American Astronomical Society
Washington, DC | 5–9 January 2014

with the High Energy Astrophysics Division (HEAD)
and Historical Astronomy Division (HAD)
Session Numbering Key

100’s Monday
200’s Tuesday
300’s Wednesday
400’s Thursday

Sessions are numbered in the Program Book by day and time.

Changes after 6 December are included only in the online program materials.

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Apogee Imaging Systems

Apogee systems have contributed to discoveries in many different fields, from astronomy to life science. They are operated in a variety of extreme conditions, from the Arctic to orbiting around the Earth. We’re proud of our accomplishments, but recognize that we must strive to continually improve our products and our processes. From bio array readers and radiance measurement systems to backyard astronomy and bright field microscopy imaging we’ve supplied the tools for serious research and discovery work for over a decade.

We are a corporate sponsor of the American Astronomical Society and support various local educational institutions.

Northrop Grumman

Since the dawn of the space age, Northrop Grumman has put good ideas into orbit and beyond. From systems engineering, spacecraft manufacturing, precision sensors, space instrument design, ground stations development and orbiting space platforms, Northrop Grumman’s space capabilities have transformed lofty concepts into high-flying realities for a wide variety of missions.

USRA

Universities Space Research Association, an independent, nonprofit research corporation that combines efforts of in-house talent and university-based expertise to advance space science & technology. USRA was founded in 1969, near the beginning of the Space Age, driven by the vision of two individuals, James Webb (NASA Administrator 1961-1968) and Frederick Seitz (National Academy of Sciences President 1962-1969). Together, they worked to create USRA to satisfy not only the ongoing need for innovation in space, but also the need to involve society more broadly so the benefits of space activities would be realized.

Today, USRA works across a wide spectrum of disciplines stemming from the range of challenges originally posed by the space program. From biomedicine to astrophysics, from basic research to facility management and operations, USRA is helping enable the study of the Universe from ground, airborne, and orbiting observatories, the study of Earth from space-based platforms, and more.
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## EXHIBITORS (by Booth Number)

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Hadrosaur Press • University of Arizona Press • University of Chicago Press
MEETING FLOOR PLANS

First Floor

Chesapeake Conference Rooms

Potomac Ballroom

Maryland Ballroom

Escalators to Hotel Ballroom Level
Second Floor

MEETING FLOOR PLANS continued
ATTENDEE SERVICES

Wear your badge at all times during the meeting. Attendees who do not have their name badges on will be denied entrance to meeting rooms, the exhibit hall, etc.

Registration

Gaylord Convention Center Foyer

Sunday: 3:00 PM - 8:00 PM
Monday: 7:30 AM - 5:00 PM
Tuesday-Wednesday: 8:00 AM - 5:00 PM
Thursday: 8:00 AM - 2:00 PM

What’s New at the Meeting

AAS Open Mic Night

Tuesday, 7 January 2014
8:00 PM - 9:00 PM; Maryland Ballroom C

For the first time, the AAS will be holding an open-mic night for our talented members to share their musical and other talents with their friends and colleagues. Held Tuesday evening, we invite all musicians, singers, storytellers, comedians, poets, spoken word enthusiasts or other performers (e.g. jugglers) to participate. We welcome all styles and genres of music from bluegrass to speed metal….seriously!

Come have some fun and strut your stuff. Cocktails, wine and beer will be available for purchase. Sign up online to ensure a spot and let us know what kind of equipment you need to perform. You can decide to participate on-site as well, but signing up early helps us ensure the proper equipment is available. Ukulele performers are especially encouraged to participate.

AAS Extras

The American Astronomical Society is pleased to unveil a new tool designed to enhance scientific communication and productivity at our meetings. Every presenter gets a personal AAS Extras webpage. You can use yours to upload a PDF of your poster or presentation slides and to create links to additional resources such as images, videos, journal articles, data sets, and websites. Your page comes with a unique QR code that you can download and print on your poster or display on one of your slides. Anyone who scans the code with their smartphone or tablet will be taken directly to your AAS Extras page, where they can download the materials and follow the links that you’ve posted there. More detailed information and instructions for accessing your personal AAS Extras page are available online at http://extras.aas.org.
Amateur Events (Monday, Tuesday or Wednesday)

We invite our amateur attendees to attend the plenary and amateur talks and to peruse our exhibit hall.

MONDAY

Gravitational Lensing Boot Camp
9:30 AM - 10:00 AM
Robert J. Nemiroff, *Professor of Physics, Michigan Technological University*

Origins of Habitable Planets
1:30 PM - 2:00 PM
Alycia J. Weinberger, *Scientific Staff Member, Carnegie Institution of Washington*

Public Talk - Tales from the Twitterverse, and Other Media Excursions
8:00 PM - 9:00 PM
Neil deGrasse Tyson, *Frederick P. Rose Director of the Hayden Planetarium*

TUESDAY

Observing Asteroids for Fun and (Astronomical) Profit
9:30 AM - 10:00 AM
Linda French, *Professor of Physics, Illinois Wesleyan University*

Hunting the Oldest Stars in the Neighborhood
1:30 PM - 2:00 PM
Thomas M. Brown, *Astronomer, Space Telescope Science Institute*

Star Party
Tuesday, (if cloudy Wednesday), 7:30 PM - 10:30 PM, Gaylord Pier
Attendance is FREE and open to the public.

Updates, including weather and logistic updates, will occur on Facebook. Follow us!  www.facebook.com/AmericanAstronomicalSociety
Organizer: Jason Kendall, *William Paterson University*
WEDNESDAY

Blazars and Gamma Rays
9:30 AM - 10:00 AM
Lynn R. Cominsky, Professor and Chair, Physics and Astronomy, Sonoma State University

The Nearest Stars
1:30 PM - 2:00 PM
Todd J. Henry, Distinguished Professor of Astronomy, Georgia State University

Exhibit Hall

Monday-Wednesday: 9:00 AM - 6:30 PM
Thursday: 9:00 AM - 2:00 PM

Please do not leave personal items unattended. The AAS is not responsible for lost or stolen property.

Posters not removed by closing time each day will be recycled.

Exhibit Hall Events

Career Center
Monday-Wednesday: 9:00 AM - 6:30 PM
Thursday: 9:00 AM - 1:00 PM

Morning Coffee Break
Monday-Thursday: 9:30 AM - 10:00 AM

Poster Session
Monday-Wednesday: 5:30 PM - 6:30 PM with cash bar
Thursday: 1:00 PM - 2:00 PM

Speaker Ready Room

Chesapeake 2
Sunday: 3:00 PM - 5:00 PM
Monday-Wednesday: 7:30 AM - 4:00 PM
Thursday: 7:30 AM - 2:00 PM
Cyber Café - Sponsored by Northrop Grumman

Located in the Exhibit Hall

Monday-Wednesday: 9:00 AM - 6:30 PM
Thursday: 9:00 AM - 2:00 PM

Absolutely no food or drink is permitted in the Cyber Café.

Using Your Own Laptop or Mobile Device While at the Meeting

• The network is monitored throughout the meeting and the AAS staff reserves the right to disconnect any device that is causing network problems or harm to other devices.

• Please keep your software up-to-date and use a firewall and virus/spyware protection when necessary.

• No device should be running as a server for off-site clients.

• Absolutely no routers can be attached to the network without prior authorization from the AAS IT Staff.

• Wireless will be available throughout the entire meeting space although some areas may experience limited connectivity. Wireless access information is printed on the back of your badge. Please note that the wireless is not encrypted.

• Due to FCC regulations and physical laws, some of the available wireless spectrum can become overcrowded and temporarily unusable which limits connectivity and speeds. We work hard to avoid this without breaking the laws set by the government or physics.

• Wireless connections will be dropped after 40 minutes of inactivity.

Donor and Sponsor Lounge

Attendance by Invitation Only

Chesapeake G

Monday-Wednesday: 7:30 AM - 5:30 PM
Thursday: 7:30 AM - 2:00 PM
Rodger Doxsey Travel Prize

The Rodger Doxsey Travel Prize, established through the support of his father, John Doxsey, and other friends, family, and colleagues, provides graduate students within one year of receiving or receipt of their PhD a monetary prize to enable the oral presentation of their dissertation research at a winter AAS meeting.

Winners:

Edmond Cheung  Bart Dunlap  Courtney Epstein  Charles Hull

Jedidah Isler  John Jardel  Jamie Lomax  Ferah Munshi

Timothy Rodigas  Dan Sirbu

Runner-Ups:

Stacey Alberts  Katherine Follette  Michael Pagano  Chalence Safranek-Shrader
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<tr>
<th>Time</th>
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<td>Exoplanet Exploration Program Analysis Group, 9:00am-5:00pm, National Harbor</td>
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<td>NASA Physics of the Cosmos Program Analysis Group, 9:30am-3:00pm, Baltimore</td>
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<td>102 Cosmology &amp; CMB I, Potomac Ballroom D</td>
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<td>103 Exoplanets and Kepler Astrophysics, Potomac Ballroom A</td>
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<td>104 Exoplanets: Exomoons and Migration, National Harbor 12</td>
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<td>105 Extrasolar Planet Characterization &amp; Theory, Maryland Ballroom A</td>
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<td>106 Galaxy Clusters: Star Formation, AGN, Interactions, National Harbor 10</td>
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<td>107 HAD IV: History of Astronomy, National Harbor 3</td>
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<td>108 HEAD I: News from the Galactic Center: A Multiwavelength Update on the Sgr A*/G2 Encounter, National Harbor 5</td>
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<td>109 Instrumentation I: Space Missions, Maryland 2</td>
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<td>110 Intergalactic Medium &amp; QSO I, National Harbor 2</td>
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<td>111 Interstellar Medium &amp; Dust I, National Harbor 4</td>
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<td>114 Pulsars &amp; Neutron Stars I, National Harbor 13</td>
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<td>115 AGN, QSO, Blazar Poster Session, National Harbor 11</td>
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<td>116 Results from the Pan-STARRS1 Surveys, Maryland Ballroom B</td>
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<td>117 Star Formation I, Potomac Ballroom C</td>
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<td>Coffee Break, 9:30am-10:00am, Exhibit Hall</td>
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<td>118 Stellar Evolution, Stellar Populations Poster Session</td>
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<td>119 Press Conference, 10:15am-11:15am, Chesapeake D/E</td>
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<td>120 Career Hour 1: Having the Right Stuff: Outstanding Resumes/CVs for Outstanding Career Opportunities in Academia and Industry, 12:30pm-1:30pm, National Harbor 2</td>
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<td>121 Town Hall: The International Astronomical Union: Roles and Goals, 11:40am-12:30pm, Potomac Ballroom A</td>
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<td>122 Town Hall: The NASA Kepler Mission Town Hall: 2014 and Beyond, 12:45pm-1:30pm, Potomac Ballroom B</td>
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<td>123 Town Hall: The NASA Kepler Mission Town Hall: 2014 and Beyond, 12:45pm-1:30pm, Potomac Ballroom B</td>
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<td>168 The Sun Poster Session</td>
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<td>169 Developing Our Own Future: Undergraduate Research and Enrichment Through Peer-Led Special and Oral Sessions 102-118, 10:00am-11:30am</td>
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<td>172 Monday, 6 January 2013</td>
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<tr>
<td>3:30am</td>
<td>173 Coffee Break, 9:30am-10:00am, Exhibit Hall</td>
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<td>3:45am</td>
<td>174 Career Center, 9:00am-6:00pm, Exhibit Hall</td>
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<td>4:00am</td>
<td>175 Cyber Café, 9:00am-6:00pm, Exhibit Hall</td>
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<td>4:15am</td>
<td>176 Monday, 6 January 2013</td>
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<td>177 Coffee Break, 9:30am-10:00am, Exhibit Hall</td>
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<td>179 Cyber Café, 9:00am-6:00pm, Exhibit Hall</td>
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<td>5:45am</td>
<td>182 Career Center, 9:00am-6:00pm, Exhibit Hall</td>
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<tr>
<td>6:00am</td>
<td>183 Cyber Café, 9:00am-6:00pm, Exhibit Hall</td>
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<tr>
<td>2:00pm</td>
<td><strong>Special and Oral Sessions 125-141, 159, 2:00pm-3:30pm</strong></td>
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<tr>
<td>125</td>
<td>Variable Stars</td>
<td>National Harbor 4</td>
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<tr>
<td>126</td>
<td>AGN on Sub-kiloparsec Scales</td>
<td>National Harbor 11</td>
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<tr>
<td>127</td>
<td>Cosmology &amp; CMB II</td>
<td>Potomac Ballroom D</td>
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<tr>
<td>128</td>
<td>Dynamics and Habitability of Exoplanets - What have we learned from Kepler?</td>
<td>Potomac Ballroom A</td>
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<tr>
<td>129</td>
<td>Evolution of Elliptical Galaxies and Black Holes</td>
<td>Maryland Ballroom D</td>
</tr>
<tr>
<td>130</td>
<td>Evolution of Star Formation and Dust in Galaxies</td>
<td>National Harbor 2</td>
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<tr>
<td>131</td>
<td>Extrasolar Planet Characterization &amp; Theory II</td>
<td>Maryland Ballroom A</td>
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<tr>
<td>132</td>
<td>Extrasolar Planet Detection - Ultra-Short-Period, Circumbinary, and Exomoons From Kepler</td>
<td>National Harbor 12</td>
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<td>133</td>
<td>Galaxy Evolution at z&gt;2</td>
<td>Maryland Ballroom C</td>
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<td>134</td>
<td>HAD V: History of Astronomy</td>
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<td>135</td>
<td>HEAD II: Consistent Cluster Cosmology: What are Planck, SZ Telescopes, and X-ray Observations Telling Us?</td>
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<td>136</td>
<td>Instrumentation II: Ground Missions</td>
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<td>137</td>
<td>Intergalactic Medium &amp; QSO II</td>
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<td>138</td>
<td>Interstellar Medium &amp; Dust II</td>
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<td>139</td>
<td>New Science from the CLASH/CANDELS Multi-Cycle Treasury Programs</td>
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<td>140</td>
<td>Pulsars &amp; Neutron Stars II</td>
<td>National Harbor 13</td>
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<td>141</td>
<td>The Dark Energy Camera and the Dark Energy Survey</td>
<td>National Harbor 10</td>
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<tr>
<td>159</td>
<td>Developing Our Own Future: Undergraduate Research and Enrichment Through Peer-Led Programs</td>
<td>Maryland 3</td>
</tr>
<tr>
<td>2:15pm</td>
<td><strong>Press Conference, 2:15pm-3:15pm, Chesapeake D/E</strong></td>
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<tr>
<td>3:40pm</td>
<td><strong>142 Plenary Session:</strong> Henry Norris Russell Lecture: New Developments in Galactic Archeology, Kenneth Freeman (Australian National University), 3:40pm-4:30pm, Potomac Ballroom A</td>
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<td>4:30pm</td>
<td><strong>143 Plenary Session:</strong> HAD Doggett Prize Lecture: Applied Historical Astronomy, F. Richard Stephenson (University of Durham), 4:30pm-5:20pm, Potomac Ballroom A</td>
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<td>5:30pm</td>
<td><strong>Evening Poster Session, 5:30pm-6:30pm, Exhibit Hall A</strong></td>
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<td>Career Hour 2: Work-Life Balance: It Can Be Done, You Can Have Fun in Both Worlds, 5:30pm-6:30pm, National Harbor 2</td>
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<td>6:30pm</td>
<td><strong>144 Town Hall:</strong> AAS Publications Town Hall, 6:30pm-8:00pm, Potomac Ballroom C</td>
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<td>SOFA Mission Status and Science Update, 6:30pm-8:00pm; Maryland Ballroom A</td>
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<td>Observatory Site Protection: Challenges &amp; Solutions, 6:30pm-8:00pm, National Harbor 3</td>
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<td>LGBTQI Networking Dinner, 6:30pm-8:30pm, Meet at AAS Registration Desk</td>
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<td>8:00pm</td>
<td>Tales from the Twitterverse, and Other Media Excursions, Neil deGrasse Tyson (American Museum of Natural History), 8:00pm-9:00pm, Potomac Ballroom A</td>
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<td>7:30am</td>
<td><strong>Plenary Session</strong>: The Thick and Thin Disks in Spiral Galaxies, Rosemary Wyse (Johns Hopkins University)</td>
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<td>8:30am</td>
<td><strong>AG4 Instrumentation III: Ground or Airborne Missions</strong> Maryland 2</td>
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<td><strong>Building the Astronomical Information Sciences: From NASA’s AISR Program to the New AAS Working Group on Astroinformatics and Astrostatistics</strong> National Harbor 4</td>
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<td>9:20am</td>
<td><strong>AG2 Cosmology &amp; CMB III</strong> Potomac Ballroom C</td>
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<tr>
<td>10:00am</td>
<td><strong>Evolution of Galaxy Structure</strong> Potomac Ballroom A</td>
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<tr>
<td>10:15am</td>
<td><strong>Plenary Session</strong>: Cannon Award: Giant Planets in Dusty Disks, Sarah Dodson-Robinson (University of Delaware) 11:40am-12:00pm, Potomac Ballroom A</td>
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<td>10:40am</td>
<td><strong>AG5 Spitzer Space Telescope: The Next Ten Years</strong> Potomac Ballroom C</td>
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<td>11:30am</td>
<td><strong>AG3 Star Formation II</strong> National Harbor 12</td>
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<td>12:30pm</td>
<td><strong>AG2 Supernovae &amp; Neutron Stars</strong> National Harbor 13</td>
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<td>1:30pm</td>
<td><strong>AG3 Laboratory Astrophysics</strong> Maryland Ballroom B</td>
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Tuesday, 7 January 2013

**Plenary Session**:

- **AG1 The Cosmic Origami: A Spectrophotographic View of the Circumgalactic Medium** Post Session Maryland 1
- **AG2 The Solar System Post Session** Maryland 1
- **AG3 Lensing & Waves Post Session** Maryland 1
- **AG4 AGN, QSO, Blazar Post Session I** National Harbor 11
- **AG5 AGN, QSO, Blazar Post Session II** National Harbor 13
- **AG6 Starburst Galaxies Post Session** Maryland 1
- **AG7 Astroinformatics and Astrostatistics Post Session** National Harbor 13
- **AG8 Surveys and Large Programs Post Session** National Harbor 13
- **AG9 Computation, Data Handling, & Image Analysis Post Session** National Harbor 13
- **AG10 Catalogs Post Session** National Harbor 13
- **AG11 Laboratory Astrophysics Post Session** Maryland Ballroom B
- **AG12 Observatory Site Protection Post Session** National Harbor 13
- **AG13 The Thick and Thin Disks in Spiral Galaxies** Potomac Ballroom A

**Special and Oral Sessions 202-218** 10:00am-11:30am

**Coffee Break** 9:30am-10:00am, Exhibit Hall

**Press Conference** 10:15am-11:15am, Chesapeake D/E

**Amateur Talk** 9:30am-10:00am, Maryland Ballroom A

**Career Hour 3: Network Yourself to a Great Career** 12:30pm-1:30pm, National Harbor 2

**Public Event** 10:15am, ‘15pm, Chesapeake O/E

**Public Event** 11:30am-12:30pm, ‘15pm, Potomac D

**Public Event** 12:30pm-1:30pm, ‘15pm, Potomac D
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<tr>
<th>Time</th>
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<tr>
<td>1:00pm</td>
<td>AGN Theory and Techniques</td>
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<td>National Harbor 11</td>
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<td>1:30pm</td>
<td>Astronomy Education Policy, EPO</td>
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<td>Programs, and Undergraduate Education</td>
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<td>Maryland 2</td>
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<td>2:00pm</td>
<td>Astrophysics Code Sharing II: The Sequel</td>
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<td>National Harbor 5</td>
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<td>2:15pm</td>
<td>Cosmology &amp; CMB I</td>
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<td>Maryland Ballroom D</td>
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<tr>
<td>2:30pm</td>
<td>Extrasolar Planet: Spectroscopy, Metallicity, and Composition</td>
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<td>Maryland Ballroom D</td>
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<td>3:00pm</td>
<td>Galaxy Evolution in Groups/Clusters</td>
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<td>National Harbor 2</td>
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<td>3:30pm</td>
<td>Laboratory Astrophysics</td>
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<td>Maryland Ballroom D</td>
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<tr>
<td>4:00pm</td>
<td>Lenses &amp; Waves II</td>
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<td>National Harbor 13</td>
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<td>4:30pm</td>
<td>The Cosmic Origins Spectrograph View of the Circumgalactic Medium</td>
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<td>National Harbor 4</td>
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<td>5:00pm</td>
<td>Telescopes for Cosmic Dawn and 21 cm Cosmology</td>
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<td>National Harbor 12</td>
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<td>5:30pm</td>
<td>Press Conference, 2:15pm-3:15pm, Chesapeake D/E</td>
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<td>6:00pm</td>
<td>Career Hour 4: Developing Your 30-Second Value Statement (aka Your Elevator Pitch)</td>
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<td>6:30pm</td>
<td>SPS Evening of Undergraduate Science</td>
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<td>National Harbor 10</td>
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<td>7:00pm</td>
<td>The Amazing Pulsar Machine and The Pulsing Gamma-ray Sky</td>
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<td>Potomac Ballroom C</td>
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<td>7:30pm</td>
<td>Gemini Observatory Open House</td>
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<td>National Harbor 10</td>
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<td>8:00pm</td>
<td>Gemini Observatory Open House</td>
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<td>Chesapeake 7</td>
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<td>8:30pm</td>
<td>NISP Open Mic Night</td>
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<td>Maryland Ballroom C</td>
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<td>9:00pm</td>
<td>plenary Session: HEAD Rossi Prize: The amazing pulser machine</td>
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<td>Maryland Ballroom A</td>
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### Wednesday, 8 January 2013

#### 7:30am
Speaker Ready Room, 7:30am-4:00pm, Chesapeake 2/3

#### 8:00am
Registration, 8:00am-5:00pm, Gaylord Convention Center Foyer  
Session Chair Breakfast, 8:00am-8:30am, Chesapeake H

#### 8:30am
**300 Plenary Session:** Pierce Prize: Exploring the Stellar Graveyard of the Milky Way, Jason Kalirai (STScI), 8:30am-9:20am, Potomac Ballroom A

#### 9:00am
Exhibit Hall, 9:00am-6:30pm  
Cyber Café, 9:00am-6:30pm, Exhibit Hall  
Career Center, 9:00am-6:00pm, Exhibit Hall  
Posters, 9:00am-6:30pm, Exhibit Hall

- 343 Time Domain Astronomy, the Large Synoptic Survey Telescope, and Transient Follow-up Poster Session  
- 344 Preparing for Future NASA Missions Poster Session  
- 345 Young Stellar Objects Poster Session  
- 346 The Milky Way, The Galactic Center Poster Session  
- 347 Extrasolar Planet Characterization Poster Session  
- 348 Extrasolar Planet Detection  
- 349 Astrobiology Poster Session

#### 9:30am
Coffee Break, 9:30am-10:00am, Exhibit Hall  
Workshop for Journal Authors and Referees, Part I, 9:30am-11:30am, Chesapeake 7

#### 10:00am
**301 AGN Across the Spectrum:** National Harbor 11  
**302 Data Handling & Catalogs** National Harbor 5  
**303 Debris Disks Around Young Stars and Planet Formation I** Potomac Ballroom C  
**304 Demographic Studies and the AAS** National Harbor 3  
**305 Developing Career Opportunities in Science Policy and Industry at All Career Levels** Maryland 1  
**306 Evolution of Local Group Galaxies** Maryland Ballroom C  
**307 Exoplanets: Interiors, Evolution, and Planetary Disks** Maryland Ballroom A  
**308 Galaxy Evolution at z~2** Potomac Ballroom A  
**309 Galaxy Evolution at z~2** Maryland Ballroom B  
**310 Galaxy Evolution at z~2** Maryland Ballroom D  
**311 Gamma Ray Bursts: Multi-wavelength and Afterglow** Maryland Ballroom D  
**312 Interstellar Medium & Dust III** Maryland Ballroom B  
**313 Large Scale Structure & Cosmic Distance I** National Harbor 13  
**314 Scientific Opportunities with the James Webb Space Telescope** Maryland Ballroom B  
**315 Stars** Maryland 2  
**316 Supernovae & Nebulae III** National Harbor 10  
**317 Time Domain Astronomy, the Large Synoptic Survey Telescope, and Transient Follow-up Poster Session** Potomac Ballroom D  
**318 The Hubble and James Webb Space Telescope Town Hall Meeting** Potomac Ballroom A  
**319 Town Hall:** The Hubble and James Webb Space Telescope Town Hall Meeting, 12:45pm-1:45pm, Potomac Ballroom A  
**320 Town Hall:** U.S. National Research Council's Committee on Astronomy and Astrophysics Town Hall, 12:45pm-1:45pm, National Harbor 3

#### 12:00pm
**Career Hour 5:** The Interview: What You Need to Do Before, During, and After to Get the Job, 12:30pm-1:30pm, National Harbor 2

#### 12:45pm
**Press Conference:** 10:15am-11:15am, Chesapeake D/E

#### 1:30pm
**Workshop for Journal Authors and Referees, Part II,** 1:30pm-3:30pm, Chesapeake 7  
**Workshop:** Bringing the Nearby Stars Closer to Home, Todd Henry (Georgia State University), 1:30pm-2:00pm, Maryland Ballroom A

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**SCHEDULE AT A GLANCE continued**

### Wednesday, 8 January 2013

#### 7:30am
Speaker Ready Room, 7:30am-4:00pm, Chesapeake 2/3

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Registration, 8:00am-5:00pm, Gaylord Convention Center Foyer  
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#### 8:30am
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- 343 Time Domain Astronomy, the Large Synoptic Survey Telescope, and Transient Follow-up Poster Session  
- 344 Preparing for Future NASA Missions Poster Session  
- 345 Young Stellar Objects Poster Session  
- 346 The Milky Way, The Galactic Center Poster Session  
- 347 Extrasolar Planet Characterization Poster Session  
- 348 Extrasolar Planet Detection  
- 349 Astrobiology Poster Session

#### 9:30am
Coffee Break, 9:30am-10:00am, Exhibit Hall  
Workshop for Journal Authors and Referees, Part I, 9:30am-11:30am, Chesapeake 7

#### 10:00am
**301 AGN Across the Spectrum:** National Harbor 11  
**302 Data Handling & Catalogs** National Harbor 5  
**303 Debris Disks Around Young Stars and Planet Formation I** Potomac Ballroom C  
**304 Demographic Studies and the AAS** National Harbor 3  
**305 Developing Career Opportunities in Science Policy and Industry at All Career Levels** Maryland 1  
**306 Evolution of Local Group Galaxies** Maryland Ballroom C  
**307 Exoplanets: Interiors, Evolution, and Planetary Disks** Maryland Ballroom A  
**308 Galaxy Evolution at z~2** Potomac Ballroom A  
**309 Galaxy Evolution at z~2** Maryland Ballroom B  
**310 Galaxy Evolution at z~2** Maryland Ballroom D  
**311 Gamma Ray Bursts: Multi-wavelength and Afterglow** Maryland Ballroom D  
**312 Interstellar Medium & Dust III** Maryland Ballroom B  
**313 Large Scale Structure & Cosmic Distance I** National Harbor 13  
**314 Scientific Opportunities with the James Webb Space Telescope** Maryland Ballroom B  
**315 Stars** Maryland 2  
**316 Supernovae & Nebulae III** National Harbor 10  
**317 Time Domain Astronomy, the Large Synoptic Survey Telescope, and Transient Follow-up Poster Session** Potomac Ballroom D  
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**320 Town Hall:** U.S. National Research Council's Committee on Astronomy and Astrophysics Town Hall, 12:45pm-1:45pm, National Harbor 3

#### 12:00pm
**Career Hour 5:** The Interview: What You Need to Do Before, During, and After to Get the Job, 12:30pm-1:30pm, National Harbor 2

#### 12:45pm
**Press Conference:** 10:15am-11:15am, Chesapeake D/E

#### 1:30pm
**Workshop for Journal Authors and Referees, Part II,** 1:30pm-3:30pm, Chesapeake 7  
**Workshop:** Bringing the Nearby Stars Closer to Home, Todd Henry (Georgia State University), 1:30pm-2:00pm, Maryland Ballroom A

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<td>2:00pm</td>
<td>Press Conference, 2:15pm-3:15pm, Chesapeake D/E</td>
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<tr>
<td>3:00pm</td>
<td>Plenary Session: U.S. Science Policy Talk, 3:40pm-4:30pm, Potomac Ballroom A</td>
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<tr>
<td>3:00pm</td>
<td>Plenary Session: Astronomy and Public Policy, Nicholas Sunzen (Texas A&amp;M University), 3:40pm-4:30pm, Potomac Ballroom A</td>
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<tr>
<td>3:30pm</td>
<td>Evening Poster Session, 4:45pm, Exhibit Hall</td>
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<td>4:30pm</td>
<td>The First Annual Buchalter Cosmology Prize, 4:30pm-5:30pm, National Harbor 11</td>
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<td>Career Discovery Networking Reception, 5:30pm-6:30pm, Potomac Ballroom A</td>
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<td>The Millennium Space Mission, 7:00pm-8:00pm, National Harbor 10</td>
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<td>RAS Gold Medal Lecture: Some Puzzles in High-Energy Astrophysics, Roger Blandford (Stanford University), 8:30pm-9:30pm, Potomac Ballroom A</td>
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<td>12:00am</td>
<td>Press Conference, 12:00am-1:00am, National Harbor 11</td>
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**Wednesday, 8 January 2013 Continued**

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<tr>
<td>7:30am</td>
<td>Plenary Session: Engineering Considerations for Large Astrophysics Projects, David Hogg (New York University), 8:30am-9:20am, Potomac Ballroom A</td>
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**Thursday, 9 January 2013**

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00am</td>
<td>Registration, 8:00am-2:00pm, Gaylord Convention Center Foyer</td>
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<td>Session Chair Breakfast, 8:00am-8:30am, Chesapeake H</td>
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<tr>
<td>8:30am</td>
<td>Exhibit Hall, 9:00am-2:00pm</td>
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<td>Cyber Café, 9:00am-2:00pm, Exhibit Hall</td>
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<tr>
<td>9:00am</td>
<td>Poster Sessions, 9:00am-2:00pm, Exhibit Hall</td>
</tr>
<tr>
<td></td>
<td>400 Plenary Session: Engineering Considerations for Large Astrophysics Projects, David Hogg (New York University), 8:30am-9:20am, Potomac Ballroom A</td>
</tr>
<tr>
<td>9:00am</td>
<td>Coffee Break, 9:30am-10:00am, Exhibit Hall</td>
</tr>
<tr>
<td>10:00am</td>
<td>Plenary Session: An Astronomical Time Machine: Light Echoes from Historic Supernovae and Stellar Eruptions, Armin Rest (STScI), 11:40am-12:30pm, Potomac Ballroom A</td>
</tr>
<tr>
<td>10:00am</td>
<td>Plenary Session: An Astronomical Time Machine: Light Echoes from Historic Supernovae and Stellar Eruptions, Armin Rest (STScI), 11:40am-12:30pm, Potomac Ballroom A</td>
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**Schedule at a Glance continued**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:30am</td>
<td>Special and Oral Sessions 401-417, 10:00am-11:30am</td>
</tr>
<tr>
<td>10:00am</td>
<td>401 A Melange of Circumstellar and Stellar Presentations, Maryland Ballroom B</td>
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<tr>
<td>10:00am</td>
<td>402 AGN Across Cosmic Time, National Harbor 11</td>
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<tr>
<td>10:00am</td>
<td>403 APOGEE - A Fresh View Into the Stellar Populations of the Milky Way Poster Session, National Harbor 3</td>
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<tr>
<td>10:00am</td>
<td>404 Astronomy Across Africa: A New Dawn Maryland 1</td>
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<tr>
<td>10:00am</td>
<td>405 Binary Systems - Dwarfs and Giants, Maryland 2</td>
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<tr>
<td>10:00am</td>
<td>406 Black Holes I, National Harbor 10</td>
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<tr>
<td>10:00am</td>
<td>407 Cosmology &amp; CMB V, National Harbor 13</td>
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<tr>
<td>10:00am</td>
<td>408 Dark Matter &amp; Dark Energy I, Maryland Ballroom C</td>
</tr>
<tr>
<td>10:00am</td>
<td>409 Debris Disks Around Young Stars and Planet Formation II, National Harbor 12</td>
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<tr>
<td>10:00am</td>
<td>410 Evolution of Nearby Galaxies, Maryland Ballroom D</td>
</tr>
<tr>
<td>10:00am</td>
<td>411 Extrasolar Planet Detection - Ground-Based Observations, Maryland Ballroom A</td>
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<tr>
<td>10:00am</td>
<td>412 Galaxy Clusters in the X-rays, National Harbor 5</td>
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<tr>
<td>10:00am</td>
<td>413 Public Policy, National Harbor 2</td>
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<td>10:00am</td>
<td>414 Science Highlights from NASA's Astrophysics Data Analysis Program, Potomac Ballroom A</td>
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<tr>
<td>10:00am</td>
<td>415 Stellar Evolution I, Potomac Ballroom C</td>
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<tr>
<td>10:00am</td>
<td>416 The Nuclear Spectroscopic Telescope Array (NuSTAR), Potomac Ballroom D</td>
</tr>
<tr>
<td>10:15am</td>
<td>Press Conference, 10:15am-11:15am, Chesapeake D/E</td>
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<tr>
<td>11:40am</td>
<td>Plenary Session: An Astronomical Time Machine: Light Echoes from Historic Supernovae and Stellar Eruptions, Armin Rest (STScI), 11:40am-12:30pm, Potomac Ballroom A</td>
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<tr>
<td>12:30pm</td>
<td>Career Hour 6: Negotiation Strategy and Tactics, 12:30pm-1:30pm, National Harbor 2</td>
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<tr>
<td>1:00pm</td>
<td>Afternoon Poster Session, 1:00pm-2:00pm, Exhibit Hall</td>
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<td>2:00pm</td>
<td><strong>Special and Oral Sessions 421-436, 2:00pm-3:30pm</strong></td>
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<td>421 AGN at Radio to IR Wavelengths</td>
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<td>National Harbor 11</td>
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<td>422 Binary Systems - ULXs and Stellar</td>
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<td>Collisions</td>
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<td>Maryland 2</td>
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<td>423 Black Holes II</td>
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<td>National Harbor 10</td>
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<td>424 Circumstellar Disk Topics with some Evolved Star Talks to Boot</td>
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<td>Maryland Ballroom B</td>
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<td>425 Clouds in Brown Dwarfs and Giant Planets</td>
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<td>National Harbor 3</td>
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<td></td>
<td>426 Cosmology &amp; CMB V</td>
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<td>National Harbor 13</td>
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<td>427 Dark Matter &amp; Dark Energy II</td>
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<td>Maryland Ballroom C</td>
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<td>428 Dwarf &amp; Irregular Galaxies</td>
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<td>National Harbor 12</td>
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<td>429 Emerging Impacts on Structure</td>
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<td>Formation and AGN Science from NanoHz Gravitational Wave Studies</td>
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<td>Maryland 2</td>
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<td>430 Extrasolar Planet Detection - M Dwarfs and Young Stars</td>
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<td>Maryland Ballroom A</td>
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<td>431 Galaxy Clusters in High Energies and Radio</td>
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<td>National Harbor 5</td>
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<td>432 Galaxy Evolution at z~1</td>
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<td>Potomac Ballroom A</td>
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<td>433 Star Clusters and Associations, Galactic and Extragalactic</td>
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<td></td>
<td>National Harbor 2</td>
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<td></td>
<td>434 Stellar Evolution II</td>
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<td>Potomac Ballroom C</td>
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<td></td>
<td>435 The Exciting Future of Cosmic Microwave Background Measurements</td>
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<td>Potomac Ballroom D</td>
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<td>436 Young Stellar Objects II</td>
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<td>National Harbor 4</td>
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<tr>
<td>2:15pm</td>
<td>Press Conference, 2:15pm-3:15pm, Chesapeake D/E</td>
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<tr>
<td>3:40pm</td>
<td><strong>Plenary Session</strong></td>
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<td>437 Plenary Session: AIP Gemant Award Lecture: Star Trek: The Search for</td>
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<td></td>
<td>the First Alleged Crab Supernova Rock Art, E.C. Krupp (Griffith</td>
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<td></td>
<td>Observatory), 3:40pm-4:30pm, Potomac Ballroom A</td>
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<tr>
<td>4:30pm</td>
<td><strong>Plenary Session</strong></td>
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<td>460 Plenary Session: Lancelot M. Berkeley Prize: Using the SDO Atmospheric</td>
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<td>Imaging Assembly to Study Solar Activity, James Lemen (Lockheed Martin</td>
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<td>Solar &amp; Astrophysics Lab), 4:30pm-5:20pm, Potomac Ballroom A</td>
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<tr>
<td>5:30pm</td>
<td><strong>AAS Closing Reception</strong></td>
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<td></td>
<td>5:30pm-7:00pm, Cherry Blossom Ballroom</td>
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</tbody>
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AAS MEETINGS ETIQUETTE

AAS meetings are the largest and most logistically complex astronomy meetings in the world. We ask all attendees to work together to enhance the value of the meetings by keeping in mind the following points.

**Executive Summary**

- Do wear your AAS identification badge at all times during the meeting.
- Do obey the “golden rule,” i.e., treat others as you would have them treat you.
- Do not hog wireless bandwidth; use the AAS wireless service sparingly.
- Do be quiet during presentations; use computers and mobile devices discretely.
- Do silence all cell phones and other electronic devices with audible alerts.
- Do not blog, tweet, or otherwise post private conversations online.
- Do not panic if reporters attend your talk on results under journal embargo.
- Do pick up after yourself by depositing trash in the appropriate receptacles.

**General Considerations**

Meetings of the American Astronomical Society are not public events. All attendees must register at the applicable rate; registration types are structured to cover all situations. The only exceptions involve sessions or other activities specifically noted as being open to the public, such as public talks or star parties held in collaboration with local amateur astronomers.

Identification badges must be worn at all times during the meeting. These badges help meeting attendees, AAS staff, and security personnel identify registered participants. Attendees not wearing their name badges will be denied entrance to session rooms, the exhibit hall, and other meeting venues. If you lose your name badge, visit the AAS registration desk to obtain a new one. Note that the design of AAS meeting badges changes regularly to prevent the inappropriate reuse of old badges.

Attendance at AAS meetings is not a right but a privilege, and attendees are expected to behave professionally. The AAS is committed to providing an atmosphere that encourages the free expression and exchange of scientific ideas. The AAS is further dedicated to the philosophy of equality of opportunity and treatment for all members and other meeting attendees, regardless of gender, race, ethnic origin, religion, age, marital status, sexual orientation, disabilities, or any other reason not related to scientific merit. It is AAS policy that all participants in Society activities will enjoy an environment free from all forms of discrimination, harassment, and retaliation. Harassment, sexual or otherwise, is a form of misconduct that undermines the integrity of Society meetings. Violators will be subject to discipline. (Full AAS anti-harassment policy: http://aas.org/policies/anti-harassment-policy)

AAS-meeting staff are trained professionals, expert at organizing and conducting scientific meetings. They work with professional contractors who specialize in providing audio-visual and other services, and with professional hotel and convention-center staff as well. The AAS retains security services, sometimes through the meeting venue and sometimes privately, to ensure the safety and security of all meeting attendees.
and exhibitors. Help us ensure a safe, secure, and professional environment by acting appropriately, reporting inappropriate behavior, and paying attention to those around you and your environment.

Attendees who are notably disrespectful or who act in an unprofessional manner toward meeting staff, contractors, other attendees, or hotel or convention-center staff will be required to leave the meeting and may have their registration rescinded without refund. In extreme cases, the AAS may call law-enforcement authorities and/or pursue legal action.

Note that all sessions except those marked “private” by the AAS are open to all registered attendees, including scientists, educators, students, journalists, and guests. All are due the same level of professional respect and courtesy. Only with your help can we ensure the most productive scientific conference.

Computers & Internet Service

The AAS provides wireless Internet service throughout each meeting, but we cannot guarantee full coverage in all locations. We provide priority access in the common areas. This means you may experience limited connectivity in the session rooms.

If you do make use of wireless Internet access during a presentation, or even if you are just taking notes on your computer, please keep your activities as quiet as possible so as to minimize distractions to other attendees and the speaker. If you must use a computer during a session, please consider sitting near the back of the room so as not to distract the speaker or session chair. These same guidelines apply to mobile phones, tablets, and other electronic devices.

One of the cost drivers for meeting registration is provision of adequate bandwidth, which — believe it or not — costs tens of thousands of dollars per meeting. Excessive downloading or uploading of files, software updates, streaming video, and other bandwidth-hungry activities (e.g., gaming, exploring virtual worlds) increases the costs for all attendees. The AAS reserves the right to ban excessive users from its meeting network and to use site blocking, port blocking, and traffic shaping to ensure adequate bandwidth for all.

Mobile Phones & Related Devices

Cell phones, tablets, pagers, and similar electronic devices should be silenced. Before each session begins and before you enter an active session, please silence your cell phone and any other devices that have audible alerts. Switching phones to vibrate rather than ring is not sufficient, as the vibrations can be heard or felt by those nearby.

Do not dial or take a phone call during a session. Please exit the session room before beginning or answering a call. All modern mobile phones have caller-ID and call-back features — please make use of them.
Blogging & Tweeting

If you blog, tweet, or otherwise post near-real-time material from the meeting online, you must follow the guidelines above concerning the use of computers, tablets, mobile phones, and AAS wireless bandwidth.

Please do not publicly report private conversations — only scheduled presentations and public comments are fair game for blogging, tweeting, etc.

Remember that many presentations at AAS meetings concern work that has not yet been peer-reviewed. So think twice before posting a blog entry or tweet that is critical of such work. It is helpful to receive constructive criticism during the Q&A after your talk or while standing next to your poster, but it is hurtful to be raked over the coals online before your session is even over and with no easy way to respond.

New York Times editor Bill Keller said it well. When it comes to meetings among colleagues, he explained, “We need a zone of trust, where people can say what is on their minds without fear of having an unscripted remark or a partially baked idea zapped into cyberspace. Think of it as common courtesy.”

Sessions & Questions

If you are giving a presentation, please be sure you have read the speaker and AV instructions on the AAS website (http://aas.org/meetings/aas-speaker-ready-and-audio-visual-information). All oral presentations must be uploaded to the internal network in the Speaker Ready Room. Personal laptops and USB drives will not be permitted for presentations in session rooms. We ask that you upload your presentation at least 24 hours in advance. Be sure to show up at your session on time.

The session chair is in charge of the session. He or she is empowered to stop questioning and to rearrange or otherwise adjust time slots (or not) based on tardiness or non-attendance of a scheduled speaker. The chair cannot extend talk times beyond the common limits of 10 minutes for regular contributions and 20 minutes for dissertation contributions (including time allotted for Q&A).

When asking questions of speakers please be professional, courteous, and polite. This is especially important when questioning students presenting their dissertation research.

Be considerate of other people wishing to ask questions. If you have multiple or detailed questions, speak with the presenter after the session.
Journalists & Embargoes

If your presentation covers results that have been, or will be, submitted to *Nature* or *Science* or any other journal with a strict embargo policy, be sure you understand how that policy applies to scientific meetings. No journal wishes to hinder communication between scientists. For example, both *Science* and *Nature* state explicitly that conference presentations do not violate their embargo policies.

Both journals also state that if your presentation covers work that has been, or will be, submitted to them, you should limit your interaction with reporters to clarifying the specifics of your presentation. As *Science* puts it, “We ask that you do not expand beyond the content of your talk or give copies of the paper, data, overheads, or slides to reporters.” That does not mean you should be rude if a reporter asks you for such materials or poses a question that you do not want to answer — just explain that your results are under embargo at *Science* or *Nature*, and the reporter will understand why you cannot be more forthcoming.

Photography & Video

Many events and presentations at AAS meetings are recorded for posterity by a Society photographer. Some sessions, and all press conferences, are videotaped and eventually posted on the AAS members website as a member benefit. Your attendance at an AAS meeting signifies your agreement to be photographed or videotaped in the course of normal meeting business. Invited and prize lecturers will be asked to sign a form for legal clarity.

If you take pictures during the meeting, please be considerate of others. Do not use a flash when taking pictures during sessions.

Eating, Drinking & Smoking

Because our meetings are so full of great content, it can be hard to find time to eat breakfast or lunch. If you must eat or drink while attending a session, please do so quietly and be sure to deposit your trash properly after the session ends. Additional cleaning services cost the AAS money and increase registration costs.

Some venues have strict policies against eating or drinking in particular areas. Meeting attendees are expected to follow these policies. Attendees may not bring their own alcoholic beverages or drink them at the meeting venue outside of areas or times when they are sold. Obviously this does not apply to bars, restaurants, or other facilities co-located with our meeting venues.

AAS meetings are strictly non-smoking, consistent with laws in the localities where we hold our conferences. When possible, smoking areas will be clearly identified.
PLANNED TABLE OF CONTENTS:

- Wondering About Things, George B. Field
- Cosmic Star-Formation History, Piero Madau, Mark Dickinson
- Far-Infrared Surveys of Galaxy Evolution, Dieter Lutz
- Gamma-Ray Pulsar Revolution, Patrizia A. Caraveo
- Hot Accretion Flows Around Black Holes, Feng Yuan, Ramesh Narayan
- Implications of Numerical Relativity for Astrophysics, Luis Lehner
- Microarcsecond Radio Astrometry, Mark J. Reid, Mareki Honma
- Observational Clues to the Progenitors of Type Ia Supernovae, Dan Maoz, Filippo Mannucci, Gijs Nelemans
- Short-Duration Gamma-Ray Bursts, Edo Berger
- Solar Dynamo Theory, Paul Charbonneau
- The Co-Evolution of Galaxies and Supermassive Black Holes: Insights from Surveys of the Contemporary Universe, Timothy M. Heckman, Phillip N. Best
- The Evolution of Galaxy Structure Over Cosmic Time, Christopher J. Conselice
- Tidal Dissipation in Stars and Giant Planets, Gordon I. Ogilvie
WHY ARE AAS MEETINGS SO EXPENSIVE?

The real question is, why are they so inexpensive?! Week-long conferences in the commercial sector typically charge registration fees that exceed $1,000 — often by a lot.

The main reason that AAS-meeting registration rates aren’t even lower than they are is that the AAS doesn’t use profits from our journals to pay for Society activities. This means that all Society expenses, including the salaries of the Executive Office staff, are paid out of meeting revenues, membership dues, Job Register fees, and some overhead collected from other projects. Not siphoning profits from the journals benefits our discipline by keeping publication costs low, but it also places severe challenges on the financing of Society operations.

As with our journals, the AAS sets its meeting-registration fees according to the expenses we actually incur to hold a meeting. A winter meeting costs more than $1 million to successfully carry out.

The lion’s share of meeting expenses are for food and beverage service as well as the infrastructure and logistical support necessary to carry out the meeting, with the food-related costs being the single biggest slice of the pie.

Why are food and beverages (known in the trade as “F&B”) so expensive? Mainly because the cost includes not only the price of the food and drinks themselves, but also the costs for any associated condiments as well as for hotel and/or convention-center staff to set up, monitor, refresh, and take down the F&B service. For a typical venue, a gallon of coffee or hot water for tea costs $70. Coffee breaks as a package at most venues cost more than $25 per person per day. Read that last sentence carefully. What about shrimp on a stick for a reception? $10 each. Want a bagel? $8 a pop. Moreover, most venues add a service charge on top of all F&B costs ranging from 18% to 26%, and on top of that there’s tax — we may be a 501(c)(3) nonprofit organization, but we’re not exempt from all taxes, just those that the local jurisdiction decides to waive. Finally, all meeting venues are for-profit entities. They need to make a profit, and F&B is one place where they can charge high rates to achieve their bottom-line goals.

Some attendees have asked why we don’t bring in outside food and beverages via catering services not associated with the convention center. This is rarely possible and rarely cheaper: most venues either prohibit external F&B vendors in the first place or charge so much extra to admit them that it wouldn’t save us money anyway.

We know that not all attendees have their registration paid for by grants, so we’re sensitive to the total cost to attend our meetings and work hard to keep the registration fee — as well as hotel rates and other costs — as low as possible. Transportation expenses are harder to control, but we try to minimize them by holding most meetings in cities that are easy to get to.

We’d love to see the meeting industry lower prices in response to the current economic climate, but so far we’ve not seen any indication that such a recalibration is in the cards. We will continue to ensure that the core purpose of our meetings — scientific discussion and interaction — can be fulfilled at the lowest possible cost to ensure the broadest possible participation of our members and the broader astronomical community. We welcome your input and comments, as always.

Kevin B. Marvel
Executive Officer
kevin.marvel@aas.org
A SPECIAL THANK YOU TO OUR AAS PAPER SORTERS

Gina Brissenden
Jeff Carlin
Karna Desai
Shantanu Desai
Rafael Eufrasio
Steve Federman
Scott Fleming
Kathryn Grasha
Nimish P. Hathi
Kevin Marvel
Joel Parriott
Wellesley Pereira
Peter Pessev
Joshua Ridley
Michael Rutkowski
Paula Szkody
Joe Tenn
Panayiotis Tzanavaris
Yan Wang
Exoplanet Exploration Program Analysis Group (Day 1 of 2)

Saturday, 9:00 AM - 5:00 PM; National Harbor 6/7

A public meeting for soliciting and coordinating community input into the development and execution of NASA’s Exoplanet Exploration Program (ExEP). It serves as a community-based, interdisciplinary forum for analysis in support of activity prioritization and for future exploration.

Organizer(s):
Ozhen Pananyan, JPL

CAE’s Tier I Teaching Excellence Workshop for Current and Future Astronomy and Space Science Instructors (Day 1 of 2)

Saturday, 9:00 AM - 5:30 PM; Chesapeake 4

Are you a current or future instructor teaching Earth, Astronomy, or Space Science? Would you like your classroom to actively engage your students in discourse about the big ideas of your class; how evidence is used to understand the universe; and the role of science in society? We invite you to come to our CAE Teaching Excellence Workshop. Spend time with your colleagues becoming an effective implementor of active-learning instructional strategies. Learn how to transform your classroom into a vibrant learning environment that will: (1) increase students’ conceptual understandings; (2) improve their abilities to think critically, interpret graphs, and reason about quantitative data; (3) motivate them to actively engage in their learning; and (4) improve their self-efficacy. Our Tier I Teaching Excellence Workshop will provide you with the experiences you need to create effective and productive active-learning classroom environments. We will model best practices in implementing many different classroom-tested instructional strategies. But most importantly, you and your workshop colleagues will gain first-hand experience implementing these strategies yourselves. During our many microteaching events, you’ll have the opportunity to role-play the parts of student and instructor. You’ll assess and critique each other’s implementation in real-time, as part of a supportive learning community. You’ll have the opportunity to face and conquer your fears of unfamiliar teaching in collaboration with kind and gentle friends and mentors before you try them by yourself in front of your students. Workshop topics will include: creating inclusive classroom environments; strategies to improve retention & diversity of STEM majors & grads; collaborative group learning; interactive lectures, demonstrations, and videos; effective use of writing; Think-Pair-Share (Peer Instruction, Clicker Questions); Lecture-Tutorials; Ranking Tasks; assessment strategies (including homework, grading, and exams). Presented by Rica French (MiraCosta College), Seth Hornstein (Univ. of Colorado-Boulder), and Paul Robinson (Westchester Community College). This workshop is sponsored by AUI/NRAO and will feature several new activities designed to effectively bring radio astronomy into your classroom.

Organizer(s):
Gina Brissenden, Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona
Astronomy Ambassadors Workshop for Early-Career AAS Members (Day 1 of 2)

Saturday, 9:00 AM - 5:30 PM; Chesapeake 7

The AAS Astronomy Ambassadors program is designed to support early-career AAS members with training in resources and techniques for effective outreach to K-12 students, families, and the public. Workshop participants will learn to communicate more effectively with public and school audiences; find outreach opportunities and establish ongoing partnerships with local schools, museums, parks, and/or community centers; reach audiences with personal stories, hands-on activities, and jargon-free language; identify strategies and techniques to improve their presentation skills; gain access to a menu of outreach resources that work in a variety of settings; and become part of an active community of astronomers who do outreach. Participation in the program includes a few hours of pre-workshop online activities to help us get to know your needs; the two-day workshop, for which lunches and up to 2 nights’ lodging will be provided; and certification as an AAS Astronomy Ambassador, once you have logged three successful outreach events. The workshop includes presenters from the American Astronomical Society, the Astronomical Society of the Pacific, and the Pacific Science Center. The number of participants is limited, and the application requires consent from your department chair. We invite applications from graduate students, postdocs and new faculty in their first two years after receipt of their PhD, and advanced undergraduates doing research and committed to continuing in astronomy. Early-career astronomers who are interested in doing outreach, but who haven’t done much yet, are encouraged to apply; we will have sessions appropriate for both those who have done some outreach already and those just starting their outreach adventures. We especially encourage applications from members of groups that are presently underrepresented in science. Please complete the online application form (http://aas.org/content/aas-astronomy-ambassadors-program-2014-application) by 18 October 2013.

Organizer(s):
Suzanne Gurton, Harvard-Smithsonian, CfA

2014 NSF Postdoctoral Fellows Symposium (Day 1 of 2)

Saturday, 1:00 PM - 6:00 PM; Chesapeake 10

This is the annual meeting of the NSF Astronomy & Astrophysics Postdoctoral Fellows (AAPF). The NSF AAPF program supports young scientists who carry out an integrated program of independent research and education/public outreach. During this two-day annual symposium, the Fellows gather to give talks on their current research and outreach projects. Several outside speakers are also invited to give keynote talks and participate in discussion panels on a range of topics such as exploring non-traditional outreach methods, addressing the next big problems in astronomy, and exploring alternative careers outside of academia. This meeting provides an opportunity for the current, past, and prospective Fellows to meet and discuss their work with members of the community, learn from each other’s experiences, and to foster new collaborations. All members of the astronomical community are welcome and encouraged to attend.

Organizer(s):
Douglas Watson, University of Chicago
WEEKEND EVENTS AND SESSIONS

SUNDAY, 5 JANUARY 2014

Exoplanet Exploration Program Analysis Group (Day 2 of 2)

Sunday, 8:00 AM - 5:00 PM; Potomac Ballroom C

A public meeting for soliciting and coordinating community input into the development and execution of NASA’s Exoplanet Exploration Program (ExEP). It serves as a community-based, interdisciplinary forum for analysis in support of activity prioritization and for future exploration.

Organizer(s):
Ozhen Pananyan, JPL

CAE’s Tier I Teaching Excellence Workshop for Current and Future Astronomy and Space Science Instructors (Day 2 of 2)

Sunday, 8:00 AM - 5:30 PM; Potomac 2

Are you a current or future instructor teaching Earth, Astronomy, or Space Science? Would you like your classroom to actively engage your students in discourse about the big ideas of your class; how evidence is used to understand the universe; and the role of science in society? We invite you to come to our CAE Teaching Excellence Workshop. Spend time with your colleagues becoming an effective implementor of active-learning instructional strategies. Learn how to transform your classroom into a vibrant learning environment that will: (1) increase students’ conceptual understandings; (2) improve their abilities to think critically, interpret graphs, and reason about quantitative data; (3) motivate them to actively engage in their learning; and (4) improve their self-efficacy. Our Tier I Teaching Excellence Workshop will provide you with the experiences you need to create effective and productive active-learning classroom environments. We will model best practices in implementing many different classroom-tested instructional strategies. But most importantly, you and your workshop colleagues will gain first-hand experience implementing these strategies yourselves. During our many microteaching events, you’ll have the opportunity to role-play the parts of student and instructor. You’ll assess and critique each other’s implementation in real-time, as part of a supportive learning community. You’ll have the opportunity to face and conquer your fears of unfamiliar teaching in collaboration with kind and gentle friends and mentors before you try them by yourself in front of your students. Workshop topics will include: creating inclusive classroom environments; strategies to improve retention & diversity of STEM majors & grads; collaborative group learning; interactive lectures, demonstrations, and videos; effective use of writing; Think-Pair-Share (Peer Instruction, Clicker Questions); Lecture-Tutorials; Ranking Tasks; assessment strategies (including homework, grading, and exams). Presented by Rica French (MiraCosta College), Seth Hornstein (Univ. of Colorado-Boulder), and Paul Robinson (Westchester Community College). This workshop is sponsored by AUI/NRAO and will feature several new activities designed to effectively bring radio astronomy into your classroom.

Organizer(s):
Gina Brissenden, Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona
AAS Council Meeting
Sunday, 8:00 AM - 5:00 PM; Chesapeake 5/6

The AAS Council is the board of directors for the AAS, which is a 501(c)3 non-profit corporation incorporated in the District of Columbia. The Council meeting, which is open to AAS members except for any executive sessions (note: limited seating is available due to space constraints), allows for routine corporate business (such as approval of prize winners and setting each year’s budget) as well as discussion of current conditions in the field of astronomy and closely related sciences, setting of long-term goals, and allocation of resources to achieve these goals.

Organizer(s):
David Helfand, *Quest University Canada*

NRAO Very Large Array Sky Survey Science Planning

Sunday, 9:00 AM - 3:00 PM; Annapolis 1

It has been 20 years since the initial observations were made for the NRAO Very Large Array Sky Survey (NVSS) and the Faint Images of the Radio Sky at Twenty-Centimeters (FIRST). These pioneering programs have defined the state-of-the-art in centimeter radio sky surveys and produced a steady stream of excellent science. Given the enhanced capabilities of the Karl G. Jansky Very Large Array (VLA), now is an appropriate time to discuss the scientific potential of new centimeter-wavelength sky surveys. High priority science goals of the 2010 decadal survey New Worlds, New Horizons in Astronomy and Astrophysics can be addressed by a new VLA sky survey, and many scientists have expressed their keen interest in employing the VLA to conduct new, wide-area synoptic surveys in support of multi-wavelength sky surveys using existing and future facilities, such as the Large Synoptic Survey Telescope. Thus, we are launching a NRAO VLA Sky Survey (VLASS) initiative that will explore the science and technical opportunities of a new centimeter-wavelength survey. A community-led Science Survey Group (SSG) will define the science program and key components of VLASS, and NRAO will support its technical definition and implementation. All VLASS data will be available immediately to the astronomical community. By 1 September 2013, we will have formally announced the formation of the SSG and issued a call for white papers that will provide critical input to the SSG and NRAO regarding survey science goals, techniques development, and design. In this workshop at the January 2014 American Astronomical Society meeting at National Harbor, MD, all interested community members are welcome to attend, learn about the VLA and its survey capabilities, participate in discussion of survey science priorities, and provide input on survey planning. This workshop will also be a forum for the presentation and discussion of the white papers.

Chair(s):
Stefi Baum, *Rochester Inst. of Technology*
Steven Myers, *NRAO*

Organizer(s):
Mark Adams, *NRAO*
Leadership and Teambuilding for Astronomers

Sunday, 9:00 AM - 4:00 PM; Potomac 4

In this interactive, day-long workshop, we will focus on numerous subjects that will enable you to successfully lead and manage teams and research groups in astronomy. The workshop will include opportunities for dynamic discussions, exercises and engagement activities. Case studies will also be utilized. Topics will include: - Leadership: The difference between leading and managing teams; the characteristics of an effective leader; and how to develop and hone leadership skills early in your career. - Project Management: The elements of project management and how to craft and produce strategic plans that incorporate vision, goals and executional tactics. - Management and Teambuilding: How to build and organize an efficient research group; choose new members of your group; motivate people (particularly across diverse cultures); and be a strong team member yourself. - Conflict Resolution: How to interact with team members in challenging situations; how to effectively disband a group or remove a team-member. - The Mentor/Protégé Relationship: Strategy and tactics for development, cultivation, and management of this partnership; how to create a synergetic experience with your mentor and your protégés. Intended Audience: Postdocs and early-career faculty. Will be limited to 30 participants. Facilitator: Alaina G. Levine has been advising emerging and established scientists and engineers about their careers for over a decade, and has consulted with tens of thousands of early- and mid-career scientific and engineering professionals.

Chair(s):
Alaina Levine, Quantum Success Solutions

Organizer(s):
Kelle Cruz, Hunter College/CUNY and AMNH

Introduction to Python

Sunday, 9:00 AM - 5:00 PM; Potomac 3

We will present an introduction to Python and object-oriented code organization concepts. Participants will get FITS data files from standard astronomical releases and write code to access the data. The participants will use these classes to display data. Through the process participants will be introduced to the numpy, matplotlib, and scipy Python packages. Emphasis will be placed on sharing and reusing code rather than recreating by each astronomer who uses the data. The instructors will be Demitri Muna (Ohio State University) and Adrian Price-Whelan (Columbia University), who have four years of experience running the successful week-long SciCoder workshop. Participant Requirements: Participants are required to bring their own laptops with specified software pre-installed. For the workshop, we will only support Mac OS X or Linux operating systems. Users who use Windows have the option of running Linux in a virtual machine or else creating a dual-boot system. Participants must have a minimum of 20GB free on their computer. Organized by August Muench and the AAS Employment Committee.

Chair(s):
Demitri Muna, New York University
Adrian Price-Whelan, Columbia University

Organizer(s):
August Muench, Smithsonian Astrophysical Observatory
Astronomy Ambassadors Workshop for Early-Career AAS Members (Day 2 of 2)

Sunday, 9:00 AM - 5:30 PM; Chesapeake 7

The AAS Astronomy Ambassadors program is designed to support early-career AAS members with training in resources and techniques for effective outreach to K-12 students, families, and the public. Workshop participants will learn to communicate more effectively with public and school audiences; find outreach opportunities and establish ongoing partnerships with local schools, museums, parks, and/or community centers; reach audiences with personal stories, hands-on activities, and jargon-free language; identify strategies and techniques to improve their presentation skills; gain access to a menu of outreach resources that work in a variety of settings; and become part of an active community of astronomers who do outreach. Participation in the program includes a few hours of pre-workshop online activities to help us get to know your needs; the two-day workshop, for which lunches and up to 2 nights’ lodging will be provided; and certification as an AAS Astronomy Ambassador, once you have logged three successful outreach events. The workshop includes presenters from the American Astronomical Society, the Astronomical Society of the Pacific, and the Pacific Science Center. The number of participants is limited, and the application requires consent from your department chair. We invite applications from graduate students, postdocs and new faculty in their first two years after receipt of their PhD, and advanced undergraduates doing research and committed to continuing in astronomy. Early-career astronomers who are interested in doing outreach, but who haven’t done much yet, are encouraged to apply; we will have sessions appropriate for both those who have done some outreach already and those just starting their outreach adventures. We especially encourage applications from members of groups that are presently underrepresented in science. Please complete the online application form (http://aas.org/content/aas-astronomy-ambassadors-program-2014-application) by 18 October 2013.

Organizer(s):
Suzanne Gurton, Astronomical Society of the Pacific

2014 NSF Postdoctoral Fellows Symposium (Day 2 of 2)

Sunday, 9:00 AM - 6:00 PM; Potomac Ballroom D

This is the annual meeting of the NSF Astronomy & Astrophysics Postdoctoral Fellows (AAPF). The NSF AAPF program supports young scientists who carry out an integrated program of independent research and education/public outreach. During this two-day annual symposium, the Fellows gather to give talks on their current research and outreach projects. Several outside speakers are also invited to give keynote talks and participate in discussion panels on a range of topics such as exploring non-traditional outreach methods, addressing the next big problems in astronomy, and exploring alternative careers outside of academia. This meeting provides an opportunity for the current, past, and prospective Fellows to meet and discuss their work with members of the community, learn from each other’s experiences, and to foster new collaborations. All members of the astronomical community are welcome and encouraged to attend.

Organizer(s):
Douglas Watson, University of Chicago
NASA’s Cosmic Origins Program Analysis Group

Sunday, 9:30 AM - 6:00 PM; Baltimore 1

The COPAG is responsible for soliciting and coordinating community input into the development and execution of NASA’s Cosmic Origins Program. The COPAG serves as a community-based, interdisciplinary forum for analysis in support of Cosmic Origins objectives and of their implications for mission planning, technology prioritization and for future studies and exploration. It provides findings and analysis to NASA through the NASA Advisory Council (NAC) via the COPAG Chair, who is a member of the Astrophysics Subcommittee. We will present a description of the on-going COPAG activities, in particular focusing on efforts to formulate science drivers for near-term mission concepts, primarily for the UV/Visible but not precluding other wavelengths, and on technology development activities. All interested parties are encouraged to participate and provide their thoughts and suggestions.

Organizer(s):  
Susan Neff, NASA’s GSFC

NASA’s PhysPAG Gamma Ray SIG

Sunday, 9:30 AM - 3:00 PM; Baltimore 3

NASA’s PhysPAG Science Interest Group, GammaSIG will hold their community meeting January 5, 2014. All interested members of the community are encouraged to participate.

Organizer(s):  
Ann Hornschemeier, NASA GSFC

NASA Physics of the Cosmos Program Analysis Group

Sunday, 9:30 AM - 6:00 PM; Annapolis 3

NASA’s Physics of the Cosmos Program Analysis Group will hold their community meeting Sunday, January 5, 2014. The PhysPAG is a forum for soliciting and coordinating input from the science community to advance the science objectives of the Physics of the Cosmos program. The five Science Analysis Groups in the areas of X-rays, Gravitational Waves, Inflation Probe, Gamma Rays and Cosmic Rays will report on progress within their groups and there will also be discussion of dark energy science. All interested members of the community are encouraged to participate.

Organizer(s):  
Ann Hornschemeier, NASA GSFC
LSST Stars, Milky Way and LV Splinter Meeting

Sunday, 12:00 PM - 6:00 PM; Baltimore 4

The Stars, Milky Way and Local Volume LSST collaboration will work from the completed Phase I roadmaps that we have assembled, and which highlight technical/scientific challenges that must be worked on in order to do LSST science. We plan here to synthesize and map out the next steps for our collaboration. We will begin the task of outlining a path from where we are today to where we need to be in 7 years to do LSST science (Phase II). Example action items include: informing the Project with respect to survey decisions such as cadence and algorithms; utilizing imminent or existing analog data to do precursor science; and developing Level 3 products.

Organizer(s):
Nitya Kallivayalil, University of Virginia

Managing, Sharing, and Archiving Your Data

Sunday, 1:00 PM - 4:00 PM; Potomac 1

Astronomers use, peruse and produce vast amounts of scientific data. Managing these data consumes a great deal research effort. Making these data publicly available is important because it supports the reproducibility of results. Archiving these data ensures their long term preservation and reuse. This workshop will introduce participants to some tools to tackle the problem of managing, sharing, and archiving their data. Specific topics covered will include funding agency data management requirements, data-literature connections such as how to best cite data in your paper, online tools for preserving and sharing data, and desktop tools for managing data. The instructor will be August Muench (Smithsonian Astrophysical Observatory). Participant Requirements: Participants at all stages of their career are welcome, and there are no prerequisites. Participants should bring their own laptops in order to participate in hands on tutorials with specific data archiving tools and websites. Organized by August Muench and the AAS Employment Committee

Organizer(s):
August Muench, Smithsonian Astrophysical Observatory
Dark Skies & Energy Kits for Classrooms & Outreach

Sunday, 1:00 PM - 5:00 PM; National Harbor 7

The National Optical Astronomy Observatory has been heavily involved in the development of Dark Skies and Energy Education activities. The activities help students identify wasteful/inefficient lighting and provide ways to reduce energy consumption and cost. Reducing excess light is critical to astronomy, but excess light also affects human health, as well as plant and animal ecosystems. In the past several years, we have taught these activities in workshops, online forums and Google+ Hangouts. They have been used in college, high school, and middle school classrooms. They have also been utilized in afterschool programs, museums, planetaria, and science and environmental centers. As part of this program, we have developed a Dark Skies and Energy Education kit (DS&EE). The DS&EE kit contains a demonstration on the importance of shielding lights; different lights, sockets and diffraction gratings to learn about the efficiency of lights; and a luxmeter, a Sky Quality Meter and a camera to quantify and calculate the energy, cost, and carbon footprint in a lighting audit. Materials for three other activities addressing how light pollution affects wildlife and helping prepare participants for the Globe at Night citizen-science campaign are also included in the kit. In this workshop, participants will learn about and evaluate the DS&EE kit materials and activities. The activities cover topics that illustrate responsible lighting, the effects light pollution has on energy consumption and wildlife, and how everyone can measure the darkness of their night skies. All of the activities will be set up and participants will have a chance to perform as many of the activities as time permits. We will collect feedback on the activities and materials from the workshop participants and incorporate the feedback into future versions of the DS&EE kit. At workshop’s end, a DS&EE kit will be raffled. For more information, see http://www.globeatnight.org/dsr/.

Organizer(s):
Constance Walker, NOAO

AAS/NGS SCIENCE COMMUNICATION WORKSHOP

Sunday, 1:00 PM - 5:00 PM; Potomac 6

One of the great things about working in astronomy is that the press and public are keenly interested in what we do. That’s the good news. The bad news is that few of us receive any training, in our education or on the job, in how to communicate effectively with the press and public. Yet funding agencies increasingly expect researchers to reach beyond the narrow confines of academia to share scientific findings and insights with the wider community. To help fill the gap between expectations and preparation, the AAS is partnering with the National Geographic Society to present a half-day workshop on science communication. Interactive and engaging, it will focus on specific practical techniques for communicating more effectively with nonscientists. Topics will include speaking to diverse audiences, visual storytelling, effective use of social media, how to write for a general readership, and tips for surviving your first TV appearance. The workshop is open to all AAS members but will be especially valuable to early-career astronomers.

Organizer(s):
Richard Fienberg, American Astronomical Society
Re-Numerate: Restoring Essential Numerical Skills

Sunday, 1:00 PM - 5:00 PM; National Harbor 12

All who step in front of an introductory science course today encounter the same problems with introducing quantitative science – students’ gross lack of arithmetic skills, inability to think numerically and frequent pervasive fear of all things numerical. Although we can enhance appreciation of astronomy through qualitative methodologies, we do so at the expense of scientific authenticity and depth of understanding by excising the real and beautiful quantitative principles that underlie nature. We also reinforce the commonly-held belief that numerical skills are not useful in everyday life. This workshop will show participants how to confront misconceptions, increase student motivation and self-awareness and improve arithmetic thinking using astronomy-specific materials as well as “real life” examples. Participants will learn how to extend existing materials (e.g., Lecture Tutorials) for this purpose and will be introduced to new possibilities in labs, class activities, think-pair-share questions and homework assignments. This is a hands-on workshop, and participants will be engaged in creating new materials of their own, in addition to being introduced to our materials.

Organizer(s):
Katherine Follette, University of Arizona

The Future of Time in Astronomy

Sunday, 1:00 PM - 5:00 PM; National Harbor 6

Turning day into night: A proposal to redefine Coordinated Universal Time (UTC) to no longer be tied to the rotation of the Earth narrowly missed a vote at the 2012 World Radiocommunication Conference (WRC) of the International Telecommunication Union (ITU), an agency of the United Nations. A similar proposal is scheduled for the 2015 WRC. While the IAU has a UTC working group, the decision is out of the hands of astronomers – but with significant implications for observatories, space missions and time domain science. Redefining UTC would introduce a secular drift into civil time and make even familiar concepts like “day” incoherent; each missed leap second would be an error of 15 seconds of arc at the equator. Clocks worldwide – and on your computer, phone and wrist – would be affected. We will discuss the history and future of timekeeping, and will present strategies and best practices (whatever the ITU outcome) for time standards and network clocks, and for performing a Y2K-like software and system inventory at your institution. See http://futureofutc.org/AAS223/ for speakers and links. Time affects everyone and AAS registration is not required.

Organizer(s):
P. Kenneth Seidelmann, Univ. of Virginia

90 HAd i: Origin of Structure and the Expanding Universe

Sunday, 1:30 PM - 3:30 PM; Baltimore 5

When Hot Big Bang cosmology became widely accepted from the 1960s theorists realised that an explanation of how structure arises in the universe was a complex intellectual puzzle.
Speakers in this session will explore how aspects of the problem of structure formation developed in the last century. Speakers will explain how the problem of origin - the “why is there something rather than nothing?” question slowly dawned. Speakers will explain why expansion models of the universe were only slowly accepted. New scholarship sheds light on the exchanges between Einstein and Hubble. A new timeline will be presented of events in 1948 concerning the thermal radiation associated with a hot expansion. The session concludes with an assessment of Beatrice Tinsley’s contribution to derailing the famous “search for two numbers” that would define the evolution of the universe.

Organizer(s):
Simon Mitton, Total Astronomy

90.01 NOR YET THE LAST TO LAY THE OLD ASIDE: Structuring the Something
Trimble, Virginia L.\textsuperscript{1}
\textsuperscript{1}UC, Irvine, Irvine, CA.

90.02 A One Galaxy Universe and the Shift to Modern Cosmology
Smith, Robert W.\textsuperscript{1}
\textsuperscript{1}Univ. of Alberta, Edmonton, AB, Canada.

90.03 REDSHIFTS AND THE EXPANDING UNIVERSE - PARADIGM SHIFT OR SLOW DAWNING?
O Raifeartaigh, Cormac\textsuperscript{1}
\textsuperscript{1}Waterford Institute of Technology, Waterford, Ireland, Ireland.

90.04 Dismantling Hubble’s Legacy?
Way, Michael J.\textsuperscript{1,2}
\textsuperscript{1}NASA/Goddard Institute for Space Studies, New York, NY. \textsuperscript{2}Department of Physics and Astronomy, Uppsala, Sweden.

90.05 What happened in 1948?
Peebles, P. J.\textsuperscript{1}
\textsuperscript{1}Princeton University, Princeton, NJ.

90.06 How Beatrice Tinsley Destroyed Sandage’s Quest for a Standard Candle
Mitton, Simon\textsuperscript{1}
\textsuperscript{1}University of Cambridge, Cambridge, United Kingdom.

91 HAD II: From Barnard’s Star to the Kepler Mission: Searching for Low Mass Companions to Stars

Sunday, 4:00 PM - 6:00 PM; Baltimore 5

One of the signal advances in astronomy in the last 25 years has been the discovery of extrasolar planets. Speakers in this session will examine the role of applying new technologies, hardware and software, scientific and cultural, to the search for planets in the universe. Speakers will identify what the limits of detection have been over the past century, and how these limits have been extended to the point where humanity seems now on the verge of actually finding habitable abodes of life circling other stars. Speakers who have been participants in the process will discuss their strategies and modes of operation, and what they feel are the key artifacts of the material heritage of the process that should be preserved to better record and appreciate this stage in the search for life in the universe. Speakers include Geoff Marcy, David Latham, Gordon Walker, Bill Borucki, Tim Brown, and Edward Dunham.
Organizer(s):
David De Vorkin, Smithsonian Inst.
Steven Dick, NASM

91.01 Hydrogen Fluoride: an unexpected catalyst in the search for extra-solar planets
Walker, Gordon A.¹
¹, Victoria, BC, Canada.

91.02 The Unseen Companion of HD 114762
Latham, David W.¹
¹ Harvard-Smithsonian, CfA, Cambridge, MA.

91.03 Technology Enabling the First 100 Exoplanets
Marcy, Geoffrey W.¹
¹ UC, Berkeley, Berkeley, CA.

91.04 Barriers to the Development of the Kepler Mission
Borucki, William J.¹; Batalha, Natalie M.¹; Dunham, Edward W.²; Jenkins, Jon M.²
¹ NASA Ames Research Center, Moffett Field, CA. ² SETI Institute, Mountain View, CA.

91.05 The Discovery of Extrasolar Planets via Transits
Dunham, Edward W.¹; Borucki, William J.²; Jenkins, Jon M.²; Batalha, Natalie M.²; Caldwell, Douglas A.³; Mandushev, Georgi³
¹ Lowell Obs., Flagstaff, AZ. ² NASA Ames, Moffett Field, CA. ³ SETI Institute, Mountain View, CA.

91.06 Adapting Low-Tech Gear to Exoplanet Discovery
Brown, Timothy M.¹,²
¹ Las Cumbres Global Telescope Network, Inc., Goleta, CA. ² CU/CASA, Boulder, CO.

Undergraduate Orientation

Sunday, 6:00 PM - 7:00 PM; Maryland Ballroom A
Undergraduate students, their advisors and those interested in attracting undergraduate students to their graduate program, or undergraduate research opportunity are invited to attend this event. Members of the AAS Council and of the Astronomy Education Board will be there to meet and chat with students. For the benefit of those students attending an AAS meeting for the first time, we will explain how to get the most out of an AAS meeting and outline how the meeting works. Sign up, free of charge to all undergrads, their advisors and those offering research opportunities (or jobs) to undergraduates, through the meeting registration form. Light snacks and refreshments will be provided.

Organizer(s):
Kevin Marvel, American Astronomical Society

AAS Opening Reception

Sunday, 7:00 PM - 9:00 PM; Potomac Ballroom A
Open to all attendees and registered guests, the Opening Reception kicks off the 223rd meeting of the American Astronomical Society at the Gaylord National.
100 Welcome Address
Monday, 8:00 AM - 8:30 AM; Potomac Ballroom A

101 Kavli Foundation Lecture: The Hubble Deep Field and its Legacy
Monday, 8:30 AM - 9:20 AM; Potomac Ballroom A
Chair(s):
David Helfand, Quest University Canada

Robert Williams - Kavli Lecturer
For providing strong scientific leadership as Director of the Cerro Tololo Inter-American Observatory, Director of the Space Telescope Science Institute, and President of the International Astronomical Union; an example of which is his instigation and leadership of the Hubble Deep Field project, which has provided us with an exquisite view of the early universe and a deeper understanding of very young galaxies.

101.01 The Hubble Deep Field and its Legacy
Williams, Robert E.1
1STScI, Baltimore, MD.

Careers 101: Career Planning Workshop for Graduate Students and Postdocs
Monday, 9:30 AM - 11:30 AM; Potomac 1
This workshop and panel discussion will center on the current and expanding crisis in the job and career market for astronomers. Specifically targeted towards graduate students and Postdocs, this workshop will identify how early-career scientists can work towards their ideal career path. Our focus will be on career planning for traditional astronomy positions. We will demonstrate how to orchestrate a personal career plan and to identify skills that will be marketable in more than one industry. We will discuss what early-career astronomers should do now to enhance their CVs and research reputations, and what they should look for in and how they can leverage a Postdoc appointment to that can set themselves up for success in the field. We will also discuss a variety of jobs and career paths in astronomy, and introduce the skills that are needed to pursue these. Q and A between panelists and workshop participants will be highly encouraged. Please see “Recovering from Postdoc Mistakes,” Science Magazine, March 3, 2011, http://sciencecareers.scientificamerican.com/career_magazine/previous_issues/articles/2011_03_18/science.opms.r1100101 for a reference on some of the topics we will discuss. Audience: Undergraduates, graduate students, postdocs. Facilitator: Alaina G. Levine, President, Quantum Success Solutions Alaina G. Levine is a science careers consultant, science writer, and professional speaker and comedian. Her new book on networking strategies for scientists and engineers will be published by Wiley in 2014.

Chair(s):
Alaina Levine, Quantum Success Solutions
Organizer(s):
Kelle Cruz, Hunter College/CUNY and AMNH
Amateur Talk: Gravitational Lensing Boot Camp

Monday, 9:30 AM - 10:00 AM; Maryland Ballroom A

What is gravitational lensing, what has it told us about the universe, and what more can it tell us about the universe? Lenses such as black holes, stars, galaxies, clusters of galaxies, and the universe as a whole will be covered. Concepts such as Einstein rings, photon spheres, image pair creation events, and shear will be defined and briefly discussed. The intersection of current research frontiers and gravitational lensing will be reviewed including how microlensing is being used to search for extra-solar planets, how radio telescopes are being used to probe galaxy-center black holes, and how weak lensing is being used to probe galaxy evolution in the early universe. Short videos showing what it looks like to go near a black hole will be shown and described.

Chair(s):
Robert Nemiroff, Michigan Technological Univ.

102 Cosmology & CMB I

Monday, 10:00 AM - 11:30 AM; Potomac Ballroom D

Chair(s):
Alan Kogut, NASA’s GSFC

102.01D Toward a precise determination of the neutral gas fraction at $z\sim7$ using the Lyman alpha fraction test
Schenker, Matthew A.\textsuperscript{1}; Ellis, Richard S.\textsuperscript{1}; Stark, Daniel\textsuperscript{2}
\textsuperscript{1}California Institute of Technology, California, CA. \textsuperscript{2}University of Arizona, Tucson, AZ.

102.02 Finding the First Cosmic Explosions: Hypernovae and Pair-Instability Supernovae
Wiggins, Brandon\textsuperscript{1,2}; Whalen, Daniel J.\textsuperscript{2}; Mignes, Victor\textsuperscript{1}
\textsuperscript{1}Brigham Young University, Provo, UT. \textsuperscript{2}Los Alamos National Laboratory, Los Alamos, NM.
Contributing teams: Astrophysics Research Group at Los Alamos National Laboratory

102.03 In Pursuit of the Thermal State of the IGM at Redshift 20: Radio Foreground Characterization
Greenhill, Lincoln J.\textsuperscript{1}
\textsuperscript{1}Harvard-Smithsonian, Cfa, Cambridge, MA.
Contributing teams: LEDA collaboration

102.04D Simulating Metal-Poor and Metal-Free Star Formation in the Earliest Galaxies
Safranek-Shrader, Chalence\textsuperscript{1}
\textsuperscript{1}University of Texas at Austin, Austin, TX.

102.05 21cm Reionization Results Suggesting X-Ray Heating
Parsons, Aaron\textsuperscript{1}
\textsuperscript{1}University of California, Berkeley, Berkeley, CA.
Contributing teams: PAPER, HERA

102.06 Linear and Circular polarization of CMB and cosmic 21cm radiation
De, Soma\textsuperscript{1}; Vachaspati, Tanmay\textsuperscript{1}; Pogosian, Levon\textsuperscript{2}; Tashiro, Hiroyuki\textsuperscript{1}
\textsuperscript{1}Arizona State University, Tempe, AZ. \textsuperscript{2}Simon Fraser University, Burnaby, BC, Canada.
102.07 The effect of aberration on partial-sky measurements of the cosmic microwave background temperature power spectrum
Jeong, Donghui; Chluba, Jens; Dai, Liang; Kamionkowski, Marc; Wang, Xin
1Johns Hopkins University, Baltimore, MD.

103 Exoplanets and Kepler Astrophysics
Monday, 10:00 AM - 11:30 AM; Potomac Ballroom A
In addition, to revolutionizing our view of exoplanets, Kepler has also extended our understanding of the time domain astrophysics. The talks presented here will yield insight into the tremendous power of citizen science in the discovery of exoplanets (Meg Schwamb), will present a discussion of the stellar variability and its relationship to the stellar properties (Fabienne Bastien), and the variability of active galactic nuclei (Rick Edelson).

Chair(s):
David Ciardi, Caltech
Organizer(s):
Frederic Rasio, Northwestern Univ.

103.01 Planet Hunters: Kepler by Eye
Schwamb, Megan E.; Lintott, Chris; Fischer, Debra; Smith, Arfon M.; Boyajian, Tabetia S.; Brewer, John M.; Giguere, Matthew J.; Lynn, Stuart; Parrish, Michael; Schawinski, Kevin; Schmitt, Joseph; Simpson, Robert; Wang, J.;
1Institute of Astronomy & Astrophysics, Academia Sinica (ASIAA), Taipei, Taiwan. 2University of Oxford, Oxford, United Kingdom. 3Adler Planetarium, Chicago, IL. 4Yale University, New Haven, CT. 5ETH Zurich, Zurich, Switzerland.

103.02 Flicker, Jitter, Crackle: Lifting the Veil on Stellar Variability and Understanding its Impact on Planet Detection with Kepler
Bastien, Fabienne A.; Stassun, Keivan; Basri, Gibor S.; Pepper, Joshua; Pett; Reid; Wang, Ji
1Vanderbilt University, Madison, TN. 2University of California, Berkeley, CA. 3Lehigh University, Bethlehem, PA. 4Fisk University, Nashville, TN.

103.03 Optical variability of the Kepler AGN
Edelson, Rick
1University of Maryland, College Park, MD.

104 Exoplanets: Exomoons and Migration
Monday, 10:00 AM - 11:30 AM; National Harbor 12
Chair(s):
Steve Bryson, NASA Ames Research Center

104.01 Open Cluster Planets and an Observational Constraint on Hot Jupiter Migration
Quinn, Samuel N.; White, Russel J.; Latham, David W.; Buchhave, Lars A.; Torres, Guillermo; Stefanik, Robert P.
1Georgia State University, Atlanta, GA. 2Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.
104.02 Planetesimal Migration and its Effects on Mean Motion Resonances
Chatterjee, Sourav\(^1\); Ford, Eric B.\(^2\)
\(^1\)University of Florida, Gainesville, FL. \(^2\)Pennsylvania State University, University Park, PA.

104.03 How Do Mini-Neptunes Migrate?
Berta-Thompson, Zachory K.\(^1\)
\(^1\)MIT, Cambridge, MA.

104.04 First Evaluation of the Rate of Planet Migration Into Stars, Plus Many Newly-Found Correlations Between Metallicity and Planet Orbit Parameters
Taylor, Stuart F.\(^1,2\)
\(^1\)Participation Worldscope, Hong Kong, Hong Kong. \(^2\)Global Telescope Science, Cottonwood, AZ.

104.05 Exomoon Conditions in Circumbinary Habitability Zones
Mason, Paul A.\(^1,3\); Zuluaga, Jorge I.\(^2\); Clark, Joni\(^3\); Cuartas-Restrepo, Pablo\(^2\)
\(^1\)Univ. Of Texas at El Paso, Las Cruces, NM. \(^2\)Universidad de Antioquia, Medellin, Colombia. \(^3\)New Mexico State University, Las Cruces, NM.

104.06 Taking Exomoons to the (Radius) Limit
Hinkel, Natalie R.\(^1\); Kane, Stephen R.\(^1\)
\(^1\)San Francisco State University, San Francisco, CA.

105 Extrasolar Planet Characterization & Theory I

Monday, 10:00 AM - 11:30 AM; Maryland Ballroom A

Chair(s):
Nicolas Cowan, Northwestern University

105.01 Earth-Size Planets from Kepler
Marcy, Geoffrey W.\(^1\); Petigura, Erik\(^1\); Howard, Andrew\(^2\); Weiss, Lauren M.\(^1\); Isaacson, Howard T.\(^1\); Rogers, Leslie\(^3\)
\(^1\)UC Berkeley, Berkeley, CA. \(^2\)University of Hawaii/IfA, Honolulu, HI. \(^3\)Caltech, Pasadena, CA.
Contributing teams: Kepler Team

105.02 Just the Photometry: Constraining exoplanet orbits by measuring stellar densities
Sliski, David\(^1\); Kipping, David M.\(^2\)
\(^1\)Harvard University, Cambridge, MA. \(^2\)Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

105.03 NPOI Observations of the Exoplanet Host Kappa Coronae Borealis
Baines, Ellyn K.\(^1\); Armstrong, J. T.\(^1\); van Belle, Gerard\(^2\)
\(^1\)Naval Research Laboratory, Washington, DC. \(^2\)Lowell Observatory, Flagstaff, AZ.

105.04 A Relation between Mass and Radius for 59 Exoplanets Smaller than 4 Earth Radii
Weiss, Lauren M.\(^1,2\); Marcy, Geoffrey W.\(^1\)
\(^1\)UC Berkeley, Berkeley, CA. \(^2\)NSF, Washington, DC.

105.05 The Fate of Hot Jupiters
Schlaufman, Kevin\(^1\)
\(^1\)MIT Kavli Institute for Astrophysics and Space Research, Cambridge, MA.
105.06 Exoplanet Transit Spectroscopy of Hot Jupiters Using HST/WFC3
Mandell, Avi1; Haynes, Korey2, 1; Sinukoff, Evan3; Madhusudhan, Nikku4;
Burrows, Adam S.5; Deming, Drake6, 1
1 NASA GSFC, Greenbelt, MD. 2 George Mason University, Fairfax, VA. 3 University
of Hawaii, Honolulu, HI. 4 Yale University, New Haven, CT. 5 Princeton University,
Princeton, NJ. 6 University of Maryland, College Park, MD.

105.07 On the Coplanar Origin of Counter Orbiting Hot Jupiters
Li, Gongjie1; Naoz, Smadar1; Kocsis, Bence1; Loeb, Abraham1
1 Harvard Univ., Cambridge, MA.

105.08 The Spitzer/IRAC 4.5 micron full-orbit phase curve of the hot Jupiter HD
209458b
Zellem, Robert1; Lewis, Nikole2; Knutson, Heather3; Griffith, Caitlin A.1;
Fortney, Jonathan J.4; Showman, Adam P.1; Cowan, Nicolas B.5; Agol, Eric6;
Burrows, Adam S.7; Charbonneau, David8; Deming, Drake9; Laughlin, Gregory
P.10; Langton, Jonathan S.10
1 Lunar and Planetary Laboratory - University of Arizona, Tucson, AZ.
2 Massachusetts Institute of Technology, Cambridge, MA. 3 California Institute
of Technology, Pasadena, CA. 4 University of California, Santa Cruz, Santa Cruz,
CA. 5 Northwestern University, Evanston, IL. 6 University of Washington, Seattle,
WA. 7 Princeton University, Princeton, NJ. 8 Harvard University, Cambridge, MA.
9 University of Maryland, College Park, MD. 10 Principia College, Elash, IL.

105.09 Experimental study of a low-order wavefront sensor for high-contrast corona
graphic imagers
Lozi, Julien1; Belikov, Ruslan2; Schneider, Glenn1; Guyon, Olivier1; Thomas,
Sandrine2, 3; Pluzhnik, Eugene2, 3
1 University of Arizona, Tucson, AZ. 2 NASA Ames Research Center, Moffett Field,
CA. 3 UARC/NASA Ames, Moffett Field, CA.
Contributing teams: EXCEDE Project Technology Development Team

106 Galaxy Clusters: Star Formation, AGN, Interactions
Monday, 10:00 AM - 11:30 AM; National Harbor 10
Chair(s):
John Feldmeier, Youngstown State Univ.

106.01D Star Formation in Cluster Dwarf Galaxies
Rude, Cody1; Barkhouse, Wayne1
1 University of North Dakota, Grand Forks, ND.

106.02D Modeling AGN Feedback in Cool-Core Clusters
Li, Yuan1
1 Columbia University, New York, NY.
Contributing teams: Enzo

106.03 The Spectacular Interacting Galaxy System Arp 105
West, Michael1; Gregg, Michael2, 3
1 Maria Mitchell Observatory, Nantucket, MA. 2 University of California, Davis,
Davis, CA. 3 Lawrence Livermore National Lab, Livermore, CA.
106.04 Star Formation in the Double Galaxy Cluster Abell 2465
Wegner, Gary A.1; Chu, Devin S.2
1Dartmouth College, Hanover, NH. 2Dartmouth College, Hanover, NH.

106.05 Weighing ‘El Gordo’ with a Precision Scale: Hubble Space Telescope
Weak-lensing Analysis of the Merging Galaxy Cluster ACT-CL J0102-4915 at z=0.87
Jee, Myungkook J.1; Hughes, John P.2; Menanteau, Felipe3,2; Sifon, Cristobal4; Mandelbaum, Rachel3; Barrientos, Felipe6; Infante, Leopoldo6; Ng, Karen1
1UC Davis, Davis, CA. 2Rutgers University, Piscataway, NJ. 3NCSA, Urbana, IL. 4Leiden University, Leiden, Netherland. 5Carnegie Mellon University, Pittsburgh, PA. 6Pontificia Universidad, Santiago, Chile.

106.06 The Radio Relics and Halo of El Gordo: a Massive Cluster Merger at z = 0.870
Baker, Andrew J.1; Lindner, Robert1,2; Battaglia, Nicholas3; Gupta, Neeraj4; Hughes, John P.1; Knowles, Kenda5; Marriage, Tobias6; Menanteau, Felipe7; Moodley, Kavilan5; Reese, Erik D.8; Srianand, Raghunathan4
1Rutgers, the State University of NJ, Piscataway, NJ. 2University of Wisconsin, Madison, WI. 3Carnegie Mellon University, Pittsburgh, PA. 4Inter-University Centre for Astronomy and Astrophysics, Pune, India. 5University of KwaZulu-Natal, Durban, South Africa. 6Johns Hopkins University, Baltimore, MD.
7University of Illinois, Urbana, IL. 8University of Pennsylvania, Philadelphia, PA.

106.07 A Deep Chandra X-ray Observation of El Gordo
Hughes, John P.1; Baker, Andrew J.1; Barrientos, Felipe2; Jee, Myungkook J.3; Infante, Leopoldo2; Lindner, Robert4; Mandelbaum, Rachel5; Menanteau, Felipe6; Sifon, Cristobal7; Zitrin, Adi8
1Rutgers Univ, Piscataway, NJ. 2Pontifica Univ Catolica de Chile, Santiago, Chile. 3UC Davis, Davis, CA. 4Univ of Wisconsin, Madison, WI. 5Carnegie Mellon Univ, Pittsburgh, PA. 6NCBA, Urbana-Champaign, IL. 7Lieden Univ, Lieden, Netherlands. 8Univ of Heidelberg, Heidelberg, Germany.

107 HAD IV: History of Astronomy
Monday, 10:00 AM - 11:30 AM; National Harbor 3
Chair(s):
Marc Rothenberg, National Science Foundation

107.01 We Are NOT Alone!
Griffin, Elizabeth1
1Dominion Astrophysical Observatory, Victoria, BC, Canada.

107.02 The Astronomy Genealogy Project
Tenn, Joseph S.1
1Sonoma State University, Rohnert Park, CA.

107.03 East, West, North, South: A look at a method available to prehistoric cultures to both determine cardinality and the date of the equinox
Hull, Anthony B.1; Ambruster, Carol3; Jewell, Elizabeth1
1University of Phoenix, Philadelphia, PA. 2AAS Emeritus, Philadelphia, PA.
3University of New Mexico, Albuquerque, NM.

107.04 Graeco-Roman Astro-Architecture: The Temples of Pompeii
Tiede, Vance R.1
1Astro-Archaeology Surveys, Guilford, CT.
107.05 The Talmudic Sage Samuel, the Pleiades and Comet 2P/Encke: An Ancient Jewish Astronomical Text Explained
Gersch, Alan¹
¹Univ. of Maryland, College Park, MD.

107.06 Copernican Astronomy and Oceanic Exploration
McKittrick, Paul¹
¹Georgia Institute of Technology, Atlanta, GA.

107.07 Messier, Copernicus, Flamsteed: The SAF Rare-Book Collection in Paris
Pasachoff, Jay M.¹
¹Williams College, Williamstown, MA.

107.08 The Carbon Dioxide Concentration in Earth’s atmosphere and Its Possible Influence on the Temperature at the Surface – as discussed in Sweden in 1894-96.
Willson, Lee Anne M.¹
¹Iowa State Univ., Ames, IA.

108 HEAD I: News from the Galactic Center: A Multiwavelength Update on the Sgr A*/G2 Encounter
Monday, 10:00 AM - 11:30 AM; National Harbor 5
The predicted collision between a dense, cold gas cloud (dubbed “G2”) and our Milky Way’s own supermassive black hole, Sgr A*, has sparked real-time observational and theoretical efforts across the entire astronomical community. G2’s orbit is eccentric and the cloud already shows signs of tidal disruption by the black hole. This encounter offers an unprecedented opportunity to test models of black hole accretion and its associated feedback. Yet, despite impressive multiwavelength monitoring campaigns and substantial theoretical work, debate continues as to the nature of G2 and its impact on Sgr A*: Is G2 really a cloud, or is it an enshrouded star? Will Sgr A*’s high energy flare rate increase during this encounter and can such an increase help constrain the flare mechanism? Can we use G2 as a probe of Sgr A*’s hot accretion flow? What changes do we observe from G2 itself as it is shocked and heated? What do we learn if nothing happens (electromagnetically speaking)? Join the AAS High Energy Astrophysics Division (and friends!) for a lively discussion about these and other controversies unfolding in our Galactic Center.

Chair(s):
Daryl Haggard, Northwestern University/CIERA
Organizer(s):
Daryl Haggard, Northwestern University/CIERA

108.01 A Brief Overview of X-ray Monitoring of the Sgr A*/G2 Interaction in 2012-2013
Baganoff, Frederick K.¹
¹MIT, Cambridge, MA.
Contributing teams: Sgr A* XVP Collaboration

108.02 G2 Monitoring at Submillimeter, Millimeter, and Radio Wavelengths
Bower, Geoffrey C.¹
¹ASIAA/RCUH, Hilo, HI.
108.03 The Swift/XRT monitoring campaign of the Galactic center
Degenaar, Nathalie; Reynolds, Mark; Miller, Jon M.; Wijnands, Rudy; Kennea, Jamie A.; Haggard, Daryl; Gehrels, Neil; Ponti, Gabriele; Baganoff, Frederick K.; Markoff, Sera; Altimamiro, Diego; Burrows, David N.

108.04 Expectations for Sgr A* in the case of an enhanced accretion rate from the G2 encounter
Markoff, Sera
1. API, University of Amsterdam, Amsterdam, Netherlands.
Contributing teams: Chandra X-ray Visionary Project on Sgr A*

108.05 Multi-Wavelength Monitoring of the G2 Cloud Interacting with Sgr A*
Yusef-Zadeh, Farhad
1. Northwestern Univ., Evanston, IL.

108.06 G2 Encounter: A Real-time Experiment on Accretion Flows
Ozel, Feryal
1. University of Arizona, Tucson, AZ.

108.07 Keck observations of G2 and SgrA*
Meyer, Leo; Ghez, Andrea M.; Do, Tuan; Boehle, Anna; Witzel, Gunther; Sitarski, Brenna; Yelda, Sylvana; Lu, Jessica R.; Morris, Mark; Becklin, Eric E.
1. UCLA, Los Angeles, CA. 2. Dunlap Institute, Toronto, ON, Canada. 3. IfA, Honolulu, HI.

108.08 VLT Observations of the Gas Cloud G2
Gillessen, Stefan
1. Max Planck Institute For Extraterrestrial Physics, Munich, Germany.

109 Instrumentation I: Space Missions
Monday, 10:00 AM - 11:30 AM; Maryland 2
Chair(s):
Tobias Marriage, Princeton University

109.01 Next Generation Submillimeter Heterodyne Focal Plane Array Technology
Goldsmith, Paul; Mehdi, Imran; Kawamura, Jonathan H.; Siles, Jose V.; Lee, Choonsup; Chattoopadhyay, Goutam; Bumble, Bruce; Stern, Jeffrey A.
1. JPL, Pasadena, CA.

109.02 Technology Demonstration Milestone #1 for the EXoplanetary Circumstellar Environments and Disk Explorer (EXCEDE) I. Laboratory/Experimental Results.
Belikov, Ruslan; Bendek, Eduardo; Davis, Paul; Duncan, Alan; Greene, Thomas P.; Guyon, Olivier; Hix, Troy; Irwin, Wes; Kendrick, Rick; Lozi, Julien; Lynch, Dana; Mihara, Roger; Pluzhnik, Eugene; Schneider, Glenn; Smith, Eric; Thomas, Sandrine; Witteborn, Fred C.
109.03 The Hybrid Lyot Coronagraph for the Imaging of Exoplanet Systems with the AFTA telescope
Trauger, John T.\(^1\); Gordon, Brian\(^1\); Moody, Dwight\(^1\)
\(^1\)JPL, Pasadena, CA.

109.04 Emulating Weak Gravitational Lensing Measurements in the Lab
Shapiro, Charles\(^1\)
\(^1\)JPL, California Institute of Technology, Pasadena, CA.

109.05 JPL Technology Development for the Dark Ages Radio Explorer (DARE) Proposal
Jones, Dayton L.\(^1\); Lazio, Joseph\(^1\); Sanchez Barbetty, Mauricio\(^1\); Sigel, Deborah\(^1\); O’Dwyer, Ian\(^1\)
\(^1\)JPL, Caltech, Pasadena, CA.

109.06 Chandra X-ray Observatory Pointing and its Stability
Zhao, Ping\(^1\)
\(^1\)Harvard-Smithsonian, CfA, Cambridge, MA.

109.07 Starshade Alignment Sensing Demonstration Using Starlight
Jordan, Ian J.\(^5\); Henze, Paul\(^7\); Cash, Webster C.\(^4\); Regan, Michael W.\(^6\); Kochte, Mark\(^3\); Soummer, Remi\(^1\); Roelle, Curtis\(^2\); Fraquelli, Dorothy A.\(^5\); Chen, Peter C.\(^3\); Lyon, Richard\(^8\)
\(^1\)STScI, Baltimore, MD. \(^2\)Henze Observatory, Westminster, MD. \(^3\)JHU/APL, Laurel, MD. \(^4\)University of Colorado, Boulder, CO. \(^5\)Computer Sciences Corporation, Baltimore, MD. \(^6\)AURA, Baltimore, MD. \(^7\)Westminster Astronomical Society, Westminster, MD. \(^8\)Goddard Space Flight Center, Greenbelt, MD.

Contributing teams: UMBRAS, WASI, New Worlds, JWST

109.08 Uncertainties in the Astronomical Ephemeris as Constraints on New Physics
Warecki, Zoey\(^1\); Overduin, James\(^1\)
\(^1\)Towson University, Towson, MD.

110 Intergalactic Medium & QSO I
Monday, 10:00 AM - 11:30 AM; National Harbor 2
Chair(s):
Aparna Venkatesan, Univ. of San Francisco

110.01D OVI Absorbers Over Cosmic Time
Muzahid, Sowgat\(^1\); 2
\(^1\)The Pennsylvania State University, State College, PA. \(^2\)Inter University Center for Astronomy & Astrophysics, Pune, Maharashtra, India.
110.02 The CGM around dwarf galaxies
Bordoloi, Rongmon1; Tumlinson, Jason1; Werk, Jessica2; Thom, Christopher1; Prochaska, Jason X.3; Tripp, Todd M.3; Katz, Neal4; Dave, Romeel1,5; Oppenheimer, Benjamin6; Brady Ford, Amanda1; O’Meara, John M.6; Peeples, Molly S.1,9; Sembach, Kenneth1; Weinberg, David H.10

110.03 OVI as an Unique Tracer of Large-Scale Stellar Feedback at 2<z<4.
Lehner, Nicolas1; O’Meara, John1; Burns, Vincent1; Howk, J. C.1; Prochaska, Jason X.3; Fox, Andrew4; Armstrong, Ashley4; Wolfe, Arthur M.5

110.04D Study of Chemical Evolution in Sub-damped Lyman-alpha QSO Absorbers
Som, Debopam1; Kulkarni, Varsha P.1; York, Donald G.2; Peroux, Celine1; Khare, Pushpa4; Lauroesch, James T.5
1. University of South Carolina, Columbia, SC. 2. University of Chicago, Chicago, IL. 3. Aix-Marseille Universite, Marseille, France. 4. IUCAA, Pune, Maharashtra, India. 5. University of Louisville, Louisville, KY.

110.05 A Detailed Spatial Study of HI and OVI Absorbing Gas Around Galaxies
Mathes, Nigel1; Churchill, Christopher W.1; Kacprzak, Glenn1; Nielsen, Nikole M.1; Charlton, Jane C.3; Muzahid, Sowgat1
1. New Mexico State University, Las Cruces, NM. 2. Swinburne University of Technology, Hawthorn, VIC, Australia. 3. The Pennsylvania State University, University Park, PA.

110.06 Tracing the flow of gas onto galaxies with the Green Bank Telescope
Pisano, Daniel J.1,2; Rabidoux, Katherine3; de Blok, Willem J.G.4; Leroy, Adam K.1,3; Walter, Fabian5; Bigiel, Frank5; Brinks, Elias8; Keating, Katie M.7
111 Interstellar Medium & Dust I

Monday, 10:00 AM - 11:30 AM; National Harbor 4

Chair(s):
Peregrine McGehee, Caltech

111.01 Modeling Thermal Dust Emission and Implications
Liang, Zhuohan\(^1\)
\(^1\)Loyola University Maryland, Baltimore, MD.

111.02 X-ray Studies of Interstellar and Intergalactic Dust
Corrales, Lia\(^1\); Paerels, Frits B.\(^1\)
\(^1\)Columbia University, New York, NY.

111.03 Dust Lifetimes and Grain Destruction Rates by Supernova Remnants in the Magellanic Clouds
Temim, Tea\(^1, 2\); Dwek, Eli\(^1\); Meixner, Margaret\(^3\); Boyer, Martha L.\(^1, 2\); Tchernyshyov, Kirill\(^4\); Gall, Christa\(^5\)
\(^1\)NASA Goddard Space Flight Center (GSFC), Greenbelt, MD.\(^2\)Oak Ridge Associated Universities (ORAU), Oak Ridge, TN.\(^3\)Space Telescope Science Institute (STScI), Baltimore, MD.\(^4\)Johns Hopkins University, Baltimore, MD.\(^5\)Aarhus University, Aarhus, Denmark.

111.04 THE EVOLUTION OF DUST IN THE MAGELLANIC CLOUDS
Dwek, Eli\(^1\); Temim, Tea\(^1, 2\); Meixner, Margaret\(^3\); Boyer, Martha L.\(^1, 2\); Tchernyshyov, Kirill\(^4\); Gall, Christa\(^5\)
\(^1\)Observational Cosmology Lab, Code 665, NASA GSFC, Greenbelt, MD.\(^2\)Oak Ridge Associated Universities (ORAU), Oak Ridge, TN.\(^3\)Space Telescope Science Institute (STScI), Baltimore, MD.\(^4\)Johns Hopkins University, Baltimore, MD.\(^5\)Aarhus University, Aarhus, Denmark.

111.05 Power-law Temperature Distribution SED Modeling To Reveal Properties of High-z Starburst Galaxies
Su, Ting\(^1\); Staguhn, Johannes\(^1, 2\); Dwek, Eli\(^2\); Kovacs, Attila\(^3, 4\)
\(^1\)The Henry A. Rowland Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD.\(^2\)Observational Cosmology Lab, Code 665, NASA Goddard Space Flight Center, Greenbelt, MD.\(^3\)California Institute of Technology, Pasadena, CA.\(^4\)Institute for Astrophysics, University of Minnesota, Minneapolis, MN.

111.06 Relations between mid-IR dust emission and UV extinction
Massa, Derck\(^1\); Fitzpatrick, Edward L.\(^3\); Gordon, Karl D.\(^2\)
\(^1\)Space Science Institute, Boulder, CO.\(^2\)STScI, Baltimore, MD.\(^3\)Villanova University, Villanova, PA.

112 Nearby Dwarf & Irregular Galaxies

Monday, 10:00 AM - 11:30 AM; Maryland Ballroom D

Chair(s):
Janice Lee, Space Telescope Science Institute

112.01 Andromeda’s dwarf spheroidals and the universal mass profile
Collins, Michelle\(^1\); Rich, Robert M.\(^2\); Martin, Nicolas\(^3\); Ibata, Rodrigo\(^3\); Chapman, Scott C.\(^4\); McConnachie, Alan W.\(^5\)
\(^1\)MPIA, Heidelberg, b.Munchen, Germany, Germany.\(^2\)UCLA, Los Angeles, CA.\(^3\)Strasbourg Observatory, Strasbourg, France.\(^4\)Dalhousie, Halifax, NS, Canada.\(^5\)HIA, Victoria, BC, Canada.
Contributing teams: PAndAS
112.02D Variations in a Universal Density Profile for the Milky Way’s Dwarf Spheroidal Galaxies
Jardel, John1; Gebhardt, Karl1
1The University of Texas, Austin, TX.

112.03 Massive No More: How baryon removal and tidal stripping alter the structure of dwarf spheroidal galaxies
Arraki, Kenza S.; Klypin, Anatoly A.; More, Surhud; Trujillo-Gomez, Sebastian1
1New Mexico State University, Las Cruces, NM. 2Kavli Institute for the Physics and Mathematics of the Universe (WPI), University of Tokyo, Kashiwa, Chiba, Japan.

112.04D Observational Constraints on Models of Rapidly Evolving Luminous Stars
Rosenfield, Philip1, 2; Dalcanton, Julienne1; Girardi, Leo3; Marigo, Paola2; Bressan, Alessandro4
1University of Washington, Seattle, WA. 2Dipartimento di Fisica e Astronomia ‘Galileo Galilei’, Padova, PD, Italy. 3INAF-OAPd, Padova, PD, Italy. 4SISSA, Trieste, Italy.
Contributing teams: ANGST Team

112.05 Ultra-Deep HST Imaging of the SMC: The IMF at M < 1 Msun
Kalirai, Jason S.; Anderson, Jay; Dotter, Aaron L.; Richer, Harvey B.; Fahlman, Gregory G.; Hansen, Bradley M.; Hurley, Jarrod R.; Reid, Iain N.; Rich, Robert M.; Shara, Michael1
1Space Telescope Science Institute, Baltimore, MD. 2Johns Hopkins University, Center for Astrophysical Sciences, Baltimore, MD. 3University of British Columbia, Vancouver, BC, Canada. 4NRC/HIA, Victoria, BC, Canada. 5UCLA, Los Angeles, CA. 6Swinburne University of Technology, Melbourne, VIC, Australia. 7American Museum of Natural History, New York, NY.

112.06 The Effect of Metallicity on Molecular Gas and Star Formation in the Large Magellanic Cloud
Jameson, Katherine; Bolatto, Alberto D.; Leroy, Adam K.; Wolfire, Mark G.; Meixner, Margaret; Roman-Duval, Julia; Gordon, Karl D.
1University of Maryland, College Park, MD. 2NRAO, Charlottesville, VA. 3STScI, Baltimore, MD.
Contributing teams: HERITAGE Collaboration

112.07 Evidence for an Interaction in the Nearest Starbursting Dwarf Galaxy IC 10
Nidever, David L.; Ashley, Trisha L.; Slater, Colin; Ott, Juergen; Johnson, Megan C.; Bell, Eric F.; Stanimirovic, Snezana; Putman, Mary E.; Majewski, Steven; Simpson, Caroline E.; Burton, W. Butler; Juette, Eva; Oosterloo, Tom
1University of Michigan, Ann Arbor, MI. 2University of Virginia, Charlottesville, VA. 3Florida International University, Miami, FL. 4National Radio Astronomy Observatory, Socorro, NM. 5National Radio Astronomy Observatory, Green Bank, WV. 6University of Wisconsin, Madison, WI. 7Columbia University, New York, NY. 8National Radio Astronomy Observatory, Charlottesville, VA. 9Ruhr-Universitaet Bochum, Bochum, North Rhine-Westphalia, Germany. 10Netherlands Institute for Radio Astronomy, Dwingeloo, Drenthe, Netherlands.
113 Novae, Dwarf Novae and Evolved Stars

Monday, 10:00 AM - 11:30 AM; Maryland 1

Chair(s):
Bradley Schaefer, Louisiana State Univ.

113.01 Fermi Discovers a New Population of Gamma-ray Novae
Cheung, Chi C.; Shore, Steve N.2,3; Jean, Pierre4
1.NRL, Washington, DC. 2.University of Pisa, Pisa, Italy. 3.INFN, Pisa, Italy. 4.IRAP, Toulouse, France.
Contributing teams: on behalf of the Fermi-LAT collaboration

113.02 Radio Observations of Gamma-ray Novae
Linford, Justin D.1; Chomiuk, Laura1; Ribeiro, Valerio2
1.Michigan State University, East Lansing, MI. 2.University of Cape Town, Cape Town, South Africa.
Contributing teams: E-Nova project

113.03 The Effect of Globular Cluster Specific Frequency on the Relative Nova Rates in Three Virgo Elliptical Galaxies
Curtin, Christopher1; Shafter, Allen W.1; Pritchet, Christopher2
1.San Diego State University, San Diego, CA. 2.University of Victoria, Victoria, BC, Canada.

113.04 Dwarf Novae in the Galactic Bulge Survey - Observational Constraints on X-ray/Recurrence Time Relations and Space Density.
Britt, Christopher1,2; Maccarone, Thomas J.1; Hynes, Robert1,2; Jonker, Peter3,4; Torres, Manuel3,4
Contributing teams: Galactic Bulge Survey Collaboration

113.05 Spitzer-IRS Spectroscopic Studies of the Properties of Dust from Oxygen-Rich Asymptotic Giant Branch and Red Supergiant Stars
Sargent, Benjamin A.1; Speck, Angela2; Volk, Kevin3; Kemper, Ciska4; Reach, William T.5; Lagadec, Eric6; Bernard, Jean-Philippe7,8; McDonald, Iain9; Meixner, Margaret3; Srinivasan, Sundar4

113.06 A Search for Thorne-Zytkow Objects
Levesque, Emily M.1; Massey, Philip7; Morrell, Nidia3; Zytkow, Anna4
114 Pulsars & Neutron Stars I

Monday, 10:00 AM - 11:30 AM; National Harbor 13

Chair(s):
Dacheng Lin, University of Alabama

114.01 Latest NANOGrav Pulsar Timing Results: Toward the Detection of Gravitational Waves
Demorest, Paul

1.National Radio Astronomy Observatory, Charlottesville, VA.
Contributing teams: NANOGrav Collaboration

114.02 Monitoring the interstellar scattering delays of NANOGrav millisecond pulsars
Levin Preston, Lina; Cordes, James M.; Demorest, Paul; Dolch, Timothy; Jones, Glenn; Lam, Michael T.; Lazio, Joseph; McLaughlin, Maura; Palliyaguru, Nipuni; Stinebring, Dan

1 West Virginia University, Morgantown, WV. 2 Cornell University, Ithaca, NY. 3 National Radio Astronomy Observatory, Charlottesville, VA. 4 Columbia University, New York, NY. 5 Jet Propulsion Laboratory, Pasadena, CA. 6 Oberlin College, Oberlin, OH.

114.03 Detecting correlated gravitational waves with pulsar timing
Van Haasteren, Rutger

1 Jet Propulsion Laboratory, Pasadena, CA.

114.04 A Day in the Life of Millisecond Pulsar J1713+0747: Limits on Timing Precision Over 24 Hours and Implications for Gravitational Wave Detection
Dolch, Timothy; Bailes, Matthew; Bassa, Cees; Bhat, Ramesh; Bhandare, Assistant; Champion, David; Chatterjee, Shami; Cognard, Ismael; Cordes, James M.; Crowter, Kathryn; Demorest, Paul; Finn, Lee S.; Fonseca, Emmanuel; Hessels, Jason; Hobbs, George; Janssen, Gemma; Jones, Glenn; Jordan, Chris; Karuppusamy, Ramesh; Keith, Michael; Kramer, Michael; Kraus, Alex; Lam, Michael T.; Lazarus, Patrick; Lazio, Joseph; Lee, Keija; Levin, Lina; Liu, Kuo; Lorimer, Duncan; Manchester, Richard N.; McLaughlin, Maura; Palliyaguru, Nipuni; Perrodin, Delphine; Petroff, Emily; Rajwade, Kaustubh; Rankin, Joanne M.; Ransom, Scott M.; Rosenblum, Jason; Roy, Jayanta; Shannon, Ryan; Stappers, Benjamin; Stovall, Kevin; Teixeira, Mateus; van Leeuwen, Joeri; van Straten, Willem; Verbiest, Joris; Zhu, Weiwei

1 Cornell University, Ithaca, NY. 2 University of Vermont, Burlington, VT. 3 Oberlin College, Oberlin, OH. 4 West Virginia University, Morgantown, WV. 5 National Radio Astronomy Observatory, Charlottesville, VA. 6 Columbia University, New York, NY. 7 Pennsylvania State University, Pennsylvania, PA. 8 University of British Columbia, Vancouver, BC, Canada. 9 Jodrell Bank Centre for Astrophysics, Manchester, United Kingdom. 10 Max-Planck-Institut für Radioastronomie, Bonn, Germany. 11 Station de Radioastronomie de Nançay, Paris Observatory, Nançay, France. 12 CSIRO Astronomy and Space Science, Australia Telescope National Facility, Epping, NSW, Australia. 13 Centre for Astrophysics and Supercomputing, Swinburne University of Technology, Hawthorn, VIC, Australia. 14 National Centre for Radio Astrophysics, Tata Institute of Fundamental Research, Pune, India. 15 ASTRON, the Netherlands Institute for Radio Astronomy, Dwingeloo, Netherlands. 16 INAF/Osservatorio Astronomico di Cagliari, Cagliari, Sardinia, Italy. 17 Fakultät für Physik, Universität Bielefeld, Bielefeld, Germany. 18 Jet Propulsion Laboratory, Pasadena, CA. 19 University of New Mexico, Albuquerque, NM.
114.05 Variable nebula of PSR B1259-63 resolved by Chandra
Kargaltsev, Oleg1; Pavlov, George G.2; Durant, Martin3; Volkov, Igor1; Hare, Jeremy1
1George Washington University, Washington, DC. 2Pennsylvania State University, University Park, PA. 3University of Toronto, Toronto, ON, Canada.

114.06 High-energy gamma-rays from pulsar wind nebula 3C 58
Hewitt, John W.1,2
1CRESST/UMBC, Baltimore, MD. 2NASA/GSFC, Greenbelt, MD.
Contributing teams: Fermi-LAT Collaboration

114.07 TeV-detected young pulsar wind nebulae
Cillis, Analia1; Torres, Diego F.2; Martin, Jonatan3; de Oña, Emma2
1Instituto de Astronomía y Física del Espacio, Buenos Aires, Argentina. 2Institut de Ciencies de l’Espai (IEEC-CSIC), Barcelona, Spain.

114.08 Near Infrared Activity Close to the Crab Pulsar Correlated with Giant Gamma-ray Flares
Rudy, Alexander R.1; Max, Claire E.1,2; Weisskopf, Martin C.3
1UC Santa Cruz, Santa Cruz, CA. 2University of California Observatories, Santa Cruz, CA. 3NASA/ Marshall Space Flight Center, Huntsville, AL.

114.09 Modelling the gamma-ray flares of the Crab Nebula
Tavani, Marco1,2
1INAF, Rome, Italy. 2University of Rome ‘Tor Vergata’, Rome, Italy.

115 QSOs, AGN

Monday, 10:00 AM - 11:30 AM; National Harbor 11

Chair(s):
Laura Brenneman, Harvard-Smithsonian Center for Astrophysics

115.01 Hosts of High-Redshift Quasars and Their Clustering Properties
Zhao, Xinghai1; Li, Yuexing2; Shandera, Sarah1; Jeong, Donghui2
1Pennsylvania State University, University Park, PA. 2Johns Hopkins University, Baltimore, MD.

115.02 Luminous Radio-Quiet Red Quasars at z ? 2.5: Feedback and Massive Black Hole Assembly
Glikman, Eilat1,5; Urrutia, Tanya2; Lacy, Mark3; Djorgovski, Stanislav G.4; Graham, Matthew4; Urry, C. M.5
1Middlebury College, Middlebury, VT. 2Leibniz Institut fur Astrophysik, Potsdam, Germany. 3NRAO, Charlottesville, VA. 4California Institute of Technology, Pasadena, CA. 5Yale University, New Haven, CT.

115.03 Physical Properties of Luminous Dust Poor Quasars
Jun, Hyunsung David1; Im, Myungshin1
1Seoul National University, Seoul, Seoul, Korea, Republic of.

115.04 The Host Galaxies of High-Luminosity Obscured Quasars at z~2.5
Ross, Nicholas1,2; Strauss, Michael A.3; Greene, Jenny E.2; Zakamska, Nadia L.4; Brandt, W. N.3; Alexandroff, Rachael1; Liu, Guilin4; Smith, Paul S.6
1Drexel University, Philadelphia, PA. 2Lawrence Berkeley National Lab, Berkeley, CA. 3Princeton University, Princeton, NJ. 4Johs Hopkins University, Baltimore, MD. 5Penn State University, State College, PA. 6University of Arizona, Tuscon, AZ.
Contributing teams: The SDSS-III BOSS Quasar Working Group
115.05 Galaxy Clustering around Low Redshift Quasars
Rafiee, Alireza¹; Scott, Jennifer E.¹; Bechtold, Jill²; Ellingson, Erica³
¹Towson University, Towson, MD. ²University of Arizona, Tucson, AZ. ³University of Colorado, Boulder, CO. ⁴NASA’s Goddard Space Flight Center, Greenbelt, MD.

115.06 The Role AGN Play in the Evolution of Quasars Host Galaxies with Spectral Signatures of Post-Starburst Stellar Populations
Cales, Sabrina¹; Brotherton, Michael S.²; Shang, Zhaohui³; Bennert, Vardha Nicola⁴; Canalizo, Gabriela⁵; Diamond-Stanic, Aleksandar M.⁶
¹Universidad de Concepcion, Concepcion, Bio-Bio, Chile. ²University of Wyoming, Laramie, WY. ³Tianjin Normal University, Tianjin, China. ⁴Cal Poly San Luis Obispo, San Luis Obispo, CA. ⁵University of California, Riverside, Riverside, CA. ⁶University of California, San Diego, San Diego, CA.

115.07 Identifying Ionized Gas Outflows in the Narrow-line Region of Type 2 AGNs
Bae, Hyun-Jin¹,³; Woo, Jong-Hak²,³
¹Yonsei University, Seoul, Korea, Republic of. ²Seoul National University, Seoul, Korea, Republic of. ³Carnegie Observatories, Pasadena, CA.

115.08 The Third Catalog of Active Galactic Nuclei Detected by the Fermi Large Area Telescope
Cutini, Sara¹,²; Lott, Benoit¹; Gasparri, Dario¹,²; Ciprini, Stefano¹,²; Cavazzuti, Elisabetta³
¹ASI Science Data Center, Roma, Rome, Italy. ²Osservatorio Astronomico di Roma, Roma, Rome, Italy. ³Agenzia Spaziale Italiana, Roma, Rome, Italy. ⁴Centre d’Etudes Nucleaires de Bordeaux, Bordeaux, Bordeaux, France.

Contributing teams: Fermi-LAT collaboration

116 Results from the Pan-STARRS1 Surveys

Monday, 10:00 AM - 11:30 AM; Maryland Ballroom B

PS1, the Pan-STARRS1 Telescope is completing its 3.5 year PS1 Science Mission, supported by the PS1 Science Consortium. The PS1 Surveys include: (1) A 3pi Steradian Survey, (2) A Medium Deep survey of 10 PS1 footprints spaced around the sky; (3) A solar system survey optimized for Near Earth Objects, (4) a Stellar Transit Survey; and (5) a Deep Survey of M31. The PS1 3pi Survey will have covered the sky north of dec=-30 with 12 visits in five bands: g,r,i,z and y or over 60 epochs per point on the sky. This session will focus on the science results to date from the PS1 Science Mission, including discoveries of NEO’s, KBO’s, brown dwarfs, mapping the dust in the Milky Way, the structure of the Milky Way, galaxies in the local group, ultra luminous supernovae, cosmological supernova, high redshift quasars, galaxy counts and clusters, and Baryon Acoustic Oscillations. We will also present details about the public data release of all PS1 data products through the STScI MAST PS1 Archive. The PS1 Science Consortium consists of The Institute for Astronomy at the University of Hawai’i in Manoa, the Max Planck Institute for Astronomy, Heidelberg and the Max Planck Institute for Extraterrestrial Physics, Garching, The Johns Hopkins University, the University of Durham, the University of Edinburgh, the Queen’s University Belfast, the Harvard-Smithsonian Center for Astrophysics, the Los Cumbres Observatory Global Telescope Network Incorporated, and the National Central University of Taiwan, NASA, NSF, University of Maryland, and the Eotvos University.
Organizer(s): Kenneth Chambers, Univ. of Hawaii

116.01 The Pan-STARRS1 Surveys
Chambers, Kenneth C.  
1Univ. of Hawaii, Honolulu, HI.

116.02 The Pan-STARRS-1 Outer Solar System Key Project: A Status Report
Holman, Matthew J.  
1Harvard-Smithsonian, CfA, Cambridge, MA.
Contributing teams: The PS1 Outer Solar System Team

116.03 Probing the atmospheres of brown dwarf with benchmark objects identified in Pan-STARRS1
Deacon, Niall 1; Liu, Michael C. 2; Magnier, Eugene A. 2; Allers, Katelyn N. 3; Dupuy, Trent J. 4; Bowler, Brendan P. 2, 5; Aller, Kimberly M. 2; Best, William M. 2; Kotson, Michael C. 2  
1Max Planck Institute for Astronomy, Heidelberg, Germany. 2Institute for Astronomy, University of Hawaii, Honolulu, HI. 3Bucknell University, Lewisburg, PA. 4Harvard-Smithsonian CfA, Cambridge, MA. 5California Institute of Technology, Pasadena, CA.
Contributing teams: Pan-STARRS1 Builders

116.04 The Dust to 5 kpc from Pan-STARRS1
Schlafly, Eddie 1; Green, Gregory 2; Finkbeiner, Douglas P. 2; Rix, Hans-Walter 1  
1MPIA, Heidelberg, Baden Wuerttemberg, Germany. 2Harvard, Cambridge, MA.

116.05 A 3D Dust Reddening Map from Pan-STARRS1
Green, Gregory 1; Schlafly, Eddie 2; Finkbeiner, Douglas P. 1  
1Harvard Univ., Cambridge, MA. 2MPIA, Heidelberg, Baaden-Wuerttemberg, Germany.

116.06 A Panoramic View of the Monoceros Ring
Slater, Colin 1; Bell, Eric F. 1; Schlafly, Eddie 2; Morganson, Eric 3; Martin, Nicolas 4, 2; Rix, Hans-Walter 2  
1University of Michigan, Ann Arbor, MI. 2Max Planck Institute for Astronomy, Heidelberg, Germany. 3Harvard-Smithsonian Center for Astrophysics, Boston, MA. 4University of Strasbourg, Strasbourg, France.
Contributing teams: The Pan-STARRS1 Consortium

116.07 Pan-STARRS-1 Medium Deep Survey Status
Huber, Mark 1  
1Institute for Astronomy, Univ. of Hawaii, Honolulu, HI.
Contributing teams: PS1SC/IPP Team

116.08 The Pan-STARRS 1 Medium Deep Field Variable Star Catalog
Flewelling, Heather 1  
1University of Hawaii, Honolulu, HI.

116.09 Systematic Uncertainties Associated with the Cosmological Analysis of the First Pan-STARRS1 Type Ia Supernova Sample
Scolnic, Daniel 1; Rest, Armin 2  
1Johns Hopkins University, Baltimore, MD. 2Space Telescope Science Institute, Baltimore, MD.
Contributing teams: PS1 Transients Group
116.10 SN IA in the IR: RAISIN A progress report
Kirchner, Robert P.1
1Harvard-Smithsonian, CfA, Cambridge, MA.
Contributing teams: The RAISIN TEAM

116.11 Early science from the Pan-STARRS1 Optical Galaxy Survey (POGS): Maps of stellar mass and star formation rate surface density obtained from distributed-computing pixel-SED fitting
Thilker, David A.1; Vinsen, Kevin2
1Johns Hopkins Univ., Baltimore, MD. 2International Centre for Radio Astronomy Research (ICRAR), Perth, WA, Australia.
Contributing teams: PS1 Galaxy Properties Key Project

116.12 Discovery of high-redshift quasars from Pan-STARRS1.
Banados, Eduardo1; Venemans, Bram1; Morganson, Eric2; Decarli, Roberto1; Walter, Fabian1; Chambers, Kenneth C.3; Rix, Hans-Walter1; Farina, Emanuele1; De Rosa, Gisella4
1Max Planck Institute for Astronomy, Heidelberg, Germany. 2Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 3Institute for Astronomy, University of Hawaii, Manoa, HI. 4Department of Astronomy, The Ohio State University, Columbus, OH.
Contributing teams: Pan-STARRS

116.13 A Pan-STARRS-1 Astrometric and Photometric Search for Substellar Young Moving Group Members
Aller, Kimberly M.1; Liu, Michael C.1; Magnier, Eugene A.1
1University of Hawaii, Manoa, Honolulu, HI.

116.14 A Pan-STARRS1-based recalibration of the Sloan Digital Sky Survey photometry
Finkbeiner, Douglas P.1; Schlafly, Eddie2; Green, Gregory1
1Harvard Univ., Cambridge, MA. 2MPIA, Heidelberg, Germany.

116.15 Early Results and Plans for the Time Domain Spectroscopic Survey
Green, Paul J.1; Anderson, Scott F.2; Morganson, Eric1; Ruan, John J.2
1Harvard-Smithsonian CfA, Cambridge, MA. 2University of Washington, Seattle, WA.
Contributing teams: PS1, SDSS-III, SDSS-IV

117 Star Formation I
Monday, 10:00 AM - 11:30 AM; Potomac Ballroom C
Chair(s):
Lynn Carlson

117.01 Structure of massive star forming clumps from the Red MSX Source Survey
Figura, Charles C.1; Urquhart, James S.2; Morgan, Lawrence3
1Wartburg College, Waverly, IA. 2Max Planck Institute for Radio Astronomy, Bonn, Germany. 3University of Hertfordshire, Hatfield, United Kingdom.

117.02 [CII] 158 ?m Emission as a Star Formation Tracer
Herrera-Camus, Rodrigo1; Bolatto, Alberto D.1; Wolfire, Mark G.1; Calzetti, Daniela2
1University of Maryland, College Park, MD. 2University of Massachusetts, Amherst, MA.
Contributing teams: KINGFISH Team
117.03 Star Formation Rate and Gas Relations in the Arp 299 Merger from the VIXENS Survey
Heiderman, Amanda L.1,2; Evans, Neal J.3; Gebhardt, Karl3; Blanc, Guillermo A.4; Davis, Timothy5; Papovich, Casey J.6; van den Bosch, Remco7; Iono, Daisuke8; Yun, Min Su9
1University of Virginia, Charlottesville, VA. 2NRAO, Charlottesville, VA. 3University of Texas at Austin, Austin, TX. 4Observatories of the Carnegie Institution, Pasadena, CA. 5ESO, Garching, Germany. 6Texas A&M University, College Station, TX. 7MPIA, Heidelberg, Germany. 8Nobeyama Radio Observatory, Minamisaku, Nagano, Japan. 9University of Massachusetts, Amherst, MA.
Contributing teams: VIXENS team

117.04 Relationship Between Dense Gas and Total Infrared Luminosity Along Spiral Arms in M51
Louie, Melissa N.1; Koda, Jin1; Egusa, Fumi2
1Stony Brook University, Stony Brook, NY. 2JAXA, Sagamihara, Kanagawa, Japan.

117.05 Bridging the Galactic-Extragalactic divide with WISE: a Galactic perspective on star-formation-rate to gas density relations in massive star forming regions
Koenig, Xavier1; Leisawitz, David2
1Yale University, New Haven, CT. 2NASA Goddard Space Flight Center, Greenbelt, MD.

117.06 Point Sources in Herschel’s HERITAGE Key Project: Star Formation in the Magellanic Clouds
Seale, Jonathan P.1; Meixner, Margaret1
1Space Telescope Science Institute, Baltimore, MD.
Contributing teams: HERITAGE

117.07D Massive Star Formation Viewed through Extragalactic-Tinted Glasses
Willis, Sarah1,2; Marengo, Massimo3; Smith, Howard A.2; Allen, Lori3
1Iowa State University, Ames, IA. 2Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 3National Optical Astronomy Observatory, Tucson, AZ.

118 The Sun
Monday, 10:00 AM - 11:30 AM; Maryland Ballroom C
Chair(s):
Thomas Ayres, University of Colorado

118.01 Solar Activity and Motions in the Solar Chromosphere and Corona at the 2012 and 2013 Total and Annular Eclipses in the U.S., Australia, and Africa
Pasachoff, Jay M.1; Babcock, Bryce A.1; Davis, Allen B.1; Demianski, Marek1; Lucas, Robert1; Lu, Muzhou1,2; Dantowitz, Ronald1; Rusin, Vojtech3; Saniga, Method4; Seaton, Daniel B.5; Gaintatzis, Pavlos6; Voulgaris, Aristeidis6; Seiradakis, John H.1; Gary, Dale E.7; Shaik, Shaheda B.7
1Williams College, Williamstown, MA. 2Barrie School, Silver Spring, MD. 3Dexter Southfield School, Brookline, MA. 4Astronomical Institute, Tatranska Lomnica, Slovakia. 5Royal Obs. Belgium, Brussels, Belgium. 6Aristotle U. Thessaloniki, Thessaloniki, Greece. 7NJIT, Newark, NJ.
118.02 Fermi Large Area Telescope observations of high-energy gamma-ray emission from solar flares
Pesce-Rollins, Melissa¹; Omodei, Nicola²; Petrosian, Vahe²
¹INFN-Pisa, Pisa, Pi, Italy. ²Stanford University, Stanford, CA.
Contributing teams: Fermi LAT Collaboration

118.03D STUDYING THE POLARIZATION OF HARD X-RAY SOLAR FLARES WITH THE GAMMA RAY POLARIMETER EXPERIMENT (GRAPE)
Ertley, Camden¹
¹The University of New Hampshire, Durham, NH.

118.04 Probing Magnetic Energy Release in a Solar Flare with Radio Dynamic Imaging Spectroscopy
Chen, Bin¹,²; Bastian, Timothy S.³; Gary, Dale E.²; White, Stephen M.⁴
¹University Corporation for Atmospheric Research, Boulder, CO. ²New Jersey Institute of Technology, Newark, NJ. ³National Radio Astronomy Observatory, Charlottesville, VA. ⁴Air Force Research Lab, Albuquerque, NM.

118.05 Self-generated Three Dimensional Turbulence in Magnetic Reconnection Layers Sharply Increases Reconnection Rates
Oishi, Jeffrey S.¹; Mac Low, Mordecai-Mark¹; Collins, David C.²
¹American Museum of Natural History, New York, NY. ²Florida State University, Tallahassee, FL.

118.06 Reflection and Wave Coupling of Torsional Alfven Waves in 3D Solar Magnetic Flux Tubes
Musielak, Zdzislaw E.¹; Murawski, Krzysztof³; Srivastava, Abhishek K.³
¹Univ. of Texas, Arlington, Arlington, TX. ²Univ. M. Curie-Sklodowska, Lublin, Poland. ³ARIES, Nainital, India.

119 Linking Visualization and Understanding in Astronomy
Monday, 11:40 AM - 12:30 PM; Potomac Ballroom A
Chair(s):
Edward Churchwell, Univ. of Wisconsin

119.01 Linking Visualization and Understanding in Astronomy
Goodman, Alyssa A.¹
¹Harvard-Smithsonian, CfA, Cambridge, MA.

Career Hour 1: Having the Right Stuff: Outstanding Resumes/CVs for Outstanding Career Opportunities in Academia and Industry
Monday, 12:30 PM - 1:30 PM; National Harbor 2
Resumes/CVs don’t get you jobs, they get you interviews. Learn the secrets of making your resume/CV one that stands out from the crowd, ensuring it will actually be read, and articulates your value to the organization and your field.

Chair(s):
Alaina Levine, Quantum Success Solutions
Organizer(s):
Kelle Cruz, Hunter College/CUNY and AMNH
120 HAD Business Meeting

Monday, 12:45 PM - 1:45 PM; National Harbor 5

Annual business meeting of the Historical Astronomy Division.

Organizer(s):
James Ulvestad, National Science Foundation

Chair(s):
Jay Pasachoff, Williams College

121 NSF Town Hall

Monday, 12:45 PM - 1:45 PM; Maryland Ballroom C

Personnel from the NSF Division of Astronomical Sciences (AST) will discuss the status of their programs. This will include the resolution of the FY 2013 (now past) budget, the status of the FY 2014 budget request, and the impact of these budgets and the AST Portfolio Review on programs of interest to the attendees. The status of major AST construction projects (ALMA, ATST, and LSST) also will be discussed.

Chair(s):
James Ulvestad, National Science Foundation

122 The International Astronomical Union: Roles and Goals

Monday, 12:45 PM - 1:45 PM; Potomac Ballroom D

Towards the 2015 General Assembly in Honolulu 1) The IAU and science: - introduction to the IAU, including history, current national/individual membership, associates, divisions/commissions/working groups, executive committee, GA & symposia, etc. - importance of global collaboration for advancing the science of astronomy (examples: ALMA, SKA, CTA, next-generation large optical telescopes) - the USA as a special case ? - perspectives 2) The IAU and society - a new Division on “Education, Outreach, and Heritage” - UNESCO/ICOMOS and World Heritage sites - strategic plan and OAD and related bodies, e.g., TF1, TF2, TF3; ROADs - public outreach and legacy of IYA 2009; OAO - public involvement in naming of celestial objects (e.g., Pluto’s moons, exoplanets) - perspectives

Chair(s):
Thierry Montmerle, IAU
123 The NASA Kepler Mission Town Hall: 2014 and Beyond

Monday, 12:45 PM - 1:45 PM; Potomac Ballroom C

The NASA Kepler mission is currently operating under a mission extension granted through the NASA Astrophysics Senior Review process. This Town Hall will present a summary of the past year of the Kepler project in order to update the community on the programmatic, technical, and scientific aspects. We will also present our plans for a second mission extension if deemed acceptable by the 2014 NASA Astrophysics Senior Review process. We will highlight the availability of new project and archive products, avenues for community involvement and the Guest Observer program. Please come join us for this town hall, meet the Kepler team, and learn about the future mission plans for both planet discovery and astrophysics using Kepler data. You are encouraged to visit the Kepler mission Science Center at http://keplergo.arc.nasa.gov/

Chair(s):
Steve Howell, NASA ARC
Organizer(s):
Steve Howell, NASA ARC

124 WGLE Town Hall

Monday, 12:45 PM - 1:45 PM; National Harbor 4

The Working Group on LGBTIQ Equality (WGLE) is tasked with promoting equality for lesbian, gay, bisexual, transgender, intersex, and questioning (LGBTIQ) individuals within our profession. Equality begins at home. If you would like your department or institution to be more welcoming to LGBTIQ students and colleagues, join us for a presentation of our new report, “Supporting LGBT+ Physicists and Astronomers: A Best Practices Guide for Departments.” Jointly developed by WGLE and the LGBT+ Physicists Organization of the American Physical Society, this document presents ideas for improving the climate in your department, both today and for the long term, tips for addressing hiring and personnel issues, and suggestions for advocacy at the institutional level. Time will be provided for comments and questions from the audience.

Chair(s):
William Van Dyke Dixon, Space Telescope Science Institute
Organizer(s):
William Van Dyke Dixon, Space Telescope Science Institute

Amateur Talk: Origins of Habitable Planets

Monday, 1:30 PM - 2:00 PM; Maryland Ballroom A

The diversity of planets in and around the habitable zone of stars is astonishing. This diversity must originate during planet formation, and I will compare what we know about Solar System formation to what we are learning about the formation of other planetary systems. I will present observations of circumstellar disks, the birthplaces of planets, and discuss the various processes that shape them and their progeny.

Chair(s):
Alycia Weinberger, Carnegie Inst. Of Washington
125 Variable Stars

Monday, 2:00 PM - 3:30 PM; National Harbor 4

Chair(s):
Massimo Marengo, Iowa State University

125.01 Predicting Fundamental Stellar Parameters From Photometric Light Curves
Miller, Adam\textsuperscript{1,2}; Richards, Joseph\textsuperscript{1}; Bloom, Joshua S.\textsuperscript{1}
\textsuperscript{1}UC Berkeley, Berkeley, CA. \textsuperscript{2}JPL/Caltech, Pasadena, CA.
Contributing teams: on behalf of a larger team

125.02 Searching Kepler Variable Stars with the Eclipsing Binary Factory Pipeline
Parvizi, Mahmoud\textsuperscript{1,2}; Paegert, Martin\textsuperscript{2}
\textsuperscript{1}Austin Peay State University, Clarksville, TN. \textsuperscript{2}Vanderbilt University, Nashville, TN.

125.03 Update on the asteroseismology of the Kepler field hot pulsating white dwarf
Kim, Agnes\textsuperscript{1}
\textsuperscript{1}Penn State University, Dunmore, PA.

125.04D The Rejuvenation of RR Lyrae Stars as Precise Distance Indicators
Klein, Christopher R.\textsuperscript{1}
\textsuperscript{1}UC Berkeley, Berkeley, CA.

125.05 Observations of Suspected RR Lyrae Stars by Undergraduate Students
Powell, William L.\textsuperscript{1}; Smith, Stephanie N.\textsuperscript{1}; Wilhelm, Ronald J.\textsuperscript{2}; De Lee, Nathan M.\textsuperscript{1}
\textsuperscript{1}University of Nebraska at Kearney, Kearney, NE. \textsuperscript{2}University of Kentucky, Lexington, KY.

125.06 Cepheid period jitter is caused by convective cell
Neilson, Hilding\textsuperscript{1}; Ignace, Richard\textsuperscript{1}
\textsuperscript{1}Dept of Physics & Astronomy, East Tennessee State University, Johnson City, TN.

126 AGN on Sub-kiloparsec Scales

Monday, 2:00 PM - 3:30 PM; National Harbor 11

Chair(s):
Steven Kraemer, Catholic University of America

126.01 Broad Absorption Line Variability on Multi-Year Timescales in a Large Quasar Sample
Brandt, W. N.\textsuperscript{1}; Filiz Ak, N.\textsuperscript{1}; Hall, Patrick B.\textsuperscript{2}; Schneider, Donald P.\textsuperscript{1}
\textsuperscript{1}Penn State Univ., University Park, PA. \textsuperscript{2}York University, Toronto, ON, Canada.
Contributing teams: The SDSS-III BAL Variability Team

126.02 On the Absence of Broad Forbidden Lines in the Low Luminosity Active Galactic Nucleus; NGC 3227
Devereux, Nicholas A.\textsuperscript{1}
\textsuperscript{1}Embry-Riddle Aeronautical Univ., Prescott, AZ.

126.03 The Broad Line Region in AGNs: Structure, Physics, and the f Factor
Grier, Catherine\textsuperscript{1}; Peterson, Bradley M.\textsuperscript{1,2}; Martini, Paul\textsuperscript{1,2}; Pogge, Richard W.\textsuperscript{1}; Pancoast, Anna\textsuperscript{1}; Treu, Tommaso\textsuperscript{1}; Watson, Linda C.\textsuperscript{4}
\textsuperscript{1}The Ohio State University, Columbus, OH. \textsuperscript{2}Center for Cosmology and AstroParticle Physics, Columbus, OH. \textsuperscript{4}UCSB, Santa Barbara, CA. \textsuperscript{4}Harvard Center for Astrophysics, Cambridge, MA.
126.04 The NLR Size - IR Luminosity Relationship: An Upper Limit on the Size of the Narrow-Line Region?
Hainline, Kevin; Hickox, Ryan C.; Greene, Jenny E.; Myers, Adam D.; Zakamska, Nadia L.; Liu, Guilin

126.05 Long-term Absorption Variation in AGN: A High-resolution Study of the Seyfert Galaxy NGC 3783
Scott, Amy
1. The Pennsylvania State University, University Park, PA.

126.06 Black Hole Spin Properties of 130 AGN
Daly, Ruth A.
1. Penn State University, Reading, PA.

126.07 The Black Hole in the Compact, High-dispersion Galaxy NGC 1271
Walsh, Jonelle; van den Bosch, Remco; Gebhardt, Karl; Yildirim, Akin; Gultekin, Kayhan; Richstone, Douglas O.
1. The University of Texas - Austin, Austin, TX. 2. Max Planck Institute for Astronomy, Heidelberg, Germany. 3. University of Michigan, Ann Arbor, MI.

126.08D Intervening broad-line region clouds’ effects on the optical/ultraviolet spectrum
Wang, Ye; Ferland, Gary J.; Hu, Chen; Wang, Jian-Min; Du, Pu
1. Department of Physics and Astronomy, University of Kentucky, Lexington, KY. 2. Institute of High Energy Physics, Chinese Academy of Sciences, Beijing, China.

127 Cosmology & CMB II
Monday, 2:00 PM - 3:30 PM; Potomac Ballroom D
Chair(s):
Jack Burns, Univ. of Colorado at Boulder

127.01 Testing Quantum Mechanics with Observations of Causally Disconnected Cosmological Events
Friedman, Andrew S.; Kaiser, David I.; Gallicchio, Jason; Guth, Alan H.

127.02 Effects of Local Inhomogeneity on Cosmological Observables
Hornstein, John
1. Silver Spring, MD.

127.03D New Constraints on the Amplitude of Cosmic Density Fluctuations and Intracluster Gas from the Thermal SZ Signal Measured by the Atacama Cosmology Telescope (ACT) and Planck
Hill, James; Spergel, David N.
1. Princeton University, Princeton, NJ.
Contributing teams: Atacama Cosmology Telescope Collaboration
127.05 Micro-Jy imaging at 150 MHz for the LOFAR EoR project
Brentjens, Michiel A.1; Yatawatta, Sarod1; Pandey, Vishambarr; Jelic, Vibor1; de Bruyn, A. G.1,2; Koopmans, Leon2; Zaroubi, Saleem2
1Astron, Dwingeloo, Drenthe, Netherlands. 2 Kapteyn Astronomical Institute, University of Groningen, Groningen, Groningen, Netherlands.

127.06 The Stratospheric Kinetic Inductance Polarimeter (SKIP)
Flanigan, Daniel1; Ade, Peter4; Araujo, Derek1; Bradford, Kristi J.2; Chapman, Daniel1; Che, George2; Day, Peter3; Didier, Joy1; Doyle, Simon4; Eriksen, Hans8; Groppi, Christopher E.2; Hillbrand, Seth N.1; Johnson, Bradley5; Jones, Glenn1,7; Limon, Michele1; Mauskopf, Philip2; McCarrick, Heather1; Miller, Amber D.1; Mroczkowski, Tony6; Reichborn-Kjennerud, Britt1; Smiley, Brian1; Sobrin, Joshua1; Wehus, Ingunn K.3,5; Zmuidzinas, Jonas3
1Columbia University, New York City, NY. 2Arizona State University, Phoenix, AZ. 3California Institute of Technology, Pasadena, CA. 4Cardiff University, Cardiff, Wales, United Kingdom. 5Jet Propulsion Laboratory, Pasadena, CA. 6Naval Research Laboratory, Washington, DC. 7National Radio Astronomy Observatory, Charlottesville, VA. 8University of Oslo, Oslo, Oslo, Norway.

128 Dynamics and Habitability of Exoplanets - What have we learned from Kepler?
Monday, 2:00 PM - 3:30 PM; Potomac Ballroom A
We now know that many, and perhaps most, planetary systems contain multiple planets with periods from a few to ~100 days, and masses intermediate between those of Earth and Neptune, as seen in the Kepler multi-transiting systems. At the same time, as the Kepler data continue to be processed, planets with longer periods are being discovered, reaching into the habitable zones of their host stars. The three invited speakers in this session will explore broadly the theoretical implications of these recent discoveries.

Chair(s):
Frederic Rasio, Northwestern Univ.
Organizer(s):
David Ciardi, Caltech

128.01 Overstable Librations can account for the Paucity of Mean Motion Resonances among Exoplanet Pairs
Schlichting, Hilke1
1MIT, Cambridge, CA.

128.02 Reaching into the Habitable Zones of Kepler Stars
Kane, Stephen R.1; Gelino, Dawn M.2; Hinkel, Natalie R.1
1San Francisco State University, San Francisco, CA. 2California Institute of Technology, Pasadena, CA.

128.03 Lessons From Kepler
Lithwick, Yoram1
1Northwestern University, Evanston, IL.
129 Evolution of Elliptical Galaxies and Black Holes

Monday, 2:00 PM - 3:30 PM; Maryland Ballroom D

Chair(s):
Yuexing Li, Penn State University

129.01 A New Population of Recently Quenched Elliptical Galaxies in the SDSS
McIntosh, Daniel H.1; Wagner, Cory2; Cooper, Andrew2; Bell, Eric F.4; Keres, Dusan5; van den Bosch, Frank C.6; Gallazzi, Anna7; Haines, Tim8; Mann, Justin9; Pasquali, Anna10
1 University of Missouri-Kansas City, Kansas City, MO. 2 Queens University, Kingston, ON, Canada. 3 University of North Carolina, Chapel Hill, Chapel Hill, NC. 4University of Michigan, Ann Arbor, MI. 5 University of California, San Diego, San Diego, CA. 6 Yale University, New Haven, CT. 7 INAF-Osservatorio Astrofisico di Arcetri, Firenze, Italy. 8 University of Wisconsin-Madison, Madison, WI. 9 University of Kansas, Lawrence, KS. 10 University of Heidelberg, Heidelberg, Germany.

129.02D Diagnosing the Formation of Elliptical Galaxies
Snyder, Gregory F.1,2; Hernquist, Lars E.2
1 Space Telescope Science Institute, Baltimore, MD. 2 Harvard University, Cambridge, MA.

129.03 Evidence of Inside-out Multi-stage Formation History in UV-bright Early Type Galaxies Observed in the Mid-IR
Petty, Sara M.1; Neill, James D.2; Jarrett, Tom3; Blain, Andrew4; Farrah, Duncan5; Rich, Robert M.5; Tsai, Chao-Wei2; Benford, Dominic J.6; Bridge, Carrie2; Lake, Sean E.7; Masci, Frank J.2; Wright, Edward L.8
1 Physics, Virginia Tech, Blacksburg, VA. 2 Caltech, Pasadena, CA. 3 University of Cape Town, Rondebosch, Cape Town, South Africa. 4 University of Leicester, Leicester, Leicestershire, United Kingdom. 5 UCLA, Los Angeles, CA. 6 NASA, Goddard Space Flight Center, Greenbelt, MD. 7 IPAC, Caltech, Pasadena, CA.
Contributing teams: WISE

129.04 Dwarf Galaxies with Active Massive Black Holes
Reines, Amy E.1; Greene, Jenny E.2; Geha, Marla C.3
1 National Radio Astronomy Observatory, Charlottesville, VA. 2 Princeton University, Princeton, NJ. 3 Yale University, New Haven, CT.

129.05D Modeling the Co-Evolution of Black-Holes and Galaxies Across Cosmic Time
Angles-Alcazar, Daniel1
1 University of Arizona, Tucson, AZ.

129.06 Systematic Errors in Black Hole Mass Measurements
McConnell, Nicholas J.1
1 IfA, University of Hawaii, Honolulu, HI.

130 Evolution of Star Formation and Dust in Galaxies

Monday, 2:00 PM - 3:30 PM; National Harbor 2

Chair(s):
Lerothodi Leeuw, SETI Institute
130.01 Connecting Dust and Galaxy Properties at High Redshift
Perley, Daniel A.1; Kruehler, Thomas2; Kasliwal, Mansi M.3; Greiner, Jochen4; Schady, Patricia5; Watson, Darach6; Zafar, Tayyaba6; Bloom, Joshua S.7; Morgan, Adam1; Cenko, Stephen B.8; Levan, Andrew J.9; Tanvir, Nial R.10

130.02D How Environment Affects Star Formation: Tracing Activity in High Redshift Galaxy Clusters
Alberts, Stacey1; Pope, Alexandra1; Brodwin, Mark2; Atlee, David W.1; Lin, Yen-Ting3; Chary, Ranga-Ram11; Dey, Arjun1; Eisenhardt, Peter R.5; Gettings, Daniel6; Gonzalez, Anthony H.6; Jannuzi, Buell12; Mancone, Conor6; Moustakas, John7; Snyder, Gregory F.8; Stanford, S. A.9; Stern, Daniel5; Weiner, Benjamin J.12; Zeimann, Gregory10

130.03D Chemical Evolution of Star-Forming Galaxies
Zahid, Harus1
1. University of Hawaii at Manoa, Honolulu, HI.

130.04 ALMA Dust Continuum for ISM Mass Estimates in High-z Galaxies
Scoville, Nicholas1; Aussel, Herve1; Sheth, Kartik1; Scott, Kimberly S.1; Sanders, David B.1; Ivison, Rob1; Pope, Alexandra1; Capak, Peter L.1; Manohar, Swarnima1; Kartaltepe, Jeyhan S.1; Lilly, Simon1
1. Caltech, Pasadena, CA.

130.05D Star Formation in Cosmological N-body Simulations
Munshi, Ferah1
1. University of Washington, Seattle, WA.

130.06 Galaxy formation in preheated IGM
Lu, Yu1
1. Stanford University, Stanford, CA.

131 Extrasolar Planet Characterization & Theory II
Monday, 2:00 PM - 3:30 PM; Maryland Ballroom A
Chair(s):
Nikku Madhusudhan, Yale University

131.01D Understanding Kepler’s Super-Earths and Sub-Neptunes: Insights from Thermal Evolution and Photo-Evaporation
Lopez, Eric1
1. UC Santa Cruz, Santa Cruz, CA.
131.02 Characterizing the Hot Kepler Objects of Interest
Rogers, Leslie1; Price, Ellen1; Shporer, Avi1; Crepp, Justin R.2; Swift, Jonathan1; Muirhead, Philip S.3; Johnson, John A.4
1California Institute of Technology, Pasadena, CA. 2Notre Dame, Notre Dame, IN. 3Boston University, Boston, MA. 4Harvard University, Cambridge, MA.

131.03 Water Clouds in Y Dwarfs and Exoplanets
Morley, Caroline1; Marley, Mark S.2; Fortney, Jonathan J.1; Lupu, Roxana E.3
1University of CA - Santa Cruz, Santa Cruz, CA. 2NASA Ames, Mountain View, CA. 3SETI Institute, Mountain View, CA.

131.04 Synthesizing Exoplanet Demographics from Radial Velocity and Microlensing Surveys
Clanton, Christian1; Gaudi, B. S.1
1Department of Astronomy, The Ohio State University, Columbus, OH.

131.05 Validation by Asteroseismology for the Rocky Planet KOI 69.01
Ballard, Sarah1, 2
1University of Washington, Seattle, WA. 2NASA Carl Sagan Fellow, Pasadena, CA.

131.06 Multiwavelength Photometric and Imaging observations of the Putative Disintegrating super-Mercury KIC 12557548b
Croll, Bryce1
1Massachusetts Institute of Technology, Cambridge, MA.

131.07 A Review of Correlated Noise in Exoplanet Light Curves
Cubillos, Patricia1; Harrington, Joseph1; Hardin, Matthew R.2; Bleicic, Jasmina1; Hardy, Ryan A.3
1University of Central Florida, Orlando, FL. 2Clemson University, Clemson, SC. 3University of Colorado at Boulder, Boulder, CO.

131.08 Warm Ice Giant GJ 3470b: Revised Planetary and Stellar Parameters from Optical to Near-infrared Transit Photometry
Biddle, Lauren I.1; Pearson, Kyle1; Crossfield, Ian2; Barman, Travis S.3; Fulton, Benjamin J.4; Ciceri, Simona2; Eastman, Jason3; Howard, Andrew4; Mann, Andrew4; Henry, Gregory W.4; Williamson, Michael W.4; Sinukoff, Evan4; Dragomir, Diana3; Vican, Laura4; Greenberg, Adam4; Turner, Jake4; Thompson, Robert1; Mancini, Luigi5; Taylor, Brian W.6; Levine, Stephen7; Webber, Matthew W.7
1University of Arizona, Tucson, AZ. 2Max-Planck Institut fur Astronomie, Heidelberg, Königstuhl, Germany. 3Lunar and Planetary Laboratory, University of Arizona, Tucson, AZ. 4Institute for Astronomy, University of Hawaii at Manoa, Manoa, HI. 5Las Cumbres Observatory Global Telescope Network, Santa Barbara, CA. 6Center of Excellence in Information Systems, Tennessee State University, Nashville, TN. 7Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology, Cambridge, MA. 8Department of Physics and Astronomy, UCLA, Los Angeles, CA. 9Department of Astronomy, University of Virginia, Charlottesville, VA.
132 Extrasolar Planet Detection - Ultra-Short-Period, Circumbinary, and Exomoons From Kepler

Monday, 2:00 PM - 3:30 PM; National Harbor 12

Chair(s):
David Spiegel, Princeton University

132.01D A study of the shortest-period planets
Sanchis Ojeda, Roberto¹; Winn, Joshua N.¹; Rappaport, Saül A.¹
¹MIT, Cambridge, MA.

132.02 A Survey for Very Short-Period Planets in the Kepler Data
Jackson, Brian K.¹; Stark, Christopher C.²; Adams, Elisabeth R.³; Chambers, John E.¹; Deming, Drake⁴
¹Carnegie DTM, Washington, DC. ²NASA Goddard Space Flight Center, Greenbelt, MD. ³Planetary Science Institute, Tucson, AZ. ⁴Department of Astronomy, University of Maryland at College Park, College Park, MD.

132.03D Discovery and characterization of circumbinary planets from Kepler
Kostov, Veselin¹; McCullough, Peter R.²; Carter, Joshua A.²; Deleuil, Magali³; Diaz, Rodrigo¹; Fabrycky, Daniel C.⁶; Hebrard, Guillaume⁴; Hinse, Tobias⁸; Orosz, Jerome A.⁵; Tsvetanov, Zlatan I.¹
¹Johns Hopkins University, Baltimore, MD. ²Space Telescope Science Institute, Baltimore, MD. ³Laboratoire d’Astrophysique de Marseille, Marseille, France. ⁴L’Institut d’astrophysique de Paris, Paris, France. ⁵San Diego State University, San Diego, CA. ⁶University of Chicago, Chicago, IL. ⁷Harvard University, Boston, MA. ⁸Korea Astronomy and Space Science Institute, Daejeon, Korea, Republic of.

132.04 A Kepler Transiting Circumbinary Planet
Welsh, William F.¹; Orosz, Jerome A.¹; Fabrycky, Daniel C.²; Haghighipour, Nader¹; Short, Donald R.¹
¹San Diego State University, San Diego, CA. ²University of Chicago, Chicago, IL. ³University of Hawaii, Honolulu, HI.
Contributing teams: Kepler Team

132.05 The Hunt for Exomoons with Kepler: Results from a Survey of M-Dwarf Host Stars
Kipping, David M.¹; Hartman, Joel D.²; Bakos, Gaspar²; Nesvorny, David³; Buchhave, Lars A.¹
¹Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. ²Princeton University, Princeton, NJ. ³Southwest Research Institute, Boulder, CO.

133 Galaxy Evolution at z > 2

Monday, 2:00 PM - 3:30 PM; Maryland Ballroom C

Chair(s):
Amanda Bauer, Australian Astronomical Observatory

133.01 The effect of Active Galactic Nuclei on the dust properties of high redshift Ultra Luminous Infrared Galaxies
Kirkpatrick, Allison¹; Pope, Alexandra¹; Sajina, Anna³; Roebuck, Eric²
¹University of Massachusetts, Amherst, MA. ²Tufts University, Medford, MA. ³Southwest Research Institute, Boulder, CO.
133.02 Restframe UV colors of 1 < z < 4 star-forming galaxies in the Hubble Ultraviolet UltraDeep Field (UVUDF)
Kurczynski, Peter; Gawiser, Eric J.; Teplitz, Harry I.; Rafelski, Marc; Finkelstein, Steven L.
1 Rutgers, The State University of New Jersey, Piscataway, NJ. 2 Infrared Processing and Analysis Center, MS 100-22, CalTech, Pasadena, CA. 3 University of Texas, Austin, TX.
Contributing teams: UVUDF Team

133.03 The Undiscovered CO: Charting the Molecular Gas of the Universe at High Redshift
Keating, Garrett K.; Bower, Geoffrey C.; DeBoer, David R.; Heiles, Carl E.; Marrone, Daniel P.
1 UC Berkeley, Berkeley, CA. 2 University of Arizona, Tuscon, AZ.

133.04D THE SIZE-LUMINOSITY DISTRIBUTIONS OF LYMAN-BREAK GALAXIES
Huang, Kuang-Han
1 University of California Davis, Davis, CA. 2 Johns Hopkins University, Baltimore, MD.
Contributing teams: The CANDELS collaboration

133.05 Galaxies Under the Cosmic Microscope
Livermore, Rachael
1 University of Texas at Austin, Austin, TX.

133.06 Are All Galaxies the Same? A Synchronized, Uniform Model for Galaxy and Black Hole Evolution
Steinhardt, Charles L.; Speagle, Josh S.
1 California Institute of Technology, Pasadena, CA. 2 Kavli Institute for the Physics and Mathematics of the Universe, Kashiwa, Chiba, Japan, Japan. 3 Harvard University, Cambridge, MA.

133.07 BoRG: Luminosity Function and Spectroscopic Follow-Up of Galaxies at z~8
Schmidt, Kasper B.; Trenti, Michele; Bradley, Larry D.; Kelly, Brandon C.; Treu, Tommaso; Oesch, Pascal
1 Physics & Astronomy, University of California Santa Barbara (UCSB), Santa Barbara, CA. 2 Kavli Institute for Cosmology and Institute of Astronomy, University of Cambridge, Cambridge, United Kingdom. 3 Space Telescope Science Institute, Baltimore, MD. 4 UCO/Lick Observatory, University of California, Santa Cruz, CA.
Contributing teams: The BoRG Collaboration

134 HAD V: History of Astronomy
Monday, 2:00 PM - 3:30 PM; National Harbor 3
Chair(s):
Linda French, Illinois Wesleyan Univ.

134.01 Astronomical Beliefs in Medieval Georgia: Innovative Approaches
Sauter, Jefferson; Orchiston, Wayne; Stephenson, F. R.
1 University of Southern Queensland, Toowoomba, QLD, Australia. 2 National Astronomical Research Institute of Thailand, Chiang Mai, Thailand. 3 University of Durham, Durham, United Kingdom.

134.02 Habitability and the Possibility of Extraterrestrial Life in the Early Telescope Era
Reynolds, Sarah
1 Indiana University, Bloomington, IN.
What exactly was William Herschel’s Milky Way and how did he construct it?
Sullivan, Woodruff T.1; Sharma, Ramon1
1Univ. of Washington, Seattle, WA.

Simon Newcomb, Other Aspects of His Career
Corbin, Brenda G.1
1U. S. Naval Observatory (retired), Washington, DC.

Celebrating 130 Years of the Alvan Clark Telescope at Albion College
Zellner, Nicolle1; Garrett Smeltekop, Nicole1
1Albion College, Albion, MI.

Lemaître’s Limit(s) to our Universe(s)
Steer, Ian1
1NED, Toronto, ON, Canada.

135 HEAD II: Consistent Cluster Cosmology: What are Planck, SZ telescopes, and X-ray observations telling us?

Monday, 2:00 PM - 3:30 PM; National Harbor 5
The recent flood of results from Planck, ACT and SPT combined with over a decade of work with Chandra, XMM-Newton, and other X-ray satellites have provided a wealth of cluster survey data. While largely consistent, there are discrepancies that could be calibration issues but might also be pointing the way to new discoveries. This session will feature talks by leaders in each area, followed by a moderated debate discussing both the possible solutions to these inconsistencies and what the future might bring.

Chair(s):
Joel Bregman, Univ. of Michigan
Organizer(s):
Jan Vrtilek, Harvard-Smithsonian, CfA

135.01 Planck Cluster Cosmology Results
Bartlett, James G.1
1Jet Propulsion Laboratory and APC Univ. Paris 7, Pasadena, CA.
Contributing teams: Planck Collaboration

135.02 The South Pole Telescope Cluster Survey
Benson, Bradford2, 1
1Enrico Fermi Institute, Chicago, IL. 2University of Chicago, Chicago, IL.
Contributing teams: The SPT, SPTpol, and SPT-3G Collaborations

135.03 X-ray Cluster Cosmology from Einstein to eROSITA
Jones, Christine1
1Harvard-Smithsonian, CfA, Cambridge, MA.

136 Instrumentation II: Ground Missions

Monday, 2:00 PM - 3:30 PM; Maryland 2
Chair(s):
Richard Green, University of Texas at Austin
136.01D Heterodyne Arrays for Terahertz/Sub-millimeter Astronomy
Kloosterman, Jenna; Walker, Christopher K.
1.University of Arizona, Tucson, AZ.
Contributing teams: SORAL, SRON, TU-Delft, JPL, APL, ASU, MIT

136.02 Prototype Development of the GMT Fast Steering Mirror
Kim, Young-Soo; Koh, Ju Heon; Jung, Hwa Kyung; Jung, Ho June; Cho, Myung K.; Park, Won Hyun; Yang, Ho-Soon; Kim, Ho-Sang; Lee, Kyoung-Don; Ahn, Hyo-Sung; Park, Byeong-Gon
1.KASI, Daejeon, 2.NOAO, Tucson, AZ. 3.The University of Arizona, Tucson, AZ. 4.KRISS, Daejeon, Korea, Republic of. 5.IAE, Yongin, Korea, Republic of. 6.GIST, Gwangju, Korea, Republic of.

136.03 Astrophysical Observations with the HEROES Balloon-borne Payload
Wilson, Colleen; Gaskin, Jessica; Christe, Steven; Shih, Albert Y.; Swartz, Douglas A.; Tennant, Allyn F.; Ramsey, Brian
1.NASA’s MSFC, Huntsville, AL. 2.NASA’s GSFC, Greenbelt, MD. 3.USRA/MSFC, Huntsville, AL.

136.04D FIREBall, CHAS, and dusty Galactic Clouds
Hamden, Erika T.; Schiminovich, David; Gordon, Sam
1.Columbia University, New York, NY.

136.05 NRES: The Network of Robotic Echelle Spectrographs
Eastman, Jason; Brown, Timothy M.; Hygelund, John; Van Eyken, Julian C.

136.06 Improvements to the Flux Density Scale between 220 and 460 MHz
Perley, Richard A.; Intema, Huib; Mao, Minnie; Scaife, Anna
1.National Radio Astronomy Observatory, Socorro, NM. 2.University of Southampton, Southampton, United Kingdom.

137 Intergalactic Medium & QSO II
Monday, 2:00 PM - 3:30 PM; Potomac Ballroom C
Chair(s):
Benjamin Weiner, University of Arizona

137.01 The Rapid Evolution of HI Rich Galaxies at z~5
Rafelski, Marc; Neeleman, Marcel; Wolfe, Arthur M.; Prochaska, Jason X.; Fumagalli, Michele

137.02 The large-scale distribution of gas
Zhu, Guangtun; Ménard, Brice; Bizyaev, Dmitry; Ho, Shirley; More, Surhud
1.Johns Hopkins University, Baltimore, MD. 2.Kavli IPMU (WPI), the University of Tokyo, Kashiwa, Japan. 3.Apache Point Observatory and New Mexico State University, Sunspot, NM. 4.Carnegie Mellon University, Pittsburgh, PA.
137.03D Glimpsing Host Galaxies of High-Redshift Quasars Using Strong Damped Lyman-Alpha Systems as Coronagraphs
Finley, Hayley L.; Petitjean, Patrick; Paris, Isabelle; Noterdaeme, Pasquier
1 Pierre and Marie Curie University (Paris 6), Paris, France. 2 Universidad de Chile, Santiago, Chile.
Contributing teams: SDSS III - BOSS

137.04 Proposal for Definitive Survey for Fast Radio Bursts at the Allen Telescope Array
Harp, Gerald; Tarter, Jill C.; Welch, William J.
1 SETI Institute, Mountain View, CA. 2 Allen Telescope Array, Hat Creek, CA.
Contributing teams: Allen Telescope Array Team

137.05 Variation of Fundamental Constants: the Impact of Wavelength Miscalibrations
Whitmore, Jonathan B.
1 Swinburne University of Technology, Hawthorn, VIC, Australia.

137.06 The Covering Factor of the Dense Circumgalactic Medium in the COSMOS Field at z < 1
Ribaudo, Joseph; Lehner, Nicolas; Howk, J. C.
1 Utica College, Utica, NY. 2 University of Notre Dame, Notre Dame, IN.

137.07 Spatially Resolved Emission of a High Redshift DLA Galaxy with the Keck/OSIRIS IFU
Jorgenson, Regina; Wolfe, Arthur M.
1 Institute for Astronomy, University of Hawaii, Honolulu, HI. 2 University of California, San Diego, San Diego, CA.

138 Interstellar Medium & Dust II

Monday, 2:00 PM - 3:30 PM; Maryland 1

Chair(s): Thomas Wilson, none

138.01D SPINR Sounding Rocket Measurements of Far-Ultraviolet Dust Scattering Properties in Orion
Mendillo, Christopher; Cook, Timothy; Chakrabarti, Supriya; Gordon, Karl D.
1 UMASS Lowell, Lowell, MA. 2 Space Telescope Science Institute, Baltimore, MD.

138.02 [CI] and CO in local galaxies from the Beyond the Peak Project
Crocker, Alison F.; Pellegrini, Eric W.; Smith, John-David T.
1 University of Toledo, Toledo, OH.
Contributing teams: Beyond The Peak Team

138.03 Estimating PAH Contribution To YSO Spectra Via IR And UV Band Strengths Of Pyrene Frozen In Water Ice
Hardegree-Ullman, Emily E.; Boogert, Abraham C.; Gudipati, Murthy; Lignell, Hanna
1 Rensselaer Polytechnic Institute, Troy, NY. 2 California Institute of Technology, Pasadena, CA. 3 Jet Propulsion Laboratory, Pasadena, CA. 4 University of California at Irvine, Irvine, CA.
Towards a Full-sky, High-resolution Dust Extinction Map with WISE and Planck
Meisner, Aaron M.1, 2; Finkbeiner, Douglas P.1, 2
1 Harvard University, Cambridge, MA. 2 Harvard-Smithsonian CfA, Cambridge, MA.

Are far-IR fluxes good measures of cloud mass?
Wagle, Gururaj1; Ferland, Gary J. 1; Troland, Thomas H. 1; Abel, Nicholas2
1 Physics and Astronomy, University of Kentucky, Lexington, KY. 2 University of Cincinnati: Clermont College, Batavia, OH.

KAT-7 Science Verification: Using HI Observations of NGC 3109 to Understand its Kinematics and Mass Distribution
Lucero, Danielle M.1; Carignan, Claude1; Hess, Kelley M.1; Frank, Bradley S.1; Randriamampandry, Toky H.1; Goedhart, Sharmila2; Passmoor, Sean S.2
1 Department of Astronomy, University of Cape Town, Rondebosch, South Africa. 2 SKA South Africa, Pinelands, South Africa.

139 New Science from the CLASH/CANDELS Multi-Cycle Treasury Programs

Monday, 2:00 PM - 3:30 PM; Maryland Ballroom B

The Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey (CANDELS) and the Cluster Lensing and Supernova survey with Hubble (CLASH) will complete their 3-year Hubble Space Telescope observations in 2013. A special session highlighting the scientific results derived from these two HST Multi-cycle Treasury Programs will be very timely. The two surveys offer a complementary approach to studying cosmic evolution, with CANDELS surveying some of the best-studied fields with the deepest multi-wavelength data, and CLASH surveying some of the most massive and relaxed moderate-redshift gravitational-lens clusters. These programs provide complementary approaches to finding and studying very high redshift (z>5) galaxies, studying structure of galaxies at redshifts 0.5 1. Data from both surveys are non-proprietary, and have already been the subject of intense study. Eight oral presentations will include the latest constraints on luminosity functions and stellar populations in the most distant galaxies, important new constraints on galaxy and cluster formation and their implications for structure formation, and the latest estimates of the evolution Type Ia supernova rate at high redshift.

Chair(s):
Marc Postman, STScI

The Concentration-Mass Relation from CLASH
Merten, Julian1
1 JPL / Caltech, Pasadena, CA.
Contributing teams: CLASH

Studying Galaxy Evolution at High-Redshift with CANDELS
Finkelstein, Steven L.1
1 University of Texas, Austin, TX.
Contributing teams: CANDELS Team

High Redshift Galaxies in CLASH
Bradley, Larry D.1
1 Space Telescope Science Institute, Baltimore, MD.
Contributing teams: CLASH Team
139.04 Confronting theoretical models with CANDELS observations
Lu, Yu
1. Stanford University, Stanford, CA.
Contributing teams: The CANDELS collaboration

139.05 Baryon-Derived Scaling Relations from CLASH
Czakon, Nicole G.1; Donahue, Megan2; Medezinski, Elinor3
Contributing teams: CLASH, Bolocam

139.06 Type Ia Supernovae in the Early Universe from CANDELS
Rodney, Steven A.1
1. Johns Hopkins University, Baltimore, MD.
Contributing teams: The CANDELS+CLASH SN Team

139.07 The CLASH Type-Ia Supernova Rates Out to Redshift 2.4
Graur, Or1, 2
1. The Johns Hopkins University, Baltimore, MD. 2. Tel Aviv University, Tel Aviv, Israel.
Contributing teams: CLASH, CANDELS

139.08 CANDELS Measurements of Structure and Morphology Over Cosmic Time
Kartaltepe, Jeyhan S.1
1. National Optical Astronomy Observatory, Tucson, AZ.
Contributing teams: The CANDELS Collaboration

140 Pulsars & Neutron Stars II

Monday, 2:00 PM - 3:30 PM; National Harbor 13
Chair(s):
Herman Marshall, MIT

140.01 Pulsar Observations Using the First Station of the Long Wavelength Array
Stovall, Kevin1; Demorest, Paul1; Dowell, Jayce1; Ray, Paul S.3; Schinzel, Frank1; Taylor, Gregory B.1

140.02 Observations of Rotating Radio Transients Using the Long Wavelength Array
Miller, Rossina B.1; McLaughlin, Maura1
1. West Virginia University, Morgantown, WV.

140.03 Detection of Pulsed Emission from the Millisecond Pulsar PSR J2145-0750 Below 100 MHz
Taylor, Gregory B.1; Dowell, Jayce1
1. Univ. of New Mexico, Albuquerque, NM.
Contributing teams: Long Wavelength Array
140.04  A Millisecond Pulsar in a Stellar Triple System
Ransom, Scott M.; Stairs, Ingrid H.; Archibald, Anne; Hessels, Jason; Kaplan, David L.; van Kerkwijk, Marten; Boyles, Jason; Lorimer, Duncan; Deller, Adam; Chatterjee, Shami
1. NRAO, Charlottesville, VA.
3. ASTRON, Dwingeloo, Netherlands.
4. U. Wisconsin-Milwaukee, Milwaukee, WI.
5. U. Toronto, Toronto, ON, Canada.
6. W. Kentucky U., Bowling Green, KY.
7. W. Virginia U., Morgantown, WV.
Contributing teams: The GBT Driftscan Collaboration

140.05  PSR J2021+4026 in the Gamma Cygni region: the first variable gamma-ray pulsar seen by the Fermi Large Area Telescope
Razzano, Massimiliano; Tibaldo, Luigi
1. University of Pisa & INFN-Pisa, Pisa, Italy.
2. KIPAC/SLAC, Menlo Park, CA.
Contributing teams: Fermi-LAT Collaboration

140.06  Discovery of a Highly Eccentric Binary Millisecond Pulsar in a Gamma-Ray-Detected Globular Cluster
DeCesar, Megan E.; Ransom, Scott M.; Ray, Paul S.; Kaplan, David L.
1. Physics, University of Wisconsin-Milwaukee, Shorewood, WI.
2. National Radio Astronomy Observatory, Charlottesville, VA.
3. Naval Research Laboratory, Washington, DC.
Contributing teams: Fermi Large Area Telescope Collaboration

140.07  Discovery of the radio and gamma-ray pulsar PSR J2339-0533 associated with the Fermi LAT bright source 0FGL J2339.8-0530
Ray, Paul S.; Belfiore, Andrea M.; Saz Parkinson, Pablo; Polisensky, Emil; Ransom, Scott M.; Romani, Roger W.; Hessels, Jason; Razzano, Massimiliano; Bhattacharyya, Bhaswati; Roy, Jayanta; Cognard, Ismael
1. NRL, Washington, DC.
2. UCSC, Santa Cruz, CA.
3. NCRA, Pune, India.
4. ASTRON, Dwingeloo, Netherlands.
5. NRAO, Charlottesville, VA.
7. University of Pisa & INFN, Pisa, Italy.
8. CNRS, Orleans, France.
9. University of Hong Kong, Hong Kong, Hong Kong.
Contributing teams: Fermi Pulsar Search Consortium

140.08  Gamma-Ray Pulsar Emission: From Theory to Observations
Kalapotharakos, Constantin; Harding, Alice K.; Kazanas, Demosthenes
1. University of Maryland, College Park, MD.
2. Goddard Space Flight Center, NASA, Greenbelt, MD.
The Dark Energy Camera is a 3-square-degree imager on the CTIO Blanco 4-meter telescope, now fully commissioned and available for community use. The Dark Energy Survey is a five-year, 5000-square-degree multicolor survey which began in August 2013, with the primary goal of exploring the cause of the Hubble acceleration. This session will describe the capabilities and on-sky performance of the camera and the new active optics system; the progress of the Survey and the data to become publicly available; and initial science results from the Survey.

Chair(s):
Gary Bernstein, Univ. of Pennsylvania
Organizer(s):
Gary Bernstein, Univ. of Pennsylvania

141.01 Overview of DECam and DES
Bernstein, Gary
Univ. of Pennsylvania, Philadelphia, PA.
Contributing teams: The Dark Energy Survey Collaboration

141.02 DECam Image Quality
Roodman, Aaron
Kavli Institute for Particle Astrophysics & Cosmology, SLAC National Accelerator Laboratory, Stanford University, Menlo Park, CA.
Contributing teams: Dark Energy Survey Collaboration

141.03 DES Gravitational Lensing Results
Melchior, Peter
Center for Cosmology and Astro-Particle Physics, The Ohio State University, Columbus, OH.

141.04 DES Large-scale Structure Results
Sevilla, Ignacio
CIEMAT, Madrid, Spain.
Contributing teams: The Dark Energy Survey Collaboration

141.05 DES Supernova Results
D'Andrea, Christopher
Institute for Cosmology and Gravitation, University of Portsmouth, Portsmouth, Hants, UK, United Kingdom.
Contributing teams: The Dark Energy Survey

141.06 DES Galaxy Cluster Results
Rykoff, Eli S.
SLAC National Accelerator Laboratory, Menlo Park, CA.
Contributing teams: DES Cluster Working Group
159 Developing Our Own Future: Undergraduate Research and Enrichment Through Peer-Led Programs

Monday, 2:00 PM - 3:30 PM; Maryland 3

This session is a collaboration between undergraduates at astronomy departments across the country to showcase undergraduate research and initiative. Having undergraduate research is essential to getting into a graduate program. Because many students go into research, getting experience as an undergraduate helps them determine the path they take after their undergraduate degree. We especially focus on the social and academic support, and career networking, aspects of undergraduate-led programs. Undergraduate research and peer-mentoring helps to promote science to a new generation of astronomers. The session features speakers from multiple undergraduate astronomy programs, and will particularly focus on the benefits and potential of peer networks as opposed to purely faculty-led initiatives. This session will build on the regular oral session presented by the University of Arizona Astronomy Club at the 221st AAS meeting in Indianapolis in June.

Chair(s):
Gina Brissenden, Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona

Organizer(s):
Gina Brissenden, Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona

159.01 Welcome Address
Towner, Allison P.1; Hardegree-Ullman, Kevin2; Brissenden, Gina3,1; Walker-LaFollette, Amanda1
1 University of Arizona, Tucson, AZ. 2 University of Toledo, Toledo, OH. 3 Center for Astronomy Education, Tucson, AZ.

159.02 The League of Astronomers
Thomas, Nancy H.1; Brandel, Andrew1; Paat, Anthony M.1; Schmitz, Denise1; Sharma, Ramon1; Trujillo, Juan1; Laws, Christopher S.1
1 University of Washington, Seattle, WA.

159.03 Bridging the gap between undergrads and grads: The mentor next door
Gruberg, Aaron1
1 San Francisco State Univ, San Francisco, CA.
Contributing teams: Aaron White

159.04 PEER DEVELOPMENT OF UNDERGRADUATE ASTRONOMERS AND PHYSICISTS AT THE UNIVERSITY OF WISCONSIN – MADISON
Abler, Melissa1
1 Univ of Wisconsin, Madison, Madison, WI.
Contributing teams: Physics Club of UW-Madison
159.05  Peer mentoring of telescope operations and data reduction at Western Kentucky University
Williams, Joshua1; Carini, Michael T.1
1, Bowling Green, KY.

159.06  The Society of Astronomy Students: From the Ground Up
Rees, Shannon1; Maldonado, Mercedes1; Beasley, Dana1; Campos, Angelica1; Medina, Amber1; Chanover, Nancy J.1
1 New Mexico State Univ, Las Cruces, NM.

159.07  Results and Implications of Seven Years of the University of Arizona Astronomy Club
Walker-LaFollette, Amanda1; Towner, Allison P.1; Hardegree-Ullman, Kevin2; Brissenden, Gina3,1
1 University of Arizona/Steward Observatory, Tucson, AZ. 2 University of Toledo, Toledo, OH. 3 Center for Astronomy Education, Tucson, AZ.

142 Henry Norris Russell Lecture: New Developments in Galactic Archaeology

Monday, 3:40 PM - 4:30 PM; Potomac Ballroom A
Chair(s): David Helfand, Quest University Canada

Kenneth C. Freeman - Henry Norris Russell Lectureship
(Photo credit: Emily Moylan)
The 2013 Henry Norris Russell Lectureship of the American Astronomical Society is awarded to Kenneth C. Freeman, Duffield Professor and Distinguished Professor at the Australian National University, for a lifetime of seminal contributions to the fields of galaxy structure and dynamics and stellar populations. Throughout his career, Ken Freeman has been a leader in our understanding of the structure and evolution of galaxies by combining theory and modeling with observations. Through his many Ph.D. students and his generous interactions with countless colleagues, his influence on Galactic and extragalactic astronomy has extended far beyond his own research.

142.01  New Developments in Galactic Archaeology
Freeman, Kenneth C.1
1 Australian National Univ., Weston Creek, ACT, Australia.
Contributing teams: HERMES/GALAH team
143 HAD Doggett Prize Lecture: Applied Historical Astronomy

Monday, 4:30 PM - 5:20 PM; Potomac Ballroom A

Chair(s):
Jarita Holbrook, University of the Western Cape

F. Richard Stephenson - HAD Doggett Prize Lecture: Applied Historical Astronomy

F. Richard Stephenson for his lifetime achievements in leading the development of the new field of applied historical astronomy, including the use of ancient records to determine changes in the rotation rate of the Earth and to help modern astronomers observe the sites of galactic supernovae observed over the last two thousand years.

143.01 Applied Historical Astronomy

Stephenson, F. Richard

1 Durham University, Durham, United Kingdom.

Evening Poster Session

Monday, 5:30 PM - 6:30 PM; Exhibit Hall ABC

Career Hour 2: Work-Life Balance: It Can Be Done, You Can Have Fun in Both Worlds

Monday, 5:30 PM - 6:30 PM; National Harbor 2

Crafting a career that is intellectually stimulating and satisfying, AND provides time and opportunities for excitement outside the profession is not impossible and not improbable in science and engineering. It’s all about identifying and articulating your priorities and ensuring that they align with the values of the organization for which you work. We will address how to orchestrate a career plan that includes avenues for “life” activities (whatever they may be) and how to ensure that your work and your personal life provide a balance for a fulfilling experience. Audience: students, postdocs, early- and mid-career professionals Facilitator: Alaina G. Levine, President, Quantum Success Solutions Alaina G. Levine is a science careers consultant, science writer, and professional speaker and comedian. Her new book on networking strategies for scientists and engineers will be published by Wiley in 2014.

Chair(s):
Alaina Levine, Quantum Success Solutions

Organizer(s):
Kelle Cruz, Hunter College/CUNY and AMNH
Observatory Site Protection: Challenges & Solutions

Monday, 6:30 PM - 8:00 PM; National Harbor 3

In the 1970s optical astronomers publicly identified the degradation of the night sky from the increase in lighting associated with development and growth. Although many communities have passed anti-light pollution ordinances, there is still need to protect dark skies near our research and college observatories and surrounding communities. Radio astronomers have also been interacting with industry and regulatory agencies to protect critical frequencies against broadcast interference and to establish radio-quiet zones around research facilities. The AAS Committee on Light Pollution, Radio Frequency Interference (RFI) and Space Debris; IAU’s Commission 50 on Observatory Site Protection; and the International Dark-Sky Association are teaming to propose presentations on 3 timely topics. Richard Wainscoat (U. Hawaii) will give a talk on the recent success in passing lighting ordinances in Hawaii. Bob Parks (IDA Executive Director) will talk on the Model Lighting Ordinance, how it has been applied so far and can be applied to benefit research and college observatory communities. Similarly, Harvey Liszt (NRAO) will talk about how the most significant challenges in RFI facing the radio astronomy community are being addressed. These presentations will tie to the new category “Observatory Site Protection” poster session and two oral sessions on Public Policy and Astronomy Education Policy that involve talks on light pollution issues. After the presentations, the splinter session will hold a discussion moderated by Richard Green (U. Arizona, President of IAU Commission 50) on how can we (AAS, IAU, IDA) help communities establish ordinances to protect dark skies and the radio spectrum, as well as on any related presentation made during the oral and poster sessions. We will post all presentations on the AAS Committee’s web site for future reference, along with a packet for what professional astronomers can do to combat light and spectrum pollution and a videotape of the session.

Organizer(s):
Constance Walker, NOAO

LGBTIQ Networking Dinner

Monday, 6:30 PM - 8:30 PM; AAS Registration Desk

The AAS Working Group on LGBTIQ Equality (WGLE) works to promote equality for lesbian, gay, bisexual, transgender, intersex, and questioning individuals within our profession. Join us for dinner on Monday evening, January 6. We’ll meet in front of the AAS Meeting Registration Desk at 6:30 and walk to a local restaurant. Please bring a method of payment for this dinner.

Organizer(s):
William Van Dyke Dixon,
SOFIA Mission Status and Science Update

Monday, 6:30 PM - 8:00 PM; Maryland Ballroom A

SOFIA, the Stratospheric Observatory for Infrared Astronomy, is a 2.5-meter infrared telescope in a Boeing 747SP that operates at altitudes up to 45,000 feet (14 km), a joint program of NASA and the German Aerospace Center (DLR). SOFIA’s Cycle 1 science programs were conducted during 2013. This splinter session will highlight the successful southern hemisphere deployment in July-August 2013, ongoing upgrades of mission systems, and status of the Cycle 2 (calendar year 2014) science program. Results from commissioning and science observations by GREAT (far-IR heterodyne spectrometer) and FORCAST (mid-IR camera) will also be presented. Upcoming commissioning of EXES (mid-IR spectrometer) and FIFI LS (far-IR imaging spectrometer) as well as future science and instrument proposal calls will be discussed. Session Agenda: (1) SOFIA Program & Science Mission Status: Pam Marcum (SOFIA Project Scientist, NASA), & Erick Young (SOFIA Science Mission Operations Director, USRA); (2) GREAT (far-IR spectrometer) Commissioning & Science: Rolf Guesten (GREAT Principal Investigator, MPIfR); (3) FORCAST (mid-IR camera) Commissioning & Science: Andrew Helton (SOFIA staff instrument scientist, USRA); (4) Questions and Answers

Organizer(s):
Dana Backman, SETI Institute

144 AAS Publications Town Hall

Monday, 6:30 PM - 8:00 PM; Potomac Ballroom C

The AAS publishing program continues to evolve, and this Town Hall offers the community an opportunity to hear from and interact with the leaders of the program about current issues and concerns as well as new initiatives and future directions.

Chair(s):
Christopher Biemesderfer, American Astronomical Society

Tales from the Twitterverse, and Other Media Excursions, Neil deGrasse Tyson, American Museum of Natural History

Monday, 8:00 PM - 9:00 PM; Potomac Ballroom A

The public’s access to our field has historically occurred through traditional conduits of communication such as television documentaries, planetarium shows, and media reports. But in the past five years social media has arisen as a means of attracting people who would have never imagined they had an interest in the universe, or in science at all. The results are stunning and unexpected, with millions of people responding to various offerings of the universe made in these media. Twitter and Facebook lead the way, but other Internet social media have proven potent as well, including YouTube, Reddit, Google+, and, more broadly, the blogosphere. We give first-hand stories and accounts of forays on this landscape and offer suggestions on how such efforts may benefit the long-term health of modern astrophysics from having cultivated public support at its deepest levels.

Chair:
David Helfand, Quest University Canada
POSTERS

145 New Science from the CLASH/CANDELS Multi-Cycle Treasury Programs Poster Session

Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

145.01 Optical And Near-infrared Variability Among Distant Galactic Nuclei Of The CANDELS EGS Field
Grogin, Norman A.; Dahlen, Tomas; Donley, Jennifer; Koekemoer, Anton M.; Salvato, Mara
Contributing teams: The CANDELS Collaboration

145.02 Automated PSF Modeling for Hubble Images
Hamilton, Timothy S.
1. Shawnee State Univ., Portsmouth, OH.

145.03 Red CANDELS: Physical Properties of IRAC Sources Undetected in the F160W Band in CANDELS Fields
Stefanon, Mauro; Yan, Haojing
1. Columbia, MO.
Contributing teams: CANDELS

145.04 Unsupervised Machine Learning to Track Galaxy Morphological Evolution in CANDELS
Peth, Michael; Lotz, Jennifer M.; Freeman, Peter E.; McPartland, Conor
Contributing teams: the CANDELS Collaboration

145.05 To Stack or Not to Stack: Physical Properties of Lyman-α Emitting Galaxies at z = 2.1
Bish, Hannah; Vargas, Carlos J.; Acquaviva, Viviana; Gawiser, Eric J.; Finkelstein, Steven L.; Ciardullo, Robin
1. Rutgers, The State University of New Jersey, Metuchen, NJ. 2. New Mexico State University, Las Cruces, NM. 3. New York City College of Technology, Brooklyn, NY. 4. The University of Texas at Austin, Austin, TX. 5. The Pennsylvania State University, University Park, PA.
Contributing teams: the MUSYC collaboration, the CANDELS collaboration

145.06 Evolution of Visually Disturbed Galaxies from 0.6<z<2.5 in the CANDELS UDS Field
Cook, Joshua; McIntosh, Daniel H.; Kartaltepe, Jeyhan S.; Koekemoer, Anton M.; Lotz, Jennifer M.; Wuyts, Stijn; Bell, Eric F.; Conselice, Christopher
Contributing teams: The CANDELS Collaboration
145.07 Probing the Reionization Epoch At Redshift ~8
Tilvi, Vithal1; Finkelstein, Steven L.2; Papovich, Casey J.3; Dickinson, Mark4; Song, Mimi5; Ferguson, Henry C.6; Koekemoer, Anton M.7; Giavalisco, Mauro8
1Texas A and M, College Station, TX. 2University of Texas, Austin, TX. 3NOAO, Tuscon, AZ. 4STScI, Baltimore, MD. 5University of Massachusetts, Amherst, MA.

145.08 A progenitor of today’s typical galaxy clusters at z=1.84
Mei, Simona1; Scarlata, Claudia2; Pentericci, Laura3; Newman, Jeffrey4; Teplitz, Harry I.5; Weiner, Benjamin J.6; Ashby, Matthew7; Castellano, Marco8; Conselice, Christopher9; Finkelstein, Steven L.10; Galametz, Audrey11; Koekemoer, Anton M.12; Lucas, Ray A.13; Rafelski, Marc14
1University of Paris - IPAC Caltech, Pasadena, CA. 2University of Minnesota, Minneapolis, MN. 3INAF - Observatory of Monteporzio, Roma, Roma, Italy. 4University of Pittsburgh, Pittsburgh, PA. 5IPAC Caltech, Pasadena, CA. 6University of Arizona, Tucson, AZ. 7CfA Harvard, Boston, MA. 8University of Nottingham, Nottingham, Notingham, United Kingdom. 9The University of Texas, Austin, TX. 10Space Telescope Science Institute, Baltimore, MD.
Contributing teams: CANDELS team

145.09 Comparing SFR estimators for IR-luminous galaxies at z~2 in CANDELS
Pforr, Janine1; Dickinson, Mark1; Kartaltepe, Jeyhan S.1; Inami, Hanae2; Penner, Kyle3
1NOAO, Tucson, AZ. 2University of Arizona, Tucson, AZ.
Contributing teams: The CANDELS collaboration

145.10 High-Redshift Supernovae Behind CLASH Galaxy Clusters
Patel, Brandon1; McCully, Curtis1; Holoien, Thomas1, 5; Graur, Or2, 3; Rodney, Steven A.1; Riess, Adam G.4
1Rutgers University, Piscataway, NJ. 2American Museum of Natural History, New York, NY. 3Tel-Aviv University, Tel-Aviv, Israel. 4The Johns Hopkins University, Baltimore, MD. 5Ohio State University, Columbus, OH.
Contributing teams: CLASH Collaboration

145.11 UV-bright Clumps in Star-forming Galaxies at 0.5<z<3 in CANDELS Fields: Clump Detection and Number Count
Guo, Yicheng1; Koo, David C.2; Primack, Joel R2
1UCO/Lick Observatory, Santa Cruz, CA. 2UCSC, Santa Cruz, CA.
Contributing teams: The CANDELS collaboration

145.12 CLASH: Assembly Histories of Brightest Cluster Galaxies
Moustakas, John1; Donahue, Megan2; Ford, Holland3; Kelson, Daniel4; Moustakas, Leonidas A.5; Postman, Marc6
Contributing teams: CLASH Collaboration
145.13 The Concentration-Mass Relation from CLASH clusters using galaxy dynamics
Lemze, Doron1; Biviano, Andrea2; Medezinski, Elinor1; Rosati, Piero3; Balestra, Italo2,4; Mercurio, Amata4; Jouvel, Stephanie5; Nonino, Mario5; Umetsu, Keiichi6; Postman, Marc7; Ford, Holland7; Kelson, Daniel7; Pereira, Maria8; Egami, Eiichi9
1 John Hopkins University, Baltimore, MD. 2 NAF/Osservatorio Astronomico di Trieste, Trieste, Italy. 3 University of Ferrara, Ferrara, Italy. 4 INAF/Osservatorio Astronomico di Capodimonte, Napoli, Italy. 5 Institut de Cincies de l’Espai, Barcelona, Spain. 6 Academia Sinica Institute of Astronomy and Astrophysics (ASIAA), Taipei, Taiwan. 7 Space Telescope Science Institute, Baltimore, MD. 8 Carnegie Institute for Science, Pasadena, CA. 9 University of Arizona, Tucson, AZ.

145.15 Massive Quiescent Disk Galaxies in the CANDELS survey
Kesseli, Aurora1; McGrath, Elizabeth J.1
1 Colby College, Waterville, ME.
Contributing teams: CANDELS collaboration

145.16 KPC-SCALE STUDY OF SUBSTRUCTURES INSIDE GALAXIES out to z ~ 1.3
Hemmati, Shoubaneh1; Mobasher, Bahram1; Miller, Sarah1; Nayyeri, Hooshang1
1 UC Riverside, Riverside, CA. 2 California Institute of Technology, Pasadena, CA.

145.17 Evolutionary Trends of Massive Spheroidal Galaxies from 0.6<z<2.5 in the CANDELS UDS Field
Rizer, Zachary1; McIntosh, Daniel H.1; Kartaltepe, Jeyhan S.2; Koekemoer, Anton M.3; van der Wel, Arjen4; Wuyts, Stijn4; Bell, Eric F.6; Conselice, Christopher7
1 University of Missouri - Kansas City, Kansas City, MO. 2 National Optical Astronomy Observatory, Tucson, AZ. 3 Space Telescope Science Institute, Baltimore, MD. 4 Max Planck Institute for Astronomy, Heidelberg, Germany. 5 Max-Planck-Institut für Extraterrestrische Physik, Garching, Germany. 6 University of Michigan, Ann Arbor, MI. 7 University of Nottingham, Nottingham, United Kingdom.
Contributing teams: The CANDELS Collaboration

146 Exoplanets and Kepler Poster Session
Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

146.01 Photometry Using Kepler ‘Superstamps’ of Open Clusters NGC 6791 & NGC 6819
Kuehn, Charles A.1; Drury, Jason1; Stello, Dennis1; Bedding, Timothy R.1
1 University of Sydney, Redfern, NSW, Australia.

146.02 Long-Term Quadrature Light Variability in Early Type Interacting Binary Systems
Peters, Geraldine J.1; Wilson, Robert E.2; Vaccaro, Todd R.3
1 University of Southern California, Los Angeles, CA. 2 University of Florida, Gainesville, FL. 3 St. Cloud State University, Saint Cloud, MN.

146.03 Algorithms for Kepler Long-Cadence Observations of Periodic Variable Stars
Mighell, Kenneth J.1
1 NOAO, Tucson, AZ.
146.04 Mining the Kepler Data using Machine Learning
Walkowicz, Lucianne1; Howe, Alex R.1; Nayar, Revant1; Turner, Edwin L.1; Scargle, Jeffrey2; Meadows, Victoria3; Zee, Anthony4

147 HAD III: Poster Session

Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

147.01 Urania in the Marketplace: The Timepieces
Rumstay, Kenneth S.1
1Valdosta State Univ., Valdosta, GA.

147.02 50 Years of the Astro-Science Workshop at the Adler Planetarium
Hammergren, Mark1; Martynowycz, Michael W.1,2; Ratliff, Gayle2,1
1Adler Planetarium, Chicago, IL. 2. Illinois Institute of Technology, Chicago, IL.

147.03 Could our Understanding of Post-Main Sequence Stellar Evolution have been Hastened? The, Errantly Dismissed, 1930’s Discovery of Subgiant Stars by the Mount Wilson Observatory Spectroscopists
Beaton, Rachael1; Sandage, Alan2; Majewski, Steven R.3
1Univ. of Virginia, Charlottesville, VA. 2. Carnegie Observatories, Pasedena, CA.

148 Instrumentation: Ground or Airborne Poster Session

Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

148.01 RIMAS - rapid reaction near infrared imager-spectrometer
Kutyrev, Alexander2,1; Toy, Vicki1; Veilleux, Sylvain2; Capone, John3; Robinson, Frederick D.3,2; Lotkin, Gennadiy N.3,2; Moseley, Samuel H.1; Gehrels, Neil1; Vogel, Stuart N.3

148.02 Rapid GRB Photometry with RIMAS
Toy, Vicki1; Kutyrev, Alexander2,1; Veilleux, Sylvain1; Capone, John3; Robinson, Frederick D.3,2; Lotkin, Gennadiy N.3,2; Moseley, Samuel H.2; Gehrels, Neil3; Vogel, Stuart N.1

148.03 The future of rapid GRB afterglow spectroscopy with RIMAS
Capone, John1; Kutyrev, Alexander2,1; Veilleux, Sylvain1; Toy, Vicki1; Robinson, Frederick D.3,2; Lotkin, Gennadiy N.3,2; Moseley, Samuel H.2; Gehrels, Neil2; Vogel, Stuart N.1
Rinehart, Stephen; Rizzo, Maxime; Veach, Todd; Dhabal, Arnab; Benford, Dominic; Silverberg, Robert; Fixsen, Dale; Barry, Richard; Staguhn, Johannes; Mahler, Stephen; Leisawitz, David; Mundy, Lee G.; Jhabvala, Christine
1 NASA's GSFC, Greenbelt, MD. 2 University of Maryland, College Park, College Park, MD. 3 Johns Hopkins University, Baltimore, MD. 4 ORAU, NASA Postdoctoral Program Fellow, Oak Ridge, TN.

148.05 The Balloon Experimental Twin Telescope for Infrared Interferometry (BETTII): Optical Design
Veach, Todd; Mentzell, Eric; Rinehart, Stephen; Fixsen, Dale; Rizzo, Maxime; Benford, Dominic; Dhabal, Arnab
1 Goddard Space Flight Center, Greenbelt, MD, MD. 2 University of Maryland, College Park, MD.

148.06 The Balloon Experimental Twin Telescopes for Infrared Interferometry (BETTII): targets and calibration
Rizzo, Maxime; Rinehart, Stephen; Benford, Dominic; Dhabal, Arnab; Fixsen, Dale; Leisawitz, David; Mundy, Lee G.
1 University of Maryland, College Park, College Park, MD. 2 NASA Goddard Space Flight Center, Greenbelt, MD.

148.07 Timing Sunsets with Smartphones: Proof of Concept for a Citizen Science Project that Quantifies the Atmosphere and Supports Astronomical Observations
Wilson, Teresa; Kantamneni, Abhilash; Bartlett, Jennifer; Nemiroff, Robert J.
1 Michigan Technological University, Houghton, MI. 2 United States Naval Observatory, Washington, DC.

148.08 Shared Skies Partnership: A Dual-Site All-Sky Live Remote Observing Initiative for Research and Education
Kielkopf, John; Hart, Rhodes; Carter, Brad; Collins, Karen; Brown, Carolyn; Hay, Jeff; Hons, Alex; Marsden, Stephen
1 Univ. of Louisville, Louisville, KY. 2 Univ. of Southern Queensland, Toowoomba, QLD, Australia.

148.09 Performance Characterization of KAPAO, a Low-Cost Natural Guide Star Adaptive Optics Instrument
Long, Joseph; Choi, Philip; Severson, Scott; Littleton, Erik; Badham, Katherine; Bolger, Dalton; Guerrero, Christian; Ortega, Fernando; Wong, Jonathan; Baranec, Christopher; Riddle, Reed
1 Pomona College, Claremont, CA. 2 Sonoma State University, Sonoma, CA. 3 California Institute of Technology, Pasadena, CA. 4 Harvey Mudd College, Claremont, CA.

148.10 Assembly and First-Light of KAPAO, a Low-Cost Natural Guide Star Adaptive Optics System
Badham, Katherine; Severson, Scott; Choi, Philip; Bolger, Dalton; Guerrero, Christian; Long, Joseph; Ortega, Fernando; Wong, Jonathan
1 Pomona College, Claremont, CA. 2 Sonoma State University, Rohnert Park, CA. 3 Harvey Mudd College, Claremont, CA.
148.11 LoFASM’s FPGA-based Digital Acquisition System
Dartez, Louis P.; Jenet, Fredrick; Creighton, Teviet D.; Ford, Anthony J.; Hicks, Brian; Hinojosa, Jesus; Kassim, Namir E.; Price, Richard H.; Stovall, Kevin; Ray, Paul S.; Taylor, Gregory B.
1 University of Texas - Brownsville, Brownsville, TX. 2 Arecibo Observatory, Arecibo, Puerto Rico. 3 U.S. Naval Research Lab, Washington, DC. 4 University of New Mexico, Albuquerque, NM.

148.12 Progress on the Low Frequency All Sky Monitor
Murray, James; Jenet, Fredrick; Craig, Joseph; Creighton, Teviet D.; Dartez, Louis P.; Ford, Anthony J.; Hicks, Brian; Hinojosa, Jesus; Jaramillo, Ricardo; Kassim, Namir E.; Lunsford, Grady; Miller, Rossina B.; Ray, Paul S.; Rivera, Jesus; Taylor, Gregory B.
1 University of Texas at Brownsville, Brownsville, TX. 2 Naval Research Laboratory, Washington, DC. 3 University of New Mexico, Albuquerque, NM.

148.13 Preliminary Results from CINDERS: Circularized IFUs Now Deployed using Economical Robots on SOAR
McBride, JoEllen; Cecil, Gerald N.
1 University of North Carolina at Chapel Hill, Chapel Hill, NC.

148.14 Concept for SAMOS: SOAR Adaptive-optics Multi-object Spectrograph
Robberto, Massimo
1 STScI, Baltimore, MD.

148.15 The Gemini Observatory Fast-Turnaround Program
Mason, Rachel; Adamson, Andy; Crabtree, Dennis; Cote, Stephanie; Kissler-Patig, Markus; Levenson, Nancy
1 Gemini Observatory, Hilo, HI. 2 Herzberg Institute of Astrophysics, Victoria, BC, Canada.

148.16 Gemini Multi-Object Spectrograph Upgrades: Hamamatsu CCDs and AO
Roth, Katherine; Gimeno, German; Murowinski, Richard; Kleinman, Scot; Trujillo, Chadwick A.; Lai, Olivier
1 Gemini Observatory, Hilo, HI. 2 Gemini Observatory, La Serena, Chile. 3 NRC Herzberg, Victoria, BC, Canada.

148.17 Monitoring Atmospheric Transmission with FLAME
Zimmer, Peter C.; McGraw, John T.; Zirzow, Daniel C.; Koppa, Matt; Buttler-Pena, Karina
1 Univ. of New Mexico, Albuquerque, NM.

148.18 Learning from AESoP: NIST-traceable Spectroradiometric Calibration of Stars
McGraw, John T.; Zimmer, Peter C.; Zirzow, Daniel C.; Koppa, Matt; Buttler-Pena, Karina
1 Univ. of New Mexico, Albuquerque, NM.

148.19 The WIYN One Degree Imager: Upgrading for the Future
Harbeck, Daniel R.; Liu, Wilson M.; Rajagopal, Jayadev
1 WIYN Observatory, Tucson, AZ. 2 NOAO, Tucson, AZ.

Contributing teams: ODI Team
148.20 Science with ODI: An overview of ongoing and upcoming research with the WIYN Observatory’s new large format imager
Hooper, Eric1,2; Harbeck, Daniel R.1
1WIYN Observatory, Tucson, AZ. 2Univ. of Wisconsin-Madison, Madison, WI.
Contributing teams: WIYN Consortium

148.21 Silicon Powder Filters for Large-Aperture Cryogenic Receivers
Boone, Fletcher1; Essinger-Hileman, Thomas1; Bennett, Charles L.1; Marriage, Tobias1; Xu, Zhilei1
1Physics and Astronomy, Johns Hopkins University, Baltimore, MD.

148.22 Monitoring of Cyg A and Cas A flux densities below 100 MHz
Schinzel, Frank1; Cutchin, Sean E.2; Polisensky, Emil2; Helmboldt, Joseph F.2; Dowell, Jayce1; Kassim, Namir E.2; Taylor, Gregory B.1
1University of New Mexico, Albuquerque, NM. 2Naval Research Laboratory, Washington, DC.
Contributing teams: on behalf of the LWA1 collaboration

148.23 A Positional X-ray Instrumentation Test Stand For Beam-Line Experiments
Nikoleyczik, Jonathan1; Prieskorn, Zachary1; Burrows, David N.1; Falcone, Abraham1
1The Pennsylvania State University, University Park, PA.

148.24 Development of a Low Cost Spectrometer for the Small Radio Telescope (SRT), Very Small Radio Telescope (VSRT), and Ozone spectrometer
Higginson-Rollins, Marci1,2; Rogers, Alan E.2
1University of Kentucky, Lexington, KY. 2MIT Haystack Observatory, Westford, MA.

148.25 Time-Domain and Transient Astronomy with the Liverpool Telescope
Davis, Christopher1
1Liverpool John Moores University, Liverpool, Merseyside, United Kingdom.

148.26 Astrometric and Photometric Accuracy of the 1.3 m Robotic Telescope on Kitt Peak
McGruder, Charles H.1; Carini, Michael T.1; Engle, Scott G.3; Gelderman, Richard1; Guinan, Edward F.3; Laney, David1; Strolger, Louis-Gregory1; Treffers, Richard R.4; Walter, Donald K.2
1Western Kentucky Univ., Bowling Green, KY. 2South Carolina State University, Orangeburg, SC. 3Villanova University, Villanova, PA. 4Starman Systems, Tucson, AZ.

148.27 Lunar Laser Ranging with Imaging Atmospheric Cherenkov Telescopes
Reitzes, Sarah1; Perkins, Jeremy2
1Tufts University, Medford, MA. 2NASA-GSFC, Greenbelt, MD.

148.28 Analysis of DECal Scans for the Dark Energy Survey Camera
Wester, William1
1Fermilab, Batavia, IL.
Contributing teams: Texas A&M University, Cerro Tololo Inter-American Observatory

148.29 Design and Construction of a New 1420 MHz Receiver System for a 12-meter Radio Telescope
Lemley, Cameron1,2; Castelaz, Michael W.1
1Pisgah Astronomical Research Institute, Rosman, NC. 2Columbia University, New York, NY.
148.30 Experiences with the Design and Construction of Astronomical Instrumentation using CASPER: The Digital Backend System
Prestage, Richard M.; Bloss, Martin; Brandt, Joe; Creager, Ramon; Demorest, Paul; Ford, John; Jones, Glenn; Luo, Jintao; McCullough, Randy; Ransom, Scott M.; Ray, Jason; Watts, Galen; Whitehead, Mark
1.NRAO, Green Bank, WV. 2.NRAO, Charlottesville, VA. 3.Columbia University, New York, NY.

148.31 MINERVA: Small Telescopes, Small Planets
Wright, Jason; Johnson, John A.; McCrady, Nate; Swift, Jonathan; Muirhead, Philip S.; Zhao, Ming; Plavchan, Peter; Bottom, Michael; Wittenmyer, Robert A.

148.32 Winter sky brightness & cloud cover over Dome A
Yang, Yi; Moore, Anna M.; Fu, Jianning; Ashley, Michael C. B.; Cui, Xiangqun; Feng, Longlong; Gong, Xuefei; Hu, Zhongwen; Laurence, Jon; LuongVan, Daniel; Riddle, Reed L.; Shang, Zhaohui; Sims, Geoffrey; Storey, John; Tothill, Nick; Travouillon, Tony; Wang, Lifan; Yang, Huigen; Yang, Ji; Zhou, Xu; Zhu, Zhenxi; Burton, Michael G.

148.33 The New Instrument Suite of the TSU/Fairborn 2m Automatic Spectroscopic Telescope
Muterspaugh, Matthew W.; Maxwell, Ted; Williamson, Michael W.; Fekel, Francis C.; Ge, Jian; Kelly, John; Ghasempour, Askari; Powell, Scott; Zhao, Bo; Varosi, Frank; Schofield, Sidney; Liu, Jian; Warner, Craig; Jakeman, Hali; Avner, Louis; Swihart, Samuel; Harrison, Chelsea; Fishler, Dan
148.34 Final Design of the CHARIS Integral Field Spectrograph for the Subaru Telescope
Groff, Tyler D.; Peters, Mary Anne; Kasdin, N. J.; Galvin, Michael; Brandt, Timothy; Carr, Michael; Knapp, Gillian R.; McElwain, Michael W.; Janson, Markus; Loomis, Craig; Guyon, Olivier; Martinache, Frantz; Jovanovic, Nemanja; Mede, Kyle; Takato, Naruhisa; Hayashi, Masahiko
1 Princeton University, Princeton, NJ. 2. Goddard Space Flight Center, Greenbelt, MD.
3 Queen’s University of Belfast, Belfast, Northern Ireland, United Kingdom. 4. Subaru Telescope, Hilo, HI. 5. National Astronomical Observatory of Japan, Mitaka, Tokyo, Japan. 6. University of Tokyo, Bunkyo-ku, Tokyo, Japan.

148.35 The HPOL Spectropolarimeter and the First 1.5 Years of Operation at Ritter Observatory
Davidson, James W.; Bjorkman, Karen S.; Bjorkman, Jon E.; Hoffman, Jennifer L.; Babler, Brian L.; Meade, Marilyn; Lomax, Jamie R.; Nordsieck, Kenneth H.; Wisniewski, John P.; Kamunen, Kody A.
1 The University of Toledo, Toledo, OH. 2 University of Denver, Denver, CO. 3 University of Wisconsin, Madison, WI. 4 University of Oklahoma, Norman, OK. 5 Minnesota State University, Mankato, MN.

148.36 The Advancement of Radio Astronomy at Brigham Young University
Honick, Charles; Migenes, Victor; Blakley, Daniel
1 Brigham Young University, Provo, UT.

148.37 CHaS, the Circumgalactic H-alpha Spectrograph
Gordon, Sam; Schiminovich, David; Hamden, Erika T.
1 Columbia University, New York, NY.

148.38 Finding Radio Transients with the Murchison Widefield Array
Kaplan, David L.
1 University of Wisconsin, Milwaukee, Milwaukee, WI.
Contributing teams: The Murchison Widefield Array Collaboration

Meyer, Allan W.
1 USRA / SOFIA, Moffett Field, CA.

148.40 Performance of Electroluminescent Flats for Precision Light Curve Photometry
Avril, Ryan L.; Oberst, Thomas E.
1 Physics, Westminster College, New Wilmington, PA.

148.41 Precision Astronomy with Imperfect Deep Depletion CCDs
Stubbs, Christopher
1 Harvard University, Cambridge, MA.
Contributing teams: LSST sensor team, PanSTARRS team.

148.42 Characteristics and Early Science Results of the Virgin Islands Robotic Telescope at the Etelman Observatory
Morris, David C.; Neff, James E.; Hakkila, Jon E.
1 College of Science and Mathematics, University of the Virgin Islands, St Thomas, Virgin Islands, U.S.. 2 College of Charleston, Charleston, SC.
149 Instrumentation: Space Missions Poster Session

Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

149.01 WFC3: Enhanced Data Processing Software
Sosey, Megan L.1
1STScI, Baltimore, MD.
Contributing teams: WFC3 Instrument Team

149.02 WFC3: Status and Advice for Cycle 22 Proposers
MacKenty, John W.1; Baggett, Sylvia M.1; Deustua, Susana E.1; Hammer, Derek1; Lee, Janice C.1; McCullough, Peter R.1; Pirzkal, Norbert1; Kozhurina-Platais, Vera1; Riess, Adam G.1
1STScI, Baltimore, MD.
Contributing teams: Wide Field Camera 3

149.03 WFC3: Understanding and Mitigating UVIS Charge Transfer Efficiency Losses and IR Persistence Effects
Baggett, Sylvia M.1; Anderson, Jay1; Long, Knox S.1; MacKenty, John W.1; Noeske, Kai1; Biretta, John A.1
1STScI, Columbia, MD.
Contributing teams: WFC3 Team

149.04 WFC3: Improved WFC3 Calibration Products
Gunning, Heather C.1; Sosey, Megan L.1; Anderson, Jay1; Lee, Janice C.1; Pirzkal, Norbert1; MacKenty, John W.1; Kozhurina-Platais, Vera1; Deustua, Susana E.1; Hammer, Derek1; Dahlen, Tomas1; Sabbi, Elena1; Mack, Jennifer1; Baggett, Sylvia M.1
1Space Telescope Science Institute, Baltimore, MD.
Contributing teams: WFC3 Team

149.05 A New, Deeper Long Baseline Study of ACS/WFC Extended Source CTE Effects
Lucas, Ray A.1; Grogin, Norman A.1; Chiaberge, Marco2; Maybhate, Aparna1; Koekemoer, Anton M.1
1STScI, Baltimore, MD.

149.06 ACS/WFC Geometric Distortion: a time dependency study
Ubeda, Leonardo1; Kozhurina-Platais, Vera1; Bedin, Luigi R.2
1Space Telescope Science Institute, Baltimore, MD. 2Osservatorio Astronomico di Padova, Padua, Italy.

149.07 Wide-field spatio-spectral interferometry for far-infrared space applications: A progress report
Leisawitz, David1; Armstrong, J. T.2; Bolcar, Matthew R.1; Lyon, Richard1; Maher, Stephen F.3,1; Memarsadeghi, Nargess1; Rinehart, Stephen1; Sinukoff, Evan4,1
1NASA GSFC, Greenbelt, MD. 2NRL, Washington, DC, DC. 3SSAI, Inc., Greenbelt, MD. 4Univ. of Hawaii, Honolulu, HI.
149.08 Technology Demonstration Milestone #1 for the EXoplanetary Circumstellar Environments and Disk Explorer (EXCEDE) II. Science Drivers and Implications. Schneider, Glenn¹; Belikov, Ruslan²; Guyon, Olivier³; Lozi, Julien¹; Eduardo, Bendek¹; Davis, Paul¹; Greene, Thomas P.¹; Lynch, Dana²; Eugene, Pluzhnik²; Sandrine, Thomas⁴; Witteborn, Fred⁴; Duncan, Alan⁵; Kendrick, Rick⁶; Hix, Troy⁷; Mihara, Roger⁸; Smith, Eric⁸; Irwin, Wes⁸; Debes, John H.⁶; Carson, Joseph⁷; Hines, Dean C.; Grady, Carol A.; Perrin, Marshall D.; Silverstone, Murray D.; Wisniewski, John P.; Hinze, Phil¹; Moro-Martín, Amaya¹¹; Henning, Thomas¹²; Tamura, Motohide¹³; Jang-Condell, Hannah¹⁴; Weinberger, Alycia J.; Woodgate, Bruce E.; Goto, Miwa¹⁷; Serabyn, Gene¹⁸; Rodigas, Timothy¹; Kuchner, Marc J.; Stark, Christopher C.¹⁶


Contributing teams: EXCEDE Project Technology Development Team, HST GO 12228 Team

149.09 Developing Astrometric Drift Scans for the Spitzer Space Telescope
Carey, Sean J.; Ingalls, James; Stauffer, John R.; Grillmair, Carl J.

¹ Caltech, Pasadena, CA.

149.10 Recent Results and Future Plans for the Gamma Ray Polarimeter Experiment (GRAPE)
McConnell, Mark L.; Bloser, Peter F.; Ertley, Camden; Legere, Jason; Ryan, James M.; Wasti, Sambid

¹ Univ. of New Hampshire, Durham, NH.

149.11 The Speedster-EXD - A New Event-Triggered Hybrid CMOS X-ray Detector
Griffith, Christopher; Falcone, Abraham; Prieskorn, Zachary; Burrows, David N.

¹ Penn State, University Park, PA.

149.12 New Worlds / New Horizons Science with an X-ray Astrophysics Probe
Smith, Randall K.; Bookbinder, Jay A.; Hornschemeier, Ann E.; Bandler, Simon²; Brandt, W. N.; Hughes, John P.; McCammon, Dan; Matsumoto, Hironori; Mushotzky, Richard; Osten, Rachel A.; Petre, Robert; Plucinsky, Paul P.; Ptak, Andrew; Ramsey, Brian; Reynolds, Christopher S.; Schattenburg, Mark

149.13 High-contrast imager for Complex Aperture Telescopes (HiCAT): testbed design and coronagraph developments

N’Diaye, Mamadou1; Choquet, Elodie1; Pueyo, Laurent1,2; Elliot, Erin1; Perrin, Marshall D.1; Wallace, J. Kent1; Anderson, Rachel E.1; Carlotti, Alexis1,3; Groff, Tyler D.4; Hartig, George F.1; Kasdin, Jeremy1; Lajoie, Charles-Philippe1; Leveq, Olivier4,5; Long, Chris1; Macintosh, Bruce1; Mawet, Dimitri6,3; Norman, Colin A.1; Shaklan, Stuart1; Sheeck, Matt2; Sivaramakrishnan, Anand1; Soummer, Remi1

1STScI, Baltimore, MD. 2Johns Hopkins University, Baltimore, MD. 3JPL, Pasadena, CA. 4Princeton University, Princeton, NJ. 5Institut de Planetologie et d’Astrophysique de Grenoble, Grenoble, France. 6European Southern Observatory, Santiago, Chile. 7Lawrence Livermore National Laboratory, Livermore, CA. 8Institut d’Optique, Orsay, France.

149.14 X-ray Polarization Capabilities of the Gravity and Extreme Magnetism Small Explorer Mission Concept

Jahoda, Keith1

1NASA’s GSFC, Greenbelt, MD.

Contributing teams: GEMS team

149.15 Cosmic Ray Nuclei in the Fermi-LAT ACD

Green, David1,2; Hays, Elizabeth A.2; Brandt, Theresa J.2

1University of Maryland, College Park, MD. 2NASA: GSFC, Greenbelt, MD.

149.16 Scientific Implications of the Modified Observing Strategy of the Fermi Gamma-ray Space Telescope

McEnery, Julie E.1

1NASA’s GSFC, Greenbelt, MD.

Contributing teams: Fermi-LAT Collaboration, Fermi-GBM team

149.17 ACCESS: Detector Control and Performance

Morris, Matthew J.1; Kaiser, Mary Elizabeth1; McCandliss, Stephan R.1; Rauscher, Bernard J.2; Kimble, Randy A.2; Kruk, Jeffrey W.2; Wright, Edward L.4; Bohlin, Ralph3; Kurucz, Robert L.3; Riess, Adam G.1,3; Pelton, Russell1; Deustua, Susana E.1; Dixon, William V.1; Sahnow, David J.3; Mott, David B.2; Wen, Yiting2; Benford, Dominic J.2; Gardner, Jonathan P.2; Feldman, Paul D.1; Moos, H. W.1; Lampton, Michael6; Perlmutter, Saul1; Woodgate, Bruce E.2

1Johns Hopkins University, Baltimore, MD. 2NASA Goddard Space Flight Center, Greenbelt, MD. 3Space Telescope Science Institute, Baltimore, MD. 4University of California, Los Angeles, Los Angeles, CA. 5University of California, Berkeley, Berkeley, CA. 6Space Sciences Laboratory, Berkeley, Berkeley, CA. 7Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

149.18 ACCESS: Thermal Mechanical Design, Performance, and Status

Kaiser, Mary Elizabeth1; Morris, Matthew J.1; McCandliss, Stephan R.1; Rauscher, Bernard J.2; Kimble, Randy A.2; Kruk, Jeffrey W.2; Wright, Edward L.4; Bohlin, Ralph3; Kurucz, Robert L.3; Riess, Adam G.1,3; Pelton, Russell1; Deustua, Susana E.3; Dixon, William V.1; Sahnow, David J.3; Benford, Dominic J.2; Gardner, Jonathan P.2; Feldman, Paul D.1; Moos, H. W.1; Lampton, Michael6; Perlmutter, Saul1; Woodgate, Bruce E.2

1Johns Hopkins University, Baltimore, MD. 2NASA Goddard Space Flight Center, Greenbelt, MD. 3Space Telescope Science Institute, Baltimore, MD. 4University of California, Los Angeles, Los Angeles, CA. 5University of California, Berkeley, Berkeley, CA. 6Space Sciences Laboratory, Berkeley, Berkeley, CA. 7Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.
149.19 Characterization of Si Hybrid CMOS Detectors for use in the Soft X-ray Band
Prieskorn, Zachary1; Griffith, Christopher1; Bongiorno, Stephen1,2; Falcone, Abraham1; Burrows, David N.1
1Astronomy and Astrophysics, Penn State University, University Park, PA.
2The Johns Hopkins University, Baltimore, MD.

149.20 Enhanced Fluoride Over-coated Al Mirrors for FUV Space Astronomy
Quijada, Manuel1; Rice, Stephen1; Threat, Felix T.1; Del Hoyo, Javier G.1
1NASA-GSFC Code 551, Greenbelt, MD.

149.21 Investigation of the Back-reflection from an On-axis Telescope for Space-based
Gravitational Wave Detectors
Mueller, Guido1; Spector, Aaron1
1University of Florida, Gainesville, FL.

149.22 Astrometry with small-size collapsible space telescope
Bendek, Eduardo1; Ennico, Kimberly1; Rademacher, Abraham1; Lynch, Dana1; Guyon, Olivier1,2
1NASA Ames Research Center, Moffett Field, CA. 2Subaru Telescope, Hi, Hl.
3University of Arizona, Tucson, AZ.

149.23 Lightweight ZERODUR®: A Candidate Material for Affordable Future UVOIR
Space Telescopes of All Apertures
Hull, Anthony B.1; Westerhoff, Thomas2; Leys, Antoine2
1University of New Mexico, Albuquerque, NM. 2SCHOTT AG, Mainz, Germany.

149.24 Improved Characterization of the HST/STIS CCD
Lockwood, Sean A.1; Proffitt, Charles R.2; Bostroem, K. A.1; Debes, John H.3; Hernandez, Svea1; Hodge, Philip1; Oliveira, Cristina M.3
1AURA/STScI, Baltimore, MD. 2CSC/STScI, Baltimore, MD. 3ESA-AURA/STScI, Baltimore, MD.

149.25 Update to the Cosmic Origins Spectrograph FUV Calibration: Improved
Characterization Below 1150 Angstroms and Improved Absolute Flux
Calibration at all Wavelengths.
Sonnentrucker, Paule1; Bostroem, K. A.1; Ely, Justin1; Debes, John H.1; DiFelice, Audrey1; Hernandez, Svea1; Hodge, Philip E.1; Lindsay, Kevin1; Lockwood, Sean A.1; Massa, Derck1; Oliveira, Cristina M.1; Roman-Duval, Julia1; Penton, Steven V.1; Proffitt, Charles R.1,2; Taylor, Joanna M.1
1Space Telescope Science Institute, Baltimore, MD. 2CSC, Baltimore, MD.

149.26 A New HST FGS Astrometry Capability
Bradley, Arthur J.1; Nelan, Edmund P.2
1Spacecraft System Eng. Services, Annapolis Junction, MD. 2Space Telescope Science Institute, Baltimore, MD.

149.27 Solar System Science with HST and JWST: Connecting the Past, Present, and
Future
Roman, Anthony1; Hines, Dean C.1; Mutchler, Maximilian J.1
1STScI, Baltimore, MD.

149.28 Simulations of MIRI Four-Quadrant Phase Mask Coronagraphy
Lajoie, Charles-Philippe1; Soummer, Remi1; Hines, Dean C.1
1Space Telescope Science Institute, Baltimore, MD.
149.29 Overview and status of the JWST science instrument payload
Greenhouse, Matthew A.; Kimble, Randy A.; Rauscher, Bernard J.; Dunn, Jamie; Voyton, Mark
1 NASA’s GSFC, Greenbelt, MD.
Contributing teams: The JWST ISIM Team, The JWST Science Working Group

149.30 James Webb Space Telescope Synergy with Dark Energy Missions
Gardner, Jonathan P.
1 NASA’s GSFC, Greenbelt, MD.

149.31 Status of the James Webb Space Telescope Observatory
Clampin, Mark; Bowers, Charles W.
1 NASA’s GSFC, Greenbelt, MD.

149.32 Solar System Observing Capabilities With The James Webb Space Telescope
Sonneborn, George; Milam, Stefanie N.; Hines, Dean C.; Stansberry, John A.; Hammel, Heidi B.; Lynne, Jonathan I.
1 NASA’s GSFC, Greenbelt, MD. 2 STScI, Baltimore, MD. 3 AURA, Washington, DC. 4 Cornell Univ., Ithaca, NY.

149.33 Providing user guidance for the Micro-Shutter Array Planning Tool for JWST/NIRSpec
Soderblom, David R.; Karakla, Diane M.; Beck, Tracy L.; Curtis, Gary; Shyrokov, Alexander; Peterson, Karla; Blair, William P.; Valenti, Jeff A.
1 STScI, Baltimore, MD.
Contributing teams: STScI NIRSpec team

149.34 Planning JWST/NIRSpec Multi-Object Spectroscopy: Galaxy Kinematics at Redshifts 2-3
Kassin, Susan A.; Beck, Tracy L.; Karakla, Diane M.; Soderblom, David R.
1 Space Telescope Science Center (STScI), Baltimore, MD.

149.35 Algorithms for Planning Multi-Object Spectroscopy Observations with the JWST Near-Infrared Spectrograph
Karakla, Diane M.; Pontoppidan, Klaus; Shyrokov, Alexander; Beck, Tracy L.; Valenti, Jeff A.; Soderblom, David R.; Tumlinson, Jason; Muzerolle, James
1 STScI, Baltimore, MD.

149.36 First Cryo-Vacuum Test of the JWST Integrated Science Instrument Module
Kimble, Randy A.; Antonille, Scott R.; Balzano, Vicki; Comber, Brian J.; Davila, Pamela S.; Drury, Michael D.; Glasse, Alistair; Glazer, Stuart D.; Lundquist, Ray; Mann, Steven D.; McGuffey, Douglas B.; Novo-Gradac, Kevin J.; Penanen, Konstantin; Ramey, Deborah D.; Sullivan, Joseph; Van Campen, Julie; Vila, Maria B.
1 NASA’s GSFC, Greenbelt, MD. 2 Space Telescope Science Institute, Baltimore, MD. 3 Orbital Sciences, Co, Dulles, VA. 4 Sigma Space, Lanham, MD. 5 UK Astronomy Technology Centre, Edinburgh, United Kingdom. 6 Hammers Company, Greenbelt, MD. 7 Stinger Ghaffarian Technologies, Greenbelt, MD. 8 Jet Propulsion Laboratory, Pasadena, CA. 9 Ball Aerospace and Technologies Corporation, Boulder, CO. 10 Com Dev International, Ottawa, ON, Canada.
149.37 The Planning Process for Multi-Object Spectroscopy with the JWST Near-Infrared Spectrograph
Beck, Tracy L.; Karakla, Diane M.; Shyrokov, Alexander; Pontoppidan, Klaus; Soderblom, David R.; Valenti, Jeff A.; Kassin, Susan A.; Gilbert, Karoline; Blair, William P.; Muzerolle, James; Tumlinson, Jason; Keyes, Charles D.; Pavlovsky, Cheryl M.; LeBlanc, Thompson
1Space Telescope Science Institute, Baltimore, MD.

149.38 Imaging Polarimetry With Polarization-Sensitive Focal Planes
Vorobiev, Dmitry; Ninkov, Zoran
1Rochester Institute of Technology, Rochester, NY.

149.39 New and Better H2RG Detectors for the JWST Near Infrared Spectrograph
Rauscher, Bernard J.
1NASA's GSFC, Greenbelt, MD.

149.40 ISS-Lobster
Camp, Jordan; Barthelmy, Scott D.; Petre, Robert; Gehrels, Neil; Marshall, Francis E.; Racusin, Judith L.; Ptak, Andrew
1NASA / Goddard Space Flight Center, Greenbelt, MD.

149.42 H4RG Near-IR Detectors with 10 micron pixels for WFIRST and Space Astrophysics
Kruk, Jeffrey W.; Rauscher, Bernard J.
1NASA - GSFC, Greenbelt, MD.

150 AGN, QSO, Blazars Poster Session III

Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

150.01 Imaging Redshift Estimates for Fermi BL Lacs
Stadnik, Matthew; Romani, Roger W.
1Stanford University, Stanford, CA.

150.02 The XMM-Newton View of Weak Emission-Line Quasars
Stein, Matthew; Shemmer, Ohad; Anderson, Scott F.; Brandt, W. N.; Diamond-Stanic, Aleksandar M.; Fan, Xiaohui; Luo, Bin; Plotkin, Richard; Richards, Gordon T.; Schneider, Donald P.; Strauss, Michael A.; Wu, Jianfeng
1Physics, University of North Texas, Roanoke, TX. 2University of Washington, Seattle, WA. 3The Pennsylvania State University, University Park, PA. 4University of California at San Diego, San Diego, CA. 5University of Arizona, Tucson, AZ. 6University of Michigan, Ann Arbor, MI. 7Drexel University, Philadelphia, PA. 8Princeton University, Princeton, NJ. 9Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

150.03 Bayesian Multiscale Analysis of X-Ray Jet Features in High Redshift Quasars
McKeough, Kathryn; Siemiginowska, Aneta; Kashyap, Vinay; Stein, Nathan
1Carnegie Mellon University, Pittsburgh, PA. 2Harvard- Smithsonian Center for Astrophysics, Boston, MA. 3Harvard University, Boston, MA.

150.04 The Impact of Gamma-ray Halos on the Angular Anisotropy of the Extragalactic Gamma-ray Background
Venters, Tonia M.; Pavlidou, Vasiliki
1Goddard Space Flight Center, Greenbelt, MD. 2University of Crete, Heraklion, Crete, Greece.
150.05 The Largest X-ray Selected Sample of z > 3 AGNs: C-COSMOS + ChaMPS
Kalfountzou, Eleni1,3; Civano, Francesca M.4; Elvis, Martin1; Trichas, Markos2
1Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 2EADS Astrium, Stevenage, United Kingdom. 3University of Hertfordshire, Hatfield, United Kingdom. 4Yale University, New Haven, CT.

150.06 The Study of AGN with an Improved Fermi LAT Event Reconstruction
Perkins, Jeremy1
1NASA/GSFC, Greenbelt, MD.
Contributing teams: The Fermi LAT Collaboration

150.07 Exploring The Quasar Wind Parameter Space With WIND
McDowell, Jonathan C.1; Ursini, Francesco1; Risaliti, Guido2; Elvis, Martin1
1Harvard-Smithsonian CfA, Cambridge, MA. 2INAF-Arcetri, Florence, Italy.

150.08 Fermi’s Greatest Hits - Insights into the Nature of High Energy Blazar Emission
Ojha, Roopesh1,2; Dutka, Michael1; Finke, Justin4; Kadler, Matthias5; D’Ammando, Filippo6
1NASA/GSFC, Greenbelt, MD. 2CRESST/UMBC, Baltimore, MD. 3Catholic University of America, Washington, DC. 4Naval Research Laboratory, Washington, DC. 5University of Wurzburg, Wurzburg, Bavaria, Germany. 6Istituto Nazionale di Astrofisica (INAF), Bologna, Bologna, Italy.
Contributing teams: on behalf of the Fermi-LAT Collaboration

150.09 Microlensing Measurements of the X-ray Continuum Emitting Region of the Gravitational Lens SDSS0924+0219
MacLeod, Chelsea1; Morgan, Christopher W.1; Mosquera, Ana2; Kochanek, Christopher S.2; Tewes, Malte3; Courbin, Frederic4; Meylan, Georges3
1U.S. Naval Academy, Annapolis, MD. 2The Ohio State University, Columbus, OH. 3Ecole Polytechnique Federale de Lausanne (EPFL), Observatoire de Sauverny, Sauverny, Versoix, Switzerland.

150.10 An elusive X-ray iron absorption line in a candidate recoiling supermassive black hole.
Marchesi, Stefano1,4; Civano, Francesca M.1,3; Lanzuisi, Giorgio1,2; Comastri, Andrea5; Costantini, Elisa6; Elvis, Martin3; Mainieri, Vincenzo7; Hickox, Ryan C.1; Jahnke, Knud8; Komossa, Stefanie9; Piconcelli, Enrico10; Vignali, Cristian4; Brusa, Marcella1; Cappelluti, Nico5; Fruscione, Antonella3
1Department of Physics and Astronomy, Dartmouth College, Hanover, NH. 2Institute of Astronomy Astrophysics, National Observatory of Athens, Athens, Greece. 3Smithsonian Astrophysical Observatory, Cambridge, MA. 4Dipartimento di Astronomia Università degli Studi di Bologna, Bologna, Italy. 5INAF-Osservatorio Astronomico di Bologna, Bologna, Italy. 6SRON, Netherlands Institute for Space Research, Utrecht, Netherlands. 7European Southern Observatory, Garching bei Munich, Germany. 8Max Planck Institute for Astronomy, Heidelberg, Germany. 9Max-Planck-Institut fuer Radioastronomie, Bonn, Germany. 10INAF-Osservatorio Astronomico di Roma, Roma, Italy.

Burris, Debra L.1; Jacobs, Jeremy1; Clark, Steven1; Hankins, Matthew1
1Univ. of Central Arkansas, Conway, AR.
150.12 Check This Out: A Minor Merger in Mrk 509?
Fischer, Travis C.; Crenshaw, D. M.; Kraemer, Steven B.; Schmitt, Henrique R.; Storchi-Bergmann, Thaisa; Riffel, Rogemar A.
1 Georgia State University, Atlanta, GA. 2 The Catholic University of America, Washington D.C., DC. 3 Naval Research Laboratory, Washington D.C., DC.
4 Universidade Federal do Rio Grande do Sul, Rio Grande do Sul, Brazil. 5 Universidade Federal Santa Maria, Santa Maria, Brazil.

150.13 WPVS 007: Dramatic Broad Absorption Line Variability in a Narrow-line Seyfert 1
Cooper, Erin M.; Leighly, Karen; Hamann, Frederick W.; Grupe, Dirk; Dietrich, Matthias
1 University of Oklahoma, Norman, OK. 2 University of Florida, Gainesville, FL.
3 Penn State University, University Park, PA. 4 Ohio University, Athens, OH.

150.14 Rehabilitating CIV-based Black Hole Mass Estimates in Quasars
Runnoe, Jessie C.; Brotherton, Michael S.; Shang, Zhaohui
1 The Pennsylvania State University, State College, PA. 2 University of Wyoming, Laramie, WY. 3 Tianjin Normal University, Tianjin, China.

150.15 RCT photometry and HCT spectroscopy of blazar candidates in the Kepler field of view.
Carini, Michael T.; Goyal, Arti; Jose, Jessy
1 Western Kentucky Univ., Bowling Green, KY. 2 Obserwatorium Astronomiczne, Universytet Jagiellonski, Krakow, Poland. 3 Indian institute of Astrophysics, Bangalore, India.

150.16 Multi-wavelength Investigation of Potential Active Galactic Nuclei
Mowry, William; Schmitt, Henrique R.; Secrest, Nathan; Satyapal, Shobita
1 George Mason University, Fairfax, VA. 2 U.S. Naval Research Lab, Washington, DC.

150.17 Breaking the Obscuring Screen: A Resolved Molecular Outflow in a Buried QSO
Rupke, David; Veilleux, Sylvain
1 Rhodes College, Memphis, TN. 2 University of Maryland, College Park, MD.

150.18 BVRI Photometric Standards in Several AGN Fields
Carroll, Carla; Joner, Michael D.
1 Brigham Young University, Provo, UT.

150.19 Measuring the Clustering Around Normal and Dust-Obscured Quasars at z~2 in the Spitzer Extragalactic Representative Volume Survey (SERVS)
Jones, Kristen M.; Lacy, Mark
1 University of Virginia, Charlottesville, VA. 2 National Radio Astronomy Observatory, Charlottesville, VA.

150.20 The Far-IR View of an Ultra-Hard X-ray Selected Sample of AGN
Shimizu, Thomas; Melendez, Marció; Mushotzky, Richard; Barger, Amy J.; Cowie, Lennox L.
1 University of Maryland, College Park, MD. 2 University of Wisconsin, Madison, WI. 3 University of Hawaii, Institute for Astronomy, Honolulu, HI.

150.21 Local Galaxy Density around X-ray AGN and Radio Galaxies in Clusters at Low-z
Klein, Christian; Hart, Quyen N.
1 Regis University, Denver, CO.
150.22 Dust-reddened Quasars in SDSS-III: Trends with Evolution or Orientation?
Herbst, Hanna1; Hamann, Frederick W.1
1. University of Florida, Gainesville, FL.

150.23 The luminosity function of AGN selected in the mid-infrared and its implications for cosmic black hole growth
Lacy, Mark1; Ridgway, Susan E.2; Petric, Andreea3; Sajina, Anna4; Gates, Elinor L.5; Urrutia, Tanya6

150.24 The WISE View on Water Maser Galaxies
Dick, Emily1; Constantin, Anca1; Braatz, James A.2; Corcoran, James1
1. James Madison University, Harrisonburg, VA. 2. NRAO, Charlottesville, VA.

150.25 The AKARI 2.5–5.0 μm Spectral Atlas of 83 Local Type-1 Active Galactic Nuclei
Kim, Dohyeong1; Im, Myungshin1; Kim, Ji Hoon1; Woo, Jong-Hak1; Jun, Hyunsung David1
1. Seoul National University, Seoul, Korea, Republic of.

150.26 IFU Observations of Feedback from Radio-Quiet Quasars at z≈0.5
Liu, Guilin1; Zakamska, Nadia L.1; Greene, Jenny E.2; Nesvadba, Nicole3; Liu, Xin4

150.27 A multi-parameter statistical analysis of the connection between water maser emission and nuclear galactic activity
Christensen, Emil1; Constantin, Anca1; Braatz, James A.2; Roten, Robert3; Nutter, Andrew1
1. James Madison University, Harrisonburg, VA. 2. National Radio Astronomy Observatory, Charlottesville, VA.

150.28 Discovery of Misaligned Radio Emission in Galaxy Cluster Zw Cl 2971
Wallack, Nicole1; Migliore, Christina2; Resnick, Alexander3; White, Tyreke4; Liu, Charles5
1. SUNY University at Albany, Albany, NY. 2. Tenafly High School, Tenafly, NJ.

150.29 Diffuse radio emission around FR II sources as exemplified by 3C452
Wiita, Paul J.1; Sirothia, Sandeep K.2; Gopal-Krishna, ..1

150.30 Decomposition of Host Galaxies of Nearby Type 1 Active Galactic Nuclei
Kim, Minjin1, 2; Ho, Luis C.1; Peng, Chien Y.1; Barth, Aaron J.1; Im, Myungshin1

150.31 The Low-Luminosity End of the Radius-Luminosity Relationship for Active Galactic Nuclei
Bentz, Misty C.1; Denney, Kelly2, 3; Grier, Catherine3; Barth, Aaron J.4; Peterson, Bradley M.3; Vestergaard, Marianne2
1. Georgia State University, Atlanta, GA. 2. Dark Cosmology Center, Niels Bohr Institute, Copenhagen, Denmark. 3. The Ohio State University, Columbus, OH. 4. University of California, Irvine, Irvine, CA.
150.32 HI Spectroscopy of Reverberation-Mapped Active Galactic Nuclei Host Galaxies
Ou-Yang, Benjamin; Bentz, Misty C.; Johnson, Megan C.
1 Georgia State University, Atlanta, GA. 2 NRAO, Green Bank, WV.

150.33 The Black Hole Mass-Bulge Luminosity Relationship for Reverberation-Mapped AGNs in the Near-IR
Nicholas, Emily; Bentz, Misty C.
1 Physics and Astronomy, Georgia State University, Atlanta, GA.

150.34 Alignments of Radio Sources in the GMRT ELAIS N1 Deep Field
Jagannathan, Preshanth; Taylor, Russ
1 University of Calgary, Calgary, AB, Canada. 2 National Radio Astronomy Organization, Socorro, NM.

150.35 Mean and Extreme Radio Properties of Quasars and the Origin of Radio Emission
Richards, Gordon T.; Kratzer, Rachael
1 Drexel Univ., Philadelphia, PA.

150.36 The Complex North Transition Region of Centaurus A
Neff, Susan G.; Eilek, Jean; Owen, Frazer N.
1 NASA’s GSFC, Glenn Dale, MD. 2 New Mexico Tech, Socorro, NM. 3 NRAO, Socorro, NM.
Contributing teams: GALEX Science Team

150.37 The Periodicity of the Tev Blazar Mrk 501
Holden, Marcus; McCombs, Thayne; Bates, Kimberly; McNeff, Mathew; Boizelle, Benjamin; Moody, Joseph
1 Brigham Young University, Provo, UT.
Contributing teams: BYU’s Remote Observatory for Variable Object Research (ROVOR)

150.38 A spectroscopic survey of WISE-selected obscured quasars with SALT
Hickox, Ryan C.; Hainline, Kevin; Myers, Adam D.
1 Dartmouth College, Hanover, NH. 2 University of Wyoming, Laramie, WY.

151 Stellar Atmospheres, Winds Poster Session
Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

151.01 Are the Winds of Young Sun-like Stars Strong or Weak?
Wood, Brian; Mueller, Hans R.; Redfield, Seth
1 Naval Research Laboratory, Washington, DC. 2 Dartmouth College, Hanover, NH. 3 Wesleyan University, Middletown, CT.

151.02 Reinvestigating the Lambda Boo Stars
Cheng, Kwang-Ping; Corbally, Christopher J.; Gray, Richard O.; Murphy, Simon; Neff, James E.; Desai, Abhishek; Newsome, Ian; Steele, Patricia
1 Cal. State Univ., Fullerton, Fullerton, CA. 2 Vatican Observatory, Tucson, AZ. 3 Appalachian State Univ., Boone, NC. 4 The University of Sydney, Sydney, NSW, Australia. 5 College of Charleston, Charleston, SC.

151.03 Analyzing Starspots with TiO bands: Comparing Fits Using Synthetic Spectra to Proxy Stars
O’Neal, Douglas B.; Skivington, Joel
1 Keystone College, La Plume, PA.
151.04 Mapping the interacting winds of Eta Carinae: Changes Across the Apastron
Gull, Theodore R.\textsuperscript{1}; Madura, Thomas\textsuperscript{2,1}; Corcoran, Michael F.\textsuperscript{3,1}; Hamaguchi, Kenji\textsuperscript{4,1}; Teodoro, Mairan\textsuperscript{5,1}
\textsuperscript{1}NASA/GSFC, Ellicott City, MD. \textsuperscript{2}NPP, Oakridge Associates, Greenbelt, MD.
\textsuperscript{3}CRESST, Columbia, MD. \textsuperscript{4}UMBC, Baltimore, MD. \textsuperscript{5}Science w/o Borders/Brazil, Greenbelt, MD.

151.05 Mining the HST ‘Advanced Spectral Library (ASTRAL) - Hot Stars’:
The High Definition UV Spectrum of the Ap Star HR 465
Carpenter, Kenneth G.\textsuperscript{1}; Ayres, Thomas R.\textsuperscript{2}; Nielsen, Krister E.\textsuperscript{3}; Kober, Gladys V.\textsuperscript{3}; Wahlgren, Glenn M.\textsuperscript{3}; Adelman, Saul J.\textsuperscript{4}; Cowley, Charles R.\textsuperscript{5}
\textsuperscript{1}NASA’s GSFC, Greenbelt, MD. \textsuperscript{2}University of Colorado, Boulder, CO. \textsuperscript{3}Catholic University of America, Washington, DC. \textsuperscript{4}The Citadel, Charleston, SC. \textsuperscript{5}University of Michigan, Ann Arbor, MI.

151.06 High-Dispersion IR Spectroscopy of Mira Variables with the Spitzer IRS
Luttermoser, Donald G\textsuperscript{1}; Creech-Eakman, Michelle J.\textsuperscript{2}; Gueth, Tina\textsuperscript{2}
\textsuperscript{1}East Tennessee State Univ., Johnson City, TN. \textsuperscript{2}New Mexico Inst. of Mining and Technology, Socorro, NM.

151.07 Time-Resolved X-ray Spectroscopy of the Massive Binary delta Ori
Nichols, Joy S.\textsuperscript{1}; Naze, Y.\textsuperscript{2}; Corcoran, Michael F.\textsuperscript{3}; Pollock, A.\textsuperscript{4}; Moffat, Anthony F.\textsuperscript{7}; Ignace, R.\textsuperscript{5}; Waldron, Wayne L.\textsuperscript{5}; Evans, Nancy R.\textsuperscript{5}
\textsuperscript{1}Harvard-Smithsonian, CfA, Cambridge, MA. \textsuperscript{2}Universite of Liege, Liege, Belgium. \textsuperscript{3}USRA CRESST, Greenbelt, MD. \textsuperscript{4}ESA XMM-Newton SOC, Madrid, Spain. \textsuperscript{5}East Tennessee State University, Johnson City, TN. \textsuperscript{6}Eureka Scientific, Inc., Oakland, CA. \textsuperscript{7}Universite de Montreal, Montreal, QC, Canada.

151.08 Strong-Flare Rates of Solar-Like Stars in Kepler Cluster NGC 6811
Wright, Paul J.\textsuperscript{1,2}; Saar, Steven H.\textsuperscript{1}; Meibom, Soren\textsuperscript{1}; Kashyap, Vinay\textsuperscript{1}; Drake, Jeremy J.\textsuperscript{1}
\textsuperscript{1}Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. \textsuperscript{2}University of Southampton, Southampton, Hampshire, United Kingdom.

151.09 Eta Carinae’s change of state: First new HST/NUV data since 2010, and the first new FUV since 2004
Martin, John C.\textsuperscript{1}; Mehner, Andrea\textsuperscript{4}; Ishibashi, Kazunori\textsuperscript{3}; Davidson, Kris\textsuperscript{2}; Humphreys, Roberta M.\textsuperscript{2}
\textsuperscript{1}U of Illinois Springfield, Springfield, IL. \textsuperscript{2}University of Minnesota, Minneapolis, MN. \textsuperscript{3}Nagoya University, Nagoya, Japan. \textsuperscript{4}ESO - Chile, Santiago, Chile.

151.10 Measurements of the Stellar Wind Strengths of Planet-Hosting G- and K-Type Stars
Edelman, Eric\textsuperscript{1}; Redfield, Seth\textsuperscript{1}; Wood, Brian\textsuperscript{1}; Linsky, Jeffrey\textsuperscript{2}; Mueller, Hans R.\textsuperscript{4}
\textsuperscript{1}Astronomy Department, Van Vleck Observatory, Wesleyan University, Middletown, CT. \textsuperscript{2}Naval Research Laboratory, Space Science Division, Washington, DC. \textsuperscript{3}University of Colorado and NIST, Boulder, CO. \textsuperscript{4}Department of Physics and Astronomy, Dartmouth College, Hanover, NH.
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<td>151.11</td>
<td>X-ray Emission from Eta Carinae near Periastron in 2009: Origin of the X-ray Minimum</td>
<td>Hamaguchi, Kenji¹,²; Corcoran, Michael F.¹,³; Russell, Christopher M.⁴; Pollock, Andrew M.⁵; Gull, Theodore R.⁶; Teodoro, Mairan⁷; Madura, Thomas¹; Damineli, Augusto⁸; Pittard, Julian M.⁹</td>
<td>¹ NASA’s GSFC, Greenbelt, MD. ² UMBC, Baltimore, MD. ³ USRA, Columbia, MD. ⁴ Hokkai-Gakuen University, Sapporo, Hokkaido, Japan. ⁵ ESA, Madrid, Spain. ⁶ Universidade de Sao Paulo, Sao Paulo, Brazil. ⁷ The University of Leeds, Leeds, United Kingdom.</td>
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<td>151.12</td>
<td>Metallicity Analysis of Planetary Hosts Kepler 37, 62, &amp; 68</td>
<td>Vaz, Zachary¹; Schuler, Simon C.¹</td>
<td>¹ University of Tampa, Tampa, FL.</td>
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<td>151.13</td>
<td>Interplanetary proton flux and solar wind conditions for different solar activities interacting with spacecraft and astronauts in space</td>
<td>Nejat, Cyrus¹</td>
<td>¹ University of Southern California, Los Angeles, CA.</td>
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<td>151.14</td>
<td>The Delta Ori Very Large Project: X-ray Emission and Stellar Variability</td>
<td>Corcoran, Michael F.¹,²; Nichols, Joy S.³; Moffat, Anthony F.⁴; Richardson, Noel⁵; Pollock, A.⁶; Gull, Theodore R.⁷; Hamaguchi, Kenji¹,³; Russell, Christopher M.⁷; Evans, Nancy R.⁸; Owocki, Stanley P.⁹; Waldron, Wayne L.¹⁰; Hoffman, Jennifer L.¹¹; Lomax, Jamie R.¹²; Gayley, Kenneth G.¹³; Oskinova, Lida¹⁴; Hamann, Wolf-Rainer¹⁵; Ipíng, Rosina¹,³; Ignace, Richard¹³; Naze, Y.¹⁵; Leutenegger, Maurice A.¹,³; Hole, Tabetha¹²</td>
<td>¹ USRA, Greenbelt, MD. ² NASA-GSFC, Greenbelt, MD. ³ University of Maryland, Catonsville, MD. ⁴ SAO, Cambridge, MA. ⁵ University of Montreal, Montreal, QC, Canada. ⁶ ESA, Vilscha, Spain. ⁷ Hokkai-Gakuen University, Sapporo, Japan. ⁸ University of Delaware, Newark, DE. ⁹ University of Denver, Denver, CO. ¹⁰ University of Oklahoma, Norman, OK. ¹¹ Eureka Scientific, Oakland, CA. ¹² Weber State University, Ogden, UT. ¹³ East Tennessee State University, Johnson City, TN. ¹⁴ University of Iowa, Iowa City, IA. ¹⁵ University of Liege, Liege, Belgium. ¹⁶ Universitat Potsdam, Potsdam, Germany.</td>
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<td>151.15</td>
<td>Modeling the Dusty Envelope Around AGB Stars</td>
<td>Villaume, Alexa¹; Conroy, Charlie¹</td>
<td>¹ Astronomy &amp; Astrophysics, UCSC, Santa Cruz, CA.</td>
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<td>151.16</td>
<td>The ‘Horns’ of FK Comae and the Complex Structure of its Outer Atmosphere</td>
<td>Saar, Steven H.¹; Ayres, Thomas R.²; Kashyap, Vinay¹</td>
<td>¹ Harvard-Smithsonian, CFA, Cambridge, MA. ² University of Colorado, Boulder, CO.</td>
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<td>151.17</td>
<td>The Atmospheric Response to High Fluxes of Nonthermal Electrons during M Dwarf Flares</td>
<td>Kowalski, Adam¹; Allred, Joel C.¹; Carlsson, Mats²; Hawley, Suzanne L.³; Holman, Gordon D.⁴; Mathioudakis, Mihalis⁵; Osten, Rachel A.⁶; Uitenbroek, Han⁶</td>
<td>¹ NASA-GSFC, Greenbelt, MD. ² University of Oslo, Oslo, Norway. ³ University of Washington, Seattle, WA. ⁴ Queen’s University Belfast, Belfast, United Kingdom. ⁵ Space Telescope Science Institute, Baltimore, MD. ⁶ National Solar Observatory, Sunspot, NM.</td>
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Detection of Thermal Radio Emission from Evolved Solar-Type Stars with the Jansky VLA
Villadsen, Jackie; Hallinan, Gregg; Bourke, Stephen
California Institute of Technology, Pasadena, CA.

152 Stellar Evolution, Stellar Populations Poster Session

Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

152.01 Stellar Populations of 16 Galaxies from the Hubble Space Telescope WFC3/IR Surface Brightness Fluctuation Observations
Lee, Hyun-chul; Le Grice, Victoria; Blakeslee, John P.; Jensen, Joseph B.; Lee, Young-Wook
The University of Texas - Pan American, Edinburg, TX. HIA, Victoria, BC, Canada. UVU, Orem, UT. Yonsei University, Seoul, Korea, Republic of.

152.02 The Massive Star Population in M101
Grammer, Skyler; Humphreys, Roberta M.
University of Minnesota, Minneapolis, MN.

152.03 Profiling Andromeda’s Metal Poor Population
Gregersen, Dylan; Seth, Anil; Dalcanton, Julianne; Williams, Benjamin F.; Dorman, Claire; Guhathakurta, Puragra
University of Utah, Salt Lake City, UT. The University of Washington, Seattle, WA. University of California Santa Cruz, Santa Cruz, CA.

152.04 The Main Sequence Turnoff Age of the Metal Rich Open Cluster NGC 6253
Margaret, Maruschak; Jeffery, Elizabeth
James Madison University, Harrisonburg, VA.

152.05 High Resolution Spectroscopic Measurements of Stars in the Milky Way
Debs, Caroline; Kirby, Evan N.; Guhathakurta, Puragra
University of California, Santa Cruz, Santa Cruz, CA. University of California, Irvine, Irvine, CA.

152.06 The Evolving Mixture of Barium Isotopes in Milky Way Halo Stars
Choudhury, Zareen; Kirby, Evan N.; Guhathakurta, Puragra
University of California, Santa Cruz, Santa Cruz, CA. University of California, Irvine, Irvine, CA. The Harker School, San Jose, CA.

152.07 Stellar Isotopic Abundances in the Milky Way: Insights into the Origin of Carbon and Neutron-Capture Elements
Guo, Michelle; Zhang, Andrew; Kirby, Evan N.; Guhathakurta, Puragra
Irvington High School, Fremont, CA. The Harker School, Fremont, CA.
University of California, Irvine, Irvine, CA. University of California, Santa Cruz, Santa Cruz, CA.

152.08 Fluorine in the Local Thin Disk
Pilachowski, Catherine A.
Indiana University, Bloomington, IN.
152.09 Ages of Solar Neighborhood Stars Using APOGEE
Feuillet, Diane1; Holtzman, Jon A.1; Girardi, Leo2; Allende-Prieto, Carlos4,5; Beers, Timothy C.6; Cunha, Katia M.7; Fabbian, Damian8; Frinchaboy, Peter M.8; Hayden, Michael R.1; Majewski, Steven9
1New Mexico State University, Las Cruces, NM. 2Osservatorio Astronomico di Padova, Padova, Italy. 3Laboratorio Interinstitucional de e-Astronomía, Rio de Janeiro, Brazil. 4Instituto de Astrofísica de Canarias, La Laguna, Tenerife, Spain. 5Departament de Astrofísica, Universidad de La Laguna, La Laguna, Tenerife, Spain. 6National Optical Astronomy Observatory, Tucson, AZ. 7Observatorio Nacional, Rio de Janeiro, Brazil. 8Department of Physics and Astronomy, Texas Christian University, Fort Worth, TX. 9Department of Astronomy, University of Virginia, Charlottesville, VA.

152.10 Carbon Enhanced Stars in the Sloan Digital Sky Survey
Keeling, Chloe1; Wilhelm, Ronald J.1
1University of Kentucky, Lexington, KY.

152.11 Comparison of Frequency of Carbon-Enhanced Metal-Poor Stars in SDSS/SEGUE with Binary Population Synthesis Models
Lee, Young S.1; Suda, Takuma2; Beers, Timothy C.3,4
1New Mexico State University (NMSU), Las Cruces, NM. 2National Astronomical Observatory of Japan (NAOJ), Mitaka, Japan. 3National Optical Astronomy Observatory (NOAO), Tucson, AZ. 4Joint Institute for Nuclear Astrophysics (JINA), East Lansing, MI.
Contributing teams: the SEGUE Collaboration

152.12 Search for Carbon-Rich Asymptotic Giant Branch Stars in Milky Way Globular Clusters
Indahl, Briana1,2; Pessev, Peter3
1University of Wisconsin-Madison, Madison, WI. 2Cerro Tololo Inter-American Observatory, La Serena, Chile. 3Gemini South Observatory, La Serena, Chile.

152.13 They Might Be Giants: Using Kepler Data to Classify the Evolutionary State of Red Giant Stars
Miller, Danielle1; Bensel, Holly2; Donelson, Fred3; Seebode, Sally4; Ciardi, David R.5; Howell, Steve B.6; Da, Rick7; Figueroa, Alejandro1; Gurgurich, Aaron3; Holliday, Cody2; Harrison, Deanna1; Keiser, Emelyn8; Kung, Sandra4; Merickel, Emily3; Quinones, Zuheily1; Stegner, Laura3; Vicente, Sydney3; Wang, Eric4; Warner, Elizabeth1; We, Iris5; Yanai, Kirstie6
1University High School, Orlando, FL. 2St. Mary’s School, Medford, OR. 3Gahanna Lincoln High School, Gahanna, OH. 4San Mateo High School, San Mateo, CA. 5Caltech, Pasadena, CA. 6NASA Ames, Mountain View, CA.

152.14 Characterizing the Protostars in the Herschel Survey of Cygnus-X
Kirk, James1,2; Hora, Joseph L.2; Smith, Howard A.2
1University of Southampton, Southampton, Hampshire, United Kingdom. 2Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.
Contributing teams: Herschel Cygnus-X group

152.15 X-ray Constraints on Magnetic Activity and Star Formation Associated with the Red Supergiant VY CMa
Montez, Rodolfo1; Humphreys, Roberta M.2; Kastner, Joel H.3; Turok, Rebecca L.1
1Vanderbilt University, Nashville, TN. 2University of Minnesota, Minneapolis, MN. 3Rochester Institute of Technology, Rochester, NY.
152.16 Study of the Impact of Stellar Multiplicity on Planet Occurrence and Properties
Thorp, Rachel; Desert, Jean-Michel; Baranec, Christoph; Law, Nicholas M.; Johnson, John A.; Riddle, Reed L.

California Institute of Technology, Pasadena, CA. University of Colorado Boulder, Boulder, CO. Institute for Astronomy, University of Hawaii, Hilo, HI. Dunlap Institute for Astronomy & Astrophysics, University of Toronto, Toronto, ON, Canada. Harvard University, Cambridge, MA.

152.17 Finding the Elusive Substellar Members of Young Moving Groups
Aller, Kimberly M.; Liu, Michael C.; Magnier, Eugene A.

University of Hawaii, Manoa, Honolulu, HI.

152.18 Population III Stars: Evolution and Explosions
Lawlor, Timothy M.; MacDonald, James; Young, Timothy

Penn State University - Brandywine, Media, PA. University of Delaware, Newark, DE. University of North Dakota, Grand Forks, ND.

153 Pulsars & Neutron stars Poster session
Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

153.01 Searching for Millisecond Pulsars in Fermi Unidentified Gamma-Ray Sources
Cromartie, H. Thankful; Camilo, Fernando M.

University of North Carolina at Chapel Hill, Chapel Hill, NC. Arecibo Observatory, Arecibo, Puerto Rico.

153.02 The Second Fermi Large Area Telescope Catalog of Gamma-ray Pulsars
Johnson, Tyrel J.; Smith, David A.; Kerr, Matthew; den Hartog, Peter R.


153.03 Bowshock Hunting: an All Sky Survey of Fermi-Pulsars to Catalogue H? Bowshocks
Brownsberger, Sasha R.; Romani, Roger W.

Stanford University, Stanford, CA.

153.04 A Case Study of Three NANOGrav Millisecond Pulsars
Jones, Megan; McLaughlin, Maura; Levin, Lina

West Virginia University, Morgantown, WV. Contributing teams: NANOGrav Collaboration Timing Group

153.05 Creation of a galactic millisecond pulsar database
McMann, Natasha; Lorimer, Duncan

West Virginia University, Morgantown, WV.

153.06 Population Synthesis of Radio & Gamma-Ray Millisecond Pulsars
Frederick, Sara; Gonthier, Peter L.; Harding, Alice K.

University of Rochester, Rochester, NY. Hope College, Holland, MI. NASA Goddard Space Flight Center, Greenbelt, MD.

153.07 Population Synthesis of Double Neutron Stars
Tenney, Craig; Lorimer, Duncan; Bagchi, Manjari

West Virginia University, Morgantown, WV.
153.08 Timing PSR J0453+1559: A likely asymmetric double neutron star system
Martinez, Jose; Stovall, Kevin; Freire, Paulo; Deneva, Julia S.; Jenet, Fredrick; McLaughlin, Maura
1 University of Texas at Brownsville, Brownsville, TX. 2 University of New Mexico, Albuquerque, NM. 3 Max Planck Institute for Radio Astronomy, Bonn, North Rhine-Westphalia, Germany. 4 National Astronomy and Ionosphere Center, Arecibo, Puerto Rico. 5 West Virginia University, Morgantown, WV.

153.09 A Bayesian Approach to Pulsar Timing
Vigeland, Sarah; Vallisneri, Michele
1 Jet Propulsion Laboratory, Pasadena, CA.

153.10 An Analysis of Models of Black Hole – Neutron Star Binary Systems
Liska, April; Lorimer, Duncan; Bates, Samuel; Dominik, Michal; Stovall, Kevin; Jenet, Fredrick; Benaquista, Matthew; Belczynski, Chris
1 West Virginia University, Morgantown, WV. 2 Astronomical Observatory, University of Warsaw, Warsaw, Poland. 3 University of Texas-San Antonio, San Antonio, TX. 4 Department of Physics and Astronomy and Center for Advanced Radio Astronomy, University of Texas at Brownsville, Brownsville, TX.

153.11 2003 VLA Archival Data Search for Fast Radio Bursts
Vatchinsky, Adrian K.
1 New York University, Bayport, NY. 2 NASA JPL, Pasadena, CA.
Contributing teams: Sarah Burke-Spolaor, Joseph Lazio

153.12 A Search for Fast Radio Transients with LWA-1
Akukwe, Bernadine; Gough, Jonathan; Cutchin, Sean E.; Kavic, Michael; Simonetti, John H.; Bear, Brandon; Tsai, Jr-Wei; Kassim, Namir E.
1 Long Island University, Brooklyn, NY. 2 National Research Council, Washington, DC. 3 Naval Research Laboratory, Washington, DC. 4 Virginia Tech, Blacksburg, VA.

153.13 New Results from the AO327 Drift Pulsar Survey
Deneva, Julia S.; Stovall, Kevin; McLaughlin, Maura; Bates, Samuel; Freire, Paulo; Martinez, Jose; Jenet, Fredrick; Bagchi, Manjari
1 Naval Research Laboratory, Washington, DC. 2 University of New Mexico, Albuquerque, NM. 3 West Virginia University, Morgantown, WV. 4 University of Texas at Brownsville, Brownsville, TX. 5 Max Planck Institute for Radioastronomy, Bonn, Germany.

153.14 Pulsar Search Results from the Arecibo Remote Command Center
Garcia, Alejandro; Stovall, Kevin; Banaszak, Shawn A.; Becker, Alison; Biwer, Christopher M.; Boehler, Keith; Caballero, Keesi; Christy, Brian; Cohen, Stephanie; Crawford, Fronefield; Cuellar, Andres; Danford, Andrew; Dartez, Louis P.; Day, David; Flanagan, Joseph D.; Gonzalez, Adolfo; Gustavson, Kathy; Handzo, Emma; Hinojosa, Jesus; Jenet, Fredrick; Kaplan, David L.; Kayal, Khalid; Lommen, Andrea N.; Longoria, Chasity; Lopez, Janine; Lunsford, Grady; Mahany, Nicolas; Martinez, Jose; Mata, Alberto; Miller, Andy; Murray, James; Pankow, Chris; Ramirez, Ivan; Reser, Jackie; Rojas, Pablo; Rohr, Matthew; Rolph, Kristina; Rose, Caitlin; Rudnik, Philip; Siemens, Xavier; Tellez, Andrea; Tillman, Nicholas; Walker, Arielle; Wells, Bradley L.; Zemeno, Adrienne
1 University of Texas at Brownsville, Brownsville, TX. 2 University of Wisconsin-Milwaukee, Milwaukee, WI. 3 Franklin and Marshall College, Lancaster, PA. 4 University of New Mexico, Albuquerque, NM. 5 Nicolet High School, Glendale, WI.
Contributing teams: GBNCC Consortium, PALFA Consortium, GBTDrift Consortium, AO327 Consortium
MONDAY POSTER SESSIONS

153.15 I(don’t)C 10: An Attempt to Find Pulsars in the Starburst Galaxy IC 10
Al Noori, Hind¹; Roberts, Mallory¹, ²; Champion, David³; McLaughlin, Maura⁴; Ransom, Scott M.⁵; Ray, Paul S.⁶
¹ New York University Abu Dhabi, Abu Dhabi, United Arab Emirates. ² Eureka Scientific, Oakland, CA. ³ Max-Planck-Institut für Radioastronomie, Bonn, Germany. ⁴ West Virginia University, Morgantown, WV. ⁵ National Radio Astronomy Observatory, Charlottesville, VA. ⁶ Naval Research Lab, Washington D.C, DC.

153.16 Developing Precision Pulsar Timing Capability for the DSN
Majid, Walid A.; Kuiper, T. B.; Lazio, Joseph; Monroe, Ryan; Preston, Robert A.; Spolaor, Sarah; Teitelbaum, Lawrence; Trinh, Joseph
¹ JPL/Caltech, Pasadena, CA. ² Caltech, Pasadena, CA.

153.17 Recent Results on Pulse Jitter and Other Single Pulse Properties of Pulsar J1713+0747
Rosenblum, Jason; Chatterjee, Shami; Cordes, James M.; Crawford, Fronefield; Dolch, Timothy; Lam, Michael T.; McLaughlin, Maura; Palliyaguru, Nipuni; Stonebring, Dan
¹ Oberlin College, Oberlin, OH. ² Cornell University, Ithaca, NY. ³ West Virginia University, Morgantown, WV. ⁴ Franklin and Marshall College, Lancaster, PA.

153.18 Rotation Measures of Globular Cluster Pulsars as a Unique Probe of the Galactic Magnetic Field
Ho, Anna; Ransom, Scott M.; Demorest, Paul
¹ MIT, Cambridge, MA. ² National Radio Astronomy Observatory, Charlottesville, VA.

153.19 Observations of Giant Pulses from Pulsar B0950+08 using LWA1
Tsai, Jr-Wei; Simonetti, John H.; Kavic, Michael; Cutchin, Sean E.; Kassim, Namir E.; Gough, Jonathan; Akukwe, Bernadine; Bear, Brandon
¹ Virginia Tech, Blacksburg, VA. ² Long Island University, Brooklyn, NY. ³ Naval Research Laboratory, Washington, DC. ⁴ National Research Council, Washington, DC.

153.20 Exceptional Flares from the Crab Nebula in the Fermi Large Area Telescope
Hays, Elizabeth A.
¹ NASA/GSFC, Greenbelt, MD.
Contribution teams: The Fermi LAT Collaboration

153.21 Chandra and Suzaku observations of two galactic TeV sources
Hare, Jeremy; Rangelov, Blagoy; Posselt, Bettina; Kargaltsev, Oleg; Pavlov, George G.
¹ The George Washington University, Washington D.C., DC. ² Pennsylvania State University, University Park, PA.

153.22 Gamma-ray and X-ray Properties of Pulsar Wind Nebulae and Unidentified Galactic TeV Sources
Rangelov, Blagoy; Kargaltsev, Oleg; Pavlov, George G.
¹ George Washington University, Washington, DC. ² Penn State University, University Park, PA.

153.23 Can X-ray Observations Provide Accurate Pulsar Distances?
Roberts, Mallory; Bognar, Kristof; Chatterjee, Shami
¹ Eureka Scientific, Oakland, CA. ² New York University Abu Dhabi, Abu Dhabi, United Arab Emirates. ³ Cornell University, Ithaca, NY.
153.24 X-Ray Observations of PSR J0337+1715
Spiewak, Renée1; Kaplan, David L.1; Stovall, Kevin2; Lorimer, Duncan3; McLaughlin, Maura3; Stairs, Ingrid H.4; Lynch, Ryan5; Ransom, Scott M.6; Hessels, Jason7; Archibald, Anne7
Contributing teams: The GBT Driftscan Collaboration

153.25 Orbital Phase-Resolved X-ray Observations of the Black-Widow Pulsar J1446-4701
Arumugasamy, Prakash1; Pavlov, George G.1
1. Pennsylvania State University, University Park, PA.

153.26 A Model for the Electrically Charged Current Sheet of a Pulsar
DeVore, C. R.1; Antiochos, Spiro K.1; Black, Carrie E.2,1; Harding, Alice K.1; Kalapotharakos, Constantinos3,1; Kazanas, Demosthenes1; Timokhin, Andrey4,1

153.27 Kinetic Simulations of the Electrically Charged Current Sheet of a Pulsar
Black, Carrie1,2; Antiochos, Spiro K.2; DeVore, C. R.2; Harding, Alice K.2; Kalapotharakos, Constantinos3,1; Kazanas, Demosthenes1; Timokhin, Andrey4,2
1. Catholic University of America, Greenbelt, MD. 2. NASA/GSFC, Greenbelt, MD. 3. UMd, College Park, MD. 4. ORAU, Greenbelt, MD.

153.28 Deep Chandra observations of pulsar tails: PSR B0355+54
Klingler, Noel1; Rangelov, Blagoy1; Kargaltsev, Oleg1; Pavlov, George G.2; Romani, Roger W.3; Slane, Patrick O.4
Contributing teams: The XVP PWN Collaboration

153.29 Investigating Variability of Quiescent Neutron Stars in the Globular Clusters NGC 6440 and Terzan 5
Walsh, Ashley1; Cackett, Edward1
1. Wayne State University, Detroit, MI.

153.30 Is SNR G12.8-0.0 Really Associated with Star Forming Region W33?
Dahal, Sumit1; Gelfand, Joseph1
1. New York University Abu Dhabi, Abu Dhabi, United Arab Emirates.

154 Novae, Cataclysmic Variables, Evolved Stars
Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

154.01 The 100 year DASCH Transient Search
Miller, George F.1; Grindlay, Jonathan E.1; Tang, Sumin2; Los, Edward1
154.02 Mining the Stony Brook/SMARTS Atlas of (mostly) Southern Novae: Photometric Studies of Dust Formation in Novae
Walter, Frederick M.; Fernandez, Davin
Stony Brook University, Stony Brook, NY.

154.03 The Search for Cataclysmic Variables using Pan-STARRS1
Jadhav, Yashashree; Deacon, Niall; Magnier, Eugene A.; Hoard, D. W.; Huber, Mark
Ohio University, Athens, Ohio, USA, OH. Max Planck Institute for Astronomy, Heidelberg, Baden-Württemberg, Germany. University of Hawaii, Honolulu, HI. Eureka Scientific, Inc., Oakland, CA.

154.04 The Search for Cataclysmic Variables in Dense Globular Clusters
Perez, Lucia; Lewis, Megan
American Museum of Natural History, New York, NY.

154.05 Nova Delphini 2013: Backyard Analysis of a Classical Nova
Reid, Piper
Austin, TX.

154.06 Development of the H? profile in Nova Del 2013
Storrs, Alex; Mahmoudian, Tina
Ohio University, Athens, Ohio, USA, OH.

154.07 The Old Nova V603 Aquila: A Far Ultraviolet Synthetic Spectral Analysis using its New Hubble FGS Parallax
Sion, Edward M.; Bisol, Alexandra C.; Godon, Patrick
Villanova University, Villanova, PA.

154.08 Modeling the Light Curve of the Classical Nova v723 Cas
Lane, Ryan; Hamilton, Catrina M.
Dickinson College, Carlisle, PA.

154.09 Identification of Recurrent Novae in M31
Shafter, Allen W.; Rector, Travis A.; Schweizer, Francois; Bryan, James
San Diego State University, San Diego, CA. University of Alaska, Anchorage, AK. Carnegie Observatories, Pasadena, CA. McDonald Observatory, Austin, TX.

154.10 Identifying and Quantifying Recurrent Novae Masquerading as Classical Novae
Pagnotta, Ashley; Schaefer, Bradley E.
American Museum of Natural History, New York, NY. Louisiana State University, Baton Rouge, LA.

154.11 Evidence for non-thermal radio emission from a classical nova - V1723 Aql
Zheng, Yong; Sokoloski, Jennifer L.; Rupen, Michael P.; Weston, Jennifer; Chomiuk, Laura; Mioduszewski, Amy J.; Mukai, Koji; Krauss, Miriam I.; Roy, Nirupam; Nelson, Thomas
Astronomy Department, Columbia University, New York, NY. National Radio Astronomy Observatory, Socorro, NM. Department of Physics and Astronomy, Michigan State University, East Lansing, MI. GRESST and X-ray Astrophysics Laboratory, Greenbelt, MD. Department of Physics, University of Maryland, Baltimore, MD. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN.
154.12 Optical Observations of the Cataclysmic Variable FL Ceti, Evidence for a Decrease in Orbital Period
Gomez, Sebastian; Mason, Paul A.; Robinson, Edward L.
1 University of Texas-El Paso, El Paso, TX. 2 The University of Texas at Austin, Austin, TX.

154.13 The High and Low Accretion States of the Eclipsing Polar LSQ 1725-64
Fuchs, Joshua T.; Dunlap, Bart H.; Barlow, Brad; O’Donoghue, Darragh; Clemens, J. Christopher
1 University of North Carolina at Chapel Hill, Chapel Hill, NC. 2 High Point University, High Point, NC. 3 South African Astronomical Observatory, Observatory, 7935, South Africa. 4 The Southern African Large Telescope, Observatory, 7935, South Africa.

154.14 Near-Infrared Photometry of Low Accretion Rate Polars
Smith, Lois
1 University of Michigan, Ann Arbor, MI.

154.15 Optical Photometry of BY Cam Modeled Using a Multipolar Magnetic Field Structure
Morales, John; Mason, Paul A.; Zhilkin, Andrey; Bisikalo, Dmitry V.; Robinson, Edward L.
1 University of Texas at El Paso, El Paso, TX. 2 New Mexico State University, Las Cruces, NM. 3 Institute for Astronomy, Russian Academy of Sciences, Moscow, Russian Federation. 4 University of Texas at Austin, Austin, TX.

154.16 The Second Eclipsing AM CVn Star
Levitan, David B.; Groot, Paul J.; Kupfer, Thomas; Margon, Bruce H.; Prince, Thomas A.; Hallinan, Gregg; Harding, Leon K.; Kyne, Gillian; Rutten, René G.
1 California Institute of Technology, Pasadena, CA. 2 Radboud University, Nijmegen, Netherlands. 3 University of California, Santa Cruz, CA. 4 National University of Ireland, Galway, Ireland. 5 GRANTECAN S.A., La Palma, Spain.

Contributing teams: Palomar Transient Factory Collaboration

154.17 Sakurai’s Object Evolving to Higher Temperature
Hinkle, Kenneth H.; Joyce, Richard R.
1 NOAO, Tucson, AZ.

154.18 Using Light Echoes to Map the Three-Dimensional Dust Structures Around V838 Monocerotis
Vogt, Frédéric P.A.; Bond, Howard E.; Cracraft, Misty M.; Sparks, William B.; Corradi, Romano L.M.; Craine, Lisa; Dopita, Michael A.; Henden, Arne A.; Levay, Zoltan G.; Munari, Ulisse; Panagia, Nino; Starrfield, Sumner; Segerman, Ben; Sutherland, Ralph; Wagner, R. Mark; White, Richard L.
1 Research School of Astronomy and Astrophysics, Australian National University, Weston Creek, ACT, Australia. 2 Johns Hopkins University, Baltimore, MD. 3 Space Telescope Science Institute, Baltimore, MD. 4 Pennsylvania State University, University Park, PA. 5 Instituto de Astrofísica de Canarias, La Laguna, Spain. 6 South African Astronomical Observatory, Cape Town, South Africa.
7 King Abdulaziz University, Jeddah, Saudi Arabia. 8 AAVSO, Cambridge, MA. 9 Universita di Padova, Padova, Italy. 10 Arizona State University, Tempe, AZ. 11 Goucher College, Baltimore, MD. 12 University of Arizona, Tucson, AZ.
154.19 Imaging Polarimetry of the Yellow Hypergiant IRC+10420 at 2.2 µm with MMTPOL
Shenoy, Dinesh1; Jones, Terry J.1; Packham, Christopher C.2; Lopez-Rodriguez, Enrique3; Warner, Craig4; Krejny, Megan M.5; DeWahl, Kathleen1
1 MN Institute for Astrophysics, University of Minnesota, Minneapolis, MN.
2 University of Texas - San Antonio, San Antonio, TX. 3 University of Florida - Gainsville, Gainsville, FL.

154.20 A Far Ultraviolet Spectroscopic Analysis of the Hot Components in Six S-Type Symbiotic Variables
Kolobow, Craig1; Sion, Edward M.1; Godon, Patrick1; Sabra, Bassem2; Mikolajewska, Joanna3
1 Villanova University, Villanova, PA. 2 Notre Dame University, Louaize, Lebanon.
3 Nicholas Copernicus Astronomical Center, Warsaw, Poland.

154.21 FUV, UV, and Optical Observations of the He-sdO Star BD+39 3226
Chayer, Pierre1; Green, Elizabeth M.2; Fontaine, Gilles3
1 Space Telescope Science Institute, Baltimore, MD. 2 Steward Observatory, Tucson, AZ. 3 University of Montreal, Montreal, QC, Canada.

154.22 Does Episodic Mass Loss Dominate the Evolution of Massive Stars?
Khan, Rubab M.3
1 Ohio State University, Columbus, OH.

154.23 The Role of the Magnetorotational Instability in the Late Stages of Stellar Evolution
Wheeler, J. C.1; Kagan, Daniel2; Chatzopoulos, Emmanouil3
1 The University of Texas at Austin, Austin, TX. 2 University of Tel Aviv, Tel Aviv, Israel. 3 University of Chicago, Chicago, IL.

154.24 Polarization of circumstellar bow shocks due to electron scattering
Shrestha, Manisha1; Hoffman, Jennifer L.1; Neilson, Hilding2; Ignace, Richard2
1 University of Denver, Denver, CO. 2 East Tennessee State University, Johnson City, TN.

154.25 The Morphology and Uniformity of Circumstellar OH and H2O Maser Shells Surrounding OH/IR Stars
Felli, Derek1; Migenes, Victor1
1 BYU, Springville, UT.

154.26 VISION: Next Generation Beam Combiner for the Navy Precision Optical Interferometer
Garcia, Eugenio1,2; van Belle, Gerard2; Muterspaugh, Matthew W.3; Swihart, Samuel4
1 Vanderbilt University, Nashville, TN. 2 Lowell Observatory, Flagstaff, AZ. 3 Tennessee State University, Nashville, TN. 4 University of Michigan, Ann Arbor, MI.

154.27 110-day Spectral Record of the Classical Nova Delphini 2013
Wiethoff, William1; Mooers, Howard D.2; Habig, Alec T.1
1 Earth and Environmental Sciences, University of Minnesota, Duluth, MN.
154.28 The Radio-Emitting Ejecta from Classical Nova V1723 Aql
Weston, Jennifer; Sokoloski, Jennifer L.; Zheng, Yong; Chomiuk, Laura; Mioduszewski, Amy J.; Mukai, Koji; Rupen, Michael P.; Krauss, Miriam I.; Roy, Nirupam; Nelson, Thomas


155 Binary Stellar Systems, X-ray Binaries

Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

155.01 The Cygnus OB2 radial velocity survey: Solutions of four more systems
Burke, Jamie; Kobulnicky, Henry A.; Dale, Daniel A.; Rolan, Emily; Lester, Katie V.; Keller, Erica; Chapman, James E.; Topel, Eric


155.02 Massive OB binary star characterization in the Cygnus OB2 association
Chapman, James E.; Burke, Jamison F.; Keller, Erica; Lester, Katie V.; Rolan, Emily; Topel, Eric; Lundquist, Michael J.; Brotherton, Michael S.; Kobulnicky, Henry A.; Dale, Daniel A.


155.03 The Cygnus OB2 radial velocity survey: Discovery of three new single-lined massive binary systems
Keller, Erica; Burke, Jamison F.; Chapman, James E.; Lester, Katie V.; Rolan, Emily; Topel, Eric; Lundquist, Michael J.; Brotherton, Michael S.; Dale, Daniel A.; Kobulnicky, Henry A.


155.04 The Cygnus OB2 radial velocity survey: Three new massive binaries MT216, MT234, MT485
Lester, Kathryn V.; Burke, Jamison F.; Chapman, James E.; Keller, Erica; Rolan, Emily; Topel, Eric; Lundquist, Michael J.; Brotherton, Michael S.; Dale, Daniel A.; Kobulnicky, Henry A.

155.05 The Cygnus OB2 Radial Velocity Survey: A Study of Six Additional Massive Systems
Rolen, Emily¹,²; Burke, Jamison F.¹,³; Chapman, James E.¹,⁴; Keller, Erica¹,⁵; Lester, Katie V.¹,⁶; Topel, Eric¹,⁷; Lundquist, Michael J.¹; Brotherton, Michael S.¹; Dale, Daniel A.¹; Kobulnicky, Henry A.¹
¹University of Wyoming, Laramie, WY. ²Vanderbilt University, Nashville, TN. ³Swarthmore College, Swarthmore, PA. ⁴Massachusetts College of Liberal Arts, North Adams, MA. ⁵Mount Holyoke College, South Hadley, MA. ⁶Lehigh University, Bethlehem, PA. ⁷St. Olaf College, Northfield, MN.

155.06 The Cygnus OB2 Radial Velocity Survey: MT378, MT601, MT268, and MT646
Topel, Eric¹; Burke, Jamison F.¹,³; Chapman, James E.¹,⁴; Keller, Erica¹,⁵; Lester, Katie V.¹,⁶; Rolen, Emily¹,⁷; Lundquist, Michael J.¹; Brotherton, Michael S.¹; Dale, Daniel A.¹; Kobulnicky, Henry A.¹
¹University of Wyoming, Laramie, WY. ²Vanderbilt University, Nashville, TN. ³Swarthmore College, Swarthmore, PA. ⁴Massachusetts College of Liberal Arts, North Adams, MA. ⁵Mount Holyoke College, South Hadley, MA. ⁶Lehigh University, Bethlehem, PA. ⁷St. Olaf College, Northfield, MN.

155.07 Radial Velocity Monitoring of Composite-Spectra Hot Subdwarf Stars with the HET
Barlow, Brad¹; Wade, Richard A.¹; Liss, Sandra³
¹High Point University, High Point, NC. ²Pennsylvania State University, University Park, PA. ³University of Virginia, Charlottesville, VA.

155.08 Exploring Binary Populations in Open Clusters
Thompson, Benjamin A.¹; Frinchaboy, Peter M.¹; Kinemuchi, Karen²; Sarajedini, Ata³
¹Texas Christian University, Fort Worth, TX. ²Apache Point Obs. / New Mexico State Uni., Las Cruces, NM. ³University of Florida, Gainesville, FL.

155.09 Period Discovery and Light Curve Analysis of the Young 25 Ori Association Eclipsing Binary GSC 118-199
Bradstreet, David H.¹; Sanders, Steven J.¹; Regi, Andrew¹
¹Eastern Univ., Saint Davids, PA.

155.10 Light Curve Analyses of the Short Period, Totally Eclipsing Binaries V449 & V463 And
Okimoto, Jensen¹; Schwartz, William H.¹; Sanders, Steven J.¹; Bradstreet, David H.¹
¹Eastern University, St. Davids, PA.

155.11 SARA South Observations of the W U Ma Pre-Contact Binary, ZZ Eridani and its Near-Brown Dwarf Companion
Faulkner, Danny R.¹; Clark, Jeremy²; Samec, Ronald G.²; Hill, Robert L.²; Kring, James³; Flaaten, Daniel³; Van Hamme, Walter V.³
¹University of South Carolina Lancaster, Lancaster, SC. ²BobJones University, Greenville, SC. ³Florida International University, Miami, FL.

155.12 V530 Andromedae: A Totally Eclipsing Near-Contact Solar Type Binary
Samec, Ronald G.¹; Kring, James¹; Flaaten, Daniel¹; Faulkner, Danny R.²; Van Hamme, Walter V.³
¹Bob Jones Univ., Greenville, SC. ²University of South Carolina, Lancaster, Lancaster, SC. ³Florida International University, Miami, FL.
155.13 Position angle and separation of binary stars selected from the Washington Double Star Catalog
Muller, Rafael J.1; Cersosimo, Juan C.1; Franco, Efremir1; Rodriguez, Roberto A.1; Diaz Rodriguez, Mariangelly1; Rosario, Marialis2; Nieves, Yamil3; Torres, Brian1; Rodriguez, Julymar1; Vergara, Nelson1
1Univ. of Puerto Rico, Humacao, Humacao, Puerto Rico.

155.14 Separated Fringe Packet Binary Star Astrometry at the CHARA Array - An Update
Ten Brummelaar, Theo1; Farrington, Christopher D.1; Mason, Brian D.2; Roberts, Lewis C.3; Turner, Nils H.1
1Georgia State Univ., Mount Wilson, CA. 2USNO, Washington, DC. 3JPL/NASA, Pasadena, CA.

155.15 Wide Binaries in the Kepler Field: Using Rotation Periods to Constrain Gyrochronology Models and Planetary Occurrence Rates
Weisenburger, Kolby L.1; West, Andrew A.1; Janes, Kenneth1; Dhital, Saurav2
1Boston University, Boston, MA. 2Embry-Riddle Aeronautical University, Daytona Beach, FL.

155.16 Masses and Radii of Low-Mass Companions in Short Period Eclipsing Binary Systems Selected from STEREO Data
Tsvetanov, Zlatan I.1; Markov, Harry2; Belcheva, Maya2; Iliev, Ilian2; Stateva, Ivanka2
1Johns Hopkins University, Baltimore, MD. 2Institute of Astronomy, Sofia, Bulgaria.

155.17 Revealing Imposters: A Target Pixel View of Eclipsing Binary False Positives
Abdul-Masih, Michael1; Matijevic, Gal1; Prsa, Andrej1
1Villanova University, Villanova, PA.

155.18 Beyond Binarity: Spots, Pulsations, and Triple Systems
Johnston, Cole1; Prsa, Andrej1
1Villanova University, Villanova, PA.

155.19 Inferred Eccentricity and Period Distributions of Kepler Eclipsing Binaries
Prsa, Andrej1; Matijevic, Gal1
1Villanova University, Villanova, PA.

155.20 A Triple Eclipsing System as a Test Case for Close Binary Formation Through Kozai Cycles
Conroy, Kyle E.1,2; Prsa, Andrej2; Stassun, Keivan1,3
1Vanderbilt University, Nashville, TN. 2Villanova University, Villanova, PA. 3Fisk University, Nashville, TN.

155.21 Analysis of Refined Parameters of the Eclipsing Hierarchical Triple Stellar System KOI-126
Earl, Nicholas M.1; Orosz, Jerome A.1; Welsh, William F.1
1San Diego State University, San Diego, CA.

155.22 Characterizing the Eclipsing Binary KOI 1120
Gonzales, Alexandria1; Swift, Jonathan1; Shporer, Avi1,5; Sanchis Ojeda, Roberto1; Johnson, John A.4
1California Institute of Technology, Pasadena, CA. 2Scripps College, Claremont, CA. 3Massachusetts Institute of Technology, Cambridge, MA. 4Harvard University, Cambridge, MA. 5Jet Propulsion Laboratory, Pasadena, CA.
155.23 Accurate Parameters of Two Bright Eclipsing Binaries with Potential for Asteroseismology
Sharp, Haley¹; Orosz, Jerome A.¹; Welsh, William F.¹; Stevick, Justin¹; Pepper, Joshua³; Bieryla, Allyson³; Latham, David W.²; Collins, Karen A.⁴; Kielkopf, John F.⁵; Jensen, Eric L.²; Reed, Phillip A.⁶
¹San Diego State University, San Diego, CA. ²Center of Astrophysics, Cambridge, MA. ³Lehigh University, Bethlehem, PA. ⁴University of Louisville, Louisville, KY. ⁵Swarthmore College, Swarthmore, PA. ⁶Kutztown University, Kutztown, PA.

155.24 Mass Transfer and Tidal Dynamics in White Dwarf Binary Systems
Gerber, Jeffrey¹; Fuller, Jim²
¹Appalachian State University, Boone, NC. ²California Institute of Technology, Pasadena, CA.

155.25 A Physical Mechanism for State Transitions in Black Hole X-ray Binaries
Salvesen, Greg¹; Nixon, Chris²
¹Astrophysical and Planetary Sciences, University of Colorado at Boulder, Boulder, CO. ²JILA, Boulder, CO.

155.26 Constraints on decreases in Eta Carinae’s mass loss from 3D SPH simulations of its binary colliding winds
Madura, Thomas¹,²; Gull, Theodore R.³; Okazaki, Atsuo T.³; Russell, Christopher M.³; Owoki, Stanley P.; Groh, Jose H.; Corcoran, Michael F.⁶;⁷; Hamaguchi, Kenji²; Teodoro, Mairan⁸
¹Oak Ridge Associated Universities (ORAU), Oak Ridge, TN. ²Astrophysics Science Division, Code 667, NASA GSFC, Greenbelt, MD. ³Hokkai-Gakuen University, Sapporo, Hokkaido, Japan. ⁴University of Delaware, Newark, DE. ⁵Geneva Observatory, Geneva, Sauverny, Switzerland. ⁶CREST and X-ray Astrophysics Lab, NASA GSFC, Greenbelt, MD. ⁷Universities Space Research Association, Columbia, MD. ⁸Department of Physics, University of Maryland, Baltimore County, Baltimore, MD. ⁹CNpq/Science without Borders Fellow, São Paulo, São Paulo, Brazil.

155.27 Constraints on Common Envelope Magnetic Fields from Observations of Jets in Planetary Nebulae
De Marco, Orsola¹; Tocknell, James¹; Wardle, M.¹
¹Macquarie University, Sydney, NSW, Australia.

155.28 Hydrodynamic Simulations of AGB Binaries in Eccentric Orbits
Staff, Jan E.¹; De Marco, Orsola¹; Galaviz, Pablo¹; Macdonald, Daniel¹
¹Macquarie University, Sydney, NSW, Australia.

155.29 Constraints on Inspiralling Binaries from First LWA Data
Papadopoulos, Joanna¹; Gough, Jonathan²; Cutchin, Sean E.³,⁴; Kavic, Michael¹; Simonetti, John H.³; Akukwe, Bernardine³; Bear, Brandon³; Tsai, Jr-Wei³; Kassim, Namir E.³
¹The College of New Jersey, Ewing, NJ. ²Long Island University, Brooklyn, NY. ³National Research Council, Washington, DC. ⁴Naval Research Laboratory, Washington, DC. ⁵Virginia Tech, Blacksburg, VA.

155.30 The Kozai Mechanism and Black Hole Binaries in Galactic Centers
VanLandingham, John¹; Miller, M. C.¹; Richardson, Derek C.¹; Hamilton, Douglas P.¹
¹University of Maryland, College Park, MD.
155.31 Disk-jet coupling in the Galactic black hole X-ray binary MAXI J1836-194
Russell, Thomas

ICRAR - Curtin University, Perth, WA, Australia.

155.32 An Optical Survey for Black Holes in the Kepler Field
Orosz, Jerome A.; Welsh, William F.; Windmiller, Gur; Short, Donald R.
San Diego State Univ., San Diego, CA.

155.33 Examining XMM Observations in the Galactic Bulge Survey Region
Estrada-Carpenter, Vicente; Hynes, Robert I.; Brit, Christopher; Johnson, Chris; Jonker, Peter; Maccarone, Thomas; Torres, Manuel; Steeghs, Danny; Greiss, Sandra; Nelemans, Gijs
Southwestern University, Georgetown, TX. 2 Louisiana State University, Baton Rouge, LA. 3 Netherlands Institute for Space Research, Utrecht, Netherlands. 4 Texas Tech University, Lubbock, TX. 5 The University of Warwick, Coventry, United Kingdom. 6 Radboud University Nijmegen, Nijmegen, Netherlands.
Contributing teams: The Galactic Bulge Survey Collaboration

155.34 An Improved Limit on the Orbital Period Derivative of the LMXB, UW CrB
Segura, Jacob; Mason, Paul A.; Robinson, Edward L.
University of Texas at El Paso, El Paso, TX. University of Texas at Austin, Austin, TX.

155.35 Simultaneous Filter Photometry of V1727 Cygni
Sundin, Emma; Mason, Paul A.; Robinson, Edward L.; Morales, John J.; Gonzalez, Rodolfo; Lopez, Isaac; Bell, Keaton
University of Texas at El Paso, El Paso, TX. University of Texas at Austin, Austin, TX.

155.36 Clump Accretion in Supergiant Fast X-Ray Transients
Chase, Eve; Raymer, Eric; Blondin, John M.
North Carolina State University, Raleigh, NC. College of William & Mary, Williamsburg, VA.

155.37 Swift Optimized Strategy for Supergiant Fast X-ray Transients Study
Mangano, Vanessa; Romano, Patrizia; Kennea, Jamie A.; Vercellone, Stefano; Burrows, David N.; Ducci, Lorenzo; Esposito, Paolo; Krimm, Hans A.; Barthelmy, Scott D.; Gehrels, Neil
Penn State University, State College, PA. INAF/IASF Palermo, Palermo, Italy. University of Tubingen, Tubingen, Germany. NASA/GSFC, Greenbelt, MD. INAF/IASF Milano, Milano, Italy.
Contributing teams: Swift

155.38 X-ray Polarization Properties of High Mass X-ray Binaries
Kallman, Timothy R.; Dorodnitsyn, Anton
NASA’s GSFC, Greenbelt, MD. CRESST/UMCP, College Park, MD.

155.39 Orbital variability and magnetic field of Centaurus X-3 with Suzaku
Gottlieb, Amy; Pottschmidt, Katja; Marcu, Diana; Suchy, Slawomir; Wilms, Jörg
University of Maryland, Baltimore County, Baltimore, MD. CRESST/NASA-GSFC, Greenbelt, MD. ECAP & Remeis Observatory, Bamberg, Germany. IAA/Tübingen, Germany.

155.40 Spectral Modeling of the Comptonized Continua of Accreting X-Ray Pulsars: Recent Progress
Wolff, Michael T.; Becker, Peter A.; Marcu, Diana; Pottschmidt, Katja; Wilms, Jörg; Wood, Kent S.
NRL, Washington, DC. George Mason University, Fairfax, VA. University of Maryland, Baltimore County, Baltimore, MD. Universitat Erlangen-Nuernberg, Erlangen, Germany.

155.41 Looking for Periodicity in X-Ray Emission Data
Cuellar, Andres; Cohen, Stephanie; Benacquista, Matthew
University of Texas at Brownsville, Brownsville, TX.
155.42 The Two-Faced Behavior of XTE J1946+274 Revealed by Suzaku
Marcu, Diana 1, 2; Pottschmidt, Katja 1, 2; Kuehnel, Matthias 3, 4; Mueller, Sebastian 5, 4; Caballero, Isabel 1; Fuerst, Felix 6; Mahmoud, Aisha 7; Kreykenbohm, Ingo 3, 4; Klochkov, Dmitry 1; Rothschild, Richard E. 5; Terada, Yukikatsu 5; Enoto, Teruaki 1, 10; Iwakiri, Wataru 5; Nakajima, Motoki 11; Wilms, Jörn 3, 4
1 NASA-GSFC, Greenbelt, MD. 2 UMBC, Baltimore, MD. 3 Remeis, FAU, Bamberg, Germany. 4 ECAP, FAU, Erlangen, Germany. 5 CEA, CNRS, Paris, France. 6 Caltech, Pasadena, CA. 7 IAAT, Tubingen, Germany. 8 CASS-UCSD, San Diego, CA. 9 Saitama University, Saitama, Japan. 10 RIKEN, Saitama, Japan. 11 Nihon University, Tokyo, Japan.

155.43 X-ray and Ultraviolet Spectral Evolution of LMC X-3 During Normal and Anomalous Low States
Torpin, Trevor 1, 2; Boyd, Patricia T. 2; Smale, Alan P. 2
1 Catholic University of America, Washington, DC. 2 NASA’s Goddard Space Flight Center, Greenbelt, MD.

155.44 The First Suzaku Observation of 4U 1538-522
Hemphill, Paul B. 1; Rothschild, Richard E. 5; Pottschmidt, Katja 2, 4; Wilms, Jörn 3
1 Physics, University of California, San Diego, La Jolla, CA. 2 University of Maryland, Baltimore County, Cantonsville, MD. 3 Dr. Karl Remeis-Sternwarte, University of Erlangen-Nuremberg, Bamberg, Bavaria, Germany. 4 NASA Goddard Space Flight Center, Greenbelt, MD.

155.45 Multiwavelength Analysis of the Gamma-ray Binary LS I +61 303
Alexander, Michael J. 1; Napier, Sean 1; McSwain, M. V. 1
1 Physics, Lehigh Univeristy, Bethlehem, PA.

155.46 Spectral Analysis of the Gamma-ray Binary Candidates 2FGL J0642.9+0319 and 2FGL J1151.5-1347
Schmitz, Erich 1, 2; McSwain, M. V. 1; Alexander, Michael J. 1
1 Lehigh University, Bethlehem, PA. 2 Benedictine College, Atchison, KS.

155.47 Standing Shock Instability in Advection-Dominated Accretion Flows
Le, Truong V. 1, 2; Wood, Kent S. 2; Wolff, Michael T. 2; Becker, Peter A. 3; Putney, Joy 4
1 College of Charleston, Charleston, SC. 2 NASA’s Goddard Space Flight Center, Greenbelt, MD. 3 George Mason University, Fairfax, VA. 4 Washington & Lee University, Lexington, VA.

155.48 Results of the Swift Monitoring Campaign of the X-ray Binary 4U 1957+11
Maitra, Dipankar 1, 2; Miller, Jon M. 1, 2; Reynolds, Mark 1, 2; Reis, Ruben C. 1; Nowak, Michael 1
1 Univ. of Michigan, Ann Arbor, MI. 2 MIT, Cambridge, MA. 3 Wheaton College, Norton, MA.

155.49 The dynamics of jets in circum-binary environment of HMXBs
Yoon, Doosoo 1; Heinz, Sebastian 1
1 University of Wisconsin, Madison, Madison, WI.

155.50 A Rare Eclipse Event: The Eclipsing Variable Radio Source b Per
Sanborn, Jason 1, 2; Zavala, Robert T. 2; Collins, Donald 4; Hummel, Christian 5; Dvorakova, Sarka 7; Templeton, Matthew R. 6
1 Lowell Observatory, Flagstaff, AZ. 2 Northern Arizona University, Flagstaff, AZ. 3 United States Naval Observatory - Flagstaff Station, Flagstaff, AZ. 4 Warren Wilson College, Asheville, NC. 5 European Southern Observatory Karl-Schwarzschild-Str., Munich, Germany. 6 American Association of Variable Star Observers, Cambridge, MA. 7 Academy of Sciences of the Czech Republic, Prague, Czech Republic.
155.51 UBVRI Observations, Analysis and Spectra of the Mature W UMa Contact Binary, V444 And
Shebs, Travis; Samec, Ronald G.; Monroe, Sharyl; Faulkner, Danny R.; Robb, Russell M.; Van Hamme, Walter V.; Chamberlain, Heather
1Bob Jones University, Greenville, SC. 2University of South Carolina at Lancaster, Lancaster, SC. 3University of Victoria, Victoria, BC, Canada. 4Florida International University, Miami, FL. 5University of Alaska, Anchorage, AK.

155.52 Productive Observing with a Small Telescope at an Urban Site
Mason, Brian D.; Hartkopf, William I.
1U.S. Naval Obs., Washington, DC.

156 Variable Stars Poster Session
Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

156.01 Sixty Thousand Periodic Variables from the Catalina Surveys
Drake, Andrew J.; Graham, Matthew; Djorgovski, Stanislav G.; Catelan, Marcio; Mahabal, Ashish A.; Prieto, Jose; Donalek, Ciro; Christensen, Eric J.; Larson, Stephen M.; Boattini, Andrea; Gibbs, Alex; Grauer, Albert D.; Hill, Richard; Kowalski, Richard; Johnson, Jess; Shelly, Frank; Torrealba, Gabriel
1Caltech, Pasadena, CA. 2UA/LPL, Tucson, AZ. 3PUC, Santiago, Chile. 4Princeton, Princeton, NJ.

156.02 A catalog of 7000 optically faint periodic variable stars from the LINEAR survey
Ivezic, Zeljko; Palaversa, Lovro; Sesar, Branimir; Stuart, J. Scott
1Univ. of Washington, Seattle, WA. 2Geneva Observatory, Geneva, Switzerland. 3Caltech, Pasadena, CA. 4Lincoln Laboratory, Lexington, MA.

156.03 Twinkle, Twinkle: Characterizing Variable Stars in Young Open Clusters
Nava, Chantanelle; Stetson, Peter B.; Walker, Gary E.; West, Michael
1University of Montana, Missoula, MT. 2NRC Herzberg Institute of Astrophysics, Victoria, BC, Canada. 3Maria Mitchell Observatory, Nantucket, MA.

156.04 Identification of BY Draconis Variable Stars in ASAS Data
Larsen, Kristine; Johnson, Jessica
1Central Connecticut State University, New Britain, CT.

156.05 Starspots on LO Pegasi, 2006-2013
Harmon, Robert O.; Cole, Brendan; Denison, Josh; Gray, Katie
1Ohio Wesleyan University, Delaware, OH. 2Wesleyan University, Middletown, CT. 3Whitman College, Walla Walla, WA.

156.06 A Mid-Infrared Search for Variable Stars in the Milky Way Galaxy
Brooks, Brian H.; Benjamin, Robert A.; Babler, Brian L.
1Old Dominion University, Norfolk, VA. 2University of Wisconsin-Madison, Madison, WI. 3University of Wisconsin-Whitewater, Whitewater, WI. Contributing teams: the GLIMPSE team

156.07 Expanded RR Lyrae Search in the Southern Hemisphere with the La Silla-QUEST Survey
Horowitz, Benjamin; Zinn, Robert; Charles, Baltay; Coppi, Paolo S.; Ellman, Nancy E.; Fowler, Genevieve; Hadjyska, Ellie I.; Rabinowitz, David L.; Vivas, Katharina
1Yale University, New Haven, CT. 2Centro de Investigaciones de Astronomia, Merida, Merida, Venezuela, Bolivarian Republic of.
156.08 An Automated Search for RR Lyrae Stars in M5
Raney, Catie; Benacquista, Matthew; Kayal, Khalid
1University of Oklahoma, Norman, OK. 2University of Texas at Brownsville, Brownsville, TX.

156.09 Spectroscopic Identification and Metallicity Determination of RR Lyrae Variables in Sloan, with a New Metallicity Calibration Including High-Temperature Phase Regions
Spalding, Eckhart; Wilhelm, Ronald J.; De Lee, Nathan M.
1University of Kentucky, Lexington, KY. 2University of Nebraska at Kearney, Kearney, NE. 3Vanderbilt University, Nashville, TN.

156.10 Observations of Suspected RR Lyrae Variable Stars
Smith, Stephanie; Powell, William L.; Wilhelm, Ronald J.; De Lee, Nathan M.
1University of Nebraska at Kearney, Kearney, NE. 2University of Kentucky, Lexington, KY.

156.11 A Mid-infrared Study of RR Lyrae Stars with the WISE Full-Sky Data Release
Gavrilchenko, Tatyana; Klein, Christopher R.; Bloom, Joshua S.; Richards, Joseph; Butler, Nathaniel
1University of California, Berkeley, Berkeley, CA. 2Arizona State University, Phoenix, AZ.

156.12 Changing Amplitudes: Detecting RR Lyrae Light Curve Shape Variations in the Galactic Disk and Inner Halo
De Lee, Nathan M.; Kinemuchi, Karen; Pepper, Joshua; Rodriguez, Joseph E.
1Univ. Nebraska Kearney, Kearney, NE. 2Vanderbilt University, Nashville, TN. 3Apache Point Observatory/New Mexico State University, Sunspot, NM. 4Lehigh University, Bethlehem, PA.

156.13 Photometry of the Under Observed RR Lyrae Star GM Orionis
Brown, Justin; Boyle, Robert J.
1Dickinson College, Carlisle, PA.

156.14 An Automated Search for RR Lyrae Stars in Globular Clusters
Kayal, Khalid; Benacquista, Matthew; Raney, Catie
1University of Texas at Brownsville, TX, TX.

156.15 A Photometric Survey for Rapidly-Pulsating Hot Subdwarf Stars with SKYNET
Vultaggio, Stephen; Barlow, Brad
1High Point University, High Point, NC. 2University of North Carolina, Chapel Hill, NC.

156.16 Asteroseismology of 23 pulsating stars in eclipsing binaries
Guo, Zhao; Gies, Douglas R.; Matson, Rachel A.; Williams, Stephen
1Georgia State University, Atlanta, GA.

156.17 Precision Asteroseismology of Compact Subdwarf B Stars using Kepler Observations.
Reed, Mike
1Missouri State Univ., Springfield, MO.

156.18 The Brightening of the North Star: Has Polaris’ Brightness Steadily Increased for Centuries and, perhaps, even Millennia?
Engle, Scott G.; Guinan, Edward F.; Harmanec, Petr; Boží?, Hrvoje; Ruzdjak, Domagoj; Sudar, Davor
1Villanova University, Villanova, PA. 2James Cook University, Townsville, QLD, Australia. 3Astronomical Institute of the Charles University, Holesovickach, Praha, Czech Republic. 4Hvar Observatory, Zagreb University, Kaciceva, Zagreb, Croatia.
156.19 Hydrogen Alpha Temperature Curves for 8 Classical Cepheids

Hintz, Eric G.1; Joner, Michael D.1
1 Brigham Young Univ., Provo, UT.

156.20 Metallicity and Crowding Effects on the Cepheid Period-Luminosity Relation for M101

Mager, Violet1, 2; Madore, Barry F.2; Freedman, Wendy L.2
1 Susquehanna University, Selinsgrove, PA. 2 Carnegie Observatories, Pasadena, CA.

156.21 Measuring Stellar Rotation Periods Over Multiple Kepler Quarters

Hyatt, Justin1
1 The University of Arizona, Tucson, AZ.
Contributing teams: The University of Arizona Kepler Project Students

156.22 Variable Circumstellar Disks of “Classical” Be Stars, Part 2

Gerhardt, Cody1; Davidson, James W.1; Bjorkman, Karen S.1; Wisniewski, John P.2
1 University of Toledo, Toledo, OH. 2 University of Oklahoma, Norman, OK.

156.23 Photometric Variability in Proto-Planetary Nebulae: Extending to a Fainter (V=13-15) Sample

Hrivnak, Bruce J.1; Lu, Wenxian1; Henson, Gary D.2; Hillwig, Todd C.1; Kaitchuck, Ronald H.3; Murphy, Brian W.4; Reed, Justin M.1; Cheek, Wesley J.1
1 Valparaiso Univ., Valparaiso, IN. 2 East Tennessee State Univ., Johnson City, TN.
3 Ball State Univ., Muncie, IN. 4 Butler Univ., Indianapolis, IN.

156.24 Time Series Photometry on Different Scales at the BYU West Mountain Observatory

Joner, Michael D.1
1 Brigham Young Univ., Provo, UT.

156.25 Photometric Evidence of Changes in Pulsation Characteristics of Hot Subdwarf B Stars

Raghavan, Arjun1
1 University of North Carolina, Chapel Hill, NC.

156.26 High-cadence high-resolution spectroscopy of the prototype RR Lyrae Kolenberg, Katrien1, 2

1 Harvard Smithsonian, CfA, Cambridge, MA. 2 University of Leuven, Leuven, Belgium.
Contributing teams: Zoey Bergstrom, Robert L. Kurucz, Thomas G. Barnes, Luca Fossati

157 White Dwarfs

Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

157.01 Effect of Radial Grain Settling on the Infrared Emission from White Dwarf Circumstellar Disks: An application to G29-38 and GD 56

Dupuis, Jean1; Podmore, Hugh2
1 Canadian Space Agency, Saint-Hubert, QC, Canada. 2 York University, Toronto, ON, Canada.

157.02 A Search for Relic Planetary Systems within 25 Parsecs of the Sun

Cox, Andrew1; Sion, Edward M.1; Debes, John H.2
1 Villanova University, Villanova, PA. 2 Space Telescope Science Institute, Baltimore, MD.
157.03 Dynamical Masses of Cool White Dwarfs in Double-Degenerate Visual Binaries  
Bond, Howard E.1,2; Nelan, Edmund P.1; Schaefer, Gail3  
1STScI, Cockeysville, MD. 2Penn State University, University Park, PA. 3Georgia State University, Atlanta, GA.

157.04 COS UV Spectroscopy of Pulsating DB White Dwarfs  
Provencal, Judith L.1,2; Nitta, Atsuko3; Shipman, Harry L.1; Dalessio, James1; Montgomery, Mike4; Thompson, Susan E.1  
1University Of Delaware, Newark, DE. 2Mt. Cuba Observatory, Greenville, DE, DE. 3Gemini Observatory, Northern Operations, Hilo, HI. 4University of Texas, Austin, TX.

157.05 High-Resolution EUV Spectroscopy of White Dwarfs  
Kowalski, Michael P.1; Wood, Kent S.1; Barstow, Martin A.2  
1NRL, Washington, DC. 2U of Leicester, Leicester, United Kingdom.

157.06 Deep Observations of the Open Cluster NGC 6253  
Jeffery, Elizabeth1  
1James Madison University, Harrisonburg, VA.

158 The Sun Poster Session

Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

158.01 A Combined Study of Photospheric Magnetic and Current Helicities and Subsurface Kinetic Helicities of Solar Active Regions during 2006-2012  
Seligman, Darryl1; Petrie, Gordon1; Komm, Rudolph2  
1National Solar Observatory, Tucson, AZ.

158.02 Kinematics of Waves in the Solar Corona: Analyzing Potential Shock Waves to Predict Solar Energetic Particle Fluxes in Space Weather  
Hammer, Michael1,2; Kozarev, Kamen A.2; Korreck, Kelly E.2  
1Cornell University, Ithaca, NY. 2Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

158.03 The Use of ACE Electron, Proton, and Alpha Monitor (EPAM) Data in Severe Geomagnetic Storm Forecasting  
Strait, Victoria1,2; Murtagh, William2; Rutledge, Robert2  
1Furman University, Greenville, SC. 2NOAA/SWPC, Boulder, CO.

158.04 Atmospheric Effects on Cosmic Ray Air Showers Observed with HAWC  
Young, Steven1  
1University of Wisconsin - Madison, Madison, WI.

158.05 Variation of the Diameter of the Sun as Measured by the Solar Disk Sextant (SDS)  
Girard, Terrence1; Sofia, Sabatino1; Sofia, Ulysses J.2; Twigg, Laurence W.3; Heaps, William1; Thuillier, Gerard4  
1Yale Univ., New Haven, CT. 2American University, Washington, DC. 3NASA/GSFC, Greenbelt, MD. 4LATMOS-CNRS, Guyancourt, France.

158.06 Recent VLA Observations of Coronal Faraday Rotation  
Kooi, Jason E.1; Fischer, Patrick D.1; Buffo, Jacob J.1; Spangler, Steven R.1  
1University of Iowa, Iowa City, IA.

158.07 Annual solar motion and spy satellites  
Jensen, Margaret1; Larson, Shane L.1  
1Utah State University, Logan, UT.
158.08 Two-dimensional Hydrodynamic Simulations of Angular Momentum Balance and Meridional Circulation in the Solar Convective Zone, Using a Viscoelastic Model for the Turbulent Maxwell Stresses due to Magnetoconvection
Williams, Peter T.\textsuperscript{1}

\textsuperscript{1}Agilent Technologies, Santa Clara, CA.

158.09 Design and Construction of a Solar Observatory in a Liberal Arts Environment: Austin College’s Gnomon and Meridian Line
Baker, David D.\textsuperscript{1}; Salisbury, Donald\textsuperscript{1}

\textsuperscript{1}Austin College, Sherman, TX.

158.10 A Search for Flare Related Systematic Changes in Stokes V Asymmetries in NOAA 11429
Sinotte, Tyler\textsuperscript{1,2}; Harker, Brian\textsuperscript{1}

\textsuperscript{1}National Solar Observatory, Tucson, AZ. \textsuperscript{2}University of Wisconsin-Madison, Madison, WI.

158.11 Predicting Ground Illuminance
Lesniak, Michael V.\textsuperscript{1}

\textsuperscript{1}U.S. Naval Observatory, Washington, DC.

160 Developing Our Own Future: Undergraduate Research and Enrichment Through Peer-Led Programs Poster Session

Monday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

160.01 How to Make a Club from Scratch: The Beginning of the University of Arizona Astronomy Club
Robertson, Amy\textsuperscript{1}; Hardegree-Ullman, Kevin\textsuperscript{2}; Towner, Allison P.\textsuperscript{1}; Walker-LaFollette, Amanda\textsuperscript{1}; Carleton, Timothy\textsuperscript{3}; McCarthy, Donald W.\textsuperscript{1}

\textsuperscript{1}University of Arizona, Tucson, AZ. \textsuperscript{2}University of Toledo, Toledo, OH. \textsuperscript{3}University of California, Irvine, Irvine, CA.

160.02 Undergraduate Skills Laboratories at Sonoma State University
Gill, Amandeep\textsuperscript{1}; Zack, Kevin\textsuperscript{1}; Mills, Hunter\textsuperscript{1}; Cunningham, Ben\textsuperscript{1}; Jackowski, Stephan\textsuperscript{1}

\textsuperscript{1}Sonoma State University, Rohnert Park, CA.

160.03 The Cornell Astronomical Society: The Student Experience of Running an Observatory
Hammer, Michael\textsuperscript{1}; Blackburn, Brecken\textsuperscript{1}; Fredricks, Jeremy\textsuperscript{1}; Garcia, Kelly\textsuperscript{1}; Poniatowski, Adrian\textsuperscript{1}; Schindler, Kevin\textsuperscript{1}; Wilk, Arthur\textsuperscript{1}

\textsuperscript{1}Cornell University, Ithaca, NY.

160.04 Bridging the gap between Undergrads and Grads: The mentor next door
White, Aaron\textsuperscript{1}

\textsuperscript{1}San Francisco State University, San Francisco, CA.

Contributing teams: Aaron Gruberg
160.05 Astronomy at the Market
Roten, Robert1; Constantin, Anca1; Christensen, Emil1; Dick, Emily1; Lapolla, Josiah1; Nutter, Andrew1; Corcoran, James1; DiDomenico, Nathan1; Eskridge, Brandon Kyle1,2; Saikin, Anthony1,2
1James Madison University, Harrisonburg, VA. 2College of William and Mary, Williamsburg, VA. 3University of New Hampshire, Durham, NH.

160.06 Albion’s Astronomy Club—A Community of Many Faces
Ganem, Alysandra1; Matti, Carlos1; Ciastko, Lindsay1; Zellner, Nicole1
1Albion College, Albion, MI.

160.07 The League of Astronomers: Outreach
Paat, Anthony1; Brandel, Andrew1; Schmitz, Denise1; Sharma, Ramon1; Thomas, Nancy H.1; Trujillo, Juan1; Laws, Christopher S.1
1University of Washington, Seattle, WA.
Contributing teams: League of Astronomers

160.08 Undergraduate Research in the University of Arizona Astronomy Club
Cates, Ian1; Towner, Allison P.1; Walker-LaFollette, Amanda1; Turner, Jake2; Harddegree-Ullman, Kevin1; Pearson, Kyle1
1University of Arizona, Tucson, AZ. 2University of Virginia, Charlottesville, VA. 3University of Toledo, Toledo, OH.

160.09 Outreach and Astronomy-Education Activities of the University of Arizona Astronomy Club
McGraw, Allison M.1; Hardegree-Ullman, Kevin1; Walker-LaFollette, Amanda1; Towner, Allison P.1
1The University of Arizona, Tucson, AZ. 2The University of Toledo, Toledo, OH.

160.10 Mizzou Student Astronomical Society – benefiting everyone
Briggs, Jason1; Speck, Angela1; Ruzhitskaya, Lanika1
1University of Missouri, Columbia, MO.

160.11 Revealing the Universe to Our Community: NMSU’s Society of Astronomy Students’ Dedication to Public Outreach
Maldonado, Mercedes1; Rees, Shannon1; Medina, Amber1; Beasley, Dana1; Campos, Angelica1; Chanover, Nancy J.1; Ucket, Kyle1; McKeever, Jean1
1New Mexico State University, Las Cruces, NM.

160.12 Reaching Beyond The Stars
Baker, Mariah1; Rosenthal, Lee1; Gaughan, Andrea1; Hopkins, Erica1
1Haverford College, Haverford, PA.

160.13 Peer Development of Undergraduate Astronomers and Physicists at the University of Wisconsin - Madison
Abler, Melissa1
1Univ of Wisconsin, Madison, Madison, WI.
Contributing teams: Physics Club of UW-Madison
200 The Thick and Thin Disks in Spiral Galaxies

Tuesday, 8:30 AM - 9:20 AM; Potomac Ballroom A

Chair(s): Edward Churchwell, Univ. of Wisconsin

200.01 The Thick and Thin Disks in Spiral Galaxies
Wyse, Rosemary F.¹
¹Johns Hopkins Univ., Baltimore, MD.

201 AAS Prize Presentations: Education Prize, Joseph Weber Award presented by AAS President David Helfand

Tuesday, 9:20 AM - 9:40 AM; Potomac Ballroom A

John R. Percy - AAS Education Prize
For 40+ years of tireless advocacy for K-12 astronomy education in Canada and around the world, during which he has trained and mentored many people who themselves have made major contributions to astronomy, astronomy education, and amateur astronomy, For leading and promoting effective partnerships with amateur astronomers and informal educators, For his public outreach efforts and leadership through the IAU, the AAS, the ASP and the AAVSO, For his role in programs that use astronomy to inspire youth all around Canada and in underserved communities throughout the world, and For inspiring the international Galileo Project combining Astronomy, Music and visual Arts.

Keith Matthews - Joseph Weber Award for Astronomical Instrumentation
Keith Matthews has been selected for the 2013 Weber Prize in recognition of his many contributions to infrared astronomical instrumentation at the Palomar and Keck Observatories. The reliability, sensitivity and innovative qualities of his instruments have enabled ground breaking scientific discoveries for decades. For example, his NIRC2 camera behind the Adaptive Optics bench at Keck 2 was responsible for the characterization of the supermassive black hole at the center of our galaxy.

Amateur Talk: Observing Asteroids for Fun and (Astronomical) Profit

Tuesday, 9:30 AM - 10:00 AM; Maryland Ballroom A

Making observations of asteroids is within the capability of many amateur and small campus observatories. Observations from “backyard astronomers” have led to the identification of the YORP (Yarkovsky-O’Keefe-Radzievskii-Paddack) effect, the discovery of many binary asteroids, and the inversion of lightcurves to determine asteroid shapes and pole directions. Such observations are ideal for students, as an individual can determine the rotation properties of an object in a short period of time while contributing to a larger ongoing research project. Resources for getting started in asteroid research will be presented.

Chair(s): Linda French, Illinois Wesleyan Univ.
202 Instrumentation III: Ground or Airborne Missions

Tuesday, 10:00 AM - 11:30 AM; Maryland 2

Chair(s):
Daniel Harbeck, *WIYN Observatory*

202.01D Imaging and Modeling Nearby Stellar Systems through Infrared Interferometers
Che, Xiao¹; Monnier, John D.¹; Ten Brummelaar, Theo²; Sturmann, Laszlo³; Millan-Gabet, Rafael⁴; Baron, Fabien⁴; Kraus, Stefan⁵; Zhao, Ming⁶

¹University of Michigan, Ann Arbor, MI. ²The CHARA Array, Mountain Wilson, CA. ³Caltech, Pasadena, CA. ⁴Georgia State University, Atlanta, GA. ⁵University of Exeter, Exeter, United Kingdom. ⁶Penn State University, University Park, PA.

Contributing teams: CHARA

202.02 Progress in the expansion of the Navy Precision Optical Interferometer
Armstrong, J. T.¹; Restaino, Sergio R.¹; Clark, James. H.¹; Schmitt, Henrique R.¹; Baines, Ellyn K.¹; Hutter, Donald J.¹; Benson, James A.²; Zavala, Robert T.²; Shankland, Paul D.²; van Belle, Gerard³; Jorgensen, Anders M.⁴

¹NRL, Washington, DC. ²USNO, Flagstaff, AZ. ³Lowell Observatory, Flagstaff, AZ. ⁴New Mexico Tech, Socorro, NM.

202.03 Improving the Visibility Amplitude Calibration of the NPOI with Photometric Information
Schmitt, Henrique R.¹; Mozurkewich, David²; Armstrong, J. T.¹; Benson, James A.³; Jorgensen, Anders M.⁴; Baines, Ellyn K.³

¹Naval Research Laboratory, Washington, DC. ²Seabrook Engineering, Seabrook, MD. ³US Naval Observatory, Flagstaff, AZ. ⁴New Mexico Tech, Socorro, NM.

202.04D Development and Commissioning of the Integral Field Spectrograph for the Gemini Planet Imager
Chilcote, Jeffrey K.¹; Larkin, James E.¹

¹UC Los Angeles, Los Angeles, CA.

Contributing teams: Gemini Planet Imager instrument and science teams

202.05 Simulation and Laboratory results of the Hard X-ray Polarimeter: X-Calibur
Guo, Qingzhen¹; Bellicke, Matthias¹; Kislat, Fabian¹; Krawczynski, Henric¹

¹Washington University in Saint Louis, Saint Louis, MO.

202.06 Low-Cost InGaAs Detectors for Near-Infrared Imaging and Photometry
Sullivan, Peter¹; Croll, Bryce¹; Simcoe, Robert A.¹

¹Massachusetts Institute of Technology, Cambridge, MA.
203 Building the Astronomical Information Sciences: From NASA’s AISR Program to the New AAS Working Group on Astroinformatics and Astrostatistics

Tuesday, 10:00 AM - 11:30 AM; National Harbor 4

Do you rely on the ADS database for literature research and citation management? Do you use SAOImage DS9 to visualize astronomical images and other data? Do you access data using Virtual Observatory (VO) tools and protocols? Does your research rely on new statistical, machine learning, or data mining methods? If you answered “yes” to any of these questions, then you are benefiting from research in the astronomical information sciences. This session will begin with a retrospective look at projects funded by NASA’s Applied Information Systems Research (AISR) Program that laid groundwork for this emerging area of interdisciplinary research; it will culminate with an introduction to the new AAS Working Group on Astroinformatics and Astrostatistics (AIAS), including overviews of current research in AIAS. The AISR program, led by NASA Senior Science Program Executive Joseph Bredekamp, operated from 1991 to 2012. It supported research tying together new developments in information sciences (high-performance computing, statistics, machine learning, data mining, etc.) and scientific concerns across all of NASA’s science divisions: Astrophysics, Planetary Science, Heliophysics, and Earth Science.

Presentations in this session will cover the history, status, and future of AISR-funded research on tools and methods for accessing, visualizing, and analyzing astronomy data across diverse applications and dataset scales. Topics to be covered include: ADS, SAOImage DS9, VAO resources, and various AIAS methods and software. The session will end with an introduction to the activities of the new Working Group on AIAS, charged by the AAS to develop and spread awareness of the applications of advanced information science tools and methods to further the goals of astronomical and astrophysical research. This will include brief overviews of several current AIAS research projects. A companion poster session will provide more detail on current AIAS research.

Chair(s):
Thomas Loredo, Cornell Univ.
Organizer(s):
Thomas Loredo, Cornell Univ.
Zeljko Ivezic, Univ. of Washington

203.01 Conflict and Reconciliation in Software Design
Mandel, Eric¹
¹Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

203.02 From AISR to the Virtual Observatory
Szalay, Alexander S.¹
¹Johns Hopkins Univ., Baltimore, MD.

203.03 Astrostatistics in X-ray Astronomy: Systematics and Calibration
Siemiginowska, Aneta²
²Harvard-Smithsonian, CfA, Cambridge, MA.
Contributing teams: Vinay Kashyap, CHASC

203.04 Hyperspectral Image Analysis in Planetary Science and Astronomy
Merenyi, Erzsebet¹
¹Rice Univ., Houston, TX.
203.05 Reflections on the AISR Program
Bredekamp, Joseph
NASA HQ (Ret.), Washington, DC.

203.06 Introducing the AAS Working Group on Astroinformatics and Astrostatistics
Ivezic, Zeljko
Univ. of Washington, Seattle, WA.

204 Cosmology & CMB III

Tuesday, 10:00 AM - 11:30 AM; Maryland Ballroom C

Chair(s):
Soma De, Arizona State University

204.01 SPTpol: A Cosmic Microwave Background Polarization Experiment on the South Pole Telescope
Henning, Jason
University of Colorado at Boulder, Boulder, CO.
Contributing teams: SPTpol Collaboration

204.02 Exploring the Epoch of Reionization with the South Pole Telescope
Reichardt, Christian L.
UC Berkeley, Berkeley, CA.
Contributing teams: SPT collaboration

204.03 Recent Results from the Atacama Cosmology Telescope
Spergel, David N.
Princeton Univ. Obs., Princeton, NJ.

204.04 The Atacama B-Mode Search
Sievers, Jonathan L.
University of KwaZulu-Natal, Durban, South Africa.
Contributing teams: ABS Collaboration

204.05 Measuring the Thermal Sunyaev-Zel’dovich Effect Through the Cross Correlation of Planck and WMAP with ROSAT
Battaglia, Nicholas; Hajian, Amir; Spergel, David N.; Bond, John R.; Pfrommer, Christoph; Sievers, Jonathan

204.06 POLARBEAR2: A new multichroic receiver for precision measurements of cosmic microwave background polarization
Barron, Darcy
UC San Diego, La Jolla, CA.
Contributing teams: POLARBEAR Collaboration
205 Evolution of Galaxy Structure

Tuesday, 10:00 AM - 11:30 AM; Potomac Ballroom A

Chair(s):
John Moustakas, Siena College

205.01D Galaxy Zoo: Observing Secular Evolution Through Bars
Cheung, Edmond; Athanassoula, Lia; Masters, Karen; Faber, Sandra M.; Koo, David C.
1. University of California Santa Cruz, Santa Cruz, CA. 2. Aix-Marseille Universite, Marseille, France. 3. University of Portsmouth, Portsmouth, United Kingdom.

Contributing teams: Galaxy Zoo

205.02 Using Bars in S4G and COSMOS to Identify the Fastest Evolving Galaxy Disks at All Epochs
Sheth, Kartik
1. NRAO, Charlottesville, VA.

Contributing teams: S4G team

205.03D Structural Properties of Barred Galaxies
Kim, Taehyun; Gadotti, Dimitri; Sheth, Kartik; Lee, Myung Gyoon
1. Seoul National University, Seoul, Korea. 2. Carnegie Observatories, Pasadena, CA. 3. ESO, Santiago, Chile. 4. NRAO, Charlottesville, VA.

Contributing teams: S4G Team

205.04 A Characteristic Mass in the Low Redshift Tully Fisher Relation
Simons, Raymond; Kassin, Susan A.; Weiner, Benjamin J.; Lee, Janice C.

205.05 The Wavelength Dependence of High-Redshift Galaxy Structure in the Rest-Frame Ultraviolet
Bond, Nicholas A.; Gardner, Jonathan P.; De Mello, Duilia F.; Teplitz, Harry I.; Rafelski, Marc; Koekemoer, Anton M.; Coe, Dan A.

205.06 On the Reliability of Structural Parameters for Compact, High-redshift Galaxies
Davari, Roozbeh; Ho, Luis C.; Peng, Chien Y.; Huang, Song

205.07 The SAMI Galaxy Survey: One Year, 50000 Spectra
Konstantopoulos, Iraklis; Croom, Scott
1. Australian Astronomical Observatory, North Ryde, NSW, Australia. 2. University of Sydney, Sydney, NSW, Australia.

Contributing teams: The SAMI Galaxy Survey team
206 Extrasolar Planet Detection - Identification, Classification, and Validation of Kepler Candidates

Tuesday, 10:00 AM - 11:30 AM; Maryland Ballroom A

Chair(s):
John Armstrong, Weber State Univ.

206.01 The Applicability of Emerging Quantum Computing Capabilities to Exo-Planet Research
Correll, Randall1, 2; Worden, Simon1
1NASA Ames Research Center, Mountain View, CA. 2RRC Research, Arlington, VA.

206.02 Likely Planet Candidates Identified by Machine Learning Applied to Four Years of Kepler Data
Jenkins, Jon M.1; McCauliff, Sean D.2; Catanzarite, Joseph1; Twicken, Joseph D.1; Burke, Christopher J.1; Campbell, Jennifer2; Seader, Shawn1
1SETI Institute, Moffett Field, CA. 2Orbital Sciences Corporation, Moffett Field, CA.

206.03 Increasing the sensitivity of the Kepler legacy archive to transiting planets
Still, Martin D.1
1NASA Ames Research Center, Moffett Field, CA.

206.04 Updating the M Dwarf Planet Occurrence Rate by Injecting and Detecting Transits in Kepler Light Curves
Dressing, Courtney D.1; Charbonneau, David1
1Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

206.05 Probabilistic Model-Based Analysis of Kepler Transit Signal Locations
Bryson, Steve1; Morton, Tim2
1NASA Ames Research Center, Moffett Field, CA. 2Princeton University, Princeton, NJ.

Contributing teams: The Kepler Team

206.06 VALFAST: Secure Probabilistic Validation of Hundreds of Kepler Planet Candidates
Morton, Tim1; Petigura, Erik2; Johnson, John A.3; Howard, Andrew4; Marcy, Geoffrey W.2; Baranec, Christoph4; Law, Nicholas M.5; Riddle, Reed L.6; Ciardi, David R.7
Contributing teams: Robo-AO Team

207 Extrasolar Planet: Atmospheres

Tuesday, 10:00 AM - 11:30 AM; Maryland Ballroom B

Chair(s):
David Latham, Harvard-Smithsonian, CfA

207.01D Diamonds in the Rough: A Cautionary Tale of C/O Ratios in Exoplanet Host Stars
Teske, Johanna K.1; Cunha, Katia M.2, 3; Schuler, Simon C.3; Griffith, Caitlin A.4; Smith, Verne V.5
1Steward Observatory, University of Arizona, Tucson, AZ. 2Observatorio Nacional, Rio de Janeiro, RJ, Brazil. 3University of Tampa, Tampa, FL. 4Lunar and Planetary Lab, University of Arizona, Tucson, AZ. 5NOAO, Tucson, AZ.
207.02 Constraints on Elemental Abundance Ratios in Hot Jupiter Atmospheres and Implications for Their Formation Conditions
Madhusudhan, Nikku
1 Yale University, New Haven, CT.

207.03 Characterizing the Atmospheres of Super-Earths and Hot-Jupiters with Narrow-Band Photometry
Colon, Knicole D.; Gaidos, Eric; Wilson, Paul A.; Ford, Eric B.; Sing, David K.; Ballester, Gilda E.; Desert, Jean-Michel; Ehrenreich, David; Fortney, Jonathan J.; Lecavelier des Etangs, Alain; Lopez-Morales, Mercedes; Morley, Caroline; Pettitt, Alex; Pont, Frederic; Vidal-Madjar, Alfred
1 Lehigh University, Bethlehem, PA. 2 University of Hawaii, Honolulu, HI. 3 University of Exeter, Exeter, United Kingdom. 4 Pennsylvania State University, University Park, PA. 5 University of Arizona, Tucson, AZ. 6 California Institute of Technology, Pasadena, CA. 7 Observatoire astronomique de l’Universite de Geneve, Sauverny, Switzerland. 8 University of California, Santa Cruz, Santa Cruz, CA. 9 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 10 Institut d’astrophysique de Paris, CNRS; Universite Pierre et Marie Curie, Paris, France.

207.04 Significance of Trends in Exoplanetary Atmospheres
Harrington, Joseph; Bowman, M. Oliver; Blumenthal, Sarah D.; Loredo, Thomas J.
1 University of Central Florida, Orlando, FL. 2 Cornell University, Ithaca, NY. Contributing teams: the UCF Exoplanets Group

207.05 Exoplanet transits in X-rays: a new observational window to the exoplanetary atmosphere
Poppenhaeger, Katja; Wolk, Scott J.; Schmitt, Juergen
1 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 2 Hamburg Observatory, Hamburg, Germany.

207.06 A Survey of the Hottest Jupiter Atmospheres via Secondary Eclipses
Zhao, Ming; O’Rourke, Joseph; Knutson, Heather; Wright, Jason
1 Penn State University, University Park, PA. 2 California Institute of Technology, Pasadena, CA. 3 Center for Exoplanets and Habitable Worlds, University Park, PA.

207.07 New Frontiers for Comparative Exoplanetology
Desert, Jean-Michel
1 University of Colorado, Boulder, CO.

208 Galaxy Clusters: Cosmology and Evolution
Tuesday, 10:00 AM - 11:30 AM; National Harbor 10
Chair(s): Michael West

208.01 Galaxy clusters in DES
Soares-Santos, Marcelle
1 Fermi National Accelerator Laboratory, Batavia, IL.
Contributing teams: DES Collaboration
208.02D MUSTANG and MUSTANG 1.5: High-Resolution Measurements of the Sunyaev-Zel’dovich Effect in Galaxy Clusters.
Young, Alexander\(^1\); Romero, Charles\(^2\); Dicker, Simon\(^1\); Mason, Brian S.\(^2\); Mroczkowski, Tony\(^3\); Reese, Erik D.\(^3\); Sarazin, Craig L.\(^2\); Sayers, Jack\(^1\); Czakon, Nicole G.\(^3\); Devlin, Mark J.\(^1\); Korngut, Phillip\(^1\); Sievers, Jonathan\(^4\)
\(^1\)University of Pennsylvania, Philadelphia, PA. \(^2\)University of Virginia, Charlottesville, VA. \(^3\)Caltech, Pasadena, CA. \(^4\)University of Kwazulu-Natal, Durban, South Africa. \(^5\)Naval Research Lab, Washington, DC. \(^6\)Moorpark College, Moorpark, CA.

208.03D Investigations of Galaxy Clusters Using Gravitational Lensing
Wiesner, Matthew P.\(^1\); Lin, Huan\(^2\); Soares-Santos, Marcelle\(^2\)
\(^1\)Northern Illinois University, Dekalb, IL. \(^2\)Fermi National Accelerator Laboratory, Batavia, IL.

208.04 A view of massive compact galaxies in nearby galaxy clusters with GeMS/GSAOI
Carrasco Damele, Eleazar R.\(^1\); Trujillo, Ignacio\(^2\)
\(^1\)Gemini Observatory, La Serena, Chile. \(^2\)Instituto de Astrofisica de Canarias, Tenerife, Spain.

208.05 Determining the Halo Mass Scale Where Gas Accretion onto Galaxies Stops
Rudnick, Gregory\(^1,2\)
\(^1\)University of Kansas, Lawrence, KS. \(^2\)Max-Planck-Institute for Astronomy, Heidelberg, Germany.
Contributing teams: ESO Distant Cluster Survey (EDisCS)

208.06 Improved LRG Selection Algorithms combining Optical And WISE (Infrared) Photometry
Prakash, Abhishek\(^1\); Newman, Jeffrey\(^1\)
\(^1\)University of Pittsburgh, Pittsburgh, PA.
Contributing teams: eBOSS collaboration

209 HAD VI: History of Astronomy

Tuesday, 10:00 AM - 11:30 AM; National Harbor 3

Chair(s):
Jay Pasachoff, Williams College

209.01 The Recurrent Nova T CrB; Two Discoveries from the 102,000 Magnitude Light Curves from 1855 to 2013 in Johnson B & V
Schaefer, Bradley E.\(^1\)
\(^1\)Louisiana State Univ., Baton Rouge, LA.

209.02 Barnard’s Star: Planets or Pretense
Bartlett, Jennifer L.\(^1\); Ianna, Philip A.\(^2\)
\(^1\)US Naval Observatory, Washington, DC. \(^2\)University of Virginia, Charlottesville, VA.

209.03 The Instability of Astrophysics Witnessed in the Twentieth Century
Harwit, Martin\(^1\)
\(^1\)Cornell University, Ithaca, NY.

209.04 The Largest Feasible Steerable Telescope
Kellermann, Kenneth I.\(^1\); Bouton, Ellen N.\(^1\)
\(^1\)NRAO, Charlottesville, VA.
209.05 Radio Frequency Interference and the National Radio Astronomy Observatory
Smith, Sierra
1. National Radio Astronomy Observatory, Charlottesville, VA.

209.06 Hubble Space Telescope: The Real ‘First Light’ Observation
Benedict, G. F.; McArthur, Barbara
1. University of Texas, Austin, TX.

209.07 The National Science Foundation and the History of Science
Rothenberg, Marc
1. National Science Foundation, Arlington, VA.

210 Jets and Outflows from AGN
Tuesday, 10:00 AM - 11:30 AM; National Harbor 11
Chair(s):
Jonathan McDowell, Harvard-Smithsonian CfA

210.01 On the relationship between jet and broad emission lines variability in Flat Spectrum Radio Quasars
Fossati, Giovanni
1. Rice Univ., Houston, TX.

210.02 A Fast Moving Polarization Event in the Jet of BL Lacertae
Homan, Daniel C.; Cohen, Marshall H.; Kovalev, Yuri Y.; Lister, Matthew L.; Meier, David L.; Pushkarev, Alexander B.

210.03D Probing the Disk-Jet Connection in Fermi Gamma-Ray Bright Blazars
Isler, Jedidah; Urry, C. M.; Coppi, Paolo S.; Bailyn, Charles D.; Chatterjee, Rita; Fossati, Giovanni; Bonning, Erin W.; Maraschi, Laura; Buxton, Michelle
1. Yale University, New Haven, CT. 2. Presidency University, Kolkata, WB, India. 3. Rice University, Houston, TX. 4. Quest University, Squamish, BC, Canada. 5. INAF - Osservatorio Astronomica di Brera, Brera, Milano, Italy.

Contributing teams: SMARTS

210.04D Interaction of Relativistic Jets with Their Environments
Kohler, Susanna; Begelman, Mitchell C.
1. JILA, University of Colorado and NIST, Boulder, CO.

210.05 ‘New Proper Motion Measurements of the Superluminal Velocities in the M87 Optical Jet with HST’
Meyer, Eileen T.; Sparks, William B.; Biretta, John A.; Sohn, S. Tony; Anderson, Jay; Van Der Marel, Roeland P.; Norman, Colin A.; Nakamura, Masanori

210.06D Observation of Radio-Jet Driven Feedback
Shih, Hsin-Yi; Stockton, Alan N.
1. University of Hawaii, Honolulu, HI.
211 Lenses & Waves I

Tuesday, 10:00 AM - 11:30 AM; Maryland 1

Chair(s):
Jonah Kanner, NASA Goddard

211.01 Concept and Analysis of a Satellite for Space-Based Radio Detection of Ultra-High Energy Cosmic Rays
Romero-Wolf, Andrew1; Gorham, Peter2; Booth, Jeff3; Chen, Pisin4; Duren, Riley M.5; Liewer, Kurt1; Nam, Jiwoo6; Saltzberg, David7; Schoorlemmer, Harm8; Wissel, Stephanie3; Zairfian, Pezhman1
1Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA.
2University of Hawaii at Manoa, Honolulu, HI.
3University of California, Los Angeles, Los Angeles, CA.
4National Taiwan University, Taipei City, Taiwan.

211.02 Coincidently Searching for Gravitational Waves and Low Frequency Radio Transients
Kavic, Michael1; Yancey, Cregg2; Shawhan, Peter S.2; Cutchin, Sean3,4; Simonetti, John H.5; Bear, Brandon6; Tsai, Jr-Wei5
1Long Island University, Brooklyn, NY.
2University of Maryland, College Park, MD.
3National Research Council, Washington, DC.
4Naval Research Laboratory, Washington, DC.
5Virginia Tech, Blacksburg, VA.

211.03 Ultra-relativistic X-ray counterparts of Compact Object Mergers
Nissanke, Samaya1,2; Hirata, Chris2,1
1Caltech, Pasadena, CA.
2Ohio State University, Columbus, OH.

211.04 The first two years of gravitational-wave astronomy with Advanced LIGO and Virgo
Singer, Leo1; Price, Larry1; Urban, Alex2; Pankow, Chris2
1LIGO Laboratory, California Institute of Technology, Pasadena, CA.
2Leonard E. Parker Center for Gravitation, Cosmology, and Astrophysics, University of Wisconsin-Milwaukee, Milwaukee, WI.

211.05 Astronomical guidance for directed searches for continuous gravitational waves
Owen, Benjamin1
1Penn State, University Park, PA.

211.06 Detecting Compact Objects with Microlensing
Schnittman, Jeremy1,2; Littenberg, Tyson3; Sahu, Kailash C.4; Thieme, Nicholas5
1NASA/GSFC, Greenbelt, MD.
2Joint Space Science Institute, College Park, MD.
3Northwestern University, Evanston, IL.
4STScI, Baltimore, MD.
5Rensselaer Polytechnic Institute, Troy, NY.

211.07 Detection and measurement of heavy black holes
Graff, Philip1; Buonanno, Alessandra2; Sathyaprakash, Bangalore S.3
1NASA/GSFC, Greenbelt, MD.
2University of Maryland, College Park, MD.
3University of Cardiff, Cardiff, United Kingdom.

211.08 Uncovering the population of binary black holes in the local universe with space-based gravitational wave detectors.
Hinojosa, Jesus1; Benacquista, Matthew2; Mata, Alberto1
1Center for Gravitational Wave Astronomy, Brownsville, TX.
212 Pulsars & Neutron Stars III

Tuesday, 10:00 AM - 11:30 AM; National Harbor 13
Chair(s):
Mallory Roberts, Eureka Scientific

212.01 Studies of Pulsars Using Space VLBI with RadioAstron
Johnson, Michael; Gwinn, Carl; Popov, Mikhail; Smirnova, Tatyana; Shishov, Vladimir; Anderson, James; Andrianov, Andrei; Bartel, Norbert; Buchner, Sarah; Deller, Adam; Hankey, Warren; Horiuchi, Shinji; Joshi, Bhal Chandra; Kardashev, Nikolay; Karuppusamy, Ramesh; Kovalev, Yuri; Kramer, Michael; McCallum, Jamie; Phillips, Chris; Quick, Jonathan; Reynolds, John; Rudnitsky, Alexey; Safutdinov, Yegor; Soglasnov, Vladimir; Tzioumis, A.; Zensus, Anton; Zhuravlev, Vladimir
Contributing teams: the RadioAstron Pulsar Group

212.02D Investigating astrophysical plasmas using LOFAR observations of pulsars
Sobey, Charlotte1, 2
1. ASTRON, Dwingeloo, Netherlands. 2. MPIfR, BONN, Germany.
Contributing teams: LOFAR collaboration

212.03 Radio Pulsars - Intermittent Particle Accelerators
Timokhin, Andrey
1. NASA Goddard Space Flight Center, Greenbelt, MD.

212.04 SGR J1745-29: Swift discovery and monitoring of a new SGR near Sgr A*
Kennea, Jamie A.; Burrows, David N.; Kouveliotou, Chryssa; Palmer, David; Gogus, Ersin; Kaneko, Yuki; Evans, Phil; Degenaar, Nathalie; Reynolds, Mark; Miller, Jon M.; Wijnands, Rudy; Mori, Kaya; Gehrels, Neil

212.05D The neutron star radius and the dense-matter equation of state
Guillot, Sebastien; Servillat, Mathieu; Webb, Natalie; Rutledge, Robert E.
1. McGill University, Montreal, QC, Canada. 2. CEA Saclay, Gif-sur-Yvette, France. 3. IRAP/CNRS, Toulouse, France.

212.06 The Neutron Star Interior Composition Explorer (NICER): Future X-ray Astrophysics from the International Space Station
Arzoumanian, Zaven; Gendreau, Keith
1. CRESST/USRA, Greenbelt, MD. 2. NASA GSFC, Greenbelt, MD.
Contributing teams: NICER team
212.07 A new crystalline phase in magnetar crusts
Mahmoodifar, Simin; Bedaque, Paulo F.; Sen, Srimoyee

1Physics, University of Maryland, College Park, MD.

213 Spitzer Space Telescope: The Next Ten Years

Tuesday, 10:00 AM - 11:30 AM; Potomac Ballroom C

NASA’s Spitzer Space Telescope passed its ten-year launch anniversary in 2013 marking a decade of exciting, ground-breaking infrared science programs. The observatory excels at observations aimed at characterizing exoplanets, brown dwarf weather, and studies of the high-redshift universe, and continues to support programs across a wide spectrum of astrophysical disciplines. The science synergy with other NASA missions, in particular the Hubble Space Telescope and the Kepler Observatory, continues to be outstanding. The current engineering assessment shows that Spitzer can continue operations into at least 2017. While it will not be taking observations in ten years, Spitzer observations will have a major impact on future missions and science programs planned in the next decade. Spitzer science programs already play a major role in defining the source lists and science for the James Webb Space Telescope. This special session highlights the current state of the art of Spitzer science programs in the fields of high-redshift galaxies, high-redshift clusters, exoplanets, and stellar variability. The speakers will also look to the future when Spitzer will have ceased to operate but will continue to have a substantial scientific impact.

Chair(s):
Michael Skrutskie, Univ. Of Virginia

Organizer(s):
Michael Skrutskie, Univ. Of Virginia

213.01 Introduction: Spitzer -- The Next Ten Years
Storrie-Lombardi, Lisa J.

1Caltech, Pasadena, CA.

213.02 Pushing the Frontiers to z>10 with the Spitzer Space Telescope
Capak, Peter L.; Steinhardt, Charles L.; Speagle, Josh S.; Petric, Andreea; Elvis, Martin

1Caltech, Pasadena, CA. 2Harvard Smithsonian Center for Astrophysics, Cambridge, MA.

Contributing teams: The Frontiers Fields Team, The SPLASH team, The COSMOS team

213.03 Spitzer and Variable Young Stars: Shining a Spotlight on Circumstellar Disks
Cody, Ann Marie

1Caltech, Pasadena, CA.

Contributing teams: The CSI 2264 Team

213.04 The Spitzer View of Galaxy Clusters in the Distant Universe
Papovich, Casey J.

1Texas A and M University, College Station, TX.
214 Star Formation II

Tuesday, 10:00 AM - 11:30 AM; National Harbor 12

Chair(s):
Xavier Koenig, NASA Goddard Space Flight Center

214.01 Do Binary Stars Primarily Originate in Multiple Protostar Systems?
Boss, Alan P.¹
¹Carnegie Inst. of Washington, Washington, DC.

214.02 Inferring the Evolutionary Stages of High-mass Star-forming Regions from Chemistry
Feng, Siyi¹; Beuther, Henrik¹; Henning, Thomas¹; Semenov, Dmitry¹; Linz, Hendrik¹
¹Max-Planck Institute for Astronomy, Heidelberg, Germany.

214.03 Radio Emission from Stars in the Central Young Cluster Orbiting Sgr A*
Yusef-Zadeh, Farhad¹; Roberts, D. A.¹; Bushouse, Howard A.²; Cotton, William D.²; Wardle, M. ³; Royster, Marc⁴
¹Northwestern University, Evanston, IL. ²NRAO, Charlottesville, VA. ³STScI, Baltimore, MD. ⁴Mcquarie, Sydney, NSW, Australia.

214.04 A Census of Diverse Environments in Infrared Dark Clouds: Where Do Massive Stars Form?
Dirienzo, William J.¹; Brogan, Crystal L.²; Indebetouw, Remy¹-²; Chandler, Claire J.³; Devine, Kathryn E.⁴
¹University of Virginia, Charlottesville, VA. ²National Radio Astronomy Observatory, Charlottesville, VA. ³National Radio Astronomy Observatory, Socorro, NM. ⁴The College of Idaho, Caldwell, ID.

214.05 Kinematics and Temperature Structures of Filaments in Serpens Main and Serpens South
Lee, Katherine¹; Mundy, Lee G.¹; Fernandez Lopez, Manuel¹; Storm, Shaye¹; Looney, Leslie²; Segura-Cox, Dominique¹; Teuben, Peter J.¹; Rosolowsky, Erik¹; Arce, Hector G.²; Shirley, Yancy L.³; Plunkett, Adele³; Isella, Andrea⁴; Tobin, John J.⁵
¹University of Maryland, College Park, MD. ²University of Illinois at Urbana-Champaign, Urbana-Champaign, IL. ³University of Alberta, Edmonton, AB, Canada. ⁴Yale University, New Haven, CT. ⁵University of Arizona, Tucson, AZ. ⁶Caltech, Pasadena, CA. ⁷NRAO, Charlottesville, VA.

214.06 Dendrogram Analysis of Large-Area CARMA Images in Perseus: the Dense Gas in NGC 1333, Barnard 1, and L1451
Storm, Shaye¹; Mundy, Lee G.¹; Teuben, Peter J.¹; Lee, Katherine¹; Looney, Leslie³; Fernandez Lopez, Manuel¹; Rosolowsky, Erik¹; Arce, Hector G.²; Shirley, Yancy L.³; Segura-Cox, Dominique²; Isella, Andrea⁶
¹University of Maryland, College Park, MD. ²University of Illinois, Urbana-Champaign, IL. ³University of Alberta, Edmonton, AB, Canada. ⁴Yale, New Haven, CT. ⁵University of Arizona, Tucson, AZ. ⁶Caltech, Pasadena, CA.

Contributing teams: CLASSy Team

214.07 PROTOBINARY EVOLUTION DRIVEN BY MAGNETIC BRAKING
Zhao, Bo¹; Li, Zhi-Yun¹; Kratter, Kaitlin M.²
¹University of Virginia, Charlottesville, VA. ²JILA, University of Colorado, Boulder, CO.
214.08D From clouds to cores to envelopes to disks: a multi-scale view of magnetized star formation
Hull, Charles¹; Plambeck, Richard L.¹
¹ UC Berkeley, Berkeley, CA.
Contributing teams: TADPOL survey team

215 Stars - M & L Dwarfs

Tuesday, 10:00 AM - 11:30 AM; National Harbor 5
Chair(s):
Todd Henry, RECONS

215.01 The CASTOFFS Survey: Pursuit of Young M Dwarfs Adrift in the Solar Neighborhood
Schlieder, Joshua E.¹; Bonnefoy, Mickael¹,²; Deacon, Niall¹; Herbst, Tom¹; Johnston, Katharine¹; Lepine, Sebastien²,³; Olofsson, Johan¹; Rice, Emily L¹,²,³; Berger, Edo³; Skemer, Andrew⁶; Hinz, Philip⁶; Chauvin, Gael⁷; Bergfors, Carolina⁸; Henning, Thomas¹; Gaidos, Eric⁹
¹Max Planck Institute for Astronomy, Heidelberg, Germany. ²Georgia State University, Atlanta, GA. ³American Museum of Natural History, New York, NY. ⁴College of Staten Island, CUNY, New York, NY. ⁵Harvard University, Cambridge, MA. ⁶University of Arizona, Tucson, AZ. ⁷IPAG/CNRS, Grenoble, France. ⁸University of Cambridge, Cambridge, United Kingdom. ⁹University of Hawaii, Manoa, HI.

215.02 Kepler’s Cool Eclipsing Binaries
Swift, Jonathan¹; Muirhead, Philip S.²; Johnson, John A.³; Gonzales, Alexandria⁴; Shporer, Avi¹; Plavchan, Peter³; Lockwood, Alex¹; Morton, Tim⁶
¹Caltech, Pasadena, CA. ²Boston University, Boston, MA. ³Harvard, Cambridge, MA. ⁴Scripps College, Claremont, CA. ⁵IPAC, Pasadena, CA. ⁶Princeton, Princeton, NJ.

215.03 HAZMAT I: The Evolution of Far- and Near-UV Emission from Early M Stars
Shkolnik, Evgenya¹; Barman, Travis S.²; Peacock, Sarah²
¹Lowell Observatory, Flagstaff, AZ. ²University of Arizona, Tucson, AZ.

215.04 Gyrochronology of Low-mass Stars - Age-Rotation-Activity Relations for Young M Dwarfs
Kidder, Benjamin¹; Shkolnik, Evgenya²; Skiff, Brian²
¹University of Redlands, Redlands, CA. ²Lowell Observatory, Flagstaff, AZ.

215.05 The SDSS-III APOGEE Radial Velocity Survey of M Dwarfs
Deshpande, Rohit¹; Bender, Chad F.¹; Mahadevan, Suvarth¹; Blake, C. H.²; Terrien, R. C.¹; Carlberg, Joleen K.³; Zasowski, Gail⁴; Crepp, Justin R.⁵
¹Pennsylvania State University, University Park, PA. ²University of Pennsylvania, Philadelphia, PA. ³Department of Terrestrial Magnetism, Washington, D.C., DC. ⁴Johns Hopkins University, Baltimore, MD. ⁵Notre Dame, South Bend, IN.
Contributing teams: APOGEE M dwarfs
215.06 Empirical Estimates of Fundamental Properties for Nearby M Dwarfs Based on Near Infrared Spectra
Newton, Elisabeth R.1; Charbonneau, David1; Irwin, Jonathan1; Berta-Thompson, Zachory K.1,2; Rojas Ayala, Barbara D.1; Covey, Kevin1; Lloyd, James P.4
1Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 2Massachusetts Institute of Technology, Cambridge, MA. 3Universidade do Porto, Porto, Portugal. 4Cornell University, Ithaca, NY. 5Lowell Observatory, Flagstaff, AZ.

215.07 Discovery of a Benchmark, Extremely-Red, Young L Dwarf
Allers, Katelyn N.1; Liu, Michael C.2; Kotson, Michael C.2; Magnier, Eugene A.2; Deacon, Niall1; Dupuy, Trent J.1; Aller, Kimberly M.1
1Bucknell University, Lewisburg, PA. 2Institute for Astronomy, University of Hawai‘i, Honolulu, HI. 3Max Planck Institute for Astronomy, Heidelberg, Germany. 4Harvard-Smithsonian Center for Astrophysics, Boston, MA.

216 Supernovae & Nebulae I
Tuesday, 10:00 AM - 11:30 AM; National Harbor 2
Chair(s):
Eric Lentz, Univ. of Tennessee

216.01 Type IIP supernova progenitor properties from Pan-STARRS1 light curves
Sanders, Nathan1; Soderberg, Alicia M.1
1Harvard University, Cambridge, MA.
Contributing teams: Pan-STARRS1 CfA Supernova Group

216.02D The UV Properties of Core Collapse Supernovae
Pritchard, Tyler A.1; Roming, Peter2,1
1Pennsylvania State University, University Park, PA. 2Southwest Research Institute, San Antonio, TX.

216.03 Core Collapse Supernova Models For Nucleosynthesis
Casanova, Jordi1; Frohlich, Carla1; Perego, Albino3; Hempel, Matthias2
1North Carolina State University, Raleigh, NC. 2University of Basel, Basel, Switzerland. 3Institute of Nuclear Physics, Technische Universitat Darmstadt, Darmstadt, Germany.

216.04 Multidimensional Radiation Hydrodynamic Simulations of Core-Collapse Supernovae
Dolence, Joshua1; Burrows, Adam S.1; Zhang, Weiqun2
1Princeton University, Princeton, NJ. 2Lawrence Berkeley National Laboratory, Berkeley, CA.

216.05 Revival of The Stalled Core-Collapse Supernova Shock Triggered by Precollapse Asphericity in the Progenitor Star
Couch, Sean M.1; Ott, Christian D.2
1University of Chicago, Chicago, IL. 2Caltech, Pasadena, CA.

216.06 Core Collapse or Thermonuclear? New Evidence for the Ambiguous Cases of SNe 2005gj and 2012ca
Fox, Ori D.1
1UC Berkeley, Berkeley, CA.

216.07 Host Galaxies of High Ejecta-Velocity Core-Collapse Explosions
Kelly, Patrick1
1California - Berkeley, University of, Berkeley, CA.
217 Surveys and Large Programs I

Tuesday, 10:00 AM - 11:30 AM; Maryland Ballroom D

Chair(s):
Andrej Prsa, Villanova University

217.01 LEGUS: A Legacy ExtraGalactic UV Survey of Nearby Galaxies with HST
Lee, Janice C. 1, 20; Calzetti, Daniela 2; Adamo, Angela 3; Aloisi, Alessandra 1; Andrews, Jennifer E. 2; Brown, Thomas M. 1; Chandar, Rupali 6; Christian, Carol A. 1; Cignoni, Michele 5; Clayton, Geoffrey C. 6; Da Silva, Robert L. 2; de Mink, Selma E. 10; Dobbs, Claire 8; Elmegreen, Bruce 9; Elmegreen, Debra M. 11; Evans, Aaron S. 12; Fumagalli, Michele 10; Gallagher, John S. 13; Gouliermis, Dimitrios 2; Grebel, Eva 14; Herrero-Davo, Artemio 15; Hilbert, Bryan 1; Hunter, Deidre A. 16; Johnson, Kelsey E. 12; Kennicutt, Robert 17; Kim, Hwi hyun 18; Krumholz, Mark R. 7; Lennon, Danny J. 15; Martin, Christopher D. 20; Nair, Preethi 1; Nota, Antonella 22; Pellerin, Anne 21; Prieto, Jose 25; Regan, Michael W. 1; Sabb, Elena 22; Schaefer, Daniel 23; Schiminovich, David 26; Smith, Linda J. 22; Thilker, David A. 25; Tosi, Monica 26; Van Dyk, Schuyler D. 20; Walterbos, Rene A. 22; Whitmore, Bradley C. 1; Wofford, Aida 28


217.02 Improved spectral energy distribution fitting of galaxies at 1 < z < 3.5 in the SFR-M* plane and their morphological properties
Lee, Bomee 1; Giavalisco, Mauro 1; Acquaviva, Viviana 2

1 University of Massachusetts at Amherst, Amherst, MA. 2 CUNY NYC College of Technology, Brooklyn, NY.

Contributing teams: The CANDELS collaboration

217.03 Herschel-CANDELS: The Infrared Luminosity Function and its Evolution
Inami, Hanae 1; Dickinson, Mark 1; Elbaz, David 1; Pfenn, Janine 1; Kartaltepe, Jeyhan S. 1

1 NOAO, Tucson, AZ. 2 CEA, Saclay, France.

Contributing teams: CANDELS+Herschel Team, The CANDELS collaboration

217.04D The formation of the compact early-type galaxies at high-redshift
Williams, Christina C. 1; Giavalisco, Mauro 1

1 University of Massachusetts, Amherst, Amherst, MA.

Contributing teams: The CANDELS Collaboration
217.05 **Live fast, die small: compact SFGs at z=2-3, the building blocks of the red-sequence**
Barro, Guillermo¹; Faber, Sandra M. ¹; Perez-Gonzalez, Pablo²; Pacifici, Camilla³; Trump, Jonathan R.¹; Koo, David C.¹; Guo, Yicheng¹
¹ UCO/Lick, Santa Cruz, CA. ² Universidad Complutense de Madrid, Madrid, Madrid, Spain. ³ Yonsei University, Seoul, Korea, Republic of.
Contributing teams: The CANDELS collaboration

217.06 **Are Compton-Thick AGN the Missing Link Between Mergers and Black Hole Growth?**
Kocevski, Dale¹; Nandra, Kirpal²; Brightman, Murray²
¹ University of Kentucky, Lexington, KY. ² Max-Planck-Institut fur extraterrestrische Physik, Garching, Germany.
Contributing teams: The CANDELS Collaboration

217.07 **The Mass Function of the First Galaxies from the CANDELS Survey**
Conselice, Christopher¹; Duncan, Kenneth¹; Hartley, William¹; Mortlock, Alice¹
¹ Univ. of Nottingham, University Park, England, UK, United Kingdom.
Contributing teams: The CANDELS collaboration

217.08 **NEOWISE: A Mid-Infrared Synoptic Survey**
Mainzer, Amanda K.¹; Bauer, James M.¹,²; Cutri, Roc M.²; Grav, Tommy³; Masiero, Joseph R.¹; Wright, Edward L.¹; Nugent, Carolyn¹; Stevenson, Rachel¹; Fabinsky, Beth¹
¹ JPL, Pasadena, CA. ² Infrared Processing and Analysis Center, California Institute of Technology, Pasadena, CA. ³ Planetary Science Institute, Tucson, AZ. ⁴ University of California Los Angeles, Los Angeles, CA.

### 218 The Solar System

Tuesday, 10:00 AM - 11:30 AM; Potomac Ballroom D

**Chair(s):**
**Alex Storrs, Towson Univ.**

218.01 **Saturn’s Ring Rain: Water Influx and Ring Lifetime Estimates**
Moore, Luke¹; O’Donoghue, James²; Mueller-Wodarg, Ingo³; Mendillo, Michael¹
¹ Boston University, Boston, MA. ² University of Leicester, Leicester, United Kingdom. ³ Imperial College London, London, United Kingdom.

218.02 **New Studies of Jovian Decametric Emission using the Long Wavelength Array Station 1**
Clarke, Tracy E.¹; Skarda, Jinhie²; Higgins, Charles³; Imai, Kazumasa⁴; Imai, Masa-fumi³; Reyes, Francisco J.⁶
¹ Naval Research Lab., Washington, DC. ² Stanford University, Stanford, CA. ³ Middle Tennessee State University, Murfreesboro, TN. ⁴ Kochi National College of Technology, Kochi City, Kochi Prefecture, Japan. ⁵ Kyoto University, Kyoto, Kyoto Prefecture, Japan. ⁶ University of Florida, Gainesville, FL.
Contributing teams: Long Wavelength Array
218.03 Fine Structure in Jupiter’s Decametric Emission using the Long Wavelength Array Station 1
Higgins, Charles1; Clarke, Tracy E.2; Skarda, Jinhie3; Imai, Kazumasa4; Imai, Masafumi5; Reyes, Francisco J.6
1Middle Tennessee St. Univ., Murfreesboro, TN. 2Naval Research Labs, Washington, DC. 3Stanford University, Stanford, CA. 4Kochi National College of Technology, Kochi, Japan. 5Kyoto University, Kyoto, Japan. 6University of Florida, Gainesville, FL.

218.04 Trojan Asteroid Lightcurves from the Palomar Transient Factory Survey
Waszczak, Adam1; Ofek, Eran2
1California Institute of Technology, Pasadena, CA. 2Weizmann Institute of Science, Rehovot, Israel.
Contributing teams: PTF Team

218.05D A dynamical model for the impact rate and angular distribution of long period comets
Feng, Fabo1; Bailer-Jones, Coryn1
1MPIA, Heidelberg, Germany.

218.06 The Characteristics and Evolution of the Dust Coma of Comet C/2012 S1 (ISON)
Li, Jian-Yang1; Kelley, Michael S.2; Knight, Matthew M.3,4; Farnham, Tony2; Weaver, Harold A.4; A’Hearn, Michael F.2; Mutchler, Maximilian J.5; Kolokolova, Ludmila2; Lamy, Philippe L.6; Toth, Imre7; Xia, Karen8
1Planetary Science Institute, Tucson, AZ. 2Department of Astronomy, University of Maryland College Park, College Park, MD. 3Lowell Observatory, Flagstaff, AZ. 4Johns Hopkins University, Applied Physics Laboratory, Laurel, MD. 5Space Telescope Science Institute, Baltimore, MD. 6Laboratoire d’Astrophysique de Marseille, Marseille, France. 7Konkoly Observatory, Research Center for Astronomy and Earth Sciences, Hungarian Academy of Science, Budapest, Hungary. 8Thomas Jefferson High School for Science and Technology, Alexandria, VA.

218.07 Linear Polarization Measurements of Comet Lovejoy from STEREO and SOHO, and their Application to Comet ISON
Thompson, William T.1; Battams, Karl2
1Adnet Systems, Inc., Lanham, MD. 2Naval Research Laboratory, Washington, DC.

218.08 Modeling Results for Optically Thick Deep Impact Spectra
Gersch, Alan1; A’Hearn, Michael F.1; Feaga, Lori M.1
1Univ. of Maryland, College Park, MD.

Education and Public Outreach, Student Welcome: Dr. John Grunsfeld, NASA

Tuesday, 11:30 AM - 12:00 PM; Maryland Ballroom C
219 Cannon Award: Giant Planets in Dusty Disks

Tuesday, 11:40 AM - 12:30 PM; Potomac Ballroom A

Chair(s):
David Helfand, Quest University Canada

Sarah Dodson-Robinson - Annie Jump Cannon Award
The 2013 Annie Jump Cannon Award is given to Sarah Dodson-Robinson for her outstanding contributions to the study of the formation of planetary systems. Especially notable is how her insights into giant planet formation in our own Solar System and in exoplanetary systems arise from broadly combining theoretical modeling with stellar and disk observations. She formed new models meshing disk structure, dynamics and chemistry and connected the metal and molecular content of disks with their mode of planet formation. She showed that both core-accretion and gravitational instability may operate in different regions around stars of different masses to form giant planets. She highlighted the importance of snow lines of different ice compositions for observers to measure.

219.01 Giant Planets in Dusty Disks
Dodson-Robinson, Sarah E.1,2; Brugamyer, Erik1; Teiser, Jens3
1University of Texas at Austin, Austin, TX. 2University of Delaware, Newark, DE. 3University of Duisburg-Essen, Duisburg & Essen, Ruhr, Germany.

Education and Public Outreach, Student Hands On Science

Tuesday, 12:00 PM - 2:00 PM; Exhibit Hall ABC

Proposing for NRAO Instruments

Tuesday, 12:30 PM - 3:30 PM; Potomac 1

This splinter, hosted by the National Radio Astronomy Observatory, is aimed at those who are interested in proposing observations with NRAO instruments (ALMA, GBT, VLA, VLBA), especially new users. After an introduction about facility capabilities and the proposing process, we will have an hands-on session to work on proposals using your own laptop, during which NRAO staff experts will be available to assist and answer questions. We encourage participants to register ahead of time in the NRAO User Database at http://my.nrao.edu. Refreshments will be provided.

Organizer(s):
Gustaaaf Van Moorsel, NRAO
Career Hour 3: Network Yourself to a Great Career

Tuesday, 12:30 PM - 1:30 PM; National Harbor 2

It’s elementary—networking is an absolute necessity in any career, and especially in science and engineering, and math. In fact, networking is not only critical to advancing your own career, but also to advancing scholarship itself. But what exactly is “networking”? It’s more than just saying hello at a conference! Learn how to appropriately promote yourself and build a network. Discover how to “work a room”, start conversations with people you have never met before, and obtain information that can set you on a path to career victory. The importance of and use of social networks will be emphasized.

Audience: students, postdocs, early- and mid-career professionals
Facilitator: Alaina G. Levine, President, Quantum Success Solutions
Alaina G. Levine is a science careers consultant, science writer, and professional speaker and comedian. Her new book on networking strategies for scientists and engineers will be published by Wiley in 2014.

Chair(s):
Alaina Levine, Quantum Success Solutions
Organizer(s):
Kelle Cruz, Hunter College/CUNY and AMNH

220 CSWA Demographics Survey 2013

Tuesday, 12:45 PM - 1:45 PM; National Harbor 12

The AAS Committee on the Status of Women in Astronomy (CSWA) has been conducting demographics surveys of major astronomy departments and divisions since 1992 to track the representation of women across the field. In 2013 we updated the survey for the first time in 10 years. This town hall will present the results of the demographics survey and invite discussion about the implications for policy in our field.

Chair(s):
A. Meredith Hughes, UC Berkeley

221 NASA Town Hall

Tuesday, 12:45 PM - 1:45 PM; Potomac Ballroom A

Senior representatives from NASA’s Science Mission Directorate and Astrophysics Division will discuss NASA’s science program and outlook. Topics will include the status of the research program, highlights of operating missions, NASA’s response to the Astro2010 decadal survey, progress of missions in development, and anticipated opportunities for both non-flight basic research awards (grants) and flight mission investigations.

Chair(s):
Paul Hertz, NASA Headquarters
Organizer(s):
Linda Sparke, NASA Headquarters
222 Thirty Meter Telescope (TMT) Town Hall

Tuesday, 12:45 PM - 1:45 PM; Potomac Ballroom C

The TMT design has been under development since 2003 and is now technically mature. With the completion of the Design Development Phase in March 2009, the project entered the Preconstruction Phase, and is ready to enter the Construction Phase at the Mauna Kea site in April 2014. In this town hall, the latest status of the TMT project will be presented. As well, TMT is continuing a new era in planning to develop a public-private partnership in TMT, with opportunities for all members (individuals and institutions) of the US astronomy community to become engaged and involved in TMT through a potential-partnership planning exercise with the NSF. Opportunities for the community include continued development of the TMT science case, the organization of the national and international scientific programs, planning for the first-light and next-generation instrumentation programs, planning for observatory operations, data access and archiving, and long-term international development of the Mauna Kea site. In summary, TMT is a telescope with a 30-meter, filled aperture primary mirror composed of 492 x 1.46-meter segments. Instruments and an adaptive optics (AO) system will be housed on two large, stable Nasmyth platforms. TMT will have a broad suite of capabilities ranging from wide-field, multi-object, seeing-based spectrometers to instruments that operation at the diffraction limit of the telescope behind a high-performance AO system. The TMT project is an international partnership involving Canada, the USA, Japan, China, and India. It represents a unique combination of technical, industrial, and scientific collaboration that benefits all partners. Sited near existing, complementary facilities on Mauna Kea in Hawaii, TMT will unite the Pacific Rim astronomical community about its vantage point, and will exclusively provide extremely-large telescope (ELT) access to the northern sky.

Chair(s):
Michael Bolte, Univ. Of California, Santa Cruz
Organizer(s):
Michael Bolte, Univ. Of California, Santa Cruz

Engaging Scientists in NASA Astrophysics E/PO

Tuesday, 1:00 PM - 2:00 PM; National Harbor 4

This workshop will provide an opportunity for scientists and the NASA Astrophysics education and public outreach (E/PO) community to connect directly with each other, explore how to make NASA E/PO resources and activities more accessible to scientists, and assist scientists in making their E/PO efforts more effective. The NASA Science Mission Directorate (SMD) Astrophysics E/PO portfolio includes a large number of resources and opportunities that have proven to be helpful for scientists and educators. Making these readily available to the scientific community is a priority and a challenge we are trying to address. In this special session, we will highlight specific opportunities for scientists to work with NASA E/PO teams. E/PO teams from several NASA Astrophysics programs will be on hand for one-on-one conversations with astronomers and astronomy educators. They will learn about the variety of field-tested educational resources and products with time for hands-on exploration. As part of the interaction, we will seek input on specific ways to collaborate in E/PO, taking into account the individual scientist’s interests and time availability.

Organizer(s):
Bonnie Meinke, STScI
Amateur Talk: Hunting the Oldest Stars in the Neighborhood

Tuesday, 1:30 PM - 2:00 PM; Maryland Ballroom A

The ultra-faint dwarf galaxies are Milky Way satellites discovered in the Sloan Digital Sky Survey and the subject of intense scrutiny by the Keck Observatory and the Hubble Space Telescope. They are the least luminous, most dark-matter dominated, and least chemically-evolved galaxies known. These galaxies offer a new front in the efforts to understand the missing satellite problem - the fact that theory predicts far more satellites than those actually observed as dwarf galaxies around the Milky Way and Andromeda. As the best candidate fossils from the early universe, the ultra-faint dwarfs are ideal places to test the physics of galaxy formation from that era.

Chair(s):
Thomas Brown, STScI

223 AGN Theory and Techniques

Tuesday, 2:00 PM - 3:30 PM; National Harbor 11

Chair(s):
Giovanni Fossati, Rice Univ.

223.01 Advection-Dominated Black Hole Accretion: Two-Fluid Hydrodynamics, Particle Acceleration, and Outflows
Lee, Jason P.1; Becker, Peter A.1
1George Mason University, Fairfax, VA.

223.02 Making Intermediate mass black holes around Supermassive black holes: like making Jupiters around stars.
McKernan, Barry1,2; Ford, Saavik1,2; Kocsis, Bence3; Lyra, Wladimir4,2

223.03 Hiding a supermassive black hole behind dusty, infrared-driven flows in Type-2 AGN: results from radiation-hydrodynamics simulations
Dorodnitsyn, Anton1
1NASA GSFC/UMD, Greenbelt, MD.
Contributing teams: T. Kallman, G.S. Bisnovatyi-Kogan

223.04 A New Analytical Model for X-Ray Time Lags from Accreting Black Holes
Kroon, John J.1; Becker, Peter A.1
1George Mason University, Fairfax, VA.

223.05 Constraining MHD Disk-Winds with X-ray Absorbers
Fukumura, Keigo1; Tombesi, Francesco2; Shrader, Chris R.3; Kazanas, Demosthenes4; Contopoulos, John5; Behar, Ehud1
1Technion, Haifa, Israel. 2Academy of Athens, College ParkAthens, Greece. 3UMD, College Park, MD. 4James Madison University, Harrisonburg, VA. 5NASA/GSFC, Greenbelt, MD.
223.06 Polarization Features of AGN Dusty Plasmas
Lopez, Ericson¹,²; Deustua, Susana E.²
¹Quito Astronomical Observatory of National Polytechnic School, Quito, Ecuador. ²Space Telescope Sciences Institute, Baltimore, MD.

223.07 Advances in Reverberation Mapping of Quasars: Techniques, Experiments, and Implications
Denney, Kelly¹
¹Ohio State University, Columbus, OH.

223.08 Space-Based Aperture-Masking Interferometry of Active Galactic Nuclei
Ford, K.E. S.¹,²; McKernan, Barry¹,²; Sivaramakrishnan, Anand³,²; Martel, Andre³; Lafreniere, David³; Parmentier, Sebastien³; Koekemoer, Anton M.³
¹Borough of Manhattan Community College - CUNY, New York, NY. ²American Museum of Natural History, New York, NY. ³Space Telescope Science Institute, Baltimore, MD. ⁴Stony Brook University - SUNY, Stony Brook, NY. ⁵University of Montreal, Montreal, QC, Canada.

224 Astronomy Education Policy, EPO Programs, and Undergraduate Education

Tuesday, 2:00 PM - 3:30 PM; Maryland 2

Chair(s):
Catharine Garmany, NOAO

224.01 Science Education & Advocacy: Tools to Support Better Education Policies
O’Donnell, Christine¹,²; Cunningham, Beth³; Hehn, Jack G.²
¹University of Virginia, Charlottesville, VA. ²American Association of Physics Teachers, College Park, MD.

224.02 Impact of NASA’s Astrophysics Education and Public Outreach Programs
Smith, Denise A.¹; Hasan, Hashima²
¹STScI, Baltimore, MD. ²NASA Headquarters, Washington, DC.

224.03 The ASP at 125: Advancing Science Literacy in an Age of Acceleration
Manning, Jim¹
¹Astronomical Society of the Pacific, San Francisco, CA.

224.04 Findings from a NASA SMD Survey of Two-Year College Faculty
Schultz, Gregory R.²; Low, Russanne³; CoBabe-Ammann, Emily³; Gross, Nicholas⁴; Buxner, Sanlyn⁵

224.05 Introductory Astronomy Student-Centered Active Learning at The George Washington University
Cobb, Bethany¹
¹George Washington University, Washington, DC.

224.06 SkyServer Voyages: Next-Generation Educational Activities using the Sloan Digital Sky Survey
Meredith, Kate¹; Raddick, Jordan¹; Lundgren, Britt²
¹Johns Hopkins University, Baltimore, MD. ²University of Wisconsin, Madison, WI.
224.07 THE SPACE PUBLIC OUTREACH TEAM (SPOT)
Williamson, Kathryn¹

¹Montana State University, Bozeman, MT.
Contributing teams: National Radio Astronomy Observatory, Montana Space Grant Consortium, West Virginia Space Grant Consortium, NASA Independent Verification and Validation Center

224.08 Inspiring a future generation of Astronomer and Astrophysicists during the 48th and 49th annual Astro-Science Workshop
Martynowycz, Michael¹, ²; Ratliff, Gayle¹, ²; Gyuk, Geza²; Hammergren, Mark²
¹University of Illinois Institute of Technology, Chicago, IL. ²Adler Planetarium & Astronomy Museum, Chicago, IL.

224.09 Dark Skies Africa: an NOAO and IAU OAD Program on Light Pollution
Walker, Constance E.¹; Tellez, Daniel¹; Pompea, Stephen M.¹
¹NOAO, Tucson, AZ.

225 Astrophysics Code Sharing II: The Sequel
Tuesday, 2:00 PM - 3:30 PM; National Harbor 5
Research in astronomy is increasingly dependent on software methods, yet these methods are often not revealed, inhibiting re-use and undermining a basic tenet of scientific research: reproducibility. Building on the findings of the January 2013 AAS splinter meeting “Astrophysics Code Sharing?”, which brought to light issues with sharing computational research methods, this session, organized by the AAS’s Working Group on Software (WGAS) and the Astrophysics Source Code Library (ASCL), explores how we as a community can better support making codes used in research available for others to examine. A panel of speakers will discuss the state of code sharing, funding agencies’ policies, and, illustrated by case studies, the benefits and pitfalls of releasing code. The case studies are presented by the authors of codes with varying times in the community, from new efforts to well-entrenched software. They will share the issues that arose when they released their codes, how they dealt with or mitigated the issues, and what benefits arose from releasing their software. They will also discuss what they learned through the process and their best practices. The floor will then be open for discussion on ways to encourage code sharing to improve the transparency and efficiency of research and mitigate the negative aspects of releasing code.

Chair(s):
Robert Hanisch, STScI
Peter Teuben, Univ. of Maryland

Organizer(s):
Alice Allen, Astrophysics Source Code Library

225.01 Occupy Hard Drives: Making your work more valuable by giving it away
Weiner, Benjamin J.¹
¹University of Arizona, Tucson, AZ.

225.02 Maintaining A User Community For The Montage Image Mosaic Toolkit.
Berriman, G. B.¹
¹Caltech, Pasadena, CA.
225.03 Cloudy—simulating the non-equilibrium microphysics of gas and dust, and its observed spectrum
Ferland, Gary J.1
1 Univ. of Kentucky, Lexington, KY.

225.04 NSF Policies on Software and Data Sharing and their Implementation
Katz, Daniel1
1 National Science Foundation, Arlington, VA.

225.05 The Astropy Project’s Self-Herding Cats Development Model
Tollerud, Erik J.1
1 Yale University, New Haven, CT.

225.06 Costs and benefits of developing out in the open
Hogg, David W.1
1 New York Univ., New York, NY.

226 Cosmology & CMB IV

Tuesday, 2:00 PM - 3:30 PM; Maryland Ballroom C

Chair(s):
Alan Kogut, NASA’s GSFC

226.01 Innovative Cosmology with Cosmic Voids
Sutter, Paul M.1, 2; Wandelt, Benjamin1, 3; Weinberg, David H.2; Warren, Michael S.4; Hamaus, Nico1
1 Paris Institute of Astrophysics, Paris, Ile-de-France, France. 2 Ohio State University, Columbus, OH. 3 University of Illinois at Urbana-Champaign, Urbana, IL. 4 Los Alamos National Laboratory, Los Alamos, NM.

226.02 A Path to the Past: Observing High Redshifts Using Cross-Correlations
Fernandez, Elizabeth R.1
1 Kapteyn Astronomical Institute, Groningen, Netherlands.

226.03 Fermat Potentials of Embedded Lensing, the Integrated Sachs-Wolfe Effect, and Weak-Lensing of CMB by Cosmic Voids
Chen, Bin1; Kantowski, Ronald1; Dai, Xinyu1
1 University of Oklahoma, Norman, OK.

226.04 Finding the 99% Today: The Cosmological Role of Dwarf Galaxies
Venkatesan, Aparna1
1 Univ. of San Francisco, San Francisco, CA.

226.05 Cosmological Constraints from applying SHAM to rescaled cosmological simulations
Simha, Vimal1
1 Durham University, Durham, United Kingdom.

226.06 Large-Scale Structure Formation with Dark Energy and Massive Neutrinos
Upadhye, Amol1, 2; Biswas, Rahul1; Pope, Adrian C.1; Heitmann, Katrin1, 2; Habib, Salman1, 2; Finkel, Hal1; Frontiere, Nicholas1, 2
1 Argonne National Laboratory, Argonne, IL. 2 University of Chicago, Chicago, IL.

226.07 Using gaps in N-body tidal streams to probe missing satellites
Ngan, Wayne1; Carlberg, Raymond G.1
1 University of Toronto, Toronto, ON, Canada.
226.08 Objects Appear Smaller as They Recede: How Proper Motions Can Directly
Reveal the Cosmic Expansion, Provide Geometric Distances, and Measure the
Hubble Constant
Darling, Jeremiah K.1
1Univ. of Colorado, Boulder, Boulder, CO.

226.09 A Novel Suite of Hydrodynamical Simulations of the Lyman-Alpha Forest with
Massive Neutrinos
Rossi, Graziano1; Palanque-Delabrouille, Nathalie1; Yeche, Christophe2; Viel, Matteo3; Rich, James1; LeGoff, Jean-Marc1; Borde, Arnaud1
1CEA, Centre de Saclay, Irfu/SPP, Gif-sur-Yvette, France. 2INAF - Osservatorio
Astronomico di Trieste, Trieste, Italy. 3INFN/National Institute for Nuclear
Physics, Trieste, Italy.

227 Evolution of Emission Line Galaxies
Tuesday, 2:00 PM - 3:30 PM; Potomac Ballroom D
Chair(s):
Dale Kocevski, University of California, Santa Cruz

227.01 “Direct” Gas-Phase Metallicities, Stellar Properties, and Local Environments of
Emission-Line Galaxies at Redshifts below 0.9
Ly, Chun1,2; Malkan, Matthew A.3; Nagao, Tohru4; Kashikawa, Nobunari5; Shimasa-ku, Kazuhiro2; Hayashi, Masao6
1NASA GSFC, Greenbelt, MD. 2Space Telescope Science Institute, Baltimore, MD. 3Indiana University, Bloomington, IN. 4Yale University, New Haven, CT. 5Carnegie Observatories, Pasadena, CA. 6University of
Wyoming, Laramie, WY. 7University of Tokyo, Kashiwa City, Chiba, Japan. 8Siena College, Loudonville, NY.

227.02 The NewHα Survey: Investigating the Fundamental Metallicity Relation at z~0.8
De Los Reyes, Mithi1; Lee, Janice C.2; Ly, Chun3; Salim, Samir3; Momcheva, Ivelina G.4,5; Feddersen, Jesse4,3; Dale, Daniel A.6; Ouchi, Masami5; Ono, Yoshiaki7; Finn, Rose8
1North Carolina State University, Raleigh, NC. 2Space Telescope Science Institute, Baltimore, MD. 3Indiana University, Bloomington, IN. 4Yale University, New Haven, CT. 5Carnegie Observatories, Pasadena, CA. 6University of
Wyoming, Laramie, WY. 7University of Tokyo, Kashiwa City, Chiba, Japan. 8Siena College, Loudonville, NY.

227.03D Physical Properties of Emission-Line Galaxies at z~2 from Near-Infrared
Spectroscopy with Magellan FIRE
Masters, Daniel C.1,2; McCarthy, Patrick J.2; Malkan, Matthew A.3; Siana, Brian
D.1; Scarlata, Claudia4; Hathi, Nimish P.5; Atek, Hakim6; Henry, Alaina L.4
1Physics & Astronomy, University of California, Riverside, Pasadena, CA. 2Carnegie Observatories, Pasadena, CA. 3University of California, Los Angeles, Los Angeles, CA. 4Goddard Space Flight Center, Greenbelt, MD. 5University of
Minnesota, Minneapolis, MN. 6Laboratoire d’Astrophysique de Marseille, Marseilles, France. 7Laboratoire d’Astrophysique Ecole Polytechnique, Sauverny, Switzerland.
Contributing teams: WISP team
227.04 Simulating Future Near-Infrared Grism Spectroscopy Using The WFC3 Infrared Spectroscopic Parallels (WISP)
Colbert, James W.1; Teplitz, Harry I.1; Atek, Hakim4; Bunker, Andrew J.5; Rafelski, Marc1; Scarlata, Claudia2; Ross, Nathaniel1; Malkan, Matthew A.3; Bedregal, Alejandro5; Dominguez, Alberto1; Dressler, Alan5; Henry, Alaina L.9; Martin, Crystal L.10; Masters, Daniel1; McCarthy, Patrick J.8; Siana, Brian D.7
1 Caltech, Pasadena, CA. 2 University of Minnesota, Minneapolis, MN. 3 University of California, Los Angeles, Los Angeles, CA. 4 Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland. 5 University of Oxford, Oxford, United Kingdom. 6 Tufts University, Medford, MA. 7 University of California, Riverside, Riverside, CA. 8 Observatories of Carnegie Institution for Science, Pasadena, CA. 9 Goddard Space Flight Center, Greenbelt, MD. 10 University of California, Santa Barbara, Santa Barbara, CA.

227.05 Science Highlights from the 3D-HST Survey
Momcheva, Ivelina G.1
1 Yale University, New Haven, CT.
Contributing teams: 3D-HST Survey Team

227.06D Recently Quenched Galaxies at z=2 in the 3D-HST Survey
Whitaker, Katherine E.1; Van Dokkum, Pieter G.2; Brammer, Gabriel1; Momcheva, Ivelina G.2; Skelton, Rosalind4; Franx, Marijn5
1 NASA/GSFC, Greenbelt, MD. 2 Yale University, New Haven, CT. 3 STScI, Baltimore, MD. 4 SAAO, Cape Town, South Africa. 5 Leiden Observatory, Leiden, Netherlands.
Contributing teams: 3D-HST collaboration

227.07 Star formation rates and extinction at z=1-2 from the AGHAST HST infrared grism survey
Weiner, Benjamin J.1
1 University of Arizona, Tucson, AZ.
Contributing teams: AGHAST team

228 Extrasolar Planet Detection - Kepler Mission and Microlensing Surveys
Tuesday, 2:00 PM - 3:30 PM; Maryland Ballroom A
Chair(s):
Natalie Batalha, San Jose State University

228.01 The Kepler Mission on Two Reaction Wheels is K2
Haas, Michael R.1; Barclay, Thomas4,1; Batalha, Natalie M.3; Bryson, Steve1; Caldwell, Douglas A.2,1; Campbell, Jennifer4,1; Coughlin, Jeffrey2,1; Howell, Steve B.1; Jenkins, Jon M.2,1; Klaus, Todd C.3,1; Mullally, Fergal1; Sanderfer, Dwight T.1; Sobeck, Charles K.5; Still, Martin D.4,1; Troeltzsch, John4; Twicken, Joseph D.2,1
1 NASA Ames Research Center, Moffett Field, CA. 2 SETI Institute, Mountain View, CA. 3 Orbital Sciences Corp, Dulles, VA. 4 BAER Institute, Sonoma, CA. 5 Ball Aerospace, Boulder, CO.

228.02 The Kepler Q1-Q12 Planet Candidate Catalogue
Rowe, Jason1,2
1 NASA Ames Research Center, Moffett Field, CA. 2 SETI Institute, Moffett Field, CA.
Contributing teams: The Kepler Team
228.03 An Estimate of Eta-Earth, Based on a New Analysis of Kepler Completeness
Traub, Wesley A. 1
1 Jet Propulsion Laboratory, Pasadena, CA.

228.04 Bridging the Habitable Gap: Combining Kepler and AFTA-WFIRST to Obtain a
More Robust Estimate of ?_Earth
Penny, Matthew 1; Gaudi, B. S. 1
1 Ohio State University, Columbus, OH.

228.05 Enabling an Exoplanet Census with the Korean Microlensing Telescope
Network: Optimal Survey Strategies and Predicted Planet Yields
Henderson, Calen B. 1; Gaudi, B. S. 1; Han, Cheongho 2; Nataf, David 3; Skowron, Jan 4; Penny, Matthew 1; Gould, Andrew 1
1 The Ohio State University, Columbus, OH. 2 Chungbuk National University, Cheongju, Korea, Republic of. 3 Australian National University, Weston Creek, ACT, Australia. 4 Warsaw University Observatory, Warsaw, Poland.

228.06 New Programs to Promote Mass Measurements and Planet Discovery via
Gravitational Lensing Events
Di Stefano, Rosanne 1; Bryk, William 2; Ginsburg, Idan 1; Kunapuli, Nikhil 3; Murphy, Max 1; Oprescu, Antonia 1; Primini, Francis 1; Tunbridge, Ben 1

229 Extrasolar Planet Detection - Occultations, Coronagraphy, and Astrometry

Tuesday, 2:00 PM - 3:30 PM; National Harbor 13

Chair(s):
Ruslan Belikov, NASA Ames Research Center

229.01D Laboratory Verification of Occulter Contrast Performance and Formation Flight
Sirbu, Dan 1
1 Princeton University, Princeton, NJ.

229.02 The Gemini Planet Imager
Macintosh, Bruce 1, 2
1 LLNL, Livermore, CA. 2 Stanford University, Stanford, CA.

Contributing teams: Gemini Planet Imager instrument team, Gemini Planet Imager Exoplanet Survey, Gemini Observatory

229.03 Archival Legacy Investigation of Circumstellar Environments (ALICE): Overview
and First Results
Soummer, Remi 1; Barman, Travis S. 1; Chen, Christine 1; Choquet, Elodie 1; Comeau, Thomas 1; Debes, John H. 1; Golimowski, David A. 1, 3; Hagan, J. Brendan 1; Hines, Dean C. 1; Lonsdale, Sean 1; Marois, Christian 1; Mawet, Dimitri 1; Mittal, Tushar 1; Moerchen, Margaret 1; N’Diaye, Mamadou 1; Perrin, Marshall D. 1; Pueyo, Laurent 1; Rajan, Abhijith 1; Reid, Iain N. 4; Schneider, Glenn 1; Wolff, Schulyer 1
1 Space Telescope Science Institute, Baltimore, MD. 2 HIA-NRC, Victoria, BC, Canada. 3 Purdue University, Lafayette, IN. 4 University of Arizona, Tucson, AZ. 5 Arizona State University, Phoenix, AZ. 6 Berkeley, Berkeley, CA. 7 ESO, La Serena, Chile.
229.04 On-Sky Tests of High Precision Astrometry and Implications for Exoplanet Mass Measurement
Ammons, Stephen1; Macintosh, Bruce1; Savransky, Dmitry1; Marois, Christian1; Neichel, Benoit5; Guyon, Olivier2; Bendek, Eduardo3
1Lawrence Livermore National Laboratory, Livermore, CA. 2University of Arizona, Tucson, AZ. 3NASA Ames, Mountain View, CA. 4Herzberg Institute for Astrophysics, Victoria, BC, Canada. 5Gemini Telescope, La Serena, Chile.

229.05 Kappa Andromedae B: New Constraints on the Companion Mass, System Age and Further Multiplicity
Hinkley, Sasha1; Pueyo, Laurent2; Faherty, Jacqueline K.3; Oppenheimer, Ben R.4; Mamajek, Eric E.5; Kraus, Adam L.6; Rice, Emily L.7, 3; Ireland, Michael8, 9; David, Trevor8; Hillenbrand, Lynne1; Vasisht, Gautam10; Cady, Eric10; Brenner, Douglas4; Veicht, Aaron4; Nilsson, Ricky4; Zimmerman, Neil11; Parry, Ian12; Beichman, Charles A.13; Dekany, Richard14; Roberts, Lewis C.10; Baranec, Christoph14; Crepp, Justin R.15
1California Institute of Technology, Pasadena, CA. 2STScI, Baltimore, MD. 3Universidad de Chile, Cerro Calan, Las Condes, Chile, Chile. 4AMNH, New York, NY. 5University of Rochester, Rochester, NY. 6Harvard-Smithsonian CfA, Cambridge, MA. 7College of Staten Island, New York, NY. 8MacQuarie University, Sydney, NSW, Australia. 9AAO, Epping, NSW, Australia. 10JPL, Pasadena, CA. 11MPIA, Heidelberg, Konigstuhl, Germany. 12IoA, Cambridge, Cambridge, United Kingdom. 13NExScI, Pasadena, CA. 14Caltech Optical Observatories, Pasadena, CA. 15University of Notre Dame, South Bend, IN.

230 Extrasolar Planet: Spectroscopy, Metallicity, and Composition
Tuesday, 2:00 PM - 3:30 PM; Maryland Ballroom B
Chair(s):
Drake Deming, Univ. of Maryland

230.01D Elemental Compositions of Extrasolar Planetesimals
Xu, Siyi1; Jura, Michael1
1UCLA, Los Angeles, CA.

230.02 The Intrinsic EUV, Lyman-alpha, and UV Emission from Exoplanet Host Stars
Linsky, Jeffrey1; France, Kevin1; Fontenla, Juan3
1JILA/Univ. of Colorado and NIST, Boulder, CO. 2CASA/Univ. of Colorado, Boulder, CO. 3NorthWest Research Associates, Boulder, CO.

230.03 Planet-Metallicity Correlation For Planets of Different Sizes
Wang, Ji1
1Yale University, New Haven, CT.

230.04 Detecting water at high-spectral resolution in hot Jupiter atmospheres
Birkby, Jayne1; Snellen, Ignas1; de Kok, Remco2; Brogi, Matteo1; Schwarz, Henriette1; Albrecht, Simon3; de Mooij, Ernst4
1Leiden Observatory, Leiden, Zuid Holland, Netherlands. 2SRON, Utrecht, Holland, Netherlands. 3MIT, Cambridge, MA. 4University of Toronto, Toronto, ON, Canada.
230.05 Transmission Spectroscopy of the Super-Earth GJ 1214b
Kreidberg, Laura\(^1\)
\(^1\)University of Chicago, Chicago, IL.

230.06 The Power of High Resolution Exoplanet Transmission Spectroscopy -- Constraining Winds, Circulation, Tidal Locking, and Clouds
Kempton, Eliza\(^1\); Perna, Rosalba\(^2\); Heng, Kevin\(^3\); Rauscher, Emily\(^4\)
\(^1\)Grinnell College, Grinnell, IA. \(^2\)University of Colorado, Boulder, CO. \(^3\)ETH Institute for Astronomy, Zurich, Switzerland. \(^4\)Princeton University, Princeton, NJ.

230.07 Revisited Transit Spectroscopy of Giant Exoplanets Using HST/NICMOS
Deming, Drake\(^1\); Wilkins, Ashlee N.\(^1\); Madhusudhan, Nikku\(^2\)
\(^1\)Univ. of Maryland, Bowie, MD. \(^2\)Yale University, New Haven, CT.

230.08 Exoplanet Secondary Eclipses Using WFC3
Haynes, Korey\(^1, 2\); Mandell, Avi\(^2\); Deming, Drake\(^3\)
\(^1\)George Mason University, Fairfax, VA. \(^2\)NASA Goddard Space Flight Center, Greenbelt, MD. \(^3\)University of Maryland, College Park, College Park, MD.

231 Galaxy Evolution in Groups/Clusters
Tuesday, 2:00 PM - 3:30 PM; National Harbor 2
Chair(s):
Simona Mei, University of Paris - IPAC Caltech

231.01 A Study of the Cold Gas and Stellar Populations of the Antlia Cluster with KAT-7 and WISE
Hess, Kelley\(^1\); Carignan, Claude\(^1\); Jarrett, Tom\(^1\); Goedhart, Sharmila\(^2\); Passmoor, Sean S.\(^2\); Wilcots, Eric M.\(^3\)
\(^1\)University of Cape Town, Rondebosch, South Africa. \(^2\)SKA-SA, Cape Town, South Africa. \(^3\)University of Wisconsin-Madison, Madison, WI.

231.02 The role of pre-processing in SDSS groups and clusters
Hou, Annie\(^1, 2\); Parker, Laura C.\(^2\); Harris, William E.\(^2\)
\(^1\)KIAS, Seoul, Korea, Republic of. \(^2\)McMaster University, Hamilton, ON, Canada.

231.03D Spatio-Temporal Sequencing Of Mass Dependent Galaxy Transformation Mechanisms In The Complex Environment Of SuperGroup Abell 1882
Sengupta, Aparajita\(^1\); Keel, William C.\(^1\); Morrison, Glenn E.\(^2, 3\); Windhorst, Rogier A.\(^4\); Smith, Brent\(^4\)
\(^1\)Physics and Astronomy, University of Alabama, TUSCALOOSA, AL. \(^2\)University of Hawaii, Honolulu, HI. \(^3\)Canada-France-Hawaii Telescope (CFHT) Corp., Kamuela, HI. \(^4\)Arizona State University, Tempe, AZ.

231.04 Exploring the interconnectionedness of halo mass, stellar mass, and environment of galaxies
Shattow, Genevieve\(^1\); Croton, Darren\(^2\)
\(^1\)Swinburne University of Technology, Hawthorn, VIC, Australia. \(^2\)Swinburne University of Technology, Hawthorn, VIC, Australia.

231.05D The Spitzer-South Pole Telescope Survey: Linking galaxies and haloes at z=1.5
Martinez-Manso, Jesus\(^1\); Gonzalez, Anthony H.\(^1\); Ashby, Matthew\(^2\); Stanford, S. A.\(^3\); Brodwin, Mark\(^4\); Holder, Gilbert P.\(^5\)
\(^1\)University of Florida, Gainesville, FL. \(^2\)Harvard CfA, Cambridge, MA. \(^3\)UC Davis, Davis, CA. \(^4\)McGill University, Montreal, QC, Canada.
231.06D How do galaxies populate dark matter halos across cosmic time?
Palamara, David P.1, 2; Brown, Michael J.1; Jannuzi, Buell2; White, Martin3; Norberg, Peder4
1 School of Physics, Monash University, Clayton, VIC, Australia. 2 University of Arizona, Tucson, AZ. 3 University of California, Berkeley, Berkeley, CA. 4 Durham University, Durham City, Durham, United Kingdom.
Contributing teams: GAMA team, NDWFS team

232 Laboratory Astrophysics

Tuesday, 2:00 PM - 3:30 PM; Maryland 1
Chair(s):
Angela Speck, Univ. of Missouri

232.01D Improved Transition Probabilities for Fe-group Elements to Resolve Unexpected Trends in Metal-Poor Stars
Wood, Michael P.1
1 University of Wisconsin-Madison, Madison, WI.

232.02 Benchmarking Charge Exchange Theory with Experiments Using an X-ray Calorimeter at an Electron Beam Ion Trap
Betancourt-Martinez, Gabrielle1, 2; Porter, Frederick S.2; Leutenegger, Maurice A.2; Brown, Gregory V.3; Beiersdorfer, Peter4
1 University of Maryland, College Park, MD. 2 NASA Goddard Space Flight Center, Greenbelt, MD. 3 Lawrence Livermore National Laboratory, Livermore, CA.

232.03 AtomDB 3.0: Atomic Data for Non-equilibrium Ionization Studies
Foster, Adam1; Smith, Randall K.1; Yamaguchi, Hiroya2, 1; Ji, Li1; Wilms, Jörn4
1 Harvard Smithsonian, CfA, Cambridge, MA. 2 NASA GSFC, Greenbelt, MD.
3 Purple Mountain Observatory, Nanjing, Jiangsu, China. 4 Friedrich-Alexander-Universität, Erlangen-Nürnberg, Bavaria, Germany.

232.04 Madison Plasma Dynamo Experiment
Kostadinova, Evdokiya1, 2; Forest, Cary2; Cooper, Christopher2; Coquerel, Martin2
1 Furman University, Greeville, SC. 2 University Of Wisconsin, Madison, Madison, WI.

233 Lenses & Waves II

Tuesday, 2:00 PM - 3:30 PM; National Harbor 12
Chair(s):
Fredrick Jenet, Univ. of Texas at Brownsville

233.01 SALT Redshift Determinations of Herschel Discovered Strong Gravitational Lenses
Leeuw, Lerothodi1, 2; Crawford, Steve3
1 University of South Africa, Pretoria, Gauteng Province, South Africa. 2 SETI Institute, Mountain View, CA. 3 South African Astronomical Observatory, Cape Town, Western Cape Province, South Africa.
Contributing teams: The Herschel-ATLAS Team

233.02D A new pixel-based method for analyzing spatially resolved, gravitationally lensed images
Tagore, Amitpal S.1; Keeton, Charles R.1; Baker, Andrew J.1
1 Rutgers University, Piscataway, NJ.
233.03 Fundamental Constants, New Physics and the Dark Energy Equation of State
Thompson, Rodger I.\textsuperscript{1}
\textsuperscript{1}Univ. of Arizona, Tucson, AZ.

233.04 Optimal Measurement of Dark Energy Parameters with Weak Gravitational Lensing Magnification
Schneider, Michael\textsuperscript{1,2}
\textsuperscript{1}Lawrence Livermore Natl Lab, Livermore, CA. \textsuperscript{2}UC Davis, Davis, CA.

233.05D Gravitational lensing as a tool for cosmology: Sources of bias and techniques for achieving its full potential
Troxel, Michael A.\textsuperscript{1}; Ishak-Boushaki, Mustapha B.\textsuperscript{1}
\textsuperscript{1}University of Texas at Dallas, Richardson, TX.

234 Reports from NASA’s Astrophysics Program Analysis Groups

Tuesday, 2:00 PM - 3:30 PM; Potomac Ballroom A
This special session will report on the current activities of NASA’s Program Analysis Groups (PAGs.) These groups serve as forums for soliciting and coordinating input and analysis from the scientific community in support of the Astrophysics Division’s program objectives. This session will begin with an introduction to the PAGs by representatives from NASA Headquarters and then include reports on current activities from the Chairs of the Exoplanet Exploration PAG (ExoPAG), the Cosmic Origins PAG (COPAG), and Physics of the Cosmos PAG (PhysPAG).

Chair(s): Ann Hornschemeier, NASA GSFC
Organizer(s): Ann Hornschemeier, NASA GSFC

234.01 Overview of NASA Astrophysics Program Analysis Groups
Garcia, Michael R.\textsuperscript{1}; Hudgins, Douglas M.\textsuperscript{1}; Sambruna, Rita M.\textsuperscript{1}
\textsuperscript{1}Astrophysics, NASA HQ, Washington, DC.

234.02 The Cosmic Origins Program Analysis Group (COPAG)
Sembach, Kenneth\textsuperscript{1}
\textsuperscript{1}STScI, Baltimore, MD.

234.03 Report from the Exoplanet Exploration Program Analysis Group (ExoPAG)
Gaudi, B. S.\textsuperscript{1}
\textsuperscript{1}Ohio State Univ., Columbus, OH.
Contributing teams: The Exoplanet Exploration Program Analysis Group

234.04 Summary of PhysPAG Activity
Nousek, John A.\textsuperscript{1}
\textsuperscript{1}Penn State Univ., University Park, PA.

235 Supernovae & Nebulae II

Tuesday, 2:00 PM - 3:30 PM; National Harbor 10
Chair(s): W. Wood-Vasey, University of Pittsburgh
235.01D Searching for Failed Supernovae
Gerke, Jill; Kochanek, Christopher S.; Stanek, Krzysztof Z.
1 The Ohio State University, Columbus, OH.

235.02 Supernova flash spectroscopy: a new observational window into stellar death
Gal-Yam, Avishay
1 Weizmann Institute of Science, Rehovot, Israel.

235.03 Observation of Dust Grain Sputtering in a Shock
Raymond, John C.; Ghavamian, Parviz; Williams, Brian J.; Blair, William P.; Borkowski, Kazimierz J.; Gaetz, Terrance J.; Sankrit, Ravi
1 Harvard-Smithsonian, CfA, Cambridge, MA. 2 Towson University, Baltimore, MD. 3 NASA Goddard Space Flight Center, Greenbelt, MD. 4 Johns Hopkins University, Baltimore, MD. 5 North Carolina State University, Raleigh, NC. 6 SOFIA Science Center, Mountain View, CA.

235.04 Physical Conditions in Shocked Clouds of the Vela Supernova Remnant: New Results from High-Resolution HST/STIS Observations of HD 72350 and HD 72648
Ritchey, Adam M.; Jenkins, Edward B.; Wallerstein, George
1 University of Washington, Seattle, WA. 2 Princeton University Observatory, Princeton, NJ.

235.05 Water, Hydroxyl and Carbon Monoxide Emission in Molecular Supernova Remnants with Herschel
Rho, Jeonghee; Hewitt, John W.
1 SETI Institute and SOFIA Science Center, NASA Ames, Mountain View, CA. 2 NASA/GSFC, Greenbelt, MD.

235.06 Particle Acceleration and Magnetic Fields: Looking at the Northwestern Rim of RCW 86 with Chandra
Castro, Daniel
1 MIT, Cambridge, MA.

235.07 The First Fermi-LAT Catalog of Supernova Remnants
Brandt, Theresa J.; Acero, Fabio; Ballet, Jean; dePalma, Francesco; Giordano, Francesco; Hewitt, John W.; Johannesson, Gudlaugur; Tibaldo, Luigi
1 NASA Goddard Space Flight Center, Greenbelt, MD. 2 NASA Postdoctoral Program, Greenbelt, MD. 3 Laboratoire AIM, Service d’Astrophysique, CEA Saclay, Gif sur Yvette, France. 4 Pegaso University, Naples, Italy. 5 INFN, Bari, Italy. 6 CRESST/UMBC, Baltimore, MD. 7 Science Institute, University of Iceland, Reykjavik, Iceland. 8 Kavli Institute for Particle Astrophysics & Cosmology, SLAC National Accelerator Laboratory, Stanford, CA.
Contributing teams: on behalf of the Fermi-LAT Collaboration

236 Surveys and Large Programs II
Tuesday, 2:00 PM - 3:30 PM; Maryland Ballroom D
Chair(s):
Heidi Newberg, Rensselaer Polytechnic Inst.

236.01 The Karl G. Jansky Very Large Array Sky Survey (VLASS)
Myers, Steven T.; Baum, Stefi A.; Chandler, Claire J.
1 NRAO, Socorro, NM. 2 Rochester Institute of Technology, Rochester, NY.
236.02 Exploring the Dynamic Radio Sky
Mooley, Kunal P.; Myers, Steven T.; Hallinan, Gregg; Frail, Dale A.; Kulkarni, Shrinivas R.; Horesh, Assaf; Bourke, Stephen
1 California Institute of Technology, Pasadena, CA. 2 National Radio Astronomy Observatory, Socorro, NM.

236.03D All Sky Automated Survey for SuperNovae (ASAS-SN or ‘Assassin’)
Shappee, Benjamin; Prieto, Jose; Stanek, Krzysztof Z.; Kochanek, Christopher S.; Holoiien, Thomas; Jencson, Jacob; Basu, Udit; Beacom, John F.; Szczegiel, Dorota; P dấuanski, Grzegorz; Brimacombe, Joseph; Dubberley, Matt; Elphick, Mark; Foale, Steve; Hawkins, Eric; Mullins, Dave; Rosing, Wayne; Ross, Rachel; Walker, Zachary
1 The Ohio State University, Columbus, OH. 2 Princeton University, Princeton, NJ. 3 Warsaw University, Warsaw, Poland. 4 Las Cumbres Observatory Global Telescope Network, Santa Barbara, CA. 5 Coral Towers Observatory, Cairns, QLD, Australia. 6 Center for Cosmology and AstroParticle Physics, Columbus, OH.

236.04 The Low Band Observatory (LOBO): A VLA-based Radio LSST for Continuous, sub-GHz Observations in the LSST Era.
Kassim, Namir E.; Clarke, Tracy E.; Hicks, Brian; Helmboldt, Joseph F.; Peters, Wendy M.; Wilson, Thomas L.; Cutchin, Sean; Hyman, Scott D.; Owen, Frazer N.; Perley, Richard A.; Durand, Steven; Intema, Huib; Brisenk, Walter; Lazio, Joseph
1 NRL, Washington, DC. 2 NRAO, Socorro, NM. 3 NRL-NRC, Washington, DC. 4 JPL-Caltech, Pasadena, CA. 5 SBC, Sweetbriar, VA.

236.05 The VLA Low Frequency Sky Survey Redux (VLSSr)
Peters, Wendy M.; Cotton, William D.; Kassim, Namir E.
1 Naval Research Lab., Washington, DC. 2 National Radio Astronomy Observatory, Charlottesville, VA.

236.06D DES SN Survey Search Strategy: First-Year Results and the Type Ia rate.
Fischer, John A.
1 University of Pennsylvania, Philadelphia, PA.
Contributing teams: Dark Energy Survey, DES SN Working Group

236.07 The LOFAR Multifrequency Snapshot Sky Survey (MSSS): Status and Results
Heald, George
1 ASTRON, Dwingeloo, Netherlands. 2 Kapteyn Astronomical Institute, University of Groningen, Groningen, Netherlands.
Contributing teams: LOFAR collaboration
237 The Cosmic Origins Spectrograph view of the Circumgalactic Medium

Tuesday, 2:00 PM - 3:30 PM; National Harbor 4

Installed in 2009, the Cosmic Origins Spectrograph (COS) is the most sensitive ultraviolet spectrograph yet flown on Hubble. Deep quasar spectra taken with COS contain a wealth of information on foreground absorption systems, which probe the halos of galaxies lying near the line-of-sight. In this Special Session we highlight the progress made by COS in our understanding of the circumgalactic medium (CGM), the interface where galaxies adjoin and interact with intergalactic space. The CGM plays several important roles in galaxy evolution, channeling gas flows into and out of galaxies, harboring substantial reservoirs of metals and baryons, and regulating star formation. COS observations have shown it to be a complex, multi-phase medium with properties that depend on the host galaxy. We will discuss these observations and identify the key remaining CGM questions to be answered in the final years of Hubble’s lifetime.

Chair(s):
Andrew Fox, STScI

Organizer(s):
Andrew Fox, STScI

237.01 The Circumgalactic Medium over Three Decades of Mass: Results from COS-Halos and COS-Dwarfs
Tumlinson, Jason¹
¹Space Telescope Science Institute, Baltimore, MD.
Contributing teams: The COS-Halos Team

237.02 The Significant Contribution of Photo-ionized Circumgalactic Gas to the Total Baryonic Budget of L* Galaxies
Werk, Jessica¹; Prochaska, Jason X.¹; Tumlinson, Jason²; Peeples, Molly S.²; Tripp, Todd M.³; Fox, Andrew¹; Lehner, Nicolas⁴
¹University of California, Santa Cruz, CA. ²Space Telescope Science Institute, Baltimore, MD. ³University of Massachusetts, Amherst, MA. ⁴Notre Dame, South Bend, IN.
Contributing teams: COS-Halos

237.03 Large Reservoirs Of Metal-Poor Gas Around z<1 Galaxies
Lehner, Nicolas¹; Howk, J. C.¹; Wotta, Christopher¹; Tumlinson, Jason³; Tripp, Todd M.³; Prochaska, Jason X.⁴; O’Meara, John⁵; Werk, Jessica⁴; Fox, Andrew³; Ribaudo, Joseph⁶
¹Univ. Of Notre Dame, Notre Dame, IN. ²STScI, Baltimore, MD. ³UMass, Amherst, MA. ⁴UCO/Lick Observatory, SANTA CRUZ, CA. ⁵St Michael College, Colchester, VT. ⁶Utica College, Utica, NY.

237.04 The Signatures of Star formation on the Properties of the Circumgalactic Medium
Borthakur, Sanchayeeta¹
¹Johns Hopkins University, Baltimore, MD.
237.05 Characterizing the Circumgalactic Medium of Nearby Galaxies
Keeney, Brian A.; Stocke, John T.; Danforth, Charles; Savage, Blair D.; Froning, Cynthia S.; Green, James C.
1 Univ. of Colorado, Boulder, CO. 2 Univ. of Wisconsin, Madison, WI. 3 Univ. of Texas, Austin, TX.

237.06 Bridging the Observational Gaps: Milestones toward Understanding the Circumgalactic Medium
Churchill, Christopher W.
1 New Mexico State Univ., Las Cruces, NM.

238 The Galactic Center
Tuesday, 2:00 PM - 3:30 PM; Potomac Ballroom C
Chair(s):
Douglas Roberts, Adler Planetarium

238.01 Extreme Gas Properties in the Central 10 Parsecs
Mills, Elisabeth A.; Güsten, Rolf; Requena Torres, Miguel A.; Lang, Cornelia C.; Morris, Mark; Butterfield, Natalie; Ludovici, Dominic; Schmitz, Susan; Ott, Juergen
1 UCLA, Santa Monica, CA. 2 NRAO, Socorro, NM. 3 U. Iowa, Iowa City, IA. 4 MPIfR, Bonn, Germany.

238.02 Plasma evolution around Sgr A*
Dibi, Salome; Markoff, Sera; Belmont, Renaud; Malzac, Julien; Barriere, Nicolas; Tomskick, John
1 Anton Pannekoek Institute, Amsterdam, Amsterdam, Netherlands. 2 IRAP, Toulouse, France. 3 SSL, Berkeley, CA.

238.03 Sensitive X-ray and Radio Monitoring of the Sgr A*/G2 Encounter
Haggard, Daryl; Baganoff, Frederick K.; Ponti, Gabriele; Heinke, Craig O.; Yusef-Zadeh, Farhad; Roberts, Douglas A.; Cotton, William D.; Gillessen, Stefan; Genzel, Reinhard; Markoff, Sera; Nowak, Michael; Neilsen, Joseph; Schulz, Norbert S.; Rea, Nanda
1 Northwestern University/CIERA, Evanston, IL. 2 MIT/Kavli, Boston, MA. 3 Boston University, Boston, MA. 4 University of Amsterdam, Amsterdam, Netherlands. 5 University of Alberta, Alberta, AB, Canada. 6 Max-Planck-Institut für extraterrestrische Physik, Munich, Germany. 7 Institute of Space Sciences, CSIC-IEEC, Barcelona, Spain. 8 NRAO, Charlottesville, VA.

238.04 NIR variability of Sgr A*
Witzel, Gunther
1 UCLA, Los Angeles, CA.

238.05 Is G2 Alone? Other Infrared Sources in the Central 0.04 Parsecs of the Galactic Center
Sitarski, Breann; Do, Tuan; Witzel, Gunther; Ghez, Andrea M.; Meyer, Leo; Boehle, Anna; Lu, Jessica R.; Yelda, Sylvana; Morris, Mark; Becklin, Eric E.
1 UCLA, Los Angeles, CA. 2 Dunlap Institute for Astronomy and Astrophysics, University of Toronto, Toronto, ON, Canada. 3 Institute for Astronomy, University of Hawaii, Honolulu, HI. 4 NASA-Ames Research Center, Moffett Field, CA.
A CARMA Spectral Line and Continuum Survey of the Central Molecular Zone
Pound, Marc W.; Yusef-Zadeh, Farhad
1.Univ. of Maryland, College Park, MD. 2.Northwestern University, Evanston, IL.

Multi-epoch Measurements of the Galactic Center (~6667 MHz) and the Blazar 0716+714 (1 & 3 MHz) taken from the Allen Telescope Array at Hat Creek Radio Observatory in 2013
Castellanos, Aaron1, 2; Harp, Gerald2, 3
1.California State Polytechnic University, Pomona, CA. 2.SETI Institute, Mountain View, CA, CA. 3.Institute of Electrical and Electronic Engineers (IEEE), Mountain View, CA, CA.

HAD VII: Oral History Project
Tuesday, 2:00 PM - 2:15 PM; National Harbor 3

HAD Oral History Project
Holbrook, Jarita1
1.University of the Western Cape, Bellville, Western Cape, South Africa.

HAD Workshop: Oral History Interviewing Techniques
Tuesday, 2:15 PM - 3:30 PM; National Harbor 3
In this workshop, participants will learn appropriate techniques to conduct oral history interviews. Dr. Gregory Good, Director of the Center for the History of Physics of the American Institute of Physics (AIP), will coach the session participants in the nuts and bolts of preparing for, conducting, and following up after an oral history interview session. Dr. Good is very experienced with collecting oral histories. If you are interested in the history of astronomy and in preserving that history, the AAS HAD invites you to participate in this workshop. Oral histories are a very important part of documenting the background and motivations for administrative and scientific contributions, the part of history that is not usually available in the printed record, such as peer-reviewed publications. So oral histories fill in the gaps on why someone dedicated much of their professional life to a particular topic or describes the journey they traveled to reach notable goals and/or make lasting contributions to the field. Your help is needed to preserve this history, the history of acoustics. Thanks for participating!

Chair(s):
Gregory Good, AIP
Organizer(s):
Joseph Tenn, Sonoma State Univ.
Heineman Prize: The Formation of Galaxies and Supermassive Black Holes: Insights and Puzzles
Tuesday, 3:40 PM - 4:30 PM; Potomac Ballroom A
Chair(s):
Catherine O’Riordan, AIP

Rachel Somerville - Dannie Heineman Award for Astrophysics
The Heineman Prize for Astrophysics is awarded to Rachel Somerville for providing fundamental insights into galaxy formation and evolution using semi-analytic modeling, simulations and observations.

239.01 The Formation of Galaxies and Supermassive Black Holes: Insights and Puzzles
Somerville, Rachel S.1
1.Rutgers University, Piscataway, NJ.

HEAD Rossi Prize: The Amazing Pulsar Machine, Alice K. Harding and The Pulsing Gamma-ray Sky, Roger Romani
Tuesday, 4:30 PM - 5:20 PM; Potomac Ballroom A
Chair(s):
Joel Bregman, Univ. of Michigan

240.01 The Amazing Pulsar Machine
Harding, Alice K.1
1.NASA Goddard Space Flight Center, Greenbelt, MD.
Contributing teams: Fermi Large Area Telescope

240.02 The Pulsing Gamma-ray Sky
Romani, Roger W.1,2
1.Dept. of Physics, Stanford University, CA. 2.KIPAC, Stanford University, CA.

Evening Poster Session
Tuesday, 5:30 PM - 6:30 PM; Exhibit Hall ABC
Career Hour 4: Developing Your 30-Second Value Statement (aka Your Elevator Pitch)

Tuesday, 5:30 PM - 6:30 PM; National Harbor 2

I have a brand and you have a brand. A brand is simply a promise of value and every successful professional and company is successful in part because they know how to articulate their brand. The ability to communicate your promise of value is vitally important for not only crafting your own career path, but also for finding out about hidden opportunities and jobs. In this workshop, we learn the fundamentals of branding as it relates to career development and planning strategy. We will work together to develop your own 30-second brand statement which you can use in networking, and informational and job interviews. We will discuss the connection between brand, attitude and reputation, and why every interaction with someone affects how people perceive your brand. You will leave this workshop with the ability to elucidate your own brand to whomever you meet, giving you a critical competitive edge in your career and the job market. Audience: students, postdocs, early-career professionals Facilitator: Alaina G. Levine, President, Quantum Success Solutions Alaina G. Levine is a science careers consultant, science writer, and professional speaker and comedian. Her new book on networking strategies for scientists and engineers will be published by Wiley in 2014.

Chair(s):
Alaina Levine, Quantum Success Solutions

Organizer(s):
Kelle Cruz, Hunter College/CUNY and AMNH

Gemini Observatory Open House

Tuesday, 6:30 PM - 8:00 PM; National Harbor 10

Join the Gemini Director and other staff to learn about recent developments at Gemini Observatory, including new capabilities and observing modes. We seek open discussion and community input to guide future developments that will best serve users. Members of advisory bodies including the Science and Technology Advisory Committee and the Users’ Committee for Gemini will also participate.

Exoplanet Exploration Program News

Tuesday, 6:30 PM - 8:00 PM; National Harbor 3

Research in the field of exoplanets continues to amaze, with new discoveries announced almost every week. There are a lot of new activities in NASA’s Exoplanet Exploration Program, as we work towards missions that will characterize Earth-like planets. In this session you can learn about what’s new in NASA’s quest to detect and characterize extrasolar planetary systems, and participate in the discussion of objectives and methods. The Exoplanet Exploration Program Analysis Group (ExoPAG), a community-based group that meets a few times each year to analyze science trends and instrument development, will report on its ongoing work and describe how you can participate. Two Science and Technology Definition Teams (STDTs) started work recently on probe-scale mission concepts for direct detection and spectroscopy of exoplanets, and will provide status updates. There will be a overview of missions in the Program, including Kepler, LBTI, and WFIRST-AFTA, which will use microlensing and direct imaging for exoplanet study (see also the Wednesday evening session on WFIRST-AFTA). We will allow plenty of time for questions and discussion.

Organizer(s):
Stephen Unwin, JPL
SPS Evening of Undergraduate Science
Tuesday, 6:30 PM - 8:00 PM; Chesapeake 7
The Society of Physics Students (SPS) invites undergraduate scientists to attend this event with noted astronomer Kathryn Flanagan (STScI). Flanagan will give a short talk (15-20 minutes) on astronomy as a personal endeavor, providing a perspective on the field and its future as well as an introduction to her extensive research and education interests. Undergraduates are encouraged to bring their posters for an hour of informal discussion with each other and with the featured speaker. The evening will provide an opportunity to network in an informal setting while celebrating the accomplishments of undergraduates. Refreshments will be served.

Organizer(s):
Daniel Golombek, STScI

241 HEAD Business Meeting
Tuesday, 6:30 PM - 7:30 PM; National Harbor 2
The annual meeting of the HEAD Division, known in the HEAD bylaws as the “Regular Meeting.” Open to all HEAD members, the meeting will include a Business Session devoted exclusively to the reports of officers and committees, and to the transaction of business affairs. In particular, the results of the upcoming HEAD elections of a new Vice Chair and two new Executive Committee members will be announced, and there will be time for discussion of the proposed new bylaws that would allow for a new class of ‘Affiliate’ HEAD members.

Chair(s):
Joel Bergman, Univ. of Michigan
Organizer(s):
Randall Smith, Smithsonian Astrophysical Observatory

242 National Radio Astronomy Observatory Town Hall
Tuesday, 6:30 PM - 8:30 PM; Potomac Ballroom C
This Town Hall will inform the AAS membership about the status of National Radio Astronomy Observatory (NRAO) science and science operations, development programs, and construction projects. This Town Hall will open with a reception that will be followed by a presentation by NRAO Director Tony Beasley that will update the membership regarding: (a) Construction progress at the Atacama Large Millimeter/submillimeter Array (ALMA); (b) Science opportunities and development programs at ALMA, the Jansky Very Large Array (VLA), the Green Bank Telescope (GBT), and the Very Long Baseline Array (VLBA); (c) Recent science results from across NRAO; and (d) Technical development for the next generation of radio astronomy research facilities. The NRAO Town Hall will include at least 30 minutes for answering audience questions.

Chair(s):
Anthony Beasley, NRAO
Organizer(s):
Mark Adams, NRAO
Star Party

Tuesday, 7:30 PM - 10:30 PM; Gaylord Pier (Wednesday if cloudy)

Come see the Moon and the stars high in the sky and meet professional astronomers. The AAS will co-host a star party with the DC area amateur astronomers, including the Southern Maryland Astronomical Society, the Howard Astronomical League, the Astronomical Society of Greenbelt, Hands-on Optics, and the Northern Virginia Astronomy Club. Depending on the weather, there will be telescopes right at the Convention Center. Featured in our winter sky will be the giant planet Jupiter and the great Orion Nebula (both favorite targets of the Hubble Space Telescope). We’ll also have a great first quarter Moon. Suitable for adults and kids of all ages, telescopes will be provided by members of the AAS and wonderful people from right in your neighborhood. In the event of clouds, we’ll have a public slideshow at the observing site featuring highlights from the great telescopes of the world, and stay warm with coffee and cookies. It’s a great opportunity to see the stars with professional astronomers and meet the local astronomers in your hometown. Star Party Updates, including weather and logistic updates, will occur on Facebook. Follow us https://www.facebook.com/AmericanAstronomicalSociety

Organizer(s):
Jason Kendall, William Paterson University

AAS Open Mic Night

Tuesday, 8:00 PM - 9:00 PM; Maryland Ballroom C

For the first time, the AAS will be holding an open-mic night for our talented members to share their musical and other talents with their friends and colleagues. Held Tuesday evening, we invite all musicians, singers, story tellers, comedians, poets, spoken word enthusiasts or other performers (e.g. jugglers) to participate. We welcome all styles and genres of music from bluegrass to speed metal….seriously! Come have some fun and strut your stuff. Cocktails, wine and beer will be available for purchase. Sign up online to ensure a spot and let us know what kind of equipment you need to perform. You can decide to participate on-site as well, but signing up early helps us ensure the proper equipment is available. Ukulele performers are especially encouraged to participate.

Organizer(s):
James Webb, Florida International Univ.

Telescopes for Cosmic Dawn and 21 cm Cosmology

Tuesday, 8:00 PM - 9:30 PM; National Harbor 12

One of the key approaches recognized for tracking the transition of the Universe from a neutral to an ionized state during Cosmic Dawn is the highly redshifted 21 cm line from neutral hydrogen. A number of groups, within the U.S. and internationally, are developing the techniques and technologies for making the requisite measurements. This session will review the current state of various projects, assess paths forward, and discuss complementary observations that could be conducted with the various telescopes.

Organizer(s):
Joseph Lazio, Jet Propulsion Laboratory
POSTERS

243 The Cosmic Origins Spectrograph view of the Circumgalactic Medium Poster Session

Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

243.01 The High-Ion Content and Kinematics of Low-Redshift Lyman Limit Systems
Fox, Andrew; Lehner, Nicolas; Tumlinson, Jason; Howk, J. C.; Tripp, Todd M.; Prochaska, Jason X.; O’Meara, John; Werk, Jessica; Bordoloi, Rongmon; Katz, Neal; Oppenheimer, Benjamin; Dave, Romeel

1STScI, Baltimore, MD. 2University of Notre Dame, Notre Dame, IN. 3University of Massachusetts, Amherst, MA. 4UCO/Lick Observatory, Santa Cruz, CA. 5St Michael’s College, Colchester, VT. 6University of Leiden, Leiden, Netherlands. 7University of Colorado, Boulder, CO. 8University of the Western Cape, Bellville, South Africa.

243.02 The First Detection of Deuterated Molecular Hydrogen at z < 1.7 Beyond the Milky Way Galaxy
Oliveira, Cristina M.; Tumlinson, Jason; Sembach, Kenneth; O’Meara, John; Thom, Christopher

1Space Telescope Science Institute, Baltimore, MD. 2Saint Michaels College, Colchester, VT.

243.03 The CGM around Dwarf Galaxies
Tumlinson, Jason; Bordoloi, Rongmon

1Space Telescope Science Institute, Baltimore, MD.

Contributing teams: The COS-Halos Team

243.04 Searching for Diffuse Ly? Emission in the Local IGM/CGM with HST/COS
Penton, Steven V.; Green, James C.; Danforth, Charles

1STScI, Baltimore, MD. 2University of Colorado, Boulder, CO.

Contributing teams: HST/COS GTO

243.05 The Metallicity Distribution of the Circumgalactic Medium at z < 1 Traced by Lyman Limit Systems
Wotta, Christopher; Howk, J. C.; Lehner, Nicolas; O’Meara, John

1University of Notre Dame, Notre Dame, IN. 2Saint Michael’s College, Colchester, VT.

243.06 C IV In Our Cosmic Backyard: Which Neighbor Put It There?
Burchett, Joseph; Burchett, Joseph; Tripp, Todd M.; Werk, Jessica; Prochaska, Jason X.; Tumlinson, Jason; Howk, J. C.

1University of Massachusetts - Amherst, Amherst, MA. 2University of California Observatories - Lick Observatory, Santa Cruz, CA. 3Space Telescope Science Institute, Baltimore, MD. 4University of Notre Dame, Notre Dame, IN.
244 Star Formation Poster Session

Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

244.01 Stellar populations and Star Formation Rates in NGC 6872, the Condor galaxy
Eufrasio, Rafael T.1, 2; De Mello, Duilia F.1, 2; Dwek, Eli3; Arendt, Richard G.3, 1; Gadotti, Dimitri A.4
1NASA Goddard Space Flight Center, Greenbelt, MD. 2The Catholic University of America, Washington, DC. 3CRESST UMBC, Baltimore, MD. 4European Southern Observatory, Santiago, Chile.

244.02 High-Mass Star Formation in NGC6822: The Ultraviolet as a Tool for Identification
Hedlund, Anne1, 2; Madore, Barry F.3; Penprase, Bryan E.1; Choi, Philip I.1
1Pomona College, Claremont, CA. 2Carnegie Institute of Science, Pasadena, CA.

244.03 New Star Formation in NGC 3690
Abdullah, Ajamu1
1Howard University, Washington D.C., DC.

244.04 Stacking Spectra of High Critical Density Tracers in ALMA Cycle 0 Observations of the Antennae Galaxies
Kadowaki, Jennifer1, 2; Leroy, Adam K.2; Barcos, Loreto3; Lee, Cheoljong3; Whitmore, Bradley C.4; Brogan, Crystal L.2; Hibbard, John E.2; Johnson, Kelsey E.3; Chandar, Rupali3; Privon, George C.3; Evans, Aaron S.3, 5; Remijan, Anthony J.2; Sheth, Kartik5
1University of California, Los Angeles, Fullerton, CA. 2National Radio Astronomy Observatory, Charlottesville, VA. 3University of Virginia, Charlottesville, VA. 4Space Telescope Science Institute, Baltimore, MD. 5University of Toledo, Toledo, OH.

244.05 The Green Bank Telescope Maps the Dense Molecular Gas in the Starburst Galaxy M82
Kepley, Amanda A.1; Leroy, Adam K.2; Frayer, David T.1; Usero, Antonio5; Marvil, Joshua4, 5; Walter, Fabian6
1National Radio Astronomy Observatory, Green Bank, WV. 2National Radio Astronomy Observatory, Charlottesville, VA. 3Observatorio Astronómico Nacional, Madrid, Spain. 4New Mexico Institute of Mining and Technology, Socorro, NM. 5National Radio Astronomy Observatory, Socorro, NM. 6Max Planck Institute für Astronomie, Heidelberg, Germany.

244.06 Modeling the Star Formation Properties of Massive Galaxies with the COLD GASS Survey
Hopkins, Erica1, 2; Shetty, Rahul1; Bigiel, Frank2; Klessen, Ralf2; Saintonge, Amealie3; Willman, Beth1
1Haverford College, Haverford, PA. 2Zentrum für Astronomie der Universität Heidelberg, Institut für Theoretische Astrophysik, Heidelberg, Baden-Württemberg, Germany. 3Max-Planck-Institut für Extraterrestrische Physik, Munich, Bavaria, Germany.

244.07 13CO Survey of Northern Intermediate-Mass Star-Forming Regions
Lundquist, Michael J.1; Kobulnicky, Henry A.1; Kerton, Charles R.2
1University of Wyoming, Laramie, WY. 2Iowa State University, Ames, IA.
244.08 MYSTIX: AGE GRADIENTS IN STELLAR POPULATIONS OF MASSIVE STAR FORMING REGIONS BASED ON A NEW STELLAR CHRONOMETER
Getman, Konstantin V.; Feigelson, Eric; Kuhn, Michael A.; Broos, Patrick S.; Townsley, Leisa K.; Naylor, Tim; Povich, Matthew S.; Luhman, Kevin; Garmire, Gordon

244.09 MYSTIX: THE STRUCTURE AND DYNAMICAL STATE OF YOUNG STELLAR CLUSTERS
Kuhn, Michael A.; Feigelson, Eric; Getman, Konstantin V.; Baddeley, Adrian; Townsley, Leisa K.; Broos, Patrick S.; Povich, Matthew S.; Luhman, Kevin; Busk, Heather; Naylor, Tim; King, Robert

244.10 Outflow-protostar interactions in the Serpens South Cluster
Bourke, Tyler L.; Gutermuth, Robert A.; Matthews, Brenda C.; Dunham, Michael M.

244.11 The Structure of Dense Gas in Perseus and Serpens: CLASSy Results
Mundy, Lee G.; Storm, Shaye; Fernandez Lopez, Manuel; Lee, Katherine; Looney, Leslie; Teuben, Peter J.; Rosolowsky, Erik; Shirley, Yancy L.; Arce, Hector G.; Plunkett, Adele; Isella, Andrea
Contributing teams: CLASSy Team

244.12 Analysis of the Serpens South Filamentary Cloud: CLASSy Results
Looney, Leslie; Fernandez Lopez, Manuel; Segura-Cox, Dominique; Arce, Hector G.; Lee, Katherine; Storm, Shaye; Mundy, Lee G.; Teuben, Peter J.; Isella, Andrea; Plunkett, Adele; Rosolowsky, Erik; Shirley, Yancy L.; Tobin, John J.
Contributing teams: CLASSy Team

244.13 Infall as a Function of Position and Molecular Tracer in L1544 and L694
Keown, Jared A.; Schnee, Scott; Bourke, Tyler L.; Friesen, Rachel
244.14 An accretion disks in the high-mass star forming region IRAS~23151+5912.
Migenes, Victor1; Rodríguez-Esnard, Tatiana2; Trinidad, Miguel A.3
1Brigham Young University, Provo, UT. 2Instituto de Geofísica y Astronomía, La Havana, Havana, Cuba. 3University of Guanajuato, Guanajuato, Guanajuato, Mexico.

244.15 Stellar and Circumstellar Properties of Low-Mass, Young, Subarcsecond Binaries
Bruhns, Sara1,2; Prato, Lisa A.1
1Lowell Observatory, Flagstaff, AZ. 2University of Virginia, Charlottesville, VA.

244.16 You Can Touch This! Bringing HST images to life as 3-D models
Christian, Carol A.1; Nota, Antonella1; Grice, Noreen A.3; Sabbi, Elena1; Shaheen, Natalie2; Greenfield, Perry1; Hurst, Amy3; Kane, Shaun3; Rao, Roshan3; Dutterer, Josh3; de Mink, Selma E.4
1STScI, Baltimore, MD. 2National Federation of the Blind, Baltimore, MD. 3You Can Do Astronomy LLC, Baltimore, MD. 4Carnegie Observatories, Baltimore, MD. 5University Of Maryland Baltimore County, Baltimore, MD. 6Brown University, Providence, RI.

244.17 The First Stars: A Low-Mass Formation Mode
Stacy, Athena1,2
1Goddard Space Flight Center, College Park, MD. 2UC Berkeley, Berkeley, CA.

244.18 Stringent Limits of O2 Abundance Toward a Low-mass Protostar with Herschel-HIFI
Yildiz, Umut1,2; Acharyya, Kinsuk3; Goldsmith, Paul1; van Dishoeck, Ewine2,4
1Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA. 2Leiden Observatory, Leiden University, Leiden, Netherlands. 3S.N. Bose National Centre for Basic Sciences, Kolkata, India. 4Max Planck Institut fuer Extraterrestrische Physik, Garching, Germany.

244.19 Using Class 0/I Protostars to Study Triggered Star Formation in NGC 281 with Herschel Photometry
Ivers, Carol B4; Booker, Melissa3; Piper, Margaret (Peggy)5; Powers, Lynn6; Ali, Babar1; Wolk, Scott J.2
Contributing teams: NITARP

244.20 A Numerical Simulation of Star Formation in Nuclear Rings of Barred-Spiral Galaxies.
Seo, Woo-Young1; Kim, Woong-Tae1
1Seoul National University, Seoul, Korea, Republic of.

244.21 ALMA observations of the extremely high velocity, massive and compact molecular outflow G331.512-0.103.
Merello, Manuel1; Evans , Neal J.1; Bronfman, Leonardo2; Garay, Guido2; Lo, Nadia2; Nyman, Lars-Ake3; Cortés, Juan R.3; Cunningham, Maria R.4
1University of Texas , Austin, TX. 2Universidad de Chile, Santiago, Santiago, Chile. 3Joint ALMA Observatory, Santiago, Santiago, Chile. 4School of Physics, UNSW, Sydney, NSW, Australia.
245 Cosmology Poster Session

Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

245.01 Challenges of Measuring Cosmic Dawn with the 21-cm Sky-Averaged, Global Signal
Burns, Jack O.1; Harker, Geraint1; Mirocha, Jordan1; Datta, Abhirup1
1.Univ. of Colorado at Boulder, Boulder, CO.

245.02 Multiple Deflections in Galaxy-Galaxy Lensing
Blumenthal, Kelly1; Brainerd, Tereasa G.1
1.Boston University, Short Hills, NJ.

245.03 Foreground Cleaning for Primordial Gravitational Wave Detection
Watts, Duncan1; Larson, David1; Marriage, Tobias1
1.Johns Hopkins University, Baltimore, MD.

Contributing teams: CLASS Collaboration

245.04 An Exposition on Friedmann Cosmologies with Negative Energy Densities
Joshi, Ravi1; Nemiroff, Robert J.1; Patla, Bijunath7
1.Michigan Tech University, Houghton, MI. 2.Harvard University, Cambridge, MA.

245.05 Probing Primordial Magnetic Fields with 21-cm Line Observations of the
High-redshift Intergalactic Medium
Oklopcic, Antonija1; Gluscevic, Vera2; Hirata, Christopher M.3; Mishra, Abhilash1;
Venumadhav, Jeaswis1. 
1.California Institute of Technology, Pasadena, CA. 2.Institute for Advanced Study, Princeton, NJ. 3.Ohio State University, Columbus, OH.

245.06 Intergalactic Dust and the Darkness of the Night Sky
Prins, Nathan1; Overduin, James2; Strobach, Edward J.1
1.Towsn University, Towson, MD. 2.University of Maryland Baltimore County, Baltimore, MD.

245.07 Comparing the clustering of galaxies and galaxy group by using the SDSS DR7
Wang, Yiran1; Brunner, Robert J.1
1.University of Illinois at Urbana-Champaign, Urbana, IL.

245.08 Detecting the Relative Velocity Effect with SDSS
Slepian, Zachary1; Eisenstein, Daniel1
1.Harvard University, Cambridge, MA.

245.09 Updates to the Union SNe Ia Compilation
Rubin, David1,3; Aldering, Gregory S.1; Amanullah, Rahman4; Barbary, Kyle H.3,10; Bruce, Adam2; Dawson, Kyle S.7; Deustua, Susana E.5; Doi, Mamoru6; Fakhouri, Hannah2,3;
Fruchter, Andrew S.5; Gibbons, Rachel A.11; Goobar, Ariel6; Hsiao, Eric13,3; Huang, Xiaosheng14,3; Ichikawa, Yutaka3; Kim, Alex G.1; Knop, Robert A.12,11; Kowalski, Marek15; Krechmer, Evan2; Lidman, Chris16; Linder, Eric1; Meyers, Joshua2,8; Morokuma, Tomoki15; Nordin, Jakob1; Perlmutter, Saul1,2; Riopinto, Pascal1; Rykoff, Elia S.3,9; Saunders, Clare2; Soofiati, Caroline2,3; Spadafora, Anthony L.3; Suzuki, Naok10; Takanashi, Naohiro6; Yasuda, Naoki6

Contributing teams: Supernova Cosmology Project
245.10 Measuring the Cosmic Distance Scale to 1% with Baryon Acoustic Oscillations in the Sloan Digital Sky Survey III Galaxy Clustering
Eisenstein, Daniel\textsuperscript{1}; Beutler, Florian\textsuperscript{2}; Bolton, Adam S.\textsuperscript{3}; Burden, Angela\textsuperscript{3}; Chuang, Chia-Hsun\textsuperscript{4}; Dawson, Kyle S.\textsuperscript{5}; Gunn, James E.\textsuperscript{6}; Ho, Shirley\textsuperscript{7}; Manera, Marc\textsuperscript{1}; McBride, Cameron\textsuperscript{1}; Mena, Olga\textsuperscript{3}; Montesano, Francesco\textsuperscript{5}; Nuza, Sebastian\textsuperscript{10}; Padmanabhan, Nikhil\textsuperscript{11}; Percival, William\textsuperscript{3}; Reid, Beth A.\textsuperscript{2}; Ross, Ashley\textsuperscript{3}; Ross, Nicholas\textsuperscript{2,12}; Samushi, Lado\textsuperscript{3,13}; Sanchez, Ariel\textsuperscript{9}; Schlegel, David J.\textsuperscript{2}; Seo, Hee-Jong\textsuperscript{14,15}; Tinker, Jeremy\textsuperscript{16}; Vargas-Magana, Mariana\textsuperscript{3}; White, Martin\textsuperscript{2,14}; Weinberg, David H.\textsuperscript{15}
\textsuperscript{1}Harvard Univ., Cambridge, MA. \textsuperscript{2}Lawrence Berkeley National Lab, Berkeley, CA. \textsuperscript{3}University of Portsmouth, Portsmouth, United Kingdom. \textsuperscript{4}Universidad Autonoma de Madrid, Madrid, Spain. \textsuperscript{5}University of Utah, Salt Lake City, UT. \textsuperscript{6}Princeton University, Princeton, NJ. \textsuperscript{7}Carnegie-Mellon University, Pittsburgh, PA. \textsuperscript{8}Universidad de Valencia, Valencia, Spain. \textsuperscript{9}Max Planck Institut fur Extraterrestrische Physik, Garching, Germany. \textsuperscript{10}Leibniz-Institut fur Astrophysik, Potsdam, Germany. \textsuperscript{11}University, New Haven, CT. \textsuperscript{12}Drexel University, Philadelphia, PA. \textsuperscript{13}Ilia State University, Tbilisi, Georgia. \textsuperscript{14}University of California Berkeley, Berkeley, CA. \textsuperscript{15}Ohio State University, Columbus, OH. \textsuperscript{16}New York University, New York, NY.

245.11 Kinematic Weak Lensing: Forecasts for a Next-Generation Lensing Measurement
Huff, Eric M.\textsuperscript{1}; George, Matthew R.\textsuperscript{2,4}; Krause, Elisabeth\textsuperscript{3}; Eifler, Tim\textsuperscript{3}; Schlegel, David J.\textsuperscript{4}
\textsuperscript{1}the Ohio State University, Columbus, OH. \textsuperscript{2}UC Berkeley, Berkeley, CA. \textsuperscript{3}University of Pennsylvania, Philadelphia, PA. \textsuperscript{4}Lawrence Berkeley National Laboratory, Berkeley, CA.

245.12 Simulations of 21-cm Intensity Mapping Observations of Baryon Acoustic Oscillations
Stucky, Thomas\textsuperscript{2,1}; Timbie, Peter T.\textsuperscript{1,2}
\textsuperscript{1}University of Wisconsin-Madison, Madison, WI. \textsuperscript{2}University of Utah, Salt Lake City, UT.
Contributing teams: Tianlai Project

245.13 Simulating a Non-Gaussian CMB Sky
Calafut, Victoria\textsuperscript{1}; Bean, Rachel\textsuperscript{2}; Byun, Joyce\textsuperscript{2}
\textsuperscript{1}The College of New Jersey, Ewing, NJ. \textsuperscript{2}Cornell University, Ithaca, NY.

245.14 Variable-delay Polarization Modulators for the CLASS Telescope
Harrington, Kathleen\textsuperscript{1}; Ali, Aamir\textsuperscript{1}; Amiri, Mandana\textsuperscript{6}; Appel, John W.\textsuperscript{1}; Araujo, Derek\textsuperscript{7}; Bennett, Charles L.\textsuperscript{1}; Boone, Fletcher\textsuperscript{1}; Chan, Manwei\textsuperscript{1}; Cho, Hsiao-Mei\textsuperscript{3}; Chuss, David T.\textsuperscript{7}; Colazo, Felipe\textsuperscript{2}; Crowe, Erik\textsuperscript{2}; Denis, Kevin\textsuperscript{2}; Dünner, Rolando\textsuperscript{4}; Eimer, Joseph\textsuperscript{1}; Essinger-Hileman, Thomas\textsuperscript{1}; Gothe, Dominik\textsuperscript{3}; Halpern, Mark\textsuperscript{6}; Hilton, Gene\textsuperscript{3}; Hinshaw, Gary F.\textsuperscript{2}; Huang, Caroline\textsuperscript{2}; Irwin, Kent\textsuperscript{4}; Jones, Glenn\textsuperscript{7}; Karakla, John\textsuperscript{1}; Kogut, Alan J.\textsuperscript{7}; Larson, David\textsuperscript{1}; Limon, Michele\textsuperscript{7}; Lowry, Lindsay\textsuperscript{1}; Marriage, Tobias\textsuperscript{1}; Mehrle, Nicholas\textsuperscript{1}; Miller, Amber D.\textsuperscript{7}; Miller, Nathan\textsuperscript{2}; Mirel, Paul\textsuperscript{2}; Moseley, Samuel H.\textsuperscript{7}; Novak, Giles\textsuperscript{4}; Reintsema, Carl\textsuperscript{2}; Rostem, Karwan\textsuperscript{2}; Stevenson, Thomas\textsuperscript{2}; Towner, Deborah\textsuperscript{2}; U-Yen, Kongpop\textsuperscript{2}; Wagner, Emily\textsuperscript{1}; Watts, Duncan\textsuperscript{1}; Wollack, Edward\textsuperscript{2}; Xu, Zhilei\textsuperscript{1}; Zeng, Lingzhen\textsuperscript{5}
\textsuperscript{1}Johns Hopkins University, Baltimore, MD. \textsuperscript{2}NASA Goddard Space Flight Center, Greenbelt, MD. \textsuperscript{3}NIST, Boulder, CO. \textsuperscript{4}Pontificia Universidad Catholica de Chile, Santiago, Chile. \textsuperscript{5}CfA-SAO, Cambridge, MA. \textsuperscript{6}University of British Columbia, Vancouver, BC, Canada. \textsuperscript{7}Columbia University, New York, NY. \textsuperscript{8}Northwestern University, Chicago, IL.
245.15 The Cosmology Large Angular Scale Surveyor
Marriage, Tobias1; Ali, Aamir2; Amiri, Mandana3; Appel, John W.1; Araujo, Derek4; Bennett, Charles L.1; Boone, Fletcher1; Chan, Manwei1; Cho, Hsiao-Mei5; Chuss, David T.6; Colazo, Felipe2; Crowe, Erik1; Denis, Kevin1; Dünner, Rolando6; Eimer, Joseph1; Essinger-Hileman, Thomas1; Gothe, Dominik1; Halpern, Mark2; Harrington, Kathleen1; Hilton, Gene3; Hinshaw, Gary F.1; Huang, Caroline1; Irwin, Kent; Jones, Glenn6; Karakla, John1; Kogut, Alan J.2; Larson, David2; Limon, Michele4; Lowry, Lindsay1; Mehrle, Nicholas1; Miller, Amber D.6; Miller, Nathan2; Moseley, Samuel H.2; Novak, Giles7; Reintsema, Carl1; Rostem, Karwan2; Stevenson, Thomas2; Towner, Deborah2; U-Yen, Kongpop2; Wagner, Emily1; Watts, Duncan1; Wollack, Edward2; Xu, Zhilei1; Zeng, Lingzhen8

245.16 Enabling Dark Energy and Beyond Science with Precise Absolute Photometry
Deustua, Susana E.1; Hines, Dean C.1; Bohlin, Ralph1; Gordon, Karl D.1
1. Space Telescope Science Institute, Baltimore, MD.

245.17 Cross-Correlation Functions of Galaxies with Grouped and Isolated Quasars in SDSS DR10
Rhodes, Will1, 2; West, Michael1
1. Maria Mitchell Association, Nantucket, MA. 2. The College of New Jersey, Ewing, NJ.

245.18 Primordial Inflation Explorer (PIXIE): Limits of Systematic Effects in CMB Measurement
Fixsen, Dale J.1, 2; Chuss, David T.1; Dotson, Johanna1; Dwek, Eli1; Halpern, Mark2; Hinshaw, Gary F.1; Kogut, Alan J.3; Meyer, Stephan3; Seiffert, Michael D.6; Moseley, Samuel H.1; Spergel, David N.4; Wollack, Edward1

245.19 The Discovery and Characterization of Surprisingly Luminous Galaxy Candidates at z=9-10: The Power of Combining HST and Spitzer
Illingworth, Garth D.1; Oesch, Pascal1, 2; Bouwens, Rychard3; Labbe, Ivo3
1. UC Santa Cruz, Santa Cruz, CA. 2. Yale University, New Haven, CT. 3. Leiden University, Leiden, Netherlands.

Contributing teams: XDF/HUDF09 team

245.20 Simulation of interferometric observations of cosmic microwave background polarization
Bunn, Emory F.1; Karakci, Ata2; Zhang, Le3; Sutter, Paul M.5; Korotkov, Andrei2; Timbie, Peter T.2; Tucker, Gregory S.2; Wandelt, Benjamin4
1. Univ. of Richmond, Richmond, VA. 2. Brown University, Providence, RI. 3. University of Wisconsin, Madison, WI. 4. Institut d, Paris, France. 5. Ohio State University, Columbus, OH.
246 Evolution of Galaxies Poster Session

Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

246.01 The Average Properties Of CaII And NaI Absorbing Galaxies From Stacked Quasar Spectra
Schulte-Ladbeck, Regina E.1; Cherinka, Brian2
1Univ. of Pittsburgh, Pittsburgh, PA. 2Dunlap Institute for Astrophysics, University of Toronto, Toronto, ON, Canada.

246.02 Probing Star Formation in Polar Ring Galaxy NGC 2685
Ackman, Laiya1, 2; Donovan Meyer, Jennifer2; Muñoz-Mateos, Juan Carlos3, 2
1Wesleyan University, Middletown, CT. 2National Radio Astronomy Observatory, Charlottesville, VA. 3European Southern Observatory, Santiago, RM, Chile.

246.03 SAMI Galaxy Survey: Spectrally Dissecting 3400 Galaxies By the Dozen
Cecil, Gerald N.1, 2; Croom, Scott2
1Univ. of North Carolina, Chapel Hill, NC. 2The University of Sydney, Sydney, NSW, Australia.
Contribution teams: The SAMI Galaxy Survey team

246.04 Stellar Masses, Star Formation Rates and X-ray Constraints on Galaxies in the Coma Cluster
Hrinda, Greg1; Desjardins, Tyler D.2; Hornschemeier, Ann E.3; Gallagher, Sarah4; Hammer, Derek4; Miller, Neal A.5; Ptak, Andrew6; Tzanavaris, Panayiotis6, 3; Johnson, Kelsey E.7; Walker, Lisa May7
1Baltimore County Public Schools, Baltimore, MD. 2University of Western Ontario, London, ON, Canada. 3NASA Goddard Space Flight Center, Greenbelt, MD. 4Space Telescope Science Institute, Baltimore, MD. 5Stevenson University, Owings Mills, MD. 6University of Maryland, Baltimore County, Baltimore, MD. 7University of Virginia, Charlottesville, VA.

246.05 The X-ray Properties of PS1 Optical Galaxy Survey Galaxies
Heeter, Doug1; Ptak, Andrew2; Thilker, David A.3; Hornschemeier, Ann E.2
1Harford County Public Schools, Pylesville, MD. 2NASA/GSFC, Greenbelt, MD. 3The Johns Hopkins University, Baltimore, MD.

246.06 What Makes a Tidal Tail?
Rodruck, Michael1; Konstantopoulos, Iraklis2; Charlton, Jane C.1
1Pennsylvania State University, State College, PA. 2Australian Astronomical Observatory, North Ryde, NSW, Australia.

246.07 EDGES: A Mass Estimate of the Tidal Streamer in M 63
Staudaher, Shawn1; Dale, Daniel A.1; van Zee, Liese2; Barnes, Kate L.2
1University of Wyoming, Laramie, WY. 2Indiana University, Bloomington, IN.
Contribution teams: EDGES

246.08 Early-Type Galaxy Star Formation Histories in Different Environments
Fitzpatrick, Patrick1; Graves, Genevieve2, 1
1Department of Astronomy, University of California, Berkeley, Berkeley, CA. 2Department of Astrophysical Sciences, Princeton University, Princeton, NJ.

246.09 Requirements for Radial Migration: How does the migrating fraction depend on stellar velocity dispersion?
Tolfree, Kathryne1; Wyse, Rosemary F.1
1Johns Hopkins University, Baltimore, MD.
246.10 Determining the Importance of Shocks on Galaxy Evolution in Compact Groups: a Herschel and CARMA View
Alatalo, Katherine A.¹; Appleton, Philip N.¹; Lisenfeld, Ute²; Cluver, Michelle E.³; Bitsakis, Theodoros⁴; Guillard, Pierre⁵; Charmandaris, Vassilis⁶
¹ IPAC/Caltech, Pasadena, CA.  ² Universidad de Granada, Granada, Spain. ³ Australian Astronomical Observatory, Sydney, NSW, Australia. ⁴ University of Crete, Rethymno, Greece. ⁵ Institut d’astrophysique spatiale, Paris, France.

246.11 Infrared and X-ray Cooling in the Taffy Bridge: Herschel and Chandra weigh in!
Appleton, Philip N.¹; Wang, Junfeng²; Peterson, Bradley W.³; Helou, George¹; Cluver, Michelle E.⁴; Gao, Yu⁵; Guillard, Pierre⁵; Boulanger, Francois⁵; Alatalo, Katherine A.¹; Ogle, Patrick M.¹; Sturm, Eckhard⁶; van der Werf, Paul⁷; Xu, C. K.¹; Lu, Nanyao Y.¹; Jarrett, Tom¹⁰; Duc, Pierre-Alain¹³; Lisenfeld, Ute⁵; Falgarone, Edith¹¹; Struck, Curtis¹²
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246.12 Arecibo Galaxy Environment Survey: Visualizing the Volumes of Isolated Galaxies NGC 5523 & UGC 2082
Rodriguez, Roberto A.¹; Minchin, Robert F.²; Taylor, Rhys²
¹ University of Puerto Rico at Humacao, Humacao, Puerto Rico. ² Arecibo Observatory, Arecibo, Puerto Rico.

246.13 Mapping the Characteristics of NCG 7081 as a Function of Galactic Radius
Moravec, Emily¹; Takamiya, Marianne Y.²; West, Michael³
¹ St. Olaf College, Northfield, MN. ² University of Hawai’i Hilo, Hilo, HI. ³ Maria Mitchell Observatory, Nantucket, MA.

246.14 The Sagittarius Dwarf Galaxy Tidal Debris in the south Galactic Cap
Thompson, Jeffery¹; Newby, Matthew¹; Newberg, Heidi J.¹; Desell, Travis²
¹ Rensselaer Polytechnic Institute, Troy, NY. ² University of North Dakota, Grand Forks, ND.

246.15 Exploring Evolution Through the Effects of Galaxy-Galaxy and Group Interactions on Gas Content
Fertig, Derek¹; Rosenberg, Jessica L.¹; Patton, David R.²,³; Ellison, Sara L.³
¹ George Mason University, Fairfax, VA. ² Trent University, Peterborough, ON, Canada. ³ University of Victoria, Victoria, BC, Canada.

246.16 A Study of Galaxy Populations with Red [3.4]-[4.6] Colors
O’Connor, Jessica¹; Rosenberg, Jessica L.¹; Satyapal, Shobita³; Secrest, Nathan¹; Stiffler, Daniel¹
¹ George Mason University, Fairfax, VA.

246.17 Galaxy Zoo 2: Statistics of Morphological Sub-Populations
Pace, Zachary¹; Willett, Kyle²; Fortson, Lucy²
¹ University at Buffalo, SUNY, Buffalo, NY. ² University of Minnesota, Twin Cities, Minneapolis, MN.
246.18 Insight into Gas Processing in Compact Groups of Galaxies
Walker, Lisa May; Johnson, Kelsey E.; Charlton, Jane C.; Desjardins, Tyler D.; Gallagher, Sarah; Hornschemeier, Ann E.; Kepley, Amanda A.; Privon, George C.; Tzanavaris, Panayiotis; Whelan, David G.
1University of Virginia, Charlottesville, VA. 2Penn State, State College, PA. 3University of Western Ontario, London, ON, Canada. 4NASA Goddard, Greenbelt, MD. 5NRAO, Green Bank, WV. 6Hampden-Sydney College, Hampden-Sydney, VA.

246.19 Metallicities of Extraplanar H II Regions in Edge-on Spiral Galaxies
Rueff, Katherine M.; Howk, J. C.; Wotta, Christopher; Croxall, Kevin V.; Savage, Blair D.; O’Meara, John
1University of Notre Dame, Notre Dame, IN. 2Ohio State University, Columbus, OH. 3University of Wisconsin, Madison, WI. 4St. Michael’s College, Colchester, VT.

246.20 Magellanic Clues to Spatially-resolved Extinction Corrections for Distant Galaxies in the HST/JWST Era
Jansen, Rolf A.; Kim, Duho; Shewchuck, Timothy; Windhorst, Rogier A.; Tamura, Kazuyuki
1Arizona State University, Tempe, AZ. 2Naruto University of Education, Naruto, Japan.

246.21 The Green Valley is a Red Herring: Different Evolutionary Pathways for Spheroidal and Disk Galaxies
Urry, C. M.; Schawinski, Kevin; Simmons, Brooke D.; Fortson, Lucy; Kaviraj, Sugata; Keel, William C.; Lintott, Chris; Masters, Karen; Nichol, Robert; Sarzi, Marc; Skibba, Ramin A.; Treister, Ezequiel; Willett, Kyle; Wong, Oiwei; Yi, Sukyoung
1Yale U., New Haven, CT. 2ETH, Zurich, Switzerland. 3Oxford U., Oxford, United Kingdom. 4U. Minnesota, Minneapolis, MN. 5U. Hertfordshire, Hatfield, United Kingdom. 6U. Alabama, Tuscaloosa, AL. 7Adler Planetarium, Chicago, IL. 8U. Portsmouth, Portsmouth, United Kingdom. 9UCSD, San Diego, CA. 10U. de Concepcion, Concepcion, Chile. 11CSIRO, Epping, NSW, Australia. 12Yonsei U., Seoul, Korea, Republic of.
Contributing teams: Galaxy Zoo Citizen Scientists

246.22 A GBT HI Survey of the HALOGAS Galaxies
Pingel, Nickolas; Pisano, Daniel J.
1West Virginia University, Morgantown, WV.

246.23 The Local Cluster Survey: Probing Gas Stripping in Nearby Galaxy Groups and Clusters
Finn, Rose; Moustakas, John; Peng, Chien Y.; Johnson, Debra; Englert, Michael
1Siena College, Loudonville, NY. 2GMTO, Pasadena, CA.
Contributing teams: Local Cluster Survey Team

246.24 Physical and Morphological Parameters of [O II] Emitting Galaxies in the HETDEX Pilot Survey
Bridge, Joanna; Gronwall, Caryl; Ciardullo, Robin; Hagen, Alex; Zeimann, Gregory
1Pennsylvania State University, University Park, PA.
Contributing teams: HETDEX Collaboration
246.25 850 μm source counts from a high-resolution survey with ALMA
Scott, Kimberly S.¹; Sheth, Kartik²; Scoville, Nicholas²
¹North American ALMA Science Center, Charlottesville, VA. ²Caltech, Pasadena, CA.
Contributing teams: COSMOS

246.26 Dependence of Galaxy Clustering on Stellar Mass and sSFR at z~1
Kim, Jae-Woo¹; Im, Myunghin¹; Lee, Seong-Kook¹; Edge, Alastair²; Wake, David¹
¹Seoul National University, Seoul, Seoul, Korea, Republic of. ²Durham University, Durham, United Kingdom.
³University of Wisconsin, Madison, WI.

246.27 The Influence of Bars in Triggering Star Formation since z = 1
Powell, Diana¹,²
¹Harvard University, Cambridge, MA. ²National Radio Astronomy Observatory, Charlottesville, VA.
Contributing teams: Kartik Sheth, Kimberly Scott

246.28 Luminosity and Color Dependence in Galaxy Cross-Correlations since z = 1 in PRIMUS
Bray, Aaron¹; Blanton, Michael R.²; Coil, Alison L.³; Cool, Richard J.⁴,⁵; Eisenstein, Daniel¹; Moustakas, John⁶; Skibba, Ramin A.³; Zhu, Guangtun⁷
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246.29 Using Morphology to Identify Galaxy Mergers at High Redshift
Blancato, Kirsten¹; Kartaltepe, Jeyhan S.²
¹Wellesley College, Wellesley, MA. ²National Optical Astronomy Observatory, Tucson, AZ.
Contributing teams: CANDELS Collaboration

246.30 2D kinematics and physical properties of distant galaxies
Lemoine-Busserolle, Marie¹,²; Lamareille, Fabrice³; Bunker, Andrew J.²; Kissler-Patig, Markus¹
¹Gemini Observatory, Hilo, HI. ²University of Oxford, Oxford, United Kingdom. ³IRAP, Toulouse, France.

246.31 Spectral Energy Distribution Fitting of HETDEX Pilot Survey Lyman-alpha Emissors in COSMOS and GOODS-N
Hagen, Alex¹; Gronwall, Caryl¹; Ciardullo, Robin¹; Acquaviva, Viviana²; Zeimann, Gregory¹; Bridge, Joanna¹; Gawiser, Eric J.³; Bond, Nicholas A.⁴
¹Pennsylvania State University, State College, PA. ²CUNY Citytech, New York, NY. ³Rutgers, New Brunswick, NJ. ⁴NASA Goddard, Greenbelt, MD.
Contributing teams: HETDEX Team

246.32 Galaxy Stellar Mass Functions from ZFOURGE/CANDELS: An Excess of Low-Mass Galaxies Since z=2 and the Rapid Buildup of Quiescent Galaxies
Tomczak, Adam R.¹; Quadri, Ryan²; Tran, Kim-Vy³; Labbe, Ivo³; Straatman, Caroline³; Papovich, Casey J.¹; Glazebrook, Karl³; Allen, Rebecca¹; Kacprzak, Glenn¹; Kawinwanichakij, Lalitwadee¹; Kelson, Daniel³; McCarthy, Patrick J.³; Mehrtens, Nicola³; Monson, Andrew²; Persson, Eric³; Spitler, Lee³; Tilvi, Vithal³; Van Dokkum, Pieter G.⁴
¹Texas A&M University, College Station, TX. ²Carnegie Observatories, Pasadena, CA. ³Sterrewacht Leiden, Leiden, Netherlands. ⁴Swinburne University, Hawthorn, NSW, Australia. ⁵Yale University, New Haven, CT.
Contributing teams: ZFOURGE, CANDELS
246.33 SED Modeling of z~0.3-4 IR-Luminous Galaxies Using Hydrodynamic Simulations
Roebuck, Eric¹; Sajina, Anna³; Pope, Alexandra²; Kirkpatrick, Allison³; Yan, Lin³; Hayward, Christopher C.⁴
¹Tufts University, Medford, MA. ²University of Massachusetts Amherst, Amherst, MA. ³California Institute of Technology, Pasadena, CA. ⁴The Heidelberg Institute for Theoretical Studies, Heidelberg, Baden-Württemberg Land, Germany.

246.34 A large JVLA molecular & continuum deep field: First continuum results
Hodge, Jacqueline¹,³; Riechers, Dominik A.²; Walter, Fabian³; Carilli, Chris L.⁴; Wagg, Jeff⁵; Lentati, Lindley⁶; Sharon, Chelsea E.⁷
¹NRAO, Charlottesville, VA. ²Cornell, Ithaca, NY. ³MPIA, Heidelberg, Germany. ⁴NRAO, Socorro, NM. ⁵Cambridge University, Cambridge, United Kingdom. ⁶Cambridge University, Cambridge, United Kingdom. ⁷Cornell, Ithaca, NY.

246.35 Tadpole Galaxies in the Near-Infrared
Straughn, Amber¹; Eufrasio, Rafael T.²,¹; Voyer, Elysse¹; De Mello, Duilia F.²; Kasin, Susan A.⁴; Gardner, Jonathan P.²; Ravindranath, Swara²; Soto, Emmaris²,¹
¹Goddard Space Flight Center, Greenbelt, MD. ²The Catholic University of America, Washington, DC. ³Aix Marseille Université, Marseille, France. ⁴Space Telescope Science Institute, Baltimore, MD.

246.36 Advantages to Having Low Pollution Environments: X-ray Binary Populations in Nearby and Distant UV-selected Galaxies
Basu-Zych, Antara¹; Lehmer, Bret²,¹; Hornschemeier, Ann E.¹,²; Fragos, Tassos³; Ptak, Andrew²,¹
¹Goddard Space Flight Center, Greenbelt, MD. ²Johns Hopkins University, Baltimore, MD. ³CFA-Harvard, Boston, MA.

246.37 The Fundamental Metallicity Relation of High-Redshift Emission-Line Galaxies
Gebhardt, Henry¹,²; Zeimann, Gregory¹,²; Ciardullo, Robin¹,²; Gronwall, Caryl¹,²; Hagen, Alex¹,²
¹Penn State, University Park, PA. ²Institute for Gravitation and the Cosmos, University Park, PA.

246.38 Understanding the Physical Conditions that Drive Line Emission in Nebular Regions of High-Redshift Galaxies
Zeimann, Gregory¹; Gebhardt, Henry¹; Ciardullo, Robin¹; Gronwall, Caryl¹; Hagen, Alex¹
¹Penn State, University Park, PA.

246.39 Cosmic Variance in the Physical Properties of Ly-alpha Emitting Galaxies at 2<z<3
Gronwall, Caryl¹; Ciardullo, Robin¹; Matkovic, Ana¹; Feldmeier, John J.²; Hay, Jack¹
¹Penn State Univ., University Park, PA. ²Youngstown State Univ., Youngstown, OH. Contributing teams: MUSYC Collaboration

246.40 Constraints on Ly? Blob Number Densities at z~2.1 and z~3.1
Hay, John¹; Ciardullo, Robin¹,²; Feldmeier, John J.³; Gronwall, Caryl¹,²; Hagen, Alex¹,²
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246.41 The Search for Diversities in Clumpy Galaxies
Soto, Emmaris; De Mello, Duilia F.; Bond, Nicholas A.; Rafelski, Marc; Gardner, Jonathan P.; Teplitz, Harry I.
1 The Catholic Univ. of America, Washington, DC. 2 NASA Goddard Space Flight Center, Greenbelt, MD. 1 Infrared Science Archive (IRSA), Pasadena, CA. 4 Spitzer Science Center, Pasadena, CA.
Contributing teams: UV UDF Team

246.42 Outflow Properties of Star-forming Galaxies at z~2 from the MOSDEF Survey
Freeman, William R.; Siana, Brian D.; Shapley, Alice E.; Coil, Alison L.; Kriek, Mariska T.; Mobasher, Bahram; Reddy, Naveen
1 Univ of CA Riverside, Riverside, CA. 2 Univ of CA Los Angeles, Los Angeles, CA. 3 Univ of CA Berkeley, Berkeley, CA. 4 Univ of CA San Diego, San Diego, CA.

246.43 Further Studies of Lyman-alpha Galaxy Halos in MUSYC-LAE Fields
Feldmeier, John J.; Hagen, Alex; Ciardullo, Robin; Gawiser, Eric J.; Gronwall, Cary
1 Youngstown State Univ., Youngstown, OH. 2 Penn State University, University Park, PA. 3 Rutgers University, Piscataway, NJ.
Contributing teams: MUSYC Collaboration

246.44 Parallel Galaxy Main Sequence and Quasar Evolution from z=0-6: A Unified View of Black Hole and Galaxy Evolution?
Speagle, Josh S.; Steinhardt, Charles L.; Capak, Peter L.; Silverman, John D.; Elvis, Martin; Feldstein, Brian S.
Contributing teams: SPLASH

246.45 Dynamically Modeling of Major Galaxy Mergers - Testing IDENTIKIT Using GADGET SPH Simulations
Mortazavi, S. Alireza; Lotz, Jennifer M.
1 Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD. 2 Space Telescope Science Institute, Baltimore, MD.

246.46 The Effect of Baryons on the Distribution of Dark Matter in Galactic Halos
Butsky, Iryna; Macciò, Andrea V.
1 California Institute of Technology, Pasadena, CA. 2 Max Planck Institute for Astronomy, Heidelberg, Baden-Württemberg, Germany.

246.47 Baryon Cycling in Cosmological Simulations of Spiral Galaxies
Christensen, Charlotte; Dave, Romeel; Pontzen, Andrew; Governato, Fabio; Quinn, Thomas R.
1 University of Arizona, Tucson, AZ. 2 University of the Western Cape, Cape Town, South Africa. 3 University College London, London, United Kingdom. 4 University of Washington, Seattle, WA.

246.48 Examining the dark matter distribution of a simulated dwarf galaxy undergoing a merger
Cates, Ian; Christensen, Charlotte
1 Steward Observatory, Tucson, AZ.
246.49 galaxy formation and evolution with an improved SPH code
Zhu, Qirong\textsuperscript{1}; Li, Yuxing\textsuperscript{1}
\textsuperscript{1}Penn State University, University Park, PA.

246.50 A WISE View of Almost Dark ALFALFA Galaxies
Pérez, Jonathan\textsuperscript{1}; Arrieta, Andres\textsuperscript{1}; Pantoja, Carmen\textsuperscript{1}; Lebrón, Mayra E.\textsuperscript{1}; Leisman, Luke\textsuperscript{2}; Koopmann, Rebecca A.\textsuperscript{3}; Haynes, Martha P.\textsuperscript{2}
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246.51 Very Large Array HI Imaging of ALFALFA-Discovered ‘Almost Dark’ Galaxies
Martinkus, Charlotte\textsuperscript{1}; Cannon, John M.\textsuperscript{2}; Adams, Elizabeth A.\textsuperscript{3}; Giovanelli, Riccardo\textsuperscript{5}; Hallenbeck, Gregory\textsuperscript{5}; Haynes, Martha P.\textsuperscript{2}; Jones, Michael\textsuperscript{6}; Joza, Gyula\textsuperscript{2}; Koopmann, Rebecca A.\textsuperscript{4}; Leisman, Luke\textsuperscript{3}; Nichols, Nathan\textsuperscript{5}; Papastergis, Emmanuel\textsuperscript{6}; Rhode, Katherine L.\textsuperscript{7}; Salzer, John J.\textsuperscript{7}; Troischt, Parker\textsuperscript{5}
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246.52 The Low CO Luminosity of Three Extremely Metal-Poor Star-Forming Galaxies
Molter, Edward\textsuperscript{1}; Warren, Steven R.\textsuperscript{2}; Bolatto, Alberto D.\textsuperscript{2}; Cannon, John M.\textsuperscript{1}; Adams, Elizabeth A.\textsuperscript{3}; Elson, Edward C.\textsuperscript{4}; Giovanelli, Riccardo\textsuperscript{5}; Haynes, Martha P.\textsuperscript{2}; McQuinn, Kristen B.\textsuperscript{5}; Rhode, Katherine L.\textsuperscript{7}; Salzer, John J.\textsuperscript{7}; Skillman, Evan D.\textsuperscript{6}
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246.53 The UAT Groups Project: HI Deficiency and Mass Function for Galaxies in Groups
Egner, Joanna\textsuperscript{1}; Crane-Odekon, Mary\textsuperscript{4}; Raskin, Mark\textsuperscript{1}
\textsuperscript{1}Skidmore College, Saratoga Springs, NY.
Contributing teams: Undergraduate ALFALFA Team

246.54 Constraints on First-Stars Models From Observations of Local Low-Mass Dwarf Galaxies and Galactic Metal-Poor Halo Stars
Yung, Long Yan\textsuperscript{1}; Venkatesan, Aparna\textsuperscript{1}
\textsuperscript{1}University of San Francisco, San Francisco, CA.

246.55 L-Band Wide Follow-up Survey: Interesting Candidates and IDL Routines
Nichols, Nathan\textsuperscript{1}; Grzeskowiak, Steven\textsuperscript{2}; Murray, Kyle\textsuperscript{1}; Troischt, Parker\textsuperscript{1}
\textsuperscript{1}Hartwick College, Oneonta, NY.
Contributing teams: ALFALFA Team

246.56 Star Formation and Gas Content in the NRGb 168 Galaxy Group
Murray, Kyle\textsuperscript{1}; Nichols, Nathan\textsuperscript{1}; Grzeskowiak, Steven\textsuperscript{2}; Troischt, Parker\textsuperscript{1}
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Contributing teams: ALFALFA Team

246.57 Star Formation and Gas Content in the NRGb 301 Galaxy Group
Grzeskowiak, Steven\textsuperscript{1}; Nichols, Nathan\textsuperscript{1}; Murray, Kyle\textsuperscript{1}; Troischt, Parker\textsuperscript{1}
\textsuperscript{1}Hartwick College, Oneonta, NY.
Contributing teams: ALFALFA Team
246.58 Spitzer, Gaia, and the Potential of the Milky Way
Price-Whelan, Adrian M.\(^1\); Johnston, Kathryn V.\(^1\); Hogg, David W.\(^2\); Madore, Barry F.\(^3\); Majewski, Steven R.\(^4\).
\(^1\)Columbia University, New York, NY. \(^2\)New York University, New York, NY. \(^3\)Carnegie Observatories, Pasadena, CA. \(^4\)University of Virginia, Charlottesville, VA.

246.59 Detection of CO2-1 in an ALMA [CII]-detected galaxy at \(z = 4.44\)
Huynh, Minh T.\(^1\).
\(^1\)University of Western Australia, Perth, WA, Australia.

246.60 Herschel-detected LBGs at \(z \sim 2\)
Wojno, Jennifer L.\(^1\); Nichols, Matthew T.\(^1\); Haberzettl, Lutz\(^1\); Williger, Gerard M.\(^1\); Leist, Brian\(^1\).
\(^1\)University of Louisville, Louisville, KY.

246.61 Cosmic evolution of star formation properties of galaxies
Kim, Sungeun\(^1\).
\(^1\)Sejong University, Seoul, Korea, Republic of.

246.62 Strategies to observe JWST First Light objects at \(z=10–20\) based on recent results from the HUDF XDF.
Windhorst, Rogier A.\(^1\).
\(^1\)Arizona State Univ., Tempe, AZ.

247 The Solar System Poster Session

247.01 Lightcurve Analysis of Three Asteroids
Hayes-Gehrke, Melissa N.\(^1\).
\(^1\)Univ. of Maryland, College Park, MD.

247.02 Characterization of Asteroid 9983 Rickfienberg
Arion, Douglas N.\(^1\); Odden, Caroline\(^2\).
\(^1\)Carthage College, Whitefield, NH. \(^2\)Phillips Academy, Andover, MA.

247.03 Rogue Asteroids in the Inner Main Asteroid Belt
DeMeo, Francesca E.\(^1\); Binzel, Richard P.\(^2\); Carry, Benoit\(^3\); Moskovitz, Nicholas\(^2\); Polishook, David\(^2\).
\(^1\)Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. \(^2\)Massachusetts Institute of Technology, Cambridge, MA. \(^3\)Institut de Mecanique Celeste et de Calcul des Ephemerides, Paris, France.

247.04 Capture of Asteroids and Transport of Asteroid Materials to Earth
Chiu, Hong-Yee\(^1\).
\(^1\)Hong-Yee Chiu Institute, North Potomac, MD.
Contributing teams: no team

247.05 A Troop of Trojans: Photometry of 24 Jovian Trojan Asteroids
French, Linda M.\(^1\); Stephens, Robert D.\(^2\); Coley, Daniel\(^2\); Wasserman, Lawrence H.\(^3\); La Rocca, Daniel\(^1\); Vilas, Faith\(^4\).
\(^1\)Illinois Wesleyan Univ., Bloomington, IL. \(^2\)Center for Solar System Studies, Rancho Cucamonga, CA. \(^3\)Lowell Observatory, Flagstaff, AZ. \(^4\)Planetary Science Institute, Tucson, AZ.
247.06 Identification and Investigation of Martian Dust Source Regions from Orbital Observation
Kulowski, Laura¹; Wang, Huiqun²
¹ Brown University, Providence, RI. ² Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

247.07 Extraction of Thermal Spectra of the Four Large Satellites of Uranus
Zivick, Paul¹; Lebouteiller, Vianney²; Lunine, Jonathan I.²
¹ The Ohio State University, Columbus, OH. ² Cornell University, Ithaca, NY.

247.08 Observation and Analysis of a Single-Chord Stellar Occultation by Kuiper Belt Object (50000) Quaoar
¹ Williams College, Williamstown, MA. ² MIT, Cambridge, MA. ³ Lowell Obs., Flagstaff, AZ. ⁴ U de Los Andes, Mérida, Venezuela, Bolivarian Republic of. ⁵ CIDA, Llano del Hato, Venezuela, Bolivarian Republic of. ⁶ SAAO, Cape Town, South Africa. ⁷ GSU, Atlanta, GA. ⁸ SMARTS, Cerro Tololo, Chile. ⁹ NYU, New York, NY. ¹⁰ LCOGT, Cerro Tololo, Chile.

247.09 Variable Features of Saturn's B-ring
Salmon, Rachel¹; Hedman, Matthew M.; Nicholson, Philip D.
¹ University of Scranton, Scranton, PA. ² Cornell University, Ithaca, NY.

247.10 Applying Advection-Corrected Correlation Image Velocimetry techniques to Saturn's winds
White, Aaron¹; Barranco, Joseph A.; Marcus, Philip; Solari, Omid; Sayanagi, Kunio M.
¹ San Francisco State University, San Francisco, CA. ² University of California Berkeley, Berkeley, CA. ³ Hampton University, Hampton, VA.

247.11 Geolocation of Terrestrial Gamma Ray Flashes in Gamma Rays Using the Fermi Large Area Telescope
Schaal, Meagan¹, ²; Grove, J. E.; Chekhtman, Alexandre¹, ²; Xiong, Shaolin⁴; Fitzpatrick, Gerard⁵; Cummer, Steven⁶; Holzworth, Robert H.
¹ National Academies, Washington, DC. ² US Naval Research Lab, Washington, DC. ³ George Mason University, Fairfax, VA. ⁴ University of Alabama, Huntsville, AL. ⁵ University College, Dublin, Dublin, Ireland. ⁶ Duke University, Durham, NC. ⁷ University of Washington, Seattle, WA.

247.12 Infrared Spectroscopy of Comet C/2012 S1 (ISON)
¹ Univ. of Cincinnati, Cincinnati, OH. ² Space Science Institute, Boulder, CO. ³ The Aerospace Corporation, Los Angeles, CA. ⁴ Applied Physics Lab, Laurel, MD. ⁵ Univ. of Maryland, College Park, MD. ⁶ Univ. of Minnesota, Minneapolis, MN. ⁷ NASA Ames Research Center, Moffett Field, CA. ⁸ UCSD/CASS, San Diego, CA. ⁹ NASA Goddard Space Flight Center, Greenbelt, MD. ¹⁰ Eureka Scientific., Inc, Oakland, CA.
247.13 Pilot Study of Enhanced Minor Planet Detection Using NEOWISE Data
Cukrov, Greta¹ ²; Mainzer, Amanda K.²; Bauer, James M.² ³; Gray, Tommy⁴; Masiero, Joseph R.²; Cutri, Roc M.³; Wright, Edward L.³; Nugent, Carolyn²; Stevenson, Rachel²; Clune, Elisabeth²; Masci, Frank J.³
¹San Jose State University, San Jose, CA. ²Jet Propulsion Laboratory, La Cañada Flintridge, CA. ³Infrared Processing and Analysis Center, Pasadena, CA. ⁴University of California, Los Angeles, Los Angeles, CA.

247.14 MCMC Radiometric Diameter Uncertainties Applying a Rotating Cratered Thermophysical Model to WISE Data
Wright, Edward L.¹; Mainzer, Amy²
¹UC, Los Angeles, Los Angeles, CA. ²JPL, Pasadena, CA.

247.15 The Pre-Perihelion Size of the Nucleus of Comet C/2012 S1 (ISON)
Kelley, Michael S.¹; Li, Jian-Yang²; Mutchler, Maximilian J.³; Weaver, Harold A.⁴; Knight, Matthew M.⁵
¹Univ. of Maryland, College Park, MD. ²Planetary Science Institute, Tucson, AZ. ³Space Telescope Science Institute, Baltimore, MD. ⁴Johns Hopkins University Applied Physics Laboratory, Laurel, MD. ⁵Lowell Observatory, Flagstaff, AZ.
Contributing teams: HST ISON Imaging Science Team

247.16 Observations of the Black-Drop Effect at the 2012 Transit of Venus
Rogoszinski, Zeeve¹ ²; Pasachoff, Jay M.²; Babcock, Bryce A.²; Schneider, Glenn³; Reardon, Kevin P.⁴
¹Vassar College, Poughkeepsie, NY. ²Williams College, Williamstown, MA. ³University of Arizona, Tucson, AZ. ⁴National Solar Observatory, Sacramento Peak, NM.

247.17 Interpreting the Thermal Lightcurve of Iapetus at 1.3mm
Hagen, Norland Raphael² ¹; Mouillet, Arielle¹; Gurwell, Mark A.³
¹National Radio Astronomy Observatory, Charlottesville, VA. ²University of Montana, Missoula, MT. ³Harvard-Smithsonian CfA, Cambridge, MA.

247.18 Lunar Sodium and Potassium Exospheric Emissions
Oliversen, Ronald J.¹; Mierkiewicz, Edwin J.²; Roesler, Fred L.³; Lupie, Olivia L.¹; Garnder, Derek D.²; Derr, Nicholas³; Kurapparatchi, Dona²; Walter, Nicholas M.³
¹NASA Goddard Space Flight Center, Greenbelt, MD. ²Embry-Riddle Aeronautical University, Daytona Beach, FL. ³University of Wisconsin, Madison, WI.

247.19 January and February Meteor Showers Detected by CAMS: the Cameras for Allsky Meteor Surveillance
Johnson, Beth¹ ²; Jenniskens, Petrus M.¹ ³
¹SETI Institute, Mountain View, CA. ²San Jose State University, San Jose, CA. ³NASA Ames Research Center, Mountain View, CA.

247.20 Explanatory Supplement to the Astronomical Almanac (3rd Edition)
Urban, Sean E.¹; Seidelmann, P. K.²
¹U.S. Naval Obs., Washington, DC. ²Univ. of Virginia, Charlottesville, VA.

247.21 The Astronomical Almanac: Recent Improvements to a Standard Resource
Stewart, Susan G.¹; Kaplan, George H.¹; Urban, Sean E.¹
¹U.S. Naval Obs., Washington, DC.

247.22 Prediction and Archival Tools for Asteroid Radar Observations
Miles, Brittany¹; Margot, Jean-Luc¹ ²
¹Earth, Planetary, and Space Sciences, UCLA, Los Angeles, CA. ²UCLA - Department of Physics and Astronomy, Los Angeles, CA.


248 Lenses & Waves Poster Session

Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

248.01 Using Variability to Search for Lensed Quasars in the Dark Energy Survey
Buckley-Geer, Elizabeth J. 1
1 Fermi Nat’l Accelerator Laboratory, Batavia, IL.
Contributing teams: Dark Energy Survey Collaboration

248.02 Modelling Gravitational Microlensing Events from Large Scale Surveys: Point-like to Planets
Tunbridge, Ben 1, 2; Di Stefano, Rosanne 1; Primini, Frank 3; Ginsburg, Idan 1; Bryk, William 1; Murphy, Max 1; Oprescu, Antonia 1; Kunapuli, Nikhil 4
1 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 2 School of Physics and Astronomy, University of Southampton, Southampton, Hampshire, United Kingdom. 3 Ramaz Upper School, New York, NY. 4 Bridgewater-Raritan High School, Bridgewater, NJ.

248.03 A framework for modeling line-of-sight effects in strong gravitational lensing
Keeton, Charles R. 1; McCully, Curtis 1; Wong, Kenneth C. 2; Zabludoff, Ann I. 3
1 Rutgers Univ., Piscataway, NJ. 2 ASIAA, Taipei, Taiwan. 3 Univ. Arizona, Tucson, AZ.

248.04 Laying the Foundation for Space-based Gravitational Wave Detection: LISA Pathfinder, the LISA Test Package, and ST7-DRS
Thorpe, James 1; Ziemer, John 2; McNamara, Paul 3
1 NASA GSFC, Greenbelt, MD. 2 NASA JPL, Pasadena, CA. 3 ESA ESTEC, Noordwijk, Netherlands.
Contributing teams: LPF Team, LTP Team, ST7-DRS Team

248.05 Calculations of Null Geodesics in the Schwarzschild Metric
Kwiatkowski, Luke 1
1 The University of Toledo, Toledo, OH.

248.06 Optical observations of lensing candidates for millimeter-wave sources
Blackman, Ryan 1, 2; Hughes, John P. 2
1 Northern Arizona University, Flagstaff, AZ. 2 Rutgers, The State University of New Jersey, New Brunswick, NJ.

248.07 Seeking fast transient counterparts to gravitational triggers from LIGO & Virgo
Kanner, Jonah 1
1 Caltech, Pasadena, CA.
Contributing teams: LIGO Scientific Collaboration, Virgo Collaboration

248.08 Electromagnetic Counterparts to massive black hole mergers
Baker, John G. 1
1 NASA/GSFC, Greenbelt, MD.

248.09 Pulsar Timing Data Simulator for the testing of Gravitational Wave Analysis Pipelines
Luo, Jing 1, 2; Jenet, Fredrick 1; Ransom, Scott M. 4; Demorest, Paul 4; Lazio, Joseph 1; Wang, Yan 1
1 The University of Texas at Brownsville, Brownsville, TX. 2 The University of Texas at San Antonio, San Antonio, TX. 4 JPL, Pasadena, CA. 4 NARO, Charlottesville, VA.
248.10 Limiting alternative theories of gravity with multi-messenger gravitational wave observations
Larson, Shane L.1; Hazboun, Jeffrey S.2
1CIERA/Northwestern University, Evanston, IL. 2Utah State University, Logan, UT.

248.11 Creating A Robust And Efficient Pipeline For Detection Of A Gravitational Wave Stochastic Background For Pulsar Timing Data
Simon, Joseph1; Siemens, Xavier1; Ellis, Justin1
1University of Wisconsin Milwaukee, Milwaukee, WI.

248.12 Recovering Hardware Injections in LIGO S5 Data
Disbrow, Ashley1; Kanner, Jonah2; Williams, Roy2; Vallisneri, Michele3-2; Weinstein, Alan J.2
1Carnegie Mellon University, Pittsburgh, PA. 2California Institute of Technology, Pasadena, CA. 3Jet Propulsion Laboratory, Pasadena, CA.

248.13 eLISA: A mission to study the entire universe with gravitational waves
Hewitson, Martin1
1AEI Hannover, Hannover, Niedersachsen, Germany.
Contributing teams: eLISA Consortium

248.14 A new torsion pendulum for testing enhancements to the LISA Gravitational Reference Sensor
Conklin, John1; Chilton, Andrew1; Ciani, Giacomo1; Mueller, Guido1; Olatunde, Taiwo1; Shelley, Ryan1
1University of Florida, Gainesville, FL.

248.15 Analysis Method for the Drift-Mode Experiment on LISA Pathfinder
Cutler, Curt1; Thorpe, James2
1Jet Propulsion Laboratory, Pasadena, CA. 2Goddard Space Flight Center, Greenbelt, MD.

249 NITARP: The NASA/IPAC Training in Archival Research Program

Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

249.01 NITARP: Impact Assessment, 2005-2013
Rebull, Luisa M.1; Gorjian, Varoujian3; Brinkworth, Carolyn1; Squires, Gordon K.1; Burtnyk, Kim1
1Caltech, Pasadena, CA. 2Science for Society, South Pasadena, CA.

249.02 NITARP Alignment with Common Core Literacy and Mathematics Standards
Granucci, Nicole1; Gorjian, Varoujian1; Paulsen, Theresa4; Rutherford, Thomas4; Blackwell, John3

249.03 Extending the invitation: Supporting learners from gateway experiences to participating in astronomical research
Laurence, Wendi1; Gibbs, John2; Marshall, Robert3; Murphy, Michael4; Orr, Laura5; Rebull, Luisa M.6; Whitworth, Christi7
1Portland State University, Portland, OR. 2Glencoe High School, Hillsboro, OR. 3Carnegie Science Center, Pittsburgh, PA. 4Ravenscroft School, Raleigh, NC. 5Ukiah High School, Ukian, OR. 6Caltech, Pasadena, CA. 7Pisgah Astronomical Research Institute, Asheville, NC.
249.04 An Initial Analysis of Learning Styles Exhibited by High School Science Students
Donelson, Frederick¹; Bensel, Holly²; Miller, Danielle³; Seebode, Sally⁴; Ciardi, David R.⁵; Howell, Steve B.⁶
¹Gahanna Lincoln High School, Gahanna, OH. ²St. Mary’s School, Medford, OR. ³University High School, Orlando, FL. ⁴San Mateo High School, San Mateo, CA. ⁵NExScI, Pasadena, CA. ⁶NASA ARC, Mountain View, CA.

249.05 Enhancing Scientific Literacy in the Northeast Kingdom
Blackwell, John¹, ²; Moss, Ben²; Wanzer, Sidney²
¹Phillips Exeter Academy, Exeter, NH. ²Northeast Kingdom Astronomy Foundation, Peacham, VT.

249.06 Charming the Snake: Student Experiences with Python Programming as a Data Analysis Tool
Booker, Melissa¹; Ivers, Carol B.³; Piper, Margaret (Peggy)⁴; Powers, Lynn⁵; Ali, Babar²
¹Robinson Secondary, Centreville, VA. ²Caltech, Pasadena, CA. ³Foran High School, Milford, CT. ⁴Lincoln-Way North High School, Frankfort, IL. ⁵Bozeman High School, Bozeman, MT.

249.07 Looking Inside XX Cygni
Pereira, Vincent¹; Doyle, Thomas¹; Robles, Rebecca¹; Rebull, Luisa M.²
¹Freeport Public Schools, Freeport, NY. ²Caltech, Pasadena, CA.

250 AGN, QSO, Blazars Poster Session I

250.01 Analysis of Quasar Variability Using Kepler Quarter 14 and 15 Data
Nowak, David¹; Revalski, Mitchell¹; Wiita, Paul J.¹; Wehrle, Ann E.²; Unwin, Stephen C.³
¹The College of New Jersey, Ewing, NJ. ²Space Science Institute, Boulder, CO. ³Jet Propulsion Lab, Pasadena, CA.

250.02 Investigating AGN Variability Using Combined Multi-Quarter Kepler Data
Revalski, Mitchell¹; Nowak, Dawid¹; Wiita, Paul J.¹; Wehrle, Ann E.²; Unwin, Stephen C.³
¹The College of New Jersey, Glen Gardner, NJ. ²Space Science Institute, Boulder, CO. ³Jet Propulsion Laboratory, Pasadena, CA.

250.03 Analysis of Kepler Lightcurves Using Turbulent Jet Model
Dhalla, Sarah M.¹; Webb, James R.¹; Bhatta, Gopal²; Laurence, Douglas¹
¹Florida International University, Miami, FL. ²Jagiellonian University, Krakow, Poland.

250.04 Photometric Monitoring of the Active Galactic Nucleus in NGC 7469
Roberts, Caroline A.¹; Bentz, Misty C.²
¹Sewanee: The University of the South, Sewanee, TN. ²Georgia State University, Atlanta, GA.
Contributing teams: Stare Collaboration

250.05 Using Swift to Search for Fast X-ray Variability from Blazars and Study Jet Emission
Pryal, Matthew¹; Falcone, Abraham¹; Stroh, Michael¹
¹The Pennsylvania State University, University Park, PA.
250.06 Detecting a Jet and Tidal Tail in HST Images of Pictor A
Gentry, Eric S.; 1 Marshall, Herman L.; 1 Perlman, Eric S.; 3 Birkinshaw, Mark; 4 Hardcastle, Martin; 2 Harris, D. E.; 6 Lenc, Emili; 5 Siemiginowska, Aneta; 6 Urry, C. M.; 7 Worrall, Diana M.
1 Massachusetts Institute of Technology, Cambridge, MA. 2 University of Hertfordshire, Hatfield, United Kingdom. 3 Florida Institute of Technology, Melbourne, FL. 4 University of Bristol, Bristol, United Kingdom. 5 CSIRO Australia Telescope National Facility, Epping, NSW, Australia. 6 Smithsonian Institution Astrophysical Observatory, Cambridge, MA. 7 Yale University, New Haven, CT.

250.07 Investigating C IV Line Variability and Multiple Epoch C IV SMBH Mass Estimates
Sharma, Ramon
1 University of Washington, Seattle, WA.

250.08 Monitoring the Lensed Quasars FBQ 0951+2635 and SDSS 1650+4251 in the Near-Infrared: Technical Challenges
Demers, Aaron; 1 Gerlach, Gregory; 1 Morgan, Christopher W.; 1 MacLeod, Chelsea; 1 Vrba, Frederick J.
1 US Naval Academy, Annapolis, MD. 2 us Naval Observatory, flagstaff, AZ.

250.09 II ZW 229.015: The most complete optical light curve of any AGN.
Williams, Joshua; 1 Carini, Michael T.
1 Bowling Green, KY.

250.10 Outburst in the Gamma-ray Bright Quasar CTA26
Foord, Adi; 1 Jorstad, Svetlana G.; 1 Marscher, Alan P.
1 Boston University, Boston, MA.

250.11 Quasar Ionization Echoes -- 100,000 Year Baseline AGN Light Curves
Schirmer, Mischa; Keel, William C.; 1 Fu, Hai; 1 Nagao, Tohru; 1 Levenson, Nancy; 1 Diaz, Ruben; 1 Turner, James; 1 Holhjem, Karianne
1 Gemini Observatory, La Serena, Chile. 2 University of Alabama, Tuscaloosa, AL. 3 University of Kyoto, Kyoto, Japan. 4 University of Iowa, Iowa City, IA. 5 SOAR telescope, La Serena, Chile.

250.12 Time-Correlation Between Optical and Gamma-ray Activity in Blazars
Cohen, Daniel P.; 1 Romani, Roger W.; 2 Filippenko, Alexei V.; 1 Cenko, Stephen B.; 1 Lott, Benoit
1 UC Berkeley, Berkeley, CA. 2 Stanford University, Stanford, CA. 3 NASA / GODDARD Space Flight Center, Greenbelt, MD. 4 CENBG, Bordeaux Gradignan, France. 5 SLAC, Stanford, CA.

250.13 TANAMI Discovery of a Milliarcsecond-scale Symmetric Radio Structure in the Gamma-ray Source PMN J1603-4904
McConville, William; Mueller, Cornelia; Ojha, Roopesh
1 NASA GSFC / University of Maryland, Adelphi, MD. 2 Universitat Wurzburg / Universitat Erlangen-Nurnberg, Bamberg, Germany. 3 NASA GSFC, Greenbelt, MD.

Contributing teams: TANAMI Collaboration, Fermi-LAT Collaboration

250.14 SMARTS Optical and Near-Infrared Observations of Fermi LAT Blazars
Buxton, Michelle; Isler, Jedidah; Urry, C. M.; Hasan, Imran; MacPherson, Emily; Bailyn, Charles D.; Coppi, Paolo
1 Yale University, New Haven, CT.

Contributing teams: Fermi Gamma-ray Space Telescope
250.15 Spectroscopic Monitoring of Supermassive Black Hole Binary Candidates
Mathes, Gavin1; Eracleous, Michael1; Sigurdsson, Steinn1; Runnoe, Jessie C.1;
Bogdanovic, Tamara2
1Penn State University, State College, PA. 2Georgia Institute of Technology, Atlanta, GA.

250.16 Time Variation of the Broad Hβ Emission Line in Local Active Galaxies
Scott, Bryan1; Bennert, Vardha Nicola1; Komossa, Stefanie2; Treu, Tommaso1;
Auger, Matthew4; Malkan, Matthew A.5
1California Polytechnic State University, San Luis Obispo, CA. 2Max Planck Institute for Radio Astronomy, Bonn, Germany. 3University of California, Santa Barbara, Santa Barbara, CA. 4Institute of Astronomy, Cambridge, United Kingdom. 5University of California, Los Angeles, Los Angeles, CA.

250.17 Exploring the Variability of the Fermi LAT Blazar Population
Macomb, Daryl J.1; Shrader, Chris R.2
1Boise State Univ., Boise, ID. 2NASA/GSFC, Greenbelt, MD.

250.18 Variability in the Intrinsic Absorption in the Seyfert 1 Galaxy NGC 3783
Gabel, Jack1; Crenshaw, D. M.2; Dunn, Jay P.1; Kraemer, Steven B.4
1Creighton University, Omaha, NE. 2Georgia State University, Atlanta, GA. 3Augusta State University, Augusta, GA. 4The Catholic University of America, Washington, DC.

250.19 A systematic search for X-ray cavities in galaxy clusters, groups, and elliptical galaxies
Shin, Jaejin1,2; Woo, Jong-Hak1,2; Mulchaey, John S.2
1Seoul National University, Republic of Korea, Seoul, Seoul, Korea, Republic of. 2Carnegie Observatories, Pasadena, CA.

250.20 Feedback in the Local Universe: The Relation Between Star Formation and AGN Activity in Typical Elliptical Galaxies
Vaddi, Sravani1; O’Dea, Christopher P.1; Baum, Stefi A.1; Jones, Christine2; Forman, Bill3; Whitmore, Samantha4; Ahmed, Rabeea5
1Rochester Institute of Technology, Rochester, NY. 2Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 3Harvard University Cambridge, Cambridge, MA.

250.21 Large Radio Sources Hosted by Spiral Galaxies (aka: The Wrong Type of Host!)
Duffin, Ryan1,2; Mao, Minnie3; Owen, Frazer N.1
1National Radio Astronomy Observatory, Socorro, NM. 2University of Virginia, Charlottesville, VA.

250.22 Morphological Classifications of the Nuclear Disks and Radio Jets for a Complete Sample of Nearby Radio-Loud Elliptical Galaxies
Chari, Vignesh1,2; Noel-Storr, Jacob1; Paradis, Jeff2; Keenan, Josephine3,1; Dioguardi, Patrick2,1
1Rush-Henrietta Senior High School, Henrietta, NY. 2Rochester Institute of Technology, Rochester, NY.
Contributing teams: The UGC FR-I Collaboration

250.23 From Starburst to Quiescence: Testing AGN Feedback in Post-Starbursts Galaxies.
Yesuf, Hassen M.1; Faber, Sandra M.1; Trump, Jonathan R.1; Koo, David C.1; Fang, Jerome J.1
1UCSC, Santa Cruz, CA.
250.24 Relative Influence of Galaxy Mergers and Clusters on AGN Activity
Khabiboulline, Emil; Steinhardt, Charles L.; Silverman, John D.; Ellison, Sara L.; Mendel, Trevor
1 California Institute of Technology, Pasadena, CA. 2 Kavli Institute for the Physics and Mathematics of the Universe, Kashiwanoha, Japan. 3 University of Victoria, Victoria, BC, Canada. 4 Max Planck Institute for Extraterrestrial Physics, Garching, Germany.

250.25 Active Galactic Nuclei in Dwarf Galaxies
Hein, Megan; Secrest, Nathan; Satyapal, Shobita
1 George Mason University, Fairfax, VA.

250.26 Obscured Active Galactic Nuclei in Dwarf Galaxies
Hrebinka, Jesse; Satyapal, Shobita; Secrest, Nathan; Koju, Raj K.; Schmitt, Henrique R.
1 George Mason University, Fairfax, VA.

250.27 Color-Magnitude Relationship of Type I Seyfert Galaxies with Redshifts from 0.1<z<0.8 Using Data From Sloan and GALEX
Rutherford, Thomas; Gorjian, Varoujian; Granucci, Nicole; Paulsen, Theresa; Blackwell, John; Boyd, Matthew; Cox, Wesley; Fratt, Ellie; Goetsch, Brendan; Hatlehol, Thomas; Hiester, Luke; Juoni, Hannah; McGee, Clara; Meyer, Brian; Michel, Shayla; Miner, Mackenzie; Nanney, Peyton; Pankratz, Elizabeth; Paulsen, Laura; Ramsay, Dylan; Spahr, Ariadne; Westgate, Brian
1 Sullivan South High School, Kingsport, TN. 2 JPL/California Institute of Technology, Pasadena, CA. 3 Oxford High School, Oxford, CT. 4 Mellen High School, Mellen, WI. 5 Ashland High School, Ashland, WI. 6 Phillips Exeter Academy, Exeter, NH. 7 Washburn High School, Washburn, WI.

250.28 Red Quasars: Hunting For Hidden Rubies in the Sky
Calapa, Marie; Gregg, Michael; West, Michael
1 University of Massachusetts Amherst, Amherst, MA. 2 University of California Davis, Davis, CA. 3 Maria Mitchell Association, Nantucket, MA.

250.29 Extending the Fermi – Swift Joint AGN Sample
Shrader, Chris R.; Macomb, Daryl J.
1 NASA’s GSFC, Greenbelt, MD. 2 Boise State University, Boise, ID.

250.30 UV Emission of AGN in the 2Jy Sample of Southern Radio Galaxies
Every, Michael; O’Dea, Christopher P.; Baum, Stefi A.; Noel-Storr, Jacob; Vaddi, Sravani
1 Rochester Institute of Technology, Rochester, NY.

250.31 A Far-UV to Mid-IR Survey of Nearby Interacting Galaxies and Mergers
Weston, Madalyn; McIntosh, Daniel H.; Rigby, Jane R.
1 University of Missouri-Kansas City, Kansas City, MO. 2 NASA/GSFC, Greenbelt, MD.

250.32 Investigating black hole - galaxy connection from present to past
Woo, Jong-Hak; Park, Daeseong; Bennert, Vardha Nicola; Treu, Tommaso; Malkan, Matthew A.; Auger, Matt
1 Seoul National University, Seoul, Korea, Republic of. 2 California Polytechnic State University, San Luis Obispo, CA. 3 UC Santa Barbara, Santa Barbara, CA. 4 UCLA, LA, CA. 5 Cambridge, Cambridge, United Kingdom.
250.33 GeMS/GSAOI imaging of z ~ 0.3 BL Lacs
Ridgway, Susan E.1; Pessev, Peter 2; Floyd, David 4
1 NOAO, Tucson, AZ. 2 Gemini Telescope, La Serena, Chile. 3 Monash University, Melbourne, ACT, Australia.

250.34 Black Hole Growth in Low-redshift LoBAL QSOs
Lazarova, Mariana S.1; Canalizo, Gabriela 2
1 Colorado College, Colorado Springs, CO. 2 UC, Riverside, Riverside, CA.

251 AGN, QSO, Blazars Poster Session II
Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

251.01 The Parsec-scale Structure and Kinematics of Radio-Loud Narrow-Line Seyfert 1 Galaxies
Richards, Joseph L.1; Lister, Matthew L.1; Foschini, Luigi2; Savolainen, Tuomas3; Homan, Daniel C.4; Kadler, Matthias5; Hovatta, Talvikki6; Readhead, Anthony C.6; Arshakian, Tigran7; Chavushyan, Vahram8
1 Purdue University, West Lafayette, IN. 2 INAF, Brera, Italy. 3 MPIfR, Bonn, Germany. 4 Denison University, Granville, OH. 5 University of Würzburg, Würzburg, Germany. 6 Caltech, Pasadena, CA. 7 University of Cologne, Cologne, Germany. 8 INAOE, Puebla, Mexico.

251.02 Deconvolving Contributions to the Narrow Emission-Line Spectra of Narrow-Line Seyfert 1s
Kraemer, Steven B.1; Crenshaw, D. M.2; Schmitt, Henrique R.3; Dietrich, Matthias4
1 Catholic University of America, Washington, DC. 2 Georgia State University, Atlanta, GA. 3 NRL, Washington, DC. 4 University of Ohio, Athens, OH.

251.03 Size of the Narrow Line Region in Low Luminosity AGNs
Soto, Edith1; Hainline, Kevin2; Hickox, Ryan C.2
1 California State University Los Angeles, Los Angeles, CA. 2 Dartmouth College, Hanover, NH.

251.04 Reverberation Mapping of the Dusty Torus of AGN NGC 6418
Vazquez, Billy1; Galiani, Pasquale2; Richmond, Michael W.3; Robinson, Andrew4; Horne, Keith D.2; Almeyda, Triana2; Bottorff, Mark3; Batcheldor, Daniel4; Peterson, Bradley M.3; Gallimore, Jack F.4; Buchanan, Catherine5; Capetti, Alessandro5; Elitzur, Moshe6; Kishimoto, Makoto7; Marconi, Alessandro8; Mason, Rachel9; Netzer, Hagai10; Packham, Christopher C.11; Perez, Enrique12; Tadhunter, Clive13; Stirpe, Giovanna14; Storchi-Bergmann, Thaisa15; Upton, John16; Axon, David17
1 Rochester Institute of Technology, Rochester, NY. 2 University of St. Andrews, St. Andrews, Scotland, United Kingdom. 3 Southwestern University, Georgetown, TX. 4 Florida Institute of Technology, Melbourne, FL. 5 Ohio State University, Columbus, OH. 6 Bucknell University, Lewisburg, PA. 7 University of Melbourne, Parkville, VIC, Australia. 8 Istituto Nazionale di Astrofisica, Roma, Roma, Italy. 9 University of Kentucky, Lexington, KY. 10 Max Planck Institute, Bonn, Bonn, Germany. 11 University of Florence, Firenze, Firenze, Italy. 12 Gemini Observatory, Hilo, HI. 13 Tel Aviv University, Tel Aviv, Israel, Israel. 14 University of Texas, San Antonio, TX. 15 Instituto de Astrofisica de Andalucia, Granada, Andalucia, Spain. 16 The University of Sheffield, Western Bank, Sheffield, United Kingdom. 17 Osservatorio Astronomico di Bologna, Bologna, Bologna, Italy. 18 Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil.
251.05 Angular Distribution of the X-ray Reflection in Accretion Disks
Garcia, Javier; Dauser, Thomas; Lohfink, Anne M.; Callan, Timothy R.; McClintock, Jeffrey E.; Steiner, James F.; Brenneman, Laura; Wilms, Jörn; Reynolds, Christopher S.; Tombesi, Francesco;
1 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 2 University of Maryland, Greenbelt, MD. 3 NASA Goddard Space Flight Center, Greenbelt, MD. 4 Dr. Karl Remeis-Observatory, Bamberg, Germany. 5 Erlangen Centre for Astroparticle Physics, Bamberg, Germany.

251.06 Correlations of Circumnuclear Water Maser Luminosity with AGN Activity and SMBH Mass
Mei, Ming-Yi Jeffrey; Zaw, Ingyin; Greenhill, Lincoln J.
1 Center for Cosmology and Particle Physics, Department of Physics, New York University, New York, NY. 2 New York University Abu Dhabi, Abu Dhabi, United Arab Emirates. 3 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

251.07 Gas Flows in the Inner Kiloparsec of NGC 1386
Lena, Davide; Robinson, Andrew; Seelig, Trent; Schnorr-Muller, Allan; Riffel, Rogemar A.; Storchi-Bergmann, Thaisa; Couto, Guilherme R.; Riffel, Rognes
1 Rochester Institute of Technology, Rochester, NY. 2 Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil. 3 Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil.

251.08 Spitzer and Kepler Space Telescope Detection of Reverberation in the Seyfert 1 Galaxy Zw 229-015
Gorjian, Varoujan; Barth, Aaron J.; Bloom, Joshua S.; Edelson, Richard; Filippenko, Alexei V.; Hoenig, Sebastian; Joner, Michael D.; Li, Weidong; Malkan, Matthew A.; Mushotzky, Richard; Nguyen, My L.; Vaughan, Simon

251.09 A Statistical Investigation of the Connection between X-ray and Water Maser Emission in Galaxy Centers
Nutter, Andrew; Constantin, Anca
1 James Madison University Department of Physics and Astronomy, Harrisonburg, VA.

251.10 The SEDs of Gapped Accretion Disks surrounding Binary Black Holes
Gultekin, Kayhan; Miller, Jon M.
1 Univ. Of Michigan, Ann Arbor, MI.

251.11 Probing Systematic Bias in the Reverberation Mapped Quasar Sample
Smith, Robyn; Richards, Gordon T.; Gallagher, Sarah
1 Drexel University, Philadelphia, PA. 2 University of Western Ontario, London, ON, Canada.

251.12 The Importance of Winds for AGN Feedback
Crenshaw, D. M.; Kraemer, Steven B.; Schmitt, Henrique R.; Fischer, Travis C.; Gagne, Justin
1 Georgia State Univ., Atlanta, GA. 2 The Catholic University of America, Washington, DC. 3 Naval Research Laboratory, Washington, DC.
251.13 The Brightest AGN: Characterizing Their Hot Gas Environments and the Accretion of Cooling Gas Onto Their SMBHs
Calzadilla, Michael1,2; Jones, Christine3; Santos, Felipe A.2,3; Evans, Daniel A.2,3; Forman, William R.; Goulding, Andy D.; Van Weeren, Reinout J.3
1University of South Florida, Tampa, FL. 2Harvard-Smithsonian, CfA, Cambridge, MA. 3National Science Foundation, Washington, DC.

251.14 Radiative deceleration in relativistic jets.
Rivas, David1; Arsham, Aryana1; Georganopoulos, Markos1
1UMBC, Baltimore, MD.

251.15 Investigating the emission mechanisms of the jet in the quasar PKS 1127-145
Duffy, Ryan T.1,2; Siemiginowska, Aneta1; Kashyap, Vinay1; Stein, Nathan3; Migliori, Giulia1
1Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 2University of Southampton, Southampton, Hampshire, United Kingdom. 3University of Pennsylvania, Philadelphia, PA.

251.16 Trans-Relativistic Particle Acceleration in Astrophysical Plasmas
Becker, Peter A.; Subramanian, Prasad2
1George Mason University, Fairfax, VA. 2Indian Institute of Science Education and Research, Pashan, Maharashtra, India.

251.17 Testing the Twisted Torus Model of Quasar Obscuration
Elvis, Martin1; Rose, Marvin1; Lawrence, Andy2; Roseboom, Isaacq2
1Harvard-Smithsonian CfA, Cambridge, MA. 2University of Edinburgh, Edinburgh, Scotland, United Kingdom.

251.18 Tests of Excitation and Reverberation in the Sub-pc Megamaser Disks of Near by AGN
Pesce, Dominic1,2; Braatz, James A.2
1University of Virginia, Charlottesville, VA. 2NRAO, Charlottesville, VA.

251.19 Observed Accelerations Due to Bends in Extragalactic Radio Jets
Meier, Eric J.1; Homan, Daniel C.1; Lister, Matthew L.2
1Denison University, Granville, OH. 2Purdue, West Lafayette, IN.

251.20 A Black Hole Recoil Candidate in a Nearby Dwarf Galaxy
Koss, Michael1,2; Blecha, Laura3; Mushotzky, Richard1; Veilleux, Sylvain3; Hung, Chao-Ling1; Man, Allison4; Li, Yanxia1
1University of Hawaii, Honolulu, HI. 2ETH Zurich, Zurich, Switzerland. 3University of Maryland, College Park, MD. 4Dark Cosmology Centre, Copenhagen, Denmark.

251.21 Quasar Outflows and AGN Feedback in the Extreme UV: HST/COS Observations of QSO HE0238-1904
Arav, Nahum1,2; Borguet, Benoit1; Chamberlain, Carter1; Edmonds, Doug1; Danforth, Charles2
1Virginia Tech, Blacksburg, VA. 2CU, Boulder, CO.

251.22 Morphology of the AGN Outflow from FBQS J0209-0438
Chamberlain, Carter1; Arav, Nahum1; Kriss, Gerard A.2; Muzahid, Sowgat3
1Virginia Tech, Blacksburg, VA. 2Space Telescope Science Institute, Baltimore, MD. 3Inter-University Centre for Astronomy and Astrophysics, Ganeshkhind, Pune, India.
251.23 Time Dependent Leptonic Modeling for the Flat Spectrum Radio Quasars: 3C 273 and 3C 279
Diltz, Chris¹; Boettcher, Markus²
¹Ohio University, Athens, OH. ²North Western University, Potchefstroom, South Africa.

251.24 Self Regulated Growth of Stars and Black Holes in Galaxies via Feedback
Sherman, Sydney¹; Li, Yuexing¹; Zhu, Qirong¹
¹The Pennsylvania State University, University Park, PA.

251.25 The ICRF3 Roadmap to the next generation International Celestial Reference Frame
Jacobs, Christopher S.¹
¹Jet Propulsion Laboratory, Pasadena, CA.
Contributing teams: ICRF-3 working group

251.26 The Efficiency of Jet Production in Radio Galaxies
Nemmen, Rodrigo¹,²
¹NASA GSFC, Greenbelt, MD. ²CRESST/UMBC, Baltimore, MD.

251.27 Five Years of the Fermi LAT Flare Advocate
Carpenter, Bryce¹,²; Ojha, Roopesh³; Gasparrini, Dario³,⁴; Ciprini, Stefano³,⁴
¹The Catholic University of America, Washington, DC. ²NASA/GSFC, Greenbelt, MD. ³Agenzia Spaziale Italiana Science Data Center, Rome, Italy. ⁴INAF Osservatorio Astronomico di Roma, Rome, Italy.
Contributing teams: on behalf of the Fermi LAT collaboration; on behalf of the Fermi LAT Flare Advocates

251.28 Diffuse X-Ray Emission in Active and Normal Galaxies in the Extended Groth Strip
Bhattacharjee, Anirban¹; Chatterjee, Suchetana¹,¹⁰; Myers, Adam D.¹; Brother- ton, Michael S.¹; Newman, Jeffrey²; Aird, James³; Cooper, Michael⁴; Jeltema, Tesla E.⁵; Nandra, Kirpal⁶; Yan, Renbin⁷; Willmar, Christopher¹¹; Montero-Dorta, Antonio⁷; Laird, Elise⁸
¹University of wyoming, Laramie, WY. ²University of Pittsburgh, Pittsburgh, PA. ³Durham university, Durham, Durham, United Kingdom. ⁴University of California- Irvine, Irvine, CA. ⁵University of California- Sant Cruz, Santa Cruz, CA. ⁶Imperial College, London, London, United Kingdom. ⁷University of Utah, Salt Lake City, UT. ⁸Max Planck Institut für Extraterrestrische Physik, Garching, Bavaria, Germany. ⁹University of Kentucky, Lexington, KY. ¹⁰Presidency University, Kolkata, West Bengal, India. ¹¹University of Arizona- Steward Observatory, Tucson, AZ.

252 Starburst Galaxies Poster Session
Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

252.01 Identifying the Physical Parameter Responsible for the Ionization Sequence in Star Forming Galaxies
Richardson, Chris T.¹; Allen, James T.²; Baldwin, Jack A.³; Hewett, Paul C.⁴; Ferland, Gary J.⁵
¹Elon University, Elon, NC. ²University of Sydney, Sydney, NSW, Australia. ³Michigan State University, East Lansing, MI. ⁴University of Cambridge, Cambridge, United Kingdom. ⁵University of Kentucky, Lexington, KY.
252.02  Imaging the Spatial Density Within Starburst Galaxies M82 and Arp220
Kern, Nicholas S. \textsuperscript{1,2}; Mangum, Jeffrey G. \textsuperscript{2}; Darling, Jeremiah K. \textsuperscript{3}; Henkel, Christian \textsuperscript{4}; Menten, Karl \textsuperscript{4}
\textsuperscript{1}Department of Astronomy & Astrophysics, University of Michigan, Ann Arbor, MI. \textsuperscript{2}National Radio Astronomy Observatory, Charlottesville, VA. \textsuperscript{3}University of Colorado, Boulder, CO. \textsuperscript{4}Max Planck Institute for Radio Astronomy, Bonn, Germany.

252.03  First extragalactic detection of far-infrared CH rotational lines from the Herschel Space Observatory
Rangwala, Naseem \textsuperscript{1,2}; Glenn, Jason \textsuperscript{1}; Wilson, Christine \textsuperscript{3}; Maloney, Phil \textsuperscript{1}; Spino-glio, Luigi \textsuperscript{4}; Kamenetzky, Julia R. \textsuperscript{1}; Schirm, Max \textsuperscript{3}; Santaella, Miguel P. \textsuperscript{4}
\textsuperscript{1}University of Colorado, Boulder, Boulder, CO. \textsuperscript{2}NASA Ames Research Center, Moffet Field, CA. \textsuperscript{3}McMaster University, Hamilton, ON, Canada. \textsuperscript{4}Istituto di Fisica dello Spazio Interplanetario, Roma, Rome, Italy.

252.04  Molecular Gas in Starburts: Understanding Mergers using High Density Gas Tracers
Manohar, Swarnima \textsuperscript{1}; Scoville, Nicholas \textsuperscript{1}; Walter, Fabian \textsuperscript{2}; Sheth, Kartik \textsuperscript{3}
\textsuperscript{1}California Institute of Technology, Pasadena, CA. \textsuperscript{2}Max Planck Institut für Astronomie, Heidelberg, Germany. \textsuperscript{3}National Radio Astronomy Observatory, Charlottesville, VA.

252.05  IDEOS: Fitting Infrared Spectra from Dusty Galaxies
Viola, Vincent \textsuperscript{1}; Rupke, David \textsuperscript{1}
\textsuperscript{1}Rhodes College, Memphis, TN.

252.06  A Deep Arecibo Spectral Scan of Arp 220
Vick, Michelle \textsuperscript{1}; Ghosh, Tapasi \textsuperscript{2}; Salter, Christopher J. \textsuperscript{2}; Minchin, Robert F. \textsuperscript{2}
\textsuperscript{1}Harvey Mudd College, Claremont, CA. \textsuperscript{2}NAIC, Arecibo, Puerto Rico.

252.07  Velocity Dispersion and Kinetic Energy in CGCG048A And CGCG048B
Lanes, Olivia \textsuperscript{1}; Wilcots, Eric M. \textsuperscript{2}; Nielsen, Danielle \textsuperscript{2}
\textsuperscript{1}Dickinson College, Carlisle, PA. \textsuperscript{2}University Of Wisconsin, Madison, Madison, WI.

252.08  Do Cosmic Rays Sample the Mean ISM Density of Starburst Galaxies?
Boettcher, Erin \textsuperscript{1}; Zweibel, Ellen G. \textsuperscript{1}; Yoast-Hull, Tova \textsuperscript{1}; Gallagher, John S. \textsuperscript{1}
\textsuperscript{1}University of Wisconsin - Madison, Madison, WI.

252.09  Exploring the Dust Content of Galactic Winds with Herschel: Nearby Dwarf Galaxies
McCormick, Alexander \textsuperscript{1}; Veilleux, Sylvain \textsuperscript{1}; Melendez, Marcio \textsuperscript{1}; Bland-Hawthorn, Jonathan \textsuperscript{2}; Cecil, Gerald \textsuperscript{2}; Engelbracht, Chad \textsuperscript{4}; Heitsch, Fabian \textsuperscript{3}; Martin, Crystal L. \textsuperscript{3}; Mueller, Thomas \textsuperscript{4}; Rupke, David \textsuperscript{4}; Tripe, Margaret \textsuperscript{5}; Zastrow, Jordan \textsuperscript{4}
\textsuperscript{1}University of Maryland, College Park, MD. \textsuperscript{2}University of Sydney, Sydney, NSW, Australia. \textsuperscript{3}University of North Carolina, Chapel Hill, NC. \textsuperscript{4}University of Arizona, Tucson, AZ. \textsuperscript{5}University of California, Santa Barbara, CA. \textsuperscript{6}Max Planck Institute for Extraterrestrial Physics, Garching, Germany. \textsuperscript{7}Rhodes College, Memphis, TN. \textsuperscript{8}Johns Hopkins University Applied Physics Laboratory, Laurel, MD. \textsuperscript{9}University of Michigan, Ann Arbor, MI.
252.10  Exploring the Dust Content of Galactic Winds with Herschel: NGC 3079 and NGC 4631
Melendez, Marcio; Veilleux, Sylvain; McCormick, Alexander; Martin, Crystal L.; Engelbracht, Chad; Bland-Hawthorn, Jonathan; Cecil, Gerald; Heitsch, Fabian; Mueller, Thomas; Rupke, David; Tripple, Margaret; Zastrow, Jordan

252.11  Numerical Models of Starburst Galaxies: A Study of Outflows and ISM Morphology in Galactic Cores
Tanner, Ryan; Cecil, Gerald N.; Heitsch, Fabian
1. University of North Carolina at Chapel Hill, Chapel Hill, NC.

252.12  What Do Star Clusters in Nearby Starburst Galaxies Tell Us?
Lim, Sungsoon; Lee, Myung Gyoon; Hwang, Naarae
1. Seoul National University, Seoul, Korea, Republic of. 2. Korea Astronomy and Space Science Institute, Daejeon, Korea, Republic of.

252.13  Imaging Arp 220 in CO 6-5 and dust at 100 pc resolution with ALMA
Wilson, Christine; Rangwala, Naseem; Glenn, Jason; Maloney, Phil; Kameetzky, Julia; Santeilla, Miguel P.; Schirm, Max; Spinoglio, Luigi

252.14  He II-Emitting Galaxies
Heap, Sara R.
1. NASA’s GSFC, Greenbelt, MD.

252.15  Far Infrared Fine Structure Lines in Ultraluminous Infrared Galaxies
Farrah, Duncan
1. Virginia Tech, Blacksburg, VA.

252.16  Hinge Clumps in Interacting Galaxies: Extra-Nuclear Starbursts
Smith, Beverly; Soria, Roberto; Struck, Curtis; Giroux, Mark; Swartz, Douglas A.; Yukita, Mihoko

252.17  Probing star formation in local luminous compact blue galaxies
Rabidoux, Katherine; Pisano, Daniel J.; Kepley, Amanda A.; Johnson, Kelsey E.

252.18  Constraining Stellar Feedback: Shock–ionized Gas in Nearby Starburst Galaxies
Hong, Sungryong; Calzetti, Daniela
1. University of Massachusetts, Amherst, Amherst, MA. 2. NOAO, Tucson, AZ.
252.19 Age-Dating Star Clusters in the Luminous Infrared Galaxy VV340
Yarber, Aara’L; Evans, Aaron S.1
1Howard University, Washington DC, DC.

252.20 The Properties of submm Galaxies in the CANDELS GOODS-S Field -- Combining ALMA with HST
Wiklind, Tommy1
1European Southern Observatory, Santiago, Vitacura, Chile.
Contributing teams: CANDELS Team

253 Astroinformatics and Astrostatistics Poster Session
Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

253.01 AstroML: Python-powered Machine Learning for Astronomy
Vander Plas, Jake1; Connolly, Andrew J.; Ivezic, Zeljko1
1University of Washington, Seattle, WA.

253.02 The Astrostastics and Astroinformatics Portal
Feigelson, Eric1; Hilbe, Joseph M.2
1Penn State Univ., University Park, PA. 2Arizona State Univ., Tempe, AZ.

253.03 Adventures in Modern Time Series Analysis: From the Sun to the Crab Nebula and Beyond.
Scargle, Jeffrey1
1NASA Ames Research Center, Moffett Field, CA.

253.04 The Virtual Observatory for the Python Programmer
Plante, Raymond L.; Fitzpatrick, Michael J.; Graham, Matthew2; Tody, Douglas3
1Univ. of Illinois, Urbana, IL. 2Caltech, Pasadena, CA. 3National Radio Astronomy Observatory, Socorro, NM. 4National Optical Astronomy Observatory, Tucson, AZ.
Contributing teams: US Virtual Astronomical Observatory

253.05 Filtergraph: A fast, intuitive, online data visualization system for large astronomy datasets
Stassun, Keivan1, 2; Burger, Dan1; Pepper, Joshua3,1; De Lee, Nathan M.1; Siverd, Robert1; Paegert, Martin1
1Vanderbilt University, Nashville, TN. 2Fisk University, Nashville, TN. 3Lehigh University, Bethlehem, PA.

253.06 NED in the Era of Very Large Extragalactic Surveys
Fadda, Dario1; Mazzarella, Joseph M.1; Ogle, Patrick M.1; Madore, Barry F.1; Ebert, Rick1; Baker, Kay1; Chan, Hiu Pan1; Chen, Xi1; Frayer, Cren1; Helou, George1; Jacobson, Jeffery D.1; LaGue, Cheryl1; Lo, Tak M.1; Pevunova, Olga1; Schmitz, Marion1; Terek, Scott1; Steer, Ian2
1CalTech, Pasadena, CA. 2Toronto, Toronto, ON, Canada.

253.07 Spectroscopic and Photometric Variability in the A0 Supergiant HR 1040
Corliss, David1; Morrison, Nancy D.; Adelman, Saul J.
1University of Toledo, Toledo, OH. 2The Citadel, Charleston, SC.

253.08 Managing the Big Data Avalanche in Astronomy - Data Mining the Galaxy Zoo Classification Database
Borne, Kirk D.
1George Mason Univ., Fairfax, VA.
254 Surveys and Large Programs Poster Session
Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

254.01 The HST Frontier Fields
Lotz, Jennifer¹; Mountain, Matt¹; Grogin, Norman A.¹; Koekemoer, Anton M.¹; Capak, Peter L.²; Mack, Jennifer¹; Coe, Dan A.¹; Barker, Elizabeth A.¹; Adler, David S.¹; Avila, Roberto J.¹; Anderson, Jay¹; Casertano, Stefano¹; Christian, Carol A.¹; Gonzaga, Shireen¹; Ferguson, Henry C.¹; Fruchter, Andrew S.¹; Jenkner, Helmut¹; Jordan, Ian J.¹; Hammer, Derek¹; Hilbert, Bryan¹; Lawton, Brandon L.¹; Lee, Janice C.¹; Lucas, Ray A.¹; MacKenty, John W.¹; Mutchler, Maximilian J.¹; Ogaz, Sara¹; Reid, Iain N.²; Royle, Patricia¹; Robberto, Massimo¹; Sembach, Kenneth¹; Smith, Linda J.¹; Sokol, Josh¹; Surace, Jason A.²; Taylor, Denise¹; Tumlinson, Jason¹; Viana, Alex¹; Williams, Robert E.¹; Workman, William¹
¹STScI, Baltimore, MD. ²SSC, Pasadena, CA.

254.02 The HST Frontier Fields: Science Data Pipeline, Products, and First Data Release
Koekemoer, Anton M.¹; Avila, Roberto J.¹; Hammer, Derek¹; Mack, Jennifer¹; Ogaz, Sara¹; Anderson, Jay¹; Barker, Elizabeth A.¹; Hilbert, Bryan¹; Gonzaga, Shireen¹; Grogin, Norman A.¹; Fruchter, Andrew S.¹; Lotz, Jennifer¹; Lucas, Ray A.¹; Mountain, Matt¹; Sokol, Josh¹
¹STScI, Baltimore, MD.

254.03 The HST Frontier Fields: DrizzlePac Workflow
Avila, Roberto J.¹; Hammer, Derek¹; Mack, Jennifer¹; Fruchter, Andrew S.¹; Koekemoer, Anton M.¹; Anderson, Jay¹; Barker, Elizabeth A.¹; Hilbert, Bryan¹; Gonzaga, Shireen¹; Grogin, Norman A.¹; Lotz, Jennifer¹; Lucas, Ray A.¹; Mountain, Matt¹; Ogaz, Sara¹; Sokol, Josh¹
¹STScI, Baltimore, MD.

254.04 The HST Frontier Fields: Gravitational Lensing Models Release
Coe, Dan A.¹; Lotz, Jennifer¹; Natarajan, Priyamvada²; Richard, Johan³; Zitrin, Adi³; Kneib, Jean-Paul³; Ebeling, Harald⁶; Sharon, Keren³; Johnson, Traci⁷; Limousin, Marceau³; Bradac, Marusa³; Hoag, Austin⁵; Cain, Benjamin³; Merten, Julian¹⁰; Williams, Liliya L.¹¹; Sebesta, Kevin¹¹; Meneghetti, Massimo¹²; Koekemoer, Anton M.¹; Barker, Elizabeth A.¹
¹STScI, Baltimore, MD. ²Yale, New Haven, CT. ³CRAL Lyon, Lyon, France. ⁴Caltech, Pasadena, CA. ⁵EPFL Lausanne, Lausanne, Switzerland. ⁶IfA, University of Hawaii, Honolulu, HI. ⁷University of Michigan, Ann Arbor, MI. ⁸LAM Marseille, Marseille, France. ⁹UC Davis, Davis, CA. ¹⁰JPL/Caltech, Pasadena, CA. ¹¹University of Minnesota, Minneapolis, MN. ¹²INAF/INFN Bologna, Bologna, Italy.

254.05 The Frontier Field Supernova Survey
Rodney, Steven A.¹
¹Johns Hopkins University, Baltimore, MD.
Contributing teams: The FrontierSN Team

254.06 First results from the HST Grism Lens-Amplified Survey from Space (GLASS)
WANG, XIN¹; Schmidt, Kasper B.¹; Treu, Tommaso¹
¹University of California, Santa Barbara, Santa Barbara, CA.
Contributing teams: GLASS team
254.07 The Ultraviolet Frontier: Deep near-UV imaging of the Hubble Frontier Fields
Siana, Brian D.; Alavi, Anahita; Richard, Johan; Stark, Daniel; Scarlata, Claudia; Robertson, Brant E.; Rafelski, Marc; Teplitz, Harry I.; Freeman, William R.; Dominguez, Alberto; Desai, Vandana; Rutkowski, Michael J.
1 UC Riverside, Riverside, CA. 2 Centre de Recherche Astronomique de Lyon, Lyon, France. 3 University of Arizona, Tucson, AZ. 4 University of Minnesota, Minneapolis, MN. 5 California Institute of Technology, Pasadena, CA.

254.08 Legacy ExtraGalactic UV Survey (LEGUS): The HST View of Star Formation in Nearby Galaxies
Calzetti, Daniela; Lee, Janice C.; Adamo, Angela; Aloisi, Alessandra; Andrews, Jennifer E.; Brown, Thomas M.; Chandar, Rupali; Christian, Carol A.; Cignoni, Michele; Clayton, Geoffrey C.; Da Silva, Robert L.; de Mink, Selma E.; Dobbs, Claire; Elmegreen, Bruce; Elmegreen, Debra M.; Evans, Aaron S.; Fumagalli, Michele; Gallagher, John S.; Gouliermis, Dimitrios; Grebel, Eva; Herrero-Davo, Artemio; Hilbert, Bryan; Hunter, Deidre A.; Johnson, Kelsey E.; Kennicutt, Robert; Kim, Hwihyun; Krumholz, Mark R.; Lennon, Danny J.; Martin, Christopher D.; Nair, Preethi; Nota, Antonella; Pellerin, Anne; Prieto, Jose; Regan, Michael W.; Sabb, Elena; Schaerer, Daniel; Schiminovich, David; Smith, Linda J.; Thilker, David A.; Tosi, Monica; Van Dyk, Schuyler; Walterbos, Rene A.; Whitmore, Bradley C.; Wofford, Aida
1 Univ. of Massachusetts, Amherst, MA. 2 STScI, Baltimore, MD. 3 MPIA, Heidelberg, Germany. 4 University of Texas, Austin, TX. 5 University of Bologna, Bologna, Italy. 6 Louisiana University, Baton Rouge, LA. 7 University of California, Santa Cruz, Santa Cruz, CA. 8 Carnegie Observatories, Pasadena, CA. 9 IBM T.J. Watson Research Center, Yorktown Heights, NY. 10 Vassar College, Poughkeepsie, NY. 11 University of Virginia, Charlottesville, VA. 12 University of Wisconsin, Madison, WI. 13 Lowell Observatory, Flagstaff, AZ. 14 Arizona State University, Phoenix, AZ. 15 Caltech, Pasadena, CA. 16 SUNY-Geneseo, Geneseo, NY. 17 Princeton University, Princeton, NJ. 18 Columbia University, New York, NY. 19 The Johns Hopkins University, Baltimore, MD. 20 New Mexico State University, Las Cruces, NM. 21 University of Exeter, Exeter, Devon, United Kingdom. 22 University of Heidelberg, Heidelberg, Germany. 23 Instituto de Astrofísica de Canarias, La Laguna, Spain. 24 Institute of Astronomy, University of Cambridge, Cambridge, United Kingdom. 25 ESA-ESAC, Madrid, Spain. 26 Geneva Observatory, Versoix, Switzerland. 27 Institute of Astrophysics - Paris, Paris, France. 28 ESA, Baltimore, MD.

254.09 The Ultraviolet Sky: final catalogs of unique UV sources from GALEX, and characterization of the UV-emitting sources across the sky, and of the Milky Way extinction.
Bianchi, Luciana; Conti, Alberto; Shiao, Bernie; Keller, Graziela; Thilker, David A.
1 Johns Hopkins Univ., Baltimore, MD.

254.10 The Dark Energy Camera and Survey
Diehl, H. Thomas
1 Fermi National Accelerator Laboratory, Batavia, IL.
Contributing teams: The Dark Energy Survey Collaboration
254.11 The Photometric Calibration of the Dark Energy Survey (DES): Results from the Summer 2013 Re-processing of the DES Science Verification Data
Tucker, Douglas L.1; Allam, Sahar S.2; Annis, James T.1; Armstrong, Robert1; Bauer, Anne3; Bernstein, Gary4; Burke, David4; Fix, Mees5; Foust, William6; Gruendl, Robert A.7,8; Head, Hope6;9; Kuehn, Kyle2; Kuhlmann, Stephen10; Li, Ting11; Lin, Huan1; Rykoff, Eli S.5; Smith, J. Allyn1; Wester, William1; Wyatt, Samuel6,1; Yan-ny, Brian1
1FNAL, Batavia, IL. 2 STScI/CSC, Baltimore, MD. 3 UPenn, Philadelphia, PA.
4ICE, IECC/CSIC, Bellaterra, Barcelona, Spain. 5 SLAC, Menlo Park, CA. 6 APSU, Clarksville, TN. 7 UIUC, Urbana, IL. 8 NCSA, Urbana, IL. 9 AAO, Sydney, NSW, Australia. 10 ANL, Lemont, IL. 11 TAMU, College Station, TX.
Contributing teams: Dark Energy Survey

254.12 White Dwarfs for Calibrating the Dark Energy Survey
Smith, J. Allyn1; Wester, William1; Tucker, Douglas L.2; Fix, Mees1; Head, Hope1; Allam, Sahar S.3; Marriner, John2; James, David4
1Austin Peay State Univ., Clarksville, TN. 2 Fermilab, Batavia, IL. 3 STScI, Baltimore, ME. 4 CTIO, La Serena, Chile.
Contributing teams: DES Calibration

254.13 Photometric Calibrations of Standard Star Fields for the Dark Energy Survey
Wyatt, Samuel1; Tucker, Douglas L.2; Smith, Allyn1
1 Austin Peay State University, Clarksville, TN. 2 FermiLab National Accelerator Laboratory, Batavia, IL.

254.14 Spectroscopic Characterization of White Dwarf Candidates for Calibrating Dark Energy Survey
Fix, Mees1,2; Smith, J. Allyn1,2; Tucker, Douglas L.2; Wester, William2
1 Austin Peay State University, Clarksville, TN. 2 Fermilab, Batavia, IL.
Contributing teams: DES

254.15 OzDES: 100 Nights of AAT Spectroscopy on DES Sources.
D’Andrea, Christopher1
1 Institute for Cosmology and Gravitation, University of Portsmouth, Portsmouth, Hants, UK, United Kingdom.
Contributing teams: OzDES

254.16 First observations of supernovae from the Dark Energy Survey
March, Marisa C.1
1 University of Pennsylvania, Philadelphia, PA.
Contributing teams: Dark Energy Survey

254.17 Exploring the Dependence of Galaxy Properties on Group Halo Environment in RESOLVE
Baker, Ashley1; Berlind, Andreas A.2; Kannappan, Sheila1; Moffett, Amanda J.1
1 UNC Chapel Hill, Chapel Hill, NC. 2 Vanderbilt University, Nashville, TN.
Contributing teams: The RESOLVE Team

254.18 Toward Detection of Low-Metallicity AGN in the RESOLVE Survey
Rivera, Angelica B.1; Hoversten, Erik A.2; Kannappan, Sheila1; Behmard, Aida3; Norman, Dara J.5; Bellovary, Jillian M.4
1 vassar, Goshen, NY. 2 University of North Carolina at Chapel Hill, Chapel Hill, NC. 3 Yale University, New Haven, CT. 4 Vanderbilt, Nashville, TN. 5 NRAO, Tuscon, AZ.
Contributing teams: RESOLVE
254.19 RESOLVE'd AGN: Refining Active Galactic Nuclei Classification Techniques
Behmard, Aida1; Norman, Dana J.2; Kannappan, Sheila3; Hoversten, Erik A.3; Ribeira, Angelica B.4; Bellovary, Jillian M.5
1Yale University, New Haven, CT. 2NOAO, Tucson, AZ. 3University of North Carolina, Chapel Hill, NC. 4Vassar College, Poughkeepsie, NY. 5Vanderbilt University, Nashville, TN.
Contributing teams: the RESOLVE Team

254.20 RESOLVE Survey Early Results: The Environment Driven shape of the Baryonic Mass Function
Eckert, Kathleen D.1; Kannappan, Sheila1; Stark, David1; Moffett, Amanda J.1; Berlind, Andreas A.2; Norris, Mark A.3
1University of North Carolina, Chapel Hill, Chapel Hill, NC. 2Vanderbilt University, Nashville, TN. 3MPIA, Heidelberg, Germany.
Contributing teams: and the RESOLVE team

254.21 Metallicities of Galaxies in the Dwarf-Dominated RESOLVE Survey
Hoversten, Erik A.1; Kannappan, Sheila1; Baker, Ashley1; Eckert, Kathleen D.1; Hall, Kirsten1; Moffett, Amanda J.1; Stark, David1
1UNC-Chapel Hill, Chapel Hill, NC.
Contributing teams: RESOLVE team

254.22 Determining the Intrinsic Shapes of Galaxies in the RESOLVE and ECO Surveys
Litke, Katrina1; Kannappan, Sheila2; Stark, David2; Moffett, Amanda J.2; Eckert, Kathleen D.2
1University of Illinois at Urbana-Champaign, Urbana-Champaign, IL. 2University of North Carolina at Chapel Hill, Chapel Hill, NC.
Contributing teams: the RESOLVE team

254.23 The Fueling Diagram and the RESOLVE Survey: Assessing External Drivers of Galaxy Gas Content
Stark, David1; Kannappan, Sheila1; Wei, Lisa H.2; Baker, Andrew J.3; Leroy, Adam K.4; Eckert, Kathleen D.1; Vogel, Stuart N.5
1University of North Carolina-Chapel Hill, Chapel Hill, NC. 2Atmospheric and Environmental Research, Lexington, MA. 3Rutgers, the State University of New Jersey, Piscataway, NJ. 4National Radio Astronomy Observatory, Charlottesville, VA. 5University of Maryland, College Park, MD.
Contributing teams: the RESOLVE team

254.24 RESOLVE: Constructing a Baryonic Tully-Fisher Relation Reference Sample across Environments
Rosenberg, Daniel1; Kannappan, Sheila1; Miller, Sarah2; Hoversten, Erik A.1; Hall, Kirsten1; Stark, David1; Moffett, Amanda J.1
1University of North Carolina at Chapel Hill, Chapel Hill, NC. 2California Institute of Technology, Pasadena, CA.
Contributing teams: RESOLVE Team

254.25 RESOLVE and ECO: Galaxy Refueling Transitions in Environmental Context
Kannappan, Sheila1; Moffett, Amanda J.1; Eckert, Kathleen D.1; Stark, David1; Norris, Mark A.1,3; Berlind, Andreas A.2
1Univ. of North Carolina, Chapel Hill, NC. 2Vanderbilt, Nashville, TN. 3MPIA, Heidelberg, Germany.
Contributing teams: the RESOLVE team
254.26 **Compact Core Galaxies in the RESOLVE Survey**
Snyder, Elaine¹; Kannappan, Sheila¹; Stark, David¹; Eckert, Kathleen D.¹; Norris, Mark A.²; Norman, Dara J.³
¹University of North Carolina, Chapel Hill, NC. ²Max-Planck-Institut für Astronomie, Heidelberg, Germany. ³NOAO, Tucson, AZ.
Contributing teams: The RESOLVE Team

254.27 **Kinematic Anomalies in the RESOLVE Survey and the Gas-Star Formation Connection**
Hall, Kirsten¹; Kannappan, Sheila¹; Baker, Andrew J.²; Stark, David³; Hoversten, Erik A.¹; Eckert, Kathleen D.¹
¹University of North Carolina at Chapel Hill, Chapel Hill, NC. ²Rutgers, the State University of New Jersey, New Brunswick, NJ.
Contributing teams: the RESOLVE Team

254.28 **A Precision Multi-Band Two-Epoch Photometric Catalog of 45 Million Sources from Combination of the USNO-B and Sloan Digital Sky Survey Catalogs**
Gaensler, Bryan M.¹, ²; Madsen, Gregory J.¹, ², ³
¹The University of Sydney, Sydney, NSW, Australia. ²ARC Centre of Excellence for All-sky Astrophysics (CAASTRO), Sydney, NSW, Australia. ³University of Cambridge, Cambridge, United Kingdom.

254.29 **A Long Term High-Cadence Nova Survey**
Castelaz, Michael W.¹; Rottler, Lee¹; Barker, Thurburn¹; Coker, Michele², ¹
¹Pisgah Astronomical Research Inst., Rosman, NC. ²Western Carolina University, Cullowhee, NC.

254.30 **Surveys, Fields, and Collections in the Astronomical Photographic Data Archive at PARI**
Cline, J. D.¹; Castelaz, Michael W.¹; Barker, Thurburn¹
¹Pisgah Astronomical Research Institute, Greensboro, NC.

254.31 **Mapping Nearby Galaxies at APO: The MaNGA IFU Galaxy Survey**
Law, David R.¹
¹Dunlap Institute, University of Toronto, Toronto, ON, Canada.
Contributing teams: MaNGA Team

254.32 **URAT - year 2**
Finch, Charlie T.¹; Zacharias, Norbert¹; Crockett, Christopher²; DiVittorio, Mike²; Furgason, Eric¹; Killian, Christopher²; Rhodes, Albert²; Schultheis, Michael²; Subasavage, John P.²; Tilleman, Trudy²; Wieden, Gary¹
¹US Naval Observatory, Washington, DC. ²US Naval Observatory Flagstaff station, Flagstaff, AZ.

254.33 **CRTS2: A Continuation of the Catalina Real-Time Transient Survey**
Djorgovski, Stanislav G.¹; Drake, Andrew J.¹; Mahabal, Ashish A.¹; Graham, Matthew¹; Donalek, Ciro²; Larson, Stephen M.²; Christensen, Eric J.²
¹Caltech, Pasadena, CA. ²University of Arizona, Tucson, AZ.
Contributing teams: CRTS Team
254.34 The Strong Lensing Time Delay Challenge (2014)
Liao, Kai¹; Dobler, Gregory¹; Fassnacht, Christopher D.²; Treu, Tommaso³; Marshall, Philip J.³; Rumbaugh, Nick²; Linder, Eric⁴; Hojjati, Alireza⁵
¹University of California, Santa Barbara, CA. ²University of California, Davis, CA. ³Kavli Institute for Particle Astrophysics and Cosmology, Stanford University, Stanford, CA. ⁴Berkeley Center for Cosmological Physics, Space Sciences Lab, Berkeley Lab, University of California, Berkeley, CA. ⁵Institute for Early Universe, Ewha Womans University, Seoul, Korea, Republic of.

254.35 The Swift/BAT hard X-ray transient monitor: Seven years and 246 sources, still going strong!
Krimm, Hans A.¹, ²; Holland, Stephen³, ²; Corbet, Robin H.⁴, ²; Pearlman, Aaron⁵; Romano, Patrizia⁶; Kennea, Jamie A.⁷; Bloom, Joshua S.⁸; Barthelmy, Scott D.²; Baumgartner, Wayne H.⁹, ²; Cummings, Jay¹⁰; Gehrels, Neil¹¹; Lien, Amy Y.¹²; Markwardt, Craig¹³; Palmer, David¹⁴; Sakamoto, Takanori¹⁵; Stamatikos, Michael¹¹; Ukwatta, Tilan N.¹²
¹Universities Space Research Association, Columbia, MD. ²NASA’s GSFC, Greenbelt, MD. ³Space Telescope Science Institute, Baltimore, MD. ⁴University of Maryland, Baltimore County, Baltimore, MD. ⁵California Institute of Technology, Pasadena, CA. ⁶INAF, Palermo, Italy. ⁷Pennsylvania State University, University Park, PA. ⁸University of California, Berkeley, Berkeley, CA. ⁹Los Alamos National Laboratory, Los Alamos, NM. ¹⁰Aoyama Gakuin University, Sagamihara-shi, Kanagawa, Japan. ¹¹Ohio State University, Columbus, OH. ¹²Michigan State University, East Lansing, MI.

254.36 Optical Photometry of the Local Volume Legacy (LVL) Survey
Cook, David O.¹; Dale, Daniel A.¹; van Zee, Liese²; Johnson, Benjamin D.³; Lee, Janice C.⁴; Cales, Sabrina⁵
¹University of Wyoming, Laramie, WY. ²Indiana University, Bloomington, IN. ³STScI, Baltimore, MD. ⁴Institut d’Astrophysique de Paris, Paris, France. ⁵Universidad de Concepcion, Concepcion, Chile.
Contributing teams: LVL Team

254.37 The Advanced Spectral Library (ASTRAL) Project
Ayres, Thomas R.¹
¹University of Colorado, Boulder, CO.
Contributing teams: The ASTRAL I & II Science Teams

254.38 Spatial Variation of Deep Galaxy Number Counts: A Method Of Constraining Extinction With LSST
Wallace, Spencer¹; Connolly, Andrew J.²
¹Astronomy, University of Arizona, Tucson, AZ. ²University of Washington, Seattle, WA.

254.39 Impact of LSST filter properties on simulated supernovae samples
Gjergo, Eda¹, ⁶; Kuhlmann, Stephen¹; Gilmore, D. K.³, ⁴; Kessler, Richard², ⁵
¹Argonne National Laboratory, Argonne, IL. ²Kavli Institute for Cosmological Physics, Chicago, IL. ³SLAC National Accelerator Laboratory, Menlo Park, CA. ⁴Kavli Institute for Particle Astrophysics and Cosmology, Menlo Park, CA. ⁵University of Chicago, Chicago, IL. ⁶Illinois Institute of Technology, Chicago, IL.
Contributing teams: LSST Collaboration, LSST-DESC, LSST Supernova
254.40 Sloan Digital Sky Survey Infrastructure Preparations at Las Campanas Observatory
Hearty, Frederick R. 1, 2; Wilson, John C. 1; Majewski, Steven R. 1; Leger, French 3; Harding, Paul 4; Parejko, John K. 2; Roman, Alexandre 1; Ebelke, Garrett 6
1 University of Virginia, Charlottesville, VA. 2 Pennsylvania State University, University Park, PA. 3 University of Washington, Seattle, WA. 4 Case Western Reserve University, Cleveland, OH. 5 Yale University, New Haven, CT. 6 New Mexico State University, Las Cruces, NM. 7 Universidad de La Serena, La Serena, Coquimbo, Chile.
Contributing teams: SDSS-IV, APOGEE-1

254.41 Massive Spectroscopic Followup of Transients from the Multi-Epoch Nearby Cluster Survey
O’Brien, Greg 1; Sand, David J. 1; Graham, Melissa L. 2; Zaritsky, Dennis F. 1; Pritchet, Christopher 3; Hoekstra, Henk 4
1 Texas Tech University, Lubbock, TX. 2 University of California Berkeley, Berkeley, CA. 3 University of Arizona, Tucson, AZ. 4 Leiden Observatory, Leiden, Leiden, Netherlands.

254.42 Infrared Study of Galaxies in the Zone of Avoidance
Arrieta, Andres 1; Lebron, Mayra E. 1; Pantoja, Carmen 1
1 University of Puerto Rico- Rio Piedras, San Juan, Puerto Rico.

254.43 The LCOGT Science Collaboration
Brown, Timothy M. 1, 3; Boroson, Todd A. 1; Howell, Dale A. 1, 2; Street, Rachel 1; Lister, Tim 1
1 Las Cumbres Global Telescope Network, Inc., Goleta, CA. 2 UCSB, Goleta, CA. 3 CU/CASA, Boulder, CO.

254.44 SMASH: The Survey of the MAgellanic Stellar History
Olsen, Knut A. 1; Nidever, David L. 2; Gruendl, Robert A. 3; Blum, Robert D. 1; Walker, Alistair R. 4; Saha, Abhijit 1; Olszewski, Edward W. 5; Munoz, Ricardo 6; Kunder, Andrea M. 1, 2; Kaleida, Catherine C. 1; Conn, Blair 1; Besla, Gurtina 5, 6; Majewski, Steven R. 10; Gallart, Carme 11; Monelli, Matteo 11; Stringfellow, Guy S. 12; Zaritsky, Dennis F. 5; Chu, You-Hua 3; Van Der Marel, Roeland P. 13; Martin, Nicolas 14; Noel, Noelia 15; Jin, Shoko 16; Kim, HwiHyun 17; Cioni, Maria-Rosa 18; Bell, Eric F. 2; Monachesi, Antonela 2; Vivas, Katherina 2; de Boer, Thomas 19
1 NOAO, Tucson, AZ. 2 U. Michigan, Ann Arbor, MI. 3 U. Illinois, Urbana-Champaign, IL. 4 CTIO, La Serena, Chile. 5 U. Arizona, Tucson, AZ. 6 U. Chile, Santiago, Chile. 7 U. Potsdam, Potsdam, Germany. 8 Gemini Observatory, La Serena, Chile. 9 Columbia U., New York, NY. 10 U. Virginia, Charlottesville, VA. 11 Instituto de Astrofísica de Canarias, Tenerife, Spain. 12 U. Colorado, Boulder, CO. 13 STScI, Baltimore, MD. 14 Strasbourg Observatory, Strasbourg, France. 15 MPIA, Heidelberg, Germany. 16 U. Groningen, Groningen, Netherlands. 17 Arizona State U., Tempe, AZ. 18 U. Hertfordshire, Hertfordshire, United Kingdom. 19 Kapteyn Astronomical Institute, Groningen, Netherlands.

254.45 Photometric Analysis of Clusters in the Vista Variables in the Via Lactea (VVV) Survey
Deich, Alex 1, 2; Roman, Alexandre 3; Kunder, Andrea M. 4
1 Humboldt State University, Arcata, CA. 2 Reed College, Portland, OR. 3 Universidad de La Serena, La Serena, Coquimbo, Chile. 4 CTIO, La Serena, Coquimbo, Chile.
254.46 First results from the Chandra COSMOS Legacy survey
Civano, Francesca M. 1, 2
1 Dartmouth College, Cambridge, MA. 2 SAO, Cambridge, MA.
Contributing teams: and the Chandra COSMOS Legacy Team

254.47 The NEWFIRM HETDEX Survey - Studying Galaxy Growth with 400,000
Galaxies at 2 < z < 3.5
Stevans, Matthew L. 1; Finkelstein, Steven L. 1; Gebhardt, Karl 1; Jogee, Shardha 1; Papovich, Casey J. 2; Ciardullo, Robin 3; Gronwall, Caryl 1; Acquaviva, Viviana 4; Weinzirl, Tim 1
1 The University of Texas at Austin, Austin, TX. 2 Texas A&M University, College Station, TX. 3 Penn State University, University Park, PA. 4 New York City College of Technology, New York, NY.
Contributing teams: HETDEX

254.48 Selecting Variables for the Time Domain Spectroscopic Survey
Morganson, Eric 1
1 CFA, Somerville, MA.
Contributing teams: TDSS, SDSS, Pan-STARRS1

254.49 Structural Evolution of Early-type Galaxies to z=2.5 in CANDELS
Chang, Yu-Yen 1; van der Wel, Arjen 1; Rix, Hans-Walter 1
1 Max Planck Institute for Astronomy, Heidelberg, Germany.
Contributing teams: The CANDELS collaboration

255 Computation, Data Handling, & Image Analysis Poster Session

Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

255.01 The LCOGT Observation Portal, Data Pipeline and Science Archive
Lister, Tim 1
1 Las Cumbres Observatory, Goleta, CA.
Contributing teams: LCOGT Science Archive Team

255.02 The ADS All Sky Survey: footprints of astronomy literature, in the sky
Pepe, Alberto 1; Goodman, Alyssa A. 1; Muench, August A. 1
1 Harvard Smithsonian Center for Astrophysics, Cambridge, MA.
Contributing teams: Seamless Astronomy Group at the CfA

255.03 Introducing ADS 2.0
Accomazzi, Alberto 1; Kurtz, Michael J. 1; Henneken, Edwin A. 1; Grant, Carolyn S. 1; Thompson, Donna 1; Luker, James 1; Chyla, Roman 1; Murray, Stephen S. 1
1 Harvard Smithsonian, CfA, Cambridge, MA.

255.04 Virtual Astronomy: The Legacy of the Virtual Astronomical Observatory
Hanisch, Robert J. 1, 10; Berriman, G. B. 2, 10; Lazio, Joseph 3, 10; Szalay, Alexander S. 4, 10; Fabbiano, Giuseppina 5, 10; Plante, Raymond L. 6, 10; McGlynn, Thomas A. 7, 10; Evans, Janet 5, 10; Emery Bunn, Sarah 8, 10; Claro, Maricel 9, 10
Contributing teams: VAO Project Team
255.05 Accessing Multi-Dimensional Images and Data Cubes in the Virtual Observatory
Tody, Douglas1, 10; Plante, Raymond L.2, 10; Berriman, G. B.3, 10; Cresitello-Dittmar, Mark4, 10; Good, John3, 10; Graham, Matthew6, 10; Greene, Gretchen6, 10; Hanisch, Robert J.5, 10; Jenness, Timothy7, 10; Lazio, Joseph8, 10; Norris, Pat9, 10; Pevunova, Olga3, 10; Rots, Arnold H.4, 10

255.06 Software Reproduceability for Science Data
Teuben, Peter J.1; Mundy, Lee G.1; Storm, Shaye1; Looney, Leslie2; Lee, Katherine1, 2; Fernandez Lopez, Manuel1
1 Univ. of Maryland, College Park, MD. 2 University of Illinois, Urbana-Champaign, IL.

255.07 Quantifying Deep-Imaging Limits of the VLA
Mayeshiba, Julia1, 2; Mayeshiba, Julia1, 2; Rau, Urvashi1; Owen, Frazer N.1
1 National Radio Astronomy Observatory, Socorro, NM. 2 University of Wisconsin-Madison, Madison, WI.

255.08 Extracting information using Spitzer IRAC color analysis
Ybarra, Jason E.1; Román-Zuñiga, Carlos1; Arvidsson, Kim1; Wolf-Chase, Grace A.1; Lada, Elizabeth A.4
1 Instituto de Astronomía, UNAM, Ensenada, Baja California, Mexico. 2 Schreiner Univ., Kerrville, TX. 3 Adler Planetarium, Chicago, IL. 4 Univ. of Florida, Gainesville, FL.

255.09 Image reduction of multi-chip near-IR data using the THELI pipeline
Holhjem, Karianne1
1 Southern Astrophysical Research (SOAR) telescope, La Serena, Coquimbo, Chile.

255.10 Automating OSIRIS Data Reduction for the Keck Observatory Archive
Tran, Hien D.1; Holt, Jen1; Goodrich, Robert W.1; Lyke, James E.1; Gelino, Christopher R.2; Berriman, G. B.2
1 W. M. Keck Observatory, Kamuela, HI. 2 NASA Exoplanet Science Institute, Pasadena, CA.
Contributing teams: KOA Team

255.11 Examining the Point Spread Function Using the Active Optics System on DECam
Davis, Christopher1, 2; Roodman, Aaron2, 1
1 Stanford University, Stanford, CA. 2 SLAC National Accelerator Laboratory, Menlo Park, CA.
Contributing teams: Dark Energy Survey

255.12 Instrument Performance Monitoring at Gemini North
Emig, Kimberly1; Pohlun, Michael1; Chene, Andre-Nicolas2
1 Arizona State University, Tempe, AZ. 2 Gemini Observatory, North, Hilo, HI.
255.13 **Automated classification of Chandra X-ray sources**  
Brehm, Derek; Kargaltsev, Oleg; Rangelov, Blagoy; Volkov, Igor; Pavlov, George G.  
\(^1\)The George Washington University, Washington, DC. \(^2\)Pennsylvania State University, University Park, PA.

255.14 **Neutrino-Gamma Multi-Messenger Source Detection via the Astrophysical Multi-Messenger Observatory Network**  
Fixelle, Josh; Miles, Smith  
\(^1\)Penn State, University Park, PA.  
Contributing teams: AMON

255.15 **Constraining Very High-Energy Gamma Ray Sources Using IceCube Neutrino Observations**  
Vance, Gregory; Feintzeig, Jacob; Karle, Albrecht  
\(^1\)University of Wisconsin-Madison, Madison, WI. \(^2\)Connecticut College, New London, CT.  
Contributing teams: IceCube Collaboration

255.16 **Scalable Machine Learning for Massive Astronomical Datasets**  
Ball, Nicholas M.  
\(^1\)Skytree, Inc., San Jose, CA.  
Contributing teams: Canadian Astronomy Data Centre

255.17 **GREAT3: The Third Gravitational Lensing Accuracy Testing Challenge**  
Simet, Melanie; Mandelbaum, Rachel; Rowe, Barnaby  
\(^1\)Carnegie Mellon University, Pittsburgh, PA. \(^2\)University College London, London, United Kingdom.  
Contributing teams: the Great3 collaboration

255.18 **Electron-Impact Uncertainty Analysis and its Impact on Certain Temperature Diagnostics**  
Sutherland, Robert; Foster, Adam; Loch, Stuart; Smith, Randall K; Ballance, Connor P.  
\(^1\)Auburn University, Auburn, AL.

255.19 **Exploring How Different Mass-loss Schemes Influence the Properties of Nascent White Dwarfs**  
Zins, Brianne; Nordhaus, Jason  
\(^1\)Allegheny College, Meadville, PA. \(^2\)Center for Computational Relativity and Gravitation, Rochester Institute of Technology, Rochester, NY. \(^3\)National Technical Institute for the Deaf, Rochester Institute of Technology, Rochester, NY. \(^4\)Research Experience for Undergraduates, Center for Imaging Science, Rochester Institute of Technology, Rochester, NY.

255.20 **Relation between star formation and AGN activity in typical elliptical galaxies: Analysis of the 2MASS K-band galaxy images**  
Pierce, Katherine  
\(^1\)Rochester Institute of Technology, Rochester, NY.

255.21 **Difference Image Analysis of De-Focused 2009 CSTAR Observations**  
Oelkers, Ryan J.; Macri, Lucas M.; Wang, Lifan  
\(^1\)Texas A&M University, College Station, TX. \(^2\)Purple Mountain Observatory, Nanjing, Jiangsu, China.  
Contributing teams: PLATO, CSTAR
255.22 ANALYSIS OF PHOTOMETRIC EFFICIENCY AND ACCURACY OF THE IDL PROCEDURE, PHAST
Kutsop, Nicholas1,2; Mighell, Kenneth J.2; Allen, Lori2; Trueblood, Mark1; Crawford, Robert4
1 Northern Arizona University, Flagstaff, AZ. 2 National Optical Astronomy Observatory, Tucson, AZ. 3 Winer Observatory, Sonoita, AZ. 4 Rincon Ranch Observatory, Tucson, AZ.

255.23 Visualizing Astronomical Data with Blender
Kent, Brian R.3
1 NRAO, Charlottesville, VA.

255.24 Astropy: Community Python Software for Astronomy
Greenfield, Perry3; Tollerud, Erik J.2; Robitaille, Thomas8
1 STScI, Baltimore, MD. 2 Yale University, New Haven, CT. 3 Max-Planck-Institut für Astronomie, Heidelberg, Germany.
Contributing teams: Astropy Developers

255.25 You’ve Written a Cool Astronomy Code! Now What Do You Do with It?
Allen, Alice1; Accomazzi, Alberto2; Berriman, G. B.3; DuPrie, Kimberly1; Hanisch, Robert J.2; Mink, Jessica D.5; Nemiroff, Robert J.6; Shamir, Lior2; Shortridge, Keith5; Taylor, Mark B.5; Teuben, Peter J.10; Wallin, John F.11
1 Astrophysics Source Code Library, Calverton, MD. 2 Smithsonian Astrophysical Observatory, Cambridge, MA. 3 Infrared Processing and Analysis Center, California Institute of Technology, Pasadena, CA. 4 Space Telescope Science Institute/Virtual Astronomical Observatory, Baltimore, MD. 5 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 6 Michigan Technological University, Houghton, MI. 7 Lawrence Technological University, Southfield, MI. 8 Australian Astronomical Observatory, North Ryde, NSW, Australia. 9 University of Bristol, Bristol, United Kingdom. 10 University of Maryland, College Park, MD. 11 Middle Tennessee State University, Murfreesboro, TN.

255.26 Data publication and sharing using the SciDrive service
Mishin, Dmitry1; Medvedev, Dmitry1; Szalay, Alexander S.1; Plante, Raymond L.2
1 Johns Hopkins University, Baltimore, MD. 2 NCSA, Urbana, IL.

255.27 A Mobile Data Application for the Fermi Mission
Stephens, Thomas E.3
1 Fermi Science Support Center, Greenbelt, MD.
Contributing teams: Fermi Science Support Center

255.28 Understanding and Using the Fermi Science Tools
Asercion, Joseph1
1 ADNET Systems, Rockville, MD.
Contributing teams: Fermi Science Support Center

255.29 A Search on the Internet for Evidence of Time Travel
Nemiroff, Robert J.1; Wilson, Teresa1
1 Michigan Technological Univ., Houghton, MI.

255.30 Detection of a Small Fast Moving Near Earth Asteroid with Synthetic Tracking
Shao, Michael1; Zhai, Chengxing1; Werne, Thomas1; Nemati, Bijan1; Harding, Leon K.2; Hallinan, Gregg2
1 JPL, pasadena, CA. 2 Caltech, Pasadena, CA.
255.31  A Method to Automate Identification of Spiral Arms in Galaxies  
Lacey, Christina K.\textsuperscript{1}; Mercer, Kevin\textsuperscript{1}  
\textsuperscript{1}Hofstra University, Hempstead, NY.

255.32  Synergy with HST and JWST Data Management Systems  
Greene, Gretchen\textsuperscript{1}  
\textsuperscript{1}Space Telescope Science Institute, Baltimore, MD.  
Contributing teams: Space Telescope Data Management Team

256 Catalogs Poster Session

256.01  The Third Fermi LAT Catalog of High-Energy Gamma-ray Sources  
Thompson, David J.\textsuperscript{1}; Ballet, Jean\textsuperscript{2}; Burnett, Thompson\textsuperscript{3}  
\textsuperscript{1}NASA’s GSFC, Greenbelt, MD. \textsuperscript{2}Laboratoire AIM, CEA-IRFU/CNRS/Universite Paris Diderot, Service d’Astrophysique CEA, Saclay, France. \textsuperscript{3}University of Washington, Seattle, WA.  
Contributing teams: Fermi Large Area Telescope Collaboration

256.02  Enigmas of the Fermi-LAT Unassociated Sources  
Ferrara, Elizabeth C.\textsuperscript{1,2}  
\textsuperscript{1}NASA/GSFC, Greenbelt, MD. \textsuperscript{2}University of Maryland, College Park, MD.  
Contributing teams: The Fermi-LAT Collaboration

256.03  Pass 8: Transforming the Scientific Performance of the Fermi Large Area Telescope  
Grove, J. E.\textsuperscript{1}  
\textsuperscript{1}NRL, Washington, DC.  
Contributing teams: on behalf of the Fermi LAT Collaboration

256.04  Searching for Variability in the Gamma-ray Sky using the Fermi All-sky Variability Analysis (FAVA)  
Kocevski, Daniel\textsuperscript{1}  
\textsuperscript{1}NASA Goddard Space Flight Center, Greenbelt, MD.

256.05  A Catalog of Stellar Targets and Calibrators for Next Generation Optical Interferometers  
Swihart, Sam\textsuperscript{1}; Muterspaugh, Matthew W.\textsuperscript{2}; Garcia, Eugenio\textsuperscript{3,4}; van Belle, Gerard\textsuperscript{1}; Stassun, Keivan\textsuperscript{4,5}  
\textsuperscript{1}University of Michigan, Ann Arbor, MI. \textsuperscript{2}Tennessee State University, Nashville, TN. \textsuperscript{3}Lowell Observatory, Flagstaff, AZ. \textsuperscript{4}Vanderbilt University, Nashville, TN. \textsuperscript{5}Fisk University, Nashville, TN.

256.06  Modeling Spiral Galaxy Surface Luminosity to Explain Non-Uniform Inclination Distributions  
Rozum, Jordan C.\textsuperscript{1}; Larson, Shane L.\textsuperscript{1}  
\textsuperscript{1}Utah State University, Logan, UT.
257 Laboratory Astrophysics Poster Session

Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

257.01 Improved log(gf) Values for Lines of Ni I and New Nickel Abundances in the Sun and the Metal-Poor Star HD 84937
Lawler, James E.1; Wood, Michael P.1; Sneden, Chris2; Cowan, John J.3
1 University of Wisconsin, Madison, WI. 2 University of Texas, Austin, TX. 3 University of Oklahoma, Norman, OK.

258 Observatory Site Protection Poster Session

Tuesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

258.01 Spectral and Illuminance Assessment of Tucson, Arizona Light Pollution Hot Spots
Chmielewski, Jeanine1; Pompea, Stephen M.2
1 Michigan Technological University, Houghton, MI. 2 National Optical Astronomy Observatory, Tucson, AZ.

258.02 Characterizing and Quantifying Time Dependent Night Sky Brightness In and Around Tucson, Arizona
Nydegger, Rachel1
1 National Optical Astronomy Observatory, Tucson, AZ. 2 Utah State University, Logan, UT.
300 Pierce Prize: Exploring the Stellar Graveyard of the Milky Way

Wednesday, 8:30 AM - 9:20 AM; Potomac Ballroom A
Chair(s):
David Helfand, *Quest University Canada*

Jason Kalirai - Newton Lacy Pierce Prize in Astronomy
The Newton Lacy Pierce Prize in Astronomy is awarded to Jason Kalirai for major contributions to the field of stellar and Galactic astrophysics, including establishing a fundamental relation of stellar astrophysics, the initial-final mass relation, that maps the fraction of mass loss that stars experience over their lives.

300.01 Exploring the Stellar Graveyard of the Milky Way
Kalirai, Jason S.¹,²
¹Space Telescope Science Institute, Baltimore, MD. ²Johns Hopkins University, Center for Astrophysical Sciences, Baltimore, MD.

Amateur Talk: Blazars and Gamma Rays

Wednesday, 9:30 AM - 10:00 AM; Maryland Ballroom A
At the heart of every distant galaxy lurks a supermassive black hole. About a quarter of these black holes emit jets of relativistic particles which create gamma rays. When the jets are pointed towards Earth, NASA’s Fermi Gamma-ray Space Telescope detects gamma rays from these sources, which are then known as gamma-ray “blazars.” Blazars are the most ubiquitous source of high-energy (> 100MeV) gamma rays in the Universe, yet many questions remain as to the nature of their jets. This talk will discuss how ground-based visible-light monitoring campaigns can provide answers to some of these questions.

Chair(s):
Lynn Cominsky, *Sonoma State Univ.*

Workshop for Journal Authors and Referees, Part I

Wednesday, 9:30am-11:30am; Chesapeake 7
The AAS is sponsoring a workshop for journal authors and referees at the AAS Winter meeting in Washington DC. The workshop is aimed mainly at young and early career astronomers. The topics that will be covered in the workshop include how to write a good paper, how to be an effective reviewer, and how the modern scholarly journal system works. There will be opportunities for workshop participants to interact with editors and publishers, and to have questions answered.

Chair:
Christopher Biemesderfer, *AAS*
NICER: Future X-ray Astrophysics from the ISS

Wednesday, 10:00 AM - 11:30 AM; Maryland 1

All are welcome to attend a series of brief presentations on NASA’s newest planned X-ray astrophysics mission, the Neutron star Interior Composition Explorer (NICER), scheduled to launch in 2016 for installation as an externally attached payload on the International Space Station (ISS). As a successor to the highly productive Rossi X-ray Timing Explorer, NICER offers capabilities that will appeal to a large community of prospective users. This session will provide an overview of the NICER mission, its core science agenda, and its expected contributions across an array of X-ray astrophysics investigations enabled by a proposed Guest Observer program. The fundamental physics of the ultra-dense matter that exists nowhere but in the cores of neutron stars is a longstanding unsolved problem. NICER is designed to probe the exotic interiors of neutron stars by inferring stellar masses and radii through time-resolved soft X-ray spectroscopy. In addition to exploring neutron star structure, NICER will study dynamic phenomena powered by accretion and strong gravity, and the extreme physics of pulsar magnetospheres, perhaps the most powerful cosmic particle accelerators known. NICER is particularly timely given the tremendous rate of pulsar discovery currently enabled by the Fermi gamma-ray telescope. NICER exploits established infrastructure on the iSS to offer a low-cost, highly capable instrument to the X-ray astrophysics community. NICER’s unique combination of photon time-tagging precision, energy resolution, and sensitivity in the soft X-ray (0.2-12 keV) band represents both a novel capability for studying neutron stars and exploration of new discovery space in time-domain astrophysics.

Organizer(s):
Zaven Arzoumanian, Arecibo Observatory

301 AGN Across the Spectrum: I

Wednesday, 10:00 AM - 11:30 AM; National Harbor 11

Chair(s):
W. Brandt, Penn State Univ.

301.01 Using Fermi Variability to Locate the Blazar GeV Emission Zone
Dotson, Amanda1; Georganopoulos, Markos1,2; Meyer, Eileen T.3
1UMBC, Baltimore, MD. 2NASA GSFC, Greenbelt, MD. 3STScI, Baltimore, MD.

301.02 The Extragalactic Background Light and the Detection of the Cosmic Gamma-Ray Horizon
Finke, Justin1; Dominguez, Alberto2; Primack, Joel R.3; Prada, Francisco4; Kitaura, Francisco5; Siana, Brian D.3
1US Naval Research Laboratory, Washington, DC. 2University of California-Riverside, Riverside, CA. 3University of California-Santa Cruz, Santa Cruz, CA. 4Universidad Autonoma de Madrid, Madrid, Spain. 5Leibniz-Institut fuer Astrophysik, Potsdam, Germany.

Contributing teams: Fermi-LAT Collaboration

301.03 The Cosmic Evolution of Fermi BL Lacertae Objects
Gasparrini, Dario1,2; Ajello, Marco3; Romani, Roger W.4; Shaw, Michael S.4
1ASDC, Roma, RM, Italy. 2INAF-OAR, Monteporzio Catone, RM, Italy. 3Space Sciences Laboratory, Berkeley, CA. 4Stanford University, Stanford, CA.
301.04 Fermi rules out the IC/CMB model for the Large-Scale Jet X-ray emission of 3C 273
Georganopoulos, Markos1; Meyer, Eileen T.2
1UMBC, Baltimore, MD. 2STScI, Baltimore, MD.

301.05 Using Swift to Obtain X-ray Monitoring of Fermi Blazars and X-ray Counter parts to Fermi Unassociated Sources
Falcone, Abraham1; Stroh, Michael1; Pryal, Matthew1
1Penn State University, University Park, PA.

301.06 Tracing the evolution of AGN host galaxies over the last 9 Gyrs
Goulding, Andy D.1; Forman, William R.1; Hickox, Ryan C.2; Jones, Christine3; Murray, Stephen S.3; Paggi, Alessandro1; Ashby, Matthew1; Coil, Alison L.4; Cooper, Michael5; Huang, Jiasheng1; Kraft, Ralph P.1; Newman, Jeffrey6; Willner, Steven P.1
1Harvard Smithsonian, CfA, Cambridge, MA. 2Dartmouth College, Hanover, NH. 3Johns Hopkins University, Baltimore, MD. 4University of California, San Diego, CA. 5University of California, Irvine, CA. 6University of Pittsburgh, Pittsburgh, PA.

301.07 Detection of cm to sub-mm band radio and gamma-ray correlated variability in Fermi bright blazars
Fuhrmann, Lars1; Larsson, Stefan2; Chiang, James3; Angelakis, Emmanouil1; Zensus, Anton1
1Max-Planck-Institut fuer Radioastronomie, Bonn, NRW, Germany. 2Oskar Klein Centre, Department of Astronomy, Stockholm University, Stockholm, Sweden. 3Department of Physics and SLAC National Accelerator Laboratory, Stanford University, Stanford, CA.
Contributing teams: F-GAMMA team, Fermi collaboration

301.08 AGNs in Dwarf Galaxies? Evidence from WISE and XMM-Newton
Secrest, Nathan1; Satyapal, Shobita1; Gliozzi, Mario1; Cheung, Teddy2
1George Mason University, Fairfax, VA. 2Naval Research Laboratory, Washington, DC.

302 Data Handling & Catalogs

Wednesday, 10:00 AM - 11:30 AM; National Harbor 5
Chair(s):
Robert Hanisch, STScI

302.01 Using Cloud Computing To Create A Multi-Wavelength Atlas Of The Galactic Plane
Berriman, G. B.1; Good, John 1; Rynge, Mats 2; Juve, Gideon1; Deelman, Ewa2; Kinney, Jamie1; Merrihew, Ann3
1Caltech, Pasadena, CA. 2Information Sciences Institute, USC, Marina del Rey, CA. 3Amazon Web Services, Seattle, WA.

302.02 Noise characteristics of LCOGT time series photometry
Dragomir, Diana4; Brown, Timothy M.1
1LCOGT/UCSB, Santa Barbara, CA.

302.03 The Astrophysical Multimessenger Observatory Network (AMON)
Tešić, Gordana1
1The Pennsylvania State University, University Park, PA.
Contributing teams: AMON development team
302.04 Explosive Growth and Advancement of the NASA/IPAC Extragalactic Database (NED)
Mazzarella, Joseph M.; Ogle, Patrick M.; Fadda, Dario; Madore, Barry F.;
Ebert, Rick; Baker, Kay; Chan, Hiu Pan; Chen, Xi; Frayer, Cren; Helou, George;
Jacobson, Jeffery D.; LaGue, Cheryl; Lo, Tak M.; Pevunova, Olga; Schmitz, Marion;
Terek, Scott; Steer, Ian
1Caltech, Pasadena, CA. 2Toronto, Toronto, ON, Canada.

302.05 Best Practices for Data Publication to Facilitate Integration into NED:
A Reference Guide for Authors
Schmitz, Marion; Mazzarella, Joseph M.; Madore, Barry F.; Ogle, Patrick M.;
Ebert, Rick; Baker, Kay; Chan, Hiu Pan; Chen, Xi; Fadda, Dario; Frayer, Cren;
Jacobson, Jeffery D.; LaGue, Cheryl; Lo, Tak M.; Pevunova, Olga; Terek, Scott;
Steer, Ian
1Caltech, Pasadena, CA. 2Self, Toronto, ON, Canada.

302.06 Using WorldWide Telescope in Observing, Research and Presentation
Roberts, Douglas A.; Fay, Jonathan
1Northwestern University, Evanston, IL.

302.07 Enhancing Science with the Hubble Source Catalog
Whitmore, Bradley C.; Allam, Sahar S.; Budavari, Tamas; Casertano, Stefano;
Lubow, Stephen H.; Quick, Lee; Strolger, Louis-Gregory; White, Richard L.
1STScI, Baltimore, MD. 2Johns Hopkins University, Baltimore, MD.

302.08D Combing Large Samples of Type Ia Supernovae To Constrain Dark Energy
Scolnic, Daniel; Riess, Adam G.
1Johns Hopkins University, Baltimore, MD. 2Space Telescope Science Institute,
Baltimore, MD.
Contributing teams: PS1 Transients Group

303 Debris Disks Around Young Stars and Planet Formation I
Wednesday, 10:00 AM - 11:30 AM; Potomac Ballroom C
Chair(s):
Alycia Weinberger, Carnegie Inst. Of Washington

303.01 SMACK: A New Algorithm for Modeling Collisions and Dynamics of
Planetesimals in Debris Disks
Nesvold, Erika; Kuchner, Marc J.; Rein, Hanno; Pan, Margaret
1University of Maryland, Baltimore County, Baltimore, MD. 2NASA Goddard
Space Flight Center, Greenbelt, MD. 3Institute for Advanced Study, Princeton, NJ.
4University of Toronto Scarborough, Toronto, ON, Canada.

303.02D Multi-Wavelength Study of Grain Growth in Protoplanetary Disks
Ubach, Catarina
1Swinburne University, Melbourne, VIC, Australia.

303.03 The Migrating Embryo Model for Planet Formation
Basu, Shantanu; Vorobyov, Eduard
1Western University, London, ON, Canada. 2The University of Vienna, Vienna, Austria.

303.04D Evolution of Protoplanetary Disks in the Orion A Star-Forming Region
Kim, Kyoung Hee
1Univ. Of Rochester, Rochester, NY. 2Korea Astronomy and Space Science
Institute, Daejeon, Korea, Republic of.
304.01 The Importance of Demographic Data in Astronomy
Elmegreen, Debra M.1
1Vassar College, Poughkeepsie, NY.

304.02 The AAS Workforce Survey
Postman, Marc1; Norman, Dara J.3; Evans, Nancy R.2; Ivie, Rachel6
1STScI, Baltimore, MD. 2Center for Astrophysics, Cambridge, MA. 3NOAO, Tucson, AZ. 4AIP, College Park, MD.

Wednesday, 10:00 AM - 11:30 AM; National Harbor 3
In its report, the 2010 Decadal Survey (New Worlds New Horizons) recommended that the American Astronomical Society, the American Physical Society, astronomy and astrophysics departments, and federal agencies should gather and disseminate demographic data on astronomers in the workforce to provide students information about career choices. The same report noted that minority Americans continue to be seriously underrepresented in the profession. To promote and increase the numbers of minorities, and promote gender equity, it is important to know what factors affect entry and retention into astronomy and astrophysics. Hence, in this special session, sponsored by the AAS Demographics Committee, the focus is on how demographic information can help address both workforce and representation issues. Debbie Elmegreen will discuss the importance of demographic studies for the profession and to the 2010 Decadal Survey. Marc Postman will present the AAS Workforce Survey, Pat Knezek will discuss why a Longitudinal Survey is important, and Rachel Ivie will present results to date from the Longitudinal Survey.

Chair(s):
Susana Deustua, Space Telescope Science Institute
Organizer(s):
Susana Deustua, Space Telescope Science Institute
304.03 Results from the Longitudinal Study of Astronomy Graduate Students
Ivie, Rachel
1 AIP, College Park, MD.

304.04 The Importance of Longitudinal Studies
Knezek, Patricia
1 NSF, Arlington, VA.

305 Developing Career Opportunities in Science Policy and Industry at All Career Levels
Wednesday, 10:00 AM - 11:30 AM; National Harbor 2

The AAS Employment Committee will host a panel discussion on career opportunities beyond academia, focusing on several possibilities that can be explored through fellowships and temporary positions, particularly in science policy/administration and industry. Short term fellowships, internships, and temporary assignments are excellent ways to explore potential careers, and to gain the experience and make the connections that enable career transitions at all career levels. The goals of the session are to provide information on the ways to become involved in these kinds of positions and on the career benefit they bring, and to open a dialog with the community about how they can be incorporated in current educational programs. The panel will feature speakers with a variety of backgrounds in astronomy, and whose diverse experiences will offer a range of perspectives on how one can become involved in science policy, industry, and other areas outside of academic or research positions. There will be ample opportunity for audience questions and discussion with panel members.

Chair(s):
Mario Perez, NASA Headquarters
Organizer(s):
Eileen Friel, Indiana University

307 Evolution of Local Group Galaxies
Wednesday, 10:00 AM - 11:30 AM; Maryland Ballroom C

307.02D Exploiting Large Multi-element Stellar Abundance Surveys
Andrews, Brett
1 The Ohio State University, Columbus, OH.

307.03D Clouds of neutral hydrogen between M31 and M33 and around the Milky Way.
Wolfe, Spencer A.
1; Pisano, Daniel J.
1; Lockman, Felix J.
2; McGaugh, Stacy S.
3; Shaya, Edward J.
4
1 West Virginia University, Morgantown, WV. 2 National Radio Astronomy Observatory, Green Bank, WV. 3 Case Western Reserve University, Cleveland, OH. 4 University of Maryland, College Park, MD.
307.04  NANOGrav and the Astrophysics of Galaxies
       Jenet, Fredrick\textsuperscript{1,2}

\textsuperscript{1}Univ. of Texas at Brownsville, Brownsville, TX.  \textsuperscript{2}Center for Advanced Radio Astronomy, Brownsville, TX.

Contributing teams: NANOGrav

308 Exoplanets: Interiors, Evolution, and Planetarydisks

Wednesday, 10:00 AM - 11:30 AM; Maryland Ballroom A

Chair(s):
Sasha Hinkley, California Institute of Technology

308.01D Circumplanetary Debris Disks in the Solar System and Beyond: Is the Fomalhaut System on the Verge of a Late Heavy Bombardment?
Tamayo, Daniel\textsuperscript{1}; Burns, Joseph A.\textsuperscript{1}
\textsuperscript{1}Cornell University, Ithaca, NY.

308.02D Protoplanetary Disks on a Moving Mesh, and other applications.
Duffell, Paul\textsuperscript{1}
\textsuperscript{1}New York University, New York, NY.

308.03 Particle Trapping in the Outer Regions of Protoplanetary Disks
Simon, Jacob B.\textsuperscript{1,2}; Armitage, Philip J.\textsuperscript{3}
\textsuperscript{1}Sagan Fellow, Boulder, CO.  \textsuperscript{2}Sagan Fellow, Southwest Research Institute, Boulder, CO.  \textsuperscript{3}University of Colorado, Boulder, CO.

308.04 Interior structure of solid super-Earths: temperature-dependent H2O structure and new online tools
Zeng, Li\textsuperscript{1}; Sasselov, Dimitar D.\textsuperscript{1}
\textsuperscript{1}Harvard University, Cambridge, MA.

308.05 Giant-Planet Structure and Evolution, and Its Dependence on Atmospheric and Interior Thermal Processes
Spiegel, David S.\textsuperscript{1}; Burrows, Adam S.\textsuperscript{2}
\textsuperscript{1}Institute for Advanced Study, Princeton, NJ.  \textsuperscript{2}Princeton University, Princeton, NJ.

308.06 Uneven Cooling: The Influence of Differential Heating and Circulation on the Thermal Evolution of Gas Giants
Rauscher, Emily\textsuperscript{1}; Showman, Adam P.\textsuperscript{2}
\textsuperscript{1}Princeton University, Princeton, NJ.  \textsuperscript{2}Univ. of Arizona, Tucson, AZ.

309 Galaxies I - Motions, Velocities, Kinematics, Masses

Wednesday, 10:00 AM - 11:30 AM; National Harbor 12

Chair(s):
Robert Minchin, NAIC, Arecibo Observatory

309.01 The Steeply Rising Stellar Velocity Dispersion of M87 from Integrated Starlight
Murphy, Jeremy\textsuperscript{1}; Gebhardt, Karl\textsuperscript{2}
\textsuperscript{1}Princeton University, Princeton, NJ.  \textsuperscript{2}University of Texas, Austin, TX.
309.02D Determination of Resonance Locations in Spiral Galaxies using Multi-band Photometry
Sierra, Amber; Seigar, Marc; Treuthardt, Patrick M.; Puerari, Ivanio
1 University of Arkansas at Little Rock, Little Rock, AR. 2 North Carolina Museum of Natural Sciences, Raleigh, NC. 3 INAOEP, Puebla, Mexico.

309.03 Kinematics of Andromeda’s Stellar Disk
Dorman, Claire; Guhathakurta, Puragra
1 UC Santa Cruz, Santa Cruz, CA.
Contributing teams: PHAT collaboration, SPLASH collaboration

309.04 The Inner Mass Structure of Observed Galaxies
Kuzio de Naray, Rachel; McGaugh, Stacy S.
1 Georgia State University, Atlanta, GA. 2 Case Western Reserve University, Cleveland, OH.

309.05 Supermassive Black Holes in Low-Mass Bulges, Pseudobulges, and Composite Bulges
Erwin, Peter; Saglia, Roberto; Thomas, Jens; Fabricius, Maximilian; Rusli, Stephanie; Nowak, Nina; Opitsch, Michael; Bender, Ralf; Williams, Michael J.; Mazzalay, Ximena
1 MPE, Garching b. Muenchen, Germany. 2 Universitaets Sternwarte Muenchen, Munich, Germany. 3 MPP, Munich, Germany.

309.06 Modeling and Fitting Tidal Stellar Streams
Fardal, Mark A.; Huang, Shuiyao; Weinberg, Martin D.
1 University of Massachusetts, Amherst, MA.
Contributing teams: PAndAS, SPLASH

309.07 Powerful Molecular Outflows in Nearby ULIRGs and Quasars
Veilleux, Sylvain; Melendez, Marcio
1 Univ. of Maryland, College Park, MD.
Contributing teams: The SHINING Team

309.08 Suppression of star formation in the galaxy NGC 253 by a starburst-driven molecular wind
Warren, Steven R.; Bolatto, Alberto D.; Leroy, Adam K.; Walter, Fabian; Veilleux, Sylvain; Ostriker, Eve C.; Ott, Juergen; Zwaan, Martin; Fisher, David B.; Weiss, Axel; Rosolowsky, Erik; Hodge, Jacqueline
1 University of Maryland, College Park, MD. 2 NRAO, Charlottesville, VA. 3 Max-Planck Institut für Astronomie, Heidelberg, Germany. 4 Princeton University, Princeton, NJ. 5 NRAO, Socorro, NM. 6 ESO, Garching, Germany. 7 Max-Planck Institut für Radioastronomie, Bonn, Germany. 8 University of British Columbia, Kelowna, BC, Canada.
310 Galaxy Evolution at z-2

Wednesday, 10:00 AM - 11:30 AM; Potomac Ballroom A

Chair(s): Eilat Glikman, Yale University

310.01 Ultra-Faint Ultraviolet Galaxies at the Epoch of Peak Star Formation 1 < z < 3
Alavi, Anahita¹; Siana, Brian D.¹; Richard, Johan²; Stark, Daniel³; Scarlata, Claudia⁴; Teplitz, Harry I.⁵; Freeman, William R.³; Dominguez, Alberto³; Rafelski, Marc³; Robertson, Brant E.³; Desai, Vandana⁶
¹University of California Riverside, Riverside, CA. ²Centre de Recherche Astronomique de Lyon, Saint-Genis-Laval, France. ³University of Arizona, Tucson, AZ. ⁴University of Minnesota, Minneapolis, MN. ⁵California Institute of Technology, Pasadena, CA. ⁶Jet Propulsion Laboratory, Pasadena, CA.

310.02 Physical properties of dwarf galaxies at z~2 from bursty star formation rate histories.
Dominguez, Alberto³; Siana, Brian D.¹
¹University of California, Riverside, CA.

310.03 A VIRUS-P Survey of Galaxy Clusters to Find Faint Ly-α-emitting Galaxies
McLinden, Emily¹; Finkelstein, Steven L.²; Siana, Brian D.³; Alavi, Anahita³
¹UT Austin - McDonald Observatory, Austin, TX. ²University of Texas - Austin, Austin, TX. ³University of California Riverside, Riverside, CA.

310.04 To Stack or Not To Stack: Spectral Energy Distribution Properties of Lyman Alpha Emitting Galaxies at z~2.1
Vargas, Carlos J.¹-²; Bish, Hannah¹; Acquaviva, Viviana²; Gawiser, Eric J.¹; Finkelstein, Steven L.³; Ciardullo, Robin⁴
¹Rutgers University, New Brunswick, NJ. ²New Mexico State University, Las Cruces, NM. ³New York City College of Technology, City University of New York, New York, NY. ⁴The University of Texas at Austin, Austin, TX. ⁵The Pennsylvania State University, University Park, PA.
Contribution teams: The CANDELS Collaboration, The MUSYC Collaboration

310.05 A multi-wavelength imaging study of a large sample of galaxies at z>2: Implications for star formation and dust properties at high redshift
Shivaei, Irene¹; Reddy, Naveen²
¹Univ of CA, Riverside, Riverside, CA. ²Univ of CA, Riverside, Riverside, CA.

310.06D The impact of stellar radiation on the formation of dwarf galaxies
Trujillo-Gomez, Sebastian¹; Klypin, Anatoly A.¹; Colin, Pedro²; Ceverino, Daniel³; Arraki, Kenza S.¹; Primack, Joel R.³
¹Astronomy Department, New Mexico State University, Las Cruces, NM. ²Centro de Radioastronomía y Astrofísica, Universidad Nacional Autónoma de México, Morelia, Michoacán, Mexico. ³Department of Physics, University of California at Santa Cruz, Santa Cruz, CA. ⁴Departamento de Física Teórica, Universidad Autónoma de Madrid, Madrid, Madrid, Spain.

310.07 The insignificance of major mergers in the early Universe
Kaviraj, Sugata¹-²; Cohen, Seth H.³; Windhorst, Rogier A.³; Silk, Joseph I.²; Ellis, Richard S.⁴; Dekel, Avishai⁵
¹University of Hertfordshire, Hatfield, Hertfordshire, United Kingdom. ²University of Oxford, Oxford, Oxfordshire, United Kingdom. ³Arizona State University, Phoenix, AZ. ⁴Caltech, Pasadena, CA. ⁵Hebrew University of Jerusalem, Jerusalem, Jerusalem, Israel.
Contribution teams: WFC3 Science Organising Committee
311 Gamma Ray Bursts: Multi-wavelength and Afterglow

Wednesday, 10:00 AM - 11:30 AM; Maryland Ballroom D

Chair(s):
Judith Racusin, NASA/GSFC

311.01D Unveiling the Progenitors of Short-duration Gamma-ray Bursts
Fong, Wen-fai 1
1 Harvard Center for Astrophysics, Cambridge, MA.

311.02 Radio Observations Of GRB 100418a: Test Of An Energy Injection Model Explaining Long-Lasting GRB Afterglows
Moin, Aquib 1; Chandra, Poonam 2; Miller-Jones, James 3; Tingay, Steven 4; Taylor, Gregory B. 5; Frail, Dale A. 6; Wang, Zhongxiang 7; Reynolds, Cormac 8; Phillips, Chris 1
1 New York University Abu Dhabi, Abu Dhabi, Abu Dhabi, United Arab Emirates. 2 Curtin University, Perth, WA, Australia. 3 ICRAR/Curtin University, Perth, WA, Australia. 4 NRAO, Socorro, NM. 5 NCRA TIFR, Pune, Maharashtra, India. 6 ATNF CASS, Sydney, NSW, Australia. 7 University of New Mexico, Albuquerque, NM.

311.03 Limits on GRB Prompt Radio Emission Using the LWA1
Obenberger, Kenneth S. 1; Hartman, Jacob M. 2; Taylor, Gregory B. 3; Craig, Joseph 1; Dowell, Jayce 1; Helmboldt, Joseph F. 2; Henning, Patricia A. 1; Schinzel, Frank 1; Wilson, Thomas L. 3
1 University of New Mexico, Albuquerque, NM. 2 NASA Jet Propulsion Laboratory, Pasadena, CA. 3 US Naval Research Laboratory, Washington, DC.

311.04 Shocked by the Very Bright Radio Flare and Afterglow of GRB 130427A
van der Horst, Alexander J. 1
1 Astronomical Institute, University of Amsterdam, Amsterdam, Netherlands.

311.05 An Account of the GRB afterglow steep-decline-and-plateau phase
Kazanas, Demosthenes 1; Sultana, Joseph 2; Mastichiadis, Apostolos 3
1 NASA's GSFC, Greenbelt, MD. 2 University of Malta, Msida, Malta. 3 University of Athens, Athens, Greece.

311.07 Fast Radio Bursts: Further Detections and Multi-wavelength Searches
Spolaor, Sarah 1, 2
1 California Institute of Technology, Pasadena, CA. 2 Jet Propulsion Laboratory, Pasadena, CA.

Contributing teams: High Time Resolution Universe Survey, V-Fastr Collaboration

312 Interstellar Medium & Dust III

Wednesday, 10:00 AM - 11:30 AM; National Harbor 13

Chair(s):
John Vaillancourt, SOFIA / USRA

312.01 The WISE Catalog of Galactic HII Regions Website
Anderson, Loren D. 1
1 West Virginia University, Morgantown, WV.

312.02D Rotationally Excited H2 in the Magellanic Clouds
Xue, Rui 1; Wong, Tony H. 1; Welty, Daniel E. 2
1 University of Illinois, Urbana, IL. 2 University of Chicago, Chicago, IL.
312.03 The Role of Stellar Feedback in the Dynamics of HII Regions
Lopez, Laura A.\textsuperscript{1}
\textsuperscript{1}MIT, Cambridge, MA.

312.04 The CO-to-H\textsubscript{2} Conversion Factor and Dust-to-Gas Ratio on Kiloparsec Scales in Nearby Galaxies
Sandstrom, Karin\textsuperscript{1}; Leroy, Adam K.\textsuperscript{2}; Kennicutt, Robert\textsuperscript{3}
\textsuperscript{1}University of Arizona, Tucson, AZ. \textsuperscript{2}NRAO, Charlottesville, VA. \textsuperscript{3}Institute of Astronomy, University of Cambridge, Cambridge, United Kingdom.
Contributing teams: KINGFISH team, HERACLES team

312.05 Anomalous Microwave Emission in HII regions: is it really anomalous? The case of RCW 49
Paladini, Roberta\textsuperscript{1}; Ingallinera, Adriano\textsuperscript{1}; Agliozzo, Claudia\textsuperscript{1}; Tibbs, Christopher\textsuperscript{1}; Dickinson, Clive\textsuperscript{1}; Trigiglio, Corrado\textsuperscript{1}; Umana, Grazia\textsuperscript{1}; Noriega-Crespo, Alberto\textsuperscript{1}; Flagay, Nicolas\textsuperscript{1}
\textsuperscript{1}NHSC/Caltech, Pasadena, CA.

312.06 Diagnosing Pressure in Molecular Clouds through Observations and Simulations
Faesi, Christopher\textsuperscript{1}; Offner, Stella\textsuperscript{2}; Goodman, Alyssa A.\textsuperscript{1}; Bisbas, Thomas\textsuperscript{3}
\textsuperscript{1}Harvard Univ., Cambridge, MA. \textsuperscript{2}Yale University, New Haven, CT. \textsuperscript{3}University College London, United Kingdom.

312.07 Modelling Photo Dissociation Region near Ultracompact H II region
Roshi, D. Anish\textsuperscript{1}; Jeyakumar, S.\textsuperscript{2}
\textsuperscript{1}National Radio Astronomy Observatory, Charlottesville, VA. \textsuperscript{2}Departamento de Astronomía, Universidad de Guanajuato, Guanajuato, CP 36000, Mexico.

312.08 Sensitive Survey of Molecular lines in the Taurus Molecular Cloud in frequency 39 to 47 GHz
Langston, Glen\textsuperscript{1}
\textsuperscript{1}National Science Foundation, Washington, DC.

313 Large Scale Structure & Cosmic Distance I

Wednesday, 10:00 AM - 11:30 AM; National Harbor 4

Chair(s):
Mark Neyrinck, Johns Hopkins Univ.

313.01D Observations give us CLUES to Cosmic Flows’ origins
Sorce, Jenny\textsuperscript{1,2}; Courtois, Helene\textsuperscript{1,5}; Gottloeber, Stefan\textsuperscript{2}; Hoffman, Yehuda\textsuperscript{3}; Pomarede, Daniel\textsuperscript{4}; Tully, R. B.\textsuperscript{5}
\textsuperscript{1}University of Lyon, CNRS/IN2P3, Nuclear Physics Institute, Villeurbanne, France. \textsuperscript{2}Leibniz-Institut fur Astrophysik, Potsdam, Germany. \textsuperscript{3}Racah Institute of Physics, Hebrew University, Jerusalem, Israel. \textsuperscript{4}CEA/IRFU, Saclay, Gif-sur-Yvette, France. \textsuperscript{5}Institute for Astronomy, University of Hawaii, Honolulu, HI.
Contributing teams: Cosmic Flows, CLUES

313.02 Improving cosmic distance measurements by reconstructing the WiggleZ Dark Energy Survey density field
Kazin, Eyal\textsuperscript{1}; Blake, Chris\textsuperscript{1}; Koda, Jun\textsuperscript{1}; Padmanabhan, Nikhil\textsuperscript{2}
\textsuperscript{1}Swinburne University of Technology, Melbourne, VIC, Australia. \textsuperscript{2}Yale, New Haven, CT.
313.03D Probing Galaxy Evolution and Cosmology using Cosmic Voids in SDSS-III
Mao, Qingqing; Berlind, Andreas A.; Scherrer, Robert; McBride, Cameron;
Neyrinck, Mark C.; Scoccimarro, Roman; Tinker, Jeremy
1Vanderbilt University, Nashville, TN. 2Harvard-Smithsonian Center for
Astrophysics, Cambridge, MA. 3Johns Hopkins University, Baltimore, MD. 4New
York University, New York, NY.

313.04D Configuring the Cosmos: New Approaches to Modeling Nonlinear Structure
Formation
McCullagh, Nuala; Szalay, Alexander S.; Neyrinck, Mark C.; Jeong, Donghui
1Johns Hopkins University, Baltimore, MD.

314 Scientific Opportunities with the James Webb Space Telescope
Wednesday, 10:00 AM - 11:30 AM; Maryland Ballroom B
The James Webb Space Telescope (JWST) will be a general purpose observatory that will
provide research opportunities and support for thousands of astronomers. In this special
session, speakers will describe JWST’s potential for advancing a number of core scientific
topics that are at the forefront of astrophysical research, with specific links to JWST’s
observing efficiency and multiple modes of imaging, spectroscopy, and coronography.
Among the range of topics that will be covered in the session are Solar System science,
planet formation and exoplanet characterization, star formation and the IMF, and galaxy
formation and assembly.

Chair(s):
Jason Kalirai, Space Telescope Science Institute
Organizer(s):
Jason Kalirai, Space Telescope Science Institute

314.01 Supernova Forensics
Soderberg, Alicia M.
1Harvard Smithsonian, CfA, Cambridge, MA.

314.02 Observing the solar system with JWST
Tiscareno, Matthew S.; Hammel, Heidi B.; Norwood, James; Milam, Stefanie
N.; Lunine, Jonathan I.; Chanover, Nancy J.; Stansberry, John A.; Hines, Dean
C.; Sonneborn, George; Brown, Michael E.; Ferruit, Pierre
1Cornell University, Ithaca, NY. 2Association of Universities for Research in
Astronomy, Washington, DC. 3Space Science Institute, Boulder, CO. 4New
Mexico State University, Las Cruces, NM. 5NASA Goddard Space Flight Center,
Greenbelt, MD. 6Space Telescope Science Institute, Baltimore, MD. 7California
Institute of Technology, Pasadena, CA. 8European Space Agency, Noordwijk,
Netherlands.

314.03 Directly Measuring the Low Mass IMF Outside the Milky Way with JWST
Geha, Marla C.
1Yale University, New Haven, CT.

314.04 Insights into planetary systems through JWST imaging of debris disks
Wyatt, Mark
1Institute of Astronomy, Cambridge, United Kingdom.
314.05 JWST Exoplanet Characterization: Big Opportunities for Small Planets Around Small Stars
Johnson, John A. ¹

³Harvard, Cambridge, MA.

315 Stars

Wednesday, 10:00 AM - 11:30 AM; Maryland 2

Chair(s):
Andrew West, Boston Univ.

315.01 Plans for Unprecedented Imaging of Stellar Surfaces with the NPOI
Jorgensen, Anders M. ¹; Schmitt, Henrique R. ²; Mozurkewich, David³; van Belle, Gerard⁴; Hutter, Donald J. ⁵; Armstrong, J. T. ³; Baines, Ellyn K. ²

¹New Mexico Tech, Socorro, NM. ²Naval Research Laboratory, Washington, DC. ³Seabrook Engineering, Seabrook, MD. ⁴Lowell Observatory, Flagstaff, AZ. ⁵Naval Observatory Flagstaff Station, Flagstaff, AZ.

315.02D Empirically Interrelating Stellar Magnetic Activity, Photometric Variability and Radial Velocity “Jitter” to Enhance Planet Discovery
Bastien, Fabienne A. ¹

¹Vanderbilt University, Madison, TN.

315.03 Tracing Detailed Starspot Evolution with Kepler
Davenport, James R. ¹; Hebb, Leslie²; Hawley, Suzanne L. ¹

¹University of Washington, Seattle, WA. ²Hobart and William Smith Colleges, Geneva, NY.

315.04 ASASSN-13bc: A Dramatic Flare on an Ultracool Dwarf
Schmidt, Sarah J. ¹; Prieto, Jose²; Stanek, Krzysztof Z. ¹; Shappee, Benjamin¹

¹Ohio State University, Columbus, OH. ²Princeton University, Princeton, NJ.

315.05 The intriguing X-ray variability of HD 150136
Leyder, Jean-Christophe¹; Pollock, Andrew M. ¹

¹European Space Astronomy Center, European Space Agency, Villanueva de la Cañada, Madrid, Spain.

315.06 Innocent Bystanders and Smoking Guns: Dwarf Carbon Stars
Green, Paul J. ¹

¹Harvard-Smithsonian CfA, Cambridge, MA.

315.07 3D Model Atmospheres of White Dwarfs
Tremblay, Pier-Emmanuel¹; Ludwig, Hans-Günter²; Steffen, Matthias³; Freytag, Bernd⁴

¹Space Telescope Science Institute, Baltimore, MD. ²Zentrum für Astronomie der Universität Heidelberg, Heidelberg, Germany. ³Leibniz Institute for Astrophysics Potsdam, Potsdam, Germany. ⁴Centre de Recherche Astronomique de Lyon - Ecole Normale Supérieure, Lyon, France.

315.08 The white dwarf cooling sequence of the Galactic bulge
Calamida, Annalisa¹; Sahu, Kailash C. ¹; Anderson, Jay¹; Casertano, Stefano¹; Brown, Thomas M. ¹; Cassisi, Santino²; Sokol, Josh¹; Bond, Howard E. ¹; Ferguson, Henry C. ¹; Livio, Mario¹; Salaris, Maurizio³; Ferraro, Ivan⁴; Valenti, Jeff A. ¹

¹Space Telescope Science Institute, Baltimore, MD. ²Osservatorio Astronomico di Teramo - INAF, Teramo, Italy. ³Astrophysics Research Institute - Liverpool John Moores University, Liverpool, United Kingdom. ⁴Osservatorio Astronomico di Roma - INAF, Rome, Italy.
316 Supernovae & Nebulae III

Wednesday, 10:00 AM - 11:30 AM; National Harbor 10

Chair(s):
Alexei Poludnenko, Naval Research Lab

316.01D Observations of Type Iax Supernovae
McCully, Curtis¹; Jha, Saurabh¹; Foley, Ryan J.²
¹Rutgers, The State University of New Jersey, Piscataway, NJ. ²University of Illinois at Urbana-Champaign, Champaign, IL.

316.02 Kepler Supernovae
Olling, Robert¹; Shaya, Edward J.¹; Mushotzky, Richard¹; Rest, Armin²; Tucker, Bradley E.³; Kasen, Daniel⁴; Margheim, Steven J.⁵
¹Univ. Of Maryland, College Park, MD. ²STScI, Baltimore, MD. ³Australian National University, Weston Creek, ACT, Australia. ⁴Univ Of California, Berkeley, Berkeley, CA. ⁵Gemini Obs., Tuscon, AZ.

316.03 High-Velocity Features in the Spectra of Type-Ia Supernova
Silverman, Jeffrey M.¹; Marion, G. H.¹; Wheeler, J. C.¹; Vinko, Jozsef¹ ²
¹University of Texas at Austin, Austin, TX. ²University of Szeged, Szeged, Hungary.

316.04 SN 2012fr: A Type Ia Supernova with Extreme High Velocity Features and Stratified Ejecta
Childress, Michael¹ ²; Scalzo, Richard A.¹ ²; Sim, Stuart³; Tucker, Bradley E.¹ ⁴; Yuan, Fang¹ ²; Schmidt, Brian P.¹ ²
¹Australian National University, Canberra, ACT, Australia. ²ARC Centre of Excellence for All-Sky Astrophysics (CAASTRO), Sydney, ACT, Australia. ³Queen’s University Belfast, Belfast, Northern Ireland, United Kingdom. ⁴University of California, Berkeley, Berkeley, CA.

Contributing teams: Carnegie Supernova Project, PESSTO, Filippenko Supernova Group

316.05 Interaction of Type Ia Supernovae With The Circumstellar Environment
Dragulin, Paul¹ ²; Hoeflich, Peter¹; Khokhlov, Alexei²
¹Tallahassee, FL, FL. ²University of Chicago, Chicago, IL.

316.06 Pulsating Instability of Turbulent Thermonuclear Flames in Type Ia Supernovae
Poludnenko, Alexei Y.¹
¹Naval Research Lab, Washington, DC.

316.07 Cosmological Constraints Measurements of Type Ia Supernovae Discovered during the first 1.5 Years of the Pan-STARRS1 Survey
Rest, Armin¹; Scully, Daniel²
¹Space Telescope Science Institute, Timonium, MD. ²John Hopkins University, Baltimore, MD.

Contributing teams: Pan-STARRS1 survey
317 Time Domain Astronomy, the Large Synoptic Survey Telescope, and Transient Follow-up

Wednesday, 10:00 AM - 11:30 AM; Potomac Ballroom D

Time Domain Astronomy (TDA) has emerged as a major field of Astrophysics, providing data and insights into astrophysical phenomena on timescales of milliseconds to a century. This special session will discuss both current and planned optical TDA surveys and some of the discoveries that on-going programs are making. Full exploitation of these discoveries requires extensive follow-up beyond the initial identification: additional photometry, spectroscopic identification, and observations in wavebands from gamma-rays to radio. The Large Synoptic Survey Telescope expects to start its 10-year mission to image the sky in late 2021. Roughly half the Celestial Sphere will be surveyed in six broad bands, ugrizy, with each patch of sky visited 850 times over the survey lifetime, leading to fundamentally new discoveries in the time domain of the faint universe. The session will conclude with a Panel and audience discussion on how the community can optimize scientific opportunities for TDA in the era of LSST.

Chair(s):
Jonathan Grindlay, LBTO
Organizer(s):
Michael Strauss, Princeton Univ.

317.01 Synoptic Sky Surveys: Lessons Learned and Challenges Ahead
Djorgovski, Stanislav G. 1
1Caltech, Pasadena, CA.
Contributing teams: CRTS team

317.02 Time-Domain Astrophysics: Results and Lessons from Pan-STARRS
Berger, Edo 1
1Harvard Univ., Cambridge, MA.

317.03 Opportunities and challenges for time domain astronomy with LSST
Ivezic, Zeljko 1
1Univ. of Washington, Seattle, WA.

317.04 Transients and Variable Stars: Followup in the Era of LSST
Walkowicz, Lucianne 1
1Princeton University, Princeton, NJ.
Contributing teams: the LSST Transients and Variable Stars Science Collaboration

318 Warner Prize: The Origin of Stellar Masses

Wednesday, 11:40 AM - 12:30 PM; Potomac Ballroom A

Chair(s):
David Helfand, Quest University Canada

Mark Krumholz - Helen B. Warner Prize for Astronomy
The Helen B. Warner Prize is awarded to Mark Krumholz for his major theoretical contributions in the areas of massive star formation and the interstellar medium, both in the Galaxy and in the early universe.
318.01 The Origin of Stellar Masses
Krumholz, Mark R.¹

¹University of California, Santa Cruz, Santa Cruz, CA.

Career Hour 5: The Interview: What you need to do before, during, and after to get the job

Wednesday, 12:30 PM - 1:30 PM; National Harbor 2

What you need to know and do to get the job from the first moment of contact to the moment you leave the interview. Audience: students, postdocs, early- and mid-career professionals

Facilitator: Alaina G. Levine, President, Quantum Success Solutions

Alaina G. Levine is a science careers consultant, science writer, and professional speaker and comedian. Her new book on networking strategies for scientists and engineers will be published by Wiley in 2014. Organizer: Kelle Cruz and the Employment Committee

Chair(s):
Alaina Levine, Quantum Success Solutions
Organizer(s):
Kelle Cruz, Hunter College/CUNY and AMNH

319 The Hubble and James Webb Space Telescopes Town Hall Meeting

Wednesday, 12:45 PM - 1:45 PM; Potomac Ballroom A

The Hubble Space Telescope is more powerful and productive than ever. Hubble is pressing forward with new instrument capabilities and ambitious observing programs to establish new scientific frontiers. As it has done throughout its history, the next wave of Hubble observations will transform our understanding of the universe, inspire generations of students, and influence popular culture. In this AAS Town Hall, we will feature a short summary of the scientific promise of Hubble for the next several years of Astrophysics, and the current status of its instrumentation. Beyond Hubble, the James Webb Space Telescope will be the most powerful telescope that astronomers have ever constructed, and is essential for answering many of the top science questions outlined in the Astronomy and Astrophysics 2000 and 2010 Decadal Surveys. The observatory made excellent progress in 2013 by achieving several important milestones, including the completion and delivery of all four science instruments, and all of the mirrors, to NASA. JWST has now entered a detailed integration and testing phase, in preparation for the 2018 launch. We will give a short presentation related to the overall status of the JWST program. Following the two updates on Hubble and Webb, we will feature an innovative science talk to be delivered by 2011 Nobel Prize recipient Adam G. Riess on measuring dark energy and the Hubble constant with both telescopes. There will ample time available for audience questions and open discussion.

Speaker Summary: Ken Sembach (STScI) - HST Update Eric Smith (NASA HQ) - JWST Update Adam Riess (STScI/JHU) - The Hubble Constant and Dark Energy

Chair(s):
Jason Kalirai, Space Telescope Science Institute
320 U.S. National Research Council’s Committee on Astronomy and Astrophysics Town Hall

Wednesday, 12:45 PM - 1:45 PM; National Harbor 3

A joint activity of the National Research Council’s Board on Physics and Astronomy and the Space Studies Board, the overarching purpose of the Committee on Astronomy and Astrophysics (CAA) is to support scientific progress in astronomy and astrophysics and assist the federal government in integrating and planning programs in these fields. The CAA provides an independent, authoritative forum for identifying and discussing issues in astronomy and astrophysics between the research community, the federal government, and the interested public. The National Research Council’s Committee on Astronomy and Astrophysics requests a town hall at the January 2014 meeting for the committee to communicate directly with the astronomy and astrophysics community to discuss issues the fields are facing and to collect input from the broad community. Encouraged by its engagement with the community at its 2013 AAS Winter Meeting Town Hall, the CAA would like to hold a town hall meeting in 2014 to solicit input from and engage with the astronomy and astrophysics community on the many issues that have arisen in the past year. The CAA is and will continue to deal with a complex set of issues that will affect future NASA, NSF, and DOE research and spending priorities. Involving the broad astronomy community is critical to the CAA’s work and will help committee members provide the most informed advice to stakeholders. In addition, the town hall would allow CAA representatives to communicate the committee’s recent activities to the community.

Chair(s):
David Spergel, Princeton Univ. Obs.

Organizer(s):
David Spergel, Princeton Univ. Obs.

Amateur Talk: Bringing the Nearby Stars Closer to Home

Wednesday, 1:30 PM - 2:00 PM; Maryland Ballroom A

The solar neighborhood holds a special place in the human psyche because, by our very nature, we humans explore the nearest locales first. Space is no exception. The nearest stars provide the framework upon which stellar astrophysics is based because the nearby star population contains the most easily studied representatives of their kinds. The nearest stars hold the greatest promise for the discovery and detailed characterization of other worlds, and ultimately, any life that may be found on them. During this talk, we’ll take a tour of the solar neighborhood and gain a perspective of how our Sun, our Earth, and we fit into the cosmos.

Chair(s):
Todd Henry, RECONS

321 AGN Across the Spectrum: II

Wednesday, 2:00 PM - 3:30 PM; National Harbor 11

Chair(s):
Dale Kocevski, University of California, Santa Cruz
321.01D Probing the Brightest QSOs Though the Spatial Distribution of Galaxies and (Fluorescent) Lya Emitters
Trainor, Ryan; Steidel, Charles C.
1Caltech, Pasadena, CA.

321.02 The Most Bolometrically Luminous Quasars
Kimball, Amy E.; Lacy, Mark; Lonsdale, Carol J.; Condon, James J.; Maiolino, Roberto
1CSIRO Astronomy and Space Science, Sydney, NSW, Australia. 2NRAO, Charlottesville, VA. 3Cavendish Laboratory, Department of Physics, Cambridge, United Kingdom.

321.03D Diversity in the 2MASS Red AGN Population - Anomalous Reddening and Excess Hot Dust?
Rose, Marvin
1Harvard Smithsonian, Cambridge, MA. 2University of Sheffield, Sheffield, Yorkshire, United Kingdom.

321.04 Evidence for Large Temperature Fluctuations in Quasar Accretion Disks from Spectral Variability
Ruan, John J.; Anderson, Scott F.; Agol, Eric; Dexter, Jason
1University of Washington, Seattle, WA. 2UC Berkeley, Berkeley, CA.

321.05D Probing the Central Regions of Active Galactic Nuclei
Lohfink, Anne M.; Reynolds, Christopher S.; Mushotzky, Richard; Nowak, Michael
1University of Maryland, College Park, MD. 2MIT Kavli Institute, Cambridge, MA.

322 Astronomy Education Research
Wednesday, 2:00 PM - 3:30 PM; Maryland 1
Chair(s):
Gina Brissenden, Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona

322.01 The Effect of Stereoscopic (‘3D’) vs. 2D Presentation on Learning through Video and Film
Price, Aaron; Kasal, Evan
1Museum of Science and Industry, Chicago, Chicago, IL. 2AAVSO, Cambridge, MA. 3University of Michigan, Ann Arbor, MI.

322.02 Visualizing Moon Phases in the Classroom with WorldWide Telescope
Udomprasert, Patricia; Goodman, Alyssa; Sunbury, Susan; Zhang, Zhihui; Sadler, Philip M.; Dussault, Mary E.; Lotridge, Erin; Jackson, Jonathan; Constantin, Ana-Maria
1Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

322.03 How Faculty can Affect Student Texting, Distraction, Grades, and Attitudes
Duncan, Douglas K.; Hoekstra, Angel; Wilcox, Bethany
1Univ. of Colorado, Boulder, CO.

322.04 Assessment of Teaching Methods and Critical Thinking in a Course for Science Majors
Speck, Angela; Ruzhitskaya, Lanika; Whittington, Alan G.
1Univ. of Missouri, Columbia, MO.
322.05 Science Literacy’s Neglected Twin: Numeracy
Follette, Katherine B.; McCarthy, Donald W.; Dokter, Erin F.; Buxner, Sanlyn
University of Arizona, Tucson, AZ.

322.06 CHARACTERIZATION AND MEASUREMENT OF INTRODUCTORY COLLEGE
ASTRONOMY AND PHYSICS STUDENT UNDERSTANDING OF NEWTONIAN
GRAVITY
Williamson, Kathryn
Montana State University, Bozeman, MT.

322.07 The Collaboration of Astronomy Teaching Scholars (CATS) – Reporting from the
Nationion’s Largest College-Level, Astronomy Education Research Initiative.
Prather, Edward E.; Brissenden, Gina; Impey, Chris D.; Lee, Kevin M.
Center for Astronomy Education (CAE) Univ. of Arizona, Tucson, AZ.
Steward Observatory, Univ. of Arizona, Tucson, AZ.
Univ. of Nebraska-Lincoln, Lincolin, NE.
Contributing teams: Collaboration of Astronomy Teaching Scholars (CATS)

322.08 Findings from Five Years Investigating Science Literacy and Where
Students Get their Information about Science
Buxner, Sanlyn; Impey, Chris D.; Nieberding, Megan N.; Romine, James M.;
Antonellis, Jessie C.; Llull, Jenna; Tijerino, Kitina
University of Arizona, Tucson, AZ.
Steward Observatory, University of Arizona, Tucson, AZ.
Arizona Space Grant Consortium, University of Arizona, Tucson, AZ.
Little Priest Tribal College, Winnebago, NE.
Contributing teams: Collaborations of Astronomy Teaching Scholars (CATS),
Steward Observatory, University of Arizona

322.09 A Research-Informed Approach to Teaching About Light & Matter in STEM
Classrooms
Hornstein, Seth D.; Wallace, Colin S.; Schlingman, Wayne M.; Prather, Edward E.
University of Colorado Boulder, Boulder, CO.
Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona, Tucson, AZ.

323 Binary Systems

Wednesday, 2:00 PM - 3:30 PM; Maryland 2
Chair(s):
Colleen Wilson, NASA’s MSFC

323.01D A holistic view of a black hole binary: bringing together spectral, timing,
and polarization analysis of Cygnus X-1
Grinberg, Victoria
Dr. Remeis Observatory & ECAP, Bamberg, Germany.

323.02 Emphasize the difference: On the energy dependance of power spectral
states in Black Hole X-ray Binaries
Stiele, Holger; Yu, Wenfei
Shanghai Astronomical Observatory, Shanghai, Shanghai, China.
323.03 Improved Constraint on the Mass of the Black Hole in Nova Muscae 1991
Wu, Jianfeng; McClintock, Jeffrey E.; Steeghs, Danny; Longa, Penelope; Torres, Manuel; Ho, Luis C.; Callanan, Paul; Reynolds, Mark; Orosz, Jerome A.; Jonker, Peter


323.04 Direct Constraints on the Evolution of LMXBs from Deep Chandra and HST Observations of Nearby Early-Type Galaxies
Lehmer, Bret; Berkeley, Matthew; Alexander, D. M.; Basu-Zych, Antara; Bauer, Franz E.; Brandt, W. N.; Fragos, Tassos; Hornschemeier, Ann E.; Jenkins, Leigh; Kalogera, Vassiliki; Ptak, Andrew; Sivakoff, Gregory R.; Tzanavaris, Panayiotis; Yukita, Mihoko; Zezas, Andreas


323.05 Multi-wavelength Observations of the Binary System PSR B1259?63/LS 2883 Around the 2010-2011 Periastron Passage
Wood, Kent S.; Chernyakova, Masha; Abdou, Aous; Neronov, Andrii; McSwain, M. V.; Moldon, J. P.; Ribó, M.; Paredes, J. M.; Susch, I. 9, 10; de Naurois, M.; Schwanke, U.; Uchiyama, Y.; Johnston, Simon; Chaty, S. 15, 16; Coleiro, Alexis; Malyshev, D.; Babyk, Iu


323.06 Hoyle-Lyttleton Accretion from a Planar Wind
Raymer, Eric

1.North Carolina State University, Raleigh, NC.

323.07 Formation and Evolution of the SS 433 Jets
Marshall, Herman L.; Heinz, Sebastian; Schulz, Norbert S.

1.MIT, Cambridge, MA. 2.U. Wisconsin, Madison, WI.

323.08 Superorbital Periodic Modulation in Wind-Accretion High-Mass X-ray Binaries from Swift BAT Observations
Corbet, Robin H.; Krimm, Hans A.

324 Evolution of Galaxy Mergers

Wednesday, 2:00 PM - 3:30 PM; National Harbor 2

Chair(s):
David Law, University of Toronto

324.01 Galaxy Mergers on a Moving Mesh
Hayward, Christopher C.¹; Torrey, Paul A.²; Springel, Volker¹; Hernquist, Lars E.²; Vogelsberger, Mark²
¹Heidelberg Institute for Theoretical Studies, Heidelberg, Germany. ²Harvard-Smithsonian CfA, Cambridge, MA.

324.02D A Pipeline for Constructing A Catalog of Multi-Method Models of Interacting Galaxies
Holinccheck, Anthony¹
¹George Mason University, Fairfax, VA.

324.03 Galaxy Pairs in the Galaxy And Mass Assembly (GAMA) Survey
Bauer, Amanda E.¹
¹Australian Astronomical Observatory, Sydney, NSW, Australia.
Contributing teams: GAMA Survey Team

324.04 Over the Peak: Full Spectrum Far-Infrared Velocity-Resolved Spectroscopy of Three Extreme Gas-Rich Mergers
Fischer, Jacqueline¹; González-Alfonso, Eduardo²; Sturm, Eckhard³; Graciá-Carpio, Javier³; Polisensky, Emil¹; Abel, Nicholas⁴; Hailey-Dunsheath, Steve³; Veilleux, Sylvain⁵; Melendez, Marcio⁶; Verma, Aprajita⁷; Poglitsch, Albrecht³; Contursi, Alessandra³
¹NRL, Washington, DC. ²Universidad de Alcalá, Madrid, Alcalá de Henares, Spain. ³MPE, Garching, Germany. ⁴Univ. of Cincinnati, Claremont College, Batavia, OH. ⁵Caltech, Pasadena, CA. ⁶Univ. of Maryland, College Park, MD. ⁷Univ. of Oxford, Oxford, United Kingdom.

324.05 Nuclear Disks in Gas-Rich Galaxy Mergers
Medling, Anne¹, ²; U, Vivian³, ⁴; Guedes, Javiera⁴; Max, Claire E.²; Mayer, Lucio⁴; Armus, Lee³; Holden, Bradford³; Roskar, Rok⁴; Sanders, David B.⁶
¹RSAA - Australian National University, Canberra, ACT, Australia. ²UC Santa Cruz, Santa Cruz, CA. ³UC Riverside, Riverside, CA. ⁴University of Zurich, Zurich, Zurich, Switzerland. ⁵Spitzer Science Center, Pasadena, CA. ⁶IfA - University of Hawaii, Manoa, HI.

324.06 The Origin and Evolution of (Ultra)Luminous Infrared Galaxies Over Cosmic Time
Kartaltepe, Jeyhan S.¹
¹National Optical Astronomy Observatory, Tucson, AZ.
Contributing teams: The CANDELS Collaboration

324.07D Photometric Study of Massive Evolved Galaxies in the CANDELS GOODS-S at z>3
Nayyeri, Hooshang¹; Mobasher, Bahram¹; Ferguson, Henry C.²; Wiklind, Tommy³; Hemmati, Shoubaneh¹; De Barros, Stephanie³; Fontana, Adriano³; Dahlen, Tomas³; Koekemoer, Anton M.²
¹UC Riverside, Riverside, CA. ²Space Telescope Science Institute, Baltimore, MD. ³INAF, Rome, Italy.
325 Exoplanet Models

Wednesday, 2:00 PM - 3:30 PM; Potomac Ballroom D

Chair(s):
Avi Mandell, NASA GSFC

325.01 Remastering the RV Classics: Self-Consistent Dynamical Models for the 55 Cnc and GJ 876 Planetary Systems
Nelson, Benjamin E.\textsuperscript{1,2}; Ford, Eric B.\textsuperscript{1,2}; Wright, Jason\textsuperscript{1}; Fischer, Debra\textsuperscript{3}
\textsuperscript{1}Pennsylvania State University, State College, PA. \textsuperscript{2}University of Florida, Gainesville, FL. \textsuperscript{3}Yale, New Haven, CT.

325.02 Finding the Needle in the Haystack: A High-Fidelity Model of the Solar System for Simulating Exoplanet Observations
Wilkins, Ashlee N.\textsuperscript{1,2}; Roberge, Aki\textsuperscript{2}; Rizzo, Maxime\textsuperscript{1,2}; Nesvold, Erika\textsuperscript{3,2}; Stark, Christopher C.\textsuperscript{2}; McElwain, Michael W.\textsuperscript{2}; Kuchner, Marc J.\textsuperscript{2}; Robinson, Tyler D.\textsuperscript{4}; Meadows, Victoria\textsuperscript{4}; Straughn, Amber\textsuperscript{2}; Turnbull, Margaret C.\textsuperscript{5}
\textsuperscript{1}University of Maryland, College Park, MD. \textsuperscript{2}NASA GSFC, Greenbelt, MD. \textsuperscript{3}University of Maryland, Baltimore County, Baltimore, MD. \textsuperscript{4}University of Washington, Seattle, WA. \textsuperscript{5}Global Science Institute, Antigo, WI.

325.03 Transiting Exoplanet Simulations with the James Webb Space Telescope
Batalha, Natasha\textsuperscript{1}; Kalirai, Jason S.\textsuperscript{1}; Lunine, Jonathan I.\textsuperscript{2}; Mandell, Avi\textsuperscript{4}
\textsuperscript{1}Space Telescope Science Institute, Baltimore, MD. \textsuperscript{2}Cornell University, Ithaca, NY. \textsuperscript{3}Pennsylvania State University, State College, PA. \textsuperscript{4}Goddard Space Flight Center, Greenbelt, MD.

325.04 Just How Earth-like are Extrasolar Super-Earths? Constraints on H+He Envelope Fractions from Kepler’s Planet Candidates
Wolfgang, Angie\textsuperscript{1}; Lopez, Eric\textsuperscript{1}
\textsuperscript{1}University of California, Santa Cruz, Santa Cruz, CA. Contributing teams: Kepler Team, SAMSI Bayesian Characterization of Exoplanet Populations Working Group

325.05 Habitable Evaporated Cores: Converting Mini-Neptunes into Super-Earths in the Habitable Zone of M Dwarfs
Luger, Rodrigo\textsuperscript{1,2}; Barnes, Rory\textsuperscript{1,2}; Lopez, Eric\textsuperscript{3}; Fortney, Jonathan J.\textsuperscript{3,2}; Jackson, Brian K.\textsuperscript{4}; Meadows, Victoria\textsuperscript{1,2}
\textsuperscript{1}Astronomy Department, University of Washington, Seattle, WA. \textsuperscript{2}Virtual Planet Laboratory, Seattle, WA. \textsuperscript{3}Department of Astronomy and Astrophysics, University of California, Santa Cruz, CA. \textsuperscript{4}Carnegie Department of Terrestrial Magnetism, Washington, DC.

325.06 Detectable Spectral Fingerprints of Super- and Mini-Earths in the HZ
Rugheimer, Sarah\textsuperscript{1}; Kaltenegger, Lisa\textsuperscript{1,2}; Sasselow, Dimitar D.\textsuperscript{1}
\textsuperscript{1}Harvard University - CFA, Cambridge, MA. \textsuperscript{2}MPIA, Heidelberg, Germany.

325.07 Water Cycling Between Ocean and Mantle: Super-Earths Need Not be Waterworlds
Cowan, Nicolas B.\textsuperscript{1}; Abbot, Dorian S.\textsuperscript{2}
\textsuperscript{1}Northwestern University, Evanston, IL. \textsuperscript{2}University of Chicago, Chicago, IL.
325.08 Effects of Extreme Obliquity Change on the Habitability of Extrasolar Planets
Armstrong, John C.¹; Barnes, Rory²; Domagal-Goldman, Shawn³
¹Weber State Univ., Ogden, UT. ²University of Washington, Seattle, WA. ³NASA Goddard, Washington, DC, DC.
Contributing teams: Virtual Planetary Laboratory

326 Extrasolar Planet Detection - Optical RV Surveys
Wednesday, 2:00 PM - 3:30 PM; Maryland Ballroom A
Chair(s):
Sarah Ballard, Harvard University

326.01 Correcting Astrophysical Noise in HARPS-N RV Measurements
Gettel, Sara¹; Charbonneau, David¹
¹Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.
Contributing teams: the HARPS-N Collaboration

326.02 The Solar Twin Planet Search
Bedell, Megan¹; Bean, Jacob¹; Melendez, Jorge²; Monroe, TalaWanda²
¹University of Chicago, Chicago, IL. ²Universidade de Sao Paulo, Sao Paulo, SP, Brazil.

326.03 Early Doppler Performance from New Generation High Resolution Optical and near Infrared Planet-hunting Spectrographs
Ge, Jian¹; Varosi, Frank¹; Powell, Scott¹; Zhao, Bo¹; Schofield, Sidney¹; Liu, Jian¹; Warner, Craig¹; Sithajan, Sirinrat¹; Li, Rui¹; Muterspaugh, Matthew W.²; Williamson, Michael W.²; Avner, Louis¹; Jakeman, Hali¹
¹Univ. of Florida, Gainesville, FL. ²Tennessee State University, Nashville, TN.

326.04 Survey of Close-in Super-Earths Using a New Generation Optical High Resolution Spectrograph
Sithajan, Sirinrat¹; Ge, Jian¹; Muterspaugh, Matthew W.²; Varosi, Frank¹; Li, Rui¹; Ma, Bo¹; Thomas, Neil B.¹; Wang, Ji¹; Barnes, Rory¹; Maxwell, Ted²
¹University of Florida, Gainesville, FL. ²Tennessee State University, Nashville, TN. ³Yale University, New Haven, CT. ⁴University of Washington, Seattle, WA.

326.05 Early Giant Planet Candidates from the SDSS-III MARVELS Planet Survey
Thomas, Neil³; Ge, Jian¹; Li, Rui¹; Sithajan, Sirinrat¹; Chen, Yunmei¹; Shi, Jiangli¹; Ma, Bo¹; Liu, Jian¹
¹University of Florida, Gainesville, FL.
327 From Protostars to Lensed Galaxies: The Immense Riches from Herschel

Wednesday, 2:00 PM - 3:30 PM; Maryland Ballroom C

The 3.5-m Herschel Space Telescope has pioneered the deepest explorations of the infrared/sub-mm wavelength regime to date. Although it exhausted its cryogen in April 2013, new results will continue to pour out from Herschel for many years to come. These include science done by astronomers with targeted programs, as well as from users of the huge Herschel Science Archive compiled from over four years of observations. This Special Session begins close by, with studies of the earliest signs of star-birth in the Galaxy, and rapidly expands out to include galaxies near and far. The topics are chosen to emphasize the remarkable power of Herschel at mapping gas and dust in nearby galaxies in great detail, as well as the probing of very distant dusty galaxies amplified by gravitational lenses. The talks will span from the heating and cooling of diffuse and dense gas in nearby galaxies, to feedback from starburst and active galactic nuclei (AGN) over cosmic time. The speakers are members of Herschel Key Programs, which collectively used 50% of all Herschel time. An important goal of the Session is to emphasize the incredible richness of the Herschel archive, to allow synergy with other facilities (Planck, CCAT, ALMA, SOFIA, JWST, SPICA), and to help provide a springboard to foster potentially new research programs at other wavelengths.

Chair(s):
David Ardila, Caltech

Organizer(s):
David Ardila, Caltech

327.01 From Protostars to Lensed Galaxies: The Immense Riches from Herschel
Helou, George¹; Pilbratt, Göran L.²
¹Caltech, Pasadena, CA. ²ESTEC, ESA, Noordwijk, Netherlands.

327.02 Unraveling the Evolution of Protostars in Diverse Environments: The Herschel Orion Protostar Survey
Megeath, S. Thomas¹
¹Univ. Of Toledo, Toledo, OH.
Contributing teams: and the Herschel Orion Protostar Survey Team

327.03 Herschel’s Unique View of Nearby Galaxies
Calzetti, Daniela¹
¹Univ. of Massachusetts, Amherst, MA.
Contributing teams: KINGFISH Team

327.04 Observations of Luminous Infrared Galaxies with Herschel
Armus, Lee¹
¹Caltech, Pasadena, CA.

327.05 Herschel’s Far-Infrared View of Galaxy Formation and Evolution
Bock, James¹ ²
¹California Institute of Technology, Pasadena, CA. ²Jet Propulsion Laboratory, Pasadena, CA.
328 Galaxies II - Starbursts

Wednesday, 2:00 PM - 3:30 PM; Potomac Ballroom C

Chair(s): Sara Petty, Virginia Tech

328.01 Atomic Gas Distribution in HCG31 and HCG92
Borthakur, Sanchayeeta; Yun, Min Su; Verdes-Montenegro, Lourdes; Heckman, Timothy M.; Zhu, Guangtun

1Johns Hopkins University, Baltimore, MD. 2University of Massachusetts, Amherst, MA. 3Instituto de Astrofisica de Andalucia, Granada, Spain.

328.02 Do Lyman-alpha photons escape from star-forming galaxies through dust holes?
France, Kevin; Wofford, Aida; Leitherer, Claus; Fleming, Brian; McCandliss, Stephan R.; Nell, Nicholas

1CASA / Colorado, Boulder, CO. 2IAP, Paris, France. 3STScI, Baltimore, MD. 4JHU, Baltimore, MD.

328.03D Neutral Gas and Low-Redshift Starbursts: From Infall to Ionization
Jaskot, Anne; Oey, M. S.; Salzer, John J.; Van Sistine, Angela; Haynes, Martha P.

1University of Michigan, Ann Arbor, MI. 2Indiana University, Bloomington, IN. 3Cornell University, Ithaca, NY.

328.04 Discovery of GeV Gamma-ray Emission from the Circinus Galaxy with the Fermi-LAT
Madejski, Grzegorz M.; Hayashida, Masaaki; Stawarz, Lukasz; Cheung, Chi C.; Bechtol, Keith

1Stanford Linear Accelerator Ctr / KIPAC., Menlo Park, CA. 2Institute for Cosmic Ray Research / Univ. of Tokyo, Kashiwa City, Chiba, Japan. 3Naval Research Lab, Washington, DC. 4KITP, Univ. of Chicago, Chicago, IL. 5ISAS / JAXA, Tokyo, Japan.
Contributing teams: On Behalf of the Fermi - LAT Team

328.05D A Survey of the Cool Molecular ISM Properties of Nearby Galaxies using the Herschel FTS
Kamenetzky, Julia R.

1University of Colorado, Boulder, CO.

329 Galaxies III - Andromeda and Nearby Disks

Wednesday, 2:00 PM - 3:30 PM; National Harbor 3

Chair(s): Peter Yoachim, University of Washington

329.01D Understanding the Structure and Evolution of Nearby Disk Galaxies
Zheng, Zheng

1Johns Hopkins University, Baltimore, MD.
Kapala, Maria¹; Sandstrom, Karin¹,²; Groves, Brent³; Croxall, Kevin V.³; Dalcanton, Julianne⁴; Gordon, Karl D.⁵; Krause, Oliver¹; Kreckel, Kathryn¹; Leroy, Adam K.⁶; Rix, Hans-Walter¹; Schinnerer, Eva¹; Walter, Fabian¹

¹Max Planck Institute for Astronomy, Heidelberg, Germany. ²University of Arizona, Tucson, AZ. ³Ohio State University, Columbus, OH. ⁴University of Washington, Seattle, WA. ⁵Space Telescope Science Institute, Baltimore, MD. ⁶National Radio Astronomy Observatory, Charlottesville, VA.

**329.03D Life in the Outer Limits: Insight into Hierarchical Merging from the Outermost Structure of the Andromeda Stellar Halo**
Beaton, Rachael¹; Majewski, Steven R.¹; Patterson, Richard J.¹; Guhathakurta, Puragra²; Gilbert, Karoline³; Kalirai, Jason S.³; Tollerud, Erik J.⁴

¹Univ. of Virginia, Charlottesville, VA. ²UC-Santa Cruz, Santa Cruz, CA. ³STSci, Baltimore, MD. ⁴Yale, New Haven, CT.

Contributing teams: SPLASH Team

### 330 Gamma Ray Bursts: Phenomenology and Model

**Wednesday, 2:00 PM - 3:30 PM; Maryland Ballroom D**

**Chair(s):**

Jön Hakkila, *College of Charleston*

**330.01D UV/Optical and X-ray Flares in Gamma-ray Burst Light Curves**
Swenson, Craig A.; Roming, Peter¹; de Pasquale, Massimiliano²; Oates, Sam³

¹The Pennsylvania State University, University Park, PA. ²Southwest Research Institute, San Antonio, TX. ³Mullard Space Science Laboratory, Surrey, United Kingdom.

**330.02D Classification, Follow-up, and Analysis of GRBs and their Early-time NIR/Optical Afterglows**
Morgan, Adam¹; Bloom, Joshua S.; Perley, Daniel A.; Christian, Pierre⁴; Richards, Joseph¹; Cenko, Stephen B.; Klein, Christopher R.³

¹UC Berkeley, Berkeley, CA. ²Caltech, Pasadena, CA. ³Goddard, Greenbelt, MD. ⁴Harvard, Boston, MA.

**330.03 Classification and Energetics of Cosmological Gamma-Ray Bursts**
Shahmoradi, Amir¹; Nemiroff, Robert J.²

¹The University of Texas at Austin, Austin, TX. ²Michigan Technological University, Houghton, MI.

**330.04 Observations of GRBs at high-energy: the first Fermi LAT catalog, and a new and improved detection algorithm**
Vianello, Giacomo³; Omodei, Nicola³; Vasileiou, Vlasios³; Piron, Frederic³; Razzaque, Soebur³; Vianello, Giacomo³

¹Stanford University, Stanford, CA. ²Laboratoire Univers et Particules de Montpellier, Montpellier, France. ³University of Johannesburg, Johannesburg, South Africa.

**330.05 On the Metallicity Aversion of LGRBs**
Graham, John¹; Fruchter, Andrew S.³

¹Space Telescope Science Inst. and Johns Hopkins Univ., Baltimore, MD.
330.06 A New Model for GRB Prompt Emission Using Multiple Spectral Components & Impact on a Epeak-Luminosity Relation for Cosmology
Guiriec, Sylvain1,2
1NASA Goddard Space Flight Center, Washington, DC. 2University of Maryland College Park, College Park, MD.

330.07 Jet-powered supernovae and GRBs
Morsony, Brian J.1; Lazzati, Davide2; Blackwell, Christopher2,3; Begelman, Mitchell C.4
1Univ. Of Wisconsin Madison, Madison, WI. 2North Carolina State University, Raleigh, NC. 3University of Alabama, Huntsville, AL. 4University of Colorado, Boulder, Boulder, CO.

331 Interstellar Medium & Dust IV

Wednesday, 2:00 PM - 3:30 PM; National Harbor 12
Chair(s):
Shantanu Basu, Univ. of Western Ontario

331.01 Effects of an Embedded B-Star Wind on the Properties of a Molecular Cloud: Ophiuchus
Chen, How-Huan1; Goodman, Alyssa A.1
1Harvard University, Cambridge, MA.

331.02 New Diagnostics of MHD Turbulence in the Multiphase ISM
Burkhart, Blakesley K.1
1University of Wisconsin Madison, Madison, WI.

331.03 Ammonia Masers in W51: Interferometric Studies
Wilson, Thomas L.1
1Naval Research Laboratory, Washington, DC.
Contributing teams: T. E. Clarke (NRL), D. A. Boboltz NSF), C. Henkel (MPIfR), R. Mauersberger (Joint ALMA Observatory), H.A. Wootten (NRAO), N. Brouillet (Observatoire de Bordeaux), A. Baudry (Observatoire de Bordeaux),

331.04 A Systematic Deuteration Survey in the Gemini OB1 Molecular Cloud
Shirley, Yancy L.1
1Univ. of Arizona, Tucson, AZ.

331.05 Young Photodissociation Complexes in NGC 6822: Stars and PDRs
Carlson, Lynn1
1Leiden Observatory, Leiden, Netherlands.
Contributing teams: Dwarf Galaxy Survey Team

331.06 The chemical inventory of pre/proto-stellar cores
Marcelino, Nuria1; Cernicharo, Jose2; Roueff, Evelyne3; Gerin, Maryvonne4; Fuentes, Asuncion5
1National Radio Astronomy Observatory, Charlottesville, VA. 2Centro de Astrobiologia. INTA-CSIC, Madrid, Spain. 3Observatoire de Paris-Meudon, Meudon, France. 4Laboratoire de Radioastronomie ENS-LERMA, Paris, France. 5Observatorio Astronomico Nacional, Madrid, Spain.

331.07 Hydrogen Halides in the Local Universe
Monje, Raquel R.1; Lis, Dariusz C.1; Phillips, Thomas G.1; Neufeld, David A.2
1California Institute of Technology, Pasadena, CA. 2Johns Hopkins Univ., Baltimore, MD.
332 Large Scale Structure & Cosmic Distance II

Wednesday, 2:00 PM - 3:30 PM; National Harbor 4

Chair(s):
Michael West

332.01D The Nature of the Cross-Correlation Between the Unresolved near-IR and X-ray Backgrounds: Contributions of Galaxies, AGN and Diffuse Emissions
Helgason, Kari1,2; Cappelluti, Nico3; Hasinger, Guenther4; Kashlinsky, Alexander2; Ricotti, Massimo1
1University of Maryland College Park, College Park, MD. 2NASA GSFC, Greenbelt, MD. 3INAF-Osservatorio Astronomico di Bologna, Bologna, Italy. 4IfA University of Hawaii, Honolulu, HI.

332.02 The Large-Scale-Structural evolution of galaxies in the CANDELS and COSMOS fields
Darvish, Behnam1; Mobasher, Bahram1
1University of California, Riverside, Riverside, CA.
Contributing teams: CANDELS team, COSMOS team

332.03 Bridging the gap between theory and observations of galaxies across cosmic times
Li, YueXing1; Zhu, Qirong1; Zhao, Xinghai1; Yajima, Hidenobu2
1Penn State University, University Park, PA. 2The University of Edinburgh, Edinburgh, Midlothian, United Kingdom.

332.04D Assembly Bias Has a Non-monotonic Dependence on Halo Age
Walker, Jean P.1; Gawiser, Eric J.1; Padilla, Nelson2
1Rutgers University, Piscataway, NJ. 2Pontificia Universidad Católica de Chile, Santiago, Chile.

333 Public Policy: Perspectives from Congressional and White House Staff

Wednesday, 2:00 PM - 3:30 PM; Potomac Ballroom A

Funding for astronomy projects and research support in the US is in jeopardy due to deficit reduction measures. There may be improving prospects as the Nation’s economy improves, but all depends on the support that science receives in the administration and Congress. This is a good time for a lively panel discussion at the AAS involving science staff members from Congress and the White House. Having the meeting in Washington provides a unique opportunity to attract an expert panel. Panel members will be given questions to answer to stimulate discussion. There will also be time for audience questions.

334 Stars - Brown Dwarfs and YSOs

Wednesday, 2:00 PM - 3:30 PM; National Harbor 13

Chair(s):
Stanimir Metchev, SUNY Stony Brook

334.01 Retrieval of Temperatures and Abundances in Brown Dwarf Atmospheres
Line, Michael R.1; Fortney, Jonathan J.1; Marley, Mark S.2; Morley, Caroline3
1University of California-Santa Cruz, Santa Cruz, CA. 2NASA Ames Research Center, Mountain View, CA.
334.02 Cloud Indicators in the Spectrum of the Closest Brown Dwarf Binary System
Faherty, Jacqueline K.1, 2

334.03 LHS 6343: Precise Constraints on the Mass and Radius of a Transiting Brown Dwarf Discovered by Kepler
Montet, Benjamin1; Johnson, John A.2; Muirhead, Philip S.4; Shporer, Avi1, 7; Howard, Andrew3; Baranec, Christoph5; Albert, Loic5
1California Institute of Technology, Pasadena, CA. 2Harvard University, Cambridge, MA. 3University of Hawaii, Manoa, HI. 4Boston University, Boston, MA. 5Universite de Montreal, Montreal, QC, Canada. 6University of Hawaii, Hilo, HI. 7Jet Propulsion Laboratory, Pasadena, CA.

Contributing teams: The Robo-AO Collaboration

334.04 Unusual Slowly Rotating Brown Dwarfs Discovered through Precision Spitzer Photometry
Heinze, Aren1; Metchev, Stanimir2, 1
1Stony Brook University, Stony Brook, NY. 2University of Western Ontario, London, ON, Canada.

334.05D Are Extreme T Dwarf Color Outliers Revealing Their Ages?
Mace, Gregory N.1
1UCLA, Los Angeles, CA.

334.06 The GALEX Nearby Young-Star Survey
Rodriguez, David1; Zuckerman, Ben M.2; Kastner, Joel H.3; Vican, Laura2; Bessell, Michael S.4; Faherty, Jacqueline K.5, 6; Murphy, Simon7
1Universidad de Chile, Santiago, Chile. 2UCLA, Los Angeles, CA. 3Rochester Institute of Technology, Rochester, NY. 4Australian National University, Canberra, ACT, Australia. 5Carnegie Department of Terrestrial Magnetism, Washington, DC. 6American Museum of Natural History, New York, NY. 7Astronomisches Rechen-Institut, Heidelberg, Germany.

334.07D Near-Infrared JHK Spectroscopy of Young Stellar and Substellar Objects in Orion
Ingraham, Patrick1, 2
1Stanford, Stanford, CA. 2Université de Montréal, Montréal, QC, Canada.

335 Supernovae & Nebulae IV

Wednesday, 2:00 PM - 3:30 PM; National Harbor 10

Chair(s):
Howie Marion, Harvard - CfA

335.01D Host Galaxy Spectra and Consequences for SN Typing From the SDSS SN Survey
Olmstead, Matt1; Brown, Peter1, 2; Dawson, Kyle S.1; Nichol, Robert1; Hlozek, Renee4
1Physics and Astronomy, University of Utah, Salt Lake City, UT. 2Texas A. & M. University, College Station, TX. 3University of Portsmouth, Portsmouth, United Kingdom. 4Princeton University, Princeton, NJ.
335.02 Type Ia Supernova Colors and Si II Velocities: Hierarchical Bayesian Regression with Non-Gaussian Distributions
Mandel, Kaisey1; Foley, Ryan J.2; Kirshner, Robert P.1
1Harvard University, Cambridge, MA. 2University of Illinois-Urbana Champaign, Urbana-Champaign, IL.

335.03 Inferring Ejected Masses of Type Ia Supernovae from Nearby Supernova Factory Data
Scalzo, Richard A.1; Aldering, Gregory S.2; Antilogus, Pierre3; Aragon, Cecilia2; Bailey, Stephen J.2; Baltay, Charles6; Bongard, Sebastien4; Buton, Clement6; Canto, Arnaud3; Cellier-Holzem, Flora3; Childress, Michael15; Chotard, Nicolas8; Copin, Yannick8; Fakhouri, Hannah2; Gangler, Emmanuel8; Guy, Julien8; Kowalski, Marek6; Kromer, Markus3; Nugent, Peter E.10; Pain, Reynald5; Pecontal, Emmanuel11,12; Pereira, Rui8; Perlmutter, Saul2,7; Rabinowitz, David L.5; Rigault, Mickael8; Runge, Karl2; Saunders, Clare2; Sim, Stuart1,12; Smadja, Gerard8; Tao, Charling13,14; Taubenberger, Stefan3; Thomas, Rollin10; Weaver, Benjamin15
1Australian National University, Weston, ACT, Australia. 2Lawrence Berkeley National Laboratory, Berkeley, CA. 3LPNHE, Universite Pierre et Marie Curie Paris, Paris, France. 4University of Washington, Seattle, WA. 5Yale University, New Haven, CT. 6Universitat Bonn, Bonn, Germany. 7University of California, Berkeley, Berkeley, CA. 8Universite de Lyon, Lyon, France. 9Max-Planck-Institut fur Astrophysik, Garching, Germany. 10Computational Cosmology Center, LBNL, Berkeley, CA. 11CRAL, Universite Lyon 1, Lyon, France. 12Queen’s University Belfast, Belfast, United Kingdom. 13CPPM, Marseilles, France. 14Tsinghua University, Beijing, China. 15New York University, New York, NY.

Contributing teams: Nearby Supernova Factory

335.04 Recurrent Novae Are Not Progenitors Of Type Ia Supernovae (Nor Are Any Binaries With Red Giant Or Sub-Giant Companion Stars)
Schaefer, Bradley E.1
1Louisiana State Univ., Baton Rouge, LA.

335.05 Supernova Simulations with a Quark-Gluon Plasma Phase
Olson, J. Pocahontas1; Meixner, Matthew1; Mathews, Grant J.1; Nguyen, Lan2; Dalhed, Hollis E.3
1Physics, University of Notre Dame, Notre Dame, IN. 2Hanoi National University of Education, Hanoi, Viet Nam. 3Lawrence Livermore National Laboratory, Livermore, CA.

335.06 Multidimensional Simulations of Rotating Pair Instability Supernovae
Chatzopoulos, Emmanouil1,2
1Department of Astronomy & Astrophysics, University of Chicago, Chicago, IL. 2FLASH Center for Computational Science, Chicago, IL.

Contributing teams: J. Craig Wheeler, Sean M. Couch

336 The Milky Way

Wednesday, 2:00 PM - 3:30 PM; Maryland Ballroom B
Chair(s):
Douglas Roberts, Adler Planetarium
336.01 Mapping the X-Shaped Structure of the Galactic Bulge
Nataf, David
1. Australian National University, Canberra, ACT, Australia.
Contributing teams: Optical Gravitational Lensing Experiment

336.02D The SEGUE K Giant Survey
Ma, Zhibo; Morrison, Heather L.; Harding, Paul; Rockosi, Constance M.; Lee, Young Sun; Janesh, William; Xue, Xiang-xiang; Johnson, Jennifer; Reding, Thomas
1. Case Western Reserve University, Cleveland, OH. 2. UCO/Lick Observatory, Santa Cruz, CA. 3. NMSU, Las Cruces, NM. 4. MPIA, Heidelberg, Germany. 5. Indiana University, Bloomington, IN. 6. OSU, Columbus, OH. 7. MSU, East Lansing, MI.
Contributing teams: SEGUE Collaboration

336.03 Relating Dark Matter to Tidal Streams with MilkyWay@home
Newberg, Heidi J.; Newby, Matthew; Arsenault, Matthew; Bauer, Jacob; Desell, Travis; Thompson, Jeffery; Weiss, Jake; Magdon-Ismail, Malik; Szymanski, Boleslaw; Varela, Carlos

336.04 Improved Constraints on the Milky Way’s Star Formation Rate and Stellar Mass from Hierarchical Bayesian Analysis
Licquia, Timothy; Newman, Jeffrey
1. University of Pittsburgh, Pittsburgh, PA.

336.05 A MIPSGAL 24 micron Source Catalog for the Community
Gutermuth, Robert A.; Heyer, Mark H.
1. Univ. of Massachusetts, Amherst, MA.

336.06 First hard X-ray detection of the non-thermal emission around the Arches cluster: morphology and spectral studies with NuSTAR
Krivonos, Roman; Tomick, John; Bauer, Franz E.; Baganoff, Frederick K.; Barriere, Nicolas; Bodaghee, Arash; Boggs, Steven E.; Christensen, Finn; Craig, William W.; Greifenstette, Brian; Hailey, Charles J.; Harrison, Fiona; Hong, JaeSub; Madsen, Kristin; Mori, Kaya; Nynka, Melania; Stern, Daniel; Zhang, William
Contributing teams: The NuSTAR Team

336.07 XMM-Newton Observations of Fermi bubbles and the Magnetic Field of the Structure
Su, Meng
1. MIT, Cambridge, MA.
336.08 Morphology and gamma-ray spectrum of the Fermi bubbles
Malyshev, Dmitry\textsuperscript{1}; Franckowiak, Anna\textsuperscript{1}; Petrosian, Vahe\textsuperscript{2}
\textsuperscript{1}SLAC, KIPAC, Menlo Park, CA. \textsuperscript{2}Stanford University, Stanford, CA.
Contributing teams: Fermi Large Area Telescope collaboration

337 The Proper Use of GRE Scores and Noncognitive Measures for Enhancing Diversity and Excellence in Astronomy Graduate Programs

Wednesday, 2:00 PM - 3:30 PM; National Harbor 5

Standardized test scores (GREs) are a staple of graduate admissions criteria in physics and astronomy graduate programs. It has long been known that GRE scores are powerfully correlated with gender and ethnicity. New research (Miller & Stassun, 2013, Science, submitted) shows that women score on average ~60 points lower than men and African Americans score on average ~150 points lower than Caucasians on the General GRE Quantitative exam. These results apply for students who were undergraduate physical sciences majors and whose undergraduate GPAs were 3.7 or higher. It is common practice in top-tier physics and astronomy graduate programs to adopt a GRE “cutoff” on the quantitative GRE of ~700, either as a matter of policy or else as a subjective but strong weight. The new research shows that applying such a cutoff immediately eliminates more than two-thirds of women, roughly three-quarters of Hispanics, and nearly all African Americans from the applicant pool. This session will present a summary of this crucially important new research (including any similarly comprehensive research on the Physics GRE subject exam), will present complementary admissions strategies including psychometrically vetted noncognitive attributes such as “grit” that have been demonstrated to successfully predict success, and will engage the community in an open discussion of best practices for sustaining a commitment to broadened participation while maintaining standards of excellence focused on successful scientific careers. An aim of the session will be to produce a follow-up white paper for use by the community summarizing findings and recommendations.

Chair(s):
Keivan Stassun, Vanderbilt University

Organizer(s):
Keivan Stassun, Vanderbilt University

337.01 Using Minimum Acceptable GRE Scores for Graduate Admissions Suppresses Diversity
Miller, Casey\textsuperscript{1}
\textsuperscript{1}Univ of South Florida, Tampa, FL.

337.02 Why Doesn’t The GRE or GPA Work in Selecting Graduate Students & What Alternatives Are There?
Sedlacek, William\textsuperscript{1}
\textsuperscript{1}Univ of Maryland, College Park, MD.

337.03 Going beyond standardized exam scores in graduate admissions: Enhancing diversity and predicting success
Stassun, Keivan\textsuperscript{1,2}
\textsuperscript{1}Vanderbilt University, Nashville, TN. \textsuperscript{2}Fisk University, Nashville, TN.

Panel Discussion
U.S. Science Policy Talk

Wednesday, 3:40 PM - 4:30 PM; Potomac Ballroom A
Chair(s):
David Helfand, AAS President

Senior U.S. Government Official (Invited)
Assistant to the President for Science and Technology
Director of the Office of Science and Technology Policy

With the U.S. focused on deficit reduction, there is little prospect for real growth in federal funding for the astronomical sciences in the near future. As we face these austere times, it is important to understand how U.S. science policy is shaped within the federal government. Our invited speaker will deliver remarks on the current and potential future state of U.S. science policy, especially as it relates to the astronomical sciences, and take questions from the audience as time permits.

338 Astronomy and Public Policy

Wednesday, 4:30 PM - 5:20 PM; Potomac Ballroom A
Astronomy and Public Policy
Chair(s):
Paula Szkody, Univ. of Washington

338.01 Astronomy and Public Policy
Suntzeff, Nicholas B.¹
¹Texas AandM University, College Station, TX.

Evening Poster Session

Wednesday, 5:30 PM - 6:30 PM; Exhibit Hall ABC

The First Annual Buchalter Cosmology Prize

Wednesday, 5:30 PM - 6:30 PM; National Harbor 11

The Buchalter Cosmology Prize is designed to stimulate truly innovative breakthrough research in cosmology, specifically around ideas that explain the cosmic expansion from basic principles. It was created to support the development of bold new thinking that might challenge currently accepted paradigms such as inflation and dark energy. This session will briefly introduce the work that inspired the prize, and present details, qualifications, and logistics around submissions for the prize. Multiple prizes are expected to be awarded annually, with $10,000 awarded for first place. This is a public session open to all interested attendees who work in theoretical or observational cosmology, with no pre-registration required.

Organizer(s):
Ari Buchalter, Caltech
Korean Astronomer Symposium

Wednesday, 6:30 PM - 8:00 PM; Maryland 1

Korean astronomers both in USA and in Korea get together and present their science and telescope projects and discuss future direction as a community. Korean astronomy community is rapidly growing. Recently, Korean astronomers have been participating in various observations, strong theoretical work, and space/ground-based missions such as GALEX, AKARI and GMT. The main goal of this event is to establish the network among the Korean astronomers in this field and to introduce their research activities in the US and Korea to each other. We invite astronomers from international communities, including the AAS members who are interested in science and telescope project collaborations or exploring future collaborations with Korean Astronomy community. To participate presentation at the session, contact Dr. Jeonghee Rho, jrho@sofia.usra.edu or Prof. Sangwook Park, s.park@uta.edu.

Organizer(s):
Sangwook Park, University of Texas at Arlington
Jeonghee Rho, SETI Institute and NASA Ames Research

Career Discovery Networking Reception

Wednesday, 6:30 PM - 7:30 PM; Maryland Ballroom D

339 Preparing for Future NASA Missions: The Strategic Astrophysics Technology Program

Wednesday, 6:30 PM - 8:00 PM; National Harbor 2

Over the next decade and beyond, NASA’s Astrophysics Division anticipates soliciting space flight missions to explore the nature of the universe. These missions will study how galaxies and stars formed and evolved to shape the universe we see today, and will search out and characterize the planets and planetary systems orbiting other stars. As compelling as these future missions will be, implementing them presents many daunting technological challenges. NASA’s Astrophysics Division has established the Strategic Astrophysics Technology (SAT) program to overcome these challenges and pave the way to ever more ambitious missions. The SAT program is intended to mature key technologies to the point at which they are feasible for implementation in space flight missions. In this session, NASA representatives will present an overview of the SAT program including technologies of interest for all three themes (Physics of the Cosmos, Cosmic Origins and Exoplanets), targeted technology readiness levels (TRL), and the scope of already approved investigations and their promised outcomes. Following this introduction, a series of presenters, all current participants in the SAT program, will provide a snapshot of their individual technology development and relate how they could enable or enhance future NASA missions. A companion poster session will showcase the full breadth of SAT research across all three.

Chair(s):
Mario Perez, NASA Headquarters

Organizer(s):
Mario Perez, NASA Headquarters
339.01 Starshades for Exoplanet Imaging and Characterization
Kasdin, N. J.; Vanderbei, Robert J.; Shaklan, Stuart; Lisman, Doug; Thomson, Mark; Cady, Eric; Macintosh, Bruce; Sirbu, Dan; Lo, Amy
1 Princeton University, Princeton, NJ. 2 Jet Propulsion Laboratory, Pasadena, CA.
3 Lawrence Livermore National Laboratory, Livermore, CA. 4 Northrop-Grumman Aerospace Systems, Redondo Beach, CA.

339.02 Next Generation X-ray Optics: High Angular Resolution, Light Weight, and Low Production Cost
Zhang, William
1 NASA’s GSFC, Greenbelt, MD.
Contributing teams: NGXO

339.03 Advanced Antenna-Coupled Superconducting Detector Arrays for CMB Polarimetry
Bock, James
1 California Institute of Technology, Pasadena, CA. 2 Jet Propulsion Lab, Pasadena, CA.

339.04 Cross strip anode readouts for microchannel plate detectors: developing flight qualified prototypes.
Vallerga, John; Cooney, Michael; Raffanti, Rick; Varner, Gary; Siegmund, Oswald; McPhate, Jason B.; Tremsin, Anton
1 University of California, Berkeley, Berkeley, CA. 2 University of Hawaii at Manoa, Honolulu, HI. 3 Techne Instruments, Oakland, CA.

339.05 Advanced Mirror Technology Development for Very Large Space Telescopes
Stahl, H. P.
1 NASA, Huntsville, AL.
340 The Millimetron Space Mission

Wednesday, 6:30 PM - 8:00 PM; National Harbor 10

Millimetron is a space mission approved by the Russian Space Agency, which is being developed in Russia by a government, academic, and industrial collaboration, led by Dr. N. Kardashev of the Astro Space Center in Moscow. Key parameters include a 10 m diameter deployable telescope operating to 200 microns wavelength, with central 3 m portion operating to wavelengths as short as 50 microns. The spacecraft will be in a L2 halo orbit, and the telescope cooled by a combination of radiation shields and cryocoolers to a temperature of 4.5 K. Building on the success of the Radioastron mission (launched 18 July 2011), a major research area for Millimetron is to extend earth-space VLBI to millimeter and submillimeter wavelengths with ALMA and other facilities, covering frequencies up to 950 GHz. The highest angular resolution of 40 nanoarcseconds (2x10 in unprecedented detail of supermassive black holes, jets, and accretion processes. It will also be possible to study water megamasers with ~10 microarcseconds resolution binary objects and gravitational lenses at high redshift. Millimetron instrumentation will include a low-resolution imaging spectrometer covering 100 to 1000 GHz in 4 bands with frequency resolution of 1.25 GHz. This will be used to study the SZ effect in a large sample of clusters, and make a survey of 1000+ high z galaxies in the C+ fine structure line. A high spectral resolution multipixel heterodyne spectrometer is also envisioned, covering key spectral ranges between 350 GHz and 6000 GHz. With an angular resolution of 4” at [CII] 158 μm and 5” at [OI] 63 μm, dramatically detailed studies of molecular cloud formation, evolution, and star formation in nearby galaxies will be enabled, complementing CO data anticipated from ALMA. Other species that will be observable include CH, HeH+ session will review the plan for the mission, the instrumentation envisioned, and present some of the astronomical highlights of the science program.

Chair(s):
Paul Goldsmith, JPL
Organizer(s):
Paul Goldsmith, JPL

340.01 Millimetron Mission and Instruments
Smirnov, A.1
1Astro Space Center of P.N. Lebedev Physical Institute, Moscow, Russian Federation.

340.02 Millimetron and Earth-Space VLBI
Likhachev, S.1
1Astro Space Center, Moscow, Russian Federation.

340.03 Millimetron and Submillimeter Spectroscopy
Goldsmith, Paul1
1JPL, Pasadena, CA.

340.04 Millimetron and the universe of galaxies and clusters
de Bernardis, Paolo1
1University La Sapienza, Roma, Italy, Italy.
Contributing teams: the MRI collaboration

340.05 Millimetron Cosmology and Fundamental Physics
Colafrancesco, Sergio1, 2
1WITS University, Johannesburg, South Africa. 2SKA South Africa, Johannesburg, South Africa.
340.06 Millimetron in the age of ALMA  

de Graauw, Thijs ¹  
¹Astro Space Centre of P.N. Lebedev Physical Institute, Moscow, Russian Federation.

341 Wide Field InfraRed Space Telescope (WFIRST)  

Wednesday, 6:30 PM - 8:00 PM; National Harbor 3  

WFIRST is the top ranked large space mission of the Astro2010 Decadal Survey. NASA has recently acquired two “Hubble class” 2.4m mirror telescopes, one of which is being baselined for WFIRST. The NASA name for this configuration of the mission is the Astrophysics Focused Telescope Assets (AFTA). The predicted performance is impressive with IR surveys covering 1000’s of square degrees to 27th magnitude. In addition to a wide-field imaging camera with a grism and an IFU spectrograph, a high contrast coronagraph will significantly advance exoplanet direct imaging, the highest ranked ASTRO2010 mid-scale priority. Observing time will be available to the community through a vigorous Guest Investigator program. The mission will make large advances in studies of dark energy, exoplanets, galaxy formation and many other areas of extragalactic, galactic and solar system astrophysics. This session will examine the scientific opportunities made available by the utilization of one of the 2.4m telescopes for the WFIRST-AFTA mission.

Chair(s):  
Neil Gehrels, NASA’s GSFC  
Organizer(s):  
Neil Gehrels, NASA’s GSFC  
David Spergel, Princeton University

341.01 How a 2.4 meter telescope makes WFIRST a more powerful and wide-ranging mission  
Spergel, David N. ¹  
¹Princeton Univ. Obs., Princeton, NJ.

341.02 Exoplanet Demographics with WFIRST-AFTA  
Gaudi, B. S.¹  
¹Ohio State Univ., Columbus, OH.  
Contributing teams: WFIRST-AFTA Science Definition Team

341.03 Coronagraphy on AFTA-WFIRST  
Kasdin, N. J.¹; Guyon, Olivier²; Greene, Thomas P.³; Macintosh, Bruce⁴; Traub, Wesley A.²  
¹Princeton University, Princeton, NJ. ²Jet Propulsion Laboratory, Pasadena, CA. ³NASA Ames Research Center, Mountain View, CA. ⁴Lawrence Livermore National Laboratory, Livermore, CA. ⁵University of Arizona, Tucson, AZ.

341.04 WFIRST Supernova Dark Energy Program Capabilities  
Perlmutter, Saul¹  
¹UC, Berkeley, Berkeley, CA.

341.05 WFIRST dark energy observations in the context of Euclid and LSST  
Bean, Rachel ¹  
¹Cornell Univ., Ithaca, NY.
Anomalous Properties of Galaxies in the Perseus Cluster

Wednesday, 7:00 PM - 8:30 PM; National Harbor 12

A discussion of anomalous structural features and dynamics, interactions, and contents of member galaxies in the extremely dense environment of the Perseus Cluster. Perseus is one of the nearest rich clusters and a detailed, multiwavelength study of unusual individual galaxies, interactions between members and subtle fine-scale features which have become observable with the new class of high-resolution telescopes will offer great insight into the evolutionary processes of early type galaxies in clusters, as well as the proposed transformation of late-type to early type galaxies that is likely to occur during infall into the gravitational well of the cluster. NGC-1275 itself, the central (cD) galaxy of the cluster, has some very interesting features which deserve further examination by comparing features across a variety of wavebands.

RAS Gold Medal Lecture: Some Puzzles in High-Energy Astrophysics, Roger Blandford

Wednesday, 8:00 PM - 9:00 PM; Potomac Ballroom A

Despite extraordinary observational and interpretive progress over the past half century, there are many puzzles that challenge our understanding of fundamental physics and the astronomical context in which they arise. Some are longstanding, such as validating the general-relativistic description of black holes, understanding how neutron stars operate, and locating the origin of ultrahigh-energy cosmic rays. Some are of more recent provenance, such as explaining rapid variability in extended sources, identifying the nature of short gamma-ray bursts, and accounting for distant blasts of coherent radio emission. All are connected, and observations using current and upcoming facilities should lead to significant progress on each of them as well as to new discoveries — which will, no doubt, beget fresh puzzles.

Chair(s):
David Helfand, Quest University Canada
POSTERS

343 Time Domain Astronomy, the Large Synoptic Survey Telescope, and Transient Follow-up Poster Session

Wednesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

343.01 Variable target discovery rates in the LSST survey
Ridgway, Stephen T.1; Matheson, Thomas1; Mighell, Kenneth J.1; Olsen, Knut A.1; Howell, Steve B.2
1 NOAO, Tucson, AZ. 2 NASA Ames Research Center, Moffett Field, CA.

343.02 ANTARES: A Prototype Transient Broker System
Matheson, Thomas1; Saha, Abhijit1; Snodgrass, Richard2; Kececioglu, John2
1 NOAO, Tucson, AZ. 2 University of Arizona, Department of Computer Science, Tucson, AZ.

343.03 LSST Capability for Transiting Exoplanet Detections
Lund, Michael1; Pepper, Joshua3, 1; Stassun, Keivan1, 2
1 Vanderbilt University, Nashville, TN. 2 Fisk University, Nashville, TN. 3 Lehigh University, Bethlehem, PA.

343.04 Multidimensional Quasar Classification for Next Generation Surveys
Peters, Christina M.1; Richards, Gordon T.1
1 Drexel University, Philadelphia, PA.

343.05 Towards Precision Quasar Light Curve Photometry with the Pan-STARRS1 Survey
Liu, Tingting1; Gezari, Suvi1
1 University of Maryland, College Park, MD.
Contributing teams: The Pan-STARRS1 Science Collaboration

343.06 Photometric and Astrometric Characterization of the La Silla QUEST AGN Variability Survey
Coppi, Paolo S.1; Cartier, Regis A.2
1 Yale Univ., New Haven, CT. 2 University of Chile, Santiago, Chile.
Contributing teams: The QUEST Team

343.07 Improving the LSST Observing Cadence for Type Ia Supernovae
Carroll, Christopher M.1, 2; Gawiser, Eric J.1; Jha, Saurabh1; Kurczynski, Peter1; Biswas, Rahul2; Cinabro, David2; Jones, R. L.2; Wood-Vasey, W. M.6
1 Dartmouth College, Hanover, NH. 2 Rutgers University, New Brunswick, NJ. 3 University of Washington, Seattle, WA. 4 Argonne National Laboratory, Lemont, IL. 5 Wayne State University, Detroit, MI. 6 University of Pittsburgh, Pittsburgh, PA.

343.08 Optimizing the LSST Dither Pattern for Dark Energy Studies
Gawiser, Eric J.1; Carroll, Christopher M.2, 1; Kurczynski, Peter1; Jones, R. L.3; Sonawalla, Aneesa4, 1; Bailey, Rachel1; Krughoff, K. S.3
1 Rutgers University, Piscataway, NJ. 2 Dartmouth College, Hanover, NH. 3 University of Washington, Seattle, WA. 4 University of Chicago, Chicago, IL.
Contributing teams: LSST Dark Energy Science Collaboration
344 Preparing for Future NASA Missions Poster Session

Wednesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

344.01 Overview and Summary of the Advanced Mirror Technology Development Project
Stahl, H. P.1
1NASA, Huntsville, AL.

344.02 Protective coatings for FUV to NIR advanced telescope mirrors
Balasubramanian, Kunjithapatham1; Nikzad, Shouleh1; Hennessy, John2; Raouf, Nasrat3; Green, James C.4; Scowen, Paul A.5
1Jet Propulsion Laboratory, Pasadena, CA. 2California Institute of Technology, Pasadena, CA. 3Arizona State University, Tempe, AZ. 4University of Colorado, Boulder, CO.

344.03 MEMS Deformable Mirror Technology Development for Space-Based Exoplanet Detection
Bierden, Paul1; Cornelissen, Steven1; Ryan, Peter1
1Boston Micromachines Corp., Cambridge, MA.

344.04 Telescope Design for a Space-Based Gravitational-Wave Observatory
Livas, Jeffrey C.1
1NASA Goddard Space Flight Center, Greenbelt, MD.

344.05 Demonstrating Enabling Technologies for the High-Resolution Imaging Spectrometer of the Next NASA X-ray Astronomy Mission
Kilbourne, Caroline1; Adams, Joseph S.1; Bandler, Simon1; Chervenak, James1; Chiao, Meng1; Dorisee, Randy1; Eckart, Megan1; Finkbeiner, Fred1; Fowler, Joseph W.1; Hilton, Gene2; Irwin, Kent1; Kelley, Richard L.1; Moseley, Samuel J.1; Porter, Frederick S.1; Reintsema, Carl1; Sadleir, John1; Smith, Stephen J.1; Swetz, Daniel1; Ullom, Joel1
1NASA GSFC, Greenbelt, MD. 2NIST – Boulder, Boulder, CO. 3Stanford University, Stanford, CA.

344.06 Physics of the Cosmos (PCOS) Technology Development Program Overview
Pham, B. Thai1; Clampin, Mark1; Werneth, Russ L.1
1NASA, Greenbelt MD, MD.

344.07 Cosmic Origins (COR) Technology Development Program Overview
Werneth, Russell1; Pham, B. Thai1; Clampin, Mark1
1NASA, Greenbelt MD, MD.

344.08 Recent progress in adjustable X-ray optics for astronomy
Reid, Paul B.; Allured, Ryan1; Cotroneo, Vincenzo1; McMuldoch, Stuart1; Marquez, Vanessa1; Schwartz, Daniel A.1; Vikhlinin, Alexey1; O’Dell, Stephen L.1; Ramsey, Brian1; Trolie-Mckinstry, Susan1; Johnson-Wilke, Raegan3; Wilke, Rudeger H.3
1Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 2NASA MSFC, Huntsville, AL. 3The Pennsylvania State University, State College, PA.

344.09 Toward Directly-Deposited Optical Blocking Filters for High-performance, Back-illuminated Imaging X-ray Detectors
Bautz, Mark W.1; Kissel, Steven E.1; Ryu, Kevin2; Suntharalingam, Vyshnavi2
1MIT, Cambridge, MA. 2MIT Lincoln Laboratory, Lexington, MA.
344.10 The Next Generation of X-Ray Reflection Gratings
McEntaffer, Randall L.¹
¹University of Iowa, Iowa City, IA.
Contributing teams: The Off-Plane X-ray Grating Spectrometer Team

344.11 Progress with NASA Technology Development for Exoplanet Missions (TDEM)
Lawson, Peter R.¹
¹Jet Propulsion Laboratory, Pasadena, CA.
Contributing teams: Exoplanets, technology, coronagraphs, starshades

344.12 Colloid Microthruster Feed System Development for Fine Pointing and Drag-Free Control of Multi-Year Astronomical Observatories
Ziemer, John¹; Mueller, Juergen¹; Spence, Douglas²; Hruby, Vlad²
¹Jet Propulsion Laboratory, Pasadena, CA.²Busek Co., Inc., Natick, MA.

344.13 Testing Starshade Manufacturing and Deployment Through NASA's Technology Development for Exoplanet Missions Program
Kasdin, N. J.¹; Shaklan, Stuart²; Lisman, Doug²; Thomson, Mark³; Cady, Eric²; Lo, Amy³; Macintosh, Bruce⁴
¹Princeton University, Princeton, NJ.²Jet Propulsion Laboratory, Pasadena, CA.³Northrop Grumman Aerospace Systems, Redondo Beach, CA.⁴Lawrence Livermore National Laboratory, Livermore, CA.

344.14 High Contrast Phase Occulted Visible Nulling Coronagraph for Arbitrary Telescope Apertures
Lyon, Richard¹; Clampin, Mark¹
¹NASA/Goddard Space Flight Center, Greenbelt, MD.

344.15 Achieving High Contrast for Exoplanet Imaging with a Kalman Filter and Stroke Minimization
Riggs, A J Eldorado¹; Groff, Tyler D.¹; Kasdin, N. J.¹; Carlotti, Alexis¹; Vanderbei, Robert J.¹
¹Princeton University, Princeton, NJ.

345 Young Stellar Objects Poster Session

345.01 The Brood of the Swan: A Multigenerational Stellar Population in M17?
Sanchez, Natalie¹; Povich, Matthew S.¹
¹Cal Poly Pomona, Pomona, CA.

345.02 Mid-Infrared Variability in Several Star Formation Regions.
Wolk, Scott J.¹; Guenther, Hans Moritz¹; Poppenhaeger, Katja¹; Forbrich, Jan²,¹
¹SAO, Cambridge, MA.²University of Vienna, Vienna, Austria.
Contributing teams: The YSOVAR Team

345.03 Young, Subarcsecond Binaries: Laboratories for Early Stellar and Circumstellar Disk Evolution
Prato, Lisa A.1
1.Lowell Observatory, Flagstaff, AZ.
Smith, Carter-Thaxton\(^1\), Rapson, Valerie\(^2\); Sargent, Benjamin A.\(^2\); Kastner, Joel H.\(^2\); Rayner, John\(^3\)
\(^1\)University of Arizona, Tucson, AZ. \(^2\)Rochester Institute of Technology, Rochester, NY. \(^3\)NASA Infrared Telescope Facility, Honolulu, HI.

345.05 Pulsed Accretion in Young Stellar Objects: A Tale of Two Binaries
Muzerolle, James\(^1\); Flaherty, Kevin M.\(^2\); Balog, Zoltan\(^3\); Beck, Tracy L.\(^1\); Furlan, Elise\(^4\); Gutermuth, Robert A.\(^5\)
\(^1\)Space Telescope Science Institute, Baltimore, MD. \(^2\)Wesleyan University, Middletown, CT. \(^3\)MPIA, Heidelberg, Germany. \(^4\)IPAC, Pasadena, CA. \(^5\)University of Massachusetts, Amherst, MA.

345.06 YSOVAR: The Age of the Cepheus C Star Cluster
Luna, Jessica\(^1\); Covey, Kevin\(^1\)
\(^1\)Lowell Observatory, Flagstaff, AZ. \(^2\)University of Redlands, Redlands, CA.
Contributing teams: YSOVAR

345.07 YSOVAR: Young Star Variations on Timescales of Years
Rebull, Luisa M.\(^1\)
\(^1\)Caltech, Pasadena, CA.
Contributing teams: YSOVAR team

345.08 Detection of Masers Toward Young Stellar Objects in the LMC
Johanson, Adam\(^1\); Migenes, Victor\(^1\)
\(^1\)Brigham Young University, Provo, UT.

345.09 Study of the Outflow and Disk surrounding a Post-Outburst FU-Orionis Star
Mellon, Samuel N.\(^1\); Perez, Laura M.\(^2\)
\(^1\)Westminster College, New Wilmington, PA. \(^2\)National Radio Astronomy Observatory, Socorro, NM.

345.10 Heating the Primordial Soup: X-raying the Circumstellar Disk of T Cha
Principe, David\(^1\); Huenemoerder, David\(^2\); Kastner, Joel H.\(^1\); Bessell, Michael S.\(^3\); Sacco, Giuseppe\(^4\)
\(^1\)Rochester Institute of Technology, Rochester, NY. \(^2\)Massachusetts Institute of Technology, Cambridge, MA. \(^3\)Australia National University, Acton, ACT, Australia. \(^4\)INAF-Osservatorio Astrofisico di Arcetri, Firenze, Italy.

345.11 X-ray and Characteristic Properties of Young Stellar Objects Identified in NGC 3576
O’Donnell, Christine\(^1\); Dierienzo, William J.\(^1\); Indebetouw, Remy\(^1\); Beaton, Rachael\(^1\)
\(^1\)University of Virginia, Charlottesville, VA. \(^2\)National Radio Astronomy Observatory, Charlottesville, VA.

345.12 A Chandra X-ray Observation of the Jet-Driving T Tauri Star RW Aur
Skinner, Steve L.\(^1\); Guedel, Manuel\(^2\)
\(^1\)Univ. Of Colorado, Boulder, CO. \(^2\)Univ. of Vienna, Vienna, Austria.

345.13 Emission Line Profiles in T Tauri Stars
Podel, Jennifer\(^1\); Edwards, Suzan\(^1\); Feng, Wanda\(^1\)
\(^1\)Smith College, Northampton, MA.

Kang, Sung-Ju\(^1\); Kerton, Charles R.\(^1\)
\(^1\)Iowa State University, Ames, IA.
345.15 **WISE Identified Young Stellar Objects In BRC 38**

Gibbs, John¹; Rebull, Luisa M.²; Laurence, Wendi³; Marshall, Robert⁴; Murphy, Michael⁵; Orr, Laura⁶; Whitworth, Christi⁷; Burton, Anna¹; Corris, Taylor¹; Goodey, Sean¹; McGinnis, Stewart¹; Laurence, Connor⁸; Aschman, Olivia¹; Kikuchi, Robin¹; Prather, Jonathan¹; Whitley, Lee³; Billings, Chad⁶; Mader, Caleb⁶

¹Glencoe High School, Hillsboro, OR. ²Caltech, Pasadena, CA. ³Portland State University, Portland, OR. ⁴Carnegie Science Center, Pittsburgh, PA. ⁵Ravenscroft School, Raleigh, NC. ⁶Ukiah High School, Ukiah, OR. ⁷Pisgah Astronomical Research Institute, Rosman, NC. ⁸Treasure Mountain Junior High, Park City, UT.

345.16 **Evidence for UV Shielding of H2O in DG Tau**

Carr, John S.¹; Najita, Joan R.²

¹Naval Research Laboratory, Washington, DC. ²National Optical Astronomy Observatory, Tucson, AZ.

345.17 **Abundances in the High-Latitude Herbig Ae Star PDS2**

Cowley, Charles R.¹; Hubrig, Swetlana²; Przybilla, Norbert³

¹University of Michigan, Ann Arbor, MI. ²Leibniz-Institute fur Astrophysik, Potsdam, Germany. ³Inst. fur Astro- und Teilchen Physik, Innsbruck, Austria.

345.18 **The curious morphology and orientation of Orion proplyd HST10**

Shuping, Ralph¹ ²; Kassis, Marc³; Bally, John⁴; Morris, Mark⁵

¹Space Science Institute, Boulder, CO. ²USRA-SOFIA, Moffett Field, CA. ³W. M. Keck Observatory, Hilo, HI. ⁴Center for Astrophysics and Space Astronomy, CU Boulder, Boulder, CO. ⁵Dept. of Physics, Astronomy Division, UCLA, Los Angeles, CA.

345.19 **Inferring Magnetic Fields in Low-Velocity Radiative Shocks**

Wright, Anna¹

¹Rice University, Houston, TX.

Contributing teams: Patrick Hartigan

345.20 **The VLA Perseus Young Protostellar Disk and Multiplicity Survey: A First Look**

Segura-Cox, Dominique¹; Tobin, John J.²; Chandler, Claire J.³; Dunham, Michael M.⁴; Kratter, Kaitlin M.⁵; Li, Zhi-Yun⁶; Looney, Leslie¹; Melis, Carl¹; Perez, Laura M.³; Sadavoy, Sarah⁸

¹University of Illinois, Urbana, IL. ²NRAO, Charlottesville, VA. ³NRAO, Socorro, NM. ⁴Yale University, New Haven, CT. ⁵University of Arizona, Tucson, AZ. ⁶University of Virginia, Charlottesville, VA. ⁷University of San Diego, San Diego, CA. ⁸MPIA, Heidelberg, Germany.

345.21 **Our Youngest Neighbors: Brown Dwarfs in Nearby Moving Groups**

Riedel, Adric R.¹, ²; Blunt, Sarah C.¹, ²; Cruz, Kelle L.¹, ²; Rice, Emily L.³, ²; Faherty, Jacqueline K.³, ²

¹Hunter College, New York City, NY. ²American Museum of Natural History, New York City, NY. ³The College of Staten Island, New York City, NY. ⁴Brown University, Providence, RI. ⁵Carnegie Institute of Washington, Washington, DC.

Contributing teams: BDNYC

345.22 **Herschel Shines Light on the Episodic Evolutionary Sequence of Protostars**

Green, Joel D.¹

¹University of Texas at Austin, Austin, TX.

Contributing teams: DIGIT, FOOSH, and COPS teams
345.23 Time-Series Position-Velocity Diagrams of the Jet and Low-Velocity Components in HH 444
Hartigan, Patrick M.\(^1\); Jones, Sharad K.\(^1\)
\(^1\)Rice Univ., Houston, TX.

345.34 Detection of Radio Outbursts of Young Low-Luminosity Protostars
Choi, Minho\(^1\); Lee, Jeong-Eun\(^2\); Kang, Miju\(^1\)
\(^1\)Korea Astronomy and Space Science Institute, Daejeon, Daejeon, Korea, Republic of. \(^2\)Kyung Hee University, Yongin, Kyungki, Korea, Republic of.

346 The Milky Way, The Galactic Center Poster Session

346.01 The Radial Velocity Experiment RAVE
Steinmetz, Matthias\(^1\)
\(^1\)Leibniz-Institut fuer Astrophysik Potsdam (AIP), Potsdam, Brandenburg, Germany.
Contributing teams: RAVE collaboration

346.02 The Radial Velocity Experiment (RAVE): Fourth Data Release
Kordopatis, Georges\(^1\)
\(^1\)University of Cambridge, Institute of Astronomy, Cambridge, United Kingdom.
Contributing teams: RAVE collaboration

346.03 A new stellar chemo-kinematic relation reveals the merger history of the Milky Way disk
Minchev, Ivan\(^1\)
\(^1\)Leibniz Institute for Astrophysics Potsdam (AIP), Potsdam, Germany.
Contributing teams: RAVE collaboration

346.04 The low metallicity tail of the thick disc seen by RAVE
Gilmore, Gerard\(^1\); Kordopatis, Georges\(^1\)
\(^1\)Institute of Astronomy, Cambridge, United Kingdom.
Contributing teams: RAVE collaboration

346.05 Kinematic Modeling Of The Milky Way Using The RAVE And GCS Stellar Surveys
Sharma, Sanjib\(^1\)
\(^1\)University Of Sydney, Sydney, NSW, Australia.
Contributing teams: RAVE Collaboration

346.06 Mapping Tidal Streams and Tails around Galactic Globular Clusters using RAVE
Kunder, Andrea\(^1\); Steinmetz, Matthias\(^1\)
\(^1\)Leibniz Institute of Astrophysics, Potsdam, Germany.
Contributing teams: RAVE collaboration

346.07 Constructing a three dimensional map of the diffuse interstellar band at 862 nm from RAVE data
Kos, Janez\(^2\); Zwitter, Tomaz\(^1\); Steinmetz, Matthias\(^2\)
\(^1\)University of Ljubljana, Faculty of mathematics and physics, Ljubljana, Slovenia. \(^2\)Leibniz-Institut fuer Astrophysik Potsdam (AIP), Potsdam, Germany.
Contributing teams: RAVE team

346.08 Finding ultra-faint dwarf galaxies with RR Lyrae
Baker, Mariah\(^1\); Willman, Beth\(^1\)
\(^1\)Haverford College, Haverford, PA.
346.09 **Accretion History and Mass of the Milky Way Halo: HST Proper Motions and Keck Spectra**
Cunningham, Emily C.; Deason, Alis J.; Guhathakurta, Puragra; Rockosi, Constance M.; Barro, Guillermo; Van Der Marel, Roeland P.; Sohn, S. Tony; Anderson, Jay

1 UCSC, Santa Cruz, CA. 2 STScI, Baltimore, MD.

Contributing teams: HSTPROMO Collaboration, HALO7D Collaboration

346.10 **Action-space clustering of tidal streams to infer the Galactic potential**
Sanderson, Robyn; Helmi, Amina; Hogg, David W.

1 Kapteyn Astronomical Institute, Groningen, Netherlands. 2 Center for Cosmology and Particle Physics, Department of Physics, New York University, New York, NY. 3 Max-Planck-Institut für Astronomie, Heidelberg, Germany.

346.11 **Painting a More Accurate Picture of the Sagittarius Dwarf Tidal Stream**
Weiss, Jake; Arsenault, Matthew; Bechtel, Torrin; Desell, Travis; Newberg, Heidi J.; Newby, Matthew; Thompson, Jeffery

1 Rensselaer Polytechnic Institute, Troy, NY. 2 University of Wisconsin - Madison, Madison, WI. 3 University of North Dakota, Grand Forks, ND.

346.12 **Testing the Caustic Ring Dark Matter Theory Against Observations in the Milky Way**
Dumas, Julie; Newberg, Heidi J.; Susser, Adam

1 Rensselaer Polytechnic Institute, Troy, NY.

346.13 **LAMOST observations of substructure in bulk velocities of Milky Way disk stars**
Carlin, Jeffrey L.; DeLaunay, James; Newberg, Heidi J.; Deng, Lical; Gole, Daniel; Grabowski, Kathleen; Jin, Ge; Liu, Chao; Liu, Xiaowei; Luo, A-Li; Yuan, Haibo; Zhang, Haotong; Zhao, Gang; Zhao, Yongheng

1 Rensselaer Polytechnic Institute, Troy, NY. 2 Penn State University, University Park, PA. 3 National Astronomical Observatories, Chinese Academy of Sciences, Beijing, China. 4 SUNY-Geneseo, Geneseo, NY. 5 University of Colorado, Boulder, CO. 6 University of Science and Technology of China, Hefei, China. 7 Kavli Institute for Astronomy and Astrophysics, Peking University, Beijing, China.

346.14 **Extending stellar density maps of the Orphan Tidal Stream**
Varilly, Taylor; Carlin, Jeffrey L.; Newberg, Heidi J.; Beaton, Rachael; Majewski, Steven R.

1 Rensselaer Polytechnic Institute, Troy, NY. 2 University of Virginia, Charlottesville, VA.

346.15 **Contributions to the nearby stellar halo of the Milky Way from in situ, kicked-out disk, and accreted populations.**
Sheffield, Allyson; Majewski, Steven R.; Johnston, Kathryn V.; Cunha, Katia M.; Smith, Verne V.

1 Columbia University, New York, NY. 2 University of Virginia, Charlottesville, VA. 3 National Optical Astronomy Observatories, Tucson, AZ. 4 Observatorio Nacional, Rio de Janeiro, Brazil.
346.16  Hypervelocity Star Candidates in SEGUE
Palladino, Lauren E.; Schlesinger, Katharine; Holley-Bockelmann, Kelly; Cal- lende Prieto, Carlos; Beers, Timothy; Lee, Young Sun; Schneider, Donald.
1 Vanderbilt University, Nashville, TN. 2 The Australian National University, Weston, ACT, Australia. 3 Fisk University, Nashville, TN. 4 Instituto de Astrofísica de Canarias, Tenerife, Spain. 5 Universidad de La Laguna, Tenerife, Spain. 6 National Optical Astronomy Observatory, Tucson, AZ. 7 New Mexico State University, Las Cruces, NM. 8 The Pennsylvania State University, University Park, PA.

346.17  Red Runaways
Vickers, John; Smith, Martin C.; Grebel, Eva
1 Astronomisches Rechen-Institut, Heidelberg, Baden-Wuerttemberg, Germany. 2 Shanghai Astronomical Observatory, Shanghai, Shanghai, China.

346.18  Exploring Biases and Sample Selection Effects for Chemical Cartography with SDSS-III/APOGEE
Hayden, Michael R.; Holtzman, Jon A.; Zasowski, Gail; Girardi, Leo; Schultheis, Mathias; Hasselquist, Sten; Feuillet, Diane; Nidever, David L.; Frinchaboy, Peter M.; Schiavon, Ricardo; Garcia Perez, Ana Elia
1 New Mexico State University, Las Cruces, NM. 2 Johns Hopkins University, Baltimore, MD. 3 Observatoire de la Cote d’Azur, Nice, Provence-Alpes-Côte d’Azur, France. 4 Osservatorio Astronomico di Padova, INAF, Padova, Veneto, Italy. 5 University of Virginia, Charlottesville, VA. 6 University of Michigan, Ann Arbor, MI. 7 Texas Christian University, Fort Worth, TX. 8 Liverpool John Moores University, Liverpool, Merseyside, United Kingdom.

346.19  The Blanco DECam Bulge Survey (BDBS): Status and Early Results
Clarkson, Will I.; Rich, Robert M.; Johnson, Christian I.; Kunder, Andrea; Michael, Scott; Young, Michael; Pilachowski, Catherine A.; Ivezic, Zeljko; Ibata, Rodrigo; Irwin, Michael; de Propris, Roberto; Koch, Andreas; Robin, Annie; Soto, Mario; Vivas, Katherina; Clyne, Elizabeth
1 Department of Natural Sciences, University of Michigan-Dearborn, Dearborn, MI. 2 Division of Astronomy and Astrophysics, University of California, Los Angeles, Los Angeles, CA. 3 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 4 Astronomisches Institut Potsdam, Potsdam, Brandenburg, Germany. 5 Pervasive Technology Institute, Indiana University Bloomington, Bloomington, IN. 6 Department of Astronomy, Indiana University, Bloomington, Bloomington, IN. 7 Astronomy Department, University of Washington, Seattle, WA. 8 Strasbourg Observatory, Strasbourg, Alsace, France. 9 Institute of Astronomy, Cambridge, Cambridgeshire, United Kingdom. 10 National Optical Astronomy Observatory, Tucson, Coquimbo, Chile. 11 Cerro Tololo Inter-American Observatory, Tucson, Coquimbo, Chile. 12 Zentrum fur Astronomie, University of Heidelberg, Heidelberg, Baden-Württemberg, Germany. 13 Besancon Observatory, Besancon, Franche-Comte, France. 14 Space Telescope Science Institute, Baltimore, MD. 15 Centro de Investigaciones de Astrobiomia (CIDA), Merida, Merida, Venezuela, Bolivarian Republic of.

346.20  Analyzing the Milky Way’s Hot Gas Halo with OVII and OVIII Emission Lines
Miller, Matthew J.; Bregman, Joel N.
1 University of Michigan, Ann Arbor, MI.
346.21 Dust ring at the Camelopardalis and Perseus border
Cepas, Vytautas 1, 2; Boyle, Richard P. 1; Zdanavicius, Justas 1; Straizys, Vytautas 1; Zdanavicius, Kazimieras 1; Laugals, Vyandas 1
1 Vilnius university, Vilnius, Lithuania. 2 Baltic institute of advanced technologies, Vilnius, Lithuania.

346.22 Emission lines in the Near-infrared Spectra of the IR Quintuplet Stars in the Galactic Center
Geballe, Thomas R. 1; Najarro, Francisco 2; de la Fuente, Diego 2; Figer, Donald F. 3
1 Gemini Obs., Hilo, HI. 2 Center for Astrobiology, Madrid, Spain. 3 Rochester Institute of Technology, Rochester, NY.

346.23 Line Diagnostics Across the Galactic Nucleus from Mid-Infrared Emission Line Mapping
An, Deokkeun 1; Sellgren, Kristen 1; Ramirez, Solange 3
1 Ewha Womans University, Seoul, Korea, Republic of. 2 Ohio State University, Columbus, OH. 3 NExScI/Caltech, Pasadena, CA.

346.24 A pilot study to monitor the Galactic Center for radio transients with the First Station of the Long Wavelength Array
Cutchin, Sean E. 1; Hyman, Scott D. 3; Kassim, Namir E. 2; Lazio, Joseph 4
1 NRC/NRL, Washington, DC. 2 NRL, Washington, DC. 3 Sweet Briar College, Sweet Briar, VA. 4 JPL/Cal Tech, Pasadena, CA.

346.25 Simulating the effect of the \texttt{sgra} accretion flow on the appearance of G2 after pericenter.
Sadowski, Aleksander 1; Abarca, David 1; Sironi, Lorenzo 1
1 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

346.26 Transient Events in Archival VLA Observations of the Galactic Center
Chiti, Anirudh 1; Chatterjee, Shami 1; Wharton, Robert 1; Cordes, James M. 1; Lazio, Joseph 2; Kaplan, David L. 3; Bower, Geoffrey C. 4; Croft, Steve 3, 4
1 Cornell University, Ithaca, NY. 2 JPL, Pasadena, CA. 3 UW Milwaukee, Milwaukee, WI. 4 UC Berkeley, Berkeley, CA.

346.27 Radio Observations of Star Formation in the Galactic Center
Butterfield, Natalie 1; Lang, Cornelia C. 1
1 University of Iowa, Iowa City, IA.

346.28 Monitoring for Low Frequency Radio Transients in the Galactic Center
Hyman, Scott D. 3; Kassim, Namir E. 2; Cutchin, Sean E. 2; Lazio, Joseph 2; Intema, Huib 4
1 Sweet Briar College, Sweet Briar, VA. 2 Naval Research Laboratory, Washington, DC. 3 JPL-Caltech, Pasadena, CA. 4 NRAO, Socorro, NM.

346.29 Multi-Wavelength Studies of Inner Galactic Gas Clouds in Clump 2: IGGC 22
Tolls, Volker 1; Smith, Howard A. 1
1 Harvard-Smithsonian, CfA, Cambridge, MA.

346.30 Evidence for a Massive Photon in the Milky Way
Bartlett, David F. 1; Cumalat, John P. 1
1 Univ. of Colorado, Boulder, CO.
346.32 SOFIA/FORCAST Observations of the Luminous Blue Variables in the Galactic Center
Lau, Ryan M.1; Herter, Terry L.1; Morris, Mark2; Adams, Joseph D.1
1Cornell University, Ithaca, NY. 2University of California Los Angeles, Los Angeles, CA.

346.33 Gemini GNIRS/NIFS Study of the Radial Velocities of Eight Massive Stars in the Galactic Center
Dong, Hui1; Mauerhan, Jon2; Morris, Mark3; Wang, Q. D.4; Cotera, Angela5
1NOAO, Tucson, AZ. 2University of California, Berkeley, Berkeley, CA. 3University of California, Los Angeles, Los Angeles, CA. 4University of Massachusetts, Amherst, Amherst, MA. 5SETI, Mountain View, CA.

346.34 The Fermi bubbles: gamma-ray, microwave and polarization signatures of leptonic AGN jets
Yang, Hsiang-Yi Karen1; Ruszkowski, Mateusz1; Zweibel, Ellen G.2
1University of Michigan, Ann Arbor, MI. 2University of Wisconsin-Madison, Madison, WI.

346.35 Astrometry in the Galactic Center with the Thirty Meter Telescope
Yelda, Sylvana1; Meyer, Leo1; Ghez, Andrea M.1; Do, Tuan1
1University of California - Los Angeles, Los Angeles, CA. 2Dunlap Institute for Astronomy and Astrophysics, University of Toronto, Toronto, ON, Canada.

347 Extrasolar Planet Characterization Poster Session
Wednesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

347.01 A Statistical Analysis of Exoplanets in Their Habitable Zones
Adams, Arthur1; Kane, Stephen R.1
1San Francisco State University, San Francisco, CA.

347.02 A Statistical Characterization of the Atmospheres of Kepler’s Planet Candidates
Sheets, Holly1; Deming, Drake1
1University of Maryland, College Park, MD.

347.03 Direct modeling of transiting planet light curves from model stellar atmospheres
Mcneil, Joseph1; Neilson, Hilding1; Ignace, Richard1
1East Tennessee State University, Johnson City, TN.

347.04 Gaseous Mean Opacities for Giant Planet and Brown Dwarf Atmospheres
Lustig-Yaeger, Jacob A.1; Fortney, Jonathan J.1; Freedman, Richard2, 3; Marley, Mark S.3; Lupu, Roxana E.2
1University of California, Santa Cruz, Santa Cruz, CA. 2SETI Institute, Mountain View, CA. 3NASA Ames Research Center, Mountain View, CA.

347.05 Searching for Extended Planetary Atmospheres Signatures In Kepler Light Curves
Barbosa de Souza, Estella1; Redfield, Seth2; Jensen, Adam G.3
1Bryn Mawr College, Bryn Mawr, PA. 2Wesleyan University, Middletown, CT. 3University of Nebraska, Lincoln, NE.

347.06 Tidal Evolution of Exomoons using a Self-Consistent Tidal and Dynamical Model
Zollinger, Rhett1; Armstrong, John C.2; Bromley, Benjamin C.1
1University of Utah, Salt Lake City, UT. 2Weber State University, Ogden, UT.
347.07  Chasing Luna: Detecting Exomoons
Lovell, Megan1; Deneault, Ethan A.1
1University of Tampa, Tampa, FL.

347.08  Investigations of Planet Formation with Combined Hydrodynamics and Radiative Transfer
Jang-Condell, Hannah1; Kloster, Dylan1
1University of Wyoming, Laramie, WY.

347.09  Exoplanent Science with OSCAAR
Morris, Taylor1; Durig, Douglas T.1; Morris, Brett M.2
1Sewanee: The University of the South, Sewanee, TN. 2University of Washington, Seattle, WA.

347.10  Effects of Roche Lobe Overflow from Eccentric Hot Jupiters Created by Planet-Planet Scattering
Sepinsky, Jeremy F.1; Salmon, Rachel L.1; Chatterjee, Sourav2
1University of Scranton, Scranton, PA. 2The University of Florida, Gainesville, FL.

347.11  Earth-like Planet on a Highly Eccentric Orbit: A 1-D Dynamical Model of Atmospheric Response at Periastron
Gonzales, Erica1; Laughlin, Greg1
1University of California, Santa Cruz, CA.

347.12  Examining Photometric Orbital Modulations in Kepler Transiting Planet Candidates
Fetherolf, Tara1; Shporer, Avi2; Knutson, Heather2; Johnson, John A.1,3,2
1San Diego State University, San Diego, CA. 2California Institute of Technology, Pasadena, CA. 3Harvard University, Cambridge, MA.

347.13  Constraining the Magnetic Fields of Transiting Exoplanets through Ground-based Near-UV Observations
Turner, Jake1,2; Smart, Brianna1,3; Pearson, Kyle1; Biddle, Lauren I.2; Cates, Ian2; Berube, Michael2; Thompson, Robert2; Smith, Carter-Thaxton2; Teske, Johanna K.2; Hardegree-Ullman, Kevin4; Robertson, Amy2; Crawford, Benjamin2; Zellem, Robert2; Nieberding, Megan N.1; Raphael, Brandon A.2; Tombleson, Ryan2; Cook, Kendall2; Hoglund, Shelby2; Hofmann, Ryan2; Jones, Christen2; Towner, Allison P.2; Small, Lindsay2; Walker-LaFollette, Amanda2; Sanford, Brent2; Sagan, Thomas A.G.2
1University of Virginia, Charlottesville, VA. 2University of Arizona, Tucson, AZ. 3University of Wisconsin–Madison, Madison, WI. 4University of Toledo, Toledo, OH.

347.14  Disentangling the Planetary and Stellar Components of Transit Light Curves
Mayorga, Laura1; Gaulme, Patrick1; Ule, Nicholas1; Maldonado, Mercedes1; Jackiewicz, Jason1
1New Mexico State University, Las Cruces, NM.

347.15  Chaotic dynamics of the highly inclined planet in HD 196885 AB
Satyal, Suman1; Quarles, Billy L.2; Hinse, Tobias3
1University of Texas at Arlington, Arlington, TX. 2NASA Ames Research Center, Moffett Field, CA. 3Korea Astronomy and Space Science Institute, Daejeon, Korea, Republic of.

347.16  Near-UV and Optical Observations of the transiting hot Jupiter WASP-1b
Pearson, Kyle1; Zellem, Robert2; Griffith, Caitlin A.2
1University of Arizona, Tucson, AZ. 2Lunar and Planetary Laboratory, Tucson, AZ.
347.17 Detailed Abundances of Stars with Small Planets Discovered by Kepler
Schuler, Simon C.¹; Cunha, Katia M.²; Howell, Steve B.³; Smith, Verne V.²
¹University of Tampa, Tampa, FL. ²NOAO, Tucson, AZ. ³NASA Ames, Moffett Field, CA.

347.18 Using N2-N2 Collisionally-Induced Absorption to Detect N2 and Determine Pressure in Planetary Atmospheres
Schwieterman, Edward¹,²; Robinson, Tyler D.³,²; Meadows, Victoria¹,²; Crisp, David¹,²; Misra, Amit¹,²
¹University of Washington Astronomy Department, Seattle, WA. ²NASA Astrobiology Institute Virtual Planetary Laboratory, Seattle, WA. ³NASA Ames Research Center, Mountain View, CA. ⁴Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA.

347.19 Multiple Scattering in Transit Transmission Spectroscopy
Misra, Amit¹; Meadows, Victoria¹; Crisp, David²
¹University of Washington, Seattle, WA. ²JPL-Caltech, Pasadena, CA.

347.20 PISCES Development and Status: An Integral Field Spectrograph for the High Contrast Imaging Testbed
McElwain, Michael W.¹; Perrin, Marshall D.²; Gong, Qian¹; Wilkins, Ashlee N.³; Stapelfeldt, Karl R.¹; Woodgate, Bruce E.¹; Brandt, Timothy¹; Heap, Sara R.¹; Hilton, George M.¹; Kruk, Jeffrey W.¹; Moody, Dwight¹; Trauger, John T.¹
¹NASA Goddard Space Flight Center, Greenbelt, MD. ²Space Telescope Science Institute, Baltimore, MD. ³University of Maryland, College Park, MD. ⁴Institute for Advanced Study, Princeton, NJ. ⁵Jet Propulsion Laboratory, Pasadena, CA.

347.21 WFC3: Precision Infrared Spectrophotometry with Spatial Scans of HD 189733b and Vega
McCullough, Peter R.¹; Crouzet, Nicolas¹; Deming, Drake³; Madhusudhan, Nikku²; Deustua, Susana E.¹
¹STScI, Baltimore, MD. ²Yale, New Haven, CT. ³University of Maryland, College Park, MD.
Contributing teams: WFC3

347.22 Day-side Spectrum of the hot-Jupiter WASP-1b
Bloemhard, Heather¹; Creech-Eakman, Michelle J.¹,²; Swain, Mark R.³; Deroo, Pieter³; Line, Michael R.⁴
¹New Mexico Institute of Mining and Technology, Socorro, NM. ²Magdalena Ridge Observatory, Socorro, NM. ³NASA JPL, Pasadena, CA. ⁴UC-Santa Cruz, Santa Cruz, CA.

347.23 Modeled Near-Infrared Water Vapor Absorption in a Habitable Super-Earth Orbiting a Late-M Dwarf
Koenig, Lenore¹; Deming, Drake¹
¹UMD, College Park, MD.

347.24 How Low Can You Go? The Photoeccentric Effect for Planets of Various Sizes
Price, Ellen¹; Rogers, Leslie¹; Dawson, Rebekah I.³; Johnson, John A.²
¹California Institute of Technology, Pasadena, CA. ²Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. ³University of California, Berkeley, Berkeley, CA.
347.25 Physical Properties of Known Exoplanet and Host Stars Within Ten Parsecs: X-ray/UV Fluxes, Rotation, Ages, and Potential of Habitability
Kullberg, Evan¹; Guinan, Edward F.¹; Engle, Scott G.¹
¹Villanova University, Villanova, PA.

347.26 A Simple Estimate of Mass Transfer on Tidally Locked Heated Super-Earths
Saxena, Prabal¹; Summers, Michael²
¹George Mason University, Fairfax, VA.

347.27 Stellar Parameters for HD 69830, a Nearby Star with Three Neptune Mass Planets and an Asteroid Belt
Tanner, Angelle M.¹; Boyajian, Tabetha S.²; von Braun, Kaspar³; van Belle, Gerard¹; Beichman, Charles A.¹; Fischer, Debra²; Brewer, John M.²
¹Mississippi State University, MSU, MS. ²Yale University, New Haven, CT. ³Lowell Observatory, Flagstaff, AZ. ⁴NEXScI, Pasadena, CA.
Contributing teams: GSU CHARA Team

347.28 Astrometry with a high-contrast Integral Field Spectrograph in the high contrast: orbital motion of the HR8799 planetary system.
Pueyo, Laurent¹; Soummer, Remi¹; Vasisht, Gautam⁴; Oppenheimer, Ben R.²; Cady, Eric⁴; Crepp, Justin R.³; Hoffmann, Jordan¹; Hinkley, Sasha¹; Sivaramakrishnan, Anand¹; Veicht, Aaron²
¹Space Telescope Science Institute, Baltimore, MD. ²AMNH, New York City, NY. ³California Institute of technology, Pasadena, CA. ⁴Jet propulsion Laboratory, Pasadena, CA.
Contributing teams: Palm 3000 Adaptive Optics Team, Project 1640 team

347.29 The University of Arizona Astronomy Club Follow-up Observations of Known Exoplanets
Small, Lindsay¹,³; Pearson, Kyle¹; Turner, Jake²,¹; Biddle, Lauren I.¹; Nguyen, Chii¹; Watson, Zachary¹,³; Mango, Dylan¹; Romine, James M.¹; Hume, Jeff¹; Sinor, Kathryn¹; Stanford-Jones, Charles¹; Qu, Dezheng¹; Liu, Yiv
¹The University of Arizona, Tucson, AZ. ²The University of Virginia, Charlottesville, VA. ³National Optical Astronomy Observatory, Tucson, AZ.

347.30 The Impact of Stellar Multiplicity on Planet Occurrence
Kraus, Adam L.¹; Ireland, Michael²; Mann, Andrew³; Huber, Daniel²; Dupuy, Trent J.⁴
¹Univ. of Texas at Austin, Austin, TX. ²Macquarie University, Sydney, NSW, Australia. ³NASA-Ames, Mountain View, CA. ⁴Harvard-Smithsonian CfA, Cambridge, MA.

347.31 Effect of Initial Stellar Metallicity on the Evolution of the Habitable Zone and the Search for Life
Danchi, William C.¹; Lopez, Bruno²
¹NASA’s GSFC, Greenbelt, MD. ²Observatoire de la Côte d’Azur, Nice, France.

347.32 Reducing Radius and Temperature Uncertainties for Low-Mass Kepler Objects of Interest With Proxy Stars
Brown, Justin¹; Ballard, Sarah²,¹
¹University of Washington, Seattle, WA. ²NASA Sagan Fellow, Pasadena, CA.
347.33 Quantifying the Effect of Stellar Binaries on the Formation and Evolution of Planetary Systems
Bryan, Marta; Knutson, Heather; Batygin, Konstantin; Hinkley, Sasha; Crepp, Justin R.; Johnson, John A.; Howard, Andrew; Ngo, Henry
1 California Institute of Technology, Pasadena, CA. 2 Harvard University, Cambridge, MA. 3 University of Hawaii, Hilo, HI. 4 University of Notre Dame, Notre Dame, IN.

347.34 X-ray and Hubble/COS UV Measures of Kapteyn’s Star: A Crucial Proxy of X-UV Irradiances for Old Red Dwarf Stars that May Host Habitable Zone Planets
Durbin, Allyn J.; Guinan, Edward F.; Engle, Scott G.
1 Villanova University, Villanova, PA.

347.35 Chemistry in an Evolving Protoplanetary Disk: Implications for Carbon Rich Systems
Moriarty, John; Fischer, Debra; Madhusudhan, Nikku
1 Yale University, New Haven, CT.

347.36 vis.SME -- Building a Visualization Tool to Analyze and Share Spectral Synthesis Stellar Characterization
Rosario Franco, Marialis; Cargile, Phillip; Hebb, Leslie; Johnson, John A.
1 University of Puerto Rico - Humacao, Guaynabo, Puerto Rico. 2 Vanderbilt University, Nashville, TN. 3 Hobart & William Smith Colleges, Geneva, NY. 4 Harvard University, Cambridge, MA.

347.37 False Positives for Life: Atmospheric Ozone and Oxygen on Lifeless Rocky Exoplanets
Domagal-Goldman, Shawn; Segura, Antígona; Meadows, Victoria; Claire, Mark; Robinson, Tyler D.
1 NASA Goddard Space Flight Center, Greenbelt, MD. 2 Universidad Nacional Autónoma de México, Mexico City, DF, Mexico. 3 University of Washington, Seattle, WA. 4 University of St. Andrews, St. Andrews, Fife, United Kingdom. 5 Oak Ridge Associated Universities, Oak Ridge, TN. 6 Virtual Planetary Laboratory, Seattle, WA.

347.38 H? Absorption During Hot Jupiter Transits
Christie, Duncan; Li, Zhi-Yun; Arras, Phil
1 University of Virginia, Charlottesville, VA.

347.39 A Comprehensive Study of Kepler Phase Curves and Secondary Eclipses
DeLarme, Emily; Angerhausen, Daniel; Morse, Jon A.
1 Rensselaer Polytechnic Institute, Troy, NY.

347.40 An Analysis of Occultations and Phase Curves of Different KOIs
Roberts, Jessica; Rowe, Jason; Quintana, Elisa V.; Barclay, Thomas; Batalha, Natalie M.
1 San Jose State University, San Jose, CA. 2 NASA Ames Research Center, Mountain View, CA.
348 Extrasolar Planet Detection

Wednesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

348.01 Improving the RV Precision of HET/HRS - The Tale of Two Iodine Atlases
Wang, Sharon Xuesong1; Wright, Jason1; Zhao, Ming1
1Pennsylvania State University, University Park, PA.

348.02 Investigating Systematic Errors in Iodine Cell Radial Velocity Measurements
Vanderburg, Andrew1; Marcy, Geoffrey W.2; Johnson, John A.1
1Harvard University, Cambridge, MA. 2University of California, Berkeley, Berkeley, CA.

348.03 Minerva exoplanet detection sensitivity from simulated observations
McCready, Nate1; Nava, Chantanelle1
1University of Montana, Missoula, MT.

348.04 Update on the SDSS-III MARVELS data pipeline development
Li, Rui1; Ge, Jian1; Thomas, Neil B.1; Petersen, Eric1; Wang, Ji2,3; Ma, Bo1;
Sithajan, Sirinrat1; Shi, Jianguo1; Ouyang, Yuyuan3; Chen, Yunmei3
1Department of Astronomy, University of Florida, Gainesville, FL. 2University of California, Berkeley, Berkeley, CA.

348.05 Exploring Exoplanets Out to the Snowline with LCOGT
Street, Rachel1
1Las Cumbres Global Telescope Network, Inc., Goleta, CA.
Contributing teams: RoboNet

348.06 Gravitational Microlensing Observations of Two New Exoplanets Using the
Deep Impact High Resolution Instrument
Barry, Richard K.1; Bennett, David P.2; Klaasen, Kenneth4; Becker, Andrew C.1;
Christiansen, Jessie4; Albrw, Michael1
1NASA’s GSFC, Greenbelt, MD. 2University of Notre Dame, Notre Dame, IN.
3Canterbury University, christchurch, New Zealand. 4Jet Propulsion Laboratory, Pasadena, CA.

348.07 Transiting Exoplanet Observations at Grinnell College
Sauerhaft, Julia1; Slough, Patrick1; Cale, Bryson1; Kempton, Eliza1
1Grinnell College, Grinnell, IA.

348.08 Detection of an Extrasolar Planet Candidate in Habitable Zone of a Low-Mass
Binary
Ponte, Sophie1,2; Bochanski, John J.2; Willman, Beth2; Guinan, Edward F.3; Engle,
Scott G.3; Law, Nicholas M.4; Baranec, Christoph5; Riddle, Reed L.6
1Conestoga High School, Berwyn, PA. 2Haverford College, Haverford, PA.
3Villanova University, Villanova, PA. 4University of North Carolina at Chapel
Hill, Chapel Hill, NC. 5University of Hawaii, Honolulu, HI. 6Caltech Optical
Observatories, Pasadena, CA.

348.09 Project PANOPTES: Crowdsourcing the Search for Exoplanets
Stump, Chad1
1Shawnee State University, Portsmouth, OH.
348.10 Planet Hunters: Two New Confirmed Planets and the First Kepler Seven Candidate System
Schmitt, Joseph1; Wang, Ji1; Jek, Kian2; Fischer, Debra1; Agol, Eric3
1Yale University, New Haven, CT. 2Planet Hunters, San Francisco, CA. 3University of Washington, Seattle, WA.
Contributing teams: Planet Hunters

348.11 Progress Toward Reliable Planet Occurrence Rates with Kepler
Batalha, Natalie M.1
1NASA Ames Research Center, Moffett Field, CA.
Contributing teams: Kepler Team

348.12 A TTV-fueled study of non-resonant companions to multiple-transiting systems in the Kepler sample
Becker, Juliette1; Montet, Benjamin1; Swift, Jonathan1; Johnson, John A.2
1California Institute of Technology, Pasadena, CA. 2Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

348.13 A focal plane mask for the PIAA Complex Mask Coronagraph
Newman, Kevin1, 2; Guyon, Olivier1; Balasubramanian, Kunjithapatham1; Wilson, Daniel1
1University of Arizona, Tucson, AZ. 2NASA Ames Research Center, Moffett Field, CA.

348.14 Gemini Planet Imager Data Analysis Methods, Software, and First Data Release
Perrin, Marshall D.1
1STScI, Baltimore, MD.
Contributing teams: The Gemini Planet Imager instrument and science teams

348.15 Non-Redundant Masking Science on the Gemini Planet Imager
Greenbaum, Alexandra1; Sivaramakrishnan, Anand2; Pueyo, Laurent2; Wolff, Schuyler1; Perrin, Marshall D.2; Ingraham, Patrick3; Thomas, Sandrine4; Norris, Barnaby2; Tuthill, Peter3
1The Johns Hopkins University, Baltimore, MD. 2Space Telescope Science Institute, Baltimore, MD. 3Universite de Montreal, Montreal, QC, Canada. 4UARC/NASA Ames Research Center, Moffett Field, CA. 5The University of Sydney, Sydney, NSW, Australia.

348.16 Archival Legacy Investigation of Circumstellar Environments (ALICE). Candidates point sources and high-level science products
Elodie, Choquet1; Chen, Christine1; Debes, John H.1; Golimowski, David A.1; Hagan, J. Brendan1, 2; Hines, Dean C.1; Lonsdale, Sean1; Marois, Christian1; Mawet, Dimitri1, 2; Mittal, Tushar1; Moerchen, Margaret1; N’Diaye, Mamadou3; Perrin, Marshall D.1; Pueyo, Laurent1; Rajan, Abhijith1; Reid, Iain N.1; Schneider, Glenn1; Wolff, Schuyler1; Soummer, Remi1
1Space Telescope Science Institute, Baltimore, MD. 2Purdue University, Lafayette, IN. 3Arizona State University, Phoenix, AZ. 4University of Arizona, Tucson, AZ. 5Berkeley, Berkeley, CA. 6ESO, La Serena, Chile. 7HIA-NRC, Victoria, BC, Canada.

348.17 LEECH: Hunting for Planets with LBTI-LMIRcam
Leisenring, Jarron1; Skemer, Andrew1
1University of Arizona, Tucson, AZ.
Contributing teams: LEECH Survey Team
348.18 High Resolution Active Optics Observations from the Kepler Follow-up Observation Program
Gautier, Thomas N.; Ciardi, David R.; Marcy, Geoffrey W.; Hirsch, Lea
1 Jet Propulsion Laboratory, Pasadena, CA. 2 IPAC/Caltech, Pasadena, CA. 3 University of California, Berkeley, Berkeley, CA. 4 University of California, Berkeley, Berkeley, CA.

348.19 A Unified Analysis of Brown Dwarf and Exoplanet Companions from Direct Imaging Surveys
Nielsen, Eric L.; Liu, Michael C.; Wahhaj, Zahed; Biller, Beth; Hayward, Thomas; Close, Laird M.; Etcas, Christ; Chun, Mark R.; Toomey, Douglas
1 Institute for Astronomy, Honolulu, HI. 2 ESO, Santiago, Chile. 3 University of Edinburgh, Edinburgh, United Kingdom. 4 Gemini, La Serena, Chile. 5 Steward Observatory, Tucson, AZ. 6 Mauna Kea Infrared, Hilo, HI.
Contributing teams: The Gemini NICI Planet-Finding Campaign Team

348.20 iLocater: A Diffraction-Limited Doppler Spectrometer for the Large Binocular Telescope
Crepp, Justin R.; Bechter, Andrew; Bechter, Eric; Berg, Michelle; Carroll, Jay; Collins, Keegan; Corpuz, Taylor; Ketterer, Ryan; Kielb, Edward; Stodard, Robert; Eisner, Joshua A.; Gaudi, B. S.; Hinz, Philip; Kratter, Kaitlin M.; Macela, Giuseppi; Quirrenbach, Andreas; Skrutskie, Michael F.; Sozzetti, Alessandro; Woodward, Charles E.; Zhao, Bo
1 University of Notre Dame, Notre Dame, IN. 2 Florida Institute of Technology, Melbourne, FL. 3 Ohio State, Columbus, OH. 4 University of Arizona, Tucson, AZ. 5 INAF, Roma, Italy. 6 U. Heidelberg, Heidelberg, Germany. 7 University of Virginia, Charlottesville, VA. 8 U. Minnesota, Minneapolis, MN. 9 University of Florida, Gainesville, FL.

348.21 PULSE: the Palomar Ultraviolet Laser for the Study of Exoplanets
Bottom, Michael; Dekany, Richard; Bowler, Brendan P.; Baranec, Christoph; Burruss, Rick
1 California Institute of Technology, Pasadena, CA. 2 Institute for Astronomy, University of Hawaii, Hilo, HI. 3 Jet Propulsion Lab, Pasadena, CA.

348.22 The Planetary System to KIC 11442793: A Compact Analogue to the Solar System
Fridlund, Carl; Cabrera, Juan; Csizmadia, Szilard; Lehman, H.; Dvorak, Rudolf; Gandolfi, Davide; Rauer, Heike; Erikson, Anders; Dreyer, Claudia; Eigmueller, Philipp; Hatzes, Artie
1 Institute of Planetary Research, German Aerospace Center, Berlin, Germany. 2 Leiden Observatory, Leiden University, Netherlands, Germany. 3 Thuringer Landessternwarte, Tautenburg, Germany. 4 Universitaetssternwarte, Vienna, Austria. 5 INAF - Catania Astrophysical Observatory, Catania, Italy. 6 Center for Astronomy and Astrophysics, TU Berlin, Berlin, Germany.

348.23 WISE Zoo: Discovering Disks In The WISE Database
Thaller, Michelle
1 NASA Goddard Space Flight Center, Greenbelt, MD.
Contributing teams: Marc Kuchner, Deborah Padgett, Mike McElwain, and Carol Grady (NASA Goddard), John Debes (STScI), Scott Kenyon (Smithsonian/CfA), Thayne Currie (U. Toronto), Laura Whyte, Ed Padget, Chris Lintott, Ali
348.24 Optimized spectral sampling for next generation spectrographs
    Giguere, Matthew J.; Fischer, Debra
    1Yale University, New Haven, CT.

348.25 Measuring Transit Signal Recovery in the Kepler Pipeline II: The First Multi-Quarter Results
    Christiansen, Jessie
    1NExScI, Pasadena, CA.
    Contributing teams: the Kepler Completeness Working Group

349 Astrobiology Poster Session

349.01 A Mid-Infrared Search for Kardashev Civilizations
    Sigurdsson, Steinn1; Wright, Jason1; Griffith, Roger2; Povich, Matthew S.3
    1Pennsylvania State Univ., University Park, PA. 2Infrared Processing and Analysis Center, Pasadena, CA. 3California Polytechnic, Pomona, CA.

349.02 Micelles Protect and Concentrate Activated Acetic Acid
    Todd, Zoe1; House, Christopher1
    1Penn State University, University Park, PA.

349.03 Seeding Life on the Moons of the Outer Planets via Lithopanspermia
    Worth, Rachel1,2; Sigurdsson, Steinn1,2; House, Christopher1,2
    1Penn State University, University Park, PA. 2Penn State Astrobiology Research Center, University Park, PA.

349.04 Beyond the Drake Equation: On the Probability of the Nature of Extraterrestrial Life Forms in Our Galaxy Today
    Geller, Harold A.
    1George Mason University, Burke, VA.

349.05 Galactic Cosmic Ray (GCR) Model of Titan and Formation of HCNO Exobiological Molecules
    Sittler, Edward C.; Cooper, John F.
    1NASA’S GSFC, Greenbelt, MD.

350 Circumstellar Disks Poster Session

350.01 Colliding dust grains in a turbulent protoplanetary disk
    Kuznetsova, Aleksandra1,2; Hubbard, Alexander2
    1University of Rochester, Rochester, NY. 2American Museum of Natural History, New York, NY.

350.02 Modeling of Expected PICTURE Observations of Exozodiacal Dust Around Epsilon Eridani
    Douglas, Ewan S.; Mendillo, Christopher; Hicks, Brian; Cook, Timothy; Polidan, Ronald S.; Chakrabarti, Supriya
    1Boston University, Boston, MA. 2University of Massachusetts Lowell, Lowell, MA. 3Northrop Grumman Aerospace Systems, Redondo Beach, CA.
350.03 Searching for faint exozodi: pushing the precision limits of ground-based mid-IR photometry
Trollo, Joseph¹; Metchev, Stanimir¹
¹The University of Western Ontario, London, ON, Canada.

350.04 Exozodi disk models for the HOSTS survey on the LBTI
Wyatt, Mark²; Kennedy, Grant³; Skemer, Andrew²; Bryden, Geoffrey³; Danchi, William C.⁴; Defrere, Denis²; Haniff, Chris¹; Hinz, Philip⁴; Mennesson, Bertrand³; Millan-Gabet, Rafael³; Panic, Olja¹; Rieke, George²; Roberge, Aki⁴; Serabyn, Gene³; Shannon, Andrew B.¹; Stapelfeldt, Karl R.²; Weinberger, Alycia J.⁶
¹University of Cambridge, Cambridge, United Kingdom. ²University of Arizona, Tucson, AZ. ³NASA JPL, Pasadena, CA. ⁴NASA GSFC, Greenbelt, MD. ⁵NExScI, Pasadena, CA. ⁶Carnegie Inst of Washington, Washington, DC.
Contributing teams: LBTI-HOSTS

350.05 Target Selection for the LBTI Hunt for Observable Signatures of Terrestrial Planetary Systems
Weinberger, Alycia J.¹; Roberge, Aki²; Kennedy, Grant³; Hinz, Philip⁴; Bryden, Geoffrey⁵; Defrere, Denis²; Wyatt, Mark³; Stapelfeldt, Karl R.²; Rieke, George⁴; Danchi, William C.³; Mennesson, Bertrand³; Millan-Gabet, Rafael⁴; Serabyn, Gene³; Skemer, Andrew⁴
³University of Cambridge, Cambridge, United Kingdom. ⁴University of Arizona, Tucson, AZ. ⁵JPL, Pasadena, CA. ⁶NExScI, Pasadena, CA.
Contributing teams: LBTI-HOSTS

350.06 An interferometric mini-survey of dust disks around post-AGB stars
Rajagopal, Jayadev¹; Ridgway, Stephen T.¹
¹NOAO, Tucson, AZ.
Contributing teams: CHARA Team

350.07 A Spitzer and Herschel Study of the Protoplanetary Disk Around the Young Nearby System V4046 Sgr
Rapson, Valerie¹; Kastner, Joel H.¹; Sacco, Giuseppe²; Sargent, Benjamin A.¹
¹Rochester Institute of Technology, Rochester, NY. ²Osservatorio Astrofisico di Arcetri, Florence, Italy.

350.08 The Effects of Internal Stellar Modes on the Evolution of Protoplanetary Star-Disk Systems
Smith, Daniel¹,²; Hadley, Kathryn Z.¹,²; Imamura, James N.²; Dumas, William²; Tumblin, Rebeca¹; Meades, Marin¹; Dederick, Ethan¹
¹Whitman College, Walla Walla, WA. ²University of Oregon, Eugene, OR.

350.09 An Infrared Examination of Young Stars in Upper Centaurus Lupus
Johnson, Chelen H.¹; Linahan, Marcella³; Barge, Jacqueline⁴; Rebull, Luisa M.²; Aranda, Donovan⁴; Canlas, Nuriel G.²; Donahoe, Katherine E.³; Ernst, Madison K.²; Ford, Sydney³; Fox, Megan E.³; Gutierrez, Elizabeth³; Haeker, Lille W.¹; Hibbs, Cecily A.¹; Maddaus, Maya R.¹; Martin, Taylor A.¹; Ng, Emily⁴; Niedbalec, Adam P.¹; O’Bryan, Sophie E.¹; Searls, Elizabeth F.¹; Zeidner, Amanda B.¹; Zegeye, David⁴
¹Breck School, Minneapolis, MN. ²Caltech, Pasadena, CA. ³Carmel Catholic High School, Mundelein, IL. ⁴Walter Payton College Prep High School, Chicago, IL.
350.10 Herschel-resolved Outer Dust Belts of Two-belt Spitzer Debris Disks around Nearby A-type and Solar Type Stars
Morales, Farisa Y.; Bryden, Geoffrey; Werner, Michael W.; Stapelfeldt, Karl R.
1 JPL, Sylmar, CA. 2 Goddard Space Flight Center, Greenbelt, MD.

350.11 Modeling the Short Timescale Inner Disk Changes of HD169142
Wagner, Kevin; Sitko, Michael L.; Whitney, Barbara; Swearingen, Jeremy R.; Champney, Elizabeth H.; Johnson, Alexa N.; Warren, Chelsea C.; Russell, Ray W.; Grady, Carol A.; Fukagawa, Misato; Hashimoto, Jun
1 University of Cincinnati, Cincinnati, OH. 2 Space Science Institute, Boulder, CO. 3 University of Wisconsin, Madison, WI. 4 The Aerospace Corporation, El Segundo, CA. 5 Eureka Scientific, Oakland, CA. 6 Goddard Space Flight Center, Greenbelt, MD. 7 Osaka University, Suita, Osaka, Japan. 8 National Astronomical Observatory of Japan, Mitaka, Tokyo, Japan.

350.12 Archival Legacy Investigations of Circumstellar Environments (ALICE): A Resolved Scattered-Light Image of the Debris Disk around HD 202917 from HST/NICMOS
Golimowski, David A.; Perrin, Marshall D.; Chen, Christine; Choquet, Elodie; Debes, John H.; Hagan, J. Brendan; Hines, Dean C.; Moerchen, Margaret; Mittal, Tushar; N'Diaye, Mamadou; Pueyo, Laurent; Reid, Iain N.; Schneider, Glenn; Wolff, Schuyler; Soummer, Remi
1 Space Telescope Science Institute, Baltimore, MD. 2 Purdue University, West Lafayette, IN. 3 University of California at Berkeley, Berkeley, CA. 4 University of Arizona, Tucson, AZ. 5 Johns Hopkins University, Baltimore, MD.

350.13 Archival Legacy Investigations of Circumstellar Environments (ALICE): Debris Disks Newly Resolved in Scattered Light from the HST NICMOS Archive
Moerchen, Margaret; Perrin, Marshall D.; Chen, Christine; Choquet, Elodie; Debes, John H.; Golimowski, David A.; Hagan, J. Brendan; Hines, Dean C.; Mittal, Tushar; N'Diaye, Mamadou; Pueyo, Laurent; Reid, Iain N.; Schneider, Glenn; Wolff, Schuyler; Soummer, Remi
1 Space Telescope Science Institute, Baltimore, MD. 2 Johns Hopkins University, Baltimore, MD. 3 University of Arizona, Tucson, AZ. 4 University of California, Berkeley, CA. 5 Purdue University, West Lafayette, IN.

350.14 Near-IR Scattered Light Imagery of the DoAr 28 Transitional Disk
Wisniewski, John P.; Rich, Evan; Hashimoto, Jun; Mayama, Satoshi
1 University of Oklahoma, Norman, OK. 2 Sokendai, Hayama-cho, Kanagawa, Japan. Contributing teams: SEEDS/HiCIAO/AO-188 Team

350.15 Ground-based Observations of Water Vapor in Planet-forming Regions
Salyk, Colette; Zhang, Ke; Pontoppidan, Klaus; Blake, Geoffrey A.
1 NOAO, Tucson, AZ. 2 California Institute of Technology, Pasadena, CA. 3 Space Telescope Science Institute, Baltimore, MD.

350.16 HST Imaging of New Edge-on Circumstellar Disks in Nearby Star-forming Regions
Stapelfeldt, Karl R.; Duchene, Gaspard; Padgett, Deborah; Perrin, Marshall D.; Wolff, Schuyler; Krist, John E.; Menard, Francois; Pinte, Christophe
1 NASA Goddard Space Flight Center, Greenbelt, MD. 2 UC Berkeley, Berkeley, CA. 3 Space Telescope Science Institute, Baltimore, MD. 4 Johns Hopkins University, Baltimore, MD. 5 JPL / Caltech, Pasadena, CA. 6 Univ. de Chile, Santiago, Chile. 7 IPAG, Grenoble, France.
350.17 HST Scattered Light Imaging and Modeling of the Edge-On Protoplanetary Disk ESO Halpha 569
Wolff, Schuyler1,2; Perrin, Marshall D.2; Stapelfeldt, Karl R.3; Duchene, Gaspard4,5; Menard, Francois5,6; Padgett, Deborah3; Pinte, Christophe3,6
1 Johns Hopkins University, Baltimore, MD. 2 STScI, Baltimore, MD. 3 NASA GSFC, Greenbelt, MD. 4 UC Berkeley, Berkeley, CA. 5 IPAG, Grenoble, France. 6 U. de Chile, Santiago, Chile.

350.18 Modeling Planet-Building Stellar Disks with Radiative Transfer Code
Swearingen, Jeremy1; Sitko, Michael L.1,2; Whitney, Barbara1,2; Wagner, Kevin1,2; Champney, Elizabeth H.1; Johnson, Alexa N.1; Warren, Chelsea C.1; Russell, Ray W.4; Grady, Carol A.5,6; Hammel, Heidi B.7,13; Lisse, Carey M.7; Cure, Michel8; Kraus, Stefan10,9; Fukushima, Misato11; Calvet, Nuria10; Espaillat, Catherine9; Monnier, John D.10; Millan-Gabet, Rafael12; Wilner, David J.9
1 University of Cincinnati, Cincinnati, OH. 2 Space Science Institute, Boulder, CO. 3 University of Wisconsin, Madison, WI. 4 The Aerospace Corporation, El Segundo, CA. 5 Eureka Scientific, Oakland, CA. 6 Goddard Space Flight Center, Greenbelt, MD. 7 Applied Physics Laboratory, Laurel, MD. 8 Universidad de Valparaiso, Valparaiso, Chile. 9 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 10 University of Michigan, Ann Arbor, MI. 11 Osaka University, Osaka, Japan. 12 California Institute of Technology, Pasadena, CA. 13 Associated Universities for Research in Astronomy, Washington, DC.

350.19 Modeling the Light Curve of a Rotating, Non-radially Pulsating Star
Lange, Jacob1,2; McSwain, M. V.1
1 Lehigh University, Bethlehem, PA. 2 Florida Institute of Technology, Melbourne, FL.

350.20 Imaging and modeling SStTaur J042021+281349, a new prototypical edge-on protoplanetary disk
Duchene, Gaspard1; Stapelfeldt, Karl R.; Isella, Andrea; Perrin, Marshall D.; Menard, Francois; Padgett, Deborah; Pinte, Christophe; Wolff, Schuyler; Ghez, Andrea M.; Konopacky, Quinn M.
1 University of California Berkeley, Berkeley, CA. 2 Institut de Planetologie et d'Astrophysique de Grenoble, Grenoble, France. 3 NASA Goddard Space Flight Center, Greenbelt, MD. 4 California Institute of Technology, Pasadena, CA. 5 Space Telescope Science Institute, Baltimore, MD. 6 Universidad de Chile, Santiago, Chile. 7 Johns Hopkins University, Baltimore, MD. 8 University of California Los Angeles, Los Angeles, CA. 9 Dunlap Institute, Toronto, ON, Canada.

350.21 Revealing Circumstellar Disks Through NPOI Observations and non-LTE Models
Lembryk, Ludwik1; Tycner, Christopher1; Sigut, T. A.1; Jansen, Brian1; Zavala, Robert T.3
1 Central Michigan Univ., Mount Pleasant, MI. 2 Western University, London, ON, Canada. 3 United States Naval Observatory, Flagstaff Station, Flagstaff, AZ.

350.22 Omicron Aquarii: Numerical Analysis of the Circumstellar Disk
Jansen, Brian1; Tycner, Christopher1; Sigut, T. A.; Lembryk, Ludwik1; Zavala, Robert T.3
1 Central Michigan University, Mount Pleasant, MI. 2 Western University, London, ON, Canada. 3 United States Naval Observatory, Flagstaff Station, Flagstaff, AZ.

350.23 The Incidence of Debris Disks Around M Dwarfs Within 25pc
Gallagher, Molly1,2; Trilling, David E.2
1 Grinnell College, Grinnell, IA. 2 Northern Arizona University, Flagstaff, AZ.
350.24 Resolved Millimeter-Wavelength Observations of Debris Disks around Sun-like Stars
Steele, Amy\textsuperscript{1}; Hughes, A. M.\textsuperscript{1}
\textsuperscript{1}Wesleyan University, Middletown, CT.

350.25 Planetary Remnants Orbiting White Dwarfs
Barber, Sara D.\textsuperscript{1}; Kilic, Mukremin\textsuperscript{1}; Brown, Warren R.\textsuperscript{2}
\textsuperscript{1}University of Oklahoma, Norman, OK. \textsuperscript{2}Smithsonian Astrophysical Observatory, Cambridge, MA.

350.26 Analysis of Hydrogen Recombination Masers Around MWC349A
Claus, Brian\textsuperscript{1}; Zhang, Qizhou\textsuperscript{1}; Watson, Linda C.\textsuperscript{1}; Moran, James M.\textsuperscript{1}
\textsuperscript{1}Harvard Smithsonian Center for Astrophysics, Mansfield, MA.

350.27 A WISE Survey of Circumstellar Disks in Taurus
Esplin, Taran\textsuperscript{1}; Luhman, Kevin\textsuperscript{1}; Mamajek, Eric E.\textsuperscript{2}
\textsuperscript{1}Pennsylvania State University, University Park, PA. \textsuperscript{2}University of Rochester, Rochester, NY.

350.28 Transitional Disks Associated With Intermediate-Mass Stars in the SEEDS Survey
Grady, C. A.\textsuperscript{1}
\textsuperscript{1}Eureka Scientific, Laurel, MD.
Contributing teams: SEEDS Consortium

350.29 Discovery and Variability of More Than 100 New Be Stars with SDSS-III/APOGEE
Chojnowski, S. Drew\textsuperscript{1}; Wisniewski, John P.\textsuperscript{2}; Whelan, David G.\textsuperscript{3}; Hall, Matthew\textsuperscript{1}; Majewski, Steven\textsuperscript{1}; Eikenberry, Stephen S.\textsuperscript{4}; Nidever, David L.\textsuperscript{5}; Shetrone, Matthew D.\textsuperscript{6}; Zasowski, Gail\textsuperscript{7}; Beaton, Rachael\textsuperscript{1}; Damke, Guillermo\textsuperscript{1}; Hearty, Fred\textsuperscript{1}; Holtzman, Jon A.\textsuperscript{8}; Pepper, Joshua\textsuperscript{8}; Skrutskie, Michael F.\textsuperscript{1}; Wilson, John C.\textsuperscript{1}
\textsuperscript{1}University of Virginia, Charlottesville, VA. \textsuperscript{2}University of Oklahoma, Norman, OK. \textsuperscript{3}Hamphden-Sydney College, Hampden Sydney, VA. \textsuperscript{4}University of Florida, Charlottesville, FL. \textsuperscript{5}University of Michigan, Ann Arbor, MI. \textsuperscript{6}University of Texas, Austin, TX. \textsuperscript{7}Johns Hopkins University, Baltimore, MD. \textsuperscript{8}Lehigh University, Bethlehem, PA. \textsuperscript{9}New Mexico State University, Las Cruces, NM.

350.30 Optical Spectroscopy of Be Stars Identified in SDSS-III/APOGEE Data
Hall, Matthew\textsuperscript{1}; Chojnowski, S. Drew\textsuperscript{1}; Wisniewski, John P.\textsuperscript{2}; Whelan, David G.\textsuperscript{3}; Majewski, Steven\textsuperscript{1}; Eikenberry, Stephen S.\textsuperscript{4}; Nidever, David L.\textsuperscript{5}; Shetrone, Matthew D.\textsuperscript{6}; Hearty, Frederick R.\textsuperscript{1}; Zasowski, Gail\textsuperscript{7}; Wilson, John C.\textsuperscript{1}; Skrutskie, Michael F.\textsuperscript{1}; Pepper, Joshua\textsuperscript{8}; Beaton, Rachael\textsuperscript{1}; Damke, Guillermo\textsuperscript{1}; Holtzman, Jon A.\textsuperscript{9}
\textsuperscript{1}University of Virginia, Charlottesville, VA. \textsuperscript{2}University of Oklahoma, Norman, OK. \textsuperscript{3}Hamphden-Sydney College, Hampden Sydney, VA. \textsuperscript{4}University of Florida, Gainesville, FL. \textsuperscript{5}University of Michigan, Ann Arbor, MI. \textsuperscript{6}University of Texas, Austin, TX. \textsuperscript{7}Johns Hopkins University, Baltimore, MD. \textsuperscript{8}Lehigh University, Bethlehem, PA. \textsuperscript{9}New Mexico State University, Las Cruces, NM.

350.31 Extending Accretion Diagnostics to the Mid-Infrared Wavelengths
Rigliaco, Elisabetta\textsuperscript{1}
\textsuperscript{1}Planetary Science, University of Arizona, Tucson, AZ.

350.32 Misaligned Protoplanetary Disks in a Young Binary System: Sufficient Misalignment to Drive Kozai Oscillations of Planetary Orbits
Jensen, Eric L.\textsuperscript{1}; Akeson, Rachel L.\textsuperscript{2}
\textsuperscript{1}Swarthmore College, Swarthmore, PA. \textsuperscript{2}NASA Exoplanet Science Institute, Pasadena, CA.
351 Dust Poster Session

Wednesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

351.01 The UV Interstellar Extinction Properties in M31
Clayton, Geoffrey C.; Gordon, Karl D.; Bianchi, Luciana; Bohlin, Ralph; Massa, Derck; Fitzpatrick, Edward L.; Wolff, Michael J.

1Louisiana State Univ., Baton Rouge, LA. 2Space Telescope Science Institute, Baltimore, MD. 3The Johns Hopkins University, Baltimore, MD. 4Villanova University, Villanova, PA. 5Space Science Institute, Boulder, CO.

351.02 Numeric Modeling of Granular Asteroid Growth
Beaumont, Benjamin; Lazzati, Davide

1North Carolina State University, Raleigh, NC.

351.03 Using Spatially-Resolved Spectroscopy to Study Stardust
Daniels, Lacey; Speck, Angela; De Souza, Nelson; Guha Niyogi, Suklima

1University of Missouri-Columbia, Columbia, MO.

351.04 The Fitting of the Broad 8-21 Micron Feature of O-Rich AGB Stars with the Summation of Two Gaussian Curves
Arrant, David J.; Speck, Angela

1University of Missouri, Columbia, MO.

351.05 An Exploration of the Dust Spectral Features of the Carbon-Rich Star V Cyg Through Time and Space
Reel, Matthew; Speck, Angela; Sloan, Gregory C.; Volk, Kevin

1University of Missouri, Columbia, MO. 2Cornell, Ithaca, NY. 3STScI, Baltimore, MD.

351.06 Global Modeling of Dust Evolution in the ISM
Slavin, Jonathan D.

1Harvard-Smithsonian, CfA, Cambridge, MA.

351.07 The effect of aluminum on silicate spectral features
Williams, Lucie; Speck, Angela; Whittington, Alan G.; Hofmeister, Anne M.; Arrant, David J.

1University of Missouri, Columbia, MO. 2Washington University, Saint Louis, MO.

351.08 Constraining the Spatial Scales and Composition of Dust in the Diffuse Interstellar Medium
Anderson, Rachel E.; Chen, Christine; Hines, Dean C.

1STScI, Baltimore, MD.

Contributing teams: IPAC

351.09 Testing the effect of continuum elimination methods on studies of infrared dust features from AGB star spectra
Delisle, Colby; Speck, Angela

1University of Missouri, Columbia, MO.

351.10 Distances and Reddenings for a Billion Stars: Constructing a 3D Reddening Map
Green, Gregory; Schlafly, Eddie; Finkbeiner, Douglas P.

1Harvard Univ, Cambridge, MA. 2MPIA, Heidelberg, Baden-Wuerttemberg, Germany.

351.11 A Catalog of Distances to Molecular Clouds from Pan-STARRS1
Schlafly, Eddie; Green, Gregory; Finkbeiner, Douglas P.; Rix, Hans-Walter

1MPIA, Heidelberg, Baden-Wuerttemberg, Germany. 2Harvard, Cambridge, MA.
352 Gamma Ray Bursts Poster Session

Wednesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

352.01 Fermi-LAT Observations of GRB 130427A
Zhu, Sylvia1,2; Chiang, James3; Dermer, Charles D.4; Omodei, Nicola5; Vianello, Giacomo6; Xiong, Shaolin6
1University of Maryland, College Park, MD. 2NASA Goddard Space Flight Center, Greenbelt, MD. 3SLAC National Accelerator Laboratory, Stanford, CA. 4Naval Research Lab, Washington, DC. 5Stanford University, Stanford, CA. 6University of Alabama, Huntsville, AL.

352.02 Search for Sub-Planckian Length Scales in GRB 090510A and GRB 130427A
Brisbois, Chad1; Nemiroff, Robert J.1; Kostinski, Alexander1
1Michigan Technological University, Houghton, MI.

352.03 The Future of Fermi-LAT Gamma-ray Burst Studies with Improved Event Reconstruction
Racusin, Judith L.1
1NASA/GSFC, Greenbelt, MD.
Contributing teams: Fermi Large Area Telescope Collaboration

352.04 Chasing short duration gamma-ray bursts with Swift and Fermi
Troja, Eleonora1,2; Lien, Amy Y.1,2; Connaughton, Valerie2; Gehrels, Neil2; Pelassa, Veronique2; Troja, Eleonora2
1University of Maryland, College Park, MD. 2NASA/GSFC, Greenbelt, MD.

352.05 Distribution of Gamma-Ray Bursts
Diaz Rodriguez, Mariangelly1,2; Smith, Miles2; Tešić, Gordana2
1University of Puerto Rico at Humacao, Humacao, Puerto Rico. 2Penn State University, State College, PA.

352.06 Probing the Gamma-Ray Burst Rate with Trigger Simulations of the Swift Burst Alert Telescope
Lien, Amy Y.1,2; Sakamoto, Takanori3; Gehrels, Neil4; Palmer, David5; Barthelmy, Scott D.4; Graziani, Carlo6; Cannizzo, John K.1,2
1University of Maryland, Baltimore County, Baltimore, MD. 2CRESST and NASA Goddard Space Flight Center, Greenbelt, MD. 3Aoyama Gakuin University, Fuchinobe, Kanagawa, Japan. 4NASA Goddard Space Flight Center, Greenbelt, MD. 5Los Alamos National Laboratory, Los Alamos, NM. 6University of Chicago, Chicago, IL.

352.07 Very High Energy Gamma Ray Bursts: Predictions for New Ground Based Telescopes
Morgan, Ian1,2; Racusin, Judith L.3; Perkins, Jeremy3
1St. Mary’s College of Maryland, St. Mary’s City, MD. 2CRESST, Baltimore, MD. 3NASA/GSFC, Greenbelt, MD.
Contributing teams: on behalf of the Fermi-Large Area Telescope Collaboration

352.08 Modeling the Afterglows of Gamma Ray Bursts for Arbitrary Viewing Angles
Ryan, Dominic1; Morsony, Brian J.2
1University of Nebraska-Lincoln, Lincoln, NE. 2University of Wisconsin-Madison, Madison, WI.
352.09 Modeling the Composition and Emissions of Gamma-Ray Burst Jet Cocoons
Meskhidze, Helen 1, 2; Masdea, Clifton J. 1, 3, 4; Lazzati, Davide 1; Lopez-Camara, Diego 1
1 North Carolina State University, Elon, NC. 2 Elon University, Elon, NC. 3 Brandeis University, Boston, MA.

352.10 Pulse Decomposition of Gamma-Ray Burst Light Curves Using Bayesian Droplets
Loredo, Thomas J. 1; Hakkila, Jon E. 2; Broadbent, Mary E. 3; Wolpert, Robert L. 4
1 Cornell University, Ithaca, NY. 2 College of Charleston, Charleston, SC. 3 Duke University, Durham, NC.

352.11 Template Reproduction of GRB Pulse Light Curves
Hakkila, Jon E. 1; Preece, Robert D. 2; Loredo, Thomas J. 3; Wolpert, Robert L. 4; Broadbent, Mary E. 4
1 College of Charleston, Charleston, SC. 2 University of Alabama in Huntsville, Huntsville, AL. 3 Cornell University, Ithaca, NY. 4 Duke University, Durham, NC.

352.12 Extrapolating Dust Composition from GRB SEDs: A Cautionary Tale
Updike, Adria C. 1; Jacobson, Robert L. 2
1 Roger Williams University, Bristol, RI.

352.13 Missing High-Energy Gamma-ray Afterglows of Gamma-ray Bursts
Holt, Carrie 1, 2; Racusin, Judith L. 3; Kocevski, Daniel 4
1 CRESST/UMBC, Baltimore, MD. 2 Wagner College, Staten Island, NY. 3 NASA/GSFC, Greenbelt, MD. 4 NASA/GSFC/ORAU, Greenbelt, MD.
Contributing teams: Fermi Large Area Telescope Collaboration

352.14 The Nature of the Most Extreme Cosmic Explosions: Broadband Studies of Fermi LAT GRB Afterglows
Kidd, Lauren 1; Troja, Eleonora 2
1 University of Colorado at Boulder, Centennial, CO. 2 NASA Goddard Space Flight Center, Greenbelt, MD.

353 Planetary Nebulae, Supernova Remnants
Wednesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

353.01 XMM-Newton X-ray studies of Supernova Remnants in the Large Magellanic Cloud
Ambrosino, William 1, 2; Guinan, Edward F. 1
1 Villanova University, Villanova, PA. 2 Max Planck Institute for Extraterrestrial Physics, Garching, Bavaria, Germany.
Contributing teams: High Energy Group at Max Planck Institute for Extraterrestrial Physics

353.02 XMM-Newton Large Program of SN1006
Li, Jiang-Tao 1; Decourchelle, Anne 1
1 Service d’Astrophysique, CEA Saclay, Gif-sur-Yvette, France.
Contributing teams: XMM-Newton LP team of SN1006

353.03 Shock and Awe: Measuring the Expansion of the Shock Front of Supernova Remnant SN1006
Dills, Sidney 1; McKinney, Lilly 1; Moffett, David A. 1; Reynoso, Estela 2
1 Furman University, Greenville, SC. 2 IAFE, University of Buenos Aires, Buenos Aires, Argentina.
353.04 Spatio-temporal Spectral Variability in Cas A
Nambiar, Yamini; Kashyap, Vinay; Patnaude, Daniel
1 Acton-Boxborough Regional High School, Acton, MA. 2 Harvard Smithsonian, CfA, Cambridge, MA.

353.05 Using Low Frequency Radio Absorption to Measure the Density and Mass of Unshocked Ejecta in Cassiopeia A
DeLaney, Tracey; Kassim, Namir E.; Rudnick, Lawrence; Perley, Richard A.
1 West Virginia Wesleyan College, Buckhannon, WV. 2 Naval Research Laboratory, Washington, DC. 3 University of Minnesota, Minneapolis, MN. 4 National Radio Astronomy Observatory, Socorro, NM.

353.06 Using Rotation Measure Synthesis to Study Shocks in Cassiopeia A
Stadelman, Matt; DeLaney, Tracey; Rupen, Michael P.; Rudnick, Lawrence; Rau, Urvashi; Bhatnagar, Sanjay; Greisen, Eric; Petre, Robert
1 West Virginia Wesleyan College, Buckhannon, WV. 2 National Radio Astronomy Observatory, Socorro, NM. 3 University of Minnesota, Minneapolis, MN. 4 NASA Goddard Space Flight Center, Greenbelt, MD.

353.07 Herschel Constraints on the Mass of Shocked Dust in the O-rich Supernova Remnant G292.0+1.8
Ghavamian, Parviz; Williams, Brian J.
1 Towson University, Towson, MD. 2 NASA/Goddard Space Flight Center, Greenbelt, MD.

353.08 X-Ray Kinematics of the Galactic Core-Collapse Supernova Remnant G292.0+1.8
Park, Sangwook; Bhalerao, Jayant; Dewey, Daniel; Hughes, John P.; Slane, Patrick O.; Burrows, David N.; Lee, Jae-joon; Mori, Koji
1 University of Texas at Arlington, Arlington, TX. 2 MIT, Cambridge, MA. 3 Rutgers, Piscataway, NJ. 4 SAO, Cambridge, MA. 5 Penn State, University Park, PA. 6 U of Miyazaki, Miyazaki, Japan. 7 KASI, Daejeon, Korea, Republic of.

353.09 A Hubble Space Telescope Measurement of the Forward Shock Velocity of the Supernova Remnant 0509+67.5 in the Large Magellanic Cloud
Hovey, Luke; Hughes, John P.; Eriksen, Kristoffer
1 Rutgers University, New Brunswick, NJ. 2 Los Alamos National Laboratory, Los Alamos, NM.

353.10 Near IR Spectroscopic Analysis of Molecular Hydrogen in the Dumbbell Nebula (NGC 6853)
Baldrige, Sean; Speck, Angela; Matsuura, Mikako
1 University of Missouri, Columbia, MO. 2 University of Manchester, Manchester, United Kingdom.

353.11 Using [FeII] to Search for Supernova Remnants in NGC 6946
Bruursema, Justice; Meixner, Margaret; Long, Knox S.; Otsuka, Masaaki
1 Johns Hopkins University, Baltimore, MD. 2 STSCI, Baltimore, MD. 3 ASIAA, Taipei, Taiwan.

353.12 The Young Core-Collapse Supernova Remnant G11.2-0.3: An Asymmetric Circumstellar Medium and a Variable Pulsar Wind Nebula
Borkowski, Kazimierz; Moseby, Andrew; Reynolds, Stephen P.
1 North Carolina State Univ., Raleigh, NC.
353.13 High-Resolution Near-Infrared Spectra of the Proto-Planetary Nebula, MWC 922
Whelan, David G.1,2; Chojnowski, S. Drew2; Zasowski, Gail3; Wisniewski, John P.5;
Nidever, David L.4; Majewski, Steven2
1Department of Physics and Astronomy, Hampden-Sydney College, Hampden-Sydney,
VA. 2University of Virginia, Charlottesville, VA. 3Johns Hopkins University, Baltimore,
MD. 4University of Michigan, Ann Arbor, MI. 5University of Oklahoma, Norman, OK.
Contributing teams: The SDSS-III/APOGEE Team

353.14 Chandra observations of SNR RCW 103
Burrows, David N.1; Frank, Kari A.1; Park, Sangwook2
1Penn State Univ., University Park, PA. 2UT-Arlington, Arlington, TX.

353.15 X-ray Measurements of Tycho Supernova Remnant’s Dynamics
Brchnelova, Michaela1
1High School Jura Hronca, Bratislava, Slovakia.

353.16 Understanding the Balmer Bubble in the Vela Supernova Remnant
Chinn, Brian1; Smith, Chris1; Points, Sean1; Heathcote, Steve1
1Cerro Tololo Inter-American Observatory, La Serena, Chile. 2University of
Florida, Roswell, FL.

353.17 Fermi-LAT Observations of Supernova Remnants Interacting with Molecular Clouds
Cohen, Jamie1,2; Hays, Elizabeth A.2
1University of Maryland, College Park, MD. 2NASA Goddard Space Flight Center,
Greenbelt, MD.
Contributing teams: Fermi-LAT Collaboration

353.18 Investigating Possible Departures from Maxwellian Energy Distributions in
Nebulae using High-Resolution Emission Line Spectra
Turbyfill, Amanda1; Dinerstein, Harriet L.1; Sterling, Nicholas C.2
1University of Texas at Austin, Austin, TX. 2University of West Georgia,
Carrollton, GA.

353.19 GAMMA-RAY EMISSION FROM SUPERNOVA REMNANT INTERACTION WITH
MOLECULAR CLUMPS
Tang, Xiaping1; Chevalier, Roger1
1University of Virginia, Charlottesville, VA.

353.20 Protrusions Beyond the Blast Waves of Young Type Ia Supernova Remnants:
Hydrodynamic Instabilities or Ejecta Bullets?
Dyer, Ashton1; Blondin, John M.1; Reynolds, Stephen P.1
1North Carolina State University, Raleigh, NC.

353.21 Analysis of Shock Interactions and Supernova Morphology from Molecular
Emission Around Young Supernova Remnants
Kilpatrick, Charles1; Bieging, John H.1; Rieke, George1
1University of Arizona, Tucson, AZ.

353.22 Electron Heating, Magnetic Field Amplification, and Cosmic Ray Precursor
Length at Supernova Remnant Shocks
Laming, J. M.1; Hwang, Una2; Ghavamian, Parviz1; Rakowski, Cara E.4
1NRL, Washington, DC. 2NASA/GSFC, Greenbelt, MD. 3Towson University,
Towson, MD. 4formerly of NRL, Washington, DC.
353.23 Electron-Ion Equilibrium and Shock Precursors in the Northeast Limb of The Cygnus Loop
Medina, Amber¹; Raymond, John C.¹; Edgar, Richard J.¹; Caldwell, Nelson¹; Fesen, Robert A.³
¹Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. ²New Mexico State University, Las Cruces, NM. ³Dartmouth College, Hanover, NH.

353.24 3D Simulations of Supernova Remnants from Type Ia Supernova Models
Johnson, Heather¹; Reynolds, Stephen P.²; Frohlich, Carla²; Blondin, John M.²
¹University of Texas at Austin, Austin, TX. ²North Carolina State University, Raleigh, NC.

353.25 Are Planetary Nebulae in Globular Clusters a Binary Phenomenon?
Jacoby, George H.¹; De Marco, Orsola²; Davies, James E.¹; Harrington, J. P.¹; Bond, Howard E.⁵
¹GMTO Corporation, Pasadena, CA. ²Macquarie Univ., North Ryde, NSW, Australia. ³Harvard Univ, Cambridge, MA. ⁴STScI, Baltimore, MD. ⁵Univ of Maryland, College Park, MD.

353.26 Post-Ejection Evolution of the Orbital Components in the Common Envelope Phase
Politano, Michael¹
¹Marquette Univ., Milwaukee, WI.

353.27 The Chandra Planetary Nebula Survey (ChanPlaNS): Results from Cycle 14
Freeman, Marcus¹; Kastner, Joel H.¹; Montez, Rodolfo²
¹Rochester Institute of Technology, Rochester, NY. ²Vanderbilt, Nashville, TN.
Contributing teams: ChanPlaNS Team

353.28 Chemical Abundances of Compact Planetary Nebulae in the Galactic Disk
Lee, Ting-Hui¹; Shaw, Richard A.²; Stanghellini, Letizia²
¹Western Kentucky University, Bowling Green, KY. ²NOAO, Tucson, AZ.

353.29 The Chemical Diversity of Planetary Nebulae
Dinerstein, Harriet L.¹; Geballe, Thomas R.²; Sterling, Nicholas C.³
¹Univ. of Texas, Austin, Austin, TX. ²Gemini Observatory, Hilo, HI. ³University of West Georgia, Carrollton, GA.

354 Supernovae Poster Session

Wednesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

354.01 SweetSpot: A 3-year NOAO Survey to Observe 150 Type Ia Supernovae in the Near Infrared in the Nearby Hubble Flow
Wood-Vasey, W. M.¹; Weyant, Anja¹; Allen, Lori¹; Garnavich, Peter M.³; Jahan, Nabila¹; Jha, Saurabh¹; Joyce, Richard R.²; Matheson, Thomas⁴; Rest, Armin⁵
¹University of Pittsburgh, Pittsburgh, PA. ²National Optical Astronomy Observatory, Tucson, AZ. ³Notre Dame, Notre Dame, IN. ⁴Rutgers, the State University of New Jersey, Piscataway, NJ. ⁵Space Telescope Science Institute, Baltimore, MD.
354.03 Analysis of Nearby Supernova Factory Type Ia Spectra with SYNAPPS: Maximum-Light Sample
Sofiatti, Caroline1, 2; Thomas, Rollin1; Aldering, Gregory S.1; Bailey, Stephen1; Birchall, Dan1; Childress, Michael1; Fakhouri, Hannah1; Hayden, Brian1; Kim, Alex G.1; Nordin, Jakob1; Nugent, Peter E.1; Perlmutter, Saul1; Rubin, David1; Runge, Karl1; Saunders, Clare3; Suzuki, Nao1; Weaver, Benjamin1; Pecontal, Emmanuel3; Buton, Clement4; Copin, Yannick4; Chotard, Nicolas4; Gangler, Emmanuel4; Pereira, Rui4; Rigault, Mickael4; Smadja, Gerard4; Cellier-Holzem, Flora5; Canto, Arnaud5; Antilogus, Pierre5; Bongard, Sebastien5; Fleury, Mathilde5; Guy, Julien5; Pain, Reynald5; Chen, Juncheng5; Tao, Charling5; Feindt, Ulrich6; Greskovic, Peter6; Kowalski, Marek6; Lombardo, Simona6; Baltay, Charles6; Rabinowitz, David L.6

354.04 Signatures of Explosion Asymmetry, Progenitor Density, and Magnetic Fields in Late-Time NIR Spectra of Type Ia SNe
Diamond, Tiara1; Gerardy, Christopher L.1; Hoeflich, Peter1
1. Florida State University, Tallahassee, FL.

354.05 Probing Type Ia Supernova Host Galaxy Correlations: Insights from Model Testing
Hayden, Brian1; Aldering, Gregory S.1; Bailey, Stephen1; Birchall, Dan1; Childress, Michael1; Fakhouri, Hannah1; Kim, Alex G.1; Nordin, Jakob1; Nugent, Peter E.1; Perlmutter, Saul1; Rubin, David1; Runge, Karl1; Saunders, Clare3; Sofiatti, Caroline1; Suzuki, Nao1; Thomas, Rollin1; Weaver, Benjamin1; Pecontal, Emmanuel3; Buton, Clement4; Copin, Yannick4; Chotard, Nicolas4; Gangler, Emmanuel4; Pereira, Rui4; Smadja, Gerard4; Cellier-Holzem, Flora5; Canto, Arnaud5; Antilogus, Pierre5; Bongard, Sebastien5; Fleury, Mathilde5; Guy, Julien5; Pain, Reynald5; Chen, Juncheng5; Tao, Charling5; Feindt, Ulrich6; Greskovic, Peter6; Kowalski, Marek6; Lombardo, Simona6; Rigault, Mickael6; Baltay, Charles6; Rabinowitz, David L.6
1. Lawrence Berkeley National Lab, Berkeley, CA. 2. Centre de Recherche Astronomique de Lyon, Lyon, France. 3. Institut de Physique Nucleaire de Lyon, Lyon, France. 4. Laboratoire de Physique Nucleaire et des Hautes Energies, Paris, France. 5. Tsinghua Center for Astrophysics, Beijing, China. 6. University of Bonn, Bonn, Germany. 7. Yale University, New Haven, CT.

354.06 On Numerical Considerations for Modeling Reactive Astrophysical Shocks
Papatheodore, Thomas1; Messer, O. E. B.2, 1
1. University of Tennessee, Knoxville, TN. 2. Oak Ridge National Laboratory, Oak Ridge, TN.

354.07 Advancing Nucleosynthesis in Core-Collapse Supernovae Models Using 2D CHIMERA Simulations
Harris, J. A.1; Hix, William R.2, 1; Chertkow, Merek A.1; Bruenn, Stephen W.3; Lentz, Eric J.1, 2; Messer, O. E. B.4, 1; Mezzacappa, Anthony3, 5; Blondin, John M.6; Marronetti, Pedro3, 7; Yakunin, Konstantin1, 2
354.08 Multidimensional simulations of core-collapse supernovae with CHIMERA
Lentz, Eric J.¹, ²; Bruenn, Stephen W.³; Yakunin, Konstantin¹, ²; Endeve, Eirik³;
Blondin, John M.⁴; Harris, J. A.¹; Hix, William R.¹, ²; Marronetti, Pedro⁵, ³; Messer,
O. E. B.²; Mezzacappa, Anthony¹, ²
¹-Univ. of Tennessee, Knoxville, TN. ²Oak Ridge Nat. Lab., Oak Ridge, TN. ³Florida
Atlantic Univ., Boca Raton, FL. ⁴NC State Univ., Raleigh, NC. ⁵NSF, Washington, DC.

354.09 3D Core-Collapse Supernova Models: Gravitational and Neutrino Signatures
Yakunin, Konstantin¹; Marronetti, Pedro², ⁴; Messer, O. E. B.¹, ³; Mezzacappa,
Anthony¹, ³; Lentz, Eric J.¹, ³; Bruenn, Stephen W.²; Hix, William R.¹, ³; Harris, J. A.¹;
Blondin, John M.⁵
¹University of Tennessee, Knoxville, TN. ²Florida Atlantic University, Boca
Raton, FL. ³Oak Ridge National Laboratory, Oak Ridge, TN. ⁴National Science
Foundation, Arlington, VA. ⁵North Carolina State University, Raleigh, NC.

354.10 Testing an Asymmetric Explosion Model for Type Ia Supernovae with Optical
Spectroscopy from SALT
Camacho, Yssavo¹; Pandya, Viraj²; McCully, Curtis²; Patel, Brandon²; Jha, Saurabh²
¹Lehigh University, Bethlehem, PA. ²Rutgers, The State University of New Jersey,
Piscataway, NJ.

354.11 Supernova Shock Breakout Light Curves and Spectra from CASTRO Multigroup
Radiation Simulations
Lovegrove, Elizabeth¹; Woosley, Stan E.¹
¹California - Santa Cruz, University of, Santa Cruz, CA.

354.12 Lightcurves of Type Ia Supernovae from the La Silla-QUEST Survey and the
Carnegie Supernova Project
Walker, Emma S.¹; Baltay, Charles¹; Rabinowitz, David L.¹; Mckinnon, Ryan¹;
Contreras, Carlos²; Hsiao, Eric²; Phillips, Mark²; Morrell, Nidia²; Campillay, Abdo²;
Gonzalez, Consuelo²; Seron, Jacqueline²; Krisiunas, Kevin³; Tucker, Bradley E.⁴
¹Yale University, New Haven, CT. ²Las Campanas Observatory, La Serena, Chile.
³Texas A&M, College Station, TX. ⁴ANU, Canberra, ACT, Australia.

354.13 The Metrology of Supernova Light Curves
Rust, Bert W.¹; Mullen, Katharine M.²
¹NIST, Gaithersburg, MD. ²UCLA, Los Angeles, CA.

354.14 A Sample of Light Curves of Type II-n and other Unclassified Supernova
Mock, Justin¹; Martin, John C.¹; Hambsch, Franz-Joseph²; Strickland, William³;
Cason, Andy⁴
¹University of Illinois Springfield, Springfield, IL. ²Remote Observatory Atacama
Desert, Mol, Belgium. ³Meyer Observatory, Coryell, TX. ⁴, Dawsonville, GA.

354.15 Bolometric Lightcurves and SEDs of Type Ia Supernovae
Smitka, Michael T.¹; Brown, Peter¹; Suntzeff, Nicholas B.¹
¹Texas A&M University, College Station, TX.
354.16 NIR Spectra of Type Ia Supernovae: High-Cadence Observations
Marion, Howie H.1, 2; Hsiao, Eric3; Vinko, Jozsef1, 4; Parrent, Jerod T.5; Silverman, Jeffrey M.1; Kirshner, Robert P.2; Phillips, Mark3; Wheeler, J. C.1; Burns, Christopher R.1; Morrell, Nidia2; Contreras, Carlos5; Challis, Peter1
1University of Texas at Austin, Austin, TX. 2Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 3Carnegie Observatories, Las Campanas Observatory, La Serena, Chile. 4Department of Optics and Quantum Electronics, University of Szeged, Szeged, Hungary. 5Las Cumbres Observatory Global Telescope Network, Goleta, CA. Observatories of the Carnegie Institution of Washington, Pasadena, CA.

Contributing teams: Carnegie Supernova Project II, CfA Supernova Group

354.17 Principal Component Analysis of Type Ia Supernova Spectrophotometric Time Series
Saunders, Clare1, 2; Aldering, Gregory S.1; Bailey, Stephen J.1; Birchall, Dan1; Childress, Michael1; Fakhouri, Hannah1, 2; Hayden, Brian1; Kim, Alex G.1; Nordin, Jakob1; Nugent, Peter E.1, 2; Perlmutter, Saul1, 2; Rubin, David1; Runge, Karl1; Sofiatti, Caroline1, 2; Suzuki, Nao1; Thomas, Rollin1; Weaver, Benjamin1; Pecontal, Emmanuel1; Buton, Clement1; Copin, Yannick2; Chotard, Nicolas2; Gangler, Emmanuel2; Pereira, Rui2; Smadja, Gerard2; Cellier-Holzem, Flora2; Canto, Arnaud2; Antilogus, Pierre2; Bongard, Sebastien2; Fleury, Mathilde2; Guy, Julien2; Pain, Reynald2; Chen, Juncheng6; Tao, Charling6; Feindt, Ulrich7; Greskovic, Peter7; Kowalski, Marek7; Lombardo, Simona7; Rigault, Mickael7; Baltay, Charles4; Rabinowitz, David L.8
1Lawrence Berkeley National Laboratory, Berkeley, CA. 2University of California - Berkeley, University of, Berkeley, CA. 3Laboratoire de Physique Nucléaire et des Hautes Énergies, Paris, France. 4Yale University, New Haven, CT. 5Centre de Recherche Astronomique de Lyon, Lyon, France. 6Tsinghua Center for Astrophysics, Beijing, China. 7Universität Bonn, Bonn, Germany. 8Institut de Physique Nucléaire de Lyon, Lyon, France.

354.18 TIME VARIATION OF AV AND RV FOR TYPE Ia SUPERNOVAE BEHIND INTERSTELLAR DUST
Huang, Xiaosheng1, 2; Biederman, Moriah1; Herger, Brendan1; Aldering, Gregory S.2
1University of San Francisco, San Francisco, CA. 2Lawrence Berkeley National Laboratory, Berkeley, CA.

354.19 Understanding U-band Spectroscopic Variations in Type Ia Supernovae
Nordin, Jakob1, 2; Aldering, Gregory S.1; Bailey, Stephen J.1; Birchall, Dan1; Childress, Michael1; Fakhouri, Hannah1, 2; Hayden, Brian1; Kim, Alex G.1; Nugent, Peter E.1, 2; Perlmutter, Saul1, 2; Rubin, David1; Runge, Karl1; Saunders, Clare1, 2; Sofiatti, Caroline1, 2; Suzuki, Nao1; Thomas, Rollin1; Weaver, Benjamin1; Pecontal, Emmanuel1; Buton, Clement1; Copin, Yannick1; Chotard, Nicolas1; Gangler, Emmanuel1; Pereira, Rui1; Rigault, Mickael1; Smadja, Gerard1; Cellier-Holzem, Flora1; Canto, Arnaud1; Antilogus, Pierre1; Bongard, Sebastien1; Fleury, Mathilde1; Guy, Julien1; Pain, Reynald1; Chen, Juncheng6; Tao, Charling6; Feindt, Ulrich7; Greskovic, Peter7; Kowalski, Marek7; Lombardo, Simona7; Rigault, Mickael1; Baltay, Charles4; Rabinowitz, David L.8
1Lawrence Berkeley National Laboratory, Berkeley, CA. 2University of California - Berkeley, Berkeley, CA. 3Centre de Recherche Astronomique de Lyon, Lyon, France. 4Institut de Physique Nucléaire de Lyon, Lyon, France. 5Laboratoire de Physique Nucléaire et des Hautes Énergies, Paris, France. 6Tsinghua Center for Astrophysics, Beijing, China. 7University of Bonn, Bonn, Germany. 8Yale University, New Haven, CT.
354.20 Supernova Spectroscopy with the Southern African Large Telescope
Pandya, Viraj 1; Jha, Saurabh 1; McCully, Curtis 1; Patel, Brandon 1; Camacho, Yssavo 2
1Rutgers University, Piscataway, NJ. 2Lehigh University, Bethlehem, PA.

354.21 The Supernova Spectropolarimetry Project: Evolution of Asymmetries in the Very Luminous Type Ib SN 2012au
Hoffman, Jennifer L. 1; Smith, Nathan 1; Bilinski, Christopher 2; Dessart, Luc 1; Huk, Leah N. 1; Leonard, Douglas C. 2; Milne, Peter 2; Smith, Nathan 1; Smith, Paul S. 2; Williams, G. Grant 5
1University of Denver, Denver, CO. 2Steward Observatory, Tucson, AZ. 3Laboratoire Lagrange, Nice, France. 4San Diego State University, San Diego, CA. 5MMT Observatory, Tucson, AZ.

354.22 The Supernova Spectropolarimetry Project: Results from Multi-Epoch Observations of the Type IIn SN 2010jl
Williams, George G. 1, 2; Dessart, Luc 5; Hoffman, Jennifer L. 1; Huk, Leah N. 1; Leonard, Douglas C. 2; Milne, Peter 2; Smith, Nathan 1; Smith, Paul S. 2
1MMT Observatory, Tucson, AZ. 2University of Arizona, Tucson, AZ. 3University of Denver, Denver, CO. 4San Diego State University, San Diego, CA. 5Laboratoire Lagrange, Nice, Provence-Alpes-Côte d’Azur, France.

354.23 The Supernova Spectropolarimetry Project: Results from Multi-Epoch Observations of the Type Iib SN 2011dh
Bilinski, Christopher 1; Williams, George G. 4; Smith, Paul S. 1; Smith, Nathan 1; Milne, Peter 1; Hoffman, Jennifer L. 1; Huk, Leah N. 1; Leonard, Douglas C. 1; Dessart, Luc 1
1Steward Observatory, Tucson, AZ. 2University of Arizona, Tucson, AZ. 3San Diego State University, San Diego, CA. 4Université de Nice, Sophia Antipolis, F-06304 Nice cedex 4, France. 5MMT Observatory, Tucson, AZ.

354.24 Permitted spectral line features at late times in SN 2011fe?
Friesen, Brian 1; Baron, Edward A. 1, 2; Parrent, Jerod T. 3, 4; Thomas, Rollin 5; Branch, David 1
1University of Oklahoma, Norman, OK. 2Hamburger Sternwarte, Hamburg, Germany. 3Dartmouth College, Hanover, NH. 4Las Cumbres Observatory Global Telescope Network, Goleta, CA. 5Lawrence Berkeley National Laboratory, Berkeley, CA.

354.25 BVRI Photometry of SN 2013ej in M74
Richmond, Michael W. 1
1Rochester Inst. of Tech., Rochester, NY.

354.26 Comprehensive Optical Observations of the Nearby Type Ia SN 2012fr
Sand, David J. 1; Valenti, Stefano 3, 2; Parrent, Jerod T. 3; Graham, Melissa L. 4; Howell, Dale A. 3, 2
1Texas Tech University, Lubbock, TX. 2UC Santa Barbara, Santa Barbara, CA. 3Las Cumbres Observatory Global Telescope Network, Goleta, CA. 4UC Berkeley, Berkeley, CA.

354.27 Examining the Late Time Evolution of the Luminous Type IIln Supernova 2010jl
Jencson, Jacob 1; Prieto, Jose 2; Stanek, Krzysztof Z. 1, 3; Shappee, Benjamin 1
1The Ohio State University, Columbus, OH. 2Princeton University, Princeton, NJ. 3Center for Cosmology and AstroParticle Physics, Columbus, OH.
SN 2011ja: A Case of Circumstellar Interaction and Early Dust Formation
Krafton, Kelsie; Andrews, Jennifer E.; Clayton, Geoffrey C.; Sugerman, Ben; Montiel, Edward J.
1 UMass Amherst, Amherst, MA. 2 Goucher College, Baltimore, MD. 3 LSU, Baton Rouge, LA.

SN 2012im/2013ek: A Supernova Double Take in NGC 6984
Milisavljevic, Dan; Drout, Maria; Margutti, Joseph; Soderberg, Alicia M.; Fesen, Robert A.; Parker, Stuart; Brimacombe, Joseph; Sanders, Nathan; Kamble, Atish; Berger, Ed; Kirshner, Robert P.; Drake, Andrew J.; Howerton, Stan; Hsiao, Eric; Morrell, Nidia
1 Harvard Smithsonian, CfA, Cambridge, MA. 2 Dartmouth College, Hanover, NH. 3 Parkdale Observatory, Oxford, Canterbury, New Zealand. 4 Coral Towers Observatory, Cairns, QLD, Australia. 5 Caltech, Pasadena, CA. 6 KITP, Santa Barbara, CA. 7 Carnegie Observatories, La Serena, Chile.

The remarkably similar explosions of SN2009ip and SN2010mc, and the late fading of Type IIn supernovae
Smith, Nathan; Mauerhan, Jon; Prieto, Jose

High velocity lines due to interaction between Type Ia supernova ejecta and a circumstellar shell: 1-D simulations
Mulligan, Brian W.; Wheeler, J. C.
1 University of Texas at Austin, Austin, TX.

How Stellar Mixing Can Explain the Overabundance of Type Ic Supernovae in Long-Duration Gamma-Ray Bursts
Frey, Lucille; Fryer, Chris; Young, Patrick A.; Even, Wesley P.
1 Los Alamos National Lab, Los Alamos, NM. 2 University of New Mexico, Albuquerque, NM. 3 University of Arizona, Tucson, AZ. 4 Arizona State University, Tempe, AZ.

STELLAR AUTOPSIES: THE ANALYSIS OF TWO GRB-SNE IN THE NEBULAR PHASE
Villar, Victoria; Soderberg, Alicia M.; Milisavljevic, Dan; Drout, Maria
1 MIT, Cambridge, MA. 2 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

Galactic SNRs in the WISE all sky survey
Powell, Jason
1 Towson University, Towson, MD.

Supernova science with LCOGT
Howell, Dale A.; Valenti, Stefano; Sand, David J.; Parrent, Jerod T.; Arcavi, Iair; Graham, Melissa L.
1 Las Cumbres Global Telescope Network, Inc., Goleta, CA. 2 UC Santa Barbara, Santa Barbara, CA. 3 Texas Tech, Lubbock, TX. 4 Dartmouth, Hanover, NH. 5 KITP, Santa Barbara, CA. 6 University of California, Berkeley, CA.

The Effects of Collective Neutrino Oscillations on Supernova Nucleosynthesis
Seadrow, Shaquann; Frohlich, Carla; Duan, Huaiyu; Friedland, Alexander; McLaughlin, Gail; Keohane, Jonathan W.
1 Hampden-Sydney College, Hampden-Sydney, VA. 2 North Carolina State University, Raleigh, NC. 3 University of New Mexico, Albuquerque, NM. 4 Los Alamos National Laboratory, Los Alamos, NM.
354.37 ALMA resolves SN 1987A’s dust factory and particle accelerator.
Indebetouw, Remy
1Univ. of Virginia, Charlottesville, VA.
Contributing teams: SN1987A ALMA Cycle 0 Team

354.38 Recalibration of the Lightcurve of SN 2011fe
Hasson, Benjamin1; Storrs, Alex1
1Department of Physics, Astronomy, and Geosciences, Towson University, Parsonburg, MD.

354.39 Spectropolarimetry of SN 2011fe
Milne, Peter1; Williams, G. Grant1; Smith, Paul S.1; Smith, Nathan1
1University of Arizona, Tucson, AZ.

354.40 Impact of Rotation to the Pair-Instability Supernovae
Chen, Ke-Jung1, 2
1UC Santa Cruz, Santa Cruz, CA. 2University of Minnesota, Twin Cities, Minneapolis, MN.

354.41 A study of colliding white dwarfs acting as a progenitor of Supernova 1a
Wozniak, Thomas1; Chang, Philip1
1UW-Milwaukee, Milwaukee, WI. 2Rufus King HS, Milwaukee, WI.

354.42 Discovery of a Gravitationally Lensed Type Ia Supernova
Quimby, Robert1; Quimby, Robert1
1Kavli IPMU, Kashiwa, Chiba, Japan.

354.43 Using the UV Lever Arm To Probe Type IIn Supernovae Shells
Roming, Peter1; de la Rosa, Janie2; Whalen, Daniel J.3; Bayless, Amanda J.1
1Southwest Research Institute, San Antonio, TX. 2University of Texas, San Antonio, San Antonio, TX. 3Carnegie Mellon University, Pittsburg, PA.

355 Dwarf & Irregular Galaxies Poster Session

Wednesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

355.01 A Quest For Stellar Streams
Mao, Shengkai1; Caldwell, Nelson2; Walker, Matthew G.3
1UC Berkeley, Berkeley, CA. 2CfA, Cambridge, MA. 3Carnegie Mellon University, Pittsburgh, PA.

355.02 Machine Learning Identification of Dwarf Galaxy Satellites around Milky Way Analogs
Sandford, Emily1; Geha, Marla C.3; Wechsler, Risa H.2; Tollerud, Erik J.1; Marshall, Philip J.2; Cunha, Carlos E.2
1Yale University, New Haven, CT. 2Stanford University, Stanford, CA.

355.03 The M31 Asymptotic Giant Exploration Survey: Intermediate-Age Stellar Content in Andromeda VII
Hamm, Karen1; Beaton, Rachael1; Hamren, Katherine1; Boyer, Martha L.3; Guhathakurta, Puragra2; Majewski, Steven R.1
1University of Virginia, Charlottesville, VA. 2University of California Santa Cruz, Santa Cruz, CA. 3NASA Goddard Space Flight Center, Greenbelt, MD.
Contributing teams: M31AGES collaboration
355.04  Metallicity Distribution Functions and Chemical Evolution Models of 4 Local Group Dwarf Galaxies.
Ross, Teresa¹; Holtzman, Jon A.¹; Anthony-Twarog, Barbara J.²; Saha, Abhijit³
¹New Mexico State University, Las Cruces, NM. ²University of Kansas, Lawrence, KS. ³NOAO, Tuscon, AZ.

355.05  The Formation History of the Ultra-Faint Dwarf Galaxies
Brown, Thomas M.¹; Tumlinson, Jason¹; Geha, Marla C.²; Kirby, Evan N.³; VandenBerg, Don A.⁴; Kalirai, Jason S.¹; Simon, Joshua D.⁵; Avila, Roberto J.¹; Munoz, Ricardo⁶; Guhathakurta, Puragra⁶; Renzini, Alvio⁶; Ferguson, Henry C.¹; Vargas, Luis C.²; Gennaro, Mario¹
¹Space Telescope Science Institute, Baltimore, MD. ²Yale University, New Haven, CT. ³University of California, Irvine, CA. ⁴University of Victoria, Victoria, BC, Canada. ⁵Observatories of the Carnegie Institution of Washington, Pasadena, CA. ⁶Universidad de Chile, Santiago, Santiago Province, Chile. ⁷University of California, Santa Cruz, CA. ⁸Osservatorio Astronomico, Padova, Padova, Italy.

355.06  The Haverford Variable Star Search: Ursa Major II and Bootes III
Gaughan, Andrea¹; Smith, Eric¹; Dillaire, Alexander¹; Bechtel, Marian¹; Willman, Beth¹; Boettcher, Erin¹
¹Haverford College, Haverford, PA. ²University of Wisconsin, Madison, WI.

355.07  Discovery of Extreme AGB Stars in the Dwarf Galaxies of the Local Group: First Results from the DUST In Nearby Galaxies with Spitzer (DUSTINGS) program
Boyer, Martha L.¹, ²; McQuinn, Kristen B.³; Barmby, Pauline¹; Bonanos, Alceste Z.⁵; Gehrz, Robert D.³; Gordon, Karl D.⁶; Groenewegen, Martin¹; Lagadec, Eric⁸; Lennon, Daniel¹⁰; Marengo, Massimo⁵; Meixner, Margaret⁸; Skillman, Evan D.³; Sloan, Gregory C.⁸; Sonneborn, George¹; van Loon, Jacco T.¹⁰; Zijlstra, Albert¹¹
¹NASA Goddard Space Flight Center, Code 665, Greenbelt, MD. ²Oak Ridge Associated Universities, Oak Ridge, TN. ³Institute for Astrophysics, University of Minnesota, Minneapolis, MN. ⁴University of Western Ontario, London, ON, Canada. ⁵National Observatory of Athens, Greece, Athens, Greece. ⁶STScI, Baltimore, MD. ⁷Royal Observatory of Belgium, Brussels, Belgium. ⁸Astronomy Department, Cornell University, Ithaca, NY. ⁹Department of Physics & Astronomy, Iowa State University, Ames, IA. ¹⁰Astrophysics Group, Lennard-Jones Laboratories, Keele University, Staffordshire, United Kingdom. ¹¹Jodrell Bank Centre for Astrophysics, University of Manchester, Manchester, United Kingdom.

355.08  Spectral results for the blue plume stars in Canis Major Overdensity
Rafiul Islam, Mirza Sharoz¹; Wilhelm, Ronald J.¹
¹University of Kentucky, Lexington, KY.

355.09  Dynamical and Population Gradients Within the Sagittarius dSph Galaxy
Hasselquist, Sten¹; Frinchaboy, Peter M.⁴; Majewski, Steven R.²; Damke, Guillermo²; Holtzman, Jon A.¹; Garcia Perez, Ana Elia²; Nidever, David L.⁶; Schiavon, Ricardo¹; Shetrone, Matthew D.⁷; Zasowski, Gail³
¹New Mexico State University, Las Cruces, NM. ²University of Virginia, Charlottesville, VA. ³Johns Hopkins University, Baltimore, MD. ⁴Texas Christian University, Fort Worth, TX. ⁵Liverpool John Moores University, Liverpool, Merseyside, United Kingdom. ⁶University of Michigan, Ann Arbor, MI. ⁷University of Texas at Austin, Austin, TX.
Contributing teams: APOGEE Team.
355.10 A Photometric Classification of the SAGE LMC Point Source Catalog
Marengo, Massimo1; Antoniou, Vallia2,1
1Iowa State University, Ames, IA. 2Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.
Contributing teams: SAGE Collaboration

355.11 The GALEX Catalog of UV Sources in the Magellanic Clouds
Thilker, David A.1; Bianchi, Luciana1; Simons, Raymond1
1Johns Hopkins University, Baltimore, MD.

355.12 Identifying Ranges of Stellar Ages and Metallicities for Blue Supergiants in the Starburst Galaxy IC 10
Bordwell, Baylee1,2; Ho, Ngoc-Nhung3; Geha, Marla C.3; West, Michael2
1University of California Berkeley, Berkeley, CA. 2Maria Mitchell Observatory, Nantucket, MA. 3Yale University, New Haven, CT.

355.13 Westerbork Synthesis Radio Telescope HI Imaging of HI-selected Local Group Galaxy Candidates
Adams, Elizabeth A.1,2; Cannon, John M.3; Oosterloo, Tom1; Giovanelli, Riccardo2; Haynes, Martha P.3
1ASTRON, Dwingeloo, Netherlands. 2Cornell University, Ithaca, NY. 3Macalester College, St. Paul, MN.

355.14 Very Large Array HI Imaging of ‘H Alpha Dots’
Alfvin, Erik1; Allan, John1; Cannon, John M.1; Kellar, Jessica1; Salzer, John J.4; Gronwall, Caryl1; Rosenberg, Jessica L.5; Wegner, Gary A.3; Williams, Anna7
1Physics & Astronomy, Macalester College, Saint Paul, MN. 2Dartmouth College, Hanover, NH. 4Indiana University, Bloomington, IN. 5Penn State University, University Park, PA. 6George Mason University, Fairfax, VA. 7University of Wisconsin, Madison, WI.

355.15 Very Large Array 14 GHz Continuum Imaging of Nearby, Star-Forming Galaxies
Nizami, Asra1; Cannon, John M.1; Kepley, Amanda A.2; Chomiuk, Laura3; Lee, Janice C.4; McQuinn, Kristen B.5; Skillman, Evan D.5; Wilcots, Eric M.6; Williams, Anna6
1Physics & Astronomy, Macalester College, Saint Paul, MN. 2NRAO, Charlottesville, VA. 3Michigan State University, East Lansing, MI. 4STScI, Baltimore, MD. 5University of Minnesota, Minneapolis, MN. 6University of Wisconsin, Madison, WI.

355.16 Structural Parameters of the SHIELD Galaxies From Hubble Space Telescope Images
Hagen, Cedric1; Cannon, John M.1; Cave, Ian1; McQuinn, Kristen B.2; Dolphin, Andrew E.3; Skillman, Evan D.2; Adams, Elizabeth A.4; Elson, Edward C.5; Giovanelli, Riccardo6; Haynes, Martha P.6; Ott, Juergen7; Saintonge, Amelie8; Salzer, John J.9
1Physics & Astronomy, Macalester College, Saint Paul, MN. 2University of Minnesota, Minneapolis, MN. 3Raytheon Company, Tucson, AZ. 4ASTRON, Dwingeloo, Netherlands. 5University of Cape Town, Cape Town, South Africa. 6Cornell University, Ithaca, NY. 7NRAO, Socorro, NM. 8Max-Planck-Institute for Extraterrestrial Physics, Garching, Germany. 9Indiana University, Bloomington, IN.
355.17 Magnetic Fields in the Irregular Galaxy NGC1156
Schmitz, Susan1,2; Kepley, Amanda A.3; Beck, Rainer4; Lang, Cornelia C.1; Wilcots, Eric M.2
1 University of Iowa, Iowa City, IA. 2 University of Wisconsin, Madison, WI. 3 National Radio Astronomy Observatory, Green Bank, WV. 4 Max-Planck-Institut für Radioastronomie, Bonn, Germany.

355.18 Radial Color and Mass Profile Trends of Dwarf Irregular Galaxies
Herrmann, Kimberly A.1,2; Hunter, Deidre A.2
1 Penn State Mont Alto, Mont Alto, PA. 2 Lowell Observatory, Flagstaff, AZ.
Contributing teams: LITTLE THINGS

355.19 Globular Cluster Systems of Dwarf Elliptical Galaxies in Virgo and Fornax
Miller, Bryan1; Puzia, Thomas2; Hilker, Michael3; Kissler-Patig, Markus4
1 Gemini Observatory, La Serena, IV Region, Chile. 2 Pontifica Universidad Católica de Chile, Santiago, Región Metropolitana, Chile. 3 European Southern Observatory, Garching, Bavaria, Germany. 4 Gemini Observatory, Hilo, HI.

355.20 Keck spectroscopy and NGVS photometry in the direction of the Virgo cluster: Globular cluster satellites of dwarf ellipticals, Milky Way halo substructure, and large-scale structure in the background
Muller, Meredith1; Toloba, Elisa1,2; Guhathakurta, Puragra1; Yagati, Samyukta1; Chen, Jingjing1; Cote, Patrick1; Dorman, Claire1; Ferrarese, Laura5; Peng, Eric W.6
1 University of California at Santa Cruz, Santa Cruz, CA. 2 Carnegie Observatories, Pasadena, CA. 3 Harker School, San Jose, CA. 4 Columbia University, New York, NY. 5 Herzberg Institute of Astrophysics, Victoria, BC, Canada. 6 Peking University, Beijing, Haidian, China.
Contributing teams: Next Generation Virgo Cluster Survey collaboration

355.21 Globular Clusters as Tracers of Dark Matter in Virgo Cluster Dwarf Elliptical Galaxies
Chen, Stephanie1; Toloba, Elisa1,2; Guhathakurta, Puragra1; Chen, Jingjing4; Cote, Patrick1; Ferrarese, Laura5; Peng, Eric W.6
1 Harker School, San Jose, CA. 2 University of California at Santa Cruz, Santa Cruz, CA. 3 Carnegie Observatories, Pasadena, CA. 4 Columbia University, New York, NY. 5 Herzberg Institute of Astrophysics, Victoria, BC, Canada. 6 Peking University, Beijing, Haidian, China.
Contributing teams: NGVS collaboration

355.22 Probing the Nature and Origin of Ultra-compact Dwarfs in Coma
Chiboucas, Kristin1; Tully, R. B.2; Carter, David3; Peng, Eric W.4,6; Phillips, Steve5
1 Gemini Observatory, Hilo, HI. 2 Institute for Astronomy, Honolulu, HI. 3 Liverpool John Moores University, Liverpool, United Kingdom. 4 Peking University, Beijing, China. 5 University of Bristol, Bristol, United Kingdom. 6 Kavli Institute for Astronomy and Astrophysics, Beijing, China.

355.23 ESO 243-49’s Small Friends: Finding Satellite Galaxies
Smullen, Rachel1; Pforr, Janine2; Servillat, Mathieu3; Farrell, Sean4
1 University of Wyoming, Laramie, WY. 2 National Optical Astronomy Observatory, Tucson, AZ. 3 CEA Saclay, Saclay, Île-de-France, France. 4 Sydney Institute for Astronomy, Redfern, NSW, Australia.
355.24  A Spectral Analysis of a Rare ‘Dwarf Eat Dwarf’ Cannibalism Event
Theakanath, Kuriakose; Toloba, Elisa; Guhathakurta, Puragra; Romanowsky, Aaron J.; Ramachandran, Neel; Arnold, Jacob
1 Bellarmine College Prep, San Jose, CA. 2 UCSC, Santa Cruz, CA. 3 San Jose State University, San Jose, CA. 4 St. Francis High School, Mountain View, CA. 5 Carnegie Observatories, Pasadena, CA.

355.25  Star Formation in Dwarf-Dwarf Mergers: Fueling Hierarchical Assembly
Stierwalt, Sabrina; Johnson, Kelsey E.; Kallivayalil, Nitya; Patton, David R.; Putman, Mary E.; Besla, Gurtina; Geha, Marla C.
1 University of Virginia, Charlottesville, VA. 2 Trent University, Peterborough, ON, Canada. 3 Columbia University, New York, NY. 4 Yale University, New Haven, CT.

355.26  The Clustering of Star Formation in Nearby Galaxies
McElwee, Sean; Calzetti, Daniela; Andrews, Jennifer E.
1 University of Massachusetts Amherst, Amherst, MA.

358  Galaxy Clusters Poster Session
Wednesday, 9:00 AM - 6:30 PM; Exhibit Hall ABC

358.01  Dwarf Galaxy Alignment in Nearby Galaxy Clusters
Barkhouse, Wayne; Archer, Haylee; Eaton, Philip; Byrd, Matthew; Burgad, Jaford; Williamson, Mark; Foote, Gregory; Koiner, Katelyn; Lopez-Cruz, Omar
1 Univ. of North Dakota, Grand Forks, ND. 2 Instituto Nacional de Astrofísica, Óptica y Electrónica, Tonantzintla, Puebla, Mexico.

358.02  Merger Hydrodynamics of the Luminous Cluster RXJ1347.5-1145
Kreisch, Christina; Machacek, Marie E.; Randall, Scott W.; Jones, Christine
1 Washington University in St. Louis, St. Louis, MO. 2 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

358.03  Redshift Survey of a Sample of Galaxy Clusters
Finney, Emily; Schirmer, Mischa
1 Cerro Tololo Inter-American Observatory, La Serena, Chile. 2 Gemini Observatory, La Serena, Chile. 3 Keck Science Department of the Claremont Colleges, Claremont, CA.

358.04  A Joint Optical & X-ray Analysis of the Triple Merging Cluster MACS J1226.8+2153
Ferrara, Jocelyn; Bulbul, Esra; Bayliss, Matthew
1 Barnard College, New York, NY. 2 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 3 Harvard Department of Physics, Cambridge, MA.

358.05  Analysis Of The Velocity Data Of Cluster A562
Calderón Espinoza, Diego Nicolás; Gomez, Percy L.
1 Instituto de Astrofísica, Facultad de Física, Pontificia Universidad Católica de Chile, Santiago, Santiago, Chile. 2 Gemini South Observatory, La Serena, Coquimbo, Chile.

358.06  Star Formation and Substructure in Galaxy Clusters
Cohen, Seth A.; Hickox, Ryan C.; Wegner, Gary A.; Einasto, Maret; Vennik, Jaan
1 Dartmouth College, White River Junction, VT. 2 Tartu Observatory, Toravere, Estonia.
358.07 Estimating Radio Source Contamination for Large SZ Cluster Surveys with Data from the Atacama Cosmology Telescope
Crichton, Devin1; Gralla, Megan B.1; Marriage, Tobias1
1The Johns Hopkins University, Baltimore, MD.
Contributing teams: Atacama Cosmology Telescope

358.08 The Gas Dynamics of Elliptical Galaxies in Virgo: Motion and Infall Toward M87
Wood, Ryan A.1, 2; Jones, Christine1; Machacek, Marie E.1; Kraft, Ralph P.1; Santos, Felipe A.1; Paggi, Alessandro1
1Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 2University of Southampton, Southampton, Hampshire, United Kingdom.

358.09 Novel, Efficient Way to Study Origins of Globular Cluster Bimodality - Calibration on MC Cluster NGC 1850a & Application to GCs in the Sombrero Galaxy
Cui, Yang1; Cecil, Gerald1
1University of North Carolina at Chapel Hill, Chapel Hill, NC.

358.10 Effect of Halo Mass on HI Gas Content of Galaxies in Groups and Clusters
Yoon, Ilsang1; Rosenberg, Jessica L.1
1George Mason University, Fairfax, VA.

358.11 Hot gas and the evolution of spiral-rich groups
Vrtilek, Jan M.1; O’Sullivan, E. J.1; Giacintucci, Simona2; David, Laurence P.1; Raychaudhury, Somak3, 4; Forman, William R.1; Jones, Christine1
1Harvard-Smithsonian, CfA, Cambridge, MA. 2University of Maryland, College Park, MD. 3Presidency University, Calcutta, India. 4University of Birmingham, Birmingham, United Kingdom.

358.12 The Environment Within Galaxy Clusters as Measured by the Gravitational Potential
Twadelle, Kyle1; Miller, Christopher J.1; Kern, Nicholas S.1; Gifford, Daniel1
1University of Michigan - Ann Arbor, Ann Arbor, MI.

358.13 Determining Photometric Redshifts for Galaxy Cluster Candidates Detected by the Planck Mission
Head, Hillary1; Desai, Shantanu2; Liu, Jiayi2; Hennig, Christina2
1Austin Peay State University, Clarksville, TN. 2Universitäts-Sternwarte München, Munich, Bavaria, Germany.

358.14 Constraining the Viscosity of the Intracluster Medium with Cold Fronts
ZuHone, John A.1; Markevitch, Maxim L.1; Stone, James M.1; Kunz, Matthew2
1NASA/Goddard Space Flight Center, Greenbelt, MD. 2Princeton University, Princeton, NJ.

358.15 Quantifying the Nature of Intracluster Light in a Fornax-like Cluster
Harris, Kathryn1, 2; Debattista, Victor P.1, 2; Clarke, Adam2; Thompson, Benjamin B.1; Farrah, Duncan1; Petty, Sara M.1
1Virginia Polytechnic Institute and State University, Blacksburg, VA. 2University of Central Lancashire, Preston, Lancashire, United Kingdom. 3University of Washington, Seattle, WA.

358.16 Investigation of Extended Emission Line Regions in Intermediate Redshift BCGs.
Cooke, Kevin1; O’Dea, Christopher P.1; Tremblay, Grant1
1Rochester Institute of Technology, Rochester, NY.
358.17 The most distant galaxy clusters in the SPT Spitzer Deep Field Survey
Rettura, Alessandro; Stanford, S. A.; Stern, Daniel; Mei, Simona; Brodwin, Mark; Gonzalez, Anthony H.; Gettings, Daniel; Ashby, Matthew; Bartlett, James G.; Rosati, Piero

358.18 Searching for the Most Distant Galaxy Clusters
Yen, Steffi; Muzzin, Adam; van der Burg, Remco

358.19 Evolution of Star Formation and HI Gas Content in Galaxy Groups
Birenbaum, Adam; Hess, Kelley M.; Wilcots, Eric
1.University of Wisconsin, Madison, WI. 2.University of Cape Town, Cape Town, Western Cape, South Africa.

358.20 On the Origin of Bias, Scatter, and Evolution in Sunyaev-Zeldovich Effect Scaling Relations
Yu, Liang; Nelson, Katherine L.; Nagai, Daisuke; Lau, Erwin
1.Yale University, New Haven, CT.

358.21 MApping the Most Massive Overdensity Through Hydrogen (MAMMOTH)
Cai, Zheng; Fan, Xiaohui; Bian, Fuyan; McGreer, Ian D.; Frye, Brenda L.; Yang, Yujin; Zabludoff, Ann I.; Zheng, Zhenya
1.Steward Observatory, University of Arizona, Tucson, AZ. 2.Mt Stromlo Observatory, The Australian National University, Canberra, ACT, Australia. 3.Argelander-Institut für Astronomie, Bonn, Bonn, Germany. 4.Arizona State University, Tempe, AZ.

358.22 Thermal and Shock Histories of Gas in Galaxy Clusters
Benjamin, Sarah; Nagai, Daisuke; Wetzel, Andrew R.
THURSDAY EVENTS AND SESSIONS

THURSDAY, 9 JANUARY 2014

400 Engineering Considerations for Large Astrophysics Projects
Thursday, 8:30 AM - 9:20 AM; Potomac Ballroom A
Chair(s):
Chryssa Kouveliotou, NASA/MSFC

400.01 Engineering considerations for large astrophysics projects
Hogg, David W.1, 2

Hack Day
Thursday, 10:00 AM - 7:00 PM; Chesapeake 7
A day to work intensively on collaborative projects. A wide-variety of projects will be undertaken and will be everything from software development and coding to creative outreach projects. Projects that take advantage of the unique gathering of enthusiasm and expertise at the Winter AAS Meeting are particularly encouraged. Hack ideas and participants will be solicited before and during the meeting. Participants can either lead a project or join a project and should plan on focusing primarily on only one hack. In addition, we ask participants to commit to hacking for the majority of the day. Registration is encouraged to facilitate pre-meeting coordination, but not required.

Sponsored By: Northrop Grumman and Microsoft Research WorldWide Telescope

Organizer(s):
Kelle Cruz, Hunter College/CUNY and AMNH
David Hogg, New York Univ.
Megan Schwamb, Institute of

401 A Melange of Circumstellar and Stellar Presentations
Thursday, 10:00 AM - 11:30 AM; Maryland Ballroom B
Chair(s):
Lee Mundy, Univ. of Maryland

401.01 Orbit evolution of disk-embedded masses: Directly observed in Saturn’s rings
Tiscareno, Matthew S.1; Moran, Allegra E.1

401.02 Exocomet Gas: Now You See It, Now You Don’t
Montgomery, Sharon L.1; Welsh, Barry2; Lallement, Rosine3; Timbs, Bryon W.1
401.03 Finding the Faintest Exozodi and Asteroid Belt Analogs in WISE
Patel, Rahul1; Metchev, Stanimir2,1; Heinze, Aren3
1 SUNY Stony Brook, East Setauket, NY. 2 University of Western Ontario, London, ON, Canada. 3 Stony Brook University, Stony Brook, NY.

401.04 CHASING DISK DISPERSAL INDICATORS: THE ORIGIN OF THE [OI] LOW-VELOCITY COMPONENT FROM YOUNG STELLAR OBJECTS
Rigliaco, Elisabetta1; Pascucci, Ilaria1; Gorti, Uma2,3; Edwards, Suzan4; Hollenbach, David J.3
1 University of Arizona, Department of Planetary Science, Tucson, AZ. 2 NASA Ames Research Center, Mountain View, CA. 3 SETI Institute, Mountain View, CA. 4 Smith College, Northampton, MA.

401.05 Analyzing the Shock Heating Rate in O-Star Winds
Li, Zequn1; Cohen, David H.1
1 Swarthmore College, Swarthmore, PA.

402 AGN Across Cosmic Time
Thursday, 10:00 AM - 11:30 AM; National Harbor 11
Chair(s):
Laura Blecha, Univ. of Maryland - College Park

402.01 Half-Megasecond Spectral Imaging of the Galactic Winds in Mrk 231
Teng, Stacy H.1; Veilleux, Sylvain2; Rupke, David3; Maiolino, Roberto4; Sturm, Eckhard5
1 NASA/GSFC, Greenbelt, MD. 2 University of Maryland, College Park, MD. 3 Rhodes College, Memphis, TN. 4 University of Cambridge, Cambridge, United Kingdom. 5 MPE, Garching, Germany.

402.02 Investigating the AGN-Star formation Connection in the Local Universe
LaMassa, Stephanie M.1; Heckman, Timothy M.2; Ptak, Andrew3; Urry, C. M.1
1 Yale University, New Haven, CT. 2 The Johns Hopkins University, Baltimore, MD. 3 NASA Goddard Space Flight Center, Greenbelt, MD.

402.03 A ~3.8 hour Periodicity from an Ultrasoft Active Galaxy
Lin, Dacheng1; Irwin, Jimmy1; Godet, Olivier2; Webb, Natalie2; Barret, Didier2
1 University of Alabama, Tuscaloosa, AL. 2 IRAP, Toulouse, France.

402.04D Exploring Quasar SEDs as a Function of Black Hole Properties
Krawczyk, Coleman M.1; Richards, Gordon T.1
1 Drexel University, Philadelphia, PA.

402.05 The AGN Census at Cosmic Noon: the Unbiased Galaxy-AGN Connection from Spatially Resolved Line Ratios
Trump, Jonathan R.1; Brandt, W. N.1; Weiner, Benjamin J.2; Juneau, Stephanie3
1 Penn State, University Park, PA. 2 University of Arizona, Tucson, AZ. 3 CEA-Saclay, Gif-sur-Yvette, France.

402.06 Exploring black hole seed formation and early growth at z>6
Schawinski, Kevin1; Weigel, Anna1; Treister, Ezequiel2; Urry, C. M.3
1 ETH Zurich, Zurich, Switzerland. 2 Yale University, New Haven, CT. 3 Universidad de Concepcion, Concepcion, Chile.
403 APOGEE - A Fresh View Into the Stellar Populations of the Milky Way

Thursday, 10:00 AM - 11:30 AM; National Harbor 3

Our understanding of the formation of the Milky Way Galaxy is on the verge of a revolution, with several massive surveys of the stellar populations of the Galaxy currently in operation, and others in design stage. At the cutting edge of that trend, the Apache Point Observatory Galactic Evolution Experiment (APOGEE), is collecting high resolution (R=23,000), high S/N (100/res. el.) for 100,000 mostly giant stars from all components of the Galaxy, from which accurate radial velocities and elemental abundances are being derived. As the world’s only major high-resolution NIR survey of Galactic stars, APOGEE has unique power to probe the disk and bulge populations. Thus, APOGEE will make a transformational contribution in a range of scientific fronts, including abundance gradients in the Galactic disk, the metallicity distribution of the Galactic bulge, kinematic signatures of the Galactic bar and its interplay with the bulge and disk, as well as a number of fundamental astrophysical problems, including diffuse interstellar bands, the ages of field stars, the dynamical masses of eclipsing binaries, and the envelopes of Be stars. With the first APOGEE public data release (as part of SDSS-III DR10), and the publication of the first several science results, the time is ripe for a focused discussion of key APOGEE science and the future exploitation of the growing APOGEE data base. This Special Session will include a survey overview and a combination of invited and contributed talks and posters, highlighting the first important APOGEE science results.

Chair(s): Ricardo Schiavon, Gemini Observatory
Organizer(s): Ricardo Schiavon, Gemini Observatory

403.01 Status of the Apache Point Observatory Galactic Evolution Experiment (APOGEE)
Majewski, Steven R.¹
¹Univ. of Virginia, Charlottesville, VA.
Contributing teams: The SDSS-III/APOGEE Collaboration

403.02 Chemical Cartography with APOGEE
Holtzman, Jon A.;¹ Hayden, Michael R.;¹ Bovy, Jo;¹ Majewski, Steven;¹ Johnson, Jennifer;¹ Zasowski, Gail;⁵ Girardi, Leo;⁵ Allende-Prieto, Carlos;⁸ Garcia Perez, Ana Elia;³ Meszaros, Szabolcs;³ Nidever, David L.;¹ Schiavon, Ricardo P.;¹ Shetrone, Matthew D.⁶
¹New Mexico State Univ., Las Cruces, NM. ²University of Virginia, Charlottesville, VA. ³University of Michigan, Ann Arbor, MI. ⁴Institute of Advanced Studies, Princeton, NJ. ⁵Ohio State University, Columbus, OH. ⁶McDonald Observatory, Fort Davis, TX. ⁷Indiana University, Bloomington, IN. ⁸IAC, Tenerife, Spain. ⁹OAPD, Padova, Italy. ¹⁰Liverpool John Moores, Liver, United Kingdom.
403.03 Mapping the Bulge Metallicity Distribution Function with APOGEE
Garcia Perez, Ana Elia; Johnson, Jennifer; Cunha, Katia M.; Allende-Prieto, Carlos; Shetrone, Matthew D.; Majewski, Steven R.; Schiavon, Ricardo; Frinchaboy, Peter M.; Hayden, Michael R.; Nidever, David L.; Robin, Annie; Schultheis, Mathias; Zasowski, Gail

1University of Virginia, Charlottesville, VA. 2The Ohio State University, Columbus, OH. 3Observatorio Nacional, Rio de Janeiro, Rio de Janeiro, Brazil. 4Instituto de Astrofísica de Canarias, La Laguna, Tenerife, Spain. 5McDonald Observatory, For Davis, TX. 6Texas Christian University, Fort Worth, TX. 7New Mexico State University, Las Cruces, NM. 8University of Michigan, Ann Arbor, MI. 9University of Liverpool, Liverpool, Merseyside, United Kingdom. 10Observatoire de la Cote d’Azur, Nice, France. 11John Hopkins University, Baltimore, MD.

403.04 Exploring Stellar Populations and Astaroseismology with APOGEE and Kepler
Epstein, Courtney R.; Elsworth, Yvonne P.; Shetrone, Matthew D.; Mosser, Benoit; Tayar, Jamie; Harding, Paul; Pinsonneault, Marc H.; Silva Aguirre, Victor; Basu, Sarbari; Bizyaev, Dmitry; Bedding, Tim; Chaplin, William J.; Garcia, Rafael; Garcia Perez, Ana Elia; Hearty, Fred; Hekker, Saskia; Huber, Daniel; Ivans, Inese; Majewski, Steven; Mathur, Savita; Serenelli, Aldo; Schiavon, Ricardo; Schoenrich, Ralph; Sobeck, Jennifer; Zasowski, Gail

1Ohio State University, Columbus, OH. 2University of Birmingham, Birmingham, United Kingdom. 3The University of Texas at Austin, Austin, TX. 4LESIA, CNRS, Université Pierre et Marie Curie, Université Denis Diderot, Observatoire de Paris, Meudon Cedex, France. 5Case Western Reserve University, Cleveland, OH. 6Aarhus University, Aarhus, Denmark. 7Yale University, New Haven, CT. 8Apache Point Observatory, Sunspot, NM. 9University of Sydney, Sydney, NSW, Australia. 10Laboratoire AIM, CEA/DSM-CNRS, Université Paris, Gif-sur-Yvette, France. 11University of Virginia, Charlottesville, VA. 12Max Planck Institute for Solar System Research, Katlenburg-Lindau, Germany. 13NASA Ames Research Center, Moffett Field, CA. 14The University of Utah, Salt Lake City, UT. 15Space Science Institute, Boulder, CO. 16Institute of Space Sciences, Bellaterra, Spain. 17Astrophysics Research Institute, Liverpool, United Kingdom. 18Université de Nice, Nice, France. 19Johns Hopkins University, Baltimore, MD.

403.05 Exploring the Diffuse Interstellar Medium with SDSS-III APOGEE
Zasowski, Gail; Ménard, Brice; Majewski, Steven; Schultheis, Mathias; Sellgren, Kristen

1Johns Hopkins University, Baltimore, MD. 2University of Virginia, Charlottesville, VA. 3Observatoire de la Cote d’Azur, Nice, France. 4The Ohio State University, Columbus, OH.

403.06 CHARACTERIZING KEPLER ECLIPSING BINARIES & PLANET HOSTS WITH SDSS-III APOGEE
Mahadevan, Suwarni

1Penn State, University Park, PA.

Contributing teams: SDSS-III EB ancillary program team, SDSS-III Kepler dark time team
One of the youngest and fastest growing astronomy communities in the world is on the African continent. In the past couple of decades and in the upcoming decades an explosion of cutting edge multi-wavelength facilities have begun or are expected to be operating namely SALT, HESS, MITRA, AVN, PAPER, MeerKAT, African VLBI and the SKA (Acronyms described at the end of this document). At the same time countries across the continent are developing human capacity in science and technology using astronomy as a gateway science. As astronomy is set to explode across Africa, its astronomy community, facilities and on-going science remain relatively unknown to the US community. With this special session(s) request we seek to change this situation by providing an overview of facilities, human capacity development programs and astronomy development work from a diverse set of both US and African astronomers engaged in these activities.
404.05 Building the Next Generation of Scientists with US-Africa Exchange Programs
Sheth, Kartik\textsuperscript{1}
\textsuperscript{1}NRAO, Charlottesville, VA.

404.06 Astronomy for Development in Africa
Govender, Kevin\textsuperscript{1}
\textsuperscript{1}IAU Office of Astronomy for Development, Cape Town, Western Cape, South Africa.

404.07 Vision for Astronomy in South Africa and partnership with the US
Nemaungani, Takalani\textsuperscript{1}
\textsuperscript{1}Department of Science and Technology, Pretoria, Gauteng, South Africa.

405 Binary Systems - Dwarfs and Giants

Thursday, 10:00 AM - 11:30 AM; Maryland 2

Chair(s): Eric Schlegel, \textit{Univ. of Texas, San Antonio}

405.01D The X-ray and Spectropolarimetric View of Mass Loss and Transfer in Massive Binary Stars
Lomax, Jamie R.\textsuperscript{1, 2}
\textsuperscript{1}University of Denver, Denver, CO. \textsuperscript{2}University of Oklahoma, Norman, OK.

405.02 A Cornucopia of Massive Binary Star Systems in the Cygnus OB2 Association: Fifty and Counting
Kobulnicky, Henry A.\textsuperscript{1}; Kiminki, Daniel C.\textsuperscript{2, 1}; Burke, Jamison F.\textsuperscript{1, 3}; Chapman, James E.\textsuperscript{1, 4}; Keller, Erica\textsuperscript{1, 5}; Lester, Katie V.\textsuperscript{1, 6}; Rolen, Emily\textsuperscript{1, 7}; Topel, Eric\textsuperscript{1, 8}; Lundquist, Michael J.\textsuperscript{1}; Bhattacharjee, Anirban\textsuperscript{1}; Vargas Alvarez, Carlos A.\textsuperscript{1}; Runnoe, Jessie C.\textsuperscript{9, 1}; Dale, Daniel A.\textsuperscript{1}
\textsuperscript{1}Univ. of Wyoming, Laramie, WY. \textsuperscript{2}University of Arizona, Tucson, AZ.
\textsuperscript{3}Swarthmore College, Swarthmore, PA. \textsuperscript{4}Massachusetts College of Liberal Arts, North Adams, MA. \textsuperscript{5}Mount Holyoke College, South Hadley, MA. \textsuperscript{6}Lehigh University, Bethlehem, PA. \textsuperscript{7}Vanderbilt University, Nashville, TN. \textsuperscript{8}St. Olaf College, Northfield, MN. \textsuperscript{9}Penn State University, University Park, PA.

405.03 Eta Carinae: An Astrophysical Laboratory to Study Conditions During the Transition Between a Pseudo-Supernova and a Supernova
McKinnon, Darren\textsuperscript{1}; Gull, Theodore R.\textsuperscript{2}; Madura, Thomas\textsuperscript{2}
\textsuperscript{1}Utah State University, Logan, UT. \textsuperscript{2}NASA GSFC, Greenbelt, MD.

405.04 A Tale of Two Red Giants: Testing Asteroseismic Scaling Relations with KIC 9246715
Rawls, Meredith L.\textsuperscript{1}; Gaulme, Patrick\textsuperscript{1}; McKeever, Jean\textsuperscript{1}; Orosz, Jerome A.\textsuperscript{2}; Latham, David W.\textsuperscript{3}; Jackiewicz, Jason\textsuperscript{1}
\textsuperscript{1}New Mexico State University, Las Cruces, NM. \textsuperscript{2}San Diego State University, San Diego, CA. \textsuperscript{3}Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

405.05 Fundamental Properties of Eclipsing Binaries in the Kepler field of view
Matson, Rachel A.\textsuperscript{1}; Gies, Douglas R.\textsuperscript{1}; Guo, Zhao\textsuperscript{1}
\textsuperscript{1}GSU, Atlanta, GA.
406 Black Holes I

Thursday, 10:00 AM - 11:30 AM; National Harbor 10

Chair(s):
Roman Shcherbakov, University of Maryland

406.01 Twisted Disks: General Relativistic Simulations of Thin Accretion Disks With A Tilted Black Hole
Avara, Mark J.; McKinney, Jonathan C.; Reynolds, Christopher S.
1. University of Maryland, College Park, College Park, MD. 2. Joint Space-Science Institute, University of Maryland, College Park, MD.

406.02 Tidal Disruption Events from Archival X-ray Observations of Dwarf Galaxies
Maksym, W. P.; Irwin, Jimmy; Ulmer, Melville; Roth, Katherine; Dupke, Renato; Ho, Luis C.; Keel, William C.; Adami, Christophe; Lin, Dacheng

406.03D Understanding X-ray Reflection as a Probe of Accreting Black Holes
Wilkins, Dan
1. Institute of Astronomy, University of Cambridge, Cambridge, United Kingdom. 2. St Mary’s University, Halifax, NS, Canada.

406.04 The Relativistically Beamed Tidal Disruption Event Sw J1644+57
Cannizzo, John K.
1. NASA/GSFC/CRESST/UMBC, Columbia, MD.

406.05 The Megasecond Chandra X-ray Visionary Project Observation of NGC 3115: Nature of Hot Gas within the Bondi Radius
Wong, Ka-Wah; Irwin, Jimmy; Shcherbakov, Roman V.; Yukita, Mihoko; Million, Evan; Bregman, Joel N.

406.06 Evidence for Enhanced Formation Rate of Black Hole LMXBs in the Galaxy from Historical Outbursts from DASCH
Grindlay, Jonathan E.; Miller, George F.; Tang, Sumin
1. Harvard-Smithsonian, CfA, Cambridge, MA. 2. UCSB, Santa Barbara, CA.

407 Cosmology & CMB V

Thursday, 10:00 AM - 11:30 AM; National Harbor 13

Chair(s):
Daniel Eisenstein, Harvard Univ.

407.01 CMB cosmology on small scales with ACT and ACTPol
Hlozek, Renee
1. Princeton University, Princeton, NJ.

Contributing teams: ACT and ACTPol teams
407.02D The Cosmology Large Angular Scale Surveyor (CLASS)

Eimer, Joseph1; Ali, Aamir1; Amiri, Mandana6; Appel, John W.1; Araujo, Derek2; Bennett, Charles L.2; Boone, Fletcher4; Chan, Manwei1; Cho, Hsiao-Mei3; Chuss, David T.; Colazo, Felipe3; Crowe, Erik1; Denis, Kevin1; Dünner, Rolando2; Essinger-Hileman, Thomas1; Gothe, Dominik1; Halpern, Mark4; Harrington, Kathleen1; Hilton, Gene3; Hinshaw, Gary F.6; Huang, Caroline4; Irwin, Kent4; Jones, Glenn2; Karakla, John5; Korek, Alan J.2; Larson, David2; Limon, Michele2; Lowry, Lindsay4; Marriage, Tobias1; Mehrle, Nicholas1; Miller, Amber D.2; Miller, Nathan2; Moseley, Samuel H.2; Novak, Giles1; Reintsema, Carl3; Rostem, Karwan2; Stevenson, Thomas2; Towner, Deborah1; U-Yen, Kongpop5; Wagner, Emily4; Watts, Duncan1; Wollack, Edward2; Xu, Zhilei1; Zeng, Lingzhen5


407.03D EBEX: A Balloon-Borne CMB Polarization Experiment

Chapman, Daniel1; Aboobaker, Asad M.2; Ade, Peter3; Aubin, Francois4; Baccigalupi, Carlo4; Bandura, Kevin5; Bao, Chaoyun1; Borrill, Julian6,7; Didier, Joy1; Dobbs, Matt5; Gold, Ben4; Grain, Julien8; Grainger, Will3; Hanany, Shaul5; Helson, Kyle5; Hillbrand, Seth N.1; Hilton, Gene10; Hubmayr, Hannes2; Irwin, Kent10; Johnson, Bradley11; Jaffe, Andrew12; Jones, Terry J.2; Kisner, Theodore6; Klein, Jeffrey7; Korotkov, Andrei9; Leach, Samuel4; Lee, Adrian T.11; Levinson, Lorne13; Limon, Michele2; MacDermed, Kevin1; Miller, Amber D.1; Milligan, Michael4; Pascale, Enzo3; Raach, Kate2; Reichborn-Kjennerud, Britt1; Sagiv, Ilan13; Smirch, Graeme5; Stompor, Radek14; Tristram, Matthieu15; Tucker, Gregory S.9; Westbrook, Benjamin11; Zilic, Kyle2

407.04D Design of the detectors for EBEX, a balloon-borne cosmic microwave background polarimeter
Westbrook, Benjamin1, 7; Aboobaker, Asad M.2; Ade, Peter4; Aubin, Francois2; Baccigalupi, Carlo3; Bandura, Kevin3; Bao, Chaoyun2; Borrill, Julian6, 7; Chapman, Daniel11; Didier, Joy11; Dobbs, Matt4; Gold, Ben2; Grain, Julien6; Grainger, Will13; Hanany, Shaul2; Helson, Kyle3; Hillbrand, Seth N.11; Hilton, Gene10; Hubmayr, Hannes10; Irwin, Kent10; Johnson, Bradley11; Jaffe, Andrew12; Jones, Terry J.; Kisner, Theodore6; Klein, Jeff; Korotkov, Andrei9; Leach, Samuel8; Lee, Adrian T.1; Levinson, Lorne13; Limon, Michele11; MacDermid, Kevin5; Miller, Amber D.11; Milligan, Michael1; Pascale, Enzo3; Raach, Kate2; Reichborn-Kjennerud, Britt11; Sagiv, Ilan11; Smecher, Graeme5; Stompor, Radek14; Tristram, Matthieu15; Tucker, Gregory S.9; Zilic, Kyle2

407.05D The First Season of POLARBEAR Observations
Boettger, David1
1. University of California, San Diego, San Diego, CA.

Contributing teams: The POLARBEAR Collaboration

408 Dark Matter & Dark Energy I

Thursday, 10:00 AM - 11:30 AM; Maryland Ballroom C

Chair(s):
Rodger Thompson, Univ. of Arizona

408.01 Locating the Transition Red Shift from the Scale Factor vs Look-back Time Plot
Ringermacher, Harry I.1; Mead, Lawrence R.1
1. Dept. of Physics & Astronomy, U. of Southern Miss., Hattiesburg, MS.

408.02 Establishing the Robustness of Cosmological Tests of General Relativity to Dark Energy Perturbations
Dossett, Jason1; Ishak, Mustapha3
1. The University of Queensland, St Lucia, QLD, Australia. 2. The University of Texas at Dallas, Richardson, TX.

408.03 Too Big To Fail: A Sensitive Test of Cosmological Parameters and Dark Matter Properties
Polisensky, Emil1; Ricotti, Massimo2, 3
408.04 Present and future insights into the particle physics of dark matter through strong gravitational lensing observations
Moustakas, Leonidas A.¹; Cyr-Racine, Francis-Yan¹,²; Keeton, Charles R.³
¹JPL/Caltech, Pasadena, CA. ²Keck Institute for Space Studies, Pasadena, CA. ³Rutgers, The State University of New Jersey, New Brunswick, NJ.

408.05 Warm Dark Matter N-Body Simulations and the Core-Cusp Problem of Cold Dark Matter
Bozek, Brandon¹; Wyse, Rosemary F.¹; Elder, Ben²
¹Johns Hopkins University, Baltimore, MD. ²Massachusetts Institute of Technology, Cambridge, MA.

408.06 The Dwarfs Beyond: The Stellar-to-Halo Mass Relation For New Low Mass Galaxies to z~1
Miller, Sarah¹,²
¹University of California, Irvine, Irvine, CA. ²California Institute of Technology, Pasadena, CA.

408.07 Dark Matter Density Profiles in Late-type Dwarfs from Stellar Kinematics
Adams, Joshua J.¹; Simon, Joshua D.¹; Fabricius, Maximilian²; van den Bosch, Remco³; Gebhardt, Karl⁴
¹Observatories of the Carnegie Institution of Washington, Pasadena, CA. ²Max Planck Institute for Extraterrestrial Physics, Garching, Germany. ³Max Planck Institute for Astronomy, Heidelberg, Germany. ⁴University of Texas at Austin, Austin, TX.

408.08 Search for Line Features in Galaxy Clusters with the Fermi-LAT
Anderson, Brandon¹
¹University of Stockholm, Stockholm, Sweden.
Contributing teams: Fermi-LAT Collaboration

408.09 Dark Matter and the Diffuse Galactic Ultraviolet Background
Tyler, Joshua¹; Overduin, James¹
¹Towson University, Towson, MD.

409 Debris Disks Around Young Stars and Planet Formation II
Thursday, 10:00 AM - 11:30 AM; National Harbor 12
Chair(s): Joel Green, Harvard Smithsonian, CfA

409.01 Modeling Eccentric Debris Rings with SMACK: Collisions Change Everything
Kuchner, Marc J.; Nesvold, Erika¹
¹NASA’s GSFC, Greenbelt, MD.

409.02D Filling in the Gaps: Illuminating Clearing Mechanisms in Transitional Circumstellar Disks
Follette, Katherine B.; Close, Laird M.; Grady, C. A.; Males, Jared³
¹University of Arizona, Tucson, AZ. ²Eureka Scientific, Oakland, CA.
Contributing teams: MagAO team, SEEDS team

409.03 [PZ99] J160421.7-213028, a transition disk with ring shaped dust accumulation
Zhang, Ke³; Isella, Andrea²; Carpenter, John M.; Blake, Geoffrey A.¹
¹Caltech, Pasadena, CA.
409.05 Carbon but No CO? Circumstellar Gas Absorption in FUV Spectra of the Unusual 49 Ceti Debris Disk
Roberge, Aki; Welsh, Barry; Kamp, Inga; Grady, C. A.; Weinberger, Alycia J.

409.06 Imitation is the sincerest form of flattery: is 49 Ceti the new Beta Pictoris?
Welsh, Barry; Montgomery, Sharon L.; Alu, Dylan; Lallemand, Rosine

409.07 Hubble Space Telescope STIS Coronagraphy of WISE Debris Disk Candidates
Padgett, Deborah; Stapelfeldt, Karl R.; Krist, John E.; Liu, Wilson M.; Leisawitz, David; Fajardo-Acosta, Sergio; Debes, John H.
1. NASA/Goddard Space Flight Center, Greenbelt, MD. 2. Jet Propulsion Laboratory, Pasadena, CA.
3. NOAO, Tucson, AZ. 4. IPAC, Pasadena, CA. 5. STScI, Baltimore, MD.

410 Evolution of Nearby Galaxies
Thursday, 10:00 AM - 11:30 AM; Maryland Ballroom D
Chair(s):
Erik Hoversten, Pennsylvania State University

410.01 Galaxies as Clocks: the Radius -- Velocity Relationship of HI Rich Galaxies
Meurer, Gerhardt; Obreschkow, Danail; Hanish, Daniel; Wong, Oiwei; Zheng, Zheng; de Blok, Erwin W.; Thilker, David A.
1. ICRAR / U Western Australia, Perth, WA, Australia. 2. Spitzer Science Center, Caltech, Pasadena, CA. 3. CSIRO Astronomy & Space Science, Epping, NSW, Australia. 4. The Johns Hopkins University, Baltimore, MD. 5. ASTRON, Dwingeloo, Netherlands.
Contributing teams: SINGG Team, SUNGG Team

410.02D High-Resolution HI and CO Observations of High Mass Galaxies - High HI Mass, HI-rich Galaxies at z~0
Hallenbeck, Gregory
1. Cornell University, Ithaca, NY.
Contributing teams: The ALFALFA Team

410.03 A Hard X-ray View of Starburst Galaxies with NuSTAR
Hornschemeier, Ann E.; Wik, Daniel R.; Lehmer, Bret; Ptak, Andrew; Antoniou, Vallia; Argo, Megan; Bechtol, Keith; Harrison, Fiona; Krivonos, Roman; Leyder, Jean-Christophe; Maccarone, Tom; Stern, Daniel; Venters, Tonia M.; Yukita, Mihoko; Zezas, Andreas; Zhang, William
1. NASA GSFC, Greenbelt, MD. 2. Johns Hopkins University, Baltimore, MD.
9. NASA JPL, Pasadena, CA.
Contributing teams: NuSTAR Team
410.04 Starburst Galaxy NGC 253 in a Hard (X-ray) Light: Resolving its Emission with NuSTAR
Wik, Daniel R. 1, 2; Lehmer, Bret 2, 1; Yukita, Mihoko 2, 1; Hornschemeier, Ann E. 1, 2; Ptak, Andrew 1, 2; Zezas, Andreas 3; Bechtol, Keith 4; Venters, Tonia M. 1; Argon, Megan 1; Antoniou, Vallia 1; Harrison, Fiona 1; Krivonos, Roman 1; Leyder, Jean-Christophe 1; Maccarone, Thomas J. 1; Stern, Daniel 1; Zhang, William 1
1 NASA Goddard Space Flight Center, Greenbelt, MD. 2 Johns Hopkins University, Baltimore, MD. 3 Smithsonian Astrophysical Observatory, Cambridge, MA.
4 Kavli Institute for Cosmological Physics, Chicago, IL. 5 ASTRON, Dwingeloo, Netherlands. 6 Caltech, Pasadena, CA. 7 UC Berkeley, Berkeley, CA. 8 Texas Tech University, Lubbock, TX. 9 NASA JPL, Pasadena, CA.
Contributing teams: NuSTAR Team

410.05D The Dynamics and Cold Gas Content of Luminous Infrared Galaxies in the Local Universe
Privon, George C. 1
1 University of Virginia, Charlottesville, VA.

411 Extrasolar Planet Detection - Ground-Based Observations

Thursday, 10:00 AM - 11:30 AM; Maryland Ballroom A

Chair(s):
Peter McCullough, STScI

411.01D Results and Lessons Learned From the KELT-North Wide-angle Transit Survey of Bright Stars
Beatty, Thomas G. 1
1 Ohio State University, Columbus, OH.

411.02 Observation of a Transit Ingress of HD 80606b in Polarized Light
Wiktorowicz, Sloane 1; Laughlin, Gregory P. 1
1 University of California, Santa Cruz, Santa Cruz, CA.

411.03 Limits on Stellar Companions to Exoplanet Host Stars With Eccentric Planets
Kane, Stephen R. 1; Howell, Steve B. 2; Horch, Elliott 1; Ciardi, David R. 4; Howard, Andrew 4; Feng, Ying 6; Wright, Jason 6
1 San Francisco State University, San Francisco, CA. 2 NASA Ames Research Center, Moffett Field, CA. 3 Southern Connecticut State University, New Haven, CT. 4 California Institute of Technology, Pasadena, CA. 5 University of Hawaii, Honolulu, HI. 6 Pennsylvania State University, University Park, PA.

411.04 Search for Magnetospheric Radio Emissions from Upsilon Andromeda
Winterhalter, Daniel 1; Majid, Walid A. 1; Knapp, Mary 2; Chandra, Ishwar 3
1 Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA. 2 Massachusetts Institute of Technology, Cambridge, MA. 3 National Center for Radio Astrophysics, Pune, Maharashtra, India.
412 Galaxy Clusters in the X-rays

Thursday, 10:00 AM - 11:30 AM; National Harbor 5

Chair(s):
Mark Bautz, MIT

412.01 Some Like It Hot: Linking Diffuse X-ray Luminosity, Baryonic Mass, and Star Formation Rate in Compact Groups of Galaxies
Desjardins, Tyler D.; Gallagher, Sarah; Hornschemeier, Ann E.; Mulchaey, John S.; Walker, Lisa May; Brandt, W. N.; Charlton, Jane C.; Johnson, Kelsey E.; Tzanavaris, Panayiotis

1Department of Physics and Astronomy, The University of Western Ontario, London, ON, Canada. 2Laboratory for X-ray Astrophysics, NASA/Goddard Space Flight Center, Greenbelt, MD. 3Carnegie Observatories, Pasadena, CA. 4Department of Astronomy, University of Virginia, Charlottesville, VA. 5Department of Astronomy and Astrophysics, The Pennsylvania State University, University Park, PA. 6Department of Physics and Astronomy, The Johns Hopkins University, Baltimore, MD.

412.02 X-ray scaling relations in Compact Group Galaxies: Compact Object Populations with Chandra
Tzanavaris, Panayiotis; Brandt, W. N.; Johnson, Kelsey E.; Charlton, Jane C.; Gallagher, Sarah; Desjardins, Tyler D.; Lenkic, Laura

1NASA Goddard Space Flight Center, Greenbelt, MD. 2Johns Hopkins University, Baltimore, MD. 3University of Western Ontario, London, ON, Canada. 4The Pennsylvania State University, University Park, PA. 5University of Virginia, Charlottesville, VA.

412.03D A Comprehensive Study of the Outskirts of Galaxy Clusters
George, Jithin V.; Mushotzky, Richard; Miller, Eric D.

1University of Maryland, Seabrook, MD. 2MIT, Cambridge, MA.

412.04 Probing X-Ray Mass-Temperature Relation and Gas Mass Fraction with A Chandra Sample of 350 Galaxy Clusters and Groups out to z $\leq$ 1.4
Wang, Jingying

1Shanghai Jiao Tong University, Shanghai, China.

412.05 Joint Constraints on Concentration, Slope, and Nonthermal Pressure Support in X-ray and Weak Lensing Observations of Galaxy Clusters
Mahdavi, Andisheh; Hoekstra, Henk; Babul, Arif; Berti, Angela

1San Francisco State University, San Francisco, CA. 2Sterrewacht Leiden, Amsterdam, Netherlands. 3University of Victoria, Victoria, BC, Canada.

412.06 Quantifying Substructure Measures In X-ray Images of Galaxy Cluster Mergers with SLAM
Chatzikos, Marios; Sarazin, Craig L.; O’Shea, Brian W.

1Univ. of Kentucky, Lexington, KY. 2University of Virginia, Charlottesville, VA. 3Michigan State University, East Lansing, MI.
413 Public Policy

Thursday, 10:00 AM - 11:30 AM; National Harbor 2

Chair(s):
Harold Geller, George Mason University

413.02 An Astronomer’s View of Climate Change
Morton, Donald C.¹
¹National Research Council of Canada, Herzberg Astronomy and Astrophysics Programs, Victoria, BC, Canada.

413.03 The IAU Office of Astronomy Development
Mauduit, Jean-Christophe¹; Govender, Kevin¹
¹International Astronomical Union, Office of Astronomy for Development, Cape Town, Western Cape, South Africa.

413.04 Dark Skies Yuma: An NOAO and APS Program on Light Pollution Education
Pompea, Stephen M.¹; Walker, Constance E.¹; Dugan, Chuck¹; Roddy, William T.²; Newhouse, Mark¹
¹NOAO, Tucson, AZ. ²University of Arizona, Tucson, AZ.

413.05 Progress in Dark Sky Protection in Southern Arizona
Green, Richard F.¹, 2; Allen, Lori¹, 11; Alvarez Del Castillo, Elizabeth M.³; Brocious, Daniel K.⁴; Corbally, Christopher J.⁵; Davis, Donald R.⁶; Falco, Emilio E.⁷; Gabor, Paul⁸; Hall, Jeffrey C.⁹; Jannuzi, Buell¹¹; Larson, Stephen M.¹², 13; Mighell, Kenneth J.¹¹; Nance, Craig¹³; Shankland, Paul D.¹⁰; Walker, Constance E.¹¹; Williams, G. Grant¹², 1; Zaritsky, Dennis F.¹
¹Steward Observatory, Tucson, AZ. ²Kitt Peak National Observatory, Tucson, AZ.
⁴Smithsonian Astrophysical Observatory, Tucson, AZ. ⁵Vatican Observatory, Tucson, AZ. ⁶Planetary Sciences Institute, Tucson, AZ. ⁷Lowell Observatory, Flagstaff, AZ. ⁸Lunar & Planetary Laboratory, Tucson, AZ. ¹¹National Optical Astronomy Observatory, Tucson, AZ. ¹²MMT Observatory, Tucson, AZ. ¹³University of Arizona, Tucson, AZ.

413.06 Recent Local and State Action in Arizona to Maintain Sky Quality
Hall, Jeffrey C.¹; Shankland, Paul D.²; Green, Richard F.³; Jannuzi, Buell¹¹
¹Lowell Obs., Flagstaff, AZ. ²United States Naval Observatory, Flagstaff, AZ. ³Steward Observatory, Tucson, AZ.

413.07 IAU Commission 50 on Astronomical Site Protection
Walker, Constance E.¹; Green, Richard F.²
¹NOAO, Tucson, AZ. ²Univ. of Arizona, Tucson, AZ.
414 Science Highlights from NASA’s Astrophysics Data Analysis Program

Thursday, 10:00 AM - 11:30 AM; Potomac Ballroom A

Over the years, NASA has invested heavily in the development and execution of an extensive array of space astrophysics missions that span the electromagnetic spectrum. The magnitude and scope of the archival data from those missions enables science that transcends traditional wavelength regimes and allows researchers to answer questions that would be difficult, if not impossible, to address through an individual observing program. To capitalize on this invaluable asset and enhance the scientific return on NASA mission investments, the Astrophysics Data Analysis Program (ADAP) provides support for investigations whose focus is on the analysis of archival data from NASA space astrophysics missions. This session highlights recent research results in the general area of galactic astrophysics from investigators supported under the ADAP Program.

415 Stellar Evolution I

Thursday, 10:00 AM - 11:30 AM; Potomac Ballroom C

Chair(s):
John Martin, University of Illinois Springfield

415.01D Stellar Ages from Rotation and Asteroseismology
Epstein, Courtney R.1
1Ohio State University, Columbus, OH.

415.02 Characterization of Kepler Exoplanet Host Stars
Howell, Steve B.1; Everett, Mark2; Ciardi, David R.3; Silva, David4; Szkody, Paula4
1NASA ARC, Moffett Field, CA. 2NOAO, Tucson, AZ. 3NASA Exoplanet Archive, Pasadena, CA. 4University of Washington, Seattle, WA.

415.03D Variability of Elemental Abundances in the Local Neighborhood and its Effect on Planetary Systems
Pagano, Michael D.1; Young, Patrick A.1
1Arizona State University, Tempe, AZ.

Van Saders, Jennifer1
1The Ohio State University, Columbus, OH.

415.05 Implementing New Semi-Convection and Overshooting Prescriptions in KEPLER
Brown, Justin1; Garaud, Pascale1; Woosley, Stan E.1
1University of California - Santa Cruz, Santa Cruz, CA.

415.06 In situ Ca and Mg abundancies in the stellar halo of the Galaxy
Fernandez-Alvar, Emma1; Allende-Prieto, Carlos1
1Instituto de Astrofísica de Canarias, La Laguna, Tenerife, Spain.
The Nuclear Spectroscopic Telescope Array (NuSTAR) was launched on 2012 June 13, is the first focusing hard X-ray mission in orbit. With approximately 10 times greater spatial resolution and more than 100 times greater sensitivity than previous missions in this energy band, NuSTAR has opened the high-energy sky to sensitive study. Over the first year of the mission, NuSTAR has undertaken a range of studies, from observations of energetic events towards the center of the Milky Way galaxy to detailed studies of distant supermassive black holes. During our Special Session we will describe the status and performance of NuSTAR, and present science results from the first 18 months in orbit.

Chair(s):
Daniel Stern, JPL/Caltech
Organizer(s):
Daniel Stern, JPL/Caltech

416.01 The Nuclear Spectroscopic Telescope Array (NuSTAR)
Stern, Daniel
1 JPL/Caltech, Pasadena, CA.
Contributing teams: NuSTAR Team

416.02 NuSTAR Observations of the Cassiopeia A Supernova Remnant
Grefenstette, Brian
1 California Institute of Technology, Pasadena, CA.
Contributing teams: The NuSTAR Team

416.03 NuSTAR Reveals Intrinsically X-ray Weak Broad Absorption Line (BAL) Quasars
Teng, Stacy H.; Brandt, W. N.; Luo, Bin; Harrison, Fiona
1 NASA/GSFC, Greenbelt, MD. 2 Penn State University, University Park, PA.
3 Caltech, Pasadena, CA.
Contributing teams: The NuSTAR Science Team

416.04 The NuSTAR Black Hole Spin Program
Walton, Dom
1 Caltech, Pasadena, CA.
Contributing teams: The NuSTAR Team

416.05 A first look at the distant high energy X-ray population with NuSTAR
Civano, Francesca M.
1 Dartmouth College, Cambridge, MA. 2 SAO, Cambridge, MA.
Contributing teams: the NuSTAR Team

417 Young Stellar Objects I
Thursday, 10:00 AM - 11:30 AM; National Harbor 4
Chair(s):
Lisa Prato, Lowell Observatory
417.01 VLA and CARMA Observations of Binaries and Disks in the Protostellar Phase
Tobin, John J.¹

¹National Radio Astronomy Observatory, Charlottesville, VA.

417.02 Connecting diverse molecular cloud environments with nascent protostars in Orion
Stutz, Amelia M.²,¹; Megeath, S. Thomas³; Fischer, William J.³; Ali, Babar⁴; Furlan, Elise⁵,⁶; Tobin, John J.⁴; Stanke, Thomas³; Henning, Thomas²; Krause, Oliver²; Puravankara, Manoj³; Osorio, Mayra⁸; Robitaille, Thomas³

¹University of Arizona/Steward Observatory, Tucson, AZ. ²MPIA, Heidelberg, Germany. ³University of Toledo, Toledo, OH. ⁴NRAO, Charlottesville, VA. ⁵ESO, Garching, Germany. ⁶NHSC, Pasadena, CA. ⁷NOAO, Tucson, AZ. ⁸IAA/CSIC, Granada, Andalucia, Spain. ⁹TIFR, Mumbai, India.

Contributing teams: HOPS team

417.03 YSOVAR: Infrared Reverberation Mapping of a Protoplanetary Disk
Meng, Huan¹,²; Plavchan, Peter¹; Gueth, Tina³; Stauffer, John R.⁴; Covey, Kevin⁵; Akeson, Rachel L.¹; Carey, Sean J.⁶; Carpenter, John M.⁷; Ciardi, David R.¹; Gutermuth, Robert A.²; Ogle, Patrick M.⁴; Rebull, Luisa M.⁸; Stapelfeldt, Karl R.⁸; Whitney, Barbara³; Morales-Calderon, Maria¹⁰; Watson, Alan¹¹; Cody, Ann Marie¹; Rieke, George²; Flaherty, Kevin M.¹²

¹IPAC, Caltech, Pasadena, CA. ²University of Arizona, Tucson, AZ. ³New Mexico Institute of Mining and Technology, Socorro, NM. ⁴Spitzer Science Center, Pasadena, CA. ⁵Lowell Observatory, Flagstaff, AZ. ⁶Caltech, Pasadena, CA. ⁷University of Massachusetts, Amherst, MA. ⁸NASA Goddard Space Flight Center, Greenbelt, MD. ⁹University of Wisconsin, Madison, Madison, WI. ¹⁰Centro de Astrobiologia, Villanueva de la Canada, Madrid, Spain. ¹¹Universidad Nacional Autonoma de Mexico, Morelia, Michoacan, Mexico. ¹²Wesleyan University, Middletown, CT.

Contributing teams: YSOVAR Collaboration

417.04D Signatures of disk structure from line profile variability
Powell, Stacie¹; Latham, David W.¹; Irwin, Michael¹; Bouvier, Jerome³; Clarke, Cathie¹; Facchini, Stefano¹

¹Institute of Astronomy, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom. ²Harvard-Smithsonian CfA, Boston, MA. ³IPAG, Grenoble, France.

417.05D Probing Young Star Physics with Aperiodic Variability
Findeisen, Krzysztof¹

¹Caltech, Pasadena, CA.

417.06D OBSERVATIONS OF WARM WATER AND VOLATILES IN YOUNG PROTOPLANETARY DISKS, AND THE CONNECTION TO DISK EVOLUTION AND PLANET FORMATION
Banzatti, Andrea¹,²; Meyer, Michael³; Pontoppidan, Klaus¹

¹Space Telescope Science Institute, Baltimore, MD. ²ETH Zurich, Zurich, Switzerland.
418 An Astronomical Time Machine: Light Echoes from Historic Supernovae and Stellar Eruptions

Thursday, 11:40 AM - 12:30 PM; Potomac Ballroom A

Chair(s):
Paula Szkody

418.01 An Astronomical Time Machine: Light Echoes from Historic Supernovae and Stellar Eruptions
Rest, Armin

1Space Telescope Science Institute, Timonium, MD.

Career Hour 6: Negotiation Strategy and Tactics

Thursday, 12:30 PM - 1:30 PM; National Harbor 2

Did you know that the salary of your very first job after graduation or your postdoc determines your salaries for the rest of your life? Learn how to create a win-win situation and negotiate right from start to finish in the job decision process. Clarifying your needs and wants, and those of the other party are key. The negotiation skills you learn are valuable in that they can be applied to any situation in your professional (and even personal) life. Audience: students, postdocs, early- and mid-career professionals Facilitator: Alaina G. Levine, President, Quantum Success Solutions Alaina G. Levine is a science careers consultant, science writer, and professional speaker and comedian. Her new book on networking strategies for scientists and engineers will be published by Wiley in 2014.

Chair(s):
Alaina Levine, Quantum Success Solutions

Organizer(s):
Kelle Cruz, Hunter College/CUNY and AMNH

419 Giant Magellan Telescope Organization Town Hall

Thursday, 12:45 PM - 1:45 PM; National Harbor 3

The GMT Project will hold a town hall to inform the AAS community regarding the status of the project and opportunities for participation in large-scale science projects. We will make short presentations on the status of the project and two science areas. These presentations will be followed by an open discussion of opportunities for community involvement. Members of the GMT Board and project team will be on hand as will members of the instrument science teams.

Chair(s):
Patrick McCarthy, GMTO

Organizer(s):
Patrick McCarthy, GMTO
420 Transforming NOAO, A Town Hall Discussion

Thursday, 12:45 PM - 1:45 PM; Maryland Ballroom C

The NSF Astronomy Division has begun to clarify the mission and scope of NOAO in the post Portfolio Review era. Please come and hear about the emerging plans to transform NOAO in the coming years. We invite the community to provide input and commentary as NOAO embarks on a process of change toward large data science in the era of DES, DESI, and LSST.

Chair(s):
David Silva, National Optical Astronomy Observatory

Afternoon Poster Session

Thursday, 1:00 PM - 2:00 PM; Exhibit Hall ABC

421 AGN at Radio to IR Wavelengths

Thursday, 2:00 PM - 3:30 PM; National Harbor 11

Chair(s):
Laura Brenneman, Harvard-Smithsonian Center for Astrophysics

421.01 Widefield Surveys of the Low-Frequency Radio Sky with the Murchison Widefield Array
Morgan, John¹; Hurley-Walker, Natasha¹; Wayth, Randall¹
¹Curtin University, Perth, WA, Australia.
Contributing teams: MWA

421.02 Millimeter Properties of Radio Sources and the Sunyaev-Zel’dovich Effect
Gralla, Megan B.¹; Crichton, Devin¹; Marriage, Tobias¹
¹Johns Hopkins University, Baltimore, MD.
Contributing teams: ACT Collaboration, HerMES Collaboration

421.03 Search for unassociated Fermi sources
Petrov, Leonid¹; Schinzel, Frank²; Edwards, Phillip³; Mahony, Elizabeth¹; Sadler, Elaine⁵; McConnell, David⁴; Taylor, Gregory B.²
¹Astrogeo Center, Falls Church, VA. ²University of New Mexico, Albuquerque, NM. ³ASTRON, the Netherlands Institute for Radio Astronomy, Dwingeloo, Netherlands. ⁴CSIRO Astronomy and Space Science, Epping, NSW, Australia. ⁵The University of Sydney, Sydney, NSW, Australia.

421.04 RadioAstron Measurement of High Brightness Temperature of 3C 273
Kellermann, Kenneth I.¹
¹NRAO, Charlottesville, VA.
Contributing teams: RadioAstron AGN Early Science Team
421.05 Detection of a High Brightness Temperature Radio Core in the AGN-Driven Molecular Outflow Candidate NGC 1266
Nyland, Kristina; Alatalo, Katherine A.; Young, Lisa; Wrobel, J. M.; Morgan-ti, Raffaella; Davis, Timothy; de Zeeuw, P. T.; Deustua, Susana E.; Bureau, Martin.

421.06 RoboPol: AGN optical linear polarization monitoring
King, Oliver G.
1. California Institute of Technology, Pasadena, CA.
Contributing teams: The RoboPol collaboration

421.07 Newly Discovered AGN and their Multi-year Light Curves from Kepler
Shaya, Edward J.; Olling, Robert; Mushotzky, Richard
1. Univ. of Maryland, College Park, MD.

422 Binary Systems - ULXs and Stellar Collisions
Thursday, 2:00 PM - 3:30 PM; Maryland 2
Chair(s):
Geraldine Peters, Univ. of Southern California

422.01D Probing the nature of ultraluminous X-ray sources through fast (a few milliseconds) and slow (a few years) X-ray variability
Dheeraj, Pasham
1. University of Maryland College Park, College park, MD. 2. NASA/GSFC, Greenbelt, MD.

422.02 An Environmental Study of the Ultraluminous X-ray Source Population in Early-type Galaxies
Plotkin, Richard; Gallo, Elena; Miller, Brendan P.; Baldassare, Vivienne; Treu, Tommaso; Woo, Jong-Hak

422.03D Observations and Origins of the Hot DQ White Dwarf Stars
Dunlap, Bart H.
1. University of North Carolina at Chapel Hill, Chapel Hill, NC.

422.04 More than scratching the surface: dredge-up in simulations of double white dwarf mergers
Motl, Patrick M.; Staff, Jan E.; Raskin, Cody; Marcello, Dominic; Clayton, Geoffrey C.; Fryer, Chris; Frank, Juhan
1. Indiana University Kokomo, Kokomo, IN. 2. Macquarie University, Sydney, NSW, Australia. 3. Lawrence Berkeley National Laboratory, Berkeley, CA. 4. Louisiana State University, Baton Rouge, LA. 5. Los Alamos National Laboratory, Los Alamos, NM.
422.05 Stellar Collisions within Very Wide Binaries
Kaib, Nathan A.; Raymond, Sean N.;
1Northwestern University, Evanston, IL. 2Univ. Bordeaux, Foirac, France. 3CNRS, LAB, Foirac, France.

423 Black Holes II

Thursday, 2:00 PM - 3:30 PM; National Harbor 10
Chair(s):
Steven Kraemer, Catholic University of America

423.01 Chandra and XMM-Newton identify ~50 black hole binary candidates in M31
Barnard, Robin; Primini, Frank; Murray, Stephen S.; Garcia, Michael R.;
1Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 2Johns Hopkins University, Baltimore, MD.

423.02 Modeling Hot Gas Flow in the Low-Luminosity Active Galactic Nucleus of NGC3115
Shcherbakov, Roman V.; Wong, Ka-Wah; Irwin, Jimmy; Reynolds, Christopher S.;
1University of Maryland, College Park, MD. 2Joint Space Science Institute, College Park, MD. 3University of Alabama, Tuscaloosa, AL.

423.03 Modeling Single and Dual Narrow-Line Active Galactic Nuclei
Blecha, Laura;
1Univ. of Maryland - College Park, College Park, MD.

423.04D Outflows from Accreting Black Holes Across the Mass Scale.
King, Ashley L.;
1University of Michigan, Ann Arbor, MI.

423.05 Local Supermassive Black Hole Scaling Relations Imply Compton Thick or Super Eddington Accretion
Novak, Gregory;
1Paris Observatory, Paris, France.

423.06 X-ray Constraints on the Local Supermassive Black Hole Occupation Fraction
Miller, Brendan P.; Gallo, Elena; Greene, Jenny E.; Kelly, Brandon C.; Treu, Tommaso; Woo, Jong-Hak; Baldassare, Vivienne;
1University of Michigan, Ann Arbor, MI. 2Macalester College, Saint Paul, MN. 3Princeton University, Princeton, NJ. 4UCSB, Santa Barbara, CA. 5Seoul National University, Seoul, Korea, Republic of.

423.07 The formation of rare massive black holes at redshift 30
Tanaka, Takamitsu; Li, Miao;
1Max Planck Institute for Astrophysics, Garching, Germany. 2Columbia University, New York, NY.
424 Circumstellar Disk Topics with some Evolved Star Talks to Boot

Thursday, 2:00 PM - 3:30 PM; Maryland Ballroom B

Chair(s):
Margaret Moerchen, Space Telescope Science Institute

424.01 Evolution of Stellar Coronae: From the Sun to a Red Giant
Airapetian, Vladimir1,2; Leake, James E.2; Carpenter, Kenneth G.3
1 Sigma Space/NASA/GSFC, Greenbelt, MD. 2 George Mason University, Fairfax, VA. 3 NASA/GSFC, Greenbelt, MD.

424.02D Toward Unraveling the Nature of the Mysterious 21 and 30 Micrometer Emission Features of Evolved Stars
Mishra, Ajay1,2; Li, Aigen1,2
1 University of Missouri, Columbia, MO. 2 University of Missouri, Columbia, MO.

424.03 Formation of Jets and Vortices on Brown Dwarfs
Zhang, Xi1; Showman, Adam P.1
1 University of Arizona, Tucson, AZ.

424.04 Searching for spectroscopic binaries within transition disk objects
Kohn, Saul1; Shkolnik, Evgenya2; Weinberger, Alycia J.1; Carlberg, Joleen K.3
1 University of Edinburgh, Edinburgh, Midlothian, United Kingdom. 2 Lowell Observatory, Flagstaff, AZ. 3 Carnegie Institution of Washington, Washington, DC.

424.05D Peering into Terrestrial Planet Formation: New Studies of Young Debris Disks
Donaldson, Jessica1; Roberge, Aki2
1 University of Maryland, College Park, MD. 2 NASA/GSFC, Greenbelt, MD.

424.06 STIS High Contrast Imaging of HD 15745 on Solar System Scales: Inspecting the Fan
Debes, John H.1; Nunez-Quiroga, Luis2; Schneider, Glenn3; Carson, Joseph4; Goto, Miwa5; Grady, Carol A.6; Henning, Thomas6; Hines, Dean C.1; Hinz, Phil6; Jang-Condell, Hannah7; Kuchner, Marc J.8; Moro-Martin, Amaya9; Perrin, Marshall D.1; Rodigas, T. J.11; Serabyn, Gene10; Stark, Christopher C.8; Tamura, Motohide12; Weinberger, Alycia J.11; Wisniewski, John P.13; Woodgate, Bruce E.8
1 STScI, Baltimore, MD. 2 University of Leiden, Leiden, Netherlands. 3 University of Arizona, Tucson, AZ. 4 College of Charleston, Charleston, NC. 5 MPIA, Heidelberg, Germany. 6 Eureka Scientific, Oakland, CA. 7 University of Wyoming, Laramie, WY. 8 NASA/GSFC, Greenbelt, MD. 9 CISC-INTA, Granada, Spain. 10 JPL/Caltech, Pasadena, CA. 11 CIW/DTM, Washington, DC. 12 NAOJ, Tokyo, Japan. 13 University of Washington, Seattle, WA.

424.07 Accretion as a function of Orbital Phase in Young Close Binaries.
Ardila, David R.1; Herczeg, Gregory3; Johns-Krull, Christopher M.4; Mathieu, Robert D.1; Vodniza, Alberto3; Tofflemire, Benjamin M.3
1 NHSC / Caltech, Pasadena, CA. 2 The Kavli Institute for Astronomy and Astrophysics, Beijing, China. 3 University of Wisconsin at Madison, Madison, WI. 4 Rice University, Houston, TX. 5 University of Narino Observatory, Pasto, Colombia.
Clouds play an important role in shaping the emergent spectra of both brown dwarfs and exoplanets. Our poor understanding of the cloud properties (e.g., vertical extent, particle size distribution, and coverage fraction) severely limits our ability to estimate the fundamental physical parameters of brown dwarfs and giant planets. For example, the inferred effective temperatures of the 2M1207b and HR8799 planets differ by up to 600 K depending on the flavor of the cloud models. Atmospheric condensates are also well recognized as a limiting factor in explaining the M/L, L/T, and T/Y spectral type transitions. Periodic variability in cool brown dwarfs, likely caused by uneven cloud coverage, provides a convenient probe of the cloud structure in rotating substellar atmospheres. Mapping the time evolution of cloud-induced variability in brown dwarfs also provides a novel way to study atmospheric circulation in non-irradiated ultracool atmospheres: a regime not accessible from observations of hot Jupiter-type transiting planets. The proposed Special Session shines a timely spotlight on this new approach to exploring ultra-cool atmospheres enabled by recent breakthroughs in precision photometry. On-going ground- and space-based surveys are using this technique to systematically study large samples of brown dwarfs. Several among the invited and confirmed speakers are leading large Spitzer and HST programs to study this phenomenon (3,000+ Spitzer hours and 100+ HST orbits). By the time of the January 2014 AAS meeting, most data will have been obtained and the results can be presented in press releases. The pressing interest in unraveling the cloud structure of directly imaged extrasolar planets and cool brown dwarfs makes the Session broadly relevant to the wider substellar astrophysics community. Through a series of short, exciting talks the community will share in the newest, unpublished results from this rapidly developing field.

Chair(s):
Stanimir Metchev, SUNY Stony Brook
Organizer(s):
Stanimir Metchev, SUNY Stony Brook

425.01 Clouds and Binaries Across the L/T Transition
Burgasser, Adam J.1
1 UC San Diego, La Jolla, CA.

425.02 Brown Dwarf Variability: What’s Varying and Why?
Marley, Mark S.1
1 NASA Ames Research Center, Moffett Field, CA.

425.03 Brown Dwarf Variability: Past, Present, and Future
Radigan, Jacqueline1
1 STScI, Baltimore, MD.

425.04 Weather on Other Worlds: Results from Variability Monitoring of an Unbiased Sample of L and T Dwarfs with Spitzer
Metchev, Stanimir A.1,2
1 University of Western Ontario, London, ON, Canada. 2 Stony Brook University, Stony Brook, NY.
Contributing teams: Weather on Other Worlds Spitzer Exploration Science Team
425.05  Spectral Mapping and Long-Term Monitoring: Details and Dynamics of Condensate Cloud Layers
Apai, Daniel\textsuperscript{1}; Buenzli, Esther\textsuperscript{4}; Flateau, Davin C.\textsuperscript{1}; Metchev, Stanimir\textsuperscript{3}; Radigan, Jacqueline\textsuperscript{3}; Marley, Mark S.\textsuperscript{3}; Showman, Adam P.\textsuperscript{1}; Reid, Iain N.\textsuperscript{2}; Yang, Hao\textsuperscript{3}; Heinze, Aren\textsuperscript{4}; Karalidi, Theodora\textsuperscript{3}; Burgasser, Adam J.\textsuperscript{10}; Lowrance, Patrick\textsuperscript{8}; Artigau, Etienne\textsuperscript{3}; Mohanty, Subhanjoy\textsuperscript{5}
\textsuperscript{1}The University of Arizona, Tucson, AZ.  \textsuperscript{2}Space Telescope Science Institute, Baltimore, MD.  \textsuperscript{3}Western University, London, ON, Canada.  \textsuperscript{4}Max Planck Institute for Astronomy, Heidelberg, Germany.  \textsuperscript{5}Imperial College, London, United Kingdom.  \textsuperscript{6}Stony Brook University, New York, NY.  \textsuperscript{7}NASA Ames, Mountain View, CA.  \textsuperscript{8}Spitzer Science Center, Pasadena, CA.  \textsuperscript{9}University of Montreal, Montreal, QC, Canada.  \textsuperscript{10}University of California, San Diego, San Diego, CA.
Contributing teams: Spitzer Exploration Science Team: Extrasolar Storms

425.06  Mapping Clouds on Brown Dwarfs
Crossfield, Ian\textsuperscript{1}; Biller, Beth\textsuperscript{1,2}; Schlieder, Josh\textsuperscript{1}; Deacon, Niall\textsuperscript{1}; Bonnefoy, Mickael\textsuperscript{1}; Homeier, Derek\textsuperscript{2}; Allard, France\textsuperscript{2}; Buenzli, Esther\textsuperscript{1}; Henning, Thomas\textsuperscript{1}; Brandner, Wolfgang\textsuperscript{1}; Goldman, Bertrand\textsuperscript{1}; Kopytova, Taisiya\textsuperscript{1,4}
\textsuperscript{1}MPIA, Heidelberg, Germany.  \textsuperscript{2}Institute for Astronomy, Edinburgh, United Kingdom.  \textsuperscript{3}CRAL-ENS, Lyon, France.  \textsuperscript{4}IMPRS, Heidelberg, Germany.

425.07  Atmospheric Dynamics of Brown Dwarfs and Directly Imaged Giant Planets
Showman, Adam P.\textsuperscript{1}; Kaspi, Yohai\textsuperscript{2}
\textsuperscript{1}Univ. Of Arizona, Tucson, AZ.  \textsuperscript{2}Weizmann Institute of Science, Rehovot, Israel.

425.08  Are Y Dwarfs Partly Cloudy?
Cushing, Michael\textsuperscript{1}
\textsuperscript{1}University of Toledo, Toledo, OH.
Contributing teams: Kevin Hardegree-Ullman, Jesica Trucks

425.09  A Mid-Infrared View of Clouds on Extrasolar Planets
Skemer, Andy\textsuperscript{1}
\textsuperscript{1}University of Arizona, Tucson, AZ.

426  Cosmology & CMB VI
Thursday, 2:00 PM - 3:30 PM; National Harbor 13
Chair(s): Renee Hlozek, Princeton University

426.01D Intrinsic alignments: cosmology from the large scales & constraining the non-linear regime
Chisari, Nora Elisa\textsuperscript{1}; Dvorkin, Cora\textsuperscript{2}; Mandelbaum, Rachel\textsuperscript{1}; Strauss, Michael A.\textsuperscript{1}; Bahcall, Neta A.\textsuperscript{1}; Huff, Eric M.\textsuperscript{4}
\textsuperscript{1}Princeton University, Princeton, NJ.  \textsuperscript{2}Institute for Advanced Study, Princeton, NJ.  \textsuperscript{3}Carnegie Mellon University, Pittsburgh, PA.  \textsuperscript{4}CCAPP, Ohio State University, Columbus, OH.

426.02  The Effects of Halo Environment on Halo Occupation Distributions and the Galaxy-Galaxy Correlation Function.
Mehta, Kushal\textsuperscript{1}; Eisenstein, Daniel\textsuperscript{2}; Weinberg, David H.\textsuperscript{3}
\textsuperscript{1}University of Arizona, Tucson, AZ.  \textsuperscript{2}Harvard University, Cambridge, MA.  \textsuperscript{3}Ohio State University, Columbus, OH.
426.04 Carbon Monoxide Intensity Mapping at Redshift 2-3
Breysse, Patrick\textsuperscript{1}; Kovetz, Ely\textsuperscript{2}; Kamionkowski, Marc\textsuperscript{1}
\textsuperscript{1}Johns Hopkins University, Baltimore, MD. \textsuperscript{2}University of Texas at Austin, Austin, TX.

426.05 Hydrogen Recombination Lines from the First Luminous Objects
Pomerantz, Brian\textsuperscript{1}; Li, Yuexing\textsuperscript{1}
\textsuperscript{1}The Pennsylvania State University, University Park, PA.

426.06 The Seeds of a Magnetic Universe
Naoz, Smadar\textsuperscript{1}; Narayan, Ramesh\textsuperscript{1}
\textsuperscript{1}Harvard University Smithsonian CfA/ITC, Cambridge, MA.

426.07 Transformationally Describing Halo Bias and Exposing Cosmological Information
Neyrinck, Mark C.\textsuperscript{1}; Aragon-Calvo, Miguel Angel\textsuperscript{1,2}; Jeong, Donghui\textsuperscript{1}; Wang, Xin\textsuperscript{1}
\textsuperscript{1}Johns Hopkins Univ., Baltimore, MD. \textsuperscript{2}University of California at Riverside, Riverside, CA.

426.08 The intensity of isotropic diffuse emission measured with the Fermi Large Area Telescope
Bechtol, Keith\textsuperscript{1}
\textsuperscript{1}Kavli Institute for Cosmological Physics, Chicago, IL.
Contributing teams: Fermi Large Area Telescope Collaboration

427 Dark Matter & Dark Energy II

Thursday, 2:00 PM - 3:30 PM; Maryland Ballroom C

Chair(s):
Michael Schneider, Lawrence Livermore Natl Lab

427.01D Lensing B-mode measurements by the POLARBEAR telescope
Feng, Chang\textsuperscript{1}
\textsuperscript{1}University of California, San Diego, La Jolla, CA.
Contributing teams: the POLARBEAR Collaboration

427.02D New Microlensing Constraints of Primordial Black Hole Dark Matter based on First Two Years of Kepler Data
Cieplak, Agnieszka\textsuperscript{1}; Griest, Kim\textsuperscript{2}; Lehner, Matthew\textsuperscript{3,4}
\textsuperscript{1}Brookhaven National Laboratory, Upton, NY. \textsuperscript{2}University of California San Diego, La Jolla, CA. \textsuperscript{3}Academia Sinica, Taipei, Taiwan. \textsuperscript{4}University of Pennsylvania, Philadelphia, PA.

427.03D The Intrinsic Alignment of Galaxies and Weak Gravitational Lensing
Blazek, Jonathan\textsuperscript{1,2}
\textsuperscript{1}Ohio State University, Columbus, OH. \textsuperscript{2}University of California, Berkeley, Berkeley, CA.

427.04 Improved cosmological constraints from a joint analysis of the SNLS and SDSS surveys
Betoule, Marc\textsuperscript{1}; Guy, Julien\textsuperscript{1}; Kessler, Richard\textsuperscript{1}; Mosher, Jennifer\textsuperscript{2}; Astier, Pierre\textsuperscript{1}; Biswas, Rahul\textsuperscript{1}; El Hage, Patrick\textsuperscript{1}; Hardin, Delphine\textsuperscript{1}; Marriner, John\textsuperscript{4}; Pain, Remy\textsuperscript{1}; Regnault, Nicolas\textsuperscript{1}
\textsuperscript{1}LPNHE (CNRS), PARIS, France. \textsuperscript{2}University of Pennsylvania, Philadelphia, PA. \textsuperscript{3}University of Chicago, Chicago, IL. \textsuperscript{4}FNAL, Batavia, IL.
427.05  Black Hole Universe Model for Explaining GRBs, X-Ray Flares, and Quasars as Emissions of Dynamic Star-like, Massive, and Supermassive Black Holes
Zhang, Tianxi
1Alabama AandM University, Normal, AL.

428 Dwarf & Irregular Galaxies
Thursday, 2:00 PM - 3:30 PM; National Harbor 12
Chair(s): Amanda Kepley, National Radio Astronomy Observatory

428.01  Finding tiny, gas-rich galaxies in the Local Group
Donovan Meyer, Jennifer1; Grcevich, Jana2; Saul, Destry R.2; Peek, Joshua G.2; Putman, Mary E.2
1NRAO, Charlottesville, VA. 2Columbia University, New York, NY.

428.02D The H I Chronicles of LITTLE THINGS BCDs
Ashley, Trisha L.1; Simpson, Caroline E.2
1Florida International University, Miami, FL.
Contributing teams: LITTLE THINGS

428.03  The HI Neighborhoods of Starburst Dwarf Galaxies
Johnson, Megan C.1; McQuinn, Kristen B.1; Koribalski, Baerbel1; Ford, Alyson1; Bailin, Jeremy1
1NRAO - Green Bank, Arbovale, NSW, Australia.

428.04D Bright and dark: Satellite galaxies as a test of galaxy formation and the nature of dark matter.
Nierenberg, Anna1
1UCSB, Santa Barbara, CA.

428.05  Tidal Dwarf Galaxies In Gas-rich Interacting Galaxy Groups
Eigenthaler, Paul1
1Pontificia Universidad Católica de Chile, Santiago, Region Metropolitana, Chile.

428.06  Kinematically-Decoupled Cores in Dwarf Ellipticals in the Virgo Cluster: Implications for Infallen Groups in Clusters
Toloba, Elisa1; Guhathakurta, Puragra1; van de Ven, Glenn3; Boselli, Alessandro4; Lisker, Thorsten5; Peletier, Reynier6
1University of California Santa Cruz, Santa Cruz, CA. 2Carnegie Observatories, Pasadena, CA. 3Max Planck Institute for Astronomy, Heidelberg, Germany. 4Laboratoire d’Astrophysique de Marseille-LAM, Marseille, France. 5Astronomisches Rechen-Institut, Heidelberg, Germany. 6Kapteyn Astronomical Institute, Groningen, Netherlands.
Contributing teams: SMAKCED collaboration

428.07  X-ray Binaries and Feedback in Lyman-? Galaxies
Prestwich, Andrea H.1; Jackson, Floyd2; Kaaret, Philip3; Brorby, Matthew3; Roberts, Timothy P.4; Saar, Steven H.1
1Harvard-Smithsonian, CfA, Cambridge, MA. 2University of Toledo, Toledo, OH. 3University of Iowa, Iowa City, IA. 4University of Durham, Durham, Durham, United Kingdom.
429 Emerging Impacts on Structure Formation and AGN Science from NanoHz Gravitational Wave Studies

Thursday, 2:00 PM - 3:30 PM; Maryland 1

This session will feature presentations and panel-led discussions on astrophysical problems addressed by current and upcoming capabilities of Pulsar Timing Arrays (PTAs). PTAs are uniquely sensitive to the low-frequency (nHz-uHz) gravitational wave spectrum, and are capable of detecting gravitational waves (GWs) from cosmic string loops, inflationary expansion, and binary supermassive black hole binaries formed in galaxy mergers. Excitingly, the sensitivity of pulsar timing has reached the upper range of the GW signal predictions for standard cosmological structure formation scenarios, and electromagnetic observational studies are beginning to discover discrete binary supermassive systems that may offer target systems for PTAs. The presentations in this session will outline: a) the current status of PTAs and realistic near-term sensitivity predictions; b) how the parameters of hierarchical structure formation models affect the expected GW signal; and c) the discovery potential of current electromagnetic surveys for discrete SMBH binary systems. A panel-led discussion will follow on the astrophysical consequences of a GW detection or strict upper limits from a timing array, focusing on unknowns in Universe structure formation, galaxy dynamics, active nucleus formation, and supermassive black hole growth. We also welcome relevant contributed posters, to provide a broader view to the focused discussion in the session. The primary goal of this session is to encourage collaborative thinking between theorists, pulsar timers, and electromagnetic observers on realistic goals in GW astrophysics with supermassive black hole binaries in the coming 1-10 years.

Chair(s):
Sarah Spolaor, Jet Propulsion Laboratory

Organizer(s):
Sarah Spolaor, Jet Propulsion Laboratory

429.01 A Crash Course in using Pulsars to Detect Gravitational Waves
Lommen, Andrea N.1
1 Franklin and Marshall College, Lancaster, PA.
Contributing teams: NANOGrav

429.02 When will NANOGrav detect gravitational waves?
Siemens, Xavier1
1 University of Wisconsin -- Milwaukee, Milwaukee, WI.

429.03 Electromagnetic Signatures of Supermassive Binaries and their Hosts
Schnittman, Jeremy1,2
1 NASA/GSFC, Greenbelt, MD. 2 Joint Space Science Institute, College Park, MD.

429.04 I Get By With A Little Help From My Friends: Enhancing PTA Sensitivity to GWs With EM Counterparts
Ellis, Justin1; Burke-Spolaor, Sarah2
1 University of Wisconsin Milwaukee, Milwaukee, WI. 2 Caltech, Pasedena, CA.

429.05 Probing Massive Black Hole Binaries with Pulsar Timing Arrays
Sesana, Alberto1
1 Albert Einstein Institute, Munich, Germany.
430 Extrasolar Planet Detection - M Dwarfs and Young Stars

Thursday, 2:00 PM - 3:30 PM; Maryland Ballroom A

Chair(s):
Natalie Batalha, San Jose State University

430.01D Planets, Cycles, and Starspots: Disentangling Stellar Activity from Radial Velocity for Cool Stars
Robertson, Paul1, 2; Endl, Michael1, 2; Cochran, William D.3, 2; Dodson-Robinson, Sarah E.4; MacQueen, Phillip1, 2
1Center for Exoplanets and Habitable Worlds, Penn State University, University Park, PA. 2The University of Texas, Austin, TX. 3McDonald Observatory, Austin, TX. 4The University of Delaware, Newark, DE.

430.02 Precise Near-Infrared Radial Velocities
Plavchan, Peter1, 2; Gao, Peter1; Bottom, Michael1; Davison, Cassy3; Mills, Sean12; Ciardi, David R.1, 2; Brinkworth, Carolyn1; Tanner, Angelle M.10; Beichman, Charles A.1, 2; Catanzarite, Joseph13; Crawford, Sam4; Wallace, J. Kent4; Mennesson, Bertrand4; Johnson, John A.3; White, Russel J.3; Anglada-Escudé, Guillem5; von Braun, Kaspar7; Walp, Bernie11; Vasisht, Gautam4; Kane, Stephen R.9; Prato, Lisa A.8
1Caltech, Pasadena, CA. 2NExScI, Pasadena, CA. 3Georgia State University, Atlanta, GA. 4Jet Propulsion Laboratory, Pasadena, CA. 5Harvard University, Cambridge, MA. 6University of Goettingen, Goettingen, Germany. 7Max Planck Institute for Astronomy, Heidelberg, Germany. 8Lowell Observatory, Flagstaff, AZ. 9San Francisco State University, San Francisco, CA. 10Mississippi State University, Mississippi State, MS. 11SOFIA, Moffett Field, CA. 12University of Chicago, Chicago, IL. 13NASA Ames, Moffett Field, CA.

Contributing teams: NIRVVs

430.03 Observations of the Pre-Main Sequence Exoplanet Candidate PTFO 8-8695
Ciardi, David R.1, 2; Beichman, Charles A.1, 2; Carey, Sean J.1, 3; Crockett, Christopher4; Johns-Krull, Christopher M.5; Kane, Stephen R.4; McLane, Jacob1, 4; Plavchan, Peter1, 2; Prato, Lisa A.4; Stauffer, John R.3, 3; van Belle, Gerard4; Van Eyken, Julian C.8, 9; von Braun, Kaspar10

430.04 A Confirmed Directly Imaged Planet Orbiting a Nearby Young, Dusty Star
Currie, Thayne M.1; Rameau, Julien2; Chauvin, Gael2; Lagrange, Anne-Marie2; Boccaletti, Anthony3; Meshkat, Tiffany4; Quanz, Sascha5; Girard, Julien6; Bonnefoy, Mickael7; Kenworthy, Matthew A.8
1University of Toronto, Toronto, ON, Canada. 2IPAG, Grenoble, France. 3LESIA/ Observatoire de Paris, Paris, France. 4Leiden Observatory, Leiden, Netherlands. 5ETH-Zurich, Zurich, Switzerland. 6ESO, Santiago, Chile. 7MPIA-Heidelberg, Heidelberg, Germany.
431 Galaxy Clusters in High Energies and Radio

Thursday, 2:00 PM - 3:30 PM; National Harbor 5

Chair(s):
Tracy Clarke, Naval Research Lab.

431.01 Characterization of ICM Temperature Distributions of 62 Galaxy Clusters with XMM-Newton
Frank, Kari A.1; Peterson, John R.2; Andersson, Karl1; Fabian, Andy C.4; Sanders, Jeremy S.4
1Pennsylvania State University, State College, PA. 2Purdue Univ., West Lafayette, IN. 3Ludwig-Maximilians-Universität, München, Germany. 4Institute of Astronomy, Cambridge, United Kingdom.

431.02 X-ray and Radio Results for Abell 2443, a Sloshing Galaxy Cluster Hosting an Ultra-Steep Spectrum Radio Source
Mroczkowski, Tony1; Clarke, Tracy E.1; Randall, Scott W.2; Sarazin, Craig L.3; Blanton, Elizabeth L.4; Giacintucci, Simona5; Intema, Huib5; ZuHone, John A.7
1Naval Research Laboratory, Washington, D.C, DC. 2Chandra X-ray Center, Cambridge, MA. 3University of Virginia, Charlottesville, VA. 4Boston University, Boston, MA. 5University of Maryland, College Park, MD. 6NRAO, Charlottesville, VA. 7Goddard Space Flight Center, Greenbelt, MD.

431.03 Deep Radio Observations of the Toothbrush Galaxy Cluster
Van Weeren, Reinout J.1; Jones, Christine1; Forman, William R.1; Röttgering, Huub2; Brüggen, Marcus3; Brunetti, Gianfranco4; de Gasperin, Francesco5; Bonafede, Annalisa5; Pizzo, Roberto6; Ferrari, Chiara6; Orrù, Emanuela6; Ogrean, Georgiana A.7
1Smithsonian Astrophysical Observatory, Cambridge, MA. 2Leiden University, Leiden, Netherlands. 3University of Hamburg, Hamburg, Germany. 4INAF Istituto di Radioastronomia, Bologna, Italy. 5Observatoire de la Côte d’Azur, Nice, France. 6ASTRON, Dwingeloo, Netherlands.
Contributing teams: LOFAR Busyweek team, LOFAR surveys KSP

431.04 Search for Cosmic-ray induced γ-ray Emission in Galaxy Clusters
Zimmer, Stephan1, 2; Pinzke, Anders1; Pfrommer, Christoph3
1Oskar Klein Center for Cosmoparticle Physics and Department of Physics, Stockholm University, Stockholm, Sweden. 2for the Fermi-LAT Collaboration, Stanford, CA. 3Heidelberg Institute for Theoretical Studies, Heidelberg, Germany.
Contributing teams: The Fermi-LAT Collaboration

431.05 Recent Results on Clusters of Galaxies with LOFAR
Wise, Michael W.1, 2
1ASTRON (Netherlands Institute for Radio Astronomy), Dwingeloo, Netherlands. 2Astronomical Institute Anton Pannekoek, University of Amsterdam, Amsterdam, Netherlands.
Contributing teams: The LOFAR Surveys KSP Cluster Working Group

431.06 Understanding the Toothbrush Merging Galaxy Cluster to Constrain Dark Matter
Dawson, William1, 2; Brüggen, Marcus1; Van Weeren, Reinout J.1; Wittman, David M.2
1LLNL, Livermore, CA. 2University of California Davis, Davis, CA.
432 Galaxy Evolution at z~1

Thursday, 2:00 PM - 3:30 PM; Potomac Ballroom A

Chair(s):
Ann Hornschemeier, NASA GSFC

432.01 A search for z <1.2 Ly-alpha Blobs using SWIFT
Ashcraft, Teresa¹; Hegel, Paul¹; Jansen, Rolf A.¹; Rutkowski, Michael J.²; Windhorst, Rogier A.¹
¹School of Earth & Space Exploration, Arizona State University, Tempe, AZ.
²Institute for Astrophysics, University of Minnesota, Minneapolis, MN.

432.02D Star Formation Quenching and Identifying AGN in Galaxies
Mendez, Alexander¹; Coil, Alison L.¹; Lotz, Jennifer M.²; Aird, James³; Diamond-Stanic, Aleksandar M.⁴; Moustakas, John⁴; Salim, Samir⁵; Simard, Luc⁶; Blanton, Michael R.⁷; Eisenstein, Daniel¹⁰; Wong, Kenneth C.¹¹; Cool, Richard J.⁹; Zhu, Guangtun¹²
¹UCSD, La Jolla, CA. ²Space Telescope Science Institute, Baltimore, MD. ³Indiana University, Bloomington, IN. ⁴Siena College, Siena, NY. ⁵University of Victoria, Victoria, BC, Canada. ⁶Durham University, Durham, United Kingdom. ⁷University of Wisconsin, Madison, WI. ⁸New York University, New York, NY. ⁹MMO Observatory, Tucson, AZ. ¹⁰Harvard, Cambridge, MA. ¹¹University of Arizona, Tucson, AZ. ¹²Johns Hopkins University, Baltimore, MD.
Contributing teams: PRIMUS, AEGIS

432.03 The Starburst-AGN Connection in Luminous and Ultraluminous Infrared Galaxies
Fiorenza, Stephanie¹, ²; Takeuchi, Tsutomu T.³; Malek, Katarzyna E.³; Liu, Charles²
¹CUNY Graduate Center, New York, NY. ²CUNY College of Staten Island, Staten Island, NY. ³Nagoya University, Nagoya, Aichi Prefecture, Japan.

432.04 Massive Star-Forming Host Galaxies of Quasars on SDSS Stripe 82
Matsuoka, Yoshiki¹, ²; Strauss, Michael A.³
¹Princeton University, Princeton, NJ. ²National Astronomical Observatory of Japan, Mitaka, Tokyo, Japan.

432.05D The 3.4 µm Extragalactic Background Light as Measured Using WISE
Lake, Sean E.¹; Wright, Edward L.¹; Petty, Sara M.²; Assef, Roberto J.³; Cutri, Roc M.⁴; Stanford, S. A.⁵; Stern, Daniel⁶
¹UCLA, Los Angeles, CA. ²Virginia Tech, Blacksburg, VA. ³Universidad Diego Portales, Santiago, Chile. ⁴JPL, Pasadena, CA. ⁵IPAC, Pasadena, CA. ⁶CalTech, Pasadena, CA. ⁷UC Davis, Pasadena, CA.

432.06 Implications for Galaxy Evolution Inferred from Virial-Mass Self-Similarity of the Circumgalactic Medium
Churchill, Christopher W.¹; Nielsen, Nikole M.²; Kacprzak, Glenn²
¹New Mexico State Univ., Las Cruces, NM. ²Swinburne University of Technology, Hawthorn, VIC, Australia.
433 Star Clusters and Associations, Galactic and Extragalactic

Thursday, 2:00 PM - 3:30 PM; National Harbor 2

Chair(s):
Catherine Pilachowski, Indiana University

433.01 Modelling of Proper Motions in Globular Clusters
Watkins, Laura; Bellini, Andrea; Van Der Marel, Roeland P.; Anderson, Jay
1 STScI, Baltimore, MD.
Contributing teams: HSTPROMO

433.02 Mass segregation for the young star clusters
YU, Jincheng
1 Pontificia Universidad Católica de Chile, Santiago, Metropolitan Region, Chile.

433.03D Abundances of Local Group Globular Clusters Using High Resolution Integrated Light Spectroscopy
Sakari, Charli; McWilliam, Andrew; Venn, Kim; Shetrone, Matthew D.; Dotter, Aaron L.; Mackey, Dougal
1 University of Victoria, Victoria, BC, Canada. 2 The Observatories of the Carnegie Institute of Washington, Pasadena, CA. 3 McDonald Observatory, University of Texas at Austin, Fort Davis, TX. 4 Research School of Astronomy and Astrophysics, The Australian National University, Weston, ACT, Australia.

433.04 Wide-Field HST Observations of the Globular Cluster System in NGC 1399
Puzia, Thomas H.
1 Pontificia Universidad Catolica, Santiago, RM, Chile.
Contributing teams: Maurizio Paolillo, Paul Goudfrooij, Thomas J. Maccarone, Giuseppina Fabbiano, Lorella Angelini

433.05 Stellar clusters formed from debris of colliding galaxies
De Mello, Duilia F.; Mendes de Oliveira, Claudia; Torres-Flores, Sergio; Urrutia-Viscarra, Fernanda
1 Catholic University of America, Washington, DC. 2 IAG/USP, Sao Paulo, SP, Brazil. 3 Univ. de La Serena, La Serena, Chile. 4 ESO, Garching, Germany.

433.06 De-confusing Herschel images by using bayesian priors.
Safarzadeh, Mohammadtaher; Ferguson, Henry C.; Lu, Yu; Inami, Hanae; Dickinson, Mark; Elbaz, David
Contributing teams: The CANDELS, GOODS-Herschel, CANDELS-Herschel collaborations
434 Stellar Evolution II

Thursday, 2:00 PM - 3:30 PM; Potomac Ballroom C

Chair(s):
Robert Olling, Univ. Of Maryland

434.01D The Mass-Transfer Formation of Blue Stragglers as Revealed by their White Dwarf Companions
Gosnell, Natalie M.1
1University of Wisconsin-Madison, Madison, WI.

434.02 Carbon Stars in Andromeda. I. Detection and Spectroscopic Properties
Hamren, Katherine1; Toloba, Elisa1, 3; Dorman, Claire1; Guhathakurta, Puragra1; Chang, Matthew2; Guha, Sumedh4
1University of California Santa Cruz, Santa Cruz, CA. 2Mountain View High School, Mountain View, CA. 3OCIW, Pasadena, CA. 4Yale University, New Haven, CT.
Contributing teams: PHAT collaboration, SPLASH collaboration

434.03 Carbon Stars In Andromeda. II. Demographics and Photometric Properties
Guhathakurta, Puragra1; Hamren, Katherine1; Dorman, Claire1; Toloba, Elisa1, 5; Seth, Anil2; Dalcanton, Julianne3; Nayak, Avinash4
1UC, Santa Cruz, Santa Cruz, CA. 2Univ of Utah, Salt Lake City, UT. 3Univ of Washington, Seattle, WA. 4Harker School, San Jose, CA. 5OCIW, Pasadena, CA.
Contributing teams: PHAT collaboration, SPLASH collaboration

434.04 Nonadiabatic Pulsation Analysis of Supermassive Stars
White, Christopher J.1; Goodman, Jeremy1
1Astrophysical Sciences, Princeton University, Princeton, NJ.

434.05 Fast or Slow? The Implications of Core Rotation Measurements for Stellar Angular Momentum Evolution
Pinsonneault, Marc H.1; Tayar, Jamie1
1Ohio State Univ., Columbus, OH.

434.06 Studying Magnetic Fields in Young Stellar Objects with MoogStokes
Deen, Casey1; Jaffe, Daniel T.2; Brandner, Wolfgang1; Johns-Krull, Christopher M.3
1Max Planck Institut für Astronomie, Heidelberg, Baden-Württemberg, Germany. 2University of Texas, Austin, TX. 3Rice University, Houston, TX.
435 The Exciting Future of Cosmic Microwave Background Measurements

Thursday, 2:00 PM - 3:30 PM; Potomac Ballroom D

Measurements of the cosmic microwave background (CMB) have produced tight constraints on cosmological parameters; provided insights into inflation; and enabled sensitive tests for extensions beyond the standard six parameter cosmological model. While measurements of the temperature angular power spectrum are approaching the cosmic variance limit, CMB instrumentation has progressed to the point where faint new signals are now accessible. In polarization the CMB may encode a detectable signal from the imprint of a background of gravitational waves produced by inflation moments after the Big Bang. In addition, polarization can probe the weak gravitational lensing of the CMB which represents a new cosmological tool for measuring large scale structures, which are sensitive to neutrino mass, early dark energy, and galaxy formation in combination with multi-wavelength surveys. Recently the Planck satellite provided spectacular measurements over the entire sky and over a frequency range between 30 and 857 GHz, and in 2014 Planck will release new polarization data. A new generation of receivers with higher sensitivity than Planck, enabled by rapid advances in detector technology, are pushing CMB polarization measurements to very low levels from ground-based and sub-orbital platforms. Improvements to instrumentation over the past quarter century also provide an avenue to improve our understanding of the CMB blackbody spectrum by three orders of magnitude beyond the 50 parts-per-million accuracy to which it was measured by COBE, the Cosmic Background Explorer. A new experiment could detect distortions at this level providing new constraints on processes ranging from inflation and the nature of the first stellar objects to exotic phenomena including primordial black holes, cosmic strings, and the decay or annihilation of dark matter. In this session we review the current state of the CMB field and offer a roadmap for upcoming results and ambitious future instruments.

Chair(s):
Jeff McMahon, University of Michigan, Ann Arbor

Organizer(s):
Jens Chluba, Johns Hopkins University
Jeff McMahon, University of Michigan, Ann Arbor

435.01 Planck and the State of the Art in CMB Measurements
Lawrence, Charles R.¹
¹JPL, Pasadena, CA.

435.02 What we know and what we don’t know about the CMB spectrum
Mather, John C.1
¹NASA’s GSFC, Greenbelt, MD.
Contributing teams: COBE team, PIXIE team

435.03 Cosmic Microwave Background as a Probe of the Low Redshift Universe
Spergel, David N.¹
¹Princeton Univ. Obs., Princeton, NJ.

435.04 Constraints on Inflation from Polarization and CMB Spectral Distortions
Kamionkowski, Marc¹
¹Johns Hopkins University, Baltimore, MD.
The Once and Future Signal: CMB Science from Sub-orbital and Proposed Satellite Missions
Kogut, Alan J. 1
1 NASA's GSFC, Greenbelt, MD.

Latest CMB Measurement Results
Bock, James 1
1 Caltech, Pasadena, CA.

436 Young Stellar Objects II

Thursday, 2:00 PM - 3:30 PM; National Harbor 4

Chair(s):
John Tobin, National Radio Astronomy Observatory

Magnetically Aligned Dust Grains in Young Stellar Objects
Rodgers, Erica 1; Cotera, Angela 2; Whitney, Barbara 1,3
1 Space Science Institute, Boulder, CO. 2 SETI, Avondale, AZ. 3 University of Wisconsin - Madison, Madison, WI.

HST FUV monitoring of TW Hya
Guenther, Hans 1; Brickhouse, Nancy S. 1; Dupree, Andrea K. 1; Luna, Gerardo 1,3; Schneider, Peter C. 2; Wolk, Scott J. 1
1 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 2 Hamburger Sternwarte, Hamburg, Germany. 3 Instituto de Astronomia y Fisica del Espacio, Buenos Aires, Argentina.

Massive Stellar Outflows From the Combined Action of Multiple Stellar Jets
Mac Low, Mordecai-Mark 1,4; Peters, Thomas 2; Klaassen, Pamela 3; Schrön, Martin 4,5; Klessen, Ralf 4
1 American Museum of Natural History, New York, NY. 2 Universität Zürich, Zürich, Switzerland. 3 Universiteit Leiden, Leiden, Netherlands. 4 Universität Heidelberg, Heidelberg, Germany. 5 Helmholtz Zentrum für Umweltforschung, Leipzig, Germany.

Powerful jets driven by intermediate-mass protostars in the Carina Nebula
Reiter, Megan 1; Smith, Nathan 1
1 The University of Arizona, Tucson, AZ.

Cep OB3b: A Multi-Wavelength Survey of a Nearby Rich Young Stellar Cluster
Allen, Thomas 1; Megeath, S. Thomas 1; Prchlik, Jakub 1; Gutermuth, Robert A. 2; Pipher, Judith 2; Naylor, Tim 3; Jeffries, Rob 3; Wolk, Scott J. 6
1 University of Toledo, Toledo, OH. 2 University of Rochester, Rochester, NY. 3 Case Western, Cleveland, OH. 4 University of Exeter, Exeter, United Kingdom. 5 Keele University, Keele, United Kingdom. 6 Center for Astronomy, Cambridge, MA.

University of Massachusetts, Amherst, MA.
437 AIP Gemant Award Lecture: Star Trek: The Search for the First Alleged Crab Supernova Rock Art

Thursday, 3:40 PM - 4:30 PM; Potomac Ballroom A

Chair(s):
Catherine O’Riordan, AIP

437.01 Star Trek: The Search for the First Alleged Crab Supernova Rock Art
Krupp, E. C.¹
¹Griffith Obs., Los Angeles, CA.

460 Berkeley Prize: Using the SDO Atmospheric Imaging Assembly to Study Solar Activity

Thursday, 4:30 PM - 5:20 PM; Potomac Ballroom A

James Lemen - Berkeley Prize
For leading the design and construction of the Atmospheric Imaging Assembly for the Solar Dynamics Observatory, which has enabled forefront advances into understanding of solar activity. He is awarded the Berkeley Prize for his widely cited paper entitled “The Atmospheric Imaging Assembly on the Solar Dynamics Observatory”.

460.01 Using the SDO Atmospheric Imaging Assembly to Study Solar Activity
Lemen, James¹
¹Lockheed Martin Solar & Astrophysics Lab, Palo Alto, CA.

AAS Closing Reception

Thursday, 5:30 PM - 7:00 PM; Cherry Blossom Ballroom

Please join us as we close the 223rd AAS Meeting, and say goodbye to old friends and new, with light refreshments provided.
438 The Nuclear Spectroscopic Telescope Array (NuSTAR) Poster Session

Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

438.01 Public NuSTAR Archive at the HEASARC
Marshall, Francis E.1; Corcoran, Michael F.2; Drake, Stephen A.3; Sabol, Edward2; Forster, Karl4; Smale, Alan P.1; Zonak, Stephanie G.1
1 NASA/GSFC, Greenbelt, MD. 2Adnet, Lanham, MD. 3USRA/CRESST, Greenbelt, MD. 4Caltech, Pasadena, CA.

438.02 Sagittarius A* X-ray Flares Simultaneously Detected by NuSTAR And Chandra
Zhang, Shuo1; Barriere, Nicolas1; Tomssick, John2; Baganoff, Frederick K.3; Dexter, Jason2; Neilson, Joseph4.3
1 Columbia University, New York, NY. 2 UC Berkeley, Berkeley, CA. 3 MIT, Cambridge, MA. 4 Boston University, Boston, MA.
Contributing teams: NuSTAR team

438.03 Detection of hard X-ray point sources above 10 keV in the NuSTAR Galactic Center Survey
Mori, Kaya1; Hailey, Charles J.1; Tomssick, John2; Krivonos, Roman2; Hong, JaeSub3
1 Columbia University, New York City, NY. 2 University of California Berkeley, Berkeley, CA. 3 Harvard University, Boston, MA.
Contributing teams: NuSTAR team

438.04 NGC 4151 as Revealed by NuSTAR and Suzaku
Keck, Mason1; Brenneman, Laura1; Elvis, Martin2; Fuerst, Felix3; Madejski, Grzegorz M.4; Matt, Giorgio5; Harrison, Fiona3; Stern, Daniel6.3
1 Boston University, Boston, MA. 2 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 3 California Institute of Technology, Pasadena, CA. 4 Stanford Linear Accelerator Center, Menlo Park, CA. 5 Università Roma Tre, Roma, Italy. 6 NASA Jet Propulsion Laboratory, Pasadena, CA.
Contributing teams: The NuSTAR team

438.05 NuSTAR observatory operations and data analysis
Forster, Karl1; Harrison, Fiona1; Grefenstette, Brian1; Madsen, Kristin1; Miyasaka, Hiromasa1; Rana, Vikram1; Hubbard, Min1; Davis, Andrew1; Perri, Matteo2.3; Puccetti, Simonetta2.3; Spagnuolo, Nino2; Giommi, Paolo2; Bester, Manfred3; Lewis, Mark4; Roberts, Bryce4; Craig, William W.4.8; Marchant, William5; Markwardt, Craig6; Marshall, Francis E.6; Zonak, Stephanie7; Dodd, Suzanne R.7; Stern, Daniel8
1 Caltech, Pasadena, CA. 2 ASI-Science Data Center, Rome, Italy. 3 INAF – Osservatorio Astronomico di Roma, Monteporzio Catone, Italy. 4 Space Sciences Laboratory, UCB, Berkeley, CA. 5 NASA/JPL, Pasadena, CA. 6 NASA/GSFC, Greenbelt, MD. 7 ADNET systems, Inc., Bethesda, MD. 8 Lawrence Berkeley National Laboratory, Berkeley, CA.
438.06 Simultaneous Broadband Observations of Mrk 501 with NuSTAR
Furniss, Amy1; Paneque, David2; Madejski, Grzegorz M.3; Noda, Koji2; Giommi, Paolo4; Fuhrmann, Lars5; Hughes, Zachary6; Balokovic, Mislav7; Harrison, Fiona7; Urry, C. M.8

438.07 A NuSTAR Perspective on the X-ray Binary Populations of Starburst Galaxies
Yukita, Mihoko1; Lehmer, Bret1, 2; Wik, Daniel R.1, 2; Hornschemeier, Ann E.2; Ptak, Andrew2, 1; Antoniou, Vallia3; Argo, Megan4; Bechtol, Keith5; Harrison, Fiona6; Krivonos, Roman7; Leyder, Jean-Christophe1; Maccarone, Thomas J.8; Stern, Daniel9; Ventsers, Tonia M.1; Zezas, Andreas3; Zhang, William2
Contributing teams: NuSTAR Team

438.08 NuSTAR analysis of the PWN and SNR in G21.5-0.9
Nynka, Melania1; Hailey, Charles J.1; Reynolds, Stephen P.2; Madsen, Kristin3; Grefenstette, Brian3
Contributing teams: NuSTAR Team

438.09 First Results from NuSTAR observations of Galactic Center Non-thermal Filaments
Hailey, Charles J.1; Nynka, Melania1; Zhang, Shuo1; Mori, Kaya1
Contributing teams: NuSTAR Team

438.10 Revealing Fundamental Physical Properties of AGN with NuSTAR, XMM and Suzaku
Brenneman, Laura1; Fuerst, Felix2; Walton, Dom2; Madejski, Grzegorz M.3; Matt, Giorgio4; Marinucci, Andrea4; Risaliti, Guido5, 1; Elvis, Martin1; Fabian, Andy C.6; Ballantyne, David R.2; Harrison, Fiona2; Stern, Daniel8
Contributing teams: the NuSTAR team
438.11 Results from the 2013 Multi-wavelength Campaign on Mkn 421
Balokovic, Mislav1; Ajello, Marco2; Blandford, Roger D.3; Boggs, Steven E.2; Borracci, Francesco4; Chiang, James5; Christensen, Finn6; Craig, William W.2; Forster, Karl1; Furniss, Amy7; Fuerst, Felix8; Ghisellini, Gabriele9; Giebel, Berrie10; Giommi, Paolo4; Grefenstette, Brian11; Hailey, Charles J.12; Harrison, Fiona13; Hayashida, Masaaki14; Humensky, Brian15; Inoue, Yoshiyuki16; Koglin, Jason17; Krawczynski, Henric18; Madejski, Grzegorz M.19; Madsen, Kristin20; Meier, David L.21; Nelson, Thomas22; Ogle, Patrick M.23; Paneque, David24; Perri, Matteo25; Puccetti, Simonetta26; Reynolds, Christopher S.27; Sbarrato, Tulia28; Schwope, Daniel29; Tagliaferri, Gianpiero30; Urry, C. M.31; Wehrle, Ann E.32; Zhang, William33

Contributing teams: NuSTAR, Swift, MAGIC, VERITAS

438.12 The first broadband study of a black hole transient in quiescence with NuSTAR and XMM-Newton
Rana, Vikram1; Tomsick, John3; Corbel, Stephane3; Chakrabarty, Deepto4; Miller, Jon M.5; Harrison, Fiona1; Smith, David M.6; Stern, Daniel7

438.13 NuSTAR observations of SMC X-1 at two different superorbital phases
Pottschmidt, Katja1,2; Bachetti, Matteo3; Leyder, Jean-Christophe4; Boggs, Steven E.5; Chakrabarty, Deepto6; Christensen, Finn7; Craig, William W.8; Fuerst, Felix9; Grefenstette, Brian9; Hailey, Charles J.10; Harrison, Fiona11; Hornschemeier, Ann E.12; Madsen, Kristin13; Markwardt, Craig14; Stern, Daniel15; Tang, Rebecca16; Tomsick, John17; Wilms, Jörn18; Zhang, William19

438.14 Morphology of the Galactic Center with NuSTAR
Perez, Kerstin1; Hailey, Charles J.1; Mori, Kaya1
1. Columbia University, New York, NY.

Contributing teams: NuSTAR Team
438.15 **NuSTAR Effective Area Calibration**

Markwardt, Craig; Madsen, Kristin; An, Hongjun; Barriere, Nicolas; Brejholt, Nicolai F.; Christensen, Finn; Craig, William W.; Forster, Karl; Fuerst, Felix; Grefenstette, Brian; Hailey, Charles J.; Harrison, Fiona; Kitaguchi, Takao; Miyasaka, Hiromasa; Nynka, Melania; Pivovaroff, Michael; Rana, Vikram; Vogel, Julia; Walton, Dom; Westergaard, Niels Jørgen; Wick, Daniel R.; Zhang, Shuo; Zoglauer, Andreas


Contributing teams: NuSTAR Team

438.16 **In Search of AGN in Starburst Galaxies with NuSTAR**

Ptak, Andrew; Hornschemeier, Ann E.; Zezas, Andreas; Antoniou, Vallia; Argo, Megan; Bechtol, Keith; Harrison, Fiona; Krivonos, Roman; Lehmer, Bret; Leyder, Jean-Christophe; Maccarone, Thomas J.; Stern, Daniel; Venters, Tonia M.; Wick, Daniel R.; Yukita, Mihoko; Zhang, William


438.17 **The reflection component from Cygnus X-1 in the soft state measured by NuSTAR and Suzaku**

Tomsick, John; Nowak, Michael; Parker, Michael; Miller, Jon M.; Fabian, Andy; Harrison, Fiona; Bachetti, Matteo; Barret, Didier; Boggs, Steven E.; Christensen, Finn; Craig, William W.; Forster, Karl; Fuerst, Felix; Grefenstette, Brian; Hailey, Charles J.; King, Ashley L.; Madsen, Kristin; Natalucci, Lorenzo; Pottschmidt, Katja; Ross, Randy R.; Stern, Daniel; Walton, Dom; Wilms, Jörn; Zhang, William

438.18 Observations of a hard state of 1E 1740.7-2942 by NuSTAR and INTEGRAL
Natalucci, Lorenzo1; Tomsick, John2; Bazzano, Angela1; Smith, David M.3; Bachetti, Matteo4,5; Barret, Didier4,5; Boggs, Steven E.2; Christensen, Finn6; Craig, William W.2; Ficoci, Mariateresa1; Fuerst, Felix2; Grefenstette, Brian8; Hailey, Charles J.9; Harrison, Fiona8; Krivonos, Roman2; Kuulkers, Erik10; Miller, Jon M.11; Pottschmidt, Katja12,13; Stern, Daniel14; Ubertini, Pietro1; Walton, Dom15; Zhang, William15
1IAPS, Istituto Nazionale di Astrofisica, Rome, Italy. 2Space Sciences Laboratory, UCB, Berkeley, CA. 3University of California, Santa Cruz, Santa Cruz, CA. 4Universite’ de Toulouse, Toulouse, France. 5CNRS-IRAP, Toulouse, France. 6DTU Space, National Space Institute, Technical University of Denmark, Lyngby, Denmark. 7Lawrence Livermore National Laboratory, Livermore, CA. 8Cahill Center for Astronomy and Astrophysics, Caltech, Pasadena, CA. 9Columbia Astrophysics Laboratory, Columbia University, New York, NY. 10European Space Astronomy Centre (ESA/ESAC), Science Operations Department, Madrid, Spain. 11Department of Astronomy, University of Michigan, Ann Arbor, MI. 12CREST and NASA Goddard Space Flight Center, Astrophysics Science Division, Greenbelt, MD. 13Center for Space Science and Technology, University of Maryland Baltimore County, Baltimore, MD. 14Jet Propulsion Laboratory, Caltech, Pasadena, CA. 15NASA Goddard Space Flight Center, Greenbelt, MD.

438.19 NuSTAR/XMM-Newton Detection of a Hard Cut-Off in Cen X-4
Chakrabarty, Deekto1; Tomsick, John2; Grefenstette, Brian1; Barret, Didier4,5; Boggs, Steven E.2; Christensen, Finn6; Craig, William W.2; Hailey, Charles J.8; Harrison, Fiona3; Psaltis, Dimitrios5; Stern, Daniel10; Wik, Daniel R.11; Zhang, William11
1MIT, Cambridge, MA. 2University of California, Berkeley, CA. 3Caltech, Pasadena, CA. 4Universite de Toulouse, Toulouse, France. 5CNRS-IRAP, Toulouse, France. 6DTU National Space Institute, Lyngby, Denmark. 7LLNL, Livermore, CA. 8Columbia University, New York, NY. 9University of Arizona, Tucson, AZ. 10JPL/Caltech, Pasadena, CA. 11NASA/GSFC, Greenbelt, MD.

438.20 NuSTAR discovery of a luminosity dependent cyclotron line energy in Vela X-1
Fuerst, Felix2; Pottschmidt, Katja2; Wilms, Jörn3; Tomsk, John4; Bachetti, Matteo5; Boggs, Steven E.6; Christensen, Finn6; Craig, William W.2; Grefenstette, Brian1; Hailey, Charles J.8; Harrison, Fiona1; Madsen, Kristin1; Miller, Jon M.9; Stern, Daniel10; Walton, Dom11; Zhang, William11
1Caltech, Pasadena, CA. 2UMBC/CRESST and NASA-GSFC, Greenbelt, MD. 3Remex-Sternwarte & ECAP, Bamberg, Germany. 4SSL, Berkeley, CA. 5Universite de Toulouse & CNRS, Toulouse, France. 6DTU Space, Lyngby, Denmark. 7LLNL, Livermore, CA. 8Columbia University, New York, NY. 9University of Arizona, Tucson, AZ. 10JPL/Pasadena, CA. 11NASA/GSFC, Greenbelt, MD.

438.21 NuSTAR Imaging of Pulsar Wind Nebulae MSH 15-52 and the Crab
Madsen, Kristin1; Reynolds, Stephen P.3; Harrison, Fiona1; Grefenstette, Brian1; Miyasaka, Hiromasa1; Stern, Daniel1; Zoglauer, Andreas1; Boggs, Steven E.7; Fryer, Chris8; Hailey, Charles J.9; Nynka, Meliliana5; Kaspi, Victoria M.8; An, Hongjun8; Kitaguchi, Takaao3; Forster, Karl1; Craig, William W.9; Wik, Daniel R.3
1Caltech, Pasadena, CA. 2Columbia University, New York, NY. 3NASA GSFC, Greenbelt, MD. 4North Carolina State University, Hillsborough, NC. 5Riken, Saitama, Wako, Japan. 6LANL, Los Alamos, NM. 7UC Berkeley, Berkeley, CA. 8McGill, Montreal, QC, Canada. 9LNLL, Livermore, CA.
439 The Exciting Future of Cosmic Microwave Background Measurements Poster Session

Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

439.01 The Primordial Inflation Explorer (PIXIE)

Kogut, Alan J.; Chuss, David T.; Dotson, Jessie L.; Dwek, Eli; Fixsen, Dale J.; Halpern, Mark; Hinshaw, Gary F.; Meyer, Stephen; Moseley, Samuel H.; Seiffert, Michael D.; Spergel, David N.; Wollack, Edward

1 NASA’s GSFC, Greenbelt, MD. 2 NASA Ames Research Center, Moffett Field, CA. 3 University of Maryland, College Park, MD. 4 University of British Columbia, Vancouver, BC, Canada. 5 University of Chicago, Chicago, IL. 6 Jet Propulsion Laboratory, Pasadena, CA. 7 Princeton University, Princeton, NJ.

439.02 PIPER: Primordial Inflation Polarization Explorer

Lazear, Justin; Ade, Peter; Benford, Dominic J.; Bennett, Charles L.; Chuss, David T.; Dotson, Jessie L.; Eimer, Joseph; Fixsen, Dale J.; Halpern, Mark; Hinderks, James; Hinshaw, Gary F.; Irwin, Kent; Jhabvala, Christine; Johnson, Bradley; Kogut, Alan J.; Mirel, Paul; Moseley, Samuel H.; Staguhn, Johannes; Switzer, Eric; Tucker, Carole E.; Weston, Amy; Wollack, Edward

1 Johns Hopkins University, Baltimore, MD. 2 NASA-GSFC, Greenbelt, MD. 3 University of British Columbia, Vancouver, BC, Canada. 4 Columbia University, New York, NY. 5 NIST, Boulder, CO. 6 Cardiff University, Cardiff, Wales, United Kingdom.

439.03 Feedhorn-coupled Bolometer Detectors at 40 GHz Implemented on the Cosmology Large Angular Scale Surveyor (CLASS)

Chuss, David T.; Ali, Aamir; Appel, John W.; Bennett, Charles L.; Colazo, Felipe; Crowe, Erik; Denis, Kevin; Eimer, Joseph; Essinger-Hileman, Thomas; Marriage, Tobias; Moseley, Samuel H.; Rostem, Karwan; Stevenson, Thomas; Towner, Deborah; U-Yen, Kongpop; Wollack, Edward; Zeng, Lingzhen

1 NASA’s GSFC, Greenbelt, MD. 2 The Johns Hopkins University, Baltimore, MD. 3 Center for Astrophysics, Cambridge, MA.

439.04 Observing the Large Scale CMB Polarization using Variable-delay Polarization Modulators

Miller, Nathan; Chuss, David T.; Wollack, Edward; Marriage, Tobias

1 NASA’s Goddard Space Flight Center, Greenbelt, MD. 2 Johns Hopkins University, Baltimore, MD.

439.05 The Primordial Inflation Polarization Explorer: Science from Circular Polarization Measurements

Switzer, Eric; Ade, Peter; Benford, Dominic J.; Bennett, Charles L.; Chuss, David T.; Dotson, Jessie L.; Eimer, Joseph; Fixsen, Dale J.; Halpern, Mark; Hinshaw, Gary F.; Irwin, Kent; Jhabvala, Christine; Johnson, Bradley; Kogut, Alan J.; Lazear, Justin; Mirel, Paul; Moseley, Samuel H.; Staguhn, Johannes; Switzer, Eric; Tucker, Carole E.; Weston, Amy; Wollack, Edward

1 NASA Goddard, Greenbelt, MD. 2 Johns Hopkins University, Baltimore, MD. 3 University of British Columbia, Vancouver, BC, Canada. 4 Columbia University, New York, NY. 5 NIST, Boulder, CO. 6 Cardiff University, Cardiff, Wales, United Kingdom.
439.06 Beam characterization and systematics of Bicep2 and the Keck Array
Wong, Chin Lin

1Harvard University, Cambridge, MA.
Contributing teams: Bicep2/Keck Collaboration

439.07 Measuring the CMB Dipole at 11 GHz—for cheap!
Markowitz, Aaron1; Harrison, Samuel1; Karkare, Kirit1,2; Kimbert, Robert2; Kovac, John M.1,2

1Harvard University, Cambridge, MA. 2Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

440 APOGEE - A Fresh View Into the Stellar Populations of the Milky Way Poster Session

Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

440.01 APOGEE: The Apache Point Observatory Galactic Evolution Experiment
Majewski, Steven R.1

1Univ. of Virginia, Charlottesville, VA.
Contributing teams: The SDSS-III/APOGEE Collaboration

440.02 DR10 SDSS-III release of APOGEE data
Shetrone, Matthew D.1; Allende-Prieto, Carlos8; Beers, Timothy C.4; Cunha, Katia M.4; Fabbian, Damian8; Feuillet, Diane7; Frinchaboy, Peter M.3; Garcia Perez, Ana Elia6; Johnson, Jennifer3; Majewski, Steven R.6; Nidever, David L.5; Pinsonneault, Marc H.2; Smith, Verne V.4; Zasowski, Gail9

1Univ. of Texas, McDonald Observatory, TX. 2Ohio State University, Columbus, OH. 3Texas Christian University, Fort Worth, TX. 4NOAO, Tuscon, AZ. 5Univ. of Michigan, Ann Arbor, MI. 6Univ. of Virginia, Charlottesville, VA. 7New Mexico State University, Las Cruces, NM. 8IAC, La Laguna, Tenerife, Spain. 9John Hopkins University, Baltimore, MD.
Contributing teams: The SDSS-III/APOGEE Collaboration

440.03 SDSS-III/APOGEE: Survey Target Selection
Meyer, Brianne1; Zasowski, Gail2; Frinchaboy, Peter M.1; Johnson, Jennifer3; Majewski, Steven R.4; Andrews, Brett3; Chojnowski, S. Drew4; Fabbian, Damian8; Hayden, Michael R.7; Hearty, Fred4; Jackson, Kelly5; Nidever, David L.6; Skrutskie, Michael F.4

1TCU, Fort Worth, TX. 2JHU, Baltimore, MD. 3OSU, Columbus, OH. 4UVA, Charlottesville, VA. 5UT Dallas, Dallas, TX. 6U Michigan, Ann Arbor, MI. 7NMSU, Las Cruzas, NM. 8IAC, La Laguna, Spain.

440.04 The APOGEE Data Reduction pipeline
Holtzman, Jon A.1; Nidever, David L.5; Nguyen, Duy Cuong8; Shetrone, Matthew D.4; Majewski, Steven5; Schiavon, Ricardo6

1New Mexico State Univ., Las Cruces, NM. 2University of Michigan, Ann Arbor, MI. 3University of Toronto, Toronto, ON, Canada. 4McDonald Observatory, Fort Davis, TX. 5University of Virginia, Charlottesville, VA. 6Liverpool John Moores, Liverpool, United Kingdom.
440.05 Model Stellar Spectral Libraries for Analysis of the SDSS-III Apache Point Observatory Galactic Evolution Experiment (APOGEE)
Allende-Prieto, Carlos 1, 16; Koesterke, Lars 2; Shetrone, Matthew D. 3; Zamora, Olga 1, 16; Ruffoni, Matthew P. 4; Smith, Verne V. 5; Cunha, Katia M. 6; Lawler, James E. 7; Pickering, Juliet C. 8; Nave, Gillian 9; Garcia Perez, Ana Elia 10; Bizyaev, Dmitry 11; Edvardsson, Bengt 12; Gustafsson, Bengt 13; Plez, Bertrand 14; Castelli, Fiorella 15; Majewski, Steven R. 16; Schiavon, Ricardo 17; Meszaros, Szabolcs 1, 16; de Vicente, Angel 16, 16
1 Instituto de Astrofisica de Canarias, La Laguna, Spain. 2 Texas Advanced Computing Center, UT Austin, Austin, TX. 3 McDonald Observatory, UT Austin, Austin, TX. 4 Physics Department, Blackett Laboratory, Imperial College, London, United Kingdom. 5 NOAO, Tucson, AZ. 6 Observatorio Nacional, Rio de Janeiro, Brazil. 7 Astronomy Department & Steward Observatory, University of Arizona, Tucson, AZ. 8 Department of Physics, University of Wisconsin, Madison, WI. 9 NIST, Gaithersburg, MD. 10 Department of Astronomy, University of Virginia, Charlottesville, VA. 11 Apache Point Observatory, Sunspot, NM. 12 Department of Physics and Astronomy, University of Uppsala, Uppsala, Sweden. 13 Laboratoire Univers et Particules de Montpellier, Universite Montpellier, Montpellier, France. 14 Istituto Nazionale di Astrofisica, Osservatorio Astronomico di Trieste, Trieste, Italy. 15 Astrophysics Research Institute, Liverpool John Moores University, Liverpool, United Kingdom. 16 Departamento de Astrofisica, Universidad de La Laguna, La Laguna, Spain.

440.06 APOGEE-2: The Second Phase of the Apache Point Observatory Galactic Evolution Experiment in SDSS-IV
Sobeck, Jennifer 2, 1; Majewski, Steven 2; Hearty, Fred 3; Schiavon, Ricardo 4; Holzman, Jon A. 5; Johnson, Jennifer 6; Frinchaboy, Peter M. 5; Skrutskie, Michael F. 2; Munoz, Ricardo 6; Pinsonneault, Marc H. 4; Nidever, David L. 11; Zasowski, Gail 16; Garcia Perez, Ana Elia 2; Fabbian, Damian 7; Meza Cofre, Andres 12; Cunha, Katia M. 18; Smith, Verne V. 14; Chiappini, Cristina 10; Beers, Timothy C. 10; Anders, Frederich 10; Bizyaev, Dmitry 15, 16; Roman, Alexandre 17; Fleming, Scott W. 13; Crane, Jeffrey D. 20
1 UChicago, Chicago, IL. 2 UVA, Charlottesville, VA. 3 NMSU, Las Cruces, NM. 4 OSU, Columbus, OH. 5 TCU, Fort Worth, TX. 6 LIMU, Liverpool, United Kingdom. 7 IAC, La Laguna, Spain. 8 ULL, La Laguna, Tenerife, Spain. 9 UChili, Santiago, Chile. 10 AIP, Potsdam, Germany. 11 UM, Ann Arbor, MI. 12 UNAB, Santiago, Chile. 13 STScI, Baltimore, MD. 14 NOAO, Tucson, AZ. 15 APO, Sunspot, NM. 16 JHU, Baltimore, MD. 17 USerena, La Serena, Chile. 18 ON-MCTI, Rio de Janeiro, Brazil. 19 JINA, Notre Dame, IN. 20 OCIW, Pasadena, CA.
Contributing teams: The SDSS-IV/APOGEE-2 Collaboration

440.07 The APOGEE Stellar Parameters and Chemical Abundances Pipeline (ASPCAP)
Garcia Perez, Ana Elia 1; Allende-Prieto, Carlos 4; Cunha, Katia M. 3; Holzman, Jon A. 4; Johnson, Jennifer 3; Majewski, Steven 1; Meszaros, Szabolcs 2; Schiavon, Ricardo 4; Shetrone, Matthew D. 7; Smith, Verne V. 8
1 University of Virginia, Charlottesville, VA. 2 Instituto de Astrofisica de Canarias, La Laguna, Tenerife, Spain. 3 Observatorio Nacional, Sao Cristovao, Rio de Janeiro, Brazil. 4 New Mexico State University, Las Cruces, NM. 5 The Ohio State University, Columbus, OH. 6 The University of Liverpool, Liverpool, Merseyside, United Kingdom. 7 McDonald Observatory, Fort Davis, TX. 8 National Optical Astronomy Observatory, Tucson, AZ.
Contributing teams: The SDSS-III/APOGEE Collaboration
441 Stars, Cool Dwarfs, Brown Dwarfs

Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

441.01 Accuracy of Astrometry Positions, Parallaxes, and Proper Motions
Harris, Hugh C.¹
¹U.S. Naval Obs., Flagstaff, AZ.

441.02 20 Years of RECONS
Henry, Todd J.¹
¹RECONS, Atlanta, GA.
Contributing teams: RECONS

441.03 Going the Distance: Parallaxes for SuperCOSMOS-RECONS (SCR) Stars
Winters, Jennifer G.², ¹; Dieterich, Sergio¹; Hambly, Nigel C.², ¹; Henry, Todd J.², ¹; Jao, Wei-Chun²; Lurie, John C.⁴, ²; Riedel, Adric R.², ¹; Subasavage, John P.⁶, ²
¹Georgia State University, Atlanta, GA. ²RECONS, Atlanta, GA. ³University of Edinburgh/Royal Observatory, Edinburgh, Scotland, United Kingdom. ⁴University of Washington, Seattle, WA. ⁵Hunter College/National Museum of Natural History, New York City, NY. ⁶US Naval Observatory, Flagstaff, AZ.
Contributing teams: RECONS

441.04 Exploring The Wide Main Sequence of Low Mass Stars
Pewett, Tiffany¹; Henry, Todd J.¹; Hosey, Altonio D.¹; Jao, Wei-Chun¹; Lepine, Sebastien¹; Riedel, Adric R.²; Winters, Jennifer G.¹
¹Georgia State University, Atlanta, GA. ²American Museum of Natural History, New York City, NY.
Contributing teams: RECONS Team

441.05 The Hydrogen Burning Limit
Dieterich, Sergio¹; Henry, Todd J.¹; Jao, Wei-Chun¹; Winters, Jennifer G.¹; Hosey, Altonio D.¹; Riedel, Adric R.²; Subasavage, John P.³
¹Georgia State University, Atlanta, GA. ²American Museum of Natural History, New York, NY. ³U.S. Naval Observatory, Flagstaff, AZ.
Contributing teams: RECONS

441.06 A study of the wide, low-mass companion population with Pan-STARRS1
Deacon, Niall¹; Liu, Michael C.²; Magnier, Eugene A.²; Aller, Kimberly M.²; Best, William M.²; Bowler, Brendan P.², ³; Kotson, Michael C.²
¹Max Planck Institute for Astronomy, Heidelberg, Germany. ²Institute for Astronomy, University of Hawaii, Honolulu, HI. ³California Institute of Technology, Pasadena, CA.
Contributing teams: Pan-STARRS1 Builders

441.07 Thirty-one new nearby binary systems discovered in archived Hubble Space Telescope images.
Lepine, Sebastien¹, ²; Lee, Fred¹; Rich, Robert M.³
¹Dept. Physics and Astronomy, Georgia State University, Atlanta, GA. ²American Museum of Natural History, New York, NY. ³Plainview Old-Bethpage JFK High School, Plainview, NY.

441.08 A Spitzer Survey for Wide Substellar Companions to Nearby Stars
Melso, Nicole¹; Kaldon, Kristina¹; Luhman, Kevin¹
¹The Pennsylvania State University, University Park, PA.
441.09 Coronal heating of M dwarfs: The flare-energy distribution of fully convective stars
Feng, Ying¹; Poppenhaeger, Katja¹; Goulding, Andy D.²; Bulbul, Esra²
¹Astronomy & Astrophysics, The Pennsylvania State University, University Park, PA. ²Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

441.10 Magnetic Dynamos and X-ray Activity in Ultracool Dwarfs (UCDs): Constraining the Role of Rotation
Cook, Benjamin A.¹; Williams, Peter K.²; Berger, Edo²
¹Princeton University, Princeton, NJ. ²Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

441.11 Magnetic Dynamos and X-ray Activity in Ultracool Dwarfs (UCDs): Surprises in the Radio Band
Williams, Peter K.¹; Cook, Benjamin A.²; Berger, Edo¹
¹Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. ²Princeton University Department of Astrophysical Sciences, Princeton, NJ.

441.12 Rotation Rates and other Physical Properties in a Sample of M-dwarfs from the Kepler Mission
Bachmakov, Eduard¹; Gouravajhala, Sai¹; Guinan, Edward F.¹
¹Villanova University, Villanova, PA.

441.13 Measuring the Rotational Velocities of Young M Stars
Martlin, Catherine¹; Jensen, Eric L.¹; Shkolnik, Evgenya²
¹Swarthmore College, Swarthmore, PA. ²Lowell Observatory, Flagstaff, AZ.

441.14 Quantifying an Age-Activity Relation using Wide White Dwarf - M Dwarf Binary Pairs
Morgan, Dylan P.¹; West, Andrew A.¹; Dhital, Saurav²; Garcés, Ane³; Catalán, Silvia³
¹Boston Univ., Cambridge, MA. ²Embry-Riddle Aeronautical University, Daytona Beach, FL. ³University of Hertfordshire, Hatfield, UK, United Kingdom. ⁴Institut de Ciències de l’Espai (IEEC-CSIC), Bellaterra, Spain.

441.15 A Color-Metallicity Relation for SDSS M Dwarfs
West, Andrew A.¹; Davenport, James R.²; Mann, Andrew³; Massey, Angela P.¹; Dhital, Saurav²
¹Boston Univ., Boston, MA. ²University of Washington, Seattle, WA. ³University of Texas, Austin, TX. ⁴Embry Riddle Aeronautical University, Daytona Beach, FL.

441.16 SDSS M-dwarfs with WISE Signatures of Infrared Excess: Evidence of Warm Circumstellar Material in Low-Mass Field Populations
Theissen, Christopher¹; West, Andrew A.¹
¹Boston University, Boston, MA.

441.17 Photometric and Spectral Analysis of Blue and Red L Dwarfs
Rice, Emily L.¹, ²; Alam, Munazza³, ⁴; Camnasio, Sara³, ⁴; Cruz, Kelle L³, ²; Faherty, Jacqueline K.³, ²; Mace, Gregory N.⁶; McLean, Ian S.⁶
441.18 **Spectral Variability and Cloud Structure in Luhman 16AB**
Burgasser, Adam J.\(^{1}\); Gillon, Michaël\(^{2}\); Faherty, Jacqueline K.\(^{3,6}\); Triaud, Amaury\(^{4}\); Street, Rachel\(^{5}\)
\(^{1}\)UC San Diego, La Jolla, CA. \(^{2}\)Universite de Liege, Liege, Belgium. \(^{3}\)Universidad de Chile, Santiago, Chile. \(^{4}\)MIT, Boston, MA. \(^{5}\)Las Cumbres Observatory, Santa Barbara, CA. \(^{6}\)Carnegie DTM, Washington, DC.

441.19 **A Volume-Limited Search for L/T Transition Brown Dwarfs With the Pan-STARRS and WISE Surveys**
Best, William M.\(^{1}\); Liu, Michael C.\(^{1}\); Magnier, Eugene A.\(^{1}\); Aller, Kimberly M.\(^{1}\); Deacon, Niall\(^{2}\)
\(^{1}\)University of Hawaii, Honolulu, HI. \(^{2}\)Max Planck Institute for Astronomy, Heidelberg, Germany.

441.21 **A Survey of L/T-transition and Peculiar Brown Dwarfs from an SDSS/2MASS/WISE Cross-match**
Kellogg, Kendra\(^{1,2}\); Metchev, Stanimir\(^{1,2}\)
\(^{1}\)Western University, London, ON, Canada. \(^{2}\)Stony Brook University, Stony Brook, NY.

441.22 **Photometric Variability of Y Dwarfs**
Trucks, Jesica\(^{1}\); Cushing, Michael\(^{1}\); Hardegree-Ullman, Kevin\(^{1}\); Gelino, Christopher R.\(^{2}\); Kirkpatrick, J. D.\(^{2}\); Mace, Gregory N.\(^{3}\); Gizis, John\(^{4}\); Marley, Mark S.\(^{5}\); Morley, Caroline\(^{6}\); Fortney, Jonathan J.\(^{6}\)
\(^{1}\)University of Toledo, Toledo, OH. \(^{2}\)IPAC/Caltech, Pasadena, CA. \(^{3}\)UCLA, Los Angeles, CA. \(^{4}\)University of Delaware, Newark, DE. \(^{5}\)NASA Ames, Mountain View, CA. \(^{6}\)UC Santa Cruz, Santa Cruz, CA.

441.23 **A USNO Search for Astrometric Companions to Brown Dwarfs IV**
Bartlett, Jennifer L.\(^{1}\); Vrba, Frederick J.\(^{1}\); Mun, Jeffrey A.\(^{2}\); Luginbuhl, Christian B.\(^{2}\); Tilleman, Trudy\(^{2}\); Henden, Arne A.\(^{3}\)
\(^{1}\)US Naval Observatory, Washington, DC. \(^{2}\)US Naval Observatory, Flagstaff, AZ. \(^{3}\)AAVSO, Cambridge, MA.

441.24 **New Evidence for a Substellar Luminosity Problem**
Dupuy, Trent J.\(^{1}\); Liu, Michael C.\(^{2}\); Ireland, Michael\(^{3,4}\)
\(^{1}\)Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. \(^{2}\)Institute for Astronomy, University of Hawai‘i, Honolulu, HI. \(^{3}\)Australian Astronomical Observatory, Epping, NSW, Australia. \(^{4}\)Macquarie University, North Ryde, NSW, Australia.

441.25 **Spectral Energy Distributions as Photometric and Spectroscopic Probes of Brown Dwarf Atmospheres**
Filippazzo, Joe\(^{1,2}\); Rice, Emily L.\(^{3,2}\); Cruz, Kelle L.A.\(^{3}\); Faherty, Jacqueline K.\(^{3,5}\)
\(^{1}\)CUNY Graduate Center, Brooklyn, NY. \(^{2}\)College of Staten Island, Staten Island, NY. \(^{3}\)American Museum of Natural History, Manhattan, NY. \(^{4}\)Hunter College, Manhattan, NY. \(^{5}\)Universidad de Chile, Cerro Calán, Chile.
Contributing teams: BDNYC

441.26 **Microlensing as a New Tool for Measuring the Masses of Nearby Brown Dwarfs**
Cisneros, Freddy\(^{1,2}\); Kirkpatrick, J. D.\(^{2}\)
\(^{1}\)Cal Poly Pomona, Pomona, CA. \(^{2}\)Infrared Processing and Analysis Center, Pasadena, CA.
441.27 A Proper Motion Census of Ophiuchus
Frezza, Damon 1; Allers, Katelyn N. 1; Kraus, Adam L. 2
1 Bucknell University, Lewisburg, PA. 2 University of Texas at Austin, Austin, TX.

441.28 Searching for Local Evidence of Supernova Enrichment in the Scorpius Centaurus OB Association
Bubar, Eric J. 1, 2; Mamajek, Eric E. 2; Young, Patrick A. 3
1 Marymount University, Arlington, VA. 2 University of Rochester, Rochester, NY.
3 Arizona State University, Phoenix, AZ.

441.29 Spectroscopic Observations of Nearby Low Mass Stars
Vican, Laura 1; Zuckerman, Ben M. 1; Rodriguez, David 1
1 UCLA, Los Angeles, CA. 2 Universidad de Chile, Santiago, Chile.

441.30 Serendipitous Chandra X-ray Spectroscopy of GALEX Nearby Young-Star Survey (GALNYSS) Candidates
Kastner, Joel H. 1; Baum, Noah 2, 1; Principe, David 1; Rodriguez, David 1
1 RIT Center for Imaging Science, Rochester, NY. 2 Carnegie-Mellon University, Pittsburgh, PA.

441.31 Insights on Li Depletion from the Oldest Solar Twin HIP 102152
Monroe, TalaWanda 1; Melendez, Jorge 1
1 Universidade de São Paulo, São Paulo, Brazil.

441.32 Rapidly Rotating Red Giants in APOGEE
Bizyaev, Dmitry 1; Carlberg, Joleen K. 2; Nidever, David L. 1; Majewski, Steven R. 1; Shetrone, Matthew D. 1; Smith, Verne V. 1; Cunha, Katia M. 1; Holtzman, Jon A. 1; O'Connell, Robert W. 1; Pan, Kaiye 1; Garcia Perez, Ana Elia 1
1 NMSU/APO, Sunspot, NM. 2 Carnegie Institution of Washington, Washington, DC.

441.33 The PTI Giant Star Angular Size Survey: Effective Temperatures & Linear Radii
van Belle, Gerard 1; Ciardi, David R. 1; von Braun, Kaspar 1
1 Lowell Observatory, Flagstaff, AZ. 2 Caltech, Pasadena, CA. 3 MPIA, Heidelberg, Germany.

441.34 Chemical Abundances in Exoplanet Host Stars
Hernandez, Luis 1; Bubar, Eric J. 1, 2; Mamajek, Eric E. 2; Young, Patrick A. 3
1 Marymount University, Arlington, VA. 2 University of Rochester, Rochester, NY.
3 Arizona State University, Phoenix, AZ.

441.35 Mapping small-scale starspots on Kepler transiting planet host stars
Hebb, Leslie 1, 2; Davenport, James R. 2; Hawley, Suzanne L. 1; Jardine, Moira M. 3; Llama, Joseph 1
1 Hobart and William Smith Colleges, Geneva, NY. 2 University of Washington, Seattle, WA.
3 University of St Andrews, St Andrews, United Kingdom.

441.36 A Spitzer Search for Substellar Companions of Nearby Planet-Host Stars
Hulsebus, Alan 1; Marengo, Massimo 1; Carson, Joseph 2; Stapelfeldt, Karl R. 1
1 Iowa State University, Ames, IA. 2 College of Charleston, Charleston, SC. 3 NASA Goddard Space Flight Center, Greenbelt, MD.
441.37 WISE colors of the MK spectral standard stars.
Ali, Babar
1Caltech, Pasadena, CA.

441.38 New GALEX UV Data Products At MAST For Stellar Astrophysics
Shiao, Bernie; Fleming, Scott W.; Million, Chase; Seibert, Mark; Bianchi, Luciana; Thompson, Randy; Tseng, Shui-Ay; Adler, William J.S; Hubbard, Min6; Levay, Karen; Madore, Barry F.; Martin, Christopher D.; Nieto-Santisteban, Maria A.; Sahai, Raghvendra; Schiminovich, David; White, Richard L.; Wyder, Ted K.

441.39 New Kepler Data Products At MAST For Stellar Astrophysics
Fleming, Scott W.; Shiao, Bernie; Tseng, Shui-Ay; Million, Chase; Thompson, Randy; Seibert, Mark; Abney, Faith; Donaldson, Tom; Dower, Theresa; Fracquelli, Dorothy A.; Handy, Steven; Koekemoer, Anton M.; Levay, Karen; Matuskey, Jacob; McLean, Brian; Quick, Lee; Rogers, Anthony; Wallace, Geoff; White, Richard L.
1Space Telescope Science Institute, Baltimore, MD. 2 Million Concepts, State College, PA. 3 Carnegie Observatories, Pasadena, CA.

441.40 Double the Lightcurves, Double the Fun: Stellar Activity on the M Dwarfs GJ 1245 A and B with Kepler
Lurie, John C.; Davenport, James R.; Hawley, Suzanne L.
1University of Washington, Seattle, WA.

442 Star Associations, Star Clusters - Galactic & Extra-galactic Poster Session
Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

442.01 The Discovery of an Extreme Molecular Star Cluster Precursor with ALMA
Johnson, Kelsey E.; Brogan, Crystal L.; Chandar, Rupali; Evans, Aaron S.; Hibbard, John E.; Leroy, Adam K.; Sheth, Kartik; Whitmore, Bradley C.
1Univ. of Virginia, Charlottesville, VA. 2 NRAO, Charlottesville, VA. 3 STScI, Baltimore, MD. 4 U. Toledo, Toledo, OH.

442.02 Characterizing the AB Doradus Moving Group Using High Resolution Spectroscopy and Kinematic Traceback
McCarthy, Kyle; Wilhelm, Ronald J.
1, Lexington, KY.

442.03 Deep Seven-color Photometry and Classification of Stars in the Cyg OB2 Association
Boyle, Richard P.; Janusz, Robert; Straizys, Vytautas; Laugalys, Vygandas
1Vatican Observatory, Castel Gandolfo, Holy See (Vatican City State). 2 Ignatianum College, Cracow, Poland. 3 Vilnius University, Vilnius, Lithuania.
442.04 Searching for Stellar Sub-Structure in the Galactic Bulge
Hsyu, Tiffany; Johnson, Christian I.; Kunder, Andrea; Rich, Robert M.; de Propris, Roberto; Koch, Andreas
1 California - Los Angeles, University of, Los Angeles, CA. 2 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 3 Leibniz-Institut fuer Astrophysik Potsdam, Potsdam, Germany. 4 European Southern Observatory, Garching, Germany.

442.05 Moving group or cluster members?
O’Connell, Julia; Frinchaboy, Peter M.
1 Texas Christian University, Fort Worth, TX.

442.06 Is Loden 1 an old and nearby star cluster?
Han, Eunkyu; Curtis, Jason L.; Wright, Jason
1 Pennsylvania State University, University Park, PA.

442.07 Rotational Velocities Of PMS Stars In NGC2362
Kimock, Benjamin; Hamilton, Catrina M.; James, David; Johns-Krull, Christopher M.
1 Dickinson College, Carlisle, PA. 2 CTIO, La Serena, Chile. 3 Rice University, Houston, TX.

442.08 Rotation and activity at 3 Gyr with Ruprecht 147
Curtis, Jason L.; Wright, Jason
1 The Pennsylvania State University, University Park, PA.

442.09 Using MASSCLEAN to Describe Stellar Clusters Found in the Vista Variables in the Via Lactea (VVV) Survey
Popescu, Bogdan; Hanson, Margaret M.; Borissova, Jura; Kurtev, Radostin; Ivanov, Valentin; Catelan, Marcio; Larsen, Soeren S.; Minniti, Dante; Lucas, Philip
1 Univ of Cincinnati, Cincinnati, OH. 2 Universidad de Valparaiso, Valparaiso, Chile. 3 ESO, Santiago, Chile. 4 Radboud Universiteit Nijmegen, Nijmegen, Netherlands. 5 Pontificia Universidad Catolica, Santiago, Chile. 6 University of Hertfordshire, Hertfordshire, United Kingdom.

442.10 A Kinematic Survey in the Perseus Molecular Cloud: Results from the APOGEE Infrared Survey of Young Nebulous Clusters (IN-SYNC)
Covey, Kevin R.; Cottaar, Michiel; Foster, Jonathan B.; Nidever, David L.; Meyer, Michael; Tan, Jonathan; Da Rio, Nicola; Flaherty, Kevin M.; Stassun, Keivan; Frinchaboy, Peter M.; Majewski, Steven
1 Lowell Observatory, Flagstaff, AZ. 2 ETH Zurich - Institute for Astronomy, Zurich, Switzerland. 3 Yale University, New Haven, CT. 4 Univ of Michigan, Ann Arbor, MI. 5 Univ. of Florida, Gainesville, FL. 6 Wesleyan Univ., Middletown, CT. 7 Vanderbilt Univ., Nashville, TN. 8 Texas Christian Univ., Fort Worth, TX. 9 Univ. of Virginia, Charlottesville, VA.
Contributing teams: APOGEE IN-SYNC Team

442.11 The Gaia-ESO Survey: a public spectroscopic survey of the Milky Way
Friel, Eileen D.; Magrini, L.; Jacobson, H. R.; Bragaglia, A.; Donati, Paolo; Randich, S.; Cantat-Gaudin, T.; Vallenari, A.; Maiorca, E.
1 Indiana University, Bloomington, IN. 2 INAF-Osservatorio Astrofisico di Arcetri, Firenze, Italy. 3 MIT, Cambridge, MA. 4 INAF-Osservatorio Astronomico di Bologna, Bologna, Italy. 5 INAF-Osservatorio Astronomico di Padova, Padova, Italy.
Contributing teams: the GES Consortium
442.12 The Open Cluster Chemical Abundances and Mapping (OCCAM) Survey
Frinchaboy, Peter M.1; Thompson, Benjamin A.1; O’Connell, Julia1; Meyer, Bri-anné1; Majewski, Steven4; Beaton, Rachael4; Cunha, Katia M.7; Holtzman, Jon A.6; Schiavon, Ricardo5; Zasowski, Gail2, 3
1Texas Christian Univ. (TCU), Fort Worth, TX. 2Johns Hopkins University, Baltimore, MD. 3Ohio State University, Columbus, OH. 4University of Virginia, Charlottesville, VA. 5LJMU, Liverpool, United Kingdom. 6New Mexico State University, Las Cruzas, NM. 7Observatorio Nacional-MCTI, Rio de Janeiro, Brazil.

442.13 Radial Velocities, Metallicities, and Improved Fundamental Parameters of Outer Disk Open Clusters
Zasowski, Gail1; Hamm, Karen2; Beaton, Rachael2; Damke, Guillermo2; Carlberg, Joleen K.3; Majewski, Steven R.2; Frinchaboy, Peter M.4
1Johns Hopkins University, Baltimore, MD. 2University of Virginia, Charlottesville, VA. 3Carnegie Institution, Department of Terrestrial Magnetism, Washington, DC. 4Texas Christian University, Fort Worth, TX.

442.14 Analysis of Spectral-type A/B Stars in Five Open Clusters
Wilhelm, Ronald J.1; Rafuil Islam, Mirza Sharoz1
1University of Kentucky, Lexington, KY.

442.15 Spectroscopic Binary Orbits in the Young Open Cluster M35
Leiner, Emily1; Mathieu, Robert D.1; Geller, Aaron M.2
1University of Wisconsin-- Madison, Madison, WI. 2Northwestern University, Evanston, IL.

442.16 NGC6791: A case study of using CN and CH band strengths to detect chemical inhomogeneities in open clusters.
Boberg, Owen1; Martell, Sarah L.2; Friel, Eileen D.1
1Indiana University, Bloomington, IN. 2Australian Astronomical Observatory, Sydney, NSW, Australia.

442.17 New Deep Photometry and Stellar Luminosity Functions for Ko 1 and Ko 2
Paust, Nathaniel1; Wilson, Danielle1; van Belle, Gerard2
1Whitman College, Walla Walla, WA. 2Lowell Observatory, Flagstaff, AZ.

442.18 A Swift/UVOT Survey of Galactic Open and Globular Clusters
Siegel, Michael1; Porterfield, Blair L.1; Linevsky, Jacquelyn S.2, 1
1Pennsylvania State University, University Park, PA. 2Cypress Bay High School, Weston, FL.

442.19 A Swift/UVOT NUV Study of RR Lyrae Stars in the Globular Cluster M3
Porterfield, Blair1; Siegel, Michael1
1The Pennsylvania State University, University Park, PA.
Contributing teams: Swift, UVOT

442.20 Physical Parameters of the Bulge Globular Cluster Terzan 5 from Long-Term Millisecond Pulsar Timing
Prager, Brian1; Ransom, Scott M.2
1University of Virginia, Charlottesville, VA. 2NRAO, Charlottesville, VA.

442.21 Photometric Metallicities of Stars in the Retrograde Globular Cluster, NGC 3201
Stone, Myra1; Hughes, Joanne D.2; Wallerstein, George3; Albright, Meagan3
1University of Maryland, College Park, MD. 2Seattle University, Seattle, WA. 3Washington University, Seattle, WA.
442.22 Chemical Abundance Patterns of Galactic Bulge Globular Clusters
Johnson, Christian I.¹; Rich, Robert M.²; Kunder, Andrea³; Pilachowski, Catherine A.⁴
¹Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. ²University of California, Los Angeles, Los Angeles, CA. ³Leibniz-Institut für Astrophysik Potsdam, Potsdam, Germany. ⁴Indiana University, Bloomington, IN.

442.23 Comparing Light Element Abundances for 47 Tucanae (NGC 104) and M71 (NGC 6838)
Cordero, Maria J.¹; Pilachowski, Catherine A.¹; Johnson, Christian I.²
¹Indiana University, Bloomington, IN. ²Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

442.24 New Stellar Debris Streams in the Sloan Digital Sky Survey
Grillmair, Carl J.¹
¹Caltech, Pasadena, CA.

442.25 Rapid dynamical processes in the cores of young star clusters in the Large Magellanic Cloud
de Grijs, Richard¹,²; Li, Chengyuan²,¹; Deng, Licai³
¹Kavli Institute for Astronomy and Astrophysics, Peking University, Beijing, Beijing, China. ²Department of Astronomy, Peking University, Beijing, Beijing, China. ³National Astronomical Observatories, Chinese Academy of Sciences, Beijing, Beijing, China.

442.26 Consequences of Dynamical Disruption and Mass Segregation for the Binary Frequencies of Star Clusters
Geller, Aaron M.¹,²; de Grijs, Richard³,⁴; Li, Chengyuan⁵,³; Hurley, Jarrod⁵
¹Northwestern University, Evanston, IL. ²University of Chicago, Chicago, IL. ³Kavli Institute for Astronomy and Astrophysics, Peking University, Hai Dian District, China. ⁴Peking University, Beijing, Hai Dian District, China. ⁵Swinburne University of Technology, Melbourne, VIC, Australia.

442.27 The Hubble Tarantula Treasury Project
Sabbi, Elena¹; Lennon, Danny J.²; Anderson, Jay¹; Van Der Marel, Roeland P.¹; Aloisi, Alessandra¹; Boyer, Martha L.³,⁴; Cignoni, Michele¹; De Marchi, Guido⁶; de Mink, Selma E.⁷; Evans, Chris J.⁸; Gallagher, John S.⁹; Gordon, Karl D.¹; Gouliermis, Dimitrios¹⁰; Grebel, Eva¹¹; Koekemoer, Anton M.¹; Larsen, Soeren S.¹; Panagia, Nino¹; Ryon, Jenna E.¹; Smith, Linda J.¹; Tosi, Monica¹; Zaritsky, Dennis F.¹⁴
¹STScI, Baltimore, MD. ²ESA-European Space Astronomy Centre, Villanueva de la Jara, Spain. ³ESA-Goddard Space Flight Center, Greenbelt, MD. ⁴Oak Ridge Associated Universities, Oak Ridge, TN. ⁵INAF-Osservatorio Astronomico di Bologna, Bologna, Italy. ⁶ESA-Space Science Department, Noordwijk, Netherlands. ⁷Carnegie Observatories, Pasadena, CA. ⁸Royal Observatory Edinburgh, Edinburgh, United Kingdom. ⁹University of Wisconsin, Madison, WI. ¹⁰ARI, Heidelberg, Germany. ¹¹Department of Astrophysics/IMAPP, University of Nijmegen, Nijmegen, Netherlands. ¹²INAF-Osservatorio Astrofisico di Catania, Catania, Italy. ¹³ESA/STScI, Baltimore, MD. ¹⁴University of Arizona, Tucson, AZ.

442.28 Spectral Types and Wind Velocities for Massive Stars in R136
Bostroem, K. A.¹; Maíz Apellániz, Jesús⁵; Caballero-Nieves, Saida M.²; Walborn, Nolan R.³; Crowther, Paul A.²
¹Space Telescope Science Institute, Baltimore, MD. ²University of Sheffield, Sheffield, United Kingdom. ³Instituto de Astrofísica de Andalucía, Granada, Spain.
442.29 The Low-Mass Luminosity Function in Globular Clusters
Dickey, Claire; Madore, Barry F.
1Pomona College, Claremont, CA. 2Carnegie Observatories, Pasadena, CA.

442.30 First Results from the Swift/UVOT Near-Ultraviolet Survey of the SMC
Hagen, Lea; Siegel, Michael; Gronwall, Caryl; Hoversten, Erik A.; Immler, Stefan
1Pennsylvania State University, State College, PA. 2University of North Carolina, Chapel Hill, NC. 3Goddard Space Flight Center, Greenbelt, MD.

442.31 Detecting Reddening by Dust for Star Clusters in the Andromeda Galaxy
Cohn, Amy; Dorman, Claire; Guhathakurta, Puragra
1University of California, Santa Cruz, Santa Cruz, CA. 2Park Tudor School, Indianapolis, IN.
Contributing teams: PHAT collaboration

442.32 The Andromeda Project: Final Results of Citizen Science Cluster Identification
Seth, Anil; Johnson, Lent C.; Wallace, Matthew; Dalcanton, Julianne; Kapadia, Amit; Lintott, Chris; Simpson, Robert; Skillman, Evan D.
1University of Utah, Salt Lake City, UT. 2University of Washington, Seattle, WA. 3Adler Planetarium, Chicago, IL. 4Oxford University, Oxford, United Kingdom. 5University of Minnesota, Minneapolis, MN.
Contributing teams: PHAT Team, Andromeda Project Team

442.33 Early Results from Star Date: M83 - A Citizen Science Project to Age Date Star Clusters in the Southern Pinwheel Galaxy
Heartley, Jeremy; Whitmore, Bradley C.; Blair, William P.; Christian, Carol A.; Donaldson, Tom; Hammer, Derek; Smith, Stephanie; Viana, Alex
1Space Telescope Science Institute, Baltimore, MD. 2John Hopkins University, Baltimore, MD. 3University of Virginia, Charlottesville, VA.

442.34 Cluster Ages in the Tidal Tail of the Merger NGC 3256
Milia, Alexander; Chandar, Rupali
1The University of Toledo, Toledo, OH.

442.35 The Luminosity Function of Star Clusters in 20 Star-Forming Galaxies Based on Hubble Legacy Archive Photometry
Bowers, Ariel; Whitmore, Bradley C.; Chandar, Rupali; Larsen, Soeren S.
1Space Telescope Science Institute, Baltimore, MD. 2University of Toledo, Toledo, OH. 3Radboud University, Nijmegen, Netherlands.

442.36 The Size Scales of Stellar Groupings in NGC 628 and NGC 2841
Williams, Molly; Kaleida, Catherine C.
1Cerro Tololo Inter-American Observatory, La Serena, Chile. 2Eastern Kentucky University, Richmond, KY.

442.37 Age and Mass Distributions of Resolved Stellar Populations in NGC 4214 based on HST/WFC3 ERS Observations
Kim, Hwihyun; Whitmore, Bradley C.; Cohen, Seth H.; Chandar, Rupali; Kaleida, Catherine C.
1Arizona State University, Tempe, AZ. 2STScI, Baltimore, MD. 3University of Toledo, Toledo, OH. 4CTIO, La Serena, Chile.
Contributing teams: WFC3 SOC
442.38 **Testing the Universality of the IMF with Unresolved Stellar Clusters**
Andrews, Jennifer E.; Calzetti, Daniela; Chandar, Rupali; Whitmore, Bradley C.; Da Silva, Robert L.; Krumholz, Mark R.; Kim, Hwihyun
1 University of Massachusetts, Amherst, MA. 2 The University of Toledo, Toledo, OH. 3 STScI, Baltimore, MD. 4 UC Santa Cruz, Santa Cruz, CA. 5 Arizona State University, Tempe, AZ.
Contributing teams: WFC3 ERS

442.39 **The Spatial Distribution of Virgo’s Globular Clusters**
Durrell, Patrick R.; Cote, Patrick; Peng, Eric W.; Blakeslee, John; Ferrarese, Laura; Mihos, Chris
1 Youngstown State Univ., Youngstown, OH. 2 NRC-CNRC, Victoria, BC, Canada. 3 Peking University, Beijing, China. 4 Case Western Reserve Univ., Cleveland, OH.
Contributing teams: NGVS Team

442.40 **The Projected Spatial Distributions of Giant Galaxy Globular Cluster Systems: Analysis of Four Giant Early-Type Galaxies**
Hargis, Jonathan R.; Rhode, Katherine L.
1 Indiana University, Bloomington, IN. 2 Haverford College, Haverford, PA.

442.41 **Highlights from a Wide-field Photometric Survey of the Globular Cluster Populations of Giant Galaxies**
Rhode, Katherine L.
1 Indiana Univ., Bloomington, IN.

442.42 **Investigating the Evolutionary Role and Structure of Binaries in Milky Way Globular Clusters through Correlational Studies of Binary Fraction**
Ravi, Namita; Hamren, Katherine
1 UC Santa Cruz, Santa Cruz, CA.

442.43 **A Variable [OIII] Emission Source in Black Hole Host Globular Cluster RZ2109**
Steele, Matthew M.; Zepf, Steve E.; Maccarone, Thomas J.; Kundu, Arunav; Rhode, Katherine L.; Salzer, John J.
1 Northern Michigan University, Marquette, MI. 2 Michigan State University, East Lansing, MI. 3 Texas Tech University, Lubbock, TX. 4 Eureka Scientific, Oakland, CA. 5 Indiana University, Bloomington, IN.

442.44 **Extragalactic Globular Cluster Systems Properties as a Function of the Environment**
Pessev, Peter
1 Gemini Observatory South, La Serena, Chile.

442.45 **Modeling Gas Evacuation Mechanisms in Globular Clusters**
Soares-Furtado, Melinda; Naiman, Jill; Ramirez-Ruiz, Enrico
1 University of California, Santa Cruz, Santa Cruz, CA.

443 **Black Holes Poster Session**
Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

443.01 **The NuSTAR Ultraluminous X-ray Source Program**
Walton, Dom
1 Caltech, Pasadena, CA.
Contributing teams: The NuSTAR Team
443.02 The ALMA Phasing Project: New Frontiers in Ultra-High Resolution Astronomy Enabled by a Beamformed ALMA
1 MIT Haystack Observatory, Westford, MA. 2 Max Planck Institut für Radioastronomie, Bonn, Germany. 3 Joint ALMA Observatory, Santiago, Chile. 4 National Radio Astronomy Observatory, Charlottesville, VA. 5 National Astronomical Observatory of Japan, Tokyo, Japan. 6 Academia Sinica Institute of Astronomy and Astrophysics, Taipei, Taiwan. 7 University of Concepción, Concepción, Chile.
Contributing teams: The ALMA Phasing Project Team

443.03 Selection of Dual AGN Candidate Using Wise & Galaxy Zoo: A Chandra Pilot Study
Koju, Raj K.
1 SPACS, George Mason University, Fairfax, VA.

443.04 New Developments with the Event Horizon Telescope
Fish, Vincent L.; Doeleman, Sheperd; Krichbaum, Thomas; Zensus, Anton
1 MIT Haystack Observatory, Westford, MA. 2 Max-Planck-Institut für Radioastronomie, Bonn, Germany.
Contributing teams: Event Horizon Telescope Collaboration

443.05 Black holes under the microscope: Prospects for imaging with the Event Horizon Telescopes
Lu, Rusen; Fish, Vincent L.; Doeleman, Sheperd; Monnier, John D.; Baron, Fabien
1 MIT Haystack Observatory, Westford, MA. 2 Harvard Smithsonian Center for Astrophysics, Cambridge, MA. 3 University of Michigan, Ann Arbor, MI. 4 Georgia State University, Atlanta, GA.

443.06 Moving Toward Polarimetry with the Event Horizon Telescope
Kosowsky, Michael; Fish, Vincent L.; Doeleman, Sheperd; Johnson, Michael; Lu, Rusen; Marrone, Daniel P.; Moran, James M.; Plambeck, Richard L.; Wardle, John F.
1 Brandeis University, Waltham, MA. 2 Harvard University, Cambridge, MA. 3 Massachusetts Institute of Technology, Cambridge, MA. 4 University of California, Berkeley, CA. 5 University of Arizona, Tucson, AZ.
Contributing teams: EHT Collaboration

443.07 Hyperaccretion during tidal disruption events: weakly bound debris envelopes and jets
Coughlin, Eric; Begelman, Mitchell C.
1 JILA, University of Colorado at Boulder and National Institute of Standards and Technology, Boulder, CO. 2 Department of Astrophysical and Planetary Sciences, University of Colorado at Boulder, Boulder, CO.

443.08 Propagating Fluctuations In A Global Accretion Disk Simulation
Hogg, J. Drew; Reynolds, Christopher S.; O’Neill, Sean M.
1 University of Maryland, College Park, MD. 2 University of Colorado - Boulder, Boulder, CO.
443.09 Propagation of excess mass through a radiatively inefficient accretion disk
Abarca, David; Sadowski, Aleksander; Narayan, Ramesh
1Harvard Smithsonian Center for Astrophysics, Cambridge, MA.

443.11 Spacetime Geometry Around an Accreting, Spinning Black Hole
Pardo, Kristina; Bertschinger, Edmund
1Furman University, Greenville, SC. 2Massachusetts Institute of Technology, Cambridge, MA.

443.12 Measuring the black hole mass in Ultraluminous X-ray Sources with the X-ray Scaling Method
Jang, Insuk; Gliozzi, Mario
1George Mason University, Fairfax, VA.

443.13 Stellar Black Holes in Globular Clusters
Rasio, Frederic A.; Morscher, Meagan
1Northwestern Univ., Evanston, IL.

444 Education and Public Outreach Events and Programs

Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

444.01 Skynet Junior Scholars- Sharing the Universe with Blind/Low Vision Youth
Hoette, Vivian L.; Kron, Richard G.; Meredith, Kate; Heatherly, Sue Ann; Williamson, Kathryn; Gurton, Suzanne; Reichart, Daniel; Haislip, Joshua
1University of Chicago, Williams Bay, WI. 2National Radio Astronomy Observatory, Green Bank, WV. 3Astronomical Society of the Pacific, San Francisco, CA. 4University of North Carolina, Chapel Hill, NC.

444.02 Skynet Junior Scholars: Sharing the Universe with Youth
Heatherly, Sue Ann; Williamson, Kathryn; Hoette, Vivian L.; Gurton, Suzanne; Kron, Richard G.; Meredith, Kate; Haislip, Joshua; Reichart, Daniel
1National Radio Astronomy Observatory, Green Bank, WV. 2University of Chicago Yerkes Observatory, Williams Bay, WI. 3Astronomical Society of the Pacific, San Francisco, CA. 4University of North Carolina, Chapel Hill, NC.

444.03 Imagine Astronomy at the Rochester Institute of Technology
Rapson, Valerie; Almeyda, Triana; Freeman, Marcus; Lena, Davide; Principe, David; Punzi, Kristina; Sargent, Benjamin A.; Vaddi, Sravani; Vazquez, Billy; Vorobiev, Dmitry
1Rochester Institute of Technology, Rochester, NY.

444.04 Dark Skies, Bright Kids! Year 5
Prager, Brian; Johnson, Kelsey E.; Barcos-Munoz, Loreto D.; Beaton, Rachael; Bittle, Lauren; Borish, H. Jacob; Burkhardt, Andrew; Corby, Joanna; Damke, Guillermo; Dean, Janice; Dorsey, Gregory; Graninger, Dawn; Lauck, Trish; Liss, Sandra; Oza, Apurva; Peacock, Sarah; Romero, Charles; Sokal, Kimberly R.; Stierwalt, Sabrina; Walker, Lisa May; Wenger, Trey; Zucker, Catherine
1University of Virginia, Charlottesville, VA.
444.05 Astronomy on Tap: A New Event Series for Outreach and Professional Development
Rice, Emily L.\textsuperscript{1,2}; Schwamb, Megan E.\textsuperscript{3}; Muna, Demetri\textsuperscript{4}
\textsuperscript{1}College of Staten Island, Staten Island, NY. \textsuperscript{2}American Museum of Natural History, New York, NY. \textsuperscript{3}Institute of Astronomy & Astrophysics, Academia Sinica, Taipei, Taiwan. \textsuperscript{4}The Ohio State University, Columbus, OH.

444.06 Reaching to the Star
Ruzhitskaya, Lanika\textsuperscript{1}; Speck, Angela\textsuperscript{1}; Baldridge, Sean\textsuperscript{1}; Briggs, Jason\textsuperscript{1}
\textsuperscript{1}University of Missouri, Columbia, MO.

444.07 Radio Jove: Jupiter Radio Astronomy for Citizens
Higgins, Charles\textsuperscript{1}; Thieman, James R.\textsuperscript{2}; Flagg, Richard\textsuperscript{3}; Reyes, Francisco J.\textsuperscript{4}; Sky, Jim\textsuperscript{5}; Greenman, Wes\textsuperscript{6}; Brown, Jim\textsuperscript{7}; Typinski, Dave\textsuperscript{8}; Ashcraft, Thomas\textsuperscript{9}; Mount, Andrew\textsuperscript{10}
\textsuperscript{1}Middle Tennessee St. Univ., Murfreesboro, TN. \textsuperscript{2}NASA/GSFC, Greenbelt, MD. \textsuperscript{3}RF Associates LLC, Honolulu, HI. \textsuperscript{4}University of Florida, Gainesville, FL. \textsuperscript{5}Radio-Sky Publishing, Captain Cook, HI. \textsuperscript{6}Wes Greenman Consultants, Alachua, FL. \textsuperscript{7}Hawk’s Nest Radio Observatory, Industry, PA. \textsuperscript{8}AJ4CO Observatory, High Springs, FL. \textsuperscript{9}Heliotown Observatory, Heliotown, NM. \textsuperscript{10}Mountain Rest Astronomical Observatory, Mountain Rest, SC.

444.08 Modernizing a Public Outreach Department by Harnessing the Power of the Digital Age
Guvenen, Blythe\textsuperscript{1,2}
\textsuperscript{1}National Optical Astronomy Observatory, Tucson, AZ. \textsuperscript{2}The University of Arizona, Tucson, AZ.

444.09 Youth for Astronomy & Engineering Program: Engaging Local Families and Partners
Anderson, Tania\textsuperscript{1}; Eisenhamer, Bonnie\textsuperscript{1}; Ryer, Holly\textsuperscript{1}
\textsuperscript{1}Space Telescope Science Institute, Baltimore, MD.

444.10 Astronomy Education Programs at the Smithsonian National Air and Space Museum
Nagy, Katie\textsuperscript{1}; de Messieres, Genevieve\textsuperscript{1}; Edson, Shauna\textsuperscript{1}
\textsuperscript{1}Smithsonian National Air and Space Museum, Washington, DC.

445 Upper-Level Undergraduates and Graduate Education, Research Opportunities, and Diversity
Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

445.01 A course on professional development for astronomy graduate students
Friel, Eileen D.\textsuperscript{1}
\textsuperscript{1}Indiana University, Bloomington, IN.

445.02 Raising Awareness in Science Education for Women (RAISE-W)
Faherty, Jacqueline K.\textsuperscript{1,2}; Holford, Mande\textsuperscript{3,2}
\textsuperscript{1}Carnegie Institution of Washington, Washington, DC. \textsuperscript{2}American Museum of Natural History, New York, NY. \textsuperscript{3}Hunter College, New York, NY.
445.03 The CAMPARE Program: A New Model Promoting Minority Participation in Astronomy Research and Education
Rudolph, Alexander L. ¹; Impey, Chris D. ²; Bieging, John H. ³; Phillips, Cynthia B. ³; Tieu, Jenny ⁴; Povich, Matthew S. ¹
¹California State Polytechnic Univ., Pomona, CA. ²University of Arizona, Tucson, AZ. ³SETI Institute, Mountain View, CA. ⁴JPL, Pasadena, CA.

445.04 Update on the NSF PAARE Project at South Carolina State University
Walter, Donald K. ¹; Brittain, Sean D. ¹; Cash, Jennifer ¹; Hartmann, Dieter ¹; Hinkle, Kenneth H. ³; Howell, Steve B. ⁴; King, Jeremy R. ²; Leising, Mark D. ²; Mighell, Kenneth J. ³; Smith, Daniel M. ¹
¹South Carolina State Univ., Orangeburg, SC. ²Clemson University, Clemson, SC. ³National Optical Astronomy Observatory, Tucson, AZ. ⁴NASA Ames Research Center, Mountain View, CA.

445.05 Stepping Stones to Research: Providing Pipelines from Middle School through PhD
Noel-Storr, Jacob ¹; Baum, Stefi A. ¹
¹Rochester Inst. Of Technology, Rochester, NY.
Contributing teams: RIT Insight Lab SSR Team, Chester F. Carlson Center for Imaging Science Faculty

445.06 The 2013 Summer Undergraduate Research Internship Program at the Pisgah Astronomical Research Institute
Castelaz, Michael W. ¹; Cline, J. D. ¹; Whitworth, Christi ¹; Clavier, David ¹; Barker, Thurburn ¹
¹Pisgah Astronomical Research Inst., Rosman, NC.

445.07 The Contributions of the WIYN Observatory to Undergraduate Education
Hooper, Eric ¹, ²
¹WIYN Observatory, Tucson, AZ. ²Univ. of Wisconsin-Madison, Madison, WI.
Contributing teams: WIYN Consortium

445.08 Research Experience for Undergraduate and Early College High School Students at University of Texas at El Paso
Medrano, Omar ¹; Gonzalez, Emmanuel ¹; Mason, Paul A. ¹
¹University of Texas at El Paso, El Paso, TX.

445.09 The Lowell Observatory Predoctoral Fellowship Program
Prato, Lisa A. ¹; Shkolnik, Evgenya ¹
¹Lowell Observatory, Flagstaff, AZ.

445.10 The Cerro Tololo Inter-American Observatory Summer Student Programs in La Serena, Chile
Kaleida, Catherine C. ¹; Smith, Chris ¹; Van Der Bliek, Nicole S. ¹; James, David ¹
¹Cerro Tololo Inter-American Observatory, La Serena, IV, Chile.

445.11 AstroCom NYC: A Partnership Between Astronomers at CUNY, AMNH, and Columbia University
Paglione, Timothy ¹, ⁴; Ford, K.E. S. ², ⁴; Robbins, Dennis ⁴; Mac Low, Mordecai-Mark ⁵; Agueros, Marcel A. ⁵
445.12 Promoting the Understanding of Scientific Reasoning, Mathematical Modeling and Data Analysis: A Course for Astrophysics Majors
Robbins, Dennis1, 2; Ford, Saavik3, 1
1 Hunter College (CUNY), New York City, NY. 2 American Museum of Natural History, New York City, NY. 3 Borough of Manhattan Community College (CUNY), New York City, NY.

445.13 Updates from Astrobites: The Astro-ph Reader's Digest
Montet, Benjamin1; Chisari, Nora Elisa2; Donaldson, Jessica4; Dressing, Courtney D.5; Drout, Maria6; Faesi, Christopher7; Fuchs, Joshua T.8; Kohler, Susanna9; Lovegrove, Elizabeth6; Mills, Elisabeth A.10; Nesvold, Erika10; Newton, Elisabeth R.3; Olmstead, Alice4; Vasel, Justin A.9; Weiss, Lauren M.7
1 California Institute of Technology, Pasadena, CA. 2 University of Colorado, Boulder, CO. 3 Harvard University, Cambridge, MA. 4 University of Maryland, College Park, College Park, MD. 5 Princeton University, Princeton, NJ. 6 University of North Carolina, Chapel Hill, NC. 7 University of California, Berkeley, Berkeley, CA. 8 University of California, Santa Cruz, Santa Cruz, CA. 9 University of Minnesota Duluth, Duluth, MN. 10 University of Maryland, Baltimore County, Baltimore, MD. 11 National Radio Astronomy Observatory, Socorro, NM.
Contributing teams: The Astrobites Team

445.14 Tablet Computing Devices to Bridge the Gap Between Planetarium and Night Sky
Smolinski, Jason P.1
1 State University of New York College at Oneonta, Oneonta, NY.

446 Observatories for Education and Public Outreach
Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

446.01 CSU’s MWV Observatory: A Facility for Research, Education and Outreach
Hood, John1; Carpenter, Nicholas D.1; McCarty, Cameron B.1; Samford, James H.1; Johnson, Michael1; Puckett, Andrew W.1; Williams, Rosa N.1; Cruzen, Shawn T.1
1 Columbus State University, Columbus, GA.

446.02 The Stocker AstroScience Center at Florida International University
Webb, James R.1
1 Florida International Univ., Miami, FL.

446.03 The Center for Advanced Radio Astronomy: Graduates, Undergraduates and High School Students Engaged in the Exploration of Astrophysics
Miller, Andy2; Jenet, Fredrick A.1
1 University of Texas-Brownsville, Brownsville, TX. 2 Saint Joseph Academy, Brownsville, TX.

446.04 Design and Construction of a Polarimeter for Small Telescopes
Topasna, Gregory A.1; Topasna, Daniela M.1
1 Virginia Military Inst., Lexington, VA.
447 Astronomy Programs and Resources for High School Students and Teachers

Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

447.01 Implementation of the 2013 Astro-Science Workshop, a Hands-on High Altitude Ballooning Program at the Adler Planetarium
Ratliff, Gayle1, 2; Martynowycz, Michael W.1, 2; Hammergren, Mark1
1Adler Planetarium, Chicago, IL. 2Illinois Institute of Technology, Chicago, IL.

447.02 Developing a Curriculum for Remote Research Mentoring of Virginia High School Students
Dirienzo, William J.1; Corby, Joanna1; Beaton, Rachael1; Barcos-Munoz, Loreto D.1; Jones, Kristen M.1; Pennucci, Tim1
1University of Virginia, Charlottesville, VA.

447.03 WorldWide Telescope in High School Astronomy Competitions
Constantin, Ana-Maria1; Goodman, Alyssa A.2; Udomprasert, Patricia S.3
1Harvard University, Cambridge, MA. 2Harvard Smithsonian Center for Astrophysics, Cambridge, MA. 3Harvard Smithsonian Center for Astrophysics, Cambridge, MA.

447.04 Multiwavelength Astronomy Modules for High School Students
Thomas, Christie1; Brazas, Julia1; Lane, Steven1; York, Donald G.1
1The University of Chicago, Chicago, IL.

448 Astronomy Education Research

Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

448.01 STEMdex: A Searchable Database of Education Research for Our Community
Brinkworth, Carolyn1; Nichols-Yehling, Michelle2; Bartolone, Lindsay3; Llamas, Jacob1; Crane, Megan1; Martin, Ann4; Wenger, Mathew4; Squires, Gordon K.1; Hurt, Robert L.1

448.02 Evaluation of a College Freshman Diversity Research Program in Astronomy
Tremmel, Michael J.1; Garner, Sarah M.2; Schmidt, Sarah J.2; Wisniewski, John P.3; Agol, Eric1
1University of Washington, Seattle, WA. 2The Ohio State University, Columbus, OH. 3University of Oklahoma, Norman, OK.

448.03 A Research-Informed Approach to Teaching About Exoplanet Detection in STEM Classrooms
Brissenden, Gina1; Wallace, Colin S.1; Prather, Edward E.1; Traub, Wesley A.2; Greene, W. M.2; Biferno, Anya A.2
1Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona, Tucson, AZ. 2NASA Exoplanet Exploration Program (ExEP), Jet Propulsion Laboratory, Pasadena, CA.

448.04 Worldviews of Introductory Astronomy Students
Green, Chrystin1; Wallace, Colin S.2; Brissenden, Gina2; Prather, Edward E.2
1California State Polytechnic University, Pomona, Pomona, CA. 2Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona, Tucson, AZ. Contributing teams: Collaboration of Astronomy Teaching Scholars (CATS)
448.05 Investigating Science Literacy: Students’ Conceptions of Radiation
Romine, James⁴; Buxner, Sanlyn¹; Impey, Chris D.¹; Nieberding, Megan N.¹; Antonellis, Jessie C.²
¹Steward Observatory, University of Arizona, Tucson, AZ. ²Little Priest Tribal College, Winnebago, NE.
Contributing teams: Collaborations of Astronomy Teaching Scholars (CATS), Steward Observatory, University of Arizona

448.06 Exploring the Potential of the Massive, Open, Online Astronomy Course
Austin, Carmen¹; Impey, Chris D.¹; Wenger, Mathew¹
¹University of Arizona, Tucson, AZ.

448.07 Learning Curve for Teaching Constellations in a Planetarium
Hintz, Eric G.¹; Smith, Nicole¹; Moody, J. W.¹; Stephens, Denise C.¹; Joner, Michael D.¹; Hintz, Maureen¹; Lawler, Jeannette¹; Jones, Michael¹; Bench, Nathan¹
¹Brigham Young Univ., Provo, UT.

448.08 Driven to Distraction: Does the Infamous Earth Shadow Distractor Divert Student Attention in the Cause of the Phases of the Moon Question?
Caton, Daniel B.³
³Appalachian State Univ., Boone, NC.

448.09 CosmoQuest Year 2: Citizen Science Progress, Motivations, and Education
Gugliucci, Nicole E.¹; Gay, Pamela L.¹; Antonenko, Irene²; Bracey, Georgia³; Costello, Kathy¹; Lehan, Cory¹; Moore, Joseph¹; Reilly, Ellen¹; Robbins, Stuart J.³; Schmidt, Britney E.⁴
¹Southern Illinois University Edwardsville, Edwardsville, IL. ²Planetary Institute of Toronto, Toronto, ON, Canada. ³Southwest Research Institute, Boulder, CO. ⁴University of Texas, Austin, TX.
Contributing teams: CosmoQuest Collaboration

448.10 iMap: A stable layout for navigating the Astronomy Picture of the Day image collection with embedded search
Nemiroff, Robert J.¹; Wang, Chaoli¹; Reese, John P.¹; Zhang, Huan¹; Tao, Jun¹; Bonnell, Jerry²,³
¹Michigan Technological Univ., Houghton, MI. ²NASA’s GSFC, Greenbelt, MD. ³University of Maryland, College Park, MD.

448.11 A Comparison of Astronomy/Science Attitudes Among Students and Secondary Teachers
Kareva, Anna¹; Miller, Scott¹; Foster, Andrea¹; James, C. R.¹
¹Sam Houston State University, Huntsville, TX.

448.12 Gains in Astronomy Content Knowledge an ASSET to East Texas Secondary Teachers
Lewis, Cale¹; Miller, Scott¹; Foster, Andrea¹; James, C. R.¹
¹Sam Houston State University, Huntsville, TX.
449 Professional Development Workshops and Programs for Teachers

Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

449.01 From the Universe to the Classroom: A Professional Development Program for Hubble and Webb
Eisenhamer, Bonnie1; Summers, Frank1; McCallister, Dan1; Ryer, Holly1; Knisely, Linda1
1.STScI, Baltimore, MD.

449.02 Teacher Professional Development in Laredo, TX
Finkelstein, Keely D.1; Macri, Lucas M.2; Hemenway, Mary Kay1; Wetzel, Marc3; Preston, Sandra4; Rood, Magdalena5
1.University of Texas at Austin, Austin, TX. 2.Texas A&M University, College Station, TX. 3.McDonald Observatory, Fort Davis, TX. 4.Third Coast Research, Austin, TX.

449.03 Network for Astronomy School Education
Deustua, Susana E.1; Ros, Rosa M.2; Garcia, Beatriz3

449.04 Collaboration between research scientists and educators to prepare new Earth Science teachers
Pagnotta, Ashley1; Grcevich, Jana1; Shara, Michael1; Mac Low, Mordecai-Mark1; Flores, Kennet1; Nadeau, Patricia A.1; Sessa, Jocelyn1; Ustunisik, Gokce1; Zirakparvar, Nasser1; Ebel, Denton1; Harlow, George1; Webster, James D.1; Kinzler, Rosamond1; MacDonald, Maritza B.1; Contino, Julie1; Cooke-Nieves, Natasha1; Howes, Elaine1; Zachowski, Marion1

449.05 The Arizona Galileoscope Project: A 5th Grade Rural Education Program
Sparks, Robert T.1; Pompea, Stephen M.1; Dugan, Chuck1; Walker, Constance E.1
1.NOAO, Tucson, AZ.

450 Education and Public Outreach Resources

Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

450.01 Using Kepler Light Curves for Astronomy Education and Public Outreach
Cash, Jennifer1; Rivers, Shillindria1; Eleby, Johnae1; Gould, Alan2; Komatsu, Toshi3
1.South Carolina State Univ., Orangeburg, SC. 2.The Lawrence Hall of Science, Berkeley, CA.

450.02 On-line Eclipse Resources from the U.S. Naval Observatory: Planning Ahead for April 2024
Fredericks, Amy C.1; Bartlett, Jennifer L.1; Bell, Steve2; Stapleton, James C.3,1
1.US Naval Obs., Washington, DC. 2.Her Majesty’s Nautical Almanac Office, Taunton, United Kingdom. 3.SEAP, Washington, DC.
450.03 Educating the Public about Meteorites and Impacts through Virtual Field Trips and Classroom Experience Boxes
Ashcraft, Teresa1; Hines, Rebekah1; Minitti, Michelle2; Taylor, Wendy3,4; Morris, Melissa A.1; Wadhwa, Meenakshi5
1Center for Meteorite Studies, School of Earth & Space Exploration, Arizona State University, Tempe, AZ. 2Applied Physics Laboratory, Johns Hopkins University, Laurel, MD. 3University of Cape Town, Cape Town, South Africa. 4School of Earth & Space Exploration, Arizona State University, Tempe, AZ.

450.04 Make Movies out of Your Dynamical Simulations with OGRE!
Tamayo, Daniel1; Douglas, Robert W.2; Ge, Heming W.1; Burns, Joseph A.1
1Cornell University, Ithaca, NY. 2Science Solved, Chicago, IL.

450.05 The Fulldome Curriculum for the Spitz SciDome Digital Planetarium: Volume 2
Bradstreet, David H.1; Sanders, Steven J.1; Huggins, Scott2
1Eastern Univ., Saint Davids, PA. 2Spitz, Inc., Chadds Ford, PA.

450.06 Locating the Great Red Spot: Yesterday, Today, and Tomorrow
Lesniak, Michael V.1; Stapleton, James C.1,2
1U.S. Naval Observatory, Washington, DC. 2Science & Engineering Apprenticeship Program (SEAP), Washington, DC.

450.07 Exploring the Early Universe on Mobile Devices
Kocevski, Dale1; McGrath, Elizabeth J.2
1University of Kentucky, Lexington, KY. 2Colby College, Waterville, ME.
Contributing teams: The CANDELS collaboration

450.08 How did the Supreme Court ruling on DOMA affect astronomers?
Rigby, Jane R.1
1NASA Goddard, Greenbelt, MD.
Contributing teams: The AAS Working Group on LGBTIQ Equality

450.09 Developing Spatial Reasoning Through 3D Representations of the Universe
Summer, Frank1; Eisenhamer, Bonnie1; McCallister, Dan1
1STScI, Baltimore, MD.

451 Astronomy 101: Courses and Resources
Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

451.01 A Coherent Content Storyline Approach for Introductory Astronomy
Palma, Christopher1; Flarend, Alice2,1; McDonald, Scott1; Kregenow, Julia M.1
1Penn State Univ., University Park, PA. 2Bellwood-Antis High School, Bellwood, PA.

451.02 Student Mastery of the Sun-Earth-Moon System in a Flipped Classroom of Pre-service Elementary Education Students
Larsen, Kristine1
1Central Connecticut State University, New Britain, CT.

451.04 Astro101 at Tohono O’odham Community College
Garmany, Catharine D.1; Salyk, Colette1
1NOAO, Tucson, AZ.
451.05  Crank Astronomy as a Teaching Tool. II.
Bridgman, William T.\textsuperscript{1}; Young, C. Alex\textsuperscript{2}; Robbins, Stuart\textsuperscript{3}
\textsuperscript{1}Global Science and Technology, Inc., Silver Spring, MD. \textsuperscript{2}NASA/GSFC, Greenbelt, MD. \textsuperscript{3}University of Colorado, Boulder, CO.

451.06  The Astronomy Workshop Extragalactic: Web Tools for Use by Students
Hayes-Gehrke, Melissa N.\textsuperscript{1}; Bolatto, Alberto D.\textsuperscript{1}
\textsuperscript{1}Univ. of Maryland, College Park, MD.

451.07  Building a Comprehensive Online Homework System for Astro 101 within Sapling Learning
Urban, Andrea\textsuperscript{1}
\textsuperscript{1}Sapling Learning, Austin, TX.

451.08  A FERPA-compliant Workflow for Efficiently Returning Classwork to Students in Large Lecture Classes
Clarkson, William I.\textsuperscript{1}
\textsuperscript{1}University of Michigan-Dearborn, Dearborn, MI.

451.09  101 Astro Honors Laboratory Exercises using the Hubble Legacy Archive, the Digitized Sky Survey on MAST, and Stellar Spectral Catalogs.
Kendall, Jason S.\textsuperscript{1}
\textsuperscript{1}William Paterson University, Wayne, NJ.

452 Increasing the Accessibility of Astronomy Poster Session
Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

452.01  The SMARTS Observatory: Rich Science Accessible for Everyone
Hasan, Imran\textsuperscript{1,2}; Misenti, Victoria\textsuperscript{1,2}; Henry, Todd J.\textsuperscript{3,1}
\textsuperscript{1,2}SMARTS Observatory, Cerro Tololo, Chile. \textsuperscript{2}Yale University, New Haven, CT. \textsuperscript{3}Georgia State University, Atlanta, GA.

452.02  AstroDance: Teaching Astrophysics Through Dance?
Noel-Storr, Jacob\textsuperscript{1}; Campanelli, Manuela\textsuperscript{2}; Bochner, Joseph\textsuperscript{1}; Warfield, Thomas\textsuperscript{1}; Bischof, Hans-Pieter\textsuperscript{1}; Zlochower, Yosef\textsuperscript{1}; Nordhaus, Jason\textsuperscript{1}; Watkins, Greyson\textsuperscript{1}
\textsuperscript{1}Rochester Inst. Of Technology, Rochester, NY.
Contributing teams: NSF CRPA AstroDance Team

453 Spiral Galaxies Poster Session
Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

453.01  A Two-Parameter Model for the Infrared/Submillimeter/Radio Spectral Energy Distributions of Galaxies and AGN
Dale, Daniel A.\textsuperscript{1}; Helou, George\textsuperscript{2}; Magdis, Georgios\textsuperscript{3,4}; Rigopoulou, Dimitra\textsuperscript{3}
\textsuperscript{1}Univ. of Wyoming, Laramie, WY. \textsuperscript{2}Spitzer Science Center, Pasadena, CA. \textsuperscript{3,4}University of Oxford, Oxford, United Kingdom. \textsuperscript{3}Rutherford Appleton Laboratory, Chilton, United Kingdom.
Contributing teams: SMUSES, HerMES
453.02 Constraining dark matter halo profiles using spiral arm morphologies: Dark and stellar mass concentrations for 13 nearby face-on galaxies
Seigar, Marc; Davis, Benjamin L.; Berrier, Joel C.; Kennefick, Daniel; Kennefick, Julia D.

453.03 A Stacking Analysis of the Free-Free Opacity of Spiral Galaxy Disks
Stil, Jeroen M.; Klassen, Tristan; Keller, Benjamin W.
1. Univ. of Calgary, Calgary, AB, Canada. 2. McMaster University, Hamilton, ON, Canada.

453.04 How Galaxy Orientation Affects Measurements of Bulge Velocity Dispersion and the Consequences for the M-Sigma Relation
Bellovary, Jillian M.; Holley-Bockelmann, Kelly; Christensen, Charlotte; Brooks, Alyson; Governato, Fabio
1. Vanderbilt University, Nashville, TN. 2. University of Arizona, Tucson, AZ.

453.05 IFU Observations of Giant Low Surface Brightness Galaxies
Yoachim, Peter; Schmitz, Denise; Loebman, Sarah; Debattista, Victor P.; Kwak, SungWon
1. University of Washington, Seattle, WA. 2. University of Michigan, Ann Arbor, MI.
3. University of Central Lancashire, Preston, United Kingdom.

453.06 Bulge Kinematics of Giant Low Surface Brightness Galaxies
Schmitz, Denise; Yoachim, Peter; Loebman, Sarah; Debattista, Victor P.; Kwak, SungWon
1. University of Washington, Seattle, WA. 2. University of Michigan, Ann Arbor, MI.
3. University of Central Lancashire, Preston, United Kingdom.

453.07 Burst and Quench? The Life Story of Low Surface Brightness Galaxies
Young, Jason; Wang, Sharon Xuesong; Kuzio de Naray, Rachel
1. Pennsylvania State Univ., University Park, PA. 2. Georgia State University, Atlanta, GA.

453.08 Wide-band Jansky Very Large Array polarization observations of M51
Mao, Sui Ann; Ott, Juergen; Zweibel, Ellen G.
1. NRAO, Socorro, NM. 2. UW Madison, Madison, WI.

453.09 A Study of Supermassive Black Holes and the Properties of Their Host Galaxies
Akhlite Al-Baidhany, Ismaeel Ahdulla; Seigar, Marc; Treuthardt, Patrick M.; Sierra, Amber; Davis, Ben N.; Kennefick, Daniel; Kennefick, Julia D.; Lacy, Claud H.
Contributing teams: Team 1, Ismaeel, Marc, Patrick, Amber, Team 2, Ben, Daniel, Julia, Claud
453.10 The effects of storm fronts over galaxy disks
Smith, Daniel C.; Struck, Curtis
1Space Department, Johns Hopkins University Applied Physics Laboratory, Laurel, MD. 2Iowa State University, Ames, IA.

453.11 Diffuse Emission in Nearby, Face-on Spiral Galaxies
Schlegel, Eric M.; Vega, Laura D.; Moore, Marilyn
1Univ. of Texas, San Antonio, San Antonio, TX. 2Univ. of Texas, San Antonio, San Antonio, TX. 3Univ. of Texas, San Antonio, San Antonio, TX.

453.12 The Dust Lane Curvature in a Sample of Galactic Bars
Treuthardt, Patrick M.; Beauchemin, Ryan; De Los Reyes, Mithi
1North Carolina Museum of Natural Sciences, Raleigh, NC. 2University of North Carolina, Chapel Hill, NC. 3North Carolina State University, Raleigh, NC.

453.13 The Arecibo Galaxy Environments Survey Isolated Galaxies Sample
Minchin, Robert F.; Taylor, Rhys; Rodriguez, Roberto A.; Taber, Tim; Auld, Robbie; Davies, Jonathan
1NAIC, Arecibo Observatory, Arecibo, Puerto Rico. 2Academy of Sciences of the Czech Republic, Prague, Czech Republic. 3UPR Humacao, Humacao, Puerto Rico. 4McAuliffe-Shepard Discovery Center, Concord, NH. 5Cardiff University, Cardiff, United Kingdom.

453.14 The Unusual Young Supernova Remnant Population in M83
Blair, William P.; Dopita, Michael A.; Ghavamian, Parviz; Kuntz, K. D.; Long, Knox S.; Plucinsky, Paul P.; Soria, Roberto; Winkler, P. F.
1Johns Hopkins Univ., Baltimore, MD. 2STScI, Baltimore, MD. 3Middlebury College, Middlebury, VT. 4Towson University, Towson, MD. 5CXC/SAO, Cambridge, MA. 6Curtin University, Perth, WA, Australia. 7Australian National University, Weston Creek, ACT, Australia.

453.15 A VLA Low Frequency Survey of the Supernova Remnant Population in M83
Stockdale, Christopher; Pritchard, Tyler A.; Blair, William P.; Cowan, John J.; Godfrey, Leith; Miller-Jones, James; Kuntz, K. D.; Long, Knox S.; Maddox, Larry A.; Plucinsky, Paul P.; Soria, Roberto; Whitmore, Bradley C.; Winkler, P. F.
1Marquette University, Milwaukee, WI. 2Pennsylvania State University, University Park, PA. 3Johns Hopkins University, Baltimore, MD. 4University of Oklahoma, Norman, OK. 5ASTRON, Dwingeloo, Netherlands. 6ICRAR - Curtin University, Bentley, WA, Australia. 7Space Telescope Science Institute, Baltimore, MD. 8Northrop Grumman Corp., Oklahoma City, OK. 9Smithsonian Astrophysical Observatory, Cambridge, MA. 10Curtin University, Bentley, WA, Australia. 11Middlebury College, Middlebury, VT.

453.16 Reconstructing the stellar mass distributions of galaxies using S4G IRAC 3.6 and 4.5 μm images: the conversion from light to mass
Meidt, Sharon; Schinnerer, Eva; Querejeta, Miguel; van de Ven, Glenn; Zaritsky, Dennis F.; Peletier, Reynier; Knapen, Johan; Sheth, Kartik
1MPIA, Heidelberg, Germany. 2University of Arizona, Tucson, AZ. 3Kapteyn Astronomical Institute, Groningen, Netherlands. 4IAC, La Laguna, Spain. 5NRAO, Charlottesville, VA.

Contributing teams: S4G, DAGAL
453.17 Exponential Galaxy Disks from Stellar Scattering
Elmegreen, Bruce1; Struck, Curtis2
1IBM Research Div., Yorktown Heights, NY. 2Iowa State University, Ames, IA.

453.18 The Upside Down Assembly of Simulated Disk Galaxies
Bird, Jonathan C.1,2; Kazantzidis, Stelios2; Weinberg, David H.2; Guedes, Javiera3; Callegari, Simone4; Mayer, Lucio5; Madau, Piero6
1Vanderbilt University, Nashville, TN. 2Ohio State University, Columbus, OH. 3Institute for Astronomy, University of Zürich, Zürich, Switzerland. 4Anthropology Institute and Museum, University of Zürich, Zürich, Switzerland. 5Institute for Theoretical Physics, University of Zürich, Zürich, Switzerland. 6University of California, Santa Cruz, Santa Cruz, CA.

453.19 Ionized Gas Velocities from Multi-slit Spectroscopy for Nearby, Edge-on Galaxies
Wu, Catharine J.1; Walterbos, Rene A.1; Rand, Richard J.2; Heald, George3
1New Mexico State University, Las Cruces, NM. 2University of New Mexico, Albuquerque, NM. 3Netherlands Institute for Radio Astronomy, Dwingeloo, Netherlands.

Contributing teams: HALOGAS team

453.20 Mass Distribution & Morphology of Simulated Spiral Galaxies
Berlanga Medina, Jazmin1; Berrier, Joel2; Hartley, Matthew1; Kennefick, Daniel1; Davis, Benjamin L.1; Shields, Douglas W.2; Seigar, Marc3; Kennefick, Julia D.1
1University of Arkansas, Fayetteville, AR. 2Rutgers University, Piscataway, NJ. 3University of Arkansas at Little Rock, Little Rock, AR.

Contributing teams: Arkansas Galaxy Evolution Survey (AGES), Arkansas High Performance Computing Center (AHPCC)

453.21 Molecular gas mass and star formation of 12 Virgo spiral galaxies along the ram pressure time sequence
Chung, Eun Jung1; Kim, Sungeun1
1Department of Astronomy & Space Science, Sejong University, Seoul, Korea, Republic of.

453.22 The Molecular Gas Properties of M100 as seen by ALMA
Vlahakis, Catherine1,5; Martin, Sergio3; Zwaan, Martin3; Bendo, George J.4; Leon, Stephane1,5; Garcia, Diego1,5
1Joint ALMA Observatory, Santiago, Chile. 2European Southern Observatory, Garching, Germany. 3Institut de RadioAstronomie Millimétrique, Grenoble, France. 4UK ALMA Regional Centre Node, Jodrell Bank Centre for Astrophysics, Manchester, United Kingdom. 5European Southern Observatory, Santiago, Chile.
454 Molecular Clouds, HII Regions, Interstellar Medium Poster Session

Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

454.01 Column Density Maps of the I-GALFA HI Survey: Evidence for Dark Gas?
Gibson, Steven J.; Koo, Bon-Chul; Douglas, Kevin A.; Newton, Jonathan H.; Peek, Joshua E.3; Hughes, James M.; Spragg, Mary; Park, Geumsook; Kang, Ji-hyun; Heiles, Carl E.; Korpela, Eric J.
1. Western Kentucky University, Bowling Green, KY. 2. Seoul National University, Seoul, Korea. 3. Okanagan College, Kelowna, BC, Canada.

454.02 Tracing molecular gas content through optical extinction within nearby galaxies
Ray Avalani, Bianca; Groves, Brent; Kreckel, Kathryn
1. Max-Planck-Institut für Astronomie, Heidelberg, Baden-Württemberg, Germany. 2. California Institute of Technology, Pasadena, CA.

454.03 Molecular Gas in the Andromeda Galaxy
Gerard, Benjamin; Darling, Jeremiah K.; Amiri, Nikta
1. Center for Astronomy and Space Astrophysics, University of Colorado at Boulder, Boulder, CO.

454.04 Massive Cold Clumps in NGC 7538 revealed by Herschel
Fallscheer, Cassandra L.; Reid, Mike; Di Francesco, James
1. University of Victoria, Victoria, BC, Canada. 2. NRC-Herzberg, Victoria, BC, Canada. 3. University of Toronto, Toronto, ON, Canada.

454.05 Improved Probing of the Rosette Nebula Superbubble with Faraday Rotation
Savage, Allison H.; Buffo, Jacob; Spangler, Steven R.
1. University of Iowa, Iowa City, IA.

454.06 Evolution of the ISM at z < 1
Mohamed, Zaarah
1. National Radio Astronomy Observatory, Cleveland, VA. 2. Case Western Reserve University, Cleveland, OH.

454.07 Examining the Initial Conditions of Star Formation Through Dense Gas Kinematics
Mead, Adrian T.; Tobin, John J.; Smith, Rowan

454.08 Probing interstellar extinction in the Tarantula Nebula with red giant stars
De Marchi, Guido; Panagia, Nino; Girardi, Leo; Sabbi, Elena
454.09 **The Distribution of Oxygen in the Magellanic Clouds**
Pramanick, Smriti¹,²; Bajwa, Ayesha¹,²; Werk, Jessica²
¹Castilleja School, Palo Alto, CA. ²University of California, Santa Cruz, Santa Cruz, CA.

454.10 **Interstellar Organics, the Solar Nebula, and Saturn’s Satellite Phoebe**
Pendleton, Yvonne J.¹; Cruikshank, Dale P.¹
¹NASA Ames Research Center, Sunnyvale, CA.

454.11 **Investigation of Interstellar Formation Routes Using Molecular Abundance Ratios of C3H2O Isomers**
Loomis, Ryan A.¹; Johnson, Chelen H.²; Remijan, Anthony J.³
¹University of Virginia, Charlottesville, VA. ²Breck School, Golden Valley, MN. ³NRAO, Charlottesville, VA.

454.12 **Molecular Lines in NGC660**
Arias de Saavedra Benitez, Maria¹; Ghosh, Tapasi²; Salter, Christopher J.²
¹Duke University, Durham, NC. ²NAIC, Arecibo Observatory, Arecibo, Puerto Rico.

454.13 **WHAM Southern Sky Survey early results: Ionized gas in the Scutum-Centaurus Arm**
Hill, Alex S.¹; Haffner, L. M.²,³; Benjamin, Robert A.⁴; Gostisha, Martin⁴; Barger, Kathleen⁵
¹CSIRO Astronomy and Space Science, Epping, NSW, Australia. ²UW-Madison, Madison, WI. ³Space Science Institute, Boulder, CO. ⁴UW-Whitewater, Whitewater, WI. ⁵University of Notre Dame, South Bend, IN.

454.14 **Pilot Search for 54-MHz Maser Emission from Interstellar Hydroxyl Using LOFAR**
Hoffman, Ian M.¹; Heald, George²; Oonk, Raymond²; McKean, John²; Mol, Jan David²; Hessels, Jason²; Toribio, Carmen²
¹Wittenberg University, Springfield, OH. ²Netherlands Institute for Radio Astronomy (ASTRON), Dwingeloo, Netherlands.
Contributing teams: The LOFAR Collaboration

454.15 **A Survey of the Local Interstellar Medium Using COS Observations of Nearby White Dwarfs**
Tweed, Benjamin¹; Redfield, Seth¹; Gaensicke, Boris T.³; Koester, Detlev²
¹Wesleyan University, Middletown, CT. ²University of Kiel, Kiel, Schleswig-Holstein, Germany. ³University of Warwick, Warwick, Coventry, United Kingdom.

454.16 **Dust in the Rosette Nebula**
Huber, Jeremy¹,²; Kielkopf, John F.¹
¹University of Louisville, Louisville, KY. ²University of Kentucky, Lexington, KY.

454.17 **What is the G2 cloud?**
Walker, Mark A.¹
¹Manly Astrophysics, Manly, NSW, Australia.
454.18 A Spectral Analysis of the Interstellar Medium Using Sagittarius B2 as the Bright Continuum Source
Chueh, Christopher¹; Manning, Brant¹; Frady, Nicholas¹; Shane, Galen¹; Beasley, Shannon¹; Corby, Joanna¹; Dirienzo, William J.¹; Beaton, Rachael¹; Jones, Kristen M.²; Barcos-Munoz, Loreto D.²; Remijan, Anthony J.³
¹Central Virginia Governor’s School for Science and Technology, Lynchburg, VA. ²University of Virginia, Charlottesville, VA. ³National Radio Astronomy Observatory, Charlottesville, VA.

454.19 A Survey of Hidden Molecular Clouds in the Milky Way
Hughes, James¹, ²; Gibson, Steven J.¹
¹Western Kentucky University, Bowling Green, KY. ²Carol Martin Gatton Academy of Mathematics and Science in Kentucky, Bowling Green, KY.
Contributing teams: I-GALFA Survey Consortium

454.20 Configuration of the local interstellar magnetic field
Frisch, Priscilla C.¹; Andersson, B-g³; Berdhyugin, Andrei²; Funsten, Herbert O.¹⁰; DeMajistre, Robert⁶; Magalhaes, Antonio Mario³; McComas, Dave⁴,¹¹; Pirola, Vilppu³; Schwadron, Nathan⁷; Seriacopi, Daiane⁵; Slavin, Jonathan D.⁹; Wiktormicz, Sloane⁸
¹University of Chicago, Chicago, IL. ²Finnish Centre for Astronomy with ESO, University of Turku, Turku, Finland. ³SOFIA-USRA, Moffet Field, CA. ⁴Southwest Research Institute, San Antonio, TX. ⁵Inst. de Astronomía, Geofisica e Ciencias Atmosfericas, Universidade de Sao Paulo, Sao Paulo, Brazil. ⁶John Hopkins University Applied Physics Lab, Laurel, MD. ⁷University of New Hampshire, Durham, NH. ⁸University of California, Santa Cruz, CA. ⁹Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. ¹⁰Los Alamos National Laboratory, Los Alamos, NM. ¹¹University of Texas, San Antonio, TX.
Contributing teams: IBEX Team

454.21 Time Variation of Cosmic Ray Arrival Directions
Corbett, Henry¹; Desiati, Paolo²
¹Guilford College, Greensboro, NC. ²University of Wisconsin - Madison, Madison, WI.

454.22 The Molecular Gas - Star Formation Connection in an Extended Ultraviolet (XUV) Disk
Watson, Linda C.¹; Martini, Paul²; Lisenfeld, Ute³; Boeker, Torsten⁴; Gil de Paz, Armando⁵; Schinnerer, Eva⁶
¹Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. ²Ohio State University, Columbus, OH. ³Universidad de Granada, Granada, Spain. ⁴European Space Agency, Noordwijk, Netherlands. ⁵Universidad Complutense de Madrid, Madrid, Spain. ⁶Max-Planck-Institut für Astronomie, Heidelberg, Germany.

454.23 Characterizing the Dense Gas in the Eagle and Pelican Pillars
Grand, Erin¹; Pound, Marc W.¹; Mundy, Lee G.¹
¹University of Maryland, College Park, MD.

454.24 X-ray Properties of the Peculiar HII Region IC 131 in M33
Pannuti, Thomas¹; Williams, Benjamin F.²; Wold, Brian³; Garofali, Kristen³; Tuellmann, Ralph³; Gaetz, Terrance J.⁴; Kosakowski, Aleksander R.¹
¹Morehead State University, Morehead, KY. ²University of Washington, Seattle, WA. ³DLR GF mbH, Oberpfaffenhofen, Bavaria, Germany. ⁴CXC/SAO, Cambridge, MA.
Contributing teams: XMM-Newton Legacy Survey of M33 Team
454.25 Examination of the Applicability of Quasi-time-dependent Truncated CJ Shock Wave Models in Interstellar Molecular Clouds
Menzel, Raymond L.1,2; Ciolek, Glenn E.1,2; Suarez, Pablo3; Roberge, Wayne G.1,2
1 New York Center for Astrobiology, Troy, NY. 2 Rensselaer Polytechnic Institute, Troy, NY. 3 Delaware State University, Dover, DE.

454.26 Diffusion, Self-Similarity, and the Formation of Multifluid Shock Waves
Ciolek, Glenn E.1; Roberge, Wayne G.1,2; Katz, Maximilian P.2,3
1 New York Center for Astrobiology, Rensselaer Polytechnic Inst., Troy, NY. 2 Dept. of Physics, Applied Physics, and Astronomy, Rensselaer Polytechnic Inst., Troy, NY. 3 Dept. of Physics and Astronomy, Stony Brook University, Stony Brook, NY.

454.27 A Multi-wavelength Analysis of Cold Evolving Interstellar Clouds
Spraggs, Mary1; Gibson, Steven J.1
1 Western Kentucky University, Bowling Green, KY.

454.28 The Northern Intermediate-Velocity Molecular Clouds (IVMCs): Distances and Environments.
McGehee, Peregrine M.1
1 Caltech, Pasadena, CA.

454.30 A multi-wavelength study of the GSH 006-15+7: A local Galactic supershell
Jo, Young-soo1; Min, Kyoung-wook1; Seon, Kwang-il2
1 Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, Republic of. 2 Astronomy and Space Science Institute (KASI), Daejeon, Korea, Republic of.

454.31 Far-Ultraviolet Study in the Ophiuchus cloud complex and the Upper Scorpius subgroup of the Sco OB2 association
Lim, Taeho1; Min, Kyoung-Wook1; Seon, Kwang-il2
1 KAIST, Daejeon, Daejeon, Korea, Republic of. 2 KASI, Daejeon, Daejeon, Korea, Republic of.

454.32 Power law structure of the interstellar medium: Fractal dimension of the HI, CO and mid-IR in nearby galaxies
Bowman, Lorraine1; Ott, Juergen2; Westpfahl, Dave1,2
1 NMT, Socorro, NM. 2 NRAO, Socorro, NM.

454.33 Kinematic Results From a Systematic Search for Infall Signatures Towards the Starless Core Population in the Perseus Molecular Cloud
Walker-LaFollette, Amanda1; Shirley, Yancy L.1,2; Amaya, Hector2; Becker, Samantha L.4; Biddle, Lauren I.1; Lichtenberger, Matthew1; Nieberding, Megan N.1; Raphael, Brandon A.1; Romine, James M.1; Small, Lindsay1; Stanford-Jones, Charles2; Smith, Carter-Thaxton1; Thompson, Robert1; Towner, Allison P.1; Turner, Jake3; Watson, Zachary1; Cates, Ian1; McGraw, Allison M.1; Pearson, Kyle1; Robertson, Amy3; Tombreson, Ryan1
1 University of Arizona/Steward Observatory, Tucson, AZ. 2 Adjunct Astronomer, The National Radio Astronomy Observatory, Socorro, AZ. 3 Arizona Radio Observatory, Tucson, AZ. 4 University of Arizona, Tucson, AZ. 5 University of Virginia, Charlottesville, VA.

454.34 Into the Darkness: Interstellar Extinction Near the Cepheus OB3 Molecular Cloud
Fitzpatrick, Edward L.1; Jacklin, Savannah1; Massa, Derck2
1 Villanova University, Villanova, PA. 2 Space Science Institute, Boulder, CO.
454.36 A Possible Protostar in IGGC 22
Towner, Allison P.; Walker, Christopher K.; Tolls, Volker; Martin, Christopher D.
1University of Arizona, Tucson, AZ. 2Harvard Smithsonian Center for Astrophysics, Cambridge, MA. 3California Institute of Technology, Pasadena, CA.

454.37 Temperature, Density, and Collision Rates in the IC63 Nebula
Vaillancourt, John E.; Andersson, Bengt-Goran; Polehampton, Edward; Sanders, James; Widicus-Weaver, Susanna
1SOFIA / USRA, Mountain View, CA. 2University of Lethbridge, Lethbridge, AB, Canada. 3Rutherford Appleton Laboratory, Didcot, Oxfordshire, United Kingdom. 4Emory University, Atlanta, GA.

454.38 NH2D in Orion KL: Results from ALMA, EVLA, and IRAM
Lucy, Adrian B.; Wootten, AL; Marcelino, Nuria
1NRAO-CV, Charlottesville, VA. 2University of Oklahoma, Norman, OK.

454.39 Far Ultraviolet Observations of the Ophiuchi HII region
Choi, Yeon-Ju; Min, Kyoung-wook; Seon, Kwang-il
1KAIST, Daejeon, Korea, Republic of. 2KASI, Daejeon, Korea, Republic of.

454.40 A Multi-Wavelength Study of Water Maser-Emitting Regions in the Andromeda Galaxy
Amiri, Nikta; Darling, Jeremiah K.; Gerard, Benjamin
1University of Colorado at Boulder, Boulder, CO.

454.41 Molecular Hydrogen as a Finite-density and Temperature Indicator
Wang, Xiang; Ferland, Gary J.; Baldwin, Jack A.
1Physics and Astronomy, University of Kentucky, Lexington, KY. 2Michigan State University, East Lansing, MI.

454.42 Vibrationally Excited Molecular Hydrogen Near Herschel 36
Rachford, Brian L.; Snow, Theodore P.; Ross, Teresa
1Embry-Riddle Aeronautical Univ., Prescott, AZ. 2University of Colorado, Boulder, CO. 3New Mexico State University, Las Cruces, NM.

454.43 OH+ and H2O+: Probes of the Molecular Hydrogen Fraction and Cosmic-Ray Ionization Rate
Indriolo, Nick; Neufeld, David A.; Gerin, Maryvonne
1Johns Hopkins University, Baltimore, MD. 2LERMA, CNRS, Observatoire de Paris, ENS, Paris, France.

454.44 Thermal OH emission and Dark Gas in the Galaxy
Allen, Ronald J.; Hogg, David E.; Engelke, Philip
1STScI, Baltimore, MD. 2NRAO, Charlottesville, VA. 3JHU Physics/Astronomy, Baltimore, MD.

454.45 Spitzer 8?m Emission as a Tracer of Neutral Gas in the Large Magellanic Cloud
Wong, Tony H.; Xue, Rui; Whitney, Barbara; Heitsch, Fabian; Hughes, Annie; Bolatto, Alberto D.; Robitaille, Thomas
1University of Illinois, Urbana, IL. 2University of Wisconsin, Madison, WI. 3University of North Carolina, Chapel Hill, NC. 4MPIA, Heidelberg, Germany. 5University of Maryland, College Park, MD.

Contributing teams: MAGMA team
454.46 Ice Formation and Grain Growth in the Quiescent Medium of the Lupus Molecular Clouds
Boogert, Abraham C.¹,²; Chiar, Jean E.³; Knez, Claudia⁴,⁵; Oberg, Karin I.⁶; Mundy, Lee G.⁷; Pendleton, Yvonne J.⁷; Tielens, Xander⁸; van Dishoeck, Ewine⁹

454.47 Micro-Spec: an Integrated, Direct-Detection Spectrometer for Far-Infrared and Sub-Millimeter Astronomy
Cataldo, Giuseppe¹,²; Moseley, Samuel H.¹; Hsieh, Wen-Ting¹; Huang, Wei-Chung¹; Stevenson, Thomas¹; Wollack, Edward¹
¹NASA Goddard Space Flight Center, Greenbelt, MD. ²Universities Space Research Association (USRA), Columbia, MD.

455 Elliptical Galaxies Poster Session
Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

455.01 EVIDENCE FOR A CONSTANT IMF IN EARLY-TYPE GALAXIES BASED ON THEIR X-RAY BINARY POPULATIONS
Zepf, Stephen E.¹; Maccarone, Thomas J.²; Kundu, Arunav³⁴; Gonzalez, Anthony H.⁵; Lehmer, Bret⁶⁷; Maraston, Claudia⁸
¹Michigan State Univ., East Lansing, MI. ²Texas Tech University, Lubbock, TX. ³Eureka Scientific, Oakland, CA. ⁴TIFR, Mumbai, India. ⁵University of Florida, Gainesville, FL. ⁶Johns Hopkins University, Baltimore, MD. ⁷NASA GSFC, Greenbelt, MD. ⁸University of Portsmouth, Portsmouth, United Kingdom.

455.02 Isolated Early-type Galaxies in the 2dFGRS
Fuse, Christopher R.¹; Lamir, Cameron¹
¹Rollins College, Winter Park, FL.

455.03 Listening to Shells: Galaxy Masses from Disrupted Satellites
Westfall, Kyle1; Sanderson, Robyn¹
¹Kapteyn Astronomical Institute, Groningen, Groningen, Netherlands.

456 Dark Matter & Dark Energy Poster Session
Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

456.01 The Dark Matter Contribution to the Galactic Diffusion Gamma Ray Emission
Yang, Lin F.¹; Szalay, Alexander S.¹; Silk, Joseph I.¹; Wyse, Rosemary F.¹; Kuhlen, Michael²; Madau, Piero²
¹Johns Hopkins University, Baltimore, MD. ²UC, Santa Cruz, Santa Cruz, CA.

456.02 Status and Prospects for Indirect Dark Matter Searches with the Fermi Large Area Telescope
Charles, Eric¹
¹SLAC National Lab., Menlo Park, CA. Contributing teams: Fermi-LAT Collaboration
456.03  Dark Matter Content of Dwarf Galaxies, Measured from Tidal Debris
Bauer, Jacob1; Arsenault, Matthew2; Desell, Travis2; Magdon-Ismail, Malik1; Newberg, Heidi J.1; Newby, Matthew3; Rice, Colin1; Thompson, Jeffrey1; Ulin, Steve1
1 Rensselaer Polytechnic Institute, Troy, NY. 2 University of North Dakota, Grand Forks, ND.

456.04  Probing Gravity in the High-Redshift Universe with HETDEX
Malz, A.I.1; Shandera, Sarah1
1 The Pennsylvania State University, State College, PA.

456.05  Measurements of D_A and H at z=2.4 from the SDSS-III/DR11 BOSS Lyman-alpha sample
Schlegel, David J.1; Delubac, Timothé2; Busca, Nicolas3; Rich, James2; Bailey, Stephen J.1; Bautista, Julian3; Front, Andreu4; Kirby, David5; Le Goff, Jean-Marc6; Pieri, Matthew6; Slosar, Anze7; Aubourg, Eric1; Blomqvist, Michael5; Bolton, Adam S.8; Borde, Arnaud1; Carithers, William3; Croft, Rupert A.9; Dawson, Kyle S.9; Eisenstein, Daniel10; Hamilton, Jean-Christophe1; Ho, Shirley9; Hogg, David W.11; Lee, Khee-Gan12; Lundgren, Britt13; Margala, Daniel5; Miranda-Escudé, Jordi14, 15; Myers, Adam D.16; Noterdaeme, Pasquier17; Palanque-Delabrouille, Nathalie2; Paris, Isabelle17, 18; Petitjean, Patrick19; Ross, Nicholas19; Rossi, Graziano20; Viet, Matteo20, 21; Weinberg, David H.21; White, Martin1, 22; Yecche, Christophe2
1 LBNL, Berkeley, CA. 2 CEA, Centre de Saclay, IRFU, GIF-sur-Yvette, France. 3 APC, Université Paris Diderot-Paris 7, Paris, France. 4 Institute of Theoretical Physics, University of Zurich, Zurich, Switzerland. 5 Department of Physics and Astronomy, University of California, Irvine, CA. 6 Institute of Cosmology and Gravitation, University of Portsmouth, Portsmouth, United Kingdom. 7 Brookhaven National Laboratory, Upton, NY. 8 Department of Physics and Astronomy, University of Utah, Salt Lake City, UT. 9 Bruce and Astrid McWilliams Center for Cosmology, Carnegie Mellon University, Pittsburgh, PA. 10 Harvard-Smithsonian Center for Astrophysics, Harvard University, Cambridge, MA. 11 Center for Cosmology and Particle Physics, New York University, New York, NY. 12 Max-Planck-Institut für Astronomie, Heidelberg, Germany. 13 Department of Astronomy, University of Wisconsin, Madison, WI. 14 Instituto de Catalana de Recerca i Estudis Avançats, Barcelona, Spain. 15 Catalonia, Institut de Ciències del Cosmos, Universitat de Barcelona/IEEC, Barcelona, Spain. 16 Department of Physics and Astronomy, University of Wyoming, Laramie, WY. 17 Université Paris 6 et CNRS, Institut d’Astrophysique de Paris, Paris, France. 18 Universidad de Chile, Santiago, Chile. 19 Department of Physics, Drexel University, Philadelphia, PA. 20 INAF, Osservatorio Astronomico di Trieste, Trieste, Italy. 21 Department of Astronomy, Ohio State University, Columbus, OH. 22 INFN/National Institute for Nuclear Physics, Trieste, Trieste, Italy. 23 University of California, Berkeley, Berkeley, CA.
Contributing teams: Sloan Digital Sky Survey III (SDSS-III) Baryon Oscillation Spectroscopic Survey (BOSS)
457 Large Scale Structure, Cosmic Distance Scale Poster Session

Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

457.01 MEGA-SH0ES: Revising the Cepheid Distance to NGC 1365
Hoffmann, Samantha L.1; Macri, Lucas M.1; Riess, Adam G.2,3
1 Texas A&M University, College Station, TX. 2 Johns Hopkins University, Baltimore, MD. 3 STScI, Baltimore, MD.
Contributing teams: MEGA-SH0ES Team

457.02 MEGA-SH0ES: A Cepheid distance to M101 based on WFC3 H-band photometry
Yuan, Wenlong1; Hoffmann, Samantha L.1; Macri, Lucas M.1; Riess, Adam G.2,3
1 Texas A&M Univ., College Station, TX. 2 Johns Hopkins Univ., Baltimore, MD. 3 STScI, Baltimore, MD.
Contributing teams: the MEGA-SH0ES team

457.03 The Tip of the Red Giant Branch Distance to NGC 1316 Hosting Four Type Ia Supernova and the Hubble Constant
Jang, In Sung1; Lee, Myung Gyoon1
1 Seoul National University, Seoul, Korea, Republic of.

457.04 The Detection of Megamasers to Identify Supermassive Black Holes
Beisser, Megan1; Mathone, Prabdeep1; Zhang, Jason1; Norvelle, William1; Good, Averie1; Beasley, Shannon1; Dirienzo, William J.2; Corby, Joanna2; Beaton, Rachael3; Barcos-Munoz, Loreto D.2; Jones, Kristen M.2; Braatz, James A.3
1 Central Virginia Governor’s School for Science and Technology, Lynchburg, VA. 2 University of Virginia, Charlottesville, VA. 3 National Radio Astronomy Observatory, Charlottesville, VA.

457.05 The Corona Borealis Supercluster - I: Observational Analysis of the Inter-Cluster Dynamics
Batiste, Merida1; Pearson, David1; Batuski, David J.1
1 University of Maine, Bangor, ME.

457.06 The Corona Borealis Supercluster - II: Mass Estimation & Simulations
Pearson, David1; Batiste, Merida1; Batuski, David J.1
1 University of Maine, Orono, ME.

457.07 A Extragalactic Spectral Survey Of The SSA22 Field
Saez, Cristian1,2; Lehmer, Bret3; Bauer, Franz E.1; Stern, Daniel4; Gonzales, Alexandria5; Harrison, Fiona1
1 Pontificia Universidad Catolica De Chile, University Park, PA. 2 University of Maryland, College Park, MD. 3 Caltech, Pasadena, CA. 4 JPL, Pasadena, CA. 5 Johns Hopkins University, Baltimore, MD.

457.08 The galaxy environment of a QSO at z~5.7
Banados, Eduardo1; Venemans, Bram1; Walter, Fabian1; Kurk, Jaron2; Overzier, Roderik3,4; Ouchi, Masami5,6
1 Max Planck Institute for Astronomy, Heidelberg, Germany. 2 Max Planck fuer Extraterrestrische Physik, Garching, Germany. 3 Department of Astronomy, The University of Texas at Austin, Austin, TX. 4 Observatorio Nacional, Rio de Janeiro, Brazil. 5 Institute for Cosmic Research, University of Tokyo, Kashiwa, Japan. 6 Kavli Institute for the Physics and Mathematics of the Universe, The University of Tokyo, Kashiwa, Japan.
457.09  **Weak Lensing with Galaxy Kinematics**
George, Matthew R.1,2; Huff, Eric M.3; Schlegel, David J.2
1 UC Berkeley, Berkeley, CA. 2 Lawrence Berkeley National Lab, Berkeley, CA. 3 Ohio State University, Columbus, OH.

457.10  **Baryon Acoustic Oscillations in Lyman Alpha Forest - Quasar Cross-Correlations**
Ho, Shirley1; Aubourg, Eric2; Bailey, Stephen J.3; Bautista, Julian4; Beutler, Florian5; Bizyaev, Dmitry6; Blomqvist, Michael7; Bolton, Adam S.8; Brewington, Howard9; Brinkmann, Jonathan V.10; Brownstein, Joel11; Busca, Nicolás G.12; Carithers, William13; Croft, Rupert A.14; Dawson, Kyle S.15; Delubac, Timothée16; Ebelke, Garrett17; Eisenstein, Daniel18; Feng, Yu19; Font-Ribera, Andrea20; Hogg, David W.21; Kinemuchi, Karen22; Kirkby, David23; Le Goff, Jean-Marc24; Lee, Khee-Gan25; Malanushenko, Elena26; Malanushenko, Viktor27; Marchante, Moses28; Margela, Daniel29; Miralda-Escudé, Jordi10,11; Muna, Demitri12; Myers, Adam D.13; Nichol, Robert14; Oravetz, Daniel15; Palanque-Delabrouille, Nathalie16; Pan, Kaise17; Noterdaeme, Pasquier18; O’Connor, Ross19; Paris, Isabelle20,21; Petitjean, Patrick22; Pieri, Matthew23; Rollinde, Emmanuel24,25; Ross, Nicholas3,26; Rossi, Graziano27; Schlegel, David J.28; Schneider, Donald P.29; Simmons, Audrey30; Slosar, Anže31; Viel, Matteo32; Weinberg, David H.33; Xu, Xiaoying34; Yeche, Christophe35; York, Donald G.36
1 Carnegie Mellon University, Pittsburgh, PA. 2 APC, Université Paris Diderot-Paris 7, Paris, France. 3 Lawrence Berkeley National Laboratory, Berkeley, CA. 4 Apache Point Observatory and New Mexico State University, Sunspot, NM. 5 University of California, Irvine, Irvine, CA. 6 University of Utah, Salt Lake City, UT. 7 CEA, Centre de Saclay, Gif-sur-Yvette, France. 8 Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. 9 University of Zurich, Zurich, Switzerland. 10 New York University, New York, NY. 11 Max Planck Institute for Astronomy, Heidelberg, Germany. 12 Instituto de Recerca i Estudis Avançats, Barcelona, Spain. 13 Institut de Ciències del Cosmos (IEEC/UB), Barcelona, Spain. 14 Ohio State University, Columbus, OH. 15 University of Wyoming, Laramie, WY. 16 University of Portsmouth, Portsmouth, United Kingdom. 17 Institut d’Astrophysique de Paris, Paris, France. 18 Drexel University, Philadelphia, PA. 19 The Pennsylvania State University, University Park, PA. 20 Brookhaven National Laboratory, Upton, NY. 21 Osservatorio Astronomico di Trieste, Trieste, Italy. 22 INFN/National Institute for Nuclear Physics, Trieste, Italy. 23 University of Chicago, Chicago, IL. 24 Universidad de Chile, Casilla, Chile.

457.11  **Mapping 3D Large-Scale Structure at z≈2 with Lyman-α Forest Tomographic Mapping**
Lee, Khee-Gan1; Hennawi, Joseph F.2; White, Martin3,4; Croft, Rupert A.5; Prochaska, Jason X.6; Schlegel, David J.7; Suzuki, Nao5; Kneib, Jean-Paul8; Bailey, Stephen J.9; Spergel, David N.10; Rix, Hans-Walter11; Strauss, Michael A.12
1 MPIA, Heidelberg, Baden-Wuerttemberg, Germany. 2 UC Berkeley, Berkeley, CA. 3 LBNL, Berkeley, CA. 4 Carnegie-Mellon University, Pittsburgh, PA. 5 University of Tokyo, Tokyo, Tokyo, Japan. 6 Princeton University, Princeton, NJ. 7 EPFL, Lausanne, Switzerland. 8 UC Santa Cruz, Santa Cruz, CA.
457.12 Red Galaxy Structures Toward a Large Quasar Group Field
Williger, Gerard M.\textsuperscript{1,2}; Feil, Eric C.\textsuperscript{2}; Haberzettl, Lutz\textsuperscript{2}; Clowes, Roger\textsuperscript{2}; Campusano, Luis\textsuperscript{3}; Haines, Christopher P.\textsuperscript{3}; Valls-Gabaud, David \textsuperscript{4}; Lehnert, Matt\textsuperscript{6}; Nesvadba, Nicole \textsuperscript{6}
\textsuperscript{1}Univ. of Louisville, Louisville, KY. \textsuperscript{2}U. Central Lancashire, Preston, United Kingdom. \textsuperscript{3}U. de Chile, Santiago, Chile. \textsuperscript{4}Obs. of Paris-Meudon, Paris, France. \textsuperscript{5}Institute d’Astrophysique, Paris, France. \textsuperscript{6}U. de Paris-Sud, Orsay, France.
Contributing teams: LQG Team

457.13 The Very Small Scale Clustering of SDSS-II and SDSS-III Galaxies
Piscionere, Jennifer\textsuperscript{1}; Berlind, Andreas A.\textsuperscript{1}
\textsuperscript{1}Vanderbilt, Nashville, TN.

457.14 Tilted Infall Regions?
Praton, Elizabeth A.\textsuperscript{1}; Abdullah, Mohamed\textsuperscript{1}
\textsuperscript{1}Franklin & Marshall College, Lancaster, PA. \textsuperscript{2}National Research Institute of Astron. & Geoph., Helwan, Egypt.

457.15 Faster, Better, Cheaper N-Body with Abacus
Ferrer, Douglas\textsuperscript{1}; Eisenstein, Daniel\textsuperscript{1}; Metchnik, Marc V.\textsuperscript{1}; Pinto, Philip A.\textsuperscript{2}
\textsuperscript{1}Harvard, Cambridge, MA. \textsuperscript{2}University of Arizona, Tuscon, AZ.

457.16 Kinematic Morphology of Large-scale Structure: Evolution from Potential to Rotational Flow
Wang, Xin\textsuperscript{1}; Szalay, Alexander S.\textsuperscript{1}; Aragon-Calvo, Miguel A.\textsuperscript{1}; Neyrinck, Mark C.\textsuperscript{1}; Eyink, Gregory L.\textsuperscript{2,1}
\textsuperscript{1}Department of Physics & Astronomy, Johns Hopkins University, Baltimore, MD. \textsuperscript{2}Department of Applied Mathematics & Statistics, Johns Hopkins University, Baltimore, MD.

457.17 A Large number of fast cosmological simulations
Koda, Jun\textsuperscript{1}; Kazin, Eyal\textsuperscript{1}; Blake, Chris\textsuperscript{1}
\textsuperscript{1}Swinburne University of Technology, Hawthorn, VIC, Australia.

457.18 Dark Matter Halo Clustering in the LasDamas Simulations
Salcedo, Andres\textsuperscript{1}; Berlind, Andreas A.\textsuperscript{2}; Maller, Ariyeh\textsuperscript{3}
\textsuperscript{1}Lehigh University, Bethlehem, PA. \textsuperscript{2}Vanderbilt University, Nashville, TN. \textsuperscript{3}New York City College of Technology, New York City, NY.

458 Intergalactic Medium, QSO Absorption Line Systems Poster Session
Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

458.01 High-Metallicity Outflows from QSOs: A Homogeneous Survey of Associated OVI Absorption with the Cosmic Origins Spectrograph
Grasha, Kathryn\textsuperscript{1}; Tripp, Todd M.\textsuperscript{1}
\textsuperscript{1}University of Massachusetts - Amherst, Amherst, MA.

458.02 Constraining the Properties of OVI in the 0.4<z<1.0 Circumgalactic Medium
Rosenwasser, Ben\textsuperscript{1}; Muzahid, Sowgat\textsuperscript{1}; Norris, Jackson\textsuperscript{1}; Charlton, Jane C.\textsuperscript{1}; Rodriguez Hidalgo, Paola\textsuperscript{1,7}; Wakker, Bart P.\textsuperscript{1}; Narayanan, Anand\textsuperscript{3}; Misawa, Toru\textsuperscript{4}; Churchill, Christopher W.\textsuperscript{1}; Mathes, Nigel\textsuperscript{6}; Nielsen, Nikki\textsuperscript{6}; Ganguly, Rajib\textsuperscript{5}
\textsuperscript{1}The Pennsylvania State University, University Park, PA. \textsuperscript{2}University of Wisconsin-Madison, Madison, WI. \textsuperscript{3}Indian Institute of Space Science and Technology, Thiruvananthapuram, Kerala, India. \textsuperscript{4}Shinshu University, Matsumoto, Nagano Prefecture, Japan. \textsuperscript{5}University of Michigan-Flint, Flint, MI. \textsuperscript{6}New Mexico State University, Las Cruces, NM. \textsuperscript{7}York University, Toronto, ON, Canada.
458.03 Probing Quasar Winds Using Intrinsic Narrow Absorption Lines
Culliton, Christopher S.\textsuperscript{1}; Charlton, Jane C.\textsuperscript{1}; Eracleous, Michael\textsuperscript{1}; Misawa, Toru\textsuperscript{2}
\textsuperscript{1}Pennsylvania State University, University Park, PA. \textsuperscript{2}Shinshu University, Matsumoto, Nagano, Japan.

458.04 Evolution in the Frequency of Heavy Element Absorbers Approaching the Epoch of Reionization
Simcoe, Robert A.\textsuperscript{1}; Cooksey, Kathy\textsuperscript{1,2}; Sullivan, Peter\textsuperscript{1}; Cooper, Thomas\textsuperscript{1}; Venable, Bram\textsuperscript{3}; deRosa, Gisella\textsuperscript{4}
\textsuperscript{1}MIT, Cambridge, MA. \textsuperscript{2}University of Hawaii at Hilo, Hilo, HI. \textsuperscript{3}MPIA, Heidelberg, Germany. \textsuperscript{4}Ohio State University, Columbus, OH.

458.05 High-z QSO Absorption Systems: Metal-Poor Cold Flows and Mg II Absorber Host Galaxies
Cooper, Thomas\textsuperscript{1}; Simcoe, Robert A.\textsuperscript{1}; Cooksey, Kathy\textsuperscript{1}; O’Meara, John\textsuperscript{2}
\textsuperscript{1}Massachusetts Institute of Technology, Cambridge, MA. \textsuperscript{2}Saint Michael’s College, Colchester, VT.

458.06 The Varied Conditions of Low Redshift Weak MgII Absorbers
Fonseca, Gloria\textsuperscript{1}; Rosenwasser, Benjamin\textsuperscript{1}; Roberts, Amber\textsuperscript{1}; Koury, Alex\textsuperscript{1}; Culliton, Christopher S.\textsuperscript{1}; Muzahid, Sowgat\textsuperscript{1}; Narayanan, Anand\textsuperscript{2}; Rodriguez Hidalgo, Paola\textsuperscript{3}; Charlton, Jane C.\textsuperscript{1}
\textsuperscript{1}The Pennsylvania State University, University Park, PA. \textsuperscript{2}University of Michigan, Ann Arbor, MI. \textsuperscript{3}York University, York, York, United Kingdom.

458.07 PROBING THE LARGE SCALE OUTFLOWS OF THE DARK SIDE OF THE LMC BY PIERCING THROUGH THE DISK
Barger, Kathleen A.\textsuperscript{1}; Howk, J. C.\textsuperscript{1}; Lehner, Nicolas\textsuperscript{1}
\textsuperscript{1}University of Notre Dame, Notre Dame, IN.

458.08 Properties of Two Strong MgII Absorbers Towards Q0454-220
Norris, Jackson\textsuperscript{1}; Charlton, Jane C.\textsuperscript{1}; Muzahid, Sowgat\textsuperscript{1}; Rosenwasser, Ben\textsuperscript{1}
\textsuperscript{1}Pennsylvania State University, University Park, PA.

458.09 Investigating TeV Gamma Ray Propagation: an Integration Approach along Blazar/Absorber Sightlines to Establish Minimum Photon Densities
Davis, Julie\textsuperscript{1}; Danforth, Charles\textsuperscript{1}; Keeney, Brian A.\textsuperscript{1}; Stocke, John T.\textsuperscript{1}
\textsuperscript{1}University of Colorado, Boulder, CO.

458.10 Intergalactic Extinction
Mills, Bradley\textsuperscript{1}; Li, Aigen\textsuperscript{1}
\textsuperscript{1}University of Missouri, Columbia, MO.

458.11 Understanding Low-Redshift Quasar Outflows Using Intrinsic NV Absorption Lines.
Roberts, Amber\textsuperscript{1}; Christopher, Culliton\textsuperscript{1}; Derseweh, Jeffery A.\textsuperscript{2}; Muzahid, Sowgat\textsuperscript{1}; Charlton, Jane C.\textsuperscript{1}; Ganguly, Rajib\textsuperscript{4}
\textsuperscript{1}The Pennsylvania State University, University Park, PA. \textsuperscript{2}University of Michigan-Flint, Flint, PA.

458.12 A Comparison of the Circumgalactic Medium of Present-Day Dwarf and Milky Way Galaxies using Absorption Line Analysis through Hydrodynamic Cosmological Simulations
Vander Vliet, Jacob R.\textsuperscript{1}; Churchill, Christopher W.\textsuperscript{1}; Trujillo-Gomez, Sebastian\textsuperscript{1}; Klimek, Elizabeth S.\textsuperscript{1}; Klypin, Anatoly A.\textsuperscript{1}
\textsuperscript{1}New Mexico State University, Las Cruces, NM.
458.13 A Statistical Study of Mg II Absorption Selected Galaxies in the SDSS at z~0.4
Curtis, Brittny; Lundgren, Britt
1Ohio State University, Columbus, OH. 2University of Wisconsin-Madison, Madison, WI.

459 The NASA SMD Science Education and Public Outreach Forum
Thursday, 9:00 AM - 2:00 PM; Exhibit Hall ABC

459.01 The NASA SMD Science Education and Public Outreach Forums: Engaging Scientists in NASA Education and Public Outreach
Smith, Denise A.; Peticolas, Laura; Schwerin, Theresa; Shipp, Stephanie
1STScI, Baltimore, MD. 2UC-Berkeley, Berkeley, CA. 3IGES, Arlington, VA. 4LPI, Houston, TX.

459.02 Engaging Scientists in NASA Education and Public Outreach: Tools for Scientist Engagement
Buxner, Sanlyn; Meinke, Bonnie K.; Hsu, Brooke; Shupla, Christine; Grier, Jennifer A.
1Planetary Science Institute, Tucson, AZ. 2STScI, Baltimore, MD. 3Lunar and Planetary Institute, Houston, TX.
Contributing teams: SMD E/PO Community

459.03 Engaging Scientists in NASA Education and Public Outreach: Informal Science Education and Outreach
Lawton, Brandon L.; Smith, Denise A.; Bartolone, Lindsay; Meinke, Bonnie K.
1STScI, Baltimore, MD. 2Adler Planetarium, Chicago, IL.
Contributing teams: Universe Discovery Guides Collaborative, NASAScience 4Girls Collaborative, SEPOF Informal Education Working Group, SMD E/PO Community

459.04 Engaging Scientists in NASA Education and Public Outreach: K - 12 Formal Education
Bartolone, Lindsay; Smith, Denise A.; Eisenhamer, Bonnie; Lawton, Brandon L.
1Adler Planetarium, Chicago, IL. 2Space Telescope Science Institute, Baltimore, MD.
Contributing teams: Multiwavelength Universe Professional Development Collaborative, Use of NASA Data Collaborative, SEPOF K-12 Formal Education Working Group, SMD E/PO Community

459.05 Engaging Scientists in NASA Education and Public Outreach: Higher Education
Meinke, Bonnie K.; Smith, Denise A.; Schultz, Gregory R.; Lawton, Brandon L.; Bianchi, Luciana; Blair, William P.; Buxner, Sanlyn
Contributing teams: SEPOF Higher Education Working Group, SMD E/PO Community
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