All scientific sessions will be held at the:

**Austin Convention Center**

500 East Cesar Chavez Street

Austin, TX 78701-4121

**AAS Paper Sorters**

Tom Armstrong, Blaise Canzian, Thayne Curry, Shantanu Desai, Aaron Evans, Nimish P. Hathi, Jason Jackiewicz, Sebastien Lepine, Kevin Marvel, Karen Masters, J. Allyn Smith, Joseph Tenn, Stephen C. Unwin, Gerritt Vershuur, Joseph C. Weingartner, Lee Anne Willson

**Session Numbering Key**

90s Sunday

100s Monday

200s Tuesday

300s Wednesday

400s Thursday

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

*Please note, posters are only up for the day listed.*

Changes after 7 December 2011 are only included in the online program materials.
AAS Officers & Councilors

President (6/2010-6/2013)  
Debra Elmegreen  Vassar College

Vice President (6/2009-6/2012)  
Lee Anne Willson  Iowa State Univ.

Vice President (6/2010-6/2013)  
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Kevin Marvel  AAS

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Edward F. Guinan  Villanova Univ. (6/2010-6/2013)
Patricia Knezek  NOAO/WIYN Observatory (6/2010-6/2013)
Bruce Balick  Univ. of Washington (6/2011-6/2014)
Angela Speck  Univ. of Missouri (6/2011-6/2014)

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Deputy Press Officer  
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Anonymous Donor in Memory of Colleagues We All Miss

UNDERGRADUATE ORIENTATION SPONSORS
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University of Colorado at Boulder
University of Iowa
University of Kansas
University of Texas, Austin
University of Virginia
University of Wisconsin - Milwaukee
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<tr>
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Attendee Services

For everyone’s protection, please wear your badge at all times during the meeting.

Registration

Atrium
Sunday: 3:00pm-8:00pm
Monday: 7:30am-5:00pm
Tuesday-Wednesday: 8:00am-5:00pm
Thursday: 8:00am-4:00pm

Exhibit Hall

You must have your badge to enter the Exhibit Hall.

Monday-Wednesday: 9:00am-6:30pm
Thursday: 9:00am-2:00pm

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

Posters not removed by closing times will be discarded.

The Exhibit Hall CLOSES at 2:00pm on Thursday.

Exhibit Hall Events

Evening Poster Session with cash bar
Monday-Wednesday, 5:30pm-6:30pm

Poster Session
Thursday, 1:00pm-2:00pm

Speaker Ready Room

Room 11
Sunday: 3:00pm-5:00pm
Monday-Wednesday: 7:30am-4:00pm
Thursday: 7:30am-2:00pm
Cyber Café
Atrium
Monday-Wednesday: 8:00am-6:30pm
Thursday: 8:00am-4:00pm
If there is a line for computers, please limit your time to 15 minutes.
Absolutely no food or drink is permitted in the Cyber Café.

Using Your Own Laptop While At The Meeting
• All devices are required to be running the most up-to-date virus protection and spyware protection.
• No device should be running as a server for offsite clients.
• Absolutely no routers can be attached to the network without prior authorization from the AAS IT Staff.
• The network will be monitored throughout the Meeting and the AAS Staff reserves the right to disconnect any device that is causing network problems.
• Wireless will be available throughout the entire meeting space although some areas may experience limited connectivity. To access the Internet through the AAS wireless network, users will need to connect to any of the AAS access points and log in with the username and password printed on the back of your badge. Please note that the wireless network is not encrypted.

Career Center
Exhibit Hall
Monday-Wednesday: 9:00am-6:00pm
Thursday: 9:00am-1:00pm

Donor Lounge
Room 10C
Attendance by Invitation Only
Monday-Wednesday: 7:30am-5:30pm
Thursday: 7:30am-4:00pm

Concession Stand
Exhibit Hall
Monday-Wednesday: 10:30am-2:30pm
Prize Winners

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 an AAS meeting.

Doxsey Prize Winners

Sarah Ballard
Harvard University (414.06D)

Jonathan C. Bird
Ohio State University (114.03D)

Geoffrey Mathews
University of Hawaii (327.04D)

Ashley Pagnotta
Louisiana State University (418.08D)

Adric R. Riedel
Georgia State University (313.04D)

Barbara Denisse Rojas Ayala
Cornell University & American Museum of Natural History (330.03D)

Sumin Tang
Harvard University (104.04D)

Gail Zasowski
University of Virginia (137.04D)

Doxsey Prize - Runner-up

Antonela Monachesi
University of Michigan (230.05D)

Mubdi Rahman
University of Toronto (137.03D)

Izaskun San Roman
University of Florida (123.04D)

Erik J. Tollerud
University of California, Irvine (201.04D)
A GUIDE TO AAS MEETING 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 obey the “golden rule”: Treat others as you would like them to treat you.
• Do silence all cell phones and other electronic devices with audible alerts.
• Do not hog wireless bandwidth; use the AAS wireless service sparingly.
• Do be quiet during presentations; if you use a computer, do so discreetly.
• 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.
• Do not blog or tweet or otherwise post private conversations online.

General Considerations

It is AAS policy that all participants in Society activities will enjoy an environment free from all forms of discrimination, harassment, and retaliation. As a professional society, the AAS is committed to providing an atmosphere that encourages the free expression and exchange of scientific ideas. The AAS is 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. 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/governance/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, security, and other services, and with professional hotel and convention center staff as well. Meeting attendees are professional scientists, expert at carrying out scientific research and presenting that research at meetings. Accordingly, please be respectful of all meeting staff and contractors, just as they respect you as an attendee and scientist. 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.

Please note that all sessions except those marked “private” by the AAS are open to all registered attendees, including scientists, students, and journalists. All are due the same level of professional respect and courtesy.

Mobile Phones & Related Devices

Cell phones, 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.
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.

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/av_information.php). All oral presentations must be uploaded to the internal network in the Speaker Ready Room. Personal laptops and USB member 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.

But 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 costs the AAS money and increases 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.

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’s on their minds without fear of having an unscripted remark or a partially baked idea zapped into cyberspace. Think of it as common courtesy.”
### Saturday, 7 January 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tr>
<td>8:00am</td>
<td>Exoplanet Exploration Program Analysis Group 5, 8:00am - 5:30pm, Room 9BC</td>
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<tr>
<td>8:00am</td>
<td>CAE/CATS Astro 101 Tier I Teaching Excellence, 8:00am - 5:30pm, Room 17B</td>
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<tr>
<td>9:30am</td>
<td>Getting Started in Astronomy Education Research, 9:30am - 12:30pm, Room 19B</td>
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<tr>
<td>1:00pm</td>
<td>2012 NSF Postdoctoral Fellows Symposium, 1:00pm - 7:00pm, Room 8</td>
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<td>2:00pm</td>
<td>AER Clinic: Robust Qualitative Research Methods, 2:00pm - 5:00pm, Room 19B</td>
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### Sunday, 8 January 2012

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<th>Time</th>
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<tr>
<td>8:00am</td>
<td>AAS Council Meeting, 8:00am - 5:00pm, Room 400, Hilton Austin</td>
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<td>CAE/CATS Tier II Technology Special Topic Workshop, 8:00am - 5:30pm, Room 9A</td>
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<td></td>
<td>CAE/CATS Astro 101 Tier I Teaching Excellence Workshop, 8:00am - 5:30pm, Room 17B</td>
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<td></td>
<td>Exoplanet Exploration Program Analysis Group 5, 8:00am - 5:30pm, Room 9BC</td>
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<td>NSF 2012 Postdoctoral Fellows Symposium, 8:00am - 7:00pm, Room 8</td>
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<td>9:00am</td>
<td>Protecting Our Dark Skies, 9:00am - 4:00pm, Room 12B</td>
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<td>Teaching Every Student: Teaching Diverse Audiences, 9:00am - 4:30pm, Room 19B</td>
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<td>NASA Cosmic Origins Program Analysis Group, 9:00am - 5:00pm, Room 18C</td>
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<td>NASA Physics of the Cosmos Program Analysis Group, 9:00am - 5:00pm, Room 10AB</td>
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<tr>
<td>12:00pm</td>
<td>Science Tools for Data-Intensive Astronomy, 12:00pm - 5:00pm, Room 19A</td>
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<tr>
<td>1:00pm</td>
<td>Structuring your Scientific Paper, 1:00pm - 5:00pm, Room 18A</td>
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<td>Becoming a More Effective Research Mentor for Your Trainees: Undergraduates to Post-docs, 1:00pm - 5:00pm, Room 18B</td>
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<tr>
<td>3:00pm</td>
<td>Registration, 3:00pm - 8:00pm, Registration Desk, Atrium</td>
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<td>Speaker Ready Room, 3:00pm - 5:00pm, Room 11</td>
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<td>4:00pm</td>
<td>91 HAD II: Funding Astronomy in the Post-World War II Era, 4:00pm - 6:00pm, Room 12A</td>
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<td>5:00pm</td>
<td>K-12 Educators Reception, 5:00pm - 7:00pm, Travis Ballroom, Radisson Austin</td>
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<td>6:00pm</td>
<td>Undergraduate Orientation, 6:00pm - 7:00pm, Austin Ballroom, Radisson Austin</td>
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<td>7:00pm</td>
<td>Opening Reception, 7:00pm - 9:30pm, Four Seasons Ballroom, Four Seasons Hotel</td>
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<tr>
<td>9:00am</td>
<td>101 Invited Session: Kavli Lecture, The CMB and Neutrinos, Lyman Page (Princeton), 8:30am - Room 8</td>
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<tr>
<td>10:00am</td>
<td>102 Early-type Galaxies, Room 17B</td>
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<td>10:30am</td>
<td>103 HEAD: Explosive Autopsy: What Do Remnants Tell Us About Core-Collapse Supernovae, Room 18B</td>
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<tr>
<td>11:00am</td>
<td>104 Variable Stars, Room 19B</td>
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<td>11:30am</td>
<td>105 Enhancing Astronomy Research in Hawai'i: Balancing Science and Culture, Room 12B</td>
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<td>12:00pm</td>
<td>106 The LITTLE THINGS Survey, Room 16B</td>
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<td>12:30pm</td>
<td>107 Evolution of Galaxies IX, Room 19A</td>
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<td>1:00pm</td>
<td>108 AGN, QSO, Blazars I, Room 17A</td>
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<td>1:30pm</td>
<td>109 Dark Matter &amp; Dark Energy, Room G</td>
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<td>2:00pm</td>
<td>110 Extrasolar Planets: Habitable Zones, Ballroom F</td>
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<td>2:30pm</td>
<td>111 Evolution of Galaxies I, Room 18C</td>
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<tr>
<td>3:00pm</td>
<td>112 Dark Matter &amp; Dark Energy, Room G</td>
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<td>3:30pm</td>
<td>113 Cyber-Discover and Science for the Decade, Room 18D</td>
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<td>4:00pm</td>
<td>114 HEAD: New Results in High Energy Astrophysics</td>
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<td>4:30pm</td>
<td>115-head: Gamma-Ray Bursts</td>
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## Schedule of Events

### Monday, 9 January 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:00am</td>
<td>Continued Monday, 9 January 2012</td>
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<tr>
<td>11:40am</td>
<td>118 Invited Session: A (Re)introduction to the Milky Way, Robert Benjamin (University of Wisconsin, Whitewater), Room 12A</td>
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<tr>
<td>12:45pm</td>
<td>120 Town Hall: HAD Business Meeting, 12:45pm - 1:45pm, Room 12A</td>
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<tr>
<td>2:00pm</td>
<td>Special Sessions/Oral Sessions - 122 - 137, 2:00pm - 3:30pm</td>
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<tr>
<td>3:40pm</td>
<td>138 Invited Session: The Challenges and Achievements in 50 Years of Human Spaceflight, Steven Hawley (University of Kansas), 3:40pm - 4:30pm, Ballroom D</td>
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<tr>
<td>3:40pm</td>
<td>139 Invited Session: HAD Doggett Prize: Cosmic Noise: The Pioneers of Early Radio Astronomy and Their Discoveries, Woodruff T. Sullivan, III (University of Washington), 3:40pm - 4:30pm, Ballroom D</td>
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<tr>
<td>4:30pm</td>
<td>139 Invited Session: HAD Doggett Prize: Cosmic Noise: The Pioneers of Early Radio Astronomy and Their Discoveries, Woodruff T. Sullivan, III (University of Washington), 4:30pm-5:20pm, Ballroom D</td>
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<tr>
<td>5:30pm</td>
<td>Evening Poster Session, 5:30pm - 8:30pm, Exhibit Hall</td>
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<td>6:00pm</td>
<td>LGBTIQ Networking Dinner, 6:00pm - 8:00pm, Room 410, Hilton Austin</td>
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<td>6:30pm</td>
<td>Penn State Alumni Reception, 6:00pm - 8:00pm, Room 410, Hilton Austin</td>
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<tr>
<td>8:00pm</td>
<td>Public Talk: Big Science in Crisis, Steven Weinberg (University of Texas), 8:00pm-9:00pm, Ballroom D</td>
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<td>Special Sessions/Oral Sessions - 122 - 137, 2:00pm - 3:30pm</td>
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<td>3:40pm</td>
<td>138 Invited Session: The Challenges and Achievements in 50 Years of Human Spaceflight, Steven Hawley (University of Kansas), 3:40pm - 4:30pm, Ballroom D</td>
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<td>3:40pm</td>
<td>139 Invited Session: HAD Doggett Prize: Cosmic Noise: The Pioneers of Early Radio Astronomy and Their Discoveries, Woodruff T. Sullivan, III (University of Washington), 3:40pm - 4:30pm, Ballroom D</td>
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<td>4:30pm</td>
<td>139 Invited Session: HAD Doggett Prize: Cosmic Noise: The Pioneers of Early Radio Astronomy and Their Discoveries, Woodruff T. Sullivan, III (University of Washington), 4:30pm-5:20pm, Ballroom D</td>
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<td>Evening Poster Session, 5:30pm - 8:30pm, Exhibit Hall</td>
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<td>LGBTIQ Networking Dinner, 6:00pm - 8:00pm, Room 410, Hilton Austin</td>
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<td>Penn State Alumni Reception, 6:00pm - 8:00pm, Room 410, Hilton Austin</td>
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<td>Public Talk: Big Science in Crisis, Steven Weinberg (University of Texas), 8:00pm-9:00pm, Ballroom D</td>
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<td>203 Supernovae I</td>
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<td>204 Professional Ethics in Astronomy: An Ongoing Dialogue</td>
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<td>205 How to Build a Milky Way: A Blueprint From the SDSS-III SEGUE</td>
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<td>206 Reports from NASA's Program</td>
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<td>209 AGN, QSO, Blazars II</td>
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<td>210 Education, Outreach, and Citizen Science</td>
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<td>211 White Dwarfs</td>
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<td>212 Cosmic Microwave Background</td>
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<td>213 HEAD III: New Results from the 214 First Science with LOFAR</td>
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<td>214 Extrasolar Planets: Detection</td>
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Continued Tuesday, 10 January 2012

11:40am - 12:30pm    217 Pulsars, Neutron Stars
                      Ballroom E

12:00pm - 12:30pm    218 The Rossi X-ray Timing Explorer: Taking the Pulse of the Universe
                      Room 17B

12:30pm - 1:30pm     219 The BigBOSS Multi-Object Spectrograph on the Mayall Telescope
                      Room 16B

12:30pm - 1:30pm     220 Star Formation II
                      Room 12A

12:30pm - 1:30pm     221 Working in Science Policy
                      Ballroom G

12:45pm - 1:30pm     222 How to Build a Milky Way: A Blueprint From the SDSS-III SEGUE Survey I
                      Room 17B

12:45pm - 1:30pm     223 Galaxy Cluster Masses and Dynamics
                      Room 12B

1:30pm - 2:30pm      224 The Sun, Stellar Atmospheres, and Winds
                      Room 18D

2:00pm - 3:30pm      225 AGN, QSO, Blazars IV
                      Room 17A

2:00pm - 3:30pm      226 HEAD IV: New Results in High Energy Astrophysics
                      Room 18B

2:00pm - 3:30pm      227 Astronomy 101 Teaching & Learning
                      Room 18A

2:00pm - 3:30pm      228 Extrasolar Planets and Brown Dwarfs: Formation, Evolution
                      Ballroom F

2:00pm - 3:30pm      229 Evolution of Galaxies IV
                      Room 19A

3:30pm - 4:30pm      230 Stellar Evolution, Stellar Populations
                      Room 19B

3:40pm - 4:30pm      231 Invited Session: Pierce Prize: Who is Under the HAT? Small Telescopes Yield Big Science, Gasper Babus (Harvard-Smithsonian CFA), 3:40pm - 4:30pm, Ballroom D

3:40pm - 4:30pm      232 Invited Session: Cannon Prize: Weak Lensing - Revealing the Dark Side of the Universe, Rachel Mandelbaum (Princeton University), 11:40am - 12:30am, Room 8

4:30pm - 5:20pm      233 Invited Session: Pierce Prize: Catching Up: Theory in a Decade of Transiting Exoplanets, Dimitar D. Sasselov, (Harvard-Smithsonian CfA), 4:30pm - 5:20pm, Ballroom D

5:30pm - 6:30pm      234 Town Hall: Gemini Town Hall, 12:45pm - 1:45pm, Ballroom F

6:30pm - 7:00pm      "Saving Hubble": Film Screening & Meet the Director, 8:30pm - 10:00pm, Ballroom G

8:00pm - 9:00pm      AAS New Worlds Technology, 6:30pm - 8:00pm, Room 18C

9:00pm - 10:00pm     "Saving Hubble": Film Screening & Meet the Director, 8:30pm - 10:00pm, Ballroom G

10:00am - 11:30am    Student Meet-Up with Nobel Laureate John Mather, 10:00am - 11:30am, Room 8

10:30am - 11:00am    Careers 201: Career Leadership Workshop: Finding Opportunities and Honeing Professional Skills.

3:00pm - 4:00pm      Personal Finance in Turbulent Times, 3:00pm - 4:00pm, Ballroom E

3:00pm - 4:00pm      Superluminous Supernovae, 3:00pm - 4:00pm, Room 8

4:00pm - 5:00pm      "Saving Hubble": Film Screening & Meet the Director, 8:30pm - 10:00pm, Ballroom G
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<td>7:30am</td>
<td>Speaker Ready Room, 7:30am - 4:00pm, Room 11</td>
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<td>Session Chair Breakfast, 7:30am - 8:00am, Room 8</td>
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<td>8:00am</td>
<td>Registration, 8:00am - 5:00pm, Registration Desk, Atrium</td>
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<td>Cyber Café, 8:00am - 6:30pm, Atrium</td>
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<td><strong>300 Invited Session:</strong> Heineman Prize: Exploding Stars and the Accelerating Universe, Robert Kirshner (Harvard-Smithsonian CfA), 8:30am-9:20am, Ballroom D</td>
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<td>Exhibit Hall, 9:00am - 6:30pm</td>
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<td>Career Center, 9:00am - 6:00pm, Exhibit Hall</td>
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<td><strong>Posters, 9:00am-6:30pm, Exhibit Hall</strong></td>
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<td><strong>334 The Solar System</strong></td>
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<td><strong>335 The BigBOSS Multi-Object Spectrograph on the Mayall Telescope</strong></td>
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<td><strong>336 Large Scale Structure, Cosmic Distance Scale</strong></td>
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<td><strong>342 Cosmology and Galaxy Formation From SDSS-III/BOSS</strong></td>
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<td><strong>348 Variable Stars, Cataclysmic Variables and Friends</strong></td>
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<td><strong>Special Sessions/Oral Sessions 301 - 314, 10:00am - 11:30am</strong></td>
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<td><strong>301 The Solar System &amp; Extrasolar Habitable Zones</strong></td>
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<td><strong>303 A Sampling of Herschel's Key Programs: Views of the Milky Way and its Nearby Environments</strong></td>
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<td>Ballroom E (10:00am-11:40am)</td>
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<td></td>
<td><strong>309 ALMA Cycle 0 Early Science and Capabilities for Cycle 1</strong></td>
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<td></td>
<td>Science Room 17B</td>
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<td></td>
<td><strong>310 Gamma Ray Bursts</strong></td>
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<td>Room 18C</td>
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<td></td>
<td><strong>311 Spiral Galaxies: Evolution of Halos, Bars, and Discs</strong></td>
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<td>Room 18B</td>
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<td></td>
<td><strong>312 Cosmology I</strong></td>
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<td>Ballroom D</td>
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### Continued Wednesday, 11 January 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:00am</td>
<td>313 Solar-mass Stars and Smaller Room 19B</td>
</tr>
<tr>
<td>11:40am</td>
<td><strong>315 Invited Session</strong>: Magnetic Fields in the Formation of Stars and Protoplanetary Disks, Susana Lizano (Centro De Radioastronomia y Astrofisica), 11:40am-12:30pm, Ballroom D</td>
</tr>
<tr>
<td>12:45pm</td>
<td>316 Town Hall: NASA Town Hall, 12:45pm - 1:45pm, Ballroom E</td>
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<tr>
<td>2:00pm</td>
<td><strong>Special Sessions/Oral Sessions 318 - 331, 2:00pm - 3:30pm</strong></td>
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<td>318 Energetic Binary Stars I Room 12A</td>
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<td>319 Surveys and Large Programs Room 18A</td>
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<td>320 Dust, the ISM and Associated Topics Room 19B</td>
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<td>321 AGN, QSO, Blazars VI Room 17A</td>
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<td>322 Evolution of Galaxies VI Room 19A</td>
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<td>323 Spiral Galaxies II Room 18B</td>
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<td>324 Cosmology and Galaxy Formation From SDSS-II/BOSS Room 18C</td>
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<td>325 Careers in Media for Scientists Room 18C</td>
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<td>326 Extrasolar Planets I Ballroom F</td>
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<td>327 Very Young Stars and Accretion Disks Ballroom E</td>
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<td>328 Instrumentation: Space Missions Room 17B</td>
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<td>329 Galaxy Evolution in the Cluster Environment Room 16B</td>
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<td>330 Cool Dwarfs, Brown Dwarfs Room 16A</td>
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<td>331 Cosmology II Ballroom D</td>
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<td></td>
<td>Data Analysis for Kepler Science: A Tutorial, 2:00pm - 4:00pm, Room 8</td>
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<td></td>
<td>Astronomers: Teach Climate Change!, 2:00pm - 3:30pm, Room 12B</td>
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<td>Astropix/Astronomy Visualization Metadata, 2:00pm-3:30pm, Room 18D</td>
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<tr>
<td>3:40pm</td>
<td><strong>332 Invited Session</strong>: Galaxy Formation Star-by-Star: the View from the Milky Way, Kathryn V. Johnston (Columbia University) 3:40pm-4:30pm, Ballroom D</td>
</tr>
<tr>
<td>4:30pm</td>
<td><strong>333 Invited Session</strong>: Star Formation in Galaxy Clusters Over the Past 10 Billion Years, Kim-Vy Tran (Texas A&amp;M University) 4:30pm - 5:20pm, Ballroom D</td>
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<tr>
<td>5:30pm</td>
<td>Evening Poster Session, 5:30pm - 6:30pm, Exhibit Hall</td>
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<td></td>
<td>Proposing to Use the NRAO Telescopes: ALMA, 5:30pm - 7:30pm, Room 8</td>
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<tr>
<td>6:00pm</td>
<td>Graduate Student Networking Reception, 6:00pm - 7:00pm, Salon B, Hilton Austin</td>
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<tr>
<td>6:30pm</td>
<td>Closing Reception, 6:30pm - 8:00pm, Grand Ballroom, Hilton Austin</td>
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<tr>
<td>8:00pm</td>
<td>&quot;The City Dark&quot; Film Screening, 8:00pm-9:30pm, Ballroom G</td>
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<tr>
<td>Time</td>
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<tr>
<td>7:30am</td>
<td>Speaker Ready Room, 7:30am - 2:00pm, Room 11</td>
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<td>Session Chair Breakfast, 7:30am - 8:00am, Room 8</td>
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<tr>
<td>8:00am</td>
<td>Registration, 8:00am - 4:00pm, Registration Desk, Atrium</td>
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<td>Cyber Café, 8:00am - 4:00pm, Atrium</td>
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<tr>
<td>8:30am</td>
<td><strong>400 Invited Session:</strong> The Evolving Context for Science and Society, Alan Leshner (AAAS), 8:30am-9:20am, Ballroom D</td>
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<tr>
<td>9:00am</td>
<td>Exhibit Hall, 9:00am - 2:00pm</td>
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<td>Career Center, 9:00am - 1:00pm, Exhibit Hall</td>
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<td></td>
<td><strong>Posters, 9:00am - 2:00pm, Exhibit Hall</strong></td>
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<tr>
<td>422</td>
<td>Instrumentation: Ground Based or Airborne</td>
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<td>423</td>
<td>Science Highlights from NASA's Astrophysics Data Analysis Program</td>
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<td>424</td>
<td>Large Programs: Hobby-Eberly Telescope Dark Energy Experiment</td>
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<td>425</td>
<td>The Wide-field Infrared Survey Explorer (WISE): Science Frontiers and Final Data Release</td>
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<td>426</td>
<td>Intergalactic Medium, QSO Absorption Line Systems</td>
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<td>427</td>
<td>Starburst Galaxies</td>
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<td>428</td>
<td>Surveys and Large Programs</td>
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<td>429</td>
<td>CANDELS Poster</td>
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<td>430</td>
<td>Computation and Data Handling</td>
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<td>431</td>
<td>Education &amp; Outreach</td>
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<td>432</td>
<td>The Sun, The Solar System, and Extrasolar Planets</td>
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<td>433</td>
<td>Binary and Variable Stars</td>
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<td>434</td>
<td>History</td>
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<td>435</td>
<td>AGN, QSOs &amp; Friends</td>
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<td>436</td>
<td>Supernovae &amp; Related Topics</td>
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<td>437</td>
<td>YSOs, the ISM and Other Topics</td>
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<td>438</td>
<td>Star Associations &amp; Clusters</td>
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<td>439</td>
<td>Stellar Topics</td>
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<td>440</td>
<td>Cosmology and Related Topics</td>
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<td>441</td>
<td>Did Someone Say Galaxies?</td>
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<td>442</td>
<td>Black Holes &amp; GRBs</td>
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<td>443</td>
<td>Make Way for Lab Astro!</td>
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<td>444</td>
<td>Star Formation, Dust, Etc.</td>
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<td>445</td>
<td>Milky Way Topics</td>
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<td>446</td>
<td>Surveys &amp; Instrumentation</td>
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<tr>
<td>9:30am</td>
<td>Proposing to Use the NRAO Telescopes: EVLA and VLBA, 9:30am - 11:30am, Room 8</td>
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<td></td>
<td>Connecting Scientists with NASA Astrophysics Education and Public Outreach (E/PO), 9:30am-11:00am, Room 19B</td>
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## Schedule of Events

### Continued Thursday, 12 January 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Special Sessions/Oral Sessions</th>
<th>Room/Location</th>
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<tbody>
<tr>
<td>10:00am</td>
<td><strong>Special Sessions/Oral Sessions 401 - 411, 10:00am - 11:30am</strong></td>
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<tr>
<td>10:00am</td>
<td><strong>401 The Wide-Field Infrared Survey Explorer (WISE): Science Frontiers and Final Data Release</strong></td>
<td>Room 17B</td>
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<td><strong>402 Large Scale Structure</strong></td>
<td>Ballroom G</td>
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<td><strong>403 AGN, QSO, Blazars VII</strong></td>
<td>Room 17A</td>
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<td><strong>404 Circumstellar Disks</strong></td>
<td>Room 12A</td>
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<td><strong>405 Extrasolar Planets II</strong></td>
<td>Ballroom F</td>
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<td><strong>406 Cosmic Assembly Near-IR Deep Extragalactic Legacy Survey (CANDELS) I</strong></td>
<td>Ballroom E</td>
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<td><strong>407 Science Highlights from NASA’s Astrophysics Data Analysis Program I</strong></td>
<td>Room 16B</td>
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<td><strong>408 Energetic Binary Stars II</strong></td>
<td>Room 18C</td>
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<td>10:00am</td>
<td><strong>409 Galactic Centers</strong></td>
<td>Room 16A</td>
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<td><strong>410 Surveys and Large Programs II</strong></td>
<td>Room 18B</td>
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<td><strong>411 Evolution of Galaxies VII</strong></td>
<td>Room 19A</td>
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<tr>
<td>11:40am</td>
<td><strong>412 Invited Session: White Dwarf Stars From the Telescope to the Laboratory and Back Again: Exploring Extreme Physics</strong>, Donald Winget (University of Texas), 11:40am - 12:30pm, Ballroom D</td>
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<tr>
<td>12:45pm</td>
<td>Proposing to Use the NRAO Telescopes: GBT and CASA, 12:45pm - 3:00pm, Room 8</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 Sessions/Oral Sessions 413-419, 2:00pm - 3:30pm</strong></td>
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<td>2:00pm</td>
<td><strong>413 Instrumentation: Ground Based</strong></td>
<td>Room 17B</td>
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<td><strong>414 Kepler Observations of Exoplanets and Systems</strong></td>
<td>Ballroom G</td>
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<td><strong>415 Science Highlights from NASA’s Astrophysics Data Analysis Program II</strong></td>
<td>Room 16B</td>
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<td><strong>416 Starburst Galaxies</strong></td>
<td>Ballroom F</td>
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<td><strong>417 Evolution of Galaxies VIII</strong></td>
<td>Room 19A</td>
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<td><strong>418 Planetary Nebulae, Supernova Remnants and Supernovae</strong></td>
<td>Room 12A</td>
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<td><strong>419 Cosmic Assembly Near-IR Deep Extragalactic Legacy Survey (CANDELS) II</strong></td>
<td>Ballroom E</td>
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<tr>
<td>4:30pm</td>
<td><strong>421 Invited Session: Berkeley Prize: Mapping the Fuel for Star Formation in Early Universe Galaxies</strong>, Linda Tacconi (MPI Fur Extraterr. Physik, Germany), 4:30pm - 5:20pm, Ballroom D</td>
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For more about these titles and media demos, stop by Booth 200 at the American Astronomical Society meeting.
Exoplanet Exploration Program Analysis Group 5
Saturday, 8:00am-5:30pm, Room 9BC

Day 1 of 2

NASA’s Exoplanet Exploration Program Analysis Group (ExoPAG) will hold its fifth meeting on January 7-8, 2012. ExoPAG meetings are always open to the astronomical community, and are an opportunity to learn about the Exoplanet Exploration Program (ExEP), and to participate in discussions of scientific and technical issues in exoplanet exploration. Topics of interest will include plans for a future, space-based, flagship-class, direct imaging mission, along with discussion of possible Probe-class (<$1B) missions that might be proposed in the next decade if money for flagships is not available. The ExoPAG would also like to broaden the discussion to include other ways in which NASA might facilitate exoplanet research over the next few years. To this end, we invite suggestions for topics and/or speakers at our January meeting. Feel free to suggest yourself as a speaker if you have interesting ideas that you would like to share. The meeting will run for two full days, so there should be plenty of time for both presentations and discussion. For more information please visit http://exep.jpl.nasa.gov/exopag/.

Please join us! We look forward to seeing you in Austin!

Organizer
Ozhen Pananyan¹
¹JPL.

CAE/CATS Astro 101 Tier I Teaching Excellence Workshop
Saturday, 8:00am-5:30pm, Room 17B

Day 1 of 2

The overarching goal of this workshop is for participants to become familiar with research-validated active engagement teaching strategies and assessment materials, as well as how to implement them in their college astronomy courses, through role-playing, modeling, practice, and more!

To accomplish this goal, participants in our workshop will learn how to create productive learning environments beginning with a brief review of research on the nature of teaching and learning. Most workshop time will be spent with participants playing the roles of student, instructor, and critical friend to practice implementing active engagement strategies such as interactive lectures, Think-Pair-Share, interactive demonstrations and videos, collaborative groups, Lecture-Tutorials, and Ranking Tasks. The workshop will culminate with participants learning how to put these teaching strategies together into effective learning sequences for the learner-centered classroom.

This workshop is designed for college instructors, post-docs, and graduate and undergraduate students currently teaching astronomy (or who think they will be in the near future).

Presented by Edward Prather¹, Gina Brissenden¹ and Colin Wallace¹ along with Paul Robinson²
¹Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona, ²Westchester Community College

Organizer
Gina Brissenden¹
¹Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona.
Getting Started in Astronomy Education Research

Saturday, 9:30am-12:30pm, Room 19B

AAS's Position Statement on In Support of Research in Astronomy Education strongly advocates that AAS members should be engaged and acknowledged for successfully engaging in astronomy education research and the scholarship of teaching because these efforts serve to improve pedagogical techniques and the evaluation of teaching. However, few AAS members have had the opportunity to pursue formal training in how to meaningfully engage in astronomy education research as an important scholarly endeavor. This participatory workshop for college and university physics and astronomy faculty, post-docs, and graduate students provides an introduction to the motivations, strategies, methodology, and publication routes for improving astronomy education through conducting and publishing rigorous science education research. Participants will evaluate the value of various education research questions, identify strengths and weaknesses of several research design methodologies, be introduced to sociological and behavioral statistics used by education researchers, learn how to obtain Institutional Review Board approval to conduct education research on human subjects, and become more aware of how education research articles are successfully created for publication in journals such as the Astronomy Education Review. This workshop is facilitated by astronomy education researchers and AAS members, Stephanie Slater (CAPER Ctr for Astro & Phys Educ Research), and Tim Slater (U. Wyoming). Additional presenters will be invited to participate and all pre-registered participants will receive a copy of “Conducting Astronomy Education Research: A Primer” and “Discipline-based Education Research: A Scientists Guide.”

Organizer
Timothy F. Slater
University of Wyoming.

2012 NSF Postdoctoral Fellows Symposium

Saturday, 1:00pm-7:00pm, Room 8

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, conducting astronomy research in large collaborations, and making the transition from postdoc to faculty. 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
Eilat Glikman
Yale University.

AER Clinic: Robust Qualitative Research Methods

Saturday, 2:00pm-5:00pm, Room 19B

Although large population statistical studies using surveys and concept inventories can reveal the range and domain of student understanding in astronomy, qualitative research methods are often the best approach for uncovering the underlying cognitive mechanisms students use when learning astronomy. This half-day “Astronomy Education Research (AER)
Clinic” introduces participants to the nature, value, and strategies of interpretative research methodologies. A second-tier workshop for college and university physics and astronomy faculty, post-docs, and graduate students, the participatory, hands-on workshop teaches participants how to conduct systematic and rigorous qualitative research. Participants will practice interpretive techniques using qualitative data from ASTRO 101 students and learn how to prepare their results for publication in refereed journals, such as the Astronomy Education Review. Participants will evaluate the value of various education research questions, identify strengths and weaknesses of several research design methodologies. This workshop is facilitated by astronomy education researchers and AAS members, Stephanie Slater (CAPERCtr for Astro & Phys Educ Research), and Tim Slater (U. Wyoming). Additional presenters will be invited to participate and all pre-registered participants will receive a copy of “Conducting Astronomy Education Research: A Primer” and “Discipline-based Education Research: A Scientists Guide.”

Organizer
Timothy F. Slater1
1University of Wyoming.
**Sunday**

**AAS Council Meeting**
Sunday, 8:00am-5:00pm, Room 400, Hilton Austin

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 those goals.

*Organizer*
Debra M. Elmegreen

1Vassar College.

**CAE/CATS Tier II Technology Special Topic Workshop**
Sunday, 8:00am-5:30pm, Room 9A

Educational research has clearly defined the characteristics of the optimal introductory astronomy classroom one where students are actively engaged in the learning process and frequently receiving timely feedback on their learning progress. This CAE/CATS Tier 2 workshop will explore a variety of technologies that enable instructors to engage students and efficiently provide feedback. Instructors will be trained and provided with curriculum materials from multiple NSF grants on computer simulations, computerized databases of Think-Pair-Share questions, and a library of animated ranking and sorting tasks. All materials will be disseminated through the web before the workshop and attendees will bring their own laptops with the software already installed.

Presented by Kevin Lee (University of Nebraska, Lincoln) and Edward Prather (University of Arizona)

*Organizer*
Gina Brissenden

1Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona.

**CAE/CATS Astro 101 Tier I Teaching Excellence Workshop**
Sunday, 8:00am-5:30pm, Room 17B

Day 2 of 2

The overarching goal of this workshop is for participants to become familiar with research-validated active engagement teaching strategies and assessment materials, as well as how to implement them in their college astronomy courses, through role-playing, modeling, practice, and more!

To accomplish this goal, participants in our workshop will learn how to create productive learning environments beginning with a brief review of research on the nature of teaching and learning. Most workshop time will be spent with participants playing the roles of student, instructor, and critical friend to practice implementing active engagement strategies such as interactive lectures, Think-Pair-Share, interactive demonstrations and videos, collaborative groups, Lecture-Tutorials, and Ranking Tasks. The workshop will culminate with participants learning how to put these teaching strategies together into effective learning sequences for the learner-centered classroom.

28
Weekend Events and Sessions

This workshop is designed for college instructors, post-docs, and graduate and undergraduate students currently teaching astronomy (or who think they will be in the near future).

Presented by Edward Prather¹, Gina Brissenden¹ and Colin Wallace¹ along with Paul Robinson²
¹Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona, Westchester Community College²

Organizer
Gina Brissenden¹
¹Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona.

Exoplanet Exploration Program Analysis Group 5

Sunday, 8:00am-5:30pm, Room 9BC

Day 2 of 2

NASA’s Exoplanet Exploration Program Analysis Group (ExoPAG) will hold its fifth meeting on January 7-8, 2012. ExoPAG meetings are always open to the astronomical community, and are an opportunity to learn about the Exoplanet Exploration Program (ExEP), and to participate in discussions of scientific and technical issues in exoplanet exploration. Topics of interest will include plans for a future, space-based, flagship-class, direct imaging mission, along with discussion of possible Probe-class (<$1B) missions that might be proposed in the next decade if money for flagsips is not available. The ExoPAG would also like to broaden the discussion to include other ways in which NASA might facilitate exoplanet research over the next few years. To this end, we invite suggestions for topics and/or speakers at our January meeting. Feel free to suggest yourself as a speaker if you have interesting ideas that you would like to share. The meeting will run for two full days, so there should be plenty of time for both presentations and discussion. For more information please visit http://exep.jpl.nasa.gov/exopag/.

Please join us! We look forward to seeing you in Austin!

Organizer
Ozhen Pananyan¹
¹JPL.

NSF 2012 Postdoctoral Fellows Symposium

Sunday, 8:00am-7:00pm, Room 8

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, conducting astronomy research in large collaborations, and making the transition from postdoc to faculty. 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
Eilat Glikman¹
¹Yale University.
**Protecting Our Dark Skies**

Sunday, 9:00am-4:00pm, Room 12B

Discover how to preserve dark skies while conserving energy through standards-based, immersive learning experiences illustrating responsible lighting, effects on wildlife, night-sky brightness measurements and more. With 8 out of 10 Americans no longer able to see the Milky Way from where they live, light pollution has limited our access to stargazing. To rescue this natural heritage that has inspired art, literature, music and science for millennia, organizations like the National Optical Astronomy Observatory (NOAO) have created successful outreach programs for their communities. These outreach programs focus on dark skies awareness through using activities to educate college and K-12 students through classroom and evening sessions, holding star parties with amateur astronomers, providing downloadable resource materials online, and holding international citizen science campaigns, photo contests and festivals. Many of the activities address how light pollution affects our lives with respect to issues on energy conservation, wildlife and health, in addition to preserving a dark night sky. The successful citizen-science campaign, GLOBE at Night (www.globeatnight.org), and the Dark Skies Rangers program will beam among the activities highlighted. Dark Skies Rangers activities offer a foundation in understanding how light pollution affects areas of our lives. GLOBE at Night offers the opportunity to use technology to take measurements of the night sky brightness and to follow up with research in areas affected by light pollution. Ways to take night sky brightness data will be demonstrated as well as how groups can participate in the challenge between cities to take transects or a grid of GLOBE at Night data. The workshop will be facilitated by Connie Walker (astronomer, science education specialist and director of GLOBE at Night), other Education and Public Outreach staff at NOAO, expert amateur and professional astronomers, International Dark-Sky Association staff and others with outreach experience in dark skies awareness. We will present activities used, approaches taken, and lessons learned in working with various audiences and how our resources might be shared in sustaining both staff and the community they serve. 

**Organizer**

Constance E. Walker

1NOAO.

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**Teaching Every Student: Teaching Diverse Audiences**

Sunday, 9:00am-4:30pm, Room 19B

ASTRO 101 professors start each new year with increasingly diverse groups of students populating their classrooms. AAS members fully understand the value and importance of having a wide diversity of students who understand and contribute to the scientific enterprise; yet, few AAS members have had the opportunity to learn how to best teach contemporary student audiences in multi-cultural classrooms. Designed for college and university physics and astronomy faculty, post-docs, and graduate students, this full-day workshop uncovers the new challenges of effectively teaching today’s diverse student bodies and provides experiences in using classroom-ready teaching strategies designed to engage all students. Much of the workshop is allocated to introducing scaffolding strategies that teach students to successfully engage in scientific thinking and design astronomy investigations by mining online astronomy databases. Participants in this workshop will learn how to structure effective student learning experiences using online resources such as the JPL's Solar System Simulator and GalaxyZoo portal access to the Sloan Digital Sky Survey and. All participants and will receive copies of classroom-ready and classroom-tested inquiry teaching materials appropriate for a diversity of ASTRO 101 students. Additionally, participants will be shown how to make their own assignments based on the principles of a backwards faded scaffolding approach, developed by faculty at the Center for Astronomy.
Weekend Events and Sessions

& Physics Education Research, CAPER. This workshop is facilitated by astronomy education researchers and AAS members, Stephanie Slater (CAPER Ctr for Astro & Phys Educ Research), Tim Slater (U. Wyoming), and Dan Lyons (University of Chicago). Additional presenters will be invited to participate. The workshop is sponsored by the University of Wyoming Excellence in Higher Education Endowment and participants are encouraged to bring their personal laptop computers.

Organizer
Timothy F. Slater
1University of Wyoming.

NASA Cosmic Origins Program Analysis Group
Sunday, 9:00am-5:00pm, Room 18C

This session is a community meeting of the NASA Cosmic Origins Program Analysis Group (COPAG). The COPAG is responsible for soliciting and coordinating community input into the development and execution of NASA's Cosmic Origins Program (COP). The COPAG serves as a community-based, interdisciplinary forum for analysis in support of Cosmic Origins objectives and of their implications for architecture planning, activity prioritization and for future exploration. It provides findings and analyses to NASA through the NASA Advisory Council (NAC) within which the COPAG Chair is a member of the Astrophysics Subcommittee. We will present a description of the on-going COPAG activities and tasks. We will outline how the COPAG plans to operate in the near future. All interested AAS meeting attendees are encouraged to come and participate and provide their thoughts and suggestions.

Organizer
Mario R. Perez
1NASA.

NASA Physics of the Cosmos Program Analysis Group
Sunday, 9:00am-5:00pm, Room 10AB

NASA's Physics of the Cosmos Program Analysis Group will hold their third community meeting. 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. Discussions will include future x-ray, gravitational wave, and inflation missions as well as the future gamma-ray and cosmic ray experiments. The Technology and Inflation Probe Science Analysis Groups will report on progress within their groups. All interested members of the community are encouraged to participate.

Organizer
Jean Cottam
1NASA's GSFC.

Science Tools for Data-Intensive Astronomy
Sunday, 12:00pm-5:00pm, Room 19A

Full exploitation of the multi-wavelength suite of ground- and space-based telescopes increasingly requires integration and joint analysis of the images, spectra, and catalogs. New time domain observational techniques also require new services and tools for coordinating observations and examining the data. The scale of data is both growing rapidly, and the rate of increase is expected to continue rising. These data-intensive aspects of astronomy were captured in the concept of “cyber-discovery” in the New Worlds, New Horizons Decadal
Weekend Events and Sessions

Survey. Moreover, proposals to both NSF and NASA now require discussion of a “data management plan.”

Session 1 is aimed at research astronomers, in which Virtual Observatory (VO) tools and services will be demonstrated in the context of a range of science use cases and tutorials. These use cases and tutorials will include constructing and modeling spectral energy distributions, cross-matching objects from diverse catalogs, exploration of time series data, and image analysis tools.

Session 2 is “The Virtual Observatory in the Classroom” and is aimed at educators, in which the VO will be illustrated in the context of providing access to astronomical data in the classroom. The VO is well-positioned to teach STEM-based subjects using real astronomical data from more than 30 world-class telescopes. Efforts are already underway to identify secondary school teachers and community college educators in the Austin area regarding this workshop. Participants will have the opportunity to provide feedback, particularly in the EPO sense for standards-based education.

This workshop is organized and sponsored by the Virtual Astronomical Observatory. Financial assistance may be available for those that qualify. Please contact Marie Huffman at mhuffman@aui.edu.

Organizer  
Robert J. Hanisch¹
¹STScI.

Structuring your Scientific Paper

Sunday, 1:00pm-5:00pm, Room 18A

Papers are one of the few deliverables of the work of researchers. Well-designed, they efficiently allow each reader to learn only what he or she needs to. Poorly designed, by contrast, they confuse readers, fail to prompt decisions, or remain unread. This workshop shows how to structure scientific papers, theses, and technical reports effectively at all levels to get the readers’ attention, facilitate navigation, and, in this way, get the message across optimally.

Organizer  
Kelle L. Cruz¹
¹Hunter College/CUNY & AMNH.

Chair  
Jean-Luc Doumont¹
¹Principiae, Belgium.

Becoming a More Effective Research Mentor for Your Trainees: Undergraduates to Post-docs

Sunday, 1:00pm-5:00pm, Room 18B

Whether formal or informal, mentoring relationships are an important part of every scientist’s career. The University of Wisconsin-Madison has developed, field-tested, and publicly released research mentor training materials for several STEM (science, technology, engineering and mathematics) disciplines, including astronomy and physics. The topics of the training seminar cover expectations, communication, independence, diversity, understanding, and ethics. This half day AAS workshop will introduce participants to the mentor training program, plus show them how to obtain and use the free materials for self study or for use in seminars at their institutions. Participants will then delve into three of the seminar’s main topics through case studies. The AAS workshop, like the mentoring seminar itself, will have a strong emphasis on group discussions and will provide time for
personal reflection and short writing activities. The goal is for participants to leave with improved mentoring skills and a good sense of how the mentor training seminar operates. The workshop will include a break after the overview and the first case study discussion, at which point anyone who has time for only an introduction to the seminar can leave at a natural and convenient break point.

Organizer
Kelle L. Cruz
Hunter College/CUNY & AMNH.

Chair
Eric Jon Hooper
Univ. of Wisconsin-Madison.

90 Had I: Transits of Venus: Looking Forward, Looking Back
Sunday, 1:00pm-3:40pm, Room 12A

The June 6, 2012, transit of Venus, completing the pair that began on June 8, 2004, will represent the last chance to observe one of these rare events from Earth until the next pair, December 11, 2117, and December 8, 2125. This year’s transit will be extremely advantageous as almost all the most populated areas of the Earth will be able to see at least some of the transit: the only land masses from which no part of the transit will be visible are the western Iberian peninsula, the western part of Africa, the eastern part of Southamerica, and Antarctica.

We invite presentations on both important historical aspects of the transits of Venus and modern applications. From a historical point of view, the occasion is of importance in providing a point of departure for a reconsideration of the singular importance of the transits in the history of astronomy and in the geographical exploration of the Earth, which led to massive preparations and far flung expeditions in the eighteenth century in pursuit of the Halleyan project of determining the solar parallax. The nineteenth-century transits also played out against a background rivalries among the great European world empires (England, Russia, France, and the U.S.) then at their height and then sliding imperceptibly but inexorably toward the Great War. The 2012 transit offers an opportunity to revisit the important expeditions of the past—many of which have been catalogued and some noted by markers or restored—and to engage in "experimental archaeology," the reconstruction of past observations, including of the Black Drop and luminous aureole, about which it was and is often mistakenly stated that, particularly for the earliest observations, it is produced by refraction by the atmosphere of Venus. Possible observations of special historical interest in 2012 could include some using historical instruments and techniques or observing from the same locations as earlier observers. But far from being an entirely retrospective exercise, the history of transit observations defines critical problems to be addressed by modern high-resolution observations from Earth and space. These include the detailed profiling of the atmosphere of Venus with ground-based and space-based observations (from satellites meant to study the Sun) and the study of a local analogue to exoplanet transits across their parent stars, the focus of many contemporary astrophysical investigations and space missions whose key astrophysical goals are to understand the prevalence and structure of planetary systems very different from our own solar system. In short, though often said to be of strictly historical interest owing to the fact that the Halleyan solar parallax method has long since been superseded, transits of Venus continue to be of great importance to astronomers and astrophysicists working at the cutting edge of important problems of our own day. See http://www.transitofvenus.info and http://www.transitofvenus.org.

90.00C Chair
Jay M. Pasachoff
Williams College.
Weekend Events and Sessions

90.01 Transits Of Venus: 1639, 1761, 1769, 1874, 1882, 2004, And 2012
Jay M. Pasachoff
1Williams College.

90.02 Astronomers, Transits of Venus, and the Birth of Experimental Psychology
William Sheehan1, S. Thurber
1Child and Adolescent Behavioral Health Services.

90.03 Australians andamericans: Observing the 1874 Transit Down Under
Nick Lomb
1Powerhouse Museum, Australia.

90.04 Transit of Venus Culture: A Celestial Phenomenon Intrigues the Public
Chuck Bueter
1TransitOfVenus.org.

91 HAD II: Funding Astronomy in the Post-World War II Era
Sunday, 4:00pm-6:00pm, Room 12A
Thanks to the establishment of the National Science Foundation and the National Aeronautics and Space Administration in the United States, and various agencies in Europe and Asia, there has been a massive influx of government funds into national and international astronomy during the last sixty-five years. At the same time, traditional sources of support, such as the Carnegie Institution of Washington, have continued to find their own niches in the new world of patronage. This session will explore the impact of the new patterns of patronage on astronomy in the United States and elsewhere.

91.00C Chair Marc Rothenberg
1NSF.

91.01 Funding for Research in Astronomy Within and Beyond Japan Since WW II
Sharon Traweek
1UCLA.

91.02 The Transformation of an Astronomical Institution
David H. DeVorkin
1Smithsonian Inst.

91.03 European Astronomy in the Age of Space Research, 1964-1970
Arturo Russo
1University of Palermo, Italy.

91.04 The National Science Foundation Revolutionizesamerican Astronomy, 1950-1975
Marc Rothenberg
1NSF.

91.05 Development of Infrared Astronomy
George Rieke
1Univ. of Arizona.

K-12 Educators Reception
Sunday, 5:00pm-7:00pm, Travis Ballroom, Radisson Austin
This session is for K-12 Educators from the area. This purpose is to give them access to scientist and engineers in the fields of astronomy and heliophysics to support K-12 education in these fields. At the reception, teachers will have a chance to be exposed to background scientific content related the latest discoveries, mingle with astronomers and
other education professionals, and will take home resources (and new connections) to use in their classrooms.

**Organizer**

Jacob Noel-Storr

1Rochester Inst. Of Technology.

### Undergraduate Orientation Reception

Sunday, 6:00pm-7:00pm, Austin Ballroom, Radisson Austin

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.

### Opening Reception

Sunday, 7:00pm-9:30pm, Four Seasons Ballroom, Four Seasons Hotel

Open to all attendees, the Opening Reception kicks off the 219th meeting of the American Astronomical Society.
Monday Sessions and Events

Monday

Invited Session 100 Welcoming Address
Monday, 8:00am-8:30am, Ballroom D

Chair
Debra M. Elmegreen
1Vassar College.

Careers 101: Career Planning Workshop for Graduate Students and Postdocs
Monday, 8:00am-10:00am, Room 9BC

This workshop will focus 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 and investigate the shortage of traditional astronomy jobs, and how early-career scientists can best prepare for this challenge. Our focus will be on career planning for traditional astronomy positions. We will demonstrate how to orchestrate a personal career plan and develop a Plan B and Plan C for contingencies. 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. Representatives from some of the major Postdoc Fellowship Programs will contribute to the session. Q and A with workshop participants will be highly encouraged.


This workshop is offered in conjunction with Careers 201: Career Leadership Workshop. Participants will benefit from attending both, but can also take each independently.

Organizer
Alaina Levine
1Quantum Success Solutions.

Invited Session 101 Kavli Lecture: The CMB and Neutrinos
Monday, 8:30am-9:20am, Ballroom D

Kavli Lecture

The Kavli Lecture is awarded by the American Astronomical Society to Lyman Page for his leadership role as instrument scientist on WMAP whose accurate measurements of the Cosmic Microwave Background constrained fundamental cosmological parameters, including the geometry, age and composition of the Universe, opening the era of precision cosmology.

Chair
Debra M. Elmegreen
1Vassar College.

100.01 The CMB and Neutrinos
Lyman Page
1Princeton.
Making SN 2011fe the Best-Understood SN Ia Ever

Monday, 9:30am-11:30am, Room 8

The Type Ia supernova SN 2011fe (PTF11kly) in M101 is the nearest such event to be discovered in decades. Its prompt announcement by the Palomar Transient Factory, mere hours after explosion, enabled rapid response by the world’s SN-observing community. We can expect SN 2011fe to become the most well-observed Type Ia SN for some time, with a complete portfolio of both ground- and space-based data, covering the entire electromagnetic spectrum. The existence of deep archival observations covering the explosion site in M101 represents a magnificent opportunity to place constraints on the progenitor systems of Type Ia SNe. The purpose of this splinter meeting is to further the goal of making SN 2011fe the most well-understood Type Ia SN ever. We invite all observers and theorists with an interest in Type Ia SNe to attend, to discuss observations obtained so far, and to make conjecture about the implications of the entire body of observations. We hope to spark new collaborative discussions that maximize the science return on SN 2011fe as quickly as possible.

Organizer
Rollin Thomas
LBNL.

102 Early-type Galaxies

Monday, 10:00am-11:30am, Room 17B

102.00C Chair
Laurence P. David
Harvard Smithsonian Center for Astrophysics.

102.01 Probing Minor-merger-driven Star Formation In Early-type Galaxies Using Spatially-resolved Spectro-photometric Studies
Imperial College London and University of Oxford, United Kingdom, University of Oxford, United Kingdom, Johns Hopkins University, University of Virginia, Space Telescope Science Institute, Arizona State University.

102.02 The UV Upturn In Elliptical Galaxies And Environmental Effects
Sukyoung Yi, J. Lee, Y. Sheen, H. Jeong, H. Suh, K. Oh
Yonsei Univ., Korea, Republic of, KASI, Korea, Republic of.

102.03 Detection of Ongoing, Low-Level Star Formation in Nearby Ellipticals
Alyson Ford, J. N. Bregman
University of Michigan.

102.04D Who Said Red And Dead? A Gas Menagerie In Local Early-type Galaxies
UC, Berkeley, European Southern Observatory, Germany, New Mexico Tech, NRAO, Oxford University, United Kingdom, Gemini Observatory.

102.05D Elliptical Galaxy Kinematics and Dark Matter Halos with VIRUS-P
Jeremy Murphy, K. Gebhardt, J. E. Greene, G. Graves
University of Texas, Austin, Princeton, University of California, Berkeley.
Monday Sessions and Events

102.06  A Multi Wavelength Survey of Early-Type Galaxies
Yuanyuan Su¹, J. Irwin¹
¹University of Alabama.

102.07  Carnegie-Irvine Galaxy Survey: Structure of Nearby Elliptical Galaxies from 2-Dimensional Image Decomposition
Song Huang¹, L. C. Ho¹, C. Y. Peng¹, Z. Y. Li², A. J. Barth³
¹Carnegie Observatories, ²Shanghai Observatory, China, ³University of California, Irvine.

103 HEAD: Explosive Autopsy: What Do Remnants Tell Us About Core-Collapse Supernovae?
Monday, 10:00am-11:30am, Room 18B

The process by which massive stars transition from a gravitational collapse of the stellar core to a supernova explosion is now understood to be an inherently multidimensional phenomenon. Numerical simulations now consistently show that the shock wave emanating from the collapsed core is no longer spherical. Moreover, the interaction of this aspherical shock with the stellar envelope introduces even more dynamical instability, resulting in large-scale inhomogeneities within the ejecta thrown out by the explosion. Such inhomogeneities are very difficult to study in supernovae themselves, but become accessible to observation hundreds to thousands of years later, in supernova remnants. As our understanding of the core-collapse mechanism has advanced, so have our observational capabilities: X-ray imaging and spectroscopy of remnants of core-collapse supernovae can now provide a detailed look at the spatial distribution, composition, and dynamics of the ejected material. This session aims to bring these two advancing fields together in search of one cohesive theory of core-collapse supernovae. Do the structure, composition, and macroscopic mixing predicted by supernova simulations match the observations of young core-collapse remnants like Cassiopeia A?

103.00C  Chair
John M. Blondin¹
¹North Carolina State Univ

103.01  Investigating the Deaths of Massive Stars
William R. Hix¹
¹Oak Ridge National Laboratory.

103.02  The First Three Months of a Core Collapse Supernova: Multidimensional Hydrodynamic Models
Tomasz Plewa¹, A. Gawryszczak², K. Kifonidis³, A. Odrzywolek⁴
¹Florida State University, ²Nicolaus Copernicus Astronomical Center, Poland, ³MPA, Germany, ⁴Jagiellonian University, Poland.

103.03  A Mass and Density Estimate for the Unshocked Ejecta in Cas A based on Low Frequency Radio Data
Tracey DeLaney¹, N. Kassim², L. Rudnick³, K. Isensee³
¹West Virginia Wesleyan College, ²Naval Research Laboratory, ³University of Minnesota.

103.04  Clues to Core-Collapse Supernovae from their Remnants
Una Hwang¹
¹NASA's GSFC.

104 Variable Stars
Monday, 10:00am-11:30am, Room 19B

104.00C  Chair
Edward F. Guinan¹
¹Villanova Univ
104.01  **Starspot Imaging Using Kepler Photometry**
*Rachael M. Roettenbacher*, M. Still, R. O. Harmon, T. Barclay

1*University of Michigan, 2*NASA Ames Research Center, 3*Ohio Wesleyan University.

104.02  **Asteroseismology Of The Kepler DBV - It's a Hot One!**
*Agnes Kim*, R. Ostensen

1*Georgia College & State University, 2*Instituut voor Sterrenkunde, K.U. Leuven, Belgium.

104.03D  **White-Light Continuum Emission in M Dwarf Flares**
*Adam Kowalski*, S. L. Hawley

1*University of Washington.

104.04D  **Exploring the Long-term and Extreme Variability of Stars**
*Sumin Tang*

1*Harvard University.

104.05  **Optical Through Mid-infrared Period-luminosity Relations Of RR Lyrae Stars**
*Christopher R. Klein*, J. W. Richards, N. R. Butler, J. S. Bloom

1*UC Berkeley Astronomy Department, 2*UC Berkeley Statistics Department, 3*Arizona State University School Of Earth and Space Exploration.

104.06D  **Phurbas: An Adaptive, Lagrangian, Meshless, Parallel, Magnetohydrodynamics Code**
*Colin McNally*, J. L. Maron, M. Mac Low

1*AMNH / Columbia U., 2*AMNH.

### 105 Enhancing Astronomy Research in Hawai’i: Balancing Science and Culture

**Monday, 10:00am-11:30am, Room 12B**

AAS’s Position Statement “On Women, Under-Represented Groups and the Baltimore Charter,” states that the AAS is committed to addressing issues of attitude and procedure that negatively impact any group. This position has direct implications to the continued use of indigenous people’s sacred sites as crucial resources to the astronomy community. The ongoing evolution of astronomy in the cultural context of the Hawaiian islands provides an opportunity to reformulate the conflict between science and culture, into a relationship that is mutually beneficial and respectful. The restoration of balance in Hawai’i places astronomy in a position of being able to do better science, while providing guidance for more effective observatory management in other locations. This 90 minute session will provide AAS members with an update of promising practices for conducting astronomy in culturally diverse regions. Experts representing the perspectives of Hawaiian scientific and cultural entities will describe the current and future potential of astronomy science and astronomy education, cultural practices, and workforce development activities in Hawaii.

Using a non-traditional format, this session engages participants in a unique combination of presentations by invited speakers. As such, attendees need to be aware that the “talks” for this session will not follow the standard time allocations, with some presentations being allocated more time while others taking less. Participants are encouraged to stay the entire session rather than “come and go.” Immediately following the session, presenters and participants will continue the discussion in a nearby location announced during the final session.

105.00C  **Chair**
*Stephanie J. Slater*

1*University of Wyoming.
Monday Sessions and Events

105.01 New Opportunities for Astronomy in Hawaii
Guenther Hasinger
1University of Hawaii.

105.02 The Future of Astronomy Research at the Maunakea Observatories
Scott Fisher1, R. Tseng2
1Gemini Observatory, 2University of Hawaii - Hilo.

105.03 Challenges and Opportunities in Developing the Hawaiian Scientific and Technical Workforce
James R. Kennedy
1County of Hawaii Workforce Investment Board.

105.04 Lenses for Seeing Astronomy in Hawaii
Lehua M. Veincent
1Department of Education, State of Hawaii.

105.05 Evolving Perspectives on Astronomy Education and Public Outreach in Hawai‘i
Ka‘iu Kimura1, T. Slater2, J. Hamilton3, V. Takata4
1‘Imiloa Astronomy Center, 2Center for Astronomy & Physics Education Research, 3University of Hawai‘i, 4Department of Education, State of Hawaii.

105.06 Upgrading Our EPO Through Focused Astronomy Education Research
Stephanie J. Slater1, A. Dye2
1University of Wyoming, 2‘Imiloa Astronomy Center.

105.07 Astronomy in Hawai‘i is Where the Ocean Meets the Mountain
Kalepa Babayan
1‘Imiloa Astronomy Center.

106 The LITTLE THINGS Survey
Monday, 10:00am-11:30am, Room 16B

Dwarf irregular galaxies are the closest analogs in the nearby universe to the low mass dark matter haloes that formed after the Big Bang, and, in the LambdaCDM model, it is in these entities that the first stars formed. Yet, we do not understand the processes that lead to star formation on galactic scales even in nearby dwarfs, the simplest, most pristine local environments. To address the question of what drives star formation in dwarf galaxies, we have assembled a complete dataset on a large sample of relatively normal, nearby gas-rich dwarf galaxies, tracing their stellar populations, gas content, dynamics, and star formation indicators. We are using these data to test and modify star formation models. This project is called LITTLE THINGS (http://www.lowell.edu/users/dah/littlethings/index.html), and it brings together deep, high spatial and high spectral resolution HI-line maps with optical, UV, and IR data of 41 dIm galaxies covering nearly the full range of galactic parameters seen in dwarf galaxies. In this Session we describe the LITTLE THINGS HI data, which are being made available to the public in January 2012, and present some first scientific results. We also present results from the complementary program VLA-ANGST and from the theoretical perspective.

We gratefully acknowledge Large Proposal status at the VLA and funding from the National Science Foundation with grants to DAH (AST-0707563), BGE (AST-0707426), CES (AST-0707468), and LMY (AST-0707835).

106.00C Chair
Bruce Elmegreen
1IBM Research Div
106.01 The LITTLE THINGS Survey
Deidre Ann Hunter¹, LITTLE THINGS Team
¹Lowell Obs

106.02 Star Formation Laws in LITTLE THINGS Dwarfs: The Case of DDO133 and DDO168
Dana Ficut-Vicas¹
¹University of Hertfordshire, United Kingdom.

106.03 High-resolution Rotation Curves And Mass Models Of Little Things
Se-Heon Oh¹
¹University of Western Australia, Australia.

106.04 NGC 1569 stellar and gas kinematics
Megan C. Johnson¹
¹NRAO.

106.05 Stellar Surface Brightness Profiles of Dwarf Galaxies
Kimberly A. Herrmann¹, LITTLE THINGS team
¹Lowell Observatory.

106.06 The Growth of the Stellar Disks of Dwarf Irregular Galaxies
Hongxin Zhang¹
¹Lowell Observatory.

106.07 VLA-ANGST: The Influence of Stellar Populations on the HI Shapes and Gas Dynamics in Galaxies
Juergen Ott¹, A. Stilp², S. Warren³, E. Skillman³, J. Dalcanton⁴, F. Walter⁴, E. de Blok⁵
¹NRAO, ²University of Washington, ³University of Minnesota, ⁴Max-Planck-Institut fuer Astronomie, Germany, ⁵University of Cape Town, South Africa.

106.08 How Outflows Turn Cusps into Cores, or How Cold Dark Matter is the Worst Model of Galaxy Formation, Except for all the Others
Fabio Governato¹
¹University of Washington.

107 Evolution of Galaxies IX
Monday, 10:00am-11:30am, Room 19A

107.00C Chair
James D. Lowenthal¹
¹Smith College.

107.01 Impact Of Stellar And Non-stellar Feedback On Intermediate-sized Galaxies
Inamr Cosmological Simulations
Taysun Kimm¹, J. Devriendt², A. Slyz¹, Y. Dobois¹
¹Oxford University, United Kingdom.

107.02D The Formation And Evolution Of Massive Galaxies And Their Supermassive Black Holes Over The Past 12 Billion Years
Asa Bluck¹, C. J. Conselice², GNS Group
¹Gemini Observatory, ²University of Nottingham, United Kingdom.

107.03 A Systematic Approach to the Discoveries of Dual Supermassive Black Holes
Julia M. Comerford¹
¹The University of Texas.
107.04 Evidence for Gas Accretion into Distant Massive Galaxies from the GOODS NICMOS Survey
Christopher Conselice¹, A. Mortlock¹, A. F. L. Bluck²
¹Univ. of Nottingham, United Kingdom, ²Gemini Observatory.

107.05 Supermassive Black Hole Mass and Spiral Galaxy Pitch Angle at Intermediate to High Redshift
John A. Hughes¹, R. S. Barrows¹, J. C. Berrier³, B. L. Davis¹, D. Kennefick², J. D. Kennefick², C. H. S. Lacy¹, M. S. Seigar³, D. W. Shields², K. A. Zoldak¹
¹University of Arkansas, Arkansas Center for Space and Planetary Sciences, ²University of Arkansas, Department of Physics, Arkansas Center for Space and Planetary Sciences, ³University of Arkansas at Little Rock, Department of Physics, Arkansas Center for Space and Planetary Sciences.

107.06D Hα Star Formation Rates of IRAC-selected Clusters in the Early Universe
Gregory Zeimann¹, S. A. Stanford¹, R. H. Becker¹, M. Brodwin², A. H. Gonzalez³, D. Stern⁴, A. Dey⁵, P. Eisenhardt⁶
¹UC Davis, ²University of Missouri, ³University of Florida, ⁴JPL/Caltech, ⁵NOAO.

107.07 Ground-based Submm/mm Follow-up Observations For Wise Selected Hyper-luminous Galaxies
Jingwen Wu¹, C. Tsai², D. Benford³, C. Bridge⁴, P. Eisenhardt¹, A. Blain⁵, J. Sayers¹, S. Petty⁶, WISE team
¹Jet Propulsion Laboratory, ²IPAC, ³GSFC, ⁴Caltech, ⁵U. Leicester, United Kingdom, ⁶UCLA.

108 Exciting Astrophysics: Supernovae, Relativistic Astrophysics and Other Results I
Monday, 10:00am-11:30am, Room 16A

108.00C Chair
Robert J. Nemiroff¹
¹Michigan Technological Univ

108.01 Self-Calibration Technique for 3-point Intrinsic Alignment Correlations in Weak Lensing Surveys
Michael A. Troxel¹, M. Ishak¹
¹University of Texas at Dallas.

108.02 A New Microlensing Event in the Doubly-Imaged Quasar Q0957+561?
Laura J. Hainline¹, C. W. Morgan¹, C. S. Kochanek², H. C. Harris³, R. Fadely⁴, E. E. Falco⁵, T. Tilleman³
¹U. S. Naval Academy, ²Ohio State University, ³U. S. Naval Observatory, Flagstaff Station, ⁴Haverford College, ⁵Harvard-Smithsonian Center for Astrophysics.

108.03 Pulsar Timing Arrays: No longer a blunt instrument for Gravitational Wave Detection
Andrea N. Lommen¹
¹Franklin and Marshall College.

108.04 Searches for Continuous Gravitational Waves from Spinning Neutron Stars with the LIGO and Virgo Detectors
Keith Riles¹, LIGO Scientific Collaboration, Virgo Collaboration
¹University of Michigan.
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<th>Session</th>
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<td>The Galactic Compact-binary Population As Target And Noise Source For Low-frequency Gravitational-wave Astronomy</td>
<td>Michele Vallisneri¹, S. Nissanke¹, T. A. Prince², G. Nelemans³</td>
<td>¹Jet Propulsion Laboratory, ²California Institute of Technology, ³Radboud University, Netherlands.</td>
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<td>108.06</td>
<td>The Rate of Core Collapse Supernovae in Galaxy Clusters</td>
<td>Melissa Graham¹, D. J. Sand¹, C. Bildfell¹, D. Zaritsky¹, C. Pritchë², H. Hoekstra⁴</td>
<td>¹LCOGT/UCSB, ²University of Victoria, Canada, ³Steward Observatory, ⁴Leiden Observatory, Netherlands.</td>
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<td>108.07</td>
<td>Role of Magnetic Fields in Type Ia Supernovae</td>
<td>Robert Penney¹, P. Hoeflich¹</td>
<td>¹Florida State University.</td>
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<td>108.08</td>
<td>The Type Ia Supernova Rate in z~0.1 Galaxy Clusters From the Multi-Epoch Nearby Cluster Survey (MENeaCS)</td>
<td>David J. Sand¹, M. Graham¹</td>
<td>¹UC Santa Barbara.</td>
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109 AGN, QSO, Blazars I

Monday, 10:00am-11:30am, Room 17A

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<th>Session</th>
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<td>109.00C</td>
<td>Chair</td>
<td>Eilat Glikman¹</td>
<td>¹Yale University.</td>
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<td>109.01</td>
<td>Morphology And Structure Of Agn Host Galaxies At z ~ 2</td>
<td>Dale Kocevski¹, S. Faber¹, K. Nandra², J. Trump¹, D. Koo¹, A. Koekemoer³</td>
<td>¹University of California, Santa Cruz, ²Max Planck Institute for Extraterrestrial Physics, Germany, ³Space Telescope Science Institute.</td>
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<td>109.02</td>
<td>A Detailed Study of Low Eddington Ratio AGN</td>
<td>Laura Trouille¹, R. Hickox²</td>
<td>¹Northwestern University CIERA Postdoctoral Fellow, ²Dartmouth College.</td>
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<td>109.03D</td>
<td>Quasar Variability - Selection of and Physics in Quasars</td>
<td>Kasper B. Schmidt¹, H. Rix¹</td>
<td>¹Max Planck Institute for Astronomy (MPIA), Germany.</td>
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<td>109.04</td>
<td>Exploratory X-ray Monitoring of High Redshift Radio-Quiet Quasars</td>
<td>Ohad Shemmer¹, W. N. Brandt², R. R. Gibson³, S. Kaspi⁴, D. P. Schneider⁴, C. Vignali⁵</td>
<td>¹University of North Texas, ²The Pennsylvania State University, ³University of Washington, ⁴Tel-Aviv University, Israel, ⁵University of Bologna, Italy.</td>
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<td>109.05</td>
<td>The Two-Component Radio Luminosity Function of QSOs: Star Formation and AGNs</td>
<td>Amy E. Kimball¹, K. I. Kellermann¹, J. J. Condon¹, Z. Ivezic², R. A. Perley¹</td>
<td>¹NRAO, ²University of Washington.</td>
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<td>109.06</td>
<td>The Evolution and Radio Luminosity Function of of Radio Quiet AGN</td>
<td>Kenneth I. Kellermann¹, P. Padovani¹, N. Miller³, A. Kimball¹, CDFS Group, EVLAQUASAR Group</td>
<td>¹NRAO, ²ESO, Germany, ³University of Md</td>
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<td>109.07D</td>
<td>Variability Constraints on Quasar Broad Absorption Line Outflows</td>
<td>Daniel M. Capellupo¹, F. Hamann¹, J. C. Shields¹, T. A. Barlow², J. P. Halpern⁴, P. Rodriguez Hidalgo⁵</td>
<td>¹University of Florida, ²Ohio University, ³California Institute of Technology, ⁴Columbia University, ⁵Pennsylvania State University.</td>
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Monday Sessions and Events

110 Extrasolar Planets: Habitable Zones
Monday, 10:00am-11:30am, Ballroom F

110.00C Chair
Lisa Kaltenegger1
1Harvard University, CfA.

110.01 Eta-Sub-Earth Projection from Kepler Data
Wesley A. Traub1
1Jet Propulsion Laboratory.

110.02D Characterization of Exoplanet Atmospheres and Kepler Planet Candidates with Multi-Color Photometry from the Gran Telescopio Canarias
Knicoile Colon1, E. B. Ford1
1University of Florida.

110.03 On The Existence Of Earth-like Planets In The Circumbinary System Kepler-16
Billy L. Quarles1, Z. E. Musielak1, M. Cuntz1
1UTA.

110.04 Constraining the Mass, Age, and Orbital Architecture of HR 8799 Planetary System
Nader Haghighipour1, J. Sudol2
1Univ. of Hawaii, 2West Chester University.

110.05 The GJ 876 System: Fundamental Stellar Parameters and Planets in the Habitable Zone
1Caltech, 2Georgia State University, 3Bordeaux, France, 4Lowell, 5CSIC-IEEC, Spain, 6CHARA Array, 7NOAO.

110.06 55 Cancri: A Coplanar Planetary System that is Likely Misaligned with its Star
Nathan A. Kaib1, S. N. Raymond2, M. J. Duncan1
1Queen's University, Canada, 2Universite de Bordeaux, France.

110.07 Orbital Motion Of HR 8799 b, c, d Using Hubble Space Telescope Data From 1998: Constraints On Inclination, Eccentricity And Stability
Remi Soummer1, J. B. Hagan1, L. Pueyo1, A. Thomman2, A. Rajan1, C. Marois3
1Space Telescope Science Institute, 2Johns Hopkins University, 3NRC Herzberg Institute of Astrophysics, Canada.

110.08 Studying Photometric Orbital Modulations Of Kepler Objects Of Interest
Avi Shporer1, B. J. Fulton2, Kepler team
1University of California, Santa Barbara, 2Las Cumbres Observatory Global Telescope.

111 Evolution of Galaxies I
Monday, 10:00am-11:30am, Room 18C

111.00C Chair
Marshall L. McCall1
1York Univ., Canada.

111.01 Lyman Alpha Emission Line Profile From Local Star-forming Galaxies
Claudia Scarlata1
1University of Minnesota.
Monday Sessions and Events

111.02 The Kinematics of Multiple-Peaked Lyα Emission in Star-Forming Galaxies at z ~ 2 − 3
Kristin Kulas1, A. E. Shapley1, J. A. Kollmeier2, Z. Zheng3, C. C. Steidel4, K. N. Hainline1
1UC Los Angeles, 2Observatories of the Carnegie Institution of Washington, 3Yale Center for Astronomy and Astrophysics, 4California Institute of Technology.

111.03D Stellar Populations And Galactic Outflows At z ~ 3
Emily McLinden1, J. E. Rhoads1, S. Malhotra1, S. L. Finkelstein2, P. Hibon3, M. L. A. Richardson1
1Arizona State University, 2University of Texas, 3Gemini, Chile.

111.04 Dynamical and Stellar Masses of Lyman-alpha Galaxies
James E. Rhoads1, S. Malhotra1, E. McLinden1, M. L. Richardson1, S. L. Finkelstein2, V. S. Tilvi3
1Arizona State Univ., 2University of Texas, 3Texas A&M University.

111.05D The Ultraviolet Spectra of Lyman Break Galaxies at z ~ 4
Tucker Jones1, D. Stark2, R. Ellis1
1California Institute of Technology, 2University of Arizona.

111.06 Lyman-alpha Emitters At Redshift Z~4.5 In The Extended CDF-S Region: Luminosity Functions, Clustering And Lyman-alpha EW Distribution.
Zhenya Zheng1, S. Malhotra1, J. Rhoads1, J. Wang1, S. Finkelstein1, V. Tilvi1, K. Finkelstein3
1Arizona State University, 2University of Science and Technology of China, China, 3Texas A&M University.

111.07 X-ray Study of Galaxy Evolution from Infancy to Mid-Life: What the Deepest X-ray Stacking of 1<z<4 Star-forming Galaxies Reveals
Antara Basu-Zych1, B. Lehmer2, A. Hornschemeier1, R. Bouwens3, N. Brandt4, P. Oesch5
1Goddard Space Flight Center, 2Johns Hopkins University, 3Leiden, Netherlands, 4Penn State University, 5UC Santa Cruz.

112 Dark Matter & Dark Energy
Monday, 10:00am-11:30am, Ballroom G

112.00C Chair
Nicholas B. Suntzeff1
1Texas A&M University.

112.01 WITHDRAWN: Dark Matter Dynamics
Phillip Zukin1, E. Bertschinger1
1MIT.

112.02 Astronomical Constraints on Quantum Cold Dark Matter
Shane Spivey1, Z. Musielak1, J. Fry1
1University of Texas at Arlington.

112.03 Dark Matter Annihilation and the Origin of Synchrotron Radio Emission from the Galactic Center Filaments
Farhad Yusef-Zadeh1, T. Linden2, D. Hooper3
1Northwestern Univ., 2UC Santa Cruz, 3Fermilab.

112.04 Is Dark Matter a purely Geometric Effect Within the Einstein Equations?
Harry I. Ringermacher1, L. R. Mead2
1General Electric Research Ctr., 2Dept. of Physics, University of Southern Mississippi.
Monday Sessions and Events

112.05D  Simulating Error in Cluster Weak Lensing Tomography
         Kellen J. Murphy¹
         ¹Ohio University.

112.06  ISiTGR: A Software Package for Testing General Relativity at Cosmological Scales.
        Jason Dossett¹, M. Ishak¹, J. Moldenhauer²
        ¹The University of Texas at Dallas, ²Francis Marion University.

113 Cyber-Discovery and Science for the Decade
Monday, 10:00am-11:30am, Room 18D

The goal of the session is to highlight the science that is driving large surveys and instruments with high data rates, and how meaning can be extracted from the resulting large data sets. The session seeks to illustrate the sense of Cyber-Discovery that will become possible in this decade—as discussed in the New Worlds, New Horizons Decadal Survey.

The structure of the session will be as a series of invited talks, with topics including time domain surveys, testing fundamental physics via radio pulsar observations, cosmological simulations, and machine learning techniques that could apply for astronomical data processing. Speakers will discuss not only the science, but illustrate how the science pushes the envelope in some aspect or aspects of “big data.”

113.00C  Chair
         T. Joseph W. Lazio¹
         ¹NRL.

113.01  Finding and Classifying Variables and Transients in the LSST Data Stream
        Lucianne M. Walkowicz¹
        ¹Princeton University.

113.02  Petabytes and Basic Physics: Today’s Surveys for Exotic Pulsars
        Scott M. Ransom¹
        ¹NRAO.

113.03  Extreme Data-Intensive Computing in Astrophysics
        Alexander S. Szalay¹
        ¹Johns Hopkins Univ

113.04  On-line Machine Learning and Event Detection in Petascale Data Streams
        David R. Thompson¹, K. L. Wagstaff¹
        ¹JPL.

114 The Milky Way: Structure and Assembly
Monday, 10:00am-11:30am, Ballroom D

114.00C  Chair
         Eileen D. Friel¹
         ¹Indiana University.

114.01  Astrophysics with Kepler During an Extended Mission
        Martin D. Still¹
        ¹NASA Ames Research Center.

114.02  Accurate Masses and Radii for Kepler’s Multi-Eclipsing Hierarchical Triples
        Joshua A. Carter¹, Kepler Team
        ¹Smithsonian Astrophysical Observatory.
Monday Sessions and Events

114.03D  Simulating the Past: Creating Testable Predictions of the Milky Way’s Assembly History Using Numerical Experiments
Jonathan C. Bird
\(^1\)The Ohio State University.

114.04D  Smooth, Squashed And Rotating: Not The Stellar Halo We Used To Know
Alis J. Deason\(^1\), V. Belokurov\(^1\), N. W. Evans\(^1\)
\(^1\)University of Cambridge, United Kingdom.

114.05D  Using SEGUE Cool Stars to Examine the Metallicity Structure of the Milky Way Disk
Katie Schlesinger\(^1\)
\(^1\)University of California - Santa Cruz.

114.06  Mining Hot, Luminous Stars in the Southern Sky: A New Look at the Magellanic-Cloud System
Dana I. Casetti-Dinescu\(^1\), K. Vieira\(^2\), T. M. Girard\(^1\), W. F. van Altena\(^1\)
\(^1\)Yale Univ., \(^2\)CIDA, Venezuela, Bolivarian Republic of.

115 HAD IV History of Astronomy
Monday, 10:00am-11:30am, Room 12A

115.00C  Chair
Jarita Holbrook\(^1\)
\(^1\)University of Arizona.

115.01  Discovery and Classification in Astronomy
Steven J. Dick\(^1\)
\(^1\)NASM.

115.02  Long-publishing Astronomers, or the Problem of Classification
Joseph S. Tenn\(^1\)
\(^1\)Sonoma State Univ

115.03  Perigean Spring Tides and Apogean Neap Tides in History
Donald W. Olson\(^1\)
\(^1\)Texas State Univ

115.04  Use of Monte Carlo Methods for Evaluating Probability of False Positives in Archaeoastronomy Alignments
Anthony B. Hull\(^1\), Cambrister\(^2\), E. Jewell\(^3\)
\(^1\)University of New Mexico, \(^2\)Delanova University, \(^3\)University of Phoenix.

115.05  Discovery that the Magnitudes in the Ancient Star Catalogs of Ptolemy, Al-Sufi, and Tycho Were All Corrected for Atmospheric Extinction
Bradley E. Schaefer\(^1\)
\(^1\)Louisiana State Univ

115.06  Where Did John Goodricke Make His Observations? New Evidence
Linda French\(^1\)
\(^1\)Illinois Wesleyan University.

116 Early Science Results from the SOFIA Observatory
Monday, 10:00am-11:30am, Ballroom E

The Stratospheric Observatory for Infrared Astronomy (SOFIA), a joint project between the United States National Aeronautics and Space Administration (NASA) and the German
Monday Sessions and Events

Aerospace Center (DLR), is a 2.5-meter infrared airborne telescope in a Boeing 747-SP that achieved first light on May 26, 2010 and began science flights on December 1, 2010. Operating in the stratosphere at altitudes as high as 45,000 feet, SOFIA can conduct photometric, spectroscopic, and imaging observations at wavelengths from 0.3 microns to 1.6 millimeters with an average transmission of greater than 80 percent. SOFIA is staged out of the NASA Dryden Flight Research Center aircraft operations facility at Palmdale, CA and the SOFIA Science Mission Operations Center is located at NASAames Research Center, Moffett Field, CA.

SOFIA’s access to regions of the atmosphere that are opaque from the ground, its rapid and global deployment capability, and its ability to incorporate new and updated instruments, guarantee that the observatory will play an important role studying a variety of key astrophysical problems. SOFIA’s first-generation instrument complement includes high speed photometers, broadband imagers, moderate-resolution spectrographs capable of resolving broad features due to dust and large molecules, and high-resolution spectrometers suitable for kinematic studies of molecular and atomic gas lines at km/s resolution. About 100 eight to ten hour flights per year are expected by 2014, and the observatory will operate until the mid 2030’s.

116.00C  Chair
Pamela M. Marcum¹

¹Texas Christian Univ

116.01  SOFIA Program Status
Pamela M. Marcum¹

¹Texas Christian Univ

116.02  SOFIA Overview and Science Capabilities for Cycle 1
Erick T. Young¹

¹SOFIA/USRA

116.03  First Science Results from SOFIA/FORCAST: Properties of Protostars and Circumstellar Disks in OMC-2
Joseph D. Adams¹, T. L. Herter¹, M. Osorio², S. T. Megeath³, L. D. Keller⁴,
J. M. De Buizer⁵

¹Cornell Univ., ²IAA, Spain, ³U. Toledo, ⁴Ithaca Coll., ⁵SOFIA/USRA

116.04  GREAT Highlights from the SOFIA Early Science Flights
Hans Zinnecker¹, R. Gusten², GREAT Team

¹NASA Ames Research Center, ²Max Plack Institute for Radio Astronomy, Germany.

116.05  SOFIA Observations of Orion with FORCAST
James M. De Buizer¹, J. D. Adams², E. E. Becklin³, T. L. Herter⁴, M. R. Morris⁴,
R. Y. Shuping⁵, W. D. Vacca⁶, H. Zinnecker⁷

¹SOFIA/USRA, ²Cornell University, ³UCLA/SOFIA-USRA, ⁴UCLA, ⁵Space Science Inst./SOFIA-USRA, ⁶SOFIA-USRA, ⁷SOFIA-DLR

116.06  First Stellar Occultation Observation with SOFIA
Edward W. Dunham¹, T. Bida², A. Bosh³, P. Collins¹, S. Levine¹, M. Person², E. Pfueller³,
H. Roeser³, B. Taylor³, M. Wiedemann³, J. Wolf³, C. Zuluaga³

¹Lowell Observatory, ²MIT, ³Deutches SOFIA Institut, Germany, ⁴Institut fuer Raumfahrtssysteme, Universitaet Stuttgart, Germany, ⁵Boston University.

116.07  SOFIA FORCAST Images of the Bipolar Planetary Nebula M2-9
Michael W. Werner¹, J. Davis², R. Sahai¹, M. Morris³, L. Keller⁴, T. Herter⁵

¹JPL, ²Caltech, ³UCLA, ⁴Ithaca College, ⁵Cornell University.
Monday Sessions and Events

116.08 Search for Interstellar Mercapto Radicals (SH) with SOFIA
David A. Neufeld¹
¹Johns Hopkins University.

117 Making the Most of Your Oral Presentations
Monday, 10:00am-11:30am, Room 18A

Strong oral presentation skills are a key to success for engineers, scientists, and other professionals, yet many speakers are at a loss to tackle the task. Systematic as they otherwise can be in their work, they go at it intuitively, sometimes haphazardly, with much good will but seldom good results. This lecture proposes a systematic way to prepare and deliver presentations and covers structure, slides, and stage fright among other topics.

117.00C Chair
Jean-Luc Doumont¹
¹Principiae, Belgium.

Invited Session 118 A (Re)introduction to the Milky Way
Monday, 11:40am-12:30pm, Ballroom D

118.00C Chair
Edward B. Churchwell¹
¹Univ. of Wisconsin.

118.01 A (Re)introduction to the Milky Way
Robert A. Benjamin¹
¹Univ. of Wisconsin, Whitewater.

119 JWST Town Hall
Monday, 12:45pm-1:45pm, Ballroom G

The James Webb Space Telescope will be the most powerful telescope that astronomers have ever constructed, and is essential to answering the top science questions outlined in the recent Astronomy 2010 - 2020 Decadal Survey. In 2011, the observatory reached several milestones including completion of key optical components. This town hall will feature presentations by Eric Smith (NASA HQ), Matt Greenhouse (NASA GSFC), and David Charbonneau (CfA). There will be time left for community comments and questions.

Chair
Jason S. Kalirai¹
¹Space Telescope Science Institute.

120 HAD Business Meeting
Monday, 12:45pm-1:45pm, Room 12A

Annual business meeting of the Historical Astronomy Division.

Chair
Jarita Holbrook¹
¹University of Arizona.
121 NSF Town Hall
Monday, 12:45pm-1:45pm, Ballroom E

NSF staff from the Division of Astronomical Sciences will present current news on budget, programs, progress on the Astro2010 decadal survey recommendations, and the status of the Division's portfolio review.

Chair
James S. Ulvestad\(^1\)
\(^1\)NSF.

122 Cutting-Edge Dynamics: From Planetary Rings to Galaxies
Monday, 2:00pm-3:30pm, Room 16B

The past decade has seen great advances in different fields of dynamical astronomy. Ground- and space-based telescopes have detected several hundred extrasolar planets and more than one thousand planetary candidates, each with its own unique dynamical and physical characteristics. Fascinating data from missions to the inner and outer parts of the solar system have answered some and raised new questions about planetary interiors, rings, and satellites. Increases in the precision of tracking spacecrafts have opened new avenues into fundamental physics. High precision astrometry with HIPPARCOS, the FGS instrument on HST, and VLBI has impacted galaxy dynamics, and HST observations of galactic nuclei have strengthened the evidence for SMBHs. In this special session we present some of the latest and best research on the above-mentioned topics that were presented in the 2011 annual meeting of the Division on Dynamical Astronomy. DDA plays and continues to play an important role in the advancement of all aspects of dynamical astronomy, including celestial mechanics, solar system dynamics, stellar dynamics, the dynamics of the interstellar medium, and galactic dynamics. We have chosen a diverse set of topics from the major achievements reported at the last DDA meeting. The talks in this session will provide insight into future trends and methodologies in the field of dynamical astronomy from the dynamics of galaxies to planet formation and solar system bodies.

122.00C Chair
Nader Haghighipour\(^1\)
\(^1\)Univ. of Hawaii.

122.01 New Developments in Spiral Structure Theory
Jerry Sellwood\(^1\)
\(^1\)Rutgers Univ

122.02 Asteroid Impact Hazard Assessment Over Long Time Intervals
Steven R. Chesley\(^1\)
\(^1\)Jet Propulsion Laboratory, California Institute of Technology.

122.03 Constraining the Size of the Protosolar Nebula
Katherine A. Kretke\(^1\)
\(^1\)Southwest Research Institute.

122.04 Confirming the Lense-Thirring Orbital Precession with Satellite Laser Ranging to the LAGEOS Satellites and GRACE Gravity Models
John C. Ries\(^1\), R. J. Eanes\(^1\)
\(^1\)Univ. of Texas, Austin.

122.05 Ring Dynamics at Saturn: Wakes, Resonances, Warps and Orbital Migration
Philip D. Nicholson\(^1\), M. M. Hedman\(^1\), M. S. Tiscareno\(^1\), J. A. Burns\(^1\), R. G. French\(^2\), R. G. French\(^2\), E. A. Marouf\(^3\), J. E. Colwell\(^4\)
\(^1\)Cornell Univ., \(^2\)Wellesley College, \(^3\)San Jose State University, \(^4\)University of Central Florida.
123 Extra-Galactic Star Clusters
Monday, 2:00pm-3:30pm, Room 18D

123.00C Chair
Henry A. Kobulnicky
Univ. of Wyoming.

123.01 SHUCS: the Snapshot Hubble U-band Cluster Survey
Iraklis Konstantopoulos, SHUCS collaboration
Penn State University.

123.02D High-Redshift Cluster Formation via Galaxy Outflows and its Relation to Halo Globular Clusters
William J. Gray, E. Scannapieco
Arizona State University.

123.03D The Effects Of Tides, Rotation, And Pressure Anisotropy On The Dynamics Of Globular Clusters
Anna L. Varri
Università degli Studi di Milano, Italy.

123.04D The Formation and Evolution of M33 as Revealed by its Star Clusters
Izaskun San Roman
University of Florida.

123.05D The Resolved Stellar Population in 50 Regions of M83 from HST/WFC3 Observations
Hwihyun Kim
Arizona State University.

124 Increasing Diversity in Your Department
Monday, 2:00pm-3:30pm, Room 12B

Diversity is becoming increasingly important as a component of a successful department. As examples, the rankings of graduate programs by the National Academies highlight diversity as a criterion and diversity is an important component of the broader impact statements required by NSF proposals. This special session will present hiring policies and practices that have been proven to be effective in increasing both the diversity and the excellence of science departments around the country. We will recommend steps that departments can take to recruit and retain women, LGBT people, and minorities; discuss what factors contribute to a friendly departmental climate; and demonstrate how to create a diverse department while enhancing academic quality. We invite members of the AAS community to attend this session to both share their own ideas and learn new ones.

124.00C Chair
Caroline E. Simpson
Florida International Univ

124.01 Best Practices in Hiring: Addressing Unconscious Bias
Caroline E. Simpson
Florida International Univ

124.02 Tools for Recruiting a Diverse Applicant Pool
Andrew A. West
Boston University.
Monday Sessions and Events

124.03 Recruitment and Retention of LGBTIQ Astronomers
William Van Dyke Dixon
1STSc.

124.04 Getting to Family-Friendly in Your Department
Catherine A. Pilachowski
1Indiana University.

125 Exoplanets: New Surveys
Monday, 2:00pm-3:30pm, Ballroom F

125.00C Chair
Wesley A. Traub
1Jet Propulsion Laboratory.

125.01 The McDonald Observatory Exoplanet Program
Michael Endl1, W. D. Cochran1, P. J. MacQueen1, P. Robertson2, E. J. Brugamer2, C. Caldwell2
1McDonald Observatory / University of Texas at Austin, 2University of Texas at Austin.

125.02D Searching For Planets Around M Dwarfs Using the Radial Velocity Technique
Ji Wang1, J. Ge1, X. Wan1
1University of Florida.

125.03D New Detections of Planet-Mass Companions to K-Giants by the Penn State - Torun Planet Search
Sara Gettel1, A. Wolsczcan1, A. Niedzielski2, G. Nowak2, M. Adamow2, P. Zielinski2, G. Maciejewski2
1Pennsylvania State Univ., 2Torun Center for Astronomy, Poland.

125.04 New Transiting Planet Surveys in the High Canadian Arctic
Nicholas M. Law1, S. Sivanandam1, R. Carlberg1, R. Murowinski1, E. Steinbring3
1University of Toronto, Canada, 2Rick.Murowinski@nrc-cnrc.gc.ca, Canada, 3NRC Herzberg Institute of Astrophysics, Canada.

125.05 Subaru SEEDS Survey of Exoplanets and Disks
Michael W. McElwain1, SEEDS collaboration
1NASA Goddard Space Flight Center.

125.06 The KELT Survey for Transiting Planets around Bright Stars
Joshua Pepper1, R. J. Siverd1, R. Kuhn3, T. Beatty3, S. Gaudi3, K. Stassun1, J. Eastman2
1Vanderbilt University, 2The University of Cape Town, South Africa, 3The Ohio State University.

125.07 First Science Results From Planethunters.org: A Citizen Science Analysis Of Kepler Data.
Chris Lintott1, M. Schwamb2, D. Fischer2, M. Giguere2, S. Lynn1, J. Brewer2, M. Parrish3, K. Schawinski2, R. Simpson3, A. Smith3, J. Spronck2
1University of Oxford, United Kingdom, 2Yale University, 3Adler Planetarium.

126 Supernovae I
Monday, 2:00pm-3:30pm, Ballroom E

126.00C Chair
George Sonneborn1
1NASA’s GSFC.
126.01D The Lick Observatory Supernova Search: Analysis of 165 Nearby Type Ia Supernova Light Curves
Mohan Ganeshalingam1, W. Li1, A. V. Filippenko1
1UC Berkeley.

126.02 Studies of Twin Supernovae with the Nearby Supernova Factory
Hannah Fakhouri1, G. Aldering2, P. Antilogus3, C. Aragon1, S. Bailey4, C. Baltay4, S. Bongard1, C. Buton5, A. Canto1, F. Cellier-Holzem1, M. Childress1, N. Chotard6, Y. Copin6, E. Gangler6, J. Guy1, E. Hsiao7, M. Kerschhaggl5, M. Kowalski5, P. Nugent6, K. Paech1, R. Pain1, E. Pecontal9, R. Pereira8, S. Perlmutter10, D. Rabinowitz8, M. Rigault8, K. Runge1, R. Scalzo11, G. Smadja6, C. Tao12, R. Thomas8, B. Weaver13, C. Wu14
1UC Berkeley / LBL, 2Physics Division, Lawrence Berkeley National Laboratory, 3Laboratoire de Physique Nucleaire et des Hautes Energies Universite Paris Diderot Paris 7, France, 4Department of Physics, Yale University, 5Physikalisches Institut, Universität Bonn, Germany, 6Universite de Lyon, France, 7Carnegie Observatories, 8Computational Cosmology Center, Computational Research Division, Lawrence Berkeley National Laboratory, 9Centre de Recherche Astronomique de Lyon, Universite Lyon 1, France, 10Physics Division, Lawrence Berkeley National Laboratory, University of California Berkeley, 11Research School of Astronomy and Astrophysics, The Australian National University, Australia, 12Tsinghua Center for Astrophysics, Tsinghua University, China, 13Center for Cosmology and Particle Physics, New York University, 14National Astronomical Observatories, Chinese Academy of Sciences, China.

126.03D The Berkeley SuperNova Ia Program (BSNIP): Dataset and Initial Analysis
Jeffrey Silverman1, M. Ganeshalingam1, J. Kong1, W. Li1, A. Filippenko1
1University of California, Berkeley.

126.04 Stripped Core-Collapse SNe: First Large and Systematic Spectroscopic Data Set
Maryam Modjaz1
1New York University.

126.05D Hubble Residual Correlations with Spectroscopic Host Properties from the SDSS-II Supernova Survey
Christopher D’Andrea1, R. Gupta2, M. Sako2, R. Nichol1, H. Campbell1, SDSS-II Supernova Survey
1Institute for Cosmology and Gravitation, University of Portsmouth, United Kingdom, 2University of Pennsylvania.

126.06 On the Explosion Geometry of Red Supergiant Stars
Douglas C. Leonard1, L. Dessart2, D. Hillier3, G. Pignata4
1San Diego State University, 2Laboratoire d’Astrophysique de Marseille, France, 3University of Pittsburgh, 4Universidad Andres Bello, Chile.

127 HEAD: The Variable and Surprising Gamma-ray Sky
Monday, 2:00pm-3:30pm, Room 18B

The Fermi Gamma-ray Space Telescope is providing a new way to view the gamma-ray sky. Its two instruments survey the full sky every three hours over an energy range spanning seven orders of magnitude. The high sensitivity offers the opportunity for time domain astronomy at gamma-ray energies, measuring variability on scales ranging from milliseconds to years. Dramatic results on gamma-ray bursts, pulsars, high-mass binary systems, and active galactic nuclei have emerged from the Fermi capabilities. Transients include flares from the Crab Nebula, a symbiotic binary nova, and the Sun, while the deepening exposures have revealed unexpected details of giant Galactic bubbles, supernova remnants, and pulsar wind nebulae.
Monday Sessions and Events

127.00C Chair
Julie E. McEnery¹
¹NASA’s GSFC.

127.01 Expecting the Unexpected with the Fermi Gamma-ray Space Telescope
David John Thompson¹
¹NASA’s GSFC.

127.02 Gamma Ray Activity in the Galaxy - Pulsars, Novae, Binaries and Supernova Remnants
Roger D. Blandford¹
¹Stanford University.

127.03 Constant Change: Understanding Black Holes Through Observations Of AGN Jets
Grzegorz Maria Madejski¹
¹Stanford Linear Accelerator Ctr

127.04 Cosmic Explosions: Exploring the Most Extreme Gamma-ray Bursts
Stephen B. Cenko¹
¹University of California, Berkeley.

128 Career Panel: Career Paths
Monday, 2:00pm-3:30pm, Ballroom G

The purpose of this panel discussion is to inform recent and upcoming graduates of careers other than the traditional professor/academic track that is typically (and incorrectly) assumed to be the natural outcome of an advanced degree in physics or astronomy. Our panelists (listed below) include representatives from public outreach, community college and education, public policy, and industry. The session will include brief introductions by each of the panelists about their careers, the skills which have enabled them to be successful, and suggestions for how to follow a similar career path. The discussion will be driven by questions from the audience. Time will be reserved at the end for small group discussions with the panelists.

Panelists:
Dave Finley, Public Information Officer for the National Radio Astronomy Observatory
Rica Sirbaugh French, Mira Costa College and NASA Center for Astronomy Education
Pat Slane, Harvard-Smithsonian Center for Astrophysics
Nick Suntzeff, Texas A&M and the State Department
Gautam Vasisht, Jet Propulsion Laboratory, California Institute of Technology.

128.00C Chair
Kelle L. Cruz¹
¹Hunter College/CUNY &amNH.

129 Evolution of Galaxies II
Monday, 2:00pm-3:30pm, Room 19A

129.00C Chair
Christopher D. Martin¹
¹Caltech.

129.01 The Faint Population Of Lyman-alpha Emitting Galaxies At Redshift 5.7
Alaina L. Henry¹, C. L. Martin¹, A. Dressler², P. McCarthy², M. Sawicki³
¹UC, Santa Barbara, ²Carnegie Observatories, ³Saint Mary’s University, Canada.
129.02 Searching for High-redshift Lyα Emitters in the COSMOS Field with NEWFIRM
Hannah B. Krug¹, S. Veilleux¹, V. Tilvi², S. Malhotra³, J. Rhoads⁴, P. Hibon⁴, R. Swaters⁴, R. Probst⁴, A. Dey⁵, M. Dickinson⁵, B. Jannuzi⁵
¹University of Maryland, ²Texas A&M University, ³Arizona State University, ⁴Gemini Observatory, Chile, ⁵NOAO.

129.03D The Stelar Mass Growth of Galaxies between z~8 and z~4
Valentino Gonzalez¹, R. Bouwens², I. Labbe², G. Illingworth¹, P. Oesch¹
¹University of California Santa Cruz, ²Leiden University, Netherlands.

129.04 Very Luminous Galaxy Population at z > 7 as Revealed by HIPPIES
Haojing Yan¹, HIPPIES Collaboration
¹University of Missouri - Columbia.

129.05D “Observing” Images of a Simulated Universe: the High Redshift Luminosity Function
Robert J. Morgan¹, E. Scannapieco¹, R. A. Windhorst¹, R. Thacker²
¹Arizona State Univ., ²St. Mary’s University, Canada.

129.06 Were Progenitors of L* Galaxies Lyman-alpha Emitters At High Redshift?
Hidenobu Yajima¹, Y. Li¹, Q. Zhu¹
¹Pennsylvania State University.

130 The Dark Universe Viewed by CFHTLenS
Monday, 2:00pm-3:30pm, Room 18C

Dark Matter and Dark Energy constitute over 95% of the energy density of the Universe, and determining their nature constitutes the major challenge for cosmology over the next decade. This special session will present the first results from the complete Canada-France-Hawaii Telescope Lensing Survey reviewing the successes and challenges of the world’s most competitive lensing survey. Weak gravitational lensing is a powerful technique that can map Dark Matter structures from its gravitational effects alone and probe Dark Energy through its effect on the growth of these structures. Its potential is only reached when systematic errors are under control as demonstrated by the completely new methodology for data, photometric redshifts and weak lensing analysis of CFHTLenS. The CFHTLenS view on the Dark Universe spans for the first time the complete range from dark matter haloes, through groups and clusters to the largest scales that Dark Matter has ever been observed. With a full 3-D analysis CFHTLenS also puts Dark energy and modified gravity theories to the test.

130.00C Chair
Barnaby T. Rowe¹
¹JPL.

130.01 The CFHT Lensing Survey
Catherine Heymans¹, CFHTLenS Collaboration
¹Institute for Astronomy, University of Edinburgh, United Kingdom.

130.02 Mapping of Dark Matter in Large Scale Structures
Ludovic Van Waerbeke¹, CFHTLenS collaboration
¹University of British Columbia, Canada.

130.03 Weak Lensing Shape Measurement in CFHTLenS
Lance Miller¹, CFHTLenS Collaboration
¹Oxford University, United Kingdom.

130.04 Weak Lensing Magnification Measurements in CFHTLenS
Hendrik Hildebrandt¹, CFHTLenS Collaboration (http://www.cfhtlens.org)
¹University of British Columbia, Canada.
Monday Sessions and Events

130.05 Dark Energy & 3D Cosmic Shear
Thomas D. Kitching
1University of Edinburgh, United Kingdom.

130.06 Testing the Laws of Gravity with CFHTLenS and WiggleZ
F. Simpson, CFHTLenS Collaboration, D. Parkinson, WiggleZ Collaboration
1IfA, University of Edinburgh, United Kingdom, 2University of Queensland, Brisbane, Australia.

130.07 Galaxy Dark Matter Halo Constraints in the CFHTLenS
Malin Velander, CFHTLenS Collaboration
1Leiden University, Netherlands.

130.08 The Scale Dependent Galaxy Bias from CFHTLenS
Christopher Bonnett
1CSIC/IEEC, Spain.

130.09 CFHTLenS - Data Handling and Public Data Products
Thomas Erben
1AlfA, Bonn University, Germany.

131 AGN, QSO, Blazars II
Monday, 2:00pm-3:30pm, Room 17A

131.00C Chair
David Floyd
1Monash University, Australia.

131.01 Emission-Line Diagnostics of Nuclear Activity and Star Formation in Galaxies at 0<z<3 with CANDELS
1UC Santa Cruz, 2Arizona.

131.02D Spectral Index Properties of Millijansky Radio Sources in ATLAS
Kate Randall, A. M. Hopkins, R. P. Norris, P. Zinn, E. Middelberg, M. Y. Mao, R. G. Sharp
1The University of Sydney/CSIRO Astronomy and Space Science, Australia, 2Australian Astronomical Observatory, Australia, 3CSIRO Astronomy and Space Science, Australia, 4Ruhr-University Bochum, Germany, 5University of Tasmania/CSIRO Astronomy and Space Science, Australia, 6Research School of Astronomy and Astrophysics, Mount Stromlo Observatory, Australia.

131.03 The Demographics Of Broad-line Quasars In The Mass-luminosity Plane
Yue Shen, B. C. Kelly
1Harvard-Smithsonian Center for Astrophysics.

131.04D Determining AGN Inclinations Via Narrow-Line Kinematics
Travis C. Fischer
1Georgia State University.

131.05D Parsec-Scale Radio Properties of Gamma-ray Bright Blazars
Justin Linford
1University of New Mexico.

131.06 Low-luminosity Blazars In Wise: A Mid-infrared View Of Unification
Richard M. Plotkin, S. F. Anderson, W. N. Brandt, S. Markoff, O. Shemmer, J. Wu
1Univ. of Amsterdam, Netherlands, 2University of Washington, 3Pennsylvania State University, 4University of North Texas.
132 Binary Stellar Systems
Monday, 2:00pm-3:30pm, Room 19B

132.00C Chair
Kris Beckwith\textsuperscript{1}
\textsuperscript{1}JILA, UC Boulder.

132.01 BINSYN; a Publicly Available Version
Albert P. Linnell\textsuperscript{1}, P. DeStefano\textsuperscript{1}
\textsuperscript{1}Univ. of Washington.

132.02D Taking a Closer Look at Massive Stars: A High Angular Resolution Survey of Cygnus OB2
Saida M. Caballero-Nieves\textsuperscript{1}
\textsuperscript{1}Georgia State University.

132.03 Heartbeat Stars: A Class Of Tidally Excited Eccentric Binaries
Thomas Barclay\textsuperscript{1}, S. E. Thompson\textsuperscript{2}, F. Mullally\textsuperscript{2}, M. Everett\textsuperscript{3}, S. B. Howell\textsuperscript{4}, M. Still\textsuperscript{1}, J. L. Christiansen\textsuperscript{2}, J. Rowe\textsuperscript{2}, D. W. Kurtz\textsuperscript{1}, K. Hambleton\textsuperscript{5}
\textsuperscript{1}NASA Ames Research Center/BAER Institute, \textsuperscript{2}NASA Ames Research Center/SETI Institute, \textsuperscript{3}University of Arizona, \textsuperscript{4}NASA Ames Research Center, \textsuperscript{5}University of Central Lancashire, United Kingdom.

132.04 Tidal Asteroseismology
Joshua Burkart\textsuperscript{1}
\textsuperscript{1}UC Berkeley.

132.05D Ultra-wide, Low-mass Binaries: Constraints on Binary Formation Theory and Calibration of Fundamental Stellar Parameters
Saurav Dhital\textsuperscript{1}, K. G. Stassun\textsuperscript{1}, A. A. West\textsuperscript{2}
\textsuperscript{1}Vanderbilt University, \textsuperscript{2}Boston University.

132.06 Low-Mass Eclipsing Binaries from Kepler: Reaching the Natural Rotation Rates of M and K Dwarfs
Jeffrey Coughlin\textsuperscript{1}, T. Harrison\textsuperscript{1}, M. Lopez-Morales\textsuperscript{2}, N. Ule\textsuperscript{1}
\textsuperscript{1}New Mexico State Univ., \textsuperscript{2}Institut de Ciencies de l’Espai, Spain.

132.07 Empirical Constraints on Common Envelope Evolution in Wide Binaries
Aaron M. Geller\textsuperscript{1}, J. R. Hurley\textsuperscript{2}, R. D. Mathieu\textsuperscript{3}
\textsuperscript{1}Northwestern University, \textsuperscript{2}Swinburne University, Australia, \textsuperscript{3}University of Wisconsin - Madison.

133 HAD V History of Astronomy
Monday, 2:00pm-3:30pm, Room 12A

133.00C Chair
Wayne Osborn\textsuperscript{1}
\textsuperscript{1}Central Michigan University.

133.01 Mapping the Cosmos on a Ceiling: Reflection Sundials from the Seventeenth Century to the Present
Woodruff T. Sullivan, III\textsuperscript{1}
\textsuperscript{1}Univ. of Washington.

133.02 Music and Astronomy: Historical and Contemporary Perspectives
Matthew Whitehouse\textsuperscript{1}
\textsuperscript{1}The University of Arizona.
Monday Sessions and Events

133.03  
George William Hill, the Great but Unknown 19th Century Celestial Mechanician  
Brenda G. Corbin¹  
¹U.S. Naval Observatory (Retired).

133.04  
A Century of Science at the South Pole: From Struggling to Survive to Exploring New and Unseen Frontiers  
Shelly Hynes¹, L. Bacque², R. Landsberg³  
¹National Science Foundation Office of Polar Programs, ²IceCube Research Center, University of Wisconsin-Madison, ³Kavli Institute for Cosmological Physics.

133.05  
Astronomers in the Chemist’s War  
Virginia L. Trimble¹  
¹UC, Irvine.

133.06  
The Search for Extraterrestrial Intelligence in the 1960s: Science in Popular Culture  
Sierra Smith¹  
¹James Madison University.

134 Education Research: Methodologies & Results

Monday, 2:00pm-3:30pm, Room 18A

134.00C  
Chair  
Gina Brissenden¹  
¹Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona.

134.01  
Worldviews: A New Paradigm for Astronomy Education Research  
Colin Scott Wallace¹, E. E. Prather¹, Collaboration of Astronomy Teaching Scholars (CATS)  
¹Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona.

134.02  
A Long-Term Study of Science Literacy and Attitudes Towards Science: Exploring Changes among College Undergraduate and Public Understanding over Twenty-Two Years  
Sanlyn Buxner¹, C. Impey², J. Antonellis³, Collaboration of Astronomy Teaching Scholars (CATS)  
¹Univ. of Arizona, ²Steward Observatory, Univ. of Arizona, ³Little Priest Tribal College.

134.03  
How Much Learning Could Possibly Be Going On In A 700 Person General Education Science Course? Research Results On The Teaching And Learning Of A “Mega” Astro 101 Course  
Edward E. Prather¹, A. L. Rudolph², G. Brissenden¹, S. Cormier¹, D. Consiglio³, Collaboration of Astronomy Teaching Scholars (CATS)  
¹Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona, ²CalPoly Pomona, ³Bryn Mawr College.

134.04D  
Impact of a Backwards Faded Scaffolding (BFS) Approach to Inquiry-Based Astronomy Laboratory Experiences on Undergraduate Non-Science Majors’ Views of Scientific Inquiry  
Daniel Jonathan Lyons¹  
¹University of Chicago.

134.05  
Measuring Student Understanding of the Process of Scientific Research through Three Modes of Assessment  
Michelle Krok¹, T. Rector¹, M. J. Young²  
¹University of Alaska Anchorage, ²MJ Young & Associates.
134.06 Epistemological Issues in Astronomy Education Research: How Big of a Sample is “Big Enough”? 
Stephanie Slater¹, T. F. Slater², Z. Souri²
¹CAPER Ctr Phys & Astro Educ Res, ²University of Wyoming.

135 Exciting Astrophysics: Supernovae, Relativistic Astrophysics and Other Results II
Monday, 2:00pm-3:30pm, Room 16A

135.00C Chair
Matthew Benacquista¹
¹University of Texas at Brownsville.

135.01 Weak Lensing Tomography with Galaxy Clusters in the SDSS Stripe 82 Coadd 
Melanie Simet¹, J. M. Kubo², S. Dodelson¹, J. T. Annis², J. Hao², D. Johnston², H. Lin², 
R. R. R. Reis¹, M. Soares-Santos³, H. Seo⁴
¹The University of Chicago, ²Fermi National Accelerator Laboratory, ³Universidade Federal do Rio de Janeiro, Brazil, ⁴University of California, Berkeley.

135.02 Strong Field Effects On Emission Line Profiles: Kerr Black Holes And Warped Accretion Disks
Yan Wang¹, X. Li²
¹University of Texas at Brownsville, ²Nanjing University, China.

135.03 A Multi-Messenger Search for Radio Transients and Gravitational Waves 
Michael Kavic¹, J. Simonetti², P. Shawhan¹, C. Yancey³, J. Kanner¹, S. Cutchin², 
S. Ellingson³
¹Long Island University, ²Virginia Tech, ³University Of Maryland.

135.04 Limitations of Atom Interferometry for Gravitational Wave Observations in Space 
Peter L. Bender¹
¹JILA, Univ. of Colorado and NIST.

135.05 The Suitability of Hybrid Waveforms for Advanced Gravitational Wave Detectors 
Ilana MacDonald¹, H. Pfeiffer¹, S. Nissanke³
¹University of Toronto, Canada, ²California Institute of Technology, Canada.

135.06 Fermi-lat Measurement Of Cosmic-ray Positron Spectrum Using The Earth’s Magnetic Field 
Carmelo Sgro¹, M. Ackermann², S. Funk³, W. Mitthumsiri¹, J. Vandenbroucke¹, Fermi LAT Collaboration
¹INFN-Pisa, Italy, ²DESY, Germany, ³SLAC National Accelerator Laboratory.

135.07 Measuring Agn Black Hole Masses Through X-ray Variability 
Erin Wells Bonning¹, J. Kim¹, C. Urry¹
¹Yale University.

136 Affordable Large Space Telescopes for UV, Optical, and Exoplanet Astronomy Beyond 2020
Monday, 2:00pm-3:30pm, Room 17B

The current fiscal climate demands that astronomers examine carefully how emerging technologies can be harnessed to achieve the ASTRO2010 Report’s goals for an optical/ultraviolet telescope for the 2020s. In this session, we propose to hear about important
developments in telescope technology that could enable a new generation of relatively low cost space telescopes in the 4m to 8m class. The session will include talks from experts in research laboratories and industry focusing on realizable technologies for astronomical space telescopes in the next decade. An associated poster session will provide a glimpse of the many scientific and instrumental possibilities such new telescopes technologies will enable.

136.00C Chair
Paul Goldsmith¹
¹JPL.

136.01 Modern Concepts for a Terrestrial Planet Finder Space Telescope
James Kasting¹
¹Pennsylvania State University.

136.02 Telescopes for Future UV/Optical Astronomy
Christopher D. Martin¹
¹Caltech.

136.03 New Paradigms for Building An Affordable Large-Aperture UV/Optical Space Telescope
Matt Mountain¹, J. M. Grunsfeld¹, M. Postman¹
¹STScI.

136.04 Driving Requirements for Advanced Space Telescopes
Martin C. Noecker¹
¹Ball Aerospace & Tech. Corp

136.05 Active Optics for Low-Cost Astronomical Space Telescopes
David Redding¹, D. Coulter¹, J. Wellman²
¹JPL, ²Applied Optics Xinetics.

136.06 SiC for Space Optics
John Wellman¹
¹Xinetics.

136.07 Cost Effective Space Science Telescopes for Astrophysics Mission in the Upcoming Decades
Gary Matthews¹
¹ITT Corporation, Space Systems Division.

137 The Milky Way: Structure of the ISM
Monday, 2:00pm-3:30pm, Ballroom D

137.00C Chair
Bruce Balick¹
¹Univ. of Washington.

137.01 The Fermi Large Area Telescope View of the Inner Galaxy
Troy A. Porter¹
¹Stanford University.

137.02D The Discovery of Fermi Bubbles: Multi-wavelength Observations and Implications to the Past Activity of Galactic Center
Meng Su¹
¹Harvard University.

137.03D The Milky Way's Most Luminous Star Clusters: Engines of Galaxy Evolution
Mubdi Rahman¹, C. D. Matzner¹, D. Moon¹
¹University of Toronto, Canada.
Monday Sessions and Events

137.04D Infrared Extinction and Stellar Populations in the Milky Way Midplane

*University of Virginia, †University of Wisconsin-Whitewater, ‡University of Wisconsin, ¶Manchester College.

137.05D Magnetic Fields in the Milky Way Probed with NIR Polarimetry
Michael D. Pavel

†Boston University.

Invited Session 138 The Challenges and Achievements in 50 Years of Human Spaceflight
Monday, 3:40pm-4:30pm, Ballroom D

138.00C Chair
Nicholas B. Suntzeff

†Texas A&M University.

138.01 The Challenges and Achievements in 50 Years of Human Spaceflight
Steven A. Hawley

†University of Kansas.

Invited Session 139 HAD Doggett Prize: Cosmic Noise: The Pioneers of Early Radio Astronomy and Their Discoveries
Monday, 4:30pm-5:20pm, Ballroom D

139.00C Chair
Thomas A. Hockey

†University of Northern Iowa.

139.01 Cosmic Noise: The Pioneers of Early Radio Astronomy and Their Discoveries
Woodruff T. Sullivan, III

†Univ. of Washington.

3000 days, 50000 hours, 1 AU – Celebrating Spitzer
Monday, 6:00pm-8:00pm, Ballroom E

On 11/11/11, NASA's Spitzer Space Telescope passed 3000 days in-flight since its launch on August 25, 2003. Originally required to execute a 2.5 year mission, Spitzer is now in its eighth year, having accumulated over 50,000 hours of science observations. Now located just over 1 AU away in an Earth-trailing orbit, Spitzer can continue to obtain data in its "warm mission" phase until 2014 and beyond. In this post-cryogenic phase, IRAC bands 1 & 2 (3.6 & 4.5 um) operate at full sensitivity, providing simultaneous imaging over two 5’x5’ fields-of-view.

This reception will provide members of the astronomical community the latest information about the Spitzer warm mission, upcoming proposal calls, funding, and the opportunity to provide feedback on plans for the ongoing mission. Ample opportunity will be provided for questions and comments from the community, and interaction with members of the Spitzer Science Center.

This session will also be a celebration of a remarkable and continuing mission. Complimentary beer, wine and hors ‘d oeuvres will be provided, and a full cash bar will be available.
Monday Sessions and Events

Support for this session was generously provided by Lockheed Martin. The Spitzer telescope was built, integrated and tested at Lockheed Martin Space Systems Company facilities in Sunnyvale, California and the Observatory Engineering Team is located at Lockheed Martin-Denver.

Organizer
Gordon Squires
California Institute of Technology

Penn State Alumni Reception

Monday, 6:00pm-8:00pm, Room 410, Hilton Austin
Please join us for hors d’oeuvres and beverages, and mingle with Penn State University alumni, Astronomy and Astrophysics faculty, and Eberly College of Science Representatives including Dean Daniel J. Larson. We invite all alumni and guests to attend.

Organizer
Barbara Hannah Collins¹
Penn State University.

LGBTIQ Networking Dinner

Monday, 6:30pm-8:30pm
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 9.

We’ll meet in front of the AAS Meeting Registration Desk at 6:30 and walk to a local restaurant.

An RSVP to AASdinner@gmail.com by December 15 is requested, but not required.

Organizer
William Van Dyke Dixon¹
Space Telescope Science Institute.

Public Talk: Big Science in Crisis

Monday, 8:00pm-9:00pm, Ballroom D

Chair
Nicholas B. Suntzeff¹
Texas A&M University.

Big Science in Crisis
Steven Weinberg¹
University of Texas.
140 HEAD: New Results in High Energy Astrophysics

Monday, 9:00am-6:30pm, Exhibit Hall

140.01 Spitzer Observations Of Mf16 And The Associated ULX
Ciprian T. Berghea¹, R. P. Dudik¹
¹USNO.

140.02 Characterization of the Breakdown of Magnetospheric Polarization Models
Helen A. Craig¹, R. W. Romani¹
¹Stanford University.

140.03 Chandra Survey Of Galactic Coronae Around Nearby Edge-on Disk Galaxies
Jiang-Tao Li¹, D. Wang¹
¹University of Massachusetts.

140.04 Modeling the Broadband Spectral Energy Distributions of Nearby Seyfert-1 AGN
Dipankar Maitra¹, J. Miller¹, S. Markoff², A. King¹
¹Univ. of Michigan, ²Univ. ofamsterdam, Netherlands.

140.05 NuSTAR’S Role in Constraining Black Hole Spin in AGN
Laura Brenneman¹, G. Matt², A. Fabian³, K. Nandra⁴, M. Elvis¹, M. Cappi⁵
¹Harvard-Smithsonian Center for Astrophysics, ²Università degli Studi Roma Tre, Italy,
³IoA Cambridge, United Kingdom, ⁴MPE Garching, Germany, ⁵INAF/IASF Bologna, Italy.

140.06 Current Status and Future Prospects for the Fermi Large Area Telescope
Robert A. Cameron¹, W. B. Atwood², L. Baldini³, E. Charles⁴, L. S. Rochester⁴,
T. L. Usher⁵, Fermi LAT Collaboration
¹KIPAC, SLAC, Stanford Univ., ²UC Santa Cruz, ³INFN, University of Pisa, Italy, ⁴SLAC National Accelerator Laboratory.

140.07 The Extreme Physics Explorer
Michael R. Garcia¹, M. Elvis¹, J. Bookbinder¹, R. Smith¹, D. Patnaude¹, E. Bulbul¹,
S. Bandler², A. Ptak², T. Okajima², T. Turner², G. Risalati³, M. Galeazzi³, E. Figueroa-Feliciano³, D. Chakrabarty³, R. Danner³, D. Daily³, G. Fraser³, R. Willingale¹⁰
¹Harvard-Smithsonian, CFA, ²NASA/GSFC, ³UMBC, ⁴Arcetri, Italy, ⁵Univ of Miami, ⁶MIT Kavli Institute, ⁷MIT Department of Physics, ⁸NGAS, ⁹University of Leicester, United Kingdom, ¹⁰University of Leicester.

140.08 Physical Model for the Revised Blazar Sequence
Justin Finke¹, C. Dermer¹
¹US Naval Research Laboratory.

140.09 Prospects for Observing Star-forming Galaxies with Future X-ray Missions
Andrew Ptak¹
¹NASA/GSFC.

141 Dark Skies, Technology and Archaeoastronomy

Monday, 9:00am-6:30pm, Exhibit Hall

141.01 Nejat Aerospace Magnoplane
Cyrus Nejat¹
¹University of Southern California.
141.02  Ancient Astronomy: A Study of the Point Remove Mound Complex  
Matt Hankins¹, D. L. Burris¹  
¹University of Central Arkansas.

141.03  Seeing Stars: A GLOBE at Night Campaign Update  
Constance E. Walker¹, S. M. Pompea², R. T. Sparks², M. Newhouse²  
¹NOAO, ²NOAO, Tucson, AZ.

141.04  Light Pollution Around Tucson, AZ And Its Effect On The Spatial Distribution Of  
Lesser Long-nosed Bats  
Alisa Fersch¹, C. Walker¹  
¹National Optical Astronomy Observatory.

142 Gamma Ray Bursts
Monday, 9:00am-6:30pm, Exhibit Hall

142.01  Dust Properties In Afterglow Of GRB 071025 At z~5  
Minsung Jang¹, M. Im¹, I. Lee², Y. Urata³, K. Huang³, H. Hirashita³, X. Fan⁴, L. Jiang⁴  
¹Center for the Exploration of the Origin of the Universe(CEOU), Astronomy Program,  
Department of Physics and Astronomy, Seoul National University, Korea, Republic of,  
²Institute of Astronomy, National Central University, Taiwan, ³Institute of Astronomy and  
Astrophysics, Academia Sinica, Taiwan, ⁴Steward Observatory, University of Arizona.

142.02  A Search for γ-Ray Burst Variability & Optical Afterglow Onset Correlations  
Sarah Yost¹, T. M. Moore¹  
¹St John’s Univ

142.03  GRB Flare Detection in UVOT Light Curves Using Bayesian Hidden Markov Models  
Craig A. Swenson¹, P. W. A. Roming²  
¹The Pennsylvania State University, ²Southwest Research Institute.

142.04  Photometric Analysis of the PAIRITEL Infrared Observations of Early Time  
Gamma Ray Burst Afterglows  
Pierre Christian¹, A. N. Morgan¹, J. S. Bloom¹, C. R. Klein¹  
¹UC Berkeley.

142.05  Modest Obscured Star-Formation Rates Inferred from EVLA Observations of  
Dark GRB Host Galaxies  
Daniel A. Perley¹, R. A. Perley²  
¹Caltech, ²NRAO.

142.06  Computational Methods: A New Limit on Lorentz Invariance and Chromatic  
Dispersion Across the Universe from GRB 090510A  
Ryan Connolly¹, R. J. Nemiroff³, J. Holmes¹  
¹Michigan Technological University.

142.07  Data and Results: A New Limit on Lorentz Invariance and Chromatic Dispersion  
Across the Universe from GRB 090510A  
Justin Holmes¹, R. J. Nemiroff³, R. Connolly¹  
¹Michigan Technological University.

143 Cosmology & the CMB
Monday, 9:00am-6:30pm, Exhibit Hall

143.01  A HIGH GRAVITATIONAL REDSHIFT?  
Gerardo A. Vazquez¹  
¹Salisbury University.
143.02 Backgrounds and the High Redshift Universe
Elizabeth R. Fernandez1, I. Iliev1, E. Komatsu1, H. Dole1, P. Shapiro4
1Institut D’Astrophysique Spatiale, France; 2Astronomy Centre, University of Sussex, United Kingdom; 3Texas Cosmology Center, 4University of Texas at Austin.

143.03 Correlation Between the Effective Neutrino Number and Curvature
Aaron Smith1, M. Archidiacono2, A. Cooray3, F. De Bernardis3, A. Melchiorri4, J. Smidt3
1Brigham Young University; 2Universita’ di Roma “La Sapienza”, Italy, 3University of California Irvine, 4Universita’ di Roma “La Sapienza”.

143.04 The Ccd Camera Testing Instrument For The Bigboss Fiber Positioner
Zengxiang Zhou1, M. Sholl2, C. Bebek1
1Lawrence Brekeley National Lab, 2Space Sciences Lab of UC Berkeley.

143.05 On The CMB Disturbances From The Epoch Of Reionization
Kayla Jaye Redmond1, V. Strelbitski2
1University of North Carolina-Asheville & Maria Mitchell Obs., 2Maria Mitchell Obs

143.06 Inhomogeneous Universe Models: the Szekeres Model
Robert Buckley1, E. M. Schlegel1
1University of Texas at San Antonio.

143.07 Growth of Structure in the Szekeres Inhomogeneous Cosmological Models
Austin Peel1, M. Ishak1
1University of Texas at Dallas.

143.08 How to Measure the Global Redshifted 21cm Signal
Adrian Liu1, J. R. Pritchard2, A. Loeb3, M. Tegmark1
1Massachusetts Institute of Technology, 2Imperial College London, United Kingdom, 3Center for Astrophysics.

143.09 Constraining Cosmological Parameters, Including Neutrino Mass, Using N-body Large Scale Simulations and Artificial Neural Networks
Shankar Agarwal1, F. B. Abdalla2, H. A. Feldman1, O. Lahav2, S. A. Thomas2
1University of Kansas, 2University College London, United Kingdom.

143.10 New High-Redshift Supernovae Ia for the Union Compilation of Type Ia Supernovae
1UC Berkeley, 2Lawrence Berkeley National Laboratory, 3Stockholm University, Sweden, 4University of Utah, 5University of Tokyo, Japan, 6University of California Berkeley, 7University of Texas at Austin, 8Space Telescope Science Institute, 9Carnegie Observatories, Chile, 10Humboldt University, Germany, 11Australian Astronomical Observatory, Australia, 12National Astronomical Observatory of Japan, Japan.

143.11 Correlations between Type Ia SNe and Host Galaxy Spectra
Joshua Meyers1, G. Graves2, G. Aldering2, K. Barbary2, H. Fakhouri1, J. Hennawi1, E. Hsiao4, S. Perlmutter2, D. Rubin1, E. Rykoff1, C. Saunders1, A. Spadafora2, N. Suzuki2
1University of California Berkeley, 2Lawrence Berkeley National Laboratory, 3Max-Planck-Institut fur Astronomie, Germany, 4Carnegie Observatories.

143.12 Measuring the Mass Dependent Bias of the Spatial Correlation Function Using the C4 Cluster Catalog
Brian Matthew Devour1, C. J. Miller1, D. Gifford1, R. H. Wechsler2, M. T. Busha3, A. E. Evrard1
1University of Michigan, 2Stanford University, 3University of Zürich, Switzerland.
**MONDAY POSTER SESSIONS**

143.13 *The Impact of Peculiar Velocity and Reionization Patchiness on 21cm Cosmology from the Epoch of Reionization*

Yi Mao¹, P. R. Shapiro¹, I. T. Iliev², G. Mellema³, K. Ahn⁴, K. Datta³

¹University of Texas at Austin, ²University of Sussex, United Kingdom, ³Stockholm University, Sweden, ⁴Chosun University, Korea, Republic of.

143.14 *The Effects of Primordial Non-Gaussianity on Cosmic Reionization*

Anson D’Aloisio¹, P. R. Shapiro¹, J. Zhang¹, Y. Mao¹, I. T. Iliev², G. Mellema³, K. Ahn⁴

¹University of Texas at Austin, ²University of Sussex, United Kingdom, ³Stockholm University, Sweden, ⁴Chosun University, Korea, Republic of.

143.15 *New Results on Cosmic Reionization*

Paul R. Shapiro¹, I. T. Iliev², G. Mellema³, K. Ahn⁴, Y. Mao¹, J. Koda³, U. Pen⁶

¹The University of Texas at Austin, ²University of Sussex, United Kingdom, ³University of Stockholm, Sweden, ⁴Chosun University, Korea, Republic of, ⁶University of Swinburne, Australia, ⁶CITA/University of Toronto, Canada.

143.16 *SPIDER: Probing the Early Universe with a Suborbital Polarimeter*

Aurélien A. Fraisse¹, SPIDER Collaboration

¹Princeton University.

143.17 *Measurements of the Sunyaev-Zel’dovich Effect Increment with Herschel*

Michael B. Zemcov¹, Herschel Multi-tiered Extragalactic Survey (HerMES), Herschel Lensing Survey (HLS)

¹California Institute of Technology.

143.18 *Comparing Cosmology Parameters: Dark Energy vs Cosmological Constant*

Jeremy Lewis¹, P. Timbie²

¹University of Colorado-Boulder, ²University of Wisconsin-Madison.

**144 The Sun**

Monday, 9:00am-6:30pm, Exhibit Hall

144.01 *A Technique for Detecting Propagating Coronal Waves with the VLA*

Steven R. Spangler¹

¹Univ. of Iowa.

144.02 *Ultraviolet Emissions and Magnetic Field Changes during Solar Flares*

Brittany Johnstone¹, G. Petrie², J. Sudol¹

¹West Chester University, ²National Solar Observatory.

144.03 *Detecting Flows, Waves and Nanoflares in the Solar Corona*

Brandon Calabro¹, J. McAteer¹, A. Pevtsov¹

¹New Mexico State University.

144.04 *Nonlinear Force-Free Modeling of Aug 4 & 10, 2010 Sigmoids via Flux Rope Insertion Method*

Tyler Behm¹

¹Texas A&M University.

144.05 *Coronal Loop Detection and Seismology*

Alexander Pevtsov¹, R. T. J. McAteer¹, J. Jackiewicz¹, B. McNamara¹, M. Kirk¹, K. Degrave¹, L. Boucheron¹, B. Calabro¹

¹New Mexico State University.

144.06 *Asymmetric Magnetic Reconnection in Coronal Mass Ejection Current Sheets*

Crystal Pope¹, M. P. Miralles², N. A. Murphy²

¹Elmhurst College, ²Harvard-Smithsonian Center for Astrophysics.
**MONDAY POSTER SESSIONS**

144.07 **Models and Comparisons of Long Duration and Impulsive Solar Flare Events from SDO**  
Trevor Bowen¹, P. Testa², K. Reeves²  
¹Marlboro College, ²Harvard-Smithsonian Center for Astrophysics.

144.08 **The Solar Oxygen Crisis, Revisited**  
Thomas R. Ayres¹  
¹University of Colorado.

144.09 **SPIES: Spectropolarimetric Imager for Energetic Sun**  
Andrew Weis¹, H. Lin²  
¹University of Pittsburgh & Institute for Astronomy, University of Hawai‘i, ²Institute for Astronomy, University of Hawai‘i.

144.10 **Observations of the Neupert Effect with the Solar Dynamics Observatory, Reuven Ramaty High Energy Solar Spectroscopic Imager, and Geostationary Operational Environmental Satellite**  
Sam J. Schonfeld¹, P. C. Chamberlin²  
¹Whitman College, ²NASA GSFC.

144.11 **Intelligent Search of Solar Data**  
Yifan Hao¹, H. Cao¹, B. McNamara¹, J. Jackiewicz¹, J. McAteer¹, L. Boucheron¹, D. Voelz¹, M. Kirk¹, G. Taylor¹, K. DeGrave¹, A. Al-Ghraibah¹, A. Pevtsov¹, B. Calabro¹  
¹New Mexico State University.

**145 Computation, Data Handling, Image Analysis**

Monday, 9:00am-6:30pm, Exhibit Hall

145.01 **Astrodrizzle: Advanced Camera for Surveys Mosaic of the Sombrero Galaxy M104**  
Amber Armstrong¹, S. Gonzaga¹, A. Fruchter¹, W. Hack¹, M. Mutchler¹, R. Lucas¹  
¹Space Telescope Science Institute.

145.02 **PhAst: A Flexible IDL Astronomical Image Viewer**  
Morgan Rehnberg¹, R. Crawford², M. Trueblood², K. Mighell³  
¹Beloit College, ²Rincon Ranch Observatory, ³National Optical Astronomy Observatory.

145.03 **High Speed White Dwarf Asteroseismology with the Herty Hall Cluster**  
Aaron Gray¹, A. Kim¹  
¹Georgia College and State University.

145.04 **The Lick Index Calibration of the Gemini Multi-Object Spectrographs**  
Brett Basarab¹  
¹Middlebury College.

145.05 **Improving Automatic Detection of Variable Stars**  
Allyn Durbin¹, R. Siverd², J. Pepper², K. Stassun²  
¹Villanova University, ²Vanderbilt University.

145.06 **The Effect of Non-stationary Noise on Drifting Signal Detection**  
Mauricio Flores¹, M. Benacquista¹, A. Stroeer¹  
¹University of Texas at Brownsville.

145.07 **Comparison and Verification of RFI Excision Techniques**  
Caroline Houston¹  
¹National Radio Astronomy Observatory.
145.08  Astrodrizzle: Optimally Combining Subsampled WFC3 & ACS Data
Abhijith Rajan¹, J. Mack¹, H. Bushouse¹, M. Dulude¹, L. Petro¹, N. Pirzkal¹, W. F.C.3
team¹
¹Space Telescope Science Institute.

145.09  Reduction and Analysis of GALFACTS Data in Search of Compact Variable
Sources
Trey Wenger¹, S. Barenfeld², T. Ghosh³, C. Salter³
¹Boston University, ²University of Rochester, ³Arecibo Observatory.

145.10  The Astrophysics Source Code Library: An Update
Alice Allen¹, R. J. Nemiroff², L. Shamir³, P. J. Teuben⁴
¹Calverton, MD, ²Michigan Technological University, ³Lawrence Technological University,
⁴University of Maryland.

145.11  Astroinformatics, Cloud Computing, and New Science at the Canadian
Astronomy Data Centre
Nicholas M. Ball¹
¹Herzberg Institute of Astrophysics, Canada.

145.12  Data Mining and Exploration (DAME): New Tools for Knowledge Discovery in
Astronomy
Stanislaw G. Djorgovski¹, G. Longo², M. Brescia³, C. Donalek¹, S. Cuvuoti², M. Paolillo²,
R. D’Abrusco³, O. Laurino³, A. Mahabal¹, M. Graham¹
¹Caltech, ²Univ. Federico II, Napoli, Italy, ³Osservatorio Astronomico di Capodimonte,
Italy, ⁴Harvard-Smithsonian Center for Astrophysics.

145.13  Database Architecture for the Indra Cosmological Simulations
Daniel S. Crankshaw¹, B. Falck¹, T. Budavari¹, L. Dobos², G. Lemson¹, M. Neyrinck¹,
A. Szalay¹, J. Wang³, R. Burns¹
¹Johns Hopkins University, ²Eotvos Lorand University, Hungary, ³Max-Planck Institute for
Astrophysics, Germany, ⁴University of Durham, United Kingdom.

145.14  Constructing Concept Schemes From Astronomical Telegrams Via Natural
Language Clustering
Matthew Graham¹, M. Zhang¹, S. G. Djorgovski¹, C. Donalek¹, A. J. Drake¹,
A. Mahabal¹
¹Caltech.

145.15  AstroDither: Drizzling with Astrometry Included
Andrew S. Fruchter¹, W. Hack¹, N. Dencheva¹, M. Droettboem¹, P. Greenfield¹,
C. Sontag¹
¹STScI.

145.16  Automated Classification of Flaring Behavior in Solar Active Regions:
Preliminary Results
Amani Al-Ghraibah¹, L. E. Boucheron¹, R. McAteer¹, H. Cao¹, J. Jackiewicz¹,
B. McNamara¹, D. Voelz¹, B. Calabro¹, K. DeGrave¹, Y. Hao¹, M. Kirk¹, A. Pevtsov¹,
J. Mckeever¹, G. Taylor¹
¹New Mexico State University.

145.17  A Modern Astrophysical MHD Solver on CUDA-Capable GPUs
Ryan Ben¹
¹University of North Carolina at Chapel Hill.

145.18  Pass 8: A Comprehensive Revision Of The Fermi Lat Event-level Analysis
William Atwood¹
¹UCSC.
146.01 The Orphan Lenses Project
1JPL/Caltech, 2Univ. of Utah, 3Haverford College, 4UC Davis, 5IAP, France, 6IPAC/Caltech, 7Rutgers, 8LAM, France, 9STScI, 10Kapteyn, Netherlands, 11Oxford, United Kingdom, 12Univ. of Bologna, Italy, 13IPMU, Japan, 14TAMU, 15IAS, 16UCSB.

146.02 CANDELS: Properties of Strong Lensing Galaxy UDS-01
Jae Alyson B. Calanog1, H. Fu1, A. Cooray1, A. Chiu1, J. Wardlow1, CANDELS team
1University of California, Irvine.

146.03 Microlensing Analysis of the Gravitationally Lensed Quasar SDSS 1650+4251
Garrett Deletti1, C. W. Morgan1, L. J. Hainline1, H. C. Harris2
1US Naval Academy, 2US Naval Observatory, Flagstaff Station.

146.04 Microlensing Analysis Of Quasars Sbs 0909+532 And Sbs 1520+530
Zachary Landaal1, C. Morgan1, L. Hainline1, H. Harris2
1US Naval Academy, 2US Naval Observatory Flagstaff.

146.05 The Environmental Dependence of Dynamical and Lensing Mass Differences
Matthew Thomas Nichols1, R. Nichol2, G. Zhao2, R. Crittenden2, J. T. Lauroesch1
1University of Louisville, 2Institute of Cosmology and Gravitation, University of Portsmouth, United Kingdom.

146.06 Observing SNe Ia Progenitors with LISA
Frank Ceballos1, A. Stroeer1, M. Benacquista1, K. Belczynski2
1The University of Texas at Brownsville, 2University of Warsaw, Poland.

146.07 Prospects For Detection Of Extragalactic Stellar Mass Black Hole Binaries With Space-based Gravitational-wave Observatories
Jesus Hinojosa1, A. Mata1, M. Benacquista1, A. Stroeer1
1ARCC UTB.

146.08 The International Pulsar Timing Array Workbench, A Web-based Application
Jose Martinez1, F. A. Jenet1, J. D. Romano1, K. Lee2, R. Shannon3, L. S. Finn4, D. Perrodin5
1University of Texas at Brownsville, 2Max Planck Institute for Radio Astronomy, Germany, 3CSIRO Astronomy and Space Science, Australia, 4Pennsylvania State University, 5Franklin & Marshall College.

146.09 Background Sky Variability for Multi-messenger Follow-up Surveys
Katelyn Breivik1, S. L. Larson1
1Utah State University.

146.10 Parameter Estimation for Black Hole Mergers with Aligned Spin
Tyson Littenberg1, J. Baker1, A. Buonanno5, R. Lang5, S. T. McWilliams5
1University of Maryland College Park / NASA Goddard Spaceflight Center, 2NASA Goddard Spaceflight Center, 3University of Maryland College Park, 4Washington University, 5Princeton University.
146.11 Testing Gravitational Physics with Space-based Gravitational-wave Observations
John G. Baker¹, J. Gair², S. Larson³, M. Vallisneri⁴
¹NASA/GSFC, ²Cambridge, United Kingdom, ³Utah State University, ⁴Jet Propulsion Laboratory.

146.12 Hardware Verification of Time Delay Interferometry with Space-craft Motion Effects for Space-based Gravitational Wave Interferometers
Shawn Mitryk¹, G. Mueller¹
¹University of Florida.

146.13 Overlap Reduction Functions for Pulsar Timing Arrays in Alternative Theories of Gravity
Sydney Chamberlin¹, X. Siemens¹
¹University of Wisconsin-Milwaukee.

146.14 The Population Of Multi-messenger Ultra-compact Galactic Binaries
Shane L. Larson¹, T. B. Littenberg²
¹Utah State University, ²Goddard Spaceflight Center.

146.15 High Precision Pulsar Timing: Effects of ISM Correction Schemes
Willie Kunert¹, J. P. W. Verbiest², R. Shannon³, D. Stinebring¹
¹Oberlin College, ²Max Planck Institute of Radio Astronomy, Germany, ³Australia Telescope National Facility, Australia.

146.16 NANOGrav High-Precision Millisecond Pulsar Timing and Gravitational Wave Background Limit
David J. Nice¹, P. B. Demorest², R. D. Ferdman³, M. E. Gonzalez⁴, S. M. Ransom⁵, I. H. Stairs¹, NANOGrav
¹Lafayette College, ²NRAO, ³University of Manchester, United Kingdom, ⁴University of British Columbia, Canada.

146.17 EVLA Follow-Up Observations of Gravitational Wave Burst Candidates
Louis Dartez¹
¹University of Texas Brownsville.

146.18 Observing Massive Black-hole Binaries With A Redesigned LISA
Sean T. McWilliams¹
¹Princeton University.

146.19 Visualizing the Effect of Gravitational Waves on Pulsar Arrival Times
Grady Lunsford¹, R. H. Price¹
¹University of Texas at Brownsville.

146.20 Detection Methods for Continuous Gravitational Waves using Pulsar Timing Data
Justin Ellis¹, F. Jenet², X. Siemens¹
¹University of Wisconsin Milwaukee, ²University of Texas Brownsville.

146.21 Observing Big Black Holes with a Small LISA
Neil J. Cornish¹, R. Lang², E. Berti³
¹Montana State Univ., ²Washington University, ³University of Mississippi.

146.22 Spectral Analysis of Timing Noise in NANOGrav Pulsars
Delphine Perrodim¹, F. A. Jenet², A. N. Lommen¹, L. S. Finn³, P. B. Demorest⁴
¹Franklin & Marshall College, ²University of Texas at Brownsville, ³The Pennsylvania State University, ⁴National Radio Astronomy Observatory.
MONDAY POSTER SESSIONS

146.23 Gravitational Wave Hotspots
Joseph Simon
Franklin and Marshall College.

146.24 Concepts For A Space-based Gravitational-wave Observatory (SGO)
Robin T. Stebbins, Gravitational Wave Concept Definition Team
NASA GSFC.

146.25 The LISA Pathfinder Mission
James Thorpe, P. W. Mc. Namara, LISA Pathfinder Team
NASA GSFC, ESA ESTEC, Netherlands.

146.26 Plans For A Next Generation Space-based Gravitational-wave Observatory (NGO)
Jeffrey C. Livas, R. T. Stebbins, O. Jennrich, NGO Mission Development Team
NASA Goddard Space Flight Center, European Space Agency ESTEC, Netherlands.

147 Undergraduate Research & Education
Monday, 9:00am-6:30pm, Exhibit Hall

147.01 Astrobites: The Astro-ph Reader’s Digest For Undergraduates
Elisabeth Rose Newton, S. Kohler, D. Gifford, A. L. Plunkett, Astrobites Team
Harvard University, University of Colorado at Boulder, University of Michigan, Yale University.

147.02 The Arecibo Remote Command Center: Undergraduate and High School Students Exploring Astrophysics
Andy Miller
University of Texas-Brownsville.

147.03 The Summer Undergraduate Research Internship Program at the Pisgah Astronomical Research Institute
J. Donald Cline, M. Castelaz, C. Whitworth, D. Clavier, L. Owen, T. Barker
Pisgah Astronomical Research Institute.

147.04 The California-Arizona Minority Partnership for Astronomy Research and Education (CAMPARE): Partnering Students to Astronomy at the University of Arizona’s Astronomy Camp
Hector Saldivar, D. McCarthy, A. L. Rudolph
Dept. of Physics and Astronomy, California State Polytechnic University, Steward Observatory, The University of Arizona.

147.05 A Telescope Tale of Two Cities: Flagstaff & Boston: One NSF REU Supplement’s Impact on 90 Students and a Dean
Dan P. Clemens
Boston Univ.

147.06 Rationale and Initial Design for a Virtual Undergraduate Internship in Astronomy
Katie Berryhill, T. F. Slater, S. J. Slater
American Public University System, University of Wyoming.

147.07 Creating A Light Curve Using Gathered Data
Lincoln-Way North High School, Eastern Illinois University.
147.08 Global Warming Education for Astro 101 Classes
James D. Lowenthal¹, E. F. Guinan², P. Knezek³, J. H. Lacy⁴, P. J. Marshall⁵, B. Rodgers⁶, E. Rykoff⁷, K. Sheth⁸
¹Smith College, ²Villanova Univ., ³NOAO/WIYN Obs., ⁴University of Texas, ⁵University of Oxford, United Kingdom, ⁶Gemini Observatory, Chile, ⁷UCSB, ⁸NRAO.

147.09 Computing Across the Physics and Astrophysics Curriculum
Kathy DeGioia Eastwood¹, M. James¹, E. Dolle¹
¹Northern Arizona University.

147.10 An Inexpensive Method to use an Ocean Optics Spectrometer for Telescopic Spectroscopy
Berger Joel¹, B. E. K. Sugerman¹
¹Goucher College.

148 The LITTLE THINGS Survey
Monday, 9:00am-6:30pm, Exhibit Hall

148.01 The Little Things Survey
Deidre Ann Hunter¹, LITTLE THINGS team
¹Lowell Obs.

148.02 Star Formation in LITTLE THINGS: HI Line Profile Analysis of Nearby Dwarfs
Phil Cigan¹, L. Young¹, D. Hunter²
¹New Mexico Tech, ²Lowell Observatory.

148.03 Color Profile Trends of Dwarf Galaxies
Kimberly A. Herrmann¹, LITTLE THINGS team
¹Lowell Observatory.

148.04 The Extent of the Atomic Gas in Spiral and Dwarf Irregular Galaxies
Elias Brinks¹, A. Portas¹, W. J. G. de Blok², R. C. Kennicutt³, J. Sommer-Larsen⁴, A. Usero⁵, F. Walter⁶
¹Univ. of Hertfordshire, United Kingdom, ²University of Cape Town, South Africa, ³University of Cambridge, United Kingdom, ⁴Niels Bohr Institute, Denmark, ⁵Observatorio Astronómico Nacional, Spain, ⁶Max–Plank–Institut für Astronomie, Germany.

148.05 Central Dark Matter Distribution In Dwarf Galaxies
Se-Heon Oh¹, C. Brook², F. Governato³, E. Brinks⁴, L. Mayer⁵, E. de Blok⁶, A. Brooks⁷, F. Walter⁶
¹CAASTRO, International Centre for Radio Astronomy (ICRAR), The Univ. of Western Australia, Australia, ²Jeremiah Horrocks Institute, University of Central Lancashire, United Kingdom, ³Astronomy Department, University of Washington, ⁴Centre for Astrophysics Research, University of Hertfordshire, United Kingdom, ⁵Institute for Theoretical Physics, University of Zurich, Switzerland, ⁶Astronomy Department, Astrophysics, Cosmology and Gravity Centre (ACGC), University of Cape Town, South Africa, ⁷Theoretical Astrophysics, California Institute of Technology, ⁸Max-Planck-Institut f für Astronomie, Germany.

148.06 NGC 1569: Stellar and Gas Kinematics and Dark Matter Content
Megan C. Johnson¹, S. Oh², H. Zhang³, D. A. Hunter⁴, E. Tollerud⁴, B. Elmegreen⁵, E. Brinks⁶, LITTLE THINGS Team
¹NRAO - Green Bank, ²University of Western Australia, Australia, ³Lowell Observatory/ Purple Mountain Observatory, ⁴Lowell Observatory, ⁵University of California - Irvine, ⁶IBM T.J. Watson Research Center, ⁷University of Hertfordshire, United Kingdom.
148.07 Fourier Transform Power Spectra Analysis of Dwarf Irregular Galaxies  
Hongxin Zhang\textsuperscript{1}, D. A. Hunter\textsuperscript{2}, LITTLE THINGS team  
\textsuperscript{1}Lowell Observatory and Purple Mountain Observatory, \textsuperscript{2}Lowell Observatory.

148.08 Deep Radio Continuum Imaging Of The Dwarf Irregular Galaxy IC 10: Tracing  
Star Formation And Magnetic Fields  
Volker Heesen\textsuperscript{1}, U. Rau\textsuperscript{2}, M. P. Rupen\textsuperscript{2}, E. Brinks\textsuperscript{1}, D. A. Hunter\textsuperscript{3}  
\textsuperscript{1}University of Hertfordshire, United Kingdom, \textsuperscript{2}NRAO, \textsuperscript{3}Lowell Observatory.

149 HEAD The Variable and Surprising Gamma-ray Sky  
Monday, 9:00am-6:30pm, Exhibit Hall

149.01 The Search for Type 1 X-ray Bursts with Fermi/GBM  
Peter Jenke\textsuperscript{1}, M. Linares\textsuperscript{2}, V. Connaughton\textsuperscript{3}, A. Camero-Arranz\textsuperscript{4}, M. H. Finger\textsuperscript{4},  
C. A. Wilson-Hodge\textsuperscript{1}, A. Van Der Horst\textsuperscript{4}, Fermi-GBM X-ray burst collaboration  
\textsuperscript{1}MSFC/NPP, \textsuperscript{2}MIT, \textsuperscript{3}UAH, \textsuperscript{4}USRA, \textsuperscript{5}NASA/MSFC.

149.02 Contents and Construction of the Second Fermi Large Area Telescope Catalog  
of Gamma-ray Pulsars  
Tyrel J. Johnson\textsuperscript{1}, D. Parent\textsuperscript{2}, O. Celik\textsuperscript{3}, J. E. Grove\textsuperscript{4}, Fermi LAT Collaboration, Pulsar  
Timing Consortium  
\textsuperscript{1}NRC Fellow at NRL, \textsuperscript{2}GMU resident at NRL, \textsuperscript{3}NASA GSFC CRESST, \textsuperscript{4}NRL.

149.03 Study of Fast Pulsars Using Continuous Time Tagged Events from the GBM  
Detectors  
Narayana P. Bhat\textsuperscript{1}, M. H. Finger\textsuperscript{2}, P. A. Jenke\textsuperscript{1}, A. Camero-Arranz\textsuperscript{2},  
C. A. Wilson-Hodge\textsuperscript{1}, M. S. Briggs\textsuperscript{1}  
\textsuperscript{1}Univ. of Alabama in Huntsville, \textsuperscript{2}USRA, \textsuperscript{3}Marshall Space Flight Center.

149.04 An Extraordinary Flare in 3C454.3 in November 2010  
Ann E. Wehrle\textsuperscript{1}, A. Marscher\textsuperscript{2}, S. Jorstad\textsuperscript{2}, M. Gurwell\textsuperscript{3}  
\textsuperscript{1}Space Science Institute, \textsuperscript{2}Boston University, \textsuperscript{3}Harvard-Smithsonian Center for  
Astrophysics.

149.05 Multi-wavelength Observations of Cygnus X-1  
Angelo Variolotta\textsuperscript{1}, VERITAS Collaboration  
\textsuperscript{1}Smithsonian Astrophysical Observatory.

149.06 Polarized X-ray Synchrotron Emission in Blazars  
Matthew G. Baring\textsuperscript{1}, T. J. Sarkar\textsuperscript{1}  
\textsuperscript{1}Rice University.

149.07 Discovery of Evidence for Correlated X-ray/GeV Variability in the Feb. 2010  
Flare of Mrk 421  
Grzegorz Maria Madejski\textsuperscript{1}, B. Giebels\textsuperscript{2}, S. Fegan\textsuperscript{2}, D. Horan\textsuperscript{2}, J. Chiang\textsuperscript{1}, Fermi LAT  
Collaboration  
\textsuperscript{1}Stanford Linear Accelerator Ctr., \textsuperscript{2}LLR Ecole Polytechnique, France.

149.08 Exploring Physical Emission Processes via Spectral Fits to Bright Fermi Gamma-  
Ray Bursts  
James M. Burgess\textsuperscript{1}, R. Preece\textsuperscript{1}, M. Baring\textsuperscript{2}, Fermi GBM Science Team  
\textsuperscript{1}University of Alabama in Huntsville, \textsuperscript{2}Rice University.

149.09 The Fermi GBM Gamma-Ray Burst Spectral Catalog: The First Two Years  
Adam Goldstein\textsuperscript{1}, J. M. Burgess\textsuperscript{1}, R. D. Preece\textsuperscript{1}, Fermi/GBM Science Team  
\textsuperscript{1}University of Alabama in Huntsville.
149.10  **Fermi-LAT Observations of Gamma-ray Bursts**  
Judith L. Racusin¹, Fermi LAT and GBM Collaborations  
\(^1\text{NASA/GSFC.}\)

149.11  **Multi-Component Spectral Analysis of Bright Gamma Ray Bursts observed with the Fermi Gamma ray Space Telescope**  
Sylvain Guiriec¹  
\(^1\text{NASA Goddard Space Flight Center.}\)

149.12  **The Fermi GBM Gamma-Ray Burst Catalog: The First Two Years**  
William Simon Paciesas¹, Fermi GBM Collaboration  
\(^1\text{Univ. of Alabama Huntsville.}\)

149.13  **Observation of Terrestrial Gamma-ray Flashes with Fermi LAT**  
J. Eric Grove¹, A. Chekhtman², Fermi LAT Collaboration, G. Fishman³, M. Briggs⁴, V. Connaughton⁵, Fermi GBM Collaboration  
\(^1\text{Naval Research Laboratory, }^2\text{George Mason University, }^3\text{Marshall Space Flight Center,}\)  
\(^4\text{University of Alabama Huntsville.}\)

149.14  **Event-by-Event Errors: Using Covariance to Enhance the Fermi Sky**  
Brendan Wells¹, W. McConville², T. Johnson³, W. Atwood⁴, S. Ritz¹  
\(^1\text{University of California, Santa Cruz, }^2\text{University of Maryland, }^3\text{Goddard, NASA.}\)

149.15  **Detection Of Multi-photon Events With The Fermi-lat**  
Eric Charles¹, Fermi-LAT Collaboration  
\(^1\text{SLAC.}\)

149.16  **Understanding and Using the Fermi Science Tools**  
Eric L. Winter¹  
\(^1\text{NASA GSFC.}\)

149.17  **The Fermi Science Support Center**  
Donald J. Horner¹, Fermi Science Support Center Team  
\(^1\text{NASA’s GSFC.}\)

149.18  **The Fermi Gamma-ray Space Telescope: Looking Towards The Future**  
Julie E. McEnery¹, Fermi mission team  
\(^1\text{NASA’s GSFC.}\)

149.19  **Investigating the Unassociated Fraction in the Second Fermi-LAT Source Catalog**  
Elizabeth C. Ferrara¹, LAT Collaboration  
\(^1\text{NASA/GSFC.}\)

149.20  **Sources above 10 GeV in the Fermi Sky**  
David John Thompson¹, P. Fortin², D. Paneque³, Fermi Large Area Telescope Collaboration  
\(^1\text{NASA’s GSFC, }^2\text{Laboratoire Leprince-Ringuet, École polytechnique, France, }^3\text{Max-Planck-Institut für Physik, München, Germany.}\)

149.21  **Fermi Science Support Center Data Servers and Archive**  
Thomas E. Stephens¹  
\(^1\text{Wyle IS/Fermi Science Support Center.}\)
150 HAD III Poster Session
Monday, 9:00am-6:30pm, Exhibit Hall

150.01 Acronical Risings and Settings
Thomas A. Hockey
University of Northern Iowa.

150.02 Urania In The Marketplace: Telescopes, Real And Fantastic
Kenneth S. Rumstay
Valdosta State University and SARA.

150.03 University of Washington’s Manastash Ridge Observatory: 40 Years of Astronomy Research and Education
Julie H. Lutz, C. Laws, N. Ramien
Univ. of Washington.

151 Star Associations, Star Clusters - Galactic & Extra-galactic
Monday, 9:00am-6:30pm, Exhibit Hall

151.01 Filaments of Young Star Clusters and Star Formation in the Outer Regions of NGC 1275
Jenna E. Ryon, R. E. A. Canning, J. S. Gallagher, R. W. O’Connell, A. C. Fabian, R. M. Johnstone
University of Wisconsin - Madison, University of Cambridge, United Kingdom, University of Virginia.

151.02 The Size Distributions of Stellar Groupings in Nearby Galaxies: Clues to Formation and Disruption
Catherine C. Kaleida, B. C. Whitmore, R. Chandra, H. Kim
Cerro Tololo Inter-American Observatory, Chile, The Space Telescope Science Institute, University of Toledo, Arizona State University.

151.03 Deep Subaru Halpha Observations of M83 XUV Disk
Jin Koda, M. Yagi, S. Boissier, A. Gil de Paz, M. Imanishi, J. Donovan Meyer, B. F. Madore
Stony Brook University, National Astronomical Observatory of Japan, Japan, Laboratoire d’Astrophysique de Marseille, France, Departamento de Astrofisica, Universidad Complutense de Madrid, Spain, Subaru Telescope, Japan, Carnegie Institution of Washington.

151.04 Dissolution of Young Super Star Clusters in NGC 1569 from Adaptive Optics Imaging
John-Paul Crawford, N. McCrady, J. R. Graham, W. D. Vacca
University of Montana, University of Toronto, Canada, SOFIA-USRA.

151.05 The Panchromatic Hubble Andromeda Treasury: Characterizing Cluster Populations in a Stochastic Regime
Morgan Fouesneau, L. C. Johnson, D. R. Weisz, A. C. Seth, J. J. Dalcanton, PHAT Collaboration
University of Washington, University of Utah.

151.06 The Panchromatic Hubble Andromeda Treasury: A Bayesian Method for Constraining the High Mass Stellar IMF
Univ. of Washington, New York University, MPIA, Germany.
151.07 **Panchromatic Hubble Andromeda Treasury (PHAT): Comparing Ages and Masses of GALEX UV-Bright Regions and Resolved Stars**

Evan D. Skillman\(^1\), J. Simones\(^1\), D. R. Weisz\(^2\), J. J. Dalcanton\(^2\), B. F. Williams\(^2\), PHAT team

\(^1\)Univ. of Minnesota, \(^2\)Univ. of Washington.

151.08 **PHAT Clusters: Obtaining a Complete View of Stellar Clusters in M31**

Lent C. Johnson\(^1\), A. C. Seth\(^3\), J. J. Dalcanton\(^1\), I. San Roman\(^3\), N. Caldwell\(^4\), M. Fouesneau\(^1\), D. A. Gouliermis\(^5\), P. W. Hodge\(^1\), S. S. Larsen\(^6\), S. Nanda\(^7\), K. A. G. Olsen\(^8\), A. Sarajedini\(^1\), D. R. Weisz\(^1\)

\(^1\)University of Washington, \(^2\)University of Utah, \(^3\)University of Florida, \(^4\)Harvard-Smithsonian CfA, \(^5\)MPIA, Germany, \(^6\)University of Utrecht, Netherlands, \(^7\)Indian Institute of Technology, Kanpur, India, \(^8\)NOAO.

151.09 **An Automated Method for Finding Star Clusters in PHAT**

Knut A. Olsen\(^1\), M. Fouesneau\(^2\), L. Johnson\(^2\), A. C. Seth\(^3\), J. J. Dalcanton\(^2\), D. R. Weisz\(^2\), B. Williams\(^2\)

\(^1\)NOAO, \(^2\)University of Washington, \(^3\)University of Utah.

151.10 **PHAT Clusters: Constraining the Properties of Partially Resolved Clusters**

Lori Beerman\(^1\), L. C. Johnson\(^1\), D. R. Weisz\(^1\), J. J. Dalcanton\(^1\), PHAT Collaboration

\(^1\)University of Washington.

151.11 **HST CMDs of M31 Massive Clusters in the PHAT Survey**

Nelson Caldwell\(^1\), A. Dolphin\(^2\), B. Williams\(^3\), A. Seth\(^4\), PHAT team

\(^1\)Center for Astrophysics, \(^2\)Raytheon, \(^3\)UWa, \(^4\)UUtah.

151.12 **Spectra Of Star Clusters In The Large Magellanic Cloud As An Age Indicator**

Randa Asa’d\(^1\), M. M. Hanson\(^1\), A. Ahumada\(^2\)

\(^1\)University of Cincinnati, \(^2\)European Southern Observatory, Chile.

151.13 **Hunting for Shooting Stars in 30 Doradus**

Selma E. de Mink\(^1\), D. J. Lennon\(^1\), E. Sabbii\(^1\), J. Anderson\(^1\), L. R. Bedin\(^2\), S. Sohn\(^1\), R. P. van der Marel\(^1\), N. R. Walborn\(^1\), N. Bastian\(^3\), E. Bressert\(^4\), P. A. Crowther\(^5\), C. J. Evans\(^6\), A. Herrero\(^7\), N. Langer\(^8\), H. Sana\(^9\)

\(^1\)Space Telescope Science Institute, \(^2\)Osservatorio Astronomico di Padova, Italy, \(^3\)Universities-Sternwarte Munchen, Germany, \(^4\)European Southern Observatory, Germany, \(^5\)University of Sheffield, United Kingdom, \(^6\)Royal Observatory Edinburgh, United Kingdom, \(^7\)Instituto de Astrofisica de Canarias, Spain, \(^8\)Universitat Bonn, Argelander Institute for Astronomy, Germany, \(^9\)Universiteit vanamsterdam, Netherlands.

151.14 **Comparing Age and Mass Determinations from 100 Million Monte Carlo Simulations to 288 LMC Clusters with CMD Ages**

Bogdan Popescu\(^1\), M. M. Hanson\(^1\)

\(^1\)Univ of Cincinnati.

151.15 **Dynamics of Globular Clusters with Multiple Stellar Populations: Binary Star Disruption**

Enrico Vesperini\(^1\), S. L. W. McMillan\(^1\), F. D’Antona\(^2\), A. D’Ercole\(^3\)

\(^1\)Drexel Univ., \(^2\)INAF-Osservatorio Astronomico di Roma, Italy, \(^3\)INAF-Osservatorio Astronomico di Bologna, Italy.
MONDAY POSTER SESSIONS

151.16  **Structure and Dynamics of the Globular Cluster Palomar 13**  
Jeremy Bradford1, M. Geha2, R. R. Munoz3, F. A. Santana4, J. D. Simon5, P. Cote5, P. B. Stetson5, E. Kirby4, S. G. Djorgovski6  
1Yale University, Central Connecticut State University, 2Yale University, 3Universidad de Chile, Chile, 4The Observatories of the Carnegie Institution of Washington, 5National Research Council of Canada, Herzberg Institute of Astrophysics, Canada, 6California Institute of Technology.

151.17  **New BVI Photometry of Pal 13**  
Nathaniel Paust1, R. Nevin1, B. Chaboyer2  
1Whitman College, 2Dartmouth College.

151.18  **Distribution of Lick Indices in the Globular Cluster NGC 2808**  
Julia O’Connell1  
1Tennessee State University.

151.19  **Discovery of 6 SX Phoenicis Stars in the Globular Cluster NGC 4833**  
Brian W. Murphy1, A. N. Darragh1  
1Butler University & SARA Observatory.

151.20  **Discovery of 27 New Variable Stars in the Globular Cluster NGC 6584**  
Joseph Toddy1, E. W. Johnson2, A. N. Darragh1, B. W. Murphy2  
1University of Georgia, 2Butler University.

151.21  **Revealing New Open Clusters with the GLIMPSE-360 Survey**  
Karen Hamm1, R. L. Beaton1, G. Zasowski1, S. R. Majewski1, B. A. Whitney2  
1University of Virginia, 2University of Wisconsin.

151.22  **Comparison of Padova and Dartmouth Isochrones Using Deep Near Infrared Data for Key Open Clusters**  
Benjamin Thompson1, P. Frinchaboy1, T. Irwin2, J. Kalirai3  
1Texas Christian University, 2Texas A&M, 3STSCI.

151.23  **A Hubble Space Telescope Photometric Study of the Galactic Open Cluster Westerlund 2**  
Carlos Vargas Alvarez1, H. Kobulnicky1  
1University of Wyoming.

151.24  **A Comprehensive Story Of Young Star Cluster NGC 3603**  
Xiaoying Pang1, E. K. Grebel1, A. Pasquali1, M. Altmann1, R. Allison1  
1Heidelberg University, Germany, Germany.

151.25  **A New Look At An Old Cluster: Age, Activity, And Rotation In NGC 752**  
Emily C. Bowsher1, M. Agüeros1, J. Bochanski1, P. Cargile1, K. Covey4, A. Kraus5, N. Law6, K. Stassun1  
1Columbia University, 2Pennsylvania State University, 3Vanderbilt University, 4Lowell Observatory, 5Institute for Astronomy, University of Hawaii, 6Dunlap Institute, University of Toronto, Canada.

151.26  **Ruprecht 147: Membership and Properties of the Nearest Old Cluster**  
Jason L. Curtis1, J. T. Wright1  
1The Pennsylvania State University.

151.27  **Core Collapse: The Race Between Stellar Evolution and Binary Heating**  
Joseph M. Converse1, R. Chandar1  
1University of Toledo.

151.28  **The Dynamical Formation of Young Black Hole Binaries in Dense Star Clusters**  
Kristen Garofali1, J. Converse2, R. Chandar2, B. Rangelov2  
1Michigan State University, 2University of Toledo.
151.29 Age Determination for the Open Cluster NGC 6939 from the Eclipsing Binary V12
Chantal Gonzalez1, E. L. Sandquist1, E. George2, M. Shetrone3, J. Orosz1
1San Diego State University, 2Humboldt State University, 3McDonald Observatory.

151.30 The AB Dor Moving Group: A Chemically Heterogeneous Kinematic Stream?
Scott A. Barenfeld1, E. J. Bubar2, E. E. Mamajek1, P. A. Young3
1University of Rochester, 2Marymount University, 3Arizona State University.

152 Stellar Evolution, Stellar Populations, Abundances

Monday, 9:00am-6:30pm, Exhibit Hall

152.01 The Circumstellar Environment of R Coronae Borealis: White Dwarf Merger or Final Helium Shell Flash?
Geoffrey C. Clayton1
1Louisiana State Univ

152.02 Mass Loss and Stellar Evolution Models of Polaris
Hilding R. Neilson1, S. G. Engle2, E. Guinan2, N. Langer1
1University of Bonn, Germany, 2Villanova University.

152.03 Manganese Abundances In Three Metal-poor Stars Using Improved log(gf)
Data For Mn I And Mn II Lines
James E. Lawler1, J. S. Sobek2, E. A. Den Hartog1, C. Sneden1, J. J. Cowan4, J. W. Truran2
1University of Wisconsin, 2University of Chicago, 3University of Texas, 4University of Oklahoma.

152.04 Improved Yttrium and Zirconium Abundances in Metal-Poor Stars
Renata Violante1, E. Biemont2, J. J. Cowan3, C. Sneden1
1University of Texas, 2Université de Mons, Belgium, 3University of Oklahoma.

152.05 Galactic Globular Cluster NGC1261: “Young”, Low-alpha and Star-to-Star Abundance Variations In Na-O?
Dan Filler1, I. I. Ivans1, J. Simmerer1
1The University of Utah.

152.06 Kinematic Analysis of Subpopulations in NGC 1851 and NGC 2808
Katharine Larson1, N. Byler2, A. Seth1, M. Walker3, M. Mateo4, J. Strader3
1University of Utah, 2University of Washington, 3Harvard-Smithsonian CfA, 4University of Michigan.

152.07 Chemical Compositions of Stars in the Globular Cluster NGC 3201: Tracers of Multi-Epoch Star Formation
Jennifer A. Simmerer1, I. I. Ivans1, D. Filler1
1University of Utah.

152.08 Comparisons Of Lighter Neutron-capture Elements In Galactic Halo Stars
Jacob Teffs1, T. Odekirk1, D. L. Burris1
1University of Central Arkansas.

152.09 Open Cluster Neutron Capture Element Abundances and Milky Way Disk Evolution
Heather R. Jacobson1, E. D. Friel2
1Michigan State Univ., 2Indiana Univ
152.10 **Solving the Ca II Triplet Puzzle for Elliptical Galaxies**  
Christopher J. Miller¹, K. S. Krughoff², J. W. Richards³, M. Bergmann⁴  
¹University of Michigan, ²University of Washington, ³University of California, Berkeley, ⁴Gentleman Astronomer.

152.11 **The Chemical Composition of RGB Stars in Off-Axis Bulge Fields**  
Christian I. Johnson¹, R. Rich¹, A. Kunder², R. de Propris², C. Kobayashi³, A. Koch⁴  
¹University of California, Los Angeles, ²Cerro-Tololo Inter-American Observatory, Chile, ³The Australian National University, Australia, ⁴University of Heidelberg, Germany.

152.12 **Age, Period, And Inclination Determination For Stars In The Debris Survey**  
Laura Vican¹, B. Zuckerman¹  
¹UCLA.

152.13 **Rotation Periods of the Hyades Open Cluster using ASAS Light Curves: Measuring the Hyades Gyro-Age and Benchmarking Tools for Gyrochronology Studies with LSST**  
Alisha Kundert¹, P. A. Cargile¹, S. Dhital¹, L. Hebb¹, J. Rostron², K. G. Stassun¹  
¹Vanderbilt University, ²Warwick University, United Kingdom.

152.14 **A Bayesian Approach to Parameters of Galactic Globular Clusters**  
Roger Cohen¹, T. von Hippel², A. Dotter³, A. Sarajedini¹, N. Stein⁴, E. Jeffery⁵, M. Montgomery⁶, D. A. van Dyk⁷  
¹Univ. Of Florida, ²Embry-Riddle Aeronautical University, ³Space Telescope Science Institute, ⁴Harvard University, ⁵James Madison University, ⁶Univ. Of Texas Austin, ⁷Imperial College, United Kingdom.

152.15 **Rotation Period of Blanco 1 Members from KELT Light Curves: Comparing Rotation-Ages to Various Stellar Chronometers at 100 Myr**  
Phillip Cargile¹, D. J. James², J. Pepper¹, R. Kuhn³, R. J. Siverd¹, K. G. Stassun¹  
¹Vanderbilt Univ., ²Cerro Tololo Inter-American Observatory, Chile, ³University of Cape Town, South Africa.

152.16 **Color Distributions of Stars in the WISE Preliminary Data Release**  
Nicholas Hunt-Walker¹, J. R. A. Davenport¹, A. R. Lewis¹, J. Ruan¹, L. Anderson¹, Y. AlSayyad¹, A. Becker¹, Z. Ivezic¹  
¹University of Washington - Seattle.

152.17 **Spectral Classification of Massive Stars in M31 and M33**  
Brianna Smart¹, P. Massey², D. R. Silva³  
¹University of Arizona, ²Lowell Observatory, ³NOAO.

152.18 **Is the Sun a Good Solar Twin?**  
Laurence E. DeWarf¹, E. F. Guinan¹, S. G. Engle¹, J. A. Robertson¹, J. M. DePasquale³  
¹Villanova Univ., ²Harvard-Smithsonian CfA.

153 Binary Stellar Systems: X-ray Binaries

Monday, 9:00am-6:30pm, Exhibit Hall

153.01 **Recent Integral Observations Of The Galactic Center Region: The Black Hole X-ray Binary Grs 1758-258 And The Enigmatic X-ray Binary 4u 1700-377**  
Aisha Mahmoud⁴, K. Pottschmidt², V. Grinberg³, D. Marcu², A. M. Lohfink⁴, M. Obst³, M. Cadelle⁶, I. Kreykenbohm³, J. Wilms³  
⁴University of Arkansas-Fayetteville, ²University of Maryland, Baltimore/CRESST & NASA Goddard Space Flight Center, ³Dr. Remeis Observatory, Germany, ⁶U. of Maryland, College Park, ³ESAC, Spain.
153.02  X-ray Binaries in the Ultrahigh Collision Rate Globular Cluster NGC 6388
James Edward Maxwell\textsuperscript{1}, H. N. Cohn\textsuperscript{1}, P. M. Lugger\textsuperscript{1}, C. O. Heinke\textsuperscript{2}, S. A. Budac\textsuperscript{2}
\textsuperscript{1}Indiana University, \textsuperscript{2}University of Alberta, Canada.

153.03  New Interacting Binaries Identified by the Chandra Galactic Bulge Survey
Christopher Britt\textsuperscript{1}, R. I. Hynes\textsuperscript{1}, P. G. Jonker\textsuperscript{2}, C. G. Bassa\textsuperscript{2}, G. Nelemans\textsuperscript{3}, D. Steeghs\textsuperscript{3}, M. A. P. Torres\textsuperscript{3}, T. J. Maccarone\textsuperscript{4}, S. Greiss\textsuperscript{5}, V. J. Mikles\textsuperscript{1}, L. Gossen\textsuperscript{1}, A. C. Collazzi\textsuperscript{1}, Galactic Bulge Survey Collaboration
\textsuperscript{1}Louisiana State University, \textsuperscript{2}SRON, Netherlands Institute for Space Research, Netherlands, \textsuperscript{3}University of Manchester, United Kingdom, \textsuperscript{4}Radboud University, Netherlands, \textsuperscript{5}University of Warwick, United Kingdom, \textsuperscript{6}University of Southampton, United Kingdom.

153.04  An Emission Line Survey for Fields Around High Mass X-Ray Binaries
Michael D. Joner\textsuperscript{1}, E. G. Hintz\textsuperscript{1}
\textsuperscript{1}Brigham Young Univ

153.05  Optical Observations of the Black Hole LMXB J1118+480
Lorena Monroy\textsuperscript{1}, P. A. Mason\textsuperscript{1}, E. L. Robinson\textsuperscript{2}, A. J. Bayless\textsuperscript{3}
\textsuperscript{1}University of Texas at El Paso, \textsuperscript{2}University of Texas at Austin, \textsuperscript{3}Southwest Research Institute (SwRI).

153.06  The LMXB Population of the Nearest Large Elliptical Galaxy: Implications on the Distance to Maffei
Ann Kathryn Rockwell\textsuperscript{1}, J. A. Irwin\textsuperscript{1}
\textsuperscript{1}University of Alabama.

153.07  Optical Photometry of the Black Hole Candidate SWIFT J1753.4-0126
Aurelio Paez\textsuperscript{1}, P. A. Mason\textsuperscript{1}, E. L. Robinson\textsuperscript{2}, A. J. Bayless\textsuperscript{3}
\textsuperscript{1}University of Texas at El Paso, \textsuperscript{2}University of Texas at Austin, \textsuperscript{3}Southwest Research Institute (SwRI).

153.08  Observations of Ellipsoidal Variations in the LMXB V1727 Cygni
Alex Price\textsuperscript{1}, P. A. Mason\textsuperscript{1}, E. L. Robinson\textsuperscript{2}
\textsuperscript{1}University of Texas at El Paso, \textsuperscript{2}University of Texas at Austin.

153.09  WITHDRAWN: Search for Gamma-Ray Emission from Variable Galactic Radio Sources
Chris R. Shrader\textsuperscript{1}, D. J. Macomb\textsuperscript{2}
\textsuperscript{1}NASA’s GSFC, \textsuperscript{2}Boise State University.

153.10  Radial Velocity Variations In The Gamma-ray Binary HESS J0632+057
M. Virginia McSwain\textsuperscript{1}, C. Aragona\textsuperscript{1}, A. N. Marsh Boyer\textsuperscript{1}, S. D. Bongiorno\textsuperscript{2}, R. L. Bowers\textsuperscript{1}, N. L. Hernandez\textsuperscript{1}
\textsuperscript{1}Lehigh Univ., \textsuperscript{2}Penn State.

153.11  The Distance Of The Gamma-ray Binary 1FGL J1018.6-5856
Vanessa Napoli\textsuperscript{1}, M. V. McSwain\textsuperscript{2}, A. N. Marsh Boyer\textsuperscript{2}, R. M. Roettenbacher\textsuperscript{3}
\textsuperscript{1}The Catholic University of America, \textsuperscript{2}Lehigh Univ., \textsuperscript{3}Univ. Michigan.

153.12  HST/COS Observations of X-ray Binaries
Cynthia S. Froning\textsuperscript{1}, E. Robinson\textsuperscript{2}, R. Hynes\textsuperscript{3}, T. Maccarone\textsuperscript{4}, K. France\textsuperscript{1}
\textsuperscript{1}Univ. of Colorado, \textsuperscript{2}University of Texas at Austin, \textsuperscript{3}Louisiana State University, \textsuperscript{4}University of Southampton, United Kingdom.

153.13  The Optical Orbital Light Curve of V1408 Aquilae (= 4U 1957+115): A Black Hole Candidate That Is Really a Neutron Star?
Edward L. Robinson\textsuperscript{1}, A. J. Bayless\textsuperscript{2}, P. A. Mason\textsuperscript{1}, P. Robertson\textsuperscript{1}
\textsuperscript{1}Univ. of Texas, \textsuperscript{2}Southwest Research Institute, \textsuperscript{3}Univ. of Texas at El Paso.
153.14 A Numerical Model for Absorption Dips and Comparison with Observations of Hercules X-1
Denis A. Leahy¹, C. D. Igna²
¹Univ. of Calgary, Canada.

153.15 X-rays from Blue Compact Dwarf Galaxies
Joseph Schmitt¹, P. Kaaret¹, M. Gorski²
¹University of Iowa, ²University of New Mexico.

153.16 The Relation Between Disk Scale-Height and Jet Power in GRMHD Simulations
Julia Wilson¹, P. Fragile¹, M. Rodriguez¹
¹College of Charleston.

153.17 Modelling The Coupling Of Variability And Spectral Emission In Black Hole X-ray Binaries
Pablo Cassatella¹, P. Uttley², J. Houck², J. E. Davis³
¹University of Southampton, United Kingdom, ²University of Amsterdam, Netherlands, ³MIT.

153.18 Ultraviolet Spectra of ULX Systems
Julie Felberg¹, J. Bregman¹, P. J. Seitzer¹, J. Liu², M. Kuemmel³
¹University of Michigan, ²Harvard, ³SpaceTelescope Science Institute.

153.19 Modeling The Evolution Of Low Mass X-Ray Binaries In Globular Clusters
Sanghamitra Goswami¹
¹Northwestern University.

153.20 Searching for Optical Variability from X-ray Sources in the Galactic Bulge Survey
Victoria Villar¹, R. I. Hynes², C. T. Britt², P. G. Jonker², C. G. Bassa³, G. Nelemans³, S. Danny³, M. A. Torres¹, T. J. Maccarone¹, S. Greiss⁵, E. M. Ratti¹, V. J. Mikles⁶, L. Gossen⁷, A. C. Collazzi²
¹Massachusetts Institute of Technology, ²Louisiana State University, ³SRON, Netherlands Institute for Space Research, Netherlands, ⁴University of Manchester, United Kingdom, ⁵Radboud University, Netherlands, ⁶University of Warwick, United Kingdom, ⁷University of Southampton, United Kingdom.

153.21 Rapid Response Galactic X-ray Transient Follow-up with Swift
Jamie A. Kennea¹
¹Penn State Univ

153.22 The Size And Shape Of The Mass Transfer Nozzle In Eccentric Interacting Binary Star Systems
Alyssa Mancini¹, C. Haggerty², J. Sepinsky¹
¹University of Scranton, ²University of Delaware.

153.23 New Results from the MW Campaign to Observe the 2010/2011 Periastron Passage of the Binary Pulsar System PSR B1259-63/LS 2883
Aous Abdo¹
¹George Mason University / Naval Research Laboratory.

153.24 The Close Binary Fraction of Dwarf M Stars
Benjamin Clark¹, C. H. Blake², G. R. Knapp²
¹California Institute of Technology, ²Princeton University.

153.25 An Orbital Radial Velocity Study of PG 1701+359, a Hot Subdwarf B Star with a Cool Main Sequence Companion
Sandra Liss¹, R. A. Wade¹, B. N. Barlow¹, M. A. Stark²
¹Pennsylvania State University, ²University of Michigan-Flint.
153.26 Radio Stars Observed With Milli-arcsecond Resolution With The Navy Optical Interferometer
Robert T. Zavala\textsuperscript{1}, J. J. Sanborn\textsuperscript{2}
\textsuperscript{1}US Naval Observatory Flagstaff Station, \textsuperscript{2}Lowell Observatory.

153.27 UBVRI Observations And Analysis Of The Solar Type, Total Eclipsing Binary, TYC 3034-299-1
Danny R. Faulkner\textsuperscript{1}, N. Blum\textsuperscript{1}, R. G. Samec\textsuperscript{2}, A. Jaso\textsuperscript{2}, P. M. Smith\textsuperscript{2}, J. White\textsuperscript{2}, W. Van Hamme\textsuperscript{1}
\textsuperscript{1}University of South Carolina Lancaster, \textsuperscript{2}Bob Jones University, \textsuperscript{3}Florida International University.

153.28 WITHDRAWN: Eclipse Timing Variations of Short-Period Binaries in the Kepler Field
Kyle E. Conroy\textsuperscript{1}, A. Prsa\textsuperscript{1}, J. Orosz\textsuperscript{1}, W. Welsh\textsuperscript{1}, N. Batalha\textsuperscript{3}, D. Koch\textsuperscript{4}, W. Borucki\textsuperscript{4}
\textsuperscript{1}Villanova University, \textsuperscript{2}San Diego State University, \textsuperscript{3}San Jose State University, \textsuperscript{4}NASA Ames Research Center.

153.29 New Observations Of The Eclipsing Red Dwarfs In LP133-373
Todd R. Vaccaro\textsuperscript{1}, S. Vennes\textsuperscript{2}, A. Kawka\textsuperscript{3}, D. Terrell\textsuperscript{3}
\textsuperscript{1}Francis Marion University, \textsuperscript{2}Astronomical Institute AV CR Ondrejov, Czech Republic, \textsuperscript{3}Southwest Research Institute.

153.30 Fermi/GBM Observations Of Torque Switching in Accreting Pulsars
Mark H. Finger\textsuperscript{1}, A. Camero-Arranz\textsuperscript{1}, C. A. Wilson-Hodge\textsuperscript{2}, P. A. Jenke\textsuperscript{3}
\textsuperscript{1}USRA/NSSTC, \textsuperscript{2}NASA/MSFC, \textsuperscript{3}MSFC/NPP.

153.31 Row, Row, Row Your Stokes To The Demon Star
Janalee Harrison\textsuperscript{1}, R. T. Zavala\textsuperscript{2}, D. A. Boboltz\textsuperscript{3}, D. J. Hutter\textsuperscript{2}, R. J. Ojha\textsuperscript{4}, M. T. Richards\textsuperscript{5}, D. B. Shaffer\textsuperscript{6}, C. Tycner\textsuperscript{7}
\textsuperscript{1}Northern Arizona University, \textsuperscript{2}US Naval Observatory Flagstaff Station, \textsuperscript{3}US Naval Observatory, \textsuperscript{4}GSFC, \textsuperscript{5}Penn State University, \textsuperscript{6}Lowell Observatory, \textsuperscript{7}Central Michigan University.

153.32 Eclipse Timing Variations of Long-Period Binaries in the Kepler Field
Jerome A. Orosz\textsuperscript{1}, D. R. Short\textsuperscript{1}, G. Windmiller\textsuperscript{1}, W. F. Welsh\textsuperscript{1}, Kepler Team
\textsuperscript{1}San Diego State University.

153.33 New Massive Binaries in the Cygnus OB2 Association
Rachel Smullen\textsuperscript{1}, H. Kobulnicky\textsuperscript{1}, D. Kiminki\textsuperscript{1}, J. Runnoe\textsuperscript{1}, G. Long\textsuperscript{1}, E. Wood\textsuperscript{1}, I. Ewing\textsuperscript{1}, C. Vargas-Alvarez\textsuperscript{1}, M. Alexander\textsuperscript{1}, A. Bhattacharjee\textsuperscript{1}
\textsuperscript{1}University of Wyoming.

153.34 Demystifying the Confounding Long-Period Eclipsing Binary Epsilon Aurigae - Investigating Clues from its past behavior and possible Stellar Associates
Cole Johnston\textsuperscript{1}, E. F. Guinan\textsuperscript{1}, P. Harmanec\textsuperscript{2}, P. Mayer\textsuperscript{2}
\textsuperscript{1}Villanova University, \textsuperscript{2}Astronomical Institute of the Charles University, Czech Republic.

153.35 A Long-Period Benchmark Eclipsing Binary From MARVELS
Scott W. Fleming\textsuperscript{1}, S. Mahadevan\textsuperscript{1}, L. Hebb\textsuperscript{2}, R. Deshpande\textsuperscript{1}, A. Roy\textsuperscript{1}, E. Agol\textsuperscript{1}, N. De Lee\textsuperscript{1}, S. Gaudi\textsuperscript{1}, J. Ge\textsuperscript{1}, L. Ghezzi\textsuperscript{1}, J. Pepper\textsuperscript{1}, R. J. Siverd\textsuperscript{2}, K. Stassun\textsuperscript{1}, J. Wisniewski\textsuperscript{1}, M. Wood-Vasey\textsuperscript{7}
\textsuperscript{1}Penn State University, \textsuperscript{2}Vanderbilt University, \textsuperscript{3}University of Washington, \textsuperscript{4}The Ohio State University, \textsuperscript{5}University of Florida, \textsuperscript{6}Observatório Nacional/LIneA, Brazil, \textsuperscript{7}University of Pittsburgh.

153.36 WIYN Open Cluster Study: Orbital Solutions for Hard Binaries of NGC 6819
Katelyn Milliman\textsuperscript{1}, R. Mathieu\textsuperscript{1}, A. M. Geller\textsuperscript{1}, N. M. Gosnell\textsuperscript{1}, S. Meibom\textsuperscript{1}
\textsuperscript{1}University of Wisconsin-Madison, \textsuperscript{2}Northwestern University, \textsuperscript{3}Harvard-Smithsonian Center for Astrophysics.
153.37 WITHDRAWN: UTEP Observatory: Interacting Binary Star Research and Education Under the NSF PAARE Program
Hector Noriega-Mendoza¹, P. A. Mason¹, C. Li¹, L. Monroy¹, A. Paez¹, A. Price¹,
M. Quiroz¹
¹University of Texas at El Paso.

153.38 Transit Timing Variations In Binary Star Systems
Eric Sansone¹, N. Haghighipour²
¹Keene State College, ²University of Hawaii - Manoa.

Jean-Claude Passy¹, F. Herwig²
¹American Museum of Natural History, NY, University of Victoria, Canada, ²University of Victoria, Canada.

153.40 Fitting Observed Spectra with a Binary Spectral Synthesis Code
Jonathan Becker¹, N. Hill², K. Milliman³, R. Townsend³
¹Carleton College, ²UW-Madison.

153.41 Light Curve Solutions of Eclipsing Binaries in the Large Magellanic Cloud
Meredith L. Rawls¹, M. S. Rao²
¹New Mexico State University, ²Indian Institute of Astrophysics, India.

153.42 Measurement Of Separation And Position Angle Of Binary Stars
Rafael J. Muller¹, J. C. Cersosimo¹, R. A. Rodriguez¹, M. Rosario¹, M. Diaz-Rodriguez¹,
E. Franco¹
¹Univ. of Puerto Rico, Humacao.

153.43 On the Nature of Continuum and Ha Emission Variations of V471 Tau-type Stars
Caitlin Brecklin¹, V. Strelntski², G. Walker², D. Sliski², L. Brown³, M. Muller³,
B. Bosworth⁴

153.44 Spectroscopic Orbits for Kepler Field of View Binaries
Rachel A. Matson¹, S. J. Williams¹, D. R. Gies¹, Z. Guo¹
¹GSU.

153.45 The Eccentricity Distribution of Binary Star Systems at the Onset of Roche Lobe Overflow
Christopher Culver¹, J. Sepinsky¹, K. Belczynski²
¹University of Scranton, ²University of Warsaw, Poland.

153.46 High Resolution IR Spectroscopy of D-type Symbiotic Novae
Kenneth H. Hinkle¹, F. C. Fekel², R. R. Joyce¹, P. Wood³
¹NOAO, ²Tennessee State University, ³Australian National University, Australia.

153.47 Fragile Binary Candidates in the SDSS DR8 Spectroscopic Archive
Terry D. Oswalt¹, J. Zhao¹
¹Florida Institute of Technology.

153.48 Deep GALEX and Optical Images of the R Aqr Symbiotic System
Joy S. Nichols¹, T. Liimets², E. Kellogg¹, R. L. M. Corradi³, J. Slavin¹
¹Harvard-Smithsonian, CFA, ²Tartu Observatory, Estonia, ³Departamento de Astrofísica, Universidad de La Laguna, Spain.
154 AGN, QSO, Blazars I

Monday, 9:00am-6:30pm, Exhibit Hall

154.01 The FAST BAL Monitoring Campaign: Multi-epoch Constraints on Quasar Outflows
Kenza S. Arraki¹, D. Haggard², S. Anderson³, P. Green⁴, T. Aldcroft⁴
¹New Mexico State University, ²Northwestern University, ³University of Washington, ⁴Harvard-Smithsonian Center for Astrophysics.

154.02 Spectral Analysis of Radio-Selected Galaxies with the Atacama Cosmology Telescope
Wenli Mo¹, T. Marriage¹
¹Johns Hopkins University.

154.03 Which Processes are Responsible for Triggering Active Galactic Nuclei?
Aden R. Draper¹, D. R. Ballantyne¹
¹Georgia Institute of Technology.

154.04 A Ten-Year Photometric Study of Eleven Active Galaxies
Caroline Anna Roberts¹, K. S. Rumstay²
¹Sewanee: The University of the South and SARA, ²Valdosta State University and SARA.

154.05 Time Dependent Photoionization of Gas Outflows in AGN
Ehab E. Elhoussieny¹, M. A. Bautista², J. Garcia²
¹Western Michigan University, ²NASA/Goddard Space Flight Center, Catholic University of America.

154.06 X-ray Observations of Broad Absorption Line Quasars
Leah K. Morabito¹, X. Dai¹, K. M. Leighly¹, G. R. Sivakoff³, F. Shankar³
¹University of Oklahoma, ²University of Alberta, Canada, ³GEPI-Observatoire de Paris, France.

154.07 The Evolution With Redshift Of The Seds Of X-ray Selected Sources
Perry Natalie¹, D. Marchesini¹
¹Tufts University.

154.08 Comparison Of Optical, UV, X-ray, And Gamma-ray Variations Of Selected Blazars In 2011
Santina Consiglio¹, A. P. Marscher², S. G. Jorstad³, G. Walker³
¹University of Notre Dame, Maria Mitchell Observatory, ²Boston University, ³Maria Mitchell Observatory.

154.09 Stripe 82 X: Archival XMM Newton- And Chandra-selected AGN In SDSS Stripe 82
C. Megan Urry¹, S. LaMassa¹, E. Glikman¹, F. Santana¹, B. Lundgren¹,
N. Padmanabhan¹, K. Schawinski¹, B. Simmons¹, E. Treister³, D. Wake¹
¹Yale Univ., ²U. de Chile, Chile, ³Concepcion University, Chile.

154.10 Investigating the Influence of the Quasar Spectral Energy Distribution on Emission Lines Using Large-scale LOC Models
Karen Leightly¹, M. D. P. Hemantha¹, G. Richards²
¹Univ. of Oklahoma, ²Drexel University.

154.11 Black hole masses and Eddington Ratios in a Large Sample of Active Galactic Nuclei
Annette Michel¹, D. M. Crenshaw¹
¹Georgia State Univ.
154.12 The Structure and Energetics of AGN Winds  
D. Michael Crenshaw1, S. B. Kraemer2, T. C. Fischer3, H. R. Schmitt4, T. J. Turner4  
1Georgia State Univ., 2Catholic University of America, 3Naval Research Laboratory, 4University of Maryland Baltimore County.

154.13 First Spitzer Detection Of Dust Reverberation At 3.6 Microns In The Seyfert 1 Galaxy Zw 229-015  
Varoujan Gorjian1, A. Barth2, M. Malkan3, A. Filippenko4, J. Bloom4  
1JPL/Caltech, 2UC Irvine, 3UCLA, 4UC Berkeley.

154.14 Properties of Quasar Close Pairs in the Chandra COSMOS Survey  
Emily C. Cunningham1, F. Civano2, T. L. Aldcroft2, M. Elvis2  
1Haverford College, 2Harvard-Smithsonian Center for Astrophysics.

154.15 Probing Spectral Properties of Radio-quiet Quasars Searched for Optical Microvariability  
Paul J. Wiita1, R. Joshi2, H. Chand3, A. C. Gupta2, R. Srianand1  
1The College of New Jersey, 2ARIES, India, 3IUCAA, India.

154.16 Blazar Demographics from Multiwavelength Surveys  
Benjamin Elder1, C. M. Urry1, T. Brandt2, L. Maraschi3  
1Yale University, 2Princeton University, 3INAF, Italy.

154.17 Understanding Quasar Variability through Kepler  
Daniel Silano1, P. J. Wiita1, A. E. Wehrle2, S. C. Unwin3  
1The College Of New Jersey, 2Space Science Institute, 3JPL.

154.18 Testing Evolutionary Models of Giant Radio Sources by Comparing Observations and Simulations  
Valerie Marchenko1, A. Kimball1  
1Brandeis University, 2National Radio Astronomy Observatory.

Gregory Mosby1, I. Wold1, A. Sheinis1, J. Richards2  
1University of Wisconsin, Madison, 2UC Berkeley.

154.20 The Environments Of The Brightest QSOs At Z ≈ 2.7  
Ryan Trainor1, C. C. Steidel1  
1Caltech.

154.21 Anomalous Trends in Quasar Emission Lines with Accretion Disk Temperature  
Alyx Stevens1, G. Shields1, E. Bonning2  
1University of Texas Austin, 2Yale University.

Sunil Fernandes1, E. Schlegel1  
1University of Texas at San Antonio.

154.23 X-Ray Selected AGN in A Merging Cluster  
Joanna M. Taylor1, D. Norman2, I. Soechting3, G. Coldwell4  
1Indiana University, 2National Optical Astronomy Observatory, 3Oxford University, United Kingdom, 4El Instituto de Ciencias Astronómicas, de la Tierra y del Espacio, Argentina.

154.24 Iron Depletion Into Grains as a Driver of Fe II Strength in AGNs  
Gregory A. Shields1  
1Univ. of Texas.
154.25 Withdrawn: Environments of Low Redshift Quasars
Christopher Thibodeau1, A. Rafiee1, J. Scott1, M. Richmond1, J. Bechtold2, E. Ellington3
1Towson University, 2University of Arizona, 3University of Colorado.

154.26 Kiloparsec-scale Jets In The 3cr Lobe-dominated Quasars
Gareth C. Jones1, D. H. Hough1
1Trinity University.

154.27 Observations and Models of Multiwaveband Variability of Blazars
Alan P. Marscher1, S. G. Jorstad2, V. M. Larionov2, I. Agudo2, P. S. Smith4, A. Lahteenmaki5, M. Joshi6, K. Williamson1, N. MacDonald1, M. F. Aller6, H. D. Aller6
1Boston Univ., 2St. Petersberg State Univ., 3Instituto de Astrofisica de Andalucia, Spain, 4Steward Obs., 5Metsahovi Radio Observatory, Finland, 6Univ. Michigan.

154.28 Recollimation Boundary Layers in Relativistic Jets
Susanna Kohler1, M. C. Begelman1
1JILA, University of Colorado and NIST.

154.29 Relation Between Events In The Millimeter-wave Core And Gamma-ray Outbursts In Blazars
Svetlana G. Jorstad1, A. P. Marscher1, I. Agudo2, N. MacDonald1, T. Scott1, K. Williamson1
1Boston Univ., 2IAA, Granada, Spain.

154.30 Turbulence, Energy Transfer, And Dissipation In 3d Mhd Simulations Of The Kelvin-helmholtz Instability
Greg Salvesen1, K. Beckwith1, J. B. Simon1, S. M. O’Neill1, S. W. Skillman2, M. C. Begelman1
1JILA, University of Colorado, 2CASA, University of Colorado.

154.31 Observations of High Energy Flaring Events in M87 at Multiple Wavelengths from TeV to Radio
Robert Craig Walker1, M. Beilicke2, C. Cheung1, P. Hardee1, D. Harris1, W. Junor4, H. Krawczynski3, C. Ly7, D. Mazin6, W. McConville6, M. Raue10, R. Wagner11, VERITAS Collaboration, MAGIC Collaboration, H.E.S.S. Collaboration, Fermi-LAT Collaboration
1NRAO, 2Washington University in St. Louis, 3National Aeronautics and Space Administration, 4University of Alabama at Tuscaloosa, 5Harvard-Smithsonian Center for Astrophysics, 6University of California, 7Space Telescope Science Institute, 8IFAE, Spain, 9University of Maryland, 10University of Hamburg, Germany, 11Max-Planck-Institute for Physics.

154.32 Constraints on Outflow Properties From Mg II in the Broad Absorption-Line Quasar FBQS J1151+3822
Adrian B. Lucy1, K. M. Leighly1, D. M. Terndrup3, M. Dietrich3, S. C. Gallagher4
1University of Oklahoma, 2National Science Foundation and Ohio State University, 3Ohio State University, 4University of Western Ontario.

154.33 BVR Photometry Of An Inverted-spectrum, Flat-spectrum Radio Source With The Rowan 0.4-meter Telescope
Erick Guerra1, A. Diekewicz1
1Rowan Univ

154.34 Modeling the Spectral Energy Distribution of 3C 279 in the Fermi Era
1Cornell University, 2Widener University, 3Bucknell University, 4University of Michigan.
MONDAY POSTER SESSIONS

154.35 The First Hubble/COS Extreme-Ultraviolet AGN Composite Spectrum
Matthew L. Stevans1, J. M. Shull1, C. W. Danforth1
1University of Colorado - Boulder.

154.36 Eddington Ratios Of Dust Obscured Quasars
Mark Lacy1, T. Urruita2, S. E. Ridgway3, A. O. Petric4, D. Farrah5, E. Glikman6, A. Sajina7
1NRAO, 2AIP, Germany, 3NOAO, 4Caltech, 5Sussex, United Kingdom, 6Yale, 7Tufts.

154.37 The Optical/Gamma Ray Variability of the Blazar OE 110
Hugh R. Miller1, J. Eggen1, J. Maune1
1Georgia State Univ

154.38 Characterizing Active Galactic Nuclei in the Hard X-Ray Spectrum
Allison Ashburn1, L. Winter2
1Benedictine College, 2University of Colorado at Boulder.

155 Exoplanet Mission Technologies

Monday, 9:00am-6:30pm, Exhibit Hall

This poster session features papers which highlight technology progress and plans toward space missions which will detect and characterize low-mass extrasolar planets around nearby stars. The main focus is on techniques for starlight suppression, allowing the direct detection of light from an exoplanet and enabling studies based on photometry and spectroscopy of the planet’s light. Progress has been made on several distinct techniques for achieving the needed starlight rejection. The session will also include technology developments toward other kinds of exoplanet measurements, such as microlensing, precision astrometry, and transit spectroscopy.

155.01 Technology Development for Exoplanet Missions
Peter R. Lawson1
1JPL.

155.02 A Hybrid Lyot Coronagraph for the Direct Imaging and Spectroscopy of Exoplanet Systems: Recent Laboratory Demonstrations and Prospects
John T. Trauger1, D. Moody1, B. Gordon1, J. Krist1, D. Mawet2
1JPL, 2ESO, Chile.

155.03 Planet Detection Algorithm using Multiple Images with Independent Speckle Patterns
Elizabeth Young1, N. J. Kasdin1, A. Carlotti1
1Princeton University.

155.04 Designing Shaped Pupils Without Extraneous Constraints
Robert J. Vanderbei1, A. Carlotti1, N. Kasdin1
1Princeton Univ

155.05 A Reconfigurable Lenslet Integral Field Spectrograph for Detecting and Characterizing Exoplanets from Space
Marshall D. Perrin1
1STScI.

155.06 The Great Advantage of Larger Apertures for Exoplanet Characterization
Marc Postman1, I. N. Reid1, R. Soummer1, N. J. Kasdin2, A. Sivaramakrishnan1, M. Mountain1, J. M. Grunsfeld1
1STScI; 2Princeton University.
155.07 Demonstrating Starshade Performance as Part of NASA’s Technology Development for Exoplanet Missions
1Princeton Univ., 2Jet Propulsion Laboratory, 3Lawrence Livermore National Laboratory, 4NASA Ames Research Center.

155.08 Starshade Starlight-Suppression Performance: Modeling and Analysis of Error Sources
Tiffany M. Glassman1, S. Casement1, D. Dailey1, J. Donovan1, W. Hurst1, A. Lo1, N. Palmer1
1Northrop Grumman Aerospace Systems.

155.09 Stray Light Assessment from the Edges of an External Occulter
L. Suzanne Casement1, M. R. Flannery1, T. M. Glassman1, A. S. Lo1
1Northrop Grumman.

155.10 Laboratory Demonstration of Occulter-Based High Contrast Imaging
Dan Sirbu1, E. Cady2, J. Kasdin1, R. Vanderbei1
1Princeton University, 2Jet Propulsion Laboratory.

155.11 A Probe-Class Exoplanet Mission with a Starshade
Stuart Shaklan1, D. Spergel2, N. Kasdin2, P. Scowen3, P. Lisman1, M. Thomson1, E. Cady1
1Jet Propulsion Laboratory, 2Princeton University, 3Arizona State University.

155.12 Hybrid Schemes for Space-based Planet-Finding
Dmitry Savransky1, N. Kasdin2, S. Shaklan2, E. J. Cady3
1Lawrence Livermore National Laboratory, 2Princeton Univeristy, 3Jet Propulsion Laboratory.

155.13 The EXoplanetary Circumstellar Disk Environments and Disk Explorer
Glenn Schneider1, O. Guyon1, EXCEDE Science Mission and Technology Team
1Univ. of Arizona.

155.14 Telescopes in Near Space: Balloon Exoplanet Nulling Interferometer (BigBENI)
Richard Lyon1, M. Clampin1, P. Petrone2, U. Mallik1, R. Mauk1
1NASA/GSFC, 2Sigma Space.

155.15 High Contrast Imaging With Phase-inducedamplitude Apodization (PIAA)
Olivier Guyon1, B. Kern2, R. Belikov3, S. Shaklan2, A. Kuhnert2, A. Giveon2, F. Martinache4, T. Greene3, E. Pluzhnik3
1University of Arizona, 2Jet Propulsion Laboratory, 3NASA Ames, 4Subaru Telescope.

155.16 Design And Testing Of A Diamond-turned Four-mirror Phase-inducedamplitude Apodization (PIAA) Coronagraph
Eric Cady1, K. Balasubramanian1, S. Shaklan1
1Jet Propulsion Lab.

155.17 PIAA Coronagraph Development at NASA Ames: High Contrast Laboratory Demonstration at Inner Working Angles Down to 1.2 I/D
Ruslan Belikov1, E. Pluzhnik1, F. C. Witteborn1, T. P. Greene1, D. H. Lynch1, P. T. Zell1, O. Guyon2
1NASA Ames Research Center, 2University of Arizona.
**155.18** High precision astrometry with a Diffractive Pupil Telescope  
Eduardo Bendek¹, O. Guyon¹, M. Shao², M.ammons³, S. Shaklan², R. Belikov⁴,  
R. Woodruff⁵  
¹University of Arizona, ²Jet Propulsion Laboratory, ³Lawrence Livermore Laboratory,  
⁴NASA Ames, ⁵-.

**156 LSST**

Monday, 9:00am-6:30pm, Exhibit Hall

**156.01** LSST Probes of Dark Energy: New Energy vs New Gravity  
Andrew Bradshaw¹, A. Tyson¹, M. J. Jee¹, H. Zhan¹, D. Bard¹, R. Bean⁴, J. Bosch⁵,  
C. Chang⁶, D. Clowe⁶, I. Dell’Antonio⁷, E. Gawiser⁸, B. Jain⁹, M. Jarvis⁹, S. Kahn¹, L. Knox¹,  
J. Newman¹⁰, D. Wittman¹, LSST Weak Lensing and LSS Science Collaborations  
¹UC Davis, ²NAOC, China, ³SLAC, ⁴Cornell, ⁵Princeton, ⁶Ohio, ⁷Brown, ⁸Rutgers, ⁹Penn, ¹⁰U Pitt.

**156.02** LSST Telescope And Site Developments  
Victor Krabbendam¹, W. Gressler¹, J. R. Andrew², J. D. Barr², C. F. Claver², J. DeVries²,  
E. Hileman², M. Liang², D. R. Neill², J. Sebag², S. Chandrasekharan², A. Vaz³, O. Wiecha³,  
B. Xin⁴, LSST Collaboration  
¹NOAO/LSST, ²NOAO, ³Harvard University, ⁴Purdue University.

**156.03** LSST Data Products and User Interfaces  
Richard A. Shaw¹, T. Axelrod², A. C. Becker², S. Bickerton², M. Juric⁵, J. Kantor⁵,  
S. Krughoff⁶, R. H. Lupton⁷, S. Van Dyk⁸, LSST Data Management and Simulations Teams  
¹NOAO, ²University of Arizona, ³University of Washington, ⁴Princeton University, ⁵LSST Corporation, ⁶IPAC, California Institute of Technology.

**156.04** Image Quality and Performance of the LSST Camera  
D. Kirk Gilmore¹, S. Kahn¹, A. Rassmussen¹, J. Singel¹  
¹SLAC/KIPAC.

**156.05** Science Opportunities with LSST  
J. Anthony Tyson¹, Z. Ivezic², M. Strauss³, LSST Science Collaborations  
¹UC Davis, ²U. Washington, ³Princeton.

**156.06** Mapping the Stellar Content of the Milky Way with LSST  
John J. Bochanski¹, P. Thorman², K. Covey³, K. Olsen⁴, S. Dhital⁵, T. C. Beers⁴,  
P. Boeshhaar⁶, P. Cargile⁵, M. Catelan⁶, S. Digel⁴, P. Guhathakurta⁸, T. Henry⁹, Z. Ivezic¹⁰,  
M. Juric¹¹, J. Kalirai¹², J. Kirkpatrick¹³, P. M. McGehee¹³, D. Minniti¹⁶, A. Mukadam¹⁶,  
J. Pepper⁶, A. Prsa¹⁴, R. Roškar¹⁵, J. Smith¹⁶, K. Stassun¹, A. Tyson¹, LSST Stellar Populations and Milky Way and Local Volume Science Collaborations  
¹Pennsylvania State University, ²UC Davis, ³Lowell Observatory, ⁴NOAO, ⁵Vanderbilt University, ⁶Pontificia Universidad Católica de Chile, ⁷Stanford University, ⁸UCO/ Lick Observatory, ⁹Georgia State University, ¹⁰University of Washington, ¹¹LSST, ¹²STScI, ¹³IPAC / Caltech, ¹⁴Villanova University, ¹⁵Institute for Theoretical Physics, Switzerland, ¹⁶Austin Peay State University.
156.07  **End-to-end Tests of LSST Science Cases with Image Simulations: Rare Astrometric Targets and Ultra-faint Dwarf Galaxies**  
1LSST, 2USNO, 3U. Delaware, 4CalTech, 5Haveford College, 6Yale University, 7U. Washington, 8Princeton University, 9Purdue University, 10U.C. Berkeley.

156.08  **LSST Image Simulations**  
1Purdue University, 2UC Berkeley, 3University of Washington, 4SLAC, 5Stanford.

156.09  **Exploring Scheduling Algorithms and Analysis Tools for the LSST Operations Simulations**  
Catherine E. Petry, M. Miller, K. H. Cook, S. Ridgway, S. Chandrasekharan, R. L. Jones, K. S. Krughoff, Z. Ivezic, V. Krabbendam  
1Univ. of Arizona, 2NOAO, 3LSSTC, 4Univ. of Washington.

156.10  **Evaluating LSST Schedule Realizations**  
1National Optical Astronomy Observatory, 2LSSTC, 3Univeristy of Arizona, 4Univeristy of Washington.

156.11  **The NOAO Transient Sky Project**  
Thomas Matheson, NOAO LSST Science Working Group  
1NOAO.

156.12  **How Many Galactic Variables will LSST Detect?**  
Stephen T. Ridgway  
1NOAO.
Invited Session 200 HEAD Rossi Prize: Bill Atwood, Peter Michelson, and the Fermi Gamma Ray Space Telescope LAT team

Tuesday, 8:30am-9:45am, Ballroom D

Rossi Prize

The 2011 Rossi Prize is awarded to Bill Atwood, Peter Michelson, and the Fermi Gamma Ray Space Telescope LAT team for enabling, through the development of the Large Area Telescope, new insights into neutron stars, supernova remnants, cosmic rays, binary systems, active galactic nuclei, and gamma-ray bursts.

200.00C Chair
Chryssa Kouveliotou
1NSSTC.

200.01 The Fermi Large Area Telescope at 3 Years: A Summary of What Has Been Learned About the High-Energy Sky
Peter F. Michelson
1Stanford University.

200.02 The Fermi Large Area Telescope: Optimizing and Then Re-Optimizing the Science Return
W. B. Atwood
1UCSC.

AAS Prize Presentations

Chair
Debra M. Elmegreen
1Vassar College.

David S. Leckrone - 2011 George Van Biesbroeck Prize

The 2011 George van Biesbroeck Prize, which honors an individual for long-term extraordinary or unselfish service to astronomy, is awarded to Dr. David S. Leckrone, for his exceptional devotion to the manifold aspects of developing, upgrading, and preserving the Hubble Space Telescope and its scientific programs from 1976 through his retirement in 2009. As Senior Project Scientist for HST (1992-2009) and in his previous capacities, he was totally committed to the Hubble project and worked tirelessly and passionately to make it a unique asset for the astronomical community that now constitutes a worthy symbol of national pride and technical accomplishment.

Dr. Leckrone’s efforts extended beyond the arena of scientific and engineering management through strong involvement in public outreach and education. His scientific leadership, technical insights, and courage and wisdom as a manager were vital to the resounding success of each of the servicing missions to the Hubble telescope and notably the final one. Dr. Leckrone was deeply involved in the definition and implementation of each of the science instruments that have flown on HST. In particular, it was his leadership that initiated the project to implement the Wide Field Camera 3, considered a scientific mainstay of the Hubble’s final complement of instruments.
Tuesday Sessions and Events

Grace L. Deming - AAS Education Prize 2011
For blazing the trail of astronomy education research, represented by this small snapshot of her many contributions:

Providing us with the Astronomy Diagnostic Test, the first means within our discipline to assess the success of our instruction, and convincing the astronomical community of the importance of assessment.

Tirelessly promoting the use of research to guide our instruction even before the field of astronomy education research existed.

Being ahead of her time in educating us about the importance of collaborative group learning to improve student understanding.

Edward S. Cheng - Joseph Weber Award
The 2010 Joseph Weber award is presented to Dr. Edward S. Cheng of Conceptual Analytics, LLC for his critical contributions to the development of several key instruments on the Hubble Space Telescope.

Dr. Cheng played a key role in the oversight of the instrument development for the HST servicing missions. He led the ACS recovery effort, when “fixing ACS” went beyond what had been done on a servicing mission before. He led the technical development of the thermoelectric cryocooler for NICMOS. This work enabled the rebirth of NICMOS and its use in key projects such as the high redshift supernova cosmology study which served to confirm the existence of dark energy. That effort was a pathfinder for cryocoolers in space for future missions such as JWST. He was also a driving force in the development of WFC3 which was installed on HST in May 2009. He worked with Rockwell/Teledyne to develop a HgCdTe detector with a 1.7 micron cutoff which would enable it to operate without cryogens. WFC3 is arguably the most sought-after instrument in astronomy today. The great success of ACS, WFC3 and NICMOS is directly due to Dr. Cheng’s effort and his ingenuity in instrument development.

Hale Van Dorn Bradt - Chambliss Astronomical Writing Award
The Chambliss Writing Award Committee has chosen Hale Bradt’s book “Astrophysics Processes; The Physics of Astronomical Phenomena” for the Chambliss Astronomical Writing Award for an upper level undergraduate/graduate astronomy textbook.

“Astrophysics Processes” is a serious, high-level, calculus-based text for introducing the basics of the physics of astronomical phenomena at roughly the junior-senior undergraduate or first year graduate level. “Astrophysics Processes” covers roughly a dozen major astrophysical ‘processes’, a few of which pertain specifically to galactic astrophysics, while all the other processes have broad applicability to both galactic and extragalactic astrophysics.

Kameny Certificate
The American Astronomical Society, in light of its commitment to diversity and equality, hereby honors the memory of the astronomer Dr. Franklin Edward Kameny for his exemplary lifelong commitment to promoting the rights of homosexual men and women. His work helped to create a society in which our members today can pursue their careers free from discrimination.

This photo of Dr. Frank Kameny was likely taken at the Oak Ridge Observatory located about 1 hour from Cambridge in Harvard, MA. Likely it is the 12-inch Metcalf Doublet telescope. Photo taken sometime during the period 1948-1956 when Kameny was a graduate student at Harvard.
201 Dwarf Galaxies
Tuesday, 10:00am-11:30am, Room 16B

201.00C Chair
Evan D. Skillman¹
¹Univ. of Minnesota.

201.01 WITHDRAWN: The Cosmic Web Of Dwarf Galaxy Halos From Cosmological Simulations
Darren S. Reed¹
¹Univ. of Zurich, Switzerland.

201.02D Cold HI in Low Mass Galaxies
Steven R. Warren¹, E. A. Petersen², E. D. Skillman¹, A. M. Stilp³, J. Ott⁴, J. J. Dalcanton¹, F. Walter², E. W. J. G. de Blok⁵, B. Koribalski⁶, A. A. West⁸
¹University of Minnesota, ²University of Illinois at Urbana-Champaign, ³University of Washington, ⁴NRAO, ⁵Max Planck Institut fur Astronomie, Germany, ⁶University of Cape Town, South Africa, ⁷Australia Telescope National Facility, Australia, ⁸Boston University.

201.03 WISE Discovery of Very Red Blue Compact Dwarf Galaxies
Chao-Wei Tsai¹, R. Griffith¹, D. Stern¹, L. Yan¹, P. Eisenhardt³, T. Jarrett¹, A. Blain⁴, R. Assef¹, D. Benford², C. Bridge⁶, J. Wu³, Y. Wu¹, S. Petty³, F. Masci¹, S. Stanford⁹, E. Wright¹, J. Moustakas¹⁰, B. Swift¹¹, F. Harrison⁶, K. Madsen⁶
¹IPAC, Caltech, ²JPL/Caltech, ³JPL, ⁴Univ of Leicester, United Kingdom, ⁵GSFC, ⁶Caltech, ⁷Mars and Co, ⁸UCLA, ⁹UC Davis, ¹⁰UCSD, ¹¹Univ of Arizona.

201.04D Kinematics Of M31 dSphs And Implications For LCDM
Erik J. Tollerud¹, R. L. Beaton², M. Geha³, P. Guhathakurta³, J. S. Bullock¹, J. S. Kalirai¹, E. N. Kirby⁶, M. Boylan-Kolchin¹
¹University of California Irvine, ²University of Virginia, ³Yale University, ⁴University of California Santa Cruz, ⁵Space Telescope Science Institute, ⁶California Institute of Technology.

201.05D HI in Local Group Dwarf Galaxies: A Method of Discovery for Ultra-faint Dwarfs and a Probe of the Galactic Hot Halo
Jana Grcevich¹
¹Columbia University.

201.06 The Small Magellanic Cloud: A Dwarf Irregular In Transition to a Dwarf Spheroidal
Gurtina Besla¹
¹Columbia University.

202 Evolution of Galaxies III
Tuesday, 10:00am-11:30am, Room 19A

202.00C Chair
Eric J. Gawiser¹
¹Rutgers University.

202.01 Comparison Of Galaxies At Redshifts Z~2 With Star-forming Clumps From HST CANDELS Observations To Those From Hydrodynamical Simulations
Mark Mozena¹, S. M. Faber¹, D. C. Koo¹, J. R. Primack¹, A. Dekel², CANDELS Team
¹University of California, Santa Cruz, ²Racah Institute of Physics, The Hebrew University, Israel.
202.02D Revealing the Assembly History of Disk Galaxies With The Tully-Fisher Relation to z~1.7
Sarah Miller\textsuperscript{1}, R. S. Ellis\textsuperscript{2}, M. Sullivan\textsuperscript{1}, K. Bundy\textsuperscript{3}, T. Treu\textsuperscript{4}
\textsuperscript{1}University of Oxford, United Kingdom, \textsuperscript{2}California Institute of Technology, \textsuperscript{3}University of California Berkeley, \textsuperscript{4}University of California Santa Barbara.

202.03 Extremely Strong Emission-Line Galaxies In The WISP Survey And Implications For High-redshift Galaxies
Hakim Atek\textsuperscript{1}, B. Siana\textsuperscript{2}, C. Scarlata\textsuperscript{3}, M. Malkan\textsuperscript{4}, P. McCarthy\textsuperscript{5}, H. Teplitz\textsuperscript{6}, A. Henry\textsuperscript{7}, J. Colbert\textsuperscript{1}
\textsuperscript{1}SSC - Caltech, \textsuperscript{2}UC Riverside, \textsuperscript{3}University of Minnesota, \textsuperscript{4}UC Los Angeles, \textsuperscript{5}Carnegie Observatories, \textsuperscript{6}IPAC - Caltech, \textsuperscript{7}UC Santa Barbara.

202.04 Early-type Galaxies At &lt; Z &gt; ~ 2 In Candels And Wisp Surveys
Alejandro Bedregal\textsuperscript{1}, C. Scarlata\textsuperscript{1}
\textsuperscript{1}University of Minnesota.

202.05D The Host Galaxies Of UV-selected AGNs At z~2-3
Kevin Hainline\textsuperscript{1}, A. Shapley\textsuperscript{1}, J. Greene\textsuperscript{2}, C. Steidel\textsuperscript{3}
\textsuperscript{1}UCLA, \textsuperscript{2}Princeton, \textsuperscript{3}California Institute of Technology.

202.06 WITHDRAWN: Keck Spectroscopy Of Ultra-faint (L&lt;L*/30) Galaxies At z~2
Brian D. Siana\textsuperscript{1}, D. P. Stark\textsuperscript{2}, J. Richard\textsuperscript{3}
\textsuperscript{1}UC Riverside, \textsuperscript{2}University of Arizona, \textsuperscript{3}Observatoire de Lyon, France.

202.07 Extremely High Sfrs In Z~2 Galaxies: Multiwavelength Estimation Vs. Halpha Spectroscopy
Peter Kurczynski\textsuperscript{1}, E. Gawiser\textsuperscript{1}, M. Huynh\textsuperscript{2}, R. J. Ivison\textsuperscript{3}, E. Treister\textsuperscript{4}, G. A. Blanc\textsuperscript{5}, E. Schinnerer\textsuperscript{6}, P. van der Werf\textsuperscript{7}, M. Urry\textsuperscript{8}, C. Cardamone\textsuperscript{9}, T. Greve\textsuperscript{10}, I. Smail\textsuperscript{11}, M. Swinbank\textsuperscript{11}
\textsuperscript{1}Rutgers, The State University of New Jersey, \textsuperscript{2}University of Western Australia, Australia, \textsuperscript{3}Royal Observatory, Edinburgh; UK ATC, United Kingdom, \textsuperscript{4}Institute for Astronomy, University of Hawaii, \textsuperscript{5}University of Texas, \textsuperscript{6}Max Planck Institute for Astronomy, Germany, \textsuperscript{7}Leiden University, Netherlands, \textsuperscript{8}Yale University, \textsuperscript{9}Massachusetts Institute of Technology, \textsuperscript{10}Niels Bohr Institute Dark Cosmology Centre, Denmark, \textsuperscript{11}Durham University, United Kingdom.

203 Supernovae II
Tuesday, 10:00am-11:30am, Room 17B

203.00C Chair
Christopher Stockdale\textsuperscript{1}
\textsuperscript{1}Marquette University.

203.01 The Extreme Hosts of Extreme Supernovae
James D. Neill\textsuperscript{1}
\textsuperscript{1}California Institute of Technology.

203.02D Formation and Initial Evolution of Rayleigh-Taylor Clumps in the Ejecta of Supernova Simulations
Carola I. Ellinger\textsuperscript{1}, P. A. Young\textsuperscript{1}, S. J. Desch\textsuperscript{1}, C. L. Fryer\textsuperscript{2}, G. Rockefeller\textsuperscript{2}
\textsuperscript{1}Arizona State University, \textsuperscript{2}Los Alamos National Laboratory.

203.03 The Rest Frame UV Properties of Type IIn Supernovae
Peter Roming\textsuperscript{1}, T. Pritchard\textsuperscript{2}, S. Immler\textsuperscript{3}, P. Brown\textsuperscript{4}
\textsuperscript{1}Southwest Research Institute, \textsuperscript{2}Penn State University, \textsuperscript{3}Goddard Space Flight Center, \textsuperscript{4}University of Utah.
203.04D Type Ia SNe Spectropolarimetry
Paula Zelaya¹
¹Pontificia Universidad Catolica De Chile, Chile.

203.05 Two Ultraluminous SNe at z~1.6 from the Supernova Legacy Survey
Dale Andrew Howell¹, Supernova Legacy Survey
¹Las Cumbres Observatory / UC Santa Barbara.

203.06D Multi-Wavelength Studies of SN Ia Host Galaxies
Bradley E. Tucker¹, B. Schmidt¹, P. Garnavich²
¹Australian National University, Research School of Astronomy and Astrophysics, Australia, ²University of Notre Dame.

204 Professional Ethics in Astronomy: An Ongoing Dialogue

Tuesday, 10:00am-11:30am, Ballroom E

The AAS recently endorsed a professional ethics statement, which along with the ethics guide for authors established by our journals, forms the framework for professional ethical behavior in the astronomical sciences.

Sigma Xi is using its 125th anniversary to devote the entire year of 2011 to ethics in the sciences, including education through the American Scientist magazine, activities across the country at professional meetings and regular articles in the American Scientist Magazine. I read the engaging column by Dr. Ahearne in the Jan/Feb issue entitled “Honesty” and felt that the time had come to again organize a panel session on professional ethics in astronomy at an AAS meeting. The last such panel session I organized was at the Minneapolis meeting in 2005, which, although scheduled in a small room, was a standing-room only event, with more than 150 people in attendance. Of particular importance to the people attending that session was the participation of the ApJ Editor-in-Chief, Robert Kennicutt and representatives from the funding agencies. Sigma Xi will produce a revised pamphlet on ethics during 2011 for general use and distribution.

The AAS provides new members with a copy of the National Academy of Sciences book “On Being a Scientist” (since 2006), which will be re-written this year with an eye toward changes in technologies used for communication, among other items. This is viewed favorably by our new members, especially Junior members and we plan to continue to distribute this low-cost volume in the future. The NAS has recently revised the edition, led in part by Rich Bissel, who serves as the Executive Director of NAS’ office for Policy and Global Affairs.

204.00C Chair
Kevin B. Marvel¹
¹American Astronomical Society.

204.01 Honesty in Professional Activities
John F. Ahearne¹
¹Sigma Xi.

204.02 Recent Studies of Research Ethics at the National Academy of Sciences
Richard Bissell¹
¹National Research Council.

204.03 Ethics for Proposal Review
Linda S. Sparke¹
¹NASA Headquarters.

204.04 What is Plagiarism?
Ethan T. Vishniac¹
¹McMaster University, Canada.
205 How to Build a Milky Way: A Blueprint From the SDSS-III SEGUE Survey I

Tuesday, 10:00am-11:30am, Room 18C

As studies of the Milky Way enter the era of large surveys, we are finding that the new detailed, multi-dimensional datasets, combined with powerful new simulations of galaxy formation and evolution in a cosmological context, are transforming our view of the Milky Way’s history. SEGUE is the SDSS project focused on the formation and evolution of the Milky Way as traced by its stars.

The survey observations are now complete, and the data have been released to the public. They consist of 3240 square degrees of ugriz imaging at low Galactic latitude and 370,000 stellar spectra to g=20. We have made extensive checks of our pipeline stellar parameter values using ugriz photometry and spectroscopy of well-studied cluster and field stars. The combination of large sample size and depth has enabled SEGUE to address long-standing questions such as the disk metallicity distribution and gradients, as well as newer questions such as the role of radial migration in shaping the disk. We have traced halo structure and substructure with larger and deeper samples than ever before, including thousands of outer halo giants. The homogeneous nature of the survey data also enable illuminating tests of selection biases, historically the bane of galactic stellar populations studies.

206 Reports from NASA’s Program Analysis Groups

Tuesday, 10:00am-11:30am, Room 18D

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
### Tuesday Sessions and Events

**Cosmos PAG (PhysPAG).**

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<td>Caltech</td>
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**207 Galaxy Clusters**  
Tuesday, 10:00am-11:30am, Room 16A

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<td>A Combined Analysis on Clusters of Galaxies with the Fermi-LAT - Gamma Ray Emission from Cosmic Rays and Dark Matter</td>
<td>Stephan Zimmer, J. Conrad, A. Pinzke</td>
<td>Oskar Klein Centre/ Stockholm University, on behalf the Fermi-LAT Collaboration, Sweden, University of California, Santa Barbara</td>
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<td>Daniel R. Wik, C. Sarazin, Y. Zhang, W. Baumgartner, R. Mushotzky, J. Tueller, T. Clarke</td>
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<td>An XMM-Newton Spatially-Resolved Study of Metal Abundance Evolution in Distant Galaxy Clusters</td>
<td>Alessandro Baldi, S. Ettori, S. Molendi, I. Balestra, F. Gastaldello, P. Tozzi</td>
<td>Astronomy Department - University of Bologna, Italy, INAF - Osservatorio Astronomico di Bologna, Italy, INAF - IASF Milano, Italy, Max-Planck-Institut für Extraterrestrische Physik, Germany, INAF - Osservatorio Astronomico di Trieste, Italy</td>
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207.06D AGN Feedback In Highly-luminous Clusters Of Galaxies
Julie Hlavacek-Larrondo¹, A. C. Fabian²
¹University of Cambridge, United Kingdom.

207.07 The Redshift Evolution of Optically-Emitting BCGs: An Indirect Probe of Cool Core Evolution?
Michael McDonald¹
¹MIT.

208 Star Formation I
Tuesday, 10:00am-11:30am, Room 12A

208.00C Chair
Enrique Vazquez-Semadeni¹
¹UNAM, Mexico.

208.01 Finding the Root of Rapid Star Formation
Eve J. Lee¹, P. Chang², N. Murray³
¹University of Toronto, Canada, ²University of Wisconsin - Milwaukee, ³Canadian Institute of Theoretical Astrophysics, Canada.

208.02 The Growth of Supermassive Stars by Rapid Accretion of Primordial Gas
Jarrett L. Johnson¹, D. J. Whalen², H. Li³
¹Los Alamos National Laboratory, ²Carnegie Mellon University.

208.03D Exploring the Limits of Star Formation from the Extreme Environment of Starbursts to the Milky Way
Amanda L. Heiderman¹
¹University of Texas at Austin.

208.04 How Starless are Starless Cores?
Scott Schnee¹, J. Di Franceso², M. Enoch¹, R. Friesen¹, D. Johnstone², S. Sadavoy⁴, L. Wei⁵
¹NRAO, ²NRC-HIA, Canada, ³UC Berkeley, ⁴University of Victoria, Canada, ⁵CfA.

208.05 On the Stability of Radiation Pressure Dominated Cavities in the Formation of Massive Stars
Rolf Kuiper¹
¹Jet Propulsion Laboratory.

208.06D Evidence Of Episodic Mass Accretion In Low-luminosity, Embedded Protostars
Hyo Jeong Kim¹, N. J. Evans, II¹, M. M. Dunham², J. Lee³
¹The University of Texas at Austin, ²Yale University, ³Kyung Hee University, Korea, Republic of.

208.07 Testing the Environmental Dependence of the Stellar Initial Mass Function - the Case of L1641
Wen-hsin Hsu¹, L. Hartmann¹, L. Allen², J. Hernandez², T. Megeath³
¹University of Michigan, ²National Optical Astronomy Observatory, ³Centro de Investigaciones de Astronomia, Venezuela, Bolivarian Republic of, ⁴University of Toledo.

209 AGN, QSO, Blazars III
Tuesday, 10:00am-11:30am, Room 17A

209.00C Chair
Alan P. Marscher¹
¹Boston Univ
209.01 Anomalous Narrow-line Quasars
Charles Steinhardt¹, J. Silverman¹
¹IPMU, University of Tokyo, Japan.

209.02D The Nature Of Microvariability Of Blazar 0716+714
Gopal Bhatta¹
¹Florida International University.

209.03 FIRST-2MASS Red Quasars: Transitional Objects Emerging from the Dust
Eilat Glikman¹, M. Lacy², T. Urrutia³, G. Djorgovski⁴, A. Mahabal⁴
¹Yale University, ²NRAO, ³Astrophysikalisches Institut Potsdam, Germany, ⁴Caltech.

209.04 The Lick AGN Monitoring Project 2011: Reverberation Mapping of Markarian 50
Aaron J. Barth¹, A. Pancoast², LAMP2011 Collaboration
¹UC Irvine, ²UCSB.

209.05 The Lick AGN Monitoring Project 2011: Dynamical Modeling of the Broad Line Region in Mrk 50
Anna Pancoast¹, B. J. Brewer¹, T. Treu¹, LAMP2011 Collaboration
¹University of California Santa Barbara.

209.06 The SDSS-III BOSS DR9 Quasar Luminosity Function
¹Lawrence Berkeley National Lab, ²Steward Observatory, University of Arizona, ³University of Wyoming, ⁴Drexel University, ⁵Princeton University, ⁶University of Washington, ⁷CEA, Centre de Saclay, IRFU, France, ⁸IAP, Universite Paris 6 et CNRS, France, ⁹Yale University, ¹⁰Pennsylvania State University, ¹¹IPMU, University of Tokyo, Japan, ¹²Ohio State University, ¹³University of Chicago.

209.07 The z~5 Quasar Luminosity Function From SDSS Stripe 82
Ian D. McGreer¹, L. Jiang², X. Fan³, N. P. Ross⁴, M. R. Eskew⁴, A. D. Myers⁴, D. P. Schneider⁶
¹University of Arizona, ²Arizona State University, ³Lawrence Berkeley National Laboratory, ⁴University of Texas, Austin, ⁵University of Wyoming, ⁶The Pennsylvania State University.

209.08 The Space Density of X-ray Selected AGN in Stripe 82
Stephanie M. LaMassa¹, C. M. Urry¹, E. Glikman¹, F. Santana², B. Lundgren¹, N. Padmanabhan¹, K. Schwabinski¹, B. Simmons¹, E. Treister², D. Wake¹
¹Yale University, ²Universidad de Chile, Chile, ³Universidad de Concepción, Chile.

210 Education, Outreach, and Citizen Science
Tuesday, 10:00am-11:30am, Room 18A

210.00C Chair
Jacob Noel-Storr¹
¹Rochester Inst. Of Technology.

210.01 CAISE: A NSF Resource Center for Informal Science Education
Benjamin Dickow¹
¹OSU/ CAISE.

210.02 “Come For The Festival, Eh?” Science Festivals As Public Outreach Venues
Jim Manning¹, G. Schultz¹, S. Gurton¹, A. Fraknoi¹
¹Astronomical Society of the Pacific.
Tuesday Sessions and Events

210.03 Advertising Citizen Science: A Trailer for the Citizen Sky Project
Ryan Wyatt¹, A. Price²
¹California Academy of Sciences, ²American Association of Variable Star Observers.

210.04D Changes in Participants’ Scientific Attitudes and Epistemological Beliefs During an Astronomical Citizen Science Project
Aaron Price¹
¹AAVSO/Tufts University.

210.05 Is Amateur Astronomers' Astronomy Knowledge a Barrier to Successful Outreach?
Timothy F. Slater¹, S. J. Slater², C. A. Price³, CAPER Center for Astronomy & Physics Education Research
¹University of Wyoming, ²CAPER Center for Astronomy & Physics Education Research, ³American Association of Variable Star Observers.

210.06 Bringing Science Public Outreach to Elementary Schools
Lucas Miller¹, A. Speck¹, A. Tinnin²
¹University of Missouri, ²The Saint Louis Science Center.

210.07 Keeping the Stars in Our Eyes: Global Astronomy Month’s Dark Skies Awareness Programs
Constance E. Walker¹, Global Astronomy Month’s Dark Skies Awareness Working Group
¹NOAO.

211 White Dwarfs, Novae, and Cataclysmic Variables
Tuesday, 10:00am-11:30am, Room 19B

211.00C Chair
D. W. Hoard¹
¹California Institute of Technology.

211.01 A Catalog of 15,000 White Dwarfs Detected in the GALEX Survey
Sebastien Lepine¹
¹American Museum of Natural History and City University of New York.

211.02 The Distance to the Galactic Globular Cluster, 47 Tuc
Kristin Woodley¹, R. Goldsbury¹, J. Kalirai², H. Richer¹, P. Tremblay¹, J. Anderson², P. Bergeron⁴, A. Dotter³, L. Esteves², G. Fahman⁴, B. Hansen³, J. Heyl¹, J. Hurley⁵, R. Rich⁷, M. Shara⁸, P. Stetson⁶
¹University of British Columbia, Canada, ²STScI, ³Universität Heidelberg, Germany, ⁴University of Montreal, Canada, ⁵University of Guelph, Canada, ⁶Herzberg Institute of Astrophysics, Canada, ⁷University of California at Los Angeles, ⁸Swinburne University of Technology, Australia, ⁹American Museum of Natural History.

211.03 Understanding Abundance Patterns of Cataclysmic Variables in the Near Infrared
Ryan T. Hamilton¹, T. E. Harrison¹
¹New Mexico State University.

211.04D Low Mach Number Simulations of Classical Novae
Brendan K. Krueger¹, A. C. Calder¹, M. Zingale¹, A. S. Almgren², J. B. Bell², A. Nonaka²
¹SUNY Stony Brook, ²Lawrence Berkeley National Laboratory.

211.05 Study of Flashes On H/He Accreting CO White Dwarfs
Joseph Mitchell¹, P. Hoeflich¹
¹Florida State University.
211.06  Resolving the Remnant in Recurrent Nova V407 Cyg
Amy J. Mioduszewski1, L. Chomiuk2, M. Rupen1, M. Krauss1, J. Sokoloski3, N. Roy4
1NRAO, 2Jansky Fellow, Harvard/CfA, 3Columbia Astrophysics Laboratory, 4Jansky Fellow, NRAO.

212 Cosmic Microwave Background
Tuesday, 10:00am-11:30am, Ballroom D

212.00C Chair
Asantha R. Cooray1
1UC Irvine.

212.01D Measuring the CMB Polarization at 94 GHz with the QUIET Experiment
Raul Monsalve1
1University of Miami.

212.02D Measuring The cmb Polarization At 94 GHz With The QUIET Pseudo-c, Pipeline
Immanuel Buder1, QUIET Collaboration
1University of Chicago.

212.03D Measuring the CMB Polarization at 94 GHz with the QUIET Maximum
Likelihood Pipeline
Sigurd Naess1, QUIET collaboration
1Oslo University, Norway.

212.04 Exploring CMB Polarization with POLARBEAR
Aubra E. Anthony1, POLARBEAR
1University of Colorado.

212.05 Constraining Direction-dependent Cosmological Birefringence With Wmap
Data
Vera Gluscevic1, D. Hanson2, M. Kamionkowski3
1Caltech, 2JPL/Caltech, 3Johns Hopkins University.

213 HEAD III: New Results from the Fermi Observatory
Tuesday, 10:00am-11:30am, Room 18B

213.00C Chair
David John Thompson1
1NASA’s GSFC.

213.01 Fermi-lat Searches For Radio-quiet Millisecond Pulsars
Pablo Saz Parkinson1, M. Dormody1, A. Belfiore1, M. Razzano1
1UC, Santa Cruz.

213.02 Supernova Remnants Interacting With Molecular Clouds: New Observations
With The Fermi-LAT
Daniel Castro1
1MIT Kavli Institute.

213.03 Fermi-LAT Observations of Supernova Remnants
Theresa Brandt1, Fermi LAT-Collaboration
1NASA Goddard Space Flight Center.

213.04D Gamma-ray Observations Of Star-forming Galaxies With The Fermi LAT
Keith Bechtol1, Fermi LAT Collaboration
1Stanford / SLAC / KIPAC.
**213.05 Coasting External Shock In Wind Medium: An Origin For The X-ray Plateau Decay Component In Swift GRB Afterglows**
Rongfeng Shen¹, C. D. Matzner¹
¹University of Toronto, Canada.

**213.06 Joint Swift/Fermi Observations Of Gamma-ray Bursts**
Eleonora Troja¹, on behalf of a larger collaboration
¹NASA/GSFC.

**213.07 Earth Occultation Monitoring of the Hard X-ray/Low-Energy Gamma Ray Sky with GBM**
Michael L. Cherry¹, A. Camero-Arranz², G. L. Case³, V. Chaplin³, M. H. Finger⁴, P. A. Jenke⁵, J. C. Rodi⁶, C. A. Wilson-Hodge⁷, GBM Earth Occultation team
¹Louisiana State Univ., ²Natl. Space and Technology Center, ³Univ. of Alabama in Huntsville, ⁴Universities Space Research Assoc., ⁵NASA Marshall Space Flight Center.

**213.08 A Statistical Approach to Recognizing Source Classes for Unassociated Sources in the Second Fermi-LAT Catalog**
Maria Elena Monzani¹, N. Omodei², Fermi-LAT Collaboration
¹SLAC National Accelerator Laboratory, ²Stanford University.

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**214 First Science with LOFAR**

Tuesday, 10:00am-11:30am, Room 12B

LOFAR, the Low Frequency Array, is a next generation radio telescope under construction in the north of the Netherlands and across Europe and a key pathfinder for the SKA. Utilizing a novel phased-array design, LOFAR is optimized for the largely unexplored low frequency range from 30-240 MHz. In the Netherlands, a total of 40 LOFAR stations are nearing completion with an initial 8 international stations currently being deployed in Germany, France, Sweden, and the UK. With its dense core array and interferometric baselines up to 1000 km, LOFAR has the potential to achieve unparalleled sensitivity (sub-mJy) and spatial resolution (sub-arcsecond) in the low frequency radio regime. In this session, we intend to present the community with an update on the status of the array and its current scientific capabilities as well as the upcoming opportunities for general, “open skies” observing. The session will also feature a number of short talks highlighting some initial science results obtained during the past year of commissioning and showcasing LOFAR’s scientific potential.

**214.00C Chair**
Michael W. Wise¹
¹ASTRON Netherlands Institute for Radio Astronomy, Netherlands.

**214.01 LOFAR: Current Status and Opportunities for Early Science**
Michael W. Wise¹
¹ASTRON Netherlands Institute for Radio Astronomy.

**214.02 The LOFAR Multifrequency Snapshot Sky Survey (MSSS): Description and First Results**
George H. Heald¹, G. de Bruyn¹, R. Nijboer¹, M. Wise¹, R. Pizzo¹, LOFAR Collaboration
¹ASTRON, Netherlands.

**214.03 First Results on Galaxy Clusters with LOFAR**
Chiara Ferrari¹
¹Observatoire de la Côte D’Azur, France.
Tuesday Sessions and Events

214.04 Pulsars and Fast Transients: Charting the Low-Frequency Radio Sky at High Time Resolution with LOFAR
Jason Hessels¹
¹ASTRON, Netherlands.

214.05 Lofar Deep Imaging And Prospects For Detecting The Eor
A G. de Bruyn¹, LOFAR EoR Key Science Project Team
ⁱGroningen/ASTRON, Netherlands.

214.06 Radio Detection of Cosmic Particles with LOFAR
Heino Falcke¹
¹MPI Für Radioastronomie/Radboud University/ASTRON, Germany.

Student Meet-Up with Nobel Laureate John Mather
Tuesday, 10:00am-11:30am, Room 8
Students, this is your chance to meet Nobel prize winner Dr. John Mather! Dr. Mather is the Senior Project Scientist for the James Webb Space Telescope, and will give a brief overview of its science capabilities and the progress of construction, and then talk with students. NASA scientists will be on-hand to answer questions about internships, fellowships, and postdoctoral positions at NASA. The workshop is open to students at any level (graduate, undergraduate, even high school) who are attending the AAS meeting.

Organizer
Jane R. Rigby¹
¹NASA Goddard Space Flight Center.

Careers 201: Career Leadership Workshop: Finding Opportunities and Honing Professional Skills
Tuesday, 10:00am-1:30pm, Room 9BC
In this fast-paced, energetic workshop, participants will learn about various professional development skills that will help them advance in their scientific career. We will discuss traditional and non-traditional career opportunities for astronomers and job search processes and strategies, and attendees will hear from an astronomer who forged an exciting career in industry and the lessons and tactics that have made her successful. We will address professional skills such as networking, negotiation, and leadership principles for emerging and established astronomers, among other topics of importance. Q and A with workshop participants will be highly encouraged.

This workshop is offered in conjunction with Careers 101: Career Planning Workshop. Participants will benefit from attending both, but can also take each independently.

Organizer
Alaina Levine¹
¹Quantum Success Solutions.

Invited Session 215 Cannon Prize: Weak Lensing - Revealing the Dark Side of the Universe
Tuesday, 11:40am-12:30pm, Ballroom D

Chair
Debra M. Elmegreen¹
¹Vassar College.
Rachel Mandelbaum - Annie J. Cannon Award

The 2011 Annie Jump Cannon prize to be awarded to Rachel Mandelbaum for her ground-breaking contributions to the field of weak gravitational lensing of galaxies. Her work on understanding and eliminating numerous systematic effects inherent in weak lensing data have advanced this technique to the point where it can now be used with confidence for precision cosmology. Dr. Mandelbaum has used her weak lensing detection pipeline on the Sloan Digital Sky Survey to produce the best measurement of the relative distribution of galaxies and their dark-matter halos. She has also demonstrated the first clear detection of intrinsic shape alignment in nearby galaxies. Her work has profound implications for testing structure formation theories as well as the efforts to study the dark matter and dark energy through weak lensing.

215.01 Cannon Prize: Weak lensing - Revealing the Dark Side of the Universe
Rachel Mandelbaum


Personal Finance in Turbulent Times

The economy is improving, but serious issues remain. If you’re not sure you’re on track to meet your financial goals, here’s your opportunity to get started. Join Ric Edelman, the nation’s #1 independent financial advisor (as ranked by Barron’s*), for this fun, informative event. In his unique, breezy style, Ric will teach you: * the 9 reasons you need to plan * the 5 obstacles you’ll face * the 5 steps that will put you on the road to financial success, and * the 4 rules you should follow for managing your investments

*Barron’s ranking “Top 100 Independent Financial Advisors” (Aug. 28, 2010 / Aug. 31, 2009) based on the quality of the advisors’ practices, including client retention and compliance record, contribution to the firm’s profitability, and the volume of assets overseen by the advisors and their teams.

Organizer
Kevin B. Marvel


216 Gemini Town Hall

Staff from Gemini Observatory will meet with the community to report on progress and to discuss plans for future instrumentation and operations developments. Community desires for new instrument capabilities are a key issue, as a new generation of Gemini instruments is being defined now.

Chair
Frederic Chaffee

University of North Carolina.

217 Pulsars, Neutron Stars

Tuesday, 2:00pm-3:30pm, Ballroom E

Chair
Matthew G. Baring

Rice University.
217.01 Millihertz Oscillations And Thermonuclear Bursts From Terzan 5: A Showcase Of Burning Regimes
Manuel Linares1, D. Altamirano2, D. Chakraborty1, A. Cumming3, L. Keek4
1MIT, 2University of Amsterdam, Netherlands, 3McGill University, Canada, 4University of Minnesota.

217.02 Quantitative and Qualitative Models in Support of the Supraluminal Model of Pulsar Emission
John Singleton1, A. Schmidt2, J. Middleditch3, H. Ardavan4, A. Ardavan5
1National High Magnetic Field Laboratory, 2UNM/LANL, 3LANL, 4University of Cambridge, United Kingdom, 5University of Oxford, United Kingdom.

217.03 Extreme Particle Acceleration via Magnetic Reconnection in the Crab Nebula
Benoit Cerutti1, D. A. Uzdensky1, M. C. Begelman1
1University of Colorado.

217.04 Constraints on the Emission Geometry of the “B” Pulsar in the Double Pulsar System
1West Virginia University, 2Purdue University, 3University of Manchester, Jodrell Bank Observatory, United Kingdom, 4University of British Columbia, Canada, 5Jodrell Bank Center for Astrophysics, United Kingdom, 6NAIC, Arecibo Observatory, 7INAF-Osservatorio Astronomica di Cagliari, Italy, 8University of Toronto, Canada, 9Australia Telescope National Facility, Australia, 10Columbia University.

217.05 Multi-wavelength Observations of PSR J2222-0137
Jason Boyles1
1West Virginia University.

217.06 Statistical Analysis Of The Pulsars In The Parkes Multibeam Survey Reveals Evidence For Violation Of The Inverse-square Law
Andrea C. Schmidt1, J. Singleton1, J. Middleditch3, H. Ardavan4, A. Ardavan5
1LANL/UNM, 2National High Magnetic Field Laboratory, 3LANL, 4University of Cambridge, United Kingdom, 5University of Oxford, United Kingdom.

217.07 Probing Gamma-ray Pulsar Emission with Light Curve Modeling and Phase-Resolved Spectroscopy
Megan E. DeCesar1, A. Harding2, M. C. Miller3, Y. Contopoulos1, C. Kalapotharakos3, D. Parent4
1University of Maryland, 2NASA Goddard Space Flight Center, 3Academy of Athens, Greece, 4Naval Research Lab.

217.08 Spectral Trends in the Second Fermi LAT Catalog of Gamma-ray Pulsars
Ozlem Celik1, Fermi LAT Collaboration, Pulsar Timing Consortium
1NASA Goddard Space Flight Center.

218 The Rossi X-ray Timing Explorer: Taking the Pulse of the Universe
Tuesday, 2:00pm-3:30pm, Room 17B
Over the course of its 16 year mission, NASA's Rossi X-ray Timing Explorer (RXTE) has revolutionized our view of the X-ray sky. With a powerful and unique combination of large collecting area, broad-band spectral coverage, high time resolution and highly flexible scheduling, RXTE observations have led to breakthroughs in our physical understanding of the extreme environments of accreting compact objects, including neutron stars and
Galactic and extragalactic black holes. Among these breakthroughs were the discoveries of the kilohertz quasiperiodic oscillations of accreting neutron stars and black holes (the fastest periodic signals known in astronomy), as well as the finding of the first accreting millisecond X-ray pulsars, that solidified the link between recycled millisecond radio pulsars and their accreting progenitors.

In this special session we will provide a survey of the amazingly rich observational legacy of RXTE, with a focus on recent discoveries, ongoing research, and the multi-wavelength perspective that RXTE coordinated observations have helped reveal. We will also highlight and discuss the frontier scientific questions that RXTE observations have helped to bring into focus, but that only future, more sensitive X-ray timing missions will be able to fully

**218.00C Chair**
Tod E. Strohmayer
1NASA’s GSFC.

**218.01 RXTE’s Contributions to Our Understanding of Neutron Stars**
Frederick K. Lamb
1Univ. of Illinois.

**218.02 Anomalous X-ray Pulsars and Soft Gamma Repeaters as Magnetars: The RXTE Legacy**
Victoria M. Kaspi
1McGill Univ., Canada.

**218.03 Black Holes with RXTE: New Insights**
John Tomsick
1UC Berkeley/SSL.

**218.04 RXTE Observations of Active Galactic Nuclei: The Power of Well-Sampled Light Curves**
Alan P. Marscher
1Boston Univ.

**218.05 Future Opportunities for X-ray Timing After RXTE**
Deepto Chakrabarty
1MIT.

**219 The BigBOSS Multi-Object Spectrograph on the Mayall Telescope**

Tuesday, 2:00pm-3:30pm, Room 16B

BigBOSS is a 3-degree field, 5000-fiber optical spectrograph proposed for the prime focus of the Mayall 4-m telescope. It is designed to undertake an unprecedented redshift survey of 20 million galaxies and QSOs to measure the gravitational growth of structure and the effects of dark energy from $z=3$ to $z=0.5$. In addition, BigBOSS will be a facility instrument, available for use by the astronomical community.

This session will review the capabilities of the BigBOSS instrument, the impact of the key project, and the opportunities for community science.

**219.00C Chair**
Timothy C. Beers
1Michigan State Univ

**219.01 An Overview of the BigBOSS Project**
Arjun Dey
1NOAO.
219.02 The BigBOSS Instrument
Natalie Roe
Lawrence Berkeley National Lab.

219.03 Cosmology With the BigBOSS Survey
Nikhil Padmanabhan, BigBOSS collaboration
Yale U

219.04 Extragalactic Science with BigBOSS
Martin White
UC Berkeley.

219.05 Mapping the Milky Way Galaxy with BigBOSS
Constance M. Rockosi
UCO/Lick Observatory.

219.06 BigBOSS Community Workshop at NOAO
Catherine A. Pilachowski
Indiana University.

220 Star Formation II
Tuesday, 2:00pm-3:30pm, Room 12A

220.00C Chair
Antonio Chrysostomou
Joint Astronomy Centre.

220.01 Observing Turbulent Fragmentation In Simulations: Through the Looking Glass of CARMA and ALMA
Stella Offner, J. Capodilupo, S. Schnee, A. Goodman
Harvard-Smithsonian Center for Astrophysics, Harvard University, National Radio Astronomy Observatory.

220.02D Probing the Role of Magnetic Fields in Star Formation with BLAST-Pol
Laura M. Fissel, BLAST-Pol Collaboration
University of Toronto, Canada.

220.03D What the Spatial Distribution of Stars tells us about Star Formation and Massive Cluster Formation
Eli Bressert, N. Bastian, L. Testi, J. Patience, S. Longmore
ESO/Univ. of Exeter/CfA, Germany, Excellence Cluster Universe, Germany, ESO, Germany, University of Exeter, United Kingdom.

220.04 The Progression Of Star Formation In The Rosette Molecular Cloud
Univ. of Florida, Universidad Nacional Autónoma de México, Mexico, Harvard-Smithsonian Center for Astrophysics, The Pennsylvania State University, Max-Planck Institut für Astronomie, Germany.

220.05 A Systematic Study of Deuteration of Dense Cores in Perseus
Rachel Friesen, H. Kirk, Y. Shirley
National Radio Astronomy Observatory, Harvard Smithsonian Center for Astrophysics, University of Arizona.

220.06 The Magnetic Field Surrounding Serp-FIR1
Northwestern University/CIERA, University of Western Australia, Australia, Herzberg Institute, Canada, Jet Propulsion Laboratory, California Institute of Technology, Universities Space Research Association, SOFIA.
220.07 Initial Conditions For Star Formation In Clusters: Physical And Kinematical Structure Of The Starless Core Opha-n6
Tyler L. Bourke¹, P. Myers¹, P. Caselli², J. Di Francesco¹, A. Belloche⁴, R. Plume⁵, D. Wilner¹
¹Harvard-Smithsonian, CfA, ²U.Leeds, United Kingdom, ³Herzberg Institute of Astrophysics, Canada, ⁴Max Planck Institut für Radioastronomie, Germany, ⁵U.Calgary, Canada.

221 Working in Science Policy
Tuesday, 2:00pm-3:30pm, Ballroom G

The goal of the panel is to encourage intelligent and enthusiastic astronomers into the field of public policy. The panel will focus on how to transition from a career in astronomy to a career in science.

Transitioning into the world of public policy from astronomy is a unique experience for each individual. There is no certain path one must take from your current career to Capitol Hill. Each panelist will tell their story on how they made the transition from astronomer to public policy and why they were motivated to pursue this type of career. The panelist range in experience, career stage, and method of transition to illustrate the different ways to success. More scientists are entering a career in public policy, however the role of the public scientist communicating with policy makers is still very important.

Panelist include: Dr. Bethany Johns, the AAS Johns Bahcall Public Policy Fellow
Dr. Nicholas Sunzetteff, Jefferson Senior Science Fellow & Humanitarian Affairs Officer
Dr. Carol Christian, Deputy of the Community Missions Office, Division of STScI
Celinda Marsh, Space Science Program Examiner at the Office of Management and Budget
Dr. Marcos Huerta, Special Assistant, Office of the Director, Office of Science at the Department of Energy

Chair
Bethany Johns¹
¹AAS.

222 How to Build a Milky Way: A Blueprint From the SDSS-III SEGUE Survey II
Tuesday, 2:00pm-3:30pm, Room 18C

As studies of the Milky Way enter the era of large surveys, we are finding that the new detailed, multi-dimensional datasets, combined with powerful new simulations of galaxy formation and evolution in a cosmological context, are transforming our view of the Milky Way’s history. SEGUE is the SDSS project focused on the formation and evolution of the Milky Way as traced by its stars.

The survey observations are now complete, and the data have been released to the public. They consist of 3240 square degrees of ugriz imaging at low Galactic latitude and 370,000 stellar spectra to g=20. We have made extensive checks of our pipeline stellar parameter values using ugriz photometry and spectroscopy of well-studied cluster and field stars. The combination of large sample size and depth has enabled SEGUE to address long-standing questions such as the disk metallicity distribution and gradients, as well as newer questions such as the role of radial migration in shaping the disk. We have traced halo structure and substructure with larger and deeper samples than ever before, including thousands of outer halo giants. The homogeneous nature of the survey data also enable illuminating tests of selection biases, historically the bane of galactic stellar populations studies.
222.00C Chair
Inese I. Ivans¹
¹University of Utah.

222.01 Exploring the Stellar Halo of the Milky Way with the Sloan Digital Sky Survey and PanSTARRS1
Eric F. Bell¹, C. T. Slater¹, J. Bailin¹, X. Xue², C. Ruhland³, N. F. Martin⁴, Pan-STARRS 1 consortium
¹University of Michigan, ²Key Lab of Optical Astronomy, National Astronomical Observatories, Beijing, China, ³University of Hertfordshire, United Kingdom, ⁴Max-Planck-Institut fuer Astronomie, Germany.

222.02 Measuring Substructure with SEGUE K Giants and BHB Stars
Heather Morrison¹
¹Case Western Reserve University.

222.03 In Situ Measurement of the Metallicity Gradient in the Galactic Halo
Paul Harding¹
¹Case Western Reserve University.

222.04 Characterizing Halo Substructure with Kapteyn Proper-Motion and with SDSS/SEGUE Data
Dana Casetti¹
¹Yale University.

222.05 Dynamical Structure of the Galaxy From the Local Kinematics of M Subdwarfs
Sebastien Lepine¹
¹American Museum of Natural History.

222.06 Carbon-Enhanced Metal-Poor (CEMP) Stars in the Halo System of the Galaxy and Their Link with High Redshift Damped Lyman Alpha Systems
Timothy C. Beers¹, D. Carollo², Y. Lee¹, C. R. Kennedy², SEGUE Collaboration
¹Michigan State Univ., ²RSAA, Australian National Univ., Australia.

223 Galaxy Cluster Masses and Dynamics
Tuesday, 2:00pm-3:30pm, Room 12B

223.00C Chair
Jack O. Burns¹
¹Univ. of Colorado at Boulder.

223.01 Dynamic Analysis of CLASH Clusters
Doron Lemze¹, M. Geller², M. Nonino³, E. Medezinski¹, M. Postman¹, H. Ford¹, M. Kurtz², K. Rines², CLASH team
¹Johns Hopkins University, ²Smithsonian Astrophysical Observatory, ³INAF - Astronomical Observatory of Bologna, Italy, ⁴The Space Telescope Science Institute, ⁵Western Washington University.

223.02 CLASH: Are Galaxy Cluster Cores Denser In Nature Than In Simulations? New Results For Abell 2261 Based On 16-band Hubble Imaging And Lensing, X-ray, And Dynamical Analyses.
Dan A. Coe¹, CLASH Team
¹STScI.

223.03 Using Caustic Methods to Measure the Masses of Galaxy Clusters
Daniel Gifford³, C. J. Miller¹, C. D. Harrison¹, M. Kao³, M. T. Busha³, R. H. Wechsler³, A. E. Evrard¹
¹University of Michigan, ²California Institute of Technology, ³KIPAC/Stanford University.
Tuesday Sessions and Events

223.04 Galaxy Cluster Dynamics and Substructure with ACRES: The Arizona Cluster Redshift Survey
Maria Pereira¹, E. Egami², C. Haines³, E. Hardegree-Ullman²
¹Steward Observatory, ²Rensselaer Polytechnic Institute.

223.05D CARMA And maxBCG: Covariance And Scaling Of SZ Signal And Richness In An Optically-selected Galaxy Cluster Sample
Christopher Greer¹
¹Univ. of Chicago.

223.06D Weak Lensing Results of the Merging Cluster A1758
Brett A. Ragozzine¹, D. I. Clowe¹
¹Ohio University.

223.07 Discovery of a Galaxy Cluster Merger in Unexplored Merger Phase-space
William Dawson¹, D. Wittman¹, J. Jee¹, P. Gee¹, J. P. Hughes², D. Marrone³, A. Tyson¹, S. Schmidt¹, S. Muchovej¹, P. Thorman¹, J. Carlstrom³, M. Bradac¹, S. Miyazaki⁶, T. Mroczkowski², B. Lemaux¹, Y. Utsumi⁶
¹University of California Davis, ²Rutgers University, ³University of Arizona, ⁴Caltech, ⁵University of Chicago, ⁶The Graduate University for Advanced Studies, Japan, ⁷University of Pennsylvania.

224 The Sun, Stellar Atmospheres, and Winds
Tuesday, 2:00pm-3:30pm, Room 18D

224.00C Chair
M. Virginia McSwain¹
¹Lehigh Univ

224.01 X-ray Emissions from Clump Bowshocks in Massive Star Winds
Richard Ignace¹, W. Waldron², J. Cassinelli³
¹East Tennessee State Univ., ²Eureka Scientific Inc, ³University of Wisconsin.

224.02 The First Direct Measurement of an Early B Supergiant X-ray Source Electron Density
Wayne L. Waldron¹, J. P. Cassinelli³, N. A. Miller³, E. M. Schlegel⁴
¹Eureka Scientific, Inc., ²University of Wisconsin-Madison, ³University of Wisconsin-Eau Claire, ⁴University of Texas-San Antonio.

224.03 NoMaDS: The Northern Massive Dim Stars Survey
Anne Pellerin¹, J. Maíz Apellániz², S. Simón-Díaz³, R. H. Barbá⁴
¹Texas A&M University, ²Instituto de Astrofísica de Andalucía-CSIC, Spain, ³Instituto de Astrofísica de Canarias, Spain, ⁴Universidad de La Serena, Chile.

224.04 High-Precision Stellar Diameters Compared with Stellar Atmosphere Models
Anders M. Jorgensen¹, J. T. Armstrong³, H. R. Schmitt³, E. K. Baines³, D. Mozurkewich⁵, C. Tycner⁵, D. Hutter⁵, T. Hall¹
¹New Mexico Tech, ²Naval Research Laboratory, ³Naval Research Laboratory, ⁴Naval Research Laboratory, ⁵Seabrook Engineering, ⁶Central Michigan University, ⁷Naval Observatory Flagstaff Station.

224.05 Self-Obscured Dusty Massive Stars in Nearby Galaxies
Rubab M. Khan¹, K. Z. Stanek¹, C. S. Kochanek¹
¹Ohio State University.

224.06 Role of Evolving Coronal Holes in the Occurrence of Solar Activity
Rajendra Shelke¹
¹Sipna’s College of Engineering & Technology, Amravati, MS-444607, India.
224.07 Advantage of Forbidden Emission Lines Over Extreme Ultraviolet Lines as Coronal Diagnostic Tools
Shadia R. Habbal1, M. Druckmuller2, H. Morgan1, A. Ding1
1Univ. of Hawaii at Manoa, 2Brno University of Technology, Czech Republic, 3Institute of Technical Physics, Germany.

224.08 Chromospheric Explosions: Linking Observations Toward a Physical Model
Michael S. Kirk1, K. S. Balasubramaniam2, J. Jackiewicz1, R. T. J. McAteer1, B. J. McNamara1
1New Mexico State University, 2Air Force Research Laboratory.

225 AGN, QSO, Blazars IV
Tuesday, 2:00pm-3:30pm, Room 17A

225.00C Chair
Robert T. Zavala1
1US Naval Observatory.

225.01 Parsec-Scale Radio Emission from The Low-Luminosity AGN in the Dwarf Starburst Galaxy Henize 2-10
Amy E. Reines1, A. T. Deller2
1National Radio Astronomy Observatory, 2ASTRON Netherlands Institute for Radio Astronomy, Netherlands.

225.02 The Evolution Of AGN & Their Host Galaxies To z~1 In Wide-field Multi-wavelength Surveys
Andy D. Goulding1, DEEP2 survey team
1Harvard Smithsonian CfA.

225.03D Roche Accretion Of Stars Close To Massive Black Holes
Lixin J. Dai1, R. Blandford1
1KIPAC / Stanford University.

225.04 Chandra X-ray and HST Imaging of Kiloparsec-scale Binary Active Galactic Nuclei
Xin Liu1, Y. Shen1, F. Civano1, P. Green1, J. Greene2, M. Strauss2
1Harvard-Smithsonian Center for Astrophysics, 2Princeton University.

225.05 Spatially Resolved Spectroscopy of SDSS J0952+2552: A Confirmed Dual Active Galactic Nucleus
Rosalie C. McGurk1, C. E. Max1, D. J. Rosario2, G. A. Shields1, K. L. Smith1, S. A. Wright1
1UC Santa Cruz, 2Max-Planck-Institute for Extraterrestrial Physics, Germany, 3UT Austin, 4UC Berkeley.

225.06D Detecting Dual AGN at High Redshift
Robert S. Barrows1
1University of Arkansas.

225.07 Identifying Luminous AGN in Deep Surveys: Revised IRAC Selection Criteria
1Space Telescope Science Institute, 2MPE, Germany, 3Caltech, 4MIT, 5Harvard Smithsonian Center for Astrophysics, 6Laboratoire d'Astrophysique de Marseille, France, 7University of Arizona, 8NOAO, 9Universidad Nacional Autónoma de México, Mexico, 10University of Hawaii, 11UCO/Lick, 12INAF-Osservatorio Astronomico di Bologna, Italy.
Tuesday Sessions and Events

226 HEAD IV: New Results in High Energy Astrophysics
Tuesday, 2:00pm-3:30pm, Room 18B

226.00C Chair
Jimmy Irwin\(^1\)
\(^1\)Univ. Of Alabama.

226.01 The X-ray Brightest Group in the Sky - NGC 5044
Laurence P. David\(^1\), E. O'Sullivan\(^2\), S. Giacintucci\(^3\), W. Forman\(^1\), C. Jones\(^1\), J. Vrtilek\(^1\), S. Raychaudhury\(^4\), M. Sun\(^5\), J. Lim\(^6\)
\(^1\)Harvard Smithsonian Center for Astrophysics, \(^2\)University of Birmingham, United Kingdom, \(^3\)University of Maryland, \(^4\)University of Birmingham, United Kingdom, \(^5\)University of Virginia, \(^6\)University of Hong Kong, Hong Kong.

226.02D Multi-Zone Modeling of Nonthermal Radiation from Pulsar Wind Nebulae
Adam Van Etten\(^1\), R. W. Romani\(^1\)
\(^1\)Stanford University.

226.03 Resolving the Bondi Accretion Flow toward the Supermassive Black Hole of NGC 3115 with Chandra
Ka-Wah Wong\(^1\), J. Irwin\(^1\), M. Yukita\(^1\), E. Million\(^1\), W. Mathews\(^2\), J. Bregman\(^3\)
\(^1\)Univ. of Alabama at Tuscaloosa, \(^2\)UCSC, \(^3\)Univ. of Michigan.

226.04 Imaging Quasar Coronae Using Gravitational Microlensing
BIN CHEN\(^1\), X. Dai\(^1\), C. S. Kochanek\(^2\), G. Chartas\(^3\), J. A. Blackburne\(^2\), S. Kozlowski\(^4\)
\(^1\)University of Oklahoma, \(^2\)The Ohio State University, \(^3\)College of Charleston, \(^4\)Warsaw University Observatory, Poland.

226.05 Optical Discovery of Stellar Tidal Disruption Flares
Glennys R. Farrar\(^1\), S. van Velzen\(^2\)
\(^1\)New York University, \(^2\)Radboud Univ., Netherlands.

226.06 Swift J164449.3+573451: Jet Emission from a Tidal Disruption Event - the 9 Month Update
David N. Burrows\(^1\), J. A. Kennea\(^1\), P. Romano\(^2\), V. Mangano\(^2\), N. Gehrels\(^3\)
\(^1\)Penn State Univ., \(^2\)INAF – Istituto di Astrofisica Spaziale e Fisica Cosmica, Italy, \(^3\)NASA/Goddard Space Flight Center.

226.07 Testing The Cas A Neutron Star Temperature Decline With Other Chandra Instruments
Khaled Elshamouty\(^1\), C. O. Heinke\(^1\), W. C. G. Ho\(^1\), D. J. Patnaude\(^1\), P. S. Shternin\(^4\), D. G. Yakovlev\(^4\)
\(^1\)University of Alberta, Canada, \(^2\)University of Southampton, United Kingdom, \(^3\)Smithsonian Astrophysical Observatory, \(^4\)Ioffe Physical Technical Institute, Russian Federation.

226.08 Hard X-ray Emission by Resonant Compton Upscattering in Magnetars
Zorawar Wadiasingh\(^1\), M. G. Baring\(^1\), P. L. Gonthier\(^2\), A. K. Harding\(^3\)
\(^1\)Rice University, \(^2\)Hope College, \(^3\)NASA Goddard Space Flight Center.

227 Astronomy 101 Teaching & Learning
Tuesday, 2:00pm-3:30pm, Room 16A

227.00C Chair
Aaron Price\(^1\)
\(^1\)AAVSO/Tufts University.
**227.01**  Fostering the Development of Quantitative Life Skills through Introductory Astronomy: Can it be Done?
Katherine B. Follette, D. W. McCarthy
University of Arizona.

**227.02D**  Understanding the Correlations among Undergraduates’ Spatial Reasoning Skills and Their Ability to Learn Astronomy Concepts
Inge Heyer
University of Wyoming.

**227.03**  3D Virtual Reality for Teaching Astronomy
Angela Speck, L. Ruzhitskaya, J. Laffey, N. Ding
Univ. of Missouri.

**227.04**  Teaching Celestial Motions in Astronomy 101 using the Digital Fulldome Planetarium Environment
Thomas J. Balonek, J. Eakin
Colgate Univ

**227.05**  Developing Resource Guides for Astro 101 Instructors, as a Higher Education Community Collaboration from the NASA Astrophysics SEPOF
Gregory R. Schultz, A. Fraknoi, D. Smith, J. Manning

**227.06**  Astronomy in Sustainable Energy: A New Approach to Make It Matter
Lanika Ruzhitskaya, A. Speck
University of Missouri.

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**228 Extrasolar Planets and Brown Dwarfs: Formation, Evolution**
Tuesday, 2:00pm-3:30pm, Ballroom F

**228.00C**  Chair
Gerard van Belle
Lowell Observatory.

**228.01D**  Heterogeneous Giant Planet Thermal Evolution with MESA
Neil Miller, J. Fortney
UC Santa Cruz.

**228.02**  Candidates for Solar Siblings
Mauri J. Valtonen, A. Myllari, A. Bajkova, V. Bobylev
Univ. of Turku, Finland, Abo Akademi University, Finland, Pulkovo Astronomical Observatory, Russian Federation.

**228.03**  A Young Exoplanet Caught at Formation
Adam L. Kraus, M. J. Ireland
Univ. of Hawaii-IfA, Macquarie University, Australia.

**228.04D**  Giant Planet Companions to T Tauri Stars
Christopher Crockett, N. Mahmud, L. Prato, C. Johns-Krull, D. T. Jaffe, P. Hartigan, C. A. Beichman
USNO, Rice University, Lowell Observatory, U.T. Austin, NExSci.

**228.05**  Discovery of Massive Brown Dwarf Companions to BAF stars in Upper Scorpius
Sasha Hinkley, M. J. Ireland, A. L. Kraus, J. M. Carpenter, P. Tuthill
California Institute of Technology, MacQuarie University, Australia, Institute for Astronomy, Univ. of Hawaii, University of Sydney, Australia.
Tuesday Sessions and Events

228.06 WITHDRAWN: The Origin of Retrograde Hot Jupiters
Smadar Naoz¹, W. Farr², Y. Lithwick², F. Rasio², J. Teyssandier²
¹Harvard-Smithsonian Center for Astrophysics ITC, ²Northwestern Univ

228.07 The TERMS Project: More Than Just Transit Exclusion
Stephen R. Kane¹, Transit Ephemeris Refinement and Monitoring Survey (TERMS)
¹NASA Exoplanet Science Institute, Caltech.

229 Evolution of Galaxies IV
Tuesday, 2:00pm-3:30pm, Room 19A

229.00C Chair
James E. Rhoads¹
¹Arizona State Univ

229.01 The UVJ Selection of Quiescent and Star Forming Galaxies: Separating Early and Late-Type Galaxies and Isolating Edge-on Spirals
Shannon Patel¹, B. P. Holden¹, D. D. Kelson³, M. Franx¹, A. van der Wel⁴, G. D. Illingworth²
¹Leiden University, Netherlands, ²University of California, Santa Cruz, ³Carnegie, ⁴Max-Planck-Institut für Astronomie, Germany.

229.02D The Prevalence and Properties of Outflowing Galactic Winds at z = 1
Katherine Kornei¹
¹UCLA.

229.03 Carnegie-Spitzer-IMACS Survey: Following the End of Star Formation in Massive Galaxies Since z=1
Daniel Kelson¹, R. Williams¹, A. Dressler¹, P. McCarthy¹, J. Mulchaey¹, A. Oemler¹, S. Shectman¹
¹Carnegie Inst. of Washington.

229.04 Carnegie-Spitzer-IMACS Survey: The Rise of Galaxy Groups Since z=1
Rik J. Williams¹, D. Kelson¹, A. Dressler¹, P. McCarthy¹, J. Mulchaey¹, A. Oemler Jr.¹, S. Shectman¹
¹Carnegie Observatories.

229.05D The Mass-Metallicity Relation At z~1.5 For A Sample Of Lensed Galaxies
Eva Wuyts¹, J. R. Rigby², K. Sharon², M. D. Gladders¹
¹The University of Chicago, ²NASA Goddard, ³University of Michigan.

229.06 Herschel/hermes: Bivariate UV/IR Luminosity Functions At Z~1.5
Sebastien Heinis¹, V. Buat¹, M. Bethermin², O. Ilbert¹
¹Laboratoire d' Astrophysique de Marseille, France, ²Institut d' Astrophysique Spatiale, France.

229.07 A Revised Parallel-Sequence Galaxy Classification: Structure and Formation of S0 and Spheroidal Galaxies
John Kormendy¹, R. Bender²
¹Univ. of Texas, ²Max-Planck-Institute for Extraterrestrial Physics, Germany.

230 Stellar Evolution, Stellar Populations
Tuesday, 2:00pm-3:30pm, Room 19B

230.00C Chair
Terry D. Oswalt¹
¹Florida Institute of Technology.
230.01  The GMOS Lithium-rich Giant Survey in M22  
Steven J. Margheim\textsuperscript{1}  
\textsuperscript{1}Gemini Observatory, Chile.

230.02  GALEX Color Magnitude Diagrams for 40 Galactic Globular Clusters  
Ricardo P. Schiavon\textsuperscript{1}, E. Dalessandro\textsuperscript{2}, S. T. Sohn\textsuperscript{3}, R. T. Rood\textsuperscript{4}, R. W. O’Connell\textsuperscript{4}, F. R. Ferraro\textsuperscript{5}, B. Lanzoni\textsuperscript{2}, G. Beccari\textsuperscript{3}, S. Rey\textsuperscript{6}, J. Rhee\textsuperscript{7}, R. Rich\textsuperscript{7}, S. Yoon\textsuperscript{8}, Y. Lee\textsuperscript{8}  
\textsuperscript{1}Gemini Observatory, \textsuperscript{2}Università degli Studi di Bologna, Italy, \textsuperscript{3}Space Telescope Science Institute, \textsuperscript{4}University of Virginia, \textsuperscript{5}European Southern Observatory, Germany, \textsuperscript{6}Chungnam National University, Korea, Republic of, \textsuperscript{7}University of California, Los Angeles, \textsuperscript{8}Yonsei University, Korea, Republic of.

230.03D  Mass-loss From Evolved Stellar Populations In The Large Magellanic Cloud  
David Riebel\textsuperscript{1}  
\textsuperscript{1}Johns Hopkins University.

230.04D  The Star Formation & Chemical Evolution Timescales of Two Nearby Dwarf Spheroidal Galaxies  
Thomas de Boer\textsuperscript{1}, E. Tolstoy\textsuperscript{1}, V. Hill\textsuperscript{1}, A. Saha\textsuperscript{1}, K. Olsen\textsuperscript{1}, E. Starkenburg\textsuperscript{1}, M. Irwin\textsuperscript{1}, G. Battaglia\textsuperscript{1}  
\textsuperscript{1}Rijks Universiteit Groningen, Netherlands, \textsuperscript{2}Observatoire de la Cote d’Azur, France, \textsuperscript{3}NOAO, \textsuperscript{4}Institute of Astronomy, University of Cambridge, United Kingdom, \textsuperscript{5}European Southern Observatory, Germany.

230.05D  The Resolved Stellar Populations of M32  
Antonela Monachesi\textsuperscript{1}  
\textsuperscript{1}University of Michigan.

230.06  Discovery of Super-Lithium Rich Red Giants in Milky Way Satellite Galaxies  
Evan Kirby\textsuperscript{1}, X. Fu\textsuperscript{2}, P. Guhathakurta\textsuperscript{3}  
\textsuperscript{1}California Institute of Technology, \textsuperscript{2}National Astronomical Observatories of China, China, \textsuperscript{3}UC Santa Cruz.

Invited Session 231 Pierce Prize: Who is Under the HAT? Small Telescopes Yield Big Science  
Tuesday, 3:40pm-4:30pm, Ballroom D

231.00C  Chair  
Debra M. Elmegreen\textsuperscript{1}  
\textsuperscript{1}Vassar College.

Gaspos Bakos - Newton Lacy Pierce Prize  
For the impact he has had on the study of exoplanets, his contributions to our understanding of the unexpected diversity of exoplanet properties, and the extraordinary entrepreneurial spirit and capability he has shown in the development of one of the most successful systems for detecting transiting extra-solar planets (HATNet).

231.01  Pierce Prize: Who is Under the HAT? Small Telescopes Yield Big Science  
Gaspar Bakos\textsuperscript{1}  
\textsuperscript{1}Harvard-Smithsonian Center for Astrophysics.
Invited Session 232 Catching Up: Theory in a Decade of Transiting Exoplanets

Tuesday, 4:30pm-5:20pm, Ballroom D

232.00C Chair
Lee Anne M. Willson\(^1\)
\(^1\)Iowa State Univ

232.01 Catching Up: Theory In A Decade Of Transiting Exoplanets
Dimitar D. Sasselov\(^1\)
\(^1\)Harvard-Smithsonian CfA.

233 HEAD Business Meeting

Tuesday, 5:30pm-6:30pm, Room 18B
Annual business meeting of the High Energy Astrophysics Division.

233.00C Chair
Chryssa Kouveliotou\(^1\)
\(^1\)NSSTC.

AAS Donor Reception

Tuesday, 5:30pm-7:00pm, Finn & Porter Restaurant, Hilton Austin
Reception hosted by the AAS to thank 2011 sponsors for their continued support. Attendance by Invitation Only.

SPS Evening of Undergraduate Science

Tuesday, 6:30pm-8:00pm, Room 9
The Society of Physics Students (SPS) is sponsoring an “Evening of Astronomy” for all undergraduates attending the AAS Meeting on Tuesday night from 6:30 until 8:00 PM. Noted astrophysicist Sandra Faber (UC Santa Cruz) who has greatly advanced our understanding of the formation of galaxies and the evolution of structure in the universe, will give a short talk (20-30 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 interests. Hors d’oeuvres will be served. 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 slow down and savor the field and the accomplishments of one’s colleagues.

Organizer
Thomas Olsen\(^1\)
\(^1\)AIP.

New Worlds Technology

Tuesday, 6:30pm-8:00pm, Room 18C
This evening session will review the current state-of-the-art in exoplanet technology and its possible implementation in new smaller mission concepts. A central theme in NASA’s science planning is the search for habitable worlds and life beyond our Solar System. Although Earth-like planets would not yet be detectable with current technology, starlight suppression now approaches flight readiness for missions that would image exozodiacal dust around nearby stars and characterize Jupiter-like exoplanets. Mission concepts of various scales based on coronagraph and starshades will be described along with their science objectives and technology requirements.
Tuesday Sessions and Events

6:30pm Introduction & Session Overview
Peter Lawson (JPL/Caltech)

6:40pm Coronagraph Technology
Probe-class missions - Olivier Guyon (University of Arizona)
Explorer & Suborbital - Wesley Traub (JPL/Caltech)

7:10pm Starshade Technology
Probe-class missions - N. Jeremy Kasdin (Princeton University)
Explorer & Suborbital - Webster Cash (University of Colorado)

7:40pm Telescope Technology Design Trades
Rémi Soummer (Space Telescope Science Institute)

7:55pm Questions
8:00pm End

Organizer
Peter Lawson\textsuperscript{1}
\textit{JPL.}

234 NRAO Town Hall

Tuesday, 6:30pm-8:30pm, Ballroom E

This Town Hall will inform the AAS membership about the status of the National Radio Astronomy Observatory (NRAO) science and science operations, observatory development and programs, and construction projects. The NRAO Town Hall will open with a reception that will be followed by brief presentations designed to update the membership regarding: (a) science opportunities and construction status at the Atacama Large Millimeter/submillimeter Array (ALMA) and the Expanded Very Large Array (EVLA); (b) science opportunities and development programs at the Green Bank Telescope (GBT) and the Very Long Baseline Array (VLBA); (c) recent science results from across the 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
Mark T. Adams\textsuperscript{1}
\textit{NRAO}

“Saving Hubble”: Film Screening & Meet the Director - Sponsored by Ball Aerospace & Technologies Corporation

Ball Aerospace & Technologies Corp.

Tuesday, 8:30pm-10:00pm, Ballroom G

Saving Hubble is a new independent film examining the popular uprising that helped convince NASA to reverse its 2004 decision to cancel the final servicing mission to the Hubble Space Telescope. It’s an inspiring portrait of everyday people joining forces with scientists to save a global astronomical icon from a senseless bureaucratic decision. Many films have been made about what the Hubble Space Telescope has seen. This one explores the question, “What does Hubble say about us?” The film took 7 years to make, during which director David Gaynes and cinematographer Eric Budney travelled more than 10,000 miles, interviewing experts and laypeople alike about the value of science in society, the frontiers of aerospace engineering, and the simple existential wonders of space. Stick around after the screening to discuss the film with the director.
235 Education Research: Methodologies & Results

Tuesday, 9:00am-6:30pm, Exhibit Hall

235.01 First Step in Building an Astronomy Learning Progression: Analyzing Student Conceptions of Astronomical Phenomena
Christopher Palma¹, J. Petula¹, J. Plummer¹, A. Flarend¹, G. Goldsborough²
¹Penn State Univ., ²Pennsby School District.

235.02 Two Eyes, 3D: A New Project to Study Stereoscopy in Astronomy Education
Aaron Price¹, M. SubbaRao², R. Wyatt³
¹AAVSO, ²Adler Planetarium and Astronomy Museum, ³California Academy of Sciences.

235.03 Assessing Student Learning in the Planetarium
Paul Sell¹, E. J. Hooper¹
¹The University of Wisconsin-Madison.

235.04 Insights Into Students’ Interests by Examining Their Choices of the Astronomy Picture of the Day
Windsor A. Morgan, Jr.¹
¹Dickinson College.

235.05 Lunatics in Introductory Physics: Using Collectivized Student Moon Position Observations To Teach Basic Orbital Mechanics In Calculus Based Introductory Physics.
Mark Bottorff¹
¹Southwestern Univ

235.07 Involving High School Students in Astronomy Research: What’s the goal?
Sue Ann Heatherly¹, S. Scoles¹, M. McLaughlin², D. Lorimer²
¹NRAO, ²WVU.

235.08 Digital Devices, Distraction and Student Performance - Does Cell Phone Use Reduce Learning?
Douglas K. Duncan¹, A. R. Hoekstra¹, B. R. Wilcox¹
¹Univ. of Colorado.

236 Professional Development for Students & Teachers

Tuesday, 9:00am-6:30pm, Exhibit Hall

236.01 Professional Development Workshops for K-8 Teachers: Workshops in Science Education and Resources (Project WISER)
Larry A. Lebofsky¹, A. M. Baldridge¹, L. F. Bleamaster¹, S. R. Buxner¹, T. L. Canizo¹, S. K. Croft¹, D. A. Crown¹, S. J. Kortenkamp¹, A. Yingst¹, E. Pierazzo²
¹Planetary Science Institute, ²Planetary Science Institute, Deceased.

236.02 Teacher Professional Development with SOFIA from Inception to Flight
Mary Kay Hemenway¹, J. Lacy¹, C. Sneden¹, SOFIA EXES Teacher Associates
¹Univ. of Texas at Austin.

236.03 Year 4 Of The NSF-funded PAARE Project At SC State
Donald K. Walter¹, S. D. Brittain², J. L. Cash¹, D. H. Hartmann², S. B. Howell², J. R. King², M. D. Leising², E. A. Mayo¹, K. J. Mighell², D. M. Smith¹
¹South Carolina State University, ²Clemson University, ³NASAmes Research Center, ⁴National Optical Astronomy Observatory.
236.04  The Lowell Observatory Predoctoral Scholar Program
Jeffrey C. Hall¹, L. A. Prato¹
¹Lowell Obs

237 Pulsars, Neutron Stars
Tuesday, 9:00am-6:30pm, Exhibit Hall

237.01  An Enhanced Analytical Model for Thermal and Bulk Comptonization in Accretion-powered X-ray Pulsars
Peter A. Becker¹
¹George Mason University.

237.02  The X-ray Counterpart Of The High-B Pulsar PSR J0726-2612
Josh Speagle¹, D. L. Kaplan¹, M. H. van Kerkwijk²
¹UW-Milwaukee, ²University of Toronto, Canada.

237.03  Near IR Astrometry Of Magnetars
Shriharsh P. Tendulkar¹, P. B. Cameron¹, S. R. Kulkarni¹
¹California Institute of Technology.

237.04  Observational Constraints on Radio Transient Emissions from Binary Neutron Star Mergers
Joanna Papadopoulos¹, D. Dispoto¹, B. Cardena¹, M. Kavic², S. Ellingson³, J. Simonetti¹, S. Cutchin¹, C. Patterson²
¹The College of New Jersey, ²Long Island University, ³Virginia Tech.

237.05  Speeding Up Blind Gamma-Ray Pulsar Searches with GPUs
Ethan Kruse¹, S. Ransom²
¹Harvard University, ²NRAO.

237.06  Population Synthesis of Radio and Gamma-ray Pulsars using the Maximum Likelihood Approach
Caleb Billman¹, P. L. Gonthier¹, A. K. Harding²
¹Hope College, ²NASA Goddard Space Flight Center.

237.07  Pulsar Search Results from the Arecibo Remote Command Center
Kevin Stovall¹, F. A. Jenet¹, X. Siemens¹, A. J. Ford¹, A. Garcia¹, R. Miller², J. Rivera³, F. Ceballos¹, L. Dartez², M. Flores², K. Kayal², J. Martinez², A. Rodriguez-Zermeño², A. Miller¹, J. Creighton³, D. Kaplan¹, J. Clayton³, C. Biwer³, D. Day¹, J. Flanigan¹, M. Rohr³, J. Hinojosa³, S. Leake³, A. Mata³, S. Cohen³, J. Murray³, J. Reser³, P. Rudnick³, PALFA Consortium, GBNCC Consortium
¹University of Texas at Brownsville/University of Texas at San Antonio, ²University of Texas at Brownsville, ³University of Wisconsin-Milwaukee.

237.08  Resonant Compton Upscattering in High Field Pulsars and Magnetars
Matthew Eiles¹, Z. Wadiasingh², P. L. Gonthier¹, M. G. Baring²
¹Hope College, ²Rice University.

237.09  Sifting for Fast Radio Transients in Pulsar Survey Data Using the Spectral Modulation Index
Laura Spitler¹, J. Cordes¹, S. Chatterjee¹, J. Stone²
¹Cornell University, ²Barnard College.

237.10  “Faster-than-Light” Pulse Propagation in the Interstellar Medium and Evidence for Birefringence
Garcia Jr. Alejandro¹, F. A. Jenet¹, P. Demorest¹, I. Stairs³, K. Stovall¹, A. J. Ford¹, R. B. Miller¹, J. Rivera¹, J. Rivera¹, L. P. Dartez¹, J. G. Martinez¹
¹University of Texas at Brownsville, ²NRAO, ³University of British Columbia, Canada.
237.11 Two Millisecond Pulsars Discovered by the PALFA Survey and a Shapiro Delay Measurement
Julia S. Deneva¹, P. Freire², PALFA Collaboration
¹Arecibo Observatory, ²Max Planck Institute, Germany.

237.12 New Discoveries from the PALFA Survey
Victoria M. Kaspi¹, PALFA Consortium
¹McGill Univ., Canada.

237.13 Continuous Gravitational Wave Searches from Galactic Neutron Stars in the Advanced Detector Era
Leslie Wade¹, X. Siemens¹, D. Kaplan¹, B. Knispel², B. Allen²
¹UW-Milwaukee, ²AEI Hannover, Germany.

237.14 Chandra Observations of Fermi-LAT and Radio Pulsar Fields
Michael Thomas Wolff¹, Fermi-LAT Collaboration
¹Naval Research Laboratory.

237.15 A Multi-wavelength Campaign to Study Crab Giant Pulses
Walid A. Majid¹, C. J. Naudet¹, S. T. Lowe¹, T. B. H. Kuiper¹
¹JPL/Caltech.

237.16 A New Search of Unidentified Radio Point Sources for Fast Pulses and Bursts
Deborah Schmidt¹, F. Crawford¹, G. Langston², C. Gilpin¹
¹Franklin & Marshall College, ²National Radio Astronomy Observatory.

237.17 A Large-Bandwidth High Frequency Survey for Radio Pulsars in the Galactic Center
Robert Wharton¹, W. Majid², J. Deneva³
¹Cornell University, ²Jet Propulsion Laboratory, ³Arecibo Observatory.

237.18 Feasibility Study: Lofar Meridian All-sky Survey (LoMASS)
Claire Gilpin¹, J. Hessels², J. van Leeuwen², B. Stappers², V. Kondratiev³, A. Alexov⁴, LOFAR Pulsar Working Group and Transients Key Science Project
¹Franklin and Marshall College, ²ASTRON Netherlands, ³University of Manchester, United Kingdom, ⁴Universiteit vanansterdam, Netherlands.

238 Laboratory Astrophysics
Tuesday, 9:00am-6:30pm, Exhibit Hall

238.01 Laboratory Studies of Solid Carbon Dioxide in Planetary and Interstellar Ices
Douglas White¹, R. M. Mastrapa², S. A. Sandford¹
¹NASA Ames Research Center, ²SETI Institute.

238.02 WITHDRAWN: Atomic Transition Probability Measurements for Nd I
Alexandra Fittante¹, E. A. Den Hartog², M. H. Stockett², M. P. Wood², J. E. Lawler²
¹University of Wisconsin-Madison (REU), ²University of Wisconsin-Madison.

238.03 Far-Infrared Optical Properties of Iron-Silicate Dust Analogues
Raymond Kinzer¹, S. Rinehart¹, D. Benford¹, G. Cataldo¹, E. Dwek¹, R. Henry¹, J. Nuth¹, C. Richey¹, R. Silverberg¹, E. Wollack¹
¹Goddard Space Flight Center.

238.04 A New Large Echelle Spectrometer for Measuring Atomic Transition Probabilities of Fe-group Ions
Michael Wood¹, J. E. Lawler¹
¹University of Wisconsin-Madison.
### Laboratory Far-infrared Spectroscopy Of Terrestrial Phyllosilicates To Support Analysis Of Cosmic Dust Spectra

Mehmet Yesiltas¹, T. Brusentsova¹, R. Peale¹, D. Maukonen¹, P. Figueiredo¹, G. H. Harlow², D. S. Ebel³, A. Nissinboim⁴, K. Sherman⁵, C. M. Lisse³

¹University of Central Florida, ²American Museum of Natural History, ³Johns Hopkins University.

### The Z Astrophysical Plasma Properties (ZAPP) Collaboration

Michael H. Montgomery¹, J. E. Bailey², C. Blancard³, A. L. Carlson², D. Cohen⁴, P. Cossé¹, G. Dunham², T. Durmaz², J. L. Ellis¹, R. E. Falcon¹, G. Faussurier³, F. Gilleron³, I. Golovkin⁴, M. R. Gomez², T. Gomez¹, I. Hall¹, S. B. Hansen⁵, C. A. Iglesias⁶, M. Kernaghan¹, P. W. Lake¹, D. Liedahl⁶, T. Lockard¹, J. MacArthur¹, J. J. MacFarlane⁶, R. C. Mancini², S. N. Nahar⁶, T. J. Nash³, D. S. Nielsen³, J. C. Pain³, M. Pinsonneault⁸, A. K. Pradhan¹, G. A. Rochau², M. Sherrill⁹, D. E. Winget¹

¹Univ. of Texas, ²Sandia National Laboratories, ³CEA, DAM, DIF, F-91297 Arpajon, France, ⁴Swarthmore College, ⁵University of Nevada, Reno, ⁶Prism Computational Sciences, ⁷Lawrence Livermore National Laboratory, ⁸Ohio State University, ⁹Los Alamos National Laboratory.

### Developing an Experimental Platform to Create White Dwarf Photospheres in the Laboratory

Ross Falcon¹, G. A. Rochau², J. E. Bailey², J. L. Ellis¹, A. L. Carlson², T. Gomez¹, M. H. Montgomery¹, D. E. Winget¹, M. R. Gomez²

¹University of Texas at Austin, ²Sandia National Laboratories, NM.

## 239 Planetary Nebulae, Supernova Remnants

Tuesday, 9:00am-6:30pm, Exhibit Hall

### The Energetics of Jets in Proto-Planetary Nebulae

Patrick J. Huggins¹

¹New York University.

### The Herschel Planetary Nebula Survey (HerPlaNS)

Djazia Ladjal¹, HerPlaNS consortium

¹University of Denver.

### Searching for Planetary Nebulae in Open Star Clusters

Julie H. Lutz¹, K. Braxton¹, J. McKeever¹, T. Gomez³, B. Balick¹, H. Gunning¹, M. Spencer¹, A. Tran¹

¹Univ. of Washington, ²Univ. of New Mexico, ³Univ. of Texas.

### Comparative Study Of Outer Halos Of Planetary Nebula NGC 246, NGC 1501, And NGC 2022

Douglas N. Arion¹, S. Finnvik¹, Z. Troyer¹

¹Carthage College.

### Luminosity And Abundance Correlations In A Carefully-studied Sample Of PNe

Bruce Balick¹, J. McKeever², J. Lutz¹, K. Braxton¹, T. Gomez³

¹Univ. of Washington, ²New Mexico State Univ, ³Univ. of Texas at Austin.

### Ionization Corrections for Deriving Se and Kr Abundances in Ionized Nebulae

Nicholas C. Sterling¹, R. L. Porter²

¹Michigan State University, ²University of Georgia.

### Kinematical Structure of the Planetary Nebula NGC 7009

Seong-Jae Lee¹, S. Hyung¹

¹Chungbuk National University, Korea, Republic of.
239.08 Carbon and Silicate Dust Condensation in Type II Supernovae
Ethan A.N Deneault¹, B. Morales¹
¹Univ. Of Tampa.

239.09 Measurement of Flux Density of Cas A at Low Frequencies
Ajinkya Patil¹, R. Fisher²
¹Indian Institute of Technology Kharagpur, India, ²NRAO.

239.10 The Progenitor of Type Ia SNR 0519-69.0 Was Either a Persistent Supersoft X-ray Source or Double-Degenerate System
Zachary Edwards¹, A. Pagnotta², B. E. Schaefer²
¹Columbus State University, ²Louisiana State University.

239.11 Improved Ionization Correction Factors for Planetary Nebula Abundance Determinations
Timothy R. Miller¹, R. B. C. Henry¹, G. J. Ferland²
¹University of Oklahoma-Norman, ²University of Kentucky.

239.12 X-ray, Optical and Radio Observations of the Extragalactic Superbubble N7793-S26
Thomas Pannuti¹, E. M. Schlegel², M. D. Filipovic³, E. Crawford¹, J. Payne³, C. K. Grimes¹
¹Morehead State University, ²University of Texas-San Antonio, ³University of Western Sydney, Australia.

239.13 Limits On The Brightness Of A Compact Object In The Remnant Of SN 1987a
Dominic Pesce¹
¹Harvard College.

239.14 X-Ray Imaging of Galactic Supernova Remnant G299.2-2.9
Seth Post¹, C. Badenes², D. N. Burrows³, J. P. Hughes⁴, J. Lee⁵, K. Mori⁶, S. Park¹, P. Slane⁷
¹The University of Texas at Arlington, ²University of Pittsburgh, ³Penn State, ⁴Rutgers, ⁵Korea Astronomy and Space Science Institute, Korea, Republic of, ⁶University of Miyazaki, Japan, ⁷Smithsonian Astrophysical Observatory.

239.15 The Molecular Content of the Crab Nebula
Charles A. Kuehn¹, E. D. Loh¹, J. A. Baldwin¹, G. J. Ferland², A. C. Fabian³, C. T. Richardson¹, P. Salome⁴, C. R. O’Dell⁵
¹Michigan State University, ²University of Kentucky, ³University of Cambridge, United Kingdom, ⁴Observatoire de Paris, France, ⁵Vanderbilt University.

239.16 An Archival XMM-Newton Study of the Large Magellanic Cloud Supernova Remnant N132D
Paul P. Plucinsky¹, A. R. Foster¹, T. J. Gaetz¹, D. Jerius¹, D. J. Patnaude¹, R. J. Edgar¹, R. K. Smith¹, W. P. Blair²
¹Harvard-Smithsonian, CfA, ²Johns Hopkins University.

239.17 The X-ray Structure Of The Supernova Remnant And Pulsar-wind Nebula In DEM L 241
Rosa Nina Murphy Williams¹, F. Seward², J. Dickel¹, Z. Edwards¹, B. Furnish¹, M. Perry¹, T. Williams¹
¹Columbus State University, ²Harvard-Smithsonian Center for Astrophysics, ³University of New Mexico.

239.18 Modeling the Binary Central Stars of the Planetary Nebulae Sp 1 and NGC 6337
Todd C. Hillwig¹, S. Margheim¹, O. De Marco³
¹Valparaiso University, ²Gemini Observatory, ³Macquarie University, Australia.
239.19  Circumstellar Dust in the Remnant of Kepler’s Type Ia Supernova  
Brian J. Williams¹, W. P. Blair², K. J. Borkowski¹, P. Ghavamian³, K. S. Long⁴,  
S. P. Reynolds¹, R. Sankrit⁵  
¹North Carolina State University, ²Johns Hopkins University, ³Towson University, ⁴Space  
Telescope Science Institute, ⁵SOFIA/USRA.

239.20  Shock Acceleration Efficiency in Kepler’s Supernova Remnant  
Stephen P. Reynolds¹, B. Williams¹, K. Borkowski¹, W. Blair², P. Ghavamian³, K. Long⁴,  
R. Sankrit⁵  
¹North Carolina State Univ., ²Johns Hopkins, ³Towson Univ., ⁴STScI, ⁵USRA.

239.21  A Search for X-ray Counterparts to Candidate Radio Supernova Remnants in  
the Galaxy NGC 4258  
Caleb Grimes¹, T. Pannuti¹, S. Laine²  
¹Morehead State University, ²Caltech.

239.22  The Iron Peak Elements in Tycho’s Supernova Remnant  
Kristoffer A. Eriksen¹, J. P. Hughes¹, J. Colgan², C. J. Fontes², M. C. Witthoeft³,  
C. Badenes⁴, P. P. Plucinsky⁵, P. Slane⁶, R. K. Smith⁵  
¹Rutgers University, ²Los Alamos National Laboratory, ³NASA/GSFC, ⁴University of  
Pittsburgh, ⁵Harvard-Smithsonian, CfA.

239.23  A Survey of Supernova Remnants detected by Fermi-LAT  
John W. Hewitt¹, Fermi LAT Collaboration  
¹NASA/GSFC.

240 Stellar Atmospheres, Winds, and Outflows

Tuesday, 9:00am-6:30pm, Exhibit Hall

240.01  Variable Geocoronal X-ray Emission from Solar Wind Charge Exchange  
Poppy Martin¹, B. J. Wargelin¹  
¹Harvard-Smithsonian Center for Astrophysics.

240.02  Application of Stellar Flare Model to Solar Flares  
Alejandro Nunez¹, R. Osten²  
¹CUNY Hunter College, ²Space Telescope Science Institute.

240.03  Line Identifications and Preliminary Synthesis of High-resolution Infrared  
Spectra of CP and Herbig Ae Stars  
Charles R. Cowley¹, F. Castelli², S. Hubrig³, B. Wolff⁴, V. Elkin⁵  
¹Department of Astronomy, Univ. of Michigan, ²Istituto Nazionale di Astrofisica,  
Osservatorio Astronomico di Trieste, Via Tiepolo 11, I-34143 Trieste, Italy, ³Leibniz-Institut  
für Astrophysik Potsdam (AIP), An der Sternwarte~16, Germany, ⁴European Southern  
Observatory, Karl-Schwarzschild-Str. 2, 85748 Garching bei Múnchen, Germany, ⁵Jeremiah  
Horrocks Institute of Astrophysics, University of Central Lancashire, Preston  
PR1 2HE, United Kingdom.

240.04  Mass Loss Rates Inferred From Mid-ir Color Excesses Of Lmc And Smc O Stars  
Derck Massa¹, A. Fullerton¹, D. Lennon¹, R. Prinja²  
¹STScI, ²UCL, United Kingdom.

240.05  Modeling Anomalous Absorption Features in the FUV Spectra of Late-B Giants  
William Van Dyke Dixon¹, P. Chayer¹  
¹Space Telescope Science Institute.

240.06  Study of AGB Mass Loss Models  
Qian Wang¹, L. Willson¹  
¹Iowa State Univ
240.07  Modeling Dust Around Late-Stage Post-AGB Stars
Alexa H. Hart1, J. L. Hora1, L. Cerrigone2
1Harvard-Smithsonian Center for Astrophysics,  2Max-Planck Institut fur Radioastronomie, Germany.

240.08  First Visual Orbit for the Prototypical Colliding-wind Binary WR 140
1Univ. of Michigan,  2Penn State,  3European Southern Observatory, Germany,  4Caltech,  5NEXSCI,  6LAOG, France,  7U. Massachusetts,amherst,  8Jet Propulsion Laboratory, Caltech,  9CHARA, Georgia State University,  10NOAO,  11Center for Micro Finance, The Institute for Financial Management and Research, India,  11Institute for Astronomy, University of Edinburgh, Royal Observatory, United Kingdom.

240.09  The Time Evolution of Eta Carinae’s Colliding Winds
Theodore R. Gull1, T. I. Madura2, J. H. Groh3, M. F. Corcoran3
1NASA/GSFC,  2MPIR, Germany,  3CRESST/GSFC.

240.10  X-ray Spectra and Variation of the Reflection Nebula of Eta Carinae
Kenji Hamaguchi1, M. F. Corcoran2, Eta Carinae Team
1NASA’s GSFC & UMBC,  2NASA’s GSFC & USRA.

241 Instrumentation: Space Missions
Tuesday, 9:00am-6:30pm, Exhibit Hall

241.01  Pixel-based CTE Correction of ACS/WFC: Modifications To The ACS Calibration Pipeline (CALACS)
Linda J. Smith1, J. Anderson1, A. Armstrong1, R. Avila1, L. Bedin1, M. Chibberge1, M. Davis1, B. Ferguson1, A. Fruchter1, D. Golimowskii1, N. Grogin1, W. Hack1, P. L. Lim1, R. Lucas1, A. Maybhate1, M. McMaster1, S. Ogaz2, A. Suchkov2, L. Ubeda1
1Space Telescope Science Institute,  2Johns Hopkins University.

241.02  Pixel-based CTE Correction Of ACS/WFC: Column Dependency
Sara Ogaz1, J. Anderson1, A. Maybhate1, L. Smith1, ACS Team
1Space Telescope Science Institute.

241.03  Pixel-based CTE Correction of ACS/WFC: CTE Time And Temperature Dependence
Leonardo Ubeda1, J. Anderson1, ACS Team
1Space Telescope Science Institute.

241.04  Pixel-based CTE Correction of ACS/WFC: New Constraints from Short Darks
Jay Anderson1, ACS Team
1STScI.

241.05  Pixel-based CTE Correction of ACS/WFC: Potential Benefits from Charge Injection
David A. Golimowski1, J. Anderson1, L. J. Smith1, J. MacKenty1, E. Cheng2, A. Waczynski2, E. Graham3, E. Wilson3, L. Mazzuca3, M. Loose4
1Space Telescope Science Institute,  2Conceptual Analytics LLC,  3NASA Goddard Space Flight Center,  4Markury Scientific Inc.

241.06  Pixel-Based CTE Correction Of ACS/WFC: Extended Sources
Ray A. Lucas1, N. A. Grogin1, M. Chabberge1, ACS Group
1STScI.
241.07  
**Pixel-based CTE Correction Of ACS/WFC: Effects On Signal To Noise Ratio**  
Roberto J. Avila¹, A. Fruchter¹, J. Anderson¹, ACS Team  
¹Space Telescope Science Institute.

241.08  
**Characterization and Mitigation of ACS/WFC Signal-Dependent Bias Shift**  
Norman A. Grogin¹, A. Suchkov², D. Golimowski¹, M. Loose¹  
¹Space Telescope Science Institute, ²Johns Hopkins University, ³Markury Scientific, Inc.

241.09  
**WFC3 UVIS Detector: Improved Flat Fields**  
Tomas Dahlen¹, J. Mack¹, E. Sabbi¹, WFC3 Team  
¹STScI.

241.10  
**The Wide Field Camera 3 (WFC3) UVIS and IR Photometric Calibration**  
Susana E. Deustua¹, WFC3 Team  
¹Space Telescope Science Institute.

241.11  
**The Wide Field Camera 3 (WFC3) Cycle 19 Calibration Plan**  
Elena Sabbi¹, J. MacKenty¹, S. E. Deustua¹, WFC3 Team  
¹STScI.

241.12  
**Status and Calibration of the HST Wide Field Camera 3**  
John W. MacKenty¹, WFC3 Team  
¹STScI.

241.13  
**Charge Transfer Efficiency and Charge Injection in the HST/WFC3 UVIS Detectors**  
Sylvia M. Baggett¹, K. Noeske¹, J. Anderson¹, J. Biretta¹, T. Borders¹, H. Bushouse¹, V. Khozhurina-Platais¹, J. MacKenty¹, L. Petro¹, WFC3 Team  
¹STScI.

241.14  
**SSET: Spatially-scanned Spectra of Exoplanet Transits**  
Peter R. McCullough¹, Z. K. Berta², A. W. Howard³, J. W. MacKenty¹, WFC3 Team  
¹STScI, ²CfA, ³UCB.

241.15  
**An Update on the Performance of the Space Telescope Imaging Spectrograph**  
K. Azalee Bostroem¹, A. Aloisi¹, R. C. Bohlin¹, C. Cox¹, R. Diaz¹, W. Dixon¹, J. Duval¹, J. Ely¹, E. Mason¹, R. Osten¹, C. Proffitt¹, P. Sonnentrucker¹, M. A. Wolfe¹, B. York¹, W. Zheng²  
¹Space Telescope Science Institute, ²Johns Hopkins University.

241.16  
**Updated Status and Performance for the Cosmic Origins Spectrograph**  
Justin Ely¹, A. Aloisi¹, K. Bostroem¹, P. Hodge¹, D. Massa¹, C. Oliveira¹, R. Osten¹, S. Penton², C. Proffitt¹, D. Sahnow¹, W. Zheng³  
¹Space Telescope Science Institute, ²CfA, University of Colorado at Boulder, ³The Johns Hopkins University.

241.17  
**Maximizing COS Detector Lifetime: Gain Sag and the Selection of a New Detector Lifetime Position for the FUV Channel on the Cosmic Origins Spectrograph**  
David J. Sahnow¹, A. Aloisi², P. E. Hodge³, E. Mason¹, D. Massa¹, C. Oliveira², R. Osten², S. N. Osterman¹, S. V. Penton³, C. Proffitt²  
¹Johns Hopkins University, ²Space Telescope Science Institute, ³University of Colorado.

241.18  
**Geocoronal Lyman Alpha Observations with COS**  
Thomas B. Ake¹  
¹Space Telescope Science Institute/Computer Sciences Corporation.

241.19  
**Announcing A New HST+COS Central Wavelength: G130M/1222**  
Steven V. Penton¹, S. N. Osterman¹, K. France¹, C. Oliveira², D. J. Sahnow³  
¹University of Colorado, ²Space Telescope Science Institute, ³Johns Hopkins University.
241.20  Dark Ages Radio Explorer Instrument Verification Program: Antenna Test Results
Abhirup Datta1, R. Bradley2, J. O. Burns1, J. Lazio3, J. Bauman4
1University of Colorado, 2National Radio Astronomy Observatory, 3Jet Propulsion Laboratory, 4NASAs Ames Research Center.

241.21  JMAPS Observations Planning Simulator
Viktor Zubko1, G. S. Hennessy1, B. N. Dorland1
1United States Naval Observatory.

241.22  Status of the James Webb Space Telescope Observatory
Mark Clampin1, C. Bowers1
1NASA's GSFC.

241.23  Progress in the Fabrication and Testing of Telescope Mirrors for The James Webb Space Telescope
Charles W. Bowers1, M. Clampin1, L. Feinberg1, R. Keski-Kuha1, A. McKay2, D. Chaney1, B. Gallagher3, K. Ha1
1NASA's GSFC, 2Northrup-Grumman Aerospace Systems, 3Ball Aerospace & Technologies Corporation.

1NASA's GSFC, 2NASA's GSFC/SIGMA, 3NASA's GSFC/Hammers, 4NASA's GSFC/SGT.

241.25  NIRSpec, the Near-IR Multi-Object Spectrograph for JWST
1ESTEC, Netherlands, 2DAMIR, Spain, 3STScI, 4Oxford University, United Kingdom, 5IAF, France, 6Leiden University, Netherlands, 7INAF, Italy, 8NASA/GSFC, 9DARK, Denmark, 10MPIA, Germany, 11Herzberg Institute of Astrophysics, Canada.

241.26  The Extra-Zodiacal Explorer (EZE)
Matthew A. Greenhouse1, S. W. Benson2, D. J. Fixsen1, J. P. Gardner1, J. W. Kruk1, H. A. Thronson1
1NASA's GSFC, 2NASA's GRC.

242 Supernovae
Tuesday, 9:00am-6:30pm, Exhibit Hall

242.01  The Gigantic Explosions from the Early Universe: Multidimensional Simulations of the First Supernovae
Ke-Jung Chen1
1University of Minnesota, Twin Cities.

242.02  COS Observations of SN1987A
Richard McCray1, K. France1, R. P. Kirshner2, SAINTS Collaboration
1Univ. of Colorado, 2Harvard-Smithsonian CFA.

242.03  Properties Of Super-luminous Supernovae: Insights From Observations, Light Curve Modeling And Simulations
Emmanouil Chatzopoulos1, J. C. Wheeler1, J. Vinko2, D. S. P. Dearborn3, S. M. Couch4
1University of Texas, Austin, 2University of Szeged, Hungary, 3Lawrence Livermore National Lab, 4University of Chicago.
TUESDAY POSTER SESSIONS

242.04 An Archival Search for Radio Transients in M51
Kate Alexander\textsuperscript{1}, A. M. Soderberg\textsuperscript{2}, L. Chomiuk\textsuperscript{2}
\textsuperscript{1}Brown University, \textsuperscript{2}Harvard-Smithsonian Center for Astrophysics.

242.05 Can We Detect Clumpiness in Supernova Ejecta?
K. Tabetha Hole\textsuperscript{1}, C. Boom\textsuperscript{2}
\textsuperscript{1}ETSU, \textsuperscript{2}Weber State U

242.06 WITHDRAWN: Hydrodynamic Studies of the Accretion of Solar Material onto White Dwarfs: The White Dwarf is Growing in Mass
Sumner Starrfield\textsuperscript{1}, F. X. Timmes\textsuperscript{1}, C. Iliadis\textsuperscript{2}, W. R. Hix\textsuperscript{3}, W. D. Arnett\textsuperscript{4}, C. Meakin\textsuperscript{5}, W. M. Sparks\textsuperscript{5}
\textsuperscript{1}Arizona State University, \textsuperscript{2}University of North Carolina, \textsuperscript{3}University of Tennessee and ORNL, \textsuperscript{4}University of Arizona, \textsuperscript{5}LANL.

242.07 Supernova Remnant Progenitor Masses in M31
Zachary Jennings\textsuperscript{1}, B. F. Williams\textsuperscript{1}, J. W. Murphy\textsuperscript{2}, J. J. Dalcanton\textsuperscript{1}
\textsuperscript{1}University of Washington, \textsuperscript{2}Princeton University.

242.08 Supernovae In The Subaru Deep Field: The Rate And Delay-time Distribution Of Type Ia Supernovae Out To Redshift 2
Or Graur\textsuperscript{1}, SDF SN team
\textsuperscript{1}Tel-Aviv University, Israel.

242.09 Absolute-Magnitude Distributions of Supernovae
Robert Jenkins\textsuperscript{1}, J. Wright\textsuperscript{2}, D. Richardson\textsuperscript{2}, L. Maddox\textsuperscript{3}
\textsuperscript{1}The Richard Stockton College of New Jersey, \textsuperscript{2}Xavier University of Louisiana, \textsuperscript{3}Southeastern Louisiana University.

242.10 Type Ia Supernova Color Curves: Disentangling Intrinsic Variations from Dust
Samia Bouzid\textsuperscript{1}, C. McCully\textsuperscript{1}, S. Jha\textsuperscript{1}
\textsuperscript{1}Rutgers University.

242.11 Comparing Type Ia Supernovae from Targeted and Wide Field Surveys
Robert Quimby\textsuperscript{1}, F. Yuan\textsuperscript{2}, C. Akerlof\textsuperscript{3}, J. C. Wheeler\textsuperscript{4}, M. S. Warren\textsuperscript{5}
\textsuperscript{1}IPMU, Japan, \textsuperscript{2}Australian National University, Australia, \textsuperscript{3}University of Michigan, \textsuperscript{4}University of Texas, \textsuperscript{5}LANL.

242.12 Nearby Supernova Factory Observations of 2007if-like SNe Ia
Richard A. Scalzo\textsuperscript{1}, Nearby Supernova Factory
\textsuperscript{1}Australian National University, Australia.

Joanne Bibby\textsuperscript{1}, M. Shara\textsuperscript{1}
\textsuperscript{1}American Museum of Natural History.

242.14 Supernova Spectropolarimetry with the VLT
J. Craig Wheeler\textsuperscript{1}, D. Baade\textsuperscript{4}, A. Clocchiatti\textsuperscript{1}, P. Hoeftlich\textsuperscript{4}, J. Maund\textsuperscript{3}, F. Patat\textsuperscript{4}, J. Quinn\textsuperscript{3}, J. Spyromilio\textsuperscript{3}, L. Wang\textsuperscript{4}, P. Zelaya\textsuperscript{3}
\textsuperscript{1}Univ. of Texas, \textsuperscript{2}ESO, Germany, \textsuperscript{3}Pontificia Universidad Catolica de Chile, Chile, \textsuperscript{4}Florida State University, \textsuperscript{5}Queen's University Belfast, Ireland, \textsuperscript{6}Texas A&M.

242.15 Photometric Analysis Of Sn2011dn
Christopher Salvo\textsuperscript{1}, D. C. Leonard\textsuperscript{2}, J. Sumandal\textsuperscript{1}, C. Horst\textsuperscript{2}
\textsuperscript{1}California State University San Marcos, \textsuperscript{2}San Diego State University.

242.16 The Influence of Central Density on the Brightness of Type Ia Supernovae
Alan Calder\textsuperscript{1}, B. K. Krueger\textsuperscript{1}, A. P. Jackson\textsuperscript{3}, D. M. Townsley\textsuperscript{1}, E. F. Brown\textsuperscript{3}, F. X. Timmes\textsuperscript{5}
\textsuperscript{1}SUNY Stony Brook, \textsuperscript{2}NRL, \textsuperscript{3}University of Alabama, \textsuperscript{4}Michigan State University, \textsuperscript{5}Arizona State University.
242.17 The 2-year Checkup On 10 SNe IIn Discovered By Spitzer To Exhibit Late-time (>100 Day) IR Emission
Ori Dosovitz Fox1, R. A. Chevalier2, M. F. Skrutskie2, A. V. Filippenko3, J. M. Silverman3, M. Ganeshalingam3
1NASA Goddard Space Flight Center, 2University of Virginia, 3UC Berkeley.

242.18 Photometric Monitoring of SN 2011dh
Michelle E. Spencer1, M. D. Joner1, C. D. Laney1, E. Stoker1
1Brigham Young University.

242.19 228 Type Ia Supernovae from the ESSENCE Survey
1Harvard University, 2STSci, 3CTIO, Chile, 4University of Washington, 5Centre de Physique des Particules de Marseille, France, 6Harvard-Smithsonian Center for Astrophysics, 7Pontificia Universidad Católica de Chile, Chile, 8University of Virginia, 9University of Queensland, Australia, 10University of California, Berkeley, 11University of Notre Dame, 12Rutgers University, 13Texas A & M University, 14European Southern Observatory, Germany, 15National Optical Astronomy Observatory, 16Fermi National Accelerator Laboratory, 17Universidad Andres Bello, Chile, 18Carnegie Observatories, 19Johns Hopkins University, 20Australian National University, Australia, 21Stockholm University, Sweden, 22University of Hawaii, 23University of Pittsburgh, 24Ludwig Maximilians Universität, Germany.

242.20 Analysis of Late-time Light Curves of Type IIB, Ib and Ic Supernovae
Vincent Johnson1, J. Wheeler1, A. Clocchiatti2
1Department of Astronomy, University of Texas at Austin, 2Pontificia Universidad Catolica de Chile, Chile.

242.21 Turbulent Combustion in Type Ia Supernovae
Aaron P. Jackson1, D. M. Townsley1, A. C. Calder1
1Stony Brook University, 2The University of Alabama.

242.22 Applications of Gaussian Processes to Supernova Data
Rollin Thomas1, A. G. Kim1, H. K. Fakhouri1, P. Truong2
1LBNL, 2LBNL, UC Berkeley.

242.23 Daily Photometry Of SN 2011fe, The Youngest Type Ia Supernova, From u Through K-band
Federica Bianco1, B. Fulton1, B. Dilday1, D. Sand1, Y. Jeon2, J. Parrent1, M. Graham1, D. Howell1, M. Im1, K. Maguire1, M. Sullivan1, P. Nugent1, PTF collaboration
1LCOGT-UCSB, 2Seoul National University, Korea, Republic of, 3Oxford University, 4Lawrence Berkeley National Laboratory.

242.24 UBVRI Optical monitoring of Supernova 2011fe in Pinwheel Galaxy with the 1.3-meter Robotically Controlled Telescope
Andrew Gott1, L. Strolger1, RCT Consortium
1Western Kentucky University.

242.25 X-ray Heating Of The Ejecta Of Supernova 1987A
George Sonneborn1, J. Larsson1, C. Fransson1, R. Kirshner3, P. Challis3, R. McCray4, SAINTS Collaboration
1NASA’s GSFC, 2Stockholm University, Sweden, 3Harvard University, 4University of Colorado.
242.26 **Spontaneous Formation of Detonations by Turbulent Flames in Thermonuclear Supernovae**  
Alexei Y. Poludnenko¹, E. S. Oran¹  
¹Naval Research Lab.

242.27 **The Enhancement Rate of SN Ia Events in Globular Clusters**  
Joel Norman Bregman¹  
¹Univ. of Michigan.

242.28 **Observations of the Shock Breakout Emission From the Type cIIb SN2006el**  
Camille N. Leibler¹, A. Soderberg¹, M. R. Drout¹  
¹Harvard University.

242.29 **Fast, Faint, And Massive: Core-collapse Models For Quickly Evolving Supernovae**  
Io Kleiser¹, D. Kasen¹  
¹University of California, Berkeley.

242.30 **The Peculiar Fast-Fading Type I SN2005ek**  
Christopher Jensen¹, A. M. Soderberg²  
¹Harvard University, ²Harvard-Smithsonian Center for Astrophysics.

242.31 **Spectropolarimetric Study of SN 2007sr**  
Alejandro Clocchiatti¹, D. Baade³, P. Hoeflich³, J. Maund³, F. Patat³, J. Quinn¹, L. Wang⁵, C. Wheeler⁶, P. Zelaya¹  
¹Univ. Catolica De Chile, Chile, ²European Sourthen Observatory, Germany, ³Florida State University, ⁴Dark Energy Cosmology Center, Denmark, ⁵Texas A&M University, ⁶Univ. of Texas at Austin.

242.32 **Early Time Bolometric Light curves of Type-II Supernovae Observed by Swift**  
Tyler A. Pritchard¹, P. W. A. Roming²  
¹Pennsylvania State University, ²Southwest Research Institute.

242.33 **X-ray Emission From Sn Ia 1885a & 1985g?**  
Melody M. Packard¹, E. M. Schlegel¹, D. Patnaude³, S. Katsuda⁴, R. Petre⁵  
¹San Antonio College, ²University of Texas at San Antonio, ³Smithsonian Astrophysical Observatory, ⁴RIKEN Institute, ⁵NASA Goddard Space Flight Center.

242.34 **WITHDRAWN: The Bronberg Observatory Supernova Search: Light Curves and Characterization of 67 Nearby Supernovae**  
Cameron White¹, J. Prieto², L. A. G. Monard³  
¹Carnegie Observatories, Pasadena City College, ²Carnegie Observatories, Princeton University, ³Bronberg Observatory, South Africa.

242.35 **Spectroscopic Time-Series of Transients with Light Echoes**  
Armin Rest¹, B. Sinnott², D. L. Welch³, F. Bianco³, J. L. Prieto⁴, N. Smith⁵, R. J. Foley⁶, M. Huber⁷, P. Challis⁸  
¹Space Telescope Science Institute, ²McMaster University, Canada, ³Las Cumbres Observatory Global Telescope Network, ⁴Princeton University, ⁵Steward Observatory, ⁶Harvard-Smithsonian Center for Astrophysics, ⁷University of Hawaii.

242.36 **SN2010jp: A Jet-Driven Type II Supernova**  
Nathan Smith¹  
¹U. of Arizona.
243 AGN, QSO, Blazars II

Tuesday, 9:00am-6:30pm, Exhibit Hall

243.01 Dust-Driven Winds from Accreting Super-Massive Black Holes Simulated Using Monte Carlo Radiative Transfer
Nathaniel Roth1, D. Kasen1, P. F. Hopkins1, E. Quataert1
1UC Berkeley.

243.02 Multi-dimensional Quasar Selection from Optical, Near-IR, and Astrometric Data
Gordon T. Richards1, S. S. Mehta1, C. M. Peters1, A. D. Myers2, N. P. Ross3
1Drexel Univ., 2University of Wyoming, 3LBNL.

243.03 Mean SEDs and Bolometric Corrections for SDSS Selected Quasars
Coleman M. Krawczyk1, G. T. Richards1
1Drexel University.

243.04 Searching for High-Redshift Obscured Quasars in the Sloan Digital Sky Survey (SDSS) Baryonic Oscillation Spectroscopic Survey (BOSS)
Rachael Alexandroff1, M. Strauss3, N. Zakamska2, J. Greene3
1Princeton University, 2Johns Hopkins.

243.05 Analysis of Microvariability in ON 231
James Raymond Webb1, G. Bhatta1, S. Dhalla1, J. Pollock2
1Florida International Univ., 2Appalachian State University.

243.06 A Search of AGES for Active Black Holes in Merging Galaxies
Kyle Schluns1, J. Comerford2, J. Greene1, R. Cool2
1University of Texas at Austin, 2Princeton University.

243.07 Strong Iron Emission in Quasars: Testing a Thermal Model
Erin M. Cooper1, K. Leighly1
1University of Oklahoma.

243.08 CHEERS! A Chandra and HST Survey Of Extended Emission-line Regions In Nearby Seyfert Galaxies
Junfeng Wang1, G. Fabbiano1, M. Elvis1, G. Risaliti2
1Harvard-Smithsonian CfA/SAO, 2INAF-Arcetri Observatory, Italy.

243.09 Active Galaxy Winds from X-ray, Ultraviolet, and Optical Studies of Nearby Seyfert 1s
Lisa M. Winter1
1CASA/University of Colorado-Boulder.

243.10 Modeling the Power Spectra of Active Galaxies with Markov Chain Monte Carlo
Kevin Marshall1
1Widener Univ

243.11 Searching for AGN Signatures in HST WFC3/IR Grism Spectra of Clumpy Galaxies at 0.5 < z < 2
Anna Han1, K. Schawinski1, B. D. Simmons1, C. M. Urry1, E. Glikman1, S. Bamford2, C. Lintott1
1Yale University, 2University of Nottingham, United Kingdom, 3University of Oxford, United Kingdom.

243.12 Characterization of H-beta and [OIII] for Determining Black Hole Masses of Quasars
Mallory Molina1, M. J. Wolf2, E. J. Hooper3, A. I. Sheinis2, P. H. Sell2
1The Ohio State University, 2University of Wisconsin-Madison.
243.13 **Mid-infrared Selection Of AGN With WISE**
Daniel Stern¹, R. J. Assef², D. J. Benford², A. Blain³, R. Cutri³, P. R. Eisenhardt¹, R. L. Griffith⁴, T. H. Jarrett⁴, S. Lake⁵, F. Masci⁴, S. Petty⁴, S. A. Stanford⁴, C. Tsai⁴, E. L. Wright⁵, L. Yan⁴, F. Harrison⁷, K. Madsen⁷
²JPL/ Caltech, ²GSFC, ³Leicester, United Kingdom, ⁴IPAC/ Caltech, ⁵UCLA, ⁶UC-Davis/IGPP-LLNLL, ⁷Caltech.

243.14 **Monitoring Lower Luminosity AGN for Milli-Magnitude Variations**
Benjamin Boizelle¹, K. Bates¹, T. McCombs¹, J. Nelson¹, B. Little¹, J. Moody¹, J. Barnes²
¹Brigham Young University, ²Salt Lake Community College.

243.15 **Continued Monitoring of Blazar-Like Optical Variability in Very Radio-Loud Narrow-Line Seyfert Galaxies**
Jeremy Maune¹, H. R. Miller¹, J. Eggen¹
¹Georgia State University.

243.16 **Ultraviolet Outflow Properties and Variability of Markarian 1513**
Barton Tofany¹, L. M. Winter¹, B. Borguet¹, C. Danforth¹, N. Arav², J. Green¹
¹University of Colorado at Boulder, ³Virginia Polytechnic Institute & State University.

243.17 **WFC3 Imaging Of z=6 Quasars: Examining The Host Galaxies Of AGN In The Early Universe**
Matt Mechtley¹, R. A. Windhorst¹, R. E. Ryan², S. H. Cohen¹, G. Schneider¹, X. Fan³, N. P. Hathi¹, R. A. Jansen¹, W. C. Keel¹, A. M. Koekemoer², H. Röttgering⁶, E. Scannapieco¹, D. P. Schneider², M. A. Strauss³, H. Yan⁹
¹Arizona State University, ²Space Telescope Science Institute, ³University of Arizona, ⁴Carnegie Institution of Washington, ⁵University of Alabama, ⁶Sterrewacht Leiden, Netherlands, ⁷The Pennsylvania State University, ⁸Princeton University, ⁹University of Missouri - Columbia.

243.18 **The New Generation Quasar SEDs from Radio to X-rays**
Zhaohui Shang¹, M. Brotherton¹, B. Wills³, D. Wills³
¹Tianjin Normal University, China, ²University of Wyoming, ³University of Texas at Austin.

243.19 **Updating Standard Quasar Bolometric Luminosity Corrections**
Jessie C. Runnoe¹, M. Brotherton¹, Z. Shang²
¹University of Wyoming, ²Tianjin Normal University, China.

243.20 **The Discovery of 58 Extragalactic Water Masers by the Megamaser Cosmology Project**
James A. Braatz¹, J. Condon¹, V. Impellizzeri², A. Tilak³, I. Zaw⁴, Megamaser Cosmology Project Team
¹NRAO, ²NRAO, Chile, ³CfA, ⁴NYU.

243.21 **Simulations of Double-Bent Radio Sources**
Brian J. Morsony¹, J. J. Miller², S. Heinz¹, E. M. Wilcots¹, E. Freeland³
¹Univ. Of Wisconsin-Madison, ²Univ. Of Colorado, Boulder, ³Texas A&M University.

243.22 **The Near-Infrared Variability of Quasars**
Adam Miller¹, J. S. Bloom¹, N. R. Butler²
¹UC Berkeley Astronomy Department, ²Arizona State University.

243.23 **Redshift Distribution in the Spitzer Mid-Infrared Quasar Survey**
Susan E. Ridgway¹, M. Lacy², A. Petric², T. Urrutia³, A. Sajina³
¹NOAO, ²NRAO, ³Caltech, ⁴AIP, Germany, ⁵Tufts.

243.24 **Environmental And Clustering Properties Of Blazars From The Sloan Digital Sky Survey**
Kyle Willett¹, T. Nelson¹, L. Fortson¹
¹University of Minnesota.
243.25 Investigating the Black Hole - Dark Matter Halo Connection in a New Sample of Local Active Galactic Nuclei
Jordan Mirocha¹, J. Darling¹, M. Haynes², R. Giovanelli², ALFALFA Team
¹University of Colorado, ²Cornell University.

243.26 Magnetic Fields in Blazar Jets: Jet-Alignment of Radio and Optical Polarization over 20-30 Years
Beverley J. Wills¹, M. F. Aller², C. Caldwell¹, H. D. Aller²
¹Univ. of Texas, Austin, ²Univ. of Michigan, Ann Arbor.

243.27 Star Formation in matched samples Of Active And Normal Galaxies
Amanda Cordes¹, F. Hamann¹, V. Sarajedini¹, P. G. Pérez-González², G. Barro², M. Steinke¹
¹University of Florida - Astronomy Department, ²Universidad Complutense de Madrid (UCM), Spain.

243.28 No Quasar Left Behind
Chelsea MacLeod¹, N. Butler², S. F. Anderson¹, R. Gibson¹, N. P. Ross³, Z. Ivezic¹, A. Kimball⁵, N. Brandt⁴, M. Strauss⁶, C. S. Kochanek², A. Myers⁸
¹University of Washington, ²Arizona State University, ³Lawrence Berkeley National Laboratory, ⁴National Radio Astronomy Observatory, ⁵Pennsylvania State University, ⁶Princeton University, ⁷The Ohio State University, ⁸University of Wyoming.

243.29 Polarization Observations of Radio-Loud Narrow Line Seyfert 1
Joseph R. Eggen¹
¹Georgia State University.

243.30 Adaptive Optics Imaging Of The Hidden Quasar IRAS 09104+4109
Hien D. Tran¹
¹W.M. Keck Observatory.

243.31 Using Radio Non-Detections to Determine the Relation
Rachael Kratzer¹, G. T. Richards¹
¹Drexel University.

243.32 Multi-wavelength Analysis of Three Blazars
Meridith Joyce¹, K. B. Marshall², M. R. Halford², H. Aller², M. Aller⁴
¹Bucknell University, ²Widener University, ³Cornell University, ⁴University of Michigan.

243.33 First Optical Spectra of Newly Detected Swift BAT AGN
J. Drew Hogg¹, L. Winter¹, J. Tueller²
¹University of Colorado - Boulder, ²NASA GSFC.

243.34 Fueling AGN: A Comparison of Nuclear Gas Characteristics in Seyfert & Quiescent Galaxies
Austin Rivers¹, E. K. S. Hicks¹, R. I. Davies², M. A. Malkan³
¹University of Washington, ²MPE, Germany, ³UCLA.

243.35 Identifying Seyfert AGN Fueling Mechanisms on Scales from 1 kpc to 10 pc
Erin K. Hicks¹, R. I. Davies², M. A. Malkan¹, A. Rivers¹
¹University of Washington, ²MPE, Germany, ³University of California, Los Angeles.

243.36 WITHDRAWN: Cosmic Origins Spectrograph Observations of Intrinsic Absorption in Mrk 876
Jennifer E. Scott¹, N. Arav¹, B. Borguet², C. Danforth¹, C. Froning³, L. Winter³
¹Towson Univ., ²Virginia Tech, ³University of Colorado.

243.37 Observations of 4 Blazars with the Robotically Controlled Telescope in 2011
Michael T. Carini¹, R. Brown¹
¹Western Kentucky Univ.
244 Dwarf and Irregular Galaxies
Tuesday, 9:00am-6:30pm, Exhibit Hall

244.01 ATCA/CABB Radio Continuum Imaging of Nearby Star-Forming Dwarf Galaxies
Qingyang Liu¹, J. M. Cannon¹
¹Macalester College.

244.02 EVLA Radio Continuum Imaging of Nearby Dwarf Galaxies
Elijah Bernstein-Cooper¹, J. M. Cannon¹, L. Chomiuk², A. Kepley¹, E. Wilcots³
¹Macalester College, ²Harvard, NRAO, ³University of Virginia, ⁴University of Wisconsin-Madison.

244.03 Dynamical Modeling Of SHIELD Galaxies: AGC 749237
Clara Thomann¹, J. M. Cannon¹, E. C. Elson², R. Giovanelli³, M. P. Haynes³, E. A. K. Adams¹, K. B. W. McQuinn¹, J. Ott¹, A. Saintonge², J. J. Salzer¹, E. D. Skillman⁴
¹Macalester College, ²International Centre for Radio Astronomy Research, The University of Western Australia, Australia, ³Cornell University, ⁴University of Minnesota, ⁵National Radio Astronomy Observatory, ⁶Max Planck Institut fuer Astrophysik, Germany, ⁷Indiana University.

244.04 The Survey Of HI In Extremely Low-mass Dwarfs (shield)
John M. Cannon¹, C. M. Thomann¹, R. Giovannelli², M. P. Haynes², S. Janowiecki¹, A. Parker¹, J. J. Salzer¹, E. A. K. Adams¹, E. C. Elson¹, E. Engstrom¹, S. Huang¹, K. B. W. McQuinn¹, J. Ott¹, A. Saintonge², E. D. Skillman¹, J. Allan¹, G. Erny¹, P. Fliss¹, A. Smith¹
¹Macalester College, ²Cornell University, ³Indiana University, ⁴International Centre for Radio Astronomy Research, The University of Western Australia, Australia, ⁵University of Minnesota, ⁶National Radio Astronomy Observatory, ⁷Max Planck Institut für Astrophysik, Germany.

244.05 Neutral Hydrogen Observations of the Lyman Alpha Reference Sample
Pardy Stephen¹, J. M. Cannon¹, G. Ostlin², F. Duval², M. Hayes¹, D. Kunth¹, M. Mas-Hesse³, D. Schaerer⁴
¹Macalester College, ²Stockholm Observatory, Sweden, ³Observatoire Midi-Pyrenees, France, ⁴Institut d’Astrophysique de Paris, France, ⁵Laboratorio de Astrofisica Espacial y Fisica Fundamental, Spain, ⁶Observatoire de Geneve.

244.06 On the Origin of the Supergiant HI Shell and Putative Companion in NGC 6822
Erin O’Leary¹, J. M. Cannon¹, D. R. Weisz¹, E. D. Skillman³, A. E. Dolphin¹, F. Bigiel³, A. A. Cole³, W. J. G. de Blok⁷, F. Walter⁸
¹Macalester College, ²University of Washington, ³University of Minnesota, ⁴Raytheon Company, ⁵University of Heidelberg, Germany, ⁶University of Tasmania, Australia, ⁷University of Cape Town, South Africa, ⁸Max-Planck-Institute for Astronomy, Germany.

244.07 Exploring Optically Compact Dwarf Galaxies for Kinematic Structures and Extended HI Halos
Hans Most¹, J. M. Cannon¹, J. J. Salzer², J. L. Rosenberg³
¹Macalester College, ²Indiana University, ³George Mason University.

244.08 WITHDRAWN: The Evolution of Dwarf Galaxies
Jacqueline M. Dunn¹
¹Midwestern State University.

244.09 Local Tadpole Galaxies
Debra M. Elmegreen¹, B. G. Elmegreen², J. Sanchez Almeida³, C. Munoz-Tunon³, J. Putko⁴, J. Dewberry¹
¹Vassar College, ²IBM T.J. Watson Research Center, ³Instituto de Astrofisica de Canarias, Spain, ⁴Middlebury College.
244.10  NGC4449B: A New Extreme Tidally Disrupting Dwarf Galaxy Near NGC4449
Christine Black1, R. M. Rich1, F. Longstaff1, D. B. Reitzel1
1University of California, Los Angeles.

244.11  EVLA Observations of the Leo Ring
Brian R. Kent1, A. Chung2, J. M. Wrobel1, J. Ott1, G. E. Morrison1, K. Bekki5, H. Park2
1NRAO, 2Yonsei University, Korea, Republic of, 3IfA-UHawaii/CFHT, 4University of New South Wales, Australia.

244.12  Regulating Star Formation in High-Redshift Dwarf Galaxies through Radiation Pressure
John Wise1
1Georgia Institute of Technology.

244.13  BCD Galaxies from In-spiraling Giant Clumps
Bruce Elmegreen1, H. Zhang2, D. A. Hunter3
1IBM Research Div., 2Lowell Observatory and Purple Mountain Observatory, 3Lowell Observatory.

244.14  The Attraction of Dwarfs
Marshall L. McCall1
1York University, Canada.

244.15  Direct Oxygen Abundances for the Lowest Luminosity LVL Galaxies
Danielle Berg1, E. D. Skillman1, A. R. Marble2, L. van Zee3, C. W. Engelbracht4
1University of Minnesota, 2National Solar Observatory, 3Indiana University, 4University of Arizona.

244.16  A Complete Census of Dusty Evolved Stars in Local Group Dwarf Galaxies with Spitzer: Description and First Results
Martha L. Boyer1, P. Barmby2, A. Z. Bonanos1, R. D. Gehrz1, K. D. Gordon1, M. A. T. Groenewegen5, E. Lagadec5, D. J. Lennon1, M. Marengo7, K. McQuinn4, M. Meixner1, E. D. Skillman4, G. C. Sloan3, J. T. van Loon9, A. A. Zijlstra10
1STScI, 2University of Western Ontario, Canada, 3National Observatory of Athens, Greece, Greece, 4University of Minnesota, 5Royal Observatory of Belgium, Belgium, 6ESO, Garching, Germany, 7Iowa State University, 8Cornell University, 9Keele University, United Kingdom, 10University of Manchester, United Kingdom.

244.17  The Splash Survey: Washington-ddo51 Photometry Of M31 Dsphs
Rachael Beaton1, E. Tollerud1, S. R. Majewski1, R. J. Patterson1, SPLASH Collaboration
1Univ. of Virginia.

244.18  Detailed Chemical Abundances of Andromeda Satellites from Co-added Spectra
Lucy Cheng1, P. Guhathakurta2, E. Kirby3, L. Yang4, SPLASH collaboration
1The Harker School, 2UC Santa Cruz, 3Caltech, 4KIAA/Beijing U, China.

244.19  Probing The Structure And Kinematics Of The Transition Layer Between The Magellanic Stream And The Halo In HI
Lou Nigra1, S. Stanimirovic1, J. S. Gallagher, III1, K. Wood2, F. J. Lockman1, D. Nidever4, S. Majewski1
1University of Wisconsin, 2University of St. Andrews, United Kingdom, 3National Radio Astronomy Observatory, 4University of Virginia.

244.20  Orbit-based Dynamical Models of the Draco Dwarf Spheroidal
John Jardel1, K. Gebhardt1, M. Fabricius2, N. Drory3
1The University of Texas, 2Max Planck Institute for Extraterrestrial Physics (MPE), Germany, 3Universidad Nacional Autónoma de México, Mexico.
244.21 Metallicity Distribution Function for Leo I Based on HST WFC3 Photometry
Teresa Ross¹, J. Holtzman¹, B. J. Anthony-Twarog², A. Saha³
¹New Mexico State University, ²University of Kansas, ³NOAO.

245 Extrasolar Planets: Detection
Tuesday, 9:00am-6:30pm, Exhibit Hall

245.01 Precision Near-Infrared Radial Velocities
Peter Plavchan¹, G. Anglada², C. Davison³, P. Gao⁴, R. White⁵, L. Prato⁶, S. Mills⁷, D. Ciardi¹, K. von Braun¹, C. Beichman¹, K. Wallace⁶, B. Mennesson⁶, S. Lin⁶
¹NASA Exoplanet Science Institute / Caltech, ²Carnegie Department of Terrestrial Magnetism, ³Georgia State University, ⁴Caltech, ⁵Lowell Observatory, ⁶Jet Propulsion Laboratory, Caltech.

245.02 CARMENES: A Radial-Velocity Survey for Terrestrial Planets in the Habitable Zones of M Dwarfs
Andreas Quirrenbach¹, CARMENES Consortium
¹Landessternwarte Heidelberg, Germany.

245.03 Searching for Jupiter Analogues: Detection Limits of the McDonald Observatory Harlan J. Smith 2.7m Telescope Radial Velocity Planet Search
Caroline Caldwell¹, M. Endl¹, W. Cochran¹, P. J. MacQueen¹
¹University of Texas.

245.04 A Doppler Search for Planets around Barnard's Star
Jieun Choi¹, G. Marcy¹, A. Howard¹
¹UC Berkeley.

245.05 New Data from the Wesleyan Transiting Exoplanet Program
Jakob Schaeffer¹, M. C. Johnson², S. Redfield¹
¹Wesleyan University, ²University of Texas at Austin.

245.06 The Statistical Significance of Planetary Transit and Occultation Detections at Dome A in Antarctica
Ryan J. Oelkers¹, D. DePoy¹
¹Texas A&M University.

245.07 Characterizing the Transit Signal Detection Efficiency of the Kepler Pipeline
Christopher J. Burke¹, J. L. Christiansen¹, J. M. Jenkins¹, P. Tenenbaum², S. Seader², Kepler Completeness Study Working Group
¹SETI Institute / NASA Ames Research Center, ²NASA Ames Research Center.

245.08 Testing the Accuracy of Ground-Based Transit Timing Observations and Their Uncertainties
Jacob Gilbert¹, E. L. N. Jensen²
¹Haverford College, ²Swarthmore College.

245.09 Systematic Exoplanet Searches During Predicted Meso-lensing Events
James Matthews¹, R. Di Stefano¹
¹Harvard-Smithsonian Centre For Astrophysics.

245.10 Extracting Binary Orbital Periods Using Timing Analysis of Microlensing Lightcurves
Xinyi Guo¹, A. Esin¹, R. Di Stefano³
¹Pomona College, ²Harvey Mudd College, ³Harvard-Smithsonian Center for Astrophysics.

245.11 Ground-based Detections of Thermal Emission from Hot Jupiters
Ming Zhao¹, J. Millburn², M. Swain³, J. Monnier⁴, S. Hinkley², T. Barman³
¹Penn State University, ²California Institute of Technology, ³JPL, ⁴University of Michigan, ⁵Lowell Observatory.
245.12 Recent Operational Improvements To High Precision Photometric Observations With Warm IRAC
Sean J. Carey1, J. Krick1, J. Ingalls1, K. von Braun2, J. Stauffer1, D. Charbonneau3,
S. Ballard4, M. Fisher5, R. Olds5
1Spitzer Science Center/Caltech, 2IPAC/Caltech, 3Harvard University, 4Harvard-Smithsonian Center for Astrophysics, 5Lockheed Martin Denver.

245.13 A High-Contrast Adaptive Optics Imaging Search for Giant Planets Around Young M Dwarfs
Brendan P. Bowler1, M. C. Liu1, E. L. Shkolnik2, M. Tamura3
1IfA/University of Hawaii, 2Lowell Observatory, 3NAOJ, Japan.

245.14 Gemini Planet Imager: From Integration And Test To Planning Observations
Sandrine Thomas1, B. Macintosh2, D. Palmer3, L. Saddlemeyer4, J. K. Wallace4,
D. Gavel1, J. Larkin2, J. Graham4, R. Doyon5, B. Oppenheimer4, S. Goodsell5, GPI Team
1UCO/Lick Observatory, 2LLNL, 3Herzberg Institute of Astrophysics, Canada, 4JPL, 5UCLA,
6University of Toronto, Canada, 7Universite de Montreal, Canada, 8AMNH, 9Gemini
Observatory.

245.15 Characterizing the Atmospheres of Highly-Irradiated Hot-Jupiters
Heather Bloemhard1, M. Creech-Eakman1, C. Jurgenson2, F. Santoro2, M. Hrynevych1,
M. Swain3, P. Deroo3, ExoSpec Team
1New Mexico Institute of Mining and Technology, 2Magdalena Ridge Observatory, 3NASA
Jet Propulsion Lab.

245.16 On The Frequency Of Hot Jupiters Orbiting F, G, K Dwarfs In The Solar Neighborhood
Jason Wright1, G. W. Marcy2, A. W. Howard2, J. A. Johnson3, T. Morton4, D. A. Fischer1
1Penn State University, 2University of California, Berkeley, 3Caltech.

245.17 Hst Parallax Of XO-3 And Implications For The Structure Of Its Hot Jupiter
Christopher M. Johns-Krull1, G. F. Benedict2, N. Mahmud1, B. McArthur6,
P. McCullough1, J. A. Valenti3
1Rice Univ., 2Univ. of Texas at Austin, 3STScI.

246 Evolution of Galaxies I
Tuesday, 9:00am-6:30pm, Exhibit Hall

246.01 Measurement of Galactic Logarithmic Spiral Arm Pitch Angle Using Two-Dimensional Fast Fourier Transform Decomposition
Benjamin L. Davis1, J. C. Berrier1, D. W. Shields1, J. Kennefick1, D. Kennefick1, M. S. Seigar1, C. H. S. Lacy1, I. Puerari3
1University of Arkansas, 2University of Arkansas at Little Rock, 3National Institute of
Astrophysics, Optics and Electronics, Mexico.

246.02 Elucidating the Spectroscopic Division of Globular Clusters in the Andromeda Galaxy
Suk-Jin Yoon1, S. Kim1, C. Chung1
1Yonsei Univ., Korea, Republic of.

246.03 Spitzer IR Colors and ISM Distributions of Virgo Cluster Spirals
Jeffrey D. Kenney1, I. Wong2, Z. Kenney1, E. Murphy3, G. Helou4, J. Howell4
1Yale Univ., 2CSIRO, Australia, 3Carnegie Observatories, 4Spitzer Science Center.

246.04 Extragalactic Science With Kepler
Michael N. Fanelli1, P. Marcum1
1NASA Ames Research Center.
246.05  Publicly Available Database: Improved Spectral Line Measurements In SDSS DR7 Galaxies  
Kyuseok Oh¹, M. Sarzi², K. Schawinski³, S. K. Yi¹  
¹Yonsei University, Korea, Republic of; ²University of Hertfordshire, United Kingdom, ³Yale University.

246.06  Empirical Constraints on the Coevolution of Supermassive Black Holes and their Host Spheroids  
Gongjie Li¹, C. Conroy¹, A. Loeb¹  
¹Harvard.

246.07  The Star Formation History of a Post-starburst Galaxy from SDSS Data Release 7  
Ryan Sanders¹, E. Hooper², M. Wolf², C. Tremonti²  
¹University of Louisville, ²University of Wisconsin-Madison.

246.08  Spatially Distributed Stellar Populations in Post-Starburst Galaxies Containing Radio AGN  
Marsha J. Wolf¹, E. J. Hooper¹  
¹Univ. of Wisconsin, Madison.

246.09  A Local Baseline for the Black Hole Mass Scaling Relations for Active Galaxies. II. Stellar Kinematics: Results and Practical Guidelines for Future Studies  
Chelsea Harris¹, V. Bennert¹, T. Treu¹  
¹University of California Santa Barbara.

246.10  The Morphologies of Double-peaked Active Galactic Nuclei  
James Diekmann¹  
¹UT Austin.

246.11  The Mass-Dependent Evolution of Galaxies Through the Green Valley  
Jerome J. Fang¹, S. M. Faber¹, S. Salim²  
¹University of California, Santa Cruz, ²University of Indiana.

246.12  USGC U579: The Group of Galaxies Surrounding HCG 069  
Michael Pinkard¹, G. L. Hoffman¹  
¹Lafayette College.

246.13  Star-Forming HI-Rich Galaxy Groups in the Local Universe  
Gerhardt R. Meurer¹, S. Sweet², M. J. Drinkwater², V. Kilborn², K. Bekki¹, SINGG  
¹University of Western Australia / ICRAR, Australia, ²University of Queensland, Australia, ³Swinburne University, Australia.

246.14  Multiwavelength Observations of an Assembling Galaxy Cluster: AGN Content  
Emily E. Freeland¹, K. Tran¹  
¹Texas A&M University.

246.15  Linking ULIRGS and Quasars: Looking for Predicted Morphological Signatures of AGN Feedback  
Nicole Steward¹, E. K. S. Hicks¹, R. I. Davies²  
¹University of Washington, ²MPE, Germany.

246.16  WITHDRAWN: Another Example Of A Gas-poor/Gas-rich Merger As A Starburst-to-QSO Transition Object  
Manuel Aravena¹, J. Wagg¹, P. Papadopoulos², I. Feain³  
¹European Southern Observatory, Chile, ²Max-Planck Institute for Radioastronomy, Germany, ³CSIRO, Australia Telescope National Facility, Australia.
246.17  Spitzer Infrared Spectrograph Observations of Infrared-Luminous Galaxies at Moderate Redshift: Diagnostics of AGN and Star Formation
Heath V. Shipley¹, C. Papovich¹, A. Dey², B. Jannuzi², G. Rieke³, B. Weiner³
¹Texas A&M University, ²National Optical Astronomy Observatory, ³University of Arizona.

246.18  Recovering Galaxy Stellar Population Properties From Spectral Energy Distribution Fitting
Janine Pförri¹, C. Maraston¹, C. Tonini¹
¹Institute of Cosmology and Gravitation, University of Portsmouth, United Kingdom,
²Centre for Astrophysics and Supercomputing, Swinburne University of Technology,
³Australia.

246.19  Paschen Alpha Dynamics of Local LBG analogs: A Low-Redshift Test of High-Redshift Assumptions
Kelsey Braxton¹, E. K. S. Hicks¹, A. Baker², W. Kropat¹, N. M. Forster Schreiber³
¹University of Washington, ²Rutgers, ³MPE, Germany.

246.20  The Emission Line Luminosity Functions Of Hα, OII, And OIII At 0<z<1.7 As Seen By PEARs
Norbert Pirzkal¹, S. Malhotra², J. E. Rhoads², C. Ly¹, B. Rothberg¹, A. Straughn², G. Meurer¹
¹STScI, ²ASU, ³UWA, Australia.

246.21  Predicting Future Space-Based Slitless Spectroscopic Surveys Using the WFC3 Infrared Spectroscopic Parallels (WISP)
James W. Colbert¹, H. Teplitz², M. Malkan³, H. Atek², N. Ross³, B. Siana⁴, A. Henry⁵, P. McCarthy⁶, A. Bunker⁷, C. Scarlata⁸
¹Spitzer Science Center, ²IPAC/Caltech, ³UCLA, ⁴UC Riverside, ⁵UC Santa Barbara, ⁶Carnegie Observatories, ⁷Oxford, United Kingdom, ⁸University of Minnesota.

246.22  Observing Star Formation Quenching In Action: A Powerful [ne V] Outflow In A Post-starburst Radio Galaxy
John Chisholm¹, C. Tremonti¹, T. Heckman², Y. Chen¹, G. Kauffmann³, K. Schawinski⁴, M. Strauss⁵
¹University of Wisconsin, ²John Hopkin’s University, ³MPA, Germany, ⁴Yale, ⁵Princeton.

246.23  A Magnified View Of Star Formation At z=0.9 From Two Lensed Galaxies
Alice Olmstead¹, J. Rigby¹, S. Veilleux¹
¹University of Maryland, ²Goddard Space Flight Center.

246.24  Star Formation and AGN Activity in Ultraluminous Infrared Galaxies at z > 1.15
Vivienne Baldassare¹, J. Kartaltepe²
¹Hunter College, ²National Optical Astronomy Observatory.

246.25  The Evolution of Lyman Break Galaxies Between z=1.5 and z=5.0
Nimish P. Hathi¹, P. J. McCarthy¹, S. H. Cohen¹, R. E. Ryan Jr.¹, R. A. Windhorst¹, H. Yan¹, M. J. Rutkowski¹, A. M. Koekemoer¹, R. W. O’Connell¹, WFC3 SOC
¹Carnegie Observatories, ²ASU, ³STScI, ⁴University of Missouri, Columbia, ⁵University of Virginia.

246.26  The Radical Transformation of Massive Galaxies Since z~2
Tim Weinzierl¹, S. Joge¹, C. J. Conselice², C. Papovich¹, R. Chary¹, A. Bluck⁵, R. Gruetzbauch², F. Buitrago², R. A. Lucas⁶, M. Dickinson¹, A. E. Bauer⁷
¹University of Texas at Austin, ²University of Nottingham, United Kingdom, ³Texas A&M University, ⁴U.S. Planck Data Center, ⁵Gemini Observatory, ⁶Space Telescope Science Institute, ⁷Australian Astronomical Observatory, Australia.

246.27  The Sizes of Passively Evolving Galaxies in the CANDELS Fields
Russell E. Ryan¹, CANDELS Team
¹STScI.
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<td>246.28</td>
<td>Investigating the Isolated Early-type Galaxy Selection Criteria</td>
<td>Alfredo J. Negron-Rivera¹, C. Fuse¹, P. Marcum², M. N. Fanelli³</td>
<td>¹Rollins College, ²NASA Ames Research Center, ³BAER Institute, NASA Ames Research Center.</td>
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<td>246.29</td>
<td>A Swift X-ray Survey Of The Localization For An Icecube 22-string Candidate Source Of High-energy Neutrinos</td>
<td>Kyle Conlon¹, D. Fox¹</td>
<td>¹Pennsylvania State University.</td>
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<td>246.30</td>
<td>Brightest Cluster Galaxy Formation: Models vs Observations</td>
<td>Shannon MacKenzie¹, A. Pipino²</td>
<td>¹University of Louisville, ²ETH Zurich, Switzerland.</td>
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<td>246.31</td>
<td>A Lyman-Alpha Galaxy at Redshift z=6.944</td>
<td>Pascale M. Hibon¹, J. E. Rhoads², S. Malhotra³, M. Cooper³, B. Weiner⁴</td>
<td>¹Gemini Observatory, Chile, ²Arizona State University, ³University of California, Irvine, ⁴Steward Observatory, University of Arizona.</td>
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<td>247</td>
<td>Black Holes</td>
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<td>247.02</td>
<td>Determining the Local Black Hole Mass Function from the Pitch Angles of Nearby Spiral Galaxies</td>
<td>Lucas Johns¹, D. Kennefick², J. C. Berrier³, B. L. Davis³, D. W. Shields²</td>
<td>¹Reed College, ²University of Arkansas.</td>
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<td>247.03</td>
<td>Numerical Simulations of Optically Thick Accretion onto a Black Hole - Spherical Case</td>
<td>Joanna Gillespie¹, P. Fragile¹, T. Monahan¹, M. Rodriguez¹</td>
<td>¹College of Charleston.</td>
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<td>247.04</td>
<td>Mesoscale and Emergent Phenomena in Magnetized Accretion Disks</td>
<td>Kris Beckwith¹, J. B. Simon¹, P. J. Armitage¹</td>
<td>¹JILA, UC Boulder.</td>
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<td>247.05</td>
<td>H2O Megamasers: Measuring The Mass Of The Black Hole In The AGN Of Mkr1210</td>
<td>Stephen Clouse¹, J. A. Braatz², C. Kuo³</td>
<td>¹Brigham Young University, ²National Radio Astronomy Observatory, ³University of Virginia.</td>
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<td>247.06</td>
<td>Constraining Intermediate Mass Black Holes with Cosmological Microlensing</td>
<td>Katherine J. Mack¹, L. A. Moustakas²</td>
<td>¹University of Cambridge, United Kingdom, ²Jet Propulsion Laboratory.</td>
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<td>247.07</td>
<td>The Cluster of Blue Stars Surrounding the M31 Nuclear Black Hole</td>
<td>Tod R. Lauer¹, R. Bender², J. Kormendy³, P. Rosenfeld⁴, R. F. Green⁵</td>
<td>¹NOAO, ²Universitas-Sternwarte Munchen, Germany, ³University of Texas, ⁴University of Washington, ⁵Large Binocular Telescope Observatory.</td>
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248 Dark Matter & Dark Energy

Tuesday, 9:00am-6:30pm, Exhibit Hall

248.01 The DECaLS Software for the Dark Energy Survey Spectrophotometric Calibration System
Jason Wise¹, J. P. Rheault¹, D. L. DePoy¹
¹Texas A&M University Department of Physics and Astronomy.

248.02 DECal: A Spectrophotometric Calibration System For DECam
Jean-Philippe Rheault¹, D. L. DePoy¹, J. L. Marshall¹, T. Prochaska¹, R. Allen¹, J. Wise¹, E. Martin¹
¹Texas A&M University.

248.03 aTmcam: A Simple Atmosphere Transmission Monitoring Camera For Sub 1% Photometric Precision
Ting Li¹, D. L. DePoy¹, D. L. Burke², R. Kessler³, J. P. Rheault¹, J. L. Marshall¹, D. W. Carona¹, S. Boada¹, T. Prochaska¹
¹Texas A&M University, ²SLAC, ³University of Chicago.

248.04 Design and Testing of DECam
Marcelle Soares-Santos¹, Dark Energy Survey Collaboration
¹Fermi National Accelerator Laboratory.

248.05 Cosmic shear measurement with the Dark Energy Survey
Barnaby T. Rowe¹, DES
¹University College London, United Kingdom.

248.06 Weak Lensing Simulations and Precision Cosmology with the Dark Energy Survey
Matthew Becker¹
¹University of Chicago, DES Simulations Working Group.

248.07 Developing Antennas for Measuring Dark Energy
Stanchfield Sara¹, P. T. Timbie¹, L. Bezroukov¹, D. Marulli¹, J. Lewis²
¹UW Madison, ²University of Colorado Boulder.

248.08 Angular Momentum in Bose-Einstein Condensed CDM Halos
Tanja Rindler-Daller¹, P. R. Shapiro¹
¹The University of Texas at Austin.

248.09 The Shapes and Alignments of Dark Matter Halos
Michael Schneider¹, C. S. Frenk², S. Cole²
¹Lawrence Livermore Natl Lab, ²Institute for Computational Cosmology, Durham University, United Kingdom.

248.10 Pulsar-driven Jets and the Non-existence of Dark Energy And Matter
John Middleditch¹
¹LANL.

248.11 The General Antiparticle Spectrometer (GAPS) as a New Approach to Search Dark Matter
Mayra Lopez-Thibodeux¹
¹San Francisco State University.
TUESDAY POSTER SESSIONS

248.12 A Spectrograph for BigBOSS
Pierre-Henri CARTON¹, C. Bebek², S. Cazaux³, A. Ealet⁴, D. Eppelle¹, J. Kneib⁴, P. Karst³, M. Levi³, C. magnevillen¹, N. Palanque-Delabrouille¹, V. Ruhlmann-Kleider¹, D. Schlegel², C. Yeche¹
¹C.E.A., France, ²LBNL, ³CPPM, France, ⁴LAM, France.

248.13 COsmic Sky MAchine (COSMA) For The Dark Energy Survey
Brandon Erickson¹, G. Evrard¹, M. Busha², M. Becker³, R. Wechsler⁴, A. Kravtsov⁴
¹University of Michigan, ²University of Zurich, ³University of Chicago, ⁴Stanford University.

249 The Rossi X-ray Timing Explorer: Taking the Pulse of the Universe
Tuesday, 9:00am-6:30pm, Exhibit Hall

249.01 X-ray Spectral Variations of the Extremely Massive Colliding Wind Binaries Eta Carinae and WR 140
Michael F. Corcoran¹, K. Hamaguchi², A. M. T. Pollock³, C. M. P. Russell⁴, A. F. J. Moffat⁵, S. Owocki⁶, B. Ishibashi⁷, K. Davidson⁸, J. M. Pittard⁹, R. Parkin¹⁰
¹USRA, ²UMBC, ³ESA, United Kingdom, ⁴U. Delaware, ⁵U. Montreal, Canada, ⁶U. Nagoya, Japan, ⁷U. Minnesota, ⁸Leeds, United Kingdom, ⁹ANU, Australia.

249.02 Caught In The Act: Disc-jet Coupling In The 2009 Outburst Of The Black Hole Candidate H1743-322
¹University of Alberta, Canada, ²International Centre for Radio Astronomy Research - Curtin University, Australia, ³University ofamsterdam, Netherlands, ⁴CEA Saclay, France, ⁵NRAO Domenici Science Operations Center, ⁶NASA Goddard Space Flight Center, ⁷MIT Kavli Institute for Astrophysics and Space Research, ⁸University of Southampton, United Kingdom, ⁹University of Wisconsin-Madison, ¹⁰Radboud University Nijmegen, Netherlands, ¹¹University of Michigan, ¹²Universitat de Barcelona, Spain, ¹³University of Virginia, ¹⁴Netherlands Institute for Radio Astronomy, Netherlands.

249.03 Marginally Stable Nuclear Burning
Tod E. Strohmayer¹, D. Altamirano²
¹NASA’s GSFC, ²Astronomical Institute, “Anton Pannekoek”, Netherlands.

249.04 Long Term Monitoring Of PSR B0540-69 With RXTE
Francis E. Marshall¹
¹NASA’s GSFC.

249.05 The Neutron star Interior Composition ExploreR
Zaven Arzoumanian¹, K. Gendreau², NICER Team
¹NASA GSFC/CRESST/USRA, ²NASA GSFC.

249.06 The Large Observatory for X-ray Timing (LOFT): An ESA M-class Mission Concept
Paul S. Ray¹, M. Feroci², J. den Herder³, E. Bozzo⁴, L. Stella⁵, LOFT Collaboration
¹NRL, ²INAF/IASF-Roma, Italy, ³SRON, Netherlands, ⁴ISDC, Switzerland, ⁵INAF/OAR, Italy.
250 White Dwarfs
Tuesday, 9:00am-6:30pm, Exhibit Hall

250.01 R Coronae Borealis Stars As The Result Of White Dwarf Mergers?
Jan E. Staff1, A. Menon2, F. Herwig3, W. Even3, G. Clayton1, J. Tohline1, C. L. Fryer3, P. Motl4, T. Geballe5
1Louisiana State University, 2University of Victoria, Canada, 3Los Alamos National Laboratory, 4Indiana University Kokomo, 5Gemini Observatory.

250.02 HST Observations of WD1337+705: A New Determination of the Metal Accretion Rates
Jean Dupuis1, P. Chayer2, V. Henault-Brunet3
1Canadian Space Agency, Canada, 2Space Telescope Science Institute, 3Institute of Astronomy, University of Edinburgh, United Kingdom.

250.03 Time-series UV Photometry Of Two Variable Carbon-atmosphere (DQV) White Dwarfs
Kurtis A. Williams1, M. H. Montgomery2, D. E. Winget2
1Texas A&M - Commerce, 2UT Austin.

250.04 Deriving the Ages of the Oldest White Dwarfs: A Bayesian Analysis
Erin M. O’Malley1, T. von Hippel2, M. Kilic3
1Siena College, 2Embry-Riddle Aeronautical University, 3University of Oklahoma.

250.05 SOAR + SMARTS Southern White Dwarf Survey
John P. Subasavage1, S. Lepine2
1United States Naval Observatory - Flagstaff, 2American Museum of Natural History.

250.06 Common Proper Motion Wide Double White Dwarfs Selected From the Sloan Digital Sky Survey
Jeffrey Andrews1, M. Agueros1, K. Belczynski2, S. Dhital3, S. Kleinman4, A. West5
1Columbia University, 2University of Warsaw, Poland, 3Vanderbilt University, 4Gemini Observatory, 5Boston University.

251 CAE/CATS Astronomy Education Research
Tuesday, 9:00am-6:30pm, Exhibit Hall

251.01 The Center for Astronomy Education (CAE) Collaboration of Astronomy Teaching Scholars (CATS) Program: A Year-Four Research Update
Gina Brissenden1, C. Impey2, E. E. Prather1, K. M. Lee3, Collaboration of Astronomy Teaching Scholars (CATS)
1Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona, 2Steward Observatory, Univ. of Arizona, 3Univ. of Nebraska.

251.02 What Does it Take to Create an Effective and Interactive Learning Environment with 700 Students in a College Gen. Ed. Astro Course?
Edward E. Prather1, G. Brissenden1, S. Cormier1, J. Eckenrode1, Collaboration of Astronomy Teaching Scholars (CATS)
1Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona.

251.03 Final Results from a Large-Scale National Study of General Education Astronomy Students' Learning Difficulties with Cosmology
Colin Scott Wallace1, E. E. Prather1, D. K. Duncan2, Collaboration of Astronomy Teaching Scholars (CATS)
1Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona, 2Dept. of Astrophysical & Planetary Sciences, Univ. of Colorado at Boulder.
251.04 Using Item Response Theory to Evaluate LSCI Learning Gains
Wayne M. Schlingman¹, E. E. Prather¹, Collaboration of Astronomy Teaching Scholars (CATS)
¹Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona.

251.05 Conceptual Surveys for Zooniverse Citizen Science Projects
Sebastien Cormier¹, E. E. Prather¹, G. Brissenden¹, C. Lintott¹, P. L. Gay³, J. Raddick⁴,
Collaboration of Astronomy Teaching Scholars (CATS)
¹Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona,
²Adler Planetarium & University of Oxford, United Kingdom, ³The Center for Science, Technology, Engineering and Mathematics Research, Education and Outreach at Southern Illinois University Edwardsville, ⁴Johns Hopkins Univ.

251.06 A Long-Term Study of Science Literacy and Attitudes Towards Science:
Comparing Survey Responses of Undergraduates to Scientists
Sanlyn Buxner¹, C. Impey², K. Tijerino³, J. Antonellis³, Collaboration of Astronomy Teaching Scholars (CATS)
¹Univ. of Arizona, ²Steward Observatory, Univ. of Arizona, ³Little Priest Tribal College.

251.07 Lecture-Tutorial Coherency: Student-Supplied Written-Responses As Indicators Of Future Success
Jeff Eckenrode¹, J. D. Welch¹, H. Saldizar², J. Laird¹, E. E. Prather¹, S. Cormier¹,
C. S. Wallace¹, G. Brissenden¹, Collaboration of Astronomy Teaching Scholars (CATS)
¹Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona, ²CalPoly Pomona.

251.08 Animated Ranking Tasks: Student Attitudes, Practices, & Learning Gains
Kevin M. Lee¹, E. E. Prather², Collaboration of Astronomy Teaching Scholars (CATS)
¹Univ. of Nebraska, ²Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona.

251.09 Teach Astronomy: An Online Resource for General Education and Informal Learning
Kevin Hardegree-Ullman¹, C. Impey¹, A. Patikkal², A. Srinathan², Collaboration of Astronomy Teaching Scholars (CATS)
¹Steward Observatory, Univ. of Arizona, ²Univ. of Arizona.

252 The Milky Way, The Galactic Center
Tuesday, 9:00am-6:30pm, Exhibit Hall

252.01 New Orbital Analysis of Stars at the Galactic Center Using Speckle Holography
Anna Boehle¹, A. Ghez¹, R. Schoedel², S. Yelda¹, L. Meyer¹
¹UCLA, ²Instituto de Astrofisica de Andalucia (CSIC), Spain.

252.02 Probing The Kinematics Of Ionized Gas In The Galactic Center
Marc Royster¹, F. Yusef-Zadeh¹, J. Braatz²
¹Northwestern University, ²National Radio Astronomy Observatory.

252.03 Analysis Of Submillimeter Mopra And Herschel Observations Of The Galactic Center
Kirill Tchernyshyov¹, C. L. Martin¹, HIGGS Team
¹Oberlin College.

252.04 Gravitationally Lensed X-Ray Sources at the Galactic Center
Michael W. Castelaz¹, L. Rottler¹
¹Pisgah Astronomical Research Inst
252.05 **The Bulge Radial Velocity Assay (BRAVA): Final Results, A New High Velocity Star, and Public Data Release**

Robert Michael Rich¹, A. M. Kunder², R. de Propris³, A. M. Koch⁴, C. I. Johnson¹, C. D. Howard¹, S. A. Stubbs⁵, J. Shen⁶, Y. Wang⁶, A. C. Robin¹, D. B. Reitzel⁸, H. Zhao⁹, P. Frinchaboy¹⁰, L. Origlia¹¹, J. Kormendy¹²

¹UCLA, ²CTIO, ³European Southern Observatory, Chile, ⁴landessternwarte Heidelberg, Germany, ⁵Shanghai Astronomical Observatory, China, ⁶Beijing Astronomical Observatory, China, ⁷Observatoire Besancon, France, ⁸Griffith Observatory, ⁹St. Andrews University, United Kingdom, ¹⁰Texas Chrisitan University, ¹¹INAF-Observatory Bologna, Italy, ¹²University of Texas, Austin.

252.06 **Stellar Kinematics in the Bar of the Milky Way**

Connor McKeel¹, P. Frinchaboy¹

¹Texas Christian University.

252.07 **New Results For Hypervelocity Stars Using N-body Simulations**

Idan Ginsburg¹, A. Loeb², H. B. Perets², G. A. Wegner¹

¹Dartmouth College, ²Harvard University.

252.08 **What Is The Color Of The Milky Way?**

Timothy Licquia¹, J. A. Newman¹

¹University of Pittsburgh.

252.09 **A New Model for the Galactic Magnetic Field and Its Implications**

Ronnie Jansson¹, G. Farrar¹

¹New York University.

252.10 **GALFA-HI: Dust/Gas Comparisons**

Susan Clark¹, K. Douglas²

¹University of North Carolina at Chapel Hill, ²Arecibo Observatory, Puerto Rico.

252.11 **GALFA-HI: A Targeted Search For Star Formation on the Far Side of the Milky Way**

Nicholas Stantzos¹, M. Gostisha², R. Benjamin³, S. Gibson¹, B. Koo⁴, K. A. Douglas⁵, J. Kang⁵, G. Park⁵, J. E. G. Peek⁶, E. J. Korpela⁶, C. Heiles⁶, J. H. Newton³

¹Northern Arizona University, ²University of Wisconsin-Whitewater, ³Western Kentucky University, ⁴Seoul National University, ⁵Dominion Radio Astrophysics Observatory, ⁶Columbia University, ⁷Berkeley Space Astron. Lab., ⁸Univ. California-Berkeley.

252.12 **The Radial Velocity Experiment (RAVE): A Stellar Spectroscopic Survey for Exploring the Formation History of the Galaxy**

Matthias Steinmetz¹, RAVE collaboration

¹Leibniz Institute for Astrophysics Potsdam (AIP), Germany.

252.13 **The Chemical Abundances of New Extremely Metal-Poor Giants with [Fe/H] < −3.0**

Jaehyon Rhee¹, M. Fink², W. Rhee³

¹Gemini Observatory & Purdue University, ²Purdue University, ³West Lafayette High School.

252.14 **The Outer Halo Metallicity Distribution**

Zhibo Ma¹, H. Morrison¹, P. Harding¹, X. Xue³, H. Rix³, C. Rockosi⁴, J. Johnson⁵, Y. Lee⁶, K. Cudworth⁷

¹Department of Astronomy, Case Western Reserve University, ²Key Lab of Optical Astronomy, National Astronomical Observatories, China, ³Max Planck Institute for Astronomy, Germany, ⁴UCO/Lick Observatory, UC Santa Cruz, ⁵Department of Astronomy, Ohio State University, ⁶Department of Physics & Astronomy, Center for the Study of Cosmic Evolution, and Joint Institute for Nuclear Astrophysics, Michigan State University, ⁷Yerkes Observatory, The University of Chicago.
252.15  On Rings and Streams in the Galactic Anticenter
    Jeffrey L. Carlin\textsuperscript{1}, J. Li\textsuperscript{2}, H. J. Newberg\textsuperscript{1}, L. Deng\textsuperscript{2}, M. Newby\textsuperscript{1}, Y. Xu\textsuperscript{2}
    \textsuperscript{1}Rensselaer Polytechnic Institute, \textsuperscript{2}National Astronomical Observatories, Chinese Academy of Sciences, China.

252.16  Kinematical Clues to the Origin of the Virgo Stellar Stream
    William Yam\textsuperscript{1}, J. L. Carlin\textsuperscript{1}, D. I. Casetti-Dinescu\textsuperscript{2}, B. A. Willett\textsuperscript{1}, H. Newberg\textsuperscript{1}, S. R. Majewski\textsuperscript{3}, T. M. Girard\textsuperscript{2}
    \textsuperscript{1}Rensselaer Polytechnic Institute, \textsuperscript{2}Yale University, \textsuperscript{3}University of Virginia.

252.17  Constraining the Mass of the Local Group through Proper Motion Measurements of Local Group Galaxies
    S. Tony Sohn\textsuperscript{1}, R. van der Marel\textsuperscript{1}, J. Anderson\textsuperscript{1}
    \textsuperscript{1}STScI.

252.18  First Results From The C Field Of The ALFA ZOA Survey
    Alexandra Truebenbach\textsuperscript{1}, T. P. McIntyre\textsuperscript{2}, R. F. Minchin\textsuperscript{3}, P. A. Henning\textsuperscript{2}
    \textsuperscript{1}Wesleyan University, \textsuperscript{2}University of New Mexico, \textsuperscript{3}Arecibo Observatory.
Invited Session 300 Heineman Prize: Exploding Stars and the Accelerating Universe

Wednesday, 8:30am-9:20am, Ballroom D

300.00C Chair
H. Frederick Dylla, AIP

Robert P. Kirshner - Dannie Heineman Prize
The 2011 Dannie Heineman Prize for Astrophysics is awarded to Robert P. Kirshner for his sustained and enduring contributions to our understanding of supernovae and cosmology. We particularly note his work with students using supernova light curves as calibrated standard candles, which has provided evidence for an accelerating expansion of the universe. The dark energy inferred from this result is one of the deepest mysteries of modern science.

300.01 Exploding Stars and the Accelerating Universe
Robert P. Kirshner

301 The Solar System & Extrasolar Habitable Zones

Wednesday, 10:00am-11:30am, Room 12A

301.00C Chair
Lee Anne M. Willson

301.01 Chemistry of the Moon-Forming Impact
Bruce Fegley, L. Schaefer, K. Lodders

301.02D Observations and Models of Iapetus’s Microwave Emissivity
Paul Ries

301.03 Searching the Southern Skies with the La Silla-QUEST KBO Survey: Probing the Inventory of Large and High Inclination Kuiper belt
Megan E. Schwamb, D. L. Rabinowitz, S. Tourtellotte, R. Brasser

301.04 The Habitable Zone Gallery
Dawn M. Gelino, S. R. Kane

301.05 Super-earths - Atmospheres And Conditions For Life
Lisa Kaltenegger

302 Molecular Clouds, HII Regions, Interstellar Medium

Wednesday, 10:00am-11:30am, Room 16A

302.00C Chair
Glen Langston

1American Institute of Physics.

1Iowa State Univ

1Harvard-Smithsonian CfA.

1University of Virginia.

1Yale University, Academia Sinica Institute of Astronomy and Astrophysics, Taiwan.

1NASA Exoplanet Science Institute, Caltech.

1MPIA/CfA, Germany.
Wednesday Sessions and Events

302.01 Water Absorption In The Milky Way: Herschel/hifi Insights On The History Of The Gas
Nicolas Flagey¹, P. F. Goldsmith¹, D. C. Lis², PRISMAS Team
¹Jet Propulsion Laboratory, ²CalTech.

302.02 The Carbon Chronometer for Molecular Cloud Ages
Paul Goldsmith¹
¹JPL.

302.03D The Role of Radiation Feedback in Starburst Environments
Sherry Yeh¹, C. D. Matzner¹, E. R. Seaquist¹
¹University of Toronto, Canada.

302.04 Abundance Patterns of Neutron-Capture Elements in the Interstellar Medium
Adam M. Ritchey¹, R. S. Federman², D. L. Lambert³
¹University of Washington, ²University of Toledo, ³University of Texas at Austin.

302.05D Recalibration of Pagel’s Strong-Line Method to Determine Abundances Considering Thermal Inhomogeneities
Maria Angeles Pena-Guerrero¹, A. Peimbert¹, M. Peimbert¹
¹IA - UNAM, Mexico.

302.06 On The Ionization Of Luminous WMAP Sources In The Galaxy: Constrains From He Recombination Line Observations With The GBT
D. Anish Roshi¹, A. Plunkett², V. Rosero³, S. Vaddi⁴
¹National Radio Astronomy Observatory, ²Yale University, ³New Mexico Tech, ⁴Rochester Institute of Technology.

302.07 The Structure of NGC 1976 in the Radio Range
Thomas L. Wilson¹, S. Casassus², K. M. Chynoweth²
¹US Naval Research Laboratory, ²Departamento de Astronomia, Universidad de Chile, Santiago, Chile, ³National Research Council Postdoctoral Research Associate at the US Naval Research Laboratory.

303 A Sampling of Herschel’s Key Programs: Views of the Milky Way and its Nearby Environs
Wednesday, 10:00am-11:30am, Ballroom F

Launched to L2 in May 2010, the European Space Agency’s Herschel Space Observatory is designed to explore the far-IR and sub-mm spectral range (60 to 650 μm) with a 3.5 m telescope and three cryogenically cooled science instruments built by multinational consortia, with enabling contributions from NASA. This proposed Special Session will present Key Program science to the broad astronomical community gathered in Austin. The talks focus mainly on Galactic science. We are making this request for a Special Session on behalf of the US-based Herschel community via the NASA Herschel Science Center (NHSC; Latter and Appleton), and the NHSC Users Panel (Meixner).

303.00C Chair
William B. Latter¹
¹Caltech.

303.01 Herschel in Mid-Mission: Status and Highlights
George Helou¹
¹Caltech.

303.02 HIGGS: The Herschel Inner Galaxy Gas Survey
Christopher L. Martin¹, HIGGS Team
¹Oberlin College.
303.03  HERschel Inventory of The Agents of Galaxy Evolution (HERITAGE) in the Magellanic Clouds
Margaret Meixner
1 STScI.

303.04  GOT C+: Galactic Plane Survey of the 1.9 THz [CII] Line
William Langer
1 JPL.

303.05  Herschel Studies of the Evolution and Environs of Young Stars in the DIGIT, WISH, and FOOSH Programs
Joel D. Green1, DIGIT (OT) Key Project Team, WISH (GT) Key Project Team, FOOSH (OT1) Team
1 University of Texas at Austin.

303.06  The Herschel Infrared Galactic Plane Survey: Hi-GAL
John Bally
1 Univ. of Colorado.

304 Intergalactic Medium, QSO Absorption Line Systems
Wednesday, 10:00am-11:30am, Room 16B

304.00C Chair
Evan Scannapieco
1 Arizona State University.

304.01  Signal Extraction for Sky-averaged 21-cm Experiments
Geraint Harker1, J. Pritchard2, J. Burns1, J. Bowman3
1 University of Colorado, 2 Imperial College London, United Kingdom, 3 Arizona State University.

304.02D Finding the First Metals
Ryan J. Cooke1, M. Pettini1
1 University of Cambridge, United Kingdom.

304.03D Radial And Azimuthal Profiles Of Mg II Absorption Around Galaxies At 0.5 < Z < 0.7
Rongmon Bordoloi
1 ETH Zurich, Switzerland.

304.04  Civ Absorbers Clustering At Z~2.4
Shailendra Kumar Vikas1, M. Wood-vasey1, B. Lundgren2, A. Myers3, N. P. Ross4, D. York5, Y. AlSayyad6
1 University of Pittsburgh, 2 Yale University, 3 University of Wyoming, 4 Lawrence Berkeley National Laboratory, 5 University of Chicago, 6 University of Washington.

304.05D CWI and FIREBall: Two Spectrographs Built to Observe Emission from the IGM.
Instrument Design and Early Results
Mateusz Matuszewski1, C. Martin1, P. Morrissey1, A. Moore2, CWI Team, FIREBall Team
1 Caltech, 2 Caltech Optical Observatories.

304.06  A Continuum-free Estimation of the Effective Lyman Alpha Opacity At z > 2.5
Nao Suzuki1, J. X. Prochaska1, G. Worseck2, J. Hennawi3, J. M. O'Meara4
1 Lawrence Berkeley National Lab., 2 University of California, Santa Cruz, 3 Max Planck Institute for Astrophysics, Germany, 4 St. Michael's Collage.
305 AGN, QSO, Blazars V

Wednesday, 10:00am-11:30am, Room 17A

305.00C Chair
Dale Kocevski
1University of California, Santa Cruz.

305.01 The Cosmic Downsizing of Fermi-detected Flat Spectrum Radio Quasars
Marco Ajello1, R. W. Romani2, M. Shaw2, C. Dermer3, L. Costamante1, Fermi LAT collaboration
1SLAC/KIPAC, 2Stanford University, 3U. S. Naval Research Laboratory.

305.02D The Co-Evolution of Galaxies and Black Holes from 0.5 < z < 2.7
Brooke Simmons1, C. M. Urry1
1Yale Univ

305.03 Discovery of a Tidal Disruption Event Candidate from the 2XMM Catalog
Dacheng Lin1, E. R. Carrasco2, D. Grupe3, N. A. Webb1, D. Barret1, S. A. Farrell4
1IRAP, France, 2Gemini Observatory/AURA, Chile, 3Pennsylvania State University, 4University of Sydney, Australia.

305.04 The Fermi Second Large Area Telescope AGN Catalog (2LAC)
Charles D. Dermer1, E. Cavazzuti2, S. Cutini2, D. Gasparriini2, B. Lott3
1NRL, 2ASI, Italy, 3University of Bordeaux, France.

305.05D The Radio Variability of Gamma-Ray Blazars
Joseph Richards1
1California Institute of Technology.

305.06 Search for Gamma-ray Emission From X-ray Selected Radio-quiet Seyfert Galaxies with Fermi-LAT
Masaaki Hayashida1, L. Stawarz2, K. Bechtol1, G. Madejski1, Fermi-LAT
1SLAC/KIPAC, Stanford, 2JAXA/ISAS, Japan.

305.07 Constraining the Parameters of Kpc-scale, Relativistic, Inverse Compton X-ray Jets in AGN
Daniel A. Schwartz1, M. Birkinshaw2, D. M. Worrall2
1Harvard-Smithsonian, CFA, 2University of Bristol, United Kingdom.

306 The Astrophysics Postdoc Job Market

Wednesday, 10:00am-11:30am, Ballroom G

The AAS Employment Committee will host a panel discussion on current issues related to the postdoc job market. Part of the discussion will likely focus on the recent proliferation of postdoc-type positions, including fellowships, without any corresponding growth in potentially permanent academic positions, and on the associated dramatic increase in the duration of the postdoc career stage for many astronomers. The goals of the session are: (1) to provide information to the community based on the personal experiences of successful young astronomers who have recently transitioned to tenure-track or other potentially permanent academic positions, or have gone on to non-academic career tracks; (2) to provide the perspective from an employer’s point of view (e.g., those running postdoctoral fellowship programs); and (3) to promote discussion about possible changes to employment, recruitment and hiring practices impacting postdocs, and how these changes could be implemented. We encourage both junior and senior AAS members to attend and share their experiences and opinions.

306.00C Chair
Frederic A. Rasio1
1Northwestern Univ.
307 Evolution of Galaxies V

Wednesday, 10:00am-11:30am, Room 19A

307.00C  Chair
Claudia Scarlata
1University of Minnesota.

307.01 Measuring the M-σ Relation with Quasars from 0.2 < z < 1
Kyle Hiner, G. Canalizo, M. Wold, M. Brotherton
1University of California, Riverside, 2Dark Cosmology Centre, Niels Bohr Institute, University of Copenhagen, Denmark, 3University of Wyoming.

307.02D Black Hole Masses and Scaling Relationships in Brightest Cluster Galaxies
Nicholas J. McConnell, C. Ma, J. R. Graham, K. Gebhardt, T. R. Lauer, S. A. Wright, J. D. Murphy, D. O. Richstone
1UC Berkeley, 2UT Austin, 3NOAO, 4UM Ann Arbor.

307.03D The Infrared Insights on the Nature and Evolution of Star-Forming Galaxies in the Past 11 Billion Years
Wiphu Rujopakarn
1University of Arizona.

307.04 Star-forming Properties within the Galaxy And Mass Assembly (GAMA) Survey
Amanda E. Bauer
1Australian Astronomical Observatory, Australia.

307.05D Witnessing the Differential Evolution in Luminosity and Size of Disk Galaxies via Gravitational Lensing
Kaushala Bandara, D. Crampton, C. Y. Peng, L. Simard
1University of Victoria/Herzberg Institute of Astrophysics, Canada, 2Herzberg Institute of Astrophysics, Canada.

307.06 Building Massive Galaxies: Measuring Hierarchical Assembly with BOSS
1IPMU / U. Tokyo, Japan, 2Yale, 3Portsmouth, United Kingdom, 4Portsmouth, Japan, 5UC Berkeley, 6U. of Utah, 7University of Arizona.

308 Black Holes

Wednesday, 10:00am-11:30am, Ballroom E

308.00C  Chair
Michael R. Garcia
1Harvard-Smithsonian, CfA.

308.01D Radiation-regulated Accretion onto Intermediate-Mass Black Holes
KwangHo Park, M. Ricotti
1University of Maryland.

308.02 Tidal Disruption Rate by Spinning Supermassive Black Holes
Michael H. Kesden
1NYU.

308.03D An X-ray Survey for Tidal Disruption Flares in Clusters of Galaxies
W. Peter Maksym
1Northwestern University.

308.04 Grmhd Simulations Of Misaligned Black Hole Accretion Disks
Xiaoyue Guan, J. Hawley, J. Krolik, S. Noble
1University of Virginia, 2John Hopkins, 3Rochester Institute of Technology.
308.05D Signatures of Kiloparsec-scale Black Hole Pairs
Laura Blecha, A. Loeb, R. Narayan

Harvard University.

308.06 Comptonization Model for Phase Lags in Black Hole Candidates in Low-Hard Spectral State
Nikolai Shaposhnikov

Goddard Space Flight Center.

308.07 State Transitions and MHD Winds In GRO J1655-40
Joseph Neilsen, J. Homan

MIT Kavli Institute.

309 ALMA Cycle 0 Early Science and Capabilities for Cycle 1 Science

Wednesday, 10:00am-11:30am, Room 17B

The Atacama Large Millimeter/submillimeter Array (ALMA) will soon provide an unprecedented combination of sensitivity, image fidelity, and resolution at millimeter and submillimeter wavelengths that will open new scientific frontiers. ALMA will probe the Universe at wavelengths from 0.3 to 9.6 mm (950 - 31 GHz), a key part of the electromagnetic spectrum, for example, for observing the first stars and galaxies, directly imaging planetary formation, and studying the energy output from supermassive black holes in starburst galaxies.

This Special Session will describe: (a) ALMA Early Science conducted during the initial Cycle 0 observing period; (b) the additional capabilities that will be available to community for the Cycle 1 ALMA Early Science opportunity; and (c) the extensive support provided to observers in the US and Canada through the Northamerican ALMA Science Center (NAASC). The ALMA Early Science (Cycle 0) Call for Proposals was released on 30 March 2011, and observing proposals are due 30 June 2011. Early Science data acquisition for successful Cycle 0 proposals will span nine months and is expected to begin on 30 September 2011 or shortly thereafter. It is anticipated that 500-700 hours of ALMA observing time will be allocated to Cycle 0 research projects that will span many fields of astrophysics.

The key capabilities available for Cycle 1 ALMA Early Science will be described, including the array configurations, receivers, and correlator modes. This Session will also discuss the latest versions of the Observing Tool (OT) for proposal preparation and submission, the Common Astronomy Software Applications (CASA) package for science data reduction, the “observing simulator” task, and Splatalogue, an on-line spectral line database. The expected deadline for ALMA Cycle 1 proposals is March/April 2012.

309.00C Chair
Adam K. Leroy

National Radio Astronomy Observatory.

309.01 The Current Status of ALMA
Alison Peck

ALMA, Chile.

309.02 Circumstellar Disks and Planet Formation with ALMA: Early Data
A. Meredith Hughes

UC Berkeley.

309.03 Star Formation Studies with ALMA in Cycle 0 and Cycle 1
Yancy L. Shirley

Univ. of Arizona.
Wednesday Sessions and Events

309.04  ALMA's First Insights into the Submillimeter/millimeter Extragalactic Universe
Carol J. Lonsdale¹
¹NRAO.

309.05  ALMA Support from the Northamerican ALMA Science Center (NAASC)
Al Wootten¹
¹NRAO.

310 Gamma Ray Bursts
Wednesday, 10:00am-11:30am, Room 18C

310.00C Chair
Emily M. Levesque¹
¹University Of Colorado Boulder.

310.01  A New Limit on Lorentz Invariance and Chromatic Dispersion Across the
Universe from GRB 090510A
Robert J. Nemiroff¹, R. Connolly¹, J. Holmes¹
¹Michigan Technological Univ

310.02  Mechanism for Gamma-Ray Bursts and Black Hole Universe Model
Tianxi Zhang¹
¹Alabama A&M University.

310.03D Testing and Improving the Luminosity Relations for Gamma-Ray Bursts
Andrew C. Collazzi¹
¹Louisiana State University.

310.04  Metallicity in the GRB100316D/SN 2010bh Host Complex
Emily M. Levesque¹, E. Berger², A. M. Soderberg², R. Chornock²
¹University Of Colorado Boulder, ²Harvard University.

310.05D On the Metal Aversion of LGRBs
John Graham¹, A. Fruchter², E. Levesque³, K. L.₄, B. J.₄, A. Levan⁵, N. Tanvir⁶, S. Patel⁷, G. Aldering⁸, S. Perlmutter⁹, K. Misra¹₀, K. Huang¹, D. Reichart¹, M. Nysewander¹
¹Space Telescope Science Inst. & Johns Hopkins Univ., ²Space Telescope Science Inst., ³Institute of Astronomy, University of Hawaii, ⁴Leiden Observatory, Netherlands, ⁵University of Warwick, United Kingdom, ⁶University of Leicester, United Kingdom, ⁷National Space Science & Technology Center, ⁸Lawrence Berkeley National Lab, ⁹University of North Carolina at Chapel Hill.

311 Spiral Galaxies: Evolution of Halos, Bars, and Discs
Wednesday, 10:00am-11:30am, Room 18B

311.00C Chair
Marc Seigar¹
¹University of Arkansas at Little Rock.

311.01  Baryons and the Dark Matter Halos of Low Surface Brightness Galaxies
Rachel Kuzio de Naray¹, K. Spekkens¹
¹Royal Military College of Canada, Canada.

311.02  Stellar Halos Of Galaxies Beyond The Local Group
Jeremy Bailin¹, E. F. Bell¹, S. N. Chappell¹, D. Radburn-Smith², R. de Jong¹
¹University of Michigan, ²University of Washington, ³Leibniz-Institut für Astrophysik Potsdam (AIP), Germany.
311.03 Galaxy Zoo: The Environmental Dependence of Bars and Bulges in Disc Galaxies  
Ramin A. Skibba, K. L. Masters, R. C. Nichol, I. Zehavi, B. Hoyle, E. M. Edmondson,  
Galaxy Zoo  
1University of Arizona, 2University of Portsmouth, United Kingdom, 3Case Western Reserve University, 4University of Barcelona, Spain.

311.04D New Observational Constraints on the Formation and Evolution of Galactic Disks though Gas Accretion and Bar-Driven Inflows  
Wang Jing  
1Max Planck Institute for Astrophysics, Germany.

311.05D Radial Variation in Vertical Structure of Edge-On Galaxies  
Kijeong Yim, T. Wong  
1University of Illinois at Urbana-Champaign.

311.06 SWELLS: A Large Sample Of Spiral Lens Galaxies  
Tommaso Treu, SWELLS team  
1University of California.

311.07D Investigating Stellar Feedback Models in Hydrodynamics Simulations  
Cameron B. Hummels  
1Columbia University.

312 Cosmology I  
Wednesday, 10:00am-11:30am, Ballroom D

312.00C Chair  
Mustapha B. Ishak  
1Univ. Of Texas at Dallas.

312.01 Life On The Edge: A Measurement Of The Cosmic UV Background At Z~0  
Juan M. Uson, J. J. Adams, G. J. Hill, P. J. MacQueen  
1Observatoire De Paris - LERMA, France, 2Carnegie Observatories, 3McDonald Observatory, University of Texas at Austin.

312.02D Fluctuations In The Cosmic Infrared Background Using the Cosmic Infrared Background ExpeRiment (CIBER)  
1UC Irvine, 2University of Tokyo, Japan, 3JPL, 4Caltech, 5UC San Diego, 6Seoul National University, Korea, Republic of, 7Korea Astronomy and Space Science Institute, Korea, Republic of, 8Brigham Young University, 9University of Washington, 10Japan Aerospace Exploration Agency, Japan.

312.03 New Results from Using Inhomogeneous Cosmological Models in an Era of Precision Cosmology Observations  
Mustapha B. Ishak, A. Nwankwo, A. Peel  
1Univ. Of Texas at Dallas.

312.04D Analytical Study on the Cosmological Large-scale Structure in an Accelerating Universe  
Xin Wang  
1Johns Hopkins University.
Wednesday Sessions and Events

312.05 Cosmological Information in Weak Lensing Peaks and Impact of Baryons
Xiuyuan Yang\textsuperscript{1}, Z. Haiman\textsuperscript{2}, M. May\textsuperscript{3}
\textsuperscript{1}Columbia University; Brookhaven National Laboratory, \textsuperscript{2}Columbia University, \textsuperscript{3}Brookhaven National Laboratory.

312.06 Constraining Population-III Stars Using High Redshift Gamma-Ray Sources
Rudy Gilmore\textsuperscript{1}
\textsuperscript{1}SISSA/ISAS, Italy.

312.07 Why We’re Exponents Of Quantifying Large-scale Structure With The Log-density
Mark C. Neyrinck\textsuperscript{1}, B. Falck\textsuperscript{1}, I. Szapudi\textsuperscript{2}, A. Szalay\textsuperscript{1}
\textsuperscript{1}Johns Hopkins Univ., \textsuperscript{2}IfA, University of Hawaii.

313 Solar-mass Stars and Smaller

Wednesday, 10:00am-11:30am, Room 19B

313.00C Chair
Jason S. Kalirai\textsuperscript{1}
\textsuperscript{1}Space Telescope Science Institute.

313.01 The Stellar Activity - Rotation relationship
Nicholas James Wright\textsuperscript{1}, J. J. Drake\textsuperscript{1}, E. E. Mamajek\textsuperscript{1}, G. W. Henry\textsuperscript{1}
\textsuperscript{1}Harvard-Smithsonian Center for Astrophysics.

313.02 A Rotation-Activity Relation for Late-type M Dwarfs
Andrew A. West\textsuperscript{1}, K. L. Weisenburger\textsuperscript{1}, J. Irwin\textsuperscript{1}, B. Wright\textsuperscript{1}, D. Charbonneau\textsuperscript{2}, M. Agueros\textsuperscript{3}, Z. K. Berta\textsuperscript{4}, J. J. Bochanski\textsuperscript{5}, K. R. Covey\textsuperscript{6}, N. M. Law\textsuperscript{6}
\textsuperscript{1}Boston University, \textsuperscript{2}Harvard-Smithsonian Center for Astrophysics, \textsuperscript{3}Columbia University, \textsuperscript{4}Penn State University, \textsuperscript{5}Lowell Observatory, \textsuperscript{6}University of Toronto.

313.03 Metallicities of M Dwarfs Targeted by the MEarth Transiting Planet Survey
Elisabeth Rose Newton\textsuperscript{1}, J. Irwin\textsuperscript{1}, D. Charbonneau\textsuperscript{1}, Z. K. Berta\textsuperscript{1}, B. Rojas-Ayala\textsuperscript{7}, K. Covey\textsuperscript{3}, J. P. Lloyd\textsuperscript{2}
\textsuperscript{1}Harvard University, \textsuperscript{2}Cornell University.

313.04D Hiding in Plain Sight: Nearby Low Proper Motion Stars
Adric R. Riedel\textsuperscript{1}, T. J. Henry\textsuperscript{1}, R. J. White\textsuperscript{1}, E. L. N. Jensen\textsuperscript{1}, I. Song\textsuperscript{1}, N. C. Hambly\textsuperscript{2}, RECONS
\textsuperscript{1}Georgia State Univ., \textsuperscript{2}Swarthmore College, \textsuperscript{3}University of Georgia, \textsuperscript{4}Royal Observatory, Edinburgh, United Kingdom.

313.05 A Uniform Astroseismic Analysis of 22 Solar-type Stars Observed by Kepler
Travis S. Metcalfe\textsuperscript{1}, S. Mathur\textsuperscript{1}
\textsuperscript{1}NCAR.

313.06 Chemical Abundances Of Carbon-enhanced Metal-poor Stars With X-shooter
Catherine R. Kennedy\textsuperscript{1}, T. C. Beers\textsuperscript{2}, B. Nordstrom\textsuperscript{3}, C. Hansen\textsuperscript{4}
\textsuperscript{1}Australian National University, Australia, \textsuperscript{2}Michigan State University, JINA, NOAO, \textsuperscript{3}Niels Bohr Institute, Copenhagen University, Denmark, \textsuperscript{4}ZAH, University of Heidelberg, Germany.

314 Protoplanetary Disks

Wednesday, 10:00am-11:30am, Room 18D

314.00C Chair
Marshall D. Perrin\textsuperscript{1}
\textsuperscript{1}STScI.
Wednesday Sessions and Events

314.01D Magnetorotational-Instability-Driven Accretion in Protoplanetary Disks
Xue-Ning Bai

1Princeton University.

314.02D Observational Constraints on Grain Growth in Protoplanetary Disks
Laura M. Perez

1California Institute of Technology.

314.03 Examining Tidal Interactions in Taurus Pre/Main Sequence Multiples: A Systematic Test of Tidal-Truncation Theory
Robert J. Harris, S. M. Andrews

1Harvard University.

314.04 Spitzer Spectroscopy of Gas in T Tauri Disks
Joan R. Najita, J. Carr, C. Salyk, K. Pontoppidan, G. Blake, E. van Dishoeck

1NOAO, 2NRL, 3STScI, 4Caltech, 5Leiden Observatory, Netherlands.

314.05 Further Characterizing the Planet Forming Region Around V1331 Cyg
Greg Doppmann, J. Najita, J. Carr, J. Graham

1Keck Observatory, 2NOAO, 3NRL, 4UC Berkeley.

314.06 Protoplanetary Disk Masses In The Orion Nebula Cluster from the SMA
Rita Mann

1National Research Council Canada, Canada, 2Institute for Astronomy, Univ. of Hawaii at Manoa.

315 Magnetic Fields in the Formation of Stars and Protoplanetary Disks

Wednesday, 11:40am-12:30pm, Ballroom D

315.00C Chair
Edward B. Churchwell

1Univ. of Wisconsin.

315.01 Magnetic Fields in the Formation of Stars and Protoplanetary Disks
Susana Lizano

1Centro De Radioastronomia Y Astrofisica, Mexico.

316 NASA Town Hall

Wednesday, 12:45pm-1:45pm, Ballroom E

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
Geoffrey Yoder

1NASA HQ.
317 NOAO Town Hall

Wednesday, 12:45pm-1:45pm, Ballroom F

These are exciting times for NOAO, our user community, and our partners. Both new or improved optical spectrometers (Mayall/KOSMOS, Blanco/COSMOS, SOAR/Goodman; and soon LBT/MODS) and infrared spectrometers (Gemini/GNIRS, Gemini/FLAMINGOS-2; and soon LBT/Lucifer and Blanco/TripleSpec) are arriving at facilities with open access via NOAO. The world-class, wide-field optical imager (Blanco/DECam) will enable a major new survey (Dark Energy Survey). Plans are afoot for new access to non-NOAO facilities soon via ReSTAR-2. Looking to the future – a 5000-fiber optical spectrometer (Mayall/BigBOSS) has been proposed to enable another major new survey, NOAO is heavily involved in LSST development, and Gemini/NOAO consolidation is under active discussion. At the same time, NOAO faces increased scrutiny within the context of a NSF Astronomy portfolio review. That review may spark revolutionary change at your national observatory. Come join the NOAO Director and other NOAO staff at the annual NOAO Town Hall for a brief overview presentation and a question-and-answer session.

Chair
David R. Silva¹
¹NOAO.

Superluminous Supernovae

Wednesday 1:30pm-3:30pm, Room 8

Five years ago, a new category of rare but very luminous supernovae was discovered at the University of Texas. Their study has become an intense new cottage industry eliciting a great deal of interest in the supernova community. This splinter meeting will allow the first collective discussion of this new category of explosive events.

Organizer
J. Craig Wheeler¹
¹Univ. of Texas.

Astronomers: Teach Climate Change!

Wednesday, 2:00pm-3:30pm, Room 12B

Do you teach Astronomy? Do you discuss climate change with non-astronomers? The AAS Sustainability Committee invites all AAS members to attend this Splinter Session, which will focus on how astronomers can be better educators about global warming, a subject we understand well but most members of the public do not. Since 40% of US college and university students take an astronomy class, we are in an excellent position to inform the public about this scientific and public policy issue that will increasingly take center stage in the coming decades. The session will focus on practical tools you can use in classes like Astro 100 as well as other public settings. The format will include a simulated debate between astronomers and climate skeptics; short demonstrations of climate change PowerPoint slides appropriate for astronomy classes; and advice on communicating climate change from education experts. Come share your own tips and pick up new ones. Visit http://sustainability.aas.org for more info.

Organizer
James Lowenthal¹
¹Smith College
Astropix/Astronomy Visualization Metadata

Wednesday, 2:00pm-3:30pm, Room 18D

The new Astropix website (astropix.ipac.caltech.edu) offers a new way to find and share astrophysics imagery that is rich in descriptive metadata. In the current state of flat web searches, looking for “M16” is more likely to return rifles than star-forming regions. Shouldn’t there be a better way to get the highest quality press release images in astronomy without filtering through endless misses on a Google search?

The Astronomy Visualization Metadata (AVM) standard for tagging TIFF/JPEG imagery offers a powerful way to capture the rich contextual information associated with public imagery, even including sky coordinates and color information. Astropix is a new site, currently in a public beta release, that offers one-stop shopping for any imagery that has been AVM-tagged. Early AVM adopters, including Chandra, ESO, GALEX, Hubble, Spitzer, and WISE, are already represented in Astropix.

This splinter session will introduce the current and planned functionalities of Astropix (from casual browsing to advanced application development). We will also cover the growing set of AVM tools for image tagging and show how easy it is to add your own archives to Astropix. This service is truly intended to benefit the entire community, including educators, scientists, observatories, museums, developers, as well as the general public.

Organizer
Robert Hurt
{Caltech/Spitzer Science Center

318 Energetic Binary Stars I

Wednesday, 2:00pm-3:30pm, Room 12A

318.00C Chair
Eric M. Schlegel
{Univ. of Texas, San Antonio.

318.01D The Curious Case of LMXB 4U 1820-30: Resonant Trapping and Tidal Dissipation Rate of the White Dwarf Secondary
Snezana Prodan, N. Murray
{CITA/ University of Toronto, Canada.

318.02D Powerful Jet-driven Outflows from Two Bright Microquasars, Circinus X-1 and Cygnus X-1
Paul Sell, S. Heinz
{The University of Wisconsin-Madison.

318.03 Long Term Fermi LAT Observations of LS I 61 303 and LS5039
Richard Dubois, Fermi LAT Collaboration
{SLAC National Accelerator Laboratory.

318.04 A Giant Radio Flare from Cygnus X-3 with Associated Gamma-ray Emission
Anna Szostek, S. Corbel, G. Dubus, Fermi LAT Collaboration, J. A. Tomsick
{Stanford University, Universite Paris Diderot/CEA Saclay, France, Laboratoire d’Astrophysique de Grenoble, Universite J. Fourier, France, SSL/UC Berkeley.
Wednesday Sessions and Events

319 Surveys and Large Programs I
Wednesday, 2:00pm-3:30pm, Room 18A

319.00C Chair
J. Allyn Smith1
1Austin Peay State Univ

319.01 The Southern Hemisphere Standard Star Catalog of PreCam, the Precursor to the Dark Energy Survey
Kyler Kuehn1, Dark Energy Survey
1Argonne National Laboratory.

319.02D AGILITE: An ATA Survey to Characterize the Population of Galactic Radio Transients and Variables
Peter K. G. Williams1, G. C. Bower1
1UC Berkeley.

319.03 New Insights into Radio Transients from the Allen Telescope Array
Steve Croft1, G. C. Bower1, D. Whysong1, Allen Telescope Array Team
1UC Berkeley.

319.04 Polarimetric Calibration of Mimir and the Galactic Plane Infrared Polarization Survey
Dan P. Clemens1, A. Pinnick1, M. Pavel1
1Boston Univ

319.05 WITHDRAWN: Infrared Multi-tiered Survey
Myungshin Im1, IMS team
1Seoul National Univ., Korea, Republic of.

319.06 Campaigns to Monitor Predicted Mesolensing Events
Rosanne Di Stefano1, S. Lepine2, J. Matthews1
1Harvard-Smithsonian CfA, 2American Museum of Natural History.

319.07 ChanPlaNS: The Chandra X-ray Observatory Planetary Nebula Survey
Joel H. Kastner1, R. Montez, Jr.1, ChanPlaNS Team
1RIT Center for Imaging Science.

320 Dust, the ISM and Associated Topics
Wednesday, 2:00pm-3:30pm, Room 19B

320.00C Chair
Geoffrey C. Clayton1
1Louisiana State Univer.

320.01 UV-Visible Laboratory Spectra Of Presolar Oxide And CAI Analogs: Corundum, Spinel, Hibonite, And Mellilites
Karly M. Pitman1, A. M. Hofmeister2, A. K. Speck3
1Planetary Science Institute, 2Washington University - St. Louis, 3University of Missouri - Columbia.

320.02 FUV Signatures of Dusty Galactic Clouds
Erika T. Hamden1, D. Schiminovich1
1Columbia University.

320.03 Classical Novae Blow Smoke Rings: A DIRTY Approach to Modeling Dust Formation
Jillian Bornak1, T. E. Harrison1, K. D. Gordon2
1New Mexico State Univ., 2Space Telescope Science Institute.
320.04 Carbon Dust Production in Nearby Dwarf Spheroidal Galaxies
Gregory C. Sloan1, A. A. Zijlstra2, E. Lagadec3, M. Matsuura4, K. E. Kraemer5, M. A. T. Groenewegen6, I. McDonald7, J. T. van Loon8, J. Bernard-Salas9, P. R. Wood9
1Cornell Univ., 2Univ. Manchester, United Kingdom, 3European Southern Obs., Germany, 4Univ. Coll. London, United Kingdom, 5Boston Coll., 6Royal Obs. Belgium, Belgium, 7Keele Univ., United Kingdom, 8IAS, France, 9Australian National Univ., Australia.

320.05 Probing Tiny Scale Structures Of The Ism Using H I Absorption Spectra
Nirupam Roy1, A. H. Minter1, W. M. Goss1, C. L. Brogan1, P. Dutta2, J. N. Chengalur2, T. J. W. Lazio3
1National Radio Astronomy Observatory, 2National Centre for Radio Astrophysics, India, 3Jet Propulsion Laboratory.

320.06 First Light: Physics of Early Star Formation from the Local Universe
Eric W. Pellegrini1, R. Porter2, P. Stancil2
1University of Michigan, 2University of Georgia Athens.

320.07 WISE Observations of The Evolution of Massive Star Forming Regions
Xavier Koenig1, D. Leisawitz1, D. Benford1, L. Rebull2, D. Padgett1, R. Assef2
1NASA Goddard Space Flight Center, 2Spitzer Science Center/Caltech, 3Jet Propulsion Laboratory, Pasadena.

320.08 Diffuse UV Background Radiation
Richard Conn Henry1, J. Murthy2
1Johns Hopkins Univ., 2Indian Institute of Astrophysics, India.

320.09 Detecting Lyman Alpha Emission from Circum-Galactic and Intergalactic Gas with the Palomar Cosmic Web Imager
Christopher D. Martin1, M. Matuszewski1, P. Morrissey1, S. Rahman1, A. Moore1
1Caltech.

321 AGN, QSO, Blazars VI
Wednesday, 2:00pm-3:30pm, Room 17A

321.00C Chair
Beverley J. Wills1
1Univ. of Texas, Austin.

321.01 A New Determination Of The High-redshift Quasar Luminosity Function To I~25 In The COSMOS Field
Daniel Masters1, P. Capak2, M. Salvato3, F. Civano4, B. Mobasher1, T. Nagao5, J. Trump5, M. Elvis4, N. Scoville2
1University of California, Riverside, 2California Institute of Technology, 3Max Planck Institute for Plasma Physics, Germany, 4Harvard, 5Ehime University, Japan, 6University of California, Santa Cruz.

321.02D Understanding the Nature of Blazars High Energy Emission with Time Dependent Multi-zone Modeling
Xuhui Chen1, G. Fossati1
1Rice University.

321.03D Studying LLAGN Accretion Disks through GRMHD, Monte Carlo Radiative Transport, and Shearing Box Simulations
Guy L. Hilburn1
1Rice University.
Wednesday Sessions and Events

321.04 Sgr A* X-ray Visionary Project --- The First High Resolution X-ray Spectrum of Sgr A* and the Central Parsec
Frederick K. Baganoff¹, M. A. Nowak¹, S. Markoff², Sgr A* X-ray Visionary Project Collaboration
¹MIT Kavli Institute for Astrophysics and Space Research, ²API, University of Amsterdam, Netherlands.

321.05D Correlated Radio And Gamma-ray Variability Of Blazars With The Ovro 40 Meter Telescope Monitoring Program And Fermi-LAT
Walter Max-Moerbeck¹
¹California Institute of Technology.

321.06 Morphologies And SEDs Of Low-redshift Low-ionization Broad Absorption Line QSOs
Mariana S. Lazarova¹, G. Canalizo¹, M. Lacy², A. Sajina³
¹University of California, Riverside, ²NRAO, ³Tufts University.

322 Evolution of Galaxies VI
Wednesday, 2:00pm-3:30pm, Room 19A

322.00C Chair
Ricardo P. Schiavon¹
¹Gemini Observatory.

322.01 Probing Galactic-Scale Outflows and Co-Rotating Halo Gas Towards a Compact Massive Galaxy
Aleksandar M. Diamond-Stanic, A. Coil², J. Moustakas², C. Tremonti³, R. Hickox⁴, A. Mendez⁵, A. Robaina⁶, G. Rudnick⁶, P. Sell³
¹CGE Fellow, University of California, San Diego, ²University of California, San Diego, ³University of Wisconsin, ⁴Dartmouth College, ⁵University of Barcelona, Spain, ⁶University of Kansas.

322.02D Mass and Environment as Drivers of Galaxy Evolution: Simplicity and its Consequences
Yingjie Peng¹
¹ETH Zurich, Switzerland.

322.03 Thinking Outside of the Box: First Light of the Millennium Run Observatory
Roderik Overzier¹, G. Lemson², B. Henriques³, R. Angulo²
¹University of Texas at Austin, ²Max-Planck-Institute for Astrophysics, Germany.

322.04D Exploring The Gas Cycle In High-redshift Galaxies: A Joint Effort Of Theory And Observations
Michele Fumagalli¹
¹UCSC.

322.05D Spitzer Irac Identification Of Herschel-atlas Spire Sources
Sam Kim¹, J. Wardlow¹, A. Cooray¹, H-ATLAS team
¹UC Irvine.

322.06 A Tale of Giants and Dwarfs: How the Red Sequence in Clusters Grew Over The Last 9.5 Gyr
Gregory Rudnick¹, K. Tran², C. Papovich²
¹University of Kansas, ²Texas A&M University.

323 Spiral Galaxies II
Wednesday, 2:00pm-3:30pm, Room 18B

323.00C Chair
Jeffrey D. Kenney¹
¹Yale Univ
323.01  The Role of Large-scale Bars on Central Star Formation and AGN Activity
Seulhee Oh1, K. Oh1, S. K. Yi1
1Yonsei University, Korea, Republic of.

323.02D  Formation and Evolution of Circumnuclear Starburst rings
Tessel Van Der Laan1, E. Schinnerer1, S. Garcia-Burillo2, F. Combes3, T. Boeker4, E. Emsellem5, F. Boone6, G. Dumas7, L. Hunt8
1MPIA, Germany, 2OAN, Spain, 3LERMA, France, 4ESA ESTEC, Netherlands, 5ESO, Germany, 6Université de Toulouse, France, 7IRAM, France, 8INAF, Italy.

323.03  Pitch Angle Restriction in late Type Spiral Galaxies
Maria de Los Angeles Perez Villegas1, B. Pichardo1, E. Moreno1, A. Peimbert1, H. M. Velazquez1
1IA-UNAM, Mexico.

323.04D  Observational Evidence Against Rigid Spiral Patterns in Galaxies
Jason Speights1, D. Westpfahl1
1New Mexico Tech.

323.05  Cosmological Simulations: The Effect Of ISM Heating And Cooling On The
Central Mass Distribution Of Spiral Galaxies
Charlotte Christensen1
1University of Arizona.

323.06  Feeding Galaxies: Cold Accretion Through Warps
David J. Radburn-Smith1, R. Roskar2, R. de Jong1, V. Debattista4, J. Dalcanton1
1University of Washington, 2University of Zurich, Switzerland, 4AIP, Germany, 3University of Central Lancashire, United Kingdom.

323.07  The Detailed Chemical History of M31
Janet E. Colucci1, R. A. Bernstein1
1University of California, Santa Cruz.

324 Cosmology and Galaxy Formation From SDSS-III/BOSS
Wednesday, 2:00pm-3:30pm, Room 18C

The SDSS-III’s Baryon Oscillation Spectroscopic Survey (BOSS) is a 6-year effort to map the spatial distribution of luminous galaxies and quasars and probe the inter-galactic medium. The goals of the survey are to constrain the characteristic scale imprinted by baryon acoustic oscillations in the early universe, the growth of structure through redshift space distortions, the matter power spectrum and the evolution of massive galaxies and quasars. By January 2012 BOSS will have completed its third year of observations and have numerous scientific results to share with the community.

BOSS will continue the SDSS tradition of public data releases. This session will be highlighting results using the first 750,000 spectra, to be released in Summer 2012.

324.00C  Chair
David J. Schlegel1
1LBNL.
324.01 Cosmology with Large Scale Structure


1Lawrence Berkeley Lab/ Carnegie Mellon University, 2Yale University, 3University of Portsmouth, United Kingdom, 4University of California, Berkeley, 5University of Valencia/ Institut De Ciencies D'Espai, Spain, 6University of Wyoming, 7Institute of Advanced Studies, 8New York University, 9Centro de Estudios de Fisica del Cosmos de Aragon, Spain, 10Instituto De Fisica Corpuscular, University of Valencia, Spain, 11Instituto de Astrofisica de Andalucia, Spain, 12Lawrence Berkeley Lab, 13University of California Berkeley, 14Penn State University, 15Ohio State University, 16Princeton University, 17Brookhaven National Laboratory, 18Institut De Ciencies D'Espai, Spain, 19Ohio State University, 20Apache Point Observatory, 21Laboratorio Interinstitucional de e-Astronomia, Brazil.

324.02 The 3D Clustering of BOSS DR9 Galaxies


1University of Portsmouth, United Kingdom, 2Vanderbilt University, 3New York University, 4University of Utah, 5Apache Point Observatory, 6Observatorio Nacional, Brazil, 7Yale University, 8Harvard University, 9Case Western Reserve University, 10Universite Paris-Diderot, France, 11Centro de Estudios de Fisica del Cosmos de Aragon, Spain, 12Lawrence Berkeley National Laboratory, 13Princeton University, 14Max Planck-Institut fur Astrophysik, Germany, 15University of Wyoming, 16Instituto de Astrofisica de Andalucia, Spain, 17Pennsylvania State University, 18University of Arizona.

324.03 Dense Sampling and Large Volume: The Structure of the Intergalactic Medium from 50,000 SDSS3 BOSS Quasar Absorption Spectra


1Carnegie Mellon University, 2Barcelona, Spain, 3Paris Diderot, France, 4Lawrence Berkeley Lab, 5University of Arizona, 6University of Washington, 7University of Utah, 8Univ. Paris 13, France, 9Apache Point Observatory, 10APC, France, 11Princeton University, 12DSM/IRFU/SPP (CEA), France, 13AIP Potsdam, Germany, 14Trieste Observatory, Italy, 15CEA, Paris, France, 16IEEC, Spain, 17APC - Paris, France, 18CEA Saclay, France, 19University of California Irvine, 20Yale University, 21Johns Hopkins University, 22University of Barcelona, Spain, 23CEA, Saclay, France, 24University of Wyoming, 25IAP, Paris, France, 26Ohio State University, 27Brookhaven National Lab, 28University of Pittsburgh, 29University of California, Berkeley.
Wednesday Sessions and Events

324.04 Clustering Near the Epoch of Peak Quasar Activity with SDSS-III/BOSS
1University of Wyoming, 2CEA Saclay, France, 3Lawrence Berkeley National Laboratory, 4The Institute for Advanced Study, 5Steward Observatory, 6Carnegie Mellon University, 7Universitat de Barcelona, Spain, 8Universite Paris, France, 9The Pennsylvania State University, 10Princeton University, 11The Ohio State University, 12UC Berkeley, 13Case Western Reserve University.

324.05 Spectroscopic Properties and Chemical Evolution of BOSS Galaxies
Daniel Thomas1, O. Steele1, C. Maraston1, J. Johansson1, A. Beifiori1, J. Pforr1, G. Stroembaeck1, C. Tremonti2, D. Wake3, R. Yan4
1University of Portsmouth, United Kingdom, 2University of Wisconsin-Madison, 3Yale University, 4New York University.

324.06 Overview of New Results from the Stripe 82 Equatorial Field
Alexie Leauthaud1, M. White2, D. Schlegel1, J. Kneib3, L. van Waerbeke4, M. Makler5, N. P. Ross1, SDSS-III/BOSS collaboration, CS82 collaboration
1LBNL, 2Berkeley, 3LAM, France, 4UBC, Canada, 5ICRA/CBPF - LIneA, Brazil.

325 Careers in Media for Scientists
Wednesday, 2:00pm-3:30pm, Ballroom G
A panel of experienced science journalists will discuss careers in the media that accommodate persons trained in Astronomy or other sciences up to the Ph.D.
David Aguilar, Harvard-Smithsonian Center for Astrophysics
Deborah Byrd, EarthSky: A Clear Voice for Science
Richard T. Fienberg, American Astronomical Society
James Glanz, The New York Times
Laura Helmuth, Smithsonian National Magazine

325.00C Chair
Stephen P. Maran1
1American Astronomical Society.

326 Extrasolar Planets I
Wednesday, 2:00pm-3:30pm, Ballroom F

326.00C Chair
Peter R. Lawson1
1JPL.

326.01 Ground-based Infrared Spectroscopy of the Extremely Hot Jupiter WASP-12b
Ian J. M. Crossfield1, B. Hansen1, T. Barman1
1UC Los Angeles, 2Lowell Observatory.

326.02 Near-infrared Thermal Emission of hot Jupiters
Bryce Croll1
1M.I.T

326.03 Planet-Disk Interactions on a Moving Mesh
Diego Munoz1
1Harvard University.
Wednesday Sessions and Events

326.04  Planet Distribution Evolution Towards Destruction By Roche Lobe Overflow
Stuart F. Taylor
1National Tsing Hua University, Taiwan.

326.05D Hot Jupiter Upper Atmospheres: Model Transit Signals in Lyman-alpha for HD 209458b
George B. Trammell1, P. Arras1, Z. Li1
1University of Virginia.

326.06  Tidal Venuses: Triggering a Climate Catastrophe via Tidal Heating
Rory Barnes1, K. Mullins1, C. Goldblatt2, V. S. Meadows1, J. F. Kasting3
1University of Washington, 2University of Victoria, Canada, 3Pennsylvania State University.

326.07  Uniform Modeling of the Kepler Objects of Interest Catalog
Jason Rowe1, E. V. Quintana1, T. S. Barclay2, S. T. Bryson3, J. L. Christiansen1,
F. R. Mullally1, S. E. Thompson1, Kepler Team
1NASA Ames/SETI Institute, 2NASA Ames, 3NASA Ames Research Center.

326.08  Direct Detection of Exoplanets with Polarimetry
Sloane Wiktorowicz1, G. Laughlin1
1University of California, Santa Cruz.

327 Very Young Stars and Accretion Disks
Wednesday, 2:00pm-3:30pm, Ballroom E

327.00C Chair
Alycia J. Weinberger1

327.01  Outflows from Thick, Turbulent Accretion in High Accretion-Rate Protostellar Systems
Peter T. Williams1
1Agilent Technologies.

327.02  X-raying A Cold, Dark Dragon To Find A Hot, Glowing Heart
Matthew S. Povich1, L. K. Townsley1, W. Orbin1
1Penn State University.

327.03D Emission from Hot Gas in Pre-Main Sequence Objects: The Accretion Shock and the Inner Disk
Laura Ingleby1
1University of Michigan.

327.04D The Tail-end of Primordial Disk Depletion - a Multiwavelength Gas and Dust Survey in Upper Scorpius
Geoffrey Mathews1
1University of Hawaii.

327.05  The Star-formation History and Accretion Disk Fractionamong the Low-Mass Members of the Scorpius-Centaurus OB Association
Mark Pecaut1, E. E. Mamajek1
1University of Rochester.

327.06D Protostellar Luminosity Functions in 11 Diverse Star Forming Environments
Erin Kryukova1, S. T. Megeath1, R. Gutermuth2, J. Pipher3, T. S. Allen1, L. E. Allen4,
P. C. Myers5, J. Muzerolle6, Cygnus-X Legacy Team
1University of Toledo, 2FCAD/Smith College, University of Massachusetts, 3University of Rochester, 4National Optical Astronomy Observatories, 5Harvard-Smithsonian Center for Astrophysics, 6Space Telescope Science Institute.
328 Instrumentation: Space Missions
Wednesday, 2:00pm-3:30pm, Room 17B

328.00C Chair
George Sonneborn¹
¹NASA's GSFC.

328.01D Optimal Electric Field Estimation and Broadband Control for Coronagraphy
Tyler Dean Groff¹
¹Princeton University.

328.02 Progress In A New Reflective Coating From The Far-ultraviolet To The Near-infrared
Matthew N. Beasley¹, H. Greer², S. Nikzad²
¹University of Colorado at Boulder, CASA, ²Jet Propulsion Laboratory.

328.03D NuSTAR: Unveiling the Hard X-ray Universe
Varun Bhalerao¹, NuSTAR team
¹Caltech.

328.04 The Advanced X-ray Spectroscopic Imaging Observatory
Jay A. Bookbinder¹, R. Smith¹, M. Garcia¹, H. Tananbaum¹, N. White², R. Petre³, A. Ptak⁴, A. Hornschemeier⁴, W. Zhang⁵, S. Bandler⁵, G. Daelemans⁵, M. Bautz¹, R. Hielmann¹, R. McEntaffer¹, J. Bregman², P. Reid¹
¹Smithsonian Astrophysical Obs., ²NASA/GSFC, ³MIT, ⁴University of Iowa, ⁵University of Michigan.

328.05 The Dark Ages Radio Explorer (DARE): First Stars, First Galaxies, and First Black Holes
Jack O. Burns¹
¹Univ. of Colorado at Boulder.

328.06 Reducing the Read Noise of the James Webb Near Infrared Spectrograph by Improved Reference Sampling & Subtraction (IRS-square)
Bernard J. Rauscher¹, S. H. Moseley¹, R. G. Arendt¹, D. Fixsen¹, D. Lindler², M. Loose³
¹NASA's GSFC, ²Sigma Space, Inc., ³Markury Scientific.

328.07 Ultra-Fast Flash Observatory (UFFO) For Early Photon Measurements From Gamma Ray Bursts
Il Park¹, B. Grossan¹, E. Linder¹, G. F. Smoot⁴, UFFO Collaboration
¹Ewha W. University, Korea, Republic of, ²UC Berkeley Space Sciences Laboratory, ³Lawrence Berkeley Lab, UC Berkeley, ⁴UC Berkeley.

329 Galaxy Evolution in the Cluster Environment
Wednesday, 2:00pm-3:30pm, Room 16B

329.00C Chair
Kim-Vy Tran¹
¹Texas A&M University.

329.01 Assembly of the Red Sequences in Galaxy Clusters
Gregory F. Snyder¹, M. Brodwin², C. M. Mancone², G. R. Zeimann³, S. A. Stanford⁴, A. H. Gonzalez⁵, D. Stern⁵, P. R. H. Eisenhardt⁶
¹Harvard University, ²University of Missouri-Kansas City, ³University of Florida, ⁴University of California-Davis, ⁵Jet Propulsion Laboratory, California Institute of Technology.
Wednesday Sessions and Events

329.02 Post-merger Signatures Of Red-sequence Galaxies In Rich Abell Clusters At Z~0.1
Yun-Kyeong Sheen1, S. K. Yi1, C. H. Ree2
1Yonsei University, Korea, Republic of; 2Korea Astronomy and Space Science Institute, Korea, Republic of.

329.03D Star and Filament Formation; Signatures of AGN Feedback in Brightest Cluster Galaxies
Rebecca Canning1
1University of Cambridge, United Kingdom.

329.04D Illuminating X-ray Bright and Faint Galaxy Groups: Global Properties and Galaxy Populations at Intermediate Redshift
Jennifer L. Connelly1
1Max Planck Institute for Extraterrestrial Physics, Germany.

329.05 The Stellar Mass Assembly of Fossil Galaxies
Craig Harrison1, C. Miller1, J. Richards2, E. Lloyd-Davies3, B. Hoyle4, K. Romer5, N. Mehrtens3, M. Hilton3, J. Stott3, D. Capozzi7, C. Collins3
1University of Michigan, 2University of California, Berkeley, 3University of Sussex, United Kingdom, 4University of Barcelona, Spain, 5University of KwaZulu-Natal, South Africa, 6University of Durham, United Kingdom, 7Liverpool John Moores University, United Kingdom.

329.06 The Virgo Cluster Through The AGES
Rhys Taylor1, J. I. Davies2, R. F. Minchin1
1Arecibo Observatory, 2Cardiff University, United Kingdom.

329.07 Applying Social Networking and Clustering Algorithms to Galaxy Groups in ALFALFA
Ali Bramson1, E. M. Wilcots1
1University of Wisconsin-Madison.

330 Cool Dwarfs, Brown Dwarfs

Wednesday, 2:00pm-3:30pm, Room 16A

330.00C Chair
Eric E. Mamajek1
1University of Rochester.

330.01 The Late-T Dwarf Population Revealed by WISE
Gregory N. Mace1, I. S. McLean1, J. D. Kirkpatrick2, WISE Brown Dwarf Team
1UCLA, 2IPAC/Caltech.

330.02 The Masses and Metallicities of Kepler’s Planet-hosting M Dwarfs
John A. Johnson1, S. Pineda1, M. Bottom1
1Caltech.

Barbara Denisse Rojas Ayala1, K. R. Covey2, J. P. Lloyd3, P. S. Muirhead4
1Cornell University and American Museum of Natural History, 2Cornell University and Lowell Observatory, 3Cornell University, 4California Institute of Technology.

330.04 Accurate Stellar Parameters of Low-Mass Kepler Planet Hosts
Philip Muirhead1, K. Hamren2, E. Schlawin1, B. Rojas-Ayala4, K. Covey3, J. Lloyd3
1California Institute of Technology, 2University of California, Santa Cruz, 3Cornell University, 4American Museum of Natural History.
330.05D Testing Low Mass Stellar Models with M-dwarf Eclipsing Binaries from SDSS Stripe 82
Waqas Bhatti¹, H. C. Ford¹, L. D. Petro², M. W. Richmond³
¹Johns Hopkins University, ²Space Telescope Science Institute, ³Rochester Institute of Technology.

330.06D Kinematics, Colors, And Ages Of Ultracool Dwarfs
Sarah J. Schmidt¹, S. L. Hawley¹
¹University of Washington.

331 Cosmology II
Wednesday, 2:00pm-3:30pm, Ballroom D

331.00C Chair
John Wise¹
¹Georgia Institute of Technology.

331.01 Dark Energy Survey Supernovae: Overview and Forecast of Cosmological Results
Joseph P. Bernstein¹, Dark Energy Survey Collaboration
¹Argonne National Lab.

331.02 Redshift Determination for the DES Supernova Survey
Eve Kovacs¹, Dark Energy Survey Collaboration
¹Argonne National Laboratory.

331.03 Photometric Typing For The Dark Energy Survey Supernovae
Stephen Kuhlmann¹
¹Argonne National Laboratory.

331.04 The Supernova Component Of The Des Survey: Forecasts Of Cosmological Constraints
Rahul Biswas¹, Dark Energy Survey Collaboration
¹Argonne National Laboratory.

331.05D Constraining Interlopers in High Redshift Samples Using Cross-correlations
Daniel Matthews¹
¹University of Pittsburgh.

331.06 The Most Powerful Cosmic Telescopes for Constraining the Faint-end Slope of the z > 7 Luminosity Function
Stephen Ammons¹, K. C. Wong², A. I. Zabludoff³, C. R. Keeton⁴, D. French²
¹Lawrence Livermore National Laboratory, ²University of Arizona, ³Rutgers University.

Data Analysis for Kepler Science: A Tutorial
Wednesday, 2:00pm-4:00pm, Room 8

Over the last 12 months, innovations in the data archived by the Kepler mission and data analysis software to exploit that data have eased the burden of the Kepler community. As a consequence, the yield of accessible science within the mission archive has increased dramatically over this period, particularly over the previously troublesome timescales of stellar rotation and starspots activity. In this splinter session the Kepler Guest Observer Office will demonstrate the methods developed to re-extract new aperture light curves from pixel level data and separate the effects of systematic noise from the intrinsic astrophysical signal of the target.

Organizer
Martin D. Still¹
¹NASAAmes Research Center.
Invited Session 332 Galaxy Formation Star-by-Star: the View from the Milky Way

Wednesday, 3:40pm-4:30pm, Ballroom D

332.00C Chair
Edward B. Churchwell¹
¹Univ. of Wisconsin.

332.01 Galaxy Formation Star-by-star: The View From The Milky Way
Kathryn V. Johnston¹
¹Columbia Univ.

Invited Session 333 Star Formation in Galaxy Clusters Over the Past 10 Billion Years

Wednesday, 4:30pm-5:20pm, Ballroom D

333.00C Chair
Nicholas B. Suntzeff¹
¹Texas A&M University.

333.01 Star Formation in Galaxy Clusters Over the Past 10 Billion Years
Kim-Vy Tran¹
¹Texas A&M University.

Proposing to Use the NRAO Telescopes: ALMA

Wednesday, 5:30pm-7:30pm, Room 8

We will present practical introductions to proposing for time on the four world-class facilities operated by NRAO: the Atacama Large Millimeter/submillimeter Array (ALMA), the Expanded Very Large Array (EVLA), the Green Bank Telescope (GBT), and the Very Long Baseline Array (VLBA). The session will focus on capabilities available for the February 2012 (EVLA,GBT,VLBA) and spring 2012 (ALMA) proposal deadlines. We will introduce these capabilities, demonstrate key proposal preparation software, and go over the main technical considerations to write a feasible proposal for each telescope. We will also give a short introduction to the CASA software package, highlighting its utility to simulate interferometer observations. In parallel, staff from each facility will be available to consult with users at the NRAO booth in the exhibit hall. The schedule of presentations will be: Wednesday 11 January, ALMA, 5:30pm-7:30pm; Thursday 12 January, EVLA and VLBA, 9:30am-11:30am; Thursday 12 January, GBT, 12:45pm-1:45pm; Thursday 12 January, CASA, 1:45pm-2:45pm. Each session will involve Q&A and one-on-one consultation with NRAO staff.

Organizer
Mark T. Adams¹
¹NRAO.

Graduate Student Networking Reception

Wednesday, 6:00pm-7:00pm, Salon B, Hilton Austin

Graduate students and those hoping to recruit them for employment in research, academia or industry are welcome to attend this evening networking event. The chair of the Employment Committee will be present to discuss the activities of the employment committee and how graduate students can benefit from them as well as briefly introducing the recruiters present. Registration is required, and is free of charge to graduate students and recruiters through the meeting registration form. Refreshments will be provided.
Closing Reception
Wednesday, 6:30pm-8:00pm, Grand Ballroom, Hilton Austin
Mingle, eat, and drink as we bid farewell to the 219th AAS Meeting.

“The City Dark” Film Screening
Wednesday, 8:00pm-9:30pm
THE CITY DARK is a feature documentary about light pollution and the disappearing night sky. It premiered in competition at the 2011 South by Southwest Film Festival, where it won the Jury Prize for Best Score/Music. After moving to light-polluted New York City from rural Maine, filmmaker Ian Cheney asks: “Do we need the dark?” Exploring the threat of killer asteroids in Hawai’i, tracking hatching turtles along the Florida coast, and rescuing injured birds on Chicago streets, Cheney unravels the myriad implications of a globe glittering with lights—including increased breast cancer rates from exposure to light at night, and a generation of kids without a glimpse of the universe above. Featuring stunning astrophotography and a cast of eclectic scientists, philosophers, historians, and lighting designers, THE CITY DARK is the definitive story of light pollution and the disappearing stars.
334 The Solar System

Wednesday, 9:00am-6:30pm, Exhibit Hall

334.01 When Oort Clouds Collide
Catherine Gosmeyer¹, S. Levine²
¹Indiana University, ²Lowell Observatory.

334.02 Lsst As A New Probe Of The Oort Cloud
Michael Solontoi¹, N. Kaib²
¹Adler Planetarium, ²Queen’s University, Canada.

334.03 Searching for Faint Kuiper Belt Objects in HST Archival Data
Daniel Feldman¹, C. Fuentes², D. Trilling²
¹College of Staten Island, ²Northern Arizona University.

334.04 Identification, Calculation Of The Three Dimensional Orbit, And Flux Of Asteroid 2007 TD14
Vincent Pereira¹, E. Martin², J. Millan²
¹Freeport Public Schools, ²Freeport High School.

334.05 Overview of Asteroid Threat Mitigation Activities at LLNL
Kirsten Howley¹, T. Antoun¹, D. Dearborn¹, J. Elliott¹, S. Gibbard¹, E. Herbold¹, I. Lomov¹, R. Managan¹, A. Miles¹, P. Miller¹, M. Owen¹, J. Wasem¹, O. Vorobiev¹
¹Lawrence Livermore National Laboratory.

334.06 Classification of Asteroid 9983 Rickfienberg using Spectral Photometry
Coty Tatge¹, D. Arion¹, R. Fienberg²
¹Carthage College, ²American Astronomical Society.

334.07 Lunar Reconnaissance Orbiter (LRO) Lyman Alpha Mapping Project (LAMP) Maps of the Permanently Shaded Regions (PSR) at the Lunar Poles
Amanda J. Bayless¹, K. D. Retherford¹, G. R. Gladstone¹, S. A. Stern², A. F. Egan², P. F. Miles¹, J. W. Parker², D. E. Kaufmann², D. G. Horvath¹, T. K. Greathouse¹, M. H. Versteeg¹, A. J. Steffi², J. Mukherjee¹, M. W. Davis¹, D. C. Slater¹, P. M. Rojas¹, P. D. Feldmann¹, D. M. Hurley¹, W. R. Pryor³, A. R. Hendrix⁶
¹Southwest Research Institute, San Antonio, ²Pisgah astronomical Research Institute, ³Pisgah Astronomical Research Institute.

334.08 Analysis Of The Morphology Of Comets Using Photometry: C/2009P1 Garrad And P1/Halley
Herbert Mehner⁴, J. Cline², M. Castelaz³
¹Massachusetts Institute of Technology, ²Pisgah astronomical Research Institute, ³Pisgah Astronomical Research Institute.

334.09 WITHDRAWN: Crystalline Silicates in the Dust of Oort Cloud Comet C/2009 P1 (Garradd)
David Emerson Harker¹, C. E. Woodward³, M. S. Kelley⁴, M. L. Sitko⁴, R. W. Russell⁵
¹UC, San Diego, ²U. of Minnesota, ³U. of Maryland, ⁴U. of Cincinnati, ⁵The Aerospace Corporation.

334.10 The Phase Function of Main-Belt Comet P/2008 R1 (Garradd)
Eric M. MacLennan¹, H. Hsieh²
¹Northern Arizona University, ²Institute for Astronomy
334.11 The Influence of Giant Planet Mass on Long-Period Comet Flux
Alexia Lewis\textsuperscript{1}, T. Quinn\textsuperscript{1}
\textsuperscript{1}University of Washington.

334.12 A Comparison of 2D and 3D RAGE Hydrocode Simulations of Effective Mitigation of Porous PHO Objects
Robert Weaver\textsuperscript{1}, W. Dearholdt\textsuperscript{1}
\textsuperscript{1}LANL.

334.13 Modelling Injection of Short-Lived Radioisotopes into a Structured Pre-Solar Cloud
Matthew D. Goodson\textsuperscript{1}, F. Heitsch\textsuperscript{1}
\textsuperscript{1}UNC-Chapel Hill.

334.14 Investigating Chemical Compositions of Select Saturnian Satellites via Mosaicking of Cassini VIMS Observations.
Laura Hosmer\textsuperscript{1}, C. Dalle Ore\textsuperscript{2}, R. Mastrapa\textsuperscript{2}, A. Speck\textsuperscript{1}
\textsuperscript{1}University of Missouri-Columbia, \textsuperscript{2}SETI Institute, NASA Ames Research Center.

334.15 Exploring Frontal Events on Mars Using MRO MARCI Images
Jordan D. Wheeler\textsuperscript{1}, H. Wang\textsuperscript{2}
\textsuperscript{1}University of Missouri - Columbia, \textsuperscript{2}AMP, SAO, Cambridge.

335 The BigBOSS Multi-Object Spectrograph on the Mayall Telescope
Wednesday, 9:00am-6:30pm, Exhibit Hall

335.01 Measuring neutrino properties with BigBOSS
Anze Slosar\textsuperscript{1}, P. McDonald\textsuperscript{2}, BigBOSS team
\textsuperscript{1}Brookhaven National Lab, \textsuperscript{2}Lawrence Berkeley National Lab.

335.02 The BigBOSS Dark Energy Figure of Merit
Patrick McDonald\textsuperscript{1}, BigBOSS Collaboration
\textsuperscript{1}LBNL/BNL.

335.03 Millions of z>0.6 Luminous Red Galaxies from BigBOSS + WISE
Jeffrey Newman\textsuperscript{1}, T. Licquia\textsuperscript{1}, N. Mostek\textsuperscript{2}, K. Barbary\textsuperscript{2}, A. Stanford\textsuperscript{1}, A. Dey\textsuperscript{1}, J. Kneib\textsuperscript{1}, M. Levi\textsuperscript{2}, D. Schlegel\textsuperscript{2}, BigBOSS Team
\textsuperscript{1}U. Pittsburgh / Pitt-PAC, \textsuperscript{2}UC Davis, \textsuperscript{3}NOAO, \textsuperscript{4}OAMP, France.

335.04 What You Can Do with Millions of Spectra: Galaxy Evolution with BigBOSS
Adam S. Bolton\textsuperscript{1}, G. Rudnick\textsuperscript{2}, E. F. Bell\textsuperscript{3}, BigBOSS collaboration
\textsuperscript{1}University of Utah, \textsuperscript{2}University of Kansas, \textsuperscript{3}University of Michigan.

335.05 BigBOSS - A Proposed Stage IV Baryon Acoustic Oscillation Experiment at the KPNO Mayall 4-m Telescope
Chris Bebek\textsuperscript{1}, BigBOSS Collaboration
\textsuperscript{1}LBNL.

335.06 Optical Fibre Connection Performance Investigation for BigBOSS
Claire Poppett\textsuperscript{1}, J. Edelstein\textsuperscript{1}, M. Sirk\textsuperscript{2}, A. M. Vanderburg\textsuperscript{2}
\textsuperscript{1}Lawrence Berkeley National Lab, \textsuperscript{2}Silver Space Sciences Lab, UC Berkeley.

335.07 Integration of the BigBOSS Instrument with the Mayall 4m Telescope
Robert Besuner\textsuperscript{1}, BigBOSS Collaboration
\textsuperscript{1}UC Berkeley/Space Sciences Lab.
335.08 BigBOSS Optical System
Michael Sholl\textsuperscript{1}, BigBOSS Collaboration

\textsuperscript{1}University of CA Berkeley.

335.09 Thermo-Mechanical Design of the BigBOSS Prime Focus Corrector
Paul Perry\textsuperscript{1}, C. Bebek\textsuperscript{1}, R. Besuner\textsuperscript{2}, J. Edelstein\textsuperscript{2}, P. Jelinsky\textsuperscript{2}, R. Lafever\textsuperscript{1}, C. Schenk\textsuperscript{2}, M. Sholl\textsuperscript{1}, J. Silber\textsuperscript{1}

\textsuperscript{1}LBNL, \textsuperscript{2}UC Berkeley Space Sciences Laboratory.

335.10 Practical Spectro-Perfectionism in SDSS-III
Stephen J. Bailey\textsuperscript{1}, A. Bolton\textsuperscript{2}, J. Brownstein\textsuperscript{2}, T. Kisner\textsuperscript{1}, P. Pandey\textsuperscript{2}, D. Schlegel\textsuperscript{1}

\textsuperscript{1}LBNL, \textsuperscript{2}University of Utah.

335.11 R-Theta Fiber Positioner Study For The BigBOSS Instrument
C. Schenk\textsuperscript{1}, Joseph H. Silber\textsuperscript{2}, Z. Zhou\textsuperscript{2}, R. L. Post\textsuperscript{2}, M. D. Cepe\textsuperscript{2}

\textsuperscript{1}Space Sciences Laboratory (SSL), UC Berkeley, \textsuperscript{2}Lawrence Berkeley National Laboratory (LBNL).

335.12 The BigBOSS QSO Pilot Survey
Adam D. Myers\textsuperscript{1}, N. Palanque-Delabrouille\textsuperscript{2}, D. J. Schlegel\textsuperscript{3}, C. Yeche\textsuperscript{3}, E. Aubourg\textsuperscript{3}, S. Bailey\textsuperscript{4}, A. Dey\textsuperscript{3}, S. Eftekhارzadeh\textsuperscript{1}, X. Fan\textsuperscript{5}, C. Magneville\textsuperscript{6}, I. Paris\textsuperscript{5}, P. Petitjean\textsuperscript{6}, N. P. Ross\textsuperscript{3}

\textsuperscript{1}University of Wyoming, \textsuperscript{2}CEA-Saclay, France, \textsuperscript{3}Lawrence Berkeley National Lab, \textsuperscript{4}NOAO, \textsuperscript{5}University of Arizona, \textsuperscript{6}Univesite Paris, France.

335.13 Emission Line Galaxies for BigBOSS
Nick J. Mostek\textsuperscript{1}, K. Barbary\textsuperscript{a}, A. Dey\textsuperscript{b}, R. Kennedy\textsuperscript{c}, A. Kim\textsuperscript{d}, J. Kneib\textsuperscript{e}, J. Newman\textsuperscript{f}, P. Nugent\textsuperscript{g}, N. Padmanabhan\textsuperscript{h}, D. Schlegel\textsuperscript{3}, BigBOSS Collaboration

\textsuperscript{1}UC Berkeley / Space Sciences Laboratory, \textsuperscript{2}Lawrence Berkeley National Laboratory, \textsuperscript{3}National Optical Astronomy Observatory, \textsuperscript{4}University of Pittsburgh, \textsuperscript{5}Yale University.

335.14 The Delivered Image Quality with the MOSAIC Cameras at the Kitt Peak 4m Mayall and Cerro Tololo 4m Blanco Telescopes
Arjun Dey\textsuperscript{1}, F. Valdes\textsuperscript{1}

\textsuperscript{1}NOAO.

335.15 Spanish Participation In The Bigboss Project: Focal Plate And Fiber Positioner Design And Prototype
Francisco Prada\textsuperscript{1}

\textsuperscript{1}Instituto De Astrofisica De Andalucia (CSIC), Spain.

335.16 Spectroscopic Observation Of Emission Line Galaxies at z~1 With The Sloan Telescope: Implications for Future Surveys
Johan Comparat\textsuperscript{1}, J. Kneib\textsuperscript{1}, S. Escoffier\textsuperscript{2}, A. Ealet\textsuperscript{1}, J. zoubian\textsuperscript{1}, F. Lamareille\textsuperscript{3}, D. Schlegel\textsuperscript{3}, BOSS Collaboration, BigBOSS Collaboration

\textsuperscript{1}LAM/CNRS, France, \textsuperscript{2}CPPM/CNRS, France, \textsuperscript{3}IRAP/CNRS, France, \textsuperscript{4}LBNL Berkeley.

335.17 Optical Fiber Systems for the BigBOSS Instrument
Jerry Edelstein\textsuperscript{1}, J. R. Allington-Smith\textsuperscript{2}, R. W. Besuner\textsuperscript{2}, C. J. Bebeck\textsuperscript{1}, P. J. Jelinsky\textsuperscript{1}, R. E. Lafever\textsuperscript{2}, G. J. Murray\textsuperscript{2}, C. Poppett\textsuperscript{1}, M. J. Sholl\textsuperscript{1}, J. H. Silber\textsuperscript{1}, C. Schenk\textsuperscript{1}

\textsuperscript{1}University of California, \textsuperscript{2}Durham University, United Kingdom, \textsuperscript{3}Lawrence Berkeley National Lab
336 Large Scale Structure, Cosmic Distance Scale
Wednesday, 9:00am-6:30pm, Exhibit Hall

336.01 The 6dFGS Peculiar Velocity Field
Chris M. Springob1, C. Magoulas2, M. Colless1, J. Mould1, P. Erdogdu4, D. H. Jones1, J. Lucey6, L. Campbell7, A. Merson6, T. Jarrett6
1Australian Astronomical Observatory, Australia, 2University of Melbourne, Australia, 3Swinburne University of Technology, Australia, 4University College London, United Kingdom, 5Monash University, Australia, 6University of Durham, United Kingdom, 7University of Western Kentucky, 8Spitzer Science Center, California Institute of Technology.

336.02 Cosmic Voids As Standard Rulers For Cosmology
Guilhem Lavaux1, B. D. Wandelt2
1University of Waterloo, Canada, 2UPMC, Universite Paris 06 / Institut d’Astrophysique de Paris, France.

336.03 Characterizing Cosmic Voids in Large Scale Simulations
Ali Snedden1, L. Phillips1
1University of Notre Dame.

336.04 Power Spectrum Forecasts for Lyα Forest Baryon Acoustic Oscillation Experiments Using a GPU Based Semi-Analytical Model
Bradley Greig1, J. S. Bolton1, J. S. B. Wyithe1
1The University of Melbourne, Australia.

336.05 Nonlinear Redshift-Space Behavior of Baryon Acoustic Oscillations from the Zel’dovich Approximation
Nuala McCullagh1, A. S. Szalay1
1Johns Hopkins University.

336.06 Tomographic Weak Gravitational Lensing Magnification with the Deep Lens Survey
Christopher Morrison1, R. Scranton1, S. Schmidt1, J. Tyson1, D. Wittman1
1UC Davis.

337 Young Stellar Objects, Very Young Stars, T-Tauri Stars, H-H Objects
Wednesday, 9:00am-6:30pm, Exhibit Hall

337.01 Understanding The Evolution Of Sun-like Stars: IRAS 4
Danna Qasim1, J. McMullin2, S. Myers2, M. Goss2, G. Sandell1
1NRAO REU, 2NRAO, 3SOFIA.

337.02 The Impact Of Molecular Outflows In The Protostellar Cluster NGC1333
Adele Plunkett1, H. G. Arce1, S. A. Corder2
1Yale University, 2NRAO/ALMA.

337.03 A Chandra and Spitzer Study of IC 348
Alex Spatzier1, C. Espaillat2, J. Forbrich3, S. Wolk2
1Oberlin College, 2CfA.

337.04 The Interstellar Bullet Engine IRAS05506+2414: A Molecular-Line Study
Raghvendra Sahai1, N. Patel2, M. J. Claussen3, C. Sanchez Contreras4, M. R. Morris5
1JPL, 2CfA, 3NRAO, 4CSIC-INTA, Madrid, Spain, 5UCLA.
337.05 Spitzer-Selected Young Stellar Objects in Two Bright Rimmed Clouds  
Chelen H. Johnson1, L. M. Rebull1, J. C. Gibb3, M. Linahan4, D. C. Sartore6,  
M. Legassie6, R. Lahe2, N. G. Killingstad1, T. S. McCanna1, A. M. O’Bryan1,  
S. D. Carlson1, M. L. Clark1, S. M. Koop1, T. A. Ravelomanantsoa1, T. R. Nuthmann1,  
T. S. Canakapalli3, S. Aryal3, M. M. Nishida3, A. Ramswaram4, H. N. Sprow4,  
A. Pullinger4, N. J. Ezyk4, J. R. Fagan4, C. M. Tilley4, K. S. Badura4  
1Breck School (Minneapolis, MN), 2Spitzer Science Center/Caltech (Pasadena, CA),  
3Glencoe High School (Hillsboro, OR), 4Carmel Catholic High School (Mundelein, IL),  
5Pine Ridge High School (Deltona, FL), 6Spitzer Science Center/Caltech and Raytheon  
(Pasadena, CA).

337.06 Discovery of ~15 Myr Old pre-Main Sequence Stars with Active Accretion and  
Sizeable Discs in NGC 6611  
Guido De Marchi1, N. Panagia2, M. G. Guarcello3, R. Bonito4  
1ESA, Netherlands, 2STScI, 3CfA, 4INAF-PA, Italy.

337.07 Young Stellar Variability in the Northamerica Nebula  
Krzysztof Findeisen1, L. Hillenbrand1  
1Caltech.

337.08 Echelle Spectra of Candidate Young Stellar Objects in the Serpens Main Cluster  
Kristen Erickson1, B. Wilking1, J. Kim2, M. Meyer3  
1UMSL, 2Steward Observatory, 3Institute for Astronomy Swiss Federal Institute of  
Technology, Switzerland.

337.09 Testing Magnetoospheric Accretion Theories in NGC 2264  
Paul Wilson Cauley1  
1Rice University.

337.10 Did All the Stars in Upper Scorpius Form in a Single Burst?  
Alycia J. Weinberger1, G. Anglada-Escude2, A. P. Boss1  

337.11 WFC3 Imaging of Protostars in the Orion Molecular Clouds  
Marina Kounkel1, T. Megeath1, W. Fischer1, C. Poteet1  
1Univ. Of Toledo.

337.12 Infrared and Submillimeter Observations Of IRAS 03245+3002  
Kirstin D. Doney1, H. Kim1, N. J. Evans1  
1University of Texas at Austin.

337.13 Simulations of Protoplanetary Disk Turbulence: Connecting Theory and  
Observations  
Jacob B. Simon1, P. J. Armitage2, K. Beckwith1  
1JILA, University of Colorado, 2JILA and Department of Astrophysical and Planetary  
Sciences, University of Colorado.

337.14 RX J0513.1+0851 and RX J0539.9+0956: Two Young, Rapidly Rotating  
Spectroscopic Binary Stars  
Dary Ruiz1, L. Prato1, L. H. Wasserman1, G. Torres2, R. Neuhauser1  
1Lowell Observatory, 2Harvard-Smithsonian Center for Astrophysics, 3Astrophysikalisches  
Institut, Universitat Jena, Germany.

337.15 Chandra Reveals Unusual X-ray Emission from the Jet-Driving T Tauri Star RY Tau  
Steve L. Skinner1, M. Audard2, M. Guedel3  
1Univ. of Colorado, 2ISDC, Univ. of Geneva, Switzerland, 3Univ. of Vienna, Austria.
338 Galaxy Clusters

Wednesday, 9:00am-6:30pm, Exhibit Hall

338.01 Far-infrared Survey of Brightest Cluster Galaxies with the Herschel Space Observatory
Tim Rawle1, E. Egami1, M. Rex1, A. Edge2, Herschel Lensing Survey, LoCuSS
1University of Arizona, 2Durham University, United Kingdom.

338.02 Diffusive Shock Acceleration Modeling of Radio Relics in Clusters of Galaxies
Hyesung Kang1, D. Ryu1, T. W. Jones3
1Pusan National Univ., Korea, Republic of, 2Chungnam National Univ., Korea, Republic of, 3Univ. of Minnesota.

338.03 A Simulation Study of Intracluster Turbulence
Dongsu Ryu1, D. H. Porter2, T. W. Jones3, J. Cho1
1Chungnam National Univ., Korea, Republic of, 2University of Minnesota.

338.04 Constraining the Evolution of Poor Clusters
Emma J. Broming1, C. R. Fuse1
1Rollins College.

338.05 Are Low-Mass Galaxy Clusters Overconcentrated?
Matthew P. Wiesner1, H. Lin2, S. Allam2, J. Annis3, E. Buckley-Geer2, H. Diehl1, D. Kubo4, J. Kubo4, D. Tucker2
1Northern Illinois University, 2University of Texas, 3University of Kansas, 4Texas A&M University, 5University of Arizona.

338.06 A NEWFIRM Medium-Band Search for High Redshift Galaxy Clusters
Adam R. Tomczak1, K. H. Tran1, C. J. Papovich1, S. L. Finkelstein1, G. H. Rudnick1, C. N. A. Willmer4
1Texas A&M University, 2University of Texas, 3University of Kansas, 4University of Arizona.

338.07 Searching for Galaxy Clusters Around AGN at z~1 Using Spitzer Archival Imaging Data
Shefali Mehta1, M. Butler2, A. Keeton3, T. Spuck4, M. Butler5, C. Cook1, M. Heller6, P. Hutchinson1, P. Hutchinson1, W. Sixel7, M. Abajian7, A. Galametz8, V. Gorjian9
1Haddam-Killingworth High School, CT, 2Orange County Astronomers, CA, 3North High School, WI, 4Oil City High School, PA, 5Tuscarora High School, VA, 6Clarion University of Pennsylvania, 7Infrared Processing & Analysis Center/California Institute of Technology, 8INAF - Osservatorio Astrofisico della Calabria Institute of Technology, 9JPL/Caltech.

338.08 High-performance GPU Models of Triaxial Galaxy Clusters
Tyler Chapman1, J. Smith1
1SFSU.

338.09 Magnetic Fields, Faraday Rotation Measurement, And Radio Emissions Of Galaxy Clusters
Hao Xu1, H. Li1
1Los Alamos National Lab.

338.10 Chandra and XMM-Newton Observations of the Matter Profile in Nearby Clusters of Galaxies
Weihan Chang1
1San Francisco State University.
338.11  **Hubble Observations Of A Spectacular Gravitationally Lensed Galaxy**  
Jane R. Rigby¹, K. Sharon², M. D. Gladders³, E. Wuyts³, B. Koester⁴, M. Bayliss⁵, F. Barrientos⁶  
¹NASA Goddard, ²Kavli Institute for Cosmological Physics, ³University of Chicago, ⁴University of Michigan, ⁵Harvard-Smithsonian Center for Astrophysics, ⁶Pontificia Universidad Católica de Chile.

338.12  **Galaxy Cluster Assembly: Cluster and Protocluster Populations**  
Joel C. Berrier¹, J. S. Bullock², K. R. Stewart³, D. Kennefick¹, J. D. Kennefick¹, M. S. Seigar⁴, C. Lacy¹  
¹Department of Physics, University of Arkansas, Fayetteville, AR 72701, ²Department of Physics and Astronomy, University of California Irvine, Irvine Ca 92697, ³Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109, ⁴Department of Physics and Astronomy, University of Arkansas Little Rock, Little Rock, AR 72204.

338.13  **Characterizing Galaxy Cluster Temperature Distributions**  
Kari A. Frank¹, J. R. Peterson¹, K. Andersson², A. C. Fabian³, J. S. Sanders¹  
¹Purdue Univ., ²MPE, Germany, ³Univ. of Cambridge, United Kingdom.

338.14  **Studies of ACT-CL J0102−4915 (“El Gordo”) the Most Massive Known Galaxy Cluster at High Redshift**  
John Patrick Hughes¹, F. Menanteau¹, ACT Collaboration  
¹Rutgers Univ

338.15  **The Local Cluster Survey: Probing Gas Depletion in Nearby Galaxy Groups and Clusters**  
Rose Finn¹, A. Earle¹, A. McCann¹, G. Rudnick², V. Desai³, R. Koopmann⁴, K. Rines⁵, M. Balogh⁶, B. Poggianti⁷, D. Zaritsky⁸, M. Haynes⁹, P. Jablonka¹⁰, P. Jablonka¹⁰  
¹Siena College, ²U. Kansas, ³IPAC, ⁴Union College, ⁵Western Washington University, ⁶U. Waterloo, Canada, ⁷U. Padova, Italy, ⁸U. Arizona, ⁹Cornell University, ¹⁰EPFL, Switzerland.

338.16  **The Effect of Thermal Conduction on the Gas in Galaxy Clusters**  
Britton D. Smith¹, B. W. O’Shea¹, M. Voit¹  
¹Michigan State University.

338.17  **Spectroscopy of Galaxies in Massive SPT Clusters**  
Jonathan Ruel¹, M. Bayliss¹, C. Stubbs¹, G. Bazin², SPT Collaboration  
¹Harvard University, ²Universitäts-Sternwarte München, Germany.

338.18  **Simulating the Cooling Flow of Cool-Core Clusters**  
Yuan Li¹, G. L. Bryan¹  
¹Columbia University.

338.19  **Comparison of Planck Early Sunyaev-Zel’dovich Catalog Clusters to X-Ray Bright Clusters**  
Kevin Fogarty¹  
¹Harvard University.

338.20  **An XMM-Newton Study of the Core of the Antlia Cluster: Heating and Chemical Enrichment in a Galaxy Cluster without a Cool Core**  
William Hawley¹, M. Machacek², R. Kraft²  
¹Harvard University, ²Harvard-Smithsonian Center for Astrophysics.

338.21  **Population Analysis of Seyfert Galaxies in the Coma-Abell 1367 Supercluster**  
Megan Jones¹, E. Wilcots¹  
¹UW Madison.

338.22  **Constructing Near UV Composite Luminosity Functions of Galaxy Clusters**  
Gustavo A. Morales Correa¹, R. DePropris²  
¹Pontificia Universidad Catolica de Chile, Chile, ²CTIO, Chile.
338.23 Testing the Standard Model of Cosmology with Strong Lensing Galaxy Clusters
Matthew Bayliss\textsuperscript{1}, M. Oguri\textsuperscript{2}, M. D. Gladders\textsuperscript{3}, K. Sharon\textsuperscript{4}, B. Koester\textsuperscript{5}, M. Gralla\textsuperscript{6}, C. J. Garcia\textsuperscript{7}, F. Barrientos\textsuperscript{1}, M. Carrasco\textsuperscript{7}
\textsuperscript{1}Harvard-Smithsonian Center for Astrophysics, \textsuperscript{2}IPMU, University of Tokyo, Japan, \textsuperscript{3}KICP, University of Chicago, \textsuperscript{4}Department of Astronomy, University of Michigan, \textsuperscript{5}University of Michigan, \textsuperscript{6}Department of Physics & Astronomy, Johns Hopkins University, \textsuperscript{7}Pontificia Universidad de Catolica, Chile.

338.24 The Cluster Lensing And Supernova survey with Hubble (CLASH): Weak Lensing from Subaru Observations
Elinor Medezinski\textsuperscript{1}, CLASH team
\textsuperscript{1}Johns Hopkins University.

338.25 Cluster Of Galaxies: Lensing And X-ray Mass Estimates, C-m Relation
Elena Rasia\textsuperscript{1}, M. Meneghetti\textsuperscript{2}, S. Borgani\textsuperscript{3}, S. Ettori\textsuperscript{3}
\textsuperscript{1}University of Michigan, \textsuperscript{2}Osservatorio di Bologna, Italy, \textsuperscript{3}University of Trieste, Italy.

338.26 HI Deficiency Estimates in Galaxy Group AWM3
Jaclyn Patterson\textsuperscript{1}, N. Nichols\textsuperscript{1}, C. Weigel\textsuperscript{1}, P. Troischt\textsuperscript{1}, ALFALFA Team
\textsuperscript{1}Hartwick College.

338.27 Group Membership and Dynamical Mass Estimates of Galaxy Group AWM3
Nathan Nichols\textsuperscript{1}, J. Patterson\textsuperscript{1}, C. Weigel\textsuperscript{1}, P. Troischt\textsuperscript{1}, ALFALFA Team
\textsuperscript{1}Hartwick College.

338.28 Starbursts Versus Stripping: Where Is The Gas In Groups Of Galaxies?
Lyle Reed\textsuperscript{1}, C. McGowan\textsuperscript{1}, A. Micula\textsuperscript{1}, M. Crone\textsuperscript{1}, ALFALFA Team
\textsuperscript{1}Skidmore College.

338.29 ALFALFA HI and Star Formation Properties of the NGC 5846 Galaxy Group
Halley Darling\textsuperscript{1}, W. Smith\textsuperscript{1}, L. Viani\textsuperscript{1}, R. A. Koopmann\textsuperscript{1}, ALFALFA Team
\textsuperscript{1}Union College.

338.30 Integral Field Unit spectroscopy of Brightest Cluster Galaxies and their companions: Angular Momentum and Dynamical Mass
James Erickson\textsuperscript{1}, K. Tran\textsuperscript{1}, S. Brough\textsuperscript{2}, K. Gebhardt\textsuperscript{3}, A. von der Linden\textsuperscript{4}
\textsuperscript{1}George P. and Cynthia W. Mitchell Institute for Fundamental Physics and Astronomy, Department of Physics and Astronomy, Texas A&M University, \textsuperscript{2}Australian Astronomical Observatory, Australia, \textsuperscript{3}Department of Astronomy, University of Texas at Austin, \textsuperscript{4}Kavli Institute of Particle Astrophysics and Cosmology (KIPAC), Stanford University.

338.31 Weak Lensing Studies of Mass Substructure in Clusters of Galaxies
Paul M. Huwe\textsuperscript{1}
\textsuperscript{1}Brown University.

339 Extrasolar Planetary Systems
Wednesday, 9:00am-6:30pm, Exhibit Hall

339.01 Worlds In Transit: Observations Of Exoplanets TrES-1b, TrES-3b, XO-2b, And GJ-1214b Using IRTF-MORIS
Mackenzie L. Jones\textsuperscript{1}, E. R. Adams\textsuperscript{2}, J. A. Carter\textsuperscript{2}
\textsuperscript{1}Butler University, \textsuperscript{2}Harvard-Smithsonian Center for Astrophysics.

339.02 WITHDRAWN: A Trio of Exoplanet Systems: Characterizing the Stars and Planets Using Interferometry
Ellyn K. Baines\textsuperscript{1}, T. Armstrong\textsuperscript{1}, H. A. McAlister\textsuperscript{2}, T. A. ten Brummelaar\textsuperscript{2}, J. Sturmann\textsuperscript{2}, L. Sturmann\textsuperscript{2}, N. H. Turner\textsuperscript{2}, P. Goldfinger\textsuperscript{2}, C. D. Farrington\textsuperscript{2}, S. T. Ridgway\textsuperscript{3}
\textsuperscript{1}Naval Research Laboratory, \textsuperscript{2}Georgia State University, \textsuperscript{3}National Optical Astronomy Observatory.
339.03 The Impact of Stellar Compositional Anomalies on the Evolution of Stellar Habitable Zones
Patrick A. Young1, K. Liebst
1Arizona State University.

339.04 Characterizing Extra-Solar Planets with Low Resolution Spectroscopy
Emily L. Rice1, B. R. Oppenheimer2, N. Zimmerman3, L. C. Roberts, Jr.4, S. Hinkley6
1College of Staten Island, 2American Museum of Natural History, 3Max Planck Institute for Astronomy, 4Jet Propulsion Laboratory, California Institute of Technology, 6California Institute of Technology.

339.05 Homogeneous Characterization of Transiting Exoplanet Systems
1Vanderbilt University/Queen's University of Belfast, 2Queen's University Belfast, United Kingdom, 3Vanderbilt University, 4Laboratoire d'Astrophysique de Marseille, France, 5Observatorio Nacional, Brazil, 6Keele University, United Kingdom, 7Universidade do Porto, Portugal.

339.06 Grism Spectroscopy Of The Eclipse Of Corot-2b At 1.1-1.7 μM
Ashlee N. Wilkins1, D. Deming1, N. Madhusudhan2, E. Agol3, A. Burrows2, D. Charbonneau4, M. Clampin5, J. Désert4, R. Gilliland6, H. Knutson7, A. Mandell3, S. Ranjan4, S. Seager4, A. Showman9
1University of Maryland, 2Princeton University, 3University of Washington, 4Center for Astrophysics, 5Goddard Space Flight Center, 6Space Telescope Science Institute, 7California Institute of Technology, 8Massachusetts Institute of Technology, 9University of Arizona.

339.07 The Effect of Tracking Error on the Measurement of Exoplanet Light Curves
Brian Graham1
1Southridge High School.

339.08 Detecting The Magnetic Fields Of The Transiting Exoplanets Corot-1b And Wasp-3b
Jake Turner1, C. A. Griffith1, R. Zellem1, K. K. Hardegree-Ullman1, L. L. Richardson1
1University of Arizona.

339.09 The University of Arizona Astronomy Club Follow-Up Ob
Amanda Walker-LaFollette1, J. D. Turner1, K. K. Hardegree-Ullman1, B. M. Smart1, B. E. Crawford1, T. M. Carleton1, B. C. Guvenen1, A. P. M. Towner1, C. W. Smith1, L. C. Small1, A. M. McGraw1, A. A. Wilson1
1University of Arizona.

339.10 How to Flip a Planet or The Kozai Mechanism and Angular Momentum Conservation: Implication for Extrasolar Planets
Frederic A. Rasio1, S. Naoz2, W. Farr3, Y. Lithwick4, J. Teyssandier1
1Northwestern Univ., 2Harvard-Smithsonian Center for Astrophysics ITC.

339.11 Modeling Capture Probabilities Of Potentially Habitable Exomoons
Charles Sharzer1, S. Porter2, W. Grundy3
1Yale University, 2Arizona State University, 3Lowell Observatory.

339.12 The Initial Mass Distribution For Exoplanetary Systems
Miles L. Timpe1, R. Barnes1, S. N. Raymond2, N. Gorelick3
1University of Washington, 2Laboratoire d'Astrophysique de Bordeaux, France, 3Google, Inc
339.13  The Evolution of Orbital Properties of Exomoons Around Habitable Zone Gas Giant Planets
Christopher R. Fuse
1Rollins College.

339.14  Qatar-2: A K Dwarf Orbited by a Transiting Hot Jupiter and a Longer-Period Massive Planet
1Harvard University, 2Qatar Foundation, Qatar, 3Harvard-Smithsonian CfA, 4SUPA, University of St Andrews, United Kingdom, 5Copenhagen University, Denmark.

339.15  Exploring the Planet-Metallicity Correlation with the Kepler Planet Candidate List
Catherine A. Pilachowski1, L. M. Rebull2, T. R. Monroe1
1Indiana University, 2Spitzer Science Center.

339.16  Stellar Abundances and Planet Formation: The Case of 16 Cyg A & B
Simon C. Schuler1, K. Cunha1, V. V. Smith1, L. Ghezzi2, J. R. King3, C. P. Deliyannis4, A. M. Boesgaard5
1NOAO, 2Observatório Nacional, Brazil, 3Clemson University, 4Indiana University, 5University of Hawaii.

340 Evolution of Galaxies II
Wednesday, 9:00am-6:30pm, Exhibit Hall

340.01  The Galaxy Evolution Explorer (GALEX) Source Catalogs
Mark Seibert1, T. Wyder2, J. Neill2, B. Madore1, L. Bianchi3, M. Smith4, B. Shiao4, D. Schiminovich4, R. M. Rich4, T. Conrow2, D. C. Martin2, GALEX Catalog Team
1Carnegie Institution of Science, 2Caltech, 3Johns Hopkins University, 4Space Telescope Science Institute, 5Columbia University, 6UCLA.

340.02  Regulating Star Formation by Molecular Hydrogen in Cosmological SPH Simulations
Robert Thompson1, K. Nagamine1
1University of Nevada Las Vegas.

340.03  Steep Faint-end Slopes of Galaxy Mass and Luminosity Functions at z ≥ 6 in Cosmological SPH Simulations and the Implications for Reionization
Jason Jaacks1, J. Choi1, K. Nagamine1
1University of Nevada Las Vegas, 2University of Kentucky.

340.04  Semi-automated Search For Lyman-alpha And Other Emission Lines In The DEEP2 And DEEP3 Databases
Katherine McCormick1, A. Alvarez-Buylla2, V. Dean3, P. Guhathakurta3, K. Lai4, M. Sawicki4, B. Lemoux5, C. Grishaw-Jones6, DEEP2, DEEP3
1UCSC, 2Balboa High School, 3Castilleja High School, 4Saint Mary’s University, Canada, 5UCD, 6Santa Cruz High School.

340.05  EWs, Escape Fractions & Kinematics of Lyα Emitters in COSMOS at 4 < z < 6
Ryan P. Mallery1, B. Mobasher1, P. Capak2, D. Masters1, Y. Kakazu2, O. Ilbert1, C. Scarlata4, M. Salvato3, N. Scoville2
1UC Riverside, 2California Institute of Technology, 3Laboratoire d’Astrophysique de Marseille, France, 4University of Minnesota, 5Max-Planck-Institut für Astronomie, Germany.

340.06  Is There Diffuse Lyman-alpha Emission Around Lyman-alpha Galaxies?
Brent Mathew Smith1, S. Malhotra1, J. Rhoads1, S. Finkelstein2, Z. Zheng3, J. Wang3
1Arizona State University, 2University of Texas, Austin, 3USTC, China.
340.07 Probing the Rest-Frame Optical Continuum of z=4.5 Lyman Alpha Emitters with Spitzer
Keely D. Finkelstein1, S. Malhotra2, J. E. Rhoads1, S. L. Finkelstein1, V. Tilvi3, N. A. Grogin4, N. Pirzkal5, A. Dey6, B. T. Jannuzi3, B. Mobasher5, S. Pakzad3, J. Wang7
1University of Texas Austin, 2Arizona State University, 3Texas A&M University, 4Space Telescope Science Institute, 5National Optical Astronomy Observatory, 6University of California, Riverside, 7University of Science and Technology of China, China.

340.08 The Evolution of the Rest-frame V-band Luminosity Function from z=4: A Constant Faint-end Slope over the Last 12 Gyr of Cosmic History
Danilo Marchesini1, M. Stefanon2
1Tufts University, 2Observatori Astronomic Universitat de Valencia, Spain.

340.09 Properties of High Equivalent Width Lyman-α Emitting Galaxies at Redshifts Between 2.5 and 3.5
Brian J. Baptista1, D. Bonfield2, C. Grady3, D. Lindler3, S. Mufson1, B. Woodgate3
1Indiana University, 2University of Hertfordshire, United Kingdom, 3NASA/Goddard Space Flight Center.

340.10 Present-day Descendants of z=3.1 Lya Emitting Galaxies In The Millennium-II Halo Merger Trees
Jean P. Walker1, E. Gawiser1, N. A. Bond5, N. Padilla3, H. Francke3
1Rutgers University, 2NASA Goddard Space Flight Center, 3Pontificia Universidad Católica de Chile, Chile.

340.11 Exploring the Photometric Properties of z=3.1 Lyman Alpha Emitting Galaxies
Carlos Vargas1, V. Acquaviva1, E. Gawiser1, K. Lai1, MUSYC Collaboration
1Rutgers University, 2Harvard-Smithsonian Center for Astrophysics.

340.12 Individual And Rest-frame Composite Spectra Of Lya Emitting And Uv Continuum-selected Galaxies At 2<z<3.5
Michael Berry1, E. Gawiser1, L. Guaita3, N. Padilla3, E. Treister4
1Rutgers University, 2Stockholm University, Sweden, 3Universidad Católica de Chile, Chile, 4University Concepcion in Chile, Chile.

340.13 The Lbt Bootes Field Survey: Luminosity Function And Clustering Of Z~3 Lbgs At The Bright End.
Fuyan Bian1, X. Fan1, L. Jiang2, A. Dey3, R. F. Green1, R. Maiolino4, F. Walter5, S. Jester6, K. Lee7, I. Mcgreer1
1University of Arizona, 2Arizona State University, 3National Optical Astronomy Observatory, 4INAF, Italy, 5Max Planck Institute for Astronomy, Germany, 6Max Planck Institute for Astronomy, Germany, 7Purdue University.

340.14 Understanding The Nature Of Massive Starburst Galaxies Through Cosmic Times
Dominik A. Riechers1
1California Institute of Technology.

340.15 A MOSAIC Search for Lyman Alpha Emitting Galaxies at z~2.1
Patrick Williams1, S. Finkelstein2, J. Rhoads3, E. McLinden3, S. Malhotra3
1Texas A&M University, 2University of Texas, 3Arizona State University.

341 Star Formation
Wednesday, 9:00am-6:30pm, Exhibit Hall

341.01 Probing Turbulence in Regions of Star Formation Using H2O and CH3OH Masers
Naomi Alpert1
1Vassar College, Maria Mitchell Observatory.
341.02 Magnetic Fields in Star Forming Regions: A GPIPS Study
Robert C. Marchwinski¹, M. D. Pavel¹, D. P. Clemens¹
¹Boston University.

341.03 WITHDRAWN: The Physical Properties of High-Mass Star Forming Regions: A Global vs. Detailed Perspective
Cara Battersby¹, A. Ginsburg¹, J. Darling¹, J. Bally¹
¹University of Colorado Boulder.

341.04 Water Masers in Star Forming Regions of the Large Magellanic Cloud
Kamber R. Schwarz¹, J. Ott², D. Meier³, M. Claussen²
¹NRAO and University of Arizona, ²NRAO, ³New Mexico Institute of Mining and Technology.

341.05 The Structure of Accretion Flows in the Formation of Very Massive Stars
Roberto Galvan-Madrid¹, Q. Zhang⁵, E. Keto⁵, L. F. Rodriguez⁵, P. T. Ho⁴
¹ESO, Germany, ²Harvard-Smithsonian CfA, ³UNAM, Mexico, ⁴ASIAA, Taiwan.

341.06 Molecular Line Predictions of Embedded Super Star Cluster Envelopes
David G. Whelan¹, K. E. Johnson¹, R. Indebetouw¹
¹University of Virginia.

341.07 Molecular Line Studies of Serpens South Star Forming Region
Lia Medeiros¹, R. Friesen¹, S. Schnee¹, R. Gutermuth¹, T. Bourke¹, P. Myers¹, J. Di Francesco⁴
¹NRAO, ²Smith College, ³Harvard Smithsonian Center for Astrophysics, ⁴NRC-HIA, Canada.

341.08 The Stellar Content of Intermediate-Mass Star-Forming Regions
Michael Lundquist¹, H. Kobulnicky¹, M. Alexander¹, C. Vargas Alvarez¹, K. Arvidsson², C. Kerton³
¹University of Wyoming, Physics & Astronomy, ²Adler Planetarium, ³Iowa State University, Physics & Astronomy.

341.09 A Spitzer View of the Giant Molecular Cloud Mon OB1/NGC 2264
Valerie Rapson¹, J. L. Pipher², R. A. Gutermuth¹, S. T. Megeath¹, T. Allen¹
¹Rochester Institute of Technology, ²University of Rochester, ³Smith College, ⁴University of Toledo.

341.10 New Herschel-identified Orion Protostars: Characterizing An Extreme Population Of Cold Sources
Amelia Marie Stutz¹, T. Megeath¹, J. Tobin³, W. Fischer³, T. Stanke³, B. Ali⁵, J. Di Francesco⁴, T. Henning⁷, P. Manoj⁸, D. Watson⁸, HOPS team
¹MPIA / University of Arizona/Steward Observatory, ²University of Toledo, ³NRAO, ⁴ESO, Germany, ⁵NHSC/IPAC/Caltech, ⁶NRC-Canada, Canada, ⁷MPIA, Germany, ⁸University of Rochester.

341.11 Using The Herschel Hi-GAL Survey And The RMS Survey To Characterise Triggered Star Formation In Galactic Bubbles
Charles C. Figura¹, L. K. Morgan¹, M. A. Thompson¹, J. S. Urquhart⁴, T. J. T. Moore²
¹Wartburg College, ²Liverpool John Moores University (Astrophysical Research Institute), United Kingdom, ³University of Hertfordshire, United Kingdom, ⁴CSIRO Astronomy and Space Science, Australia.

341.12 Star Formation in Orion’s L1630 Cloud: An Infrared and Multi-epoch X-Ray Study
David Principe¹, J. H. Kastner¹, N. Grosso⁷, K. Hamaguchi⁷, M. Richmond¹, W. K. Teets⁴, D. A. Weintraub⁴
¹Rochester Institute of Technology, ²Universite de Strasbourg, France, ³Goddard Space Flight Center, ⁴Vanderbilt University.
**WEDNESDAY POSTER SESSIONS**

**341.13** Mid-infrared Imaging Of The W40 Star Forming Region Using Sofia-Forcast
E. Shuping, W. Vacca, T. Herter, J. Adams
1Space Science Institute, 2USRA-SOFIA, 3Cornell Univ

**341.14** KFPA Mapping of NH3 in the G111 Infrared Dark Cloud Filament
Wayne M. Schlingman, Y. L. Shirley, G. Langston, A. Ginsburg
1Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona, 2Steward Observatory, Univ. of Arizona; NRAO, 3National Radio Astronomy Observatory, 4University of Colorado.

**341.15** Investigating Star Formation at Low Metallicity with MIRI on JWST
Margaret Meixner, J. Seale, M. Sewilo
1STScI, 2Johns Hopkins University.

**341.16** Infrared Dark Clouds in the Cygnus-X Region
1Harvard-Smithsonian CFA, 2University of Southampton, United Kingdom, 3Boston College, 4University of Toledo, 5Spitzer Science Center, 6Smith College, 7University of Cologne, Germany, 8NOAO, 9CEA-Saclay, France, 10Univ. of Bordeaux, France, 11Cornell University, 12NASA/GSFC.

**341.17** An Analysis of Ultra-luminous X-ray Sources in Interacting Arp Galaxies
Jacob A. Burleson, B. J. Smith, D. A. Swartz, O. Miller, M. A. Nowak, C. J. Struck
1University of Alabama in Huntsville, 2East Tennessee State University, 3Universities Space Research Association NASA/MSFC, 4MIT - CXC, 5Iowa State University.

**341.18** The Free-fall Time of Finite Sheets and Filaments
Enrique Vazquez-Semadeni, J. A. Toala, G. C. Gomez
1CRYA-UNAM, Mexico.

**342 Cosmology and Galaxy Formation From SDSS-III/BOSS**

Wednesday, 9:00am-6:30pm, Exhibit Hall

**342.01** The First Large Scale Galaxy Clustering Measurements from the Baryon Oscillation Spectroscopic Survey (BOSS)
David J. Schlegel, SDSS-III collaboration
1BNL.

**342.02** A 2% Bao Distance Measurement From Density-field Reconstruction In The SDSS
Xiaoying Xu, A. Cuesta, D. Eisenstein, K. Mehta, N. Padmanabhan
1University of Arizona, 2Yale University, 3Harvard University.

**342.03** New Results from a Census of Metal Absorption Lines in the BOSS DR9 Quasar Spectra
Britt Lundgren, D. G. York, Y. AlSayyad, A. Myers, P. Petitjean, M. Pieri, N. Ross, S. Vikas, M. Wood-Vasey
1Yale University, 2Enrico Fermi Institute, University of Chicago, 3University of Washington, 4University of Wyoming, 5Institut d’Astrophysique de Paris, France, 6Institute of Cosmology & Gravitation, University of Portsmouth, United Kingdom, 7Lawrence Berkeley National Laboratory, 8University of Pittsburgh.
**342.04 Cosmological Constraints from the Angular Power Spectra of SDSS DR8 Photometric LRGs**


¹Yale University, ²Carnegie Mellon University, ³Lawrence Berkeley National Laboratory, ⁴University of California at Berkeley, ⁵Institute of Cosmology and Gravitation, University of Portsmouth, United Kingdom, ⁶Institute of Cosmos Sciences, University of Barcelona, Spain, ⁷Center for Astrophysics, Harvard University, ⁸Instituto de Astrofisica de Andalucia, Spain, ⁹Observatorio Nacional, Brazil, ¹⁰Steward Observatory, University of Arizona, ¹¹Osservatorio Astronomico di Trieste, Italy.

**343 Dust**

Wednesday, 9:00am-6:30pm, Exhibit Hall

**343.01 Differential Depletion of Mg and Fe in Planetary Nebulae: Implications for the Composition of AGB-Star Dust**

Harriet L. Dinerstein¹, F. Prasla¹, A. K. Speck²

¹Univ. of Texas, Austin, ²Univ. of Missouri.

**343.02 Spitzer Sage/lmc Observations Of Extreme Carbon Stars As A Probe Of Carbon-rich Stardust Properties**

Nicholas Parmley¹, A. K. Speck¹, A. J. Mulia¹, SAGE-Spec team

¹University of Missouri.

**343.03 The Enigmatic 13 micron Feature in the Spectra of AGB Stars**

Nelson De Souza¹, A. K. Speck¹

¹University of Missouri.

**343.04 Modeling the Effect of Pulsation on the Dust Spectrum of Carbon Star V Cyg**

Angela Speck¹, B. Hester¹, A. Corman¹, K. Volk², G. C. Sloan³

¹Univ. of Missouri, ²Space Telescope Institute, ³Cornell University.

**343.05 Dust Destruction By The Reverse Shock In The Cassiopeia A Supernova Remnant**

Elisabetta Micelotta¹, E. Dwek²

¹University of Western Ontario, Canada, ²NASA Goddard Space Flight Center.

**343.06 Dust Distribution and Properties in the Orion-Eridanus Superbubble Region**

Young-soo Jo¹, K. Min¹, T. Lim¹, K. Seon²

¹KAIST, Korea, Republic of, ²KASI, Korea, Republic of.

**343.07 Dust-scattered FUV halo around Spica**

Choi Yeon-Ju¹, J. Park², T. Lim¹, K. Seon², K. Min¹

¹KAIST, Korea, Republic of, ²KOREAN INTELLECTUAL PROPERTY OFFICE, Korea, Republic of, ³KASI, Korea, Republic of.

**343.08 A FUV Study in Taurus-Auriga-Perseus(TAP) Complex**

Lim Tae-Ho¹, K. Min¹, K. Seon¹

¹KAIST, Korea, Republic of.

**343.09 Light echoes from the Supernova Factory NGC 6946**

Ben Sugerman¹, SEEDS Collaboration

¹Goucher College.

**343.10 Exploring the Origin of Dust in the Solar Neighborhood**

Adria C. Updike¹, E. Dwek²

¹Dickinson College, ²NASA/GSFC.
343.11 Understanding Stardust via Spatially-Resolved Spectroscopy: A Case Study on R Hya
Aaron Kaberline, S. Guha Niyogi, A. K. Speck, K. Volk
1University of Missouri, 2Space Telescope Science Institute.

343.12 UV-to-IR Spectral Energy Distribution Fitting with DIRTY - Initial Results
Ka Hei Law, K. D. Gordon
1Johns Hopkins University, 2Space Telescope Science Institute.

1University of Missouri.

344 Circumstellar Disks
Wednesday, 9:00am-6:30pm, Exhibit Hall

344.01 Reconstruction of Lyman Alpha Radiation in Classical T-Tauri Stars
Eric Schindhelm, K. France
1Univ. of Colorado.

344.02 The Gravo-Magneto Limit Cycle in Accretion Disks
Rebecca G. Martin, S. H. Lubow
1STScI.

344.03 Near-IR Spectral Variability Of Young Stars: A Multi-year Survey
Clint Hawkins, J. Eisner, A. L. Rudolph
1Department of Physics and Astronomy, California State Polytechnic University, Pomona, 2Department of Astronomy and Steward Observatory, University of Arizona.

344.04 The Elusive SR-21 Inner Cavity: Polarized Images Reveal that Submillimeter-Resolved Cavity is Not Present in the NIR
Katherine B. Follette, M. Tamura, J. Hashimoto, SEEDS Team
1University of Arizona, 2National Astronomical Observatory of Japan, Japan.

344.05 Resolving Protoplanetary Disks at Millimeter Wavelengths
Woojin Kwon, L. W. Looney, L. G. Mundy, W. J. Welch
1University of Illinois at Urbana-Champaign, 2University of Maryland, 3University of California at Berkeley.

344.06 SEEDS Polarimetric Differential Imaging of LkCa 15
1University of Washington, 2Osaka University, Japan, 3MPIA, Germany, 4NASA GSFC & Eureka Scientific, 5NAOJ, Japan, 6MPIA, 7University of Hawaii, 8Kanagawa University, Japan, 9Princeton University, 10Anton Pannekoek Institute, Netherlands, 11University of Wisconsin.

344.07 On The Nature Of The Transition Disk Around Lkca 15
Andrea Isella, L. M. Perez, J. M. Carpenter
1CALTECH.

344.08 The Nature of Transition Circumstellar Disks in Perseus, Taurus, and Auriga
1University of Hawaii, 2Universidad de Valparaiso, Chile.
344.09  On the Chemistry of Circumstellar Disk Around MWC349A
Kristen Lagergren1, A. Bans3, V. Streltinski3
1University of Virginia & Maria Mitchell Observatory, 2University of Chicago & Maria Mitchell Observatory, 3Maria Mitchell Observatory.

344.10  Observing Compact Disks Inside Pre-Planetary Nebulae with the Very Large Telescope Interferometer
Stacey N. Bright1, O. De Marco1, O. Chesneau2, E. Lagadec3, H. Van Winckel4, B. J. Hrivnak6
1Macquarie University, Australia, 2Observatoire de la Côte d’Azur, France, 3European Southern Observatory, Germany, 4Instituut voor Sterrenkunde, Belgium, 6Valparaiso University.

344.11  Properties of the Inner H2 Disks of Protoplanetary Systems
Kevin France1, E. Schindhelm1, G. Herczeg2
1CASA / Colorado, 2KIAA / Peking University, China.

344.12  Circumstellar Gas-disk Variability And Exo-comet Detection In The Debris Disks Of A-type Stars
Sharon Lynn Montgomery1, B. Y. Welsh2, R. A. Cooper1
1Clarion University, 2U.C. at Berkeley, Space Science Laboratory.

344.13  A Herschel-resolved Debris Disk Around the Nearby G Star HIP 32480
Karl R. Stapelfeldt1, G. Bryden2, C. Eiroa3, Herschel/DUNES Key Project Team
1NASA Goddard Space Flight Center, 2Jet Propulsion Laboratory, Caltech, 3UA Madrid, Spain.

344.14  Binariesamong Debris Disk Stars
David R. Rodriguez1, B. Zuckerman2
1Universidad De Chile, Chile, 2UCLA.

344.15  Modeling Self-Subtraction of Extended Emission in Angular Differential Imaging: Application to the HD 32297 Debris Disk
Thomas Esposito1, M. P. Fitzgerald1, P. Kalas2, J. R. Graham2
1University of California, Los Angeles, 2University of California, Berkeley.

344.16  WITHDRAWN: Mid-IR Imaging of the Debris Disk of Gamma Oph with SOFIA/FORCAST
C. A. Grady1, P. Abraham2, D. Apai3, T. Currie4, T. Henning5, T. Herter6, S. Kenyon7, M. Kuchner1, C. Stark1
1Eureka Scientific, 2Konkoly Observatory, Hungary, 3Steward Observatory, 4NASA’s GSFC, 5Max Planck Institut fur Astronomie - Heidelberg, Germany, 6Cornell University, 7Center for Astrophysics, Harvard University.

344.17  Modeling the HD 32297 Debris Disk with Far-IR Herschel Data
Jessica Donaldson1, A. Roberge2
1Department of Astronomy, University of Maryland, College Park, 2Exoplanets and Stellar Astrophysics Laboratory, NASA Goddard Space Flight Center.

344.18  W2D2: WISE Warm Debris Disks Around Exoplanet-bearing Stars
Farisa Y. Morales1, M. W. Werner1, G. Bryden1, K. R. Stapelfeldt2, D. L. Padgett2
1JPL, 2Goddard Space Flight Center.

344.19  Applying a New Polarization-based Diagnostic to an Existing Survey of Classical Be Stars
Zachary H. Draper1, J. P. Wisniewski1, K. Bjorkman2, X. Haubois3, A. C. Carciofi3, J. E. Bjorkman2, M. R. Meade4
1University of Washington, 2University of Toledo, 3Universidade de Sao Paulo, Brazil, 4University of Wisconsin-Madison.
344.20  The Balmer Decrement in Be Stars  
Christina Aragona1, M. V. McSwain1, A. Marsh Boyer1  
1Lehigh University.

344.21  The Spectral Energy Distributions of the Be Stars of δ and χ Persei  
Amber Nichole Marsh Boyer1, M. McSwain1, T. Currie2, C. Aragona1  
1Lehigh University, 2NASA-Goddard Space Flight Center.

344.22  Imaging Disk Distortion Of Be Binary System δ Scorpii Near Periastron  
Xiao Che1, J. Monnier1, F. Baron1, S. Kraus1, E. Pedretti2, N. Thureau3,  
1University of Michigan, 2ESO, Germany, 3University of St. Andrews, United Kingdom, 4The  
CHARA Array, Georgia State University, 5National Optical Astronomy Observatory.

344.23  Be Stars: Comparing Two Techniques to Determine Disk Size  
Erika Grundstrom1, D. R. Gies2  
1Vanderbilt University and Fisk University, 2Georgia State University.

345 Stars, Cool Dwarfs, Brown Dwarfs  
Wednesday, 9:00am-6:30pm, Exhibit Hall

345.01  Fundamental Properties of Main-Sequence Stars  
Tabetha S. Boyajian1, K. von Braun2, H. McAlister3, J. Jones1, G. van Belle3, D. Gies1,  
T. ten Brummelaar1, G. Schaefer1, R. White1, S. Ridgway4, T. Staff5  
1Georgia State Univ./CHARA, 2Caltech, 3Lowell Observatory, 4NOAO.

345.02  Results from the Nearby Stars (NStars) Program  
Christopher J. Corbally1, R. O. Gray2, R. Jeck1  
1Vatican Observatory, 2Appalachian State U

345.03  The Young Solar Analogs Project  
Richard O. Gray1, J. M. Saken2, C. J. Corbally3, M. F. Seeds3, S. S. Morrison1  
1Appalachian State Univ., 2Marshall University, 3Vatican Observatory Research Group.

345.04  Harnessing the Power of NASA's Kepler Mission for Understanding Stellar  
Activity and Enhancing Planet Discovery  
Fabienne A. Bastien1, K. G. Stassun1, J. Pepper1, L. Walkowicz2, G. Basri3,  
K. G. Carpenter4  
1Vanderbilt University, 2Princeton University, 3University of California at Berkeley, 4NASA  
Goddard Space Flight Center.

345.05  Spectroscopically Determining Fundamental Properties Of M Dwarfs  
Michael Bottom1, J. Pineda1, J. A. Johnson1  
1California Institute of Technology.

345.06  A Standard Star System For Intermediate-band Cah Photometry: Sara U42a  
And Nuro Data  
Chelsea Spengler1, L. Farris2, T. Robertson3  
1Case Western Reserve University, 2Missouri State University, 3Ball State University.

345.07  Searching for Treasure in the South: Red Dwarfs within 25 Parsecs  
Altonio D. Hosey1, J. G. Winters3, M. R. Boyd1, S. B. Dieterich1, C. T. Finch2,  
N. C. Hambly3, T. J. Henry1, P. A. Ianna4, W. Jao5, A. R. Riedel1, J. P. Subasavage5  
1Georgia State University, 2United States Naval Observatory, 3University of Edinburgh, United  
Kingdom, 4University of Virginia, 5Cerro Tololo Inter-American Observatory, Chile.
345.08 The Optical-IR Color-Magnitude Sequence Around the Hydrogen Burning Mass Limit: Optical Photometry and Trigonometric Parallaxes for Nearby M and L Dwarfs
Sergio Dieterich1, T. J. Henry1, A. D. Hosey1, W. Jao1, J. G. Winters1, RECONS
1Georgia State University.

345.09 Trigonometric Parallax Measurements from the MEarth Survey
Jason Dittmann1, J. M. Irwin2, Z. K. Berta1, D. Charbonneau1, T. MEarth Team1
1Harvard University, 2Smithsonian Center for Astrophysics.

345.10 A Qualitative Analysis Of The High-precision Long-cadence Photometry Of A Sample Of Kepler Dm Stars
Sai Gouravajhala1, E. Guinan1, S. Engle1
1Villanova University.

345.11 Observational Exploration of M dwarf Dynamos
Randall Hamper1, K. Honeycutt1, QUEST2 Collaboration
1Indiana University.

345.12 Planets and Brown Dwarfs and Stars, Oh My! --- Companions Along the Road to the Nearest Stars
1RECONS, 2Georgia State University, 3Northern Arizona University, 4USNO, 5Mississippi State University.

345.13 Eleven Wide, Very-Low-Mass Companions to Nearby High Proper Motion Stars Discovered with WISE
Daniel P. Dutcher1, A. C. Mennen2, S. Lepine3, J. Faherty3
1Washington University, 2College of William and Mary, 3American Museum of Natural History.

345.14 Candidate Very-Low-Mass Companions to Nearby Stars Found in the WISE Survey
Anne Mennen1, D. Dutcher2, S. Lepine3, J. Faherty3
1American Museum of Natural History, The College of William and Mary, 2American Museum of Natural History, Washington University in St. Louis, 3American Museum of Natural History.

345.15 The EBLM Project: Defining The M Dwarf Mass-radius Relation As A Function Of Activity And Metallicity Using F/G/K + M Dwarf Eclipsing Binaries
Leslie Hebb1, Y. Gomez Maqueo Chew2, D. Pollacco2, K. Stassun1, A. Collier Cameron1
1Vanderbilt University, 2Queen's University, Belfast, United Kingdom, 3St Andrews University, United Kingdom.

345.16 Hα Variability in Active Equal-Mass M Dwarf Wide Binaries
Heather C. Gunning1, S. J. Schmidt1, J. R. A. Davenport1, S. L. Hawley1, S. Dhital2
1University of Washington, 2Vanderbilt University.

345.17 Recalibration of the M star ζ Metallicity Index Using Common Proper Motion Systems
Matthew Wilde1, S. Lepine1
1American Museum of Natural History.

345.18 Wide Low-Mass Tertiary Companions of Binary Star Systems as a Test of Star Formation Theories
Stephanie Douglas1, P. Allen2
1Franklin & Marshall College, 2University of Pennsylvania/Franklin & Marshall College.

Thomas E. Harrison1, J. L. Coughlin1, N. M. Ule1, M. Lopez-Morales2

1New Mexico State Univ., 2Institut de Ciencies de L'Espai, Spain.

345.20 Very Low Mass Companions from the First Two Years of SDSS-III MARVELS

Nathan M. De Lee1, J. Ge2, S. Gaudi3, B. Lee3, S. Fleming4, B. Ma5, K. Stassun5, E. Agol6, J. Pepper6, D. C. Nguyen7, L. Hebb5, J. Wisniewski6, S. Mahadevan7, J. Crepp8, B. Zhao2, L. Ghezzi9, C. Reyle10, B. Santiago11

1University of Florida, Vanderbilt University, 2University of Florida, 3Ohio State University, 4University of Florida, Penn State University, 5Vanderbilt University, 6University of Washington, 7Penn State University, 8Caltech, 9Observatório Nacional/LineA, Brazil, 10Besancon Observatory, France, 11IF/UFRGS, Brazil.

345.21 Searching for Partners of Cool Senior Citizens

Wei-Chun Jao1, T. J. Henry1

1Georgia State University.

345.22 Angular Momentum Loss in Subdwarf B + dwarf M Binaries

Donald M. Terndrup1, N. Karnath2, C. Epstein1, M. Pinsonneault1, J. O. Djordjevic3

1Ohio State Univ., 2Northern Arizona University, 3Clemson University.

345.23 A Search for Fine Wines: Discovering Close Red Dwarf-White Dwarf Binaries

Mark Boyd1, C. T. Finch2, N. C. Hambly3, T. J. Henry1, W. Jao1, A. R. Riedel1, J. P. Subasavage4, J. G. Winters1, RECONS

1Georgia State University, 2United States Naval Observatory, 3University of Edinburgh, United Kingdom, 4Cerro Tololo Inter-American Observatory, Chile.

345.24 A USNO Search for Astrometric Companions to Brown Dwarfs

Jennifer L. Bartlett1, F. J. Vrba1, J. A. Munn1, C. B. Luginbuhl1, T. Tillemann1, A. A. Henden7

1US Naval Observatory, 2American Association of Variable Star Observers.

345.25 The CFHT Infrared Astrometry Program: High-Precision Parallaxes for Ultracool Dwarfs

Trent J. Dupuy1, M. C. Liu2

1CfA/SAO, 2IfA/Hawaii.

345.26 Comparing Low- and High-Resolution Model Fits to T Dwarf Spectra

Erin Boettcher1, E. Rice1, I. S. McLean1, T. Barman4, K. Cruz2, S. Douglas6

1Haverford College, 2American Museum of Natural History, The College of Staten Island, 3UCLA, 4Lowell Observatory, 5American Museum of Natural History, Hunter College, 6Franklin and Marshall College.

345.27 A Study of Young Brown Dwarfs in the Mid Infrared

Joseph P. Lyons1, K. N. Allers2, M. Herzog2, M. C. Liu3

1University of Massachusettsamherst, 2Bucknell University, 3University of Hawai’i.

345.28 Determining Youth Indicators Among Brown Dwarfs

Emily Lemonier1, K. Cruz1, V. Baldassare2

1AMNH, 2Hunter College.

345.29 Application of Mie Theory to L Dwarf Cloud Models

Kay Hiranaka1, K. Cruz2, M. Marley3

1Hunter College, Graduate Center, CUNY &american Museum of Natural History, 2Hunter College, CUNY &american Museum of Natural History, 3NASAames Research Center.
345.30 A Model For Pulsed Radio Cmi Emission From Ultra Cool Dwarfs
Robert Lucien Mutel
1
1Univ. of Iowa.

345.31 “Spectral Classes”: A Mast Tool For Selecting Stars According To Their Spectral Types
Myron Smith1, R. W. Thompson1, R. O. Gray2, C. J. Corbally3
1Computer Sciences Corp., 2Appalachian State Univ., 3Vatican Obs. Res. Grp

346 Spiral Galaxies
Wednesday, 9:00am–6:30pm, Exhibit Hall

346.01 Cool Dust in the Outer Ring of NGC1291
Joannah L. Hinz1, C. W. Engelbracht1, R. Skibba1, J. Donovan Meyer1, A. Crocker3, K. Sandstrom4, F. Walter4, B. D. Johnson4, KINGFISH Team
1Univ. of Arizona, 2Stony Brook University, 3Univ. of Massachusetts, 4Max-Planck-Institut fur Astronomie, Germany, 5Institut d’Astrophysique de Paris, France.

346.02 Molecular Gas and Star Formation in Atomic Gas Dominated Regions - Results from the HERACLES Survey
Andreas Schruba1, A. K. Leroy2, F. Walter3, HERACLES team
1California Institute of Technology, 2National Radio Astronomy Observatory, 3Max Planck Institute for Astronomy, Germany.

346.03 The IRAM Large Program HERACLES: The HERA CO-line Extragalactic Survey
Adam K. Leroy1, F. Walter2, A. Schruba3, HERACLES Collaboration
1National Radio Astronomy Observatory, 2Max Planck Institute for Astronomy, Germany, 3California Institute of Technology.

346.04 The Connection Between Shear And Star Formation In Spiral Galaxies: Disk Star Formation Rates From 24 Micron Spitzer Imaging Data
Marc Seigar1, A. Sierra1
1University of Arkansas at Little Rock.

346.05 Star Formation Rates in Resolved Galaxies: Near to Far Infrared Calibrations
Yiming Li1, A. F. Crocker1, D. Calzetti1, C. D. Wilson2, R. C. Kennicutt3, E. J. Murphy4, KINGFISH Team
1Dept. of Astronomy, University of Massachusetts, Amherst, 2Department of Physics & Astronomy, McMaster University, Canada, 3Institute of Astronomy, Cambridge University, United Kingdom, 4Department of Physics & Astronomy, University of Wyoming.

346.06 The Tully-fisher Relation For 25,000 SDSS Galaxies As Function Of Environment
Philip Mocz1, A. Green2, M. Malacari3, K. Glazebrook2
1Harvard University, 2Swinburne University, Australia, 3University of Adelaide, Australia.

346.07 A Comparison of Methods for Measuring Supermassive Black Hole Methods
Ismaeel Ahdulla Akhlite Al-Baidhany1, M. S. Seigar1, P. Treu2, J. Benknefick2, J. Benknefick3, C. H. S. Lacy3, B. Davis2
1University of Arkansas at Little Rock, 2University of Arkansas at Fayetteville.

346.08 Kinematics Of M31’s Inner Spheroid Using SPLASH and PHAT Data
Claire Dorman1, P. Guhathakurta1, M. A. Fardal1, M. C. Geha3, K. M. Howley1, J. S. Kalirai4, D. Lang4, J. Cuillandre4, J. Dalcanton7, K. M. Gilbert7, A. C. Seth8, B. F. Williams5, B. Yniguez9
1UC Santa Cruz, 2University of Massachusetts, 3Yale University, 4Space Telescope Science Institute, 5Princeton University, 6Canada-France-Hawaii Telescope, 7University of Washington, 8University of Utah, 9UC Irvine.
346.09 3D Mapping Of Dusty Clouds In The Nuclear Bulge Of M31
Hui Dong\textsuperscript{1}, Z. Li\textsuperscript{1}, D. Wang\textsuperscript{1}, K. Olsen\textsuperscript{1}, J. Dalcanton\textsuperscript{4}, A. Saha\textsuperscript{1}
\textsuperscript{1}NOAO, \textsuperscript{2}CfA, \textsuperscript{3}University of Massachusetts, amherst, \textsuperscript{4}University of Washington.

346.10 A Study Of The Kinematics Of Stellar Sub-populations In M31's Disk And Spheroid Using PHAT And SPLASH Data
Puragra Guhathakurta\textsuperscript{1}, C. Dorman\textsuperscript{1}, A. Seth\textsuperscript{2}, J. Dalcanton\textsuperscript{3}, K. Gilbert\textsuperscript{3}, K. Howley\textsuperscript{4}, L. C. Johnson\textsuperscript{5}, J. Kalirai\textsuperscript{6}, T. Krause\textsuperscript{6}, D. Lang\textsuperscript{7}, B. Williams\textsuperscript{8}, PHAT team, SPLASH collaboration
\textsuperscript{1}UC, Santa Cruz, \textsuperscript{2}U of Utah, \textsuperscript{3}U Washington, \textsuperscript{4}LLNL, \textsuperscript{5}STScI, \textsuperscript{6}Castilleja School, \textsuperscript{7}Princeton U.

346.11 The Panchromatic Hubble Andromeda Treasury: Bright UV Stars in the Bulge of M31
Philip Rosenfield\textsuperscript{1}, L. Johnson\textsuperscript{1}, L. Girardi\textsuperscript{2}, J. J. Dalcanton\textsuperscript{1}, A. Bressan\textsuperscript{3}, D. Lang\textsuperscript{4}, B. F. Williams\textsuperscript{1}, K. M. Howley\textsuperscript{5}, P. Guhathakurta\textsuperscript{6}, Panchromatic Hubble Andromeda Treasury Survey Team
\textsuperscript{1}University of Washington, \textsuperscript{2}Osservatorio Astronomico di Padova -- INAF, Italy, \textsuperscript{3}SISSA, Italy, \textsuperscript{4}Department of Astrophysical Sciences, Princeton University, \textsuperscript{5}Lawrence Livermore National Laboratory, \textsuperscript{6}University of California Observatories/Lick Observatory, University of California.

346.12 Beyond the Break: Observational Evidence of Stellar Migration
Peter Yoachim\textsuperscript{1}, R. Roškar\textsuperscript{2}, V. P. Debattista\textsuperscript{3}
\textsuperscript{1}Univ. of Washington, \textsuperscript{2}University of Zürich, Institute for Theoretical Physics, Switzerland, \textsuperscript{3}Jeremiah Horrocks Institute, University of Central Lancashire, United Kingdom.

346.13 Water Masers in the Andromeda Galaxy: The First Step Toward Proper Motion
Jeremiah K. Darling\textsuperscript{1}
\textsuperscript{1}Univ. of Colorado, Boulder.

346.14 Warp Characteristics of Spiral Galaxies in the Virgo Cluster
Hyun-Jin Bae\textsuperscript{1}, A. Chung\textsuperscript{1}, S. S. Kim\textsuperscript{2}, G. I. G. Jozsa\textsuperscript{3}, S. Yoon\textsuperscript{1}
\textsuperscript{1}Yonsei University, Korea, Republic of, \textsuperscript{2}Kyung Hee University, Korea, Republic of, \textsuperscript{3}ASTRON, Netherlands.

346.15 Disk Galaxy Warp Formation via Close Encounters
Jeonghwan Kim\textsuperscript{1}, S. Peirani\textsuperscript{2}, S. Kim\textsuperscript{3}, S. Yoon\textsuperscript{1}
\textsuperscript{1}Yonsei University, Korea, Republic of, \textsuperscript{2}Institut d’Astrophysique de Paris, France, \textsuperscript{3}Kyung Hee University, Korea, Republic of.

346.16 Revisiting the Spiral Density Wave Paradigm in M51 with PAWS
Sharon Meidt\textsuperscript{1}, E. Schinnerer\textsuperscript{1}, S. Garcia-Burillo\textsuperscript{2}, A. Hughes\textsuperscript{1}, D. Colombo\textsuperscript{1}, J. Pety\textsuperscript{3}, A. Leroy\textsuperscript{4}, K. Schuster\textsuperscript{1}, C. Kramer\textsuperscript{6}, G. Dumas\textsuperscript{5}, C. Dobbs\textsuperscript{6}, T. Thompson\textsuperscript{7}
\textsuperscript{1}MPIA, Germany, \textsuperscript{2}OAN, Spain, \textsuperscript{3}IRAM, France, \textsuperscript{4}NRAO, \textsuperscript{5}IRAM, Spain, \textsuperscript{6}MPE, Germany, \textsuperscript{7}OSU.

346.17 Molecular Gas and Giant Molecular Clouds in M51: Insights from PAWS
Annie Hughes\textsuperscript{1}, D. Colombo\textsuperscript{1}, E. Schinnerer\textsuperscript{1}, J. Pety\textsuperscript{3}, S. Meidt\textsuperscript{1}, A. Leroy\textsuperscript{4}, C. Dobbs\textsuperscript{6}, G. Dumas\textsuperscript{5}, S. Garcia-Burillo\textsuperscript{2}, C. Kramer\textsuperscript{6}, K. Schuster\textsuperscript{2}, T. Thompson\textsuperscript{7}
\textsuperscript{1}MPIA, Germany, \textsuperscript{2}IRAM, France, \textsuperscript{3}NRAO, \textsuperscript{4}MPE, Germany, \textsuperscript{5}OAN, Spain, \textsuperscript{6}IRAM, Spain, \textsuperscript{7}Ohio State University.

346.18 The Apparent Counter-Winding Bar-Spiral Hybrid of NGC 3124
Patrick M. Treuthardt\textsuperscript{1}, M. Seigar\textsuperscript{1}
\textsuperscript{1}University of Arkansas at Little Rock.

346.19 Using Dwarf Spheroidal Satellites as Probes of Galaxy Properties
Abrar Choudhury\textsuperscript{1}, P. Guhathakurta\textsuperscript{2}, K. M. Gilbert\textsuperscript{3}, R. L. Beaton\textsuperscript{4}, E. J. Tollerud\textsuperscript{5}, SPLASH collaboration
\textsuperscript{1}Bellarmine College Preparatory, \textsuperscript{2}University of California, Santa Cruz, \textsuperscript{3}University of Washington, \textsuperscript{4}University of Virginia, \textsuperscript{5}University of California, Irvine.
346.20  On the Neutral Hydrogen Filament Between M31 and M33
Felix J. Lockman¹, N. Free², J. C. Shields²
¹NRAO, ²Ohio University.

346.21  Constraining the Mass of NGC 4258 with Satellite Galaxies
Meghin Spencer¹, P. Yoachim¹, S. Loebman¹
¹University of Washington.

346.22  A Study of Tidal Streams in the Via Lactea II Simulation
Anirudh Suvarna¹, V. Rashkov², P. GuhaThakurta²
¹Monta Vista High School, ²UC Santa Cruz.

346.23  Ultraviolet Extinction in Backlit Galaxies - from Galaxy Zoo to GALEX
William C. Keel¹, A. Manning¹, B. W. Holwerda³, C. Lintott³, K. Schawinski⁴, Galaxy Zoo team
¹Univ. of Alabama, ²ESA/ESTEC, Netherlands, ³Oxford Univ., United Kingdom, ⁴Yale Univ

346.24  The WSRT HALOGAS Survey
George H. Heald¹, HALOGAS Team
¹ASTRON, Netherlands.

346.25  HI Streams And Spurs In HALOGAS Observations Of NGC 5055
Maria Patterson¹, R. Walterbos¹, G. Heald², G. Jozsa², G. Gentile³, D. Thilker⁴, HALOGAS Team
¹New Mexico State University, ²Netherlands Institute for Radio Astronomy (ASTRON), Netherlands, ³Universiteit Gent, Belgium, ⁴Johns Hopkins University.

346.26  Ionized Gas Velocities for Edge-on HALOGAS Galaxies
Catharine J. Wu¹, R. Walterbos¹, R. Rand², G. Heald³, HALOGAS Team
¹New Mexico State University, ²University of New Mexico, ³ASTRON, Netherlands.

346.27  HALOGAS: Observations and Modeling of the Nearby Edge-on Spiral Galaxy NGC 4565
Laura Zschaechner¹, R. Rand¹, G. Heald³, HALOGAS Team
¹University of New Mexico, ²ASTRON, Netherlands.

346.28  Temperature Gradients In The X-ray Emission Of Edge-on Spirals?
David Durke¹, E. M. Schlegel¹
¹UTSA.

346.29  X-ray Properties Across the Spiral Morphology
Casey E. Barker¹, C. Fuse¹
¹Rollins College.

346.30  Diffuse X-ray Emission and Star Clusters in Nearby, Face-on Spiral Galaxies
Laura D. Vega¹, M. Moore¹, L. McMaster¹, E. M. Schlegel¹
¹Univ of Texas at San Antonio.

346.31  X-ray/Optical Comparisons in M83: A Preliminary Chandra/HST Perspective
William P. Blair¹, K. Kuntz¹, K. S. Long², P. P. Plucinsky³, R. Soria⁴, B. C. Whitmore⁵, P. F. Winkler⁶
¹Johns Hopkins Univ., ²STScI, ³Harvard-Smithsonian CfA, ⁴University of Sydney, Australia, ⁵Middlebury College.

346.32  Giant Molecular Clouds and Star Formation in the Non-Grand Design Spiral Galaxy NGC 6946
David Rebolledo¹, T. Wong¹, A. Leroy²
¹University of Illinois Urbana-Champaign, ²NRAO.
347 Education & Public Outreach

Wednesday, 9:00am-6:30pm, Exhibit Hall

347.01 Hubble Legacy Archive And The Public
Jessica Harris¹, B. Whitmore¹, B. Eisenhamer¹, M. Bishop¹, L. Knisely¹
¹STScI.

347.02 Education and Outreach with the Virtual Astronomical Observatory
Brandon L. Lawton¹, B. Eisenhamer¹, M. J. Raddick², B. J. Mattson³, J. Harris¹
¹STScI, ²Johns Hopkins University, ³NASA Goddard Space Flight Center and Adnet Systems, Inc

347.03 Astropix: Everyone’s New Portal to the Universe of Astronomical Imagery
Robert L. Hurt¹, G. K. Squires¹, J. Llamas¹, C. Rosenthal³, C. S. Brinkworth³
¹Caltech, ³Port 49.

347.04 Combining Social Media with Innovative Ways of Communicating about the James Webb Space Telescope
Margaret Masetti¹
¹Adnet.

347.05 Space Culture: Innovative Cultural Approaches To Public Engagement With Astronomy, Space Science And Astronautics
Roger F. Malina¹
¹University of Texas, Dallas.

347.06 A Tale of Two Sites: Planning Ahead for August 2017
Jennifer L. Bartlett¹, S. Bell²
¹US Naval Observatory, ²HM Nautical Almanac Office, United Kingdom.

347.07 Dark Skies, Bright Kids! Year 3
David G. Whelan¹, K. E. Johnson¹, L. D. Barcos-Munoz¹, R. L. Beaton¹, J. Borish¹,
J. F. Corby¹, G. Dorsey¹, N. E. Gugliucci¹, B. J. Prager¹, P. A. Ries¹, C. E. Romero¹,
K. R. Sokal¹, X. Tang¹, L. M. Walker¹, A. J. Yang¹, G. Zasowski¹
¹University of Virginia.

347.08 Bringing the Universe to the Valley of the Sun: Astronomy Outreach at Arizona State University
Teresa Ashcraft¹, K. A. Knierman¹, W. L. Taylor¹, M. J. Rutkowski³
¹Arizona State University.

347.09 Alternative Mounting Systems for the Galileoscope
Christine Welling¹, S. Pompea², R. Sparks²
¹Dickinson College, ²National Optical Astronomy Observatory.

348 Variable Stars Cataclysmic Variables and Friends

Wednesday, 9:00am-6:30pm, Exhibit Hall

348.01 Science Literacy and Research: Making Connections Using Kepler Data
Stacy DeVeau¹, J. Blackwell², D. Edwards³, D. Ciardi⁴, S. Howell⁵
¹Arizona NASA Educator Resource Center, ²Phillips Exeter Academy, ³Sherando High School, ⁴California Institute of Technology, ⁵NASA Ames Research Center.

348.02 An Analysis of Known Variable Stars in the Kepler Field
Nicholas J. Jimenez¹, K. J. Mighell³
¹Alfred University, ³National Optical Astronomy Observatory.
348.03 Spectral Variations of RV Tauri and Semi-Regular Variables Observed with Kepler
Donald K. Walter¹, S. B. Howell², J. L. Cash¹
¹South Carolina State University, ²NASA Ames Research Center.

348.04 Pulsating B Stars observed by Kepler
Bernard J. McNamara¹, J. Jackiewicz¹, J. McKeever¹, J. McAteer¹, L. Boucheron¹, H. Cao¹, D. Voelz¹, K. DeGreave¹, M. Kirk¹, G. Taylor¹, A. Al-Ghraibah¹, A. Pevtsov¹, B. Calabro¹, Y. Hao¹
¹New Mexico State Univ

348.05 Unusual Pulsation Properties of Red Giant Branch Stars in Kepler
Jean McKeever¹, J. Jackiewicz¹, B. McNamara¹, J. McAteer¹, L. Boucheron¹, H. Cao¹, M. Kirk¹, K. Degraeve¹
¹New Mexico State University.

348.06 Understanding Stellar Periodicity with Kepler Quarter 1 Data
Christine Burns¹, D. R. Ciardi², S. B. Howell³, J. A. Blackwell³, B. L. Rachford¹, S. N. DeVoe¹, D. L. Costache¹, D. Edwards², D. S. Stiles¹, R. C. Esplin¹
¹Embry-Riddle Aeronautical University, ²NASA Exoplanet Science Institute/Caltech, ³NASA Ames Research Center, ⁴Phillips Exeter Academy, ⁵Earth Science/Environmental Science/Astronomy Teacher.

348.07 Searching For Stellar X-ray Cycles With XMM-Newton
John Hoffman¹, H. Guenther², N. Wright²
¹University of Illinois at Urbana-Champaign, ²Harvard-Smithsonian Center for Astrophysics.

348.08 RR Lyrae Variables In The Ultraviolet: The View From GALEX
Jonathan Wheatley¹, B. Y. Welsh¹, S. E. Browne²
¹University of California Berkeley, ²Eureka Scientific, Inc.

348.09 Variable Uv-source Catalog From The Galex Database
Nitish Chopra¹, A. Conti², L. Bianchi³
¹University of Wisconsin, ²STScI, ³Johns Hopkins University.

348.10 On The Variability Of MWC 349A: Continuum Versus Hα Emission
Alexander Hillbrand¹, V. Strelnitski², D. Sliski², G. Walker², B. Bosworth³
¹Cornell U. & Maria Mitchell Obs., ²Maria Mitchell Obs., ³Mass. Coll. of Art & Design & Maria Mitchell Obs

348.11 Observations of Suspected RR Lyrae Variable Stars
Caleb Bahr¹, H. amende¹, W. Powell Jr.¹, R. Wilhelm²
¹Texas Lutheran University, ²University of Kentucky.

348.12 A Mid-infrared Study of RR Lyrae Stars with the WISE Preliminary Data Release
Tatyana Gavrilchenko¹, C. R. Klein¹, J. S. Bloom¹, N. R. Butler²
¹University of California, Berkeley, ²Arizona State University.

348.13 First Detection of Far-IR Variability in M33 and M101
Edward J. Montiel¹, C. W. Engelbracht¹, G. C. Clayton²
¹Steward Observatory, ²Dept. of Physics & Astronomy, Louisiana State University.

348.14 Near-infrared Period-Luminosity relations of Large Magellanic Cloud Cepheids
Michael T. Smitka¹, L. M. Macri¹, S. Kanbur⁴, F. Ripple², C. Ngeow³
¹Texas A&M University, ²SUNY-Oswego, ³National Central University, Taiwan.

348.15 A search for Cepheids in NGC 5584 using Difference Image Analysis
Samantha L. Hoffmann¹, L. M. Macri¹, A. G. Riess¹, SHOES team
¹Texas A&M University, ²Johns Hopkins University/Space Telescope Science Institute.
348.16 Low-Frequency Temporal Variability in Mira and Semiregular Variables
Matthew R. Templeton\textsuperscript{1}, M. Karovska\textsuperscript{2}, E. O. Waagen\textsuperscript{1}
\textsuperscript{1}AAVSO, \textsuperscript{2}Harvard-Smithsonian Center for Astrophysics.

348.17 Analysis Of Low-amplitude Variations In The Light Curves Of FF Aqr And HD 185587
Keenan M. Stone\textsuperscript{1}, T. R. Vaccaro\textsuperscript{1}
\textsuperscript{1}Francis Marion University.

348.18 MOST Observations of the Trapezium Region
Arne A. Henden\textsuperscript{1}, M. R. Templeton\textsuperscript{1}, W. Herbst\textsuperscript{2}, J. A. Guzik\textsuperscript{3}
\textsuperscript{1}AAVSO, \textsuperscript{2}Wesleyan University, \textsuperscript{3}Los Alamos National Laboratory.

348.19 The LINEAR Photometric Database: Time Domain Information for SDSS Objects
Mark Veyette\textsuperscript{1}, A. C. Becker\textsuperscript{1}, H. Bozic\textsuperscript{2}, P. Carroll\textsuperscript{1}, P. Champey\textsuperscript{1}, Z. Draper\textsuperscript{1}, N. Evans\textsuperscript{1}, A. Filbrandt\textsuperscript{1}, J. Fowler\textsuperscript{1}, J. Gailey\textsuperscript{1}, M. Galin\textsuperscript{2}, Z. Ivezic\textsuperscript{1}, Z. Jennings\textsuperscript{1}, J. Kelley\textsuperscript{1}, A. Krofin\textsuperscript{1}, C. Laws\textsuperscript{1}, E. Lewarch\textsuperscript{1}, S. Loebman\textsuperscript{1}, L. Mayorga\textsuperscript{1}, M. Mesaric\textsuperscript{2}, D. P. Morgan\textsuperscript{1}, P. Munk\textsuperscript{2}, H. Oluseyi\textsuperscript{1}, L. Palaversa\textsuperscript{3}, M. Patel\textsuperscript{1}, D. Ruzdjak\textsuperscript{2}, S. Schmidt\textsuperscript{1}, B. Sesar\textsuperscript{4}, G. Srdoc\textsuperscript{2}, K. Steakley\textsuperscript{1}, J. S. Stuart\textsuperscript{2}, D. Sudar\textsuperscript{2}, D. Vrbanec\textsuperscript{1}, D. B. Westman\textsuperscript{1}, S. Wheaton\textsuperscript{1}, P. Wozniak\textsuperscript{1}
\textsuperscript{1}University of Washington, \textsuperscript{2}University of Zagreb, Croatia, \textsuperscript{3}Florida Institute of Technology, \textsuperscript{4}Boston University, \textsuperscript{5}Geneva University, Switzerland, \textsuperscript{6}California Institute of Technology, \textsuperscript{7}Massachusetts Institute of Technology, \textsuperscript{8}Los Alamos National Laboratory.

348.20 Waves In Accretion Disks, Observed With Fresno State’S Station At Sierra Remote Observatories: Hv Andromedae, Lq Pegasi, And Lm Ursae Majoris
Gerald Rude\textsuperscript{1}, F. A. Ringwald\textsuperscript{1}
\textsuperscript{1}California State University Fresno.

348.21 The 100,000-Magnitude Light Curve For the Eruption of Recurrent Nova T Pyx
Bradley E. Schaefer\textsuperscript{1}
\textsuperscript{1}Louisiana State Univ

348.22 Expansion of the Nova Shell Around Z Cam
Trisha Mizusawa\textsuperscript{1}, M. Shara\textsuperscript{1}, D. Zurek\textsuperscript{1}
\textsuperscript{1}American Museum of Natural History.

348.23 Toward a Unified Understanding of Radio Emission from Novae
Traci Johnson\textsuperscript{1}, M. Krauss\textsuperscript{2}, M. Rupen\textsuperscript{3}, A. Mioduszewski\textsuperscript{2}, L. Chomiuk\textsuperscript{2}, J. Sokoloski\textsuperscript{1}, N. Roy\textsuperscript{2}
\textsuperscript{1}Carleton College, \textsuperscript{2}National Radio Astronomy Observatory, \textsuperscript{3}Columbia University.

348.24 Water Masers of Water Fountain Pre-Planetary Nebula IRAS 16342-3814
Hannah Rogers\textsuperscript{1}, M. Claussen\textsuperscript{2}, M. R. Morris\textsuperscript{3}, R. Sahai\textsuperscript{4}
\textsuperscript{1}Augustana College / NRAO REU, \textsuperscript{2}National Radio Astronomy Observatory, \textsuperscript{3}UCLA, \textsuperscript{4}Caltech / JPL.

349 Molecular Clouds, HII Regions, Interstellar Medium
Wednesday, 9:00am-6:30pm, Exhibit Hall

349.01 The G1 Intermediate-velocity Cloud:low-metallicity Gas Streaming Away From The Galaxy
Barry Welsh\textsuperscript{1}, R. Lallement\textsuperscript{2}, J. Wheatley\textsuperscript{1}
\textsuperscript{1}UC, Berkeley, \textsuperscript{2}GEPI, Observatoire de Paris, CNRS, Meudon, France.
349.02 Effects of Shear and Magnetic Fields on Molecular Cloud Formation in the Flow-Driven Picture in 2D
Christina M. Haig¹, F. Heitsch¹, J. Carroll³, A. Frank²
¹University of North Carolina, Chapel Hill, ²University of Rochester.

349.03 Cosmic Origins Spectrograph Observations of the Heavily-Reddened Star NCG 2024 Number 1
Theodore P. Snow¹, E. Burgh¹, J. Destree¹, D. Anderson¹, R. Ferguson¹
¹Univ. of Colorado.

349.04 Snakes in the Plane: Direct Imaging of Magnetized Turbulence in the Interstellar Medium
Bryan M. Gaensler¹, M. Haverkorn², B. Burkhart³, K. J. Newton-McGee¹, R. D. Ekers⁴, A. Lazarian³, N. M. McClure-Griffiths⁴, T. Robishaw⁴, J. M. Dickey⁵, A. J. Green¹
¹The University of Sydney, Australia, ²Radboud University Nijmegen, Netherlands, ³University of Wisconsin, Madison, ⁴CSIRO, Australia, ⁵DRAO, Canada, ⁶University of Tasmania, Australia.

349.05 An Ultraviolet and X-Ray Study of ISM Dust and Gas Toward Two LMXBs
Adam G. Jensen¹, G. Sonneborn², N. Schulz³, L. Valencic²
¹Wesleyan University, ²NASA’s GSFC, ³MIT.

349.06 Faraday Rotation Measurements of the Super Bubble Associated with the Rosette Nebula
Allison H. Savage¹, S. R. Spangler¹, P. D. Fischer¹
¹University of Iowa.

349.07 Cosmic Origins Spectrograph Observations of Translucent Clouds
Eric B. Burgh¹, T. P. Snow¹, J. D. Destree¹, R. M. Ferguson¹, A. A. Youngblood¹, D. K. Anderson¹, K. France¹
¹Univ. of Colorado, Boulder.

349.08 Mapping the Magnetic Field of Cloud 3 in Lynds 204
Lauren Cashman¹, D. P. Clemens¹
¹Boston University.

349.09 Self-sustained Magnetized Clumps And Their Interaction With Shocks
Shule Li¹, A. Frank¹
¹University of Rochester.

349.10 Mapping Dust Across Kiloparsec-Scale Areas of M31 with the Panchromatic Hubble Andromeda Treasury (PHAT)
Julianne Dalcanton¹, A. K. Leroy², K. D. Gordon³, D. Lang⁴, B. F. Williams¹, PHAT Collaboration
¹Univ. of Washington, ²NRAO, ³STScI, ⁴Princeton University.

349.11 The Ultra-compact HII Region G31.41+0.31 Revisited: A Radio Continuum and Infrared Study
Charity J. Southworth¹
¹Indiana University.

349.12 The Emission Nebula Sh2-231 And Its Relation To The Dust Cloud TGU 1192 (LDN 1525)
Richard P. Boyle¹, R. Janusz², V. Straizys², V. Laugalys²
¹Vatican Observatory, ²Vilnius University, Lithuania.

349.13 Locating New Sites of Massive Star Formation With WISE
Loren D. Anderson¹, T. M. Bania², D. S. Balser³
¹West Virginia University, ²Boston University, ³NRAO.
349.14 The Polarized ISM Toward and Beyond Open Cluster NGC 6802
April Pinnick\(^1\), D. P. Clemens\(^1\)
\(^1\)Boston University.

349.15 A Detailed Chandra Study of the Interstellar Medium Metallicity in the Large Magellanic Cloud
Andrew Schenc\(^1\), C. Boone\(^1\), D. Burrows\(^2\), J. Hughes\(^3\), J. Lee\(^4\), R. Lord\(^1\), K. Mori\(^5\), S. Park\(^1\), S. Post\(^1\), P. Slane\(^6\)
\(^1\)University of Texas at Arlington, \(^2\)Penn State Univ., \(^3\)Rutgers Univ. NJ, \(^4\)Korea Astronomy and Space Science Institute, Korea, Republic of, \(^5\)Univ of Miyazaki, Japan, \(^6\)Harvard-Smithsonian, CfA.

349.16 The Interstellar Medium in the Kepler Search Volume
Marshall C. Johnson\(^1\), A. G. Jensen\(^2\), S. Redfield\(^2\)
\(^1\)University of Texas at Austin, \(^2\)Wesleyan University.

349.17 GALFA HI: Needles as a New Measure of Interstellar Magnetic Fields
Joshua Goldston Peek\(^1\), GALFA-HI Survey Team
\(^1\)Columbia University.

349.18 The GALFA-HI Survey: Analyzing The New Ultra-Compact Cloud Catalog
Destry R. Saul\(^1\), J. E. G. Peek\(^1\), J. Grcevich\(^1\), M. E. Putman\(^1\), K. A. Douglas\(^2\), E. J. Korpela\(^1\), S. Stanimirovic\(^1\), C. Heiles\(^3\), M. Lee\(^4\), S. J. Gibson\(^3\), A. Begum\(^6\), A. R. H. Brown\(^1\), B. Burkhart\(^4\), E. T. Hamden\(^1\), N. M. Pingel\(^6\), S. Tonnesen\(^6\)
\(^1\)Columbia University, \(^2\)Arecibo Observatory, \(^3\)University of California, Berkeley, \(^4\)University of Wisconsin, Madison, \(^5\)Western Kentucky University, \(^6\)Princeton University.

349.19 Interferometric Images of the 36 GHz Methanol Masers in Star Forming Regions
Hannah Seyb\(^1\), V. Fish\(^2\), L. Sjouwerman\(^2\), Y. Pihlström\(^2\)
\(^1\)Guilford College, \(^2\)MIT Haystack Observatory, \(^3\)National Radio Astronomy Observatory, \(^4\)University of New Mexico.

349.20 Analysis Of The California Molecular Cloud Through CS J(2-1), HCN J(1-0), And C18O J(2-1)molecular Tracers
Steven Jasso\(^1\), Y. Shirley\(^2\), J. Bieging\(^2\), A. Rudolph\(^1\), C. Lada\(^3\), J. Forbrich\(^3\), C. Roman\(^4\)
\(^1\)Department of Physics and Astronomy, California State Polytechnic University of Pomona, \(^2\)Steward Observatory, University of Arizona, \(^3\)Harvard-Smithsonian Center for Astrophysics, \(^4\)UNAM-Ensenada, Mexico.

349.21 Ices and the Extinction Curve in the Quiescent Medium of Isolated Dense Cores
Abraham C. A. Boogert\(^1\), T. Huard\(^1\), A. Cook\(^1\), J. Chiar\(^1\), C. Knez\(^2\), L. Decin\(^5\), G. Blake\(^1\), X. Tieless\(^6\), E. van Dishoeck\(^6\)
\(^1\)California Institute of Tech., \(^2\)University of Maryland, \(^3\)NASA/Ames, \(^4\)SETI, \(^5\)KU Leuven, Belgium, \(^6\)Leiden Observatory, Netherlands.

349.22 Physical Properties of Galactic Star Forming Region W51
Kevin Christiansen\(^1\), G. Langston\(^2\), M. Jones\(^3\), A. Battisti\(^4\)
\(^1\)Rochester Institute of Technology, \(^2\)NRAO, \(^3\)University of Wisconsin, \(^4\)University of Massachusettsamherst.

349.23 HI Maps of the Lockman Hole Region and a Comparison with Spitzer 160 micron Maps
Bruce Grossan\(^1\), C. Heiles\(^2\), J. E. G. Peek\(^3\)
\(^1\)University of California Space Sciences Laboratory, \(^2\)University of California, Berkeley, Department of Astronomy, \(^3\)Colombia University Department of Astronomy.
349.24  GALFA HI: Candidate Sites for H2 Formation in Cold HI Emission and Other Tracers
Jonathan Newton\(^1\), S. J. Gibson\(^1\), K. A. Douglas\(^2\), B. Koo\(^3\), J. Kang\(^1\), G. Park\(^1\),
J. E. G. Peek\(^4\), E. J. Korpela\(^5\), C. Heiles\(^6\), T. M. Dame\(^7\)
\(^1\)Western Kentucky University, \(^2\)Dominion Radio Astrophysical Observatory, Canada,
\(^3\)Seoul National University, Korea, Republic of, \(^4\)Columbia University, \(^5\)Berkeley Space
Sciences Laboratory, \(^6\)University of California - Berkeley, \(^7\)Harvard Center for Astrophysics.

349.25  Water Maser Polarization in W3(OH)
Steven Merriman\(^1\), E. Momjian\(^2\), A. Sarma\(^1\)
\(^1\)Depaul University, \(^2\)NRAO.

349.26  Cm and mm Survey of Molecular Absorption Lines in Centaurus A
Juergen Ott\(^1\), S. Muller\(^2\), D. Meier\(^3\), A. Peck\(^1\), V. Impellizzeri\(^1\), F. Walter\(^4\), C. Henkel\(^5\),
S. Martin\(^5\), S. Aalto\(^2\), P. van der Werf\(^7\), I. Feain\(^8\), C. Anderson\(^3\)
\(^1\)National Radio Astronomy Observatory, \(^2\)Chalmers University of Technology, Onsala
Space Observatory, Sweden, \(^3\)New Mexico Institute of Technology, \(^4\)Max-Planck-Institut
fuer Astronomie, Germany, \(^5\)Max-Planck-Institut fuer Radioastronomie, Germany,
\(^6\)European Southern Observatory, Chile, \(^7\)Leiden University, Netherlands, \(^8\)CSIRO
Astronomy and Space Science, Australia.

349.27  The Energy Budget of Massive Star-Formation in Andromeda
Karin M. Sandstrom\(^1\), B. Groves\(^1\), M. Kapala\(^1\), J. Dalcanton\(^2\), K. Gordon\(^3\), O. Krause\(^1\),
A. Leroy\(^4\), H. Rix\(^1\), E. Schinnerer\(^1\), A. Schruba\(^1\), G. van de Ven\(^1\), F. Walter\(^1\), D. Weisz\(^2\)
\(^1\)Max Planck Institute for Astronomy, Germany, \(^2\)University of Washington, Department of
Astronomy, \(^3\)Space Telescope Science Institute, \(^4\)National Radio Astronomy
Observatory.

349.28  Dust Infrared Emission in an H2-Forming, Perseus-Arm Cloud
Aaron C. Bell\(^1\), S. J. Gibson\(^1\), A. Noriega-Crespo\(^2\), W. T. Reach\(^2\), S. Carey\(^2\), M. Miville-
Deschenes\(^3\), F. Boulanger\(^1\), C. M. Brunt\(^1\), A. R. Taylor\(^4\), P. G. Martin\(^6\), K. A. Douglas\(^7\)
\(^1\)Western Kentucky University, \(^2\)Infrared Processing and Analysis Center, Caltech, \(^3\)Institut d' Astrophysique Spatiale, Universite Paris, France,
\(^4\)Exeter University, United Kingdom,
\(^5\)University of Calgary, Canada, \(^6\)Canadian Institute for Theoretical Astrophysics,
University of Toronto, Canada, \(^7\)Dominion Radio Astrophysical Observatory, Canada.

349.29  GALFA HI: The Inner-Galaxy ALFA (I-GALFA) Low-Latitude HI Survey
Steven J. Gibson\(^1\), B. Koo\(^2\), K. A. Douglas\(^3\), J. Kang\(^1\), G. Park\(^2\), J. E. G. Peek\(^4\),
E. J. Korpela\(^5\), C. Heiles\(^6\), J. H. Newton\(^1\)
\(^1\)Western Kentucky University, \(^2\)Seoul National University, Korea, Republic of, \(^3\)Dominion
Radio Astrophysical Observatory, Canada, \(^4\)Columbia University, \(^5\)Berkeley Space
Sciences Laboratory, \(^6\)University of California - Berkeley.

349.30  Tracing the Serpens Molecular Cloud with 12CO and 13CO J = 2 -> 1: Achieving High Resolution over a Large Field of View
Kaylan Burleigh\(^1\), A. Chromey\(^1\), J. Bieging\(^1\), C. Kulesa\(^1\)
\(^1\)University of Arizona.

349.31  IRAS01202+6133: A Possible Case of Protostellar Collapse Triggered by a Small HIIRegion
Sung-Ju Kang\(^1\), C. Kerton\(^1\)
\(^1\)Iowa State University.
350 Astronomy in Middle & High Schools
Wednesday, 9:00am-6:30pm, Exhibit Hall

350.01 Incorporating Astronomy Research into the High School Curriculum
Rachael Beaton¹, G. Zasowski¹, W. Dirienzo¹, J. Corby¹
¹Univ. of Virginia.

350.02 The Georgians Experience Astronomy Research in Schools (GEARS) High School Galaxy Unit
Sarah Higdon¹, J. Higdon¹, J. Aguilar²
¹Georgia Southern Univ., ²Georgia Department of Education.

350.03 The Effect of an Authentic Science Research Experience on Teachers and Students through NITARP
Marcella Linahan¹, L. M. Rebull², C. H. Johnson³, J. C. Gibbs⁴, D. C. Sartore⁵, A. Rameswaram¹, H. N. Sprow¹, J. R. Fagan¹, A. Pullinger¹, N. J. Ezyk¹, T. Nuthmann⁴, T. Canakapalli⁴, S. Arya⁴, M. Nishida⁴, N. G. Killingstad⁴, T. S. McCanna³, A. M. O’Bryan¹, S. D. Carlson¹, M. L. Clark¹, S. M. Koop¹, T. A. Ravelomanantsoa¹, C. M. Tilley⁶, K. S. Badura⁷
¹Carmel Catholic High School (Mundelein, IL), ²Spitzer Science Center/CalTech (Pasadena, CA), ³Breck School (Minneapolis, MN), ⁴Glencoe High School (Hillsboro, OR), ⁵Pine Ridge High School (Deltona, FL).

350.04 Teacher-Student Education and Public Outreach Using Spitzer Data
Adam Keeton¹, S. Mehta², M. Butler³, T. Spuck⁴, M. Heller³, W. Sixel¹, C. Cook², P. Hutchinson², M. Butler⁶, M. Abajian⁷, V. Gorjian⁸
¹North High School, ²Haddam-Killingworth High School, ³Orange County Astronomers, ⁴Oil City High School, ⁵Clarion University, ⁶Tuscarora High School, ⁷Infrared Processing & Analysis Center/California Institute of Technology, ⁸JPL/Caltech.

350.05 The James Webb STEM Innovation Project: Bringing JWST to the Education Community
Bonnie Eisenhamer¹, J. Harris¹, H. Ryer¹, J. Taylor¹, M. Bishop¹
¹STScI.

350.06 Bringing Astronomy Activities and Science Content to Girls Locally and Nationally: A Girl Scout and NIRCam Collaboration
Larry A. Lebofsky¹, M. L. Higgins¹, D. W. McCarthy², N. R. Lebofsky¹
¹Girl Scouts of Southern Arizona Sahuaro, ²Steward Observatory, University of Arizona.

350.07 Novel Low-Cost Technologies for Communicating Astronomical Topics
Jacob Noel-Storr¹, B. N. Cole¹, D. C. Lierheimer¹, RIT Insight Lab
¹Rochester Inst. Of Technology.

350.08 Solar Filters, Galileoscopes and Students: Analysis of Two Curricula and Attitudes Toward Science
Erika Grundstrom¹
¹Vanderbilt University and Fisk University.
Invited Session 400 The Evolving Context for Science and Society
Thursday, 8:30am-9:20am, Ballroom D

400.00C Chair
Lee Anne M. Willson
Iowa State Univ

400.01 The Evolving Context for Science and Society
Alan I. Leshner
AAAS.

Connecting Scientists with NASA Astrophysics Education and Public Outreach (E/PO)
Thursday, 9:30am-11:00am, Room 19B

This 90-minute splinter meeting 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.

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 splinter session, we will highlight opportunities for scientists and NASA E/PO teams to work together, and showcase a variety of field-tested educational resources and products with time for hands-on exploration. NASA SMD program officers will be available to discuss grant funding for education and outreach. E/PO teams from several NASA Astrophysics programs will be on hand for one-on-one conversations with astronomers and astronomy educators. 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
Mangala Sharma
STScI.

Proposing to Use the NRAO Telescopes: EVLA and VLBA
Thursday, 9:30am-11:30am, Room 8

We will present practical introductions to proposing for time on the four world-class facilities operated by NRAO: the Atacama Large Millimeter/submillimeter Array (ALMA), the Expanded Very Large Array (EVLA), the Green Bank Telescope (GBT), and the Very Long Baseline Array (VLBA). The session will focus on capabilities available for the February 2012 (EVLA,GBT,VLBA) and spring 2012 (ALMA) proposal deadlines. We will introduce these capabilities, demonstrate key proposal preparation software, and go over the main technical considerations to write a feasible proposal for each telescope. We will also give a short introduction to the CASA software package, highlighting its utility to simulate interferometer observations. In parallel, staff from each facility will be available to consult with users at the NRAO booth in the exhibit hall. The schedule of presentations will be: Wednesday 11 January, ALMA, 5:30pm-7:30pm; Thursday 12 January, EVLA and VLBA,
Thursday Sessions and Events

9:30am-11:30am; Thursday 12 January, GBT, 12:45pm-1:45pm; Thursday 12 January, CASA, 1:45pm-2:45pm. Each session will involve Q&A and one-on-one consultation with NRAO staff.

Organizer
Mark T. Adams¹
¹NRAO.

401 The Wide-Field Infrared Survey Explorer (WISE): Science Frontiers and Final Data Release

Thursday, 10:00am-11:30am, Room 17B

The Wide-field Infrared Survey Explorer (WISE), a medium class Explorer NASA mission, was launched on 14 Dec 2009 and mapped the entire sky at 3.4, 4.6, 12, and 22 microns with 5 sigma point source sensitivities of approximately 0.05, 0.1, 0.73, and 5.9 mJy or better in the four bands, respectively. WISE detected hundreds of millions of stars and galaxies, including millions of ULIRGS and QSOs, hundreds of thousands of asteroids, and hundreds of brown dwarfs. Preliminary WISE data products consisting of a Source Catalog, Image Atlas, and Explanatory Supplement were released in April 2011 and covered 57% of the sky. The final data release, with full-sky coverage, is planned in March 2012. Several illustrative WISE science results will be presented in this session to suggest how the WISE survey and complementary measurements can yield groundbreaking results. The session will also include an overview of the WISE data products and mention an imminent opportunity to obtain funding support for WISE-related data analysis through NASA’s Astrophysics Data Analysis Program.

401.00C Chair
David Leisawitz¹
¹NASA’s GSFC.

401.01 WISE Enables the Community’s Science
Edward L. Wright¹
¹UC, Los Angeles.

401.02 A WISE Look at Near Earth Objects
A. Mainzer¹, J. Bauer¹, T. Grav², J. Masiero¹, R. S. McMillan², R. Walker², E. L. Wright³, R. M. Cutri¹, D. J. Tholen², WISE/NEOWISE Teams
¹JPL, ²Planetary Science Institute, ³University of Arizona, ⁴MIRA, ⁵UCLA, ⁶Infrared Processing and Analysis Center, Caltech, ⁷University of Hawaii.

401.03 The Discovery of Y Dwarfs with WISE
Michael Cushing¹
¹University of Toledo.

401.04 A WISE Look at Debris Disks
Deborah Padgett¹
¹NASA’s GSFC.

401.05 The Reddest Extragalactic WISE Sources: Hot DOGs?
Peter R. Eisenhardt¹
¹JPL.

401.06 WISE Final Data Release Preview
Roc M. Cutri¹, IPAC/WISE Science Data Center Team
¹Caltech, IPAC.
Thursday Sessions and Events

402 Large Scale Structure
Thursday, 10:00am-11:30am, Ballroom G

402.00C Chair
Matthew Graham
1Caltech.

402.01 The 6dF Galaxy Survey: Baryon Acoustic Oscillations and the Local Hubble Constant
Florian Beutler1, C. Blake2, M. Colless3, L. Staveley-Smith4, H. Jones4
1ICRAR, Australia, 2Swinburne University, Australia, 3AAO, Australia, 4Monash University, Australia.

402.02 Acoustic Scale from the Angular Power Spectra of SDSS DR8 Photometric LRGs
Hee-Jong Seo1, S. Ho2, M. White1, A. Cuesta3, A. Ross4, S. Saito1, B. Reid2, N. Padmanabhan1, W. Percival4, R. de Putter1, D. Schlegel2, D. J. Eisenstein6, L. A. N. da Costa7, F. Prada8, B. Ramos9, F. de Simoni9, R. Skibba10, L. Verde11, J. R. Gott, Ill12, I. Zehavi13
1University of California, Berkeley, 2LBL, 3Yale University, 4University of Portsmouth, United Kingdom, 5IFIC, Universidad de Valencia-CSIC, Spain, 6Harvard University, 7Laboratorio Interinstitucional de e-Astronomía- LineA, Brazil, 8Instituto de Astrofísica de Andalucia (CSIC), Spain, 9Observatorio Astronómico Nacional, Rua Gal, Brazil, 10Steward Observatory, University of Arizona, 11Institut de Ciencias del Cosmos, ICC-UB, Spain, 12Princeton University, 13Case Western Reserve University.

402.03 Testing Gravity and Cosmic Acceleration with Galaxy Clustering
Eyal Kazin1, J. Tinker2, A. G. Sanchez3, M. Blanton2
1Swinburne University of Technology, Australia, 2New York University, 3Max Planck Institut fur Extraterrestische Physik, Germany.

402.04 Measuring Dark Energy With The WiggleZ Survey
Chris Blake1, WiggleZ Dark Energy Survey
1Swinburne University of Technology, Australia.

402.05 Dark Energy, Expansion History And Non-Gaussianity From The Topology Of The Large-Scale Structure Of The Universe
Graziano Rossi1, C. Park1
1Korea Institute for Advanced Study (KIAS), Korea, Republic of.

402.06 Constraints On The Primordial Non-gaussianity From The Topology Of Large-scale Structure
Changbom Park1
1Korea Institute for Advanced Study, Korea, Republic of.

402.07 ORIGAMI: Delineating Halos using Phase-Space Folds
Bridget Falck1
1Johns Hopkins University.

402.08 Lyman Alpha Tomography
Eric J. Gawiser1, G. Kanarek2, R. Ciardullo3, C. Gronwall3, MUSYC Collaboration
1Rutgers University, 2Columbia University, 3Penn State University.

402.09 A Numerical Action Method-Based Interpretation of the Dynamical State of the M81 Group
Bradley Jacobs1, R. B. Tully1, E. J. Shaya2, L. Rizzi3
1Univ. Of Hawaii, 2Univ. Of Maryland, 3W. M. Keck Observatory.
Thursday Sessions and Events

403 AGN, QSO, Blazars VII
Thursday, 10:00am-11:30am, Room 17A

403.00C Chair
Ohad Shemmer
1University of North Texas.

403.01 LoCuSS: A Dynamical Analysis Of X-ray AGN In Massive Clusters
Christopher Haines1, M. J. Pereira1, E. Egami1, G. P. Smith2
1Steward Observatory, 2University of Birmingham, United Kingdom.

403.02 New Constraints on the Broad Line Region
David Floyd1, A. J. Ruff1, R. L. Webster2
1Monash University, Australia, 2University of Melbourne, Australia.

403.03 Time Variable Broad Line Emission in NGC 4203: Evidence for Stellar Contrails
Nicholas A. Devereux1
1Embry-Riddle Aeronautical University.

403.04 The Herschel View Of The Palomar-Green Qso: Measuring The Ism Content Of A Large Volume Limited Sample Of Nearby Quasars
Andreea Petric1, L. Ho1, N. Scoville1, N. Flagey1
1Caltech, 2Carnegie.

403.05 Observing the Fast Growth of Black Holes at z~4.8
Benny Trakhtenbrot1, H. Netzer1, P. Lira2, O. Shemmer3
1Tel-Aviv University, Israel, 2Universidad de Chile, Chile, 3University of North Texas.

403.06 STARE: Testing Black Hole Mass Measurements in Active Galaxies
Misty C. Bentz1, STARE Collaboration
1Georgia State University.

403.07 Are LINERs AGN?
Renbin Yan1, M. R. Blanton1
1New York University.

403.08 Fresh Activity in Old Systems: Radio AGN in Fossil Groups of Galaxies
Kelley M. Hess1, E. M. Wilcots2, V. L. Hartwick2
1Univ. Of Cape Town, South Africa, 2Univ. Of Wisconsin-Madison.

403.09 HST WFC3/IR Grism: Discovery of Three Accreting Black Holes in a Galaxy at z~1.35
Kevin Schawinski1, M. Urry1, E. Treister2, B. Simmons3, P. Natarajan1, E. Glikman1
1Yale University, 2Universidad de Concepcion, Chile.

404 Circumstellar Disks
Thursday, 10:00am-11:30am, Room 12A

404.00C Chair
Joseph M. Hahn1
1Space Science Institute - Austin.

404.01 Keck AO Observations of the Protostellar Disk around Radio Source I in the Orion Kleinmann-Low Nebula
Breann Sitarski1, M. R. Morris1, E. E. Becklin1, A. M. Ghez1, J. R. Lu2, A. Stolte3, H. Zinnecker4
1UCLA, 2University of Hawaii, 3Universität Bonn, Germany, 4Astrophysikalisches Institut Potsdam, Germany/SOFIA Science Center.
Thursday Sessions and Events

404.02D Circumstellar Disks Around Rapidly Rotating Be-type Stars
Yamina Touhami¹
¹Georgia State University.

404.03 A Disappearing Dusty Debris Disk
Carl Melis¹, B. Zuckerman², I. Song³, J. H. Rhee⁴, M. S. Bessell⁵, S. J. Murphy⁶
¹UC San Diego, ²UC Los Angeles, ³University of Georgia, ⁴Eureka Scientific, ⁵Australian National University.

404.04 Planetary Construction Zones in Occultation: Eclipses by Circumsecondary and Circumplanetary Disks and a Candidate Eclipse of a Pre-Main Sequence Star in Sco-Cen
Eric E. Mamajek¹, A. C. Quillen², M. Pecaut², F. Moolekamp², E. L. Scott², M. A. Kenworthy³, A. Collier Cameron⁴, N. Parley⁴
¹CTIO, University of Rochester, ²University of Rochester, ³Leiden University, Netherlands, ⁴University of St. Andrews, United Kingdom.

404.05 Studying the Gas in Circumstellar Disks with Dust Gaps and Holes
Catherine Espaillat¹
¹Harvard-Smithsonian Center for Astrophysics.

404.06 Modeling Accretion Disk Formation In Binary Systems
Martin Huarte Espinosa¹, A. Frank¹, E. G. Blackman¹, J. J. Carroll-Nellenback¹, J. Nordhaus¹
¹University of Rochester.

405 Extrasolar Planets II
Thursday, 10:00am-11:30am, Ballroom F

405.00C Chair
Nader Haghighipour¹
¹Univ. of Hawaii.

405.01 The California-Kepler Survey: Precise Planet Radii and Metallicities
Andrew Howard¹, G. W. Marcy¹, J. A. Johnson², T. D. Morton², H. Isaacson¹
¹UC Berkeley, ²Caltech.

405.02D Retrieval of Atmosphere Structure and Composition of Exoplanets from Transit Spectroscopy
Jae-Min Lee¹, L. N. Fletcher¹, P. G. J. Irwin¹
¹Atmospheric, Oceanic and Planetary Physics, University of Oxford, United Kingdom.

405.03D The Hypatia Catalog: Chemical Abundances in the Habitable Solar Neighborhood
Natalie R. Hinkel¹
¹Arizona State University.

405.04 C/O Ratios In Exoplanetary Atmospheres - New Results And Major Implications
Nikku Madhusudhan¹
¹Princeton University.

405.05 Infrared Spectroscopy of the Transiting Exoplanets HD189733b and XO-1 Using Hubble WFC3 in Spatial Scan Mode
Drake Deming¹, A. Wilkins¹, P.McCullough², N. Madhusudhan³, E. Agol⁴, A. Burrows⁵, D. Charbonneau⁶, M. Clampin⁷, J. Desert⁸, R. Gilliland⁹, H. Knutson¹⁰, A. Mandell¹⁰, S. Ranjan¹⁰, S. Seager¹⁰, A. Showman¹⁰
¹Univ. of Maryland, ²STScI, ³Princeton Univ., ⁴Univ. of Washington, ⁵CfA, ⁶GSFC, ⁷Caltech, ⁸MIT, ⁹Univ. Arizona.
Thursday Sessions and Events

405.06  New Imaging of the beta Pictoris Planet and Debris Disk
Thayne M. Currie¹, C. Thalmann², S. Matsumura³, N. Madhusudhan⁴, A. Burrows⁴, M. Kuchner¹
¹NASA-Goddard Space Flight Center, ²University of Amsterdam, Netherlands, ³University of Maryland, ⁴Princeton University.

405.07  First: Florida IR Silicon Immersion Grating Spectrometer
Jian Ge¹, B. Zhao¹, J. Wang¹, X. Wan¹, S. Powell¹
¹Univ. of Florida.

406 Cosmic Assembly Near-IR Deep Extragalactic Legacy Survey (CANDELS) I
Thursday, 10:00am-11:30am, Ballroom E

The Cosmic Assembly Near-IR Deep Extragalactic Legacy Survey (CANDELS) is the largest survey yet conducted with the Hubble Space Telescope. It is designed to document the first third of galactic evolution, from redshift z ~ 8 to z ~ 1.5. It will image more than 250,000 distant galaxies using three separate cameras on board HST from the mid-UV to near-IR, and it will find and measure Type Ia SNe beyond z > 1.5 and test their accuracy as standard candles for cosmology. Five premier sky regions are selected, all with extensive multi-wavelength imaging and spectroscopy from X-ray to radio.

The heart of CANDELS is the WFC3/IR camera, which opens up extensive high-resolution near-IR imaging on Hubble for the first time. WFC3/IR’s longer wavelengths reveal the true structure of z ~ 2 galaxies as outlined by older stars and can find and measure distant Type Ia SNe to higher redshifts than previously possible. WFC3/IR returns superbly accurate YJH photometry that goes 10 times fainter than ground data, permitting the first complete census of galaxies in the distant Universe down to a few billion solar masses out to z ~ 8. The CANDELS special sessions will give an overview of CANDELS and present early science results from the first year of data. CANDELS I will concentrate on the structure and morphologies of z ~ 2 galaxies and their relation to stellar mass and star-formation activity. The new CANDELS morphological classification scheme will be described, and morphologies for z ~ 2 X-ray AGN summarized. WFC3 grism observations in CANDELS fields will be described.

406.00C  Chair
Henry Closson Ferguson¹
¹STScI.

406.01  Introduction to the CANDELS Survey
S. M. Faber¹, H. C. Ferguson², CANDELS Team
¹UC, Santa Cruz, ²STScI.

406.02  The CANDELS Morphological Classification System for z ~ 2 Galaxies
Jeyhan S. Kartaltepe¹, CANDELS Team
¹National Optical Astronomy Observatory.

406.03  Quenching and Galactic Structure: Why Did SFR Shut Down in Massive Galaxies?
Eric F. Bell¹, CANDELS team
¹University of Michigan.

406.04  Clumps in Star-forming Galaxies at High Redshifts and Their Evolution
Swaravindranath¹
¹IUCAA, India.
Thursday Sessions and Events

406.05  **Morphology and Structure of AGN Host Galaxies at z ~ 2**  
Dale Kocevski¹, S. Faber¹, K. Nandra², J. Trump¹, D. Koo¹, A. Koekemoer³  
¹University of California, Santa Cruz, ²Max Planck Institute for Extraterrestrial Physics, ³STScI.

406.06  **Infrared Spectroscopy with HST: Grism Results in the CANDELS Fields**  
Benjamin J. Weiner¹  
¹University of Arizona.

407 Science Highlights from NASA’s Astrophysics Data Analysis Program I

Thursday, 10:00am-11:30am, Room 16B

Over the years, NASA has invested heavily in the development and execution of an extensive array of space astrophysics missions. 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 from investigators supported under the ADAP Program.

407.00C  **Chair**  
Douglas M. Hudgins¹  
¹NASA Headquarters.

407.01  **Survey of Infrared Variability of Young Stellar Objects in Nearby Molecular Clouds**  
Tracy L. Huard¹, S. Storm¹, L. G. Mundy¹  
¹Univ. of Maryland.

407.02  **The Role of Environment in Star Formation**  
Dawn E. Peterson¹  
¹Harvard-Smithsonian CfA.

407.03  **Protostellar Jets and Outflows: New Features from Spitzer Image Analysis**  
Thangasamy Velusamy¹, W. D. Langer¹  
¹JPL.

407.04  **Studies of Evolved Star Mass Loss: GRAMS Modeling of Red Supergiant and Asymptotic Giant Branch Stars in the Magellanic Clouds**  
Benjamin A. Sargent¹, S. Srinivasan², D. Riebel³, M. Boyer¹, M. Meixner¹  
¹Space Telescope Science Institute, ²Institut d’Astrophysique de Paris, France, ³The Johns Hopkins University.

407.05  **Discovering and Characterizing Black Hole X-ray Sources in Extragalactic Globular Clusters**  
Stephen E. Zepf¹, M. B. Peacock¹, A. Kundu¹, T. J. Maccarone³  
¹Michigan State Univ., ²Eureka Scientific, ³Southampton University.

407.06  **Modeling Accretion Hysteresis in LMC X-3**  
Hal J. Cambier¹, D. Smith¹  
¹UCSC.
Thursday Sessions and Events

408 Energetic Binary Stars II
Thursday, 10:00am-11:30am, Room 18C

408.00C Chair
Virginia L. Trimble
1UC, Irvine.

408.01 The Chandra Galactic Bulge Survey
1Louisiana State University, 2SRON, Netherlands Institute for Space Research, Netherlands, 3University of Manchester, United Kingdom, 4Radboud University, Netherlands, 5University of Warwick, United Kingdom, 6University of Southampton, United Kingdom, 7University of Amsterdam, Netherlands, 8University of Groningen, Netherlands, 9Institut de Ciencies de l’Espai (ICE, IEEC-CSIC), Spain, 10ISOC, ESA/ESAC, Spain, 11University of Alberta, Canada, 12University of Arizona.

408.02D An Infrared Study Of Compact Binary Systems
Juthika Khargharia1
1University of Colorado.

408.03 A Radial Velocity Study of Hot Subdwarf B Stars with Cool Main Sequence Companions
Brad Barlow1, R. A. Wade1, S. E. Liss1, M. A. Stark2
1The Pennsylvania State University, 2University of Michigan-Flint.

408.04D Searching for Flares in Hard X-rays/Soft Gamma Rays with GBM Using the Earth Occultation Technique
James Rodi1, A. Camero-Arranz2, G. Case1, V. Chaplin3, M. Cherry1, M. Finger2, P. Jenke1, J. Taylor1, C. Wilson-Hodge4
1Louisiana State University, 2USRA, 3University of Alabama-Huntsville, 4NASA Marshall Space Flight Center.

408.05 The X-ray Point Source Population of NGC 300
Breanna A. Binder1, B. F. Williams1, S. F. Anderson1, J. J. Dalcanton1, M. Eracleous2, T. J. Gaetz3, M. R. Garcia3, A. K. H. Kong4, P. P. Plucinsky1, A. C. Seth3, E. D. Skillman3, D. R. Weisz1
1University of Washington, 2Pennsylvania State University, 3Harvard-Smithsonian Center for Astrophysics, 4National Tsing Hua University, Taiwan, 5University of Minnesota.

409 Galactic Centers
Thursday, 10:00am-11:30am, Room 16A

409.00C Chair
Felix J. Lockman1
1NRAO.

409.01 GBT Measurements of the Physical Properties of the Sgr B2 Region
Glen Langston1, D. R. Schmidt2, K. Christiansen3
1NRAO, 2Franklin and Marshall, 3Rochester Institute of Technology.

409.02 Sgr A*: Energizing the Surroundings across Epochs
Roman Shcherbakov4, F. Baganoiff, R. Penna3, J. McKinney4
1University of Maryland, 2MIT, 3Harvard University, 4Stanford.
Thursday Sessions and Events

409.03D Direct Orbital Parameter Estimates of the Young Stellar Disk in the Galactic Center
Sylvana Yelda¹, A. M. Ghez², J. R. Lu³, T. Do³, L. Meyer¹, M. R. Morris¹, K. Matthews⁴
¹UCLA, ²Institute for Astronomy, Hawaii, ³UC Irvine, ⁴Caltech.

409.04 HST Observations of the Stellar Distribution Near Sgr A*
Howard A. Bushouse¹, F. Yusef-Zadeh², M. Wardle³
¹STScI, ²Northwestern University, ³Macquarie University, Australia.

409.05 Sgr A*: Quiescent But Not Atypical — A Comparison With A0620-00
Sera Markoff¹, M. A. Nowak², J. Nip¹, F. K. Baganoff², C. S. Froning³, A. G. Cantrell⁴, T. J. Maccarone³, E. Gallo⁵
¹API, University of Amsterdam, Netherlands, ²MIT Kavli Institute for Astrophysics & Space Research, ³CASA, University of Colorado, ⁴Department of Astronomy, Yale University, ⁵School of Physics & Astronomy, University of Southampton, United Kingdom, ⁶Department of Astronomy, University of Michigan.

409.06 Keck AO Observations of the Central 5 pc of M31
Jessica R. Lu¹, R. M. Rich², A. M. Ghez³, K. Matthews¹, K. Gebhardt⁴
¹IFA, U. of Hawaii, ²UCLA, ³Caltech, ⁴University of Texas, Austin.

410 Surveys and Large Programs II
Thursday, 10:00am-11:30am, Room 18B

410.00C Chair
David J. Helfand¹
¹Columbia Astrophysics Lab

410.01 Science Quality Mosaics and a Source List for the Spitzer Heritage Archive
Peter L. Capak¹, H. Teplitz², D. Hanish³, Spitzer Science Center, T. Brooke³, R. Laher¹
¹Caltech, ²IPAC/Caltech, ³IPAC.

410.02 The JCMT Legacy Survey: A Spectroscopic And Continuum Survey Of The Submillimetre Sky
Antonio Chrysostomou¹, G. R. Davis¹, JCMT Legacy Survey coordinators
¹Joint Astronomy Centre.

410.03D The Arecibo Zone of Avoidance Survey: First Results
Travis P. McIntyre¹, R. Minchin², P. Henning¹
¹The University of New Mexico, ²Arecibo Observatory.

410.04 Early APOGEE Chemical Results for the Milky Way Bulge
Ana Elia Garcia Perez², C. Allende Prieto³, D. Bizyaev³, P. Frinchaboy⁴, J. Holtzman⁵, J. Johnson⁶, S. R. Majewski¹, D. Nidever¹, R. Schiavon⁷, M. Schultheis⁸, M. D. Shetrone⁹, M. Skrutskie¹⁰, J. C. Wilson¹, G. Zasowski¹
¹University of Virginia, ²Instituto de Astrofisica de Canarias, Spain, ³Apache Point Observatory, ⁴Texas Christian University, ⁵New Mexico State University, ⁶Ohio State University, ⁷Gemini Observatory, ⁸Observatoire de Besançon, France, ⁹University of Texas.

410.05 Exploring The Sagittarius Dwarf Spheroidal Galaxy And Its Tidal Tails With APOGEE
Steven R. Majewski¹, C. Allende-Prieto², T. C. Beers³, D. M. Bizyaev⁴, P. M. Frinchaboy⁵, A. Garcia-Perez¹, J. Holtzman⁶, I. I. Ivans⁷, D. R. Law⁸, D. L. Nidever¹, R. P. Schiavon⁹, M. Shetrone¹⁰, M. F. Skrutskie¹, J. C. Wilson¹, G. Zasowski²
¹Univ. of Virginia, ²IAC, Spain, ³JINA/NOAO, ⁴APO, ⁵TCU, ⁶NMSU, ⁷Univ. of Utah, ⁸Univ. of Toronto, Canada, ⁹Gemini Observatory, ¹⁰Univ. of Texas.
Thursday Sessions and Events

410.06 First APOGEE Results on Galactic Bulge Kinematics
David L. Nidever¹, C. Allende Prieto¹, D. Bizyaev¹, P. M. Frinchaboy⁴, A. E. Garcia Perez¹, J. Holtzman¹, S. R. Majewski¹, R. Schiavon⁴, M. F. Skrutskie⁴, G. Zasowski¹
¹Univ. of Virginia, ²Instituto de Astrofísica de Canarias, Spain, ³Apache Point Observatory, ⁴Texas Christian University, ⁵New Mexico State University, ⁶Gemini Observatory.

410.07 WITHDRAWN: SKYMONITOR: A Global Network to Monitor Sky Brightness at Dark Sky Sites
Donald R. Davis¹, D. Mckenna², P. Boley³, D. Pulvermacher⁴, R. Pulvermacher⁴
¹International Dark-sky Association, ²Palomar Observatory, California Institute of Technology, ³Max Plank Institute for Astronomy, Heidelberg, Germany, ⁴Matrix Product Development.

411 Evolution of Galaxies VII
Thursday, 10:00am-11:30am, Room 19A

411.00C Chair
Viviana Acquaviva¹
¹Rutgers, The State University of New Jersey.

411.01 The Properties Of The Stellar Nuclei With The Host Galaxy Morphology In The ACSVCS
Hyun-chul Lee¹
¹The University of Texas - Panamerican.

411.02D Kinematics and Energetics in Local Luminous Infrared Galaxies
Vivian U¹, D. B. Sanders¹, GOALS Team
¹UH Institute for Astronomy.

411.03 The Properties Of Iras Detected Mergers In The Local Universe
Alfredo Carpineti⁴, S. Kaviraj¹, D. L. Clements¹, D. Darg², A. K. Hyde¹, C. Lintott²
¹Imperial College, United Kingdom, ²Oxford University, United Kingdom.

411.04D Observational Studies of Interacting Galaxies and the Development of a Wide Integral-field Infrared Spectrograph
Richard C. Chou¹
¹University of Toronto, Canada.

411.05 A Complete Census of Cold Gas and Dust in Nearby Luminous Infrared Galaxies
Sabrina Stierwalt¹, D. Frayer², D. Windemuth², R. Maddalena²
¹Caltech, ²NRAO, ³Wesleyan University.

411.06 The Evolution Of The Galaxy Mass-size Relation In Different Environments
Simona Mei¹, A. Raichoor¹, A. S. Stanford¹, B. P. Holden¹, F. Nakata³, P. Rosati⁶, F. Shankar¹, M. Tanaka⁸, H. C. Ford³, M. Huertas-Company¹⁰, G. D. Illingworth⁴, T. Kodama¹¹, M. Postman¹², A. Rettura¹³, J. P. Blakeslee¹⁰, R. Demarco¹⁵, M. J. Jee³, W. Rick¹²
¹Observatory of Paris/University P. Diderot - IPAC Caltech, ²Osservatorio Astronomico di Brera, Italy, ³University of California Davis, ⁴University of Santa Cruz, ⁵Subaru Telescope, National Astronomical Observatory of Japan, ⁶ESO, Germany, ⁷Observatory of Paris, France, ⁸IPMU, University of Tokyo, Japan, ⁹Johns Hopkins University, ¹⁰Observatory of Paris/University P. Diderot, France, ¹¹National Astronomical Observatory of Japan, Japan, ¹²Space Telescope Science Institute, ¹³University of California Riverside, ¹⁴Herzberg Institute of Astrophysics, Canada, ¹⁵Universidad de Concepcion, Chile.
**Thursday Sessions and Events**

**411.07**  
First Results from TYPHOON: A Spectrophotometric Data Cube Program  
Laura Sturch\(^1\), B. Madore\(^2\)  
\(^1\)Boston University, \(^2\)Carnegie Observatories.

**Invited Session 412 White Dwarf Stars From the Telescope to the Laboratory and Back Again: Exploring Extreme Physics**  
Thursday, 11:40am-12:30pm, Ballroom D

**412.00C**  
Chair  
Lee Anne M. Willson\(^1\)  
\(^1\)Iowa State Univ

**412.01**  
White Dwarf Stars From the Telescope to the Laboratory and Back Again: Exploring Extreme Physics  
Donald E. Winget\(^1\)  
\(^1\)University of Texas.

**Proposing to Use the NRAO Telescopes: GBT and CASA**  
Thursday, 12:45pm-3:00pm, Room 8

We will present practical introductions to proposing for time on the four world-class facilities operated by NRAO: the Atacama Large Millimeter/submillimeter Array (ALMA), the Expanded Very Large Array (EVLA), the Green Bank Telescope (GBT), and the Very Long Baseline Array (VLBA). The session will focus on capabilities available for the February 2012 (EVLA, GBT, VLBA) and spring 2012 (ALMA) proposal deadlines. We will introduce these capabilities, demonstrate key proposal preparation software, and go over the main technical considerations to write a feasible proposal for each telescope. We will also give a short introduction to the CASA software package, highlighting its utility to simulate interferometer observations. In parallel, staff from each facility will be available to consult with users at the NRAO booth in the exhibit hall. The schedule of presentations will be: Wednesday 11 January, ALMA, 5:30pm-7:30pm; Thursday 12 January, EVLA and VLBA, 9:30am-11:30am; Thursday 12 January, GBT, 12:45pm-1:45pm; Thursday 12 January, CASA, 1:45pm-2:45pm. Each session will involve Q&A and one-on-one consultation with NRAO staff.

**Organizer**  
Mark T. Adams\(^1\)  
\(^1\)NRAO.

**413 Instrumentation: Ground Based**  
Thursday, 2:00pm-3:30pm, Room 17B

**413.00C**  
Chair  
David Sprayberry\(^1\)  
\(^1\)NOAO.

**413.01**  
Early Results from the Long Wavelength Array  
Gregory B. Taylor\(^1\), LWA Collaboration  
\(^1\)Univ. of New Mexico.

**413.02**  
Commissioning the First Station of the Long Wavelength Array  
Jayce Dowell\(^1\), LWA Collaboration  
\(^1\)University of New Mexico.

**413.03D**  
The Search for Ionospheric Effects at 150 MHz with PAPER  
Nicole E. Gugliucci\(^1\), R. Bradley\(^2\), PAPER Collaboration  
\(^1\)Univ. of Virginia, \(^2\)National Radio Astronomy Observatory.
413.04D The Subaru Coronagraphic Extrem Ao: Near Diffraction Limit Visible Imager on A 8m Meter Telescope
Vincent Garrel¹, O. Guyon¹, P. Baudouz², F. Martinache¹
¹Subaru Telescope, NAOJ, ²Observatoire de Paris, LESIA, France.

413.05 The Dark Energy Survey & Camera (DECam)
H. Thomas Diehl¹, Dark Energy Survey Collaboration
¹Fermi National Accelerator Laboratory.

413.06 First Optical Observations with Microwave Kinetic Inductance Detectors
Seth Meeker¹, B. A. Mazin¹, K. O’Brien¹, S. McHugh¹, B. Bumble³, E. Langman¹, M. Navaroli¹
¹UCSB Department of Physics, ²NASA Jet Propulsion Laboratory.

413.07 Results of Recommissioning FLAMINGOS-2
Percy L. Gomez¹, R. Diaz¹, P. Pessev¹, P. Prado¹, P. Candia¹, E. Hogan¹, G. Perez¹, M. Lazo¹, G. Luis¹, R. Rogers¹, P. Gigoux¹, H. Solis¹, E. Tollestrup¹, A. Stephens¹, M. Schirmer¹
¹Gemini Obs

414 Kepler Observations of Exoplanets and Systems
Thursday, 2:00pm-3:30pm, Ballroom G

414.00C Chair
Jason Wright¹
¹Penn State University.

414.01 Kepler: Updated Exoplanet Statistics
William J. Borucki¹, D. G. Koch¹, Kepler Team
¹NASA Ames Research Center.

414.02 Using Spitzer to Estimate the Kepler False Positive Rate and to Validate Kepler Candidates.
Jean-Michel Desert¹, D. Charbonneau¹, F. Fressin¹, G. Torres¹
¹Harvard-Smithsonian Center for Astrophysics.

414.03 Determining Which Star is the Transit Source in Kepler Data
Steve Bryson¹, J. M. Jenkins², R. L. Gilliland³, J. F. Rowe², G. Torres⁴, F. Fressin⁴, J. D. Twicken¹, Kepler Science Team
¹NASA Ames Research Center, ²SETI Institute/NASA Ames Research Center, ³Space Telescope Science Institute, ⁴Harvard-Smithsonian Center for Astrophysics.

414.04 Exploring Stellar Multiplicity Among Kepler Objects of Interest
Tim Morton¹, R. Murray-Clay², J. A. Johnson¹, G. Marcy³, A. Howard⁴, H. Isaacson¹
¹Caltech, ²Harvard-Smithsonian CfA, ³UC Berkeley.

414.05 The Hunt for Exomoons with Kepler
David M. Kipping¹
¹Harvard-Smithsonian Center for Astrophysics.

414.06D Validating and Characterizing Transiting Exoplanets from Space with EPOXI, Kepler, and Warm Spitzer
Sarah Ballard¹
¹Harvard University.

414.07 The Kepler Search for Circumbinary Planets
William F. Welsh¹, Kepler Team
¹San Diego State Univ
Thursday Sessions and Events

414.08 GJ 581 Update: An Independent Re-analysis Of The HARPS Data Set
Steven S. Vogt, R. Butler, E. R. Rivera, N. Haghighipour

UC, Santa Cruz, Carnegie DTM, IFA Hawaii.

415 Science Highlights from NASA’s Astrophysics Data Analysis Program II

Thursday, 2:00pm-3:30pm, Room 16B

Over the years, NASA has invested heavily in the development and execution of an extensive array of space astrophysics missions. 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 from investigators supported under the ADAP Program.

415.00C Chair
Douglas M. Hudgins
NASA Headquarters.

415.01 A Multiwavelength Investigation of a Suspected IMBH Tidal Disruption Event Within an Extragalactic Globular Cluster
Jimmy Irwin, K. Chiboucas, D. Clausen, S. Sigurdsson, M. Eracleous, R. Dupke

Univ. Of Alabama, Gemini Observatory, Penn State University, Observatorio Nacional, Brazil, Brazil.

415.02 Galaxy Formation in Action: A Multi-Wavelength Study of Ly-alpha Nebulae in the Distant Universe
Ann I. Zabludoff
University of Arizona.

415.03 Ultraviolet Properties of Nearby Galaxies from Swift UV/Optical Telescope Imaging
Erik A. Hoversten, J. Berrier, C. Conroy, C. Gronwall
Pennsylvania State University, Harvard-Smithsonian Center for Astrophysics.

415.04 Quasar SEDs From The SAFIRES Archival Survey
Daniel Hanish, H. Teplitz, P. Capak, SAFIRES team
Infrared Processing and Analysis Center, California Institute of Technology.

415.05 Measuring the ‘Dark Flow’ of Galaxy Clusters with X-ray and CMB Data: Methods, Results and Implications
Alexander Kashlinsky
NASA’s GSFC.

415.06 The Swift Serendipitous Cluster Survey
Xinyu Dai, J. N. Bregman, C. S. Kochanek
Univ. of Oklahoma, Univ. of Michigan, Ohio State University.

415.07 Constraining The Formation And Evolution Of Young X-ray Binaries In The Nearest Star-Forming Galaxies
Vallia Antoniou, A. Zezas, T. Linden, V. Kalogera
Iowa State University, University of Crete, Greece, University of California, Santa Cruz, Northwestern University.
**Thursday Sessions and Events**

### 416 Starburst Galaxies

**Thursday, 2:00pm-3:30pm, Ballroom F**

**416.00C Chair**

Patricia Knezek

1WIYN Consortium, Inc

**416.01D Shocked Outflows and Gas Disks in Local Merging Galaxies**

Kurt Soto1, C. L. Martin1, M. K. M. Prescott1, L. Armus2

1UC Santa Barbara, 2Spitzer Science Center, California Institute of Technology.

**416.02 A Strongly Lensed Planck Source at z = 3.26**

Hai Fu1, E. Jullo2, A. Cooray1, H-ATLAS Team

1University of California, Irvine, 2Astronomy Observatory of Marseilles Provence, France.

**416.03 HST/COS Observations Of Lyman-α Emission From <z>=0.03 Star Forming Galaxies**

Aida Wofford1, C. Leitherer1, J. Salzer2, COS Science Team

1STScI, 2Indiana University.

**416.04 Clustering, Halo Mass, and Evolution of Submillimeter Galaxies**

Ryan C. Hickox1, LESS Collaboration

1Dartmouth College.

**416.05 Luminous Blue Compact Galaxies: Probes of Galaxy Assembly**

Cassidy L. Newton1, M. Fanelli2, P. Marcum2

1Texas Christian University, 2NASAamES.

**416.06 Identification of a Fundamental Transition in a Turbulently-Supported Interstellar Medium**

Evan Scannapieco1, W. Gray1, L. Pan1

1Arizona State University.

**416.07 Mcmc Sed Fitting Of Candels Galaxies: A Realistic Error Budget**

Viviana Acquaviva1, E. Gawiser1, CANDELS team

1Rutgers, The State University of New Jersey.

### 417 Evolution of Galaxies VIII

**Thursday, 2:00pm-3:30pm, Room 19A**

**417.00C Chair**

Nicholas A. Devereux1

1Embry-Riddle Aeronautical Univ

**417.01 The Demographics of Bulges in the Local Universe**

David B. Fisher1, N. Drory2

1University of Maryland, 2Universidad Nacional Autonoma de Mexico, Mexico.

**417.02D Astrophysically Motivated Bulge-Disk Decompositions in SDSS**

Claire Lackner1, J. Gunn1

1Princeton University.

**417.04 Thick Disks seen in the Spitzer Survey of Stellar Structure in Galaxies**

Johan H. Knapen1, S. Comeron2, B. Elmegreen3, K. Sheth4, S4G collaboration

1Instituto de Astrofisica de Canarias, Spain, 2KASI, Korea, Republic of, 3IBM, 4NRAO.
417.05 Ultra-Violet Analysis of the S4G Sample
Raquel Chicharro-Fuertes1, A. Gil de Paz1, K. Sheth2, J. Munoz-Mateos2, Spitzer Survey of Stellar Structure in Galaxies (S4G) team
1Universidad Complutense De Madrid, Spain, 2National Radio Astronomy Observatory.

417.06 Measuring the Fraction of Bars and Offset Bars Using the Spitzer Survey of Stellar Structure in Galaxies
Alexa Ross1
1Reed College.

417.07 Relative Fraction of E, S0, and Strong Barred Galaxies in Groups and Clusters in the Nearby Universe, 0 Less than Z Less than 0.066, as a Function of Redshift
Jose A. Garcia-Barreto1
1Univ. Nac. Autonoma de Mexico (UNAM), Mexico.

418 Planetary Nebulae, Supernova Remnants and Supernovae
Thursday, 2:00pm-3:30pm, Room 12A

418.00C Chair
G. Fritz Benedict1
1Univ. of Texas, Austin.

418.01 Do Most Planetary Nebulae Derive from Binary Interactions? The Binary Fraction of Central Stars of Planetary Nebula
Orsola De Marco1, D. Douchin1, J. C. Passy2, G. H. Jacoby1, D. J. Frew1, T. Hillwig4
1Macquarie University, Australia, 2American Museum of Natural History, 3Giant Magellan Telescope, 4Valparaiso University, Australia.

418.02 Using Kepler to Measure the Binary Fraction of Planetary Nebula Central Stars
George Jacoby1, O. De Marco2, S. Howell3, M. Kronberger4
1GMT / Carnegie Obs, 2Macquarie University, Australia, 3NASA ARC, 4CERN, Switzerland.

418.03 The Origin of Kepler’s Supernova Remnant
Daniel Patnaude1, C. Badenes2, S. Park3
1Harvard-Smithsonian, CFA, 2University of Pittsburgh, 3University of Texas at Arlington.

418.04 Fermi Observations of Flares from the Crab Nebula
Roger D. Blandford1, R. Buehler1, S. Funk1
1Stanford University.

418.05 Probing the Unique Morphology and Plasma Conditions of W49B with Chandra
Laura A. Lopez1, E. Ramirez-Ruiz2, E. Figueroa-Feliciano1
1MIT, 2UC Santa Cruz.

418.06 WITHDRAWN: A Decade-baseline Study Of The Plasma States Of Ejecta Knots In Cassiopeia A
Sarah N. Trowbridge1, E. Figueroa-Feliciano1, J. Rutherford1, D. Dewey1, F. Bastien2
1Massachusetts Institute of Technology, 2Vanderbilt University.

418.07 Detonation Waves in Supernova Remnants
Yang Gao1, C. K. Law2
1Tsinghua University, Beijing, China, 2Princeton University.

418.08D The Local Type Ia Supernova Progenitors: One Double-Degenerate, No Symbiotics
Ashley Pagnotta1, B. E. Schaefer1
1Louisiana State University.
The Cosmic Assembly Near-IR Deep Extragalactic Legacy Survey (CANDELS) is the largest survey yet conducted with the Hubble Space Telescope. It is designed to document the first third of galactic evolution, from redshift \( z \sim 8 \) to \( z \sim 1.5 \). It will image more than 250,000 distant galaxies using three separate cameras on board HST from the mid-UV to near-IR, and it will find and measure Type Ia SNe beyond \( z > 1.5 \) and test their accuracy as standard candles for cosmology. Five premier sky regions are selected, all with extensive multi-wavelength imaging and spectroscopy from X-ray to radio.

The heart of CANDELS is the WFC3/IR camera, which opens up extensive high-resolution near-IR imaging on Hubble for the first time. WFC3/IR’s longer wavelengths reveal the true structure of \( z \sim 2 \) galaxies as outlined by older stars and can find and measure distant Type Ia SNe to higher redshifts than previously possible. WFC3/IR returns superbly accurate YJH photometry that goes 10 times fainter than ground data, permitting the first complete census of galaxies in the distant Universe down to a few billion solar masses out to \( z \sim 8 \).

The CANDELS special sessions will give an overview of CANDELS and present early science results from the first year of data. CANDELS II will focus on more distant galaxies. The number and stellar content of very distant galaxies beyond \( z \sim 6 \) will be described, along with the structure of distant AGN hosts and early black-hole growth rates. A summary of data on distant supernovae from both the CANDELS and CLASH programs will be provided. CANDELS also has a very active program of theoretical mock catalogs and galaxy simulations that are being released for use by the astronomical community, and these also will be described.

**419.00C Chair**

Mauro Giavalisco\(^1\)

\(^1\)University of Massachusetts.

**419.01 CANDELS Results on High-Redshift AGN and Early Black Hole Growth**

Anton M. Koekemoer\(^1\)

\(^1\)STScI.

**419.02 Supernovae at \( z > 1.5 \) from HST**

Steven A. Rodney\(^1\), Adam G. Riess\(^2\)

\(^1\)Johns Hopkins University, \(^2\)STScI.

**419.03 Probing Galaxy Evolution from \( z = 4 - 8 \) with CANDELS**

Steven L. Finkelstein\(^1\), C. Papovich\(^2\), B. Salmon\(^2\), M. Giavalisco\(^3\), N. Reddy\(^4\), H. Ferguson\(^5\), M. Dickinson\(^6\), A. Koekemoer\(^5\)

\(^1\)University of Texas at Austin, \(^2\)Texas A&M University, \(^3\)University of Massachusettsamherst, \(^4\)University of California, Riverside, \(^5\)Space Telescope Science Institute, \(^6\)National Optical Astronomy Observatory.

**419.04 A First CANDELS Census of Luminous Galaxies at \( z > 6 \)**

Haojing Yan\(^1\)

\(^1\)CCAPP, Ohio State University.

**419.05 CANDELS Theory: Predictions and Model Constraints**

Risa H. Wechsler\(^1\)

\(^1\)Stanford University.

**419.06 CANDELS Theory: Zoom-in Cosmological Hydrodynamical Simulations of Galaxy Formation**

Piero Madau\(^1\)

\(^1\)University of California.
Invited Session 420 AIP Gemant Award: Tycho to Kepler: Four Centuries and More of Astronomy and the Media
Thursday, 3:40:00pm-4:30pm, Ballroom D

420.00C  Chair
H. Frederick Dylla, AIP
\(^1\)American Institute of Physics.

**Steve Maran – Gemant Award**
The 2011 Andrew Gemant Award is presented to Dr. Stephen Maran, for his extraordinary contributions to the public communication of astrophysics through popular books and articles for broad audiences, his mentorship of science writers, and his dedication to enhancing the dissemination of science news throughout the world.

420.01  Tycho to Kepler: Four Centuries and More of Astronomy and the Media
Stephen P. Maran
\(^1\)American Astronomical Society.

Invited Session 421 Berkeley Prize: Mapping the Fuel for Star Formation in Early Universe Galaxies
Thursday, 4:30pm-5:20:00pm, Ballroom D

421.00C  Chair
Debra M. Elmegreen
\(^1\)Vassar College.

**Linda Tacconi – Berkeley Prize**
The 2012 Lancelot M. Berkeley - New York Community Trust Prize Lecture is awarded to Linda J. Tacconi in recognition of her work on cold gas in massive star-forming galaxies in the young universe.

421.01  Berkeley Prize: Mapping the Fuel for Star Formation in Early Universe Galaxies
Linda Tacconi
\(^1\)MPI Fur Extraterr. Physik, Germany.
422 Instrumentation: Ground Based or Airborne

Thursday, 9:00am-2:00pm, Exhibit Hall

422.01 VRI/gri Photometry And Polarimetry Of Blazars At The Table Mountain Observatory, 2005-2011
Alma C. Zook¹, F. S. Giron¹, C. A. Owens¹
¹Pomona College.

422.02 Transmission Grating Spectrometers in Undergraduate Astronomy Laboratories
Ryan Hood¹, J. Moore¹, M. McKinlay¹, D. Coffin¹, D. Trieweiler¹, R. L. Mutel¹
¹University of Iowa.

422.03 Spectroscopy at LCOGT
Timothy M. Brown¹, M. Becker¹, B. Burleson¹, J. De Vera¹, M. Dubberley¹, J. Eastman¹, B. Haldeman¹, E. Hawkins¹, R. Haynes¹, J. Hygelund¹, T. Lister¹, R. Lobdill¹, M. Norbury¹, A. Pickles¹, W. Rosing¹, D. Sand¹, J. Tufts¹
¹LCOGT.

422.04 The Upgraded Tennessee State University 2m Automatic Spectroscopic Telescope
Matthew W. Muterspaugh¹, M. H. Williamson¹, F. C. Fekel¹, C. Harrison¹
¹Tennessee State University.

422.05 Optimal Resolutions for Optical and IR Spectroscopy
Steven Villanueva¹, D. L. Depoy¹, J. Marshall¹
¹Texas A&M University.

422.06 Progress in Astronomical Radiometry: Demonstration of Precise Lidar-based Real-time Atmospheric Extinction Corrections
John T. McGraw¹, P. C. Zimmer¹, D. M. Vorobiev², D. C. Zirzow¹, J. C. Karle¹, P. S. Romero¹, C. E. Cramer³, K. R. Lykke⁴, J. T. Woodward⁵, S. E. Deustua⁶, D. C. Hines⁴, Measurement Astrophysics Research Team
¹Univ. of New Mexico, ²Rochester Institute of Technology, ³National Institute of Standards and Technology, ⁴Space Telescope Science Institute.

422.07 Calibrating Atmospheric Transmission
Peter C. Zimmer¹, J. T. McGraw¹, D. M. Vorobiev², D. C. Zirzow¹, J. C. Karle¹, K. R. Lykke⁴, J. T. Woodward⁵, C. E. Cramer³
¹Univ. of New Mexico, ²Rochester Institute of Technology, ³NIST.

422.08 Progress Towards A NIST-calibrated Catalog Of Spectrophotometric Standard Stars
Claire Cramer¹, K. R. Lykke¹, P. Shaw¹, J. T. Woodward¹, E. E. Falco², C. W. Stubbs³, A. Vaz³, J. T. McGraw⁴, P. C. Zimmer⁴
¹NIST, ²Harvard-Smithsonian Center for Astrophysics, ³Harvard University, ⁴University of New Mexico.

422.09 Dark Energy Spectrometer-A Proposed Multi-Fiber Instrument for the Blanco 4 Meter Telescope
Stephen M. Kent¹, T. Diehl¹, J. Marshall², D. DePoy², W. Saunders³, M. Colless³, J. Frieman¹, O. Lahav⁴, F. Abdalla⁴, J. Annis¹, H. Lin¹, S. Jouvel³
¹Fermi Nat’l. Accelerator Lab., ²Texas A&M U., ³AAO, Australia, ⁴U. College London, United Kingdom, ⁵U. College London.
422.10 Commissioning the Robert Stobie Spectrograph on the 11-meter Southern African Large Telescope (SALT)
Eric Jon Hooper\textsuperscript{1}, K. Nordsieck\textsuperscript{1}, T. Williams\textsuperscript{2}, D. Buckley\textsuperscript{3}, SALT Operations Group, UW-Madison RSS Commissioning Group
\textsuperscript{1}Univ. of Wisconsin-Madison, \textsuperscript{2}Rutgers University, \textsuperscript{3}Southern African Large Telescope, South Africa.

422.11 High Time Resolution Astronomy on the 10m Southern African Large Telescope (SALT)
John Vallerga\textsuperscript{1}, B. Y. Welsh\textsuperscript{1}, M. Kotze\textsuperscript{3}, A. Gulbis\textsuperscript{3}, S. Potter\textsuperscript{2}, D. Buckley\textsuperscript{1}, D. Anderson\textsuperscript{1}
\textsuperscript{1}University of California, Berkeley, \textsuperscript{2}South African Astronomical Observatory, South Africa, \textsuperscript{3}South African Astronomical Observatory and Southern African Large Telescope, South Africa, \textsuperscript{4}Southern African Large Telescope, South Africa.

422.12 The Subaru Coronagraphic Extreme Ao Project: First On-sky Results
Christophe Clergeon\textsuperscript{1}, O. Guyon\textsuperscript{1}, F. Martinache\textsuperscript{1}
\textsuperscript{1}Subaru Telescope.

422.13 The GMACS Spectrograph for the GMT
Jennifer L. Marshall\textsuperscript{1}, D. L. DePoy\textsuperscript{1}, S. A. Shectman\textsuperscript{2}, C. Papovich\textsuperscript{1}, S. A. Smee\textsuperscript{3}, R. H. Barkhouse\textsuperscript{1}, T. M. Prochaska\textsuperscript{1}, R. P. Hammond\textsuperscript{1}
\textsuperscript{1}Texas A & M University, \textsuperscript{2}GMT Observatory, \textsuperscript{3}JHU/IDG.

422.14 Design of the MooSci Lunar Scintillometer
Kyle W. Cook\textsuperscript{1}, D. L. DePoy\textsuperscript{1}, J. L. Marshall\textsuperscript{1}, S. Villanueva Jr.\textsuperscript{1}, J. Rheault\textsuperscript{1}, R. D. Allen\textsuperscript{1}, D. W. Carona\textsuperscript{1}, J. E. Thomas-Osip\textsuperscript{2}, G. Prieto\textsuperscript{2}, A. Berdja\textsuperscript{2}
\textsuperscript{1}Texas A&M University, \textsuperscript{2}Giant Magellan Telescope Organization.

422.15 Development Status of the Prototype of the GMT Fast Steering Mirror
Young-Soo Kim\textsuperscript{1}, J. Koh\textsuperscript{1}, I. Chung\textsuperscript{1}, M. Cho\textsuperscript{1}, H. Yang\textsuperscript{1}, H. Kim\textsuperscript{1}, H. Ahn\textsuperscript{1}, I. Han\textsuperscript{1}, J. Kyeong\textsuperscript{1}, M. Chun\textsuperscript{1}, B. Park\textsuperscript{1}
\textsuperscript{1}KASI, Korea, Republic of, \textsuperscript{2}NOAO, \textsuperscript{3}KRISS, Korea, Republic of, \textsuperscript{4}IAE, Korea, Republic of, \textsuperscript{5}GIST, Korea, Republic of.

422.16 Gemini North Multi-Object Spectrograph (GMOS-N) CCDs Upgrade: Project Status and Future Plans
Scot Kleinman\textsuperscript{1}, T. Hardy\textsuperscript{1}, R. Murowinski\textsuperscript{2}, K. Szeto\textsuperscript{2}, B. Walls\textsuperscript{1}, K. Roth\textsuperscript{1}, K. Chiboucas\textsuperscript{1}, R. Schiavon\textsuperscript{1}, G. Gimeno\textsuperscript{1}, J. White\textsuperscript{1}, D. Simons\textsuperscript{1}, M. Rippa\textsuperscript{1}, K. Labrie\textsuperscript{1}, J. Dunn\textsuperscript{1}, K. Hanna\textsuperscript{1}, C. Cavedoni\textsuperscript{1}, S. Bombino\textsuperscript{1}
\textsuperscript{1}Gemini Observatory, \textsuperscript{2}NRC Herzberg Institute of Astrophysics, Canada, \textsuperscript{3}Gemini Observatory, Chile.

422.17 Gemini North Multi-Object Spectrograph (GMOS-N) Interim CCDs Upgrade: Commissioning Results I
Kristin Chiboucas\textsuperscript{1}, K. Roth\textsuperscript{1}, R. Schiavon\textsuperscript{1}, I. Jorgensen\textsuperscript{1}, G. Gimeno\textsuperscript{1}, S. Kleinman\textsuperscript{1}
\textsuperscript{1}Gemini Observatory, \textsuperscript{2}Gemini Observatory, Chile.

422.18 Gemini North Multi-Object Spectrograph (GMOS-N) Interim CCDs Upgrade: Commissioning Results II
Katherine Roth\textsuperscript{1}, R. Schiavon\textsuperscript{1}, K. Chiboucas\textsuperscript{1}, G. Gimeno\textsuperscript{2}
\textsuperscript{1}Gemini Obs., \textsuperscript{2}Gemini Obs., Chile.

422.19 Fully Optimized Shaped Pupils for Arbitrary Apertures
Alexis Carlotti\textsuperscript{1}, R. Vanderbei\textsuperscript{1}, N. J. Kasdin\textsuperscript{1}, G. Che\textsuperscript{1}
\textsuperscript{1}Princeton University.

422.20 Hivis: Precision Limitations
Becky Nevin\textsuperscript{1}, D. Harrington\textsuperscript{2}
\textsuperscript{1}Whitman College, \textsuperscript{2}University of Hawai’i - Institute for Astronomy.
422.21 Established Designs For Advanced Ground Based Astronomical Telescopes In The 1-meter To 4-meter Domain
Anthony B. Hull, J. Barentine, S. Legters
1L-3 Integrated Optical Systems: Tinsley, 2L-3 Integrated Optical Systems: Brashear.

422.22 Challenges and Approach for Making the Top End Optical Assembly for the 4-meter Advanced Technology Solar Telescope
Blaise Canzian, J. Barentine, T. Hull
1L-3 Communications/IOS.

422.23 Astronomical Secondary Mirrors And Field Correctors: Special Challenges And Metrology Solutions Routinely Used At Brashear
Francios Piche, G. Gardopee, A. Clarkson, T. Hull
1L-3 Communications Inc

422.24 Lowell Observatory’s Discovery Channel Telescope: Status, Key Science, and Opportunities
Jeffrey C. Hall, S. E. Levine
1Lowell Obs

422.25 Lowell Observatory’s Discovery Channel Telescope: Telescope and Systems Specifications and Commissioning Status
Stephen Levine, J. C. Hall
1Lowell Observatory.

422.26 The Navy Optical Interferometer: Status, Science, Ongoing Development
Gerard van Belle, D. J. Hutter, T. Armstrong, NOI Collaboration
1Lowell Observatory, 2US Naval Observatory, 3Naval Research Laboratory.

422.27 EXES: The Echelon-Cross-Echelle Spectrograph for SOFIA
Curtis N. DeWitt, M. J. Richter, M. E. McKelvey, A. Seifahrt
1UC Davis, 2NASA Ames Research Center, 3University of Chicago, Department of Astronomy and Astrophysics.

422.28 A Rotating Polarized Source for Precise Calibration of Microwave Polarimeters
Kristi J. Bradford, J. M. Kovac, A. G. Vieregg, Keck Array Team
1Harvard University.

422.29 The Balloon-borne Large Aperture Submillimeter Telescope for Polarimetry (BLAST-Pol): Instrument and 2010 Science Campaign
Natalie Gandilo, BLAST-Pol Collaboration
1University of Toronto, Canada.

422.30 Astronomical Performance Of The SCUBA-2 Camera On The JCMT
Gary R. Davis, W. S. Holland, A. Chrysostomou, SCUBA-2 Team
1Joint Astronomy Centre, United Kingdom, 2UK Astronomy Technology Centre and Institute for Astronomy, University of Edinburgh, United Kingdom.

422.31 Stratopsheric Terrahertz Observatory Software Systems
Thomas Shaw
1Oberlin College.

422.32 Terahertz Ballooning: STO And GUSSTO
Christopher L. Martin, Stratospheric TeraHertz Observatory (STO) Team, Gal/Xgal U/LDB Spectroscopic/Stratospheric THz Observatory (GUSSTO) Team
1Oberlin College.
422.33 The Low Frequency All Sky Monitor for the Study of Radio Transients: Array Configuration and Sensitivity
Rossina B. Miller¹, F. A. Jenet¹, B. Hicks², N. E. Kassim², P. S. Ray², G. B. Taylor³
¹University of Texas at Brownsville, ²Naval Research Laboratory, ³University of New Mexico.

422.34 Low Frequencies in New Mexico: The EVLA Low Band Upgrade and The Long Wavelength Array Station One
Namir E. Kassim¹, T. E. Clarke¹, B. C. Hicks¹, P. S. Ray¹, S. Durand², P. Harden², L. Kogan², C. Kutz², F. Owen², R. A. Perley², M. Pospieszalski², Long Wavelength Array Consortium
¹NRL, ²NRAO.

422.35 The Low Frequency All Sky Monitor for the Study of Radio Transients: Prototype Hardware Development
Jesus Rivera¹, A. J. Ford¹, F. A. Jenet¹, K. Stovall¹, S. C. Cohen¹, L. Darte⁴, A. Garcia Jr.¹, J. Hinojosa¹, C. Longoria¹, G. Lunsford¹, A. Mata¹, R. B. Miller¹, J. S. Reser¹, B. C. Hicks², N. E. Kassim², P. S. Ray², G. B. Taylor³
¹University of Texas at Brownsville, ²U.S. Naval Research Lab, ³University of New Mexico.

422.36 The AARTFAAC Project: Searching for Radio Transient Signals with LOFAR
Yvette Cendes¹, AARTFAAC Project Team
¹University of Amsterdam, Netherlands.

422.37 The Expanded Very Large Array: Exploring the Microjansky Sky
Michael P. Rupen¹, EVLA Commissioning Team
¹NRAO.

422.38 Accurately Measuring the Spillover of a Radio Telescope
Ronald J. Maddalena¹, M. E. Mattox²
¹NRAO, ²Linkhorne Middle School.

423 Science Highlights from NASA’s Astrophysics Data Analysis Program
Thursday, 9:00am-2:00pm, Exhibit Hall

423.01 Charge Exchange Models with AtomDB v2.0
Randall K. Smith¹, A. Foster¹, N. Brickhouse¹
¹Smithsonian Astrophysical Observatory.

423.02 The Resolved Star Formation Rate in the Nearby Fireworks Galaxy: NGC6946
Rafael T. Eufra§io¹, E. Dwek², R. Arendt³, D. Fixsen³
¹NASA Goddard Space Flight Center / The Catholic University of America, ²NASA Goddard Space Flight Center, ³NASA Goddard Space Flight Center / University of Maryland in Baltimore County.

423.03 Analyzing the SEDs of Deeply Embedded Protostars. The Example of IRAS 05345+3157.
Randolf Klein¹, K. I. Lee², L. W. Looney³, T. Henning³
¹SOFIA - USRA, ²UIUC, ³MPIA Heidelberg, Germany.

423.04 Multi-component SED Fitting Of AGN Host Galaxies
Seth H. Cohen¹, R. E. Ryan², R. A. Windhst³, N. A. Grogin³, N. P. Hathi², A. N. Straughn², M. R. Mechtley¹, A. M. Koekemoer², R. W. O’Connell², WFC3 SOC
¹Arizona State University, ²STScI, ³OCIW, ⁴NASA/GSFC, ⁵University of Virginia.
THURSDAY POSTER SESSIONS

424 Large Programs: Hobby-Eberly Telescope Dark Energy Experiment

Thursday, 9:00am-2:00pm, Exhibit Hall

424.01  **HETDEX: Overview of the Hobby-Eberly Telescope Dark Energy Experiment and Instrumentation**
Gary J. Hill¹, K. Gebhardt¹, N. Drory², D. DePoy³, E. Komatsu¹, R. Bender¹,
D. Schneider⁴, M. Fabricius⁵, H. Lee¹, S. Tuttle¹, J. Marshall¹, A. Kelz⁶, M. Roth⁶,
M. Cornell¹, HETDEX Collaboration
¹Univ. of Texas, Austin, ²Instituto de Astronomia, UNAM, Mexico, ³Texas A&M University,
⁴MPE, Germany, ⁵Pennsylvania State University, ⁶AIP, Germany.

424.02  **HETDEX: Measuring Dark Energy at High Redshift**
Karl Gebhardt¹, G. Hill¹, E. Komatsu¹, N. Drory², D. DePoy³, R. Ciardullo⁴, C. Gronwall⁴,
M. Fabricius⁵, L. Wisotzki⁶, HETDEX Collaboration
¹Univ. of Texas at Austin, ²Instituto de Astronomia UNAM, Mexico, ³Texas A&M University,
⁴Pennsylvania State University, ⁴Max-Planck-Institut fuer Extraterrestrische Physik,
Germany, ⁶Astrophysikalisches Institut Potsdam, Germany.

424.03  **HETDEX: Evolution and Drivers of Cosmic Star Formation Over 12 Billion Years**
Shardha Jogee¹, K. Gebhardt¹, R. Ciardullo², C. Gronwall², S. Finkelstein¹,
C. Papovich³, T. Weinzierl¹, M. Song¹, K. Finkelstein¹, N. Evans¹, N. Drory⁴, E. Mentuch¹,
HETDEX Team
¹Univ. of Texas, at Austin, ²Penn State University, ³Texas A&M University, ⁴Universidad Nacional Autonoma de Mexico (UNAM), Mexico.

424.04  **HETDEX: Constraining Inflation With Primordial Non-Gaussianity**
Donghui Jeong¹, E. Komatsu², G. J. Hill², K. Gebhardt², HETDEX Collaboration
¹Johns Hopkins University, ²Univ. of Texas, Austin.

424.05  **HETDEX: AGN Statistics**
Andreas Schulze¹, L. Wisotzki², L. Hao³, HETDEX Collaboration
¹Kavli Institute for Astronomy and Astrophysics, China, ²Leibniz Institute for Astrophysics,
Germany, ³Shanghai Astronomical Observatory, China.

424.06  **HETDEX: AGN Selections and Their Host Galaxy Studies**
Lei Hao¹, A. Schulze², HETDEX Collaboration
¹Shanghai Astronomical Observatory, China, ²Leibniz-Institut fur Astrophysik Postdam,
Germany.

424.07  **HETDEX: A Magnitude-limited Spectroscopic Sample Of Stars In The Galaxy Down To V~20**
Carlos Allende-Prieto¹, M. Shetrone², S. C. Odewahn², G. Benedict³,
B. G. Castanheira³, R. de Jong⁴, D. L. Lambert⁴, P. J. MacQueen⁵, J. L. Marshall⁶,
B. E. McArthur⁴, C. Sneden⁶, HETDEX collaboration
¹Instituto de Astrofisica de Canarias, Spain, ²McDonald Observatory, ³Universidade Federal do Rio Grande do Sul, Brazil, ⁴Leibniz-Institut fur Astrophysik Potsdam, Germany, ⁵Texas A & M University, ⁶University of Texas at Austin.

424.08  **White Dwarf Stars in the HET Dark Energy Experiment**
Barbara Castanheira¹, D. Winget¹, K. Gebhardt¹, C. Allende Prieto², M. Shetrone¹,
S. Odewahn¹, M. H. Montgomery¹
¹University of Texas, ²Instituto de Astrofisica de Canarias, Spain.
**HETDEX: The Spitzer-HETDEX Exploratory Large Area Survey**


¹Texas A&M University, ²University of Texas-Austin, ³Stanford University, ⁴MP, Germany, ⁵Carnegie Observatories, ⁶Penn State University, ⁷AIP, Germany, ⁸Universidad Nacional Autonoma de Mexico (UNAM), Mexico, ⁹Rutgers University, ¹⁰Princeton University, ¹¹Munich University, Germany, ¹²NRAO.

**HETDEX: Cosmology with High-z Galaxy Survey**

**Eiichiro Komatsu**¹, G. J. Hill², K. Gebhardt³, D. Jeong⁴, M. Shoji⁵, HETDEX Collaboration

¹Univ. of Texas, Austin, ²Johns Hopkins University.

**HETDEX: The Physical Properties of [O II] Emitters**

**Robin Ciardullo**¹, C. Gronwall¹, G. Blanc², K. Gebhardt³, S. Jogee³, HETDEX Collaboration

¹Penn State Univ., ²Carnegie Observatories, ³Univ. of Texas.

**HETDEX: The Physical Properties of Lyman-alpha Emitters**

**Caryl Gronwall**¹, G. Blanc², R. Ciardullo¹, S. Finkelstein¹, E. Gawiser¹, K. Gebhardt³, HETDEX Collaboration

¹Penn State Univ., ²Carnegie Observatories, ³Univ. of Texas, ⁴Rutgers Univ.

**HETDEX: Evolution of Lyman Alpha Emitters**

**Guillermo A. Blanc**¹, K. Gebhardt², G. J. Hill¹, C. Gronwall¹, R. Ciardullo³, S. Finkelstein⁵, E. Gawiser⁶, HETDEX Collaboration

¹Carnegie Observatories, ²University of Texas at Austin, ³Penn State University, ⁴Rutgers University.

**HETDEX: Two-dimensional Galaxy Power Spectrum**

**Chi-Ting Chiang**¹, E. Komatsu¹, D. Jeong², G. J. Hill¹, K. Gebhardt¹, HETDEX Collaboration

¹The University of Texas at Austin, ²Johns Hopkins University.

**HETDEX: Nearby Galaxies**

**Niv Drory**¹, K. Gebhardt², S. Jogee³, M. Fabricius³, J. Greene⁴, HETDEX Collaboration

¹Universidad Nacional Autonoma De Mexico, Mexico, ²University of Texas, ³Max-Planck Institute for Extraterrestrial Physics, Germany, ⁴Princeton University.

**HETDEX: Probing the Chemical Evolution of the Universe with Lyman Alpha Emitting Galaxies**

**Steven L. Finkelstein**¹, G. J. Hill¹, K. Gebhardt¹, G. Blanc², N. Drory³, HETDEX Collaboration

¹University of Texas, ²Carnegie Observatories, ³Universidad Nacional Autonoma de Mexico, Mexico.

**HETDEX: Synergy with HyperSuprime Camera**

**Jenny E. Greene**¹, K. Gebhardt², E. Komatsu³, HETDEX collaboration

¹Princeton University, ²UT Austin.

**VIRUS Parallel Observations with The Hobby-Eberly Telescope**

**Stephen C. Odewahn**¹, N. Drory¹, K. Gebhardt¹, R. de Jong¹, C. Allende Prieto⁵, M. Shetroné¹, S. Tuttle¹, HETDEX Collaboration

¹Hobby-Eberly Telescope, ²Instituto de Astronomia, UNMA, Mexico, ³Univ. of Texas, ⁴AIP, Germany, ⁵Instituto de Astrofisica de Canarias, Spain.
424.19 HETDEX: Developing the HET’s Second Generation Low Resolution Spectrograph for Probing Lyman-alpha Emitting Galaxies
Taylor S. Chonis¹, G. J. Hill², H. Lee³, S. E. Tuttle⁴, B. L. Vattiat², K. Gebhardt¹,
S. L. Finkelstein¹, J. J. Adams³, HETDEX Collaboration
¹University of Texas at Austin, ²McDonald Observatory, ³Carnegie Observatories.

424.20 HETDEX: VIRUS Spectrographs Assembly and Alignment
Travis Prochaska¹, J. L. Marshall¹, D. L. DePoy¹, E. Boster¹, W. Meador¹, R. Allen¹,
G. J. Hill¹, HETDEX Collaboration
¹Texas A&M University, ²University of Texas--Austin.

424.21 HETDEX: Optical Alignment Of The Virus Spectrographs
Emily Martin¹, J. Marshall¹, J. Rheault¹, D. DePoy¹, T. Prochaska¹, R. Allen¹, G. Hill²,
HETDEX Collaboration
¹Texas A&M University, ²University of Texas.

424.22 HETDEX: Virus Instrument
Hanshin Lee¹, G. J. Hill¹, D. L. DePoy², S. Tuttle¹, J. L. Marshall¹, B. L. Vattiat¹,
T. Prochaska², T. S. Chonis³, R. Allen², HETDEX Collaboration
¹McDonald Observatory, UT Austin, ²Department of Physics and Astronomy, Texas A&M
University, ³Department of Astronomy, UT Austin.

424.23 HETDEX: Diffuse Lyman-Alpha Emission
Sarah E. Tuttle¹, S. Finkelstein¹, K. Gebhardt¹, HETDEX Collaboration
¹University of Texas at Austin.

424.24 HETDEX: Public Data Products
Mark E. Cornell¹, J. M. Snigula¹, N. Drory², M. Fabricius², M. Landreau², G. J. Hill¹,
K. Gebhardt¹, HETDEX Collaboration
¹McDonald Observatory, ²MPE, Germany, ³Instituto de Astronomia, UNAM, Mexico,
⁴University of Texas.

425 The Wide-field Infrared Survey Explorer (WISE): Science Frontiers and Final Data Release

425.01 Calculating the Yarkovsky Effect for Main-Belt Asteroids using the Rotating, Cratered Thermophysical Asteroid Model
Drummond Fielding¹, E. L. Wright²
¹JHU Department of Physics & Astronomy, ²UCLA Dept. of Physics & Astronomy.

425.02 A Newly-Discovered Yellow (D’) Symbiotic System
Bruce McCollum¹, C. Tsai¹, T. Jarrett¹, D. Stern², M. Skrutskie³, R. Griffith²,
D. L. Padgett¹, D. I. Hoffman¹, S. A. Stanford¹, P. R. Eisenhardt², E. L. Wright³
¹IPAC/Caltech, ²JPL, ³Univ. of Virginia, ⁴U.C. Davis, ⁵UCLA.

425.03 WISE Flux Variables
Douglas I. Hoffman¹, R. Cutri¹, F. Masci¹, J. Fowler¹, T. Jarrett¹, K. Marsh¹
¹IPAC / Caltech.

425.04 WISE Observations Of Young Stellar Objects In The L1509 Dark Cloud
Wilson M. Liu¹, D. L. Padgett², S. Terebey³, J. R. Angione⁴
¹IPAC/Caltech, ²NASA Goddard, ³California State University- Los Angeles, ⁴JPL.
**THURSDAY POSTER SESSIONS**

425.05 New Young Star Candidates in the Taurus-Auriga Region as Selected from WISE  
Luisa M. Rebull¹, X. Koenig², D. Padgett³, S. Terebey⁴, P. McGehee⁵, L. Hillenbrand⁶,  
G. Knapp⁷, D. Leisawitz⁸, W. Liu⁹, A. Noriega-Crespo¹⁰, M. Ressler¹¹, K. Stapelfeldt¹²,  
S. Fajardo-Acosta¹³, A. Mainzer¹⁴  
¹Caltech, ²GSFC, ³Caltech (currently GSFC), ⁴Cal State LA, ⁵IPAC/Caltech, ⁶Princeton, ⁷JPL,  
⁸JPL (Currently GSFC).

425.06 Wise Selection of Obscured and Unobscured AGN  
Roberto Assef¹, D. K. Stern¹  
¹Jet Propulsion Laboratory.

425.07 The 3.4 μm Galaxy Luminosity Function Measured Using WISE  
Sean E. Lake¹, E. L. Wright¹, S. Petty¹, R. J. Assef¹, S. A. Stanford¹, D. K. Stern²  
¹UCLA, ²JPL CalTech, ³UC Davis.

425.08 The Infrared Properties Of Sources In The H-ATLAS And WISE Surveys  
Nicholas A. Bond¹, D. Benford¹, J. P. Gardner¹  
¹NASA/Goddard.

425.09 Improving the Precision of Stellar Astrometry of IRAC Channel 1 Observations  
Kenneth J. Mighell¹  
¹National Optical Astronomy Observatory.

426 Intergalactic Medium, QSO Absorption Line Systems  
Thursday, 9:00am-2:00pm, Exhibit Hall

426.01 He Ii Lyß Gunn-peterson Absorption: New Hst Observations, And Theoretical Expectations  
David Syphers¹, S. F. Anderson², W. Zheng³, B. Smith⁴, M. Pieri⁵  
¹University of Colorado, ²University of Washington, ³Johns Hopkins University, ⁴Michigan State University, ⁵University of Portsmouth, United Kingdom.

426.02 Detection of a Milky Way Analog in a z ~ Quasar 2175 Å Dust Absorber System  
Michael Steinke¹, J. Ge¹, A. Murrah¹, E. Grafer¹, H. Zhou²  
¹University of Florida, ²University of Science and Technology of China, China.

426.03 Thermal And Dynamical Properties Of C IV Absorbers (1.5 < z < 3.5)  
Drake Ranquist¹, T. Kim²  
¹Brigham Young University, ²University of Wisconsin--Madison.

426.04 Lyman-alpha Luminosity Function near the Epoch of Reionization  
Vithal Tilvi¹, S. Malhotra², J. E. Rhoads³, H. Krug⁴, S. Veilleux⁵, P. Hibon⁶, S. Finkelstein⁷,  
J. Wang⁸, R. Swaters⁹, R. Probst⁹, C. Papovich⁴, M. Dickinson⁷  
¹Texas A&M, ²Arizona State University, ³University of Maryland, ⁴Gemini, Chile, ⁵U T Austin, ⁶CSTC, China, ⁷NOAO.

426.05 Spectral Response of the OII Spatial Heterodyne Spectrometer  
Roberto Rodriguez¹, E. J. Mierkiewicz²  
¹University of Puerto Rico at Humacao, ²University of Wisconsin-Madison.
426.06  Orbiting Cool Halo Gas: Observing the End of Cold Mode Gas Accretion onto Galaxies
Kyle Stewart¹, T. Kaufmann², J. Bullock¹, E. Barton¹, A. Maller¹, J. Diemand³,
J. Wadsley⁴, L. Moustakas¹
¹Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109,
²Institute for Astronomy, ETH Zurich, CH-8093 Zurich, Switzerland,
³Center for Cosmology, Department of Physics and Astronomy, The University of California at Irisve, Irvine, CA, 92697,
⁴Department of Physics, New York City College of Technology, 300 Jay St., Brooklyn, NY 11201,
⁵Institute for Theoretical Physics, University of Zurich, 8057, Zurich, Switzerland,
⁶Department of Physics and Astronomy, McMaster University, Main Street West, Hamilton L8S 4M1, Canada.

426.07  A Standardized Catalog of 242 MgII Absorption-Selected Galaxies: Correlations, Covering Fractions, and Cantankerous Outliers
Nikole M. Nielsen¹, C. W. Churchill¹
¹New Mexico State University.

426.08  Large-scale Spatial Fluctuations in Metal Enrichment during Reionization
Mia S. Bovill¹, P. R. Shapiro¹, I. T. Iliev², G. Mellema³, Y. Mao¹, K. Ahn⁴
¹University of Texas at Austin, ²University of Sussex, United Kingdom,
³Stockholm University, Sweden, ⁴Chosun University, Korea, Republic of.

426.09  Probing Galaxies Through Quasar Absorption Lines with HST/COS
Brian A. Keeney¹, J. T. Stocke¹, C. W. Danforth¹, S. V. Penton¹
¹Univ. of Colorado.

426.10  IGM Absorption Environments: A Galaxy Redshift Survey
Helen Yamamoto¹, D. Syphers¹, B. Keeney¹, J. Stocke¹
¹Center for Astrophysics and Space Astronomy.

427 Starburst Galaxies
Thursday, 9:00am-2:00pm, Exhibit Hall

427.01  Resolving the Connection Between Dense Gas Properties and Star Formation in Maffei 2
David S. Meier¹, J. L. Turner²
¹New Mexico Institute of Mining and Technology, ²University of California, Los Angeles.

427.02  Molecular Gas In The Cartwheel’s “Over-Cooked” Ring
James L. Higdon¹, S. J. U. Higdon¹
¹Georgia Southern University.

427.03  Probing the Mass Distribution and Stellar Populations of M82
Johnny Greco¹, P. Martini¹, T. A. Thompson¹
¹The Ohio State University.

427.04  UV-derived Star Formation Rates in a Survey of Nearby Starburst Dwarf Galaxies
Noah P. Mitchell¹, K. B. W. McQuinn², E. D. Skillman²
¹St. Olaf College, ²University of Minnesota.

427.05  The Bluest Quest: Searching For Young Stars In NGC6872
Duilia F. De Mello¹, R. T. Eufrasio¹, T. Lakeman¹
¹Catholic University of America.
427.06  HI Properties of the GOALS Luminous Infrared Galaxies
Diana Windemuth¹, D. Frayer², R. Maddalena³, S. Stierwalt³
¹Wesleyan University, ²National Radio Astronomy Observatory, ³California Institute of Technology.

427.07  EVLA Radio Continuum Observations of the Nuclear Starburst in NGC 2146
Joshua Marvil¹, F. Owen², J. Eilek¹
¹New Mexico Tech, ²National Radio Astronomy Observatory.

427.08  Characterizing Radio Emission from Nearby LIRGs and ULIRGs
Ashley Reichardt¹, A. K. Leroy², A. S. Evans², E. Momjian², E. Murphy³, EVLA U/LIRG Collaboration (Ott, Armus, Condon, Haan, Mazzarella, Meier, Privon, Schinnerer, et al.)
¹University of Pennsylvania, ²National Radio Astronomy Observatory, ³Observatories of the Carnegie Institution for Science.

427.09  Massive Star Formation in Extreme Galaxies Using Radio Recombination Lines
Amanda A. Kepley¹, D. Balser², L. Chomiuk³, W. Goss², K. Johnson¹, D. Meier⁴, D. Pisano⁵, A. Pope⁶
¹University of Virginia, ²NRAO, ³Harvard Smithsonian Center for Astrophysics, ⁴New Mexico Tech, ⁵West Virginia University, ⁶University of Massachusetts--Amherst.

427.10  Blue Compact Dwarf Galaxies: Characteristics and Relations to their Environment
Meryl Sell¹
¹University of Wisconsin - Madison.

427.11  Temperature and Heating Mechanisms in the Polar Ring Galaxy NGC660
Brian E. Svoboda¹, J. G. Mangum²
¹Western Washington University, ²National Radio Astronomy Observatory.

427.12  Herschel-SPIRE Imaging Spectroscopy of Molecular Gas in M82
Julia R. Kamenetzky¹, J. Glenn¹, N. Rangwala¹, P. R. Maloney¹, C. D. Wilson², M. Bradford³, G. J. Bendo⁴, SPIRE Local Galaxies Working Group (SAG 2): Very Nearby Galaxies Survey
¹University of Colorado at Boulder, ²McMaster University, Canada, ³California Institute of Technology, ⁴University of Manchester, United Kingdom.

427.13  Herschel-SPIRE observations of Arp 220: An Unprecedented View of the Molecular Gas in an Extreme Star Formation Environment
Naseem Rangwala¹, Herschel SAG-2 Team
¹University of Colorado, Boulder.

427.14  Herschel SPIRE Legacy Survey (HSLS)
Asantha R. Cooray¹
¹UC Irvine.

427.15  Herschel HerMES: Gravitationally Lensed Galaxies and Lensing Statistics at Submillimeter Wavelengths
Julie L. Wardlow¹, A. Cooray¹, F. De Bernardis¹, HerMES Collaboration
¹University of California, Irvine.

427.16  Identifying Extremely Red H-ATLAS Sources Using a Map-Based Technique
Chris C. Frazer¹, A. Cooray¹, K. Mitchell-Wynne¹, J. L. Wardlow¹, H-ATLAS team
¹University of California, Irvine.

427.17  Intensity Mapping of the [CII] Fine Structure Line during the Epoch of Reionization
Yan Gong¹, A. Cooray¹, M. Silva², M. G. Santos², J. Bock¹, M. Bradford³, M. Zemcov³
¹UCI, ²Technical University of Lisbon, Portugal, ³California Institute of Technology.
POSTERS: THU

428.02 Apache Point Observatory Galactic Evolution Experiment (APOGEE) Spectrograph

John C. Wilson¹, D. Fearty¹, M. F. Skrutskie¹, R. Majewski¹, R. Schiavon¹, D. Eisenstein¹, J. Gunn¹, B. Gillespie¹, D. Weinberg¹, B. Blank¹, C. Henderson¹, S. Smee¹, R. Barkhouser¹, A. Harding¹, S. Hope¹, G. Fitzgerald¹, T. Stolberg¹, J. Arns¹, M. Nelson¹, S. Brunner¹, A. Burton¹, E. Walker¹, C. Lam¹, P. Maseman¹, J. Barr¹, F. Leger¹, L. Carey¹, N. MacDonald¹, G. Ebelke¹, S. Beland¹, T. Horne¹, E. Young¹, G. Rieke¹, M. Rieke¹, T. O'Brien¹, J. Crane¹, M. Carr¹, C. Harrison¹, R. Stoll¹, M. Vernieri¹, J. Holtzman¹, D. Nidever¹, M. Shetrone¹, C. Allende-Prieto¹, J. Johnson⁶, P. Frinchaboy¹⁰, G. Zasowski¹, A. Garcia Perez¹, D. Bizyaev¹, B. Zhao¹
¹Univ. of Virginia, ²Gemini Observatory, ³Harvard University, ⁴Princeton University, ⁵Apache Point Observatory, ⁶Ohio State University, ⁷PulseRay, ⁸Johns Hopkins University, ⁹New England Optical Systems, ¹⁰Kaiser Optical Systems, Inc., ¹¹University of Arizona, ¹²University of Washington, ¹³University of Colorado, ¹⁴NASAs Ames Research Center, ¹⁵Carnegie Observatories, ¹⁶C Technologies, ¹⁷New Mexico State University, ¹⁸McDonald Observatory, ¹⁹Instituto de Astrofisica de Canarias, Spain, ²⁰Texas Christian University, ²¹University of Florida.

428.03 Stellar Cluster Abundances from APOGEE Commissioning Spectroscopy

Matthew D. Shetrone¹, C. Allende-Prieto², S. Meszaros², I. Ivans³, P. Frinchaboy³, D. Bizyaev⁴, R. Schiavon⁴, K. Cunha⁵, V. Smith⁵
¹Univ. of Texas, ²Instituto de Astrofisica de Canarias, Spain, ³Univ. of Utah, ⁴Texas Christian University, ⁵Apache Point Observatory, ⁶Gemini Observatory, ⁷NOAO.

428.04 SDSS-III/APOGEE: Star Clusters From The APOGEE “First Light” Field

Peter M. Frinchaboy¹, C. Allende-Prieto², T. C. Beers¹, D. Bizyaev¹, J. Holtzman⁵, I. Ivans⁴, K. M. Jackson¹, J. A. Johnson¹, S. R. Majewski⁵, D. Nidever⁴, A. Garcia Perez⁴, M. Pinsonneault⁴, R. Schiavon⁴, M. Shetrone⁴, M. Skrutskie⁴, J. C. Wilson⁴, G. Zasowski⁴
¹TCU, ²IAAC, Spain, ³JINA/NOAO, ⁴APO, ⁵NMSU, ⁶U. Utah, ⁷OSU, ⁸U. Virginia, ⁹Gemini Observatory, ¹⁰HET.

428.05 Search for CO-Emitting Galaxies in Blank Field Surveys

Courtney D. Laughlin¹, M. Lacy²
¹Virginia Polytech Institute, ²National Radio Astronomy Observatory.

428.06 Spitzer Heritage Archive Enhanced Imaging Products

Harry I. Teplitz¹, P. Capak², D. Hanish², T. Y. Brooke², J. W. Colbert², V. Desai¹, D. W. Hoard², J. Howell², R. Laher², A. Noriega-Crespo¹
¹Infrared Science Archive (IRSA), ²Spitzer Science Center.
428.07 Characterizing The Completeness Of Spitzer IRAC Imaging And The GLIMPSE Point Source Catalog In High-background Regions
Henry A. Kobulnicky\textsuperscript{1}, M. Alexander\textsuperscript{1}, B. Brian\textsuperscript{2}, M. Meade\textsuperscript{2}, B. Whitney\textsuperscript{2},
E. Churchwell\textsuperscript{2}
\textsuperscript{1}Univ. of Wyoming, \textsuperscript{2}Univ. of Wisconsin.

428.08 SASIR: the Synoptic All-Sky Infrared Survey
Eva Noyola\textsuperscript{1}
\textsuperscript{1}Instituto De Astronomia, UNAM, Mexico.

428.09 Analysis Of The 2mass Calibration Scan Database: Variability In The NIR From Minutes To Years
James R. A. Davenport\textsuperscript{1}, A. C. Becker\textsuperscript{1}
\textsuperscript{1}University of Washington.

428.10 WISE View of Extragalactic Sources
Lauren M. Anderson\textsuperscript{1}, A. R. Lewis\textsuperscript{1}, Y. AlSayyad\textsuperscript{1}, A. C. Becker\textsuperscript{1}, J. R. A. Davenport\textsuperscript{1},
N. M. Hunt-Walker\textsuperscript{1}, Z. Ivezic\textsuperscript{1}
\textsuperscript{1}University of Washington.

428.11 The Brightest of Reionizing Galaxies Survey: A Protocluster Candidate at redshift z~8
Michele Trenti\textsuperscript{1}, BoRG Collective
\textsuperscript{1}University of Colorado.

428.12 The Brightest of Reionizing Galaxies Survey: Design and Key Results
Massimo Stiavelli\textsuperscript{1}, M. Trenti\textsuperscript{2}, BoRG Collective
\textsuperscript{1}STScI, \textsuperscript{2}University of Colorado.

428.13 The Brightest of Reionizing Galaxies Survey: Ancillary Science at redshift z~2
Soyoung Kim\textsuperscript{1}, M. Trenti\textsuperscript{2}, BoRG Collective
\textsuperscript{1}Johns Hopkins Univ., \textsuperscript{2}University of Colorado.

428.14 Cluster Lensing And Supernova survey with Hubble (CLASH): A Magnified View of the High-Redshift Universe
Larry D. Bradley\textsuperscript{1}, CLASH Team
\textsuperscript{1}Space Telescope Science Institute.

428.15 Using The Z Band For Stellar Classification: Looking Forward To Pan-starrs
John Vickers\textsuperscript{1}, E. Grebel\textsuperscript{1}, A. Huxor\textsuperscript{1}
\textsuperscript{1}Astronomisches Rechen-Institut, Germany.

428.16 The Photometric Calibration of the First Year of the Pan-STARRS 1 Survey
Eddie Schlafly\textsuperscript{1}, D. P. Finkbeiner\textsuperscript{1}, M. Juric\textsuperscript{1}
\textsuperscript{1}Harvard.

428.17 Preliminary Results of a Chandra X-ray Survey of the Norma Spiral Arm
Francesca Fornasini\textsuperscript{1}, J. A. Tomsick\textsuperscript{2}, E. V. Gotthelf\textsuperscript{2}, A. Bodaghee\textsuperscript{2}, S. E. Boggs\textsuperscript{2},
F. Rahoui\textsuperscript{2}, V. M. Kaspi\textsuperscript{2}
\textsuperscript{1}Department of Astronomy, University of California-Berkeley, \textsuperscript{2}Space Sciences Laboratory, University of California-Berkeley, \textsuperscript{3}Columbia Astrophysics Laboratory, Columbia University, \textsuperscript{4}Department of Physics and Space Sciences Laboratory, University of California-Berkeley, \textsuperscript{5}Department of Astronomy and Harvard-Smithsonian Center for Astrophysics, Harvard University, \textsuperscript{6}Physics Department, McGill University, Canada.

428.18 The 4 Ms Chandra Deep Field-South Survey Number Counts: The Impending Dominance of Normal Galaxy Populations in Ultra-Deep X-ray Surveys
Bret Lehmer\textsuperscript{1}
\textsuperscript{1}Johns Hopkins University.
428.19 Panchromatic Hubble Andromeda Treasury Survey: Resolved Stellar Photometry
Benjamin F. Williams¹, J. J. Dalcanton¹, A. E. Dolphin², D. Lang³, D. Weisz¹, A. C. Seth⁴, J. Kalirai⁵, T. Lauer⁶, K. Rosema⁷
¹Univ. of Washington, ²Raytheon, ³Princeton, ⁴Harvard-Smithsonian Center for Astrophysics, ⁵Space Telescope Science Institute, ⁶NOAO, ⁷Random Walk Group.

428.20 The First Data Release of the Catalina Surveys
Andrew J. Drake¹, E. Beshore², S. G. Djorgovski¹, S. Larson², A. Boattini², M. Catelan³, E. Christensen⁴, C. Donalek¹, A. Gibbs², M. Graham¹, A. Grauer², R. Hill², R. Kowalski², A. Mahabal¹, J. L. Prieto⁵, R. Williams¹
¹Caltech, ²LPL, ³PUC Catolica, Chile, ⁴Gemini, Chile, ⁵Princeton Uni.

428.21 The LAMOST-PLUS Partnership: The Pilot Survey Begins
Heidi Jo Newberg¹, Z. Bai², T. Beers³, J. Carlin¹, J. Chen², L. Chen³, Y. Chu², L. Deng², X. Fu³, C. Grillmair², P. Guhathakurta³, J. Hou⁴, J. Hu², S. Lepine³, H. Li², J. Li², C. Liu², X. Liu², A. Luo², H. Morrison¹⁰, E. Peng¹, J. Sellwood¹¹, X. X. Xue², Y. Xu², L. Yang⁶, B. Yanny¹², J. Yu⁴, Y. Zhang², H. Zhang², G. Zhao², Y. Zhao², Z. Zheng¹³, J. Zhong⁴, Participants in LAMOST, US (PLUS), LAMOST (Guoshoujing)
¹Rensselaer Polytechnic Inst., ²National Astronomical Observatory of China, Beijing, China, ³NOAO, ⁴Shanghai Astronomical Observatory, China, ⁵USTC, China, ⁶IPAC, ⁷UC Santa Cruz/ Lick Observatory, ⁸American Museum of Natural History, ⁹Peking University, ¹⁰Case Western Reserve University, ¹¹Rutgers University, ¹²Fermi National Accelerator Laboratory, ¹³University of Utah.

428.22 Results from the NGC 7448 cube of the Arecibo Galaxy Environment Survey
Hanna Herbst¹, R. Taylor², R. Minchin²
¹UW Madison Astronomy Dept., ²Arecibo Observatory, Puerto Rico.

429 CANDELS Poster
Thursday, 9:00am-2:00pm, Exhibit Hall

429.01 Host Galaxies Near And Far: The Candels Sn Survey
Brian Hayden¹, P. Garnavich¹, CANDELS SN Survey
¹University of Notre Dame.

429.02 Impact of Nebular Emission on SED Fitting of CANDELS Data at 3 ≤ Z ≤ 7: The SFR-Mass Relation
Brett W. Salmon¹, C. Papovich¹, S. L. Finkelstein², V. Tilvi¹, CANDELS Team
¹Texas A&M University, ²University of Texas.

429.03 Investigating Sub-structures Of Galaxies At z=2 With CANDELS
Yicheng Guo¹, M. Giavalisco¹, CANDELS Team
¹University of Massachusetts, amherst.

429.04 The Assembly of Galaxies at z~2: The Emerging Diversity of Stellar Populations measured from Internal Colors with CANDELS
Steven A. Boada¹, C. Papovich¹, S. Finkelstein², V. Tilvi¹, CANDELS Team
¹Texas A&M University, ²The University of Texas at Austin.

429.05 Candels Observations Of The Relation Between Galaxy Color, Stellar Mass, And Morphology With Environment At Z=1.6
Robert Bassett¹, C. J. Papovich¹, J. M. Lotz², K. Tran¹, S. Finkelstein¹, H. Ferguson²
¹Texas A&M University, ²STSI, ³University of Texas.
THURSDAY POSTER SESSIONS

429.06  No Significant Evolution in the Bar Fraction in Large Disk Galaxies From $z=1.8$ to $z=0.6$
Jessica Herrington$^1$, E. Bell$^1$, CANDELS Team
$^1$University of Michigan.

429.07  Candels: GOODS-S1 And GOODS-S2 Strong Lens Candidates
Alexander Chiu$^1$, H. Fu$^1$, J. Calanog$^1$, A. Cooray$^1$, J. Wardlow$^1$, CANDELS team
$^1$University of California - Irvine.

429.08  Color Gradients of Passive Disks at $z\sim2$
Elizabeth J. McGrath$^1$, A. van der Wel$^1$, D. C. Koo$^1$, S. M. Faber$^1$, M. Mozena$^1$, S. Wuyts$^1$, Y. Guo$^1$, CANDELS team
$^1$University of California, Santa Cruz, $^2$MPIA, Germany, $^3$MPE, Germany, $^4$University of Massachusetts, Amherst.

430 Computation and Data Handling
Thursday, 9:00am-2:00pm, Exhibit Hall

430.01  Cyber Exploration of the Interstellar Medium: A New Age of Broadband Data Cube Analysis
Brent J. Harris$^1$, B. Pate$^1$, K. Lehmann$^1$, T. Remijan$^2$, C. Brogan$^2$, Virginia Image and Video Analysis
$^1$University of Virginia, $^2$National Radio Astronomy Observatory.

430.02  IMCOM: A Method for the Optimized Linear Combination of Astrophysical Images
Jason Rhodes$^1$, B. Rowe$^1$, C. Hirata$^1$, S. Seshadri$^1$, R. Smith$^2$
$^1$JPL, $^2$Caltech.

430.03  Imtrandetect: A New Tool/methodology For Detecting Astronomical Transients From Large Image-data Streams
Frank J. Masci$^1$, D. Hoffman$^1$
$^1$IPAC/Caltech.

430.04  High Energy Astronomical Data Processing and Analysis via the Internet
Lynne A. Valencic$^1$, S. Snowden$^2$, W. Pence$^2$
$^1$Johns Hopkins Univ., $^2$NASA-GSFC.

430.05  Data Wrangling Within Different Astronomy Career Trajectories
Reynal Guillen$^1$, D. Gu$^1$, J. Holbrook$^1$, L. Murillo$^1$, S. Traweek$^1$
$^1$University of California, Los Angeles.

430.06  Mining the Green Bank Telescope Metadata Archive: Statistics on Radio Frequency Use, 2002-2011
Michael Blatnik$^1$, A. W. Clegg$^1$, C. Beaudet$^3$, R. J. Madellena$^3$
$^1$University of Massachusetts Amherst, $^2$National Science Foundation, $^3$National Radio Astronomy Observatory.

431 Education & Outreach
Thursday, 9:00am-2:00pm, Exhibit Hall

431.01  Public Outreach at Appalachian State University's Dark Sky Observatory Cline Visitor Center
Daniel B. Caton$^1$, L. Hawkins$^1$, A. B. Smith$^1$
$^1$Appalachian State Univ..
431.02 2011 Astronomy Day at McDonald Observatory
Sandra Preston1, M. Hemeway1, M. Wetzel1
1The University of Texas at Austin.

431.03 Black Holes Traveling Exhibition: This Time, It’s Personal.
Mary E. Dussault1, E. L. Braswell1, S. Sunbury1, M. Wasser1, R. R. Gould1
1Harvard-Smithsonian, CfA.

431.04 International Astronomical Search Collaboration – Astronomical Discovery Program for High School and College Students
Patrick Miller1
1Hardin-Simmons University.

431.05 WWT Ambassadors: Worldwide Telescope For Interactive Learning
Patricia S. Udomprasert1, A. A. Goodman1, C. Wong2
1Harvard-Smithsonian Center for Astrophysics, 2Microsoft Research.

431.06 Astronomy Student Activities Using Stellarium Software
Raymond D. Benge1, S. R. Tuttle1
1Tarrant County College.

432 The Sun, The Solar System and Extrasolar Planets
Thursday, 9:00am-2:00pm, Exhibit Hall

432.01 On The Neutral ISM In The Kepler Field Of View: Using Spectroscopy To Map The Distribution Of NaI
Kathryn Silverio1
1University of California, Berkeley.

432.02 A Subaru SEEDS Imaging Search for Extrasolar Planets Around Early-Type Stars
1College of Charleston, 2Anton Pannekoek Astronomical Institute, Netherlands, 3Princeton University, 4Max Planck Institute for Astronomy, Germany, 5NASA Goddard Space Flight Center, 6National Astronomical Observatory of Japan, Japan.

432.03 Towards Earth-like Worlds: Identifying and Removing Stellar Jitter
1Queen's University Belfast, United Kingdom; Vanderbilt University, 2Queen's University Belfast, United Kingdom, 3University of Warwick, United Kingdom, 4University of Sheffield, United Kingdom, 5Universit J. Fourier/CNRS, Laboratoire d’Astrophysique de Grenoble, France.

432.04 The McDonald Observatory Planet Search: New Long-Periodic Giant Planets, and Two Interacting Jupiters in the HD 155358 System
Paul Robertson1, M. Endl2, W. D. Cochran2, P. J. MacQueen3, R. A. Wittenmyer4, J. Horner1, E. J. Brugamyer5, A. E. Simon6, S. I. Barnes2, C. Caldwell1
1University of Texas at Austin, 2McDonald Observatory / University of Texas at Austin, 3University of New South Wales, Australia, 4Konkoly Observatory of the Hungarian Academy of Sciences, Hungary.

432.05 Probable z'-band Ground-based Detection of the Secondary Eclipse of WASP-19b
John Burton1, C. A. Watson1, S. P. Littlefair2
1Queen's University Belfast, United Kingdom, 2University of Sheffield, United Kingdom.
432.06 The TERMS Project: Improved Orbital Parameters and Photometry of HD 168443 and the Photometry Pipeline
1Pennsylvania State University, 2Caltech, 3University of California, 4Agnes Scott College, 5Yale University, 6Tennessee State University, 7Swarthmore College, 8Pontificia Universidad Catolica de Chile, Chile.

432.07 The Planet-Metallicity Correlation in the Kepler Field
Keith Hawkins1, J. Johnson2, T. Morton2
1Ohio University, 2Caltech.

432.08 Detection of Exoplanet Thermal Emission with Future High-Resolution Spectrometers
Kevin Gullikson1, M. Endl1, D. Jaffe1
1University of Texas Austin.

432.09 Searching for Sunquakes in Solar Cycle 24
Karen Garcia1, T. Barajas1, D. Vo1, N. Murphy2
1California State University Los Angeles, 2Jet Propulsion Laboratory.

432.10 Io’s Eclipse Emission Spectrum Following Umbral Ingress
Laurence M. Trafton1, C. H. Moore3, D. B. Goldstein1, P. L. Varghese1, M. A. McGrath3
1Univ. of Texas at Austin, 2Sandia National Laboratories, 3NASA’s MSFC.

432.11 Radar Observations of 2005 YU55’s Flyby of Earth
Patrick A. Taylor1, M. C. Nolan1, E. S. Howell1, M. W. Busch2, L. A. M. Benner3, M. Brozovic1, J. D. Giorgini1, J. S. Jao2, C. G. Lee3, M. A. Slade3, F. D. Ghigo4, J. L. Margot2
1Arecibo Observatory, 2UCLA, 3Jet Propulsion Laboratory, 4NRAO/Green Bank.

432.12 A Reevaluation of the Hubble Space Telescope Spectra of the Impact of the LCROSS Satellite with the Moon
Alex Storrs1, L. Guillou1
1Towson Univ..

432.13 Broadband CCD Photometry of 2005 YU55 in Four Colors at McDonald Observatory
Judit Gyorgyey Ries1
1Univ. of Texas, Austin.

432.14 Examining the Shape Distribution of Near-Earth Asteroids
Abby A. Thane1, E. S. Howell1, M. C. Nolan2, P. A. Taylor2, C. Magri3
1The University of Montana, 2Arecibo Observatory, Puerto Rico, 3University of Maine, Farmington.

432.15 Physical Characterization of Near-Earth Object 3988 (1986 LA)
Thien-Tin Truong1, M. Hicks2, C. Strojia3, S. Teague3, C. Gerhart4, M. McCormack5
1California State University - LA, 2Jet Propulsion Laboratory/Caltech, 3Victor Valley College, 4Los Angeles Valley College, 5Los Angeles City College.

432.16 Evolutionary Models of Main Belt Comets
Dina Prialnik1, G. Sarid2, K. Meech2, A. Assis1
1Tel Aviv Univ., Israel, 2University of Hawaii.
433 Binary and Variable Stars

433.01 Periodic Emission From The Gamma-ray Binary 1FGL J1018.6-5856
1UMBC/NASA GSFC, 2University of Southampton, United Kingdom, 3Australian Astronomical Observatory - Las Campanas Observatory, Chile, 4CSIRO, Australia, 5University of Western Sydney, Australia, 6Harvard-Smithsonian Center for Astrophysics.

433.02 Studying the Environment of Symbiotic Stars with Spitzer IRS Spectroscopy
Ryan P. Norris1, F. C. Bruhweiler2, B. McCollum3, G. Wahlgren1
1CUA, 2CUA/NASA-GSFC, 3IPAC/Caltech, 4CUA/NASA.

433.03 Similarities and Differences in Spectral Behavior Between W Ser and UX Mon in the UV
Matthew Bobrowsky1, M. R. Sanad2
1University of Maryland, 2National Research Institute of Astronomy and Geophysics, Egypt.

433.04 Stellar Wind Ionization in High-Mass X-ray Binary Systems
Rosina Iping1, G. Sonneborn1
1NASA’s GSFC.

433.05 VLT/X-shooter Spectroscopy Of The Candidate Black Hole X-ray Binary MAXI J1659-152
Ramanpreet Kaur1, L. Kaper1, L. Ellerbroek1, D. Russell1, D. Altamirano1, R. Wijnands1, GRB/X-shooter team
1University of Amsterdam, Netherlands.

433.06 Optical Spectroscopy of ASAS 150946-2147.7
Ishioka Ryoko1
1NAOJ.

433.07 SHRINKING DISK IN V926 SCO
Sam Connolly1, S. Vrtilek1
1Harvard-Smithsonian Centre for Astrophysics.

433.08 A Photometric and Spectroscopic Study of Eclipsing Binary AQ Serpentis
Anthony Oliveri1, C. Lacy2
1University of Texas - Austin, 2University of Arkansas.

433.09 X-ray Emission From Star-forming Galaxies
Stefano Mineo1, M. Gilfanov2, R. Sunyaev2
1Smithsonian Astrophysical Observatory, 2Max-Planck-Institut für Astrophysik, Germany.

433.10 ATCA-CABB Observations of Neutron Star X-ray Binaries
Daniel Calvelo1, R. Fender1, J. Broderick1, M. Bell1, T. Tzioumis2, M. Nakajima3
1University of Southampton, UK, United Kingdom, 2ATNF, Australia, 3Nihon University, Japan.

433.11 Surface Maps of LO Pegasi May-July 2011 Generated via BVRI Light Curve Inversion
Robert O. Harmon1, P. Johns Vidaurri2, S. Krug1
1Ohio Wesleyan Univ., 2Northern Arizona Univ., 3Univ. of Notre Dame.
433.12 Long-Term Optical and Near-Infrared Spectroscopic Monitoring of ε Aurigae During the 2009-11 Eclipse
John C. Barentine¹, W. F. Ketzeback², J. M. Dembicky³, J. Huehnerhoff³, R. McMillan², G. Saurage³, A. Sheldon³, J. Coughlin³, N. Ule¹, S. Hawley⁴, S. Schmidt⁴, G. Wallerstein⁴, R. Leadbeater⁵, D. G. York⁶
¹University of Texas at Austin, ²Apache Point Observatory, ³New Mexico State University, ⁴University of Washington, ⁵Three Hills Observatory, United Kingdom, ⁶University of Chicago.

433.13 Selection of RR Lyrae Stars
Mohamad Abbas¹
¹Astronomisches Rechen-Institut (ARI), Germany.

434 History
Thursday, 9:00am-2:00pm, Exhibit Hall

434.01 Franklin Edward Kameny (1925-2011, Astronomer)
Jason Wright¹
¹Penn State University.

434.02 Where Did John Goodricke Make His observations? New Evidence
Linda M. French¹
¹Illinois Wesleyan Univ..

435 AGN, QSOs & Friends
Thursday, 9:00am-2:00pm, Exhibit Hall

435.01 Application of Data Visualization Techniques to Studying the Narrow Line Region of Seyfert Galaxies
Charles H. Nelson¹, T. Urness¹, J. Mirocha², K. Kreimeyer¹, W. Kockler¹, J. Albrechtson¹
¹Drake Univ., ²Univ. of Colorado, ³Univ. of Maryland.

435.02 The First Direct Measure of BAL Quasar Orientations
Michael A. DiPompeo¹, M. S. Brotherton¹, C. De Breuck², S. Laurent-Muehleisen³, A. D. Myers¹
¹University of Wyoming, ²European Southern Observatory, ³Illinois Institute of Technology.

435.03 Evolution of the Black Hole Mass - Galaxy Bulge Relationship for Quasars in the Sloan Digital Sky Survey Data Release 7
Sarah Salviander¹, G. A. Shields¹
¹University of Texas at Austin.

435.04 Multiwavelength Campaign on Mrk 509 IX: Limits on the Distance of the Absorber from HST COS and STIS Spectroscopy
Doug Edmonds¹, N. Arav¹, B. Borguet¹, G. A. Kriss²
¹Virginia Tech, ²Space Telescope Science Institute.

435.05 3c 449: Is It A Merging Radio Galaxy?
Dharam V. Lal¹, R. Kraft¹, S. Randall¹, M. Hardcastle³, W. Forman¹, P. Nulsen¹, C. Jones¹, J. Croston³
¹Harvard-Smithsonian Center for Astrophysics, ²University of Hertfordshire, United Kingdom, ³University of Southampton, United Kingdom.
435.06 Physical Conditions And Kinematics Of The Molecular Gas In Feedback-dominated Radio Galaxies
Pierre Guillard\textsuperscript{1}, P. Ogle\textsuperscript{2}, B. Emonts\textsuperscript{3}, P. Appleton\textsuperscript{4}, R. Morganti\textsuperscript{5}
\textsuperscript{1}Caltech, \textsuperscript{2}IPAC, Caltech, \textsuperscript{3}Australia Telescope National Facility, CSIRO, Australia, \textsuperscript{4}Nasa Herschel Science Center, IPAC, Caltech, \textsuperscript{5}Netherlands Foundation for Research in Astronomy, Netherlands.

435.07 Investigating The Core Morphology--seyfert Class Relationship Using Archival Hubble Space Telescope Images Of Local Seyfert Galaxies
Rogier A. Windhorst\textsuperscript{1}, M. J. Rutkowski\textsuperscript{1}, P. Hegel\textsuperscript{1}, H. Kim\textsuperscript{1}, K. Tamura\textsuperscript{1}, M. R. Corbin\textsuperscript{1}
\textsuperscript{1}Arizona State Univ.

435.08 The Origin of the Hot Dust Poor Quasars
Heng Hao\textsuperscript{1}, M. Elvis\textsuperscript{2}, L. Danese\textsuperscript{1}, A. Celotti\textsuperscript{1}
\textsuperscript{1}SISSA, Italy, \textsuperscript{2}Smithsonian Center for Astrophysics.

435.09 Dual Frequency VLBI Monitoring of a Large Sample of Compact Extragalactic Sources at 8 and 32 GHz
Christopher S. Jacobs\textsuperscript{1}, W. A. Majid\textsuperscript{1}, A. Romero-Wolf\textsuperscript{1}, L. Snedeker\textsuperscript{1}, C. Garcia-Miro\textsuperscript{2}, I. Sotuela\textsuperscript{2}, S. Horiuchi\textsuperscript{3}
\textsuperscript{1}JPL, \textsuperscript{2}INSA, Spain, \textsuperscript{3}CSIRO, Australia.

435.10 Recalibrating Single-epoch Black Hole Mass Estimates
Jong-Hak Woo\textsuperscript{1}, D. Park\textsuperscript{1}, T. Treu\textsuperscript{2}, A. J. Barth\textsuperscript{3}, M. C. Bentz\textsuperscript{4}, V. N. Bennert\textsuperscript{5}, G. Canalizo\textsuperscript{6}, A. V. Filippenko\textsuperscript{6}, E. Gates\textsuperscript{6}, J. E. Greene\textsuperscript{6}, M. A. Malkan\textsuperscript{6}, J. Walsh\textsuperscript{6}
\textsuperscript{1}Seoul National University, Korea, Republic of, \textsuperscript{2}UC Santa Barbara, \textsuperscript{3}UC Irvine, \textsuperscript{4}Georgia State University, \textsuperscript{5}California Polytechnic State University, \textsuperscript{6}UC Riverside, \textsuperscript{7}UC Berkeley, \textsuperscript{8}Lick Observatory, \textsuperscript{9}Princeton University, \textsuperscript{10}UCLA, \textsuperscript{11}UT Austin.

435.11 The Ideal AGN Atlas of AGN Theoretical Images and Spectra
Brandon Marshall\textsuperscript{1}, M. Bautista\textsuperscript{1}
\textsuperscript{1}Western Michigan University.

435.12 Determination Of The Kinetic Luminosity Of The High Ionization UV Outflow In SDSS J1512+1119 Using High S/N VLT/X-Shooter Spectrum
Benoit Borguet\textsuperscript{1}, N. Arav\textsuperscript{1}, D. Edmonds\textsuperscript{1}, C. Chamberlain\textsuperscript{1}
\textsuperscript{1}Virginia Tech.

Sarah True\textsuperscript{1}, N. Arav\textsuperscript{1}, Quasar Outflow Group at Virginia Tech
\textsuperscript{1}Virginia Polytechnic Institute and State University.

435.14 Physical Properties Of The NLR In Low-mass Active Galaxies
Randi R. Ludwig\textsuperscript{1}, J. E. Greene\textsuperscript{2}, A. J. Barth\textsuperscript{3}, L. C. Ho\textsuperscript{4}
\textsuperscript{1}University of Texas, \textsuperscript{2}Princeton University, \textsuperscript{3}University of California, Irvine, \textsuperscript{4}Observatories of the Carnegie Institution for Science.

435.15 Spitzer and Herschel-based SEDs of 24 \textmu M-bright z~0.3-3.0 Starbursts and Obscured Quasars
Anna Sajina\textsuperscript{1}, L. Yan\textsuperscript{3}, D. Fadda\textsuperscript{1}, K. Dasyra\textsuperscript{1}, M. Huynh\textsuperscript{5}
\textsuperscript{1}Tufts University, \textsuperscript{2}IPAC, Caltech, \textsuperscript{3}NASA Herschel Science Center, \textsuperscript{4}Observatoire de Paris, France, \textsuperscript{5}University of Western Australia, Australia.

435.16 Comparing Optical And X-ray Spectra Of Swift/BAT-selected Agn
Stuart Flury\textsuperscript{1}, M. L. Trippe\textsuperscript{2}
\textsuperscript{1}Dickinson College, \textsuperscript{2}University of Maryland - College Park.
THURSDAY POSTER SESSIONS

435.17 Steps Toward Unveiling the True Population of AGN: Photometric Selection of Broad-Line AGN
Evan Schneider¹, C. Impey¹
¹University of Arizona.

435.18 Precious Metals In SDSS QSOs: The Hunt For Intergalactic CIV In DR7
Kathy Cooksey¹, M. Kao², R. Simcoe³, J. O’Meara⁴, J. Prochaska⁵, E. Seyffert³
¹MIT Kavli Institute for Astrophysics & Space Research, ²Caltech, ³MIT, ⁴St. Michael’s College, ⁵UC Santa Cruz.

436 Supernovae & Related Topics
Thursday, 9:00am-2:00pm, Exhibit Hall

436.01 Off-center Collisions of two White Dwarfs: A Type Ia Supernova Progenitor Scenario.
Themis Athanassiadou¹, W. Hawley¹, F. Timmes¹
¹Arizona State University.

436.02 The Progenitor Masses Of Type IIP Supernovae From Late-time Spectral Modeling
Anders Jerkstrand¹
¹Stockholm University, Sweden.

436.03 Host Galaxy Environments of Supernovae
Patrick Kelly¹
¹Stanford University.

436.04 Sn 2010kd -- A Super-luminous, Pair-instability Supernova?
Jozsef Vinko¹, W. Zheng², S. B. Pandey³, R. Quimby³, A. Romadan³, R. Roy¹, K. Takats¹, E. Chatzopoulos³, J. C. Wheeler³, N. Whallon³, F. Yuan³, C. Akerlof³, D. Pooley¹
¹University of Szeged, Hungary, ²University of Michigan, ³ARIES, India, ⁴IPMU University of Tokyo, Japan, ⁵University of Texas, ⁶RSAA Australian National University, Australia, ⁷Sam Houston State University.

436.05 White Dwarf Collisions: Grid versus Particle Codes
Wendy Hawley¹, T. Athanassiadou¹, F. Timmes¹, C. Raskin¹, M. Richardson¹
¹Arizona State University.

436.06 Modelling Spectra and Lightcurves from Supernovae
Lucille Frey¹, W. Even², D. Whalen², C. Fryer², A. Hungerford², C. Fontes²
¹LANL, University of New Mexico, ²LANL, ³Carnegie Mellon University.

436.07 Early Radio and X-ray Observations of the Youngest Nearby Type Ia Supernova PTF11kly (SN 2011fe)
Assaf Horesh¹
¹Caltech.

436.08 The Critical Neutrino Luminosity in Rotating Core-Collapse Supernovae
Howard E. Bond¹, R. M. Humphreys³, L. R. Bedin⁴, A. Bonanos⁴, K. Davidson⁴, B. Monard⁵, J. Prieto⁵, F. Walter⁷
¹STScI, ²U Minnesota, ³Osservatorio di Padova, Italy, ⁴National Observatory of Athens, Greece, ⁵Bronberg Observatory, South Africa, ⁶Princeton U, ⁷Stony Brook U.
436.10 Himalayan Chandra Telescope Observations of Type-Ia Supernova SN 2010at
Brandon Patel¹, G. Anupama², D. K. Sahu²
¹Rutgers University, ²Indian Institute of Astrophysics, India.

436.11 Crab Nebula Gamma-ray Flares as Relativistic Reconnection Minijets
Eric Ryan Clausen-Brown¹, M. Lyutikov¹
¹Purdue University.

436.12 The Crab Pulsar Observed by RXTE: Monitoring the X-ray to Radio Delay for 16 Years
Arnold H. Rots¹, K. Jahoda²
¹Smithsonian Astrophysical Observatory, ²NASA/Goddard Space Flight Center.

436.13 Young Neutron Stars in Extragalactic Supernovae
Nathan Tehrani¹, D. R. Lorimer¹
¹West Virginia University.

436.14 Full 3-D MHD Simulations of Accretion Flow in Cataclysmic Variables With Strong and Complex Magnetic Fields
Paul A. Mason¹, A. G. Zhilkina², D. V. Bisikalo³
¹Univ. Of Texas at El Paso, ²Institute of Astronomy RAS, Chelyabinsk State University, Russian Federation, ³Institute of Astronomy RAS, Russian Federation.

436.15 The Mass and Wind-momentum Ratios in the Colliding-wind Binary WR140
Sean M. Dougherty¹, I. A. Smith²
¹NRC HIA, Canada, ²University of Waterloo, Canada.

436.16 V458 Vul 2007: A Fast Varying Nova In The Early Phase Of Evolution
Samira Rajabi¹, M. W. Muterspaugh¹, B. F. Lane², M. M. Sirk³, S. Browne³, A. Ghasempour¹, S. P. Halverson⁴, J. G. Kelly¹, M. Williamson¹
¹Tennessee State University, ²Draper Laboratory, ³University of California, ⁴The Pennsylvania State University.

436.17 Searching For X-ray Emission From AGB Stars
Rodolfo Montez, Jr.¹, S. Ramstedt², J. H. Kastner¹, W. H. T. Vlemmings³
¹Rochester Institute of Technology, ²Argelander Institute for Astronomy, Germany, ³Onsala Space Observatory, Sweden.

436.18 Carbon Monoxide Emission in the Nova V496 Scuti
Richard J. Rudy¹, R. W. Russell¹, W. L. Dimpfl¹, T. R. Prater¹, L. Bernstein², R. C. Puettter³, R. B. Perry¹, M. L. Sitko⁵, K. S. Bjorkman⁶, J. P. Wisniewski⁷
¹The Aerospace Corporation, ²Spectral Sciences, ³UCSD, ⁴NASA, LaRC, ⁵U. of Cincinnati, ⁶U. of Toledo, ⁷U. of Washington.

436.19 Discovery of Three New B[e] Supergiants in the Small Magellanic Cloud
Andrew Graus¹, J. B. Lamb¹, M. S. Oey¹
¹University of Michigan.

437 YSOs, the ISM and Other Topics
Thursday, 9:00am-2:00pm, Exhibit Hall

437.01 The Chemical Structure of Orion KL: A 2D Spectral Line Survey at 1mm
Nuria Marcelino¹, J. Cernicharo², G. B. Esplugues², A. Palau², T. Bell², B. Tercero², M. Guerin⁴
¹National Radio Astronomy Observatory, ²CAB, INTA-CSIC, Spain, ³CSIC-IEEC, Spain, ⁴IRAM, France.
437.02 Aperture Synthesis Observations Toward The Protostellar Systems L1551 Irs 5 And Hl Tau: Rotation In The Infalling Envelope
Masao Saito1, Y. Kitamura2, M. Momose3, T. Tsukagoshi4, R. Kawabe5
1National Astronomical Observatory of Japan, Japan, 2Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Japan, 3College of Science, Ibaraki University, Japan, 4Institute of Astronomy, Faculty of Science, University of Tokyo, Japan, 5Nobeyama Radio Observatory, National Astronomical Observatory of Japan, Japan.

437.03 Infrared Variability of Protoplanetary Disks: Signs of Complex Disk Structure
Kevin M. Flaherty1, J. Muzerolle2, G. Rieke1, R. Gutermuth1, Z. Balog4, W. Herbst5, S. Megeath6, M. Kun7
1University of Arizona, 2STSCI, 3University of Massachusetts, 4MPIA, Germany, 5Wesleyan University, 6University of Toledo, 7Konkoly Observatory, Hungary.

437.04 Evidence For Accretion-driven X-ray Production In Ex Lupi And V1647 Ori
William K. Teets1, D. Weintraub1, N. Grosso2, D. Principe3, J. Kastner3, K. Hamaguchi4, M. Richmond5
1Vanderbilt University, 2Observatoire Astronomique de Strasbourg, Université de Strasbourg, France, 3Rochester Institute of Technology, 4Goddard Space Flight Center.

437.05 Mid-Infrared Variability of Orion Protostars
S. Terebey1, J. Stauffer1, M. Morales1, H. H. M. Mok1, D. Padgett1, L. Rebull2, P. Plavchan1
1Cal. State Univ. at Los Angeles, 2Caltech, 3NASA Goddard.

438 Star Associations & Clusters
Thursday, 9:00am-2:00pm, Exhibit Hall

438.01 F Turnoff Distribution in the Galactic Halo Using Globular Clusters as Proxies
Matthew Newby1, H. J. Newberg1, J. Simones2, M. Monaco1, N. Cole1
1Rensselaer Polytechnic Institute, 2University of Minnesota, Minneapolis.

438.02 Exploring the Outer Halo Globular Cluster Pyxis
Brian L. Pohl1, B. W. Carney1
1University of North Carolina, Chapel Hill.

438.03 NGC 2146: a Nearby Laboratory for Cluster Formation Modes
Angela Adamo1, J. S. Gallagher1, L. Smith1, M. Westmoquette4, I. S. Konstantopoulos5, N. Bastian6, J. E. Ryom2, E. Zackrisson1, S. S. Larsen6, J. Charlton6, D. Weisz6
1Max-Planck-Institut Fuer Astronomie, Germany, 2University of Wisconsin-Madison, 3Space Telescope Science Institute and European Space Agency, 4European Southern Observatory, Germany, 5Penn State, 6Excellence Cluster Universe, Germany, 7Oscar Klein Center, Astronomy Department, Stockholm University, Sweden, 8Astronomical Institute, Utrecht University, Netherlands, 9University of Washington.

438.04 WIYN Open Cluster Study: Spectroscopic Metallicity of the Open Cluster M37
Evan Losh1, M. Gregor1, D. Gole1, A. Steinhauer1, C. P. Deliyannis2
1SUNY Geneseo, 2Indiana University.
438.05 FUV & NUV Integrated-Light Photometry of Galactic Globular Clusters Using GALEX Archival Data.
Cesar A. Munoz Gonzalez¹, P. Pessev², R. de Propris³
¹University of Concepcion, Chile, ²Gemini Observatory, Chile, ³Cerro Tololo Inter-American Observatory, Chile.

438.06 Wynn Open Cluster Study: UBVRI CCD Photometry of the Open Cluster NGC 581
Gole Daniel¹, E. Losh¹, M. Gregor¹, A. Steinhauer¹, C. P. Deliyannis²
¹SUNY Geneseo, ²Indiana University.

438.07 The Star Cluster Population of the Interacting Galaxy System Arp 261
Bradley W. Peterson¹, C. Struck¹, B. J. Smith¹, M. Hancock³
¹Iowa State University, ²East Tennessee State University, ³University of California.

438.08 Spitzer IRAC Mid-IR Photometry of Galactic Globular Clusters
Peter Pessev¹, P. Goudfrooij², T. Puzia³, R. Chandar⁴
¹Gemini Observatory, Chile, ²STScI, ³Pontificia Universidad Catolica de Chile, Chile, ⁴University of Toledo.

438.09 A uvbcaHβ CCD Survey Of The Intermediate-age Open Cluster, NGC 7789
Bruce A. Twarog¹, B. J. Anthony-Twarog¹, B. S. Schafer¹
¹Univ. of Kansas.

438.10 Determination of a Precise Age of the Old Open Cluster Berkeley 39 from the Eclipsing Binary
Emily Martin¹, E. Sandquist¹, C. Gonzalez¹, M. Shetrone², J. Orosz¹
¹San Diego State University, ²McDonald Observatory, University of Texas.

439 Stellar Topics
Thursday, 9:00am-2:00pm, Exhibit Hall

439.01 Standard Star System for Intermediate-band CaH Photometry: SARA U42a and U55 Data
Laurel Farris¹, C. Spengler², T. Robertson³
¹Missouri State University, ²Case Western Reserve University, ³Ball State University.

439.02 Self-Similar Dynamics of SNe Ejecta
Lile Wang¹
¹Tsinghua University, China.

439.03 Brown Dwarfs Around Extrasolar Planet Systems
John Bent¹, J. Carson¹, M. Marengo², T. Henning³, W. Brandner³, M. Feldt¹, C. Schnupp³
¹College of Charleston, ²Iowa State University, ³Max Planck Institute for Astronomy, Germany.

439.04 Emission Line Variability In The HgMn Star 11 Per
Glenn Michael Wahlgren¹, D. Bohlender², M. Melendez³
¹NASA Headquarters / CUA, ²NRC Herzberg Institute of Astrophysics, Canada, ³University of Maryland.

439.05 Characterizing the Sites of Hadronic Cosmic Ray Acceleration
Ylva Pihlstrom¹, R. Mesler¹, L. Sjouwerman², D. Frail², M. Claussen²
¹Univ. of New Mexico, ²NRAO.
439.06 The Lifetime of Protoplanetary Disks Surrounding Intermediate-mass Stars
Chikako Yasui1, N. Kobayashi2, A. T. Tokunaga3, M. Saito1
1National Astronomical Observatory of Japan, Japan, 2Institute of Astronomy, School of Science, University of Tokyo, Japan, 3Institute for Astronomy, University of Hawaii.

439.07 Polycyclic Aromatic Hydrocarbon Processing in the Blast Wave of the Supernova Remnant 132D
Jeonghee Rho1, A. Tappe1
1SOFIA Science Center/USRA.

439.08 Search for High Proper Motion Objects Using WISE and 2MASS
Philip Castro1, J. E. Gizis1
1University of Delaware.

439.09 A Cautionary Tale: MARVELS Brown Dwarf Candidate Reveals Itself as a Likely Eccentric Binary
Claude E. Mack1, J. Ge2, K. Stassun3, J. Wisniewski3, S. Gaudi4, S. Fleming4, N. De Lee5, B. Lee5, L. Ghezzi5, G. Porto de Mello5, L. Ferreira5, B. Femenia6, J. Gonzalez Hernandez5, M. Esposito5, S. Mahadevan56, E. Agol5, B. Tofflemire5, T. Beatty6, J. Eastman6, L. Hebb1, J. Pepper1, P. Cargile1, M. Paegert1, R. Siverd1
1Vanderbilt University, 2University of Florida, 3University of Washington, 4Ohio State University, 5University of Florida, Pennsylvania State University, 6University of Florida, Vanderbilt University, 7Observatorio Nacional/LineA, Brazil, 8Observatorio do Valongo, Brazil, 9IAC, Spain, 10Pennsylvania State University.

439.10 Swift/UVOT Photometry of WeBo 1: Unmasking a Faint Hot Companion Star
Michael Siegel1, E. Hoversten1, H. E. Bond2
1Pennsylvania State University, 2Space Telescope Science Institute.

439.11 X-ray Spectral Analysis of Dim Type Ia Supernova Remnant Candidates in the Small Magellanic Cloud
Quentin Roper1, R. McEntaffer1, C. DeRoo1
1University of Iowa.

439.12 Hubble Space Telescope Detection of Binary Companions Around Three WC9 Stars: WR 98a, WR 104, and WR 112
Debra J. Wallace1, M. M. Shara2, D. R. Gies3, A. F. J. Moffat4
1University of South Carolina Beaufort, 2American Museum of Natural History, 3Georgia State University, 4University of Montreal, Canada.

439.13 Yonsei Evolutionary Population Synthesis (YEPS) : The 2012 Version
Sang-Yoon Lee1, C. Chung1, H. Kim1, S. Yoon1
1Department of Astronomy and Center for Galaxy Evolution Research, Yonsei University, Korea, Republic of.

439.14 Convection in White Dwarfs
Judith L. Provencal1, H. Shipman1, J. Dalessio1, M. M2
1University Of Delaware, 2University of Texas.

439.15 Eclipse Mapping of HAT-P-11: Measuring Small Scale Starspots on an Active K-Dwarf
Woody Austin1, L. Hebb1, K. Stassun1

439.16 3D Kinematic Reconstruction of Cas A’s High-Velocity Ejecta Jets
Dan Milisavljević1, R. Fesen2
1Harvard CfA, 2Dartmouth College.
439.17 Chromium Abundance Determination Utilizing Ionization Equilibrium In Two Very Metal-poor Stars
Matthew Alvarez¹, J. S. Sobeck², J. E. Lawler³, E. A. Den Hartog¹, C. Sneden¹,
J. J. Cowan⁴
¹University of Texas, ²University of Chicago, ³University of Wisconsin, ⁴University of
Oklahoma.

439.18 EC04207-4748 and EC05221-4725: Preliminary Results from the Whole Earth Telescope Campaign XCOV28
James Dalessio¹, J. L. Provencal¹, H. L. Shipman¹
¹University of Delaware.

439.19 Determination Of Physical Dimensions Of Mu Cas : From Abundance Analysis To Radiation-hydrodynamics
Bach Kiehunn¹, Y. Kim¹, W. Kang²
¹Yonsei University, Korea, Republic of, ²Kyunghoe University, Korea, Republic of.

439.20 Metallicity Distribution of the Galactic Halo from SDSS Photometry
Deokkeun An¹, T. C. Beers², J. A. Johnson³, M. H. Pinsonneault³, Y. Lee⁴, Z. Ivezic⁵,
M. Newby⁶
¹Ewha Womans University, Korea, Republic of; ²Michigan State University/JINA/NOAO,
³Ohio State University, ⁴Michigan State University/JINA, ⁵University of Washington,
⁶Rensselaer Polytechnic Institute.

439.21 Young Supernova Remnant Candidates in the Southern Hemisphere
William Robbins¹, V. Moss¹, B. M. Gaensler¹, T. Murphy¹, A. J. Green¹
¹Sydney Institute for Astronomy, School of Physics, The University of Sydney, Australia.

439.22 Evaluating Early-time vs. Late-time Chemical Evolutionary Tracers in Starless Cores
Amy Robertson¹, Y. Shirley¹
¹University of Arizona.

439.23 Element Distributions In The Crab Nebula
Gordon M. MacAlpine¹, A. Sibley¹, A. Katz¹, T. Satterfield¹, A. Uomoto²
¹Trinity Univ., ²Carnegie Observatories.

439.24 Mass-loss History of a ‘typical’ AGB Star, Mira, Using Far-Infrared Imaging Photometry
Basil Menzi Mchunu¹, A. K. Speck¹
¹Univ. of Missouri - Columbia.

439.25 Chemical Abundances of CH Stars in Omega Centauri
Elizabeth Otto¹, J. Johnson¹
¹The Ohio State University.

439.26 The Red Giant Branch Bump as a Probe of Stellar Populations
David Nataf¹
¹The Ohio State University.

439.27 HR7672B: A Benchmark Brown Dwarf with High Eccentricity
Justin R. Crepp¹, J. A. Johnson¹, California Planet Search
¹California Institute of Technology.

439.28 Searching for Binary Systems in Planetary Nebulae Using the ISIS Image Subtraction Software
Samantha Jo Schwartz¹, T. Hillwig¹
¹Valparaiso University.
**440 Cosmology and Related Topics**

Thursday, 9:00am-2:00pm, Exhibit Hall

**440.01 The BigBOSS Multi-Object Spectrograph on the Mayall Telescope: Guide, Focus and Alignment Sensor System**
Kevin Reil\(^1\), BigBOSS Collaboration
\(^1\)SLAC National Accelerator Lab.

**440.02 Measuring the Power Spectrum with Peculiar Velocities**
Edward Macaulay\(^1\), H. A. Feldman\(^2\), P. G. Ferreira\(^1\), A. H. Jaffe\(^3\), S. Agarwal\(^1\), M. J. Hudson\(^4\), R. Watkins\(^5\)
\(^1\)University of Oxford, United Kingdom, \(^2\)University of Kansas, \(^3\)Imperial College, London, United Kingdom, \(^4\)University of Waterloo, Canada, \(^5\)Willamette University.

**440.03 Title: Measuring Luminosity Dependent Quasar Clustering**
Jessica Kirkpatrick\(^1\)
\(^1\)Lawrence Berkeley National Lab.

**440.04 A Cosmic Shear Measurement from SDSS**
Eric M. Huff\(^1\), T. Eifler\(^2\), C. M. Hirata\(^3\), R. Mandelbaum\(^4\), D. Schlegel\(^5\), U. Seljak\(^6\)
\(^1\)UC Berkeley, \(^2\)Center for Cosmology and AstroParticle Physics, The Ohio State University, \(^3\)Caltech, \(^4\)Department of Astrophysical Sciences, Princeton University, \(^5\)Lawrence Berkeley National Laboratory, \(^6\)Department of Astronomy, Department of Physics, UC Berkeley.

**440.05 Cosmological Constraints from Cosmic Shear in CFHTLenS**
Martin Kilbinger\(^1\), CFHTLenS Collaboration (www.cfhtlens.org)
\(^1\)CEA, France.

**440.06 Fundamental Physics With Large-scale Structure: Modified Gravity, Non-Gaussianity, And Gravity Waves**
Fabian Schmidt\(^1\)
\(^1\)California Institute of Technology.

**440.07 Cfhtlens: Third-order Galaxy-galaxy Lensing As Function Of Stellar Mass, Luminosity And Galaxy Type**
Patrick Simon\(^1\)
\(^1\)Argenlander-Institut Fuer Astronomie, Germany.

**440.08 A Murchison Widefield Array 32-Tile Survey of EoR Foregrounds**
Christopher L. Williams\(^1\), J. N. Hewitt\(^1\), Murchison Widefield Array Collaboration
\(^1\)MIT.

**440.09 The Hunt for the First Supernovae: The Source Density and Observability of Pair Instability Supernovae from the First Stars**
Jacob Hummel\(^1\), A. Pawlik\(^1\), M. Milosavljevic\(^1\), V. Bromm\(^1\)
\(^1\)The University of Texas at Austin.

**440.10 Dynamics of Dust in Plasma and Implications to CMB and Magnetic Fields Studies**
Thiem Hoang\(^1\)
\(^1\)Univ. Of Wisconsin-Madison.

**440.11 Cosmic Microwave Background Fluctuations from the Kinetic Sunyaev-Zeldovich Effect as a Cosmological Probe**
Hyunbae Park\(^1\), P. Shaprio\(^1\), E. Komatsu\(^1\)
\(^1\)The University of Texas at Austin.
440.12 WITHDRAWN: Dark Matter Halo Merger Tree
Lilian Jiang1, S. Cole1, C. Frenk1
1Institute for Computational Cosmology, United Kingdom.

440.13 A New Method of Detecting Primordial Black Hole Dark Matter using Microlensing
Agnieszka Cieplak1, K. Giest1, M. J. Lehner2
1University of California, San Diego, 2University of Pennsylvania.

440.14 Identifying Compact Binary Mergers Using Gravitational Wave Measurements And Electromagnetic Wide-field Surveys
Samaya Nissanke1
1Caltech/JPL.

440.15 Evidence For Spin In Compact Binary Coalescence: When Can We Trust It?
Vivien Raymond1
1Northwestern University.

440.16 Re-Purposed MCMC for Low-Latency Sky Localization of Gravitational Wave Sources
Benjamin F. Farr1, V. Raymond1, W. M. Farr1, D. Fazi1, J. Veitch2, I. Mandel3, B. Aylott1, C. Röver1, V. Kalogera1
1Northwestern University, 2Cardiff University, United Kingdom, 3University of Birmingham, United Kingdom, 4Albert-Einstein-Institut, Germany.

440.17 The Influence Of General Relativity On The Stability Of Orbits Far From Galaxies
Jerry Schirmer1
1University of Texas at Austin.

440.18 A Generic Stochastic Template Bank Placement Algorithm
Melissa Frei1, N. Fotopoulos2, S. Priviteria2
1RIT, 2Caltech.

440.19 Galaxy Evolution at the Cluster-Filament Interface of SuperGroup Abell 1882
Aparajita Sengupta1, W. Keel1, G. Morrison2
1University of Alabama, 2Canada-France-Hawaii Telescope (CFHT) Corp..

440.20 Using Quasars as Standard Candles for Studying Dark Energy
Kelly D. Denney1, M. Vestergaard1, D. Watson1, T. Davis2
1Dark Cosmology Centre, Niels Bohr Institute, Denmark, 2University of Queensland, Australia.

441 Did Someone Say Galaxies?
Thursday, 9:00am-2:00pm, Exhibit Hall

441.01 Disentangling Correlated Scatter In Cluster Mass Measurements
Yookyung Noh1, J. D. Cohn1
1University of California Berkeley.

441.02 Kinematics of the Diffuse Ionized Gas Disk of Andromeda
Alexander Thelen1, K. Howley2, P. Guhathakurta1, C. Dorman1, SPLASH Collaboration
1University of California, Santa Cruz, 2Lawrence Livermore National Laboratory.

441.03 Average Heating Rate of Hot Atmospheres in Distant Clusters by Radio AGN
Cheng-Jiun Ma1, B. McNamara1, P. Nulsen1
1SAO, 2University of Waterloo, Canada.
The Eating Habits of Giants and Dwarfs: Chemo-dynamics of Halo Assembly in Nearby Galaxies
Aaron J. Romanowsky1, SAGES team
1University of California Observatories.

Galactic Disk Abundance Gradients and the 10 kpc Rg Region
Jackie Milingo1, R. B. C. Henry2, K. B. Kwitter3, B. Balick4
1Gettysburg College, 2University of Oklahoma, 3Williams College, 4University of Washington.

Zpectrometer Blind Redshift Determinations for Distant Dusty Galaxies from the H-ATLAS Sample
Andrew J. Baker1, A. I. Harris2, D. T. Frayer3, I. Smail4, M. Swinbank5, H-ATLAS Team
1Rutgers, the State University of NJ, 2University of Maryland, 3National Radio Astronomy Observatory, 4Durham University, United Kingdom, 5Durham University, United Kingdom.

Early Results from the VENGA Integral Field Spectroscopy Survey: Current and Past Spatially-Resolved Star Formation in NGC2903
Mimi Song1, K. Gebhardt1, S. Jogee1, VENGA
1University of Texas at Austin.

AEGIS: The Morphologies of Green Galaxies at z~0.7
Alexander Mendez1
1UCSD.

Feathering Instability of Spiral Arms and OB Star Formation
Wing-Kit Lee1, F. H. Shu1
1University of California, San Diego.

The First Galaxies: Assembly and Radiative Feedback from the First Stars
Andreas Pawlik1, V. Bromm1, M. Milosavljevic1
1University of Texas Austin.

Cluster Mergers Induce Faint Galaxy Deficit In Luminosity Functions
Kiyun Yun1, S. Ahn1, J. Kim2, S. Kim3, S. Yoon1
1Yonsei Univ., Korea, Republic of, 2Korea Institute for Advanced Study, Korea, Republic of, 3Kyung Hee Univ., Korea, Republic of.

Low Surface Brightness Galaxies and The AGN Connection: New Insights from the SDSS Survey
Gaspar Galaz1, R. Herrera2, D. Garcia-Lambas3, N. Padilla1
1Pontificia Universidad Catolica de Chile, Chile, 2University of Maryland, 3Universidad De Cordoba, Argentina.

A New Probe of the Distribution of Dark Matter in Galaxies
Sukanya Chakrabarti1
1Florida Atlantic University.

A Search For Lyman-alpha Halos Around Lyman-alpha Emitters At Z=2 And Z=3
Alex Hagen1, R. Ciardullo1, J. Feldmeier2, C. Gronwall1, MUSYC Team
1Pennsylvania State University, 2Youngstown State University.

Galactic Center Inner Galaxy Dust Clouds In The Infrared And Submillimeter
Volker Tolls1, H. A. Smith1, A. A. Stark1, M. Etxaluze-Azkonaga1, C. L. Martin2, K. Tchernyshyov2
1Harvard-Smithsonian, CfA, 2Oberlin College.
THURSDAY POSTER SESSIONS

441.16 Environmental Effects On Galaxy Evolution In Semi-analytic Models
Jaehyun Lee*, I. Jung†, S. Yi
†Yonsei University, Korea, Republic of.

441.17 Galaxy Structure in the Ultraviolet: Case studies for Galaxy Evolution
Violet Mager*, C. Conseil†, M. Seibert‡, C. Gusbar†, R. Windhorst‡, B. Madore§
†Ohio University, ‡University of Nottingham, United Kingdom, §Carnegie Observatories,
§Arizona State University.

441.18 Moving Mesh Cosmological Simulations: Characteristics Of Galaxies And Halos
Dusan Keres*, M. Vogelsberger$, D. Sijacki$, V. Springel$, L. Hernquist$
$1Theoretical Astrophysics Center, UC Berkeley, 2ITC/Harvard, 3HITS, Germany, 4Harvard University.

441.19 Compact, Dispersion-dominated, Star-forming Galaxies at z~2
Sarah Newman*, R. Genzel‡
‡UC Berkeley, ‡MPE, Germany.

441.20 A Synthesis Of Cosmic X-ray And Infrared Background
Yong Shi*, G. Helou†, L. Armus†, S. Stierwalt†
†California Institute Of Technology.

441.21 Measuring Radial Velocities of Extragalactic Planetary Nebulae
Farris Gillman*, K. A. Herrmann*, R. Ciardullo$
$1Yale University, 2Lowell Observatory, 3Pennsylvania State University.

441.22 Star-formation and LLAGN in Early-Type Galaxies
Kristina Nyland*, L. Young†, J. Wrobel‡, R. Morganti§, M. Sarzi§, M. Cappellari§, R. McDermid§, D. Krajnović§, E. Emsellem$
§New Mexico Tech, §NRAO, §ASTRON, Netherlands, 4University of Hertfordshire, United Kingdom, 5University of Oxford, United Kingdom, 6Gemini Observatory, 7European Southern Observatory, Germany.

441.23 Gas, Stars and Star Formation in ALFALFA Dwarf Galaxies
Shan Huang*, M. Haynes†, R. Giovanelli*, J. Brinchmann‡, S. Stierwalt†, S. Neff‡
†Cornell University, ‡Leiden University, Netherlands, 3California Institute of Technology, 4NASA GSFC.

441.24 Homologies in Physics and Astrophysics
David F. Bartlett*, J. P. Cumalat*
*Univ. of Colorado.

441.25 The X-ray Properties of Local Group Dwarf Galaxies
R. Mitch Verboncoeur*, C. Fuse†
†Rollins College.

441.26 Galaxy Transformation and Environment in the ORELSE Survey
Roy R. Gal
†Univ. Of Hawaii.

441.27 Merging Features and Optical-Near Infrared Color Gradients of Early-type Galaxies
Duho Kim*, M. Im
*Seoul National University, Korea, Republic of.
442 Black Holes & GRBs
Thursday, 9:00am-2:00pm, Exhibit Hall

442.01 Theoretical Considerations for Black Hole Formation in Supernova Ejecta
Andrew Hayes¹, N. F. Comins¹
¹University of Maine.

442.02 A Dynamical Model to Track the SMBBH’s Path Towards Coalescence
Eva Martinez-Palafox¹, O. Valenzuela¹
¹IA-UNAM, Mexico.

442.03 A Very Close Binary Black Hole in 3C 66B and its Black Hole Merger
Satoru Iguchi¹
¹NAOJ, Japan.

442.04 Dynamical Constraints on the Black Hole in Ultraluminous X-ray Source NGC 1313 X-2
Jifeng Liu¹, J. Orosz², J. N. Bregman³
¹Harvard-Smithsonian, CFA, ²SDSU, ³University of Michigan.

442.05 CXO M31 J004253.1+411422: The First Ultra-luminous X-ray Transient In M 31
A. Kaur¹, M. Henze¹, F. Haberl², W. Pietsch³, J. Greiner³, A. Rau², D. Hartmann¹, G. Sala¹, M. Hernanz⁴
¹Clemson University, ²Max-Planck-Institut fur extraterrestrische Physik, Giessenbachstrasse, Germany, ³Department of Fisica i Enginyeria Nuclear, EUETIB (UPC-IEEC), Comte d’Urgell 187, Spain, ⁴Institut de Ciencies de l’Espai (CSIC-IEEC), Campus UAB, Facultat Ciencies, C5 parell 2on, Spain.

442.06 Grb 110328a/swift J164449.3+573451: The Tidal Obliteration Of A Deeply Plunging Star?
John K. Cannizzo¹, E. Troja², G. Lodato³
¹NASA/GSFC/CRESST/UMBC, ²NASA Postdoctoral Program, ³Università degli Studi di Milano, Italy.

442.07 Tapping into the Energy of Black Holes
Patrick M. Motl¹, L. Lenher², S. Liebling³, C. Palenzuela³, D. Neilson³, E. Hirschmann³
¹Indiana University Kokomo, ²The Perimeter Institute, Canada, ³Long Island University, ⁴CITA, Canada, ⁵Brigham Young University.

442.08 Uncovering the Low Energy Emission of Fermi LAT Transients
Veronique Pelassa¹, Fermi LAT and GBM collaborations
¹NSSTC - MSFC/UAH.

442.09 Probing the Circumburst Environment & Jet of GRB 091018A : Modeling the Synchrotron Peak - Cooling Break Cross Over
Apurva Oza¹, D. E. Reichart¹, A. Trotter¹, UNC GRB team
¹UNC Chapel Hill.

442.10 New GRB Candidates as Detected by the Fermi Gamma-ray Space Telescope, January-June 2011
Rebecca Robinson¹
¹Michigan State University.
443 Make Way for Lab Astro!
Thursday, 9:00am-2:00pm, Exhibit Hall

443.01  NIST Atomic Spectroscopy Databases in Support of Astronomy
Joseph Reader\textsuperscript{1}, A. Kramida\textsuperscript{1}, Y. Ralchenko\textsuperscript{1}
\textsuperscript{1}National Institute of Standards and Technology.

443.02  Experimental Atomic Spectroscopy At NIST In Support Of Astronomy
Gillian Nave\textsuperscript{1}, C. J. Sansonetti\textsuperscript{1}, S. L. Redman\textsuperscript{1}
\textsuperscript{1}NIST.

443.03  Atomic Data For Lowly Ionized Fe-peak Species
Manuel Bautista\textsuperscript{1}, V. Fivet\textsuperscript{1}, C. Ballance\textsuperscript{2}, P. Quinet\textsuperscript{3}
\textsuperscript{1}Western Michigan University, \textsuperscript{2}Auburn University, \textsuperscript{3}Universite de Mons, Belgium.

443.04  Radiative and Collision Rates for Transitions in Mg VI and Si VIII
Swaraj S. Tayal\textsuperscript{1}
\textsuperscript{1}Clark Atlanta Univ.

443.05  New Computation Of The Astrophysical HD-Cooling Function
Renat Sultanov\textsuperscript{1}, D. Guster\textsuperscript{1}, S. K. Adhikari\textsuperscript{2}
\textsuperscript{1}St. Cloud State University, Department of Information Systems and ISRL, \textsuperscript{2}Institute of Theoretical Physics, IFT-UNESP, Sao Paulo, Brazil.

444 Star Formation, Dust, Etc.
Thursday, 9:00am-2:00pm, Exhibit Hall

444.01  Searching for Low-mass Companions of Cepheids, Part II
Nancy Remage Evans\textsuperscript{1}, E. Tingle\textsuperscript{1}, H. E. Bond\textsuperscript{2}, G. H. Schaefer\textsuperscript{1}, B. Mason\textsuperscript{4}, M. Karovska\textsuperscript{1}, S. Wolk\textsuperscript{1}, I. Pillitteri\textsuperscript{1}, J. DePasquale\textsuperscript{1}, E. Guinan\textsuperscript{1}, S. Engle\textsuperscript{5}, M. Karovska\textsuperscript{1}, S. Wolk\textsuperscript{1}, I. Pillitteri\textsuperscript{1}, J. DePasquale\textsuperscript{1}, E. Guinan\textsuperscript{1}, S. Engle\textsuperscript{5}
\textsuperscript{1}SAO, \textsuperscript{2}STScI, \textsuperscript{3}Georgia State Univ., The CHARA Array, \textsuperscript{4}US Naval Obs., \textsuperscript{5}Villanova.

444.02  Simulated ALMA Observations of a Low-mass Star Forming Region
Gilberto Lopez\textsuperscript{1}
\textsuperscript{1}Harvard.

444.03  Herschel FIR Spectroscopic Observations of L1448-MM
Jinhee Lee\textsuperscript{1}, J. Lee\textsuperscript{1}, DIGIT Team
\textsuperscript{1}Kyung-Hee University, Korea, Republic of.

444.04  Herschel Observations of a Potential Core Forming Clump: Perseus B1-E
James Di Francesco\textsuperscript{1}, S. Sadavoy\textsuperscript{3}, Herschel Gould Belt Survey Team
\textsuperscript{1}Herzberg Inst. of Astrophysics, Canada, \textsuperscript{2}University of Victoria, Canada.

444.05  The First Stars: Mass Growth Under Protostellar Feedback
Athena Stacy\textsuperscript{1}
\textsuperscript{1}Goddard Space Flight Center.

444.06  Water Vapor MASER Observations of High-mass Star Formation Regions
Victor Migenes\textsuperscript{1}, T. Rodriguez\textsuperscript{2}, M. A. Trinidad\textsuperscript{2}
\textsuperscript{1}Brigham Young University, \textsuperscript{2}University of Guanajuato, Mexico.

444.07  A Numerical Synthesis of Molecular Lines from the UV-heated Outflow walls in the Embedded Protostellar Objects
Seokho Lee\textsuperscript{1}, J. Lee\textsuperscript{3}, Y. Park\textsuperscript{1}
\textsuperscript{1}Seoul National University, Korea, Republic of, \textsuperscript{2}Kyung Hee University, Korea, Republic of.
444.08 Inflow Models of Nearby Cores
De La Cruz David¹, C. H. De Vries¹, H. G. Arce²
¹CSU Stanislaus, ²Yale University.

444.09 An Analysis of Triggered Star Formation in the G38.91-0.42 Complex
Michael Alexander¹, H. Kobulnicky¹, K. Arvidsson², C. Kerton³
¹University of Wyoming, ²Adler Planetarium, ³Iowa State University.

444.10 Extended Schmidt Law: Role of Existing Stars in Current Star Formation
Yong Shi¹, G. Helou¹, L. Armus¹, S. Stierwalt¹, L. Yan¹
¹California Institute Of Technology.

444.11 Dust Acceleration in Radiative Shocks: Seeds of Cosmic Rays?
Jonathan David Slavin¹
¹Harvard-Smithsonian, CfA.

444.12 Searching for Ejecta and Dust Formation Signatures in Young Supernova Remnants with ISO/LWS and Herschel
Sung-Joon Park¹, J. Rho²
¹NASA Ames Research Center, ²SOFIA Science Center/USRA/NASA Ames Research Center.

444.13 Modeling Dust and Starlight in Galaxies Observed by Spitzer and Herschel: NGC 628 and NGC 6946
Gonzalo J. Aniano Porcile¹, B. T. Draine¹, .. KINGFISH²
¹Princeton University, ²..

444.14 Dust-to-Gas Ratios in Early-type Galaxies
Alison Faye Crocker¹, L. M. Young², P. Serra³, J. Donovan Meyer³, M. Bureau²,
Atlas3D team
¹University of Massachusetts Amherst, ²New Mexico Tech, ³ASTRON, Netherlands, ⁴Stony Brook University, ⁵University of Oxford, United Kingdom.

444.15 The CO-to-H2 Conversion Factor Within GMCs in Nearby Spiral Galaxies
Jennifer Donovan Meyer¹, J. Koda¹
¹Stony Brook University.

444.16 Estimating Interstellar Medium Dust Temperature And Spectral Index In The Far-infrared And Submillimeter
Marcella Veneziani¹, A. Noriega-Crespo¹, F. Piacentini², R. Paladini¹
¹IPAC-Caltech, ²University of Rome La Sapienza, Italy.

444.17 The Local Interstellar Magnetic Field - 100 AU to 40 pc
Priscilla C. Frisch¹, B. Andersson², A. Berdyugin³, W. DeMajistre⁴, H. Funsten⁴,
A. M. Magalhaes⁵, D. J. McComas⁶, D. B. Seriacopi⁷, V. Piirola⁸, N. A. Schwadron⁹, J. D. Slavin¹, S. J. Wiktorowicz¹
¹Univ. of Chicago, ²SOFIA, USRA, ³Finnish Center for Astronomy with ESO, U. Turku, Finland, ⁴Johns Hopkins University Applied Physics Laboratory, ⁵LANL, ⁶Inst. de Astronomia, University de Sao Paulo, Brazil, ⁷Southwest Research Institute, ⁸Inst. de Astronomia, University de Sao Paulo, Brazil, ⁹Finnish Center for Astronomy with ESO, Univ. Turku, Finland, ¹⁰Univ. of New Hampshire, ¹¹Harvard-Smithsonian Center for Astrophysics, ¹²Dept. Astronomy, Univ. California at Santa Cruz.

444.18 IRAS 01202+6133 : A Possible Case of Protostellar Collapse Triggered by a Small HII Region
Sung-Ju Kang¹, C. Kerton¹
¹Iowa State University.
444.19  Small Scale Structures as Units of Dynamical Multi-Phase Interstellar Medium  
Kengo Tachihara¹, K. Saigo², A. Higuchi², T. Inoue³, S. Inutsuka⁴  
¹JAO/NAOJ, Chile, ²NAOJ, Japan, ³Aoyama Gakuin University, Japan, ⁴Nagoya University, Japan.

444.20  The Dust Content of Evolved HII Regions: Spitzer and Herschel Characterization  
Roberta Paladini¹  
¹NHSC/Caltech.

445 Milky Way Topics  
Thursday, 9:00am-2:00pm, Exhibit Hall

445.01  Ionized Gas In The Galactic Center: New Observations, Interpretation, And  
Speculation  
Wesley Irons¹, J. H. Lacy¹  
¹University of Texas.

445.02  A Search for Hydroxylamine (NH$_2$OH) toward Select Astronomical Sources  
Robin Pulliam¹; B. A. McGuire², A. J. Remijan¹  
¹National Radio Astronomy Observatory, ²California Institute of Technology.

445.03  Dust Production and the Collisional Erosion of the beta Pictoris Debris Disk  
Joseph M. Hahn¹  
¹Space Science Institute - Austin.

445.04  Asymmetric Drift And Rotation Curve From RAVE And SEGUE Data  
Oleksiy Golubov¹, A. Just¹  
¹Astronomisches Rechen-Institut, Germany.

446 Surveys & Instrumentation  
Thursday, 9:00am-2:00pm, Exhibit Hall

446.01  Chandra X-ray Observatory Aimpoint and Optical Axis  
Ping Zhao¹  
¹Harvard-Smithsonian, CfA.

446.02  Probing for Exoplanets Hiding in Dusty Debris Disks: Inner Disk Imaging,  
Characterization, and Exploration with HST/STIS Multi-Roll Coronagraphy  
Glenn Schneider¹, HST GO/12228 Team  
¹Univ. of Arizona.

446.03  Flight Demonstration of a Milli-Arcsecond Optical Pointing System for Direct  
Exoplanet Imaging  
Christopher Mendillo¹, S. Chakrabarti¹, T. Cook¹, B. Hicks¹  
¹Boston University.

446.04  ACIS Focal Plane Temperature Control and Observational Strategies  
Nancy Adams-Wolk¹, P. P. Plucinsky¹, T. L. Aldcroft¹, G. Germain¹  
¹Harvard-Smithsonian, CfA.

446.05  Common-resolution Convolution Kernels For Space- And Ground-based  
Telescopes  
Gonzalo J. Aniano Porcile¹, B. T. Draine¹, K. D. Gordon², K. Sandstrom³  
¹Princeton University, ²SpaceTelescope Science Institute, ³Max-Planck Institut fur  
Astronomie, Germany.
446.06 AEGIS: An Astrophysics Experiment for Grating and Imaging Spectroscopy—a Soft X-ray, High-resolution Spectrometer
David Huenemoerder¹, M. W. Bautz², J. E. Davis³, R. K. Heilmann¹, J. C. Houck¹, H. L. Marshall¹, J. Neilson¹, F. Nicastro², M. A. Nowak¹, M. L. Schattenburg¹, N. S. Schulz¹, R. K. Smith², S. Wolk², AEGIS Team
¹MIT Kavli Institute, ²SAO.

446.07 InFOCµS: A Balloon Instrument with <10 Arc Second Hard X-ray Imaging
Jack Tueller¹, W. Zhang¹, S. D. Barthelmy¹, A. Furuzawa², Y. Haba², H. Krimm³, H. Kunieda², T. Okajima¹, T. Miyazawa², R. F. Mushotzky⁴, K. Tamura², Y. Tawara²
¹NASA/GSFC, ²Nagoya University, Japan, ³CRESST/USRA/GSFC, ⁴University of Maryland, College Park.

446.08 MUSTANG2: High-resolution SZE Imaging Of Galaxy Clusters With The GBT
Alexander Young¹, J. Aguirre¹, M. Devlin¹, S. Dicker¹, P. Korngut², B. Mason³, T. Mroczkowski², E. Reese¹, C. Romero³, M. Rosenman¹, C. Sarazin³, J. Sievers³, M. Sun³
¹University of Pennsylvania, ²Caltech, ³University of Virginia, ⁴Princeton University.

446.09 State of Detector Development for the WIYN One Degree Imager: Deploying a Partially Populated Focal Plane in Summer 2012
Daniel R. Harbeck¹, T. Boroson², M. Lesser³
¹WIYN Observatory, ²National Optical Astronomy Observatory, ³UA Imaging Technology Laboratory.

446.10 VEGAS: VErsatile GBT Astronomical Spectrometer
Srikanth Bussa¹, VEGAS Development Team
¹National Radio Astronomy Observatory.

446.11 CQUEAN: New CCD Camera System For The Otto Struve Telescope At The McDonald Observatory
Soojong Pak¹, W. Park², M. Im²
¹Kyung Hee Univ., Korea, Republic of, ²Seoul National University, Korea, Republic of.

446.12 Design Of And Progress Towards The Gravity Wave-front Sensors
Casey Deen¹, W. Brandner¹, S. Hippler¹, R. Lenzen¹, V. Naranjo¹, R. Rohloff¹, W. Laun¹, R. Klein¹, J. R. Ramos¹, U. Neumann¹, A. Böhm¹, A. Huber¹, S. Kendrew¹, P. Yang¹, N. Kudryavtseva¹, Y. Clénet², E. Gendron²
¹Max Planck Institute for Astronomy, Germany, ²l’Observatorie de Paris, France.

446.13 VISION: The Next Generation Science Camera for the Navy Optical Interferometer
Askari Ghasempour¹, M. Muterspaugh¹, D. Hutter², J. Monnier³, T. Armstrong⁴, J. Benson⁴, D. Mozurkewich⁵, M. Williamson⁵, S. Fall⁴, C. Harrison⁴, C. Sergeous⁵
¹Tennessee State University, ²US Naval Observatory, ³University of Michigan, ⁴Naval Research Laboratory, ⁵Seabrook Engineering.

446.14 RIMAS - Optical Design Development of the Imager/Spectrometer for the Discovery Channel Telescope
John Capone¹, D. Content², A. Kutyrev³, S. Veilleux¹, S. Moseley¹, N. Gehrels²
¹The University of Maryland, ²GSFC, ³GSFC / The University of Maryland.

446.15 Radio Transient Searches using Low Frequency VLA Archival Observations
Theodore Jaeger¹, N. Kassim¹, S. Hyman¹, J. Lazio¹, R. Osten¹, R. Mutel¹, W. Peters¹
¹US Naval Research Laboratory, ²Department of Physics and Engineering - Sweet Briar College, ³Jet Propulsion Laboratory, ⁴Space Telescope Science Institute, ⁵Department of Physics and Astronomy - The University of Iowa.
446.16  **Lightcurve Based Classification Of Transients Events**  
*Ciro Donalek*, M. J. Graham, A. Mahabal, S. G. Djorgovski, A. J. Drake, B. Moghaddam, M. Turmon, Y. Chen, N. Sharma  
1Caltech, 2JPL.

446.17  **The C-Band All-Sky Survey: Northern Survey Progress and Southern Survey Instrument**  
*Oliver G. King*, C-BASS Team  
1California Institute of Technology.

446.18  **The Search for Possible Stellar Companions of DEBRIS Candidate Stars: An Update**  
*Harold M. Butner*, A. Saikin, G. S. Leisure, C. A. Wolfe, H. Tom, G. Duchene, D. Rodriguez, DEBRIS Team  
1James Madison Univ., 2UC Berkeley, 3U. Chile, Chile.

446.19  **The Spitzer Extragalactic Representative Volume Survey (SERVS)**  
*Jean-Christophe Mauduit*, M. Lacy, D. Farrah, J. Surace, M. Jarvis, S. Oliver, C. Maraston, SERVS team  
1California Institute of Technology, 2National Radio Astronomy Observatory, 3University of Sussex, United Kingdom, 4University of Hertfordshire, United Kingdom, 5University of Portsmouth, United Kingdom.
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