IN CONJUNCTION WITH:
with High Energy Astrophysics Division (HEAD) and Historical Astronomy Division (HAD)
GET READY FOR LIFT-OFF
Submit your out-of-this-world research today!

pubs.acs.org/acsearthspacechem
Session Numbering Key

100s Wednesday
200s Thursday
300s Friday
400s Saturday

Sessions are numbered in the Program Book by day and time.
Changes after 7 December are included only in the online program and mobile app.

Follow us on Twitter
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#aas229
AAS OFFICERS & COUNCILORS

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WELCOME LETTER FROM MAYOR

January 3, 2017

Dear American Astronomical Society attendees:

On behalf of the City Council and the citizens of Grapevine, I am pleased to officially welcome you to our city and express our support for the 229th American Astronomical Society Meeting at the Gaylord Texan Resort, January 3-7.

Grapevine is honored to serve as your convention destination. We trust that your stay with us will be enjoyable and memorable.

In Grapevine, visitors and locals alike find a sophisticated charm and convenient escape from the big city. During your free time, you are sure to enjoy Historic Downtown Grapevine with over 80 unique boutiques, galleries, the Urban Wine Trail and restaurants. When you add the Grapevine Vintage Railroad, Grapevine Mills, the LEGOLAND® Discovery Center DFW, the SEA LIFE Grapevine Aquarium, Bass Pro Shops Outdoor World, 81 holes of golf and 8,000 acres of beautiful Lake Grapevine scenery, you have the ideal location! Most of all, our friendly community allows you to feel at home.

We invite you to return to Grapevine throughout the year to take advantage of our many exciting and award-winning events including Main Street Fest, GrapeFest® and the Christmas Capital of Texas®. Please be sure to visit www.GrapevineTexasUSA.com for detailed information.

Enjoy your convention. May it be productive and successful.

Sincerely,

William D. Tate
Mayor of Grapevine

WDT:mrb
ATTENDEE SERVICES

Wear your badge at all times during the meeting. Attendees who do not have their name badges on will be denied entrance to meeting rooms, the exhibit hall, etc. Please do not leave personal items unattended. The AAS is not responsible for lost or stolen property.

Registration
Texas Ballroom Foyer
Tuesday: 1:00 pm - 8:00 pm
Wednesday: 7:30 am - 5:00 pm
Thursday & Friday: 8:00 am - 5:00 pm
Saturday: 8:00 am - 12:00 pm

Exhibit Hall
Longhorn Exhibit Hall D
Tuesday Evening: 7:00 pm - 9:00 pm
Wednesday - Friday: 9:00 am - 6:30 pm
Saturday: 9:00 am - 2:00 pm

Exhibit Hall Events
• Opening Reception
  Tuesday: 7:00 pm - 9:00 pm

• Morning Coffee Breaks
  Wednesday - Saturday:
  9:30 am - 10:00 am

• Poster Sessions
  Wednesday - Friday:
  5:30 pm - 6:30 pm with cash bar
  Saturday: 1:00 pm - 2:00 pm

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

Speaker Ready Room
Austin 1
Tuesday: 3:00 pm - 5:00 pm
Wednesday - Friday: 7:30 am - 4:00 pm
Saturday: 7:30 am - 2:00 pm

Donor and Sponsor Lounge
Attendance by Invitation Only
Austin 4
Wednesday - Friday: 7:30 am - 5:30 pm
Saturday: 7:30 am - 5:30 pm

Shuttle Information
Complimentary shuttle provided by AAS:

Destinations
Downtown Grapevine and
Tate Avenue/Highway 114

Hours of Operation
All hours listed are for
Wednesday - Friday

• Downtown Grapevine Shuttle
  Shuttle # 1
  6:00 pm - 12:00 pm depart Gaylord Tour
  Bus Lobby :00 and :30 each hour
  Shuttle # 2
  6:00 pm - 10:00 pm depart Gaylord Tour
  Bus Lobby :15 and :45 each hour

• Tate Avenue/Highway 114 Shuttle
  6:00 pm - 10:00 pm depart Gaylord Tour
  Bus Lobby :00 and :30 each hour

Shuttle provided by Grapevine Convention and Visitors Bureau:
Passes and additional information can be found at the Gaylord Texan Resort Tour Lobby

Destinations
Grapevine Mills, Historic Downtown
Grapevine, and Grapevine Towne Center

Fees
Individual Day Pass: $5 or Family Day Pass: $10 (up to 2 adults and their children 18 and under)

Hours of Operation
Sunday: 11:00 am - 7:00 pm
Monday - Thursday: 3:00 pm - 11:00 pm
Friday & Saturday: 10:00 am - 11:00 pm
MEETING FLOOR PLAN

HOW TO FIND YOUR ROOM

DIRECTIONS TO...

- HEADQUARTERS & PARKING LOT (ROOMS): Level 4 on Lone Star Hallway
- APPALOOSA, MUSTANG & PALOMINO: Level 3 on Lone Star A & B Elevators or Stairs
- GUEST LAUNDRY: Level 1 on Lone Star Hallway or Elevators

PARADISE SPRINGS LEGEND


GLASS CACTUS LEGEND


1501 Gaylord Trail | Grapevine, TX 76051 | GaylordTexan.com
We would like to thank our Platinum and Gold sponsors for their generous support of the 229th AAS meeting.

AAS Publishing

We go beyond traditional publishing, developing resources such as the astronomy image explorer, interactive figures in our journals, and AAS Nova, and supporting community initiatives including the World Wide Telescope, astrobites and the Unified Astronomy Thesaurus.

Research is welcomed from the full spectrum of astronomy and astrophysics, including but not limited to planetary research, cosmology, stellar physics, solar physics, astrobiology, exoplanets and interstellar matter.

Visit us at booth 317 to discover how we can communicate your work to the world.

AAS IOP ebooks
The new AAS-IOP ebook collection is the official book program of the American Astronomical Society (AAS). Combining the award-winning IOP ebooks™ program with the vast experience of the AAS allows community experts to explore and share in depth the most fascinating areas of astronomy, astrophysics and planetary science. The series includes publications in the following topics:

- Galaxies and cosmology
- Interstellar matter and the local universe
- High-energy phenomena and fundamental physics
- The sun and the heliosphere
- Stars and stellar physics
- Instrumentation, software, laboratory astrophysics, and data
- Planetary systems, exoplanets and astrobiology
- Education, outreach and heritage

For more information on AAS-IOP ebooks, including forthcoming titles, details on the digital publishing capabilities, including interactive figures and data visualizations, or how to get published in this exciting collection visit iopscience.org/books/aas or email us at aas.ebooks@iop.org
Northrop Grumman

Northrop Grumman is a leading global security company providing innovative systems, products and solutions in unmanned systems, cyber, C4ISR, and logistics and modernization to government and commercial customers worldwide. We pride ourselves on partnering with NASA and the scientific community to build sophisticated space-based telescopes, like NASA’s James Webb Telescope, NASA’s Chandra X-ray Observatory and other innovations. Over the past 30 years, we have enabled tremendous discoveries and we are now working on the next generation of astrophysics platforms. These platforms will make use of novel and evolvable technologies to support future large aperture space innovations. Please visit www.northropgrumman.com for more information.

Nature Astronomy

Astronomy is arguably the oldest science, and has featured strongly throughout the history of Nature — the first quasar, the first exoplanet, the nature of spiral nebulae, to name but a few of the advances reported in its pages. The launch of Nature Astronomy now enables much expanded coverage of the modern discipline: the journal welcomes research across astronomy, astrophysics and planetary science, with the aim of fostering closer interaction between the researchers in each of these areas.

Like all Nature-branded journals, Nature Astronomy is characterized by a dedicated team of professional editors, a fair and rigorous peer-review process, high standards of copy-editing and production, swift publication and editorial independence.

Publishing online monthly, Nature Astronomy offers a range of content types including original research, Review Articles, Perspectives, Comments, News & Views and Research Highlights. We do not charge for publication, and we encourage authors to post their papers on preprint servers, for example arXiv, at any point during the submission process.

For more information, please visit our website: www.nature.com/natureastronomy
### SPONSORED ACTIVITIES

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### STUDENT ORIENTATION RECEPTION AND PAVILION ORGANIZATIONS

- AAS - Committee for Sexual-Orientation & Gender Minorities in Astronomy - SGMA
- AAS - Committee on the Status of Minorities in Astronomy
- Arizona State University
- Astrobites
- Boston University
- Brigham Young University
- Caltech
- Columbia University
- Embry-Riddle Aeronautical University
- Georgia State University
- Harvard University
- Indiana University
- Institute for Research on Exoplanets - IREx
- Johns Hopkins University
- Maria Mitchell Observatory
- National Radio Astronomy Observatory - NRAO
- New Mexico Institute of Mining & Technology
- New Mexico State University
- Northwestern University / CIERA
- Pennsylvania State University
- Princeton University
- Rutgers, The State University of New Jersey
- San Diego State University
- Society of Physics Students
- Texas A&M University
- Texas Christian University
- Texas Tech University
- The George Washington University
- The University of Chicago
- The University of Texas at Dallas
- University of Arizona, Steward Observatory
- University of California Berkeley
- University of Colorado
- University of Denver
- University of Hawaii
- University of Illinois
- University of Kansas
- University of Maryland, College Park
- University of Massachusetts, Amherst
- University of Michigan
- University of Oklahoma
- University of Texas, Austin
- University of Utah
- University of Virginia
- University of Wisconsin, Madison
- University of Wyoming
- Yale University
**EXHIBITORS (ALPHABETICALLY)**

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<td>831</td>
<td>American Institute of Physics &amp; GradSchoolShopper</td>
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<tr>
<td>835</td>
<td>Frontiers</td>
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<td><strong>SHARED BOOK EXHIBIT</strong></td>
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<td>University of Arizona Press</td>
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<td><strong>SHARED BOOK EXHIBIT</strong></td>
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<tr>
<td></td>
<td>The Big Eclipse</td>
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</tbody>
</table>
The Rodger Doxsey Travel Prize, established through the support of his father, John Doxsey, and other friends, family, and colleagues, provides graduate students within one year of receiving or receipt of their PhD a monetary prize to enable the oral presentation of their dissertation research at a winter AAS meeting.

WINNERS:

Vivienne Baldassare  Paige Godfrey  V. Zach Golkhou

Yanxia Li  Jingzhe Ma  Sukrit Ranjan  Anna Rosen

HONORABLE MENTIONS:

Joseph Booker  Christopher Faesi

Krista Smith  Hyewon Suh  Sarah Wellons
AAS ANTI-HARASSMENT STATEMENT OF POLICY

It is the policy of the American Astronomical Society (AAS) 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. In pursuit of that ideal, the AAS is dedicated to the philosophy of equality of opportunity and treatment for all members, regardless of gender, gender identity or expression, race, color, national or ethnic origin, religion or religious belief, age, marital status, sexual orientation, disabilities, veteran status, 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 of this policy will be subject to discipline.

Any individual covered by this policy who believes that he or she has been subjected to harassment should contact the AAS Executive Officer at kevin.marvel@aas.org / 202-688-1993 or other Society Officer.

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

**General Considerations**

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

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

Attendance at AAS meetings is not a right but a privilege, and attendees are expected to behave professionally. The AAS is committed to providing an atmosphere that encourages the free expression and exchange of scientific ideas. The AAS is further dedicated to the philosophy of equality of opportunity and treatment for all members and other meeting attendees, regardless of gender, race, ethnic origin, religion, age, marital status, sexual orientation, disabilities, or any other reason not related to scientific merit. It is AAS policy that all participants in Society activities will enjoy an environment free from all forms of discrimination, harassment, and retaliation. Harassment, sexual or otherwise, is a form of misconduct that undermines the integrity of Society meetings. Violators will be subject to discipline.
AAS-meeting staff are trained professionals, expert at organizing and conducting scientific meetings. They work with professional contractors who specialize in providing audio-visual and other services, and with professional hotel and convention-center staff as well. The AAS retains security services, sometimes through the meeting venue and sometimes privately, to ensure the safety and security of all meeting attendees and exhibitors. Help us ensure a safe, secure, and professional environment by acting appropriately, reporting inappropriate behavior, and paying attention to those around you and your environment.

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

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

**Computers & Internet Service**

The AAS provides wireless Internet service throughout each meeting, but we cannot guarantee full coverage in all locations. We provide priority access in common areas, such as the Exhibit Hall, and in session rooms. This means you may experience limited connectivity in other areas. Wireless access information is printed on the back of your meeting badge. Please note that the wireless service is not encrypted.

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.

AAS staff monitor the network throughout the meeting and reserve the right to disconnect any device that is causing network problems or harm to other devices.
In addition to the foregoing, please follow these guidelines:

- Keep your software up to date and use a firewall and virus/spyware protection when necessary.
- No device should be running as a server for off-site clients.
- Absolutely no routers may be attached to the network without prior authorization from the AAS IT staff.
- Due to FCC regulations and physical laws, some of the available wireless spectrum can become overcrowded and temporarily unusable, which limits connectivity and download/upload speeds. We work hard to avoid this without breaking the laws set by the government or physics.
- Wireless connections will be dropped after 40 minutes of inactivity.

**Mobile Phones & Related Devices**

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

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

**Blogging & Tweeting**

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

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

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

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

If you are giving a presentation, please be sure you have read our speaker and AV instructions. All oral presentations must be uploaded to the internal network in the Speaker Ready Room. Personal laptops and USB drives will not be permitted for presentations in session rooms. We ask that you upload your presentation at least 24 hours in advance. Be sure to show up at your session on time.

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

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

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

Journalists & Embargoes

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

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

Photography & Video

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

If you take pictures during the meeting, please be considerate of others. Do not use a flash when taking pictures during sessions.
Eating, Drinking & Smoking
Because our meetings are so full of great content, it can be hard to find time to eat breakfast or lunch. If you must eat or drink while attending a session, please do so quietly and be sure to deposit your trash properly after the session ends. Additional cleaning services cost the AAS money and increase registration costs.

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

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

Activities Other than Official AAS Events
Social interactions that occur outside of official AAS activities are not sponsored by the AAS and should not be considered AAS activities. AAS’s business and social programs and activities are limited to those that are planned and officially publicized through the AAS, and the AAS is not responsible for any other activities that may take place before or after such programs and activities. Participation in any such outside activities is purely voluntary. Any such outside gatherings or events are solely the responsibility of those who decide to participate in them.

If you choose to attend any outside gathering or participate in any such non-AAS-sponsored activity, however, please be mindful that as AAS members you are still expected to uphold the same standards of personal conduct with respect to fellow members as you would at an AAS-sponsored program or activity. Please also be extremely mindful of your own safety as well as that of your colleagues at all times: if you choose to use alcohol, do so only in moderation, and keep the safety and behavior of yourself and your colleagues uppermost in your mind.

A Special Thank You To Our AAS Paper Sorters

<table>
<thead>
<tr>
<th>Tri L Astraatmadja</th>
<th>Kathryn Grasha</th>
<th>Jacob Noel-Storr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom Armstrong</td>
<td>Nimish Hathi</td>
<td>Barry Rothberg</td>
</tr>
<tr>
<td>Gina Brissenden</td>
<td>Chryssa Kouveliotou</td>
<td>Kenneth Rumstay</td>
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<tr>
<td>James Davenport</td>
<td>Sebastien Lepine</td>
<td>Farid Salama</td>
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<tr>
<td>Dina Drozdov</td>
<td>Tom Montemayor</td>
<td>J. Allyn Smith</td>
</tr>
<tr>
<td>Lisseth Gavilan</td>
<td>Huan Meng</td>
<td>Jason Ybarra</td>
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At Play in the Cosmos: The Videogame
Jeff Bary, Colgate University • Adam Frank, University of Rochester • Learning Games Network

A first-of-its-kind videogame
*At Play in the Cosmos* is a videogame designed to engage students taking the introductory astronomy course. In the game, students confront challenges and fly missions that span the scope of the course, from basic physics to cosmology. In each of 20 missions, students must complete an objective—fix their spaceship, find a habitable planet, pursue an alien civilization—that involves the application of knowledge acquired from their reading.

Astronomy: At Play in the Cosmos
*First Edition • Available now*
Adam Frank, University of Rochester

A textbook not written like a textbook
Science is a human endeavor. Adam Frank introduces students to the people who do science, making *Astronomy: At Play in the Cosmos* unlike any other textbook. In every chapter the interviews with scientists provide a fascinating second voice that drives the narrative while making astronomy feel immediate, relevant, and real for students. The text is accompanied by an innovative ancillary package, including a videogame, interactive simulations, and Smartwork® online homework.

Also available

Teach Introduction to Astronomy? Stop by booth 101 to fly a mission of *At Play in the Cosmos: The Videogame*.
# SCHEDULE AT-A-GLANCE

## Monday, 2 January 2017 and Tuesday, 3 January 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 pm</td>
<td><strong>Workshop:</strong> Identifying Habitable Planets of Nearby M Dwarfs, 1:00 pm - 5:00 pm, Texas C</td>
<td></td>
</tr>
<tr>
<td>2:00 pm</td>
<td>Exoplanet Exploration Program Analysis Group 15 (day 1 of 2), 2:00 pm - 7:30 pm, Texas D</td>
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## Tuesday, 3 January 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>8:00 am</td>
<td>AAS Council Meeting, 8:00 am - 5:00 pm, Yellow Rose Ballroom</td>
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<tr>
<td>8:30 am</td>
<td><strong>Workshop:</strong> Introduction to Software Carpentry, 8:00 am - 5:30 pm, Appaloosa 1</td>
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<tr>
<td>9:00 am</td>
<td>LSST AGN Science Collaboration Roadmap Development, 9:00 am - 6:00 pm, Appaloosa 2</td>
<td>Exoplanet Exploration Program Analysis Group 15 (day 2 of 2), 9:00 am - 5:00 pm, Texas D</td>
</tr>
<tr>
<td>10:00 am</td>
<td><strong>Workshop:</strong> The Performing Art of Science Presentation, 10:00 am - 5:00 pm, Texas 4</td>
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<tr>
<td>12:30 pm</td>
<td><strong>Workshop:</strong> Impacting Broader Audiences with Your Research, 12:30 pm - 4:00 pm, Mustang 4</td>
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<tr>
<td>1:00 pm</td>
<td>Registration, 1:00 pm - 8:00 pm, Texas Ballroom Foyer</td>
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<tr>
<td>1:00 pm</td>
<td><strong>Workshop:</strong> Light Pollution Solutions Communities Can Use, 1:00 pm - 5:00 pm, Mustang 6</td>
<td>DIY Your Own Zooniverse Project, 1:00 pm - 3:00 pm, Mustang 2</td>
</tr>
<tr>
<td>2:30 pm</td>
<td><strong>Workshop:</strong> ZTF Community Workshop, 2:30 pm - 5:00 pm, Mustang 3</td>
<td>90 HAD I: The 2017 Osterbrock Prize: The Biographical Encyclopedia of Astronomers, 2:30 pm - 4:30 pm, Texas 3</td>
</tr>
<tr>
<td>3:00 pm</td>
<td>Speaker Ready Room, 3:00 pm - 5:00 pm, Austin 1</td>
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<tr>
<td>4:30 pm</td>
<td>K-12 Astronomy Educator Reception, 4:30 pm - 6:30 pm, Dallas 1</td>
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<tr>
<td>5:30 pm</td>
<td>Student Reception - Orientation and Grad School Fair, 5:30 pm - 7:30 pm, Texas A</td>
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<tr>
<td>6:00 pm</td>
<td>WG for the Preservation of Astronomical Heritage, 6:00 pm - 7:00 pm, Appaloosa 3</td>
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<tr>
<td>7:00 pm</td>
<td>AAS Opening Reception, 7:00 pm - 8:30 pm, Longhorn Exhibit Hall D</td>
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### Wednesday, 4 January 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:30 am</td>
<td>Session Chair Breakfast, 7:30 am - 8:00 am, Appaloosa 4 (Invitation Only)</td>
</tr>
<tr>
<td></td>
<td>Speaker Ready Room, 7:30 am - 4:00 pm, Austin 1</td>
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<td></td>
<td>Registration, 7:30 am - 5:00 pm, Texas Ballroom Foyer</td>
</tr>
<tr>
<td>8:00 am</td>
<td><strong>100 Plenary Session</strong>: Welcome Address by AAS President Christine Jones (Harvard-Smithsonian, CfA), 8:00 am - 8:30 am, Texas A</td>
</tr>
<tr>
<td>8:30 am</td>
<td><strong>101 Plenary Session</strong>: Kavli Foundation Lecture: Early Solar System Bombardment: Exploring the Echos of Planetary Migration and Lost Ice Giants, William Bottke (SwRI), 8:30 am - 9:20 am, Texas A</td>
</tr>
<tr>
<td>9:00 am</td>
<td>Exhibit Hall, Posters &amp; Internet Café, 9:00 am - 6:30 pm, Longhorn Exhibit Hall D</td>
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<tr>
<td>9:00 am</td>
<td>Coffee Break, 9:30 am - 10:00 am, Longhorn Exhibit Hall D</td>
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<tr>
<td>9:30 am</td>
<td>Flexible Multi-dimensional Modeling of Complex Data in Astronomy, 9:30 am - 11:30 am, Grapevine 4</td>
</tr>
<tr>
<td>10:00 am</td>
<td><strong>Workshop</strong>: Career 101: Career Planning Workshop and Panel for Graduate Students and Postdocs, 9:30 am - 11:30 am, San Antonio 1</td>
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<tr>
<td>10:00 am</td>
<td>Concurrent Sessions 102 - 116, 10:00 am - 11:30 am</td>
</tr>
<tr>
<td>102</td>
<td>Star Formation I, Texas A</td>
</tr>
<tr>
<td>103</td>
<td>Mergers, AGN, and GRB Host Galaxies, Texas C</td>
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<tr>
<td>104</td>
<td>Extrasolar Planets Detection: Transit, Texas D</td>
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<tr>
<td>105</td>
<td>Galaxy Clusters I, Grapevine A</td>
</tr>
<tr>
<td>106</td>
<td>Ground Based and Airborne Instruments, Grapevine B</td>
</tr>
<tr>
<td>107</td>
<td>Black Holes I, Grapevine C</td>
</tr>
<tr>
<td>108</td>
<td>HEAD I: Astronomy Across the Gravitational Spectrum, Grapevine D</td>
</tr>
<tr>
<td>109</td>
<td>New, Fundamental, Cutting-Edge Science from Arecibo Observatory, Texas 1</td>
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<tr>
<td>110</td>
<td>Geoengineering the Atmosphere to Fight Climate Change: Should Astronomers Worry About It?, Texas 5</td>
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<tr>
<td>111</td>
<td>HAD II: Some Notes on the History of Infrared Astronomy from Above the Atmosphere, Texas 3</td>
</tr>
<tr>
<td>112</td>
<td>The Solar System, Texas 4</td>
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<tr>
<td>113</td>
<td>Intergalactic Medium, QSO Absorption Line Systems, Grapevine 1</td>
</tr>
<tr>
<td>114</td>
<td>Elliptical and Spiral Galaxies, Grapevine 2</td>
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<tr>
<td>115</td>
<td>Supernovae and Planetary Nebulae, Fort Worth 6</td>
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<tr>
<td>116</td>
<td>Planetary Environments and Habitability, Dallas 6</td>
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<td></td>
<td>AAS Astronomy Education Board Forum, 10:00 am - 11:30 am, Dallas 1</td>
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<tr>
<td>10:15 am</td>
<td>Press Conference, 10:15 am - 11:15 am, Austin 5</td>
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<tr>
<td>11:40 am</td>
<td><strong>117 Plenary Session</strong>: Annie Jump Cannon Award: The Tumultuous Lives and Deaths of Stars, Laura Lopez (Ohio State University), 11:40 am - 12:30 pm, Texas A</td>
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<td>Time</td>
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</table>
| 12:30 pm | **Workshop:** Introducing Current Research Into Your Classroom, 12:30 pm - 2:00 pm, Appaloosa 1  
 **Workshop:** New Methods for Teaching About Exoplanets, 12:30 pm - 2:00 pm, Dallas 1 |
| 12:45 pm | **118 Town Hall:** NSF Town Hall, 12:45 pm - 1:45 pm, Texas C  
 **119 Town Hall:** HAD Town Hall, 12:45 pm - 1:45 pm, Texas 3  
 **Workshop:** 2017 AAS Astronomy Ambassadors Workshop (day 2 of 2), 12:45 pm - 5:30 pm, Appaloosa 4 |
| 1:00 pm | Science of X-ray Surveyor, 1:00 pm - 3:30 pm, San Antonio 1 |
| 2:00 pm | **Concurrent Sessions 120 - 134 , 2:00 pm - 3:30 pm**  
 | **120** Extrasolar Planets: Characterization and Theory I, Texas A  
 **122** GW-SMBH-Lensing-PTA, Texas D  
 **124** Star Associations, Star Clusters - Galactic & Extragalactic I, Grapevine B  
 **126** Science with the Discovery Channel Telescope and Beyond , Grapevine D  
 **127** Linking the Scales of Star Formation, Texas 1  
 **128** Surveys and Data - Catalogs, Archives, Searched, Texas 5  
 **130** Variable Stars, Asteroseismology, Texas 4  
 **132** CO-HI Observations of Galaxies, Grapevine 2  
 **134** Structure of the Milky Way, and Stellar Astrometry, Dallas 6  
 **121** AGN, QSO, Blazars: Obscured, Texas C  
 **123** Dwarf and Irregular Galaxies I, Grapevine A  
 **125** Cosmology I, Grapevine C  
 **129** HAD III: History, Texas 3  
 **131** Cool Stars I, Grapevine 1  
 **133** Dust and Magnetic Fields, Fort Worth 6  
 |  
| 2:15 pm | Press Conference, 2:15 pm - 3:15 pm, Austin 5 |
| 3:40 pm | **135 Plenary Session:** Henry Norris Russell Lectureship: How Stars Form, Christopher McKee (University of California, Berkeley), 3:40 pm - 4:30 pm, Texas A |
| 4:30 pm | **136 Town Hall:** Racism = Prejudice + Power: A Discussion of Racism in the Field of Astronomy, 4:30 pm - 5:30 pm, Texas A |
## Wednesday, 4 January 2017 (continued)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</table>
| 5:30 pm| **Evening Poster Session 137 - 157, 5:30 pm - 6:30 pm, Longhorn Exhibit Hall D**  
137 New, Fundamental, Cutting-Edge Science from Arecibo Observatory Poster Session  
138 Astrobiology Poster Session  
139 Laboratory Astrophysics Poster Session  
140 Preparing for, and Engaging in, the 2017 Solar Eclipse Poster Session  
141 Relativistic Astrophysics, Gravitational Lenses, and Waves Poster Session  
142 The Milky Way, The Galactic Center Poster Session  
143 Elliptical Galaxies Poster Session  
144 Spiral Galaxies Poster Session  
145 Dwarf and Irregular Galaxies Poster Session  
146 Extrasolar Planets: Detection Poster Session  
147 The Solar System Poster Session  
148 Planetary Nebulae, Supernova Remnants Poster Session  
149 Gamma Ray Bursts Poster Session  
150 Intergalactic Medium, QSO Absorption Lines Poster Session  
151 Stellar Atmospheres, Winds, Be Stars, and Rayet Phenomena Poster Session  
152 Pulsating & Variable Stars Poster Session  
153 Star Formation Poster Session  
154 Stellar Evolution, Stellar Populations Poster Session  
155 Ground Based Facilities and Instrumentation Poster Session  
156 Catalogs Poster Session  
157 Societal Matters Poster Session  
158 HAD IV: Poster Session  |

**Workshop:** Career Hour 1: Leveraging Social Media for Networking and Career Advancement, 5:30 pm - 6:30 pm, San Antonio 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</table>
| 6:30 pm| Career Networking and Job Fair, 6:30 pm - 8:00 pm, Grapevine C  
CSMA Meet & Greet, 6:30 pm - 7:30 pm, San Antonio 5  
SPS Evening of Undergraduate Science, 6:30 pm - 8:30 pm, Yellow Rose Ballroom  
LGBITQA Networking Dinner, 6:30 pm - Meet at AAS Registration Desk |
| 7:30 pm| Science Opportunities with the NASA K2 and TESS Missions, 7:30 pm - 9:00 pm, Texas C  
159 Town Hall: LSST Town Hall, 7:30 pm - 9:00 pm, Grapevine A |
<p>| 8:00 pm| Film Screening: StarMen, 8:00 pm - 10:00 pm, Grapevine D |</p>
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<td>8:00 am</td>
<td>Registration, 8:00 am - 5:00 pm, Texas Ballroom Foyer</td>
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<td>Session Chair Breakfast, 8:00 am - 8:30 am, Appaloosa 4 (Invitation Only)</td>
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<tr>
<td>8:30 am</td>
<td><strong>200 Plenary Session</strong>: The LED Outdoor Lighting Revolution: Opportunities, Threats and Mitigation, Martin Aubé (Cégep de Sherbrook), 8:30 am - 9:20 am, Texas A</td>
</tr>
<tr>
<td>9:00 am</td>
<td>Exhibit Hall, Posters &amp; Internet Café, 9:00 am - 6:30 pm, Longhorn Exhibit Hall D</td>
</tr>
<tr>
<td>9:20 am</td>
<td><strong>201 Plenary Session</strong>: AAS Prize Presentations: Buchalter Cosmology, Weber, George Van Biesbroeck, Tinsley, LAD Astrophysics Prize, Education, 9:20 am - 9:40 am, Texas A</td>
</tr>
<tr>
<td>9:40 am</td>
<td>Coffee Break, 9:40 am - 10:00 am, Longhorn Exhibit Hall D</td>
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<tr>
<td>10:00 am</td>
<td><strong>Concurrent Sessions 202 - 216, 10:00 am - 11:30 am</strong></td>
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<tr>
<td></td>
<td><strong>202</strong> Extrasolar Planets: Characterization and Theory II, Texas A</td>
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<td><strong>203</strong> AGN, QSO, Blazars: Energetics and Physics, Texas C</td>
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<td><strong>204</strong> Star Formation: Galactic to Extragalactic, Texas D</td>
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<tr>
<td></td>
<td><strong>205</strong> First Galaxies and Early Universe, Grapevine A</td>
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<td><strong>206</strong> Space Missions from Cubesats to LUVOIR, Texas 5</td>
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<td><strong>207</strong> Black Holes II, Grapevine C</td>
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<td><strong>208</strong> HEAD II: The Physics of the Perseus Cluster, and Other Highlights, From Hitomi, Grapevine D</td>
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<td><strong>209</strong> Making Great Observations Even Better: Hubble's Hand in Studying the Multi-Wavelength Universe, Texas 1</td>
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<td><strong>210</strong> The Presidential Transition: What Can We Expect?, Grapevine B</td>
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<td><strong>211</strong> The Value of Astronomical Data and Long Term Preservation, Texas 3</td>
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<td><strong>212</strong> Young Stellar Objects, Very Young Stars, T-Stars, H-H Objects, Texas 4</td>
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<td><strong>213</strong> Innovations in Astronomy Teaching and Learning, Grapevine 1</td>
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<td></td>
<td><strong>214</strong> Galaxies at High Redshift, Grapevine 2</td>
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<td><strong>215</strong> Cataclysmic Variables, Novae, and Symbiotic Stars, Forth Worth 6</td>
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<td><strong>216</strong> The Galactic Disk, Galactic Bulge, and Galactic Center, Dallas 6</td>
</tr>
<tr>
<td>10:15 am</td>
<td>Press Conference, 10:15 am - 11:15 am, Austin 5</td>
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</table>

2017 Eclipse of the Sun: Education and Outreach, 10:00 am - 11:30 am, San Antonio 1
<table>
<thead>
<tr>
<th>Time</th>
<th>Session/Event</th>
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</thead>
<tbody>
<tr>
<td>11:40 am</td>
<td><strong>217 Plenary Session:</strong> What We Don’t Know About the Beginning of the Universe, Sean Carroll (Caltech), 11:40 am - 12:30 pm, Texas A (followed by event in Exhibit Hall until 2:00 pm)</td>
</tr>
<tr>
<td></td>
<td>Education and Public Outreach Event, Student Welcome, 11:40 am - 12:10 pm, Grapevine C</td>
</tr>
<tr>
<td>12:30 pm</td>
<td><strong>Workshop:</strong> Career Hour 2: Interviewing: What You Need to Do Before, During, and After to Get the Job, 12:30 pm - 1:30 pm, San Antonio 1</td>
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<tr>
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<td><strong>Workshop:</strong> New Methods for Teaching in the Flipped Classroom, 12:30 pm - 2:00 pm, Dallas 1</td>
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<tr>
<td>12:45 pm</td>
<td><strong>218 Town Hall:</strong> NASA Town Hall, 12:45 pm - 1:45 pm, Texas C</td>
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<tr>
<td>2:00 pm</td>
<td><strong>Concurrent Sessions 219 - 233, 2:00 pm - 3:30 pm</strong></td>
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<tr>
<td></td>
<td><strong>219</strong> Extrasolar Planets: Characterization and Theory III, Texas A</td>
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<tr>
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<td><strong>220</strong> AGN, QSO, Blazars: High Redshift, Texas C</td>
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<td><strong>221</strong> Star Associations, Star Clusters - Galactic and Extragalactic II, Texas D</td>
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<td><strong>222</strong> Starburst Galaxies Near and Far, Grapevine A</td>
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<td><strong>223</strong> Surveys and Data - From the Ground, Grapevine B</td>
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<td><strong>224</strong> Large Scale Structure, Cosmic Distance Scale, Grapevine C</td>
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<td><strong>225</strong> Extremes of Time Domain Astrophysics: Stellar Mergers to Black Hole Outbursts, Grapevine D</td>
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<td><strong>226</strong> Science with the Hyper Suprime-Cam (HSC) Survey, Texas 1</td>
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<td><strong>227</strong> W. M. Keck Observatory: A Resource for NASA and the Entire US Community, Texas 5</td>
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<td><strong>228</strong> White Dwarfs, Texas 3</td>
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<td><strong>229</strong> Star-forming Galaxies at z~2, Texas 4</td>
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<td><strong>230</strong> Cool Stars II, Grapevine 1</td>
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<td></td>
<td><strong>231</strong> Galaxy Clusters and Local Environment, Grapevine 2</td>
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<td><strong>232</strong> Stellar Evolution, Stellar Populations, Forth Worth 6</td>
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<td></td>
<td><strong>233</strong> Neutron Stars (Pulsars, Magnetars, Pulsar Wind Nebulae) I, Dallas 6</td>
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<td>Annual Meeting of the USVOA, 2:00 pm - 3:30 pm, Appaloosa 1</td>
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<tr>
<td>2:15 pm</td>
<td>Press Conference, 2:15 pm - 3:15 pm, Austin 5</td>
</tr>
<tr>
<td>3:40 pm</td>
<td><strong>234 Plenary Session:</strong> Dannie Heineman Prize for Astrophysics: Increasing Accuracy and Increasing Tension in Ho, Wendy Freedman (University of Chicago), 3:40 pm - 4:30 pm, Texas A</td>
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<td>Time</td>
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<td>4:30 pm</td>
<td><strong>235 Plenary Session</strong>: HEAD Bruno Rossi Prize: A Good Hard Look at Growing Supermassive Black Holes in the Distant Universe, W. Neil Brandt (Pennsylvania State University), 4:30 pm - 5:20 pm, Texas A</td>
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<tr>
<td>5:30 pm</td>
<td>Evening Poster Session 236 - 250, 5:30 pm - 6:30 pm, Longhorn Exhibit Hall D</td>
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<tr>
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<td><strong>236 Computation, Data Handling, Image Analysis, and Light Pollution Poster Session</strong></td>
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<td><strong>237 Surveys and Large Programs Poster Session</strong></td>
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<td><strong>238 Space Missions and Instrumentation Poster Session</strong></td>
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<td><strong>239 Making Great Observatories Even Better: Hubble’s Hand in Studying the Multi-wavelength Universe Poster Session</strong></td>
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<td><strong>240 Cool Stars and Others: Survey, Spectra, Rotation, Fundamentals Poster Session</strong></td>
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<td><strong>241 Young Stellar Objects, Very Young Stars, T-Stars, H-H Objects Poster Session</strong></td>
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<td></td>
<td><strong>242 Neutron Stars (Pulsars, Magnetars, Pulsar Wind Nebulae) Poster Session</strong></td>
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<tr>
<td>6:30 pm</td>
<td><strong>251 Town Hall</strong>: Proposing for the James Webb Space Telescope, 6:30 pm - 8:30 pm, Grapevine C</td>
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<td><strong>252 Town Hall</strong>: HEAD Business Meeting, 6:30 pm - 7:30 pm, San Antonio 5</td>
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<tr>
<td></td>
<td>Gemini Observatory Open House, 6:30 pm - 7:30 pm, Texas 4</td>
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<td></td>
<td>AAS 40+E and Donor and Sponsor Reception, 6:30 pm - 7:30 pm, Yellow Rose Ballroom (Invitation Only)</td>
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<tr>
<td>7:30 pm</td>
<td>GMT Open House, 7:30 pm - 9:00 pm, Grapevine A</td>
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<td>WFIRST Status and Science Opportunities, 7:30 pm - 9:00 pm, Grapevine B</td>
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<tr>
<td>8:00 pm</td>
<td>Open Mic Night, 8:00 pm - 9:30 pm, Texas C</td>
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</tbody>
</table>
# SCHEDULE AT-A-GLANCE

## Friday, 6 January 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>7:30 am</td>
<td>Speaker Ready Room, 7:30 am - 4:00 pm, Austin 1</td>
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<tr>
<td>8:00 am</td>
<td>Registration, 8:00 am - 5:00 pm, Texas Ballroom Foyer</td>
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<td></td>
<td>Session Chair Breakfast, 8:00 am - 8:30 am, Appaloosa 4 (Invitation Only)</td>
</tr>
<tr>
<td>8:30 am</td>
<td><strong>300 Plenary Session</strong>: SPD George Ellery Hale Prize: Magnetic Energy Release in Solar Flares, Terry Forbes (University of New Hampshire), 8:30 am - 9:20 am, Texas A</td>
</tr>
<tr>
<td>9:00 am</td>
<td>Exhibit Hall, Posters &amp; Internet Café, 9:00 am - 6:30 pm, Longhorn Exhibit Hall D</td>
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<tr>
<td>9:30 am</td>
<td>Coffee Break, 9:30 am - 10:00 am, Longhorn Exhibit Hall D</td>
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<td><strong>Workshop</strong>: Graduate School and Postdocs as Means to a Job, 9:30 am - 11:30 am, San Antonio 1</td>
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<td></td>
<td><strong>Concurrent Sessions 301 - 314, 10:00 am - 11:30 am</strong></td>
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<tr>
<td></td>
<td><strong>301</strong> Extrasolar Planets: Characterization and Theory IV, Texas A</td>
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<td><strong>302</strong> AGN, QSO, Blazars: Jets, Outflows, and Winds, Texas C</td>
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<td><strong>303</strong> Extrasolar Planets Detection: Imaging, Texas D</td>
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<tr>
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<td><strong>304</strong> Properties of Nearby Galaxies, Grapevine A</td>
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<td><strong>305</strong> Galactic Archaeology with Kepler and K2, Grapevine B</td>
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<td><strong>306</strong> Cosmology II, Grapevine C</td>
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<td><strong>307</strong> Merging Galaxies and Gravitational Waves: Mpc to mpc, Grapevine D</td>
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<td><strong>308</strong> Supernovae, Texas 1</td>
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<tr>
<td>10:00 am</td>
<td><strong>309</strong> Space Missions: X-ray Instruments, Texas 3</td>
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<td><strong>310</strong> Planets and Planetesimals in Circumstellar Disks, Texas 4</td>
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<td><strong>311</strong> Molecular Clouds, HII Regions, PDRs, Grapevine 1</td>
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<td><strong>312</strong> Perspectives in Research Software: Education, Funding, Reproducibility, Citation, and Impact, Grapevine 2</td>
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<td><strong>313</strong> Exploring the Optical Time Domain with the Intermediate Palomar Transient Factory, Fort Worth 6</td>
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<tr>
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<td><strong>314</strong> Graduate, Majors, and Gen. Ed. Astronomy Education: Research, Practice, and Funding Opportunities!, Dallas 6</td>
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<tr>
<td></td>
<td>Thirty Meter Telescope Open House, 10:00 am - 11:30 am, Yellow Rose Ballroom</td>
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<td>Early Science with the Large Millimeter Telescope, 10:00 am - 11:30 am, Grapevine 4</td>
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<tr>
<td>10:15 am</td>
<td>Press Conference, 10:15 - 11:15 am, Austin 5</td>
</tr>
<tr>
<td>11:40 am</td>
<td><strong>315 Plenary Session</strong>: Newton Lacy Pierce Prize: The Chemistry of Planet Formation, Karin Öberg (Harvard-Smithsonian, CfA), 11:40 am - 12:30 pm, Texas A</td>
</tr>
</tbody>
</table>
# SCHEDULE AT-A-GLANCE

## Friday, 6 January 2017 (continued)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>12:30 pm</td>
<td>NASA COPAG-Far-Infrared SIG Meeting, 12:30 pm - 3:30 pm, San Antonio 1</td>
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<tr>
<td>12:45 pm</td>
<td><strong>316 Town Hall:</strong> Astro2020: The Next Decadal Survey of Astronomy and Astrophysics, 12:45 pm - 1:45 pm, Grapevine C</td>
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<td><strong>317 Town Hall:</strong> NOAO Forward, 12:45 pm - 1:45 pm, Texas C</td>
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<tr>
<td>2:00 pm</td>
<td><strong>Concurrent Sessions 318 - 330, 2:00 pm - 3:30 pm</strong></td>
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<tr>
<td>2:15 pm</td>
<td>Press Conference, 2:15 pm - 3:15 pm, Austin 5</td>
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<tr>
<td>3:40 pm</td>
<td><strong>331 Plenary Session:</strong> Helen B. Warner Prize: Feedback: Now with Physics, Philip Hopkins (Caltech), 3:40 pm - 4:30 pm, Texas A</td>
</tr>
<tr>
<td>4:30 pm</td>
<td><strong>332 Plenary Session:</strong> Astronomy from the Upper Stratosphere: Key Discoveries and New Opportunities from High Altitude Scientific Balloons, Laura Fissel (Northwestern University), 4:30 pm - 5:20 pm, Texas A</td>
</tr>
</tbody>
</table>

### Concurrent Sessions 318 - 330, 2:00 pm - 3:30 pm

- **318** Extrasolar Planets: Characterization and Theory V, Texas A
- **319** AGN, QSO, Blazars: Hosts and Interactions, Texas C
- **320** Extrasolar Planets Detection: Radial Velocity I, Texas D
- **321** Galaxy Formation and Evolution, Grapevine A
- **322** Beyond the Academy: Panel Discussion on Entering Non-Academic Careers, Grapevine B
- **323** Cosmic Microwave Background, Grapevine C
- **324** Surveys and Data - Radio and High Energy, Grapevine D
- **325** The Sun, Texas 3
- **326** Binary and X-ray Stellar Systems, Texas 4
- **327** ALMA Observations of Circumstellar Disks, Grapevine 1
- **328** CubeSats in Astronomy and Astrophysics, Grapevine 2
- **329** Results from the New Half-Degree Imager WIYN-0.9m Telescope, Fort Worth 6
- **330** Neutron Stars (Pulsars, Magnetars, Pulsar Wind Nebulae) II, Dallas 6
- NOAO Mini-Workshop: Mining Observatory Archives, 2:00 pm - 3:30 pm, San Antonio 4
- Starshade Development for Direct Imaging of Exoplanets, 2:00 pm - 3:30 pm, Appaloosa 1

### 331 Plenary Session
- Helen B. Warner Prize: Feedback: Now with Physics, Philip Hopkins (Caltech), 3:40 pm - 4:30 pm, Texas A

### 332 Plenary Session
- Astronomy from the Upper Stratosphere: Key Discoveries and New Opportunities from High Altitude Scientific Balloons, Laura Fissel (Northwestern University), 4:30 pm - 5:20 pm, Texas A
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<tr>
<td>5:30 pm</td>
<td><strong>Evening Poster Session</strong> 333 - 348, 5:30 pm - 6:30 pm, Longhorn Exhibit Hall D</td>
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<tr>
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<td>333 Astronomy Majors and Graduate Students: Curriculum and the GRE Poster Session</td>
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<td>334 K-12 and Citizen Science Research Collaboration Involving Scientists, Teachers, and Students Poster Session</td>
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<td>335 Education Resources and Projects Spanning Broad Audiences Poster Session</td>
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<td>336 Promoting Research, Mentorship, and Diversity for Astronomy Poster Session</td>
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<td>338 Internships, Fellowships, and Observatory Management Training for High School Students Poster Session</td>
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<td>339 The Sun Poster Session</td>
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<td>340 Molecular Clouds, HII Regions, Interstellar Medium, and Dust Poster Session</td>
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<td>341 Supernovae Poster Session</td>
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<td>342 Cosmology and CMB Poster Session</td>
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<td>343 Star Associations, Star Clusters - Galactic &amp; Extragalactic Poster Session</td>
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<td>344 X-Ray &amp; Eclipsing Binaries, Multiple Star Systems Poster Session</td>
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<td>345 Circumstellar and Debris Disks Poster Session</td>
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<td>346 Galaxy Clusters Poster Session</td>
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<td>347 Evolution of Galaxies Poster Session</td>
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<td>348 Next Generation VLA Poster Session</td>
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<td>6:30 pm</td>
<td>349 Town Hall: 2017 NSF Astronomy and Astrophysics Postdoctoral Fellows Showcase and Forum, 6:30 pm - 8:30 pm, Texas C</td>
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<td>350 Town Hall: NRAO Town Hall, 6:30 pm - 8:00 pm, Grapevine C</td>
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<td>CSWA Meet &amp; Greet, 6:30 pm - 7:30 pm, Yellow Rose Ballroom</td>
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<td>Opportunities for Time Domain Science with LCOGT: Preparing for the LSST Era, 6:30 pm - 8:00 pm, Grapevine 2</td>
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<td>AAS Agent's Reception, 6:30 pm - 7:30 pm, Fort Worth 5 (Invitation Only)</td>
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<td>Registration, 8:00 am - 12:00 pm, Texas Ballroom Foyer</td>
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<td>Session Chair Breakfast, 8:00 am - 8:30 am, Appaloosa 4 (Invitation Only)</td>
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<tr>
<td>8:30 am</td>
<td>400 Plenary Session: Lancelot M. Berkeley Prize: Exploring for Galaxies in the First Billion Years with Hubble and Spitzer - Pathfinding for JWST, Garth Illingworth (UC Santa Cruz), 8:30 am - 9:20 am, Texas A</td>
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<tr>
<td>9:00 am</td>
<td>Exhibit Hall, Late Posters &amp; Internet Café, 9:00 am - 2:00 pm, Longhorn Exhibit Hall D</td>
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<td>Coffee Break, 9:30 am - 10:00 am, Longhorn Exhibit Hall D</td>
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<tr>
<td>10:00 am</td>
<td><strong>Concurrent Sessions 401 - 411, 10:00 am - 11:30 am</strong></td>
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<tr>
<td>10:00 am</td>
<td>401 Extrasolar Planets: Characterization and Theory VI, Texas A</td>
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<tr>
<td>10:00 am</td>
<td>402 AGN, QSO, Blazars: X-rays and Gamma Rays, Texas C</td>
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<tr>
<td>10:00 am</td>
<td>403 Extrasolar Planets Detection: Radial Velocity II, Texas D</td>
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<tr>
<td>10:00 am</td>
<td>404 Galaxy Clusters II, Grapevine A</td>
</tr>
<tr>
<td>10:00 am</td>
<td>405 NASA’s 2020 Decadal Studies: An Update, Grapevine B</td>
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<tr>
<td>10:00 am</td>
<td>406 Cosmology III, Grapevine C</td>
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<tr>
<td>10:00 am</td>
<td>407 GW-Stellar Mass BH, Grapevine D</td>
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<tr>
<td>10:00 am</td>
<td>408 The Coolest Stars and Brown Dwarfs, Grapevine 1</td>
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<tr>
<td>10:00 am</td>
<td>409 Statistical, Mathematical and Computational Methods for Astronomy (ASTRO): SAMSI 2016-17, Grapevine 2</td>
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<tr>
<td>10:00 am</td>
<td>410 Supernovae and Remnants , Fort Worth 6</td>
</tr>
<tr>
<td>10:00 am</td>
<td>411 Astronomy Education Across the Human Continuum: Research, Programs, Practice, and More!, Dallas 6</td>
</tr>
<tr>
<td>10:15 am</td>
<td>Press Conference, 10:15 am - 11:15 am, Austin 5</td>
</tr>
<tr>
<td>11:40 am</td>
<td>412 Plenary Session: The 21st Century: The Century of Biology on Earth and Beyond, Jill Tarter (SETI Institute), 11:40 am - 12:30 pm, Texas A</td>
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<td><strong>1:00 pm</strong></td>
<td><strong>Afternoon Poster Session 424 - 440, 1:00 pm - 2:00 pm, Longhorn Exhibit Hall D</strong></td>
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<tr>
<td><strong>424</strong></td>
<td>The Sun &amp; Solar System Late Poster Session</td>
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<td><strong>425</strong></td>
<td>Extrasolar Planets Late Poster Session</td>
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<td><strong>426</strong></td>
<td>Galaxy Clusters and the IGM Late Poster Session</td>
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<tr>
<td><strong>427</strong></td>
<td>Galaxy Evolution Late Poster Session</td>
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<tr>
<td><strong>428</strong></td>
<td>The Milky Way and Other Galaxies Late Poster Session</td>
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<td><strong>429</strong></td>
<td>AGN and Friends Late Poster Session</td>
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<tr>
<td><strong>430</strong></td>
<td>Cosmology and Related Topics Late Poster Session</td>
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<tr>
<td><strong>431</strong></td>
<td>Neutron Stars &amp; Friends Late Poster Session</td>
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<tr>
<td><strong>432</strong></td>
<td>Star Formation, Young Stars and Clusters Late Poster Session</td>
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<tr>
<td><strong>433</strong></td>
<td>Stars of Many Stripes Late Poster Session</td>
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<tr>
<td><strong>434</strong></td>
<td>Supernovae et Multo Amplius Late Poster Session</td>
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<tr>
<td><strong>435</strong></td>
<td>The ISM, Dust and Circumstellar Disks Late Poster Session</td>
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<tr>
<td><strong>436</strong></td>
<td>GRBs and Space Missions Late Poster Session</td>
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<tr>
<td><strong>437</strong></td>
<td>From the Earth, We Peer Outward...Late Poster Session</td>
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<tr>
<td><strong>438</strong></td>
<td>Catalogs, Surveys, Computation, etc. Late Poster Session</td>
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<tr>
<td><strong>439</strong></td>
<td>Education and Public Outreach Late Poster Session</td>
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<tr>
<td><strong>2:00 pm</strong></td>
<td><strong>Concurrent Sessions 413 - 421, 2:00 pm - 3:30 pm</strong></td>
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<tr>
<td><strong>413</strong></td>
<td>Extrasolar Planets: Characterization and Theory VII, Texas A</td>
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<tr>
<td><strong>414</strong></td>
<td>AGN, QSO, Blazars: Nuclear Regions, and Black Holes, Texas C</td>
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<tr>
<td><strong>415</strong></td>
<td>Extrasolar Planets Detection: Methodology, Texas D</td>
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<tr>
<td><strong>416</strong></td>
<td>Dwarf and Irregular Galaxies II, Grapevine A</td>
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<td><strong>417</strong></td>
<td>Binary Stellar Systems, Grapevine B</td>
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<td><strong>418</strong></td>
<td>Dark Matter, Dark Energy, and CMB, Grapevine C</td>
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<td><strong>419</strong></td>
<td>Star Formation II, Grapevine D</td>
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<td><strong>420</strong></td>
<td>Circumstellar and Debris Disks, Grapevine 1</td>
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<td><strong>421</strong></td>
<td>Astronomy Picture of the Day: Creative Use in the Classroom and Beyond, Grapevine 2</td>
</tr>
<tr>
<td><strong>2:15 pm</strong></td>
<td>Press Conference, 2:15 pm - 3:15 pm, Austin 5</td>
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<tr>
<td><strong>3:40 pm</strong></td>
<td><strong>422 Plenary Session: The 2017 Total Solar Eclipse: Through the Eyes of NASA, Alex Young (NASA GSFC), 3:40 pm - 4:30 pm, Texas A</strong></td>
</tr>
<tr>
<td><strong>4:30 pm</strong></td>
<td><strong>423 Plenary Session: How Supermassive Black Hole Feedback Might Work, Megan Donahue (Michigan State University), 4:30 pm - 5:20 pm, Texas A</strong></td>
</tr>
<tr>
<td><strong>5:30 pm</strong></td>
<td>AAS Closing Reception, 5:30 pm - 6:30 pm, Grapevine C</td>
</tr>
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</table>
Save the Date
AAS FUTURE MEETINGS

AAS 230th MEETING
AMERICAN ASTRONOMICAL SOCIETY
AUSTIN, TEXAS • 4-8 JUNE 2017
JW Marriott Austin

AAS 231st Meeting
7–11 January 2018
Gaylord National Resort & Convention Center
National Harbor, MD

AAS 232nd Meeting
3–7 June 2018
Sheraton Denver Downtown
Denver, CO

AAS 233rd Meeting
6–10 January 2019
Washington State Convention & Trade Center
Seattle, WA

AAS 234th Meeting
June 2019
Location TBD

AAS 235th Meeting
5–9 January 2020
Hawaii Convention Center
Honolulu, HI
Up here we don’t hear “no.” We don’t understand “can’t,” and “impossible” isn’t in our vocabulary. Up here it’s about possibilities. It’s about a working laboratory set to temperatures of 380 degrees below zero. It’s about a front-row seat to the birth of our universe and every life-sustaining exoplanet thereafter. It’s about looking up and knowing there is no limit because if there’s one thing we’ve learned from the past, it’s that we as humans have always underestimated the possibilities of the future. It’s about pinpoint precision and the confidence in knowing we’re ready for the surprises the universe always provides in such an ambitious undertaking. Up here it’s about performance.

Welcome to our neighborhood.

www.northropgrumman.com/space
Identifying Habitable Planets of Nearby M Dwarfs

Monday, 1:00 pm - 5:00 pm; Texas C

Recent discoveries of small planets orbiting in and close to the classical habitable zones of nearby M dwarfs provide our first opportunity to search for habitability and life beyond the Solar System. In the short term, these planets will be amenable to photometric and spectral characterization with JWST and large ground-based telescopes, as well as with longer term direct imaging mission concepts such as HabEx and LUVOIR. This workshop will describe the science of planetary habitability and biosignatures as well as the photometric and spectral features that are detectable with future missions. Habitability will be considered from an interdisciplinary perspective, and will include the interaction of interiors, atmospheres, stars, orbits, and galactic effects. Biosignature discussions will encompass the range of possible biosignatures, and the framework needed to understand environmental context, potential false positives, and optimum observing strategies for the most robust detection. Modeling predictions of diagnostic photometric and spectral features will be presented, along with instrument simulations and retrievals. Discussions will be led by members of the NASA Astrobiology Institute’s Virtual Planetary Lab and will include tutorials on publicly-available software and resources. Anyone interested in the theory of exoplanet evolution, planetary habitability and biosignature detection is welcome.

Organizer(s): Rory Barnes (University of Washington)

Exoplanet Exploration Program Analysis Group 15
(day 1 of 2)

Monday, 2:00 pm - 7:30 pm; Texas D

The Exoplanet Exploration Program Analysis Group (ExoPAG) is responsible for soliciting and coordinating community input into the development and execution of NASA’s Exoplanet Exploration Program (ExEP). It serves as a community-based, interdisciplinary forum for analysis in support of activity prioritization and for future exploration. It provides findings of analyses to NASA through the Astrophysics Subcommittee (APS) of the NASA Advisory Council (NAC); the ExoPAG Chair (Alan Boss) is a member of the APS.

Organizer(s): Ozhen Pananyan (JPL)
Introduction to Software Carpentry

Tuesday, 8:00 am - 5:30 pm; Appaloosa 1

Computing is now an integral part of every aspect of astronomy and astrophysics, but most scientists are never taught how to build, use, validate, and share software. As a result, many spend hours or days doing things badly that could be done well in just a few minutes. The goal of the Software Carpentry Workshop is to change that. The tools presented at this abbreviated workshop will enable astronomers to spend less time wrestling with software and more time doing useful research. Furthermore, good quality code will make their science results easier to confirm and update. The Software Carpentry Workshop at the 229th AAS consists of short tutorials alternating with hands-on practical exercises and will cover the core software skills needed to construct and use software in astronomy. The tutorials will be comprised of shell programming, basic Python programming, and an introduction to version control with git. The workshop will be run by a set of certified instructors and a team of helpers.

The course is aimed at astronomers at all stages of their education and careers who wish to learn computational tools to increase the reproducibility and efficiency of their work. Participants should have some knowledge of programming (not necessarily Python) and have some familiarity with the shell command line (i.e. navigating directories on the shell command line). Specific knowledge of Python and Git are not required.

Participants will be required to bring laptops and to install software in advance of the workshop. A group list will be compiled approximately one month prior to the workshop to distribute software requirements and collaborative troubleshooting. Workshop participants are also encouraged to participate in the Hack Day to apply their new skills.

More information on the Software Carpentry project can be found at http://software-carpentry.org.

Organizer(s): AAS Employment Committee (AAS)

AAS Council Meeting

Tuesday, 8:00 am - 5:00 pm; Yellow Rose Ballroom

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

Organizer(s): Christine Jones (Harvard-Smithsonian, CfA)
Using Python for Astronomical Data Analysis

Tuesday, 8:30 am - 5:00 pm; Texas C

This workshop will cover the use of Python tools for analysis of JWST data, but with broad applicability to general Optical, IR and UV data sets. The primary tools that will be covered are those available in the Astropy library and affiliated packages, many of which are developed specifically for JWST, but designed to be compatible with HST and other major mission data. The specific tools to be covered will be: * How to interact with conda and git * Physical units and quantities * Basics on accessing data files, both FITS and ascii tables * Coordinate utilities * Modeling and Fitting * Interactive visualization and analysis tools, including Glue, imexam, specviz, and photometric tools There will be time spent on hands-on exercises. Instructions on installing the necessary software will be provided before the workshop and help will be available at the workshop for those that experience problems with installations. The prerequisites are a familiarity with astronomical data analysis. Basic Python experience is highly recommended to be able to participate in the exercises. Those without Python experience will still get much useful information about the capabilities for data analysis in Python. Experience with Python scientific libraries, particularly numpy and matplotlib, is helpful, but not required.

Organizer(s): Megan Sosey (STScI)

2017 NSF Postdoctoral Fellows Symposium

Tuesday, 8:30 am - 5:30 pm; Dallas 6

This is the 16th 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 annual symposium, the Fellows gather to give talks on their current research and outreach projects. Several outside speakers are also invited to give keynote talks and participate in discussion panels on a range of topics such as exploring non traditional outreach methods, addressing the next big problems in astronomy, and exploring alternative careers outside of academia. This meeting provides an opportunity for the current, past, and prospective Fellows to meet and discuss their work with members of the community, learn from each other’s experiences, and to foster new collaborations. All members of the astronomical community are welcome and encouraged to attend.

Organizer(s): Darcy Barron (UC San Diego)
2017 AAS Astronomy Ambassadors Workshop (day 1 of 2)

Tuesday, 8:30 am - 6:00 pm; Appaloosa 4

This 5th annual Astronomy Ambassador workshop is for early career astronomers (graduate students, post docs, young faculty) eager to put a new face on astronomy through active engagement in outreach to their communities. During the two days of active learning, you can build skills to help engage your audience in your presentations, gain insights into how people learn, and discover tested outreach resources. The workshop is free, but is limited to 30 participants by application only.

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

Exoplanet Exploration Program Analysis Group 15 (day 2 of 2)

Tuesday, 9:00 am - 5:00 pm; Texas D

The Exoplanet Exploration Program Analysis Group (ExoPAG) is responsible for soliciting and coordinating community input into the development and execution of NASA’s Exoplanet Exploration Program (ExEP). It serves as a community-based, interdisciplinary forum for analysis in support of activity prioritization and for future exploration. It provides findings of analyses to NASA through the Astrophysics Subcommittee (APS) of the NASA Advisory Council (NAC); the ExoPAG Chair (Alan Boss) is a member of the APS.

Organizer(s): Ozhen Pananyan (JPL)

LSST AGN Science Collaboration Roadmap Development

Tuesday, 9:00 am - 6:00 pm; Appaloosa 2

The goals of the meeting are to: 1) develop a comprehensive Roadmap for the Active Galactic Nuclei (AGN) Science Collaboration of the Large Synoptic Survey Telescope (LSST), presenting a coherent vision for AGN research pre- and post-LSST commissioning, 2) form dedicated Working Groups within the Science Collaboration who will work on specific projects described by the Roadmap, 3) explore funding opportunities to support the highest-ranked projects described by the Roadmap, and 4) encourage eligible active extragalactic researchers to join the AGN Science Collaboration.

Organizer(s): Ohad Shemmer (University of North Texas)
The Performing Art of Science Presentation

Tuesday, 10:00 am - 5:00 pm; Texas 4

Scientists are often so deep into their research they might forget to translate their content when speaking to audiences outside of their areas. This workshop offers specific skills from the theater to become a more engaging and memorable speaker, whether at a professional conference, public event, job talk or in the classroom. With a focus on clarifying the message, topics also include connection to audience; body language, gesture and movement; purpose and passion; structure and timing; PowerPoint use; managing stage fright; voice, speech and articulation; and how to include stories and metaphors to illuminate complex or important ideas. The goal is to become more clear, compelling and memorable, getting your research to come to life and your ideas to stick.

Nancy Houfek (www.nancyhoufek.com) brings over thirty five years of working with performers and public speakers to her consulting and coaching. A stage director, award-winning actor, and nationally recognized theater educator, Nancy presents workshops combining theater, storytelling and leadership techniques for corporations, think tanks, universities, and professional organizations throughout the U.S. and Canada. This session is organized by the AAS Employment Committee.

Organizer(s): AAS Employment Committee (AAS)

Impacting Broader Audiences with your Research

Tuesday, 12:30 pm - 4:00 pm; Mustang 4

Do you want to have an impact on people’s knowledge beyond the walls of the scientific research community? Do you want to communicate with broader audiences in ways that are educational and memorable? This workshop is for scientists who are interested in increasing the impacts of their science knowledge and expertise by interacting with people online, or in other venues outside of your normal work environment. Maybe you are interested in hosting webinars, running a short online course for the public, or using Facebook, Twitter or other social media to communicate science? Perhaps you are interested in setting up something for an open house, science fair, or star party?

You will leave this workshop with a plan of action, and pathways to obtaining the skills, tools, partnerships and opportunities that you need to effectively implement it. In this three hour workshop you will: 1) Learn why and how people choose to, and do, learn in a variety of settings; 2) Think about and plan your goals for who you would like to impact and why; 3) Explore ways to discover if learning is taking place in these settings; and 4) Develop an implementation plan, using relevant and appropriate tools and techniques that you can put into immediate action! We are offering this workshop as a part of the NASA funded CosmoQuest project (funded in part via NASA Cooperative Agreement #NNX16AC68A)

Organizer(s): Jacob Noel-Storr (InsightSTEM)
ZTF Community Workshop

Tuesday, 1:00 pm - 5:00 pm; Mustang 3

The Zwicky Transient Facility (ZTF) is a next-generation optical time-domain survey that will run from 2017-2020 with significantly expanded capability compared to the successful Palomar Transient Factory (PTF) survey. ZTF is supported in part by the NSF MSIP program. As a part of the MSIP proposal, two public surveys—a 3-night LSST-like high latitude survey and a Galactic plane survey—were proposed. The workshop will present the instrument capabilities, details of the two surveys, and the planned data products and release schedule. In the second half of the workshop, actual and projected observing programs for PTF, ZTF, and LSST will be compared using the LSST Metrics Analysis Framework. Feedback from the workshop will help the PI team determine the final survey parameters.

Organizer(s): Eric Bellm (Caltech)

Light Pollution Solutions Communities Can Use

Tuesday, 1:00 pm - 5:00 pm; Mustang 6

A wealth of knowledge and expertise on responsible lighting and best practices exists among the astronomical community and its associates. The AAS Committee on Light Pollution, Radio Frequency Interference and Space Debris would like to host a workshop to share that knowledge with the astronomical community. The workshop will be designed to share information that people can put into practice. Jeff Hall (Director, Lowell Observatory) and Lori Allen (Director, Kitt Peak National Observatory) will help facilitate the workshop, as well as staff from the International Dark-Sky Association and Chris Monrad from Monrad Engineering. McDonald Observatory/UT Austin has also been invited. A three-part session format within a three-hour period is being considered: a plenary overview at the start, followed by breakouts at individual tables in round-robin fashion, and concluding with a panel discussion on best practices for specific themes (LED conversion, health impacts, codes). The tables would be hosted by the organizations mentioned, who would also serve on the discussion panel. The workshop will showcase successful outcomes with real “before” and “after” data and an expectation that going forward, communities can make progress in reducing light pollution. Easy to adopt “roadmaps” could be made available, as a motivator to action. This would be balanced with sanity checks on the difficulty and resources needed. As an example, McDonald Observatory had a program that acquired donations to pay for Hubbell Sky Caps and arranged for the utility company to replace several hundred units for the plastic refracting lenses on dusk-to-dawn fixtures. As another example, Lowell Observatory has been working with consultants, Monrad and Benya, to find a dark-sky-preserving solution for converting Flagstaff’s current streetlights (70% LPS, 30% HPS) to LED. The approach and solution being developed by Flagstaff is intended to be a model for picking types of LEDs best for a community.

Organizer(s): Constance Walker (NOAO)
DIY Your Own Zooniverse Project

Tuesday, 1:00 pm - 3:00 pm; Mustang 2

We invite all to attend this hands-on, DIY workshop to create your own Zooniverse project for free, in an afternoon. Processing our increasingly large datasets poses a bottleneck for producing real scientific outcomes. Citizen science – engaging the public in research – provides a solution, particularly when coupled with machine learning algorithms. Zooniverse is the most widely used and successful citizen science platform, with over 1.5 million volunteers worldwide and over 40 active projects across the disciplines resulting in over 100 peer-reviewed publications. Faced with a rapidly growing demand for citizen science projects, Zooniverse launched a ‘Project Builder’ which allows you, the researcher, to build your own crowd-sourced research project using the Zooniverse infrastructure and tools. Through this hands-on workshop, you will be able to build your own Zooniverse project. We will also share best practices for engaging with our Zooniverse volunteer community.

Organizer(s): Laura Trouille (Northwestern University & The Adler Planetarium)

90 HAD I: The 2017 Osterbrock Prize: The Biographical Encyclopedia of Astronomers

Tuesday, 2:30 pm - 4:30 pm; Texas 3

Chair: Jay Pasachoff (Williams College)

Jay M. Pasachoff, presentation of the Osterbrock Prize and memorial to Prof. Donald Osterbrock

90.01 Osterbrock Prize Lecture: The Coming to Be of the Biographical Encyclopedia of Astronomers

Author(s): Thomas A. Hockey¹

Institution(s): ¹ University of Northern Iowa

90.02 Keeping the Biographical Encyclopedia of Astronomers Relevant for a Generation

Author(s): Marc Rothenberg¹

Institution(s): ¹ Smithsonian Institution

90.03 Reading BEA II in Irvine (And Elsewhere)

Author(s): Virginia L. Trimble¹

Institution(s): ¹ UC, Irvine

Panel Discussion
K-12 Astronomy Educator Reception

Tuesday, 4:30 pm - 6:30 pm; Dallas 1

Space is limited! Registration is required at http://bit.ly/AAEJan17 Please join us for an opportunity for Astronomers and K12 Educators to meet and mingle in a relaxed social environment! Our K12 Educator Reception brings together Astronomy Research professionals, Astronomy Education professionals, and K12 Teachers to share the latest in research and education in astronomy ahead of the semi-annual meeting of the American Astronomical Society. Please join us to reconnect with colleagues, and to form new partnerships and contacts. Drinks and light snacks are provided! To contribute materials for teachers, or to find out about sponsorship opportunities for the event, please contact Jake Noel-Storr at jake@insightstem.com.

Organizer(s): Jacob Noel-Storr (InsightSTEM)

Student Reception - Orientation and Grad School Fair

Tuesday, 5:30 pm - 7:00 pm; Texas A

Undergraduate students, their advisors, and those interested in attracting undergraduate students to their graduate program, or undergraduate research opportunity are invited to attend this event. Members of the AAS Council and of the Astronomy Education Board will be there to meet and chat with students. For the benefit of those students attending an AAS meeting for the first time, we will explain how to get the most out of an AAS meeting and outline how the meeting works. Meet with representatives from over 40 graduate schools and research for undergraduate programs. 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. This event is sponsored by the graduate and REU programs represented. Sign up to sponsor this event at aas.org/content/undergraduate-orientation-sponsorship.

WG for the Preservation of Astronomical Heritage

Tuesday, 6:00 pm - 7:00 pm; Appaloosa 3

Annual Meeting of the Working Group for the Preservation of Astronomical Heritage. All interested individuals are welcome to attend and participate in the discussion.

Organizer(s): Jennifer Bartlett (USNO)

AAS Opening Reception

Tuesday, 7:00 pm - 8:30 pm; Longhorn Exhibit Hall D

Open to all attendees and registered guests, the Opening Reception at the Gaylord Texan kicks off the 229th meeting of the American Astronomical Society.
WEDNESDAY, 4 JANUARY 2017

100 Welcome Address by AAS President Christine Jones (Harvard-Smithsonian, CfA)
Wednesday, 8:00 am - 8:30 am; Texas A

101 Plenary Session: Kavli Foundation Lecture: Early Solar System Bombardment: Exploring the Echos of Planetary Migration and Lost Ice Giants, William Bottke (SwRI)
Wednesday, 8:30 am - 9:20 am; Texas A
Chair: Christine Jones (Harvard-Smithsonian, CfA)

101.01 Early Solar System Bombardment: Exploring the Echos of Planetary Migration and Lost Ice Giants
Author(s): William Bottke
Institution(s): 1 Southwest Research Inst.

Citation: For his decade of leadership in modeling the evolution of planetary bodies in the solar system. His work on the early bombardment of the solar system, the evolution of the Earth-Moon system, and planetary migration have produced important new insights into the formation and evolution of planetary systems.

Careers 101: Career Planning Workshop and Panel for Graduate Students and Postdocs
Wednesday, 9:30 am - 11:30 am; San Antonio 1
This FREE workshop and panel discussion will center on the current and expanding crisis in the job and career market for astronomers. Specifically targeted towards graduate students and Postdocs, this workshop will identify 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 set themselves up for success in the field. We will also discuss non-traditional jobs and career paths in astronomy, and introduce the skills that are needed to pursue these. Q and A between panelists and workshop participants will be highly encouraged. This session is organized by the AAS Employment Committee.
Organizer(s): AAS Employment Committee (AAS)
Flexible Multi-dimensional Modeling of Complex Data in Astronomy

Wednesday, 9:30 am - 11:30 am; Grapevine 4

Recent improvements in instrumentation and the data collection process across the entire electromagnetic spectrum have resulted in an increasing amount of high quality multi-wavelength observations. The analysis of these modern data sets presents several statistical challenges that require new methods and techniques to support the scientific inference. Our session will focus on the discussion of both challenges and applied methodology. We will present tutorials based on the Sherpa-Python and IRIS tools developed by the Chandra X-ray Observatory. Sherpa is a Python-based general modeling and fitting application that provides an environment for modeling multi-dimensional data with a set of optimization methods, including MCMC simulations for sampling posterior distributions. Sherpa provides flexible mechanisms for modeling Poisson (sparse) and Gaussian (rich) data with appropriate likelihoods, including both pre-defined models and an interface to incorporate user defined models (Python functions or external code). Sherpa can be used for modeling 1D, 2D, or 3D data, i.e., spectra, time-series, or images, and can be extended to spectral-timing and spatial-timing domains. An upcoming 'Sherpa to Astropy' Python package will allow users to use Sherpa's optimizers and error estimators seamlessly within the Astropy's modeling framework. Iris has been built on top of Sherpa for fitting SEDs to multi-wavelength data. Iris also provides a front-end to ‘Virtual Observatory’ archival catalogs that can supply the appropriate data for the modeling session. We will use IPython Notebooks to guide the participants through Sherpa-Python sessions and present a tutorial demonstration showing Iris connectivity to the archives and examples of SED modeling.

Organizer(s): Giuseppina Fabbiano (Harvard-Smithsonian, CfA)

AAS Astronomy Education Board Forum

Wednesday, 10:00 am - 11:30 am; Dallas 1

The AAS Astronomy Education Board is pleased to host its annual forum for the presentation and discussion of education-related topics and issues in astronomy. This year, the forum will focus upon the just-completed report of the AAS Task Force on Education, including its recommendations to the AAS Council and the results of the Task Force’s online survey of the education experiences and priorities of the astronomical community. All are welcome; please join us!

Organizer(s): Charles Liu (CUNY College of Staten Island)
102 Star Formation I

Wednesday, 10:00 am - 11:30 am; Texas A

Chair: Volker Tolls (Harvard-Smithsonian, CfA)

102.01 Measuring Dark Molecular Gas
Author(s): Di Li1, Carl E. Heiles2
Institution(s): 1 National Astronomical Observatories of China, 2 University of California at Berkeley

102.02 Fragmentation of Filamentary Molecular Clouds Threaded by Perpendicular Magnetic Field
Author(s): Tomoyuki Hanawa1, Takahiro Kudoh2, Kohji Tomisaka3
Institution(s): 1 Chiba University, 2 Nagasaki University, 3 National Astronomical Observatory Japan

102.03 Interferometric Mapping of Perseus Outflows with MASSES
Author(s): Ian Stephens1, Michael Dunham2, Philip C. Myers1
Institution(s): 1 Harvard-Smithsonian Center for Astrophysics, 2 SUNY Fredonia
Contributing team(s): the MASSES Team

102.04D Disk Masses of Class I Protostars in Taurus and Ophiuchus
Author(s): Patrick Sheehan1, Joshua A. Eisner1
Institution(s): 1 University of Arizona

102.05 The location, clustering, and propagation of massive star formation in giant molecular clouds
Author(s): Bram Ochsendorf3, Margaret Meixner2, Jeremy Chastenet2, A. G. G. M. Tielens1, Julia Roman-Duval2
Institution(s): 1 Leiden University, 2 STScI, 3 The Johns Hopkins University

102.06D The Destructive Birth of Massive Stars and Massive Star Clusters
Author(s): Anna Rosen1, Mark Krumholz1, Christopher F. McKee2, Richard I. Klein2, Enrico Ramirez-Ruiz3
Institution(s): 1 Australian National University, 2 University of California, Berkeley, 3 University of California, Santa Cruz

102.07 ALMA and VLA Observations of Proplyd Candidates near Sgr A*
Institution(s): 1 IAA, 2 Macquarie University, 3 Northwestern Univ., 4 NRAO
103 Mergers, AGN, & GRB Host Galaxies

Wednesday, 10:00 am - 11:30 am; Texas C
Chair: Eileen Meyer (Space Telescope Science Institute)

103.01D Major mergers are not significant drivers of star formation or morphological transformation at z~2
Author(s): Emma Lofthouse¹, Sugata Kaviraj³, Christopher Conselice⁴, William Hartley¹, Alice Mortlock²
Institution(s): ¹ ETH Zurich, ² University of Edinburgh, ³ University of Hertfordshire, ⁴ University of Nottingham

103.02D Exploring Quenching, Morphological Transformation and AGN-Driven Winds with Simulations of Galaxy Evolution
Author(s): Ryan Brennan¹
Institution(s): ¹ Rutgers University

103.03 Signatures of AGN feedback
Author(s): Dominika Wylezalek¹, Nadia L. Zakamska¹
Institution(s): ¹ Johns Hopkins University
Contributing team(s): CANDELS

103.04D Star Formation and AGN activity of X-ray selected AGN host galaxies in the Chandra-COSMOS Legacy Survey
Author(s): Hyewon Suh¹
Institution(s): ¹ Institute for Astronomy, University of Hawaii

103.05 A Curious Lack of Evolution in the LGRB Host Metallicity Distribution
Author(s): John Graham¹, Patricia Schady¹, Thomas Kruehler¹
Institution(s): ¹ Max-Planck-Institut für extraterrestrische Physik

103.06 A simple model for black hole growth
Author(s): Kevin Schawinski¹, Anna K. K. Weigel¹, Neven Caplar¹, Ivy Wong²
Institution(s): ¹ ETH Zurich, ² ICRAR/UWA

104 Extrasolar Planets Detection: Transit

Wednesday, 10:00 am - 11:30 am; Texas D
Chair: Laura Mayorga (New Mexico State University)

104.01 New Constraints on the Kepler Exomoon Population
Author(s): Alexander Teachey², David M. Kipping², Allan Schmitt¹, Gaspar Bakos³, Lars A Buchhave⁶, Guillermo Torres³, David Nesvorny⁵, Joel Hartman⁴, Chelsea Huang⁷
Institution(s): ¹ Citizen Scientist, ² Columbia University, ³ Harvard-Smithsonian CfA, ⁴ Princeton University, ⁵ Southwest Research Institute, ⁶ University of Copenhagen, ⁷ University of Toronto
104.02 K2 Warm Jupiters with the LCOGT TECH team
Author(s): Avi Shporer, Daniel Bayliss, Joao Bento, William D. Cochran, Knicole D. Colon, Diana Dragomir, Michael Endl, Benjamin James Fulton, Howard T. Isaacson, Enric Palle, Robert Siverd, Andrew Vanderburg, George Zhou
Contributing team(s): LCOGT TECH team

104.03 SuPerPiG’s Ultra-Short-Period Planets from K2 Campaigns 6 through 8
Author(s): Brian K. Jackson, Elisabeth R. Adams, Michael Endl
Institution(s): 1. Boise State University, 2. Planetary Science Institute, 3. University of Texas at Austin

104.04 Variable Variability: Understanding How Stars Vary from 4 years of Kepler Data
Author(s): David R. Ciardi, Steve B. Howell
Institution(s): 1. Caltech, 2. NASA Ames

104.05 The Exoplanet Migration Timescale from K2 Young Clusters
Author(s): Aaron C Rizzuto, Andrew Mann, Adam L. Kraus, Michael Ireland
Institution(s): 1. Australian National University, 2. University of Texas at Austin

104.06 The Zodiacal Exoplanets in Time (ZEIT) Survey
Author(s): Andrew Mann, Eric Gaia, Elisabeth R. Newton, Aaron C Rizzuto, Andrew Vanderburg, Gregory N. Mace, Adam L. Kraus

104.07 Update on the KELT Transit Survey: Hot Planets around Hot, Bright Stars
Author(s): B. Scott Gaudi
Institution(s): 1. Ohio State Univ.
Contributing team(s): The KELT Collaboration

104.08 A Search for Transits of Proxima b in MOST Photometry
Author(s): David M. Kipping
Institution(s): 1. Columbia University

104.09 Mission Status for the Transiting Exoplanet Survey Satellite (TESS)
Author(s): George R. Ricker
Institution(s): 1. MIT
Contributing team(s): TESS Science Team

105 Galaxy Clusters I
Wednesday, 10:00 am - 11:30 am; Grapevine A
Chair: Felipe Andrade-Santos (Harvard-Smithsonian Center for Astrophysics)
105.01 Lyman Alpha Blobs: Seeds of Galaxy Groups
Author(s): Agnar Hall\textsuperscript{1}, Moire Prescott\textsuperscript{1}
Institution(s): \textsuperscript{1} New Mexico State University

105.02D Observational Constraints on the Link Between the Intracluster Medium and Brightest Cluster Galaxies
Author(s): Kevin Fogarty\textsuperscript{1}, Marc Postman\textsuperscript{3}, Megan Donahue\textsuperscript{2}
Institution(s): \textsuperscript{1} Johns Hopkins University, \textsuperscript{2} Michigan State University, \textsuperscript{3} Space Telescope Science Institute
Contributing team(s): CLASH

105.03 Galaxy group dynamics using the GAMA survey and predictions from semi-analytics and cosmological simulation.
Author(s): Prajwal R. Kafle\textsuperscript{1}, Aaron Robotham\textsuperscript{1}, Claudia Lagos\textsuperscript{1}, Simon P Driver\textsuperscript{1}
Institution(s): \textsuperscript{1} ICRAR, University of Western Australia
Contributing team(s): GAMA, GALFORM, EAGLE

105.04 The Cluster Environments of Quasar Groups
Author(s): Michael West\textsuperscript{1}, Michael Gregg\textsuperscript{3}, Justin Toller\textsuperscript{2}
Institution(s): \textsuperscript{1} Lowell Observatory, \textsuperscript{2} Northern Arizona University, \textsuperscript{3} University of California, Davis

105.05D Shock Features in Merging Galaxy Clusters
Author(s): Sarthak Dasadia\textsuperscript{1}, Ming Sun\textsuperscript{1}, Andrea Morandi\textsuperscript{1}
Institution(s): \textsuperscript{1} The University of Alabama in Huntsville

105.06 Electron Heating at Galaxy Cluster Shocks: Measuring the Temperature of the Bullet Cluster Shock with NuSTAR
Author(s): Daniel R. Wik\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Utah

105.07 Constraining halo energetics using Sunyaev-Zel'dovich measurements
Author(s): Nicholas Battaglia\textsuperscript{1}, Emmanuel Schaan\textsuperscript{1}, Simone Ferraro\textsuperscript{2}, David N. Spergel\textsuperscript{1}
Institution(s): \textsuperscript{1} Princeton University, \textsuperscript{2} UC Berkeley

106 Ground Based & Airborne Instruments

Wednesday, 10:00 am - 11:30 am; Grapevine B

Chair: Charles Bradford (Caltech/ JPL)

106.01 A new imaging technique for detecting interstellar communications
Author(s): John Vallerga\textsuperscript{2}, Barry Welsh\textsuperscript{2}, Marissa Kotze\textsuperscript{3}, Oswald Siegmund\textsuperscript{2}
Institution(s): \textsuperscript{1} South African Astronomical Observatory, \textsuperscript{2} University of California, Berkeley

106.02 Science capabilities of the Maunakea Spectroscopic Explorer
Author(s): Daniel Devost\textsuperscript{1}, Alan McConnachie\textsuperscript{1}, Nicolas Flagey\textsuperscript{1}, Patrick Cote\textsuperscript{2}, Michael Balogh\textsuperscript{4}, Simon P Driver\textsuperscript{3}, Kim Venn\textsuperscript{3}
Institution(s): \textsuperscript{1} Canada-France-Hawaii Telescope, \textsuperscript{2} National Research Council of Canada, \textsuperscript{3} University of Victoria, \textsuperscript{4} University of Waterloo, \textsuperscript{5} University of Western Australia
WEDNESDAY, 4 JANUARY 2017

106.03D FLITECAM/SOFIA Commissioning and Early Science and A Study of Late-T Dwarf Color Outliers with NIRSPEC/Keck
Author(s): Sarah E. Logsdon
Institution(s): ¹ University of California, Los Angeles

106.04 Update on the Commensal VLA Low-band Ionospheric and Transient Experiment (VLITE)
Author(s): Namir E. Kassim, Tracy E. Clarke, Paul S. Ray, Emil Polisensky, Wendy M. Peters, Simona Giacintucci, Joseph F. Helmboldt, Scott D. Hyman, Walter Brisken, Brian Hicks, Julia S Deneva
Institution(s): ¹ George Mason University, resident at NRL, ² NRAO, ³ NRL, ⁴ Sweetbriar College

106.05 Dedicated MONitor of EXotransits and Transients (DEMONEXT): Low-Cost Robotic and Automated Telescope for Followup of Exoplanetary Transits and Transients
Author(s): Steven Villanueva, Jason D Eastman, B. Scott Gaudi, Richard W. Pogge, Keivan G. Stassun, Mark Trueblood, Patricia Trueblood
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics, ² The Ohio State University, ³ Vanderbilt University, ⁴ Winer Observatory

107 Black Holes I

Wednesday, 10:00 am - 11:30 am; Grapevine C
Chair: David Ballantyne (Georgia Institute of Technology)

107.01D Testing SMBH scaling relations using cosmological simulations and optical/near-IR imaging data
Author(s): Burcin Mutlu Pakdil, Marc S. Seigar, Benjamin L. Davis, Patrick M. Treuthardt, Joel Berrier
Institution(s): ¹ Centre for Astrophysics and Supercomputing, ² North Carolina Museum of Natural Sciences, ³ University of Minnesota, ⁴ University of Minnesota Duluth, ⁵ University of Nebraska at Kearney

107.02D Exploring mass-scaling physics and outflow geometry in accreting black holes
Author(s): Riley Michael Thomas Connors
Institution(s): ² Anton Pannekoek Institute, University of Amsterdam

107.03 Diagnosing the Black Hole Accretion Physics of Sgr A*: Spitzer/Chandra Observations
Author(s): Joseph L. Hora, Giovanni G. Fazio, Steven P. Willner, Mark A. Gurwell, Howard Alan Smith, Matthew Ashby, Frederick K. Baganoff, Gunther Wittel, Mark Morris, Andrea M. Ghez, Leo Meyer, Eric E. Becklin, James G. Ingalls, William J. Glaccum, Sean J. Carey, Daryl Haggard, Daniel P. Marrone, Charles F. Gammie
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics, ² McGill University, ³ MIT, ⁴ SOFIA Science Center, ⁵ Spitzer Science Center, ⁶ UCLA, ⁷ University of Arizona, ⁸ University of Illinois
WEDNESDAY, 4 JANUARY 2017

107.04 Strongly Magnetized Accretion Disks Around Black Holes
Author(s): Greg Salvesen1, Philip J. Armitage2, Jacob B. Simon1, Mitchell C. Begelman3
Institution(s): 1 Southwest Research Institute, 2 University of California, Santa Barbara, 3 University of Colorado Boulder

107.05 A Black Hole Mass Measurement from Adaptive Optics Spectroscopy for the Compact Galaxy Mrk 1216
Author(s): Jonelle Walsh2, Remco van den Bosch1, Karl Gebhardt4, Akin Yildirim1, Kayhan Gultekin3, Bernd Husemann1, Douglas O. Richstone3
Institution(s): 1 Max Planck Institute for Astronomy, 2 Texas A&M University, 3 University of Michigan, 4 University of Texas, Austin

107.06 Model for coeval growth of bulges and their seed black holes in presence of radiative feedback
Author(s): KwangHo Park1, Tamara Bogdanovic1, John Wise1
Institution(s): 1 Georgia Institute of Technology

107.07 CXB and CIB joint fluctuations in COSMOS, EGS, UDS and HDFN
Author(s): Nico Cappelluti4, Yanxia Li3, Rachel Ann Cooper4, Joyce Guo4, C. Megan Urry4, Guenther Hasinger3, Richard G. Arendt2, Alexander Kashlinsky1
Institution(s): 1 NASA GSFC, 2 UMBC, 3 University of Hawaii, 4 Yale University

108 HEAD I: Astronomy Across the Gravitational Wave Spectrum
Wednesday, 10:00 am - 11:30 am; Grapevine D

The historic detection of a pair of merging black holes by the LIGO-Virgo Scientific Collaboration marks the emergence of gravitational wave science as a bona fide field of astronomy. The detection of GW150914 represents only the beginning, both in terms of the additional events and sources that ground based detectors will uncover, as well as the other regions of the gravitational wave spectrum that will soon become accessible to astronomers. This session consists of three invited talks covering three bands of the gravitational wave spectrum. The first talk, representing the decahertz band accessible from the ground, will focus on the hunt for electromagnetic counterparts to gravitational wave triggers and the efforts to follow them using a wide array of electromagnetic observatories. The second talk, representing the nanohertz band accessible with pulsar timing arrays, will demonstrate how the formation and evolution of supermassive black holes and their host galaxies can be informed through gravitational wave observations and highlight both recent results and near-term prospects. The final talk, representing the millihertz band accessible from space-based detectors, will discuss the science case for the LISA instrument in the context of the LIGO and LISA Pathfinder successes.
Chair: James Thorpe (NASA GSFC)

108.01 GW astronomy, EM observations, and the interactions between them
Author(s): Reed Essick1
Institution(s): 1 Massachusetts Institute of Technology
Contributing team(s): LIGO-Virgo Collaboration
108.02 The Gravitational-Wave Universe seen by Pulsar Timing Arrays  
Author(s): Chiara M. F. Mingarelli
Institution(s): 1 Max Planck Institute for Radio Astronomy  
Contributing team(s): The International Pulsar Timing Array

108.03 LISA: Science and Prospects for Gravitational Wave Detection in Space  
Author(s): Shane L. Larson
Institution(s): 1 Northwestern University

109 New, Fundamental, Cutting-Edge Science from Arecibo Observatory

Wednesday, 10:00 am - 11:30 am; Texas 1

Arecibo Observatory celebrated its 50th anniversary in 2013. Historically, many important discoveries were made there in both radio and radar astronomy, but this session is about discoveries made since this milestone anniversary. Arecibo is by far the best telescope for detecting the faintest millisecond pulsars in exotic binary orbits, and only Arecibo has the potential to time radio pulsars at the highest possible precision. This makes it a crucial element in the worldwide Pulsar Timing Array which could lead to the first-ever detection of gravitational waves in the very-low frequency domain from supermassive black hole binaries. The participation of Arecibo is crucial to the success of fundamental VLBI science. The resolution of the Pleiades distance controversy required Arecibo, and only the Arecibo-Radioastron baseline can search for the physical components of active galactic nuclei responsible for intraday variability. With the world's largest collecting area and a sensitive multi-beam receiver, Arecibo can observe HI deeper, faster, and more precisely than any other telescope in the world. Survey maps not only reveal Galactic HI filaments but also show that these structures are aligned with the magnetic field. Arecibo is the only telescope that can detect galaxies that consist largely of dark matter, which are predicted by recent models of the formation of structures in the universe. Arecibo's Planetary Radar system is the world's most powerful instrument for the characterization and orbital refinement of NEOs. Where traditional observations provide only plane-of-sky information, Arecibo can determine the full 3D orbit as well as the object's size, shape, mass, and spin, information essential for the assessment of impact hazards. The Arecibo radar is also the most sensitive instrument for investigations of internal structures of solid planets and for constraining surface activity of the Moon and Mercury.

Chair: Joan Schmelz (Univ. of Memphis)

109.01 Cutting-Edge Science from Arecibo Observatory: Introduction  
Author(s): Joan T. Schmelz
Institution(s): 1 Arecibo Observatory

109.02 The Enigmatic Fast Radio Burst FRB121102  
Author(s): Jason Hessels
Institution(s): 1 ASTRON  
Contributing team(s): PALFA Survey Team, VLA+AO FRB121102 Simultaneous Campaign Team, EVN FRB121102 Campaign Team
109.03 GALFA-HI and the Discovery of Magnetically Aligned Neutral Hydrogen Fibers
Author(s): Susan Clark
Institution(s): 1 Columbia University
Contributing team(s): GALFA-HI Collaboration

109.04 Cutting-edge HI science with the Arecibo Telescope
Author(s): Robert F. Minchin
Institution(s): 1 NAIC, Arecibo Observatory

109.05 Observing the Plasma-Physical Processes of Pulsar Radio Emission with Arecibo
Author(s): Joanna M. Rankin
Institution(s): 1 Univ. of Vermont

109.06 Recent results of the NANOGrav Physics Frontiers Center
Author(s): Xavier Siemens
Institution(s): 1 University of Wisconsin -- Milwaukee
Contributing team(s): NANOGrav Physics Frontiers Center

110 Geoengineering the Atmosphere to Fight Climate Change: Should Astronomers Worry about It?
Wednesday, 10:00 am - 11:30 am; Texas 5
The AAS Sustainability Committee invites you to attend this Special Session on an issue that may be of growing concern to astronomers: "geoengineering", or large-scale engineering plans to modify the atmosphere in an attempt to offset the effects of global warming, such as by injecting aerosols globally to reflect sunlight. The session will be run in an interactive debate and panel forum format. Several researchers studying geoengineering, including astronomers, will present widely divergent views on the merits and risks of geoengineering and other climate interventions, both for ground-based astronomy, which of course must peer through the atmosphere, and for the long-term stability of the Earth’s climate system. There will be ample time for Q and A discussion between attendees and the panelists.
Chair: James Lowenthal (Smith College)

111 HAD II: Some Notes on the History of Infrared Astronomy from Above the Atmosphere
Wednesday, 10:00 am - 11:30 am; Texas 3
Chair: David DeVorkin (Smithsonian Inst.)

111.01 From Single Pixels to Many Megapixels: Progress in Astronomical Infrared Imaging from Space-borne Telescopes
Author(s): Judith Pipher
Institution(s): 1 Univ. of Rochester
111.02 NASA's Kuiper Airborne Observatory 1974-1995 - Twenty One Years of Discovery
Author(s): Edwin F. Erickson
Institution(s): 1 NASA Ames Research Center

111.03 Small Can Be Beautiful: The NASA Lear Jet and the Initiation of Astronomical Far-Infrared Fine-Structure-Line Spectroscopy
Author(s): Martin Harwit
Institution(s): 1 Cornell University

112 The Solar System
Wednesday, 10:00 am - 11:30 am; Texas 4
Chair: Alex Storrs (Towson Univ.)

112.01 Creating an Isotopically Similar Earth and Moon from a Giant Impact with Correct Angular Momentum
Author(s): William Sumpter
Institution(s): 1 Tarleton State University

112.02 Dynamics of the Giant Planets due to a Fully Self-gravitating Planetesimal Disk
Author(s): Billy L. Quarles, Nathan A. Kaib
Institution(s): 1 University of Oklahoma

112.03 Sources of Chaos in Planetary Systems Formed Through Numerical Methods
Author(s): Matthew S Clement
Institution(s): 1 University of Oklahoma

112.04 Assessing the Main-Belt Comet Population with Comet Hunters
Author(s): Megan E. Schwamb, Henry H. Hsieh, Zhi-Wei Zhang, Ying-Tung Chen, Chris Lintott, Shiang-Yu Wang, Ishan Mishra
Institution(s): 1 Gemini Observatory, 2 Institute of Astronomy & Astrophysics, Academia Sinica (ASIAA), 3 Planetary Science Institute, 4 University of Oxford

112.05 A New Measurement of D/H in Saturn's H2 Using Cassini CIRS
Author(s): Justin Roberts-Pierrel, Conor A. Nixon, Emmanuel Lellouch, Leigh N. Fletcher, Gordon Bjoraker, Richard K. Achterberg, Brigette E. Hesman, Patrick GI Irwin, F. Michael Flasar
Institution(s): 1 Department of Physics & Astronomy, University of Leicester, 2 Department of Physics, University of Oxford, 3 LESIA-Observatoire de Paris, 4 NASA GSFC

112.06 An Empirical Examination of the NEOWISE Results and Data analysis
Author(s): Nathan P Myhrvold
Institution(s): 1 Intellectual Ventures

112.07 Observing near-Earth objects with LBT
Author(s): Marco Micheli, Elisabetta Dotto, Elena Mazzotta Epifani, Olivier Hainaut, Simone Ieva, Andrea Di Paola, Gerhard Hahn, Detlef Koschny, Ettore Perozzi, Roberto Speziali, Giovanni B. Valsecchi
Institution(s): 1 DLR, 2 ESA SSA-NEO Coordination Centre, 3 ESO, 4 INAF-IAPS, 5 INAF-OAR
113 Intergalactic Medium, QSO Absorption Line Systems

Wednesday, 10:00 am - 11:30 am; Grapevine 1
Chair: Jennifer Scott (Towson Univ.)

113.01 Limits on Intergalactic Dust during Reionization
   Author(s): Nia Imara¹, Abraham Loeb¹
   Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics

113.02D The Vulture Survey: Analyzing the Evolution of MgII and CIV Absorbers
   Author(s): Nigel Mathes¹, Christopher W. Churchill¹, Michael Murphy²
   Institution(s): ¹ New Mexico State University, ² Swinburne University of Technology

113.03 Searching for Variability of NV Intrinsic Narrow Absorption Line Systems
   Author(s): Michael Rodruck¹, Jane C. Charlton¹, Rajib Ganguly²
   Institution(s): ¹ Penn State University, ² University of Michigan-Flint

113.04D Galaxy-environment Interactions as Revealed by the Circumgalactic Medium
   Author(s): Joseph Burchett⁵, Todd M. Tripp⁵, Daniel Wang⁶, Christopher Willmer², Jason X. Prochaska⁴, Jessica Werk⁶, Rongmon Bordoloi¹, Neal Katz⁵, Jason Tumlinson³
   Institution(s): ¹ MIT, ² Steward Observatory (U. of Arizona), ³ STScI, ⁴ UC-Santa Cruz, ⁵ University of Massachusetts, ⁶ University of Washington

113.05 The Metallicity of the Circumgalactic Medium of z<1 Galaxies: How low can you go?
   Author(s): Christopher Wotta³, Nicolas Lehner³, J. Christopher Howk³, John O'Meara¹, Jason X. Prochaska²
   Institution(s): ¹ Saint Michael’s College, ² UC, Santa Cruz, ³ University of Notre Dame

114 Elliptical & Spiral Galaxies

Wednesday, 10:00 am - 11:30 am; Grapevine 2
Chair: Sheila Kannappan (Univ. of North Carolina)

114.01D The Black Hole Mass – Pitch Angle Relation of Type I AGN In Spiral Galaxies
   Author(s): Amanda Schilling¹, Logan Jones¹, John A. Hughes¹, R. Scott Barrows², Julia D. Kennefick¹
   Institution(s): ¹ University of Arkansas, Fayetteville, ² University of Colorado Boulder, ³ University of Wisconsin - Madison

114.02D Spirality: A Noval Way to Measure Spiral Arm Pitch Angle
   Author(s): Douglas Shields¹
   Institution(s): ¹ University of Arkansas
   Contributing team(s): Arkansas Galaxy Evolution Survey
114.03D Strong Evidence for the Density-Wave Theory of Spiral Structure Based on Variations in Pitch Angle When Viewed Across Optical and non-Optical Wavelengths
Author(s): Hamed Pour-Imani¹, Daniel Kennefick¹, Julia D. Kennefick¹, Benjamin L. Davis¹, Douglas W. Shields¹, Mohamed Shameer Abdeen¹
Institution(s):¹ University of Arkansas

114.04 On the Origin of Exponential Radial Profiles in Galaxy Disks
Author(s): Bruce Elmegreen¹, Curtis Struck²
Institution(s):¹ IBM Research Div.,² Iowa State University

114.05 Measuring the extent of x-ray emitting hot gas haloes around elliptical galaxies
Author(s): Mehmet Alpaslan³, Pamela M. Marcum¹
Institution(s):¹ NASA Ames Research Center

114.06 Circumnuclear Disks in Early-type Galaxies: 12CO(2-1) and Continuum Properties
Author(s): Benjamin Boizelle⁵, Aaron J. Barth⁵, Andrew J. Baker², Jeremiah K. Darling⁴, Luis Ho¹, Jonelle Walsh³, David A. Buote⁶
Institution(s):¹ Kavli Institute for Astronomy and Astrophysics,² Rutgers,³ Texas A&M,⁴ Univ. of Colorado, Boulder,⁵ University of California, Irvine

115 Supernovae & Planetary Nebulae

Wednesday, 10:00 am - 11:30 am; Fort Worth 6
Chair: Ravi Sankrit (SOFIA/USRA)

115.01 SuperNovae Analysis aPplication (SNAP): A revolutionary method for understanding the physics of supernovae
Author(s): Amanda J. Bayless¹
Institution(s):¹ Southwest Research Institute

115.02D Fermi and Swift as supernova alarms: Alert, localization, and diagnosis of future Galactic Type Ia explosions
Author(s): Xilu Wang², Brian D. Fields², Amy Y. Lien¹
Institution(s):¹ NASA Goddard Space Flight Center,² University of Illinois at Urbana-Champaign

115.03D Decontaminating Cosmology: Towards Measuring Dark Energy with Photometrically Classified Pan-STARRS Supernovae
Author(s): David Jones⁴, Adam G. Riess⁴, Daniel Scolnic⁴, Richard Kessler⁶, Armin Rest³, Robert P. Kirshner¹, Edo Berger¹, Carolyn Ortega⁴, Ryan Foley⁵, Ryan Chornock², Peter Challis¹
Institution(s):¹ Harvard-Smithsonian Center for Astrophysics,² Ohio University,³ Space Telescope Science Institute,⁴ The Johns Hopkins University,⁵ University of California, Santa Cruz,⁶ University of Chicago
115.04  K2 High-cadence Light Curves of Transients
Author(s): Armin Rest\textsuperscript{5}, Peter M. Garnavich\textsuperscript{4}, Brad Tucker\textsuperscript{1}, Edward J. Shaya\textsuperscript{7}, Robert Olling\textsuperscript{7}, Daniel Kasen\textsuperscript{6}, Alfredo Zenteno\textsuperscript{2}, Steven J. Margheim\textsuperscript{3}, Chris Smith\textsuperscript{7}, David James\textsuperscript{2}
Institution(s): \textsuperscript{1} Australian National University, \textsuperscript{2} CTIO/NOAO, \textsuperscript{3} Gemini Observatory, \textsuperscript{4} Notre Dame, \textsuperscript{5} Space Telescope Science Institute, \textsuperscript{6} University of California, Berkeley, \textsuperscript{7} University of Maryland

115.05  New extended gamma-ray sources in the Galactic Plane using 6 years of Fermi Large Area Telescope data above 10 GeV
Author(s): Elizabeth A. Hays\textsuperscript{1}
Institution(s): \textsuperscript{1} NASA/GSFC
Contributing team(s): Fermi LAT Collaboration

115.06D  Spatial Analysis of Spectra from Galactic Planetary Nebulae and Extragalactic H II Regions: Testing for Abundance Variations
Author(s): Timothy R. Miller\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Oklahoma-Norman

116  Planetary Environments & Habitability
Wednesday, 10:00 am - 11:30 am; Dallas 6
Chair: Rebekah Dawson (The Pennsylvania State University)

116.02D  The UV Surface Environment on Young Planets: Implications for Prebiotic Chemistry & Life on Other Worlds
Author(s): Sukrit Ranjan\textsuperscript{1}
Institution(s): \textsuperscript{1} Harvard Univ.
Contributing team(s): Simons Collaboration on the Origin of Life, Harvard Origins of Life Initiative

116.03  Habitability in the Local Universe
Author(s): Paul A. Mason\textsuperscript{1}
Institution(s): \textsuperscript{1} NMSU

116.04  The Breakthrough Listen Initiative and the Future of the Search for Intelligent Life
Author(s): J. Emilio Enriquez\textsuperscript{4}, Andrew Siemion\textsuperscript{5}, Heino Falcke\textsuperscript{3}, Steve Croft\textsuperscript{4}, David R. DeBoer\textsuperscript{4}, Vishal Gajjar\textsuperscript{3}, Jack Hickish\textsuperscript{6}, Howard T. Isaacson\textsuperscript{4}, Matt Lebofsky\textsuperscript{4}, David MacMahon\textsuperscript{4}, Danny C Price\textsuperscript{4}, Nate Tellis\textsuperscript{4}, Dan Werthimer\textsuperscript{4}, Sander ter Veen\textsuperscript{8}, Michael A. Garrett\textsuperscript{1}, Greg Hellbourg\textsuperscript{4}
Institution(s): \textsuperscript{1} ASTRON, \textsuperscript{2} Radboud Universiteit Nijmegen, \textsuperscript{3} The University of Manchester, \textsuperscript{4} UC Berkeley

116.05D  The Search for Stellar Coronal Mass Ejections
Author(s): Jacqueline Villadsen\textsuperscript{1}, Gregg Hallinan\textsuperscript{1}, Ryan Monroe\textsuperscript{1}, Stephen Bourke\textsuperscript{2}
Institution(s): \textsuperscript{1} California Institute of Technology, \textsuperscript{2} Chalmers University of Technology
Contributing team(s): Starburst Program Team
117 Plenary Session: Annie Jump Cannon Award:
The Tumultuous Lives and Deaths of Stars, Laura Lopez
(Ohio State University)

Wednesday, 11:40 am - 12:30 pm; Texas A
Chair: Christine Jones (Harvard-Smithsonian, CfA)

117.01 The Tumultuous Lives and Deaths of Stars
Author(s): Laura A. Lopez
Institution(s): † The Ohio State University

Citation: For her contributions to understanding the birth-to-death cycle of stars in our galaxy. Lopez’s work on supernova remnants, young massive stars, and the interstellar medium spans radio through X-ray wavelengths and bridges the gap between theory and observation.

New Methods for Teaching about Exoplanets

Wednesday, 12:30 pm - 2:00 pm; Dallas 1

Working with a national collaboration of astronomy educators we have developed a suite of new active learning materials that bring to life the exciting methods by which we detect exoplanets using the Doppler Method, Transits, and Gravitational Microlensing. Come engage in a fun and supportive environment designed to help you successfully bringing the frontiers of exoplanet discoveries into the Astro 101 classroom. Participants will come away with instructional materials and assessment strategies ready for immediate classroom use. Presenters will be Edward Prather and Gina Brissenden (Center for Astronomy Education, Steward Observatory, Univ. of Arizona), who encourage you to bring your lunch! This workshop is based upon work supported by NASA under award number NNX16AC65A. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Aeronautics and Space Administration.
Organizer(s): Gina Brissenden (Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona)

Introducing Current Research Into Your Classroom

Wednesday, 12:30 pm - 2:00 pm; Appaloosa 1

Do you wish you could ground your undergraduate classes more thoroughly in the latest astronomical research? Do you want to expose your students not just to facts, but also to the process of science? In this workshop, we’ll show you how you can use Astrobites to enhance your students’ experience. Astrobites, founded in 2010 and officially supported by the AAS since 2016, is a graduate-student organization that publishes an online astrophysical literature blog. The blog consists of daily digests of recent articles appearing on astro-ph, with a current archive of posts covering more than one thousand recent astrophysics research papers. Each post is written at an undergraduate level,
providing an accessible summary of the research methods and outcomes as well as useful background and context. Over the span of this 1.5-hour workshop, we will provide an overview of Astrobites and discuss several different ways that you can use Astrobites to bring the most recent astronomical research into your undergraduate classroom. You will then have the opportunity to develop original lesson plans and curriculum materials with the assistance of Astrobites authors and administrators. The organizers encourage you to bring your laptop and a lunch to this workshop.

Organizer(s): Susanna Kohler (University of Colorado at Boulder)

**2017 AAS Astronomy Ambassadors Workshop (day 2 of 2)**

**Wednesday, 12:45 pm - 5:30 pm; Appaloosa 4**

This 5th annual Astronomy Ambassador workshop is for early career astronomers (graduate students, post docs, young faculty) eager to put a new face on astronomy through active engagement in outreach to their communities. During the two days of active learning, you can build skills to help engage your audience in your presentations, gain insights into how people learn, and discover tested outreach resources. The workshop is free, but is limited to 30 participants by application only.

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

**118 NSF Town Hall**

**Wednesday, 12:45 pm - 1:45 pm; Texas C**

Staff from the National Science Foundation will discuss recent science results, news about the Division, the status and evolution of budgets, and information about grants programs and facility development.

Organizer(s): James Ulvestad (National Science Foundation)

**119 HAD Town Hall**

**Wednesday, 12:45 pm - 1:45 pm; Texas 3**

Organizer(s): Kenneth Rumstay (Valdosta State Univ.)

**Science of X-ray Surveyor**

**Wednesday, 1:00 pm - 3:30 pm; San Antonio 1**

We will invite the community to attend this splinter meeting to discuss several major topics related to the science achievable with a future X-ray Surveyor mission. We aim at 4 presentations by the X-ray Surveyor Science Team members or leads of the Science Working groups. Potential topics include the earliest populations of black holes, diffuse gas in the galactic halos and cosmic web, the physics of feedback, physics of high densities and GR tests, stellar lifecycles.

Organizer(s): Alexey Vikhlinin (Harvard-Smithsonian, CfA)
Big Bang to Biology: What Can I Do With LUVOIR?
Wednesday, 2:00 pm - 3:30 pm; Mustang 4
This splinter meeting will involve hands-on practice with web-based science simulation tools for the Large UV/Optical/IR Surveyor (LUVOIR) mission. LUVOIR is a concept for a highly capable, multi-wavelength observatory with ambitious science goals. This mission would enable a great leap forward in a broad range of astrophysics — from the epoch of reionization, through galaxy formation and evolution, to star and planet formation. LUVOIR also has the major goal of characterizing a wide range of exoplanets, including those that might be habitable — or even inhabited. Powerful remote sensing observations of Solar System bodies will also be possible. LUVOIR is one of four Decadal Survey Mission Concept Studies initiated in Jan 2016. The study will extend over three years, culminating in reports to NASA and the National Academies. More info on LUVOIR and the study can be found at http://asd.gsfc.nasa.gov/luvoir/. In this meeting, we’ll introduce you to the range of science that LUVOIR can address, then describe the current mission architecture and instrument suite chosen by the Science and Technology Definition Team. The web-based science simulation tools will be demonstrated, then we will hand things over to the meeting participants. Bring your favorite science case and/or input models, and be ready to dream big! We’ll take feedback on all aspects of the mission study, including what other tools you’d like to see.
Organizer(s): Aki Roberge (NASA GSFC)

Astronomy Education in the NSF IUSE:EHR Program
Wednesday, 2:00 pm - 3:30 pm; Grapevine 4
This session will consist of three presentations on astronomy education awards from the NSF IUSE:EHR (Improving Undergraduate STEM Education) program. The speakers and the awards are: 1) Angela Speck, University of Missouri, Co-PI on “Nationwide Preparation for the Eclipse of 21 August 2017” (Marvel/1564535), 2) Laura Trouille, Adler Planetarium, PI on “Collaborative Research: EngagingIntroductoryAstronomyStudentsinAuthenticResearchthroughCitizenScience”(Trouille/1524189), and 3) Edward Prather, University of Arizona, Co-PI on “Collaborative Research: Enhancing Undergraduate STEM Education: Workshops and Learning Communities for Physics and Astronomy Faculty” (Hilborn/1431638). These three awards from diverse areas of astronomy education will showcase the flexibility of the IUSE:EHR program. IUSE:EHR can support any projects that benefit undergraduate students and contribute to the knowledge base of STEM education.
Chair: Kevin Lee (NSF)

120 Extrasolar Planets: Characterization & Theory I
Wednesday, 2:00 pm - 3:30 pm; Texas A
Chair: George Benedict (Univ. of Texas, Austin)
120.01 Characterizing Exoplanets with WFIRST
Author(s):Tyler D. Robinson, Karl R. Stapelfeldt, Mark S. Marley, Franck Marchis, Jonathan J Fortney
Institution(s): 1 JPL/Caltech, 2 NASA Ames Research Center, 3 SETI Institute, 4 University of California, Santa Cruz

120.02 Key Exoplanets in the Era of JWST
Author(s): Natasha Batalha, Avi Mandell, Nikole K. Lewis, Klaus Pontoppidan
Institution(s): 1 Goddard Space Flight Center, 2 Pennsylvania State University, 3 University of California, Santa Cruz

120.03 Proxima Centauri b: Environmental States and Observational Discriminants
Author(s):Victoria Meadows, Giada Arney, Edward Schwieterman, Jacob A Lustig-Yaeger, Andrew Lincowski, Tyler D. Robinson, Shawn Domagal-Goldman, Rory Barnes, David P Fleming, Russell Deitrick, Rodrigo Luger, Peter E. Driscoll, Thomas R. Quinn, David Crisp
Institution(s): 1 Carnegie Institution of Washington, 2 Jet Propulsion Laboratory/Caltech, 3 NASA Goddard Space Flight Center, 4 University of California - Santa Cruz, 5 University of Washington

120.04 Beyond Proxima b: Investigating the next nearest Potentially Habitable Exoplanets: Kapteyn b (13 LY) and Wolf 1061 c (14 LY) - Assessing their Suitability for Life
Author(s): Edward F. Guinan, Scott G. Engle
Institution(s): 1 Villanova Univ.

120.05 Improving Habitatibility of Earth-sized Proxima Centauri b by an Exomoon
Author(s): Sergio Garza, Marialis Rosario Franco, Niyousha Davachi, Zdzislaw E. Musielak
Institution(s): 1 University of Texas at Arlington

120.06 Stable Orbits for Exomoons in Earth’s Cousin (Kepler-452b) Orbiting a Sun-like Star
Author(s): Niyousha Davachi, Marialis Rosario Franco, Sergio Garza, Zdzislaw E. Musielak
Institution(s): 1 University of Texas At Arlington

120.07D Emerging Science Capabilities of Modern Adaptive Optics Systems for Exoplanet and Stellar Astrophyiscs
Author(s): Rebecca M. Jensen-Clem
Institution(s): 1 Caltech

120.08 Direct Imaging Discovery of a Remarkably Red Planetary-Mass Companion
Author(s): Brendan P. Bowler, Michael C. Liu, Dimitri Mawet, Henry Ngo, Lison Malo, Gregory N. Mace, Jacob McLane, Jessica Lu, Isaiah Tristan, Sasha Hinkley, Lynne Hillenbrand, Evgenya L Shkolnik, Björn Benneke, William M. J. Best
Institution(s): 1 Arizona State University, 2 Caltech, 3 CFHT, 4 Exeter, 5 Rice University, 6 UC Berkeley, 7 University of Hawaii, 8 UT Austin
121 AGN, QSO, Blazars: Obscured

Wednesday, 2:00 pm - 3:30 pm; Texas C

Chair: J. Moody (Brigham Young Univ.)

121.01 Discovering highly obscured AGN with the Swift-BAT 100-month survey
Author(s): Stefano Marchesi\textsuperscript{1}, Marco Ajello\textsuperscript{1}, Andrea Comastri\textsuperscript{3}, Giancarlo Cusumano\textsuperscript{2}, Valentina La Parola\textsuperscript{2}, Alberto Segreto\textsuperscript{2}

\textit{Institution(s):} \textsuperscript{1}Clemson University, \textsuperscript{2}INAF-IAFSC Palermo, \textsuperscript{3}INAF-OABO

121.02D A multi-wavelength survey of obscured and reddened quasars at the peak of galaxy formation
Author(s): Rachael Alexandroff\textsuperscript{1}

\textit{Institution(s):} \textsuperscript{1}Johns Hopkins University

121.03D Hard X-ray Spectroscopy of Obscured AGN with NuSTAR
Author(s): Mislav Balokovic\textsuperscript{1}, Fiona Harrison\textsuperscript{1}

\textit{Institution(s):} \textsuperscript{1}California Institute of Technology

Contributing team(s): NuSTAR Extragalactic Surveys Team

121.04 Extreme Obscuration and Circumnuclear Star-Formation Revealed in AGN NGC 4968
Author(s): Stephanie M. LaMassa\textsuperscript{2}, Tahir Yaqoob\textsuperscript{4}, Nancy A. Levenson\textsuperscript{1}, Peter Boorman\textsuperscript{3}, Timothy M. Heckman\textsuperscript{3}, Poshak Gandhi\textsuperscript{5}, Jane R. Rigby\textsuperscript{2}, C. Megan Urry\textsuperscript{6}, Andrew Ptak\textsuperscript{2}

\textit{Institution(s):} \textsuperscript{1}Gemini Observatory, \textsuperscript{2}NASA GSFC, \textsuperscript{3}The Johns Hopkins University, \textsuperscript{4}UMBC, \textsuperscript{5}University of Southampton, \textsuperscript{6}Yale University

122 GW-SMBH-Lensing-PTA

Wednesday, 2:00 pm - 3:30 pm; Texas D

Chair: Michael Kesden (University of Texas at Dallas)

122.01D Black Hole Accretion Discs on a Moving Mesh
Author(s): Geoffrey Ryan\textsuperscript{1}

\textit{Institution(s):} \textsuperscript{1}New York University

122.02 The Effect of Supermassive Black Hole Binary Environments on Time to Detection for the Stochastic Background
Author(s): Sarah Vigeland\textsuperscript{1}, Xavier Siemens\textsuperscript{1}

\textit{Institution(s):} \textsuperscript{1}University of Wisconsin -- Milwaukee

122.03 Effectiveness of Null Signal Sky Localization in Pulsar Timing Arrays
Author(s): Jeffrey Shafiq Hazboun\textsuperscript{1}

\textit{Institution(s):} \textsuperscript{1}Center for Advanced Radio Astronomy

122.04 Inferring the mass and density profile of dark matter subhalos in gravitational lens galaxies
Author(s): Quinn Minor\textsuperscript{1}, Manoj Kaplinghat\textsuperscript{2}

\textit{Institution(s):} \textsuperscript{1}Borough of Manhattan Community College, \textsuperscript{2}University of California, Irvine
**122.05 DeepLensing: The Use of Deep Machine Learning to Find Strong Gravitational Lenses in Astronomical Surveys**

Author(s): Brian Nord
Institution(s): ¹ Fermi National Accelerator Laboratory

**122.06 Precession-averaged evolution of the orbital and total angular momenta in binary black-hole systems**

Author(s): Xinyu Zhao, Michael H. Kesden, Davide Gerosa
Institution(s): ¹ California Institute of Technology, ² University of Texas at Dallas

**122.07 Bayesian model-emulation of stochastic gravitational-wave spectra for probes of the final-parsec problem with pulsar-timing arrays**

Author(s): Stephen R Taylor, Joseph Simon, Laura Sampson
Institution(s): ¹ CIERA, Northwestern University, ² Jet Propulsion Laboratory, ³ University of Wisconsin-Milwaukee

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**123 Dwarf & Irregular Galaxies I**

Wednesday, 2:00 pm - 3:30 pm; Grapevine A

Chair: Daniel Dale (Univ. of Wyoming)

**123.01 Accretion phenomena onto star-forming dwarf-galaxies.**

Author(s): Francesca Annibali
Institution(s): ¹ INAF- Osservatorio Astronomico Bologna

**123.02 The Star-Forming Main Sequence at Low Galaxy Mass**

Author(s): Sabrina Stierwalt, Kelsey E. Johnson, David R. Patton, Gurtina Besla, Nitya Kallivayalil, Sandra Liss, Sarah Pearson, George C. Privon, Mary E. Putman
Institution(s): ¹ Columbia University, ² National Radio Astronomy Observatory, ³ Trent University, ⁴ University of Arizona, ⁵ University of Virginia

**123.03D Large-scale environmental dependence of chemical abundances in dwarf galaxies and implications for connecting star formation history and halo mass**

Author(s): Kelly Douglass, Michael S. Vogeley
Institution(s): ¹ Drexel University

**123.04 APOGEE Chemical Abundances of the Sagittarius Dwarf Galaxy**

Institution(s): ¹ IAC, ² Johns Hopkins University, ³ New Mexico State University, ⁴ NOAO, ⁵ Observatorio Nacional, ⁶ Pontificia Universidad Católica de Chile, ⁷ Texas Christian University, ⁸ The Observatories of the Carnegie Institute of Washington, ⁹ Universidad de La Serena, ¹⁰ University of Notre Dame, ¹¹ University of Texas at Austin, ¹² University of Utah, ¹³ University of Virginia

Contributing team(s): APOGEE
123.05 The HI Chronicles of LITTLE THINGS BCDs: VII Zw 403’s External Gas Cloud
Author(s): Trisha L. Ashley1, Caroline E. Simpson3, Bruce Elmegreen4, Megan C. Johnson2, Nau Raj Pokhrel3
Institution(s): 1 Bay Area Environmental Research Institute and NASA Ames, 2 CSIRO, 3 Florida International University, 4 IBM

123.06D Baryons and their Effects on Planes of Satellites Around Milky Way-Mass Galaxies
Author(s): Sheehan H Ahmed1
Institution(s): 1 Rutgers, The State University of New Jersey

124 Star Associations, Star Clusters - Galactic & Extragalactic I
Wednesday, 2:00 pm - 3:30 pm; Grapevine B
Chair: Bryan Miller (Gemini Observatory)

124.01D Testing Theories of in situ Nuclear Star Formation in M31
Author(s): Kelly Lockhart7, Jessica Lu4, Hiranya Peiris3, Robert Michael Rich6, Antonin H. Bouchez2, Keith Matthews1, Andrea M. Ghez6, Scott D. Tremaine3
Institution(s): 1 California Institute of Technology, 2 Giant Magellan Telescope, 3 Institute for Advanced Study, 4 University College London, 5 University of California, Berkeley, 6 University of California, Los Angeles, 7 University of Hawaii

124.02 Multiple Populations in M31 Globular Clusters: Clues from Infrared High Resolution Integrated Light Spectroscopy
Author(s): Charli Sakari1
Institution(s): 1 University of Washington
Contributing team(s): The APOGEE team

124.03D The Open Cluster Chemical Abundances and Mapping (OCCAM) Survey: Galactic Neutron Capture Abundance Gradients
Author(s): Julia O’Connell3, Peter M. Frinchaboy3, Matthew D. Shetrone4, Matthew Melendez3, Katia M. L. Cunha2, Steven R. Majewski5, Gail Zasowski1
Institution(s): 1 Johns Hopkins University, STSci, 2 Observatorio Nacional, 3 Texas Christian University, 4 University of Texas, 5 University of Virginia
Contributing team(s): APOGEE Team

124.04D The Photometric Study of Globular Cluster Systems in the Coma, Fornax, and Virgo Clusters of Galaxies with the HST WFC3/IR
Author(s): Hyejeon Cho2, John P. Blakeslee2, Young-Wook Lee2
Institution(s): 1 NRC Herzberg Astronomy and Astrophysics, 2 Yonsei University

124.05 Hierarchical Star Formation in Turbulent Media: Evidence from Young Star Clusters
Author(s): Kathryn Grasha2, Bruce Elmegreen1, Daniela Calzetti2
Institution(s): 1 Thomas J. Watson Research Center, 2 University of Massachusetts - Amherst
125 Cosmology I

Wednesday, 2:00 pm - 3:30 pm; Grapevine C

Chair: Mustapha Ishak-Boushaki (Univ. Of Texas at Dallas)

125.01 Measuring the Epoch of Reionization using [CII] Intensity Mapping with TIME-Pilot
Author(s): Abigail Crites¹, James Bock¹, Matt Bradford¹, Bruce Bumble³, Tzu-Ching Chang¹, Yun-Ting Cheng¹, Asantha R. Cooray⁶, Steve Hailey-Dunsheath¹, Jonathon Hunacek¹, Chao-Te Li², Roger O’Brient³, Erik Shirokoff⁷, Zachary Staniszewski¹, Corwin Shiu¹, Bade Uzgil¹, Michael B. Zemcov¹, Guochao Sun¹
Institution(s): ¹ California Institute of Technology, ² Caltech, ³ Jet Propulsion Laboratory, ⁴ Princeton, ⁵ RIT, ⁶ UCIrvine, ⁷ University of Chicago

125.02D Cosmic infrared background fluctuations of the COSMOS field in the SPLASH survey: new measurements and the cosmological explanations
Author(s): Yanxia Li¹
Institution(s): ¹ University of Hawaii

125.03 Early Science from the Hydrogen Epoch of Reionization Array
Author(s): Daniel Jacobs¹
Institution(s): ¹ Arizona State University

125.04 Data Simulation for 21 cm Cosmology Experiments
Author(s): Jonathan Pober¹
Institution(s): ¹ Brown University

125.05 Constraining compensated isocurvature perturbations using the CMB
Author(s): Tristan L. Smith¹
Institution(s): ¹ Swarthmore College

125.06 Testing gravity theories using tensor perturbations
Author(s): Weikang Lin¹, Mustapha B. Ishak-Boushaki¹
Institution(s): ¹ University of Texas at Dallas

125.07 Effect of Self-Calibration of Intrinsic Alignment on the Cosmological Parameter Constraints for LSST
Author(s): Ji Yao², Mustapha Ishak², Michael A. Troxel¹, Weikang Lin¹
Institution(s): ² Ohio State University, ² The University of Texas at Dallas

125.08 Planck SZ Cluster Mass Calibration using HSC Weak Lensing
Author(s): Elinor Medezinski⁵, Nicholas Battaglia⁵, Michael A. Strauss⁵, David N. Spergel⁵, Hironao Miyatake³, Rachel Mandelbaum², Masasune Oguri⁵, Keiichi Umetsu¹
Institution(s): ¹ ASIAA, ² Carnegie-Mellon University, ³ Jet Propulsion Laboratory, ⁴ Kavli/IPMU, ⁵ Princeton University

Contributing team(s): HSC
126 Science with the Discovery Channel Telescope and Beyond

Wednesday, 2:00 pm - 3:30 pm; Grapevine D

Lowell Observatory’s Discovery Channel Telescope saw first light in 2012 and began full-time operations the following year. This state-of-the-art 4.3-meter telescope, located at an elevation of 7,740 feet in Happy Jack, AZ, has a growing suite of optical and near-infrared instruments. Lowell’s DCT partners include Boston University, the University of Maryland, the University of Toledo, Northern Arizona University, Yale University, and the University of Texas/Korean Astronomy and Space Science Institute IGRINS team. This special session will showcase scientific highlights from the first few years of DCT operations as well as synergies with telescopes on nearby Anderson Mesa, including the Navy Precision Optical Interferometer. Talks will cover the diverse research being done with the DCT, from studies of solar system objects to distant GRBs. This is an opportunity to learn more about the newest 4-meter-class telescope in the United States and perhaps to stimulate new scientific collaborations.

Chair: Michael West (Maria Mitchell Observatory)

126.01 Lowell Observatory’s Discovery Channel Telescope
Author(s): Jeffrey C. Hall
Institution(s): 1 Lowell Obs.

126.02 Follow-Up Discovery Channel Telescope Observations of Transients and Variables from Optical Time Domain Surveys
Author(s): Suvi Gezari, Tingting Liu, Tiara Hung
Institution(s): 1 University of Maryland

126.03 Target of Opportunity Observations with the Discovery Channel Telescope
Author(s): Stephen B. Cenko, Sylvain Veilleux, Vicki Toy, John Capone, Eleonora Troja, Antonino Cucchiara, Suvi Gezari, Tiara Hung
Institution(s): 1 NASA Goddard Space Flight Center, 2 University of Maryland, 3 University of the Virgin Islands

126.04 EXPRES: the EXtreme PREcision Spectrograph at the Discovery Channel Telescope
Author(s): Debra Fischer, Colby Jurgenson, Tyler McCracken, David Sawyer, Ryan Blackman, Andrew E. Szymkowiak
Institution(s): 1 Yale University

126.05 Proper Motions and Parallaxes of Very Low-Mass Stars using DCT Astrometry
Author(s): Julie N. Skinner, Andrew A West, Jacqueline K. Faherty, Philip Steven Muirhead
Institution(s): 1 Boston University, 2 Carnegie Institute of Washington

126.06 IGRINS on the DCT
Author(s): Lisa A. Prato
Institution(s): 1 Lowell Observatory
WEDNESDAY, 4 JANUARY 2017

126.07 The Puzzling Atmospheres of Low-mass Stars, Brown Dwarfs and Exoplanets Revealed by the Discovery Channel Telescope
Author(s): Philip Steven Muirhead, Bryce Croll, Paul A. Dalba, Mark Veyette, Eunkyu Han, Aurora Kesseli, Brian Healy
Institution(s): 1. Boston University

126.08 Characterizing Mid-Type M Dwarfs in the Kepler Field with the Discovery Channel Telescope and WIYN
Author(s): Kevin Hardegree-Ullman, Michael Cushing, Philip Steven Muirhead
Institution(s): 1. Boston University, 2. University of Toledo

126.09 Speckle Interferometry at Lowell’s Discovery Channel Telescope
Author(s): Gerard van Belle, Elliott Horch
Institution(s): 1. Lowell Observatory, 2. Southern Connecticut State University

127 Linking the Scales of Star Formation
Wednesday, 2:00 pm - 3:30 pm; Texas 1
Could the relationships between the properties of star formation on two fundamental scales – on those of galaxy disks over kiloparsecs, and individual stars, stellar clusters and associations over parsecs – provide new key insights into the mechanisms that control star formation? In this session we will probe this missing piece in the grand puzzle of star formation by reporting new results from the Hubble Space Telescope (HST) Treasury program LEGUS (Legacy ExtraGalactic Ultraviolet Survey), and related projects. LEGUS has obtained complete five band HST imaging in NUV, U, B, V and I, for 50 nearby galaxies. The galaxies have been carefully selected to cover the full range of galaxy mass, morphology, star formation rate (SFR), SSFR (specific SFR=SFR/mass), metallicity, internal structure (rings, bars), and interaction state found in the Local Volume where HST can resolve and age-date young stellar populations on pc-scales. Well-known, archetypal galaxies with the largest suites of multi-wavelength data available have been targeted, to ensure that the dataset will have exceptional legacy value. High resolution UV imaging, which was not previously available for >90% of the sample, is critical for the age-dating and identification of young massive stars and clusters; the reconstruction of the recent star formation histories (SFH) at requisite accuracies (~10 Myr); and the breaking of the age-extinction degeneracies on small scales. The talks in this session will touch upon a full range of star formation science pursued by LEGUS and related projects, from studies of the demographics of star clusters to the environments of supernovae. We anticipate that the LEGUS dataset will also support a significant amount of community science, and the session will showcase the higher-level data products (multiband drizzled images; catalogs of the physical and observed properties of stars and star clusters) which have been and will be released to the community.
Chair: Janice Lee (Space Telescope Science Institute)

127.01 HST LEGUS - Legacy Extragalactic UV Survey
Author(s): Daniela Calzetti
Institution(s): 1. Univ. of Massachusetts
Contributing team(s): and the LEGUS Team
127.03 Star Cluster Luminosity Functions and Cluster Formation Efficiencies in LEGUS Dwarf Galaxies  
Author(s): David O. Cook¹, Janice C. Lee⁴, Angela Adamo³, Hwiyun Kim², Jenna E Ryon⁵  
Institution(s): ¹ Caltech, ² McDonald Observatory - UT Austin, ³ Stockholm University, ⁴ StSci, ⁵ University of Wisconsin - Madison  
Contributing team(s): LEGUS Team

127.04 The Fraction of Stars Formed In A Diverse Sample of 8 Galaxies  
Author(s): Rupali Chandar¹  
Institution(s): ¹ University of Toledo

127.05 The Hierarchical Distribution of Young Stellar Clusters in Nearby Galaxies  
Author(s): Kathryn Grasha¹, Daniela Calzetti¹  
Institution(s): ¹ University of Massachusetts - Amherst

127.06 Single Star HII Regions in nearby LEGUS Galaxies  
Author(s): Bridget Kayitesi², Janice C. Lee², David A. Thilker¹  
Institution(s): ¹ Johns Hopkins University, ² Space Telescope Science Institute  
Contributing team(s): LEGUS Team

127.07 Multi-scale, Hierarchically Nested Young Stellar Structures in LEGUS Galaxies  
Author(s): David A. Thilker¹  
Institution(s): ¹ Johns Hopkins Univ.  
Contributing team(s): LEGUS Team

127.08 Extinction Mapping of Nearby Galaxies Using LEGUS  
Author(s): Lauren Kahre¹, Rene A.M. Walterbos¹, Daniela Calzetti³, Elena Sabbi², Leonardo Ubeda²  
Institution(s): ¹ New Mexico State University, ² Space Telescope Science Institute, ³ University of Massachusetts  
Contributing team(s): LEGUS Collaboration

127.09 SN Environments in LEGUS  
Author(s): Schuyler D. Van Dyk¹  
Institution(s): ¹ Caltech  
Contributing team(s): the LEGUS Team

127.10 Star Formation at Low Rates: How a Lack of Massive Stars Impacts the Evolution of Dwarf Galaxies  
Author(s): Gerhard Hensler¹  
Institution(s): ¹ University of Vienna
128 Surveys & Data - Catalogs, Archives, Searched

Wednesday, 2:00 pm - 3:30 pm; Texas 5
Chair: Elizabeth Adams (ASTRON)

128.01 From Sky to Archive: Long Term Management of Sky Survey Data
Author(s): Peter T Darch¹, Ashley E. Sands¹, Christine Borgman¹, Milena S. Golshan¹, Sharon Traweek¹
Institution(s): ¹ University of California, Los Angeles, ² University of Illinois at Urbana-Champaign

128.02D A Mass Census of the Nearby Universe with RESOLVE and ECO
Author(s): Kathleen D. Eckert³, Sheila Kannappan³, David Stark², Amanda J. Moffett¹, Mark A Norris⁴, Andreas A. Berlind⁷, Kirsten Hall³, Ashley Baker⁵, Elaine M. Snyder⁴, Ashley Bittner⁵, Erik A. Hoversten⁶, Claudia Lagos¹, Zachary Nasipak⁶
Institution(s): ¹ ICRAR, ² IPMU, ³ Johns Hopkins University, ⁴ University of Central Lancaster, ⁵ University of North Carolina, Chapel Hill, ⁶ University of Pennsylvania, ⁷ Vanderbilt University
Contributing team(s): RESOLVE team

128.03 What Time Is Sunrise? Revisiting the Refraction Component of Sunrise/set Prediction Models
Author(s): Teresa Wilson¹, Jennifer L. Bartlett³, James Lindsay Hilton²
Institution(s): ¹ Michigan Technological University, ² US Naval Observatory

128.04 Testing LSST Dither Strategies for Large-scale Structure Systematics
Author(s): Humna Awan², Eric J. Gawiser², Peter Kurczynski¹
Institution(s): ¹ National Science Foundation, ² Rutgers University

128.05D A Search for Miras in M33 Using Sparsely-Sampled Time Series Photometry
Author(s): Wenlong Yuan¹, Lucas M. Macri³, Shiuyuan He², James Long², Jianhua Huang²
Institution(s): ¹ Department of Physics & Astronomy, Texas A&M University, ² Department of Statistics, Texas A&M University

128.06 Astronomical Methods for Nonparametric Regression
Author(s): Charles L. Steinhardt¹, Adam Jermyn²
Institution(s): ¹ Dark Cosmology Centre, Niels Bohr Institute, ² Institute of Astronomy, University of Cambridge

128.07 FRB121102: statistics of burst properties compared to the fast radio burst population
Author(s): Andrew Seymour⁸, Daniele Michilli ¹, Maura McLaughlin⁷, Shami Chatterjee³, Jason Hessel¹, Sarah Spolaor², Demorest Paul⁶, Paul Scholz⁴, Laura Spitler³, Shriharsh P. Tendulkar²
Institution(s): ¹ Anton Pannekoek Institute for Astronomy, ² California Institute of Technology, ³ Cornell University, ⁴ McGill University, ⁵ NAIC, ⁶ National Radio Astronomy Observatory, ⁷ West Virginia University
Contributing team(s): PALFA Survey Team, VLA+AO FRB121102 Simultaneous Campaign Team, EVN FRB121102 Campaign Team
WEDNESDAY, 4 JANUARY 2017

129 HAD III: History
Wednesday, 2:00 pm - 3:30 pm; Texas 3
Chair: Marc Rothenberg (National Science Foundation)

129.01 An Account of Stellar Spectroscopy and John S. Plaskett’s Leadership within Early 20th-Century Astrophysics in Canada
Author(s): Andrew Ihor Oakes
Institution(s): ¹ University of Toronto

129.02 Under Connecticut Skies: Exploring 100 Years of Astronomy at Van Vleck Observatory in Middletown, Connecticut
Author(s): Roy E. Kilgard¹, Amrys Williams¹, Paul Erickson¹, William Herbst¹, Seth Redfield¹
Institution(s): ¹ Wesleyan Univ.

129.03 Building the Green Bank Telescope
Author(s): Kenneth I. Kellermann
Institution(s): ¹ NRAO

129.04 The 2017 Eclipse: Centenary of the Einstein Light Deflection Experiment
Author(s): Daniel Kennefick
Institution(s): ¹ University of Arkansas - Fayetteville

129.06 The Unlikely Origins of NASA’s “Search for Origins” Program
Author(s): Mario R. Perez², Harley A. Thronson¹
Institution(s): ¹ NASA Goddard Space Flight Center, ² NASA Headquarters

129.07 Recording of Supernovae in Rock Art, A Case Study at the Paint Rock Pictograph Site
Author(s): Gordon L. Houston¹, Irakli Simonia¹
Institution(s): ¹ Ilia State University
Contributing team(s): NA

129.08 Thirty Years After Jack Eddy at the Big Horn Medicine Wheel
Author(s): Ivy Merriot¹
Institution(s): ¹ Montana State University

129.09 The Astronomy Genealogy Project: It's more than just tracing your ancestry
Author(s): Joseph S. Tenn¹
Institution(s): ¹ Sonoma State Univ.
Contributing team(s): AstroGen Team

130 Variable Stars, Asteroseismology
Wednesday, 2:00 pm - 3:30 pm; Texas 4
Chair: Catherine Pilachowski (Indiana University)

130.01 Studying RR Lyrae Stars in M4 with K2
Author(s): Charles A. Kuehn², Jason Drury¹, Pawel Moskalik¹
Institution(s): ² Copernicus Astronomical Center, ² University of Northern Colorado, ³ University of Sydney
130.02D RR Lyrae variable stars in M31-M33 super-halo
Author(s): Nahathai Tanakul¹, Ata Sarajedini¹
Institution(s): ¹ University of Florida

130.03D Probing the Histories of Local Group Dwarf Galaxies with Pulsating Variable Stars
Author(s): Antonio J Ordoñez¹, Ata Sarajedini¹
Institution(s): ¹ University of Florida

130.04 The connection between period spectra and constraints in white dwarf asteroseismology
Author(s): Agnes Kim¹
Institution(s): ¹ Penn State Worthington Scranton

130.05 Asteroseismology with Kepler and K2 data: Exploring horizontal branch cores using subdwarf B stars
Author(s): Michael Reed¹, Joshua Kern¹, Laura Ketzer¹
Institution(s): ¹ Missouri State Univ.

130.06 Mid-Infrared Studies of the Variability of the Dustiest, Most Extreme Asymptotic Giant Branch Stars in the Magellanic Clouds
Author(s): Benjamin A. Sargent¹, Margaret Meixner¹, Olivia Jones¹
Institution(s): ¹ Space Telescope Science Institute

131 Cool Stars I
Wednesday, 2:00 pm - 3:30 pm; Grapevine 1
Chair: Sergio Dieterich (Georgia State University)

131.01D Calibrating the Age-Rotation-Activity Relation in Low-Mass Stars: Chromospheric and Coronal Activity in the 500 Myr-old M37 Open Cluster
Author(s): Alejandro Núñez¹, Marcel A. Agueros¹
Institution(s): ¹ Columbia University

131.02D Open clusters as laboratories for stellar spin-down and magnetic activity decay
Author(s): Stephanie Douglas¹, Marcel A. Agueros¹, Kevin R. Covey²
Institution(s): ¹ Columbia University, ² Western Washington University

131.03 The rotation-activity relation in M dwarfs
Author(s): Elisabeth R. Newton², Jonathan Irwin³, David Charbonneau¹, Perry L. Berlind¹, Michael L. Calkins¹, Jessica D. Mink¹
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics, ² Massachusetts Institute of Technology
131.04  Know the Planet, Know the Star: Precise Stellar Parameters with Kepler
Author(s): Emily Sandford1, David M. Kipping1
Institution(s): 1 Columbia University

131.05D The Ages of A-Stars: Interferometric Observations of Our Brightest Neighbors
Author(s): Jeremy Jones2, Russel J. White2, Tabetha S. Boyajian4, Gail Schaefer2,
Ellyn K. Baines5, Michael Ireland1, Samuel N. Quinn3
Institution(s): 2 Australian National University, 2 Georgia State University,
3 Harvard, 4 Louisiana State University, 5 Naval Research Laboratory
Contributing team(s): The CHARA Team

132 CO-HI Observations of Galaxies
Wednesday, 2:00 pm - 3:30 pm; Grapevine 2
Chair: Barry Welsh (UC, Berkeley)

132.01 ALMA Reveals Large Molecular Gas Reservoirs in Ancestors of Milky Way-Mass
Galaxies at z=1.2-1.3
Author(s): Casey J. Papovich5, Ivo Labbe1, Karl Glazebrook4, Ryan Quadri3,
Georgios Bekiaris4, Mark Dickinson3, Steven L. Finkelstein6, David B. Fisher4,
Hanae Inami3, Rachael C. Livermore6, Lee Spitler2, Caroline Straatman3, Kim-Vy Tran5
Institution(s): 1 Leiden Observatory, 2 Macquarie University, 3 NOAO,
4 Swinburne, 5 Texas AandM University, 6 University of Texas at Austin

132.02 GBT CO observations of two ACT dusty star-forming galaxies
Author(s): Jesus Rivera6, Andrew J. Baker4, Grant Wilson9, Min Su Yun9, David
T. Frayer1, Andrew I. Harris8, Tobias Marriage2, Megan Gralla5, Ting Su2, Itziar
Aretxaga1, Kirsten Hall2, David Hughes1, John Patrick Hughes4, Charles R.
Keeton4, Felipe Menanteau4, Alfredo Montana1, Amitpal Tagore3, Yaping Tang9
Institution(s): 1 Instituto Nacional de Astrofisica, Optica y Electronica, 2 Johns
Hopkins, 3 NRAO, 4 Rutgers, the State University of New Jersey, 5 University
of Arizona, 6 University of Illinois at Urbana-Champaign, 7 University of
Manchester, 8 University of Maryland, 9 University of Massachusetts at Amherst
Contributing team(s): Atacama Cosmology Telescope team

132.03 Initial HI results from the Arecibo Pisces-Perseus Supercluster Survey
Author(s): David W Craig6, Cory Davis5, Cory Johnson6, Rebecca A. Koopmann4,
Michael G Jones1, Gregory L Hallenbeck1, Aileen A. O'Donoghue3, Martha P.
Haynes1, Riccardo Giovanelli1, Jessica L. Rosenberg2, Aparna Venkatesan6
Institution(s): 1 Cornell University, 2 George Mason University, 3 St. Lawrence
University, 4 Union College, 5 University of San Francisco, 6 West Texas A&M
University
Contributing team(s): Undergraduate ALFALFA Team
132.04D Using the Greenbank Telescope with Gravitational Lensing and the VLA to search for HI Beyond $z=0.25$
Author(s): Lucas Hunt$^1$, Daniel J. Pisano$^2$, Steve Crawford$^1$
Institution(s): $^1$ South African Astronomical Observatory, $^2$ West Virginia University
Contributing team(s): CHILES

132.05 Mapping Diffuse HI Content in MHONGOSE Galaxies NGC 1744 and NGC 7424
Author(s): Amy Sardone$^1$, Daniel J. Pisano$^1$, Nickolas Pingel$^1$
Institution(s): $^1$ West Virginia University

132.06D (Almost) Dark Galaxies in the ALFALFA Survey: HI-bearing Ultra-Diffuse Galaxies, and Beyond
Author(s): Luke Leisman$^1$, Martha P. Haynes$^1$, Riccardo Giovanelli$^1$
Institution(s): $^1$ Cornell University
Contributing team(s): The ALFALFA Almost Darks Team

132.07 Characterizing source confusion in HI spectral line stacking experiments
Author(s): Andrew J. Baker$^1$, Edward C Elson$^2$, Sarah Blyth$^2$
Institution(s): $^1$ Rutgers, the State University of NJ, $^2$ University of Cape Town

133 Dust & Magnetic Fields

Wednesday, 2:00 pm - 3:30 pm; Fort Worth 6
Chair: Alex Lazarian (Univ. of Wisconsin)

133.01D Magnetic Fields in the Interstellar Medium
Author(s): Susan Clark$^1$
Institution(s): $^1$ Columbia University

133.02 Dust Grain Alignment and Magnetic Field Strength in the Wall of the Local Bubble
Author(s): B-G Andersson$^2$, Ilija Medan$^1$
Institution(s): $^1$ Dept. of Physics, Santa Clara University, $^2$ SOFIA Science Center

133.03D Characterizing Dust Attenuation in Local Star Forming Galaxies
Author(s): Andrew Battisti$^2$, Daniela Calzetti$^2$, Ranga-Ram Chary$^1$
Institution(s): $^1$ Caltech, $^2$ University of Massachusetts at Amherst

133.04 PAH 8μm Emission as a Diagnostic of HII Region Optical Depth
Author(s): M. S. Oey$^6$, J. Lopez-Hernandez$^4$, J. A. Kellar$^4$, E. W. Pellegrini$^5$, Karl D. Gordon$^3$, Katherine Jameson$^7$, Aigen Li$^9$, Suzanne C. Madden$^1$, Margaret Meixner$^1$, Julia Roman-Duval$^3$, Caroline Bot$^2$, Monica Rubio$^4$, A. G. G. M. Tielens$^6$
Institution(s): $^1$ CEA, Univ. de Paris, $^2$ Observatoire de Strasbourg, $^3$ STScI, $^4$ Univ. de Chile, $^5$ Univ. Heidelberg, $^6$ Univ. Leiden, $^7$ Univ. of Maryland, $^8$ Univ. of Michigan, $^9$ Univ. of Missouri
133.05D The First Observation of the Submillimeter Polarization Spectrum in a Low-AV Molecular Cloud

Author(s): Peter Campbell Ashton¹³, Peter Ade³, Francesco E Angilè¹⁹, Steven J Benton¹⁴, Mark J. Devlin¹⁹, Bradley Dober¹¹, Laura M. Fissel¹², Yasuo Fukui⁸, Nicholas Galitzki¹⁷, Natalie Gandilo⁷, Jeffrey Klein¹⁹, Zhi-Yun Li¹⁵, Andrei Korotkov¹, Peter G. Martin²⁰, Tristan Matthews¹³, Lorenzo Moncelsi², fumitaka nakamura¹⁰, Calvin Barth Netterfield²⁰, Giles Novak¹³, Enzo Pascale¹, Frédérick Poidevin⁶, Fabio P. Santos¹⁵, Giorgio Savini¹⁵, Douglas Scott¹⁶, Jamil Shariff⁴, Juan D. Soler⁴, Nicholas Thomas⁹, carole tucker³, Gregory S. Tucker¹, Derek Ward-Thompson¹⁸

Institution(s): ¹ Brown University, ² California Institute of Technology, ³ Cardiff University, ⁴ Case Western Reserve University, ⁵ Institut d’Astrophysique Spatiale, ⁶ Instituto de Astrofisica de Canarias, ⁷ Johns Hopkins University, ⁸ Nagoya University, ⁹ NASA Goddard Space Flight Center, ¹⁰ National Astronomical Observatory of Japan, ¹¹ National Institute of Standards and Technology, ¹² National Radio Astronomy Observatory, ¹³ Northwestern University, ¹⁴ Princeton University, ¹⁵ University College London, ¹⁶ University of British Columbia, ¹⁷ University of California - San Diego, ¹⁸ University of Central Lancashire, ¹⁹ University of Pennsylvania, ²⁰ University of Toronto, ²¹ University of Virginia

Contributing team(s): BLASTPol

133.06 BLAST-TNG: A Next Generation Balloon-borne Large Aperture Submillimeter Polarimeter

Author(s): Laura M. Fissel⁷, Peter Ade³, Francesco E Angilè¹⁴, Peter Campbell Ashton⁹, Jason Edward Austermann⁶, Tashalee Billings¹⁴, George Che¹, Hsiao-Mei Cho⁶, Maria R Cunningham¹³, Kristina Davis¹, Mark J. Devlin¹⁹, Simon Dicker¹⁴, Bradley Dober⁶, Yasuo Fukui⁸, Nicholas Galitzki¹², jiansong gao⁶, Sam Gordon¹, Christopher E. Groppi¹, Seth Hillbrand¹¹, Gene Hilton¹, Hannes Hubmayr⁷, Kent Irwin⁹, Paul Jones¹³, Jeffrey Klein¹⁴, dale li⁶, Zhi-Yun Li¹⁵, nathan lourie¹⁴, Ian Lowe¹⁴, Hamdi Mani³, Peter G. Martin², Philip Mauskopf¹, Christopher McKenney⁶, Federico Nati¹⁴, Giles Novak⁶, Enzo Pascale¹, giampaolo pisano³, Fábio Pereira Santos⁶, Douglas Scott¹⁰, Adrian Sinclair¹, Juan Diego Diego Soler⁴, carole tucker³, Matthew Underhill¹, Michael Vissers⁶, Paul Williams⁸

Institution(s): ¹ Arizona State University, ² Canadian Institute for Theoretical Astrophysics, ³ Cardiff University, ⁴ Institute d’Astrophysique Spatiale, ⁵ Nagoya University, ⁶ National Institute of Standards and Technology, ⁷ National Radio Astronomy Observatory, ⁸ Northwestern University, ⁹ Stanford University, ¹⁰ University of British Columbia, ¹¹ University of California Davis, ¹² University of California San Diego, ¹³ University of New South Wales, ¹⁴ University of Pennsylvania, ¹⁵ University of Virginia
134 Structure of the Milky Way, & Stellar Astrometry

Wednesday, 2:00 pm - 3:30 pm; Dallas 6
Chair: Breann Sitarski (UCLA)

134.02D Mapping Milky Way Halo Structure with Blue Horizontal Branch Stars
Author(s): Charles Martin\textsuperscript{2}, Heidi Jo Newberg\textsuperscript{2}, Jeffrey L. Carlin\textsuperscript{1}
Institution(s): \textsuperscript{1} LSST & Steward Observatory, \textsuperscript{2} Rensselaer Polytechnic Institute

134.03 The First Mass Function and Rise of Carbon in the Early Universe
Author(s): Kaitlin Rasmussen\textsuperscript{1}, Timothy C. Beers\textsuperscript{1}, Vinicius M Placco\textsuperscript{1}, Jinmi Yoon\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Notre Dame

134.04D Bayesian Mass Estimates of the Milky Way: Inferring the Mass Profile from Globular Cluster Kinematics
Author(s): Gwendolyn Eadie\textsuperscript{1}, William E. Harris\textsuperscript{1}, Aaron Springford\textsuperscript{2}, Larry Widrow\textsuperscript{1}
Institution(s): \textsuperscript{1} McMaster University, \textsuperscript{2} Queen's University

134.05 Constraining the mass of single stars from HST astrometric microlensing measurements
Author(s): Noé Kains\textsuperscript{2}, Kailash C. Sahu\textsuperscript{2}, Stefano Casertano\textsuperscript{2}, Jay Anderson\textsuperscript{2}, Annalisa Calamida\textsuperscript{1}
Institution(s): \textsuperscript{1} NOAO, \textsuperscript{2} Space Telescope Science Institute
Contributing team(s): The OGLE collaboration

134.06 Estimating distances from parallaxes
Author(s): Tri L. Astraatmadja\textsuperscript{1}, Coryn Bailer-Jones\textsuperscript{2}
Institution(s): \textsuperscript{1} Department of Terrestrial Magnetism, Carnegie Institution for Science, \textsuperscript{2} Max Planck Institute for Astronomy

134.07 Beta Dips in the Gaia Era: Simulation Predictions of the Galactic Velocity Anisotropy Parameter (β)
Author(s): Sarah Loebman\textsuperscript{4}, Monica Valluri\textsuperscript{4}, Kohei Hattori\textsuperscript{4}, Victor P. Debattista\textsuperscript{2}, Eric F. Bell\textsuperscript{1}, Greg Stinson\textsuperscript{3}, Charlotte Christensen\textsuperscript{1}, Alyson Brooks\textsuperscript{1}, Thomas R. Quinn\textsuperscript{5}, Fabio Governato\textsuperscript{5}
Institution(s): \textsuperscript{1} Grinnell College, \textsuperscript{2} Jeremiah Horrocks Institute, University of Central Lancashire, \textsuperscript{3} Rutgers University, \textsuperscript{4} University of Michigan, \textsuperscript{5} University of Washington
WEDNESDAY, 4 JANUARY 2017

135 Plenary Session: Henry Norris Russell Lectureship: How Stars Form, Christopher McKee (University of California, Berkeley)

Wednesday, 3:40 pm - 4:30 pm; Texas A
Chair: Christine Jones (Harvard-Smithsonian, CfA)

135.01 How Stars Form
Author(s): Christopher F. McKee
Institution(s): 1. UC, Berkeley

Citation: For his innovative ideas, powerful theoretical insights, and practical models that have had significant impact on many areas of astrophysics. The prize committee specifically noted McKee’s research on the interstellar medium and star formation as well as his leadership in the university community and nationally through the astronomy decadal surveys.

136 Racism = Prejudice + Power: A Discussion of Racism in the Field of Astronomy

Wednesday, 4:30 pm - 5:30 pm; Texas A

The daily news cycle reminds us that racism is alive and well in the United States: police violence against persons of color, racial profiling at borders and airports, anti-muslim and anti-immigrant rhetoric by presidential candidates are common headlines. What may be surprising and hard to accept by many astronomers is that racism is also entrenched in our own scientific community. Racial discrimination in graduate admissions, closures of research programs and Astronomy departments at minority-serving institutions, lack of scholarship funding for immigrants, and demeaning language directed toward indigenous groups opposed to astronomical development on sacred sites are all examples of endemic racism in astronomy. But what exactly is racism? How does it manifest itself? How do we talk about it? And how do we eliminate it from our community? Drawing on the work done and lessons learned during the 2015 Inclusive Astronomy meeting, this session aims to educate astronomers on race and racism, their equivalence to power dynamics and white privilege, and what (primarily white) astronomers in power can do to recognize and dismantle racism at our institutions and communities. The session will include a panel of astronomers and social scientists with expertise in racism and racialized power dynamics, followed by a moderated discussion. Given the sensitive nature of the subject matter, participants will be asked to adhere to specific ground rules for the discussion, including sharing the air, being conscientious of power dynamics, using "both/and" rather than "either/or" language, leaning into discomfort, speaking to their own experience, focusing on the message rather than the messenger, and identifying and acknowledging harmful speech ("oops, ouch"). We will ask that the discussion be confidential ("What's said here stays here; what's learned here leaves here") to permit a safe space to do this challenging but essential work.

Organizer(s): Adam Burgasser (UC San Diego)
Career Hour 1: Leveraging Social Media for Networking and Career Advancement

Wednesday, 5:30 pm - 6:30 pm; San Antonio 1

More and more recruiters, job decision-makers and hiring managers are using the web to find and research potential candidates. How can you make sure that you are not only found, but are ahead of the pack? In this session, we will discuss how decision-makers use LinkedIn and Facebook, and how you can use LinkedIn to establish yourself as a leader in your field, enhance your research reputation, and seek out and take advantage of innovative opportunities. We will demonstrate how to optimize your presence on Twitter, and create a winning LinkedIn profile, and how to use its multitude of features (such as joining and commenting in groups) to generate solid leads for your career.

Organizer(s): AAS Employment Committee (AAS)
137 New, Fundamental, Cutting-Edge Science from Arecibo Observatory Poster Session

Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

137.01 Characterization of HI Filaments
Author(s): Emily Lubar$^2$, Gerrit L. Verschuur$^1$
Institution(s): $^1$ Arecibo Observatory, $^2$ The Evergreen State College

137.02 The NANOGrav Eleven-Year Data Set: High-precision timing of 48 Millisecond Pulsars
Author(s): David J. Nice$^1$
Institution(s): $^2$ Lafayette College
Contributing team(s): NANOGrav

137.03 The NSF Undergraduate ALFALFA Team: Partnering with Arecibo Observatory to Offer Undergraduate and Faculty Extragalactic Radio Astronomy Research Opportunities
Author(s): Joseph Ribaudo$^{19}$, Rebecca A. Koopmann$^{14}$, Martha P. Haynes$^3$, Thomas J. Balonek$^1$, John M. Cannon$^7$, Kimberly A. Coble$^8$, David W Craig$^{20}$, Grant R. Denn$^5$, Adriana Durbala$^{16}$, Rose Finn$^{10}$, Gregory L Hallenbeck$^{14}$, G. Lyle Hoffman$^6$, Mayra E. Lebron$^{15}$, Brendan P. Miller$^1$, Mary Crone-Odekon$^{13}$, Aileen A. O’Donoghue$^8$, Ronald Paul Olowin$^{13}$, Carmen Pantoja$^{15}$, Daniel J. Pisano$^{21}$, Jessica L. Rosenberg$^3$, Parker Troischt$^3$, Aparna Venkatesan$^{16}$, Eric M. Wilcots$^{17}$
Institution(s): $^1$ Colgate University, $^2$ College of St. Scholastica, $^3$ Cornell University, $^4$ George Mason University, $^5$ Hartwick College, $^6$ Lafayette College, $^7$ Macalester College, $^8$ Metropolitan State University of Denver, $^9$ San Francisco State University, $^{10}$ Siena College, $^{11}$ Skidmore College, $^{12}$ St. Lawrence University, $^{13}$ St. Mary’s College of California, $^{14}$ Union College, $^{15}$ University of Puerto Rico, $^{16}$ University of San Francisco, $^{17}$ University of Wisconsin, $^{18}$ University of Wisconsin Stevens Point, $^{19}$ Utica College, $^{20}$ West Texas A&M University, $^{21}$ West Virginia University
Contributing team(s): ALFALFA Team

137.04 The Arecibo Environment Galaxy Survey: The NGC 2577/UGC 4375-galaxy pair
Author(s): Ashley Ann Iguina$^2$, Robert F. Minchin$^1$
Institution(s): $^1$ Arecibo Observatory, $^2$ Wellesley College

137.05 Improving Arecibo Observatory's Hardware
Author(s): Paula Van Rooy$^4$, Dana Whitlow$^1$, Andrew Seymour$^1$
Institution(s): $^1$ Arecibo Observatory

137.06 Monitoring the Remarkable Radio Spectral-Line/Continuum Outburst in Galaxy NGC 660
Author(s): Christopher J. Salter$^1$, Tapasi Ghosh$^1$, Robert F. Minchin$^1$, Emmanuel Momjian$^2$
Institution(s): $^1$ NAIC, Arecibo Observatory, $^2$ NRAO
WEDNESDAY, 4 JANUARY 2017

137.07 Correcting the Redshift Measurement of 4C15.05 Using Neutral Hydrogen
Author(s): Kristen M. Jones¹, Tapasi Ghosh¹, Christopher J. Salter¹
Institution(s): ¹ Arecibo Observatory

137.08 Detected Galaxies and Large Scale Structure in the Arecibo L-band Feed Array Zone of Avoidance Survey (ALFAZOA)
Author(s): Patricia A. Henning¹⁰, Monica Sanchez-Barrantes¹⁰, Travis McIntyre⁵, Robert F. Minchin⁴, Emmanuel Momjian⁶, Zhon Butcher⁹, Jessica L. Rosenberg², Stephen E. Schneider⁹, Lister Staveley-Smith³, Wim van Driel⁷, Mpati Ramatsoku⁸, Baerbel Koribalski¹, Brady Spears¹⁰
Institution(s): ¹ CSIRO, ² George Mason Univ., ³ ICRAR, ⁴ NAIC, ⁵ NM LFC, ⁶ NRAO, ⁷ Observatoire Paris-Site de Meudon, ⁸ U. Groningen, ⁹ Univ. of Massachusetts, ¹⁰ Univ. of New Mexico

138 Astrobiology Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

138.01 Glycolaldehyde and Ethylene Glycol on Nearly Isotropic Comets
Author(s): Jayden Butler¹, Nicolle Zellner¹, Vanessa McCaffrey¹
Institution(s): ¹ Albion College

138.02 Using Lunar Impact Glasses to Inform the Amount of Organic Material Delivered to the Early Earth
Author(s): Pham Nguyen², Nicolle Zellner¹
Institution(s): ¹ Albion College, ² Michigan State University

138.04 MISE: A Search for Organics on Europa
Author(s): Kelly Whalen¹, Jonathan I. Lunine¹, Diana L. Blaney³
Institution(s): ¹ Cornell University, ² JPL

138.05 How Mathematics Describes Life
Author(s): Abraham Teklu¹
Institution(s): ¹ Oregon State University

138.06 Cosmogenic Secondary Radiation from a Nearby Supernova
Author(s): Andrew Overholt¹
Institution(s): ¹ MidAmerica Nazarene University

139 Laboratory Astrophysics Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

139.01 Improved Cr II log(gf)s and Cr Abundances in the Photospheres of the Sun and Metal-Poor Star HD 84937
Author(s): James E. Lawler⁴, Chris Sneden⁴, Gillian Nave¹, Elizabeth Den Hartog⁴, Nuri Emrahoglu⁴, John J. Cowan²
Institution(s): ¹ NIST, ² University of Oklahoma, ³ University of Texas, ⁴ University of Wisconsin
139.02 Astrochemistry at the Cryogenic Storage Ring  
Author(s): Holger Kreckel, Arno Becker, Klaus Blaum, Christian Breitenfeldt, Sebastian George, Jürgen Göck, Manfred Grieser, Florian Grussie, Elisabeth Guerin, Oded Heber, Jonas Karthein, Claude Krantz, Christian Meyer, Preeti Mishra, Oldrich Novotny, Aodh O’Connor, Sunny Saurabh, Stefan Schippers, Kaija Spruck, S. Sunil Kumar, Xavier Urbain, Stephen Vogel, Robert von Hahn, Patrick Wilhelm, Andreas Wolf, Daniel Zajfman  
Institution(s): 1. I. Physics Institute, Justus-Liebig-University Giessen, 2. Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, 3. Max Planck Institute for Nuclear Physics, 4. Weizmann Institute of Science

139.03 Experimentally Determined Binding Energies of Astrophysically Relevant Hydrocarbons in Pure and H2O-Layered Ices  
Author(s): Aida Behmard, Dawn Graninger, Edith Fayolle, Karin I. Oberg  
Institution(s): 1. Harvard-Smithsonian Center for Astrophysics, 2. Princeton University

139.04 Investigating Cosmic Analog Dusts in the Lab at MM/Sub-MM Wavelength  
Author(s): Lunjun Liu, Kyle O’Shea, Fiona Breyer, Ronan Dorsey, Hansheng Chen, Thushara Perera  
Institution(s): 1. Illinois Wesleyan University, 2. Michigan State University

140 Preparing for, & Engaging in, the 2017 Solar Eclipse Poster Session

Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

140.01 Celebrating the Eighth Annual International Observe the Moon Night and Supporting the 2017 Solar Eclipse  
Author(s): Sanlyn Buxner, Andrea Jones, Lora Bleacher, Andy Shaner, Matthew Wenger, Maya Bakerman, Emily Joseph, Brian Day, Vivian White  
Contributing team(s): InOMN Coordinating Committee

140.02 Update on the Citizen CATE Experiment: Indonesia to 2017  
Author(s): Myles McKay, Matt Penn, Robert Baer, Robert Bosh, David Garrison, Richard Gelderman, Honor Hare, Fred Isberner, Logan Jensen, Sarah Kovac, Adriana Mitchell, Michael Pierce, Patricia Thompson, Andrei Ursaché, John R. Varsik, Donald K. Walter, Zachary Watson, David T. Young  
Contributing team(s): The Citizen CATE Team
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140.03 There's An App For That: Planning Ahead for the Solar Eclipse in August 2017
Author(s): Malynda R. Chizek Frouard¹, Michael V. Lesniak², Steve Bell¹
Institution(s): ¹ Her Majesty's Nautical Almanac Office, ² US Naval Observatory

140.04 Eclipse '17 at Indiana University Bloomington
Author(s): Karna Mahadev Desai¹, Catherine A. Pilachowski¹
Institution(s): ¹ Indiana University Bloomington

140.05 Observing the 2017 Total Solar Eclipse from the Pisgah Astronomical Research Institute
Author(s): Sean Matthew Kirwan¹, J. Donald Cline¹, Mark Krochmal¹
Institution(s): ¹ Pisgah Astronomical Research Institute
Contributing team(s): Donald Cline, Mark Krochmal

140.06 The 2017 solar eclipse and Majorana & Allais gravity anomalies
Author(s): Hector A Munera¹
Institution(s): ¹ International Center for Physics CIF

141 Relativistic Astrophysics, Gravitational Lenses & Waves Poster Session

Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

141.01 Microlensing Events in Gaia and other Astrometric Surveys
Author(s): Claire Baker², Rosanne Di Stefano², Sebastien Lepine¹
Institution(s): ¹ Georgia State University, ² Smithsonian Astrophysical Observatory

141.02 Exploring Parameter Space Coverage of Various LISA Configurations
Author(s): Michael L Katz¹
Institution(s): ¹ Northwestern University

141.03 Gravitational Wave Detection of Compact Binaries Through Multivariate Analysis
Author(s): Dany Victor Atallah¹, Iain Dorrington², Patrick Sutton²
Institution(s): ¹ California State University Long Beach, ² Cardiff University

141.04 A unified relativistic treatment of tidal disruption by a Schwarzschild black hole
Author(s): Juan Edgardo Servin¹, Michael Kesden¹
Institution(s): ¹ University of Texas at Dallas

141.05 Multi-Messenger Astronomy: White Dwarf Binaries, LISA and GAIA
Author(s): Michael Bueno², Katelyn Breivik¹, Shane L. Larson¹
Institution(s): ¹ CIERA, Northwestern University, ² Haverford College

141.06 Studying Variance in the Galactic Ultra-compact Binary Population
Author(s): Shane L. Larson¹, Katelyn Breivik¹
Institution(s): ¹ Northwestern

141.07 Geometry of Superluminal Light-Echo Pair Events
Author(s): Robert J. Nemiroff¹
Institution(s): ¹ Michigan Technological Univ.
The Effects of Physically Unrelated Near Neighbors on the Galaxy-Galaxy Lensing Signal
Author(s): Tereasa G. Brainerd
Institution(s): Boston Univ.

The UV Luminosity Function at 6 < z < 10 from the Hubble Frontier Fields
Author(s): Rachael C. Livermore, Steven L. Finkelstein, Jennifer M. Lotz
Institution(s): Space Telescope Science Institute, University of Texas at Austin

142 The Milky Way, The Galactic Center Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

An Enigmatic Variable Star in the Backyard of Sagittarius A
Author(s): Christopher O’Connor, Abhimat Gautam, Tuan Do, Andrea M. Ghez, Shoko Sakai, Mark Morris, Jessica R. Lu, Gunther Witzel, Breann Sitarski, Samantha Chappell
Institution(s): University of California, Berkeley, University of California, Los Angeles

Observable Priors: Limiting Biases in Estimated Parameters for Incomplete Orbits
Author(s): Kelly Kosmo, Gregory Martinez, Aurelien Hees, Gunther Witzel, Andrea M. Ghez, Tuan Do, Breann Sitarski, Devin Chu, Arezu Dehghanfar
Institution(s): UCLA

HI Clouds Near the Galactic Center: Possible Tracers of the Nuclear Wind
Author(s): Felix J. Lockman, Naomi McClure-Griffiths, Enrico DiTeodoro
Institution(s): Australian National University, Green Bank Observatory

Probing Magnetized Turbulence in the Fermi Bubbles
Author(s): Kelsey Lund, Christopher A. Hales, Meng Su
Institution(s): Hong Kong University, NRAO, University of California San Diego

A Detailed Analysis of the Physical Conditions in the Infrared Dark Clouds in the Region IGGC 16/23
Author(s): Samantha Scibelli, Volker Tolls
Institution(s): Harvard-Smithsonian Center for Astrophysics, Stony Brook University

On the claimed X-shaped structure in the Milky Way bulge
Author(s): Daniel Han, Young-Wook Lee
Institution(s): Yonsei University

The Dynamics of Molecular Clouds in the Galactic Bar Region on the Near-Side of the CMZ
Author(s): Volker Tolls, Howard Alan Smith
Institution(s): Harvard-Smithsonian, CfA
Contributing team(s): HIGGS Team
142.09  Hunting for accretors towards the bulge with the Chandra and Hubble Space Telescopes
Author(s): Brittany Howard, Emily Aufdemberge, JaeSub Hong, William I. Clarkson, Maureen Van Den Berg, Kailash C. Sahu, Jonanthan Grindlay, Robert Michael Rich, Annalisa Calamida

142.10  Distance to the High-Latitude Molecular Cloud MBM 37 (LDN 183)
Author(s): Richard P. Boyle, Robert Janusz, Vytautas Straizys, Christopher J. Corbally, Ulisse Munari, B-G Andersson, Justas Zdanavicius, Marius Maskoliunas, Algirdas Kazlauskas

142.12  Smith’s Cloud: No chemistry but we did find some of the Milky Way’s Missing Baryons
Author(s): Anthony Howard Minter
Institution(s): 1. Green Bank Observatory

142.13  Age-Metallicity Relationships Across the Milky Way Galaxy with APOGEE
Author(s): Colton Casados-Medve, Jonathan C. Bird
Institution(s): 1. University of Denver, 2. Vanderbilt University
Contributing team(s): APOGEE Team (Sloan Digital Sky Survey)

142.14  Local Velocity Substructure in the Milky Way Disk
Author(s): Alan Pearl, Heidi Jo Newberg, Jeffrey L. Carlin, R. Fiona Smith
Institution(s): 1. LSST and Steward Observatory, 2. Rensselaer Polytechnic Institute

142.15  Halo Substructure Towards the Galactic Center
Author(s): Paul Martin Amy, Charles Martin, Heidi Jo Newberg, Siddartha Shelton, Jeffrey L. Carlin, Benjamin A. Willett
Institution(s): 1. LSST and Steward Observatory, 2. Rensselaer Polytechnic Institute

142.16  Better Galactic mass models through chemistry
Author(s): Robyn Ellyn Sanderson, Andrew Wetzel, Philip F. Hopkins, Sanjib Sharma
Institution(s): 1. Caltech, 2. University of Sydney

142.17  Structures in the Milky Way’s Halo System using the Age Distribution of Field Horizontal-Branch Stars
Author(s): Geoffrey Lentner, Timothy C. Beers, Vinicius M Placco, Daniela Carollo, Deven Whitten, Pavel Denissenkov, Rafael Santucci, Silvia Rossi
Institution(s): 1. University of Notre Dame, 2. University of Sao Paulo, 3. University of Victoria

142.18  Identifying CEMP-s and CEMP-no Stars within Milky Way Halo Structures
Author(s): Sarah Eliana Dietz, Timothy C. Beers, Daniela Carollo, Jinmi Yoon, Vinicius M Placco
Institution(s): 1. University of Notre Dame
142.19 Keck Spectroscopy of NGVS Sources: Milky Way Halo Star Kinematics
Author(s): Hao Zhang¹, Puragra Guhathakurta², Eric W Peng¹, Elisa Toloba³
Institution(s): ¹ Peking University, ² University of California, Santa Cruz
Contributing team(s): Next Generation Virgo Cluster Survey (NGVS) Collaboration

142.20 The WFIRST view of the distant stellar halo
Author(s): Amy Secunda¹, Robyn Ellyn Sanderson¹, Kathryn V. Johnston¹, Sanjib Sharma²
Institution(s): ¹ Columbia University, ² University of Sydney

143 Elliptical Galaxies Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

143.01 The Origin of Isolated Early-Type Galaxies: A Multiwavelength Study of Three Systems
Author(s): Michael N. Fanelli¹, Pamela M. Marcum¹, Trisha L. Ashley¹, Christopher R. Fuse³, Heather O’Toole Appleby³
Institution(s): ¹ NASA Ames Research Center, ² Richland College, ³ Rollins College

143.02 Early type galaxies, i.e. ellipticals and lenticulars, are generally considered to be largely devoid of cool gas and associated dust
Author(s): Joel Travis Stadler¹, Ralf C. Kotulla², John S. Gallagher²
Institution(s): ¹ North Carolina A&T, ² University of Wisconsin

143.03 Examining the X-ray Properties of Lenticular Galaxies: Rollins S0 X-ray Sample (RS0X)
Author(s): Christopher R. Fuse¹, Alysa Malespina¹
Institution(s): ¹ Rollins College

143.04 HST Infrared Imaging of MASSIVE Survey Galaxies
Author(s): Joseph B. Jensen², Charles Goullaud⁴, John Blakeslee³, Casey Mitchiner⁵, Chung-Pei Ma⁴, Jenny E. Greene³, Nicholas J. McConnell¹, Jens Thomas¹
Institution(s): ¹ Herzberg Astrophysics, ² Max Planck Institute, ³ Princeton University, ⁴ UC Berkeley, ⁵ Utah Valley University

143.05 A New Distance Measurement to NGC 4874 in the Coma Cluster
Author(s): Crystal-Lynn Bartier², Joseph Jensen², John Blakeslee³
Institution(s): ¹ Herzberg Astronomy & Astrophysics, ² Utah Valley University

144 Spiral Galaxies Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

144.01 Star Formation in MUSCEL Galaxies
Author(s): Jason Young¹, Rachel Kuzio de Naray², Sharon Xuesong Wang³
Institution(s): ¹ Carnegie DTM, ² Georgia State University, ³ Mount Holyoke College
144.02 Kinematics of MUSCEL Galaxies
Author(s): Rachel Kuzio de Naray², Jason Young³, Sharon Wang¹
Institution(s): ¹ Carnegie DTM, ² Georgia State University, ³ Mount Holyoke

144.03 New Photometric and Kinematic Evidence for a Bar in NGC 2841
Author(s): Wesley Peters¹, Rachel Kuzio de Naray³
Institution(s): ¹ Georgia State University

144.04 Improving Stellar Velocity Dispersion Measurements in Barred Spiral Galaxies With Supermassive Black Holes
Author(s): Benjamin Dittenber³, Monica Valluri³
Institution(s): ¹ University of Michigan

144.05 Gravitational Instability of Nuclear Rings in Barred Galaxies
Author(s): Woong-Tae Kim¹, Sanghyuk Moon³
Institution(s): ¹ Seoul National Univ.

144.06 EVN VLBI Imaging of the Jet in the Nucleus of the Barred Spiral Galaxy NGC 7479
Author(s): Seppo J. Laine¹, Emmanuel Momjian³, Thomas Krichbaum², Rainer Beck², S. Komossa²
Institution(s): ¹ Caltech, ² MPIfR, ³ NRAO

144.07 Determining the Co-Rotation Radius of Nearby Spiral Galaxies Using Spiral Arm Overlays
Author(s): Mohamed Shameer Abdeen¹, Daniel Kennefick¹, Julia D. Kennefick¹, Hamed Pour Imani³, Douglas W Shields¹, Rafael Eufrasio¹, Jazmin Berlanga Medina¹, Erik Monson¹
Institution(s): ¹ Department of Physics, University of Arkansas

144.08 The Spiral Arm Pattern Speed for Different Components of the Interstellar Medium in NGC 3184
Author(s): Jacob Lichtenberg¹, Jason Speights¹
Institution(s): ¹ Frostburg State University

144.09 Time Variability and Luminosity of X-ray Sources of Face-on Spiral Galaxy NGC 1232
Author(s): Oscar Cantua¹, Tyler Rucas¹, Pranjal Singh¹, Eric M. Schlegel¹
Institution(s): ¹ The University of Texas at San Antonio

144.10 Chandra ACIS Observations of the Nearby Spiral Galaxy NGC 300
Author(s): Dale Bobar¹, Kevin Turner¹, Eric M. Schlegel¹
Institution(s): ¹ University of Texas at San Antonio

144.11 The Extent of Hot Gaseous Galaxy Halos
Author(s): Joel N. Bregman², Michael E. Anderson³, Edmund J. Hodges-Kluck², Matthew J. Miller², Xinyu Dai³
Institution(s): ² Max Planck Institute of Astrophysics, ³ Univ. of Michigan, ³ University of Oklahoma

144.12 A Chandra Observation of the Face-on Spiral Galaxy NGC 3938
Author(s): Kelsey Buhidar¹, Eric M. Schlegel¹
Institution(s): ¹ University of Texas at San Antonio
144.13 Properties of Extended X-ray Halos Around Spiral Galaxies
Author(s): Florence Concepcion Mairey
Institution(s): 1 Harvard-Smithsonian Center for Astrophysics

144.14 Observational Confirmations of Spiral Density Wave Theory
Author(s): Julia D. Kennefick, Daniel Kennefick, Mohamed Shameer Abdeen, Joel Berrier, Benjamin Davis, Michael Fusco, Hamed Pour Imani, Doug Shields
Institution(s): 1 Swinburne University of Technology, 2 University of Arkansas - Fayetteville, 3 University of Nebraska
Contributing team(s): DMS, SINGS

144.15 UGC 4599: Revealing the Extended Structure of a Hoag’s Object Analog with HERON
Author(s): Michael Fusco, David A. Thilker, Fufang Wen, Junjie Xia, Stephen Storment, Noah Brosch, Francis Longstaff, Julia D. Kennefick, Robert Michael Rich
Institution(s): 1 Johns Hopkins University, 2 Tel Aviv University, 3 University of California, Los Angeles
Contributing team(s): The Halos and Environments of Nearby galaxies (HERON) team

144.16 Updated Photometry for the SINGS/KINGFISH Samples of Nearby Galaxies
Author(s): Daniel A. Dale
Institution(s): 1 Univ. of Wyoming
Contributing team(s): SINGS, KINGFISH

144.17 Dust lanes in backlit galaxies: first results from the STARS MOG survey
Author(s): William C. Keel, Sarah Bradford, Benne Holwerda, Christopher Conselice, Ivan Baldry, Jonathan Bland-Hawthorn, Simon P Driver, Loretta Dunne, Jochen Liske, Aaron Robotham, Richard Tuffs
Institution(s): 1 ICRAR, 2 Liverpool John Moores U., 3 MPIA, 4 MTSI, Inc., 5 Sterrewacht Leiden, 6 U. Edinburgh, 7 U. Hamburg, 8 U. Nottingham, 9 U. Sydney, 10 University of Alabama - Tuscaloosa

144.18 Identifying Hidden Supernova Remnants in M83 with the VLA
Institution(s): 1 ASTRON, 2 Boeing Company, 3 Curtin University, 4 Harvard Smithsonian Center for Astrophysics, 5 Johns Hopkins University, 6 Marquette University, 7 Middlebury College, 8 STScI, 9 Swinburne University of Technology, 10 University of Oklahoma

144.19 De-coding the Neutral Hydrogen (21cm) Line Profiles of Disk galaxies
Author(s): Sandy Moak, Barry Madore, David Khatami
Institution(s): 1 Carnegie Observatories
144.20 Stellar Populations in the Outer Regions of M101
Author(s): Patrick R. Durrell\textsuperscript{2}, Chris Mihos\textsuperscript{1}, John J. Feldmeier\textsuperscript{2}, Paul Harding\textsuperscript{1}, Aaron Emery Watkins\textsuperscript{1}
Institution(s): \textsuperscript{1} Case Western Reserve Univ., \textsuperscript{2} Youngstown State Univ.

144.21 ALMA CO Observations of Shocks and Star Formation in the Interacting Galaxies IC 2163 and NGC 2207
Author(s): Debra M. Elmegreen\textsuperscript{7}, Bruce Elmegreen\textsuperscript{5}, Michele Kaufman\textsuperscript{4}, Elias Brinks\textsuperscript{4}, Curtis Struck\textsuperscript{4}, Frederic Bournaud\textsuperscript{1}, Kartik Sheth\textsuperscript{5}, Stephanie Juneau\textsuperscript{1}
Institution(s): \textsuperscript{1} CEA Saclay, \textsuperscript{2} IBM T.J. Watson Research Ctr., \textsuperscript{3} Iowa State University, \textsuperscript{4} N.A, \textsuperscript{5} NASA Headquarters, \textsuperscript{6} University of Hertfordshire, \textsuperscript{7} Vassar College

145 Dwarf & Irregular Galaxies Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

145.01 Exploring Dwarf Galaxy Evolution
Author(s): Jacqueline M. Dunn\textsuperscript{1}
Institution(s): \textsuperscript{1} Midwestern State Univ.

145.02 Investigating Dwarf Spiral Galaxies
Author(s): Sachithra Weerasooriya\textsuperscript{1}, Jacqueline M. Dunn\textsuperscript{1}
Institution(s): \textsuperscript{1} Midwestern State University

145.03 The Smallest Galaxies in the Universe: Investigating the Origins of Ultra-faint Galaxies
Author(s): Yuewen Qi\textsuperscript{1}, Andrew Graus\textsuperscript{1}, James Bullock\textsuperscript{1}
Institution(s): \textsuperscript{1} UC Irvine

145.04 The WHAM H\alpha Magellanic Stream Survey: Progress and Early Results
Author(s): Brianna Smart\textsuperscript{1}, L. Matthew Haffner\textsuperscript{2}, Kat Barger\textsuperscript{1}, Dhanesh Krishnarao\textsuperscript{2}
Institution(s): \textsuperscript{1} Texas Christian University, \textsuperscript{2} University of Wisconsin - Madison

145.05 The rise of ionized gas in the Magellanic Stream
Author(s): Michael Hernandez\textsuperscript{3}, Kathleen Barger\textsuperscript{1}, Brianna Smart\textsuperscript{2}, L. Matthew Haffner\textsuperscript{2}
Institution(s): \textsuperscript{1} Texas Christian University, \textsuperscript{2} University of Wisconsin-Madison

145.06 Probing ionization conditions of Galactic halo gas using H-alpha observations of the Magellanic Stream
Author(s): Kat Barger\textsuperscript{6}, Gregory J Madsen\textsuperscript{2}, Andrew Fox\textsuperscript{4}, Bart P. Wakker\textsuperscript{4}, Jonathan Bland-Hawthorn\textsuperscript{5}, David L. Nidever\textsuperscript{3}, Nicolas Lehner\textsuperscript{7}, L. Matthew Haffner\textsuperscript{8}, Alex S. Hill\textsuperscript{1}
Institution(s): \textsuperscript{1} Haverford College, \textsuperscript{2} Lockheed Martin, \textsuperscript{3} National Optical Astronomy Observatory, \textsuperscript{4} Space Telescope Science Center, \textsuperscript{5} Sydney Institute for Astronomy, \textsuperscript{6} Texas Christian University, \textsuperscript{7} University of Notre Dame, \textsuperscript{8} University of Wisconsin-Madison
145.07 Feeding the Milky Way: Properties of the Leading Arm of the Magellanic Stream
Author(s): Jacqueline Antwi-Danso\textsuperscript{2}, Andrew Fox\textsuperscript{1}
Institution(s): \textsuperscript{1}Space Telescope Science Institute, \textsuperscript{2}Texas Christian University

145.08 Supernovae explosions in the Large Magellanic Cloud drive massive winds toward the Milky Way
Author(s): Drew A Ciampa\textsuperscript{2}, Kat Barger\textsuperscript{3}, Madeline Horn\textsuperscript{1}, Michael Hernandez\textsuperscript{2}, L. Matthew Haffner\textsuperscript{4}, Nicolas Lehner\textsuperscript{3}, J. Christopher Howk\textsuperscript{3}
Institution(s): \textsuperscript{1}Smith College, \textsuperscript{2}Texas Christian University, \textsuperscript{3}University of Notre Dame, \textsuperscript{4}University of Wisconsin-Madison

145.09 VLA+WSRT HI Imaging of Two “Almost Dark” Galaxies
Author(s): Catie Ball\textsuperscript{5}, Quinton Singer\textsuperscript{5}, John M. Cannon\textsuperscript{5}, Luke Leisman\textsuperscript{2}, Martha P. Haynes\textsuperscript{2}, Elizabeth A. Adams\textsuperscript{3}, David Bernal Neira\textsuperscript{8}, Riccardo Giovanelli\textsuperscript{2}, Gregory L Hallenbeck\textsuperscript{7}, William Janes\textsuperscript{4}, Steven Janowiecki\textsuperscript{3}, Gyula Jozs\textsuperscript{a}, Katherine L. Rhode\textsuperscript{4}, John Joseph Salzer\textsuperscript{4}
Institution(s): \textsuperscript{1}ASTRON, \textsuperscript{2}Cornell University, \textsuperscript{3}ICRAR, \textsuperscript{4}Indiana University, \textsuperscript{5}Macalester College, \textsuperscript{6}SKA, \textsuperscript{7}Union College, \textsuperscript{8}Universidad de los Andes

145.10 “Almost Darks”: HI Mapping and Optical Analysis
Author(s): Quinton Singer\textsuperscript{9}, Catie Ball\textsuperscript{5}, John M. Cannon\textsuperscript{5}, Luke Leisman\textsuperscript{2}, Martha P. Haynes\textsuperscript{2}, Elizabeth A. Adams\textsuperscript{3}, David Bernal Neira\textsuperscript{8}, Riccardo Giovanelli\textsuperscript{2}, Gregory L Hallenbeck\textsuperscript{7}, William Janes\textsuperscript{4}, Steven Janowiecki\textsuperscript{3}, Gyula Jozs\textsuperscript{a}, Katherine L. Rhode\textsuperscript{4}, John Joseph Salzer\textsuperscript{4}
Institution(s): \textsuperscript{1}ASTRON, \textsuperscript{2}Cornell University, \textsuperscript{3}ICRAR, \textsuperscript{4}Indiana University, \textsuperscript{5}Macalester College, \textsuperscript{6}SKA, \textsuperscript{7}Union College, \textsuperscript{8}Universidad de los Andes

145.11 SHIELD: EVLA HI Spectral Line Observations of Low-mass Dwarfs
Author(s): Masao Miazzo\textsuperscript{8}, Elizabeth Ruvolo\textsuperscript{8}, John M. Cannon\textsuperscript{9}, Andrew McNichols\textsuperscript{10}, Yaron Teich\textsuperscript{8}, Elizabeth A. Adams\textsuperscript{3}, Riccardo Giovanelli\textsuperscript{2}, Martha P. Haynes\textsuperscript{2}, Kristen B. McQuinn\textsuperscript{17}, John Joseph Salzer\textsuperscript{3}, Evan D. Skillman\textsuperscript{16}, Andrew E. Dolphin\textsuperscript{12}, Edward C Elson\textsuperscript{15}, Nathalie C. Haurberg\textsuperscript{7}, Shan Huang\textsuperscript{9}, Steven Janowiecki\textsuperscript{3}, Gyula Jozs\textsuperscript{a}, Luke Leisman\textsuperscript{2}, Juergen Ott\textsuperscript{11}, Emmanouil Papastergis\textsuperscript{6}, Katherine L. Rhode\textsuperscript{5}, Amelie Saintonge\textsuperscript{14}, Angela Van Sistine\textsuperscript{18}, Steven R. Warren\textsuperscript{3}
Institution(s): \textsuperscript{1}ASTRON, \textsuperscript{2}Cornell University, \textsuperscript{3}Kapteyn Astronomical Institute, \textsuperscript{4}Knox College, \textsuperscript{5}Macalester College, \textsuperscript{6}New York University, \textsuperscript{7}NRAO, \textsuperscript{9}Stony Brook, \textsuperscript{10}Raytheon, \textsuperscript{11}Universe of Minnesota, \textsuperscript{12}University of Texas, \textsuperscript{13}University of Wisconsin Milwaukee

145.12 SHIELD: Observations of Three Candidate Interacting Systems
Author(s): Elizabeth Ruvolo\textsuperscript{8}, Masao Miazzo\textsuperscript{8}, John M. Cannon\textsuperscript{9}, Andrew McNichols\textsuperscript{10}, Yaron Teich\textsuperscript{8}, Elizabeth A. Adams\textsuperscript{3}, Riccardo Giovanelli\textsuperscript{2}, Martha P. Haynes\textsuperscript{2}, Kristen B. McQuinn\textsuperscript{17}, John Joseph Salzer\textsuperscript{3}, Evan D. Skillman\textsuperscript{16}, Andrew E. Dolphin\textsuperscript{12}, Edward C Elson\textsuperscript{15}, Nathalie C. Haurberg\textsuperscript{7}, Shan Huang\textsuperscript{9}, Steven Janowiecki\textsuperscript{3}, Gyula Jozs\textsuperscript{a}, Luke Leisman\textsuperscript{2}, Juergen Ott\textsuperscript{11}, Emmanouil Papastergis\textsuperscript{6}, Katherine L. Rhode\textsuperscript{5}, Amelie Saintonge\textsuperscript{14}, Angela Van Sistine\textsuperscript{18}, Steven R. Warren\textsuperscript{3}
145.13 Rotational Dynamics and Star Formation in the Nearby Dwarf Galaxy NGC 5238
Author(s): Kathleen Fitzgibbon\textsuperscript{1}, John M. Cannon\textsuperscript{1}, Andrew McNichols\textsuperscript{2}, Yaron Teich\textsuperscript{1}, Catie Ball\textsuperscript{1}, John Banovetz\textsuperscript{2}, Annika Brock\textsuperscript{3}, Brian Eisner\textsuperscript{1}, Masao Miazzo\textsuperscript{1}, Asra Nizami\textsuperscript{1}, Bridget Reilly\textsuperscript{1}, Elizabeth Ruvolo\textsuperscript{1}, Quinton Singer\textsuperscript{1}
Institution(s): \textsuperscript{1} Macalester College, \textsuperscript{2} NRAO, \textsuperscript{3} Purdue University

145.14 The Frequency of Starbursts in Dwarf Galaxies
Author(s): Anna McGilvray\textsuperscript{5}, Kristen B. McQuinn\textsuperscript{5}, John M. Cannon\textsuperscript{2}, Julianne Dalcanton\textsuperscript{6}, Andrew E. Dolphin\textsuperscript{3}, Evan D. Skillman\textsuperscript{4}, Benjamin F. Williams\textsuperscript{6}, Liese van Zee\textsuperscript{1}
Institution(s): \textsuperscript{1} Indiana University, \textsuperscript{2} Macalester, \textsuperscript{3} Raytheon Company, \textsuperscript{4} University of Minnesota, \textsuperscript{5} University of Texas at Austin, \textsuperscript{6} University of Washington

145.15 Scaling Stellar Mass Estimates of Dwarf Galaxies
Author(s): Brandon Michael Carr\textsuperscript{6}, Kristen B. McQuinn\textsuperscript{5}, John M. Cannon\textsuperscript{1}, Julianne Dalcanton\textsuperscript{6}, Andrew E. Dolphin\textsuperscript{2}, Evan D. Skillman\textsuperscript{4}, Benjamin F. Williams\textsuperscript{6}, Liese van Zee\textsuperscript{1}
Institution(s): \textsuperscript{1} Macalester, \textsuperscript{2} Raytheon Company, \textsuperscript{3} University of Indiana, \textsuperscript{4} University of Minnesota, \textsuperscript{5} University of Texas at Austin, \textsuperscript{6} University of Washington

145.16 Exploring the Metal Retention Fractions of Dwarf Galaxies
Author(s): Melissa Elizabeth Morris\textsuperscript{5}, Kristen B. McQuinn\textsuperscript{5}, John M. Cannon\textsuperscript{1}, Julianne Dalcanton\textsuperscript{6}, Andrew E. Dolphin\textsuperscript{2}, Evan D. Skillman\textsuperscript{4}, Benjamin F. Williams\textsuperscript{6}, Liese van Zee\textsuperscript{1}
Institution(s): \textsuperscript{1} Macalester College, \textsuperscript{2} Raytheon Company, \textsuperscript{3} University of Indiana, \textsuperscript{4} University of Minnesota, \textsuperscript{5} University of Texas at Austin, \textsuperscript{6} University of Washington

145.17 Photometric and spectroscopic study of the ultra-faint Milky Way satellite Pegasus III
Author(s): Dongwon Kim\textsuperscript{1}, Helmut Jerjen\textsuperscript{1}, Marla C. Geha\textsuperscript{4}, Anirudh Chiti\textsuperscript{2}, Antonino Milone\textsuperscript{1}, Gary S. Da Costa\textsuperscript{1}, Dougal Mackey\textsuperscript{1}, Anna Frebel\textsuperscript{1}, Blair Conn\textsuperscript{1}
Institution(s): \textsuperscript{1} Australian National University, \textsuperscript{2} Massachusetts Institute of Technology, \textsuperscript{3} Yale

145.18 Gas Stripping in the Simulated Pegasus Galaxy
Author(s): Francisco Javier Mercado\textsuperscript{1}, Alejandro Samaniego\textsuperscript{1}, Coral Wheeler\textsuperscript{2}, James Bullock\textsuperscript{3}
Institution(s): \textsuperscript{1} Cal Poly Pomona, \textsuperscript{2} Caltech, \textsuperscript{3} University of California, Irvine
145.19 The Nonbarred Double-Ringed Galaxy, PGC 1000714
Author(s): Marc Seigar, Burcin Mutlu Pakdil, Mithila Mangedarage, Patrick M. Treuthardt
Institution(s): 1. North Carolina Museum of Natural Sciences, 2. University of Minnesota Duluth

145.20 A Study of Low-Metallicity Red Giant Stars in the Ursa Minor Dwarf Spheroidal Galaxy Using APOGEE Survey Data
Author(s): Wanying Fu, Joshua D. Simon
Institution(s): 1. Observatories of the Carnegie Institution of Washington, 2. Pomona College
Contributing team(s): APOGEE-2

145.21 Spitzer Merger History and Shape of the Galactic Halo: The Distance to the Core of the Sagittarius Dwarf Galaxy from the Mid-Infrared Period-Luminosity Relation for RR Lyrae Variable Stars
Author(s): Arvind Gupta, Rachael Beaton, Victoria Scowcroft, Steven R. Majewski
Contributing team(s): SMHASH Team

145.22 Mass-to-Light versus Color Relations for Dwarf Irregular Galaxies
Author(s): Kimberly A. Herrmann, Deidre Ann Hunter, Hong-Xin Zhang, Bruce Elmegreen
Institution(s): 1. IBM T. J. Watson Research Center, 2. Lowell Observatory, 3. Penn State Mont Alto, 4. Pontificia Universidad Catolica de Chile
Contributing team(s): LITTLE THINGS

Author(s): Jeffrey L. Carlin, David J. Sand, Beth Willman, Jean P. Brodie, Denija Crnojevic, Annika Peter, Paul A. Price, Aaron J. Romanowsky, Kristine Spekkens, Jay Strader
Institution(s): 1. LSST, 2. Michigan State University, 3. Ohio State University, 4. Princeton University, 5. Royal Military College of Canada, 6. San Jose State University, 7. Texas Tech University, 8. UC Santa Cruz

145.24 Hubble Space Telescope observations of the optical counterpart to a ultra-compact high-velocity cloud
Author(s): David J. Sand
Institution(s): 1. Texas Tech University

145.25 Analyzing the Formation of Ultra-compact Dwarfs through Stellar Populations
Author(s): Anish Seshadri, Carolyn Wang, Aaron J. Romanowsky, Ignacio Martin-navarro
Institution(s): 1. Science Internship Program, University of California Santa Cruz, 2. University of California Santa Cruz
145.26 Comparison between high and low star forming sides of dwarf irregular galaxies with asymmetrical distributions of star formation.
Author(s): Samavarti Gallardo\(^2\), Deidre Ann Hunter\(^1\)
Institution(s): \(^1\) Lowell Observatory, \(^2\) NAU / Lowell Observatory
Contributing team(s): The LEGUS team

145.27 Characterizing the Bow Shock of the Large Magellanic Cloud
Author(s): David Setton\(^2\), Gurtina Besla\(^2\), Cameron Hummels\(^1\)
Institution(s): \(^1\) Caltech, \(^2\) University of Arizona

145.28 Cold Gas in Quenched Dwarf Galaxies using HI-MaNGA
Author(s): Alaina Bonilla\(^1\)
Institution(s): \(^1\) CUNY College of Staten Island

146 Extrasolar Planets: Detection Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

146.01 The Gemini Planet Imager Exoplanet Survey
Author(s): Eric L. Nielsen\(^6\), Bruce Macintosh\(^7\), James R. Graham\(^9\), Travis S. Barman\(^3\), Rene Doyon\(^12\), Daniel Fabrycky\(^13\), Michael P. Fitzgerald\(^10\), Paul Kalas\(^9\), Quinn M. Konopack\(^11\), Franck Marchis\(^6\), Mark S. Marley\(^4\), Christian Marois\(^3\), Jenny Patience\(^2\), Marshall D. Perrin\(^8\), Rebecca Oppenheimer\(^1\), Inseok Song\(^14\)
Institution(s): \(^1\) AMNH, \(^2\) Arizona State University, \(^3\) LPL, University of Arizona, \(^4\) NASA Ames, \(^5\) NRC of Canada, Herzberg, \(^6\) SETI Institute, \(^7\) Stanford University, \(^8\) STScI, \(^9\) UC Berkeley, \(^10\) UCLA, \(^11\) UCSD, \(^12\) Univ. de Montréal, \(^13\) University of Chicago, \(^14\) University of Georgia
Contributing team(s): The GPIES Team

146.02 Orbits for the Impatient: A Bayesian Rejection Sampling Method for Quickly Fitting the Orbits of Long-Period Exoplanets
Author(s): Sarah Caroline Blunt\(^1\), Eric Nielsen\(^3\), Robert J De Rosa\(^3\), Quinn M. Konopacky\(^1\), Dominic Ryan\(^2\), Jason Wang\(^7\), Laurent Pueyo\(^4\), Julien Rameau\(^6\), Christian Marois\(^2\), Franck Marchis\(^3\), Bruce Macintosh\(^1\), James R. Graham\(^7\)
Institution(s): \(^1\) Brown University, \(^2\) NRC Herzberg Institute of Astrophysics, \(^3\) SETI Institute, \(^4\) Space Telescope Science Institute, \(^5\) Stanford University, \(^6\) Université de Montréal, \(^7\) University of California at Berkeley, \(^8\) University of California at San Diego
Contributing team(s): GPIES Collaboration

146.03 Astrometric Calibration of the Gemini Planet Imager
Author(s): Debby Tran\(^1\), Quinn M. Konopacky\(^3\)
Institution(s): \(^1\) University of California, San Diego
Contributing team(s): GPIES Team
146.04 Gemini Planet Imager Calibrations, Pipeline Updates, and Campaign Data Processing


Institution(s): 1 Arizona State University, 2 Cornell University, 3 Dunlap Institute, 4 Gemini Observatory, 5 Johns Hopkins University, 6 LSST, 7 NRC Herzberg, 8 SETI Institute, 9 Stanford, 10 STScI, 11 UC Berkeley, 12 UCLA, 13 UCSD, 14 Universite de Montreal, 15 University of Toronto, 16 University of Victoria, 17 Western University

Contributing team(s): GPIES team

146.05 The Gemini Planet Imager view of the HD 32297 debris disk system

Author(s): Malena Rice, Justin Hom, Joe Zalesky, Gaspard Duchene, Max Millar-Blanchaer, Thomas Esposito, Paul Kalas, Michael P. Fitzgerald

Institution(s): 1 Arizona State University, 2 NASA Jet Propulsion Laboratory, 3 UC Berkeley, 4 University of California, Berkeley

Contributing team(s): GPIES Team

146.06 Blind Source Separation Algorithms for PSF Subtraction from Direct Imaging

Author(s): Jacob Shapiro, Nikhil Ranganathan, Dmitry Savransky, Jean-Baptise Ruffio, Bruce Macintosh

Institution(s): 1 Cornell University, 2 Stanford University

Contributing team(s): The GPIES Team

146.07 Reprocessing of Archival Direct Imaging Data of Herbig Ae/Be Stars

Author(s): Emily Safsten, Denise C. Stephens

Institution(s): 1 Brigham Young University

146.08 Project MINERVA’s Follow-up on Wide-Field, Small Telescope Photometry to Identify Exoplanets

Author(s): Audrey Houghton, Morgan Henderson, Samson Johnson, Anthony Sergi, Jason D Eastman, Thomas G. Beatty, Nate McCrady

Institution(s): 1 Harvard University, 2 Pennsylvania State University, 3 The University of Montana

146.09 MINERVA-Red: A telescope dedicated to the discovery of planets orbiting the nearest low-mass stars

Author(s): David Sliski, Cullen Blake, John A. Johnson, Peter Plavchan, Robert A. Wittenmyer, Jason D Eastman, Stuart Barnes, Ashley Baker

Institution(s): 1 Harvard University, 2 Missouri State, 3 Stuart Barnes Optical Design, 4 University of New South Whales, 5 University of Pennsylvania
146.10 Simulating a Radial Velocity Precursor Survey for Target Yield Optimization for a Future Direct Imaging Mission
Author(s): Patrick Newman\textsuperscript{1}, Peter Plavchan\textsuperscript{1}, Justin R. Crepp\textsuperscript{4}, Shannon Dulz\textsuperscript{1}, Chris Stark\textsuperscript{3}, Stephen R. Kane\textsuperscript{2}
Institution(s): \textsuperscript{1} Missouri State University, \textsuperscript{2} San Francisco State University, \textsuperscript{3} Space Telescope Science Institute, \textsuperscript{4} University of Notre Dame

146.11 A Search and Exploration of Multi-Exoplanet Systems Via Transit Timing Variation (TTV) Algorithms for the K2 Mission
Author(s): Shishir Dholakia\textsuperscript{1}, Shashank Dholakia\textsuperscript{1}, Ann Marie Cody\textsuperscript{2}
Institution(s): \textsuperscript{1} Adrian Wilcox High School, \textsuperscript{2} NASA Ames Research Center

146.12 Analytical Methods for Exoplanet Imaging Detection Metrics
Author(s): Daniel Garrett\textsuperscript{1}, Dmitry Savransky\textsuperscript{3}
Institution(s): \textsuperscript{1} Cornell University

146.13 Finding Planets in K2: A New Method of Cleaning the Data
Author(s): Miles Currie\textsuperscript{1}, Fergal Mullally\textsuperscript{2}, Susan E. Thompson\textsuperscript{3}
Institution(s): \textsuperscript{1} Florida State University, \textsuperscript{2} Kepler Science Office, \textsuperscript{3} SETI Institute

146.14 MICRONERVA: A Novel Approach to Large Aperture Astronomical Spectroscopy
Author(s): Ryan Hall\textsuperscript{3}, Peter Plavchan\textsuperscript{1}, Claire Geneser\textsuperscript{2}, Frank Giddens\textsuperscript{3}, Christopher Klenke\textsuperscript{3}, Denise Weigand\textsuperscript{1}
Institution(s): \textsuperscript{1} Central Methodist University, \textsuperscript{2} Mississippi State University, \textsuperscript{3} Missouri State University

146.15 Distribution-dependent total exoplanet yield for a large aperture space telescope
Author(s): Evan Morris\textsuperscript{1}, David Schiminovich\textsuperscript{3}
Institution(s): \textsuperscript{1} Columbia University

146.16 The NASA Exoplanet Archive
Author(s): Rachel L. Akeson\textsuperscript{1}, Jessie Christiansen\textsuperscript{3}, David R. Ciardi\textsuperscript{1}, Solange Ramirez\textsuperscript{1}, Joshua Schlieder\textsuperscript{1}, Julian C. Van Eyken\textsuperscript{1}
Institution(s): \textsuperscript{1} NASA Exoplanet Science Institute/Caltech
Contributing team(s): NASA Exoplanet Archive team

146.17 Searching for Wide, Planetary-Mass Companions in Archival Spitzer/IRAC Data
Author(s): Raquel Martinez\textsuperscript{1}
Institution(s): \textsuperscript{1} The University of Texas at Austin

146.18 Planet Occurrence Rates for K2 M Dwarfs
Author(s): Girish Manideep Duvvuri\textsuperscript{2}, Courtney D. Dressing\textsuperscript{1}, Heather Knutson\textsuperscript{1}
Institution(s): \textsuperscript{1} California Institute of Technology, \textsuperscript{2} Wesleyan University
146.19 The Snapshot A-Star SurvY (SASSY)  
Author(s): Jasmine Garani¹, Eric L. Nielsen³, Franck Marchis³, Michael C. Liu², Bruce Macintosh⁴, Abhijith Rajan⁴, Robert J De Rosa³, Jason Wang⁵, Thomas Esposito³, William M. J. Best³, Brendan P. Bowler⁶, Trent J. Dupuy⁶, Jean-Baptise Ruffio⁴  
Institution(s): ¹ Arizona State University, ² Institute for Astronomy, University of Hawaii, ³ SETI Institute, ⁴ Stanford University, ⁵ University of California at Berkeley, ⁶ University of Texas

146.20 Results of Edge Scatter Testing for a Starshade Mission  
Author(s): Daniel Smith¹, L. Suzanne Casement¹, Scott Ellis², John Stover³, Steve Warwick¹  
Institution(s): ¹ Northrop Grumman, ² Photon Engineering, ³ The ScatterWorks

146.21 Testbed Demonstration of Low Order Wavefront Sensing and Control Technology for WFIRST Coronagraph  
Author(s): Fang Shi¹  
Institution(s): ¹ Jet Propulsion Laboratory

146.22 Laboratory validation of model-based wavefront control for multi-star systems  
Author(s): Dan Sirbu¹, Ruslan Belikov¹, Eugene Pluzhnik¹, Christopher Henze¹, Sandrine Thomas¹  
Institution(s): ¹ NASA ARC

146.23 The DeMi CubeSat: Wavefront Control with a MEMS Deformable Mirror in Space  
Author(s): Ewan S. Douglas¹, Eduardo Bendek⁴, Anne Marinan², Ruslan Belikov⁴, John Merck¹, Kerri Lynn Cahoy³  
Institution(s): ¹ Aurora Flight Sciences, ² Jet Propulsion Laboratory, ³ Massachusetts Institute of Technology, ⁴ NASA Ames

146.24 Experimental Verification of Sparse Aperture Mask for Low Order Wavefront Sensing  
Author(s): Hari Subedi¹, N. Jeremy Kasdin¹  
Institution(s): ¹ Princeton University

146.25 Kernel-Phase Interferometry for Super-Resolution Detection of Faint Companions  
Author(s): Samuel M. Factor⁴, Adam L. Kraus¹  
Institution(s): ¹ The University of Texas at Austin

146.26 Status of Technology Development to enable Large Stable UVOIR Space Telescopes  
Author(s): H. Philip Stahl¹  
Institution(s): ¹ NASA

Contributing team(s): MSFC AMTD Team
146.27 A Model for Astrometric Detection and Characterization of Multi-Exoplanet Systems
Author(s): Maggie April Thompson, David N. Spergel
Institution(s): 1 Princeton University

146.28 First light of an external occulter testbed at flight Fresnel numbers
Author(s): Yunjong Kim, Dan Sirbu, Mia Hu, Jeremy Kasdin, Robert J. Vanderbei, Anthony Harness, Stuart Shaklan
Institution(s): 1 Jet Propulsion Laboratory, 2 NASA Ames Research Center, 3 Princeton University, 4 University of Colorado Boulder

146.29 Techniques for Constraining the Population of Small Close-in Planets Around Subgiants
Author(s): Amber Medina, John A. Johnson
Institution(s): 1 Harvard University

146.30 Examining the Flicker-Jitter Relation of K2 stars: the Dependence on Chromospheric Activity
Author(s): Jacob K. Luhn, Fabienne A. Bastien, Jason Wright
Institution(s): 1 Penn State University

146.31 Analysis of a Close Pair of Faint Sources Near a Massive Young Star
Author(s): Saki Kamon, Adam L. Kraus, Aaron C Rizzuto, Michael Ireland, John M. Carpenter
Institution(s): 1 Atacama Large Millimeter/submillimeter Array, 2 Australian National University, 3 University of Texas at Austin

146.32 A Possible 5th Planet in the Kepler-89 System
Author(s): Andrew Mayo, Katherine Deck, Heather Knutson, Konstantin Batygin, Jessie Christiansen
Institution(s): 1 California Institute of Technology, 2 Harvard University

146.33 How many habitable planets can we detect around nearby M dwarfs, and are they really habitable?
Author(s): Hope Pegues, Elisabeth R. Newton, Benjamin Montet, John A. Johnson
Institution(s): 1 Center for Astrophysics, 2 North Carolina A&T State University

146.34 A Search for Exoplanets in the Open Star Clusters Messier 35 and Koposov 62 Using A Photometric Algorithm for the K2 Mission
Author(s): Shashank Dholakia, Shishir Dholakia, Ann Marie Cody
Institution(s): 1 Adrian Wilcox High School, 2 NASA AMES Research Center

146.35 A Search for Radio Emission from Nearby Exoplanets
Author(s): Amethyst D. Maps, Timothy S. Bastian, Anthony J. Beasley
Institution(s): 1 NRAO, 2 Old Dominion University

146.36 KELT-FUN and the discovery of KELT-18b
Author(s): Kim K. McLeod, Casey Melton, Keivan G. Stassun
Institution(s): 1 Vanderbilt University, 2 Wellesley College
Contributing team(s): KELT Collaboration
146.37 An astro-comb calibrated solar telescope to study solar activity and search for the radial velocity signature of Venus
Author(s): David Phillips¹
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics
Contributing team(s): HARPS-N Collaboration

146.38 Planet Hunters, Undergraduate Research, and Detection of Extrasolar Planet Kepler-818 b
Author(s): David Baker¹, Graham Crannell¹, James Duncan¹, Aryn Hays¹, Landon Hendrix¹
Institution(s): ¹ Austin College

147 The Solar System Poster Session

Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

147.01 Understanding the Earth’s Composition through Neutrino Oscillations
Author(s): Beverly Lowell¹, André de Gouvêa²
Institution(s): ¹ Northwestern University

147.03 Recovering Neptune 170 Years After its Initial Discovery
Author(s): Justin Myles¹
Institution(s): ¹ Yale University

147.04 A Search for Planet 9 at the Thacher Observatory
Author(s): Nick Edwards¹, Liam Kirkpatrick¹, Kathleen O’Neill¹, Yao Yin¹, Asher Wood¹, Jonathan Swift¹
Institution(s): ¹ The Thacher School

147.05 Rotational Study of Ambiguous Taxonomic Classified Asteroids
Author(s): Tyler R. Linder¹, Rick Sanchez², Wolfgang Wuerker², Timothy Clayson², Tucker Giles²
Institution(s): ¹ Astronomical Research Institute, ² Johnson County School District

147.06 Eight Potentially Hazardous Near Earth Asteroids: Characterization and Threat Assessment
Author(s): Stacy Hicks¹, Michael T. Carini¹
Institution(s): ¹ Western Kentucky University

147.07 Spectral Classification of NEOWISE Observed Near-Earth Asteroids
Author(s): Christopher Desira¹
Institution(s): ¹ Harvard-Smithsonian Institute for Astrophysics

147.08 Density and Macroporosity Distribution of Near Earth Asteroids
Author(s): Jessie L. Dotson¹, Donovan Mathias¹
Institution(s): ¹ NASA Ames Research Center

147.09 Models of millimeter-wave emission from dust in the coma of Comet 67P
Author(s): Theodore R Kareta¹, F. Peter Schloerb¹
Institution(s): ¹ University of Massachusetts, Amherst
148 Planetary Nebulae, Supernova Remnants Poster Session

Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

148.01 17 Years of Chandra Observations of SN1987A
Author(s): David N. Burrows, Kari A. Frank
Institution(s): 1 Penn State Univ.

148.02 Calculating the Flux Density Decay of Cas A with LWA1
Author(s): Jaquelin Erazo, Frank Schinzel
Institution(s): 1 CUNY Hunter College, 2 NRAO
Contributing team(s): LWA Collaboration

148.03 Exploring Supernova Remnants with the SPIES Project
Author(s): Kari A. Frank, David N. Burrows, Vikram Dwarkadas
Institution(s): 1 Pennsylvania State University, 2 University of Chicago

148.04 A Survey of X-Ray Luminosity Limits for Unobserved Compact Stellar Remnants in Core-Collapse SNRs
Author(s): Anthony Glenn Rich, Ashley Herbst, Nina Clark, Paul Thongkham, Eric Cooper, Alexandria Carino, Robert Mathews, Andrew Schenck, Jayant Bhalerao, Sangwook Park
Institution(s): 1 University of Texas at Arlington

148.05 Revealing the Detailed Structure of the Galactic Core-Collapse Supernova Remnant G292.0+1.8 with X-Ray Mapping
Author(s): Jayant Bhalerao, Sangwook Park, Andrew Schenck
Institution(s): 1 UT Arlington

148.06 Optical Observations of Galactic Supernova Remnant G64.5+0.9
Author(s): Jack Neustadt, Robert A. Fesen, Christine Black
Institution(s): 1 Dartmouth College

148.07 Measuring the Symmetry of Supernova Remnants in the Radio
Author(s): Jennifer Stafford, Laura A. Lopez
Institution(s): 1 The Ohio State University

148.08 Behind the Curtain: Revealing the Nebular Influence on X-ray Emission from Planetary Nebulae
Author(s): Rodolfo Montez Jr.
Institution(s): 1 Smithsonian Astrophysical Observatory

148.09 Spectroscopy of Planetary Nebulae at the Bright End of the Luminosity Function
Author(s): Anneliese Rilinger, Karen B. Kwitter, Bruce Balick, R. L. M. Corradi, Rebeca Galera Rosillo, George H. Jacoby, Richard A. Shaw
Institution(s): 1 Instituto de Astrofisica de Canarias, 2 Lowell Observatory, 3 NOAO, 4 University of Washington, 5 Williams College
WEDNESDAY, 4 JANUARY 2017

148.10 The Eclipsing Central Stars of the Planetary Nebulae Lo 16 and PHR J1040-5417
Author(s): Todd C. Hillwig¹, David Frew², David Jones¹, Danielle Crispo³
Institution(s): ¹ Instituto de Astrofísica de Canarias, ² University of Hong Kong, ³ Valparaiso University

148.11 Zeeman Effect observations toward 36 GHz methanol masers in the Galactic Center
Author(s): Justin A Potvin¹, Emmanuel Momjian², Anuj Pratim Sarma³
Institution(s): ¹ DePaul, ² NRAO

149 Gamma Ray Bursts Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

149.01 Long-Wavelength Demographics of GRB Host Galaxies
Author(s): Daniel A. Perley¹
Institution(s): ¹ Niels Bohr Institute, University of Copenhagen

149.02 A Study of the Gamma-Ray Burst Fundamental Plane
Author(s): Christian Gilbertson⁵, Maria Dainotti⁵, Sergey Postnikov¹, Shigehiro Nagataki⁵, Richard Willingale⁴
Institution(s): ¹ Indiana University, ² RIKEN, ³ Stanford University, ⁴ University of Leicester, ⁵ Virginia Polytechnic Institute and State University

149.03 A Spatially - Resolved Study of the GRB 020903 Host Complex
Author(s): Mallory Thorp¹, Emily M. Levesque¹
Institution(s): ¹ University of Washington

150 Intergalactic Medium, QSO Absorption Line Systems Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

150.01 Quasar Absorption Lines and SDSS Galaxies
Author(s): Emileigh Suzanne Shoemaker¹, Jennifer E. Scott¹, Katarzyna Oldak¹
Institution(s): ¹ Towson University

150.02 Shock waves and particle acceleration in clusters of galaxies
Author(s): Dongsu Ryu¹, Hyesung Kang¹, Ji-Hoon Ha¹
Institution(s): ¹ Pusan National University, ² UNIST

150.03 First light with Trident: multi-platform synthetic quasar spectra
Author(s): Devin W. Silvia³, Cameron B. Hummels¹, Britton Smith²
Institution(s): ¹ California Institute of Technology, ² Institute for Astronomy, ³ Michigan State University

150.04 A Measurement of the z=4 Ultraviolet Background from the Proximity Effect
Author(s): Jennifer E. Scott¹
Institution(s): ¹ Towson Univ.
**WEDNESDAY, 4 JANUARY 2017**

**150.05 Understanding the IGM Through the Use of a Lensed Quasar**
Author(s): Teresa Panurach¹, Matthew O’Dowd²
Institution(s): ¹ CUNY Hunter College, ² CUNY Lehman College

**150.06 Deeper Insights into the Circumgalactic Medium using Multivariate Analysis Methods**
Author(s): James Lewis¹, Christopher W. Churchill¹, Nikole M. Nielsen², Glenn Kacprzak²
Institution(s): ¹ New Mexico State University, ² Swinburne University of Technology

**151 Stellar Atmospheres, Winds, Be Stars, & Wolf-Rayet Phenomena Poster Session**

**Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D**

**151.01 Circumstellar Dust Composition of M-type Mira Variables observed with phase with Spitzer**
Author(s): Tina Güth¹, Michelle J. Creech-Eakman¹
Institution(s): ¹ New Mexico Institute of Mining and Technology

**151.02 Bridging the Gap between Coronal and Non-Coronal Evolved Stars**
Author(s): Kenneth G. Carpenter², Kristo E. Nielsen¹, Gladys V. Kober¹
Institution(s): ¹ Catholic University of America, ² NASA’s GSFC

**151.03 Stratification in Ap star atmospheres: Simulations**
Author(s): Charles R. Cowley², Fiorella Castelli¹
Institution(s): ¹ Instituto Nazionale di Astrofisica, Osservatorio Astronomico di Trieste, ² Univ. of Michigan

**151.04 Spectroscopic Parameters of B Stars in the Carina Nebula**
Author(s): Richard Hanes¹, M. Virginia McSwain¹
Institution(s): ¹ Lehigh University

**151.05 The Fe Group Abundances in the B3 IV Standard ι Herculis Determined from ASTRAL II Observations**
Author(s): Geraldine J. Peters³, Charles R. Proffitt¹, Saul J. Adelman¹, Thomas R. Ayres⁴
Institution(s): ¹ Space Telescope Science Institute, ² The Citadel, ³ Univ. of Southern California, ⁴ University of Colorado

**151.06 The Be Population in 10 Galactic Open Clusters From the Discovery Channel Telescope**
Author(s): Pa Chia Thao¹, Noel Richardson³, Cody Gerhartz³, Karen S. Bjorkman¹, Jon Eric Bjorkman³, John P. Wisniewski², Anthony Burrow³, Jamie R Lomax⁵, Kevin R. Covey⁵
Institution(s): ¹ Mount Holyoke College, ² University of Oklahoma, ³ University of Toledo, ⁵ University of Washington, ⁵ Western Washington University
POSTERS

WEDNESDAY, 4 JANUARY 2017

151.07 Variable Circumstellar Disks: Prevalence, Timescales, and Physical Mechanisms
Author(s): Anthony Burrow1, John P. Wisniewski2, Jamie R Lomax2, Karen S. Bjorkman3, Jon Eric Bjorkman3, Kevin R. Covey4, Cody Gerhartz4, Noel Richardson4, Pa Thao1
Institution(s): 1 Mount Holyoke, 2 University of Oklahoma, 3 University of Toledo, 4 Western Washington University

151.08 A spectroscopic orbit for the late-type Be star β CMi
Author(s): Nick Dulaney4, Noel Richardson4, Cody Gerhartz4, Jon Eric Bjorkman4, Karen S. Bjorkman4, Alex C. Carciofi3, Luqian Wang2, Nancy D. Morrison4, Robert Klement1
Institution(s): 1 European Organisation for Astronomical Research, 2 Georgia State University, 3 Universidade de Sao Paulo, 4 University of Toledo
Contributing team(s): Ritter Observing Team

151.09 Destruction of Be star disk by large scale magnetic fields
Author(s): Asif Ud-Doula1, Stanley P. Owocki2, Nathaniel Kee3, Michael Vanyo1
Institution(s): 1 Penn State Worthington Scranton, 2 University of Delaware, 3 University of Tübingen

151.10 Spectral Classification of Central Stars of Bowshock Nebulae
Author(s): William T. Chick2, Henry A. Kobulnicky2, Matthew S. Povich1, Don Dixon1, Daniel Lee1
Institution(s): 1 California State Polytechnic University, Pomona, 2 University of Wyoming

151.11 Polarization signatures of bow shocks: A diagnostic tool to constrain the properties of stellar winds and ISM
Author(s): Manisha Shrestha2, Jennifer L. Hoffman2, Hilding R. Nielson3, Richard Ignace1
Institution(s): 1 East Tennessee State University, 2 University of Denver, 3 University of Toronto

151.12 Exploring X-ray Emission from Winds in Two Early B-type Binary Systems
Author(s): John P. Rotter2, Tabetha Hole2, Richard Ignace1, Lida Oskinova3
Institution(s): 1 East Tennessee State University, 2 Norwich University, 3 U. Potsdam

151.13 The Variability of the BRITE-est Wolf-Rayet star gamma Velorum. Photometric and Spectroscopic Evidence of Colliding Winds.
Author(s): Noel Richardson5, Lucas St-Jean4, Anthony F. J. Moffat4, Nicole St. Louis4, Christopher Michael Post Russell2, Tomer Shenar3, Herbert Pablo4, Grant M. Hill1, Tahina Ramiaramanantsoa4, Kenji Hamaguchi2, Michael F. Corcoran2
Institution(s): 1 Keck Observatory, 2 NASA Goddard, 3 Universitat Potsdam, 4 Universite de Montreal, 5 University of Toledo
151.14 Stagnant Shells in the Vicinity of the Dusty Wolf-Rayet-O/B Binary WR 112
Author(s): Ryan M. Lau¹, Matthew Hankins², R. Schoedel¹, Joel Sanchez-Bermudez³, Anthony F. J. Moffat⁴, Michael E. Ressler⁴
Institution(s): ¹ Caltech, ² Cornell University, ³ Instituto de Astrofísica de Andalucía (CSIC), ⁴ JPL, ⁵ Max-Planck-Institut für Astronomie, ⁶ Université de Montreal

151.15 TRES Survey of Variable Diffuse Interstellar Bands
Author(s): Charles Law¹, Dan Milisavljevic², Kyle Crabtree³, Sommer Johansen³, Daniel Patnaude²
Institution(s): ¹ Harvard University, ² Smithsonian Astrophysical Observatory, ³ University of California Davis

152 Pulsating & Variable Stars Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

152.01 Variable Stars in the Large Magellanic Cloud from Archival HST Observations
Author(s): Gabriel Alejandro Fuentes¹, Ata Sarajedini¹
Institution(s): ¹ University of Florida

152.02 The First Kepler Observations of the Pulsations of R Coronae Borealis Stars
Author(s): Geoffrey C. Clayton², C. Simon Jeffery¹, Edward Montiel¹, Hideyuki Saio³, Gavin Ramsay¹
Institution(s): ¹ Armagh Observatory, ² Louisiana State Univ., ³ Tohoku University, ⁴ UC Davis

152.03 Multiband Fourier Analysis and Interstellar Reddening of Variable Stars in the Globular Cluster NGC 6584
Author(s): Nathan J. Villiger¹, Sedrick Weinschenk¹, Paul T Hettinger¹, Brian W. Murphy¹
Institution(s): ¹ Butler University

152.05 Monitoring Period and Amplitude Changes in Classical Cepheids
Author(s): Mary Erickson¹, Scott G. Engle¹
Institution(s): ¹ Villanova University
Contributing team(s): Mark Wells (Penn State University)

152.06 Discovering Cepheid and RR Lyrae Stars: Pan-STARRS Science Archive @ STScI and Robotically Controlled Telescopes
Author(s): Elizabeth Johnson⁴, Louis-Gregory Strolger⁵, Scott G. Engle⁴, Richard Irving Anderson¹, Armin Rest³, Annalisa Calamida², Ori Dosovitz Fox⁴, David Laney⁶
Institution(s): ¹ Johns Hopkins University, ² NOAO, ³ Space Telescope Science Institute, ⁴ Villanova University, ⁵ Western Kentucky University

152.07 The Search for RR Lyrae Variables in the Dark Energy Survey
Author(s): Chandler Nielsen¹, Jennifer L. Marshall³, James Long²
Institution(s): ¹ Purdue University, ² Texas A&M University
152.08  KELT RR Lyrae Variable Stars Observed by NKU Schneider and Michigan State Observatories
Author(s): Nathan M. De Lee5, Stacy Brueneman5, Logan Hicks5, Neil Russell5, Karen Kinemuchi1, Joshua Pepper3, Joseph Rodriguez2, Martin Paegert2, Horace A. Smith6
Institution(s): 1 Apache Point Observatory, 2 Harvard–Smithsonian Center for Astrophysics, 3 Lehigh University, 4 Michigan State University, 5 Northern Kentucky University

152.09  Reddening determination of RR Lyrae from small scale observations
Author(s): Lucas Stahl1, Donald J. Bord1, William I. Clarkson1
Institution(s): 1 University of Michigan - Dearborn

152.10  Evidence for Binarity in Kepler Observations of the Pulsating RV Tau Variable DF Cygni
Author(s): Laura D. Vega3, Rodolfo Montez Jr.2, Keivan G. Stassun3, Patricia T. Boyd1
Institution(s): 1 NASA’s Goddard Space Flight Center, 2 Smithsonian Astrophysical Observatory, 3 Vanderbilt University

152.11  O-C analysis of the pulsating subdwarf B star PG 1219 + 534
Author(s): Tomomi Otani1, Alexander Stone-Martinez1, Terry D. Oswalt1, Claudia Morello1, Adam Moss1, Dana Singh1, Kenneth Sampson1, Caila DeAbreu1, Aliyah Khan1, Austin Seepersad1, Mehvesh Shaikh1, Linda Wilson1
Institution(s): 1 Embry-Riddle Aeronautical University

152.12  Radiative Transfer Modeling of the Mid-IR/Far-IR Dust Emissions of the Symbiotic Mira, V* R Aqr
Author(s): Eric B. Omelian3, Ravi Sankrit4, L. Andrew Helton4, Uma Gorti2, R. Mark Wagner1
Institution(s): 1 LBT Observatory, 2 NASA Ames/SETI, 3 NASA Ames/SOFIA/Logyx, 4 USRA/SOFIA

152.13  Period Analysis of Three SRS: Stars in the Kepler Field
Author(s): Wesley Red1, Gabrielle Jones1, Jennifer Cash1, Donald K. Walter1
Institution(s): 1 South Carolina State University

152.14  A Testing Ground for Polarized Maser Transport: Multi-Epoch Analysis of a π/2 Electric Vector Rotation
Author(s): Taylor Tobin1, Athol J. Kemball1
Institution(s): 1 University of Illinois

153 Star Formation Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D
153.01 Probing turbulent, magnetized star formation with ALMA observations and next-generation AREPO simulations
Author(s): Charles L. H. Hull¹, Philip Mocz², Blakesley K. Burkhart², Josep Miquel Girart¹, Alyssa A. Goodman², Paulo Cortes¹, Zhi-Yun Li⁶, Shih-Ping Lai⁴, Lars Hernquist¹, Volker Springel³
Institution(s): ¹ CSIC-IEEC, ² Harvard-CfA, ³ HITS, ⁴ National Tsing Hua University, ⁵ NRAO, ⁶ University of Virginia

153.02 Simulating Stellar Cluster Formation and Early Evolution
Author(s): Joshua Wall², Stephen L. W. McMillan², Mordecai-Mark Mac Low¹, Juan Ibañez-Mejía³, Simon Portegies Zwart⁴, Andrew Pellegrino²
Institution(s): ¹ American Museum of Natural History, ² Drexel University, ³ Leiden Observatory, ⁴ University of Cologne

153.03 Is Episodic Accretion Necessary to Resolve the Luminosity Problem in Low-Mass Protostars?
Author(s): Raymond Andrew Sevrinsky¹, Michael Dunham¹
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics

153.04 Predicting Complex Organic Molecule Emission from TW Hya
Author(s): Shreyas Vissapragada³, Catherine Walsh²
Institution(s): ¹ Columbia University, ² Sterrewacht Leiden

153.05 Modeling Protostar Envelopes and Disks Seen With ALMA
Author(s): Susan Terebey¹, Lizandra Flores-Rivera¹, Karen Willacy²
Institution(s): ¹ Cal. State Univ. at Los Angeles, ² Jet Propulsion Lab

153.06 3-D MHD disk wind simulations of jets and outflows from high-mass protostars
Author(s): Jan E. Staff³, Kei Tanaka³, Jonathan C. Tan³, Yichen Zhang³, Mengyao Liu³
Institution(s): ¹ RIKEN, ² University of Florida, ³ University of the Virgin Islands

153.07 Argus: a new 16-pixel millimeter-wave spectroscopic instrument for star formation studies at the Green Bank Telescope
Author(s): Nichol Cunningham², David T. Frayer², Sarah E. Church⁴, Matthew Sieth⁴, Andrew I. Harris⁵, Kieran Cleary⁵, Joshua O. Gundersen⁶, Paul Goldsmith⁷, Dongwoo Chung⁴, Anthony C. S. Readhead¹, todd gaier¹, Pekka Kangaslahti³, Lorene Samoska³
Institution(s): ¹ California Institute of Technology, ² Green Bank Observatory, ³ Jet Propulsion Laboratory, ⁴ Stanford University, ⁵ University of Maryland, ⁶ University of Miami

153.08 An LMT/AzTEC 1.1 mm Survey of Dense Cores in the Monoceros R2 Giant Molecular Cloud
Author(s): Alyssa D Sokol¹, Robert A. Gutermuth², Grant Wilson², Stella Offner², Mark H. Heyer², Riwaj Pokhrel², Arturo Gomez-Ruiz¹, Abraham Luna¹
Institution(s): ¹ National Institute of Astrophysics, Optics and Electronics, ² University of Massachusetts Amherst
153.09 High Resolution 33 GHz Observations of Embedded Star Formation in NGC 6240
Author(s): Antonio J Porras, Aaron S. Evans, Sean Linden, Loreto Barcos
Institution(s): 1 Fisk-Vanderbilt Bridge Student, 2 National Radio Astronomy Observatory, 3 University of Virginia

153.10 The Dense Gas Fraction in the Central Molecular Zone in the Milky Way
Author(s): Irene Vargas-Salazar, Cara Battersby, Daniel Walker, Qizhou Zhang
Institution(s): 1 Harvard-Smithsonian CFA, 2 Louisiana State University
Contributing team(s): CMZoom

153.11 Interactions of mid-infrared bubbles with the interstellar medium: are bubble rims associated with collapsing cores?
Author(s): Kathryn E. Devine, Johanna Mori, Christer Watson
Institution(s): 1 College of Idaho, 2 Manchester University

153.12 Stars and Star Clusters: A Look at Intermediate-Mass Star-Forming Regions
Author(s): Michael J. Lundquist, Henry A. Kobulnicky, Ryan M. Lau
Institution(s): 1 Gemini Observatory, 2 Jet Propulsion Laboratory, 3 University of Wyoming

153.13 Investigating Star-Gas Correlation and Evolution in the 100pc Cygnus X Complex
Author(s): Robert A. Gutermuth, Mark H. Heyer, Stella Offner
Institution(s): 1 Univ. of Massachusetts

153.14 ATLASGAL: Chemical evolution of star forming clumps
Author(s): Charles C. Figura, James S Urquhart, Friedrich Wyrowski
Institution(s): 1 Max Planck Institute for Radio Astronomy, 2 University of Kent, 3 Wartburg College

153.15 A Star-Formation Rate Atlas of the Nearby Universe
Author(s): Tristan Ashton, David Pooley, Saul A. Rappaport
Institution(s): 1 MIT, 2 Trinity University

153.16 How Does Dense Molecular Gas Contribute to Star Formation in the Starburst Galaxy NGC 2146?
Author(s): Alia Wofford
Institution(s): 1 Elizabeth City State University

154 Stellar Evolution, Stellar Populations Poster Session
Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

154.01 Comparing Stellar Populations of Galaxies Across the Hubble Sequence
Author(s): Sarina Marie Etheridge, Catherine Kaleida, Rolf Jansen
Institution(s): 1 Arizona State University, 2 College of Charleston, 3 Space Telescope Science Institute
154.02 Kinematics of Hα Emitting Stars in Andromeda
Author(s): Megha Ilango¹, Anita Ilango¹, Gabriel Damon³, Laura Prichard², Puragra Guhathakurta⁴
*Institution(s):* ¹ Cupertino High School, ² Oxford University, ³ Santa Cruz High School, ⁴ UC Santa Cruz
Contributing team(s): PHAT collaboration, SPLASH collaboration

154.03 A Mysterious Population of Stars With Weak CN Absorption in the Disk of M31
Author(s): Anika Kamath³, Alyssa Sales², Atmika Sarukkai², Puragra Guhathakurta⁵, Jon Hays¹, Philip Rosenfield⁴
*Institution(s):* ¹ Cabrillo College, ² Castilleja School, ³ Crystal Springs Uplands School, ⁴ Harvard CfA, ⁵ UC Santa Cruz
Contributing team(s): SPLASH collaboration, PHAT collaboration

154.04 The Red Supergiant Content of the LMC and SMC
Author(s): Kate Anne Evans¹, Philip Massey¹
*Institution(s):* ¹ Lowell Observatory

154.05 Stellar Evolution of the Star Cluster NGC 602 and Massive Star Formation in the Low-Density Wing of the SMC
Author(s): Leah Fulmer², Lida Oskinova¹, Varsha Ramachandran¹, Wolf-Rainer Hamann¹, John S. Gallagher²
*Institution(s):* ¹ Universität Potsdam - Institut für Physik, ² University of Wisconsin - Madison

154.06 M dwarfs kink and TPAGB in the MIST and PARSEC Infrared Isochrones
Author(s): Hyun-chul Lee³, Jose Ortiz², Dionicio Garza², Wendy Montano¹, Jessica Garza¹, Iannelly Bernal³
*Institution(s):* ¹ Nikki Rowe High School, ² Robert Vela High School, ³ The University of Texas Rio Grande Valley

154.07 Rotation in Praesepe with K2
Author(s): Luisa M. Rebull¹, John R. Stauffer¹
*Institution(s):* ¹ Caltech
Contributing team(s): K2 Clusters Team

154.08 Isochrone Fitting of Hubble Photometry in UV-Vis Bands
Author(s): Hallie Barker¹, Nathaniel Paust¹
*Institution(s):* ¹ Whitman College

154.09 Conservation of Angular Momentum Confirmed: Rotational Deceleration in an Intermediate-Age Star Cluster
Author(s): Richard de Grijs², Xiaohan Wu², Chengyuan Li², Licai Deng¹
*Institution(s):* ¹ National Astronomical Observatories, Chinese Academy of Sciences, ² Peking University

154.10 Follow up of stellar migrants from globular clusters using the Hobby-Eberly Telescope
Author(s): Matthew D. Shetrone¹, Sarah L. Martell²
*Institution(s):* ¹ Univ. of Texas, ² University of New South Wales
154.11 Sakurai’s Object Continues to Brighten and Expand
Author(s): Kenneth H. Hinkle¹, Richard R. Joyce¹, Thomas Matheson¹
Institution(s): ¹ NOAO

154.12 Sizing Up Southern Red Dwarfs in the Solar Neighborhood
Author(s): Michele L. Silverstein³, Todd J. Henry³, Wei-Chun Jao³, Adric R. Riedel¹, Sergio Dieterich², Jennifer G. Winters⁴, Kenneth J. Slatten⁵
Institution(s): ¹ California Institute of Technology, ² Department of Terrestrial Magnetism, Carnegie Institution of Washington, ³ Georgia State University, ⁴ Harvard-Smithsonian Center for Astrophysics, ⁵ RECONS Institute
Contributing team(s): The RECONS Team

154.13 Modeling the spatial distribution of fragments formed from tidally disrupted stars
Author(s): Eden Girma¹, James Guillochon²
Institution(s): ¹ Harvard College, ² Harvard-Smithsonian Center for Astrophysics
Contributing team(s): Banneker Institute

154.14 Understanding Activity Cycles of Solar Type Stars with Kepler
Author(s): Guadalupe Tovar², Benjamin Montet¹, John A. Johnson¹
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics, ² University of Chicago, ³ University of Washington

154.15 Extension of H-alpha/H-beta Photometry to Additional Luminosity Classes and Emission Line Objects
Author(s): Eric G. Hintz¹, Michael D. Joner¹
Institution(s): ¹ Brigham Young Univ.

154.16 Calibrating the Luminosity of Carbon Stars: An Archival Study of Galaxies in the Nearby Universe
Author(s): Aaron J. Grocholski³, Roeland P. Van Der Marel², Marla C. Geha⁴, Geoffrey C. Clayton¹
Institution(s): ¹ Louisiana State University, ² STScI, ³ Swarthmore College, ⁴ Yale University

154.17 Detailed Iron-Group Abundances in a Very Metal-Poor Main Sequence Turnoff Star
Author(s): Chris Sneden¹, Ian U. Roederer¹, Ann M. Boesgaard², James E. Lawler⁵, Elizabeth Den Hartog⁶, John J. Cowan⁴, Jennifer Sobeck⁵
Institution(s): ¹ Univ. of Texas, ² University of Hawaii, ³ University of Michigan, ⁴ University of Oklahoma, ⁵ University of Virginia, ⁶ University of Wisconsin

154.18 A Multi-Fiber Spectroscopic Search for Low-mass Young Stars in Orion OB1
Author(s): Jacqueline Loerincs³, Cesar Briceno³, Nuria Calvet⁴, Mario L. Mateo⁴, Jesus Hernandez¹
Institution(s): ¹ Centro de Investigaciones de Astronomía, ² Cerro Tololo Inter-American Observatory, ³ Colorado School of Mines, ⁴ University of Michigan

154.19 An Analytical Approach to the Evolution and Death of AGB Stars
Author(s): Henry Alexander Prager², Lee Anne M. Willson³, Massimo Marengo¹, Michelle J. Creech-Eakman²
Institution(s): ¹ Iowa State University, ² New Mexico Tech
154.20 Investigating the Common Origins of Stars Using Dynamical Modeling  
Author(s): Elizabeth Gutierrez, Ivan Ramirez  
Institution(s): 1. The University of Texas at Austin, 2. Villanova University

154.21 A near-infrared surface compositional analysis of blue straggler stars in open cluster M67.  
Author(s): Richard Seifert, Natalie M. Gosnell, Chris Sneden  
Institution(s): 1. University of Texas at Austin

154.22 The Evolutionary Status of the Enigmatic Field Star RZ Piscium: A Search for Comoving Companions  
Author(s): Lydia Gingerich, Tori Knapp, Kristina Punzi, Joel H. Kastner, Carl Melis, Ben M. Zuckerman  
Institution(s): 1. Haverford College, 2. Ithaca College, 3. RIT Center for Imaging Science, 4. UC Los Angeles, 5. UC San Diego

154.23 Neutron-Capture Elements in Low Metallicity Stars within the Inner Galactic Halo  
Author(s): Kenneth A Jumper, Debra L. Burris  
Institution(s): 1. University of Central Arkansas

154.24 A Fast Method to Predict Distributions of Binary Black Hole Masses Based on Gaussian Process Regression  
Author(s): Yuqi Yun, Michael Zevin, Laura Sampson, Vassiliki Kalogera  
Institution(s): 1. Duke University, 2. Northwestern University

154.25 Automated Detection of Dwarf Galaxies and Star Clusters in SMASH through the NOAO Data Lab  
Author(s): Knut A. Olsen, David L. Nidever, Michael J. Fitzpatrick, Kenneth J. Mighell  
Institution(s): 1. NOAO  
Contributing team(s): SMASH Collaboration, NOAO Data Lab Team

154.26 A Novel Approach to Constraining Uncertain Stellar Evolution Models  
Author(s): Philip Rosenfield, Leo Girardi, Julianne Dalcanton, L. C. Johnson, Benjamin F. Williams, Daniel R. Weisz, Alessandro Bressan, Morgan Fouesneau  

154.27 On the Quantification of Incertitude in Astrophysical Simulation Codes  
Author(s): Melissa Hoffman, Maximilian P. Katz, Donald E. Willcox, Scott Ferson, F. Douglas Swesty, Alan Calder  
Institution(s): 1. Applied Biomathematics, 2. Stony Brook University

155 Ground Based Facilities & Instrumentation Poster Session

Wednesday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D
155.01 Re-development of the Mount Evans Womble Observatory
Author(s): Robert E. Stencel
Institution(s): 1. Univ. Denver

155.02 Instruments at the Lowell Observatory Discovery Channel Telescope (DCT)
Author(s): George H. Jacoby1, Thomas A. Bida1, Debra Fischer3, Elliott Horch2, Alexander Kutyrev3, Gregory N. Mace4, Philip Massey1, Henry G. Roe1, Lisa A. Prato1

155.03 First Light of the Renovated Thacher Observatory
Author(s): Katie O’Neill2, Yao Yin1, Nick Edwards1, Jonathan Swift1
Institution(s): 1. The Thacher School

155.04 Quality Control of The Miniature Exoplanet Radio Velocity Array(MINERVA)
Author(s): Kevin O Rivera García2, Jason D Eastman1
Institution(s): 1. Harvard University, 2. University of Puerto Rico Rio Piedras campus

155.05 Brown University Radio Student Telescope (BURST)
Author(s): Michelle Miller1
Institution(s): 1. Brown University

155.06 Weizmann Fast Astronomical Survey Telescope (WFAST)
Author(s): Guy Nir2, Eran Oded Ofek2, Sag Ben-Ami3, Ilan Manulis2, Avishay Gal-Yam2, Oz Diner2, Michael Rappaport2
Institution(s): 1. Harvard Smithsonian Astrophysical Observatory, 2. Weizmann Institute

155.07 Estimating Noise in the Hydrogen Epoch of Reionization Array
Author(s): Philip Englund Mathieu1
Institution(s): 1. Brown University
Contributing team(s): HERA Team

155.08 Spectrographs and Large Telescopes: A Study of Instrumentation
Author(s): Haley Diane Fica1, Jeffrey D. Crane2, Alan K. Uomoto2, Tyson Hare2
Institution(s): 1. Barnard College, 2. Carnegie Observatories

155.09 Use of the Half-Degree Imager as a Photometric Instrument
Author(s): J. Allyn Smith1
Institution(s): 1. Austin Peay State Univ.
Contributing team(s): WIYHN-0.9m Consortium

155.10 On-Sky Performance Verification of the CHARIS IFS
Author(s): Tyler Dean Groff3, Jeffrey K. Chilcote1, Jeremy Kasdin5, Timothy Brandt2, Michael Galvin3, Craig Loomis5, Michael Carr5, Gillian R. Knapp5, Olivier Guyon6, Nemanja Jovanovic, Julien Lozi6, Naruhisa Takato6, Masahiko Hayashi3
155.11 Photometric Calibration of the Gemini South Adaptive Optics Imager
Author(s): Sarah Anne Stevenson¹, Eleazar Rodrigo Carrasco Damele¹, Joanna Thomas-Osip¹
Institution(s): ¹ Gemini Observatory, ² Williams College

155.12 DuO Cam: A Two-Channel Camera for Simultaneous Photometric Observations of Stellar Clusters
Author(s): Erin R Maier³, Emily Witt¹, Darren L. Depoy², Luke M. Schmidt²
Institution(s): ¹ St. Olaf College, ² Texas A&M University, ³ University of Iowa

155.13 Spectro-spatial reconstruction of Wide Field Imaging Interferometry Testbed (WIIT) data
Author(s): Roser Juanola-Parramon¹, David Leisawitz¹, Matthew R Bolcar¹, Alexander Iacchetta¹, Stephen F Maher¹, Stephen Rinehart³
Institution(s): ¹ NASA Goddard Space Flight Center, ² The Institute of Optics - University of Rochester

155.14 Simulations and Interpretations of BETTII Observations
Author(s): Arnab Dhabal², Lee G. Mundy², Maxime Rizzo¹, Stephen Rinehart¹, Roser Juanola-Parramon¹
Institution(s): ¹ NASA Goddard Space Flight Center, ² University of Maryland

155.15 Monitoring Telluric Water Absorption with CAMAL
Author(s): Ashley Baker¹, Cullen Blake¹, David Sliski¹
Institution(s): ¹ University of Pennsylvania

155.16 Wide Band Artificial Pulsar
Author(s): Zackary Parsons¹
Institution(s): ¹ National Radio Astronomy Observatory

155.17 Preparing ZEUS-2 for Observing Run at the APEX Telescope
Author(s): Patrick Dahlin², Amit Vishwas¹, Thomas Nikola¹, Gordon J. Stacey¹
Institution(s): ¹ Cornell University, ² University of Michigan - Ann Arbor

155.18 Developing a Single-shot Polarimeter for Astronomy with Stressed-engineered Optics
Author(s): Tristan Wolfe³, Robert E Stencel¹
Institution(s): ¹ University of Denver

155.19 Design Considerations for the Installation of an Iodine (I2) Cell onto TRES
Author(s): Juliana Garcia-Mejia¹
Institution(s): ¹ Harvard University

155.20 A dispersed fringe sensor prototype for the Giant Magellan Telescope
Author(s): Danielle Frostig¹, Brian A. McLeod¹, Derek Kopon¹
Institution(s): ¹ Harvard Smithsonian Center for Astrophysics

155.21 Camera Development for the Cherenkov Telescope Array
Author(s): Roberto Jose Moncada¹
Institution(s): ¹ University of Wisconsin-Madison
156 Catalogs Poster Session

156.01 The SUPERBLINK all-sky catalog of 2.8 million stars with proper motions larger than 40 mas/yr, enhanced with data from the first GAIA release
Author(s): Sebastien Lepine
Institution(s): 1. Georgia State University

156.02 The Reliability of Galaxy Classifications by Citizen Scientists
Author(s): Lennox Francis, Stefan J. Kautsch, Dmitry Bizyaev
Institution(s): 1. Apache Point Observatory, 2. Nova Southeastern University

156.03 Cross-matching within the Chandra Source Catalog
Author(s): Arnold H. Rots, Douglas J. Burke, Francesca Civano, Roger Hain, Dan Nguyen
Institution(s): 1. Harvard-Smithsonian CfA

156.04 Classifying TDSS Stellar Variables
Author(s): Rachael Christina Amaro, Paul J. Green
Institution(s): 1. Harvard-Smithsonian Center for Astrophysics, 2. University of Illinois at Urbana-Champaign
Contributing team(s): The TDSS Collaboration

157 Societal Matters Poster Session

157.01 The AAS Working Group on Accessibility and Disability (WGAD): Year 1 Highlights
Author(s): Alicia Aarnio, Jacqueline Monkiewicz, Nicholas Arnold Murphy, Jason Nordhaus, Sarah E. Tuttle

157.02 Astronomy Allies
Author(s): Heather Flewelling, Katherine A. Alatalo
Institution(s): 1. Carnegie Observatories, 2. University of Hawaii

158 HAD IV: Poster Session

158.01 This Month in Astronomical History: Preliminary Survey Results
Author(s): Teresa Wilson
Institution(s): 1. Michigan Technological University
Author(s): Kristine Larsen
Institution(s): 1 Central Connecticut State University

158.03 Caroline Furness and the Evolution of Visual Variable Star Observing
Author(s): Kristine Larsen
Institution(s): 1 Central Connecticut State University

158.04 Changes in Latitude, Changes in Attitude: U.S. Naval Observatory Observations of Solar Eclipses 1869 to the Present
Author(s): Malynnda R. Chizek Frouard, Linda Towne, George H. Kaplan
Institution(s): 1 US Naval Observatory

158.05 Instrumentation for Infrared Astronomy in the Collections of the National Air and Space Museum, Smithsonian Institution
Author(s): David H. DeVorkin
Institution(s): 1 Smithsonian Inst.

158.06 Airborne Infrared Astronomical Telescopes
Author(s): Edwin F. Erickson
Institution(s): 1 NASA Ames Research Center

158.07 Urania in the Marketplace: The Blue Comet (A Railroad’s Astronomical Heritage)
Author(s): Kenneth S. Rumstay
Institution(s): 1 Valdosta State Univ.

SPS Evening of Undergraduate Science

Wednesday, 6:30 pm - 8:30 pm; Yellow Rose Ballroom

The Society of Physics Students (SPS) sponsors this meeting and invites all undergraduates attending the AAS Meeting. At this meeting students will have an opportunity to display their posters and showcase their research. A noted astronomer will give a short talk on astronomy as a personal endeavor, providing a perspective on the field and the SPS Director will give a short presentation on career tools, resume writing skills, and astronomy trivia. The session provides an opportunity to slow down and savor the field and the accomplishments of one’s colleagues.
Organizer(s): Brad Conrad (Society for Physics Students/AIP)

CSMA Meet & Greet

Wednesday, 6:30 pm - 7:30 pm; San Antonio 5

The CSMA Meet & Greet is an informal forum for students and researchers from underrepresented minority groups, and their allies, to meet with each other and AAS leadership (including CSMA members), network, and disseminate information about how to pursue a career in Astronomy and get involved with the AAS. Confirmed Speakers Jorge Moreno (CSMA chair), Adam Burgasser (AAS Council)
Organizer(s): Adam Burgasser (UC San Diego)
WEDNESDAY, 4 JANUARY 2017

Career Networking and Job Fair

Wednesday, 6:30 pm - 8:00 pm; Grapevine C

The AAS Employment Committee invites employers and potential employees to the Career Networking and Job Fair. Learn about the various career services offered at the meeting and by the association, including the Career Center, Job Register, career hours, workshops, and much more. Employers have a special opportunity to sponsor a table at the concurrent Job Fair. This is an open event, but registration is requested. Sign up to sponsor this event at aas.org/meetings/aas229/jobfair.

Organizer(s): AAS Employment Committee (AAS)

LGBTIQA Networking Dinner

Wednesday, 6:30 pm - 8:30 pm; AAS Registration Desk

The AAS Committee for Sexual-Orientation and Gender Minorities in Astronomy (SGMA) works to promote equality for lesbian, gay, bisexual, transgender, intersex, questioning, and asexual individuals within our profession. Join us for dinner on Wednesday evening, January 4. We'll meet in front of the Meeting Registration Desk at 7:30 and walk to a local restaurant. Please bring a method of payment for this dinner.

Organizer(s): William Dixon (Space Telescope Science Institute)

Science Opportunities with the NASA K2 and TESS Missions

Wednesday, 7:30 pm - 9:00 pm; Texas C

The NASA K2 and TESS missions have many similar science goals and guest observer opportunities. This Town Hall will present summaries of the mission status and science highlights for K2 and mission progress and guest observer plans for TESS. Many of the K2 and TESS project staff will be on hand to answer questions and chat in the informal reception to follow a few brief talks.

Organizer(s): Steve Howell (NASA ARC)

159 LSST Town Hall

Wednesday, 7:30 pm - 9:00 pm; Grapevine A

All US scientists, and a growing list of scientists affiliated with international partners, have the opportunity to contribute now to the development of the LSST observing strategy and to precursor scientific studies. This broad astronomical community will also have equal access to all LSST transient alerts, data products and software. The LSST Town Hall will bring updates to the community on the activities and policies of the LSST Project (Beth Willman), LSST Corporation (Pat Eliason), and LSST Science Collaborations (Lucianne Walkowicz). This town hall will include emphasis on elucidating the complementary missions of these entities, highlighting ways for community members to get involved in LSST now, and soliciting community feedback.

Organizer(s): Suzanne Jacoby (Large Synoptic Survey Telescope)
Film Screening: StarMen

Wednesday, 8:00 pm - 10:00 pm; Grapevine D

Four exceptional astronomers celebrate 50 years of work and friendship on a return road trip in the southwestern United States, recapturing youthful adventures and recounting each other's influences on the most exciting period in astronomy's history. I wanted to go with them because I became enchanted with astronomy as a young girl, at the time they were becoming leaders in their field: Roger the instrument-maker, Donald the theoretician, Nick the visionary, and Wal the observer. Together they represent the most productive period astronomy has ever had. They helped build the world's biggest observatories and made revolutionary discoveries about the evolving universe, discoveries that have the power to change the way humanity sees itself. In old age and facing death, their journey through memory and the breathtaking landscape provokes them to reflect on how their profound work on the universe has reflected back on the individual, affecting their sense of religious faith, how life may have purpose, and what is knowable and unknowable. Filmed in California, Arizona, New Mexico and Utah, the film features POV narration, and draws a character-driven, intimate portrait of friendship as the men travel from the century-old telescope on Mt. Wilson through a progression of larger and more powerful observatories. They pause at the Grand Canyon, and re-take a hike that nearly defeated them when they were young. Alison Rose is a producer, director, and writer whose filmmaking explores how people experience and understand the world – scientifically; ethically. Alison worked at the Canadian Institute for Theoretical Astrophysics for 18 months during the making of this film. Her previous documentaries include Galileo’s Sons & Love at the Twilight Motel. STAR MEN is her first cross-platform project.
200 Plenary Talk: The LED Outdoor Lighting Revolution: Opportunities, Threats and Mitigation, Martin Aubé (Cégep de Sherbrooke)

Thursday, 8:30 am - 9:20 am; Texas A
Chair: James Lowenthal (Smith College)

200.01 The LED outdoor lighting revolution: Opportunities, threats and mitigation
Author(s): Martin Aube¹
Institution(s): ¹ Cégep de Sherbrooke

201 Plenary Session: AAS Prize Presentations: Buchalter Cosmology, Weber, George Van Biesbroeck, Tinsley, LAD Astrophysics Prize, Education

Thursday, 9:20 am - 9:40 am; Texas A
Chair: Christine Jones (Harvard-Smithsonian, CfA)

Citations:
Weber: James J. (Jamie) Bock For his development of low noise “spider web” bolometers that enable a broad range of submillimeter and millimeter observations with ground-based, balloon-based, and space-based instruments, leading to critically important measurements of the cosmic microwave background radiation.

Van B: Richard (Rick) A. Perley For his tireless and unrelenting career-long service to the global astronomical community, and the dedication of his unparalleled expertise in radio interferometry to the design, commissioning, and optimization of the world’s premier radio telescope, the Very Large Array.

Tinsley: Andrew Gould For his development of gravitational microlensing as an important tool for the discovery and characterization of exoplanets.

LAD Astrophysics Prize: Peter Beiersdorfer For his numerous contributions to the study of astronomical environments at extreme-ultraviolet and X-ray wavelengths.

Education: Lynn R. Cominsky For her long-standing leadership of the Sonoma State University Education and Public Outreach Group, which has had a broad and significant impact both locally and nationally. Cominsky has done extensive work on teacher training and on public outreach for many high-energy-astrophysics missions, including XMM-Newton, Swift, Fermi, and NuSTAR.
2017 Eclipse of the Sun: Education and Outreach

Thursday, 10:00 am - 11:30 am; San Antonio 1

This 90-minute discussion and share-a-thon, organized by members of the AAS Solar Eclipse Task Force, is an opportunity to learn what education and outreach projects other astronomers and institutions are doing in anticipation of the August 2017 eclipse of the Sun, and to share information about your own plans with your peers. Even if you plan to go to the path of totality, you may want to be part of eclipse outreach in the months preceding the event. Tables will be set out for an exchange of handouts or brochures, and panelists will discuss some of the key projects now under discussion or under way. Among these will be: • The AAS NSF small grants program for eclipse outreach programs to underserved communities • Where the work of the AAS Solar Eclipse Task Force (and its committees) stand now and what else needs to be done • NASA’s plans for education, outreach, and citizen science • Other planned national citizen science and outreach projects, plus examples of promising local and regional outreach activities • Insights from the Astronomical Society of the Pacific’s December meeting on eclipse outreach to inner city and other diverse communities • Projects for bulk distribution of eclipse glasses and safe-viewing information • Tips and resources for setting up your own local eclipse outreach events • Work with the medical and public-safety communities • Media related projects and materials. If you would like to share information about your education or outreach project through a handout, bring 200 copies with you to the meeting.

Organizer(s): Andrew Fraknoi (Foothill College)

202 Extrasolar Planets: Characterization & Theory II

Thursday, 10:00 am - 11:30 am; Texas A

Chair: Zdzislaw Musielak (Univ. of Texas, Arlington)

202.01 Cloud and Haze in the Atmospheres of Wide-Separation Exoplanets

Author(s): Renyu Hu

Institution(s): 1. Jet Propulsion Laboratory

202.02 Formation of Hazes & Clouds on Tidally Locked Hot-Jupiters: Insights from Size Distribution Dynamics

Author(s): Diana Powell, Xi Zhang, Peter Gao, Vivien Parmentier

Institution(s): 1. California Institute of Technology, 2. UC Santa Cruz, 3. University of Arizona

202.03 Impact of Sulfur Hazes on the Reflected Light Spectra of Giant Exoplanets

Author(s): Peter Gao, Mark S. Marley, Kevin Zahnle, Tyler D. Robinson, Nikole K. Lewis

Institution(s): 1. NASA Ames Research Center, 2. Space Telescope Science Institute, 3. University of California, Santa Cruz

202.04D The Exo-Atmosphere of WASP-103b

Author(s): Kimberly Michelle Star Cartier, Jason Wright, Thomas G. Beatty

Institution(s): 1. Pennsylvania State University
202.05 Probing the Physics and Chemistry in Hot Jupiter Exoclimes for Future Missions
Author(s): Mahmuda Afrin Badhan⁴, Ravi Kumar Kopparapu⁴, Shawn Domagal-Goldman¹, Drake Deming⁴, Eric Hébrard³, Patrick GJ Irwin⁵, Natasha Batalha², Avi Mandel³
Institution(s): ¹ NASA Goddard Space Flight Center, ² Pennsylvania State University, ³ University of Exeter, ⁴ University of Maryland College Park, ⁵ University of Oxford

202.06 Through the Looking-Glass: Reflected Light from Other Worlds
Author(s): Jayne Birkby², Roi Alonso², Sergio Hoyer², Mercedes Lopez-Morales¹
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics, ² Instituto de Astrofisica de Canarias

202.07D Searching for new diagnostics of exoplanet atmospheres
Author(s): Antonija Oklopcic¹, Christopher M. Hirata², Kevin Heng³
Institution(s): ¹ California Institute of Technology, ² Ohio State University, ³ University of Bern

203 AGN, QSO, Blazars: Energetics & Physics
Thursday, 10:00 am - 11:30 am; Texas C
Chair: Nico Cappelluti (Yale University)

203.01 A Radiative Transport Model for Blazars
Author(s): Tiffany Lewis¹, Finke Justin², Peter A. Becker¹
Institution(s): ¹ George Mason University, ² Naval Research Laboratory

203.02D Kepler and K2 Light Curves of Active Galaxies: Optical Time Domain Windows into the Central Engine
Author(s): Krista Lynne Smith⁴, Richard Mushotzky⁴, Patricia T. Boyd³, Steve B. Howell², Neil Gehrels³, Dawn M. Gelino¹
Institution(s): ¹ Caltech, ² NASA ARC, ³ NASA GSFC, ⁴ University of Maryland College Park

203.03D Excitation Mechanisms of Near-Infrared Emission Lines in LINER Galaxies
Author(s): Anna Boehle¹
Institution(s): ¹ UCLA

203.04 The Similarity of Luminosity in Quasar Doppelganger Pairs
Author(s): Michael S. Brotherton², Thomas Bernard Rochais², Vikram Singh², William T. Chick², Jaya Maithil³, Jessica Sutter², Zhaohui Shang¹
Institution(s): ¹ Tianjin Normal University, ² Univ. of Wyoming

203.05D Probing Feedback with the Thermal Sunyaev-Zel'dovich Effect
Author(s): Devin T Crichton¹
Institution(s): ¹ Johns Hopkins University
Contributing team(s): Atacama Cosmology Telescope Collaboration
204 Star Formation: Galactic to Extragalactic

Thursday, 10:00 am - 11:30 am; Texas D

Chair: Anuj Sarma (DePaul Univ.)

204.01 Mapping the High-Dimensional ISM with Kinetic Tomography
Author(s): Gail Zasowski, Joshua Eli Goldston Peek, Kirill Tchernyshyov
Institution(s): 1. Johns Hopkins University, 2. Space Telescope Science Institute

204.02D Deciphering Galactic Hydrogen with 21-SPONGE
Author(s): Claire Murray, Snezana Stanimirovic, Miller Goss, Carl E. Heiles, John Miller Dickey, Robert Lindner, Brian L Babler

204.03D Bridging the Gap from Galactic to Extragalactic: Star Formation and Giant Molecular Clouds within the Nearby Spiral Galaxy NGC 300
Author(s): Christopher Faesi
Institution(s): 1. Harvard Univ.

204.04D Untangling the magnetic fields in spiral galaxy NGC 6946 with wide-band polarimetry
Author(s): Anna Williams, George Heald, Eric M. Wilcots, Ellen Gould Zweibel
Institution(s): 1. CSIRO, 2. University of Wisconsin-Madison

204.05D The EDGE--CALIFA Survey: Molecular Gas Depletion Time in Galaxy Centers
Author(s): Dyas Utomo, Leo Blitz, Alberto D. Bolatto, Tony H. Wong, Eve C. Ostriker
Contributing team(s): the EDGE--CALIFA collaboration

205 First Galaxies & Early Universe

Thursday, 10:00 am - 11:30 am; Grapevine A

Chair: Kim-Vy Tran (Texas AandM University)

205.01 The pair and major merger history of galaxies up to z=6 over 3 square degrees
Author(s): Christopher Conselice, Carl Mundy, Kenneth Duncan
Institution(s): 1. Leiden Observatory, 2. Univ. of Nottingham

205.02D The formation and evolution of high-redshift dusty galaxies
Author(s): Jingzhe Ma, Anthony H. Gonzalez, Jian Ge, Joaquin D. Vieira, Jason X. Prochaska, Justin Spilker, Maria Strandet, Matthew Ashby, Pasquier Noterdaeme, Britt Lundgren, Yinan Zhao, Tuo Ji, Shaohua Zhang, Paul Caucal
Contributing team(s): SPT SMG collaboration
205.03 Physical and observable properties of the first galaxies
Author(s): John Wise¹, Kirk Stuart Simeon Barrow¹, Brian W. O'Shea², Michael L. Norman³, Hao Xu³
Institution(s): ¹ Georgia Institute of Technology, ² Michigan State University, ³ UC - San Diego

205.04D High-Redshift Astrophysics Using Every Photon
Author(s): Patrick Breyssse¹, Ely Kovetz³, Mubdi Rahman¹, Marc Kamionkowski¹
Institution(s): ¹ Johns Hopkins University

205.05 RELICS: Reionization Lensing Cluster Survey
Author(s): Dan A. Coe¹
Institution(s): ¹ STScI
Contributing team(s): RELICS Team

205.06D Magnetizing the Universe during the Epoch of Reionization
Author(s): Daegene Koh¹, John Wise¹
Institution(s): ¹ Georgia Institute of Technology

206 Space Missions from Cubesats to LUVOIR

Thursday, 10:00 am - 11:30 am; Texas 5
Chair: Brendan Crill (Jet Propulsion Laboratory)

206.01D The Behavior of Warm Molecules in Planet-forming Disks and CHESS: a Pathfinder UV Spectrograph for the LUVOIR Surveyor
Author(s): Keri Hoadley¹, Kevin France¹
Institution(s): ¹ University of Colorado - Boulder

206.02 Optics Technologies for LUVOIR & HabEx: Polarization & Mirror Count
Author(s): James B. Breckinridge¹
Institution(s): ¹ College of Optical Sciences, University of Arizona

206.03 A new active method to correct for the effects of complex apertures on coronagraph performance
Author(s): Johan Mazoyer², Laurent Pueyo², Mamadou N'Diaye², Kevin Fogarty², Marshall D. Perrin², Remi Soummer², Colin Arthur Norman¹
Institution(s): ¹ Johns Hopkins University, ² Space Telescope Science Institute

206.04 Improving HST/WFC3 photometric calibration
Author(s): Susana E. Deustua¹
Institution(s): ¹ Space Telescope Science Institute
Contributing team(s): WFC3 Team

206.05 CubeSats for Astrophysics: The Current Perspective
Author(s): David R. Ardila³, Evgenya Shkolnik¹, Varoujan Gorjian ²
Institution(s): ¹ Arizona State University, ² Jet Propulsion Laboratory, ³ The Aerospace Corporation

206.06 The Crisis in Astrophysics and Planetary Science: How Commercial Space and Program Design Principles will let us Escape
Author(s): Martin Elvis¹
Institution(s): ¹ Harvard-Smithsonian CfA
206.07 Exoplanet mass determination using precision imaging astrometry and coronagraphy
Author(s): Eduardo Bendek2, Ruslan Belikov2, Emily R Finan1, Olivier Guyon3, Eugene Pluzhnik2, Stephen Ammons1
Institution(s): 1 Lawrence Livermore National Laboratory, 2 NASA Ames, 3 University of Arizona

207 Black Holes II
Thursday, 10:00 am - 11:30 am; Grapevine C
Chair: Maria Dainotti (Stanford University)

207.01 Tidal Disruption Events Across Cosmic Time
Author(s): Anastasia Fialkov1, Abraham Loeb1
Institution(s): 1 Harvard

207.02 What sets the line widths in tidal disruption events?
Author(s): Nathaniel Roth2, Daniel Kasen1
Institution(s): 1 Univ. of California, Berkeley, 2 University of Maryland, College Park

207.03 Discovery of transient infrared emission from dust heated by stellar tidal disruption flares
Author(s): Sjoert Van Velzen2, Julian H. Krong2, Varoujan Gorjian1
Institution(s): 1 JPL, 2 The Johns Hopkins University

207.04 New Results from Chandra on the X-ray Emission from the Massive Black Hole in the Compact Starburst Galaxy Henize 2-10
Author(s): Amy E. Reines2, Mark Reynolds6, Jon M. Miller5, Gregory R. Sivakoff4, Jenny E. Greene1, Ryan C. Hickox1, Kelsey E. Johnson6
Institution(s): 1 Dartmouth, 2 NOAO, 3 Princeton University, 4 University of Alberta, 5 University of Michigan, 6 University of Virginia

207.05 NuSTAR Discovery of a Possible Black Hole HMXB and Cygnus X-1 Progenitor
Author(s): Jonathan E. Grindlay3, Charles James Hailey1, Shuo Zhang1, Kaya Mori1, Sebastian Gomez2, Jaesub Hong2, John Tomsick3
Institution(s): 1 Columbia University, 2 Harvard-Smithsonian, CfA, 3 University of California

207.06D Spectral-Timing to Probe Strong Gravity in X-ray Binaries
Author(s): Abigail Stevens1, Phil Uttley1
Institution(s): 1 Anton Pannekoek Institute

207.07 Finding Free-Floating Black Holes using Astrometric Microlensing
Author(s): Jessica R. Lu1, Eran Oded Ofek4, Evan Sinukoff3, Andrzej Udalski3, Szymon Kozlowski3
Institution(s): 1 UC Berkeley, 2 University of Hawaii, 3 Warsaw University Observatory, 4 Weizmann Institute
207.08 Improved Constraints to the Local Supermassive Black Hole Occupation Fraction
Author(s): Jianfeng Wu\textsuperscript{2}, Elena Gallo\textsuperscript{2}, Brendan P. Miller\textsuperscript{1}
Institution(s): \textsuperscript{1} College of St. Scholastica, \textsuperscript{2} University of Michigan

208 HEAD II: The Physics of the Perseus Cluster, and Other Highlights, From Hitomi

Thursday, 10:00 am - 11:30 am; Grapevine D

Before the tragic loss of the spacecraft, the Soft X-ray Spectrometer on the Hitomi/Astro-H observatory observed the Perseus cluster of galaxies, producing X-ray spectral data with unprecedented spectral resolution. This session reviews the scientific impact of these transformation data on our understanding of cluster physics and the central active galaxy. We end with a discussion of Hitomi observations of the three other objects for which Hitomi data were obtained, the Crab Nebula, G21.5 and N132D

Chair: Christopher Reynolds (Univ. of Maryland)

208.01 Hitomi measurements of the dynamics of the intracluster medium in the Perseus Cluster
Author(s): Andrew C Fabian\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Cambridge
Contributing team(s): Hitomi Collaboration

208.02 Hitomi results on the Perseus cluster thermodynamics, elemental abundances, and emission processes
Author(s): Maxim L. Markevitch\textsuperscript{1}
Institution(s): \textsuperscript{1} NASA GSFC
Contributing team(s): Hitomi collaboration

208.03 Hitomi Results -NGC 1275: The Origin of Fe-K\alpha Line
Author(s): Richard Mushotzky\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Maryland
Contributing team(s): Hitomi Collaboration

208.04 Highlights from Hitomi observations of non-Perseus targets
Author(s): Hiroya Yamaguchi\textsuperscript{4}, Aya Bamba\textsuperscript{7}, Manabu Ishida\textsuperscript{3}, Satoru Katsuda\textsuperscript{1}, John Patrick Hughes\textsuperscript{5}, Greg Madejski\textsuperscript{6}, Yasushi Fukazawa\textsuperscript{2}
Institution(s): \textsuperscript{1} Chuo University, \textsuperscript{2} Hiroshima University, \textsuperscript{3} JAXA/ISAS, \textsuperscript{4} NASA/GSFC, \textsuperscript{5} Rutgers University, \textsuperscript{6} Stanford University, \textsuperscript{7} The University of Tokyo
Contributing team(s): Hitomi Collaboration

209 Making Great Observatories Even Better: Hubble's Hand in Studying the Multi-Wavelength Universe

Thursday, 10:00 am - 11:30 am; Texas 1

Hubble has a long history of encouraging and facilitating multi-wavelength science through its joint observing programs. Since Cycle 9 of HST in the year 2000, scientists thinking about multi-wavelength projects with Hubble have been able to propose for
an expanding list of facilities that now spans the Chandra X-ray Observatory, NOAO telescopes, Spitzer, XMM-Newton, and NRAO telescopes. This science is often more than the sum of its parts, and enables time-domain and synergistic astrophysics studies not possible with the traditional double-jeopardy approach to arranging observing campaigns. Almost 4000 HST orbits in about 350 joint observing programs have been awarded since the inception of the joint observing program framework, equivalent to more than a year’s worth of Hubble observations. The purpose of this special session is to describe some of the important science results which have been enabled through the joint observing programs, and look ahead to enabling science from additional joint programs. The invited speaker list consists of astronomers who have authored papers resulting from data obtained through joint observing programs, and will highlight the breadth of science enabled from these several joint programs. We propose for a poster session to accompany the oral session, for additional contributions by the science community.

Chair: Rachel Osten (Space Telescope Science Institute)

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<td>Coordinated UV and X-ray Observations of AGN Outflows</td>
<td>Gerard A. Kriss</td>
<td>1. STScI</td>
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<td>209.02</td>
<td>Leo P: A very low-mass, extremely metal-poor, star-forming galaxy</td>
<td>Kristen B. McQuinn</td>
<td>1. University of Texas</td>
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<td>209.04</td>
<td>Multi-wavelength Characterization of Exoplanet Host Stars with the MUSCLES Treasury Survey</td>
<td>Kevin France, Allison Youngblood, R. O. Parke Loyd, Christian Schneider</td>
<td>1. ESA, 2. Univ of Colorado</td>
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<td>209.05</td>
<td>Extrasolar Storms: Mapping Cloud Cover Evolution with Joint HST-Spitzer Observations</td>
<td>Daniel Apai</td>
<td>1. University of Arizona</td>
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209.07 HST, ALMA, and revealing the throes of planet formation
Author(s): Aaron C. Boley
Institution(s): The University of British Columbia

210 The Presidential Transition: What Can We Expect?
Thursday, 10:00 am - 11:30 am; Grapevine B
A new president has been elected and the incoming administration is currently preparing to take charge. How does this transition process impact federal support of science, especially at NASA, NSF, and DOE? Policy experts will discuss the process of a presidential transition, with a particular emphasis on federal support of science.
Chair: Joel Bregman (Univ. of Michigan)

211 The Value of Astronomical Data & Long Term Preservation
Thursday, 10:00 am - 11:30 am; Texas 3
As more sky surveys collect large amounts of data, we automatically assume that all the data will be accessible, preserved and curated for eternity. However, as more data is accumulating, we will have to face some hard tradeoffs what to keep and what to discard, and how much to invest in long-term preservation. As these issues are becoming more and more acute, it is time to have a public discussion about how to make these difficult choices and how to create a sustainable data preservation strategy for the US Astronomy community. The session would feature five speakers and would have an extended open discussion.
Chair: Alexander Szalay (Johns Hopkins Univ.)

211.01 The long term future of astronomical archives
Author: Alex Szalay

211.02 Curating and Archiving LSST Data Products
Author: Beth Wilman

211.03 NASA Astronomy Archives: Enabling Science Now and in the Future
Author: Lisa J. Storrie-Lombardi

211.04 Policy and Practice for Data Preservation at NIST
Author: Robert J. Hanisch

211.05 The PanSTARRS Public Data Archive: A Case Study in Data Preservation
Author: Marc Postman

212 Young Stellar Objects, Very Young Stars, T-Tauri Stars, H-H Objects
Thursday, 10:00 am - 11:30 am; Texas 4
Chair: James De Buizer (SOFIA/USRA)
212.01 Assessing Magnetospheric Accretion in Herbig Ae/Be Stars
Author(s): Alicia Aarnio\textsuperscript{1}, John D. Monnier\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Michigan

212.02 A WISE Study of Star Formation in Canis Major and Target Selection for JWST
Author(s): William J. Fischer\textsuperscript{2}, Deborah Padgett\textsuperscript{2}, Karl R. Stapelfeldt\textsuperscript{1}, Marta M. Sewilo\textsuperscript{2}
Institution(s): \textsuperscript{1} JPL, \textsuperscript{2} NASA Goddard Space Flight Center

212.03D Searching for the bottom of the IMF
Author(s): Taran Esplin\textsuperscript{1}, Kevin Luhman\textsuperscript{1}
Institution(s): \textsuperscript{1} Pennsylvania State University

212.04 A Newly Discovered Source with Peculiar Chemistry Near the HH 111/HH 121 Protostellar System
Author(s): Jennifer J. Wiseman\textsuperscript{2}, Marta M. Sewilo\textsuperscript{2}, Remy Indebetouw\textsuperscript{3}, Johan Lindberg\textsuperscript{2}, Steven B. Charnley\textsuperscript{3}, Jaime E. Pineda\textsuperscript{1}
Institution(s): \textsuperscript{1} Max Planck Institute for Extraterrestrial Physics, \textsuperscript{2} NASA / GSFC, \textsuperscript{3} University of Virginia

212.05 A Triple Protostar System in L1448 IRS3B Formed via Fragmentation of a Gravitationally Unstable Disk
Author(s): John J. Tobin\textsuperscript{9}, Kaitlin M. Kratter\textsuperscript{7}, Magnus Persson\textsuperscript{1}, Leslie Looney\textsuperscript{6}, Michael Dunham\textsuperscript{5}, Dominique Segura-Cox\textsuperscript{4}, Zhi-Yun Li\textsuperscript{10}, Claire J. Chandler\textsuperscript{4}, Sarah Sadavoy\textsuperscript{2}, Robert J. Harris\textsuperscript{8}, Carl Melis\textsuperscript{6}, Laura M. Perez\textsuperscript{3}
Institution(s): \textsuperscript{1} Chalmers University of Technology, Onsala Space Observatory, \textsuperscript{2} Harvard-Smithsonian Center for Astrophysics, \textsuperscript{3} Max Planck Institute for Radio Astronomy, \textsuperscript{4} National Radio Astronomy Observatory, \textsuperscript{5} SUNY - Fredonia, \textsuperscript{6} UC San Diego, \textsuperscript{7} University of Arizona, \textsuperscript{8} University of Illinois, \textsuperscript{9} University of Oklahoma, \textsuperscript{10} University of Virginia

212.06DHST 1.6\textmu m Imaging Survey of Orion Protostars
Author(s): Joseph J. Booker\textsuperscript{9}, S. Thomas Megeath\textsuperscript{9}, William J. Fischer\textsuperscript{1}, Marina Kounkel\textsuperscript{6}, Charles A. Poteet\textsuperscript{3}, Elise Furlan\textsuperscript{2}, Amelia Marie Stutz\textsuperscript{8}, Manoj Puravankara\textsuperscript{4}, John J. Tobin\textsuperscript{9}, Zsofia Nagy\textsuperscript{9}, Dan M. Watson\textsuperscript{8}
Institution(s): \textsuperscript{1} Goddard Space Flight Center, \textsuperscript{2} IPAC, \textsuperscript{3} Space Telescope Institute, \textsuperscript{4} Tata Institute of Fundamental Research, \textsuperscript{5} Universidad de Concepción, \textsuperscript{6} University of Michigan, \textsuperscript{7} University of Oklahoma, \textsuperscript{8} University of Rochester, \textsuperscript{9} University of Toledo
Contributing team(s): Herschel Orion Protostar Survey

213 Innovations in Astronomy Teaching & Learning
Thursday, 10:00 am - 11:30 am; Grapevine 1
The field of Astronomy Education Research is a quickly advancing area of study that gives insights into the teaching and learning of astronomy. Presenters in this special session will discuss the results of research on a variety of recent innovations in astronomy education for college-level instruction and lifelong learning. Topics will include innovations in Pedagogy, Assessment, and Curricular materials for face-to-face, and online college-level instruction as well as MOOCs (Massive Open Online Courses).
Chair: Chris Impey (Univ. of Arizona)
213.01 Results of Studying Astronomy Students’ Science Literacy, Quantitative Literacy, and Information Literacy
Author(s): Sanlyn Buxner¹, Chris David Impey², Katherine B. Follette³, Erin F. Dokter⁴, Don McCarthy⁴, Beau Vezino⁴, Martin Formanek⁵, James M Romine¹, Laci Brock⁶, Megan Neiberding⁷, Edward E. Prather⁴
Institution(s): ¹ Independent, ² NOAO, ³ Stanford University, ⁴ University of Arizona

213.02 A Preliminary Analysis of College Students’ Preinstructional Ideas About Planet Formation
Author(s): Molly Simon¹, Chris David Impey¹, Sanlyn Buxner¹
Institution(s): ¹ University of Arizona

213.03 Using pedagogical discipline representations (PDRs) to enable Astro 101 students to reason about modern astrophysics
Author(s): Colin Scott Wallace⁴, Edward E. Prather¹, Timothy G. Chambers³, Julia R. Kamenetzky⁵, Seth D. Hornstein²
Institution(s): ¹ University of Arizona, ² University of Colorado Boulder, ³ University of Michigan, ⁴ University of North Carolina at Chapel Hill, ⁵ Westminster College
Panel Discussion and Audience Q&A

213.04 Astronomy for Astronomical Numbers with Massive Open Online Classes
Author(s): Chris David Impey¹, Matthew Wenger¹, Sanlyn Buxner¹, Martin Formanek¹
Institution(s): ¹ Univ. of Arizona

213.05 Research on Peer Grading in an Astronomy Massive Open Online Course
Author(s): Martin Formanek¹, Chris David Impey¹, Matthew Wenger¹, Tenzin Sonam¹, Sanlyn Buxner¹
Institution(s): ¹ University of Arizona

213.06 Studying Student Motivations in an Astronomy Massive Open Online Class
Author(s): Matthew Wenger¹, Chris David Impey¹, Sanlyn Buxner¹, Martin Formanek¹
Institution(s): ¹ University of Arizona
Panel Discussion and Audience Q&A

214 Galaxies at High Redshift
Thursday, 10:00 am - 11:30 am; Grapevine 2
Chair: Rachael Livermore (University of Texas at Austin)

214.01D The diversity of evolutionary pathways of compact elliptical galaxies in cosmological simulations
Author(s): Sarah Wellons¹
Institution(s): ¹ Harvard University
214.02 What drives the kinematic evolution of star-forming galaxies?
Author(s): Chao-Ling Hung1, Christopher C. Hayward2, Tiantian Yuan1
Institution(s): 1 Australian National University, 2 Center for Computational Astronomy, 3 University of Texas at Austin

214.03D Star formation history and chemical enrichment in the early Universe: clues from the rest-optical and rest-UV spectra of ∼2-3 star-forming galaxies in the Keck Baryonic Structure Survey
Author(s): Allison L. Strom1
Institution(s): 1 Caltech

214.04 Fast-Timescale Star Formation at z ~ 1 Revealed by H alpha
Author(s): Peter Kurczynski2, Eric J. Gawiser3, Viviana Acquaviva2, Marc Rafelski4, Harry I. Teplitz1
Institution(s): 1 Infrared Processing and Analysis Center, MS 100-22, CalTech, 2 New York City College of Technology, 3 Rutgers University, 4 Space Telescope Science Institute
Contributing team(s): UVUDF Team, CANDELS Team

214.05 The Evolution of Massive Morphological Spheroid and Disk Galaxies in CANDELS from 11 to 6 Billion Years Ago
Author(s): Daniel H. McIntosh1
Institution(s): 1 University of Missouri-Kansas City
Contributing team(s): CANDELS Collaboration

214.06 The ZINGRS Radio Survey: Probing metallicities at high-z with far-IR fine-structure lines and the radio continuum
Author(s): Carl Ferkinhoff4, Sarah Higdon2, James L. Higdon2, Hannah Tidwell2, Miguel Rangel2, Amit Vishwas1, Thomas Nikola1, Gordon J. Stacey1, Drew Brisbin3
Institution(s): 1 Cornell University - Department of Astronomy, 2 Georgia Southern, 3 Universidad Diego Portales, 4 Winona State University

215 Cataclysmic Variables, Novae, & Symbiotic Stars
Thursday, 10:00 am - 11:30 am; Fort Worth 6
Chair: Eric Schlegel (Univ. of Texas, San Antonio)

215.01 Mind the Gap when Data Mining the Ritter-Kolb Cataclysmic Variable Catalogue
Author(s): Warren M. Sparks1, Edward M. Sion3
Institution(s): 1 formerly LANL, 2 Villanova University

215.02 The Disk Instability Model for SU UMa systems - a Comparison of the Thermal-Tidal Model and Plain Vanilla Model
Author(s): John K. Cannizzo1
Institution(s): 1 NASA/GSFC/CRESST/UMBC
215.03D Radio Observations as a Tool to Investigate Shocks and Asymmetries in Accreting White Dwarf Binaries
Author(s): Jennifer Helen Seng Weston
Institution(s): 1 Columbia University
Contributing team(s): The E-Nova Project

215.04 SOFIA/FORCAST Observations of the Symbiotic Mira, R Aquarii
Author(s): Ravi Sankrit, Eric B. Omelian, L. Andrew Helton, Uma Gorti, R. Mark Wagner
Institution(s): 1 LBT Observatory, 2 NASA Ames/SETI, 3 NASA/SOFIA/LOGYX, 4 SOFIA/USRA

215.05 New Results on RZ Leo and CC Scl
Author(s): Paula Szkody, Anjum S. Mukadam, Boris T Gaensicke, Odette Toloza, Zhibin Dai
Institution(s): 1 Univ. of Washington, 2 University of Warwick, 3 Yunnan Observatories
Contributing team(s): HST GO12870 team

215.06 The luminous red nova M101-OT2015-1: a candidate for common envelope ejection
Author(s): Nadejda Blagorodnova, Mansi M. Kasliwal, Rubina Kotak
Institution(s): 1 Caltech, 2 Queens University Belfast

215.07 The Peculiar Evolution of V1535 Sco
Author(s): Justin D. Linford, Laura Chomiuk, Thomas Nelson, Thomas Finzell, Jennifer L. Sokoloski, Michael P. Rupen, Koji Mukai, Amy J. Mioduszewski, Jennifer Helen Seng Weston
Institution(s): 1 Columbia University, 2 George Washington University, 3 Green Bank Observatory, 4 Herzberg Institute for Astrophysics, 5 Michigan State University, 6 NRAO, 7 University of Maryland Baltimore County, 8 University of Pittsburgh

216 The Galactic Disk, Galactic Bulge, & Galactic Center
Thursday, 10:00 am - 11:30 am; Dallas 6
Chair: Robyn Sanderson (Columbia University)

216.01 Chemical Cartography in the Milky Way with SDSS/APOGEE: Multi-element abundances and abundance ratio variations
Author(s): Jon A. Holtzman, Sten Hasselquist, Jennifer Johnson, Jonathan C. Bird, Steven R. Majewski
Institution(s): 1 New Mexico State Univ., 2 Ohio State University, 3 University of Virginia, 4 Vanderbilt University
Contributing team(s): SDSS/APOGEE team

216.02 On the Radial Abundance Gradients of Europium and Oxygen of Stars Inside the Disk of a Simulated Milky Way
Author(s): Krystal Ruiz-Rocha, Gabriela Montes, Enrico Ramirez-Ruiz
Institution(s): 1 University of California, Santa Cruz
216.03  Multiple stellar populations and the origin of the double red clump in the Milky Way bulge  
Author(s): Young-Wook Lee
Institution(s): 1 Yonsei University

216.04  Can Star-Disk Collisions Explain the Missing Red Giants Problem in the Galactic Center?  
Author(s): Tamara Bogdanovic, Thomas Kieffer
Institution(s): 1 Georgia Institute of Technology

216.05D  The Mysterious Galactic Center Radio Source N3  
Author(s): Dominic Ludovici, Cornelia C. Lang, Mark Morris, Robert Lucien Mutel, Elisabeth A.C. Mills, James E Toomey, Juergen Ott
Institution(s): 1 Jan Jose State University, 2 NRAO, 3 United States Coast Guard Academy, 4 University of California, 5 University of Iowa

216.06  High Resolution Surveys of the Water and Methanol Star Formation Masers in the Central Molecular Zone  
Author(s): Matthew Rickert, Farhad Yusef-Zadeh, Juergen Ott, David S. Meier, Nico Krieger
Institution(s): 1 Max-Planck-Institut fur Astronomie, 2 National Radio Astronomy Observatory, 3 New Mexico Institute of Mining and Technology, 4 Northwestern University
Contributing team(s): SWAG

216.07  Modelling the thermal X-ray emission around the Galactic center from colliding Wolf-Rayet winds  
Author(s): Christopher Michael Post Russell, Q. Daniel Wang, Jorge Cuadra
Institution(s): 1 NASA/GSFC, 2 Pontificia Universidad Católica de Chile, 3 University of Massachusetts Amherst

216.08  Probing the Southern Fermi Bubble in Ultraviolet Absorption  
Author(s): Md. Tanveer Karim, Andrew Fox, Edward B. Jenkins
Institution(s): 1 Princeton University Observatory, 2 Space Telescope Science Institute, 3 University of Rochester

Education and Public Outreach Event, Student Welcome  
Thursday, 11:40 am - 12:10 pm; Grapevine C
THURSDAY, 5 JANUARY 2017

217 Plenary Talk: What We Don't Know about the Beginning of the Universe, Sean Carroll (Caltech)

Thursday, 11:40 am - 12:30 pm; Texas A
Chair: Jack Burns (Univ. of Colorado at Boulder)

217.01 What We Don't Know about the Beginning of the Universe
Author(s): Sean Carroll
Institution(s): Caltech

Career Hour 2: Interviewing: What you Need to Do Before, During, and After to Get the Job

Thursday, 12:30 pm - 1:30 pm; San Antonio 1
Find out what you need to know and do to get the job from the first moment of contact to the moment you leave the interview.
Organizer(s): AAS Employment Committee (AAS)

New Methods for Teaching in the Flipped Classroom

Thursday, 12:30 pm - 2:00 pm; Dallas 1
Been thinking about flipping your class? So have we! Working with a national collaboration of astronomy educators we have developed a suite of active learning materials that can be used during the freed-up class time the flipped classroom offers. Come engage in a fun and supportive environment designed to help you successfully motivate students to participate, facilitate student learning groups, assess student learning, and manage time in the flipped classroom. Participants will come away with instructional materials and assessment strategies ready for immediate classroom use. Presenters will be Edward Prather and Gina Brissenden (Center for Astronomy Education, Steward Observatory, Univ. of Arizona), who encourage you to bring your lunch! This workshop is based upon work supported by NASA under award number NNX16AC65A. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Aeronautics and Space Administration.
Organizer(s): Gina Brissenden (Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona)

218 NASA Town Hall

Thursday, 12:45 pm - 1:45 pm; Texas C
Senior representatives from NASA's Science Mission Directorate and Astrophysics Division will discuss NASA's science program and outlook. Topics will include...
status of the research program, highlights of operating missions, NASA’s progress in implementing the 2010 Decadal Survey and planning for the 2020 Decadal Survey, progress of missions in development, and anticipated opportunities for both non-flight basic research awards (grants) and flight mission investigations.

**Organizer(s):** Linda Sparke (NASA Headquarters)

**Annual meeting of the USVOA**

**Thursday, 2:00 pm - 3:30 pm; Appaloosa 1**

The USVOA (US Virtual Observatory Alliance) is a forum for collaboration in the US in the area of data and interoperability standards for astronomy. This collaboration represents the US community in the International Virtual Observatory Alliance, the world-wide collaboration times at developing and establishing these standards. The annual meeting will discuss progress and issues in this areas, and also in the area of astronomy user tools enabled by these standards.

**Organizer(s):** Giuseppina Fabbiano (Harvard-Smithsonian, CfA)

**219 Extrasolar Planets: Characterization & Theory III**

**Thursday, 2:00 pm - 3:30 pm; Texas A**

**Chair: Jayne Birkby (Harvard-Smithsonian Center for Astrophysics)**

**219.01 Orbital Architectures of Planet-Hosting Binaries: Testing Co-alignment**

Author(s): Trent J. Dupuy¹, Adam L. Kraus³, Kaitlin M. Kratter², Lisa A. Prato¹  
Institution(s): ¹ Lowell Observatory, ² Steward Observatory, ³ University of Texas at Austin

**219.02 Exploring the optical contrast effect in strong atomic lines for exoplanets transiting active stars**

Author(s): Paul W. Cauley¹, Seth Redfield¹  
Institution(s): ¹ Wesleyan University

**219.03 Characterizing K2 Planetary Systems Orbiting Cool Dwarfs**

Author(s): Courtney D. Dressing¹, Elisabeth R. Newton³, Joshua Schlieder⁴, Andrew Vanderburg², David Charbonneau¹, Heather Knutson¹  
Institution(s): ¹ California Institute of Technology, ² Harvard University, ³ Massachusetts Institute of Technology, ⁴ NASA Exoplanet Science Institute  
Contributing team(s): K2C2

**219.04 Confirming Variability in the Secondary Eclipse Depth of the Rocky Super-Earth 55 Cancri e**

Author(s): Patrick Tamburo², Avi Mandell¹, Drake Deming², Emily Garhart²  
Institution(s): ¹ NASA GSFC, ² University of Maryland

**219.05 The Ruinous Influence of Close Binary Companions on Planetary Systems**

Author(s): Adam L. Kraus², Michael Ireland¹, Andrew Mann³, Daniel Huber³, Trent J. Dupuy²  
Institution(s): ¹ Australian National University, ² The University of Texas at Austin, ³ University of Sydney
219.06 Assessing the Effect of Stellar Companions to Kepler Objects of Interest
Author(s): Lea Hirsch², David R. Ciardi¹, Andrew Howard¹
Institution(s): ¹ Caltech, ² UC Berkeley

219.07D Hubble Case Studies of Transiting Giant Exoplanets
Author(s): Ashlee N. Wilkins⁷, Drake Deming⁷, Adrian Barker⁶, Björn Benneke¹, Laetitia Delrez⁵, Michaël Gillon⁵, Douglas P. Hamilton⁷, Emmanuel Jehin⁵, Heather Knutson¹, Nikole K. Lewis⁴, Nikku Madhusudhan², Avi Mandell³, Peter R. McCullough⁴, Hannah R Wakeford³
Institution(s): ¹ California Institute of Technology, ² Cambridge University, ³ NASA GSFC, ⁴ Space Telescope Science Institute, ⁵ Université de Liège, ⁶ University of Leeds, ⁷ University of Maryland

219.08 Bayesian Inference of Giant Exoplanet Physics
Author(s): Daniel Thorngren¹, Jonathan J Fortney¹
Institution(s): ¹ UCSC

220 AGN, QSO, Blazars: High Redshift
Thursday, 2:00 pm - 3:30 pm; Texas C
Chair: Steven B. Kraemer (Catholic University of America)

220.01D Quasars at Cosmic Dawn: Discoveries and Probes of the Early Universe
Author(s): Feige Wang², Xue-Bing Wu², Xiaohui Fan³, Jinyi Yang², Fuyan Bian¹, Ian D. McGreer³, Richard F. Green³, Qian Yang², Linhua Jiang², Ran Wang²
Institution(s): ¹ Australian National University, ² Peking University, ³ University of Arizona
Contributing team(s): DECaLS team, UHS team

220.02D Surveys of Luminous Quasars in the Post-reionization Universe at z=5-6
Author(s): Jinyi Yang², Xue-Bing Wu², Xiaohui Fan³, Feige Wang², Ian D. McGreer³, Fuyan Bian¹, Richard F. Green³, Qian Yang², Linhua Jiang², Ran Wang², Weimin Yi¹
Institution(s): ¹ Australian National University, ² Peking University, ³ University of Arizona, ⁴ Yunnan Observatories
Contributing team(s): UHS team

220.03D The z~4 Quasar Luminosity Function: Implications for supermassive black hole growth, reionization, and future time domain surveys
Author(s): Yusra AlSayyad¹, Andrew J. Connolly⁴, Ian D. McGreer², Zeljko Ivezic³, Xiaohui Fan³
Institution(s): ¹ Princeton University, ² University of Arizona, ³ University of Washington
Contributing team(s): LSST Data Management

220.04D The High-Redshift Clustering of Photometrically Selected Quasars
Author(s): John Timlin¹
Institution(s): ¹ Drexel University
220.05  New High-z Fermi BL Lacs with the Photometric Dropout Technique  
Author(s): A. Kaur¹, Arne Rau¹, Marco Ajello¹, Dieter Hartmann¹, Vaidehi Paliya¹,  
Jan Bolmer², Jochen Greiner², Patricia Schady²  
_Institution(s): ¹ Clemson University, ² MPE

221 Star Associations, Star Clusters - Galactic & Extragalactic II

Thursday, 2:00 pm - 3:30 pm; Texas D

Chair: Peter Frinchaboy (Texas Christian Univ. (TCU))

221.01D NLTE Effects in Globular Cluster Integrated Light Spectra and Photometric Colors  
Author(s): Mitchell Young¹, C. Ian Short¹  
_Institution(s): ¹ Saint Mary's University

221.02  The Evolutionary Population Synthesis Model for Helium-Enhanced Stellar Populations  
Author(s): Chul Chung¹, Suk-Jin Yoon², Young-Wook Lee²  
_Institution(s): ¹ Center for Galaxy Evolution Research, ² Department of Astronomy, Yonsei University

221.03  Two Groups of Red Giants with Distinct Chemical Abundances in the Bulge Globular Cluster NGC 6553 Through the Eyes of APOGEE  
Author(s): Baitian Tang⁶, Roger Cohen⁶, Douglas Geisler⁶, Ricardo P. Schiavon³,  
Steven R. Majewski³, Sandro Villanova⁶, Ricardo Carrera², Olga Zamora², D Garcia-Hernandez², Matthew D. Shetrone⁷, Peter M. Frinchaboy³, Jose Gregorio Fernandez Trincado⁵  
_Institution(s): ¹ University of Virginia, ² Instituto de Astrofisica de Canarias,  
³, Liverpool John Moores University, ⁴ Texas Christian University, ⁵ Universite de Franche-Comte, ⁶ University of Concepcion, ⁷ University of Texas at Austin  
Contribution team(s): APOGEE Team

221.04  RR Lyrae stars as a tracer of multiple stellar populations in globular clusters  
Author(s): Sohee Jang¹, Young-Wook Lee¹  
_Institution(s): ¹ Yonsei Univ.

221.05  The Multiple Generations and Populations of the Massive Globular Cluster NGC 6273 (M 19)  
Author(s): Christian I. Johnson³, Nelson Caldwell³, Robert Michael Rich⁵, Mario L. Mateo⁶, John Ira Bailey², William I. Clarkson⁷, Edward W. Olszewski³, Matthew G Walker¹  
_Institution(s): ¹ Carnegie Mellon, ² Leiden University, ³ Smithsonian Astrophysical Observatory, ⁴ University of Arizona, ⁵ University of California, Los Angeles, ⁶ University of Michigan, ⁷ University of Michigan-Dearborn

221.06  The High-mass Truncation of the Star Cluster Mass Function: Limits on Massive Cluster Formation  
Author(s): L. C. Johnson¹  
_Institution(s): ¹ University of California, San Diego  
Contribution team(s): PHAT Team
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222 Starburst Galaxies Near & Far

Thursday, 2:00 pm - 3:30 pm; Grapevine A
Chair: Michael N. Fanelli (NASA Ames Research Center)

222.01D Characterizing Lyman Alpha Scattering in Nearby Galaxies
Author(s): Joanna Bridge¹, Matthew Hayes², Jens Melinder³, Göran Östlin², Caryl Gronwall¹

Institution(s): ¹ Pennsylvania State University, ² Stockholm University

222.02 Green Peas emit X-rays: Extreme Star Formation in Early Universe Analog Galaxies
Author(s): Matthew Brorby¹, Philip Kaaret¹

Institution(s): ¹ University of Iowa

222.03 The Dense Molecular Gas and Nuclear Activity in the Local ULIRG IRAS 13120-5453
Author(s): George C. Privon⁶, Susanne Aalto², Niklas Falstad², Sebastien Muller², Eduardo González-Alfonso⁶, Kazimierz Sliwa⁴, Ezequiel Treister⁶, Francesco Costagliola², Lee Armus², Aaron S. Evans¹⁰, Santiago Garcia-Burillo⁵, Takuma Izumi⁴, Kazushi Sakamoto¹, Paul van der Werf⁶

Institution(s): ¹ Academia Sinica, ² Chalmers University of Technology, ³ Leiden University, ⁴ Max Planck Institute for Astronomy, ⁵ Observatorio de Madrid, ⁶ Pontificia Universidad Católica de Chile, ⁷ SSC/Caltech, ⁸ Universidad de Alcalá, ⁹ University of Tokyo, ¹⁰ University of Virginia

222.04 Scaling Relations of Galactic Winds with Star Formation Rate
Author(s): Ryan Tanner¹, Gerald Cecil², Fabian Heitsch²

Institution(s): ¹ Augusta University, ² University of North Carolina at Chapel Hill

222.05D Simulating Galactic Winds on Supercomputers
Author(s): Evan Schneider¹

Institution(s): ¹ University of Arizona

222.06 Photometric Redshifts for High Resolution Radio Galaxies in the SuperCLASS Field
Author(s): Sinclaire Manning¹, Caitlin Casey¹, Richard Battye⁴, Christopher A. Hales⁴, Scott Chapman², Ian Smail³

Institution(s): ¹ Department of Astronomy, University of Texas at Austin, ² Department of Physics and Atmospheric Science, Dalhousie University, ³ Institute for Computational Cosmology, Durham University, ⁴ Jodrell Bank Centre for Astrophysics, University of Manchester, ⁵ National Radio Astronomy Observatory

Contributing team(s): SuperCLASS Team

222.07 Probing the Circumgalactic Medium of Submillimeter Galaxies with QSO Absorption Line Spectroscopy
Author(s): Hai Fu⁶, Joseph F Hennawi¹, Jason X. Prochaska⁴, Alan N. Stockton⁵, Robert Lucien Mutel⁵, Caitlin Casey², Asantha R. Cooray², Dusan Keres³

Institution(s): ¹ MPIA, ² UC Irvine, ³ UC San Diego, ⁴ UC Santa Cruz, ⁵ University of Hawaii, ⁶ University of Iowa, ⁷ UT Austin
223 Surveys & Data - From the Ground

Thursday, 2:00 pm - 3:30 pm; Grapevine B

Chair: Namir Kassim (NRL)

223.01 The Dynamic Infrared Sky
Author(s): Mansi M. Kasliwal\(^1\)
Institution(s): \(^1\) Caltech
Contributing team(s): SPIRITS (Spitzer InfraRed Intensive Transients Survey) Team

223.02 Guard Earth, but Monitor the Universe: ATLAS and the Variable Sky
Author(s): Aren Heinze\(^1\), John Tonry\(^1\), Larry Denneau\(^1\), Brian Stalder\(^1\), Andrei Sherstyuk\(^1\), Armin Rest\(^2\), Ken Smith\(^2\), Steven Smartt\(^2\)
Institution(s): \(^1\) Institute for Astronomy, University of Hawaii, \(^2\) Queen's University Belfast

223.03 The Pan-STARRS1 Survey Data Release
Author(s): Kenneth C. Chambers\(^1\)
Institution(s): \(^1\) Univ. of Hawaii
Contributing team(s): Pan-STARRS Team

223.04D Late-Time Follow-up of ASAS-SN Tidal Disruption Events
Author(s): Thomas Warren-Son Holoien\(^1\)
Institution(s): \(^1\) The Ohio State University
Contributing team(s): The ASAS-SN Team

223.05 Selected First Results from the 7 Ms Chandra Deep Field-South Survey
Author(s): W. Niel Brandt\(^1\)
Institution(s): \(^1\) Penn State Univ.
Contributing team(s): Chandra Deep Field-South Team

223.06 A Numerical Study on the Streams of Star Debris after Tidal Disruption
Author(s): Priscila Camacho Olachea\(^1\), Enrico Ramirez-Ruiz\(^1\), Jamie Law-Smith\(^1\)
Institution(s): \(^1\) University of California Santa Cruz

224 Large Scale Structure, Cosmic Distance Scale

Thursday, 2:00 pm - 3:30 pm; Grapevine C

Chair: Mehmet Alpaslan (NASA Ames Research Centre)

224.01 Where does cosmic far-infrared background come from? Interpreting the Planck and Herschel results using physical and empirical models
Author(s): Hao-Yi Wu\(^1\), Olivier Doré\(^1\)
Institution(s): \(^1\) California Institute of Technology.

224.02D Methods for accurate analysis of galaxy clustering on non-linear scales
Author(s): Mohammadjavad Vakili\(^1\)
Institution(s): \(^1\) New York University
224.03 Redshift-Independent Distances in the NASA/IPAC Extragalactic Database Surpass 166,000 Estimates for 77,000 Galaxies
Author(s): Ian Steer
Institution(s): 1 NED

224.04D Galaxy-galaxy and galaxy-CMB Lensing with SDSS-III BOSS galaxies
Author(s): Sukhdeep Singh, Rachel Mandelbaum
Institution(s): 1 Carnegie Mellon University

224.05 Efficient Cosmological Perturbation Theory with FAST-PT
Author(s): Xiao Fang, Jonathan Blazek, Joseph McEwen, Christopher M. Hirata
Institution(s): 1 The Ohio State University

225 Extremes of Time Domain Astrophysics: Stellar Mergers to Black Hole Outbursts

Thursday, 2:00 pm - 3:30 pm; Grapevine D

Time Domain Astrophysics (TDA) covers an enormous landscape of timescales and energies: from stellar birth to death; and from mergers of stars, to stellar mass black holes, to supermassive black hole mergers -- to list but a few. We propose a Special Session to to focus on the extremes of TDA phenomena, with duration timescales from months to milliseconds and currently observed (or inferred) rates (if recurrent) of \(<10^{-2} -- >10^{+3}\) per year. The Session will deal not only with extreme phenomena, but the current and planned surveys and analysis methods to study them. Both observation and analysis techniques will be paramount to the session organization. An accompanying Poster session will be solicited. This session is also designed to promote the newly formed (2014) Working Group on Time Domain Astronomy (WGTDA) and enlist new members to work in and promote this now major field of Astronomy/Astrophysics as well as to consider its future needs and plans for the coming 2020 Decadal Survey.

Chair: Stanislav Djorgovski (Caltech)

225.01 Stellar Mergers and Common Envelope Episodes in the Transient Night Sky
Author(s): Morgan MacLeod
Institution(s): 1 Institute for Advanced Study

225.02 Fast Radio Bursts
Author(s): Victoria M. Kaspi
Institution(s): 1 McGill Univ.

225.03 Changing Look Quasars
Author(s): Paul J. Green, Chelsea MacLeod, Scott F. Anderson, Michael Eracleous, John J. Ruan, Jessie C. Runnoe, Matthew J. Graham
Institution(s): 1 California Institute of Technology, 2 Harvard-Smithsonian CfA, 3 Penn State University, 4 University of Michigan, 5 University of Washington

225.04 Exciting Developments in Tidal Disruption Event Observations
Author(s): Suvi Gezari
Institution(s): 1 University of Maryland
### 225.05 Electromagnetic Counterparts to Gravitational Waves

**Author(s):** Mansi M. Kasliwal

**Institution(s):** 1. Caltech

**Contributing team(s):** GROWTH collaboration, iPTF/ZTF collaboration

### 225.06 Harvesting Extremes of Time Domain Astrophysics in the 2020s and Beyond

**Author(s):** Jonathan E. Grindlay

**Institution(s):** 1. Harvard-Smithsonian, CfA

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### 226 Science with the Hyper Suprime-Cam (HSC) Survey

**Thursday, 2:00 pm - 3:30 pm; Texas 1**

This goal of this session, including both talks and poster contributions, is to present a selection of initial science results from the first year of the HSC survey, including exciting results in the fields of weak gravitational lensing, strong lensing, galaxy clusters including SZ-selected ACT clusters, galaxy evolution, and high-redshift quasars. The Hyper Suprime-Cam (HSC) Subaru Strategic Program is an ongoing 300 night survey at the 8.2m Subaru telescope using the wide-field HSC imager over a period of five years. The survey has three layers — wide, deep, and ultra-deep — covering 1400 deg^2, 27 deg^2, and 3.5 deg^2, respectively; observations are being taken in five broadband filters and several narrow-band filters. The survey depth (r~26 for the wide layer) and the excellent imaging quality (median seeing of 0.6 arcsec in the i band), combined with the overlap with many ancillary multi-wavelength datasets like SDSS/BOSS and ACTPol, makes this survey very powerful for a wide range of scientific goals, from weak lensing cosmology, to studies of galaxies at low and high redshift, to quasars (with many additional investigations in other areas enabled by the dataset). The first dataset from the survey will be released in early 2017. For more information about the HSC survey, see [http://hsc.mtk.nao.ac.jp/ssp/](http://hsc.mtk.nao.ac.jp/ssp/).

**Chair: Satoshi Miyazaki (NAOJ)**

#### 226.01 The Subaru Hyper Suprime-Cam Survey

**Author(s):** Michael A. Strauss

**Institution(s):** 1. Princeton Univ.

**Contributing team(s):** the Hyper Suprime-Cam team

#### 226.02 Weak gravitational lensing with the Hyper Suprime-Cam survey

**Author(s):** Rachel Mandelbaum

**Institution(s):** 1. Carnegie Mellon University

**Contributing team(s):** The Hyper Suprime-Cam (HSC) collaboration

#### 226.03 Weak Lensing with the Hyper Suprime-Cam Survey: Connecting the Mass Profiles of Massive Galaxies with their Dark Matter Halos

**Author(s):** Alexie Leauthaud

**Institution(s):** 1. UCSC

**Contributing team(s):** HSC Survey Collaboration

#### 226.04 HSC Weak Lensing Measurement of ACTPol SZ-selected Galaxy Clusters

**Author(s):** Hironao Miyatake

**Institution(s):** 1. Jet Propulsion Laboratory/California Institute of Technology

**Contributing team(s):** HSC collaboration, ACTPol collaboration
226.05 One survey to find them all: detecting and studying galaxy clusters from infancy to maturity with Subaru HyperSuprimeCam Survey
Author(s): Yen-Ting Lin
Institution(s): 1 Academia Sinica
Contributing team(s): HSC collaboration

226.06 Exciting discoveries of strong gravitational lenses from the HSC Survey
Author(s): Anupreeta More
Institution(s): 1 Kavli IPMU, U. of Tokyo

226.07 Environment and Structure of Massive Central Galaxies through the Eye of Hyper Suprime-Cam
Author(s): Song Huang
Institution(s): 1 Kavli-IPMU, University of Tokyo
Contributing team(s): The HSC Survey Collaboration

226.08 Subaru High-z Exploration of Low-Luminosity Quasars (SHELLQs): New z > 6 Quasar Survey with Subaru/HSC
Author(s): Yoshiki Matsuoka
Institution(s): 1 National Astronomical Observatory of Japan
Contributing team(s): The SHELLQs collaboration

227 W. M. Keck Observatory: A Resource for NASA and the Entire US Community
Thursday, 2:00 pm - 3:30 pm; Texas 5
This 90 minute session will feature 6 speakers, presenting a broad array of science highlighting the scientific complementarity between NASA missions and Keck Observations. The session will include such scientific milestones as: 1) The confirmation of planets from the Kepler and K2 missions to establish the demography and physical properties of planetary systems; 2) Spectroscopy of exoplanets revealing the presence of various molecular species; 3) Spectroscopic measurements of Pluto’s surface and atmosphere to provide context for the New Horizon’s encounter; 4) Spectroscopy of brown dwarf candidates identified by WISE, allowing astronomers to establish new spectroscopic classes T and Y; 5) The validation and characterization of extremely high redshift galaxies first located by NASA space observatories Spitzer and HST; 6) The ongoing effort to observe a large number of high redshift galaxies to determine their spectroscopic redshifts in preparation for Euclid and WFIRST. The session will also inform the attendees on how the broad US community can apply for Keck time through the NASA Exoplanet Science Institute (NExScI), as well as how to access public Keck data through the NASA-Keck joint Keck Observatory Archive (KOA).
Chair: Anne Kinney (NASA Headquarters)

227.01 Andrew Howard
227.01 Direct spectroscopy of exoplanets revealing the presence of various molecular species
Author(s): Quinn M. Konopacky
Institution(s): 1 University of California, San Diego

227.02 Every Member of the U.S. Astronomical Community Can Apply for NASA Keck Time
Author(s): Dawn M. Gelino
Institution(s): 1 NASA Exoplanet Science Institute

227.03 Spectroscopic constraints on Pluto’s coupled surface and atmosphere: context for the New Horizons encounter
Author(s): Eliot F. Young
Institution(s): 1 Southwest Research Inst.

227.04 Exploring Substellar Evolution with the Coldest Brown Dwarfs
Author(s): Trent J. Dupuy
Institution(s): 1 University of Texas at Austin

227.05 The Confirmation and Characterization of the Highest Redshift Galaxies: The Power of Complementary Observations by Keck, Spitzer and Hubble.
Author(s): Garth D. Illingworth
Institution(s): 1 UC, Santa Cruz

227.06 C3R2 - Complete Calibration of the Color-Redshift Relation: Keck spectroscopy to train photometric redshifts for Euclid and WFIRST
Author(s): Daniel Stern
Institution(s): 1 JPL/ Caltech
Contributing team(s): C3R2 Team

228 White Dwarfs

Thursday, 2:00 pm - 3:30 pm; Texas 3
Chair: Terry Oswalt (Embry-Riddle Aeronautical University)

228.01 White Dwarf Pulsational Constraints on Stellar Evolution
Author(s): Bart H. Dunlap, J. Christopher Clemens, Patrick C. O’Brien, J. J. Hermes, Joshua T Fuchs
Institution(s): 1 University of North Carolina at Chapel Hill

228.02D Outbursts from Cool Pulsating White Dwarfs in Kepler and K2
Author(s): Keaton J. Bell, J. J. Hermes, Michael H. Montgomery, Donald E. Winget
Institution(s): 1 University of North Carolina-Chapel Hill, 2 University of Texas-Austin

228.03 Evolution of double white dwarf binaries undergoing direct-impact accretion: Implications for gravitational wave astronomy
Author(s): Kyle Kremer, Katelyn Breivik, Shane L. Larson, Vassiliki Kalogera
Institution(s): 1 CIERA-Northwestern University
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228.04 When flux standards go wild: white dwarfs in the age of Kepler  
Author(s): JJ Hermes\textsuperscript{1}  
Institution(s): \textsuperscript{1} University of North Carolina at Chapel Hill

228.05D A Uniform Set of DAV Atmospheric Parameters to Enable Differential Seismology  
Author(s): Joshua T Fuchs\textsuperscript{1}, Bart H. Dunlap\textsuperscript{1}, J. Christopher Clemens\textsuperscript{1}, Jesus Meza\textsuperscript{1}, Erik Dennihy\textsuperscript{1}  
Institution(s): \textsuperscript{1} University of North Carolina at Chapel Hill

228.06D Compact binaries in the globular cluster 47 Tucanae  
Author(s): Lilliana Rivera Sandoval\textsuperscript{7}, Maureen Van Den Berg\textsuperscript{7}, Craig O. Heinke\textsuperscript{6}, Haldan N. Cohn\textsuperscript{3}, Phyllis M. Lugger\textsuperscript{2}, Paulo Freire\textsuperscript{3}, Jay Anderson\textsuperscript{5}, Adrienne Cool\textsuperscript{4}, Jonathan Grindlay\textsuperscript{6}, Peter Edmonds\textsuperscript{1}, Rudy Wijnands\textsuperscript{7}, Natalia Ivanova\textsuperscript{6}  
Institution(s): \textsuperscript{1} Harvard-Smithsonian Center for Astrophysics, \textsuperscript{2} Indiana University, \textsuperscript{3} Max Planck Institute for Radio Astronomy, \textsuperscript{4} San Francisco State University, \textsuperscript{5} Space Telescope Science Institute, \textsuperscript{6} University of Alberta, \textsuperscript{7} University of Amsterdam

229 Star-forming Galaxies at z~2  
Thursday, 2:00 pm - 3:30 pm; Texas 4  
Chair: Stephan McCandliss (Johns Hopkins University)

229.01D A Multi-Wavelength Census of Dust and Star Formation in Galaxies at z ~ 2  
Author(s): Irene Shivaei\textsuperscript{1}, Naveen Reddy\textsuperscript{1}  
Institution(s): \textsuperscript{1} UC Riverside  
Contributing team(s): MOSDEF collaboration

229.02 ZFIRE: Similar Stellar Growth in Halpma-emitting Cluster and Field Galaxies at z~2  
Author(s): Kim-Vy Tran\textsuperscript{6}, Leo Alcorn\textsuperscript{6}, Glenn Kacprzak\textsuperscript{5}, Themiya Nanayakkara\textsuperscript{5}, Caroline Straatman\textsuperscript{5}, Tiantian Yuan\textsuperscript{1}, Michael Cowley\textsuperscript{6}, Romeel Dave\textsuperscript{5}, Karl Glazebrook\textsuperscript{5}, Lisa J. Kewley\textsuperscript{1}, Ivo Labbe\textsuperscript{2}, davide martizzi\textsuperscript{7}, Casey J. Papovich\textsuperscript{6}, Ryan Quadri\textsuperscript{6}, Lee Spitler\textsuperscript{3}, Adam R. Tomczak\textsuperscript{8}  
Institution(s): \textsuperscript{1} Australian National University, \textsuperscript{2} Leiden University, \textsuperscript{3} Macquarie University, \textsuperscript{4} MPIA, \textsuperscript{5} Swinburne University, \textsuperscript{6} Texas A&M University, \textsuperscript{7} UC Berkeley, \textsuperscript{8} UC Davis, \textsuperscript{9} University of Edinburgh

229.03D The Physical Properties of z ~ 2 Lyman-alpha Emitters and their Use as Tracers of the Star Forming Galaxy Population  
Author(s): Alex Hagen\textsuperscript{1}, Robin Ciardullo\textsuperscript{1}, Caryl Gronwall\textsuperscript{1}, Joanna Bridge\textsuperscript{1}, Henry Gebhardt\textsuperscript{1}, Gregory Zeimann\textsuperscript{2}  
Institution(s): \textsuperscript{1} Pennsylvania State University, \textsuperscript{2} University of Texas at Austin  
Contributing team(s): HETDEX Team
229.04D The MOSDEF Survey: Outflows from Broadened Emission Lines at z=\[1.3 - 3.8\]
Author(s): William R. Freeman\textsuperscript{2}, Brian D. Siana\textsuperscript{3}, Mariska T Kriek\textsuperscript{3}, Alice E. Shapley\textsuperscript{3}, Alison L. Coil\textsuperscript{2}, Naveen Reddy\textsuperscript{3}, Bahram Mobasher\textsuperscript{2}, Irene Shivaei\textsuperscript{2}, Mojegan Azadi\textsuperscript{3}, Ryan Sanders\textsuperscript{4}, Sedona Price\textsuperscript{3}, Laura DeGroot\textsuperscript{1}, Dusan Keres\textsuperscript{3}, Alexander Muratov\textsuperscript{5}
\textbf{Institution(s):} 1. Denison University, 2. Univ of CA Riverside, 3. Univ of CA, Berkeley, 4. Univ of CA, Los Angeles, 5. Univ of CA, San Diego

229.05 Low Gas Fractions Connect Compact Star-Forming Galaxies to their z~2 Quiescent Descendants
Author(s): Justin Spilker\textsuperscript{2}, Rachel Bezanson\textsuperscript{1}, Daniel P. Marrone\textsuperscript{2}, Benjamin J. Weiner\textsuperscript{2}, Katherine E. Whitaker\textsuperscript{3}, Christina C. Williams\textsuperscript{2}
\textbf{Institution(s):} 1. Princeton University, 2. University of Arizona, 3. University of Massachusetts - Amherst

230 Cool Stars II
Thursday, 2:00 pm - 3:30 pm; Grapevine 1
Chair: Elisabeth Newton (Harvard Univ.)

230.01 An X-ray and Optical Spectroscopic Study of the Perplexing Star RZ Piscium
Author(s): Kristina Marie Punzi\textsuperscript{1}, Joel H. Kastner\textsuperscript{1}, Carl Melis\textsuperscript{3}, Ben M. Zuckerman\textsuperscript{2}
\textbf{Institution(s):} 1. Rochester Institute of Technology, 2. University of California, Los Angeles, 3. University of California, San Diego

230.02 Flares of Nearby, Mid-to-late M-dwarfs Characterized by the MEarth Project
Author(s): Nicholas Mondrik\textsuperscript{2}, David Charbonneau\textsuperscript{2}, Jonathan Irwin\textsuperscript{1}, Elisabeth R. Newton\textsuperscript{1}
\textbf{Institution(s):} 1. Center for Astrophysics, 2. Harvard University, 3. MIT

230.03D Companions and Environments of Low-Mass Stars: From Star-Forming Regions to the Field
Author(s): Kimberly Ward-Duong\textsuperscript{2}, Jenny Patience\textsuperscript{2}, Robert J De Rosa\textsuperscript{2}, Joanna Bulger\textsuperscript{6}, Abhijith Rajan\textsuperscript{1}, Simon Goodwin\textsuperscript{10}, Richard J Parker\textsuperscript{3}, Donald W. McCarthy\textsuperscript{9}, Craig Kulesa\textsuperscript{9}, Gerrit van der Plas\textsuperscript{3}, Francois Menard\textsuperscript{8}, Christophe Pinte\textsuperscript{8}, Alan Patrick Jackson\textsuperscript{2}, Geoffrey Bryden\textsuperscript{4}, Neal J. Turner\textsuperscript{4}, Paul M. Harvey\textsuperscript{11}, Antonio Hales\textsuperscript{1}

230.04D Elucidating the True Binary Fraction of VLM Stars and Brown Dwarfs with Spectral Binaries
Author(s): Daniella Bardalez Gagliuffi\textsuperscript{6}, Adam J. Burgasser\textsuperscript{6}, Christopher R. Gelino\textsuperscript{1}, JOHANNES SAHLMANN\textsuperscript{6}, Sarah J. Schmidt\textsuperscript{1}, Jonathan Gagne\textsuperscript{6}, Nathalie Skrzypek\textsuperscript{3}
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230.05  The Active Latitudes of HAT-P-11
Author(s): Brett Morris¹, Leslie Hebb¹, James R. A. Davenport³, Suzanne L. Hawley²
Institution(s): ¹ Hobart and William Smith Colleges, ² University of Washington, ³ Western Washington University

230.06  About K Dwarfs - Investigating the Goldilocks Stars of Exobiology
Author(s): Manfred Cuntz¹, Edward F. Guinan²
Institution(s): ¹ Univ. of Texas at Arlington, ² Villanova University

231 Galaxy Clusters & Local Environment
Thursday, 2:00 pm - 3:30 pm; Grapevine 2
Chair: Alexandra Pope (Univ. of Massachusetts, Amherst)

231.01  Probing the mass distribution at the outskirts of galaxy clusters using weak lensing
Author(s): Matthew Fong¹, Lindsay J King¹
Institution(s): ¹ University of Texas, Dallas

231.02  Unusually gas-rich central galaxies in small groups
Author(s): Steven Janowiecki¹
Institution(s): ¹ ICRAR/UWA
Contributing team(s): xGASS team

231.03  The Massive and Distant Clusters of WISE Survey (MaDCoWS): Stellar mass fractions in a sample of infrared-selected galaxy clusters at z~1
Author(s): Bandon Decker¹, Mark Brodwin¹
Institution(s): ¹ University of Missouri -- Kansas City

231.04  Low star formation efficiencies in z=1.62 star-forming proto-cluster galaxies as seen in CO(1-0).
Author(s): Gregory Rudnick¹
Institution(s): ¹ University of Kansas

231.05D  Faint Submillimeter Galaxies Behind Lensing Clusters
Author(s): Li-Yen Hsu³, Lennox Lauchlan Cowie³, Amy J. Barger⁴, Vandana Desai³, Eric J. Murphy²
Institution(s): ¹ Infrared Processing and Analysis Center, ² NRAO, ³ University of Hawaii, ⁴ University of Wisconsin–Madison

231.06  The ALMA Frontier Fields
Author(s): Franz E. Bauer², Jorge Gonzalez-Lopez², Nicolas Laporte⁴, Alejandra Muñoz Arancibia³, Eric Villard³, Ruediger Kneissl¹, Sam Kim²
Institution(s): ¹ ALMA-JAO, ² Pontificia Universidad Católica de Chile, ³ Universidad de Valparaíso, ⁴ University College London
Contributing team(s): The ALMA Frontier Fields Team

231.07  CANDELS Sheds Light on the Environmental Quenching of Low-mass Galaxies
Author(s): Yicheng Guo², Eric F. Bell¹, David C. Koo², Sandra M. Faber², Yu Lu¹
Institution(s): ¹ Carnegie Observatories, ² UCO/Lick Observatory, ³ University of Michigan
231.08  Effect of local environment and stellar mass on galaxy quenching at 0.3 < z < 2.5 in ZFOURGE
Author(s): Lalitwadee Kawinwanichakij, Casey J. Papovich, Ryan Quadri
Institution(s): 1 Texas A&M University
Contributing team(s): the ZFOURGE team

232 Stellar Evolution, Stellar Populations
Thursday, 2:00 pm - 3:30 pm; Fort Worth 6
Chair: Rodolfo Montez Jr. (Vanderbilt University)

Author(s): Ryan P. Norris, Fabien Baron
Institution(s): 1 Center for High Angular Resolution Astronomy, Georgia State University

232.02D  Bayesian Analysis and Characterization of Multiple Populations in Galactic Globular Clusters
Author(s): Rachel A. Wagner-Kaiser, David Stenning, Ata Sarajedini, Ted von Hippel, David A van Dyk, Eliot Robinson, Nathan Stein, William H. Jefferys
Institution(s): 1 Argiope Technical Solutions, 2 Embry Riddle Aeronautical University, 3 Imperial College London, 4 Statistical and Applied Mathematical Sciences Institute, 5 The Wharton School, University of Pennsylvania, 6 University of Florida, 7 University of Texas
Contributing team(s): BASE-9, HST UVIS Globular Cluster Treasury Program

232.03  Searching for New Highly r-Process-Enhanced Stars in the Halo of the Milky Way
Author(s): Timothy C. Beers, Vinicius Placco, Erika M. Holmbeck, Terese T. Hansen, Joshua D. Simon, Ian Thompson, Anna Frebel
Institution(s): 1 Carnegie Observatories, 2 MIT, 3 University of Notre Dame

232.04  Kinematics and chemistry of faint high latitude dwarf carbon stars
Author(s): Jinmi Yoon, Timothy C. Beers, Sarah Dietz, Young Sun Lee, Vinicius M Placco
Institution(s): 1 Chungnam National University, 2 University of Notre Dame

232.05D  Testing the Wind-Shock Paradigm for B-Type Star X-Ray Production with θ Carinae
Author(s): Trisha Doyle (Mizusawa), Veronique Petit, David Held Cohen, Maurice A. Leutenegger, Alexander W. Fullerton
Institution(s): 1 Florida Institute of Technology, 2 GSFC, 3 STScI, 4 Swarthmore College
232.06 Using a Weak CN Spectral Feature as a Marker for Massive AGB Stars in the Andromeda Galaxy
Author(s): Puragra Guhathakurta\textsuperscript{4}, Anika Kamath\textsuperscript{1}, Alyssa Sales\textsuperscript{2}, Atmika Sarukkai\textsuperscript{2}, Jon Hays\textsuperscript{1}
Institution(s): \textsuperscript{1} Cabrillo College, \textsuperscript{2} Castilleja School, \textsuperscript{3} Crystal Springs Uplands School, \textsuperscript{4} UC, Santa Cruz
Contributing team(s): PHAT collaboration, SPLASH collaboration

232.07 Variable Polarization from Co-Rotating Interaction Regions in Massive Star Winds
Author(s): Richard Ignace\textsuperscript{4}, Nicole St. Louis\textsuperscript{2}, Patrick Tremblay\textsuperscript{2}, Felix Proulx-Giraldseau\textsuperscript{2}
Institution(s): \textsuperscript{1} East Tennessee State Univ., \textsuperscript{2} University of Montreal

233 Neutron Stars (Pulsars, Magnetars, Pulsar Wind Nebulae) I

Thursday, 2:00 pm - 3:30 pm; Dallas 6
Chair: Sarah Vigeland (University of Wisconsin)

233.01D Polarized X-ray Scattering and Birefringence in Magnetars
Author(s): Joseph Barchas\textsuperscript{1}, Matthew G. Baring\textsuperscript{1}
Institution(s): \textsuperscript{1} Rice University

233.02 Testing the electron-capture supernova scenario using universal relations between neutron star properties
Author(s): William Newton\textsuperscript{1}
Institution(s): \textsuperscript{1} Texas A&M University-Commerce

233.03 A Model for Axions Producing Extended gamma-ray Emission from Neutron Star J0108-1431
Author(s): Bijan Berenji\textsuperscript{1}
Institution(s): \textsuperscript{1} California State University, Los Angeles
Contributing team(s): Fermi LAT Collaboration

233.04D An Analytic Particle Acceleration Model in Pulsar Wind Termination Shocks Applied to the Crab Nebula Gamma-Ray Flares
Author(s): John J. Kroon\textsuperscript{2}, Peter A. Becker\textsuperscript{1}, Finke Justin\textsuperscript{2}, Charles D. Dermer\textsuperscript{2}
Institution(s): \textsuperscript{1} George Mason University, \textsuperscript{2} Naval Research Lab

233.05 A Library of known X-ray Pulsars in the Small Magellanic Cloud: Time Evolution of their Luminosities and Spin Periods
Author(s): Jun Yang\textsuperscript{2}, Silas Laycock\textsuperscript{2}, Dimitris Christodoulou\textsuperscript{2}, Jeremy J. Drake\textsuperscript{1}, Jaesub Hong\textsuperscript{1}, Vallia Antoniou\textsuperscript{1}, Andreas Zezas\textsuperscript{1}, Malcolm Coe\textsuperscript{3}, Wynn Ho\textsuperscript{3}
Institution(s): \textsuperscript{1} Harvard-Smithsonian CfA, \textsuperscript{2} University of Massachusetts, \textsuperscript{3} University of Southampton

233.06D Characterization of a Precision Pulsar Timing Gravitational Wave Detector
Author(s): Michael T. Lam\textsuperscript{1}
Institution(s): \textsuperscript{1} West Virginia University


234 Plenary Session: Dannie Heineman Prize for Astrophysics: Increasing Accuracy and Increasing Tension in Ho, Wendy Freedman (University of Chicago)

Thursday, 3:40 pm - 4:30 pm; Texas A
Chair: Robert Brown (AIP)

234.01 Increasing Accuracy and Increasing Tension in Ho
Author(s): Wendy L. Freedman
Institution(s): The University of Chicago

Citation: For her outstanding contributions and leadership role in using optical and infrared space- and ground-based observations of Cepheid variable stars, together with innovative analysis techniques, to greatly improve the accuracy of the cosmic distance scale and thereby constrain fundamental cosmological parameters.


Thursday, 4:30 pm - 5:20 pm; Texas A
Chair: Christopher Reynolds (Univ. of Maryland)

235.01 A Good Hard Look at Growing Supermassive Black Holes in the Distant Universe
Author(s): W. Niel Brandt
Institution(s): Penn State Univ.
Contributing team(s): The Chandra Deep Fields Tea

Citation: Who led the effort to obtain the deepest Chandra fields, enabling the most sensitive cosmological X-ray surveys to date. His work traces the accretion history of SMBH and their coevolution with host galaxies across cosmic time.
THURSDAY, 5 JANUARY 2017

POSTER SESSIONS

236 Computation, Data Handling, Image Analysis & Light Pollution Poster Session

Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

236.01 When Will It Be ...?: U.S. Naval Observatory Sidereal Time and Julian Date Calculators
Author(s): Malynda R. Chizek Frouard1, Michael V. Lesniak1, Jennifer L. Bartlett1
Institution(s): 1 US Naval Observatory

236.02 Automated Approaches to RFI Flagging
Author(s): Karthik Garimella2, Emmanuel Momjian2
Institution(s): 1 Hendrix College, 2 National Radio Astronomy Observatory

236.03 First Science Verification of the VLA Sky Survey Pilot
Author(s): Amy Cavanaugh1
Institution(s): 1 West Chester University

236.04 Image-based query-by-example for big databases of galaxy images
Author(s): Lior Shamir1, Evan Kuminski1
Institution(s): 1 Lawrence Technological University

236.05 Bifrost: a Modular Python/C++ Framework for Development of High-Throughput Data Analysis Pipelines
Author(s): Miles Cranmer1, Benjamin R Barsdell1, Danny C Price4, Hugh Garsden1, Gregory B. Taylor3, Jayce Dowell1, Frank Schinzel1, Timothy Costa1, Lincoln J. Greenhill1
Institution(s): 1 Harvard-Smithsonian Center for Astrophysics, 2 National Radio Astronomy Observatory, 3 NVIDIA, 4 University of California, Berkeley, 5 University of New Mexico

236.06 photPARTY: Python automated square-aperture photometry
Author(s): Teresa A. Symons1, Barbara J. Anthony-Twarog1
Institution(s): 1 University of Kansas

236.07 A Modified Bootstrap Monte Carlo Method to Investigate the Impact of Systematic Effects on Calibrated Optical Interferometry Data
Author(s): Mahmudul Hasan1, Christopher Tycner1, Aaron Sigut2, Robert T. Zavala3
Institution(s): 1 Central Michigan University, 2 The University of Western Ontario, 3 US Naval Observatory, Flagstaff Station

236.08 DRAGraces: An open source pipeline to extract your GRACES data!
Author(s): André-Nicolas Chené1
Institution(s): 1 Gemini Observatory

236.09 TOASTing Your Images With Montage
Author(s): G. Bruce Berriman1, John Good1
Institution(s): 1 Caltech
236.10 Galaxy Classification using Machine Learning
Author(s): Lucas Fowler1, Kevin Schawinski1, Ben-Elias Brandt1, Nicole widmer1
Institution(s): 1 ETH Zürich

236.11 Gemini Observatory Operations and Software for the 2020s
Author(s): Bryan W. Miller2, Andrew W. Stephens3, Arturo Nunez2, Mischa Schirmer2
Institution(s): 1 Gemini Observatory - North, 2 Gemini Observatory - South

236.12 Maestro and Castro: Simulation Codes for Astrophysical Flows
Author(s): Michael Zingale4, Ann Almgren2, Vince Beckner2, John Bell2, Brian Friesen2, Adam Jacobs3, Maximilian P. Katz4, Christopher Malone1, Andrew Nonaka3, Weiqun Zhang2
Institution(s): 1 LANL, 2 LBNL, 3 MSU, 4 Stony Brook University

236.13 Top ten reasons to register your code with the Astrophysics Source Code Library
Author(s): Alice Allen1, Kimberly DuPrie10, G. Bruce Berriman4, Jessica D. Mink9, Robert J. Nemiroff7, Thomas Robitaille3, Judy Schmidt1, Lior Shamir6, Keith Shortridge5, Peter J. Teuben11, John F. Wallin8, Rein Warmels2
Institution(s): 1 Astrophysics Source Code Library, 2 European Southern Observatory, 3 Freelance, 4 IPAC, Caltech, 5 Knave and Varlet, 6 Lawrence Technological University, 7 Michigan Technological Univ., 8 Middle Tennessee State University, 9 Smithsonian Astrophysical Observatory, 10 STScI, 11 University of Maryland

236.14 3D Immersive Visualization with Astrophysical Data
Author(s): Brian R. Kent1
Institution(s): 1 NRAO

236.15 SciServer: An Online Collaborative Environment for Big Data in Research and Education
Author(s): Jordan Raddick1, Barbara Souter1, Gerard Lemson1, Manuchehr Taghizadeh-Popp1
Institution(s): 1 Johns Hopkins University

236.16 Understanding and Using the Fermi Science Tools
Author(s): Joseph Asercion1
Institution(s): 1 Fermi Science Support Center
Contributing team(s): Fermi Science Support Center

236.17 Secondary Standard Sequence and BVRI-H-alpha Light Curves for NGC 4151
Author(s): Melissa Hallum1, Micheal Joner1
Institution(s): 1 Brigham Young University

236.18 Improving Photometric Redshifts for Hyper Suprime-Cam
Author(s): Josh S Speagle1, Alexie Leauthaud5, Daniel Eisenstein1, Kevin Bundy5, Peter L. Capak3, Boris Leistedt4, Daniel C. Masters3, Daniel Mortlock2, Hiranya Peiris6
Institution(s): 1 Harvard University, 2 Imperial College London, 3 IPAC, 4 NYU, 5 UCSC, 6 University College London
Contributing team(s): HSC Photo-z Team, HSC Weak Lensing Team
236.19 Comparing High-redshift Galaxy Dropouts in GOODS-S from SelfCal and MultiDrizzle Maps
Author(s): Jennifer Cooper¹, Asantha R. Cooray², Hooshang Nayyeri²
Institution(s): ¹ California State University Los Angeles, ² UC Irvine

236.20 Measuring the color and brightness of artificial sky glow from cities using an all-sky imaging system calibrated with astronomical methods in the Johnson-Cousins B and V photometric systems
Author(s): Ashley Pipkin², Dan M Duriscoe², Christian Lughinbuhl¹
Institution(s): ¹ Flagstaff Dark Skies Coalition, ² National Park Service

236.21 Studying the Light Pollution around Urban Observatories: Columbus State University's WestRock Observatory
Author(s): Brendon Andrew O'Keefe¹, Michael Johnson¹
Institution(s): ¹ Columbus State University

237 Surveys & Large Programs Poster Session

237.01 A methodology to address mixed AGN and starlight contributions in emission line galaxies found in the RESOLVE survey and ECO catalog
Author(s): Chris T. Richardson¹, Sheila Kannappan², Ashley Bittner², Rohan Isaac²
Institution(s): ¹ Elon University, ² University of North Carolina
Contributing team(s): RESOLVE

237.02 Structure and Morphology of RESOLVE Galaxies in Relation to Environment, Gas, and Star Formation
Author(s): Sheila Kannappan¹, Callie Hood¹, Elaine M. Snyder¹, Kathleen D. Eckert¹, David Stark¹
Institution(s): ¹ Univ. of North Carolina
Contributing team(s): RESOLVE team

237.03 The Environmental Dependence of the Galaxy Stellar Mass Function in the ECO Survey
Author(s): Hannah Richstein², Andreas A. Berlind³, Victor Calderon³, Kathleen D. Eckert¹, Sheila Kannappan³, Amanda J. Moffett⁴, David Stark¹
Institution(s): ¹ Kavli IPMU, ² Texas Christian University, ³ University of North Carolina, Chapel Hill, ⁴ University of Western Australia, ⁵ Vanderbilt University

237.04 An Automated Census Of Variable X-Ray Objects in the Direction of Clusters of Galaxies
Author(s): Lupe MacIntosh¹, Elizabeth Cunningham¹, Melville P. Ulmer³
Institution(s): ¹ Harvey Mudd College, ² Loyola University, ³ Northwestern University

237.05 Point and Condensed Hα Sources in the Interior of M33
Author(s): J. Ward Moody¹, Eric G. Hintz¹, Peter Roming¹, Michael D. Joner¹, Brian Bucklein²
Institution(s): ¹ Brigham Young Univ., ² Missouri Western
237.06 Pan-STARRS1 Medium Deep Survey  
Author(s): Mark Huber
Institution(s): 1 Institute for Astronomy, University of Hawaii  
Contributing team(s): PS1 Science Consortium, Pan-STARRS IPP Team

237.07 Pan-STARRS Data Release 1  
Author(s): Heather Flewelling
Institution(s): 1 University of Hawaii

237.08 Census of the Local Universe (CLU) Galaxy Survey: Results Within Preliminary Fields  
Author(s): David O. Cook, Mansi M. Kasliwal, Angela Van Sistine, Daniel A. Dale, Jessica Sutter, Jordan Turner, Ryan Parziale  
Institution(s): 1 Caltech, 2 University of Wisconsin - Milwaukee, 3 University of Wyoming  
Contributing team(s): iPTF Team

237.09 Highlights from the La Silla QUEST Variability Survey  
Author(s): Paolo S. Coppi
Institution(s): 1 Yale Univ.  
Contributing team(s): The La Silla QUEST Survey Team

237.10 Transients Discovered by the All-Sky Automated Survey for Supernovae  
Author(s): Jonathan Brown, Thomas Warren-Son Holoien  
Institution(s): 1 The Ohio State University  
Contributing team(s): The ASAS-SN Team

237.11 The Expansion of the Astronomical Photographic Data Archive at PARI  
Author(s): J. Donald Cline, Thurburn Barker, Michael Castelaz  
Institution(s): 1 Pisgah Astronomical Research Institute

237.12 The first two years of the Gemini Fast Turnaround Proposal Program  
Author(s): Morten Andersen, Rachel Mason, Thomas R. Geballe, Kristin Chiboucas, Ricardo Salinas, Michael J. Lundquist, Julia scharwaechter, Mischa Schirmer, Karleyene silva  
Institution(s): 1 Gemini Observatory, 2 Gemini Observatory, Southern Operations Center

237.13 The Formation of COINS: Equity and Inclusion in SDSS  
Author(s): Sarah J. Schmidt, Jose Ramon Sanchez-Gallego, Nancy J. Chanover, Kelly Holley-Bockelmann, Sara Lucatello, Alfonso Aragon-Salamanca, Francesco Belfiore, Brian Cherinka, Diane Feuillet, Amy Jones, Karen Masters, Audrey Simmons, Ashley Ross, Keivan G. Stassun, Jamie Tayar  
Institution(s): 1 Cambridge University, 2 Johns Hopkins University, 3 Leibniz-Institute for Astrophysics Potsdam (AIP), 4 MPA, 5 MPIA, 6 National Institute for Astrophysics (INAF), 7 New Mexico State University, 8 Ohio State University, 9 Portsmouth University, 10 University of Nottingham, 11 University of Washington, 12 Vanderbilt
238 Space Missions & Instrumentation Poster Session

THURSDAY, 5 JANUARY 2017

Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

238.01 NASA Astrophysics Prioritizes Technology Development Funding for Strategic Missions
Author(s): Harley A. Thronson1, Bruce Pham1, Opher Ganel1
Institution(s): 1 NASA GSFC

238.02 Ensuring the Enduring Viability of the Space Science Enterprise: New Questions, New Thinking, New Paradigms
Author(s): Jonathan Arenberg1, Alberto Conti1, Charles Atkinson1
Institution(s): 1 Northrop Grumman

238.03 Determination of the STIS CCD Gain
Author(s): Allyssa Riley1, TalaWanda R. Monroe1, Sean A. Lockwood1
Institution(s): 1 Space Telescope Science Institute

238.04 HST Wide Field Camera 3: Instrument Status and Advice for Cycle 25 Proposers
Author(s): Ivelina G. Momcheva1
Institution(s): 1 Space Telescope Science Institute
Contributing team(s): WFC3 Instrument Team

238.05 Charge transfer efficiency in HST WFC3/UVIS: monitoring and mitigation
Author(s): Sylvia M. Baggett1, Jay Anderson1, Megan L. Sosey1, Matthew Bourque1, Catherine Martlin1, Heather Kurtz1, Clare Shanahan1, Vera Kozhurina-Platais1, Elena Sabbi1
Institution(s): 1 STScI
Contributing team(s): WFC3 Team

238.06 Low Frequency Flats for Imaging Cameras on the Hubble Space Telescope
Author(s): Diana Kossakowski2, Roberto J. Avila1, David Borncamp1, Norman A. Grogin1
Institution(s): 1 Space Telescope Science Institute, 2 University of California, Berkeley

238.07 Fermi Science Support Center Data Servers and Archive
Author(s): Alexander Reustle1
Institution(s): 1 Goddard Space Flight Center
Contributing team(s): FSSC, LAT Collaboration

238.08 Wide Field Lyman alpha Geocoronal Simulator (WFLaGS) for the Far-uv Off Rowland-circle Telescope for Imaging and Spectroscopy (FORTIS)
Author(s): Anna Carter1, Stephan R. McCandliss1, Keith Redwine1, Russell Pelton1
Institution(s): 1 Johns Hopkins University

238.09 LISA Pathfinder: A Summary of results to date
Author(s): James Thorpe1
Institution(s): 1 NASA GSFC
Contributing team(s): LISA Pathfinder Team, LTP Team, DRS Team
238.10 Build up and integration of the rocket-borne Cosmic Infrared Background ExpeRiment-2
Author(s): Alicia E. Lanz1, Toshiaki Arai2, John Battle3, James Bock4, Asantha R. Cooray5, Viktor Hristov1, Tomoya Kojima6, Phillip Korngut1, Dae Hee Lee3, Peter Mason1, Toshio Matsumoto4, Shuji Matsuura6, Chi Nguyen7, Mai Shirahata1, Aoi Takahashi5, Kohji Tsumurai1, Takehiko Wada1, Shiang-Yu Wang3, Michael B. Zemcov1
Institution(s): 1 California Institute of Technology, 2 Genesia Corporation, 3 Institute of Astronomy and Astrophysics, Academia Sinica, 4 Japan Aerospace Exploration Agency, 5 Korea Astronomy and Space Science Institute (KASI), 6 Kwansei Gakuin University, 7 Rochester Institute of Technology, 8 Tohoku University, 9 University of California, Irvine

238.11 Near Ultraviolet Spectrograph for Cubesats
Author(s): Sreejith Aickara Gopinathan1, Joice Mathew1, Mayuresh Sarpotdar1, Ambily Suresh1, Nirmal Kaippacheri1, Margarita Safonova1, Jayant Murthy1
Institution(s): 1 Indian Institute of Astrophysics

238.12 The James Webb Space Telescope: Observatory Status Update
Author(s): Michael W. McElwain1, Charles W. Bowers1, Mark Clampin1, Malcolm B. Niedner1, Randy A. Kimble1
Institution(s): 1 NASA Goddard Space Flight Center

238.13 WebbPSF for JWST and WFIRST
Author(s): Joseph D. Long1, Marshall D. Perrin1, Neil T Zimmerman1, Keira Brooks1
Institution(s): 1 Space Telescope Science Institute

238.14 Cryo-Vacuum Testing of JWST’s Integrated Telescope & Scientific Instrument Suite
Author(s): Randy A. Kimble4, Peter H. Apollo6, Lee Feinberg6, Stuart D Glazer6, Jeffrey M. Hanley1, Ritva A. Keski-Kuha6, Jeffrey R. Kirk1, J. Scott Knight2, Scott Lambros6, Juli A. Lander6, Douglas B McGuffey6, Kimberly I. Mehalick6, Raymond George Oh1, Wes OuIsley1, Carl A. Reis5, Paul J. Reynolds2, M. Begoña Vila9, Mark Voyer6, Mark Waldman8, Tony Whitman4
Institution(s): 1 Aerospace Corporation, 2 Ball Aerospace & Technologies Corporation, 3 Genesis Engineering Solutions, Inc., 4 Harris, Inc., 5 Jacobs Technology, 6 NASA’s GSFC, 7 Northrop Grumman Aerospace Systems, 8 Sigma Space Corporation, 9 Stinger Ghaффarian Technologies

238.15 Starshade Orbital Maneuver Study for WFIRST
Author(s): Gabriel Soto4, Dmitry Savransky3, Daniel Garrett1, Christian Delacroix1, Amlan Sinha1
Institution(s): 1 Cornell University

238.16 Science Advancements for Black Hole Binaries from Observations with NICER
Author(s): Ronald A. Remillard4, James F. Steiner3, Jon M. Miller4, Jeroen Homan1, Stephen S. Eikenberry5, Erin Kara1, Dheeraj Pasham1, Phil Uttley2
Institution(s): 1 MIT, 2 U Amsterdam, 3 U Maryland, 4 U Michigan, 5 University of Florida
Contributing team(s): Nicer Science Team
THURSDAY, 5 JANUARY 2017

238.17 eLISA Telescope In-Field Pointing and Scattered Light Study
Author(s): Jeffrey C. Livas\(^1\), Shannon R Sankar\(^1\)
Institution(s): \(^1\) NASA Goddard Space Flight Center

238.18 Origins Space Telescope: Study Plan
Author(s): Asantha R. Cooray\(^1\)
Institution(s): \(^1\) UC Irvine
Contributing team(s): Origins Space Telescope Study Team

238.19 Origins Space Telescope: Community Participation
Author(s): Sean J. Carey\(^1\)
Institution(s): \(^1\) IPAC/Caltech
Contributing team(s): Origins Space Telescope Study Team

238.20 Origins Space Telescope: Telescope Design and Instrument Specifications
Author(s): Margaret Meixner\(^1\), Ruth Carter\(^2\), David Leisawitz\(^2\), Mike Dipirro\(^2\), Anel Flores\(^2\), Johannes Staguhn\(^5\), James Kellog\(^2\), Thomas L. Roellig\(^6\), Gary J. Melnick\(^3\), Charles Bradford\(^4\), Edward L. Wright\(^8\), Jonas Zmuidzinas\(^1\)
Institution(s): \(^1\) Caltech, \(^2\) Goddard Space Flight Center, \(^3\) Harvard-Smithsonian CfA, \(^4\) Jet Propulsion Lab, \(^5\) Johns Hopkins University, \(^6\) NASA Ames, \(^7\) STScI, \(^8\) UCLA
Contributing team(s): Origins Space Telescope Study Team

238.21 Origins Space Telescope: Planet-forming disks and exoplanets
Author(s): Klaus Pontoppidan\(^1\)
Institution(s): \(^1\) Space Telescope Science Institute
Contributing team(s): Origins Space Telescope Study Team

238.22 Origins Space Telescope: Galaxy and Black Hole Evolution over Cosmic Time
Author(s): Alexandra Pope\(^1\)
Institution(s): \(^1\) Univ. of Massachusetts, Amherst
Contributing team(s): Origins Space Telescope Study Team

238.23 Origins Space Telescope: Solar System Science
Author(s): Edward L. Wright\(^1\)
Institution(s): \(^1\) UC, Los Angeles
Contributing team(s): Origins Space Telescope Study Team

238.24 Origins Space Telescope: Interstellar Medium, Milky Way, and Nearby Galaxies
Author(s): Cara Battersby\(^1\)
Institution(s): \(^1\) Harvard-Smithsonian Center for Astrophysics
Contributing team(s): Origins Space Telescope Study Team

238.25 The Space Infrared Telescope for Cosmology and Astrophysics and Pending US Contribution
Author(s): Charles Bradford\(^1\)
Institution(s): \(^1\) Caltech/ JPL
Contributing team(s): SPICA Consortium, SAFARI Consortium
238.26 Depicting the MeV realm with the Compton Pair-Production Telescope (ComPair)

Author(s): Elizabeth C. Ferrara¹, Sara Buson¹

Institution(s): ¹ NASA/GSFC

Contributing team(s): ComPair Mission Team

238.27 Cosmic Evolution Through UV Spectroscopy (CETUS): A NASA Probe-Class Mission Concept

Author(s): Sara R. Heap¹

Institution(s): ¹ NASA’s GSFC (Emerita)

Contributing team(s): the CETUS Team

238.28 Instrumental and Calibration Advancements for the Dark Ages Radio Explorer (DARE)

Author(s): Raul A. Monsalve⁴, Jack O. Burns⁴, Richard F. Bradley³, Keith Tauscher⁴, Bang Nhan⁴, Judd D. Bowman¹, William R. Purcell², David Newell², David Draper²

Institution(s): ¹ Arizona State University, ² Ball Aerospace, ³ National Radio Astronomy Observatory, ⁴ University of Colorado Boulder

238.29 A Modular Orbital Demonstration of an Evolvable Space Telescope (MODEST)

Author(s): Alberto Conti¹, Jonathan Arenberg¹, Brian Baldauf¹

Institution(s): ¹ Northrop Grumman Corporation

238.30 TeraHertz Space Telescope (TST)

Author(s): Marina Madeline Dunn¹, David Lesser⁴, Stephan O'Dougherty⁴, Brandon Swift⁴, Terrance Pat⁴, German Cortez³, Steve Smith³, Paul Goldsmith¹, Christopher K. Walker⁴

Institution(s): ¹ JPL, ² SwRI, ³ University of Antioquia, ⁴ University of Arizona

238.31 Linear-constraint wavefront control for exoplanet coronagraphic imaging systems

Author(s): He Sun³, A J Eldorado Riggs¹, N. Jeremy Kasdin³, Robert J. Vanderbei³, Tyler Dean Groff²

Institution(s): ¹ Jet Propulsion Laboratory, California Institute of Technology, ² NASA’s Goddard Space Flight Center, ³ Princeton University

238.32 Soft x-ray transmission grating spectrometer for X-ray Surveyor and smaller missions with high resolving power

Author(s): Ralf K. Heilmann², Alexander Brucoleri¹, Mark Schattenburg², Jeffery Kolodziejczak³, Jessica Gaskin³, Stephen L. O’Dell³

Institution(s): ¹ Izentis, LLC, ² MIT, ³ MSFC

238.33 Lightweight ZERODUR®: Validation of mirror performance and mirror modeling predictions

Author(s): Anthony B. Hull¹, H. Philip Stahl³, Thomas Westerhoff⁴, Martin Valente¹, Thomas Brooks¹, Ron Eng¹

Institution(s): ¹ Arizona Optical Systems, ² Department of Physics and Astronomy, University of New Mexico, ³ NASA MSFC, ⁴ Schott AG
238.34 Use of Plasma Enhanced ALD to Construct Efficient Interference Filters for Astronomy in the FUV - Year 2 Update
Author(s): Paul A. Scowen, Robert Nemanich, Brianna Eller, Hongbin Yu, Tom Mooney, Matt Beasley
Institution(s): 1 Arizona State Univ., 2 Materion Precision Optics & Thin Film Coatings, 3 Planetary Resources Inc.

238.35 An Exploration of Software-Based GNSS Signal Processing at Multiple Frequencies
Author(s): Manuel Pasqual Paul, Pedro Elosegui, Frank Lind, Antonio Vazquez, Victor Pankratius
Institution(s): 1 California State University, San Bernardino, 2 Massachusetts Institute of Technology, Haystack Observatory

238.36 Origins Space Telescope: Cosmology and Reionization
Author(s): Joaquin D. Vieira
Institution(s): 1 University of Illinois at Urbana-Champaign
Contributing team(s): Origins Space Telescope Study Team

239 Making Great Observatories Even Better: Hubble's Hand in Studying the Multi-Wavelength Universe Poster Session
Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

239.01 A Multiwavelength Study of Three Hybrid Blazars
Author(s): Ethan Stanley, Preeti Kharb, Matthew L. Lister, Herman L. Marshall, Christopher O'Dea, Stefi Baum
Institution(s): 1 Indian Institute of Astrophysics, 2 Massachusetts Institute of Technology, 3 Purdue University, 4 Rochester Institute of Technology

239.02 A Multi-Observatory View of the Alpha Persei Coronal Conundrum
Author(s): Thomas R. Ayres
Institution(s): 1 University of Colorado

239.03 The era of synoptic galactic archeology: using HST and Chandra observations to constrain the evolution of elliptical galaxies through the spatial distribution of globular clusters and X-ray binaries.
Author(s): Raffaele D’Abrusco, Giuseppina Fabbiano, Andreas Zezas
Institution(s): 1 Physics Department & Institute of Theoretical & Computational Physics, University of Crete, 2 Smithsonian Astrophysical Observatory

239.04 An Ultraviolet Counterpart to the Fast X-ray Outflow in the Quasar PG1211+143
Author(s): Gerard A. Kriss, Julia C. Lee, Michael Nowak, Tatao Fang, Martin Hardcastle, Andrew J. Young, Joseph Nielsen, Herman L. Marshall
Institution(s): 1 Harvard, 2 Hertsfordshire, 3 MIT-Kavli, 4 STScI, 5 UC Riverside, 6 University of Bristol
239.05 The Survey of HI in Extremely Low-mass Dwarfs: A Multi-Wavelength Perspective on Low-Mass Galaxy Evolution
Author(s): John M. Cannon, Andrew McNichols, Yaron Teich, Elizabeth A. Adams, Riccardo Giovanelli, Martha P. Haynes, Kristen B. McQuinn, John Joseph Salzer, Evan D. Skillman, Andrew E. Dolphin, Edward C Elson, Nathalie C. Haurberg, Shan Huang, Steven Janowiecki, Gyula Jozsa, Luke Leisman, Juergen Ott, Emmanouil Papastergis, Katherine L. Rhode, Amelie Saintonge, Angela Van Sistine, Steven R. Warren

240 Cool Stars & Others: Surveys, Spectra, Rotation, Fundamentals Poster Session
Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

240.01 Photometry and Kinematics of Ultracool Dwarfs in the Pan-STARRS 3pi Survey
Author(s): William M. J. Best, Eugene A. Magnier, Michael C. Liu, Kimberly Mei Aller, Zhoujian Zhang
Institution(s): 1. University of Hawaii

240.02 A Pan-STARRS1 Proper-Motion Survey for Young Brown Dwarfs in the Taurus and the Upper Scorpius Star-Forming Regions
Author(s): Zhoujian Zhang, Michael C. Liu, William M. J. Best, Eugene A. Magnier, Kimberly Mei Aller
Institution(s): 1. University of Hawaii

240.03 DECam Survey for Substellar and Low-mass Stellar Members of Sco-Cen
Author(s): Eric E. Mamajek, Fred Moolekamp, David James, Kevin Luhman, Mark Pecaut, Stanimir A. Metchev, Sara Denbo, Cameron P.M. Bell

240.04 Your Age is Showing: Understanding the Spectral Features of Young Brown Dwarfs
Author(s): Victoria DiTomasso, Ellianna Schwab, Emily L. Rice, Adric R. Riedel, Kelle L. Cruz, Jackie Faherty

240.05 Principal Component Analysis of Brown Dwarfs
Author(s): Colleen Cleary, David Rodriguez
Institution(s): 1. American Museum of Natural History, 2. Hunter College
240.06  Comparison of BT Settl Model Spectra in NIR to Brown Dwarfs and Massive Exoplanets
Author(s): Mark Popinchalk\textsuperscript{1}, Cam Buzard\textsuperscript{2}, Munazza Alam\textsuperscript{4}, Sara Camnasio\textsuperscript{6}, Kelle L. Cruz\textsuperscript{5}, Jacqueline K. Faherty\textsuperscript{1}, Emily L. Rice\textsuperscript{3}
Institution(s): \textsuperscript{1} American Museum of Natural History, \textsuperscript{2} Barnard University, \textsuperscript{3} College of Staten Island, \textsuperscript{4} Harvard-Smithsonian Center for Astrophysics, \textsuperscript{5} Hunter College, \textsuperscript{6} New York University

240.07  Spectral Variability at the L/T Transition and Beyond
Author(s): Jacqueline Radigan\textsuperscript{5}, Jonathan Davis\textsuperscript{5}, Brian Andrew York\textsuperscript{3}, Daniel Apai\textsuperscript{4}, Mark S. Marley\textsuperscript{2}, Didier Saumon\textsuperscript{1}
Institution(s): \textsuperscript{1} LANL, \textsuperscript{2} NASA Ames, \textsuperscript{3} Space Telescope Science Institute, \textsuperscript{4} University of Arizona, \textsuperscript{5} Utah Valley University

240.08  Too Cool for Stellar Rules: A Bayesian Exploration of Trends in Ultracool Magnetism
Author(s): Kelle L. Cruz\textsuperscript{3}, Ellianna Schwab\textsuperscript{2}, Peter K. G. Williams\textsuperscript{4}, David W. Hogg\textsuperscript{5}, David R Rodriguez\textsuperscript{1}
Institution(s): \textsuperscript{1} American Museum of Natural History, \textsuperscript{2} CUNY - The City College of New York, \textsuperscript{3} CUNY Hunter College and AMNH, \textsuperscript{4} Harvard Smithsonian Center for Astrophysics, \textsuperscript{5} New York University
Contributing team(s): BDNYC

240.09  The Search for Signatures Of Transient Mass Loss in Active Stars
Author(s): Michael Kevin Crosley\textsuperscript{1}, Rachel A. Osten\textsuperscript{2}
Institution(s): \textsuperscript{1} Johns Hopkins University, \textsuperscript{2} Space Telescope Science Institute

240.10  H2 Fluorescence in M dwarf Systems: A Stellar Origin
Author(s): Nicholas Kruczek\textsuperscript{1}, Kevin France\textsuperscript{1}, William Evonosky\textsuperscript{1}, Allison Youngblood\textsuperscript{1}, R. O. Parke Loyd\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Colorado Boulder, \textsuperscript{2} University of South Florida

240.11  Modeling molecular hydrogen emission in M dwarf exoplanetary systems
Author(s): William Evonosky\textsuperscript{1}, Kevin France\textsuperscript{1}, Nick E. Kruczek\textsuperscript{1}, Allison Youngblood\textsuperscript{1}
Institution(s): \textsuperscript{1} Laboratory for Atmospheric and Space Physics, University of Colorado, \textsuperscript{2} University of South Florida
Contributing team(s): Measurements of the Ultraviolet Spectral Characteristics of Low-mass Exoplanet host Stars (MUSCLES)

240.12  Tuning Into Brown Dwarfs: Long-Term Radio Monitoring of Two Very Low Mass Dwarfs
Author(s): Russell Van Linge\textsuperscript{2}, Adam J. Burgasser\textsuperscript{3}, Carl Melis\textsuperscript{3}, Peter K. G. Williams\textsuperscript{1}
Institution(s): \textsuperscript{1} Harvard, \textsuperscript{2} Palomar College, \textsuperscript{3} UC San Diego
240.13 Knowing Our Neighbors: Four New Nearby High Proper Motion Systems  
Author(s): Jennifer L. Bartlett\textsuperscript{7}, John C. Lurie\textsuperscript{6}, Philip A. Ianna\textsuperscript{4}, Adric R. Riedel\textsuperscript{1}, Charlie T. Finch\textsuperscript{7}, Jennifer G. Winters\textsuperscript{3}, Wei-Chun Jao\textsuperscript{1}, John P Subasavage\textsuperscript{5}, Todd J. Henry\textsuperscript{4}  
Institution(s): \textsuperscript{1} California Institute of Technology, \textsuperscript{2} Georgia State University, \textsuperscript{3} Harvard-Smithsonian Center for Astrophysics, \textsuperscript{4} RECONS Institute, \textsuperscript{5} U.S. Naval Observatory, \textsuperscript{6} University of Washington, \textsuperscript{7} US Naval Observatory

240.14 Characterization of Low-mass K2 planet hosts using Near-Infrared Spectroscopy  
Author(s): Romy Rodríguez-Martínez\textsuperscript{2}, Sarah Ballard\textsuperscript{1}  
Institution(s): \textsuperscript{1} Massachusetts Institute of Technology, \textsuperscript{2} University of Puerto Rico, Rio Piedras

240.15 A Nearby Survey of M-Dwarfs  
Author(s): Amy Elaine Ray\textsuperscript{1}  
Institution(s): \textsuperscript{1} Mississippi State University

240.16 Investigating the Spectroscopic Variability and Magnetic Activity of Photometrically Variable M Dwarfs in SDSS  
Author(s): Jean-Paul Ventura\textsuperscript{2}, Aurora Cid\textsuperscript{1}, Sarah J. Schmidt\textsuperscript{3}, Emily L. Rice\textsuperscript{1}, Kelle L. Cruz\textsuperscript{2}  
Institution(s): \textsuperscript{1} CUNY College of Staten Island, \textsuperscript{2} CUNY Hunter College, \textsuperscript{3} Leibniz Institut fur Astrophysik

240.17 Toward a Comprehensive Sample of VLM Chemical Abundances with APOGEE  
Author(s): Christian Aganze\textsuperscript{4}, Jessica L Birky\textsuperscript{4}, Christopher Theissen\textsuperscript{1}, Adam J. Burgasser\textsuperscript{1}, Sarah J. Schmidt\textsuperscript{3}, Johanna K. Teske\textsuperscript{3}, Keivan G. Stassun\textsuperscript{3}, Jonathan C. Bird\textsuperscript{5}  
Institution(s): \textsuperscript{1} Boston University, \textsuperscript{2} Carnegie Institution of Washington, \textsuperscript{3} Leibniz-Institut für Astrophysik Potsdam (AIP), \textsuperscript{4} UC San Diego, \textsuperscript{5} Vanderbilt University

240.18 Modeling Stellar Parameters for High Resolution Late-M and Early-L Dwarf SDSS/APOGEE Spectra  
Author(s): Jessica L Birky\textsuperscript{3}, Christian Aganze\textsuperscript{3}, Adam J. Burgasser\textsuperscript{3}, Christopher Theissen\textsuperscript{1}, Sarah J. Schmidt\textsuperscript{2}, Johanna K. Teske\textsuperscript{3}, Keivan G. Stassun\textsuperscript{3}, Jonathan C. Bird\textsuperscript{4}  
Institution(s): \textsuperscript{1} Carnegie Institute, \textsuperscript{2} Leibniz-Institut für Astrophysik Potsdam (AIP), \textsuperscript{3} UC San Diego, \textsuperscript{4} Vanderbilt University  
Contributing team(s): UCSD FAST Team

240.19 Characterizing the Resolved M6 Dwarf Twin LP 318-218AB  
Author(s): Elizabeth Moreno Hilario\textsuperscript{2}, Adam J. Burgasser\textsuperscript{1}, Daniella Bardalez Galiluifi\textsuperscript{1}, Tomoki Tamiya\textsuperscript{1}  
Institution(s): \textsuperscript{1} University of California, San Diego, \textsuperscript{2} University of Guanajuato

240.20 Does the Eclipsing Binary KIC 10935310 Contain a Massively Inflated M Dwarf?  
Author(s): Jonathan Swift\textsuperscript{3}, Eunkyu Han\textsuperscript{1}, Jefffrey Ding\textsuperscript{3}, Kathleen O’Neill\textsuperscript{3}, Yousef Lawrence\textsuperscript{3}, Douglas Klink\textsuperscript{3}, Philip Steven Muirhead\textsuperscript{2}, Yutong Shan\textsuperscript{2}  
Institution(s): \textsuperscript{1} Boston University, \textsuperscript{2} Harvard, \textsuperscript{3} The Thacher School
240.21 M Dwarf Mysteries
Author(s): Todd J. Henry\textsuperscript{a}, Wei-Chun Jao\textsuperscript{b}, Jonathan Irwin\textsuperscript{c}, Sergio Dieterich\textsuperscript{d}, Charlie T. Finch\textsuperscript{e}, Adric R. Riedel\textsuperscript{f}, John P Subasavage\textsuperscript{g}, Jennifer Winters\textsuperscript{h}
Institution(s): \textsuperscript{a} Caltech, \textsuperscript{b} Carnegie Institution for Science, \textsuperscript{c} Georgia State University, \textsuperscript{d} Harvard-Smithsonian Center for Astrophysics, \textsuperscript{e} RECONS, \textsuperscript{f} USNO, \textsuperscript{g} USNO
Contributing team(s): RECONS Team

240.22 The Rotational Properties of M Dwarfs
Author(s): Steven Gilhool\textsuperscript{a}, Cullen Blake\textsuperscript{b}
Institution(s): \textsuperscript{a} University of Pennsylvania

240.23 Differential rotation as a model for starspots in magnetically active stars
Author(s): Christopher James Agostino\textsuperscript{a}, Gibor S. Basri\textsuperscript{b}
Institution(s): \textsuperscript{a} University of California-Berkeley

240.24 Identification of Misclassified Rotational Variables in the ASAS Catalog
Author(s): Kristine Larsen\textsuperscript{a}, Jessica M. Johnson\textsuperscript{b}, Corwin Hoover\textsuperscript{c}
Institution(s): \textsuperscript{a} Central Connecticut State University, \textsuperscript{b} Earth & Planetary Sciences Department, University of New Mexico

240.26 Gyrochronology of Stars in Wide Binaries in the Kepler K2 Cycle 5 Field
Author(s): Terry D. Oswalt\textsuperscript{a}, Derek L. Buzasi\textsuperscript{b}, Tomomi Otani\textsuperscript{c}
Institution(s): \textsuperscript{a} Embry-Riddle Aeronautical University, \textsuperscript{b} Florida Gulf Coast University

240.27 M Dwarfs in the Solar Neighborhood: Analysis of 16,000 SUPERBLINK-K2 Light Curves
Author(s): Dicy Ann E. Saylor\textsuperscript{a}, Sebastien Lepine\textsuperscript{b}, Erik Petigura\textsuperscript{c}, Ian Crossfield\textsuperscript{d}
Institution(s): \textsuperscript{a} Georgia State University, \textsuperscript{b} UA/LPL, \textsuperscript{c} University of California

240.28 The PTI Giant Star Angular Size Survey: Effective Temperatures & Linear Radii
Author(s): Gerard van Belle\textsuperscript{a}, Kaspar von Braun\textsuperscript{b}, David R. Ciardi\textsuperscript{c}, Genady Pilyavsky\textsuperscript{d}
Institution(s): \textsuperscript{a} Arizona State University, \textsuperscript{b} Caltech, \textsuperscript{c} Lowell Observatory

240.29 The Fundamental Stellar Parameters of FGK Stars in the SEEDS Survey
Author(s): Evan Rich\textsuperscript{a}, John P. Wisniewski\textsuperscript{b}
Institution(s): \textsuperscript{a} University of Oklahoma
Contributing team(s): the SEEDS team

240.30 Fundamental Stellar Parameters with HST/FGS Dynamical Masses and HST/STIS Spectroscopy of M Dwarf Binaries
Author(s): Sergio Dieterich\textsuperscript{a}, Todd J. Henry\textsuperscript{b}, George Fritz Benedict\textsuperscript{c}, Wei-Chun Jao\textsuperscript{d}, Russel White\textsuperscript{e}
Institution(s): \textsuperscript{a} Department of Terrestrial Magnetism, Carnegie Institution of Washington, \textsuperscript{b} Georgia State University, \textsuperscript{c} McDonald Observatory, \textsuperscript{d} RECONS Institute
Contributing team(s): RECONS
240.31 Spectrophotometry of Twenty of the Brightest Stars in the Southern Sky
Author(s): Kevin Krisciunas¹, Nicholas B. Suntzeff¹, Bethany Kelarek¹, Kyle Bonar¹, Joshua Stenzel¹
Institution(s): ¹ Texas A& M University

240.32 Harvard Observatory Project monitoring of Boyajian’s Star (KIC 8462852)
Author(s): Clea F Schumer¹, Andrew Vanderburg¹, Allyson Bieryla¹, Theron Carmichael¹, Lehman H Garrison¹, Jane Huang¹, John Lewis¹, Andrew Mayo¹, Munazza Alam¹, Sebastian Gomez¹, Harshil Kamdar¹, Sihan Yuan¹, Rodrigo Cordova¹
Institution(s): ¹ Harvard University

240.33 Analytic, piecewise solution to the Lane-Emden equation for stars with complex density profiles
Author(s): Jeff Miller⁴, Tamara Bogdanovic¹
Institution(s): ¹ Georgia Institute of Technology

240.34 The Evolution of Starspots on LO Pegasi
Author(s): Robert O. Harmon³, Mallory Cochran³, Derek Shank³, Nicholas Sweeney², Oana Vesa¹
Institution(s): ¹ Albion College, ² Haverford College, ³ Ohio Wesleyan Univ.

240.35 PyHammer: An Automatic and Visual Suite for Spectral Typing Stars
Author(s): Aurora Kesseli¹, Andrew A West¹, Brandon Harrison², Mark Veyette¹, Daniel Feldman¹
Institution(s): ¹ Boston University

240.36 FTS Spectra from the Mayall 4m Telescope, 1975-1995
Author(s): Catherine A. Pilachowski¹, Kenneth H. Hinkle², Michael Young¹, Harold Dennis¹, Arvind Gopu¹, Robert Henschel¹, Soichi Hayashi¹
Institution(s): ¹ Indiana University, ² National Optical Astronomy Observatory

241 Young Stellar Objects, Very Young Stars, T-Tauri Stars, H-H Objects Poster Session
Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

241.01 Constraining the orbits of young binary systems with ALMA
Author(s): Natasha Nogueira², Eric L. N. Jensen², Rachel L. Akeson¹
Institution(s): ¹ NASA Exoplanet Science Institute, Caltech, ² Swarthmore College

241.02 The Young Visual Binary Database
Author(s): Lisa A. Prato³, Ian Avilez², Thomas Allen², Saeid Zoonematkermani², Lauren Biddle², Ryan Muzzio², Matthew Wittal², Gail Schaefer¹, Michal Simon³
Institution(s): ¹ Georgia State University, ² Lowell Observatory, ³ SUNY Stony Brook

241.03 Effective Temperatures for Young Stars in Binaries
Author(s): Ryan Muzzio², Ian Avilez², Lisa A. Prato³, Lauren I Biddle⁴, Thomas Allen¹, Nuria Meilani Laure Wright-Garba³, Matthew Wittal¹
Institution(s): ¹ Embry-Riddle Aeronautical University, ² Kenyon College, ³ Lowell Observatory, ⁴ Northern Arizona University
241.04 Variable Stellar and Circumstellar Properties of the Young Binary VV CrA
Author(s): Ian Avilez\textsuperscript{1}, Lisa A. Prato\textsuperscript{1}, Thomas Allen\textsuperscript{1}, Nuria Meilani Laure Wright-Garba\textsuperscript{1}, Lauren Biddle\textsuperscript{1}, Ryan Muzzio\textsuperscript{1}
Institution(s): \textsuperscript{1} Lowell Observatory

241.05 Orbiting Clouds of Material at or near the Keplerian Co-Rotation Radius in Late M Dwarfs WTTs of Upper Sco
Author(s): John R. Stauffer\textsuperscript{1}, Trevor J. David\textsuperscript{1}, Lynne Hillenbrand\textsuperscript{1}, Luisa M. Rebull\textsuperscript{1}, Ann Marie Cody\textsuperscript{2}
Institution(s): \textsuperscript{1} Caltech, \textsuperscript{2} NASA Ames Research Center
Contributing team(s): K2Clusters

241.06 Is the Young UY Auriga System a Triple?
Author(s): Matthew Wittal\textsuperscript{1}, Lisa A. Prato\textsuperscript{2}, Gail Schaefer\textsuperscript{1}, David R. Ciardi\textsuperscript{3}, Allen Thomas\textsuperscript{1}, Lauren Biddle\textsuperscript{2}, Ian Avilez\textsuperscript{2}, Ryan Muzzio\textsuperscript{2}, Jennifer Patience\textsuperscript{4}, Charles Beichman Charles.A.Beichman@jpl.nasa.gov\textsuperscript{3}
Institution(s): \textsuperscript{1} GSU CHARA, \textsuperscript{2} Lowell Observatory, \textsuperscript{3} NASA NExScI, \textsuperscript{4} Northern Arizona University

241.07 Interpreting Infant Stars: SOFIA Imaging of Protostars in L1630 and NGC 2264
Author(s): Hannah Drew-Moyer\textsuperscript{2}, Valerie Rapson\textsuperscript{1}, David Principe\textsuperscript{3}, Ralph Shuping\textsuperscript{4}, Joel H. Kastner\textsuperscript{3}
Institution(s): \textsuperscript{1} Dudley Observatory, \textsuperscript{2} Rensselaer Polytechnic Institute, \textsuperscript{3} Rochester Institute of Technology, \textsuperscript{4} Space Science Institute

241.08 A search for the lasts gasps of disk accretion in Orion T Tauri stars
Author(s): Catherine Clark\textsuperscript{3}, Cesar Briceno\textsuperscript{2}, Nuria Calvet\textsuperscript{3}, Jesus Hernandez\textsuperscript{1}
Institution(s): \textsuperscript{1} Centro de Investigaciones de Venezuela, \textsuperscript{2} Cerro Tololo Inter-American Observatory, \textsuperscript{3} University of Michigan

241.09 X-ray Observations of LkCa 15: A T Tauri Star Hosting a Protoplanetary System
Author(s): Steve L. Skinner\textsuperscript{1}, Manuel Guedel\textsuperscript{2}
Institution(s): \textsuperscript{1} Univ. Of Colorado, \textsuperscript{2} Univ. of Vienna

241.10 Finding High Quality Young Star Candidates in Cephei C using X-ray, Optical, and IR data
Author(s): Laura Orr\textsuperscript{6}, Luisa M. Rebull\textsuperscript{2}, Milton Johnson\textsuperscript{1}, Alexandra Miller\textsuperscript{4}, Anthony Aragon Orozco\textsuperscript{1}, Benjamin Bakhai\textsuperscript{3}, Jacquelyn Bakshian\textsuperscript{4}, Elizabeth Chiffelle\textsuperscript{1}, Arie DeLint\textsuperscript{3}, Stefan Gerber\textsuperscript{3}, Jared Mader\textsuperscript{4}, Amelia Marengo\textsuperscript{4}, Jesse McAdams\textsuperscript{4}, Cassandra Montufar\textsuperscript{1}, Quinton Orr\textsuperscript{6}, Lis San Emeterio\textsuperscript{1}, Eliyah Stern\textsuperscript{4}, Drew Weisserman\textsuperscript{4}
Institution(s): \textsuperscript{1} Bioscience High School, \textsuperscript{2} Caltech, \textsuperscript{3} McCall-Donnelly High School, \textsuperscript{4} Milken Community Schools, \textsuperscript{5} Pilot Rock High School, \textsuperscript{6} Ukiah High School
241.11 An Infrared Search for Young Stellar Objects in IC 1396
Author(s): Chelen H. Johnson¹, Marcella Linahan³, John Gibbs⁴, Luisa M. Rebull², Andrew R Archibald⁵, Samantha Rose Dickmann³, Erica A Hart³, Audrey R Hedlund¹, Shannon L Hilfer⁴, Thomas Lacher³, John T. McKernan³, Emma M Medeiros¹, Samantha Brooks Nelson¹, Harrison O’Leary⁴, Nicholas D Peña⁴, Alexis Peterson⁴, Livia K Reader¹, Brandi Lucia Ropinski³, Gabriella Scarpa¹, Kiera A Sundeen¹, Amber L Takara⁴, Theresa Thiel³
Institution(s): ¹ Breck School, ² Caltech, ³ Carmel Catholic High School, ⁴ Glencoe High School

241.12 A full 1---40 micron spectral energy distribution for the Becklin-Neugebauer object: Placing constraints on disk size for a runaway massive young stellar object
Author(s): Ralph Shuping⁴, Luke D. Keller², Joseph D. Adams⁶, Maya Petkova⁵, Kenneth Wood⁵, Terry Herter¹, Greg Sloan¹, Daniel Thomas Jaffe⁷, Thomas P. Greene⁵, Kimberly Ennico¹
Institution(s): ¹ Cornell Univ., ² Ithaca College, ³ NASA-Ames, ⁴ Space Science Institute, ⁵ Univ. of St. Andrews, ⁶ USRA-SOFIA, ⁷ UT Austin

241.13 Probing the Evolution of Massive Young Stellar Objects using Weak Class II 6.7GHz Methanol Maser Emission
Author(s): Bethany Ann Ludwig⁵, Nichol Cunningham¹
Institution(s): ¹ National Radio Astronomy Observatory, ² University of California San Diego

241.14 Massive Star Formation in the Cygnus-X DR15 Complex
Author(s): Anna Laws¹, Joseph L. Hora¹, Qizhou Zhang¹
Institution(s): ¹ Harvard-Smithsonian CfA

241.15 Bipolar Outflows Properties from Class 0/I protostars in Perseus
Author(s): Oscar A. De La Rosa¹
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics
Contributing team(s): Mass Assembly of Stellar Systems and their Evolution with the SMA (MASSES) Program

242 Neutron Stars (Pulsars, Magnetars, Pulsar Wind Nebulae) Poster Session

Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

242.01 Time Evolution of Pulsar Magnetosphere: An Implicit Approach
Author(s): Sushilkumar Sreekumar⁴, Eric M. Schlegel¹
Institution(s): ¹ University of Texas San Antonio

242.02 Timing will Tell: Constraining Pulsar Timing Errors in the Search for Gravitational Waves
Author(s): Ellianna Schwab¹, Scott M. Ransom²
Institution(s): ¹ CUNY - The City College of New York, ² NRAO
Contributing team(s): NANOGrav
242.03 Long-Term Timing of Globular Cluster Pulsars
Author(s): Sergio Roi Smith\textsuperscript{1}, Ryan S Lynch\textsuperscript{1}
Institution(s): \textsuperscript{1} Green Bank Observatory, \textsuperscript{2} Howard University

242.04 A Multi-Frequency Study of Nearby MSP J1400-1431
Author(s): Joe K Swiggum\textsuperscript{2}, David L.A. Kaplan\textsuperscript{2}, Maura McLaughlin\textsuperscript{3}, Duncan Lorimer\textsuperscript{1}, Brad Barlow\textsuperscript{1}
Institution(s): \textsuperscript{1} High Point University, \textsuperscript{2} University of Wisconsin - Milwaukee, \textsuperscript{3} West Virginia University

242.05 Steep Spectrum Pulsar Candidates Near Sgr A*
Author(s): Deven Bhakta\textsuperscript{1}, Dale A. Frail\textsuperscript{1}
Institution(s): \textsuperscript{1} NRAO, \textsuperscript{2} Texas Tech University

242.06 Black Widow Pulsar radiation hydrodynamics simulation using Castro: Methodology
Author(s): Maria Barrios Sazo\textsuperscript{2}, Michael Zingale\textsuperscript{2}, Weiqun Zhang\textsuperscript{1}
Institution(s): \textsuperscript{1} Lawrence Berkeley National Laboratory, \textsuperscript{2} Stony Brook University

242.07 A New, Low Braking Index For the LMC Pulsar B0540-69
Author(s): Francis E. Marshall\textsuperscript{4}, Lucas Guillemot\textsuperscript{1}, Alice Kust Harding\textsuperscript{4}, Pierrick Martin\textsuperscript{1}, David A Smith\textsuperscript{4}
Institution(s): \textsuperscript{1} CNRS-Universite d'Orleans, \textsuperscript{2} CNRS-Universite de Bordeaux, \textsuperscript{3} CNRS-Universite d’Toulouse, \textsuperscript{4} NASA’s GSFC

242.08 Post-outburst radio monitoring of the high magnetic field pulsar PSR J1119-6127
Author(s): Walid A. Majid\textsuperscript{1}, Aaron Pearlman\textsuperscript{1}, jonathan kocz\textsuperscript{1}, Thomas A Prince\textsuperscript{1}, Jonas lippuner\textsuperscript{1}, Shinji Horiuchi\textsuperscript{1}
Institution(s): \textsuperscript{1} JPL/Caltech

242.09 FRB 121102: Searching for a Host
Author(s): Matthew W. Abruzzo\textsuperscript{5}, Robert Wharton\textsuperscript{3}, Shami Chatterjee\textsuperscript{3}, James M. Cordes\textsuperscript{3}, Cees Bassa\textsuperscript{3}, Geoffrey C. Bower\textsuperscript{1}, Sarah Burke-Spolaor\textsuperscript{10}, Bryan J. Butler\textsuperscript{10}, Demorest Paul\textsuperscript{10}, Jason Jessels\textsuperscript{3}, Victoria M. Kaspi\textsuperscript{7}, Casey J. Law\textsuperscript{11}, Maura McLaughlin\textsuperscript{12}, Scott M. Ransom\textsuperscript{9}, Paul Scholz\textsuperscript{4}, Andrew Seymour\textsuperscript{9}, Laura Spitler\textsuperscript{6}, Shriharsh P. Tendulkar\textsuperscript{7}
Institution(s): \textsuperscript{1} Academia Sinica, \textsuperscript{2} ASTRON, \textsuperscript{3} Cornell University, \textsuperscript{4} Dominion Radio Astrophysical Observatory, \textsuperscript{5} Haverford College, \textsuperscript{6} Max-Planck-Institut für Radioastronomie, \textsuperscript{7} McGill University, \textsuperscript{8} NAIC, \textsuperscript{9} National Radio Astronomy Observatory, \textsuperscript{10} National Radio Astronomy Observatory, \textsuperscript{11} University of California at Berkeley, \textsuperscript{12} West Virginia University

242.10 Seeking Fast Radio Burst Origins Using the Very Large Array
Author(s): Bridget Clare Andersen\textsuperscript{2}, Sarah Spolaor\textsuperscript{3}, Paul Demorest\textsuperscript{1}
Institution(s): \textsuperscript{1} National Radio Astronomy Observatory, \textsuperscript{2} University of Virginia
Contributing team(s): Realfast

242.11 Quasi-Periodicities in the Anomalous Emission Events in Pulsars B1859+07 and B0919+06
Author(s): Haley Wahl\textsuperscript{1}, Joanna M. Rankin\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Vermont
242.12 Follow-up Observations of the Magnetar PSR J1745-2900 and Sgr A*  
Author(s): Rebecca Rimai Diesing, Farhad Yusef-Zadeh, Lorant Sjouwerman, Doug Roberts  
*Institution(s): 1 National Radio Astronomy Observatory, 2 Northwestern University

242.13 Nuclear pasta in protoneutron stars: simulations of neutrino emission from nuclear de-excitation  
Author(s): Matthew Charles Witt, William Newton  
Institution(s): 1 Texas A&M University, Commerce

242.14 High Time Resolution Studies with the GBT  
Author(s): Natalia Lewandowska, Ryan S Lynch  
Institution(s): 1 Green Bank Observatory

242.16 The Arecibo Remote Command Center Network  
Author(s): Fronefield Crawford, Fredrick Jenet, Brian Christy, Timothy Dolch, Alma Guerreo-Miller, Volker Quetschke, Xavier Siemens, Tristan L. Smith, Kevin Stovall, Leslie Wade, Madeline Wade  
*Institution(s): 1 Franklin and Marshall College, 2 Hillsdale College, 3 Kenyon College, 4 Notre Dame of Maryland University, 5 Swarthmore College, 6 University of New Mexico, 7 University of Texas Rio Grande Valley, 8 University of Wisconsin - Milwaukee

242.17 Searches for Optical Counterparts to Fermi Unassociated Sources with the Intermediate Palomar Transient Factory  
Author(s): Eric Christopher Bellm, Thomas A Prince, David L.A. Kaplan, Thomas Kupfer, Megan E. DeCesar, Russ Laher, Frank J. Masci, David L. Shupe  
Institution(s): 1 Caltech, 2 University of Wisconsin, Milwaukee  
Contributing team(s): Intermediate Palomar Transient Factory Collaboration

242.18 Upper Limits On High-Frequency Single-Source Gravitational Waves  
Author(s): Daniel Halmrast, Elif Beklen, Shami Chatterjee, James M. Cordes, Timothy Dolch, Justin Ellis, Michael T. Lam, Maura McLaughlin, Timothy Pennucci  
Institution(s): 1 Columbia University, 2 Cornell University, 3 Hillsdale College, 4 Jet Propulsion Laboratory, 5 Suleyman Demirel University, 6 West Virginia University

242.19 The CHIME Fast Radio Burst Project  
Author(s): Victoria M. Kaspi  
Institution(s): 1 McGill Univ.  
Contributing team(s): CHIME/FRB Collaboration

243 Cataclysmic Variables, Novae, & Symbiotic Stars Poster Session  
Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D
243.01 Realistic MHD Modelling of Cataclysmic Variable Spin-Down
Author(s): Alex Lascelles\(^1\), Cecilia Garraffo\(^1\), Jeremy J. Drake\(^1\), Ofer Cohen\(^2\)
Institution(s): \(^1\) Harvard-Smithsonian Centre for Astrophysics, \(^2\) University of Massachusetts Lowell

243.02 Cataclysmic Variables discovered in the ChaMPlane Survey
Author(s): Ping Zhao\(^1\), Jonathan E. Grindlay\(^1\), JaeSub Hong\(^1\), Mathieu Servillat\(^2\), Maureen Van Den Berg\(^1\)
Institution(s): \(^1\) Harvard-Smithsonian, CfA, \(^2\) Observatoire de Paris-Meudon

243.03 The Kepler2 70-day Observation of the Eclipsing Cataclysmic AC Cnc
Author(s): Eric M. Schlegel\(^2\), R. K. Honeycutt\(^1\)
Institution(s): \(^1\) Indiana University, \(^2\) Univ. of Texas, San Antonio

243.05 Detecting Nova Shells around known Cataclysmic Variable systems
Author(s): Enia Xhakaj\(^2\), Thomas Kupfer\(^1\), Thomas A Prince\(^1\)
Institution(s): \(^1\) California Institute of Technology, \(^2\) Lafayette College

243.06 The Fall and Rise of FO Aquarii - King of the Intermediate Polars
Author(s): Peter M. Garnavich\(^3\), Colin Littlefield\(^1\), Mark Kennedy\(^4\), Erin Aadland\(^1\), Grace V. Calhoun\(^2\), Donald M. Terndrup\(^2\)
Institution(s): \(^1\) Minnesota State University, \(^2\) Ohio State University, \(^3\) Univ. of Notre Dame, \(^4\) University College Cork

243.07 Recent Observations of AG Pegasi’s Latest Outburst Phase by Harvard Observing Project
Author(s): Jose Luis Espinel\(^1\), John Lewis\(^5\), Rimute Budreviceute\(^2\), Allyson Bieryla\(^1\), Kate Denham Alexander\(^1\), Peter Blanchard\(^1\), Theron Carmichael\(^1\), Lehman H Garrison\(^1\), Jane Huang\(^5\), Andrew Mayo\(^1\), Missy McIntosh\(^1\), Andrew Vanderburg\(^1\), Munazza Alam\(^5\), Rodrigo Cordova\(^1\), Sebastian Gomez\(^1\), Ian Weaver\(^1\), Sihan Yuan\(^1\), Evander Price\(^1\)
Institution(s): \(^1\) Harvard University

243.08 Long-term Accretion Variations of the Magnetic Cataclysmic Variable Star QQ Vulpecula
Author(s): Sanaea C. Rose\(^1,4\), Stella Kafka\(^2\), R. K. Honeycutt\(^3\), Regina Jorgenson\(^4\), Derrick Carr\(^5,4\), Francesca Childs\(^6,4\), Holly Christenson\(^7,4\), Md. Tanveer Karim\(^8,4\), Tarini Konchady\(^9,4\), Gary E. Walker\(^4\)
Institution(s): \(^1\) Wellesley College, \(^2\) American Association of Variable Star Observers, \(^3\) Indiana University, \(^4\) Maria Mitchell Observatory, \(^5\) Haverford College, \(^6\) Harvard College, \(^7\) Western Washington University, \(^8\) University of Rochester, \(^9\) Johns Hopkins University

244 White Dwarfs Poster Session
Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

244.01 Orbital Stability of the Hierarchical Triple System HIP 3678
Author(s): Asher Kirschbaum\(^1\), Jason Nordhaus\(^1\)
Institution(s): \(^1\) Rochester Institute of Technology
244.02 Searching For Infrared Excesses Around White Dwarf Stars
Author(s): Elin Deeb Wilson\textsuperscript{1}, Luisa M. Rebull\textsuperscript{1}, John H. Debes\textsuperscript{3}, Chris Stark\textsuperscript{3}

244.03 Transit probabilities for debris around white dwarfs
Author(s): John Arban Lewis\textsuperscript{1}, John A. Johnson\textsuperscript{1}
Institution(s): 1. Harvard University

244.04 White Dwarf Pollution by Disk Accretion of Tidally Disrupted Rocky Bodies
Author(s): Wanda Feng\textsuperscript{2}, Steven Desch\textsuperscript{1}
Institution(s): 1. Arizona State University

244.05 Three-Dimensional Simulations of the Convective Urca Process in Pre-Supernova White Dwarfs
Author(s): Donald E. Wilcox\textsuperscript{1}, Dean Townsley\textsuperscript{2}, Michael Zingale\textsuperscript{1}, Alan Calder\textsuperscript{1}
Institution(s): 1. Department of Physics and Astronomy, Stony Brook University, 2. Department of Physics and Astronomy, The University of Alabama

244.06 Spectroscopic Reductions of White Dwarf Stars to Support Dark Energy Survey Calibrations
Author(s): Deborah Jean Gulledge\textsuperscript{1}, Jacob M. Robertson\textsuperscript{1}, Douglas Lee Tucker\textsuperscript{2}, J. Allyn Smith\textsuperscript{1}, William Wester\textsuperscript{1}, Pier-Emmanuel Tremblay\textsuperscript{3}, Mees B. Fix\textsuperscript{3}
Institution(s): 1. Austin Peay State University, 2. Fermi National Accelerator Laboratory, 3. Space Telescope Science Institute

245 Extrasolar Planets: Characterization & Theory Poster Session
Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

245.01 Characterizing Extrasolar Planets from Transit Light Curves obtained at the Universidad de Monterrey Observatory – Part 2
Author(s): Pedro Valdés Sada\textsuperscript{1}
Institution(s): 1. Universidad De Monterrey

245.02 Simulated JWST/NIRISS Spectroscopy of Anticipated TESS Planets and Selected Super-Earths Discovered from K2 and Ground-Based Surveys
Author(s): Dana Louie\textsuperscript{2}, Loic Albert\textsuperscript{1}, Drake Deming\textsuperscript{2}
Institution(s): 1. Institut de recherche sur les exoplanètes (iREx), 2. University of Maryland

245.03 Exploring JWST’s Capability to Constrain Habitability on Simulated Terrestrial TESS Planets
Author(s): Luke Tremblay\textsuperscript{2}, Amber Britt\textsuperscript{3}, Natasha Batalha\textsuperscript{3}, Edward Schwieterman\textsuperscript{4}, Giada Arney\textsuperscript{4}, Shawn Domagal-Goldman\textsuperscript{2}, Avi Mandell\textsuperscript{2}
Contributing team(s): Planetary Systems Laboratory, Virtual Planetary Laboratory
245.04 Reaching the Diffraction Limit: High-Resolution Imaging for Exoplanet and Stellar Studies  
Author(s): Steve B. Howell¹, Nic Scott¹, Elliott Horch²  
*Institution(s):* ¹ NASA ARC, ² SCSU

245.05 WIRC-POL: A near-IR spectro-polarimetric imager at Palomar Observatory  
Author(s): Ricky Nilsson¹, Samaporn Tinyanont³, Dimitri Mawet¹, Heather Knutson¹  
*Institution(s):* ¹ California Institute of Technology  
Contributing team(s): WIRC-POL team

245.06 Hobby-Eberly Telescope Optical Transmission Spectroscopy of the Hot Jupiter WASP-12b  
Author(s): Adam G. Jensen¹, Seth Redfield³, Paul W. Cauley¹, Michael Endl², William D. Cochran²  
*Institution(s):* ¹ University of Nebraska-Kearney, ² University of Texas-Austin, ³ Wesleyan University

245.07 Using Transmission Spectroscopy to Determine the Rotation Rate of HD 189733b  
Author(s): Erin Elise Flowers¹, Emily Rauscher⁴, Eliza Kempton², Matteo Brogi³  
*Institution(s):* ¹ Columbia University, ² Grinnell College, ³ University of Colorado Boulder, ⁴ University of Michigan

245.08 Determining Vsini of Young Planet-hosting Stars  
Author(s): Jennifer Vanessa Medina¹, Andrew W Mann²  
*Institution(s):* ¹ TAUROS Program, University of Texas, ² University of Texas

245.09 A search for inversion layers in hot Jupiters with high-resolution spectroscopy  
Author(s): Callie Hood², Jayne Birkby¹, Mercedes Lopez-Morales¹  
*Institution(s):* ¹ Harvard-Smithsonian Center for Astrophysics, ² University of North Carolina at Chapel Hill

245.10 Regular satellite formation and evolution in a dead zone  
Author(s): Cheng Chen¹, Rebecca G. Martin¹  
*Institution(s):* ¹ Department of Physics and Astronomy University of Nevada, Las Vegas

245.11 Quantifying the Effects of Temperature on Rocky Planets  
Author(s): Sabrina Berger¹, Leslie Rogers²  
*Institution(s):* ¹ University of California, Berkeley, ² University of Chicago

245.13 Transit Timing Variation analysis with Kepler light curves of KOI 227 and Kepler 93b  
Author(s): Shannon Dultz¹, Mike Reed¹  
*Institution(s):* ¹ Missouri State University

245.14 Blue Skies through a Blue Sky: an attempt to detect Rayleigh scattering in an exoplanet atmosphere from a ground-based telescope  
Author(s): Kristen Luchsinger³, Seth Redfield³, Paul W. Cauley³, Travis S. Barman¹, Adam G. Jensen²  
*Institution(s):* ¹ Lunar and Planetary Laboratory, University of Arizona, Tuscon, ² University of Nebraska, Kearney, ³ Wesleyan University
245.15 The HD 202206 Exoplanetary System: Companion Masses and (in)Stability
Author(s): George Fritz Benedict¹, Thomas E. Harrison¹, Barbara E. McArthur²
Institution(s): ¹ New Mexico State University, ² Univ. of Texas, Austin

245.16 Exoplanet Transit Analysis of KIC 8462852
Author(s): Noah Isaac Rivera¹, Michael H Schmitt²
Institution(s): ¹ California State University, San Bernardino, ² Northwestern University

245.17 A Search for Host Stars of Free-Floating Planetary Mass Objects
Author(s): Isaiah Tristan¹, Brendan P. Bowler²
Institution(s): ¹ Rice University, ² University of Texas at Austin

245.18 Obliquities of Exoplanet Host Stars from Precise Distances and Stellar Angular Diameters
Author(s): Samuel N. Quinn², Russel J. White¹
Institution(s): ¹ Georgia State University, ² Harvard-Smithsonian Center for Astrophysics

245.19 The Perfect Map
Author(s): Veenu Suri², Emily Rauscher², Nicolas B. Cowan¹
Institution(s): ¹ McGill University, ² University of Michigan, Ann Arbor

245.20 How obliquity influences the climate of aquaplanets
Author(s): Carly Snell³, Illeana Gomez Leal¹, Lisa Kaltenegger¹, Ross Jennings¹
Institution(s): ¹ Cornell University

245.21 Small Friends of Hot Jupiters
Author(s): Luis Ernesto Nunez¹, John A. Johnson²
Institution(s): ¹ California State Polytechnic University, Pomona, ² Harvard-Smithsonian Center for Astrophysics

245.22 The Occurrence Rate of Hot Jupiters
Author(s): Rayna Rampalli³, Joseph Catanzarite², Natalie M. Batalha¹
Institution(s): ¹ NASA Ames, ² SETI Institute, ³ Wellesley College

245.23 Constraining hot Jupiter’s atmospheric structure and dynamics through Doppler shifted emission spectra
Author(s): Jisheng Zhang¹, Eliza Kempton¹, Emily Rauscher²
Institution(s): ¹ Grinnell College, ² University of Michigan

245.24 Let’s Grow Old Together: The Simultaneous Evolution of Planet and Host Star
Author(s): Megan Barnett¹, Leslie Rogers²
Institution(s): ¹ University of California Berkeley, ² University of Chicago

245.25 The effect of stellar radiation on exoplanet atmospheric heating and mass loss
Author(s): Winonah Ojanen³, Brendan P. Miller³, Elena Gallo⁴, Jason Wright², Katja Poppenhaeger³
Institution(s): ³ College of St. Scholastica, ² Pennsylvania State University, ³ Queen’s University Belfast, ⁴ University of Michigan
245.26 Atmospheric evaporation in super-Earth exoplanet systems
Author(s): Spencer Moller1, Brendan P. Miller1, Elena Gallo4, Jason Wright2, Katja Poppenhaeger3
Institution(s): 1. College of St. Scholastica, 2. Pennsylvania State University, 3. Queen’s University Belfast, 4. University of Michigan

245.27 Swift X-ray monitoring of M dwarf coronal variability
Author(s): Brendan P. Miller1, Cedric Hagen2, Elena Gallo4, Jason Wright4

245.28 Effects of exomoon's magnetic field on generation of radio emissions
Author(s): John Griffith1, Joaquin Noyola1, Suman Satyal1, Zdzislaw E. Musielak1
Institution(s): 1. University of Texas at Arlington

245.29 The Influence of Volcanic Aerosols on Planetary Habitability
Author(s): Howard Chen1, Daniel Ethan Horton1
Institution(s): 1. Northwestern University

246 Large Scale Structure, Cosmic Distance Scale Poster Session
Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

246.01 A Catalog of Proper Motions to Dynamically Measure the Hubble Expansion and the Evolution of Large-Scale Structure
Author(s): Alexandra Truebenbach1, Jeremiah K. Darling1
Institution(s): 1. University of Colorado Boulder

246.02 Using Quasar Pairs to put Constraints on Cosmological Parameters
Author(s): Louis Johnson2, Isabelle Pâris1
Institution(s): 1. Astronomical Observatory of Trieste, 2. University of the Pacific

246.03 Detecting the BAO using Discrete Wavelet Packets
Author(s): Noel Anthony Garcia1, Yunyun Wu1, Kevin Kadowaki1, Jesus Pando1
Institution(s): 1. DePaul University

246.04 Does the HI Mass Function Vary with Environment?
Author(s): Robert F. Minchin1
Institution(s): 1. NAIC, Arecibo Observatory

246.05 Galaxy Interaction in Overdense Environments
Author(s): Derek Holman1, Chao-Ling Hung2
Institution(s): 1. University of Tennessee at Chattanooga, 2. University of Texas at Austin
247 Black Holes Poster Session

Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

247.01 Super-resolution Polarimetric Imaging of Black Holes using the Event Horizon Telescope
Author(s): Mollie Pleau\(^2\), Kazunori Akiyama\(^1\), Vincent L. Fish\(^1\)
Institution(s): \(^1\) MIT Haystack Observatory, \(^2\) Smith College

247.02 Optical Observations and Modeling of a Possible Black Hole HMXB and Cygnus X-1 Progenitor
Author(s): Sebastian Gomez\(^1\), Jonathan E. Grindlay\(^1\)
Institution(s): \(^1\) Harvard University

247.03 Long-term X-ray and Optical Monitoring of RZ2109
Author(s): Kristen C Dage\(^2\), Steve E. Zepf\(^2\), Thomas J. Maccarone\(^3\), Mark Peacock\(^2\), Arunav Kundu\(^1\)
Institution(s): \(^1\) Eureka Scientific, \(^2\) Michigan State University, \(^3\) Texas Tech University

247.04 Longterm Multi-wavelength Monitoring of the Relativistic Tidal Disruption Event Swift J164449.3+573451
Author(s): Tarraneh Eftekhari\(^1\), Edo Berger\(^1\), Ashley Zauderer\(^1\)
Institution(s): \(^1\) Harvard-Smithsonian Center for Astrophysics

247.05 The contribution of SUBARU-HSC faint galaxies to the Spitzer-CIB fluctuations in COSMOS
Author(s): Joyce Guo\(^1\), Nico Cappelluti\(^1\), Yanxia Li\(^1\), Rachel Ann Cooper\(^1\)
Institution(s): \(^1\) Yale University

247.06 Exploring Sources of Gravitational Waves From Star Cluster Dynamics
Author(s): Joshua Fuhrman\(^1\), Aaron M. Geller\(^2\), Carl L. Rodriguez\(^2\), Frederic A. Rasio\(^2\)
Institution(s): \(^1\) Carnegie Mellon University, \(^2\) Northwestern University

247.07 Distinguishing Between Formation Channels for Binary Black Holes with LISA
Author(s): Katelyn Breivik\(^2\), Carl L. Rodriguez\(^3\), Shane L. Larson\(^1\), Vassiliki Kalogera\(^2\), Frederic A. Rasio\(^2\)
Institution(s): \(^1\) Adler Planetarium, \(^2\) Center for Interdisciplinary Exploration and Research in Astrophysics (CIERA) and Dept. of Physics and Astronomy, Northwestern University, \(^2\) MIT-Kavli Institute for Astrophysics and Space Research

247.08 Chandra HETGS and VLBI Observations of SS 433
Author(s): Herman L. Marshall\(^2\), David H. Roberts\(^1\), Norbert S. Schulz\(^2\)
Institution(s): \(^1\) Brandeis University, \(^2\) MIT

247.09 Measuring X-ray Binary Accretion State Distributions in Extragalactic Environments using XMM-Newton
Author(s): Lacey West\(^4\), Bret Lehmer\(^3\), Mihoko Yukita\(^2\), Ann E. Hornschemeier\(^3\), Andrew Ptak\(^3\), Daniel R. Wik\(^1\), Andreas Zezas\(^1\)
Institution(s): \(^1\) Crete, \(^2\) Johns Hopkins University, \(^3\) NASA GSFC, \(^4\) University of Arkansas
247.10 Active Galactic Nuclei from He II: a more complete census of AGN in SDSS galaxies yields a new population of low-luminosity AGN in highly star-forming galaxies
Author(s): Rudolf E Baer\textsuperscript{1}, Anna Weigel\textsuperscript{1}, Lia F. Sartori\textsuperscript{1}, Kyuseok Oh\textsuperscript{1}, Michael Koss\textsuperscript{1}, Kevin Schawinski\textsuperscript{1}
Institution(s): \textsuperscript{1} ETH Zurich

247.11 You’re Cut Off: HD and MHD Simulations of Truncated Accretion Disks
Author(s): J. Drew Hogg\textsuperscript{1}, Christopher S. Reynolds\textsuperscript{1}
Institution(s): \textsuperscript{1} The University of Maryland

247.12 On the Supermassive Black Hole-Galaxy Coevolution
Author(s): Sahil Hegde\textsuperscript{1}, Shawn Zhang\textsuperscript{1}, Aldo Rodriguez\textsuperscript{2}, Joel R. Primack\textsuperscript{3}
Institution(s): \textsuperscript{1} Amador Valley High School, \textsuperscript{2} Prospect High School, \textsuperscript{3} University of California, Santa Cruz

247.13 Measuring the Stellar Kinematics of the S0 Galaxy NGC 4203
Author(s): Zuzana Isabelle Calbo\textsuperscript{1}, Jonelle Walsh\textsuperscript{4}, Aaron J. Barth\textsuperscript{5}, Remco van den Bosch\textsuperscript{2}, Joseph C. Shields\textsuperscript{3}, Marc Sarzi\textsuperscript{6}
Institution(s): \textsuperscript{1} Hofstra University, \textsuperscript{2} Max Planck Institute for Astronomy, \textsuperscript{3} Ohio University, \textsuperscript{4} Texas A&M University, \textsuperscript{5} University of California, Irvine, \textsuperscript{6} University of Hertfordshire

247.14 Efficiency of Dynamical Friction in Presence of Black Hole Radiative Feedback
Author(s): Alexander Buser\textsuperscript{1}, Tamara Bogdanovic\textsuperscript{1}, KwangHo Park\textsuperscript{1}
Institution(s): \textsuperscript{1} Georgia Institute of Technology

247.15 What is the nature of the high energy X-ray sources in the galaxy?
Author(s): Sophie Cuturilo\textsuperscript{2}, John Tomsick\textsuperscript{3}, Maica Clavel\textsuperscript{3}, George B Lansbury\textsuperscript{1}
Institution(s): \textsuperscript{1} Durham University, \textsuperscript{2} Seattle Pacific University, \textsuperscript{3} UC Berkeley/SSL

248 Dark Matter & Dark Energy Poster Session

Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

248.01 A Blind Search Pipeline for Dark Satellites of the Milky Way in Gamma Rays
Author(s): Nathan Ross Sandford\textsuperscript{2}, Eric Charles\textsuperscript{1}, Mattia Di Mauro\textsuperscript{1}
Institution(s): \textsuperscript{1} Kavli Institute for Particle Astrophysics and Cosmology, SLAC National Accelerator Laboratory, Stanford University, \textsuperscript{2} Pomona College Contributing team(s): Fermi-LAT Collaboration

248.02 Searching for a 3.5-keV line in the spectrum of the deepest Chandra blank fields
Author(s): C. Megan Urry\textsuperscript{2}, Nico Cappelluti\textsuperscript{2}, Esra Bulbul\textsuperscript{1}
Institution(s): \textsuperscript{1} Massachusetts Institute of Technology, \textsuperscript{2} Yale University

248.03 Simulating Xenon Bubble Chambers for Dark Matter Detection
Author(s): Joseph Arroyo\textsuperscript{1}, Eric Dahl\textsuperscript{1}
Institution(s): \textsuperscript{1} Northwestern University Contributing team(s): PICO
248.04 Testing Ultra-Light Dark Matter Axions Using Galaxy Surveys
Author(s): Emery Trott¹, Tristan L. Smith², Daniel Grin¹
Institution(s): ¹ Haverford College, ² Swarthmore College

248.05 In Theory: Dark Energy as a Power Source
Author(s): Robert J. Nemiroff¹, David Russell¹, Matipon Tangmatitham¹
Institution(s): ¹ Michigan Technological Univ.

249 Starburst Galaxies Near & Far Poster Session
Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

249.01 GMRT HI Imaging of the Ly-α Emitting Starburst Galaxy Tololo 1924-416
Author(s): Cesar I Mendoza Davila¹, Karen Perez Sarmiento², John M. Cannon¹, Matthew Hayes², Jens Melinder², Göran Östlin², Stephen Pardy³
Institution(s): ¹ Macalester College, ² Stockholm University, ³ University of Wisconsin
Contributing team(s): LARS Team

249.02 GMRT HI Imaging of Selected LARS+eLARS Galaxies
Author(s): Karen Perez Sarmiento², Cesar I Mendoza Davila¹, John M. Cannon¹, Matthew Hayes², Jens Melinder², Göran Östlin², Stephen Pardy³
Institution(s): ¹ Macalester College, ² Stockholm University, ³ University of Wisconsin
Contributing team(s): LARS Team

249.03 VLA HI Imaging of the LARS+eLARS Galaxies: Global HI Properties
Author(s): Brian Andrew Eisner¹, Bridget Reilly¹, John M. Cannon¹, Matthew Hayes², Jens Melinder², Göran Östlin², Stephen Pardy³
Institution(s): ¹ Macalester College, ² Stockholm University, ³ University of Wisconsin
Contributing team(s): LARS Team

249.04 VLA HI Imaging of the LARS+eLARS Galaxies: Tidally Interacting Systems
Author(s): Bridget Reilly¹, Brian Andrew Eisner¹, John M. Cannon¹, Matthew Hayes², Jens Melinder², Göran Östlin², Stephen Pardy³
Institution(s): ¹ Macalester College, ² Stockholm University, ³ University of Wisconsin
Contributing team(s): LARS Team

249.05 Too Young to Shine? Chandra analysis of X-ray emission in nearby primordial galaxies
Author(s): Antara Basu-Zych³, Alaina L. Henry⁵, Mihoko Yukita⁴, Tassos Fragos², Ann E. Hornschemeier³, Brett Lehmer⁶, Andrew Ptak³, Andreas Zezas¹
Institution(s): ¹ CFA, ² Geneva Observatory, ³ Goddard Space Flight Center, ⁴ Johns Hopkins University, ⁵ Space Telescope Science Institute, ⁶ University of Arkansas
249.06 Initial Results of a Far-Ultraviolet Spectroscopic Survey of Nearby Star-forming Galaxies with the Cosmic Origins Spectrograph
Author(s): Keith Redwine\textsuperscript{2}, Stephan R. McCandliss\textsuperscript{2}, Aida Wofford\textsuperscript{1}, Claus Leitherer\textsuperscript{3}, Timothy M. Heckman\textsuperscript{2}, Kevin France\textsuperscript{4}, Brian Fleming\textsuperscript{4}
Institution(s): \textsuperscript{1} CNRS, Institut d’Astrophysique de Paris, \textsuperscript{2} Johns Hopkins University, \textsuperscript{3} Space Telescope Science Institute, \textsuperscript{4} University of Colorado at Boulder

249.07 Toward Gas Chemistry in Low Metallicity Starburst Galaxies
Author(s): David S. Meier\textsuperscript{2}, Crystal N. Anderson\textsuperscript{2}, Jean Turner\textsuperscript{4}, Juergen Ott\textsuperscript{1}, Sara C Beck\textsuperscript{3}
Institution(s): \textsuperscript{1} National Radio Astronomy Observatory, \textsuperscript{2} New Mexico Institute of Mining and Technology, \textsuperscript{3} Tel Aviv University, \textsuperscript{4} UC, Los Angeles, \textsuperscript{5} Voss Scientific, LLC

249.08 Hα Kinematics of High-z Dusty Star Forming Galaxies
Author(s): Patrick Drew\textsuperscript{4}, Caitlin Casey\textsuperscript{4}, Chao-Ling Hung\textsuperscript{4}, Asantha R. Cooray\textsuperscript{1}, David B. Sanders\textsuperscript{2}, Hai Fu\textsuperscript{3}
Institution(s): \textsuperscript{1} UC Irvine, \textsuperscript{2} University of Hawaii, \textsuperscript{3} University of Iowa, \textsuperscript{4} University of Texas at Austin

249.09 The HDUV Survey: Seven Lyman Continuum Emitter Candidates at z~2 Revealed by HST UV Imaging
Author(s): Rohan Potham Naidu\textsuperscript{2}, Pascal Oesch\textsuperscript{1}
Institution(s): \textsuperscript{1} Université de Genève, \textsuperscript{2} Yale-NUS College
Contributing team(s): Hubble Deep UV (HDUV) Legacy Survey Team

249.10 AGN contamination in total infrared determined star formation rates in dusty galaxies at z~2-3
Author(s): Renato Mazzei\textsuperscript{2}, Chelsea E. Sharon\textsuperscript{1}, Dominik Riechers\textsuperscript{1}
Institution(s): \textsuperscript{1} Cornell University, \textsuperscript{2} University of Virginia

249.11 Molecular Gas Content of an Extremely Star-forming Herschel Observed Lensed Dusty Galaxy at z=2.685
Author(s): Hooshang Nayyeri\textsuperscript{1}, Asantha R. Cooray\textsuperscript{1}
Institution(s): \textsuperscript{1} UC Irvine
Contributing team(s): H-ATLAS

249.12 C IV and He II line emission of Lyman α blobs: powered by shock-heated gas
Author(s): Samuel Cabot\textsuperscript{4}, Renyue Cen\textsuperscript{1}, Zheng Zheng\textsuperscript{2}
Institution(s): \textsuperscript{1} Princeton University, \textsuperscript{2} University of Utah

249.13 Serendipitous ALMA detections of faint submm galaxies in SERVS
Author(s): Pallavi Patil\textsuperscript{1}, Mark Lacy\textsuperscript{1}, Kristina Nyland\textsuperscript{1}
Institution(s): \textsuperscript{1} National Radio Astronomy Observatory, \textsuperscript{2} University of Virginia
250 AGN, QSO, Blazars Poster Session

Thursday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

250.01 New quasar survey with WIRO: Color-selection of quasar candidates behind M33

Author(s): William Bradford Harvey, Neil Bassett, Sophie Deam, Don Dixon, Emily Griffith, Daniel Lee, Bradley Lyke, Evan Haze Nunez, Ryan Parziale, Catherine Witherspoon, Adam D. Myers, Joseph Findlay, Henry A. Kobulnicky, Daniel A. Dale


250.02 New quasar surveys with WIRO: UV variability of known quasars behind M33


250.03 New quasar survey with WIRO: The light curves of quasars over ~15 year timescales

Author(s): Emily Griffith, Neil Bassett, Sophie Deam, Don Dixon, William Harvey, Daniel Lee, Bradley Lyke, Evan Haze Nunez, Ryan Parziale, Catherine Witherspoon, Adam D. Myers, Joseph Findlay, Henry A. Kobulnicky, Daniel A. Dale


250.04 New Quasar Surveys With WIRO: Planning and Depth of Observations

Author(s): Neil Bassett, Sophie Deam, Don Dixon, Emily Griffith, William Harvey, Daniel Lee, Bradley Lyke, Evan Haze Nunez, Ryan Parziale, Catherine Witherspoon, Adam D. Myers, Joseph Findlay, Henry A. Kobulnicky, Daniel A. Dale

250.05 New Quasar Surveys with WIRO: Data and Calibration for Studies of Variability
Author(s): Bradley Lyke², Neil Bassett⁴, Sophie Deam⁶, Don Dixon¹, Emily Griffith³, William Harvey³, Daniel Lee¹, Evan Haze Nunez⁴, Ryan Parziale⁹, Catherine Witherspoon⁷, Adam D. Myers⁹, Joseph Findlay⁹, Henry A. Kobulnicky⁵, Daniel A. Dale³
Institution(s): ¹ Cal Poly Pomona, ² California State University, Long Beach, ³ Concordia College, ⁴ El Camino College, ⁵ Grinnell College, ⁶ Indiana University, ⁷ James Madison University, ⁸ University of Iowa, ⁹ University of Wyoming

250.06 New Quasar Surveys with WIRO: Colors of ~1000 Quasars at 0 < z < 3
Author(s): Catherine Witherspoon⁷, Neil Bassett⁴, Sophie Deam⁶, Don Dixon¹, Emily Griffith³, William Harvey³, Daniel Lee¹, Bradley Lyke², Evan Haze Nunez⁴, Ryan Parziale⁹, Adam D. Myers⁹, Joseph Findlay⁹, Henry A. Kobulnicky⁵, Daniel A. Dale³
Institution(s): ¹ Cal Poly Pomona, ² California State University, Long Beach, ³ Concordia College, ⁴ El Camino College, ⁵ Grinnell College, ⁶ Indiana University, ⁷ James Madison University, ⁸ University of Iowa, ⁹ University of Wyoming

250.07 New quasar surveys with WIRO: Searching for high redshift (z~6) quasar candidates
Author(s): Evan Haze Nunez⁴, Neil Bassett⁴, Sophie Deam⁶, Don Dixon¹, Emily Griffith³, William Bradford Harvey¹, Daniel Lee¹, Bradley Lyke², Ryan Parziale⁹, Catherine Witherspoon⁷, Adam D. Myers⁹, Joseph Findlay⁹, Henry A. Kobulnicky⁵, Daniel A. Dale³
Institution(s): ¹ Cal Poly Pomona, ² Cal State Long Beach, ³ Concordia College, ⁴ Grinnell College, ⁵ Indiana University, ⁷ University of Iowa, ⁹ University of Wyoming

250.08 In Search Of Tiny Giants: Finding Supermassive Black Holes In Low Mass Galaxies
Author(s): Dillon Tanner Berger¹
Institution(s): ¹ George Mason University
Contributing team(s): Shobita Satyapal, Nick Abel, Laura Blecha, Richard Mushotzky, Christopher Reynolds

250.09 Clustering, Cosmology and a New Era of Black Hole Demographics: The Conditional Luminosity Function of AGNs
Author(s): David R. Ballantyne¹
Institution(s): ¹ Georgia Institute of Technology

250.10 Improving LSST Photometric Redshifts using Differential Chromatic Refraction
Author(s): Christina M. Peters⁴, Gordon T. Richards¹
Institution(s): ¹ Drexel University, ² Dunlap Institute, University of Toronto

250.11 Identifying Merging Binary Active Galactic Nuclei with Wide-Field High-Resolution Radio Surveys
Author(s): Jacob Isbell², Hai Fu², Kunal P Mooley¹, Gregg Hallinan¹
Institution(s): ¹ California Institute of Technology, ² University of Iowa
250.12 The Era of Monster Formation: Peering into the Heart of ULIRGs out to z ~ 1
Author(s): Barry Rothberg\textsuperscript{1}, Norbert Pirzkal\textsuperscript{4}, Jacqueline Fischer\textsuperscript{2}, Myriam Rodrigues\textsuperscript{3}
Institution(s): \textsuperscript{1} Large Binocular Telescope Observatory, \textsuperscript{2} Naval Research Laboratory, \textsuperscript{3} Observatoire de Paris, \textsuperscript{4} Space Telescope Science Institute

250.13 Likelihood for detection of sub-parsec supermassive black hole binaries in spectroscopic surveys
Author(s): Bryan James Pflueger\textsuperscript{1}, Tamara Bogdanovic\textsuperscript{1}, Michael Eracleous\textsuperscript{2}, Jessie C. Runnoe\textsuperscript{3}, Steinn Sigurdsson\textsuperscript{2}
Institution(s): \textsuperscript{1} Georgia Tech, \textsuperscript{2} Pennsylvania State University, \textsuperscript{3} University of Michigan

250.14 EMPCA and Cluster Analysis of Quasar Spectra: Construction and Application to Simulated Spectra
Author(s): Adam Marrs\textsuperscript{1}, Karen Leighly\textsuperscript{3}, Cassidy Wagner\textsuperscript{1}, Francis Macinnis\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Oklahoma

250.15 EMPCA and Cluster Analysis of Quasar Spectra: Sample Preparation and Validation
Author(s): Cassidy Wagner\textsuperscript{2}, Karen Leighly\textsuperscript{3}, Francis Macinnis\textsuperscript{2}, Adam Marrs\textsuperscript{2}, Gordon T. Richards\textsuperscript{1}
Institution(s): \textsuperscript{1} Drexel University, \textsuperscript{2} University of Oklahoma

250.16 EMPCA and Cluster Analysis of Quasar Spectra: Application to SDSS Spectra
Author(s): Karen Leighly\textsuperscript{1}, Adam Marrs\textsuperscript{1}, Cassidy Wagner\textsuperscript{1}, Francis Macinnis\textsuperscript{1}
Institution(s): \textsuperscript{1} Univ. of Oklahoma

250.17 SimBAL: A Spectral Synthesis Approach to Analyzing Broad Absorption Line Quasar Spectra
Author(s): Donald M. Terndrup\textsuperscript{2}, Karen Leighly\textsuperscript{3}, Sarah Gallagher\textsuperscript{4}, Gordon T. Richards\textsuperscript{1}
Institution(s): \textsuperscript{1} Drexel University, \textsuperscript{2} Ohio State Univ., \textsuperscript{3} University of Oklahoma, \textsuperscript{4} University of Western Ontario

250.18 Determining Black Hole Mass of AGN using FWHM of H-beta Emission Line and Luminosity Relations
Author(s): Thomas Jacob Cameron\textsuperscript{1}, Debra L. Burris\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Central Arkansas

250.19 Broad and Narrow Intrinsic Absorption in Quasars as it Relates to Outflows, Orientation, and Radio Properties
Author(s): Robert Bernard Stone\textsuperscript{4}, Gordon T. Richards\textsuperscript{1}
Institution(s): \textsuperscript{1} Drexel University

250.20 Correlations between different line-forming regions in quasar environments
Author(s): Chen Chen\textsuperscript{3}, Fred Hamann\textsuperscript{1}, Britt Lundgren\textsuperscript{3}
Institution(s): \textsuperscript{1} University of California, Riverside, \textsuperscript{2} University of Florida, \textsuperscript{3} University of Wisconsin, Madison
250.21 Investigating the Sensitivity of Emission Line Spectra to the Incident SED in Narrow Line Seyferts and LINERs
Author(s): Christopher Greene1, Chris T. Richardson1
Institution(s): 1 Elon University

250.22 Identifying Evolutionary Patterns of SMBHS Using Characteristic Variables of the Quasar AGNs of eBOSS
Author(s): Sarah Katherine Martens1, Eric M. Wilcots1
Institution(s): 1 University of Wisconsin Madison

250.23 Statistical Analysis of Quasar Light Curves from Pan-STARRS1
Author(s): Betsy Hernandez1, Tingting Liu1, Suvi Gezari1
Institution(s): 1 CUNY Hunter College, 2 University of Maryland

250.24 Infrared Reverberation Mapping of 17 Quasars from the SDSS Reverberation Mapping Project
Author(s): Varoujan Gorjian1, Yue Shen1, Aaron J. Barth3, W. Niel Brandt4, Kyle S. Dawson6, Paul J. Green1, Luis Ho1, Keith D. Horne10, Linhua Jiang1, Ian D. McGreer6, Donald P. Schneider4, Charling Tao5
Institution(s): 1 CfA, 2 JPL/Caltech, 3 Peking University, 4 Penn State, 5 Tsinghua University/CPPM/IN2P3/CNRS, 6 U. of Arizona, 7 U. of Illinois, 8 U. of Utah, 9 UCI, 10 Univ. of St. Andrews

250.25 Powerful Quasar Outflows at High Redshifts
Author(s): Sara Aljanahi1
Institution(s): 1 University of Oregon

250.26 Cross-Correlating the Cosmic Infrared and Cosmic X-Ray Background Fluctuations
Author(s): Rachel Ann Cooper1, Nico Cappelluti1, Yanxia Li1, C. Megan Urry1, Joyce Guo1
Institution(s): 1 Yale University

250.27 Luminous, High-z, Type-2 Quasars are Still Missing
Author(s): Gordon T. Richards1, Joseph F Hennawi2, Angelica Rivera1
Institution(s): 1 Drexel Univ., 2 Max Planck Institute of Astronomy

250.28 Discovery of a New Quasar: SDSS J022155.26-064916.6
Author(s): Jacob Robertson1, J. Allyn Smith1, Douglas Lee Tucker2, Huan Lin2, Deborah Jean Gulledge1, Mees B. Fix2
Institution(s): 1 Austin Peay State University, 2 Fermi National Accelerator Laboratory, 3 Space Telescope Science Institute

250.29 Multiwavelength and Polarimetric Analysis of the Flat Spectrum Radio Quasars 3C 273 and 3C 279
Author(s): Sunil Fernandes3, Victor Patiño-Álvarez2, Vahram Chavushyan1, Eric M. Schlegel3, Enrique Lopez-Rodriguez2, Jonathan León-Tavares1, Luis Carrasco1, José Valdés1, Alberto Carramiñana1
Institution(s): 1 Instituto Nacional de Astrofísica, Optica y Electronica, 2 SOFIA/USRA, NASA Ames Research Center, 3 University of Texas at San Antonio
250.30 Associated TeV Emission from the Double-Synchrotron Model for Large-Scale Quasar Jets
Author(s): Kevin Michael Whitley¹, Eileen T. Meyer¹, Markos Georganopoulos¹
Institution(s): ¹ University of Maryland - Baltimore County

250.31 On the Time Scales of Optical Variability in Radio-Quiet Quasar PDS 456
Author(s): Francesca Childs¹, Vladimir Strelbitski², Regina Jorgenson², Gary E. Walker²
Institution(s): ¹ Harvard College, ² Maria Mitchell Observatory

250.32 Periodic Variability of MRK501 in Optical Light
Author(s): L Joseph Rivest³, McKay Osborne¹, J. Ward Moody¹, Marcus Holden¹, Eric G. Hintz¹, Elizabeth Jeffery¹, Michael D. Joner¹
Institution(s): ¹ Brigham Young University

250.33 The Dramatic June 2016 Optical Outburst and Micro-Variability of the Blazar 3C 454.3
Author(s): Zachary R Weaver¹, Thomas J. Balonek¹
Institution(s): ¹ Colgate University

250.34 The Optical Variability of the Blazar 3C 454.3 over Three Decades from the Colgate University Foggy Bottom Observatory
Author(s): Thomas J. Balonek¹, Zachary R Weaver², Nicholas Didio², Leah Jenks³, Carolyn Morris³, Ryan Stahlin³, Jovana Zagorac³, Katie Chapman³, Brian D’Auteuil³, Katherine L. Karse³, Joshua S Reding³, Alina Sabyr³, Saiyang Zhang³, Samantha Boni³, Caitlin Rose³, Anneliese Rilinger⁴
Institution(s): ¹ Bridgewater State Univ, ² Colgate Univ., ³ Vassar Coll, ⁴ Williams Coll

250.35 Searching for X-Ray Variability in Resolved Jets from Radio-Loud AGN
Author(s): Natalie DeNigris¹, Eileen T. Meyer¹, Markos Georganopoulos¹
Institution(s): ¹ University of Maryland, Baltimore County

250.36 AGN Variability: Probing Black Hole Accretion
Author(s): Jackeline Moreno¹, Jack O’Brien¹, Michael S. Vogeley¹, Gordon T. Richards¹, Vishal P. Kasliwal²
Institution(s): ¹ Drexel University, ² Princeton University

250.37 Searching for Short Term Variable Active Galactic Nuclei: A Vital Step Towards Using AGN as Standard Candles
Author(s): Kelly Kilts², Varoujan Gorjian¹, Thomas Rutherford⁵, Russell Kohrs³, Vincent Urbanowski⁵, Nina Bellusci⁵, Savannah Horton⁵, Dana Jones³, Kaytlyn Jones⁵, Peter Pawelski³, Haley Tranum³, Emily Zhang³
Institution(s): ¹ JPL/Caltech, ² Lexington High School, ³ Massanutten Regional Governor’s School for Integrated Environmental Science and Technology, ⁴ Stamford Academy of Information Technology & Engineering, ⁵ Sullivan South High School
250.38  K2 Observations of Optical Variability in Fermi Gamma Ray Blazars in 2015-2016
Author(s): Ann E. Wehrle¹, Michael T. Carini³, Paul J. Wiita²
Institution(s): ¹ Space Science Institute, ² The College of New Jersey, ³ Western Kentucky University

250.39  The bursting behavior of the blazar PKS 1130+009 from K2 and ground based photometry
Author(s): Michael T. Carini¹, Rebecca Brown¹, Henry Yik¹
Institution(s): ¹ Western Kentucky Univ.

250.40  A Comparison of Two Methods for Estimating Black Hole Spin in Active Galactic Nuclei
Author(s): Daniel M. Capellupo¹, Daryl Haggard¹, Gaylor Wafflard-Fernandez²
Institution(s): ¹ McGill University, ² Université Paris-Sud

250.41  B-FlaP: Classifying Gamma-ray Blazars Using Machine Learning
Author(s): David John Thompson³, Graziano Chiaro⁴, Marcello Giroletti², David Salvetti¹, Giovanni La Mura¹, Denis Bastieri⁴
Institution(s): ¹ 2INAF -Istituto di Astrofisica Spaziale e Fisica Cosmica, ² INAF-Institute of Radioastronomy, ³ NASA’s GSFC, ⁴ Universita di Padova

250.42  Searching for Hard X-Ray Emission from Radio-Loud Gamma-Ray Quiet Blazars
Author(s): Katelyn R Wada¹, Daryl J. Macomb¹
Institution(s): ¹ Boise State University

250.43  Spectral and Temporal Analysis of 1H1934-0617: Observing an “Eclipsed” AGN with XMM-Newton and NuSTAR
Author(s): Sara Frederick¹, Erin Kara¹, Christopher S. Reynolds¹
Institution(s): ¹ University of Maryland

250.44  Fermi Observations of Resolved Large-Scale Jets: Testing the IC/CMB Model
Author(s): Peter Breiding¹, Eileen T. Meyer¹, Markos Georganopoulos¹
Institution(s): ¹ University of Maryland, Baltimore County

Author(s): Jacob Noel-Storr¹, Christopher O’Dea⁵, Diana M Worrall⁴, Tracy E. Clarke⁶, Grant Tremblay⁶, Stefi Baum⁵, Kevin Christiansen¹, Christopher Mullarkey³, Rupal Mittal³
Institution(s): ¹ InsightSTEM, ² Naval Research Laboratory, ³ Rochester Institute of Technology, ⁴ University of Bristol, ⁵ University of Manitoba, ⁶ Yale University

250.46  Properties of the optical line-emitting gas in the radio galaxy, 4C+29.30
Author(s): Olga Kuhn², Aneta Siemiginowska¹
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics, ² Large Binocular Telescope Observatory (LBTO)
250.47 HST Polarimetry of the 3C 273 Jet
Author(s): Devon Clautice, Eric S. Perlman, William B. Sparks, John A. Biretta, Christopher P. O'Dea, Stefi Alison Baum, Chi C. Cheung, Mark Birkinshaw, Diana M Worrall, Andre Martel, C. Megan Urry, Lukasz Stawarz, Paolo S. Coppi, Yasunobu Uchiyama, Mihai Cara, Klaus Meisenheimer, Mitchell C. Begelman
Institution(s): 1 Eureka Scientific, 2 Florida Institute of Technology, 3 Jagiellonian University, 4 Max-Planck-Institut fur Astronomie, Heidelberg, 5 Naval Research Laboratory, 6 Rikkyo University, 7 Space Telescope Science Institute, 8 University of Bristol, 9 University of Colorado Boulder, 10 University of Manitoba, 11 Yale University

250.48 A Hubble Space Telescope Survey of Intrinsic Absorption in Nearby AGN
Author(s): Dzhuliya Dashtamirova, Jay P. Dunn, D. Michael Crenshaw
Institution(s): 1 Georgia State University

250.49 Exploring the Vertical Structure of Nuclear Starburst Disks: A Possible Source of AGN Obscuration at Redshift ~ 1
Author(s): Raj Gohil, David R. Ballantyne
Institution(s): 1 Georgia Institute of Technology

250.50 Optical to extreme ultraviolet reddening curves for normal AGN dust and for dust associated with high-velocity outflows
Author(s): Japneet Singh, Martin Gaskell, Jake Gill
Institution(s): 1 Archbishop Mitty High School, 2 Santa Cruz High School, 3 University of California at Santa Cruz

250.51 Tracing the Far-Infrared Roles of AGN in Dusty Star-Forming Galaxies
Author(s): Arianna Brown, Hooshang Nayyeri, Asantha R. Cooray, Ketron Mitchell-Wynne
Institution(s): 1 CSU - Los Angeles, 2 UC Irvine

250.52 Circumnuclear Star Formation in Seyfert Galaxies
Author(s): Melissa Marquette, Erin K. Hicks, Francisco Mueller Sanchez, Matthew Arnold Malkan, Richard Davies
Institution(s): 1 Max Planck Institut für extraterrestrische Physik, 2 UC Berkeley, 3 UCLA, 4 University of Alaska Anchorage, 5 University of Colorado Boulder

250.53 Disentangling the NLR Structure in Mrk 573 with Integral Field Spectroscopy
Author(s): Travis C. Fischer, Camilo Machuca, Marlon Diniz, D. Michael Crenshaw, Steven Kraemer, Rogemar A Riffel, Henrique R. Schmitt, Fabien Baron, Thaisa Storchi-Bergmann, Amber Straughn, Mitchell Revalski, Crystal L Pope
Institution(s): 1 Catholic University of America, 2 Federal University of Rio Grande do Sul, 3 Georgia State University, 4 NASA’s Goddard Space Flight Center, 5 Naval Research Laboratory, 6 Universidade Federal de Santa Maria

250.54 An Extended Look at the Narrow-Line Region of the Seyfert 2 Galaxy Mrk 573
Author(s): Camilo Machuca, Travis C. Fischer, D. Michael Crenshaw
Institution(s): 1 Georgia State University, 2 NASA’s Goddard Space Flight Center
THURSDAY, 5 JANUARY 2017

250.55 NGC 3393: multi-component AGN feedback as seen by CHEERS
Author(s): W. Peter Maksym1, Giuseppina Fabbiano1, Martin Elvis1, Margarita Karovska1, John C. Raymond1, Thaisa Storchi-Bergmann1, Alessandro Paggi1, Junfeng Wang4, Guido Risaliti2
Institution(s): 1 Harvard-Smithsonian Center for Astrophysics, 2 INAF - Arcetri Astrophysical Observatory, 3 Universidade Federal do Rio Grande do Sul, 4 Xiamen University

250.56 A Search for H2O Maser Emission from Wide-Angle Outflows in Nearby AGN
Author(s): Emily Wilson1, James A. Braatz2, Dom Pesce3
Institution(s): 1 Franklin and Marshall College, 2 National Radio Astronomy Observatory, 3 University of Virginia
Contributing team(s): Megamaser Cosmology Project

250.57 Probing the Physical Properties and Origins of Ultra-fast Outflows in AGN
Author(s): Steven B. Kraemer1, Francesco Tombesi3, Mark Bottorff2
Institution(s): 1 Catholic University of America, 2 Southwestern University, 3 University of Maryland, College Park

250.58 Possible Superluminal Components in the Nearest Tidal Disruption Event
Author(s): Eric S. Perlman1, Eileen T. Meyer4, Daniel Wang5, Qiang Yuan2, Judith Irwin3, Richard N. Henriksen3
Institution(s): 1 Florida Institute of Technology, 2 Purple Mountain Observatory, 3 Queens University, 4 University of Maryland, Baltimore County, 5 University of Massachusetts

250.59 AGN-halo Mass Assembly Connection in Galaxy Clusters: Investigation Using the Splashback Radius
Author(s): Missy McIntosh1, Surhud More2, John D Silverman2
Institution(s): 1 Harvard University, 2 Kavli IPMU, UTokyo

Gemini Observatory Open House
Thursday, 6:30 pm - 7:30 pm; Texas 4
Director Markus Kissler-Patig will share the latest news from Gemini Observatory and seek feedback from the user community to better achieve your scientific goals. He will report on progress with Gemini’s Strategic Vision that will prepare the observatory for 2020 and beyond. The robust instrumentation program includes two major new facility instruments under development and ongoing opportunities for community involvement to upgrade current capabilities. Novel operations approaches enable regular proposal opportunities every month and targets of opportunity in both hemispheres. Completion of several observatory initiatives has reduced Gemini’s carbon footprint and delivered the world’s highest solar electricity system connected to the utility grid. We look forward to your input and ideas in an open conversation.
Organizer(s): Markus Kissler-Patig (Gemini Observatory)
251 Proposing for the James Webb Space Telescope

Thursday, 6:30 pm - 8:30 pm; Grapevine C

The James Webb Space Telescope will be the most powerful telescope that astronomers have ever constructed, serving a broad range of high priority science, as identified by the 2010 decadal survey. The October 2018 launch is rapidly approaching, and the Jan 2017 AAS meeting will take place less than one year before JWST’s Cycle 1 Call for Proposals, and only a few months before the call for Early Release Science (ERS) Proposals. The ERS represents the first opportunity for the general astronomical community to win JWST observing time. A suite of tools to help proposers propose for JWST time will become available around the time of the 229th AAS. At the Town Hall, STScI will present the flight release of the JWST exposure time calculator, the Astronomer’s Proposal Tool and the JWST observer’s documentation, as well as the science timeline for JWST as it relates to proposal planning. STScI will also outline specifics for the Nov 2017 Cycle 1 Call for proposals. Finally, the Town Hall will feature a presentation on JWST status: Dr. Eric Smith (JWST Program Director, NASA HQ) will describe the progress of JWST, and its readiness for the planned October 2018 launch (e.g., testing activities at Johnson Space Flight Center and final integration activities). Ample time will be reserved for discussion with the community and to answer questions related to proposing for JWST.

Organizer(s): Klaus Pontoppidan (California Institute of Technology)

252 HEAD Business Meeting

Thursday, 6:30 pm - 7:30 pm; San Antonio 5

The High Energy Astrophysics Division will hold its business meeting on Thursday, 5 January 2017 at 6:30pm-7:30pm. This is a chance for members and potential members to hear the latest status of the HEAD, and to interact with the HEAD Chair and other members of the Executive Committee. Refreshments will be served.

Chair: Christopher Reynolds (Univ. of Maryland)

WFIRST Status and Science Opportunities

Thursday, 7:30 pm - 9:00 pm; Grapevine B

WFIRST is the top ranked large space mission of the Astro2010 Decadal Survey. The mission has recently started its Phase A study for launch in 2025 and science teams have been selected. The predicted performance is impressive with IR surveys covering 1000’s of square degrees to 26.5AB magnitude. The wide-field imaging camera has 288 Mpixels, a grism and an IFU spectrograph. The high contrast coronagraph will significantly advance exoplanet direct imaging and spectroscopy, the highest ranked ASTRO2010 mid-scale priority. Observing time will be available to the community through a vigorous Guest Investigator / Guest Observer program. The mission will make large advances in studies of dark energy, exoplanets, galaxy formation and many other areas of extragalactic, galactic and solar system astrophysics. This session will examine the scientific opportunities available with WFIRST.

Organizer(s): Neil Gehrels (NASA’s GSFC)
THURSDAY, 5 JANUARY 2017

GMT Open House

Thursday, 7:30 pm - 9:00 pm; Grapevine A

The Giant Magellan Telescope (GMT) Project is a collaboration of US and international research institutions constructing a next-generation extremely large optical/infrared telescope. The GMT will have a seven-segment primary mirror 25 meters in diameter and will be sited at Las Campanas Observatory in Chile. It is designed with integrated adaptive optics and an advanced suite of instruments to support a program of key scientific investigations. Onsite construction began in 2015. GMT partners are: Astronomy Australia Ltd, The Australian National University, Carnegie Institution for Science, Harvard University, Korea Astronomy and Space Science Institute, FAPESP, Smithsonian Institution, University of Texas at Austin, Texas A&M, University of Arizona, and the University of Chicago. Come to this Open House to meet senior project staff and Science Advisory Committee members. There will be a short update on the project and followed by open discussion. Complimentary snacks and refreshments will be provided. Organizer(s): Amanda Kocz (GMTO Corporation)

AAS Open Mic Night

Thursday, 8:00 pm - 9:30 pm; Texas C

The 4th Annual AAS Open Mic Night is an event you cannot miss! Members and meeting attendees are encouraged to share their talents with their colleagues in a welcoming, accepting environment. Story tellers, poets, musicians, comedians, jugglers (no fire!): everyone is invited to participate. We welcome all styles and genres of music from bluegrass to speed metal...seriously! Performances must be acceptable to a general audience of your peers and the AAS reserves the right to limit performances based on content. Let us know if you want to perform quickly, as we will be on a first-come, first-served basis for this popular event, but we may be able to accept walk-on performances depending on time availability. Come have some fun and strut your stuff. Cocktails, wine, and beer will be available for purchase.
FRIDAY, 6 JANUARY 2017

300 Plenary Session: SPD George Ellery Hale Prize:
Magnetic Energy Release in Solar Flares, Terry Forbes
(University of New Hampshire)

Friday, 8:30 am - 9:20 am; Texas A
Chair: Dana Longcope (Montana State Univ.)

300.01 Magnetic Energy Release in Solar Flares
Author(s): Terry G. Forbes
Institution(s): 1 Univ. of New Hampshire

Citation: For his significant contributions to the theory of magnetic
reconnection, for his development of important new models of the
physics of solar flares and coronal mass ejections, and for his achievements mentoring
students and junior scientists in the solar physics community.

Graduate School and Postdocs as Means to a Job

Friday, 9:30 am - 11:30 am; San Antonio 1

In this workshop, led by academic career counselor and author Dr. Karen Kelsky, we
examine the conditions of the current American job market, the most common mistakes
made by job-seekers, and the ways you can maximize your chances of success while
looking for a tenure-track job. We'll cover: the big-picture conditions of the U.S. tenure
track job market; how to build a competitive CV in grad school; the all-important 5-year-
plan; how to think like a search committee; the qualities of a successful tenure track job
candidate; the ethos of job market documents; the most common mistakes made by job
seekers; the three keys to academic interviewing; and the non-academic option. We also
examine some of the intangible pitfalls that bedevil job documents and interviewing.
Organizer(s): AAS Employment Committee (AAS)

Thirty Meter Telescope Open House

Friday, 10:00 am - 11:30 am; Yellow Rose Ballroom

The Thirty Meter Telescope (TMT) will make transformational contributions to most
areas of astronomy and astrophysics, from the solar system to cosmology. With an order
of magnitude more collecting area than today's largest optical/infrared telescopes, and
nearly 5 times better angular resolution than the James Webb Space Telescope at similar
infrared wavelengths, TMT will open entirely new regimes of observation and research.
At this Open House we will report on the status of TMT, and highlight the continued
role of the US astronomical community in planning the observatory and its future
scientific programs. We will discuss the permitting process in Hawaii, as well as the
characterization and prioritization of potential alternate sites for the observatory. There
will be updates on the continued development of the telescope and its instrumentation
and adaptive optics systems, planning for future-generation instruments, and ongoing
activities in education, workforce development, and public outreach. The TMT
International Observatory partnership includes Canada, China, India, Japan, Caltech, and
the University of California. AURA is an Associate Member of TMT, and NOAO executes AURA’s TMT-related activities on behalf of the US community. As part of a cooperative agreement with the National Science Foundation, the US TMT Science Working Group (SWG) and the TMT project have developed a plan for US national participation in TMT. This plan describes the scientific, technological, educational, and programmatic benefits of TMT participation for the US community, and considers choices that would maximize those benefits. Members of the US TMT SWG will attend this Open House, and there will be ample time for audience questions and discussion. Complimentary refreshments will be provided.

Organizer(s): Mark Dickinson (NOAO)

**Early Science with the Large Millimeter Telescope**

**Friday, 10:00 am - 11:30 am; Grapevine 4**

The Large Millimeter Telescope is the world’s largest single-dish millimeter telescope. In the early science phase, the LMT has been taking observations of gas and dust from debris disks around nearby stars to star forming regions within our Galaxy to galaxies and active galactic nuclei over cosmic time. In this session, we will highlight new science results from the LMT, discuss synergies with other facilities such as ALMA, and motivate the next phase including a new suite of instruments on the 50m LMT.

Organizer(s): Alexandra Pope (Univ. of Massachusetts, Amherst)

**301 Extrasolar Planets: Characterization & Theory IV**

**Friday, 10:00 am - 11:30 am; Texas A**

Chair: Eric Mamajek (University of Rochester)

**301.01D A Model of the Hα Transmission Spectrum of HD 189733b**

Author(s): Chenliang Huang¹, Phil Arras², Duncan Christie¹, Zhi-Yun Li²

Institution(s): ¹ University of Florida, ² University of Virginia

**301.02 Unveiling exoplanetary atmospheres through LBT spectrophotometry**

Author(s): Valerio Nascimbeni², Giampaolo Piotto², Isabella Pagano¹, Gaetano Scandariato¹, Lorenzo Pino²

Institution(s): ¹ INAF-OACT, ² Università di Padova

**301.03 VLT FORS2 comparative transmission spectral survey of clear and cloudy exoplanet atmospheres**

Author(s): Nikolay Nikolov³, David K Sing⁶, Neale Gibson³, Jonathan J Fortney⁵, Tom M. Evans⁶, Joanna Barstow⁴, Tiffany Kataria⁵, Paul Wilson¹

Institution(s): ¹ IAP, ² JPL, ³ Queens University Belfast, ⁴ UCL, ⁵ University of California Santa Cruz, ⁶ University of Exeter

**301.04 Exploring an Earth-sized neighbor: ground-based transmission spectroscopy of GJ1132b, a rocky planet transiting a small nearby M-dwarf**

Author(s): Hannah Diamond-Lowe², Zachory K. Berta-Thompson¹, David Charbonneau², Jonathan Irwin³, Elisabeth R. Newton⁴, Jason Dittmann²

Institution(s): ¹ CU Boulder, ² Harvard University, ³ MIT
301.05 Emission Spectroscopy of the Super-Earth 55 Cnc e
Author(s): Diana Dragomir, Jacob Bean, Laura Kreidberg, Kevin B. Stevenson, Michael R. Line
Institution(s): 1 Arizona State University, 2 Harvard, 3 MIT, 4 Space Telescope Science Institute, 5 University of Chicago

301.06 Challenges to Constraining Exoplanet Masses via Transmission Spectroscopy
Author(s): Eliza Kempton, Natasha Batalha, Rostom Mbarek
Institution(s): 1 Grinnell College, 2 Pennsylvania State University, 3 University of Chicago

301.07 The ACCESS Transiting Exoplanets Spectroscopy Survey and the Impact of Heterogeneous Stellar Atmospheres on Transit Spectroscopy
Author(s): Daniel Apai, Benjamin V. Rackham, Mercedes Lopez-Morales, Nestor Espinoza, Andres Jordan, David Osip, Nikole K. Lewis, Florian Rodler, Jonathan Fraine, Caroline Morley, Jonathan J Fortney, Alex Bixel
Institution(s): 1 Catholic University Chile, 2 European Southern Observatory, 3 Harvard-Smithsonian Center for Astrophysics, 4 Observatories of the Carnegie Institution for Science, 5 Space Telescope Science Institute, 6 University of Arizona, 7 University of California Santa Cruz
Contributing team(s): ACCESS Team; Earths in Other Solar Systems Team

301.08 FINESSE: A Dedicated Transiting Exoplanet Spectroscopy Mission
Author(s): Jacob Bean
Institution(s): 2 University of Chicago
Contributing team(s): FINESSE Science Team

302 AGN, QSO, Blazars: Jets, Outflows, & Winds

Friday, 10:00 am - 11:30 am; Texas C
Chair: Bradley Peterson (Ohio State Univ.)

302.01 Polarization Signatures distinguish the kinetic- and the magnetic-driven blazar jet models
Author(s): Haocheng Zhang, Hui Li, Gregory B. Taylor
Institution(s): 1 Los Alamos National Lab, 2 University of New Mexico

302.02 The remarkable optical jet in 4C +00.58
Author(s): Eileen T. Meyer, William B. Sparks, Markos Georganopoulos, Marco Chiaberge, Eric S. Perlman
Institution(s): 1 Florida Institute of Technology, 2 Space Telescope Science Institute, 3 University of Maryland, Baltimore County

302.03D The link between quasar broad-line region and galaxy-scale outflows and accurate CIV-based black hole masses
Author(s): Liam Coatman, Paul C Hewett, Manda Banerji, Gordon T. Richards, Joseph F Hennawi, Jason X. Prochaska
Institution(s): 1 Department of Physics, Drexel University, 2 Institute of Astronomy, University of Cambridge, 3 MPIA, 4 UCO/Lick, UCSC
302.04 Determining the Spatially Resolved Mass Outflow Rate in Markarian 573
Author(s): Mitchell Revalski, D. Michael Crenshaw, Travis C. Fischer, Steven B. Kraemer, Henrique R. Schmitt
Institution(s): 1. Georgia State University, 2. Goddard Space Flight Center, 3. Naval Research Laboratory, 4. The Catholic University of America

302.05 Composite Spectra of Broad Absorption Line Quasars in SDSS-III BOSS
Author(s): Hanna Herbst, Fred Hamann, Isabelle Paris, Daniel M. Capellupo
Institution(s): 1. Institut de Astrophysics, 2. McGill University, 3. UC Riverside, 4. University of Florida

302.06 The LBT/WISSH quasar survey: revealing powerful winds in the most luminous AGN
Author(s): Giustina Vietri
Institution(s): 1. Astronomical Observatory of Rome - INAF

302.07D Probing Quasar Winds Using Intrinsic Narrow Absorption Lines
Author(s): Christopher S. Culliton, Jane C. Charlton, Michael Eracleous, Amber Roberts, Rajib Ganguly, Toru Misawa, Sowgat Muzahid
Institution(s): 1. Pennsylvania State University, 2. Shinshu University, 3. University of Michigan - Flint

303 Extrasolar Planets Detection: Imaging

Friday, 10:00 am - 11:30 am; Texas D
Chair: Harley Thronson (NASA GSFC)

303.01D Using direct imaging to investigate the formation and migration histories of gas giant exoplanets
Author(s): Henry Ngo
Institution(s): 1. California Institute of Technology

303.03D Imaging Protoplanets: Observing Transition Disks with Non-Redundant Masking
Author(s): Stephanie Sallum
Institution(s): 1. University of Arizona

303.04 Directly Imaging Planets with SCExAO: First Results
Author(s): Thayne M. Currie, Olivier Guyon, Nemanja Jovanovic, Julien Lozi, Motohide Tamura, Tomoyuki Kudo, Taichi Uyama, Eugenio Garcia
Institution(s): 1. Lawrence Livermore National Laboratory, 2. NAOJ/Subaru Telescope, 3. University of Tokyo

303.05 Illuminating Free-floating Planet Demographics with Keck AO
Author(s): Calen B. Henderson
Institution(s): 1. JPL/Caltech

303.06 Laboratory Demonstration of High Contrast Imaging in Multi-Star Systems
Author(s): Ruslan Belikov, Eduardo Bendek, Eugene Pluzhnik, Dan Sirbu, Sandrine Thomas
Institution(s): 1. LSST, 2. NASA Ames Research Center
303.07 Technologies Required to Image Earth 2.0 with a Space Coronagraph
Author(s): Nicholas Siegler
Institution(s): 1. Jet Propulsion Laboratory

304 Properties of Nearby Galaxies

Friday, 10:00 am - 11:30 am; Grapevine A
Chair: Caitlin Casey (University of Cambridge)

304.01 The SAMI Galaxy Survey: Publicly Available Spatially Resolved Emission Line Data Products
Author(s): Anne Medling, Andrew W. Green, I-Ting Ho, Brent Groves, Scott Croom
Contributing team(s): the SAMI Galaxy Survey Team

304.02D The Dragonfly Nearby Galaxies Survey: A Census of the Stellar Halos of Nearby Luminous Galaxies
Author(s): Allison T. Merritt
Institution(s): 1. Yale University

304.03 The Shocked Poststarburst Galaxy Survey
Author(s): Katherine A. Alatalo
Institution(s): 1. Carnegie Observatories
Contributing team(s): The SPOGS Team

304.04D Resolved Ammonia Thermometry, Water and Methanol Masers from the “Survey of Water and Ammonia in Nearby Galaxies (SWAN)”
Author(s): Mark Gorski, Juergen Ott, Richard J. Rand, David S. Meier, Emmanuel Momjian, Fabian Walter, Eva Schinnerer
Institution(s): 1. Max Planck Institut für Astronomie, 2. National Radio Astronomy Observatory, 3. New Mexico Institute of Mining and Technology, 4. University of New Mexico

304.05 Analyzing Extragalactic Magnetic Fields Using Faraday Rotation Measure Synthesis
Author(s): Dylan Pare, Q. Daniel Wang, Patrick Kamieneski, Kendall Sullivan
Institution(s): 1. University of Massachusetts, Amherst

304.06D A New Perspective on Galaxy Evolution from the Low Density Outskirts of Galaxies
Author(s): Aaron Emery Watkins
Institution(s): 1. Case Western Reserve University
The exquisite lightcurves of the Kepler and K2 missions have been an unexpected boon to the field of near-field cosmology. Ages and evolutionary states can now be derived for field red giants, by combining asteroseismology with spectroscopic data. Red giants, far more luminous than the main-sequence turnoff stars usually used, allow us to probe the evolution of the whole Galaxy. Originally these investigations were restricted to a single line of sight of the Kepler field. With the failure of two of the reaction wheels and the start of the K2 program to observe many fields along the ecliptic, we now probe distinctly different Galactic populations, including the inner and outer disks, the bulge-halo interface, and far more of the Galactic halo. In K2, the Galactic Archaeology Program has been awarded the second largest number of targets, with over 50,000 stars targeted to understand the formation of the Milky Way. The data from the Kepler field has already been used to calibrate the largest age map yet made of the Galaxy, and we are just beginning to explore this vast dataset. The ongoing release of Kepler/K2 light curves and the public availability of follow-up spectra for thousands of targets over the last year alone indicates that this is an ideal time to discuss the most recent breakthroughs in the rapidly evolving field of Galactic archaeology. In this special session, we will discuss the extensive follow-up work underway to make Galactic archaeology possible, discuss how Kepler/K2 data in stellar clusters reveals the history of stellar activity, and present the pioneering results of Galactic archaeology. These include investigations of the age spread in the Galactic halo, examination of the vertical and radial age gradients in the thick and thin disk, measurement of the timescales for chemical evolution, calibration of age indicators for even larger age maps, and discussion of synergies with Gaia.

Chair: Jennifer Johnson (Ohio State Univ.)

**305.01 Overview of Galactic Archaeology with Kepler and K2**

Author(s): Jennifer Johnson

Institution(s): 1. Ohio State Univ.

Contributing team(s): APOKASC Team, APO-K2

**305.02 Synergies between spectroscopic and time-series photometric surveys – LAMOST observations for the Kepler field and K2 fields**

Author(s): Jianning Fu, Peter De Cat, Martin Smith

Institution(s): 1. Beijing Normal University, 2. Royal Observatory of Belgium, 3. Shanghai Astronomical Observatory

**305.03 K2 red giant asteroseismology using Bayesian Asteroseismology data Modeling (BAM)**

Author(s): Joel Zinn, Dennis Stello, Marc H. Pinsonneault

Institution(s): 1. Ohio State University, 2. University of New South Whales

**305.04 Activity and age from Kepler and K2 observations of field and cluster stars**

Author(s): David R. Soderblom

Institution(s): 1. STScI
305.05 APOKASC 2.0: Asteroseismology and Spectroscopy for Cool Stars
Author(s): Marc H. Pinsonneault1, Yvonne P Elsworth2
Institution(s): 1. Ohio State Univ., 2. University of Birmingham
Contributing team(s): APOKASC

305.07 Disentangling the stellar components of the metal-poor Milky Way
Author(s): Matthew D. Shetrone3, Jennifer Johnson3, Giuseppina Battaglia1, Dennis Stello4, Joel Zinn2, Sanjib Sharma2
Institution(s): 1. Instituto de Astrofisica De Canarias, 2. Ohio State University, 3. Univ. of Texas, 4. University of New South Wales
Contributing team(s): APOGEE Team

306 Cosmology II
Friday, 10:00 am - 11:30 am; Grapevine C
Chair: Renee Hlozek (Princeton University)

306.01 The SDSS-IV Extended Baryon Oscillation Spectroscopic Survey: The Clustering of Luminous Red Galaxies Using Photometric Redshifts
Author(s): Abhishek Prakash1
Institution(s): 1. University of Pittsburgh
Contributing team(s): SDSS-IV/eBOSS

306.02 Strong New Evidence for Oscillation of the Cosmological Scale Factor Observed in the Large Scale Structure
Author(s): Harry I. Ringerlacher1, Lawrence R Mead1
Institution(s): 1. U. of Southern Mississippi

306.04 The Properties of Primordial Stars and Galaxies measured from the 21-cm Global Spectrum using the Dark Ages Radio Explorer (DARE)
Author(s): Jack O. Burns8, Judd D. Bowman1, Richard F. Bradley5, Anastasia Fialkov8, Steven R. Furlanetto7, Dayton L. Jones6, Justin Kasper9, Abraham Loeb2, Jordan Mirocha1, Raul A. Monsalve8, David Rapetti8, Keith Tauscher8, Edward Wollack4

306.05 Lyman-alpha radiation hydrodynamics of galactic winds before cosmic reionization
Author(s): Aaron Smith2, Volker Bromm3, Abraham Loeb1
Institution(s): 1. Harvard University, 2. University of Texas at Austin

306.06 Cosmological consistency tests of gravity theory and cosmic acceleration
Author(s): Mustapha B. Ishak-Boushaki1
Institution(s): 1. Univ. Of Texas at Dallas

306.07 Cosmology with Independently Varying Neutrino Temperature and Number
Author(s): Richard Galvez1
Institution(s): 1. Vanderbilt University
307 Merging Galaxies & Gravitational Waves: From Mpc to mpc

Friday, 10:00 am - 11:30 am; Grapevine D

This Special Session will highlight advancements in astrophysics in the low frequency gravitational waveband. Galaxy mergers are key to galaxy assembly and dynamics, as large galaxies in the local Universe are thought to undergo multiple mergers during their development. It is also established that most, if not all, large galaxies in the local Universe host a supermassive black hole (SMBH). During a merger SMBHs sink, through dynamical friction, to the center of the merger product; this simple dynamical evolution model can replicate a variety of galaxy and quasar properties, including the M_BH-sigma relation, the quasar luminosity function, and the central brightness of galaxies. The two SMBHs will form a bound *binary* when their separation is of order 10 pc. Further interactions with stars in the central region, and possibly gas interactions, may drive the binary to a point at which gravitational wave emission dominates its dynamics. The nanohertz gravitational waves emitted by a binary SMBH should be detectable by precise timing of radio pulsars. The sensitivity of pulsar timing arrays has now breached the strength of gravitational-wave signals expected from the known population of merging galaxies. The upper limits on nanohertz gravitational waves have a number of implications for galaxy dynamics: (i) masses of SMBH binaries could be systematically over-estimated, such that their gravitational waves are too; (ii) SMBH binaries could "stall," remaining at pc-scale separations and never emit gravitational waves; or (iii) Binaries could evolve rapidly through the nanohertz regime because they couple strongly to the galactic environment. This session will review what is known about the SMBH mass function, black hole-host relations, the galaxy merger process, and the influence of these on the expected gravitational wave signals. We will explore potential resolutions of the emerging mismatch between observed galaxy mergers and their not-yet-detected gravitational waves.

Chair: Joseph Lazio (Jet Propulsion Laboratory)

307.01 AGN Triggering in Kpc-scale Separation Merging Galaxies
Author(s): Julia M. Comerford
Institution(s): 1 University of Colorado, Boulder

307.02 Gravitational waves from binary supermassive black holes in galactic nuclei
Author(s): David Merritt
Institution(s): 1 Rochester Inst. of Technology

307.03 Implications of gravitational-wave observations observations for supermassive binary black holes
Author(s): Xavier Siemens
Institution(s): 1 University of Wisconsin -- Milwaukee
Contributing team(s): NANOGrav Physics Frontiers Center

307.04D Evolution of massive black hole binaries in rotating galactic nuclei: implications for gravitational wave detection
Author(s): Alexander Rasskazov, David Merritt
Institution(s): 1 Rochester Institute of Technology
307.05 Gravitational Wave Multi-Messenger Prospects for Pulsar Timing Arrays  
Author(s): Joseph Simon¹, Sarah Burke-Spolaor²  
Institution(s): ¹ University of Wisconsin Milwaukee, ² West Virginia University

307.06 Nanohertz gravitational wave sources in the local universe  
Author(s): Chiara M. F. Mingarelli¹, Steve Croft³, Justin Ellis², Jenny E. Greene⁴, Joseph Lazio⁵, Chung-Pei Ma⁵, Alberto Sesana⁶, Sarah Burke-Spolaor³, Stephen R Taylor²  
Institution(s): ¹ Max Planck Institute for Radio Astronomy, ² NASA Jet Propulsion Laboratory, ³ National Radio Astronomy Observatory, ⁴ Princeton University, ⁵ UC Berkeley, ⁶ University of Birmingham

308 Supernovae

Friday, 10:00 am - 11:30 am; Texas 1  
Chair: Peter Garnavich (Univ. of Notre Dame)

308.01 On Variations Of Pre-Supernova Model Properties  
Author(s): Robert Farmer¹, Carl Fields³, Ilka Petermann¹, Luc Dessart⁴, Matteo Cantiello², Bill Paxton², Francis Timmes¹  
Institution(s): ¹ Arizona State University, ² KITP, UC Santa Barbra, ³ Michigan State University, ⁴ Universite Côte d’Azur

308.02 The Fate of Exploding Carbon-Oxygen Chandrasekhar-Mass White Dwarfs: The Production of Stable Iron-Peak Elements in the Type Ia Supernova Remnant 3C 397  
Author(s): Robert Fisher³, Pranav Dave³, Rahul Kashyap³, Francis Timmes¹, Dean Townsley²  
Institution(s): ¹ Arizona State University, ² University of Alabama, ³ University of Massachusetts Dartmouth

308.03 The Type Ia Supernova Color-Magnitude Relation and Host Galaxy Dust: A Simple Hierarchical Bayesian Model  
Author(s): Kaisey Mandel¹, Daniel Scolnic⁴, Hikmatali Shariff², Ryan Foley³, Robert Kirshner⁵  
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics, ² Imperial College London, ³ UCSC, ⁴ University of Chicago

308.04 Progressive Red Shifts in the Late-Time Spectra of Type Ia Supernovae  
Author(s): Christine Black⁴, Robert Fesen¹, Jerod Parrent²  
Institution(s): ¹ Dartmouth College, ² Harvard CFA

308.05D Simulation of compact circumstellar shells around Type Ia supernovae and the resulting high-velocity features  
Author(s): Brian W. Mulligan³, J. Craig Wheeler³  
Institution(s): ¹ University of Texas at Austin
308.06 Short-Lived Circumstellar Interaction in a Low-Luminosity Type IIP Supernova
Author(s): Griffin Hosseinzadeh¹, Stefano Valenti², Iair Arcavi³, Curtis McCully¹, Dale Andrew Howell¹
Institution(s): ¹ Las Cumbres Observatory, ² University of California, Davis, ³ University of California, Santa Barbara

308.07D Time Lapse Spectropolarimetry: Constraining the Nature and Progenitors of Interacting CCSNe
Author(s): Leah N. Huk³
Institution(s): ² University of Denver
Contributing team(s): SNSPOL

309 Space Missions: X-ray Instruments
Friday, 10:00 am - 11:30 am; Texas 3
Chair: Philip Kaaret (Univ. of Iowa)

309.01 Status of the Micro-X Sounding Rocket Telescope
Author(s): David Goldfinger⁴, Joseph D Adams², Bob Baker², Simon Bandler², Meredith E. Danowski³, Randy Dorise⁵, Megan Eckart², Enectali Figueroa-Feliciano⁶, Sarah N. Heine⁶, Gene Hilton⁵, Antonia Hubbard⁴, Richard L. Kelley⁴, Caroline Kilbourne², Renée Manzagol⁶, Dan McCammon⁷, Takashi Okajima², Frederick Scott Porter², Carl Reintsema⁵, Peter J. Serlemitsos², Stephen J Smith⁴, Patrick Wikus¹
Institution(s): ¹ Bruker BioSpin AG, ² Goddard Space Flight Center, ³ L-3, ⁴ Massachusetts Institute of Technology, ⁵ NIST, ⁶ Northwestern University, ⁷ University of Wisconsin
Contributing team(s): Micro-X Collaboration

309.02 Prospects for Sterile Neutrino Observations with the Micro-X Sounding Rocket
Author(s): Antonia Hubbard⁶, Joseph D Adams⁴, Bob Baker⁴, Simon Bandler⁴, Meredith E. Danowski², Randy Dorise⁵, Megan Eckart², Enectali Figueroa-Feliciano⁶, Sarah N. Heine⁶, Gene Hilton⁵, David Goldfinger⁴, Richard L. Kelley⁴, Caroline Kilbourne², Renée Manzagol⁶, Dan McCammon⁷, Takashi Okajima², Frederick Scott Porter², Carl Reintsema⁵, Peter J. Serlemitsos⁴, Stephen J Smith⁴, Patrick Wikus¹
Institution(s): ¹ Bruker BioSpin AG, ² Goddard Space Flight Center, ³ L-3, ⁴ Massachusetts Institute of Technology, ⁵ NIST, ⁶ Northwestern University, ⁷ University of Wisconsin
Contributing team(s): Micro-X Collaboration

309.03 NICER ground verification: as-built timing, spectroscopy, and throughout performance of NASA’s next X-ray timing astrophysics mission
Author(s): Keith Gendreau¹, Zaven Arzoumanian³
Institution(s): ¹ NASA/GSFC
Contributing team(s): NICER Team
309.04 STROBE-X: X-ray Timing & Spectroscopy on Dynamical Timescales from Microseconds to Years
Author(s): Colleen A. Wilson-Hodge\(^5\), Paul S. Ray\(^7\), Keith Gendreau\(^4\), Deetko Chakrabarty\(^3\), Marco Feroci\(^2\), Tom Maccarone\(^9\), Zaven Arzoumanian\(^1\), Ronald A. Remillard\(^3\), Kent Wood\(^8\), Christopher Griffith\(^6\)
Institution(s): \(^1\) CRESST/GSFC, \(^2\) INAF-IASF/INFN, \(^3\) MIT, \(^4\) NASA's GSFC, \(^5\) NASA's MSFC, \(^6\) NRC/NRL, \(^7\) NRL, \(^8\) Praxis/NRL, \(^9\) Texas Tech
Contributing team(s): STROBE-X Collaboration

309.05 Diffraction efficiency of a replicated, flight-like off-plane reflection grating baselined for future X-ray missions
Author(s): Drew Miles\(^2\), Randall McEntaffer\(^2\), Jake McCoy\(^2\), James Tutt\(^2\), Casey DeRoo\(^1\)
Institution(s): \(^1\) Harvard-Smithsonian Center for Astrophysics, \(^2\) Penn State University

310 Planets & Planetesimals in Circumstellar Disks
Friday, 10:00 am - 11:30 am; Texas 4
Chair: Ilaria Pascucci (LPL/University of Arizona)

310.01 Using Disk Eclipsing Systems to Understand Planet Formation and Evolution
Author(s): Joseph E. Rodriguez\(^2\), Hugh P. Osborn\(^3\), Benjamin John Shappee\(^1\)
Institution(s): \(^1\) Carnegie Observatories, \(^2\) Harvard-Smithsonian Center for Astrophysics, \(^3\) Warwick University
Contributing team(s): KELT Collaboration

310.02D Studying the inner regions of young stars and their disks with aperture masking interferometry
Author(s): Alexandra Greenbaum\(^3\), Anand Sivaramakrishnan\(^1\)
Institution(s): \(^1\) Space Telescope Science Institute, \(^2\) University of Michigan
Contributing team(s): GPI Instrument Team, NIRISS Instrument Team

310.03 The First 40 Million Years of Circumstellar Disk Evolution: The Signature of Terrestrial Planet Formation
Author(s): Huan Meng\(^1\), George Rieke\(^1\), Kate Y.L. Su\(^1\), Andras Gaspar\(^1\)
Institution(s): \(^1\) University of Arizona

310.04D Illuminating the Role of Spiral Waves in Circumstellar Disks
Author(s): Jaehan Bae\(^1\), Lee W. Hartmann\(^1\)
Institution(s): \(^1\) University of Michigan

310.06 The highly varying circumstellar debris disk of HD 183324
Author(s): Barry Welsh\(^2\), Sharon Lynn Montgomery\(^1\)
Institution(s): \(^1\) Clarion University, \(^2\) UC, Berkeley

310.07 Spectroscopic Evolution of Disintegrating Planetesimals: Minutes to Months Variability in the Circumstellar Gas Associated with WD 1145+017
Author(s): Seth Redfield\(^4\), Jay Farihi\(^2\), Paul W. Cauley\(^4\), Steven Parsons\(^2\), Boris T Gaensicke\(^3\), Girish Manideep Duvvuri\(^4\)
Institution(s): \(^1\) University College London, \(^2\) University of Sheffield, \(^3\) University of Warwick, \(^4\) Wesleyan University
FRIDAY, 6 JANUARY 2017

311 Molecular Clouds, HII Regions, PDRs
Friday, 10:00 am - 11:30 am; Grapevine 1
Chair: Laura Fissel (National Radio Astronomy Observatory)

311.01 Measurements of Molecular Cloud Ages using the HI/ H2 Ratio
Author(s): Marko Krco¹, Di Li¹
Institution(s): ¹ National Astronomical Observatories of China

311.02D Physical properties of CO-dark molecular gas with C+ and OH observations
Author(s): Ningyu Tang², Di Li², Carl E. Heiles¹
Institution(s): ¹ Department of Astronomy, University of California, Berkeley, ² National Astronomical Observatories, Chinese Academy of Sciences
Contributing team(s): ISM group in National Astronomical Observatories, CAS

311.03 Spectral Classification of Heavily Reddened Stars by CO Absorption Strength
Author(s): Christopher Garling², Jeffrey S. Bary¹, Tracy L. Huard³
Institution(s): ¹ Colgate University, ² Haverford College, ³ University of Maryland

311.04D Quantifying the Multiphase Galactic Outflows Driven by Supernovae
Author(s): Miao Li¹, Greg Bryan¹, Jeremiah P. Ostriker¹
Institution(s): ¹ Columbia University

311.05 Striae and MHD Waves in Molecular Clouds
Author(s): Paul Goldsmith³, Mark H. Heyer¹, Umut Yildiz², Ronald L. Snell³, Edith Falgarone¹, Jorge L. Pineda²
Institution(s): ¹ ENS, ² JPL, ³ University of Massachusetts

311.06D Probing the conditions within Photo-dissociation Regions with high resolution near-infrared spectroscopy of UV-excited molecular hydrogen
Author(s): Kyle Kaplan¹, Harriet L. Dinerstein¹, Daniel Thomas Jaffe¹
Institution(s): ¹ The University of Texas at Austin

312 Perspectives in Research Software: Education, Funding, Reproducibility, Citation, & Impact
Friday, 10:00 am - 11:30 am; Grapevine 2

Software is of vital importance to scientific research. Indeed, a recent informal survey found that all astronomers use software in their research(1). All disciplines, including astronomy, struggle with funding for developing and maintaining software, and with methods for sustaining, sharing, discovering, and citing software. Further, scientists are often not taught how to program well, efficiently, and in a sustainable manner, and software-related activities are frequently not rewarded in academic and research institutions. Given the importance of software to research, improving all aspects of research codes will result in even better science. This session, organized by the Astrophysics Source Code Library (ASCL) and the Moore-Sloan Data Science Environment (DSE) at NYU, builds on previous AAS special sessions and brings together experts from other fields and within astronomy. They will present information on activities and
projects that are addressing some of the challenges the astronomy community and the scientists who write software face and will share lessons learned in other disciplines that have direct applicability to astronomy. After the presentations, the floor will be open for discussion and questions. (1)https://www.authorea.com/users/10533/articles/18046

Chair: G. Berriman (Caltech)

312.01 Software not as a service
Author(s): Tracy Teal
Institution(s): Data Carpentry

312.02 Funding Research Software Development
Author(s): Ivelina G. Momcheva
Institution(s): Space Telescope Science Institute

312.03 Reproducibility and reusability of scientific software
Author(s): Lior Shamir
Institution(s): Lawrence Technological University

312.04 Finding the right wheel when you don’t want to reinvent it
Author(s): Michael Hucka
Institution(s): California Institute of Technology

312.05 Update on research software citation efforts
Author(s): Alice Allen
Institution(s): Astrophysics Source Code Library

312.06 Capturing the impact of software
Author(s): Heather Piwowar
Institution(s): Impactstory

312.07 The relationships between software publications and software systems
Author(s): David W. Hogg
Institution(s): New York University

313 Exploring the Optical Time Domain with the Intermediate Palomar Transient Factory

Friday, 10:00 am - 11:30 am; Fort Worth 6

The Intermediate Palomar Transient Factory (iPTF) has conducted a range of time-domain surveys since 2013, including high-cadence searches for fast transients, targeted followup of Fermi gamma-ray bursts and Advanced LIGO triggers, and an extensive variability survey of the Northern Galactic Plane. As the survey concludes, we review the scientific returns from these surveys as well as implications for next-generation surveys such as the Zwicky Transient Facility and LSST. Finally, we provide an overview of the public data products being released.

Chair: Stephen Cenko (University of California, Berkeley)

313.01 An Overview of the The Intermediate Palomar Transient Factory Surveys
Author(s): Eric Christopher Bellm, Shrinivas R. Kulkarni
Institution(s): Caltech
Contributing team(s): The Intermediate Palomar Transient Factory Collaboration
313.02 Early rise of Type Ia supernovae in the iPTF sample
Author(s): Yi Cao¹, Shrinivas R. Kulkarni¹, Peter E. Nugent²
Institution(s): ¹ Caltech, ² Lawrence Berkeley National Lab, ³ University of Washington
Contributing team(s): the intermediate Palomar Transient Factory collaboration

313.03 Exploding massive stars in real time: highlights from iPTF studies of core-collapse supernovae
Author(s): Avishay Gal-Yam¹
Institution(s): ¹ Weizmann Institute of Science

313.04 Superluminous Supernovae and Other Transients from iPTF
Author(s): Ragnhild Lunnan¹, Robert Quimby², Lin Yan¹, Annalisa De Cia³, Avishay Gal-Yam⁴, Paul Vreeswijk⁵, Giorgos Leloudas⁶, Daniel A. Perley²
Institution(s): ¹ California Institute of Technology, ² Dark Cosmology Center, ³ ESO, ⁴ SDSU, ⁵ Weizmann Institute of Science
Contributing team(s): Intermediate Palomar Transient Factory

313.05 Leo Singer

313.06 The iPTF variability data and the iPTF Galactic Plane survey
Author(s): Thomas Kupfer¹, Eric Christopher Bellm¹, Thomas A Prince¹, Shrinivas R. Kulkarni¹, Frank J. Masci², Russ Laher², David L. Shupe²
Institution(s): ¹ Caltech, ² IPAC/Caltech
Contributing team(s): Intermediate Palomar Transient Factory Collaboration

313.07 Exploring Near to Home: Solar System Science with the Palomar Transient Factory
Author(s): Thomas Allen Prince¹
Institution(s): ¹ Caltech/JPL
Contributing team(s): Palomar Transient Factory, Intermediate Palomar Transient Factory

314 Graduate, Majors, & Gen. Ed. Astronomy Education: Research, Practice, & Funding Opportunities!
Friday, 10:00 am - 11:30 am; Dallas 6
Chair: Kristine Larsen (Central Connecticut State University)

314.01 The AstroPAL Starter Pack: How to Create a Grad Mentoring Program That Fosters Equity and Inclusion in Your Department
Author(s): Nicole Cabrera¹
Institution(s): ¹ Georgia State University

314.02 ZTF Undergraduate Astronomy Institute at Caltech and Pomona College
Author(s): Bryan Edward Penprase², Eric Christopher Bellm¹
Institution(s): ¹ California Institute of Technology, ² Yale-NUS College
314.03  Harvard Observing Project (HOP): Involving Undergraduates in Research Projects  
Author(s): Allyson Bieryla \textsuperscript{1}  
Institution(s): \textsuperscript{1} Harvard Univ.

314.04  A Bridge to the Stars: A Model High School-to-College Pipeline to Improve Diversity in STEM  
Author(s): Daniel H. McIntosh \textsuperscript{1}, Derrick H Jennings \textsuperscript{1}  
Institution(s): \textsuperscript{1} University of Missouri-Kansas City

314.05  Unpacking Exoplanet Detection Using Pedagogical Discipline Representations (PDRs)  
Author(s): Edward E. Prather \textsuperscript{2}, Timothy G. Chambers \textsuperscript{3}, Colin Scott Wallace \textsuperscript{1}, Gina Brissenden \textsuperscript{2}  
Institution(s): \textsuperscript{1} UNC Chapel Hill, \textsuperscript{2} University of Arizona, \textsuperscript{3} University of Michigan

314.06  Mobile Learning of Astronomy Through Apple’s iTunes U  
Author(s): Robert M. Wagner \textsuperscript{1}  
Institution(s): \textsuperscript{1} Harrisburg Area Community College

314.07  Analysis of the NSF IUSE Physics & Astronomy Education Portfolio  
Author(s): Kevin M. Lee \textsuperscript{1}  
Institution(s): \textsuperscript{1} National Science Foundation

315  Plenary Session: Newton Lacy Pierce Prize: The Chemistry of Planet Formation, Karen Öberg (Harvard-Smithsonian, CfA)  

Friday, 11:40 am - 12:30 pm; Texas A  
Chair: Christine Jones (Harvard-Smithsonian, CfA)

315.01  The Chemistry of Planet Formation  
Author(s): Karin I. Oberg \textsuperscript{1}  
Institution(s): \textsuperscript{1} Harvard-Smithsonian Center for Astrophysics

Citation: For her research on the astrochemistry and astrophysics of ices and molecules in star-forming regions and protoplanetary disks. Öberg’s scientific leadership and her comparison of observations and simulations have led to new understanding of the chemical processes taking place in planet-forming circumstellar disks and fundamental advances in the field of star and planet formation.

NASA COPAG-Far-Infrared SIG Meeting  

Friday, 12:30 pm - 3:30 pm; San Antonio 1  
Science Interest Group for Far-Infrared Science and Technology  
Organizer(s): Susan Neff (NASA's GSFC)
316 Astro2020: The Next Decadal Survey of Astronomy and Astrophysics

Friday, 12:45 pm - 1:45 pm; Grapevine C

The decadal survey is the process through which the broad astronomy and astrophysics community forms recommendations to the agencies supporting its research for the next decade. The most recent survey and the resulting report, “New Worlds, New Horizons in Astronomy and Astrophysics,” completed in August 2010, recommended a suite of new activities that NASA, NSF, and DOE are working to implement. In addition, the 2015 report, “The Space Science Decadal Surveys: Lessons Learned and Best Practices”, and the 2016 mid-decadal survey report, both provide important input as the National Academy of Sciences, Engineering, and Medicine (the Academies) and its Committee on Astronomy and Astrophysics (CAA) begin to plan for the next decadal survey, Astro2020. Community involvement throughout the process is essential to the success of a survey. We therefore seek the community’s engagement in a Town Hall during the 229th Meeting of the American Astronomical Society. At this Town Hall, the co-chairs of the CAA will briefly describe the planning process and expected schedule for Astro2020. They will then facilitate a community discussion on key matters facing the next survey, including technical and programmatic scope and boundaries, inputs (including white papers), timing and structure, the cost and technical evaluation (CATE) process, the international context, and the state of the profession. Marcia Rieke, University of Arizona, and Steven Ritz, University of California, Santa Cruz, CAA Co-Chairs, will chair the session. Other CAA members will be present.

Organizer(s): Michael Moloney (National Research Council)

317 NOAO Town Hall: NOAO Forward

Friday, 12:45 pm - 1:45 pm; Texas C

The National Optical Astronomy Observatory (NOAO) is deploying a new suite of research capabilities for the community-at-large in partnership with NSF, DOE, NASA, and various major science collaborations. Instrumentation capabilities available now include the ultra-wide field optical imager DECam as well as new optical and infrared medium-resolution spectrometers. Coming in the near future are DESI ultra-wide-field, 5000-fiber optical spectrometer and the Extreme Precision Doppler Spectrometer (EPDS). Wide-field optical surveys are delivering major new data products to the Science Archive for community use now. In support of those new data products, NOAO is developing catalog exploration, exploitation, and visualization tools within the Data Lab project. NOAO remains active as the US gateway to Gemini and its recently improved instrument suite. Meanwhile, NOAO is laying the groundwork for supporting LSST-related research in the 2020s, especially in the time-domain. Join us for a presentation by the NOAO Director as well as ample opportunity for discussion.

Chair: David Silva (National Optical Astronomy Observatory)
NOAO Mini-Workshop: Mining Observatory Archives

Friday, 2:00 pm - 3:30 pm; San Antonio 4

Publication statistics from major public observatories show that less than half of all programs scheduled on telescopes result in a publication. Statistics collected at Gemini show this to be independent of instrument, mode of observation, and whether or not raw or pipeline reduced data were delivered. Even the percentage completed does not have a strong impact for programs that are over 50 percent complete. The average time between observation and publication is two years with the number publications after two years declining roughly exponentially. With astronomy transitioning from largely PI driven observations to increasing dependence on survey data, the discovery and use of archival data is becoming important. We will discuss both observatory metrics and tools for mining archived data. Staff from NOAO, Gemini, and the two largest public archives, MAST and IPAC, will give presentations. The NOAO Data Lab, which includes tools well suited to mining both survey and archival data, will be discussed.

Organizer(s): Kenneth Hinkle (NOAO)

Starshade Development for Direct Imaging of Exoplanets

Friday, 2:00 pm - 3:30 pm; Appaloosa 1

Flying between a space telescope and its target star, a starshade can suppress starlight to levels needed for direct imaging of habitable exoplanets. If developed in time to rendezvous with WFIRST, a starshade would enable the habitable zones of ~30 nearby stars to be searched for Earth-like planets. To prepare a starshade rendezvous option for the 2020 Decadal Survey’s consideration, the NASA Exoplanet Exploration Program (ExEP) has organized two community working groups. This splinter session will present the technology development and validation strategy for 2017-2019 that was recommended by the 50-member StarShade readiness Working Group (SSWG), and plans for ExEP’s new Starshade Technology Project (STP) which is charged to carry out those recommendations in collaboration with the national community.

2:00 PM  Introduction to NASA Starshade Development Activities
          (Gary Blackwood, JPL)
2:10 PM  Starshade-enabled Exoplanet Science for the 20s and 30s
          (Margaret Turnbull, SETI Institute)
2:30 PM  The Engineering Strategy to Demonstrate Technical Readiness
          (Charley Noecker and Gary Blackwood, JPL)
3:00 PM  Next Steps in Starshade Technology Development
          (John Ziemer, JPL)
3:20 PM  Accommodation of Starshade Readiness on WFIRST
          (Dominic Benford, NASA HQ)
3:30 PM  end

Organizer(s): Karl Stapelfeldt (NASA Goddard Space Flight Center)
FRIDAY, 6 JANUARY 2017

318 Extrasolar Planets: Characterization & Theory V

Friday, 2:00 pm - 3:30 pm; Texas A

Chair: Sarah Ballard (University of Washington)

318.01D Observational constraints on planet formation and migration timescales
Author(s): Trevor J. David
Institution(s): 1. California Institute of Technology

318.02 Forming Gaps in Debris Disks with Migrating Planets
Author(s): Sarah J. Morrison, Kaitlin M. Kratter
Institution(s): 1. Univ. of Arizona

318.03D Messages from the Reversing Layer: Clues to Planet Formation in Spectral Abundances
Author(s): John Michael Brewer, Debra Fischer, Sarbani Basu
Institution(s): 1. Yale University

318.04 The Formation of Close-in Exoplanets
Author(s): Jacob B. Simon
Institution(s): 1. University of Colorado

318.05 Is Collisional Fragmentation a Barrier to the Formation of Short-Period Planets?
Author(s): Joshua Wallace, Scott D. Tremaine, John E. Chambers

318.07 The World is Spinning: Constraining the Origin of Supermassive Gas Giant Planets at Wide Separations Using Planetary Spin
Author(s): Marta Bryan, Heather Knutson, Konstantin Batygin, Björn Benneke, Brendan Bowler
Institution(s): 1. Caltech, 2. UT Austin

319 AGN, QSO, Blazars: Hosts & Interactions

Friday, 2:00 pm - 3:30 pm; Texas C

Chair: Herman Marshall (MIT)

319.01 Improving Calibration of the MBH-σ* Relation for AGN with the BRAVE Program
Author(s): Merida Batiste, Misty C. Bentz, Emily Manne-Nicholas, Sandra I. Raimundo, Christopher A. Onken, Marianne Vestergaard, Matthew A. Bershady
Institution(s): 1. Australian National University, 2. Georgia State University, 3. Niels Bohr Institute, 4. University of Wisconsin

319.02D AGN multi-wavelength identification and host galaxy properties
Author(s): Mojegan Azadi, Alison L. Coil
Institution(s): 1. University of California, San Diego
Contributing team(s): The MOSDEF team, The PRIMUS team
319.03D Investigating the host galaxies of luminous AGN in the local universe with integral field spectroscopy
Author(s): Rebecca McElroy, Scott Croom, Bernd Husemann
Institution(s): ¹ Max Planck Institute for Astronomy, ² University of Sydney
Contributing team(s): The Close AGN Reference Survey, The SAMI Galaxy Survey

319.04D Characterizing the population of active galactic nuclei in dwarf galaxies
Author(s): Vivienne F Baldassare, Amy E. Reines, Elena Gallo, Jenny E. Greene
Institution(s): ¹ NOAO, ² Princeton University, ³ University of Michigan

319.05 Galaxy Interactions and AGN-triggering to z~1: an unprecedented new view from the Hyper Suprime-Cam Survey
Author(s): Andy D. Goulding, Jenny E. Greene, Rachel Bezanson, Johnny Greco, Sean Johnson, Elinor Medezinski, Michael A. Strauss
Institution(s): ¹ Princeton University
Contributing team(s): The HSC Collaboration

319.06 Serendipitous Discovery of a Radio Transient in the Luminous Radio Galaxy Cygnus A
Author(s): Richard A. Perley, Daniel A. Perley, Chris Luke Carilli, Vivek Dhawan
Institution(s): ¹ Dark Cosmology Centre, ² NRAO

320 Extrasolar Planets Detection: Radial Velocity I
Friday, 2:00 pm - 3:30 pm; Texas D
Chair: Debra Fischer (Yale University)

320.01 Upgrades to MINERVA control software
Author(s): Maurice Wilson, Jason D Eastman
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics

320.02 Spectroscopic commissioning results from MINERVA
Author(s): Jason D Eastman, Samson Johnson, Sharon Wang, David Sliski, Maurice Wilson, John A. Johnson, Nate McCrady, Robert A. Wittenmyer, Jason Wright, Peter Plavchan, Cullen Blake, Thomas G. Beatty
Institution(s): ¹ Department of Terrestrial Magnetism Carnegie Institution of Washington, ² Harvard-Smithsonian Center for Astrophysics, ³ Missouri State University, ⁴ Pennsylvania State University, ⁵ The Ohio State University, ⁶ University of Montana, ⁷ University of New South Wales, ⁸ University of Pennsylvania

320.03D The Promise of Many Worlds: Detection and Characterization of Exoplanets with Extreme Precision Spectroscopy
Author(s): Arpita Roy
Institution(s): ¹ The Pennsylvania State University
320.04 Discovery of Two Jovian Planet Candidates Around AU Mic
Author(s): Peter Plavchan\textsuperscript{9}, Peter Gao\textsuperscript{10}, Jonathan Gagne\textsuperscript{1}, Angelle M. Tanner\textsuperscript{8}, Elise Furlan\textsuperscript{3}, Carolyn Brinkworth\textsuperscript{12}, Kaspar von Braun\textsuperscript{7}, David R. Ciardi\textsuperscript{5}, Stephen R. Kane\textsuperscript{11}, Russel White\textsuperscript{3}, John A. Johnson\textsuperscript{4}, Ryan Hall\textsuperscript{9}, Frank Giddens\textsuperscript{9}, Perri Zilberman\textsuperscript{6}, Joe Huber\textsuperscript{3}, America Nishimoto\textsuperscript{9}, Andrew Cancino\textsuperscript{9}, Denise Weigand\textsuperscript{2}, Christopher Klenke\textsuperscript{9}
Institution(s): \textsuperscript{1} Carnegie DTM, \textsuperscript{2} Central Methodist U, \textsuperscript{3} Georgia State University, \textsuperscript{4} Harvard, \textsuperscript{5} IPAC, Caltech, \textsuperscript{6} JFK High School, \textsuperscript{7} Lowell Observatory, \textsuperscript{8} Mississippi State University, \textsuperscript{9} Missouri State University, \textsuperscript{10} NASA Ames, \textsuperscript{11} San Francisco State University, \textsuperscript{12} UCAR

320.05 Update from the ongoing precision radial velocity campaign to characterize the HD 3167 system
Author(s): Jessie Christiansen\textsuperscript{1}
Institution(s): \textsuperscript{1} NASA Exoplanet Science Institute/Caltech
Contributing team(s): team members from the CHAI collaboration, Harvard-Smithsonian Center for Astrophysics, Carnegie Institute of Washington, and University of California Santa Cruz

320.06D Hide and Seek: Radial-velocity searches for planets around active stars
Author(s): Raphaelle Haywood\textsuperscript{1}
Institution(s): \textsuperscript{1} Harvard College Observatory

320.07 The Anglo-Australian Planet Search Legacy
Author(s): Robert A. Wittenmyer\textsuperscript{3}, Christopher G. Tinney\textsuperscript{4}, Paul Butler\textsuperscript{1}, Jonathan Horner\textsuperscript{3}, Brad Carter\textsuperscript{3}, Duncan Wright\textsuperscript{4}, H.R.A. Jones\textsuperscript{2}
Institution(s): \textsuperscript{1} Carnegie Institution of Washington, \textsuperscript{2} University of Hertfordshire, \textsuperscript{3} University of Southern Queensland, \textsuperscript{4} UNSW Australia

321 Galaxy Formation & Evolution
Friday, 2:00 pm - 3:30 pm; Grapevine A
Chair: Ivelina Momcheva (Carnegie Observatories)

321.01 Quantifying the Effects of Gas-Rich Flyby Encounters on Galaxy Evolution
Author(s): Julie Dumas\textsuperscript{2}, Kelly Holley-Bockelmann\textsuperscript{2}, Meagan Lang\textsuperscript{2}
Institution(s): \textsuperscript{1} University of Illinois at Urbana-Champaign, \textsuperscript{2} Vanderbilt University

321.02D Evolving Galaxies in a Hierarchical Universe
Author(s): Changhoon Hahn\textsuperscript{1}
Institution(s): \textsuperscript{1} New York University

321.03 The Spatial Distribution and Kinematics of the Circumgalactic Medium
Author(s): Christopher W. Churchill\textsuperscript{1}, Nikole M. Nielsen\textsuperscript{3}, Glenn Kacprzak\textsuperscript{3}, Jane C. Charlton\textsuperscript{3}, Sowgat Muzahid\textsuperscript{2}
Institution(s): \textsuperscript{1} New Mexico State Univ., \textsuperscript{2} Penn State, \textsuperscript{3} Swinburne University of Technology
321.04D First Detection of a Cluster-scale Gradient in the ISM metallicity of the Star-forming Galaxies
Author(s): Anshu Gupta①, Tiantian Yuan①, Kim-Vy Tran②, davide martizzi③, Philip Taylor①, Lisa J. Kewley①
Institution(s): ① Australian National University, ② Texas A&M University, ③ University of California

321.05D Observations and Models of Galaxy Assembly Bias
Author(s): Duncan A. Campbell①
Institution(s): ① Yale University

322 Beyond the Academy: Panel Discussion on Entering Non-Academic Careers
Friday, 2:00 pm - 3:30 pm; Grapevine B
More of our astronomy colleagues are choosing meaningful careers in industry, and yet very little information trickles back into academia about what those careers are like, what skills transferred from astronomy training, or even how to make the career transition. The lack of solid information and mentoring can make any career path beyond the academy seem daunting. We propose to fill this information gap in a continuation of the Employment Committee’s professional development workshops and seminars at the annual winter meeting of the American Astronomical Society (AAS). In partnership with the American Institute of Physics (AIP), the 2017 meeting will feature a panel discussion on careers beyond academia. Invited speakers from the professional, entrepreneurial, and government sectors will be joined by recruiters and other astronomers from a wide spectrum of fields for an engaging panel discussion on how to start a career outside academia. Topics will cover advice on: marketing your existing skills for a position outside academia, what highly-sought skills will increase your competitiveness, how the job-hunting process works, what to expect in the interview process, and what the initial transition is really like. We will have the panel introduce themselves for 30 minutes, followed by questions from the audience for 30 minutes. The final 30 minutes will allow the audience to network with individual panelists in small groups.
Chair: Kelly Holley-Bockelmann (Vanderbilt University)

323 Cosmic Microwave Background
Friday, 2:00 pm - 3:30 pm; Grapevine C
Chair: Brian Nord (University of Michigan)
323.01 The Atacama Cosmology Telescope: Two-season spectrum and parameters
Author(s): Renée Hlozek①, Thibaut Louis②, Emily Grace③, Matthew Hasselfield④, Marius Lungu⑤, Loic Maurin③
Institution(s): ① Dunlap Institute for Astronomy and Astrophysics, ② Institut d’Astrophysique de Paris, ③ Instituto de Astrofísica P. Universidad Católica de Chile, ④ Penn State, ⑤ Princeton University, ⑥ University of Pennsylvania
Contributing team(s): Atacama Cosmology Telescope
323.02D Multifrequency Beam Characterization and Systematics for the Keck Array, BICEP3, and Future CMB Polarization Experiments  
Author(s): Kirit Karkare$^1$  
Institution(s): $^1$ Harvard-Smithsonian Center for Astrophysics  
Contributing team(s): BICEP/Keck Array Collaboration

323.03D The Cosmology Large Angular Scale Surveyor  
Institution(s): $^1$ Harvard Smithsonian Center for Astrophysics, $^2$ Johns Hopkins University, $^3$ NASA Goddard Space Flight Center, $^4$ National Institutes of Science and Technology, $^5$ Pontificia Universidad Católica de Chile, $^6$ University of British Columbia, $^7$ University of Michigan, $^8$ University of Toronto

323.04 Testing the ultra-light axion hypothesis with CMB-SIV  
Author(s): Daniel Grin$^1$, Renee Hlozek$^3$, David Marsh$^2$  
Institution(s): $^1$ Haverford College, $^2$ Kings College London, $^3$ University of Toronto

323.05 Cosmic Microwave Background Small-Scale Structure: I. Observations of the Foreground Emission  
Author(s): Joan T. Schmelz$^1$, Gerrit L. Verschuur$^1$  
Institution(s): $^1$ Arecibo Observatory

323.06 Cosmic Microwave Background Small-Scale Structure: II. Model of the Foreground Emission  
Author(s): Gerrit L. Verschuur$^1$, Joan T. Schmelz$^1$  
Institution(s): $^1$ Arecibo Observatory

324 Surveys & Data - Radio and High Energy

Friday, 2:00 pm - 3:30 pm; Grapevine D

Chair: Mansi Kasliwal (Caltech)

324.01 MALATANG: MApping the dense moLecular gAs in the sTrongest stAr-formiNg Galaxies  
Author(s): Yu Gao$^1$  
Institution(s): $^1$ Purple Mountain Observatory  
Contributing team(s): Zhiyu Zhang, Thomas Greve, and MALATANG team
324.02 First imaging results from Apertif, a phased-array feed for WSRT
Author(s): Elizabeth A. Adams¹, Björn Adebahr¹, Willem J.G. de Blok¹, Kelley M Hess³, Boudewijn Hut¹, Danielle M. Lucero³, Filippo Maccagni³, Raffaella Morganti¹, Tom Oosterloo¹, Lister Staveley-Smith², Thijs van der Hulst³, Marc Verheijen³, Joris Verstappen³
Institution(s): ¹ ASTRON, ² ICRAR, ³ Kapteyn Astronomical Institute

324.03 The VLA Sky Survey - science goals and some early results from the pilot survey
Author(s): Mark Lacy¹, Claire J. Chandler¹, Amy E. Kimball¹, Steven T. Myers¹, Frank Schinzel¹
Institution(s): ¹ NRAO
Contributing team(s): VLASS Survey Science Group

324.04 The VLA Sky Survey (VLASS): Technical Implementation and Pilot Survey Results
Author(s): Steven T. Myers³, Stefi Baum⁵, Claire J. Chandler³, Shami Chatterjee¹, Amy E. Kimball³, Mark Lacy², Casey J. Law⁴, Frank Schinzel³, Demian Arancibia³, R. Hiriart³, Drew Medlin³
Institution(s): ¹ Cornell University, ² NRAO, ³ NRAO, ⁴ University of California, ⁵ University of Manitoba
Contributing team(s): for the VLA Sky Survey Team, and the Survey Science Group

324.05 An Enhanced Multiwavelength Photometric Catalog for the Spitzer Extragalactic Representative Volume Survey
Author(s): Kristina Nyland¹
Institution(s): ¹ NRAO

324.06 The SAGE-Spec Spitzer Legacy program: Identification of Spitzer-IRS staring mode targets in the Large Magellanic Cloud
Author(s): Olivia Jones¹
Institution(s): ¹ STScI
Contributing team(s): Sage-Spec team

325 The Sun
Friday, 2:00 pm - 3:30 pm; Texas 3
Chair: Alicia Aarnio (University of Michigan)

325.01 Why Theory Fails to Reproduce the Observed Variation of Acoustic Cutoff in the Solar Atmosphere?
Author(s): Zdzislaw E. Musielak², Krzysztof Murawski³
Institution(s): ² Uni. Maria Curie-Skłodowska, ³ Univ. of Texas, Arlington

325.02 The solar corona through the sunspot cycle: preparing for the August 21, 2017, total solar eclipse
Author(s): Jay M. Pasachoff¹, Daniel Seaton², Vojtech Rusin¹
Institution(s): ¹ Astronomical Inst., Slovak Academy of Sciences, ² CIRES, U. Colorado, ³ Williams College
325.03 A Hierarchical Relationship between CME Properties and the Fluence Spectral Index of Large Solar Energetic Particle Events
Author(s): N. Gopalswamy¹, Seiji Yashiro², Neeharika Thakur², Pertti Makela², Hong Xie², Sachiko Akiyama²
Institution(s): ¹ NASA GSFC, ² The Catholic University of America

325.04D White-Light and Radioastronomical Remote-Sensing of Coronal Mass Ejections
Author(s): Jason E. Kooi¹, Steven R. Spangler²
Institution(s): ¹ U.S. Naval Research Laboratory, ² University of Iowa

326 Binary & X-ray Stellar Systems
Friday, 2:00 pm - 3:30 pm; Texas 4
Chair: Lynn Cominsky (Sonoma State Univ.)

326.01 Flow Patterns in Simulated Contact Binaries
Author(s): Patrick M. Motl¹, Kundan Kadam², Juhan Frank², Geoffrey C. Clayton²
Institution(s): ¹ Indiana University Kokomo, ² Louisiana State University

326.02D A Chandra X-ray census of the interacting binaries in old open clusters - NGC 188
Author(s): Smriti Vats¹, Maureen Van Den Berg¹
Institution(s): ¹ Anton Pannekoek Institute for Astronomy, University of Amsterdam

326.03 Low-mass X-ray binaries in the outer halo of NGC 4472: a consequence of natal kicks?
Author(s): Lennart M Van Haften¹, Thomas J. Maccarone⁴, Paul Sell⁹, Chris Mihos¹, David J. Sand⁴, Arunav Kundu¹, Stephen Zepf⁸
Institution(s): ¹ Case Western Reserve University, ² Eureka Scientific, ³ Michigan State University, ⁴ Texas Tech University, ⁵ University of Crete

326.04 Tracing X-ray Binary Population Evolution By Galaxy Dissection: First Results from M51
Author(s): Bret Lehmer⁶, Rafael T. Eufrasio⁶, Larissa Markwardt⁶, Andreas Zezas¹, Antara Basu-Zych¹, Tassos Fragos⁷, Ann E. Hornschemeier⁸, Vassiliki Kalogera³, Andrew Ptak⁴, Panayiotis Tzanavaris⁴, Mihoko Yukita³
Institution(s): ¹ Crete, ² Geneva Observatory, ³ Johns Hopkins University, ⁴ NASA GSFC, ⁵ Northwestern, ⁶ Univ of Arkansas

326.05 The evolution of triple-star systems
Author(s): Silvia Toonen¹, Adrian Hamers², Simon Portegies Zwart³
Institution(s): ¹ Anton Pannekoek Institute, ² Institute for Advanced Study, ³ Leiden University

326.06 Close encounters of Proxima and alpha Centauri as a consequence of the galactic environment
Author(s): Russell Deitrick², Thomas R. Quinn², Rory Barnes³, Nathan A. Kaib¹
Institution(s): ¹ University of Oklahoma, ² University of Washington
326.07  N-body Simulation of Binary Star Mass Transfer  
Author(s): Taylor Hutyra¹, William Sumpter¹  
_Institution(s): ¹ Tarleton State University_

326.08  Hunting the Huntsmen: Compact Pulsar Binaries with Giant Companions  
Author(s): Samuel Swihart², Jay Strader², Laura Chomiuk², David J. Sand⁴, Chi C. Cheung³, Tyrel J. Johnson¹  
_Institution(s): ¹ George Mason University, ² Michigan State University, ³ NRL, ⁴ Texas Tech University_

327 ALMA Observations of Circumstellar Disks  
Friday, 2:00 pm - 3:30 pm; Grapevine 1  
Chair: Gaspard Duchene (University of California Berkeley)

327.01  The End of Protoplanetary Disk Evolution: An ALMA Survey of Upper Scorpius  
Author(s): Scott A. Barenfeld¹, John M. Carpenter³, Anneila I. Sargent¹, Luca Ricci², Andrea Isella⁴  
_Institution(s): ¹ California Institute of Technology, ² Harvard-Smithsonian Center for Astrophysics, ³ Joint ALMA Observatory, ⁴ Rice University_

327.02  A Steeper than Linear Disk Mass-Stellar Mass Scaling Relation  
Author(s): Ilaria Pascucci³  
_Institution(s): ³ LPL/University of Arizona_

327.03D  Millimeter Studies of Nearby Debris Disks  
Author(s): Meredith A. MacGregor¹  
_Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics_

327.04  ALMA 1.3 mm Observation of the Fomalhaut Debris Disk  
Author(s): Jacob White⁴, Aaron C. Boley⁴, Eric B. Ford⁹, Matthew J. Payne³, William Dent¹, Stuartt Corder¹  
_Institution(s): ¹ ALMA, ² Harvard CfA, ³ Pennsylvania State University, ⁴ University of British Columbia_

327.05D  Searching for the Youngest Protostellar Disks and Earliest Signs of Planet Formation  
Author(s): Dominique Segura-Cox¹  
_Institution(s): ¹ University of Illinois_

327.06  ALMA Measurements of Circumstellar Material in the GQ Lup System  
Author(s): David J. Wilner³, Meredith A. MacGregor³, Ian Czekala³, Sean M. Andrews¹, Yu Sophia Dai³, Gregory Herczeg³, Kaitlin M. Kratter⁵, Adam L. Kraus⁶, Luca Ricci³, Leonardo Testi²  
_Institution(s): ¹ Caltech, ² ESO, ³ Harvard-Smithsonian, CfA, ⁴ KIAA, ⁵ University of Arizona, ⁶ University of Texas_
327.07 A Three-Dimensional View of Turbulence Amid Complex Structure in the HD 163296 Protoplanetary Disk

Author(s): Kevin M. Flaherty5, A. Meredith Hughes5, Sanaea Rose4, Sean M. Andrews1, David J. Wilner1, Eugene Chiang3, Jacob B. Simon2

Institution(s): 1 Harvard Smithsonian Center for Astrophysics, 2 Southwest Research Institute, 3 UC, Berkeley, 4 Wellesley College, 5 Wesleyan University

328 CubeSats in Astronomy & Astrophysics

Friday, 2:00 pm - 3:30 pm; Grapevine 2

CubeSats, small satellites built in increments of 10 cm cubes (1 cube is called 1U or "unit," two 10 cm cubes together are known as 2U, and so on) are being used more and more to carry out science observations and collect data while providing low-cost access to space, platforms for technology development, and training ground for students and other early-career researchers. While most CubeSats launched to date are studying the earth and other objects within the solar system, interest in using CubeSats in astronomy and astrophysics is growing. An ad hoc committee of the The National Academy has recently concluded a study reviewing the current state of the scientific potential and technological promise of CubeSats. This study, chaired by Thomas Zurbuchen (Univ. Michigan), focused on the potential of using CubeSats as platforms for obtaining high priority science, such as that recommended in recent Decadal Surveys and the 2014 NASA Science Plan. Their report, to be released this month (May 2016) includes an overview of science goals that can be accomplished with current CubeSat technological capabilities and those anticipated in the near future. This Special Session will provide a broad look at CubeSats in astronomy and astrophysics, including an overview of their scientific potential, as well as the current state and future promise of CubeSat technology. Application of CubeSats to study decadal priorities will be highlighted, and experiences with carrying out CubeSat development in university settings will be shared.

Chair: Joan Centrella (NASA’s GSFC)

328.01 Achieving Science with CubeSats: Thinking Inside the Box

Author(s): Thomas H. Zurbuchen2, Bhavya Lal1

Institution(s): 1 IDA Science and Technology Policy Institute, 2 Univ. of Michigan

328.02 How CubeSats contribute to Science and Technology in Astronomy and Astrophysics

Author(s): Kerri Lynn Cahoy1, Ewan Douglas1, Ashley Carlton1, James Clark1, Christian Haughwout1

Institution(s): 1 MIT

328.04 CUTIE: Cubesat Ultraviolet Transient Imaging Experiment

Author(s): Stephen B. Cenko4, Eric Christopher Bellm1, Avishay Gal-Yam6, Suvi Gezari1, Varoujan Gorjian1, April Jewell3, Jeffrey W. Kruk4, Shrinivas R. Kulkarni1, Richard Mushotzky5, Shouleh Nikzad3, Anthony Piro3, Eli Waxman6, Eran Oded Ofek6

Institution(s): 1 Caltech, 2 Carnegie Observatories, 3 JPL, 4 NASA Goddard Space Flight Center, 5 University of Maryland, 6 Weizmann Institute of Science
328.03  **HaloSat – A CubeSat to Study the Hot Galactic Halo**  
Author(s): Philip Kaaret$^1$  
Institution(s): $^1$ Univ. of Iowa

329 Results from the New Half-Degree Imager on the WIYN-0.9m Telescope  
Friday, 2:00 pm - 3:30 pm; Fort Worth 6  
We will discuss early results from the new HDI imager in operation on the WIYN-0.9m telescope at Kitt Peak National Observatory. While part of the session will deal with the technical aspects of the imager and early science results: we will also discuss opportunities for the community to become involved and use of the telescope in education and outreach activities. The partner institutions of the WIYN-0.9m consortium represent a range of universities from small to large; undergraduate-only to Tier-1 research schools; and public and private educational institutions. The associated poster session will present early science results developed using HDI, including many student-led projects.  
Chair: J. Allyn Smith (Austin Peay State Univ.)

329.01  **Technical Summary of the Half-Degree Imager (HDI)**  
Author(s): Michael W. Richmond$^1$  
Institution(s): $^1$ Rochester Inst. of Tech.

329.02  **Undergraduate Education with the WIYN 0.9-m Telescope**  
Author(s): Catherine A. Pilachowski$^1$  
Institution(s): $^1$ Indiana University

329.03  **Using the HDI camera with Tohono O’odham Tribal Community College Students**  
Author(s): Catharine D. Garmany$^1$  
Institution(s): $^1$ NOAO

329.04  **Making and Using Aesthetically Pleasing Images With HDI**  
Author(s): Spencer L. Buckner$^1$  
Institution(s): $^1$ Austin Peay State Univ.

330 Neutron Stars (Pulsars, Magnetars, Pulsar Wind Nebulae) II  
Friday, 2:00 pm - 3:30 pm; Dallas 6  
Chair: Elizabeth Ferrara (NASA/GSFC)
330.01 Localizing the Fast Radio Burst 121102
Author(s): Shami Chatterjee³, Robert Wharton³, Casey J. Law¹⁰, Jason Hessels², Sarah Burke-Spolaor¹³, Geoffrey C. Bower¹, Matthew W Abruzzo⁵, Cees Bassa³, Bryan J. Butler⁹, James M. Cordes³, Demorest Paul⁴, Victoria M. Kaspi⁷, Maura McLaughlin¹¹, Scott M. Ransom⁸, Paul Scholz⁴, Andrew Seymour⁶, Laura Spitler⁶, Shriharsh P. Tendulkar⁷
Institution(s): ¹ ASIAA, ² ASTRON, ³ Cornell University, ⁴ DRAO, ⁵ Haverford College, ⁶ Max-Planck-Institut für Radioastronomie, ⁷ McGill University, ⁸ NAIC, ⁹ NRAO, ¹⁰ University of California, ¹¹ West Virginia University
Contributing team(s): PALFA Survey Team, VLA+AO FRB121102 Simultaneous Campaign Team, EVN FRB121102 Campaign Team

330.02 Finding and Localizing FRBs in Realtime with realfast
Author(s): Casey J. Law⁶, Geoffrey C. Bower¹, Sarah Burke-Spolaor⁴, Bryan J. Butler⁴, Demorest Paul⁴, Joseph Lazio³, Michael P. Rupen²
Institution(s): ¹ ASIAA, ² DRAO, ³ JPL/NASA, ⁴ National Radio Astronomy Observatory, ⁵ UC Berkeley

330.03 Properties of Radio Sources in the FRB 121102 Field
Author(s): Geoffrey C. Bower¹, Shami Chatterjee³, Robert Wharton³, Casey J. Law⁴, Jason Hessels², Sarah Spolaor⁸, Matthew W. Abruzzo⁵, Cees Bassa³, Bryan J. Butler⁴, James M. Cordes³, Paul Demorest⁴, Victoria M. Kaspi⁷, Maura McLaughlin¹⁰, Scott M. Ransom⁸, Paul Scholz⁴, Andrew Seymour⁷, Laura Spitler⁶, Shriharsh P. Tendulkar⁵
Institution(s): ¹ ASIAA, ² ASTRON, ³ Cornell University, ⁴ DRAO, ⁵ Haverford College, ⁶ McGill, ⁷ MPIfR, ⁸ NAIC, ⁹ NRAO, ¹⁰ UC Berkeley, ¹¹ WVU
Contributing team(s): PALFA Survey, VLA+AO FRB121102 Simultaneous Campaign Team, EVN FRB121102 Campaign Team, realfast team

330.05 A polarised fast radio burst at low Galactic latitude
Author(s): Emily Petroff¹
Institution(s): ¹ ASTRON
Contributing team(s): SUPERB collaboration, HESS collaboration, ANTARES collaboration

330.06D Algorithms for searching Fast radio bursts and pulsars in tight binary systems.
Author(s): Barak Zackay¹
Institution(s): ¹ Weizmann Institute of Science

330.07 Interstellar Medium Effects on Radio Pulsars PSR B1937+21 and PSR B2224+65, and Implications for Gravitational Wave Detection
Author(s): Timothy Dolch⁴, Shami Chatterjee², James M. Cordes³, Demorest Paul⁴, Daniel Halmrast³, Cody Jessup⁵, Glenn Jones¹, Michael T. Lam⁶, Andrew Lyne⁶, Maura McLaughlin⁶, Joshua Ramette³, Dan Stinebring⁶, Benjamin Stappers⁵, Kevin Stovall⁷
Institution(s): ¹ Columbia University, ² Cornell University, ³ Hillsdale College, ⁴ NRAO, ⁵ Oberlin College, ⁶ University of Manchester, ⁷ University of New Mexico, ⁸ West Virginia University
330.08  An Update on the Timing of the Millisecond Pulsar in a Triple System
Author(s): Scott M. Ransom¹, Anne Archibald², Ingrid H. Stairs³, Jason Hessels², Duncan Lorimer⁴, Ryan S Lynch¹
Institution(s): ¹ NRAO, ² University of Amsterdam, ³ University of British Columbia, ⁴ West Virginia University

331 Plenary Session: Helen B. Warner Prize: Feedback: Now with Physics, Philip Hopkins (Caltech)

Friday, 3:40 pm - 4:30 pm; Texas A
Chair: Christine Jones (Harvard-Smithsonian, CfA)

331.01 Feedback: Now with Physics
Author(s): Philip F. Hopkins³, Eliot Quataert³, Claude-Andre Faucher-Giguere², Dusan Keres⁵, Andrew R. Wetzel⁴, Norman W. Murray¹
Institution(s): ¹ Canadian Institute for Theoretical Astrophysics, ² Northwestern University, ³ UC Berkeley, ⁴ UC Davis, ⁵ UC San Diego

Citation: For his research on galaxy formation and evolution and the growth of supermassive black holes. Hopkins builds both numerical and analytic models with strong connections to observational data. His work has provided great insight into the role of galaxy mergers on galaxy properties as well as quasar activation.

332 Plenary Talk: Astronomy from the Upper Stratosphere: Key Discoveries and New Opportunities from High Altitude Scientific Balloons, Laura Fissel (Northwestern University)

Friday, 4:30 pm - 5:20 pm; Texas A
Chair: Charles Woodward (Univ. of Minnesota)

332.01 Astronomy from the Upper Stratosphere: Key Discoveries and New Opportunities from High Altitude Scientific Balloons
Author(s): Laura M. Fissel¹
Institution(s): ¹ National Radio Astronomy Observatory
FRIDAY, 6 JANUARY 2017

POSTER SESSIONS

333 Astronomy Majors & Graduate Students: Curriculum & the GRE Poster Session

Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

333.01 Effectiveness of Online Module for Graduate Astronomy Course
   Author(s): Lauren E. P. Campbell¹, Kelly Holley-Bockelmann¹, Cynthia Brame³
   Institution(s): ¹ Vanderbilt University

333.02 Physics GRE Scores of Prize Postdoctoral Fellows in Astronomy
   Author(s): Emily M. Levesque², Rachel Bezanson¹, Grant Tremblay³
   Institution(s): ¹ Princeton, ² University of Washington, ³ Yale

333.03 The Benefits of Adding SETI to the University Curriculum and What We Have Learned from a SETI Course Recently Offered at UCLA
   Author(s): Larry Lesyna⁶, Jean-Luc Margot², Adam Greenberg⁵, Akshay Shinde¹, Yashaswi Alladi³, Srinivas Prasad MN³, Oliver Bowman², Callum Fisher², Szilard Gyalay³, William McKibbin⁵, Brittany E. Miles⁵, Donald Nguyen⁵, Conor Power³, Namrata Ramani⁴, Rashmi Raviprasad⁵, Jesse Santana⁵
   Institution(s): ¹ Department of Computer Science, University of California, Los Angeles, ² Department of Earth, Planetary, and Space Sciences, University of California, Los Angeles, ³ Department of Electrical Engineering, University of California, Los Angeles, ⁴ Department of Materials Science and Engineering, University of California, Los Angeles, ⁵ Department of Physics and Astronomy, University of California, Los Angeles, ⁶ LXL Technology

333.04 “Pretty Pictures” with the HDI
   Author(s): Spencer L. Buckner¹
   Institution(s): ¹ Austin Peay State Univ.

333.05 Demonstrating Supernova Remnant Evolution
   Author(s): Denis A. Leahy¹, Jacqueline Williams¹
   Institution(s): ¹ Univ. of Calgary

334 K12 & Citizen Science Research Collaborations: Involving Scientists, Teachers, & Students Poster Session

Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

334.01 Effective Models for Scientists Engaging in Meaningful Education and Outreach
   Author(s): Jacob Noel-Storr¹, Isaiah Gurule¹
   Institution(s): ¹ InsightSTEM
   Contributing team(s): InsightSTEM Teacher-Scientist-Communicator-Learner Team

334.02 The NASA/IPAC Teacher Archive Research Program (NITARP): Lessons Learned
   Author(s): Luisa M. Rebull², Varoujan Gorjian ¹, Gordon K. Squires¹
   Institution(s): ¹ Caltech
334.03  NITARP: Changing Perceptions of Science Among Secondary Students and Teachers
Author(s): Russell Kohrs\textsuperscript{3}, Kelly Kilts\textsuperscript{2}, Vincent Urbanowski\textsuperscript{5}, Thomas Rutherford\textsuperscript{4}, Varoujan Gorjian\textsuperscript{1}
Institution(s): \textsuperscript{1} JPL, \textsuperscript{2} Lexington High School, \textsuperscript{3} Massanutten Regional Governor’s School for Environmental Science and Technology, \textsuperscript{4} Sullivan South High School, \textsuperscript{5} The Academy of Information Technology and Engineering

334.04  STEM Education is Missing This.......  
Author(s): Laura Orr\textsuperscript{4}, Milton Johnson\textsuperscript{1}, Alexandra Miller\textsuperscript{3}, Luisa M. Rebull\textsuperscript{2}
Institution(s): \textsuperscript{1} Bioscience High School, \textsuperscript{2} Caltech, \textsuperscript{3} Milken Community Schools, \textsuperscript{4} Ukiah High School

334.05  Hawaii Student / Teacher Astronomy Research program (HI STAR): 10 years of high school students exploring the universe
Author(s): Geoffrey Mathews\textsuperscript{2}, James Armstrong\textsuperscript{1}, Michael A. Nassir\textsuperscript{3}, Carolyn Kaichi\textsuperscript{1}
Institution(s): \textsuperscript{1} Institute for Astronomy, \textsuperscript{2} University of Hawaii at Manoa

334.06  Are We Alone? GAVRT Search for Extra Terrestrial Intelligence (SETI) Project
Author(s): Holly Bensel\textsuperscript{1}, Ian Cool\textsuperscript{1}
Institution(s): \textsuperscript{1} St. Mary’s School
Contributing team(s): St. Mary’s High School Astronomy Club, St. Mary’s Middle School Astronomy Club

334.07  Highschool astronomy research workshop in Thailand and how it transforms Thai astronomy education
Author(s): Matipon Tangmatitham\textsuperscript{1}
Institution(s): \textsuperscript{1} Michigan Technical University

334.08  Confirming and Improving Ross Variable Star RV Del
Author(s): Tyler R. Linder\textsuperscript{1}, Rick Sanchez\textsuperscript{2}, Sage Palser\textsuperscript{2}, Kendra Schultze\textsuperscript{2}, Jessica Kenney\textsuperscript{2}, Briana Thompson\textsuperscript{3}, Richard DeCoster\textsuperscript{3}, Frank Mills\textsuperscript{3}, Wayne Osborn\textsuperscript{3}, Vivian L. Hoette\textsuperscript{3}
Institution(s): \textsuperscript{1} Astronomical Research Institute, \textsuperscript{2} Johnson County School District, \textsuperscript{3} Yerkes Observatory
Contributing team(s): Skynet Junior Scholars, Stone Edge Observatory

334.09  Visual Double Stars - St. Mary’s High School Astronomy Club
Author(s): Holly Bensel\textsuperscript{1}, Thanh Tran\textsuperscript{1}, Sean Hicks\textsuperscript{1}, Yifan He\textsuperscript{1}, Mitchell Moczygemba\textsuperscript{1}, Yuqi Shi\textsuperscript{1}, Leah Sternenberg\textsuperscript{1}, Kaycia Watson\textsuperscript{1}, kieran rooney\textsuperscript{1}, Paige Birmingham\textsuperscript{1}, Ruiyang You\textsuperscript{1}
Institution(s): \textsuperscript{1} St. Mary’s School

334.10  South African Student Constructed Indlebe Radio Telescope
Author(s): Charles H. McGruder\textsuperscript{1}, Stuart MacPherson\textsuperscript{1}, Gary Peter Janse Van Vuuren\textsuperscript{1}
Institution(s): \textsuperscript{1} Durban University of Technology, \textsuperscript{2} Western Kentucky Univ.
334.11 Results of Needs Assessments Related to Citizen Science Projects
Author(s): Sanlyn Buxner¹, Georgia Bracey², Anna Glushko², Maya Bakerman¹, Pamela L. Gay²
Institution(s): ¹ Planetary Science Institute, ² Southern Illinois University Edwardsville
Contributing team(s): CosmoQuest Team

334.12 Recording A Sunrise: A Citizen Science Project to Enhance Sunrise/set Prediction Times
Author(s): Teresa Wilson¹, Malynda Chizek Frouard², Jennifer L. Bartlett²
Institution(s): ¹ Michigan Technological University, ² United States Naval Observatory

335 Education Resources & Projects Spanning Broad Audiences Poster Session
Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

335.01 Multimedia Astronomy Communication: Effectively Communicate Astronomy to the Desired Audience
Author(s): Kimberly Michelle Star Cartier¹, Jason Wright¹
Institution(s): ¹ Pennsylvania State University

335.02 Astrobites: Engaging Undergraduate Science Majors with Current Astrophysical Research
Author(s): Michael Zevin¹
Institution(s): ¹ Northwestern
Contributing team(s): Astrobites

335.03 APOD Data Release of Social Network Footprint for 2015
Author(s): Robert J. Nemiroff³, David Russell³, Alice Allen², Paul Connelly¹, Stuart R. Lowe¹, Sydney Petz³, Ralf Haring¹, Jerry T. Bonnell³
Institution(s): ¹ APOD, ² Astrophysics Source Code Library, ³ Michigan Technological Univ.
Contributing team(s): APOD Team

335.04 Active Galactic Videos: A YouTube Channel for Astronomy Education and Outreach
Author(s): Carmen Austin¹, Jenny Calahan¹, Alexandria Resi Baucco¹, Christopher William Bullivant¹, Ross Eckley², W. Haydon Ekstrom¹, M. Ryleigh Fitzpatrick¹, Taylor Fay Genovese¹, Chris David Impey¹, Kaitlin Libby¹, Galen McCaw¹, Alexander N Olmedo², Joshua Ritter¹, Matthew Wenger¹, Stephanie Williams¹
Institution(s): ¹ University of Arizona
335.05  When Will It Be ...?: U.S. Naval Observatory Religious Calendar Computers Expanded  
Author(s): Jennifer L. Bartlett, Malynda Chizek Frouard, Cross Ziegler, Michael V. Lesniak  
Institution(s): 1 Science and Engineering Apprenticeship Program, 2 US Naval Observatory

335.06  Planning for the Future: Revealing Underrepresented Stories in the History of Physics and Astronomy  
Author(s): Victoria DiTomasso, Samantha Spytek, Stephen Neal, Lance Burch, Gregory Good  
Institution(s): 1 American Institute of Physics, 2 CUNY Macaulay Honors College at Hunter College, 3 University of Wisconsin-Madison, 4 Virginia Polytechnic Institute and State University

335.07  Astronomers Who Write Science Fiction: Using SF as a Form of Astronomy Outreach  
Author(s): Andrew Fraknoi  
Institution(s): 1 Foothill College

335.08  Conceptualizing Astronomical Distances for Urban Populations  
Author(s): Mark Popinchalk, Kristen Olson, Jenny Ingber, Mariel O’Brien  
Institution(s): 1 American Museum of Natural History

335.09  Dark Skies, Bright Kids Year 8  
Author(s): Lauren E. Bittle, Trey Wenger, Kelsey E. Johnson, Dylan Angell, Andrew Burkhardt, Blair Davis, Ariel Firebaugh, Danielle Hancock, Whitney Richardson, Christian Rochford Hayes, Sean Linden, Sandra Liss, Allison Matthews, Shunlante McNair, Brian Prager, Matthew Pryal, Nicholas William Troup  
Institution(s): 1 Albemarle County Virginia Public Schools, 2 University of Virginia

335.10  If You Planet, They Will Come: Reviving the CCNY Planetarium  
Author(s): Elianna Schwab, Victoria DiTomasso, James Hedberg  
Institution(s): 1 CUNY - Hunter College, 2 CUNY - The City College of New York

335.11  The Expanding Universe of Astronomy on Tap  
Author(s): Rachael C. Livermore, Brett Morris, Gautham Narayan, Sarah J. Morrison, Evan Schneider, Brandon Bozek, Emily L. Rice, Cameron B. Hummels, Kristen Garofali, Raquel Martinez, Yuan Li, Joel D. Green, Stephanie M. LaMassa, Devin W. Silvia, Megan E. Schwamb, Iair Arcavi, Jeffrey M. Silverman  
Institution(s): 1 California Institute of Technology, 2 CUNY College of Staten Island, 3 Gemini Observatory, 4 Michigan State University, 5 NASA Goddard Space Flight Center, 6 National Optical Astronomy Observatory, 7 Space Telescope Science Institute, 8 UC Santa Barbara, 9 University of Arizona, 10 University of Michigan, 11 University of Texas at Austin, 12 University of Washington
336 Promoting Research, Mentorship, & Diversity for Astronomy Majors Poster Session

Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

336.01 CAMPARE and Cal-Bridge: Two Institutional Networks Increasing Diversity in Astronomy
Author(s): Alexander L. Rudolph¹, Tammy A. Smecker-Hane²
Institution(s): ¹ California State Polytechnic Univ., ² University of California

336.02 AstroCom NYC: Equity, Inclusion, and the Next Generation of Astrophysicists
Author(s): Timothy Paglione⁴, Saavik Ford³, Dennis Robbins⁴, Marcel A. Aguero², Mordecai-Mark Mac Low¹
Institution(s): ¹ AMNH, ² Columbia Univ., ³ CUNY BMCC & AMNH, ⁴ CUNY Hunter College, ⁵ CUNY York College & AMNH

336.03 The National Astronomy Consortium (NAC)
Author(s): Lyndele Von Schill¹, Joyce Ivory¹
Institution(s): ¹ National Radio Astronomy Observatory

336.04 Results from a Pilot REU Program: Exploring the Cosmos Using Sloan Digital Sky Survey Data
Author(s): Nancy J. Chanover¹, Kelly Holley-Bockelmann², Jon A. Holtzman¹
Institution(s): ¹ New Mexico State Univ., ² Vanderbilt University

336.05 The FAST Initiative: Fostering a More Inclusive SDSS Collaboration
Author(s): Kelly Holley-Bockelmann¹⁵, Nancy J. Chanover⁶, Adam J. Burgasser¹³, Kelle L. Cruz², Charles Liu², Paul A. Mason⁹, Jesus Pando⁴, Emily L. Rice¹, Sarah J. Schmidt¹, Jose Ramon Sanchez-Gallego¹⁴, Sara Lucatello⁶, Alfonso Aragón-Salamanca¹⁰, Francesco Belfiore³, Brian Cherinka⁷, Diane Feuillet⁹, Amy Jones⁶, Karen Masters¹², Audrey Simmons⁹, Ashley Ross¹¹, Keivan G. Stassun¹⁵, Jamie Tayar¹¹
Institution(s): ¹ AIP, ² Cambridge, ³ CUNY, Staten Island, ⁴ DePaul, ⁵ Hunter College, ⁶ INAF, ⁷ JHU, ⁸ MPA, ⁹ NMSU, ¹⁰ Nottingham, ¹¹ OSU, ¹² Portsmouth, ¹³ UCSD, ¹⁴ UKy, ¹⁵ Vanderbilt University

336.06 The NRAO Observing for University Classes Program
Author(s): John M. Cannon¹, Gustaaf A. Van Moorsel²
Institution(s): ¹ Macalester College, ² Nation Radio Astronomy Observatory

336.07 Introducing Research Methods to Undergraduate Majors Through an On-Campus Observatory with The University of Toledo’s Ritter Observatory
Author(s): Noel Richardson¹, Kevin Hardegree-Ullman¹, Jon Eric Bjorkman¹, Karen S. Bjorkman¹
Institution(s): ¹ University of Toledo
Contributing team(s): Ritter Observing Team

336.08 Spectroscopic Instrumentation in Undergraduate Astronomy Laboratories
Author(s): Dominic Ludovici¹, Robert Lucien Mutel³, Cornelia C. Lang¹
Institution(s): ¹ University of Iowa
336.09 Variable Stars as an Introduction to Computational Research
Author(s): Jennifer Cash¹, Donald K. Walter¹
Institution(s): ¹ South Carolina State Univ.

Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

337.01 A General Education Course in Cultural Astronomy: Exploring the Universe Through Human Eyes
Author(s): Kristine Larsen¹
Institution(s): ¹ Central Connecticut State University

337.02 The Art of Astronomy: A New General Education Course for Non-Science Majors
Author(s): Catherine A. Pilachowski¹, Liese van Zee¹
Institution(s): ¹ Indiana University

337.03 Teaching Astronomy Classes and Labs in a Smart Classroom
Author(s): Nicole E. Gugliucci¹
Institution(s): ¹ Saint Anselm College

337.04 Update on the NSF PAARE Program at SC State
Author(s): Donald K. Walter⁴, Marco Ajello², Sean D. Brittain², Jennifer Cash⁴, Dieter Hartmann², Shirley Ho¹, Steve B. Howell³, Jeremy R. King², Mark D. Leising², Daniel M. Smith⁴
Institution(s): ¹ Carnegie Mellon University, ² Clemson University, ³ NASA ARC, ⁴ South Carolina State Univ.

338 Internships, Fellowships, & Observatory Management Training for High School Students, Majors, & Graduates Poster Session
Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

338.01 Summer Internships for Students through the Air Force Research Laboratory’s Scholars Program
Author(s): David A. Barnaby⁴, Eunsook Hwang¹, Julie A. McCullough¹
Institution(s): ¹ Air Force Research Lab

338.02 Shrinking the Gap Between Science Policy and Scientists
Author(s): Demetri Call¹
Institution(s): ¹ University of Nevada, Reno

338.03 The LSSTC Data Science Fellowship Program
Author(s): Adam Miller², Lucianne Walkowicz¹
Institution(s): ¹ Adler Planetarium, ² CIERA
Contributing team(s): The LSSTC DSFP Leadership Council
338.04 The Lowell Observatory Predoctoral Scholar Program
Author(s): Lisa A. Prato
Institution(s): 1 Lowell Observatory

338.05 Educational Programs for Graduate Level Learners and Professionals - National Radio Astronomy Observatory National and International Non-Traditional Exchange Program
Author(s): Lory Mitchell Wingate
Institution(s): 1 National Radio Astronomy Observatory

339 The Sun Poster Session
Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

339.01 The Evershed Effect from the Photosphere to the Chromosphere
Author(s): Brian Healy, Alexandra Tritschler
Institution(s): 1 Boston University, 2 National Solar Observatory

339.02 A Chromospheric Flare Model Consisting of Two Dynamical Layers: Critical Tests from IRIS Data of Solar Flares
Author(s): Adam Kowalski, Joel C. Allred, Adrian N. Daw, Gianna Cauzzi, Mats Carlsson, Andrew Inglis, Aaron O'Neill, Mihalis Mathioudakis, Han Uitenbroek
Institution(s): 1 Catholic University of America/NASA-GSFC, 2 INAF/NSO, 3 NASA GSFC, 4 National Solar Observatory, 5 Queen's University Belfast, 6 University of Colorado, 7 University of Oslo

339.03 Non-Equilibrium Ionization Modeling of Coronal Mass Ejections
Author(s): Remington Rimple, Nicholas Arnold Murphy, Chengcai Shen
Institution(s): 1 California State University San Marcos, 2 Harvard-Smithsonian Center for Astrophysics

339.04 Three-Dimensional Potential-Field Source-Surface Modeling of the Evolution of Coronal Structures
Author(s): Rosa Wallace, Mausumi Dikpati, Giuliana de Toma, Joan Burkepile
Institution(s): 1 High Altitude Observatory, NCAR, 2 University of Colorado Denver

339.05 Evolving Flare Ribbon Small-Scale Substructure: A Second Candidate
Author(s): Alissa Roegge, Sean Brannon
Institution(s): 1 Montana State University, 2 University of Massachusetts, Amherst

339.06 Data Mining Solar X-Ray Flares Triggered by Emerging Magnetic Flux
Author(s): Kaitlyn Loftus, Steven H. Saar, Nicole Schanche
Institution(s): 1 Columbia University, 2 Harvard-Smithsonian, CfA
339.07 Citizen CATE Experiment and Polar Plume Dynamics
Author(s): Adriana Mitchell, Matt Penn, Robert Baer, Robert Bosh, David Garrison, Richard Gelderman, Honor Hare, Fred Isberner, Logan Jensen, Sarah Kovac, Myles McKay, Michael Pierce, Patricia Thompson, Andrei Ursache, John R. Varsik, Donald Walter, Zachary Watson, David Young
Contributing team(s): Citizen CATE Team

339.08 Methods on Efficiently Relating Data from the Sun to In-situ Data at L1: An Application to the Slow Solar Wind
Author(s): Maria McQuillan, Nicholeen Viall
Institution(s): 1. NASA Goddard Space Flight Center, 2. University of St. Thomas

339.09 Periodic Alpha Signatures and the Origins of the Slow Solar Wind
Author(s): Catherine Blume, Larry Kepko
Institution(s): 1. NASA Goddard Space Flight Center, 2. Princeton University

340 Molecular Clouds, HII Regions, Interstellar Medium & Dust Poster Session

Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

340.01 Mapping of the Local Interstellar Medium using Absorption Line Spectroscopy
Author(s): Bryan Edward Penprase
Institution(s): 1. Yale-NUS College

340.02 A Narrowband Emission-Line Survey of the Large Magellanic Cloud
Author(s): Alex Jonhn Robert Gordon, Sean Points, Chris Smith
Institution(s): 1. Cerro Tololo Inter-American Observatory, 2. Macalester College
Contributing team(s): MCELS Team

340.03 Far-ultraviolet florescent molecular hydrogen emission map of the Milky Way Galaxy
Author(s): Young-soo Jo, Kwang-il Seon, Kyoung-wook Min, Jerry Edelstein, Wonyong Han
Institution(s): 1. Korea Advanced Institute of Science and Technology, 2. Korea Astronomy & Space Science Institute, 3. University of California

340.04 HST/STIS Observations of the Local Interstellar Medium toward Very Nearby Stars: A Detailed Analysis of the a Centuari Sight Line
Author(s): Julian Dann, Seth Redfield, Thomas R. Ayres
Institution(s): 1. Department of Astronomy, Wesleyan University, 2. University of Colorado
340.05 The Fan Region at 1.5 GHz with GMIMS: Polarized synchrotron emission tracing Galactic structure
Author(s): Alex S. Hill¹, Tom Landecker², Ettore Carretti³, Kevin A. Douglas⁴, Xiaohui Sun¹¹, Bryan M. Gaensler⁴, Sui Ann Mao⁶, Naomi McClure-Griffiths¹, Wolfgang Reich⁵, Maik Wolleben⁹, John Miller Dickey¹², Andrew Gray⁴, Marijke Havercorn⁸, John Patrick Leahy¹⁰, Dominic Schnitzeler⁶
Institution(s): ¹ Australian National University, ² Dominion Radio Astrophysical Observatory, ³ Dunlap Institute, University of Toronto, ⁴ Haverford College, ⁵ INAF/Osservatorio Astronomico di Cagliari, ⁶ Max-Planck-Institut für Radioastronomie, ⁷ Okanagan College, ⁸ Radboud University Nijmegen, ⁹ Skaha Remote Sensing, ¹⁰ University of Manchester, ¹¹ University of Sydney, ¹² University of Tasmania

340.06 The ALMA View of Dense Molecular Gas in 30 Doradus
Author(s): Lauren E. Bittle³, Remy Indebetouw³, Crystal L. Brogan¹, Todd R. Hunter¹, Adam Leroy²
Institution(s): ¹ NRAO, ² Ohio State University, ³ University of Virginia

340.07 Metallicity Structure in the Milky Way Disk
Author(s): Trey Wenger³, Dana S. Balser², Loren D. Anderson⁹, Thomas M. Bania¹
Institution(s): ¹ Boston University, ² NRAO, ³ University of Virginia, ⁴ West Virginia University

340.08 The Milky Way Project: Mapping star formation in our home Galaxy, one click at a time
Author(s): Tharindu K Jayasinghe¹, Matthew S. Povich¹, Don Dixon¹, Jose Velasco²
Institution(s): ¹ Cal Poly Pomona, ² Citrus College
Contributing team(s): Milky Way Project Team

340.09 The Milky Way Project: A Citizen Science Catalog of Infrared Bow Shock Nebulae
Author(s): Don Dixon¹, Tharindu Jayasinghe¹, Matthew S. Povich¹
Institution(s): ¹ Cal Poly Pomona

340.10 The properties of the hot gaseous halo around the Milky Way
Author(s): Yunyang Li¹, Joel N. Bregman², Edmund J. Hodges-Kluck²
Institution(s): ¹ Peking University, ² University of Michigan

340.11 A Multi-Wavelength View of the Environments of Extreme Clustered Star Formation
Author(s): James M. De Buizer¹
Institution(s): ¹ SOFIA/USRA

340.12 A Deuteration Survey of the Clump Population in the Gemini OB1 Molecular Cloud
Author(s): Andrew Scott Henrici¹, Yancy L. Shirley¹, Brian E. Svoboda¹
Institution(s): ¹ University of Arizona
340.13 WHAM Observations of the Gum Nebula and Energetic Neighbors
Author(s): L. Matthew Haffner¹, Robert A. Benjamin³, Martin Gostisha², Alexander Orchard¹
Institution(s): ¹ University of Wisconsin—Madison, ² University of Wisconsin—Milwaukee, ³ University of Wisconsin—Whitewater

340.14 The impact of galactic environment on star formation
Author(s): Kathryn Kreckel³, Guillermo A. Blanc⁵, Eva Schinnerer³, Brent Groves¹, Angela Adamo⁶, Annie Hughes², Sharon Meidt¹
Institution(s): ¹ Australian National University, ² IRAP, ³ MPIA, ⁴ Stockholm University, ⁵ Universidad de Chile
Contributing team(s): SFNG Collaboration

340.15 Properties of Low Metallicity Molecular Clouds: A 0.3 Parsec Resolution Map of SMC B1 #1
Author(s): Uriel Rodea¹
Institution(s): ¹ California State University, San Marcos

340.16 Examining Gaseous Behavior of Galaxies and their Environments
Author(s): KeShawn Ivory¹, Kathleen Barger²
Institution(s): ¹ Rice University, ² Texas Christian University

340.17 Discovering the Lowest Metallicty z<1 Galaxies
Author(s): Keith Tirimba¹, Jason X. Prochaska¹
Institution(s): ¹ University of California, Santa Cruz

340.18 Spectroscopic Study of Low Mass Members of NGC 2244
Author(s): Michelle Alty¹, Jason E. Ybarra¹, Carlos G. Román-Zúñiga¹, Elizabeth A. Lada³
Institution(s): ¹ Bridgewater College, ² Instituto de Astronomía, UNAM, ³ University of Florida

340.20 Herschel Far Infrared Spectra of Dusty Star-Forming Galaxies
Author(s): Derek Wilson¹, Asantha R. Cooray¹, Hooshang Nayyeri¹
Institution(s): ¹ University of California, Irvine

340.21 The Vertical Structure of Diffuse Ionized Gas in Galactic Spiral Arms
Author(s): Dhanesh Krishnarao¹, L. Matthew Haffner², Robert A. Benjamin²
Institution(s): ¹ University of Wisconsin-Madison, ² University of Wisconsin-Whitewater

340.22 Aggregate growth in a protoplanetary disk
Author(s): Chuchu Xiang³, Augusto Carballido³, Lorin Matthews¹, Truell Hyde¹
Institution(s): ¹ Baylor University

340.23 Properties of compact HII regions and their host clumps in the inner vs outer Galaxy - early results from SASSy
Author(s): Julie Djordjevic¹, Mark Thompson¹, James S Urquhart²
Institution(s): ¹ University of Hertfordshire, ² University of Kent
340.24 Determining properties of halo dust for the Herschel EDGE-on galaxy Survey (HEDGES)
Author(s): Jacklyn M Pezzato\textsuperscript{2}, Eric J. Murphy\textsuperscript{1}
Institution(s): \textsuperscript{1} National Radio Astronomy Observatory, \textsuperscript{2} Swarthmore College

340.25 Realistic Models for Filling Factors in HII Regions
Author(s): Steven R. Spangler\textsuperscript{2}, Allison H. Costa\textsuperscript{2}, Brandon M Bergerud\textsuperscript{2}, Kara M. Beauchamp\textsuperscript{1}
Institution(s): \textsuperscript{1} Cornell College, \textsuperscript{2} Univ. of Iowa

340.26 The Southern HII Region Discovery Survey: Preliminary Results
Author(s): Jeanine Shea\textsuperscript{3}, Trey Wenger\textsuperscript{6}, Dana S. Balser\textsuperscript{4}, Loren D. Anderson\textsuperscript{7}, William P. Armentrout\textsuperscript{7}, Thomas M. Bania\textsuperscript{3}, Joanne Dawson\textsuperscript{1}, John Miller Dickey\textsuperscript{3}, Christopher Jordan\textsuperscript{3}, Naomi M. McClure-Griffiths\textsuperscript{3}
Institution(s): \textsuperscript{1} Australia Telescope National Facility, \textsuperscript{2} Boston University, \textsuperscript{3} Bucknell University, \textsuperscript{4} NRAO, \textsuperscript{5} University of Tasmania, \textsuperscript{6} University of Virginia, \textsuperscript{7} West Virginia University

340.27 HST STIS Observations of Interstellar Chlorine
Author(s): Valerie Rose Becker\textsuperscript{3}, Cody Dirks\textsuperscript{2}, David M. Meyer\textsuperscript{2}, Stefan I.B. Cartledge\textsuperscript{1}
Institution(s): \textsuperscript{1} MacEwan University, \textsuperscript{2} Northwestern University, \textsuperscript{3} Southern Illinois University Edwardsville

340.28 Formation of Interstellar OH and CH
Author(s): Kyujin Kwak\textsuperscript{1}, Jeongkwan Yoon\textsuperscript{1}, Seungyeong Hong\textsuperscript{1}
Institution(s): \textsuperscript{1} Ulsan National Institute of Science and Technology

340.29 Galaxy bachelors, couples, spouses: Star formation in interacting galaxies
Author(s): Jing Sun\textsuperscript{3}, Kathleen Barger\textsuperscript{1}, Hannah Richstein\textsuperscript{1}
Institution(s): \textsuperscript{1} Texas Christian University
Contributing team(s): SDSS-IV/MaNGA

340.30 Mapping the Heiles Supershell GSH 90-28-17
Author(s): Sharon Lynn Montgomery\textsuperscript{1}, Jacob Lucas Beckey\textsuperscript{1}, Barry Welsh\textsuperscript{2}, John W Kuehne\textsuperscript{3}
Institution(s): \textsuperscript{1} Clarion University, \textsuperscript{2} Space Sciences Laboratory, UC Berkeley, \textsuperscript{3} University of Texas

340.31 Continuing the Search for Flickering Ultracompact HII Regions: EVLA Observations of W49A
Author(s): Christopher G. De Pree\textsuperscript{1}, Theresa Melo\textsuperscript{1}, Mordecai-Mark Mac Low\textsuperscript{2}, David J. Wilner\textsuperscript{4}, Miller Goss\textsuperscript{3}, Roberto Galvan-Madrid\textsuperscript{3}
Institution(s): \textsuperscript{1} Agnes Scott College, \textsuperscript{2} American Museum of Natural History, \textsuperscript{3} ESO, \textsuperscript{4} Harvard-Smithsonian, CfA, \textsuperscript{5} NRAO

340.32 Probing Planck Cold Clump Sightlines through HST STIS UV Spectroscopy
Author(s): Cody Dirks\textsuperscript{1}, David M. Meyer\textsuperscript{1}
Institution(s): \textsuperscript{1} Northwestern University
340.33 Hydrodynamical Modeling of the Local Interstellar Medium
Author(s): Jonathan David Slavin
Institution(s): 1 Harvard-Smithsonian, CfA

340.34 Measuring the local ISM along the sight lines of the two Voyager spacecraft with HST/STIS
Author(s): Julia Zachary, Seth Redfield, Jeffrey Linsky
Institution(s): 1 Joint Institute for Laboratory Astrophysics - University of Colorado, 2 Wesleyan University

340.35 VLA Observations of the Magnetic Field of the Smith High Velocity Cloud
Author(s): Sarah Betti, Alex S. Hill, Sui Ann Mao, Naomi M. McClure-Griffiths, Felix J. Lockman, Robert A. Benjamin, Bryan M. Gaensler
Institution(s): 1 CSIRO Astronomy and Space Science, 2 Haverford College, 3 National Radio Astronomy Observatory, 4 University of Toronto, 5 University of Wisconsin-Madison, 6 University of Wisconsin-Whitewater

340.36 Properties of Cold HI Emission Clouds in the Inner-Galaxy ALFA Survey
Author(s): James Marcus Hughes, Steven J. Gibson, Alberto Noriega-Crespo, Jonathan Newton, Bon-Chul Koo, Kevin A. Douglas, Joshua Eli Goldston Peek, Geumsook Park, Ji-hyun Kang, Eric J. Korpela, Carl E. Heiles, Thomas M. Dame
Institution(s): 1 Berkeley Space Science Laboratory, 2 Harvard-Smithsonian Center for Astrophysics, 3 Okanagan College, 4 Seoul National University, 5 Space Telescope Science Institute, 6 University of California-Berkeley, 7 Western Kentucky University, 8 Williams College, 9 Yonsei University

341 Supernovae Poster Session
Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

341.01 SALT Spectroscopy of ASASSN-15lh: The Most Luminous Supernova?
Author(s): Travis Court, Yssavo Camacho, Kyle Dettman, Saurabh W Jha
Institution(s): 1 Allegheny College, 2 Rutgers, The State University of New Jersey

341.02 SOUSA Supernova Surprises
Author(s): Peter J. Brown
Institution(s): 1 Texas A&M

341.03 Fast and Furious: Analysis of the Luminous and Rapidly-Evolving Type Ic-BL Supernova iPTF16asu
Author(s): Lindsey Whitesides, Ragnhild Lunnan, Mansi M. Kasliwal, Alessandra Corsi, Stephen B. Cenko
Institution(s): 1 California Institute of Technology, 2 NASA Goddard, 3 Texas Tech

341.04 SN 2013fs & SN 2013fr: Filling the gaps between Type IIn and Type IIP supernovae
Author(s): Christopher William Bullivant, Nathan Smith, Peter Milne
Institution(s): 1 University of Arizona
Contributing team(s): LOSS, PESSTO, LCOGT
341.05 The Extinction properties of and distance to the highly reddened Type-Ia supernova SN 2012cu
Author(s): Xiaosheng Huang14, Zachary Raha14, Greg Scott Aldering5, Pierre Antilogus4, Stephen J. Bailey9, Baltay Charles15, Kyle H. Barbary12, Derek Baugh1, Kyle Boone5, Sebastien Bondard4, Clement Buton10, Juncheng Chen9, Nicolas Chotard10, Yannick Copini10, Parker Fagrelius5, Hannah Fakhouri3, Ulrich Feindt8, Dominique Fouchez1, Emmanuel Gangler2, Brian Hayden8, Wolfgang Hillebrandt6, Alex G. Kim5, Marek Kowalski5, Pierre-Francois Leget2, Simona Lombardo3, Jakob Nordin3, Reynald Pain1, Emmanuel Pecontal11, Rui Pereira10, Saul Perlmutter5, David L. Rabinowitz15, Mickael Rigault3, David Rubin7, Karl Runge8, Clare Saunders5, Gerard Smadja10, Andrew Stocker13, Nao Suzuki6, Stefan Taubenberger6, Charling Tao9, Rollin Thomas5

341.06 Two New Calcium-Rich Gap Transients in Group and Cluster Environments
Author(s): Ragnhild Lunnan1, Mansi M. Kasliwal1, Yi Cao5, Laura Hangard4, Ofer Yaron6, Jerod Parrent2, Yagi Masafumi3
Institution(s): 1. California Institute of Technology, 2. Harvard University, 3. NOAJ, 4. Oskar Klein Center, 5. UW, 6. Weizmann Institute of Science
Contributing team(s): Intermediate Palomar Transient Factory

341.07 Supernova Classification Using Swift UVOT Photometry
Author(s): Madison Smith1, Peter J Brown2
Institution(s): 1. New College of Florida, 2. Texas A&M University

341.08 See Change: the Supernova Sample from the Supernova Cosmology Project High Redshift Cluster Supernova Survey

341.09 New Cosmology Results from The Pan-STARRS Type Ia Supernova Sample
Author(s): Daniel Scolnic1, David Jones1, Armin Rest2
Institution(s): 1. Johns Hopkins University, 2. STScI, 3. University of Chicago
Contributing team(s): Pan-STARRS Transients Team

341.10 The Supernova Key Project
Author(s): Dale Andrew Howell1
Institution(s): 1. Las Cumbres Global Telescope Network, Inc.

341.11 Studies of Machine Learning Photometric Classification of Supernovae
Author(s): Joseph Nicholas Macaluso2, John Cunningham2, Stephen Kuhlmann1, Ravi Gupta1, Eve Kovacs1
Institution(s): 1. Argonne National Laboratory, 2. Loyola University Chicago

341.12 Calibration and Simulation of the Foundation Supernova Survey
Author(s): Michael Foley3, Ryan Foley4, Daniel Scolnic7, Armin Rest3, Adam G. Riess3, Saurabh W Jha4, Robert Kirshner1, Ori Dosovitz Fox6, Yen-Chen Pan6, Steven Smartt3

341.13 Understanding how Supernova Light Curves are Affected by the Density Profiles of Extended Material
Author(s): Marc Mühleisen1, Anthony Piro1
Institution(s): 1. Carnegie Observatories

341.14 On the Nebular-Phase Spectra of Type Ia Supernovae
Author(s): Sahana Kumar1, Melissa Graham2, Alexei V. Filippenko1
Institution(s): 1. University of California, Berkeley, 2. University of Washington
341.15 **A Systematic Study of Mid-Infrared Emission from Core-Collapse Supernovae with SPIRITS**

Author(s): Samaporn Tinyanont\(^2\), Mansi M. Kasliwal\(^1\), Ori Dosovitz Fox\(^7\), Ryan M. Lau\(^2\), Nathan Smith\(^5\), Robert E. Williams\(^7\), Jacob Jencson\(^2\), Daniel A. Perley\(^3\), Devin Dykhoff\(^5\), Robert D. Gehrz\(^5\), Joel Johansson\(^1\), Schuyler D. Van Dyk\(^2\), Frank J. Masci\(^4\), Ann Marie Cody\(^6\), Thomas Allen Prince\(^2\)

Institution(s): \(^1\) Benoziyo Center for Astrophysics, Weizmann Institute of Science, \(^2\) California Institute of Technology, \(^3\) Dark Cosmology Centre, Niels Bohr Institute, University of Copenhagen, \(^4\) Infrared Processing and Analysis Center, California Institute of Technology, \(^5\) Minnesota Institute for Astrophysics, School of Physics and Astronomy, University of Minnesota, \(^6\) NASA Ames Research Center, \(^7\) Space Telescope Science Institute, \(^8\) Steward Observatory, University of Arizona

Contributing team(s): SPIRITS

341.16 **Bolometric Lightcurves of Peculiar Type II-P Supernovae**

Author(s): Jeremy A Lusk\(^1\), Edward A. Baron\(^1\)

Institution(s): \(^1\) University of Oklahoma

341.17 **Studying white dwarf merger remnants with FLASH**

Author(s): Malia Jenks\(^1\)

Institution(s): \(^1\) University of Oklahoma

341.18 **Estimating Type Ia Supernova Metallicities Using Neural Networks**

Author(s): V. Ashley Villar\(^1\)

Institution(s): \(^1\) Harvard University

341.19 **Type Ia Supernova Modeling with Spectrophotometric Data from the Nearby Supernova Factory**

Author(s): Clare Saunders\(^1\)

Institution(s): \(^1\) Laboratoire de Physique Nucléaire et de Hautes Énergies

Contributing team(s): The Nearby Supernova Factory

341.20 **Identifying Type Ia Supernova Mechanisms in Dwarf Spheroidal Galaxies through Analysis of Iron-peak Elemental Abundances**

Author(s): Rachel Guo\(^2\), Justin Long Xie\(^3\), Evan N Kirby\(^1\)

Institution(s): \(^1\) California Institute of Technology, \(^2\) Irvington High School, \(^3\) The Harker School

341.21 **Uncertainty in Explosive Yields of Core-Collapse Supernovae**

Author(s): Sydney Andrews\(^2\), Chris Fryer\(^2\), Wesley P. Even\(^2\), Samuel Jones\(^1\), Marco Pignatari\(^1\)

Institution(s): \(^1\) Heidelberg Institute for Theoretical Studies, \(^2\) Los Alamos National Laboratory, \(^3\) Milne Centre for Astrophysics, University of Hull

Contributing team(s): NuGrid Collaboration

341.22 **r-Process Nucleosynthesis in Jet-driven Core-Collapse Supernovae**

Author(s): Goni Halevi\(^1\), Philipp Moesta\(^1\)

Institution(s): \(^1\) University of California, Berkeley
342 Cosmology & CMB Poster Session

Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

342.01 The HST Frontier Fields: Complete High-Level Science Data Products for All 6 Clusters
Author(s): Anton M. Koekemoer¹, Jennifer Mack¹, Jennifer M. Lotz¹, David Borncamp¹, Harish G. Khandrika¹, Ray A. Lucas¹, Catherine Martlin¹, Blair Porterfield¹, Ben Sunnquist¹, Jay Anderson¹, Roberto J. Avila¹, Elizabeth A. Barker², Norman A. Grogin¹, Heather C. Gunning¹, Bryan Hilbert¹, Sara Ogaz¹, Massimo Robberto³, Kenneth Sembach¹, Kathryn Flanagan¹, Matt Mountain¹
Institution(s): ¹ STScI
Contributing team(s): HST Frontier Fields Team

342.02 Detecting Massive, High-Redshift Galaxy Clusters Using the Thermal Sunyaev-Zel’dovich Effect
Author(s): Carson Adams¹, Charles L. Steinhardt⁶, Abraham Loeb², Alexander Karim⁵, Johannes Staguhn⁴, Jens Erler⁵, Peter L. Capak³
Institution(s): ¹ California Institute of Technology, ² Harvard University, ³ Infrared Processing and Analysis Center, ⁴ Johns Hopkins University, ⁵ The University of Bonn, ⁶ University of Copenhagen

342.03 The Suppression of Star Formation in Low-Mass Galaxies Caused by the Reionization of their Local Patch
Author(s): Taha Dawoodbhoy⁴, Paul R. Shapiro⁶, Jun-Hwan Choi⁶, Pierre Ocvirk¹, Nicolas Gillet¹, Dominique Aubert¹, Ilian T. Iliev⁵, Romain Teyssier⁷, Gustavo Yepes⁴, David Sullivan⁴, Alexander Knebe⁴, Stefan Gottloeber³, Anson D’Aloisio⁶, Hyunbae Park⁶, Yehuda Hoffman², Timothy Stranex⁷
Institution(s): ¹ Observatoire Astronomique de Strasbourg, ² Hebrew University, ³ Leibniz-Institute für Astrophysik Potsdam (AIP), ⁴ Universidad Autonoma de Madrid, ⁵ University of Sussex, ⁶ University of Texas at Austin, ⁷ University of Zurich

342.04 Time delay in the variability of multiply lensed QSOs HS0810+2554 and Q2237+030
Author(s): Alex Storrs¹, Sergio Lainez¹
Institution(s): ¹ Towson Univ.

342.05 Deep Generative Models of Galaxy Images for the Calibration of the Next Generation of Weak Lensing Surveys
Author(s): Francois Lanusse¹, Siamak Ravanbakhsh¹, Rachel Mandelbaum¹, Jeff Schneider¹, Barnabas Poczos¹
Institution(s): ¹ Carnegie Mellon University

342.06 Simulating Type 1a Supernova Populations Using Host Mass Information
Author(s): Jared Hand¹, Daniel Scolnic²
Institution(s): ¹ Boise State University, ² University of Chicago
342.07 Analyses in Support of the WFIRST Supernova Survey
Author(s): David Rubin\textsuperscript{a}, Greg Scott Aldering\textsuperscript{b}, Baltay Charles\textsuperscript{c}, Kyle H. Barbary\textsuperscript{d}, Miles Currie\textsuperscript{e}, Susana E. Deustua\textsuperscript{a}, Parker Fagrelius\textsuperscript{f}, Ori Dosovitz Fox\textsuperscript{g}, Andrew S. Fruchter\textsuperscript{h}, David R. Law\textsuperscript{a}, Saul Perlmutter\textsuperscript{d}, Klaus Pontoppidan\textsuperscript{a}, David L. Rabinowitz\textsuperscript{i}, Masao Sako\textsuperscript{j}.  
Institution(s): \textsuperscript{a} Florida state university, \textsuperscript{b} Lawrence Berkeley National Laboratory, \textsuperscript{c} Space Telescope Science Institute, \textsuperscript{d} U Penn, \textsuperscript{i} Yale

342.09 The tethered galaxy problem: a possible window to explore cosmological models
Author(s): Matipon Tangmatitham\textsuperscript{a}, Robert J. Nemiroff\textsuperscript{a}.
Institution(s): \textsuperscript{a} Michigan Technical University

342.10 On the Shape of Dark Matter Halos in Milky Way-like Galaxies
Author(s): Biwei Dai\textsuperscript{a}, Brant E. Robertson\textsuperscript{b}, Piero Madau\textsuperscript{b}.
Institution(s): \textsuperscript{a} Peking University, \textsuperscript{b} University of California, Santa Cruz

342.11 Improved linear kinetic Sunyaev-Zeldovich effect constraints on the observed Local Void
Author(s): Benjamin L Hoscheit\textsuperscript{a}, Amy J. Barger\textsuperscript{a}.
Institution(s): \textsuperscript{a} Department of Astronomy, University of Wisconsin-Madison, \textsuperscript{2} Department of Physics, University of Wisconsin-Madison.

342.12 The rarity of Dark Matter Halos in medium-sized walls of the cosmic web
Author(s): Tze Goh\textsuperscript{a}, Joel R. Primack\textsuperscript{a}, Christoph Lee\textsuperscript{a}, Miguel A Aragon-Calvo\textsuperscript{b}, Peter Behroozi\textsuperscript{c}.
Institution(s): \textsuperscript{a} Columbia University, \textsuperscript{b} Universidad Nacional Autonoma de Mexico, \textsuperscript{c} University of California, Berkeley, \textsuperscript{d} University of California, Santa Cruz

342.13 Superconducting microstripline diplexer for CMB studies in the 200-300 GHz atmospheric window
Author(s): Elizabeth Dabrowski\textsuperscript{a}, Peter T. Timbie\textsuperscript{b}.
Institution(s): \textsuperscript{1} University of Puget Sound, \textsuperscript{2} University of Wisconsin - Madison

342.14 Variable-delay Polarization Modulators for the CLASS Telescopes
Author(s): Kathleen Harrington\textsuperscript{a}.
Institution(s): \textsuperscript{1} Johns Hopkins University
Contributing team(s): CLASS Collaboration

343 Star Associations, Star Clusters - Galactic & Extragalactic Poster Session
Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

343.01 The Open Cluster Chemical Abundances and Mapping (OCCAM) Survey: Overview and Membership Methods
Author(s): John Donor\textsuperscript{a}, Peter M. Frinchaboy\textsuperscript{a}, Julia O’Connell\textsuperscript{a}, Katia M. L. Cunha\textsuperscript{a}, Benjamin A. Thompson\textsuperscript{a}, Matthew Melendez\textsuperscript{a}, Matthew D. Shetrone\textsuperscript{a}, Steven R. Majewski\textsuperscript{a}, Gail Zasowski\textsuperscript{a}, Carlos Allende-Prieto\textsuperscript{b}, Marc H. Pinsonneault\textsuperscript{b}, Alexandre Roman-Lopes\textsuperscript{b}, Mathias Schultheis \textsuperscript{2}, Keivan G. Stassun\textsuperscript{10}
343.02 The Open Cluster Chemical Abundances and Mapping (OCCAM) Survey: Galactic Gradients using SDSS-IV/DR13 and Gaia

Institution(s): IAC, Observatoire de la Cote d’Azur, Observatorio Nacional, Ohio State Univ., STSci, Texas Christian University, U. La Serena, Univ. of Virginia, University of Texas, Vanderbilt

Contributing team(s): Apogee Team

343.03 The Open Cluster Chemical Abundances and Mapping (OCCAM) Survey: Optical Extension for Neutron Capture Elements

Institution(s): Observatorio Nacional, Ohio State, STSci, Texas Christian University, U. La Serena, University of Texas, Vanderbilt

Contributing team(s): APOGEE Team

343.04 Barium Abundances in Omega Centauri Candidate Stars

Institution(s): NOAO, Observatorio Nacional, University of Virginia

343.05 Searching for the Progenitor Galaxy of Omega Centauri Using RR Lyrae Spectra
Author(s): Natalia Carignano, Anna Katherina Vivas, Marcio Catelan, Gabriel Torrealba, Jose Gregorio Fernandez Trincado.

Institution(s): Besancon Astronomical Observatory, Cerro Tololo Inter-American Observatory, Pontificia Universidad Católica de Chile, Smith College, University of Cambridge

343.06 Low-Resolution Spectroscopic Study of the Intriguing Globular Cluster NGC 2808: Chemical Abundance Patterns among Subpopulations
Author(s): Seungsoo Hong, Dongwook Lim, Sang-II Han, Young-Wook Lee.

Institution(s): Korea Astronomy and Space Science Institute, Yonsei University
343.07 The Trigonometric Parallax of the Globular Cluster M4
Author(s): Richard F. Rees\textsuperscript{1}, Kyle M. Cudworth\textsuperscript{2}
Institution(s): 1. Westfield State University, 2. Yerkes Observatory

343.08 Interstellar Extinction toward the Young Open Cluster NGC 1502
Author(s): Gregory A. Topasna\textsuperscript{1}, Nadia Kaltcheva\textsuperscript{1}
Institution(s): 1. University of Wisconsin Oshkosh, 2. Virginia Military Institute

343.09 H-alpha and H-beta Standard Stars in M 67 and NGC 752
Author(s): Michael D. Joner\textsuperscript{1}, Clint A. Saylor\textsuperscript{1}, Maureen Hintz\textsuperscript{1}, Eric G. Hintz\textsuperscript{1}
Institution(s): 1. Brigham Young University

343.10 H-alpha Monitoring of the Star Field around Cygnus OB2
Author(s): Seth Clarke\textsuperscript{1}, Eric G. Hintz\textsuperscript{1}, Michael D. Joner\textsuperscript{1}
Institution(s): 1. Brigham Young University

343.11 Variable Stars in M92 and M15
Author(s): Riley Jordan\textsuperscript{1}, Nathaniel Paust\textsuperscript{1}
Institution(s): 1. Whitman College

343.12 Stellar Variability in the Intermediate Age Cluster NGC 1846
Author(s): Michael A Pajkos\textsuperscript{1}, Ricardo Salinas\textsuperscript{1}, Anna Katherine Vivas\textsuperscript{2}, Jay Strader\textsuperscript{4}, Rodrigo Contreras\textsuperscript{5}
Institution(s): 1. Butler University, 2. Cerro Tololo Inter-American Observatory, 3. Gemini South Observatory, 4. Michigan State University, 5. Pontificia Universidad Catolica de Chile

343.13 From the Ultraviolet to the Infrared: The Stellar Population of the Globular Cluster M70
Author(s): Sabrina Appel\textsuperscript{2}, David Zurek\textsuperscript{1}, Nathan Leigh\textsuperscript{1}
Institution(s): 1. American Museum of Natural History, 2. Reed College

343.14 Deep WIYN Imaging of the Globular Cluster System of the Lenticular Galaxy NGC 3607
Author(s): Derrick Carr\textsuperscript{1}, Katherine L. Rhode\textsuperscript{2}, Regina Jorgenson\textsuperscript{3}
Institution(s): 1. Haverford College, 2. Indiana University, 3. Maria Mitchell Association

343.16 Photometric Calibrations of Gemini Images of NGC 6253
Author(s): Sean Pearce\textsuperscript{1}, Elizabeth Jeffery\textsuperscript{1}
Institution(s): 1. Brigham Young University

343.17 The Role of Dynamics in the Formation of Cataclysmic Variables in Globular Clusters
Author(s): Enrico Vesperini\textsuperscript{1}, Jongsuk Hong\textsuperscript{1}, Diogo Belloni\textsuperscript{1}, Mirek Giersz\textsuperscript{2}
Institution(s): 1. Indiana University, Bloomington, 2. Nicolaus Copernicus Astronomical Center

343.18 Stellar Parameters of A- and B-type Members of the Scorpius-Centaurus OB Association
Author(s): Grant Eckelkamp\textsuperscript{1}, Skylar Smith\textsuperscript{1}, Mark Pecaut\textsuperscript{1}, Eric E. Mamajek\textsuperscript{2}
Institution(s): 1. Rockhurst University, 2. University of Rochester
343.19  Star Cluster Mass Functions and Hierarchical Clustering: Learning from Koposov 1 and 2
   Author(s): Nathaniel Paust², Danielle Wilson², Gerard van Belle¹
   Institution(s): ¹ Lowell Observatory, ² Whitman College

343.20  New insight on the chemical evolution in proto-globular clusters
   Author(s): Jaeyeon Kim¹, Young-Wook Lee¹
   Institution(s): ¹ Yonsei University

343.21  Spectroscopy of globular clusters in the outer halo of M81
   Author(s): Chutipong Suwannajak¹, Ata Sarajedini¹
   Institution(s): ¹ University of Florida

343.22  The Extended Globular Cluster System of NGC3923
   Author(s): Tomás Ahumada³, Bryan Miller², Graeme Candlish⁴, Stacy S. McGaugh¹, Chris Mihos², Rory Smith³, Thomas H. Puzia², Matthew Taylor³
   Institution(s): ¹ Case Western Reserve University, ² Gemini Observatory, ³ Pontificia Universidad Católica de Chile, ⁴ Universidad de Valparaíso, ⁵ Yonsei University

343.23  Star Clusters within FIRE
   Author(s): Adrianna Perez³, Jorge Moreno², Jill Naiman⁴, Enrico Ramirez-Ruiz⁵, Philip F. Hopkins¹
   Institution(s): ¹ California Institute of Technology, ² California State Polytechnic University, Pomona, ³ CSU Dominguez Hills, ⁴ Harvard, ⁵ UC Santa Cruz

343.24  Tidal Tales II: Molecular Gas and Star Formation in the Tidal Tails of Minor Mergers
   Author(s): Karen A. Knierman¹, Paul A. Scowen¹, Christopher E. Groppi¹
   Institution(s): ¹ School of Earth and Space Exploration - Arizona State University

344  X-Ray & Eclipsing Binaries, Multiple Star Systems Poster Session

Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

344.01  The Spectrum of SS 433 in the H and K Bands
   Author(s): Edward L. Robinson², Cynthia S. Froning², Daniel Thomas Jaffe², Kyle Kaplan², Hwiyun Kim², Gregory N. Mace², Kimberly R. Sokal², Jae-Joon Lee¹
   Institution(s): ¹ KASSI, ² Univ. of Texas

344.02  The Distorted Winds of V444 Cygni: New Insights from Spectropolarimetry
   Author(s): Jennifer L. Hoffman⁵, Sierra F. Ashley¹, Jose L. Ornelas¹, Andrew Fullard¹, Jamie R Lomax⁴, Manisha Shrestha¹, Brian L Babler⁵, Jon Eric Bjorkman¹, Karen S. Bjorkman¹, James W. Davidson³, Marilyn Meade³, Kenneth H. Nordsieck², Noel Richardson²
   Institution(s): ¹ University of Denver, ² University of Toledo, ³ University of Virginia, ⁴ University of Washington, ⁵ University of Wisconsin-Madison
344.03 The Structures of X-ray Binary Systems V801 Ara and Cyg X-3 from Doppler Tomography
Author(s): Kaley Brauer¹, Saeqa Dil Vrtilek¹, Charith Peris³, Karri Koljonen², Michael L. McCollough³
Institution(s): ¹ Brown University, ² Finnish Center for Astronomy, ³ Harvard-Smithsonian, CfA

344.04 X-Ray Analysis of a Pulsating Source in the 3XMM Catalogue with a Period of 6.8 Minutes
Author(s): Hao Qiu¹, Ping Zhou¹, Wenfei Yu², Xiangdong Li¹, Xiaojie Xu¹
Institution(s): ¹ School of Astronomy and Space Science, Nanjing University, ² Shanghai Astronomical Observatory

344.05 Selection effects on the orbital period distribution of Low Mass X-ray Binaries
Author(s): Kavitha Arur¹, Tom Maccarone¹
Institution(s): ¹ Texas Tech University

344.06 X-ray Luminosity Functions of Subgalactic Regions in the Whirlpool Galaxy (M51)
Author(s): Larissa Markwardt⁴, Bret Lehmer⁴, Rafael Eufraiso⁴, Antara Basu-Zych², Tassos Fragos¹, Ann E. Hornschemeier, Vassiliki Kalogera³, Andrew Ptak², Panayiots Tzanavaris², Andreas Zetas⁵
Institution(s): ¹ Geneva Observatory, ² NASA Goddard Space Flight Center, ³ Northwestern University, ⁴ University of Arkansas, ⁵ University of Crete

344.07 Multi-color Photometric Study of the Contact Eclipsing Binary V1062 Her
Author(s): Amanda Hashimoto¹, Xianming L. Han¹, Liyun Zhang³, Daimei Wang³, Hongpeng Lu²
Institution(s): ¹ Butler University, ² Guizhou University

344.08 Artificial Neural Network Solutions to Eclipsing Binary Lightcurves from the Kepler Space Telescope Database
Author(s): Connor Hause², Andrej Prsa², Gal Matijevic², Edward F. Guinan³
Institution(s): ² Leibniz Institute for Astrophysics Potsdam, ³ Villanova University

344.09 Using Gaussian Processes to Model Noise in Eclipsing Binary Light Curves
Author(s): Andrej Prsa¹, Kelly M Hambleton¹
Institution(s): ¹ Villanova University

344.10 The Galactic Distribution of Contact Eclipsing Binaries
Author(s): Michael W. Castelaz¹, Leah Dorn¹, Abby Breitfeld³, Regan Mies³, Tess Avery³
Institution(s): ¹ Brevard College, ² North Carolina State University, ³ Princeton University, ⁴ St John's Preparatory School, ⁵ St. Paul's High School

344.11 COS Spectroscopy of White Dwarf Companions to Blue Stragglers
Author(s): Natalie M. Gosnell¹, Aaron M. Geller², Christian Knigge³, Robert D. Mathieu⁴, Alison Sills⁵, Emily Leiner⁶, Nathan Leigh¹
Institution(s): ¹ American Museum of Natural History, ² Colorado College, ³ McMaster University, ⁴ Northwestern University, ⁵ University of Southampton, ⁶ University of Wisconsin-Madison
344.12 K-KIDS: Companions to K Dwarfs Within 50 Parsecs
Author(s): Daniel Anthony Nusdeo¹, Jennifer Winters², Leonardo Paredes-Alvarez¹, Elliott Horch³, Wei-Chun Jao¹, Todd J. Henry³
Institution(s): ¹ Georgia State University, ² Harvard-Smithsonian CfA, ³ RECONS Institute, ⁴ Southern Connecticut State University
Contributing team(s): The RECONS Institute

344.13 The K-KIDS Sample: K Dwarfs within 50 Parsecs and the Search for their Closest Companions with CHIRON
Author(s): Leonardo Paredes-Alvarez¹, Daniel Anthony Nusdeo¹, Todd J. Henry², Wei-Chun Jao¹, Douglas R. Gies³, Russel White³
Institution(s): ¹ Georgia State University, ² RECONS Institute
Contributing team(s): RECONS Team

344.14 New Low-Mass Wide Companions to Members of the Sco-Cen OB Association
Author(s): Molly Finn³, Eric E. Mamajek³, Kevin Luhman¹, Simon Murphy²
Institution(s): ¹ Pennsylvania State University, ² University of New South Wales, ³ University of Rochester

344.15 An All-Sky Search for Wide Binaries in the SUPERBLINK Proper Motion Catalog
Author(s): Zachary Hartman¹, Sebastien Lepine¹
Institution(s): ¹ Georgia State University

344.16 Assessing the fundamental limits of multiple star formation: An imaging search for the lowest mass stellar companions to intermediate-mass stars
Author(s): Gaspard Duchene⁵, Jner Tzern Oon⁵, Patrick Kantorski⁵, Robert J De Rosa⁵, Sandrine Thomas³, Jennifer Patience¹, Laurent Pueyo⁶, Eric L. Nielsen³, Quinn M. Konopacky⁶
Institution(s): ¹ Arizona State University, ² Large Synoptic Survey Telescope, ³ SETI Institute, ⁴ Space Telescope Science Institute, ⁵ University of California Berkeley, ⁶ University of California, San Diego

344.17 Analyzing Age-Rotation-Activity Relationships in Wide Binary Systems
Author(s): Riley Walton Clarke¹, James R. A. Davenport¹
Institution(s): ¹ Western Washington University

344.18 Searching for Long-Period Companions and False Positives within the APOGEE Catalog of Companion Candidates
Author(s): Duy Nguyen⁵, Nicholas William Troup¹, Steven R. Majewski¹
Institution(s): ¹ University of Virginia

344.19 The APOGEE DR13 Catalog of Stellar and Substellar Companion Candidates
Author(s): Nicholas William Troup¹
Institution(s): ¹ University of Virginia
Contributing team(s): APOGEE RV Variability Working Group

344.20 APOGEE/Kepler Overlap Yields Orbital Solutions for a Variety of Eclipsing Binaries
Author(s): Joni Marie Clark Cunningham¹, Diana Windemuth², Aleezah Ali², Meredith L. Rawls², Jason Jackiewicz¹
Institution(s): ¹ New Mexico State University, ² University of Washington
344.21 The Complex Circumstellar and Circumbinary Environment of V356 Sgr
Author(s): Andrew Fullard, Jamie R Lomax, Michael A. Malatesta, Brian L Babler, Daniel Bednarski, Jodi Berdis, Karen S. Bjorkman, Jon Eric Bjorkman, Alex C. Carciofi, James W. Davidson, Marcus Keil, Marilyn Meade, Kenneth H. Nordsieck, Matt Scheffler, Jennifer L. Hoffman, John P. Wisniewski
Institution(s): 1 Universidade de Sao Paulo, 2 University of Denver, 3 University of Oklahoma, 4 University of Toledo, 5 University of Virginia, 6 University of Washington, 7 University of Wisconsin-Madison

344.22 Robust Modeling of Stellar Triples in PHOEBE
Author(s): Kyle E. Conroy, Andrej Prsa, Martin Horvat, Keivan G. Stassun
Institution(s): 1 Vanderbilt University, 2 Villanova University

344.23 Heat Redistribution and Misaligned Orbit Models in PHOEBE
Author(s): Martin Horvat, Andrej Prsa, Kyle E. Conroy
Institution(s): 1 Villanova University

344.24 Determination of the Fundamental Properties of the Eclipsing Binary V541 Cygni
Author(s): Chima McGruder, Guillermo Torres, Robert Siverd, Joshua Pepper, Joseph Rodriguez
Institution(s): 1 Harvard-Smithsonian CfA, 2 Las Cumbres Observatory Global Telescope Network, 3 Lehigh University, 4 University of Tennessee Knoxville
Contributing team(s): the KELT collaboration

345 Circumstellar & Debris Disks Poster Session
Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

345.01 A New All-Sky Catalogue of Candidate Protoplanetary Disks from Aggregated Optical and Infrared Surveys
Author(s): Daniel Horenstein, Sebastien Lepine
Institution(s): 1 Georgia State University

345.03 An ALMA Survey of Planet Forming Disks in Rho Ophiuchus
Author(s): Erin Guilfoil Cox, Leslie Looney, Robert J. Harris, Jiayin Dong, Dominique Segura-Cox, John J. Tobin, Sarah Sadavoy, Zhi-Yun Li, Michael Dunham, Laura M. Perez, Claire J. Chandler, Kaitlin M. Kratter, Carl Melis, Hsin-Fang Chiang
Institution(s): 1 Max Planck Institut für Radioastronomie, 2 Max Planck Institute for Astronomy, 3 National Center for Supercomputing Applications, 4 National Radio Astronomy Observatory, 5 SUNY Fredonia, 6 University of Arizona, 7 University of California--San Diego, 8 University of Illinois at Urbana-Champaign, 9 University of Oklahoma, 10 University of Virginia

345.04 Protoplanetary disks in Taurus: Probing the role of multiplicity with ALMA observations
Author(s): Stefan Laos, Rachel L. Akeson, Eric L. N. Jensen
Institution(s): 1 NASA Exoplanet Science Institute, Caltech, 2 Swarthmore College
345.05 Disk Sizes and Grain Growth across the Brown Dwarf Boundary from the Taurus Boundary of Stellar/Substellar (TBOSS) Survey
Author(s): Jenny Patience1, Kimberly Ward-Duong1, Joanna Bulger5, Gerrit van der Plas6, Francois Menard2, Christophe Pinte2, Geoffrey Bryden3, Neal J. Turner3, Alan Patrick Jackson1, Paul M. Harvey7, Antonio Hales4
Institution(s): 1 Arizona State University, 2 IPAG, 3 JPL, 4 NRAO, 5 Subaru Observatory, 6 University of Chile, 7 UT Austin

345.06 Carbon Monoxide Emissions in Middle Aged Debris Disks
Author(s): Morgan Henderson3, Uma Gorti2, Antonio Hales1, John M. Carpenter1, A. Meredith Hughes4
Institution(s): 1 Joint ALMA Observatory, 2 NASA Ames Research Center, 3 University of Montana, 4 Wesleyan University

345.07 Differential polarization direct imaging of FU Ori type YSO
Author(s): Guangwei Fu2, Michihiro Takami1, Peter Scicluna3, Jennifer Karr1
Institution(s): 1 ASIAA, 2 University of Wisconsin - Madison

345.08 The correlation between HCN/H2O flux ratios and disk mass: evidence for protoplanet formation
Author(s): Caitlin Rose1, Colette Salyk1
Institution(s): 1 Vassar College

345.09 A CO Spectral Analysis of Protoplanetary Disks
Author(s): Sara Vannah2, Colette Salyk1
Institution(s): 1 Vassar College, 2 Wellesley College

345.10 Variability of Disk Emission in Pre-main Sequence and Related Stars. IV. Occultation Events from the Innermost Disk Region of the Herbig AE Star HD 163296 = MWC 275
Author(s): Monika Pikhartova2, Zachary Long2, Rachel B Fernandes2, Michael L Sitko2, Carol A Grady1, Evan Rich3, John P. Wisniewski3
Institution(s): 1 Eureka Scientific, 2 University of Cincinnati, 3 University of Oklahoma

345.11 Variability of Disk Emission in Pre-main Sequence and Related Stars. V. Changes in the Innermost Disk Structure of the Herbig AE Star HD 31648 = MWC 480
Author(s): Rachel Fernandes3, Zachary Long3, Michael L. Sitko1, C. A. Grady1, Nobuhiko Kusakabe2
Institution(s): 1 Goddard Space Flight Center, 2 National Astronomical Observatory of Japan, 3 University of Cincinnati

345.12 The Transiting Exocomets in the HD 172555 System
Author(s): C. A. Grady1, Alexander Brown5, Inga Kamp3, Aki Roberge4, Pablo Riviere-Marichalar2, Barry Welsh1
Institution(s): 1 Eureka Scientific, 2 European Space Agency, 3 Kapteyn Institute, 4 NASA’s GSFC, 5 University of Colorado
345.13 Placing Limits on the Mass of the DH Tau b Circumplanetary Disk
Author(s): Schuyler G Wolff1, Francois Menard2, Claudio Caceres3, Charlene Lefevre3
Institution(s): 1 Instituto de Fisica y Astronomia, 2 IPAG, 3 IRAM, 4 Johns Hopkins University

345.14 The Shadow Knows: Using Shadows to Investigate the Structure of the Pretransitional Disk of HD 00453
Author(s): Zachary Long4, Rachel B Fernandes4, Michael L. Sitko4, Carol A Grady1, Takayuki Muto2, Jun Hashimoto3, John P. Wisniewski5
Institution(s): 1 Eureka Scientific, 2 Kogakuin University, 3 National Astronomical Observatory of Japan, 4 University of Cincinnati, 5 University of Oklahoma
Contributing team(s): the SEEDS Consortium

345.15 Investigating FP Tau’s protoplanetary disk structure through modeling
Author(s): Marah Brinjikji2, Catherine Espaillat1
Institution(s): 1 Boston University Institute for Astrophysical Research, 2 University of Michigan Astronomy Department

345.16 Migration of Gas Giant Planets in a Gravitationally Unstable Disk
Author(s): Karna Mahadev Desai4, Thomas Y. Steiman-Cameron1, Scott Michael1, Richard H. Durisen1
Institution(s): 1 Indiana University Bloomington

345.17 Effect of External Photoevaporation on the Radial Transport of Volatiles and the Water Snowline in the Solar Nebula
Author(s): Anusha Kalyaan1, Steven Desch1
Institution(s): 1 Arizona State University

345.18 Understanding Gas-Phase Ammonia Chemistry in Protoplanetary Disks
Author(s): Lauren Chambers2, Karin I. Oberg1, Lauren Ilstedore Cleeves1
Institution(s): 1 Harvard-Smithsonian CfA, 2 Yale University

345.19 Chemistry of protostellar envelopes and disks: computational testing of 2D abundances
Author(s): Lizxandra Flores Rivera1, Karen Willacy2, Susan Terebey1
Institution(s): 1 California State University Los Angeles, 2 Jet Propulsion Laboratory

345.20 Dust coagulation and magnetic field strength in a planet-induced gap subject to MRI turbulence
Author(s): Augusto Carballido1, Lorin Matthews1, Truell Hyde1
Institution(s): 1 Baylor University
346 Galaxy Clusters Poster Session

Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

346.01 The Nature of Red-Sequence Cluster Spiral Galaxies
Author(s): Lane Kashur\textsuperscript{1}, Wayne Barkhouse\textsuperscript{3}, Madina Sultanova\textsuperscript{3}, Sandanuwa Kalawila Vithanage\textsuperscript{3}, Haylee Archer\textsuperscript{3}, Gregory Foote\textsuperscript{1}, Elijah Mathew\textsuperscript{3}, Cody Rude\textsuperscript{2}, Omar Lopez-Cruz\textsuperscript{1}

\textit{Institution(s):} \textsuperscript{1} INAOE, \textsuperscript{2} MIT Haystack Observatory, \textsuperscript{3} University of North Dakota

346.02 Galaxy Groups within 3500 km s\textsuperscript{-1}
Author(s): Ehsan Kourkchi\textsuperscript{1}, R. Brent Tully\textsuperscript{1}

\textit{Institution(s):} \textsuperscript{1} Institute for Astronomy

346.03 Constraining the Mass of A Galaxy Cluster
Author(s): Nicholas Cemenenkoff\textsuperscript{3}, Kenneth J. Rines\textsuperscript{3}, Margaret J. Geller\textsuperscript{1}, Antonaldo Diaferio\textsuperscript{2}

\textit{Institution(s):} \textsuperscript{1} Smithsonian Astrophysical Institute, \textsuperscript{2} University of Torino, \textsuperscript{3} Western Washington University

346.04 The mass of high-z massive galaxy cluster, SPT-CL J2106-5844 using weak-lensing analysis with HST observations
Author(s): Jinhyub Kim\textsuperscript{2}, James Jee\textsuperscript{2}, Jongwan Ko\textsuperscript{1}

\textit{Institution(s):} \textsuperscript{1} Korea Astronomy and Space Science Institute, \textsuperscript{2} Yonsei University

346.05 Discovery and Characterization of Gravitationally Lensed X-ray Sources in the CLASH Sample
Author(s): Imad Pasha\textsuperscript{2}, Reinout J. Van Weeren\textsuperscript{1}, Felipe A Santos\textsuperscript{1}

\textit{Institution(s):} \textsuperscript{1} Harvard-Smithsonian Center for Astrophysics, \textsuperscript{2} University of California, Berkeley

346.06 Chandra Observation of the WAT Radio Source/ICM Interaction in Abell 623
Author(s): Gagandeep Anand\textsuperscript{1}, Elizabeth L. Blanton\textsuperscript{1}, Scott W. Randall\textsuperscript{2}, Rachel Paterno-Mahler\textsuperscript{4}, Edmund Douglass\textsuperscript{3}

\textit{Institution(s):} \textsuperscript{1} Boston University, \textsuperscript{2} Harvard-Smithsonian Center for Astrophysics, \textsuperscript{3} SUNY - Farmingdale State College, \textsuperscript{4} University of Michigan

346.07 Algorithms for Finding Substructure in Galaxy Clusters
Author(s): Natalie Delworth\textsuperscript{1}, Eric M. Wilcots\textsuperscript{2}

\textit{Institution(s):} \textsuperscript{1} Brown University, \textsuperscript{2} Univ. of Wisconsin

346.08 The Impact of Large Scale Environments on Cluster Entropy Profiles
Author(s): Isabella Trierweiler\textsuperscript{3}, Yuanyuan Su\textsuperscript{2}

\textit{Institution(s):} \textsuperscript{1} Harvard-Smithsonian Center for Astrophysics, \textsuperscript{2} Yale University

346.09 Undergraduate ALFALFA Team: Analysis of Spatially-Resolved Star-Formation in Nearby Galaxy Groups and Clusters
Author(s): Rose Finn\textsuperscript{2}, Natasha Collova\textsuperscript{2}, Sandy Spicer\textsuperscript{2}, Kelly Whalen\textsuperscript{2}, Rebecca A. Koopmann\textsuperscript{4}, Adriana Durbala\textsuperscript{4}, Martha P. Haynes\textsuperscript{1}

\textit{Institution(s):} \textsuperscript{1} Cornell University, \textsuperscript{2} Siena College, \textsuperscript{3} Union College, \textsuperscript{4} University of Wisconsin - Stevens Point

Contributing team(s): Undergraduate ALFALFA Team
346.10 Star Formation in Undergraduate ALFALFA Team Galaxy Groups and Clusters
Author(s): Rebecca A. Koopmann9, Adriana Durbala10, Rose Finn8, Martha P. Haynes2, Kimberly A. Coble5, David W Craig11, G. Lyle Hoffman4, Brendan P. Miller1, Mary Crone-Odekon7, Aileen A. O'Donoghue4, Parker Troischt3
Institution(s): 1 College of Saint Scholastica, 2 Cornell University, 3 Hartwick College, 4 Lafayette College, 5 San Francisco State University, 6 Siena College, 7 Skidmore College, 8 St. Lawrence University, 9 Union College, 10 University of Wisconsin Stevens Point, 11 West Texas A&M
Contributing team(s): Undergraduate ALFALFA Team, ALFALFA Team

346.11 The Gas in Virgo’s “Red and Dead” Dwarf Elliptical Galaxies
Author(s): Gregory L Hallenbeck1, Rebecca A. Koopmann1
Institution(s): 1 Union College

346.12 Extending ALFALFA in the Direction of the Pisces-Perseus Supercluster with the Arecibo L-Band Wide Receiver
Author(s): Aileen A. O'Donoghue4, Martha P. Haynes3, Rebecca A. Koopmann5, Michael G. Jones2, Gregory L Hallenbeck2, Riccardo Giovanelli1, Lyle Hoffman3, David W Craig6
Institution(s): 1 Cornell University, 2 Instituto de Astrofísica de Andalucía (IAA-CSIC), 3 Lafayette College, 4 St. Lawrence Univ., 5 Union College, 6 West Texas A&M University
Contributing team(s): Undergraduate ALFALFA Team

346.13 Evolution of the BCG in Disturbed Galaxy Clusters
Author(s): Felipe Ardila2, Michael A. Strauss2, Tod R. Lauer1, Marc Postman3
Institution(s): 1 NOAO, 2 Princeton University, 3 STScI

346.14 Accretion and Feedback from Supermassive Black Holes in Galaxy Clusters
Author(s): Yu Qiu1, Tamara Bogdanovic1, KwangHo Park1
Institution(s): 1 Georgia Institute of Technology

346.15 Star formation quenching and stellar mass in the cluster Abell 85
Author(s): Dario Fadda1, Rebecca Habas4, Francine Marleau4, Andrea Biviano2, Florence Durret1
Institution(s): 1 IAP, 2 INAF, 3 Sofia / USRA, 4 University of Innsbruck

346.16 The Co-Evolution of Galaxies, their ISM, and the ICM: The Hydrodynamics of Galaxy Transformation
Author(s): Rukmani Vijayaraghavan2, Craig L. Sarazin2, Paul M. Ricker1
Institution(s): 1 University of Illinois at Urbana-Champaign, 2 University of Virginia
347 Evolution of Galaxies Poster Session

Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

347.01 Extraction of global 21-cm signal from simulated data for the Dark Ages Radio Explorer (DARE) using an MCMC pipeline
Author(s): Keith A. Tauscher, Jack O. Burns, David Rapetti, Jordan Mirocha, Raul A. Monsalve
Institution(s): 1. UCLA, 2. Univ. of Colorado at Boulder

347.02 Predicting the High Redshift Galaxy Population for JWST
Author(s): Zoey Flynn, Andrew Benson
Institution(s): 1. Caltech, 2. Carnegie Observatories

347.04 A New Semi-Empirical Model of Reionization
Author(s): Steven L. Finkelstein, Jan-Pieter Paardekooper, Peter Behroozi, kristian finlator, Russell E. Ryan, Anson D'Aloisio, Rachael C. Livermore
Institution(s): 1. NMSU, 2. STScI, 3. The University of Texas at Austin, 4. UC Berkeley, 5. Univ of Washington, 6. University of Heidelberg

347.05 A Blind Search for Ly-α Emission from Galaxies at z = 6-8 with Deep HST Grism Spectra
Author(s): Rebecca L Larson, Steven L. Finkelstein, Norbert Pirzkal, Vithal Tilvi, Intae Jung, Sangeeta Malhotra, James E. Rhoads
Institution(s): 1. Arizona State University, 2. Space Telescope Science Institute, 3. University of Texas at Austin

347.06 Investigating the Initial Mass Function with Increased Redshift
Author(s): Danielle Rowland, Steven L. Finkelstein, Matthew L. Stevans, Isaiah Tristan
Institution(s): 1. Columbia University, 2. Rice University, 3. University of Texas at Austin

347.07 Searching for Extreme High Redshift Galaxies with HST Grism Spectroscopy
Author(s): John R Weaver, Michael Maseda
Institution(s): 1. Leiden University

347.08 First Simultaneous Detection of Lyman-alpha Emission and Lyman Break from a Galaxy at Redshift 7.51 from Faint Infrared Grism Survey (FIGS)
Contributing team(s): FIGS Team
347.09 Constraining CIII] Emission in a Statistic Sample of Five \( z = 5.7 \) Galaxies
Author(s): Jiani Ding, Zheng Cai, Xiaohui Fan, Daniel Stark, Fuyan Bian, Linhua Jiang, Ian D. McGreer, Brant E. Robertson, Brian D. Siana
Institution(s): 1. Dept of Physics and Astronomy, UC Riverside, 2. Kavli Institute for Astronomy and Astrophysics, Peking University, 3. Research School of Astronomy and Astrophysics, Australian National University, 4. Steward Observatory, University of Arizona, 5. UCO/Lick Observatory, University of Santa Cruz
Contributing team(s): Space Telescope Science Institute

347.10 The [CII]/[NII] far-infrared line ratio at \( z>5 \): extreme conditions for “normal” galaxies

347.11 Discovery of Extreme [OIII]+Hβ Emission Line Galaxies Tracing an Overdensity at \( z\sim3.5 \)
Author(s): Ben Forrest, Kim-Vy Tran, Adam Broussard
Institution(s): 1. Texas A&M University
Contributing team(s): The ZFOURGE Collaboration

347.12 Spatially Resolved Emission of a \( z\sim3 \) Damped Lyman Alpha Galaxy with Keck/OSIRIS IFU
Author(s): Holly Christenson, Regina Jorgenson
Institution(s): 1. Maria Mitchell Observatory, 2. Western Washington University

347.13 ZFOURGE: Exploring the Properties of \( \sim1500 \) Ks-Selected Galaxies at \( 2.5 < z < 4 \) with Composite Spectra
Author(s): Adam Broussard
Institution(s): 1. Rutgers University
Contributing team(s): ZFOURGE

347.14 Investigating the Metallicity Evolution of Sub-damped Lyman alpha Systems
Author(s): Tarini Konchady, Regina Jorgenson
Institution(s): 1. Johns Hopkins University, 2. Maria Mitchell Observatory

347.15 Constraining the Merging History of Massive Galaxies Since Redshift 3 Using Close Pairs. I. Major Pairs from CANDLES and the SDSS

347.16 Flux sensitivity requirements for the detection of Lyman continuum radiation from star-forming galaxies below redshifts of 3
Author(s): Stephan R. McCandliss
Institution(s): 1. Center for Astrophysical Sciences/Dept of Phys and Astro - JHU

347.17 Quantitative Morphology Measures in Galaxies: Ground-Truthing from Simulations
Author(s): Desika T. Narayanan, Matthew W. Abruzzo, Romeel Dave, Robert Thompson

347.18 The 1D and 2D Hα Kinematics of Galaxies in ZFIRE at z ~ 2
Author(s): Leo Yvonne Alcorn, Kim-Vy Tran, Karl Glazebrook, Ivo Labbe, Caroline Straatman, Glenn Kacprzak
Institution(s): 1. Leiden University, 2. Max Planck Institute for Astronomy, 3. Swinburne University, 4. Texas A&M University
Contributing team(s): ZFIRE, ZFOURGE

347.19 Discriminating among stellar population synthesis models of the TP-AGB phase in early quiescent galaxies
Author(s): Mason MacDougall, Andrew Newman, Sirio Belli, Richard S. Ellis

347.20 Exploring the Role of Galaxy Morphology in the Mass-Metallicity-Star Formation Rate Relation
Author(s): Anthony Pahl, Marc Rafelski, Claudia Scarlata, Camilla Pacifici, Alaina L. Henry, Jonathan P. Gardner, Debra M. Elmegreen

347.22 Reconstruction of Galaxy Star Formation Histories through SED Fitting: The Dense Basis Approach
Author(s): Kartheik Iyer, Eric J. Gawiser
Institution(s): 1. Rutgers University
347.23 Modeling the Internal Kinematics (Rotation and Dispersion) of Distant Galaxies (z ~ 1.0) Using Multi-PA Keck DEIMOS Slit Spectra
Author(s): Connie Miao¹, Jerry Chen¹, Jose Torres Hernandez², Puragra Guhathakurta², Hyerin Jang²
Institution(s): ¹ The Harker School, ² UC, Santa Cruz

347.24 Cosmic Web of Galaxies in the COMOS Field
Author(s): Behnam Darvish¹, Christopher D. Martin¹, Bahram Mobasher³, Nicholas Scoville¹, David Sobral²
Institution(s): ¹ California Institute of Technology, ² Lancaster University, ³ University of California, Riverside
Contributing team(s): The COSMOS science team

347.25 Constraining Metallicity and Age for Massive Quiescent Galaxies in a Redshift Range of 1
Author(s): Vicente Estrada-Carpenter⁶, Casey J. Papovich⁶, Ivelina G. Momcheva⁵, Gabriel Brammer⁵, Joanna Bridge⁶, Mark Dickinson², Henry Closson Ferguson⁵, Kristian fisher⁵, Steven L. Finkelstein⁹, Mauro Giavalisco⁸, Catherine Gosmeyer⁵, Rachael C. Livermore⁶, Jennifer M. Lotz², Lalitwadee Kawinwanichaki⁶, Norbert Pirzkal³, Ryan Quadri⁶, Brett W. Salmon⁵, Vithal Tilvi¹, Jonathan R. Trump⁴, Benjamin J. Weiner⁷
Institution(s): ¹ Arizona State University, ² National Optical Astronomy Observatory, ³ New Mexico State University, ⁴ Pennsylvania State University, ⁵ Space Telescope Science Institute, ⁶ Texas A&M University, ⁷ University of Arizona, ⁸ University of Massachusetts Amherst, ⁹ University of Texas

347.26 Evolution in Solitude - Field Galaxies from Half the Age of the Universe to the Present
Author(s): Charity Woodrum³, Inger Jørgensen¹, Lindsey Oberhelman¹, Taylor Contreras³, Ricardo Demarco², Robert Scott Fisher¹, Jacob Bieker³
Institution(s): ¹ Gemini Observatory, ² Universidad de Concepción, ³ University of Oregon

347.27 Thick Disks and Galaxy Morphology in the Hubble Space Telescope Frontier Fields
Author(s): Brittany Tompkins³, Leah Jenks¹, Debra M. Elmegreen⁵, Bruce Elmegreen²
Institution(s): ¹ Colgate University, ² IBM T.J. Watson Research Ctr., ³ Vassar College

347.28 The Stability Of Disk Barred Galaxies Over the Past 7 Billion Years
Author(s): Amauri Tapia¹, Brooke Simmons²
Institution(s): ¹ California State University - Dominguez Hills, ² University of California - San Diego

347.29 Broadband and Narrowband Search for z < 1 Analogs of High Redshift Star Forming Galaxies
Author(s): Benjamin Rosenwasser³, Amy J. Barger³, Isak Wold², Lennox Lauchlan Cowie¹
Institution(s): ¹ University of Hawaii-Manoa, ² University of Texas-Austin, ³ University of Wisconsin-Madison
347.30 Characterizing and Cataloguing Star-Forming Galaxies in Preparation for the LADUMA Survey
Author(s): Manuel Joe Perez, Andrew J. Baker, John F. Wu
Institution(s): 1 Rutgers, The State University of New Jersey, 2 University of Redlands

347.31 Gas dynamical imaging and dust properties of the strongly-lensed quasar host galaxy RXJ1131-1231 at z=0.65
Author(s): Tsz Kuk Daisy Leung, Dominik Riechers, Riccardo Pavesi
Institution(s): 1 Cornell University

347.32 Prediction of the Statistical Robustness of the Measurement of Neutral Hydrogen Mass Functions in the COSMOS H I Large Extragalactic Survey (CHILES)
Author(s): Monica Sanchez-Barrantes, Patricia A Henning, Jacqueline H. Van Gorkom, Natasha Maddox, Kelley M. Hess
Institution(s): 1 Columbia University, 2 Netherlands Institute for Radio Astronomy, 3 University of New Mexico
Contributing team(s): CHILES team

347.33 The AGN Luminosity Fraction in Galaxy Mergers
Author(s): Jeremy Dietrich, Aaron Weiner, Matthew Ashby, Juan Rafael Martinez-Galarza, Howard Alan Smith
Institution(s): 1 Harvard University, 2 Rensselaer Polytechnic Institute, 3 Smithsonian Astrophysical Observatory

347.34 Correlating The Star Formation Histories Of MaNGA Galaxies With Their Past AGN Activity
Author(s): Andrea Gonzalez Ortiz
Institution(s): 1 CUNY-College of Staten Island

347.35 Incidence of WISE-Selected Obscured AGNs in Major Mergers and Interactions from the SDSS
Author(s): Madalyn Weston, Daniel H. McIntosh, Mark Brodwin, Justin Mann, Andrew Cooper, Adam McConnell, Jennifer L Nielson
Institution(s): 1 University of Missouri - Kansas City

347.36 Kinematics of Galaxy Mergers in The FIRE Simulation
Author(s): Jose Antonio Flores, Jorge Moreno
Institution(s): 1 Cal Poly Pomona

347.37 Galaxy merger time-scales in the Illustris Simulation
Author(s): Areli Rojas, Vicente Rodriguez-Gomez, Lars E. Hernquist, Sarah Wellons, Jorge Moreno
Institution(s): 1 Cal Poly Pomona, 2 Harvard University

347.38 Properties of Pseudo-bulges and Classical Bulges Identified Among SDSS Galaxies
Author(s): Yifei Luo, Aldo Rodriguez, David C. Koo, Joel R. Primack, Sandra M. Faber, Yicheng Guo, Zhu Chen, Jerome J. Fang, Marc Huertas-Company
Institution(s): 1 Nanjing University, 2 Orange Coast College, 3 Paris Observatory, 4 Shanghai Normal University, 5 UC, Santa Cruz
347.39  The HI Content of Galaxies as a Function of Local Density and Large-Scale Environment  
Author(s): Henry Thoreen¹, Kelly Cantwell¹, Erin Maloney¹, Thomas Cane¹, Theodore Brough Morris¹, Oscar Flory¹, Mark Raskin², Mary Crone-Odekon¹  
Institution(s): ¹ Skidmore College  
Contributing team(s): ALFALFA Team

347.40  HI data reduction for the Arecibo Pisces-Perseus Supercluster Survey  
Author(s): Cory Davis⁴, Cory Johnson⁴, David W Craig⁴, Martha P. Haynes¹, Michael G. Jones², Rebecca A. Koopmann³, Gregory L Hallenbeck¹  
Institution(s): ¹ Cornell University, ² Instituto de Astrofísica de Andalucía, ³ Union College, ⁴ West Texas A&M University  
Contributing team(s): Undergraduate ALFALFA Team

347.41  The Local [CII] Emission Line Luminosity Function  
Author(s): Shoubaneh Hemmati¹  
Institution(s): ¹ IPAC/Caltech

347.42  Haro 11: Where is the Lyman Continuum Source?  
Author(s): Ryan P Keenan³, M. S. Oey³, Anne Jaskot¹, Bethan James²  
Institution(s): ¹ Smith College, ² University of Cambridge, ³ University of Michigan

347.43  Ram Pressure Stripping of Galaxy JO201  
Author(s): Greta Zhong³, Stephanie Tonnesen¹, Yara Jaffé², Callum Bellhouse²  
Institution(s): ¹ Carnegie Observatories, ² European Southern Observatory, ³ Pomona College  
Contributing team(s): Bianca Poggianti

347.44  Ram Pressure Stripping: Observations Meet Simulations  
Author(s): Matthew Past¹, Mateusz Ruszkowski¹, Keren Sharon¹  
Institution(s): ¹ University of Michigan

347.45  Turbulence and Star Formation in Interacting Galaxies  
Author(s): Connor Auge¹, Lisa Chien¹  
Institution(s): ¹ Northern Arizona University

347.46  A Search for Triggered Star Formation in the Compact Group of Galaxies NGC 5851, NGC 5852 and CGCG 077-007  
Author(s): Charlotte Alexandra Olsen¹, Antara Basu-Zych¹, Ann E. Hornschemeier¹  
Institution(s): ¹ NASA Goddard Space Flight Center  
Contributing team(s): NASA / GSFC X-ray Galaxies Group

347.47  The prevalence of dwarf galaxy compact groups over cosmic time  
Author(s): Christopher Wiens¹  
Institution(s): ¹ University of Virginia

347.48  The Radial Flow Speed of the Neutral Hydrogen in the Oval Distortion of NGC 4736  
Author(s): Jason Speights³, Allen Benton¹, Rebecca Reimer¹, Robert Lemaire¹, Caleb Godwin¹  
Institution(s): ¹ Frostburg State University
347.49 Faraday rotation measure synthesis of UGC 10288
Author(s): Patrick Kamieneski, Q. Daniel Wang, Dylan Pare, Kendall Sullivan
Institution(s): University of Massachusetts Amherst

347.50 Study of Remote Globular Cluster Satellites of M87
Author(s): Arushi Sahai, Andrew Shao, Elisa Toloba, Puragra Guhathakurta, Eric W Peng, Hao Zhang
Institution(s): Lynbrook High School, Menlo School, Peking University, UC, Santa Cruz

347.51 Tracing the Angular Dependence of the CGM
Author(s): Michael Nattinger, Charlotte Christensen
Institution(s): Grinnell College

347.52 Effects of Mechanical and Radiative Supernova Feedback on Subhalo Evolution
Author(s): Amanda Quirk, Ena Choi, Jeremiah P. Ostriker
Institution(s): Columbia University, Rutgers University

347.53 Comparing the effects of supernovae feedback models on the interstellar medium
Author(s): Lindsey Byrne, Charlotte Christensen, Benjamin W Keller
Institution(s): Grinnell College, McMaster University

347.54 Recent Advances and Coming Attractions in the NASA/IPAC Extragalactic Database
Author(s): Joseph M. Mazzarella, Kay Baker, Hiu Pan Chan, Xi Chen, Rick Ebert, Cren Frayer, George Helou, Jeffery D Jacobson, Tak M Lo, Barry Madore, Patrick M. Ogle, Olga Pevunova, Ian Steer, Marion Schmitz, Scott Terek
Institution(s): Caltech, Self

347.55 Spectral Analysis, Synthesis, & Energy Distributions of Nearby E+A Galaxies Using SDSS-IV MaNGA
Author(s): Olivia A Weaver, Miguel Ricardo Anderson, Muhammad Wally, Olivia James, Julia Falcone, Allen Liu, Nicole Wallack, Charles Liu
Institution(s): California Institute of Technology, Case Western Reserve University, CUNY college of Staten Island, CUNY York, Duke University, Florida Atlantic University, Harvard University, Xavier University
Contributing team(s): SDSS Collaboration

347.56 A Study of E+A Galaxies Through SDSS-MaNGA Integral Field Spectroscopy
Author(s): Muhammad Wally, Olivia A Weaver, Miguel Ricardo Anderson, Allen Liu, Julia Falcone, Nicole Lisa Wallack, Olivia James, Charles Liu
Institution(s): California Institute of Technology, Case Western Reserve, CUNY College of Staten Island, CUNY York College, Duke University, Florida Atlantic University, Harvard, Xavier University of Louisiana
347.57 Gas motions within high-velocity cloud Complex A reveal that it is dissolving into the Galactic Halo
Author(s): Cannan Huey-You¹, Kathleen Barger⁴, David L. Nidever², Katherine Meredith Rueff³
Institution(s): ¹ Accommodated Learning Academy, ² National Optical Astronomy Observatory, ³ South Bend Community School Corporation, ⁴ Texas Christian University

348 Next Generation VLA Poster Session
Friday, 5:30 pm - 6:30 pm; Longhorn Exhibit Hall D

348.01 Preliminary Antenna Concept for the ngVLA
Author(s): James Di Francesco², Robert Selina¹, Wes Grammer¹, Mark M. McKinnon¹
Institution(s): ¹ National Radio Astronomy Observatory, ² National Research Council of Canada

348.02 Antenna Optics and Receiver Concept for the Next Generation Very Large Array
Author(s): Mark M. McKinnon², Sivasankaran Srikanth¹, Wes Grammer³, Marian Pospieszalski¹, Silver Sturgis²
Institution(s): ¹ NRAO, ² NRAO

348.03 Low Cost 1.2 to 116 GHz Receivers for the ngVLA
Author(s): Sander Weinreb², Ahmed Soliman¹, Hamdi Mani¹
Institution(s): ¹ Arizona State University, ² caltech

348.04 Antenna Electronics Concept for the Next-Generation Very Large Array
Author(s): Anthony J. Beasley¹, Jim Jackson¹, Robert Selina¹
Institution(s): ¹ National Radio Astronomy Observatory

348.05 Implementation Status of a Ultra-Wideband Receiver Package for the next-generation Very Large Array
Author(s): T. Joseph W Lazio¹, Jose Velazco¹, Melissa Soriano¹, Daniel Hoppe¹, Damon Russell¹, Larry D’Addario¹, Ezra Long¹, James Bowen¹, Lorene Samoska¹, Andrew Janzen¹
Institution(s): ¹ Jet Propulsion Laboratory, California Institute of Technology

348.06 Computing Architecture for the ngVLA
Author(s): Jeffrey S. Kern¹, Brian Glendenning¹, R. Hiriart¹
Institution(s): ¹ NRAO

348.07 Core Strength: Investigating Two Possible Configurations of the NGVLA
Author(s): Brian S. Mason¹, Chris Luke Carilli¹, Eric J. Murphy¹, Bryan J. Butler¹
Institution(s): ¹ NRAO

348.08 Science with a Next-Generation VLA
Author(s): Eric J. Murphy¹, Chris Luke Carilli¹
Institution(s): ¹ NRAO
Contributing team(s): ngVLA Science Working Groups
FRIDAY, 6 JANUARY 2017

348.09 Imaging Cold Gas to 1 kpc scales in high-redshift galaxies with the ngVLA
Author(s): Caitlin Casey, Desika Narayanan, Romeel Dave, Chao-Ling Hung, Jaclyn Champagne, Chris Luke Carilli, Roberto Decarli, Eric J. Murphy, Gergo Popping, Dominik Riechers, Rachel S. Somerville, Fabian Walter
Institution(s): 1 Cornell University, 2 ESO, 3 MPIA, 4 NRAO, 5 NRAO, 6 Rutgers University, 7 University of Florida, 8 University of Texas at Austin, 9 University of Western Cape

348.10 Tracing the Baryon Cycle within Nearby Galaxies with a next-generation VLA
Author(s): Amanda A. Kepley, Adam Leroy, Eric J. Murphy
Institution(s): 1 National Radio Astronomy Observatory, 2 The Ohio State University
Contributing team(s): ngVLA Baryon Cycle Science Working Group

348.11 Next Generation Very Large Array: The Cradle of Life
Author(s): Andrea Isella, Charles L. H. Hull, Arielle Moullet
Institution(s): 1 Harvard-Smithsonian Center for Astrophysics, 2 NRAO, 3 Rice University
Contributing team(s): ngVLA Cradle of Life

348.12 The Cold Gas History of the Universe as seen by the ngVLA
Author(s): Dominik A. Riechers, Chris Luke Carilli, Caitlin Casey, Elisabete da Cunha, Jacqueline Hodge, Rob Ivison, Eric J. Murphy, Desika Narayanan, Mark T. Sargent, Nicholas Scoville, Fabian Walter
Institution(s): 1 Australian National University, 2 California Institute of Technology, 3 Cornell University, 4 ESO, 5 Haverford College, 6 Leiden, 7 MPIA, 8 NRAO, 9 Sussex, 10 UT Austin

348.13 Time Domain Science and Fundamental Physics with the Next-generation Very Large Array
Author(s): Paul Demorest, Geoffrey C. Bower
Institution(s): 1 ASIAA, 2 National Radio Astronomy Observatory
Contributing team(s): ngVLA Time Domain/Physics Science Working Group

CSWA Meet & Greet
Friday, 6:30 pm - 7:30 pm; Yellow Rose Ballroom
Hosted by the AAS Committee on the Status of Women in Astronomy.
Organizer(s): Christina Richey (NASA HQ)
Opportunities for Time Domain Science with LCOGT: Preparing for the LSST Era

Friday, 6:30 pm - 8:00 pm; Grapevine 2

The Las Cumbres Observatory global network of 1m and 2m telescopes will be made available to the US community through an award from NSF’s MSIP program, starting in 2017. The goal of this program is to stimulate time domain science projects that respond to alerts from current surveys, with a view to developing infrastructure and experience applicable to LSST. This session will discuss the challenges inherent to observational projects of this kind. We will also summarize the capabilities of the LCO network and describe some of the tools that current users have developed to help them address these challenges. LSST will be a landmark program in time domain astronomy when it begins in ~2020, but much of its science return will depend on our ability to respond effectively to discoveries within its data and our handling of follow-up observations. Surveys in current operation have similar requirements. With the inauguration of this open-access program, LCO is encouraging the US community to prepare for a number of significant challenges: How will a wide range of desired targets be identified from the high-volume alert stream? What software tools are needed? How will follow-up observations be obtained in a timely fashion? How will observations be coordinated between many competing projects across many facilities? How will the resulting data be disseminated and how quickly? These and other questions demand careful preparation to ensure that the observational, hardware and software facilities required to maximize the science return can be brought to bear effectively. Existing and near-future time domain surveys offer an excellent opportunity for follow-up programs to develop tools, services and experience, and to take advantage of new technologies.

Organizer(s): Rachel Street (Las Cumbres Global Telescope Network, Inc.)

2017 NSF Astronomy and Astrophysics Postdoctoral Fellows Showcase and Forum

Friday, 6:30 pm - 8:30 pm; Texas C

This session forms part of the annual meeting of the NSF Astronomy and Astrophysics Postdoctoral Fellowship (AAPF). The NSF AAPF supports young scientists who carry out an integrated program of independent research and education. In this part of the meeting, six current Fellows will present short talks on their research and educational activities enabled by the fellowship. Following the talks, the speakers and several past Fellows will participate in a panel discussion on the fellowship program and application process. All members of the astronomical community are welcome and encouraged to attend. NSF AAPF Fellows conduct research on a wide range of topics in astronomy. Additionally, this is the only prize fellowship that includes a significant educational component. The speakers in this special session will showcase the fruits of this postdoctoral program. This session provides an opportunity for current, past, and prospective Fellows to meet and discuss their work with members of the community, as well as to broaden participation in the AAPF application process through the panel discussion.

Organizer(s): Darcy Barron (UC San Diego)
FRIDAY, 6 JANUARY 2017

350 NRAO Town Hall

Friday, 6:30 pm - 8:00 pm; Grapevine C

This Town Hall will inform the American Astronomical Society membership about the status of science, science operations, and development programs at the National Radio Astronomy Observatory (NRAO). The NRAO Town Hall will include an opening reception that will be followed by a presentation by NRAO Deputy Director Phil Jewell that will update the membership regarding: (a) science operations status, scientific opportunities, and technical development at the Observatory; (b) recent scientific research results from across the community and the NRAO; and (c) scientific and technical planning for the next generation of radio-millimeter-submillimeter astronomy research facilities. The NRAO Town Hall will include time for discussion and answering audience questions.

Organizer(s): Mark Adams (NRAO)
SATURDAY, 7 JANUARY 2017

400 Plenary Session: Lancelot M. Berkeley Prize: Exploring for Galaxies in the First Billion Years with Hubble and Spitzer - Pathfinding for JWST, Garth Illingworth (UC Santa Cruz)

Saturday, 8:30 am - 9:20 am; Texas A

Chair: Christine Jones (Harvard-Smithsonian, CfA)

400.01 Exploring for Galaxies in the First Billion Years with Hubble and Spitzer - Pathfinding for JWST

Author(s): Garth D. Illingworth

Institution(s): 1. UC, Santa Cruz

Contributing team(s): HUDF09, HLF

Citation: In recognition of his major research programs using innovative tools and techniques to investigate the formation, history, evolution, and nature of the most distant and earliest galaxies. He is awarded the Berkeley Prize for his team’s report describing significant new results, "UV Luminosity Functions at Redshifts z~4 to z~10: 10,000 Galaxies from HST Legacy Fields", which was one of the most widely cited astrophysics papers of 2015."

Hack Together Day

Saturday, 10:00 am - 7:00 pm; Grapevine 4

Hack Together Day is a day to work intensively on collaborative projects of interest to the Astronomical community. A wide variety of projects will be undertaken, spanning everything from software development to creative outreach projects. Projects that take advantage of the unique gathering of enthusiasm and expertise at the Winter AAS Meeting are particularly encouraged. Hack day or programming experience is not required; newcomers are extremely welcome! Project ideas and participants will be solicited before and during the meeting. Participants can lead or join a project, and should plan on focusing on only one thing. In addition, we ask participants to commit to Hack Together Day for the majority of the day. The registration link and more information can be found here: www.astrobetter.com/wiki/AASHackDay

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

401 Extrasolar Planets: Characterization & Theory VI

Saturday, 10:00 am - 11:30 am; Texas A

Chair: David Ciardi (Caltech)
401.01  HAT-P-26b: A Neptune-mass Exoplanet with Primordial Solar Heavy Element Abundance  
Author(s): Hannah R Wakeford, David K Sing, Tiffany Kataria, Drake Deming, Nikolay Nikolov, Eric Lopez, Pascal Tremblin, David Skalid Amundsen, Nikole K. Lewis, Avi Mandell, Jonathan J Fortney, Heather Knutson, Björn Benneke, Tom M. Evans  

401.02  Characterizing K2 Exoplanets with NIR Transit Photometry from the 3.5m WIYN Telescope  
Author(s): Knicole D. Colon, Thomas Barclay, Susan E. Thompson, Jeffrey Coughlin, Geert Barentsen, Elisa V. Quintana  
Institution(s): 1. NASA Ames Research Center, 2. SETI Institute

401.03D  Kepler Planet Masses and Eccentricities from Transit Timing Variations  
Author(s): Sam Hadden, Yoram Lithwick  
Institution(s): 1. Northwestern University

401.04  Mitigating bias in testing the origins of warm Jupiters via constraints on transit duration variations  
Author(s): Rebekah Ilene Dawson  
Institution(s): 1. The Pennsylvania State University

401.05  What Determines the Presence of a Thermal Inversion in Hot Jupiters?  
Author(s): Thomas G. Beatty, Nikku Madhusudhan, Richard W. Pogge, Angelos Tsiaras, B. Scott Gaudi, Sun Mi Chung  

401.06  Atmosphere-magma ocean modeling of GJ 1132 b  
Author(s): Laura Schaefer, Robin Wordsworth, Zachory K. Berta-Thompson, Dimitar Sasselov  

402 AGN, QSO, Blazars: X-rays & Gamma Rays

Saturday, 10:00 am - 11:30 am; Texas C
Chair: Robert Nemiroff (Michigan Technological Univ.)

402.01  Scientific Drivers for X-Ray Polarimetry Observations of Active Galactic Nuclei  
Author(s): Banafsheh Beheshtipour, Henric Krawczynski  
Institution(s): 1. Washington University in St. Louis
SATURDAY, 7 JANUARY 2017

402.02  A Long Look at NGC 3783 with Chandra/HETG and NuSTAR
Author(s): Laura Brenneman1, Christopher S. Reynolds3, Michael Nowak1
Institution(s): 1 MIT Kavli Institute, 2 Smithsonian Astrophysical Observatory, 3 University of Maryland

402.03  Chandra Observations of the Sextuply Imaged Quasar SDSS J2222+2745
Author(s): David A. Pooley2, Saul A. Rappaport1
Institution(s): 1. MIT, 2. Trinity University

402.04D  X-Ray Modeling of the Intrinsic Absorption in NGC 4151
Author(s): Jullianna Denes Couto2, Steven Kraemer2, T. Jane Turner3, D. Michael Crenshaw1
Institution(s): 1. Georgia State University, 2. The Catholic University of America, 3. University of Maryland Baltimore County

402.05  The BAT AGN Spectroscopic Survey (BASS)
Author(s): Michael Koss2, Benny Trakhtenbrot2, Claudio Ricci2, Isabella Lamperti2, Kyuseok Oh2, Simon Berney2, Kevin Schawinski2, Mislav Balokovic1, Linda Baronchelli8, Neil Gehrels3, Daniel Stern3, Richard Mushotzky8, Sylvain Veilleux9, Yoshihiro Ueda3, D. Michael Crenshaw1, Fiona Harrison3, Travis C. Fischer3, Ezequiel Treister7
Contributing team(s): BASS Team, Swift BAT Team

402.06  Gamma-ray blazars within the first two billion years
Author(s): Marco Ajello2, Vaidehi Paliya2, Dario Gasparrini1, Roopesh Ojha3
Institution(s): 1. ASI Science Data Center, 2. Clemson, 3. GSFC/NASA
Contributing team(s): Fermi-LAT Collaboration

403  Extrasolar Planets Detection: Radial Velocity II
Saturday, 10:00 am - 11:30 am; Texas D
Chair: Diana Dragomir (MIT)

403.01  The Dharma Planet Survey of Low-mass and Habitable Rocky Planets around Nearby Solar-type Stars
403.02 Light Curves as Predictors of Good Radial Velocity Planet Search Targets in New Stellar Domains
Author(s): Fabienne A. Bastien, Jason Wright, Steinn Sigurdsson, Xavier Dumusque, Jacob K. Luhn, Andrew Howard
Institution(s): 1 California Institute of Technology, 2 Center for Exoplanets and Habitable Worlds, Pennsylvania State University, 3 Geneva Observatory

403.03D Multiplexing Precision Radial Velocities with the Michigan/Magellan Fiber System: Searching for Hot Jupiters in Southern Open Star Clusters
Author(s): John Ira Bailey, Mario L. Mateo, Russel J. White, Jeffrey D. Crane, Stephen A. Shectman
Institution(s): 1 Carnegie Observatories, 2 Georgia State University, 3 Leiden Observatory, 4 University of Michigan
Contributing team(s): M2FS Instrument Team

403.04 Halpha as a Diagnostic of FGKM Stellar Atmospheres
Author(s): Johanna K. Teske
Institution(s): 1 Carnegie DTM
Contributing team(s): Carnegie/California Planet Search Team

403.05D Illuminating the Origins of Planets with Solar Twins
Author(s): Megan Bedell
Institution(s): 1 University of Chicago

403.06 Precise Radial Velocity First Light Observations with iSHELL
Institution(s): 1 Carnegie Department of Terrestrial Magnetism, 2 Georgia State University, 3 Harvard University, 4 Lowell Observatory, 5 Mississippi State University, 6 Missouri State University, 7 NASA Ames, 8 NASA Exoplanet Science Institute, 9 NASA JPL, 10 Queen Mary University of London, 11 San Francisco State University, 12 SETI Institute, 13 Spitzer Science Center, 14 University Corporation for Atmospheric Research

403.07 Planets around nearby M dwarfs
Author(s): Hugh Jones
Institution(s): 1 University of Hertfordshire
Contributing team(s): Tuomi, M., Anglada-Escude, G., Feng, F., Butler, R.P., Vogt, S.

404 Galaxy Clusters II

Saturday, 10:00 am - 11:30 am; Grapevine A
Chair: Daniel R. Wik (NASA Goddard Space Flight Center)
404.01 Strong Lens Models for Massive Galaxy Clusters in the Reionization Lensing Cluster Survey
Author(s): Catherine Cerny, Keren Sharon, Dan A. Coe, Rachel Paterno-Mahler, Christine Jones, Nicole G. Czakon, Keiichi Umetsu, Daniel Stark, Larry D. Bradley, Michele Trenti, Traci Johnson, Marusa Bradač, William Dawson, Steven A. Rodney, Louis-Gregory Strolger
Institution(s): 1 Academia Sinica, Institute of Astronomy and Astrophysics, 2 Lawrence Livermore National Laboratory, 3 Smithsonian Institution Astrophysical Observatory, 4 Space Telescope Science Institute, 5 The Johns Hopkins University, 6 University of Arizona, 7 University of California-Davis, 8 University of Melbourne, 9 University of Michigan
Contributing team(s): RELICS Team

404.02 Mass Distribution from Strong Gravitational Lensing of Merging Cluster Abell 2146
Author(s): Joseph E. Coleman, Lindsay J King, Masamune Oguri, Helen Russell
Institution(s): 1 University of Cambridge, 2 University of Texas-Dallas, 3 University of Tokyo

404.03 Discovery of Electron Re-Acceleration at Galaxy Cluster Shocks
Institution(s): 1 European Southern Observatory, 2 Hamburg University, 3 Lancaster University, 4 Lawrence Livermore National Lab, 5 National Centre for Radio Astrophysics, 6 Pusan National University, 7 Smithsonian Astrophysical Observatory, 8 Stanford University, 9 The Johns Hopkins University, 10 UNIST, 11 Universidade de São Paulo, 12 University of California, 13 University of Notre Dame, 14 Yonsei University

404.04 The Fraction of Cool-Core Clusters in X-ray vs. SZ samples using Chandra Observations
Author(s): Felipe Andrade-Santos, Christine Jones, William R. Forman, Lorenzo Lovisari
Institution(s): 1 Harvard-Smithsonian Center for Astrophysics
 Contributing team(s): Chandra-Planck Collaboration

404.05 Cool Core Disruption in Abell 1763
Author(s): Edmund Douglass, Elizabeth L. Blanton, Tracy E. Clarke, Scott W. Randall, Louise O. V. Edwards, Ziad Sabry
Institution(s): 1 Boston Univ., 2 California Polytechnic State University, 3 Farmingdale State College - SUNY, 4 Harvard-Smithsonian Center for Astrophysics, 5 Naval Research Laboratory
404.07 Are SZ and X-ray experiments detecting the same population of galaxy clusters?
Author(s): Lorenzo Lovisari\textsuperscript{1}, Christine Jones\textsuperscript{1}, Felipe Andrade-Santos\textsuperscript{1}, William R. Forman\textsuperscript{1}

Institution(s): \textsuperscript{1} Smithsonian Astrophysical Observatory

404.08 Subsonic evolution of the radio bubbles in the nearby massive early-type galaxy NGC 4472: uplift, buoyancy, and heating
Author(s): Ralph P. Kraft\textsuperscript{1}, Marie-Lou Gendron Marsolais\textsuperscript{2}, Akos Bogdan\textsuperscript{1}, Yuanyuan Su\textsuperscript{1}, William R. Forman\textsuperscript{1}, Julie Hlavacek-Larrondo\textsuperscript{2}, Christine Jones\textsuperscript{1}, Paul Nulsen\textsuperscript{1}, Scott W. Randall\textsuperscript{1}, Elke Roediger\textsuperscript{3}

Institution(s): \textsuperscript{1} Harvard-Smithsonian, CfA, \textsuperscript{2} Universite de Montreal, \textsuperscript{3} University of Hull

404.09 X-ray Scaling Relations of SPT Selected Galaxy Clusters Observed with XMM-Newton
Author(s): Esra Bulbul\textsuperscript{3}, Inon Chiu\textsuperscript{1}, Michael McDonald\textsuperscript{3}, Mark W. Bautz\textsuperscript{3}, Bradford Benson\textsuperscript{4}, Lindsey Bleem\textsuperscript{4}, Eric D. Miller\textsuperscript{3}, Joseph J. Mohr\textsuperscript{2}, Paul Nulsen\textsuperscript{1}, Scott W. Randall\textsuperscript{1}, Elke Roediger\textsuperscript{3}

Institution(s): \textsuperscript{1} Academia Sinica Institute of Astronomy and Astrophysics, \textsuperscript{2} LMU, \textsuperscript{3} MIT, \textsuperscript{4} University of Chicago

405 NASA's 2020 Decadal Studies: An Update

Saturday, 10:00 am - 11:30 am; Grapevine B

NASA has started preparations to identify the next strategic mission to follow JWST and WFIRST. A community-driven process has indicated that the most likely candidate mission concepts will be a Far-IR (FIR) Surveyor, a Habitable Exoplanet Imager (HabEx), a Large UV, Optical, and IR (LUVOIR) Surveyor, and an X-ray Surveyor. In order to define the mission Concepts for consideration and prioritization by the 2020 Decadal, NASA has assembled four Study and Technology Definition Teams (STDTs) drawing membership from the astrophysics community. STDTs' work has been progressing steadily during the last 9 months, with telecons and face-to-face meetings. This session will report the progress achieved so far as well as providing an opportunity to the astrophysics community at large to give feedback.

Chair: Rita Sambruna (NASA HQ)

405.01 Origins Space Telescope
Author(s): Asantha R. Cooray\textsuperscript{1}

Institution(s): \textsuperscript{1} UC Irvine

Contributing team(s): Origins Space Telescope Study Team

405.02 The Habitable Exoplanet (HabEx) Imaging Mission: Preliminary Science Drivers and Technical Requirements
Author(s): B. Scott Gaudi\textsuperscript{1}

Institution(s): \textsuperscript{1} Ohio State Univ.

Contributing team(s): Habitable Exoplanet Imaging Mission Science and Technology Definition Team
SATURDAY, 7 JANUARY 2017

405.03 Revealing the Invisible Universe with the Lynx Mission
Author(s): Feryal Ozel
Institution(s): 1. University of Arizona

405.04 The Large Ultraviolet/Optical/Infrared Surveyor (LUVOIR)
Author(s): Bradley M. Peterson1, Debra Fischer2
Institution(s): 1. Space Telescope Science Institute, 2. Yale University
Contributing team(s): LUVOIR Science and Technology Definition Team

406 Cosmology III
Saturday, 10:00 am - 11:30 am; Grapevine C
Chair: Daniel Jacobs (Arizona State University)

406.01 The Distribution of Dark and Luminous Matter in the Galaxy Cluster Merger Abell 2146
Author(s): Lindsay King4, Douglas Clowe2, Joseph E. Coleman4, Helen Russell6, Rebecca Santana2, Jacob White5, Rebecca Canning3, Nicole Deering2, Andrew C Fabian6, Brandyn Lee3, Baogiu Li1, Brian R. McNamara7

406.02 The impact of baryonic matter on gravitational lensing by galaxy clusters
Author(s): Brandyn E Lee3, Lindsay King3, Douglas Applegate2, Ian McCarthy1
Institution(s): 1. Liverpool John Moores University, 2. University of Chicago, 3. University of Texas at Dallas

406.03 A Study of the Gamma-Ray Burst Fundamental Plane
Author(s): Maria Dainotti4, Christian Gilbertson5, Sergey Postnikov5, Shigehiro Nagataki1, Richard Willingale2
Institution(s): 1. Indiana, 2. Leicester, 3. RIKEN, 4. Stanford University, 5. Virginia Tech

406.04D RR Lyrae period luminosity relations with Spitzer
Author(s): Jillian R Neeley3, Massimo Marengo1
Institution(s): 1. Iowa State University
Contributing team(s): CRRP team

406.05 Co-evolution of Central Direct Collapse Black Holes and Stellar Populations in the Early Universe
Author(s): Aycin Aykutalp1, John Wise1
Institution(s): 1. Georgia Institute of Technology

406.07 The WFIRST Supernova Survey
Author(s): Ryan J. Foley2, Rebekah Hounsell2, Daniel Scolnic1
Institution(s): 1. U Chicago/KICP, 2. UC Santa Cruz
Contributing team(s): WFIRST Supernova Science Investigation Team
406.08 Multi-Messenger Time-Domain Astronomy with the Fermi Gamma-ray Burst Monitor
Author(s): Valerie Connaughton\textsuperscript{1}, Adam Goldstein\textsuperscript{1}
Institution(s): \textsuperscript{1} USRA
Contributing team(s): Fermi GBM - LIGO group

407 GW-Stellar Mass BH
Saturday, 10:00 am - 11:30 am; Grapevine D
Chair: Tamara Bogdanovic (Univ. of Maryland)

407.01D Temporal Constraints on the Size of Gamma-ray Burst Progenitors and Implications for Gravitational Wave Follow-up
Author(s): V. Zach Golkhou\textsuperscript{1}, Nathaniel Butler\textsuperscript{1}, Owen Littlejohns\textsuperscript{1}
Institution(s): \textsuperscript{1} ASU

407.02 Detectability of GW150914-like events by gravitational microlensing
Author(s): Daniel Eilbott\textsuperscript{1}, Alexander Riley\textsuperscript{1}, Jonathan Cohn\textsuperscript{1}, Michael H. Kesden\textsuperscript{1}, Lindsay J King\textsuperscript{1}
Institution(s): \textsuperscript{1} The University of Texas at Dallas

407.03 Electromagnetic counterparts to Gravitational Wave events with the Fermi Large Area Telescope
Author(s): Giacomo Vianello\textsuperscript{3}, Nicola Omodei\textsuperscript{3}, Judith L. Racusin\textsuperscript{1}, Julie E. McEnery\textsuperscript{1}, James Chiang\textsuperscript{2}, Sara Buson\textsuperscript{1}
Institution(s): \textsuperscript{1} NASA/GSFC, \textsuperscript{2} SLAC, \textsuperscript{3} Stanford University
Contributing team(s): Fermi LAT collaboration

407.04 Learning about Black-Hole Formation from Gravitational Waves
Author(s): Michael H. Kesden\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Texas at Dallas

407.05 LBT in the era of electromagnetic follow-up of gravitational sources
Author(s): Andrea Rossi\textsuperscript{1}
Institution(s): \textsuperscript{1} INAF/IASFBO

407.06 Discriminating Formation Channels of Binary Black Hole Systems with Advanced LIGO
Author(s): Michael Zevin\textsuperscript{1}, Carl L. Rodriguez\textsuperscript{1}, Chris Pankow\textsuperscript{1}, Vassiliki Kalogera\textsuperscript{1}, Frederic A. Rasio\textsuperscript{1}
Institution(s): \textsuperscript{1} Northwestern

407.07D Constraining Microwave Emission from Extensive Air Showers via the MIDAS Experiment
Author(s): Matthew Richardson\textsuperscript{1}, Paolo Privitera\textsuperscript{2}
Institution(s): \textsuperscript{1} Planetary Science Institute, \textsuperscript{2} University of Chicago

408 The Coolest Stars & Brown Dwarfs
Saturday, 10:00 am - 11:30 am; Grapevine 1
Chair: Jennifer Bartlett (US Naval Observatory)
408.01 Precision Spectral Variability of L Dwarfs from the Ground
Author(s): Adam J. Burgasser\textsuperscript{3}, Everett Schlawin\textsuperscript{3}, Johanna K. Teske\textsuperscript{1}, Theodora Karalidi\textsuperscript{3}, John Gizis\textsuperscript{4}

Institution(s): \textsuperscript{1} Carnegie Institute of Washington, \textsuperscript{2} UC San Diego, \textsuperscript{3} University of Arizona Steward Observatory, \textsuperscript{4} University of Delaware

408.02D A Survey of Peculiar L and T Dwarfs in a Cross-Correlation of the SDSS, 2MASS and WISE Databases
Author(s): Kendra Kellogg\textsuperscript{1}, Stanimir A. Metchev\textsuperscript{1}

Institution(s): \textsuperscript{1} Western University

408.03D Atmospheric Properties of T Dwarfs Inferred from Model Fits at Low Spectral Resolution as Exoplanet Atmosphere Analogs
Author(s): Paige A. Godfrey\textsuperscript{1}

Institution(s): \textsuperscript{1} The Graduate Center at the City University of New York

408.04 Variable and Polarized Radio Emission from a T6 Brown Dwarf
Author(s): Peter K. G. Williams\textsuperscript{1}, John Gizis\textsuperscript{2}, Edo Berger\textsuperscript{1}

Institution(s): \textsuperscript{1} Harvard-Smithsonian Center for Astrophysics, \textsuperscript{2} University of Delaware

408.05 Parallaxes for 21 late-T and Y dwarfs in the Spitzer Parallax Program
Author(s): Emily Martin\textsuperscript{6}, J. Davy Kirkpatrick\textsuperscript{2}, Charles A. Beichman\textsuperscript{1}, Richard L Smart\textsuperscript{4}, Patrick Lowrance\textsuperscript{2}, James G. Ingalls\textsuperscript{2}, Michael Cushing\textsuperscript{5}, Edward L. Wright\textsuperscript{6}, Jacqueline K. Faherty\textsuperscript{1}, Christopher R. Gelino\textsuperscript{2}, Ian S. McLean\textsuperscript{6}, Sarah E. Logsdon\textsuperscript{6}, Christopher G. Tinney\textsuperscript{7}

Institution(s): \textsuperscript{1} Carnegie Institute of Washington, \textsuperscript{2} IPAC, \textsuperscript{3} NExSci, \textsuperscript{4} OATO, \textsuperscript{5} U Toledo, \textsuperscript{6} UCLA, \textsuperscript{7} University of New South Wales

408.06D Constraining Substellar Magnetic Dynamos using Auroral Radio Emission
Author(s): Melodie Kao\textsuperscript{1}, Gregg Hallinan\textsuperscript{1}, J. Sebastian Pineda\textsuperscript{1}, Ivanna Escala\textsuperscript{1}, Adam J. Burgasser\textsuperscript{1}, David J. Stevenson\textsuperscript{1}

Institution(s): \textsuperscript{1} California Institute of Technology, \textsuperscript{2} University of California San Diego

409 Statistical, Mathematical & Computational Methods for Astronomy (ASTRO): SAMSI 2016-17

Saturday, 10:00 am - 11:30 am; Grapevine 2

Statistical and Applied Mathematical Sciences Institute (SAMSI), a National Science Foundation funded institute in Research Triangle Park, NC, is organizing a year-long research (Aug 2016- May 2017) program on Statistical, Mathematical and Computational Methods for Astronomy (ASTRO). This program will bring together astronomers, computer scientists, applied mathematicians and statisticians. The main aims are: to foster cross-disciplinary activities; to accelerate the adoption of modern statistical and mathematical tools into modern astronomy; and to develop new tools needed for important astronomical research problems. This is timely given the flood of data into astronomy from ground- and space-based missions at multiple wavelengths. Interpretation of the resulting complex data require diverse statistical and mathematical
methods. Mapping appropriate methods when confronting large datasets is crucial. Astronomical themes identified by SAMSI include cosmology, exoplanets, gravitational waves and synoptic surveys. Each of the astronomical sub-fields could benefit from improved time series analysis, hierarchical modeling, uncertainty quantification, reduced order modeling and inference with misspecified models and will be addressed. The SAMSI program is working on establishing some working groups viz. I: Uncertainty Quantification and Reduced Order Modeling in Gravitation, Astrophysics, and Cosmology, II: Synoptic Time Domain Surveys, III: Time Series Analysis for Exoplanets & Gravitational Waves: Beyond Stationary Gaussian Processes, IV: Population Modeling & Signal Separation for Exoplanets & Gravitational Waves, V: Statistics, computation, and modeling in cosmology. Collaborating scientists spend extended periods (weeks to a semester) of time at SAMSI and meet regularly via webex/telecon throughout the year. Chair: Aneta Siemiginowska (Harvard-Smithsonian, CfA)

409.01 Overview of the SAMSI year-long program on Statistical, Mathematical and Computational Methods for Astronomy
Author(s): G. Jogesh Babu
Institution(s): 1. Penn State University

409.02 Statistical Methods for Characterizing Variability in Stellar Spectra
Author(s): Jessi Cisewski
Institution(s): 1. Yale University
Contributing team(s): Yale Astrostatistics

409.03 Statistics, Computation, and Modeling in Cosmology
Author(s): Jeff Jewell, Joe Guiness
Institution(s): 1. NASA JPL, 2. North Carolina State University
Contributing team(s): SAMSI 2016 Working Group in Cosmology

409.04 Statistical and Mathematical Methods for Synoptic Time Domain Surveys
Author(s): Ashish A. Mahabal
Institution(s): 1. Caltech
Contributing team(s): SAMSI Synoptic Surveys Time Domain Working Group

410 Supernovae & Remnants
Saturday, 10:00 am - 11:30 am; Fort Worth 6
Chair: Amanda Bayless (Southwest Research Institute)

410.01 Type Iax Supernovae
Author(s): Saurabh W Jha, Yssavo Camacho, Curtis McCully, Ryan Foley
Institution(s): 1. Las Cumbres Observatory Global Telescope, 2. Rutgers University, 3. University of California Santa Cruz

410.02 Near-infrared absolute magnitudes of Type Ia Supernovae
Author(s): Arturo Avelino, Andrew S. Friedman, Kaisey Mandel, Robert Kirshner, Peter Challis
Institution(s): 1. Harvard University, 2. MIT
410.03D Interstellar-medium Mapping in M82 and Circumstellar Environment Constraints through Light Echoes Around Supernova 2014J
Author(s): Yi Yang¹, Lifan Wang¹
Institution(s): ¹ Texas A&M University

410.04 The Three-Dimensional Motions of the Ejecta of Tycho’s Supernova Remnant
Author(s): Brian J. Williams², Nina Coyle³, Hiroya Yamaguchi², Joseph M. DePasquale¹, John W. Hewitt⁶, John M. Blondin³, Kazimierz J. Borkowski³, Parviz Ghavamian⁴, Robert Petre², Stephen P. Reynolds³
Institution(s): ¹ Harvard-Smithsonian CfA, ² NASA Goddard, ³ North Carolina State University, ⁴ Towson University, ⁵ University of Chicago, ⁶ University of North Florida

410.05 A new set of supernova remnant distances for the inner Galaxy
Author(s): Denis A. Leahy¹, Sujith Ranasinghe¹
Institution(s): ¹ Univ. of Calgary

410.06 The Unprecedented Metamorphosis of Supernova 2014C: New Insights from New Observations by HST and Gemini
Author(s): Dan Milisavljevic¹, Daniel Patnaude¹, Raffaella Margutti³, Atish Kamble¹, John C. Raymond¹, Michael Bietenholz⁶, Jerod Parrent¹, Robert Kirshner¹, Peter Challis¹, Claes Fransson⁴, Wen-fai Fong¹, Ashley Zauderer²
Institution(s): ¹ Harvard-Smithsonian, CfA, ² New York University, ³ Northwestern University, ⁴ Stockholm University, ⁵ University of Arizona, ⁶ York University

410.07 Critical Resolution and Physical Dependences of Supernovae: Stars in Heat and Under Pressure
Author(s): David Vartanyan¹, Adam Seth Burrows¹
Institution(s): ¹ Princeton University

410.08 The Role of Waves in the Explosion Mechanism of Core-Collapse Supernovae
Author(s): Sarah Gossan¹, Jim Fuller¹, Luke Roberts²
Institution(s): ¹ California Institute of Technology, ² Michigan State University

411 Astronomy Education Across the Human Continuum: Research, Programs, Practice, & More!
Saturday, 10:00 am - 11:30 am; Dallas 6
Chair: Nicole Gugliucci (Saint Anselm College)

411.01 Middle School Teacher Misconceptions and Anxieties Concerning Space Science Disciplinary Core Ideas in NGSS
Author(s): Kristine Larsen¹
Institution(s): ¹ Central Connecticut State University

411.02 Analyzing Tibetan Monastic Conceptions of the Universe Through Individual Drawings
Author(s): Tenzin Sonam¹, Chris David Impey¹
Institution(s): ¹ University of Arizona
411.03 Educating the Public about the 2017 Total Solar Eclipse
Author(s): Jay M. Pasachoff
Institution(s): Williams College

411.04 NASA’s Universe of Learning: Connecting Scientists, Educators, and Learners
Author(s): Denise A. Smith, Kathleen Lestition, Gordon K. Squires, W. M. Greene, Anya A Biferno, Lynn R. Cominsky, Irene Goodman, Allyson Walker
Institution(s): Cornerstone Evaluation Associates, Goodman Research Group, IPAC at Caltech, Jet Propulsion Laboratory, Smithsonian Astrophysical Observatory, Sonoma State University, STScI
Contributing team(s): Universe of Learning Team

411.05 Astrophysics for Older adults in Chicago
Author(s): Daniel Grin, Randall H. Landsberg, Karen Flude
Institution(s): Age with Ease, Haverford College, University of Chicago

411.06 Bringing the Science of JWST to the Public
Author(s): Joel D. Green, Denise A. Smith, Brandon L. Lawton, Bonnie K. Meinke, Hussein Jirdeh
Institution(s): Space Telescope Science Institute

411.07 Bringing Live Astronomy into the Classroom and to the Public
Author(s): Paul Cox
Institution(s): Slooh LLC

411.08 Solar System Symphony: Combining astronomy with live classical music
Author(s): Kyle Kremer
Institution(s): CIERA-Northwestern University
Contributing team(s): WorldWide Telescope

411.09 Do Facilitate, Don’t Demonstrate: Meaningful Engagement for Science Outreach
Author(s): Richard Gelderman
Institution(s): Western Kentucky University

412.01 The 21st Century: The Century of Biology on Earth and Beyond
Author(s): Jill C. Tarter
Institution(s): SETI Institute
Contributing team(s): SETI Team

412 Plenary Talk: The 21st Century: The Century of Biology on Earth and Beyond, Jill Tarter (SETI Institute)
Saturday, 11:40 am - 12:30 pm; Texas A
Chair: Charles Woodward (Univ. of Minnesota)
SATURDAY, 7 JANUARY 2017

POSTER SESSIONS

424 The Sun & Solar System Late Poster Session
Saturday, 1:00 pm - 2:00 pm; Longhorn D

424.01 Multi-site Observations of the March 2016 Total Solar Eclipse: Calibration of Images to Simulate Continuous Monitoring
Author(s): Robert Bosh⁹, Matthew J. Penn⁶, Myles McKay⁷, Robert Baer⁶, David Garrison⁹, Richard Gelderman⁹, Honor Hare⁹, Fred Isberner⁶, Logan Jensen⁶, Sarah Kovac⁶, Adriana Mitchell⁴, Michael Pierce⁹, Patricia Thompson⁹, Andrei Ursache³, John R. Varsik¹, Donald K. Walter⁵, Zachary Watson⁴, David Young²
Institution(s): ¹ Big Bear Solar Observatory, ² Citizen CATE Team, ³ Mathworks Inc., ⁴ National Solar Observatory, ⁵ South Carolina State University, ⁶ Southern Illinois University, ⁷ Space Telescope Science Institute, ⁸ University of Wyoming, ⁹ Western Kentucky University
Contributing team(s): Citizen Cate Team

424.02 DIY Astrophysics: Examining diurnal and seasonal fluctuations in the effects of solar gravity using a three-axis accelerometer
Author(s): Kristine Romich¹, Andrew Kruger¹
Institution(s): ¹ City Colleges of Chicago

424.03 Albedos of Centaurs, Jovian Trojans and Hildas
Author(s): William Romanishin¹
Institution(s): ¹ Univ. of Oklahoma

424.04 Shape Modeling and Boulder Mapping of Asteroid 1992 UY4
Author(s): Nicholas Duong², Michael W. Busch¹
Institution(s): ¹ SETI Institute, ² University of Louisville

424.05 Simulation of Rogue Planet Encounters with the Solar System: Is Planet 9 a Captured Rogue?
Author(s): James Vesper¹, Paul A. Mason¹
Institution(s): ¹ New Mexico State University

424.06 Matching intermediate-term, multi-angle averages of CIRS FP1+FP3 observations for the He VMR and cloud in Saturn’s atmosphere
Author(s): Joshua Serrano³, Glenn S. Orton¹, James Sinclair¹, Leigh N. Fletcher³
Institution(s): ¹ NASA Jet Propulsion Laboratory, ² University of La Verne, ³ University of Leicester

425 Extrasolar Planets Late Poster Session
Saturday, 1:00 pm - 2:00 pm; Longhorn D

425.01 Transiting Planets with LSST: Finding exoplanets in the Large Magellanic Cloud
Author(s): Michael Lund³, Joshua Pepper², Savannah Jacklin³, Keivan G. Stassun³
Institution(s): ¹ Fisk University, ² Lehigh University, ³ Vanderbilt University
425.02 Planets, Moons, and Multiple Stars – Gravitational Microlensing by Three-Body Systems
Author(s): David Heyrovsky¹, Kamil Danek¹
Institution(s): ¹ Charles University

425.03 The metallicity distribution and hot Jupiter rate of the Kepler field: Hectochelle High-resolution spectroscopy for 776 Kepler target stars
Author(s): Xueying Guo³, John A. Johnson², Andrew W Mann⁴, Adam L. Kraus¹, Jason L. Curtis⁵, David W. Latham²
Institution(s): ¹ Columbia University, ² Harvard-Smithsonian Center for Astrophysics, ³ Massachusetts Institute of Technology, ⁴ The University of Texas at Austin

425.04 Insights on the spectral signatures of RV jitter from PCA
Author(s): Allen Bradford Davis³, Jessica Cisewski³, Xavier Dumusque², Debra Fischer³, Eric B. Ford¹
Institution(s): ¹ The Pennsylvania State University, ² University of Geneva, ³ Yale University

425.05 The Escaping Upper Atmospheres of Hot Jupiters
Author(s): Eric Davidson¹, Gabrielle Jones³, Ana Uribe¹, Joseph Carson¹
Institution(s): ¹ College of Charleston, ² South Carolina State University

425.07 ZEIT: Searching for Young Stars in K2
Author(s): Nathan Morris¹, Andrew W Mann¹
Institution(s): ¹ University of Texas at Austin

425.08 A Novel Statistical Technique for Determining the Properties of Extrasolar Planets
Author(s): Cassandra Starr Henderson¹, Andrew Skemer¹, Caroline Morley³, Jonathan J. Fortney¹
Institution(s): ¹ UC Santa Cruz

425.09 pyLIMA : an open source microlensing software
Author(s): Etienne Bachelet¹
Institution(s): ¹ LCO

425.10 A population of planetary systems from Kepler data that are characterized by short-period, Earth-sized planets
Author(s): Jason H. Steffen², Jeffrey Coughlin¹
Institution(s): ¹ SETI Institute, ² University of Nevada, Las Vegas

425.11 Extra Solar Planet Science With a Non Redundant Mask
Author(s): Stefenie Nicolet Minto¹
Institution(s): ¹ The Space Telescope Science Institute
Contributing team(s): Anand Sivaramakrishnan, Alexandra Greenbaum, Kathryn St Laurent, Deepashri Thatte

425.12 Investigating Exoplanets Within Stellar Clusters
Author(s): Joseph Paul Glaser³, Tyler Reisinger¹, Jonathan Thornton¹, Stephen L. W. McMillan¹
Institution(s): ¹ Drexel University
426 Galaxy Clusters and the IGM Late Poster Session

Saturday, 1:00 pm - 2:00 pm; Longhorn D

426.01 The dark matter distribution of merging galaxy cluster PLCKG287.0+32.9 by weak lensing
Author(s): Kyle Finner4, James Jee4, William Dawson1, Nathan Golovich3, Daniel Gruen2, Brian Lemaux3, David M. Wittman1
Institution(s): 1 Lawrence Livermore National Lab, 2 Stanford University, 3 UC Davis, 4 Yonsei University

426.02 Helium Reionization in From New Sightlines
Author(s): David Syphers1
Institution(s): 1 Eastern Washington University

426.03 Magnetic Draping as a Possible Solution to Turbulent Heating of the ICM in Kinetic Mode AGN Feedback
Author(s): Christopher John Bambic1, Christopher S. Reynolds1, Brian Morsony1
Institution(s): 1 University of Maryland, College Park

426.04 Probing Galaxy Clusters and Substructures using Gravitational Lensing
Author(s): Miyoung Choi2, Hoang Nguyen2, Lindsay King2, Brandyn E Lee3, Ian McCarthy1
Institution(s): 2 Liverpool John Moores, 2 The University of Texas at Dallas

426.05 Ratio of Dust to Metal Abundance in Quasar Absorption Line Systems from 1.9 < z < 3.3
Author(s): Stephanie Stawinski1, Sangeeta Malhotra1
Institution(s): 1 Arizona State University

426.06 Observation of Weak Low-ionization Winds in Host Galaxies of Low Luminosity Active Galactic Nuclei at z ~1
Author(s): Hassen Yesuf3
Institution(s): 1 University of California Santa Cruz
Contributing team(s): David C. Koo, S. M. Faber, J. Xavier Prochaska, Yicheng Guo, F. S. Liu, Emily C. Cunningham, Alison L. Coil, Puragra Guhathakurta

427 Galaxy Evolution Late Poster Session

Saturday, 1:00 pm - 2:00 pm; Longhorn D

427.01 Galaxy Structure in the Far-Ultraviolet
Author(s): Violet Mager4, Christopher Conselice6, Mark Seibert2, Courtney Gusbar3, Anthony Katona5, Joseph Villari5, Barry F. Madore2, Rogier A. Windhorst1
Institution(s): 1 Arizona State University, 2 Carnegie Observatories, 3 Ohio University, 4 Penn State Wilkes-Barre, 5 Susquehanna University, 6 University of Nottingham
427.02 The Universe Going Green: Extraordinarily Strong [OIII]5007 in Typical Dwarf Galaxies at z~3
Author(s): Matthew Arnold Malkan1, Daniel Cohen1
Institution(s): 1 UC, Los Angeles

427.03 Constraining the Effect of Close-Pairs on the Measurements of the Number Density of the Most Massive Galaxies in the Early Universe
Author(s): Zehra Cemile Marsan2, Danilo Marchesini2, Gabriel Brammer1, Adam Muzzin3
Institution(s): 1 University of Maryland, College Park, 2 University of Michigan, Ann Arbor, 3 University of Wisconsin-Madison

427.04 Galactic Winds and Cosmic Ray Transport in a Multiphase Interstellar Medium
Author(s): Ryan Farber2, Mateusz Ruszkowski2, Karen Hsiang-Yi1, Ellen Gould Zweibel3
Institution(s): 1 University of Maryland, College Park, 2 University of Michigan, Ann Arbor, 3 University of Wisconsin-Madison

427.05 The multi-wavelength properties of faint submillimeter galaxies at 450 and 850um
Author(s): Jorge Zavala1, Itziar Aretxaga1, David Hughes1, James Dunlop1, Michal Michalowski2
Institution(s): 1 INAOE, 2 University of Edinburgh
Contributing team(s): SCUBA-2 Cosmology Legacy Survey

427.06 Environmental Variations in the Atomic and Molecular Gas Radial Profiles of Nearby Spiral Galaxies
Author(s): Angus Mok1, Christine Wilson1
Institution(s): 1 McMaster University
Contributing team(s): JCMT Nearby Galaxies Legacy Survey

427.07 Ram Pressure Stripping and Morphological Transformation in the Coma Cluster
Author(s): Michael Gregg2, Michael West1
Institution(s): 1 Lowell Observatory, 2 University of California, Davis

427.08 Bar Evolution and Bar Properties from Disc Galaxies in the Early Universe
Author(s): Tenley Hutchinson-Smith1, Brooke Simmons2
Institution(s): 1 Spelman College, 2 UC San Diego

428 The Milky Way and Other Galaxies Late Poster Session
Saturday, 1:00 pm - 2:00 pm; Longhorn D

428.01 Two Populations of SiO Masers in the Galactic Bulge
Author(s): Adam Trapp2, Robert Michael Rich2, Mark Morris2, Ylva Pihlstrom3, Lorant Sjouwerman1, Mark J. Claussen1, Michael Stroh3
Institution(s): 1 NRAO, 2 UCLA, 3 University of New Mexico

428.02 The Colors and Stellar Populations of Ultra-Diffuse Galaxies in the Coma and Virgo Clusters
Author(s): Maria Babakhanyan Stone3, Aaron J. Romanowsky1
Institution(s): 1 San Jose State University
428.03 A New High Resolution JVLA Survey of the Fireworks Galaxy, NGC 6946
Author(s): Christina K. Lacey1, Zuzana Isabelle Calbo1, Thomas Pannuti3, Christopher Stockdale2, Kelly E. Fries1
Institution(s): 1 Hofstra University, 2 Marquette University, 3 Morehead State University

428.04 Simulating Galaxies: Investigating Spiral Pitch Angle and the Efficiency of Radial Mixing
Author(s): Noah Lifset2, Luke Barbano2, Kathryne J Daniel1
Institution(s): 1 Bryn Mawr College, 2 Swarthmore College

428.05 Spectral Analysis of CLU Galaxies
Author(s): Jessica Sutter2, David O. Cook1, Mansi M. Kasliwal1, Daniel A. Dale3
Institution(s): 1 Caltech, 2 University of Wyoming

428.06 Numerical Simulations of a Jet-Cloud Collision and Starburst: Application to Minkowski’s Object
Author(s): Jason Witry1, P. Christopher Christopher Fragile1, Peter Anninos2, Steve Croft3, Mark Lacy4
Institution(s): 1 College of Charleston, 2 Lawrence Livermore National Laboratory, 3 NRAO, 4 UC Berkeley

428.07 Near-Infrared Photometric Properties of Red Supergiant Stars in Nearby Galaxies: NGC 4214, NGC 4736 and M51
Author(s): DooSeek Jung2, Sang-Hyun Chun3, Samyad Choudhury3, Young-Jong Sohn2
Institution(s): 1 Seoul National University, 2 Yonsei University, 3 Yonsei University Observatory

428.08 Studying Lyman-alpha escape and reionization in Green Pea galaxies
Author(s): Huan Yang1, Sangeeta Malhotra3, James E. Rhoads1, Max Gronke4, Claus Leitherer1, Aida Wofford3, Mark Dijkstra4
Institution(s): 1 Arizona State University, 2 National Autonomous University of Mexico, 3 STScI, 4 University of Oslo

429 AGN and Friends Late Poster Session
Saturday, 1:00 pm - 2:00 pm; Longhorn D

429.01 AGN feedback in action? - outflows and star formation in type 2 AGNs
Author(s): Jong-Hak Woo1
Institution(s): 1 Seoul National University

429.02 Infrared Variability and Time Lags for Periodic Quasars
Author(s): Hyunsung David Jun3, Daniel Stern3, Matthew J. Graham1, Stanislav G. Djorgovski3, Amy Mainzer3, Roc M. Cutri2, Andrew J. Drake3, Ashish A. Mahabal3
Institution(s): 1 Caltech, 2 IPAC, 3 Jet Propulsion Laboratory
429.03 Near-Infrared Spectroscopic Analysis of Galaxy Mergers: Revealing Obscured Accretion
Author(s): Jason Ferguson\textsuperscript{2}, Anca Constantin\textsuperscript{2}, Shobita Satyapal\textsuperscript{1}, Barry Rothberg\textsuperscript{3}
\textit{Institution(s):} \textsuperscript{1} George Mason University, \textsuperscript{2} James Madison University, \textsuperscript{3} Large Binocular Telescope Observatory

429.04 Reverberation mapping of PG 0934+013
Author(s): Songyoun Park\textsuperscript{1}, Jong-Hak Woo\textsuperscript{1}, Encarni Romero-colmenero\textsuperscript{2}, Steve Crawford\textsuperscript{2}, Yiseul Jeon\textsuperscript{1}
\textit{Institution(s):} \textsuperscript{1} Seoul National University, \textsuperscript{2} South African Astronomical Observatory

429.05 Constraining Quasar Properties with Variability via the Dark Energy Survey and Australian DES
Author(s): Dale Mudd\textsuperscript{1}, Paul Martini\textsuperscript{1}
\textit{Institution(s):} \textsuperscript{1} Ohio State University
Contributing team(s): Dark Energy Survey, Australian DES

429.06 Integrated Properties of Nearby Seyfert Galaxies Measured by 2-D Spectroscopy
Author(s): Junjie Xia\textsuperscript{1}, Matthew Arnold Malkan\textsuperscript{1}
\textit{Institution(s):} \textsuperscript{1} University of California, Los Angeles

429.07 Galactic Winds in Galaxies with Active Black Holes
Author(s): Lin Lee\textsuperscript{1}, Hassen Mohammed Yesuf\textsuperscript{2}
\textit{Institution(s):} \textsuperscript{1} The Hockaday School, \textsuperscript{2} UC Santa Cruz

429.08 NGC1448 and IC 3639: Two Concealed Black Holes Lurking in our Cosmic Backyard Unveiled by NuSTAR
Author(s): Daniel Stern\textsuperscript{11}, Peter Boorman\textsuperscript{18}, Ady Annuar\textsuperscript{5}, Poshak Gandhi\textsuperscript{18}, D. M Alexander\textsuperscript{5}, George B Lansbury\textsuperscript{5}, Daniel Asmus\textsuperscript{6}, David R. Ballantyne\textsuperscript{8}, Franz E. Bauer\textsuperscript{16}, Steven E. Boggs\textsuperscript{17}, W. Niel Brandt\textsuperscript{13}, Murray Brightman\textsuperscript{7}, Finn Christensen\textsuperscript{6}, William W. Craig\textsuperscript{15}, Duncan Farrah\textsuperscript{19}, Andy D. Goulding\textsuperscript{14}, Charles James Hailey\textsuperscript{4}, Fiona Harrison\textsuperscript{2}, Sebastian Hoenig\textsuperscript{18}, Michael Koss\textsuperscript{1}, Stephanie M. LaMassa\textsuperscript{12}, Alberto Masini\textsuperscript{9}, Stephen S. Murray\textsuperscript{10}, Claudio Ricci\textsuperscript{15}, Guido Risaliti\textsuperscript{1}, David J. Rosario\textsuperscript{2}, Floran Stanetti\textsuperscript{5}, William Zhang\textsuperscript{12}
\textit{Institution(s):} \textsuperscript{1} Arcetri, \textsuperscript{2} Caltech, \textsuperscript{3} Columbia, \textsuperscript{4} DTU-Space, \textsuperscript{5} Durham University, \textsuperscript{6} ESO, \textsuperscript{7} ETH-Zurich, \textsuperscript{8} Georgia Tech, \textsuperscript{9} INAF, \textsuperscript{10} Johns Hopkins, \textsuperscript{11} JPL/ Caltech, \textsuperscript{12} NASA GSFC, \textsuperscript{13} Penn State, \textsuperscript{14} Princeton, \textsuperscript{15} PUC, \textsuperscript{16} Space Science Institute, \textsuperscript{17} Space Sciences Laboratory, \textsuperscript{18} University of Southampton, \textsuperscript{19} Virginia Tech

430 Cosmology and Related Topics Late Poster Session
Saturday, 1:00 pm - 2:00 pm; Longhorn D

430.01 Cosmological constraints with weak lensing peak counts and second-order statistics in a large-field survey
Author(s): Austin Peel\textsuperscript{1}, Chieh-An Lin\textsuperscript{2}, Francois Lanusse\textsuperscript{1}, Adrienne Leonard\textsuperscript{3}, Jean-Luc Starck\textsuperscript{2}, Martin Kilbinger\textsuperscript{2}
\textit{Institution(s):} \textsuperscript{1} Carnegie Mellon University, \textsuperscript{2} CEA Saclay, \textsuperscript{3} University College London
430.02 A large sample of binary quasars: Does quasar bias tracks from Mpc scale to kpc scales?
Author(s): Sarah Eftekharzadeh, Adam D. Myers, Stanislav G. Djorgovski, Matthew J. Graham
Institution(s): \(^1\) California Institute of Technology, 1200 E California Blvd, \(^2\) Department of Physics and Astronomy, 1000 E. University, Dept 3905

430.03 Deep Learning the Universe
Author(s): Shiwangi Singh, Deborah Bard
Institution(s): \(^1\) NERSC, Lawrence Berkeley National Laboratory

430.04 The Primordial Inflation Polarization Explorer (PIPER)
Institution(s): \(^1\) Cardiff University, \(^2\) Johns Hopkins University, \(^3\) NASA / Ames, \(^4\) NASA / GSFC, \(^5\) NIST, \(^6\) Stanford University, \(^7\) University of British Columbia, \(^8\) University of Michigan, \(^9\) Villanova University

430.05 Massive Black Hole Binary Mergers and their Gravitational Waves
Author(s): Luke Zoltan Kelley, Laura Blecha, Lars Hernquist, Alberto Sesana
Institution(s): \(^1\) Harvard University, \(^2\) University of Birmingham, \(^3\) University of Maryland

430.06 The Wave Turbulence Approach to Gravitational Collapse in Anti-de Sitter Space
Author(s): Brian Cook, Leopoldo Pando Zayas
Institution(s): \(^1\) University of Michigan

430.07 Gravitational lensing of gravitational wave
Author(s): Wang Kei Wong, Kwan Yeung Ng
Institution(s): \(^1\) The Chinese University of Hong Kong

431 Neutron Stars & Friends Late Poster Session

Saturday, 1:00 pm - 2:00 pm; Longhorn D

431.01 Exploring the Physical Conditions in Millisecond Pulsar Emission Regions
Author(s): Joanna M. Rankin
Institution(s): \(^1\) Univ. of Vermont

431.02 Polarization Behavior Across Profile Modes For B0329+54: What Consistent Non-RVM Polarization Tells About the Emission Processes
Author(s): Casey Brinkman-Traverse, Joanna M. Rankin, Dipanjan Mitra
Institution(s): \(^1\) NCRA, TIFR, \(^2\) University of Vermont
431.03 Single Pulse Searches for Pulsars in the Galactic Center  
Author(s): Daniel Joseph Cushey\textsuperscript{1}, Walid A. Majid\textsuperscript{1}, Thomas Allen Prince\textsuperscript{1}  
Institution(s): \textsuperscript{1}California Institute of Technology, \textsuperscript{2}Jet Propulsion Laboratory

431.04 Searching for Magnetar SGR 0755-2933  
Author(s): Amanda Harrison\textsuperscript{1}  
Institution(s): \textsuperscript{1}Green Bank Telescope  
Contributing team(s): Ryan Lynch, NRAO Green Bank Telescope

431.05 Contrasting Magnetohydrodynamic Turbulence with alpha-Viscosity in Simulations of Black Hole Accretion  
Author(s): P. Christopher Christopher Fragile\textsuperscript{2}, Sarina Marie Etheridge\textsuperscript{2}, Peter Anninos\textsuperscript{3}, Bhupendra Mishra\textsuperscript{1}  
Institution(s): \textsuperscript{1}CAMK, \textsuperscript{2}College of Charleston, \textsuperscript{3}Lawrence Livermore National Laboratory

431.06 Signatures of strong gravity in the light curves of tidal disruption events  
Author(s): Júlia Alsina Oriol\textsuperscript{1}, Tamara Bogdanovic\textsuperscript{1}  
Institution(s): \textsuperscript{1}Georgia Institute of Technology

431.07 Tracking the Disk Wind Behavior of MAXI J1305-704  
Author(s): Kimberly Poppy Sinclair\textsuperscript{1}, Jon M. Miller\textsuperscript{1}  
Institution(s): \textsuperscript{1}University of Michigan

431.08 Mass Constraints on the Black Hole Candidate in M62  
Author(s): Christopher Britt\textsuperscript{1}, Jay Strader\textsuperscript{3}, Laura Chomiuk\textsuperscript{3}, Thomas J. Maccarone\textsuperscript{4}, Laura Shishkovsky\textsuperscript{5}, James Miller-Jones\textsuperscript{1}, Vlad Tudor\textsuperscript{1}, Evangelina Tremou\textsuperscript{1}, Arash Bahramian\textsuperscript{3}, Sebastian Kamann\textsuperscript{2}  
Institution(s): \textsuperscript{1}Curtin University, \textsuperscript{2}Institute for Astrophysics Göttingen, \textsuperscript{3}Michigan State University, \textsuperscript{4}Texas Tech University

432 Star Formation, Young Stars and Clusters Late Poster Session  
Saturday, 1:00 pm - 2:00 pm; Longhorn D

432.01 Revealing the Jets in the BHR 71 Protostellar System  
Author(s): Tyler L. Bourke\textsuperscript{3}, John J. Tobin\textsuperscript{4}, Antoine Gusdorf\textsuperscript{5}, Hector G. Arce\textsuperscript{5}, Mario Tafalla\textsuperscript{3}  
Institution(s): \textsuperscript{1}LERMA/ENS, \textsuperscript{2}OAN, \textsuperscript{3}SKA Organisation, \textsuperscript{4}University of Oklahoma, \textsuperscript{5}Yale

432.02 High Resolution SOFIA/EXES Spectroscopy of CH4 and SO2 toward Massive Young Stellar Objects  
Author(s): Abraham C. A. Boogert\textsuperscript{1}, Matt Richter\textsuperscript{5}, Curtis DeWitt\textsuperscript{5}, Nick Indriolo\textsuperscript{4}, David A. Neufeld\textsuperscript{3}, Agata Karska\textsuperscript{3}, Edwin A. Bergin\textsuperscript{6}, Rachel L. Smith\textsuperscript{3}, Edward Montiel\textsuperscript{3}  
Institution(s): \textsuperscript{1}Adam Mickiewics University, \textsuperscript{2}Appalachian State University, \textsuperscript{3}Johns Hopkins University, \textsuperscript{4}STScI, \textsuperscript{5}UC Davis, \textsuperscript{6}University of Michigan, \textsuperscript{7}USRA-Stratospheric Observatory for Infrared Astronomy, NASA Ames Research Center
SATURDAY, 7 JANUARY 2017

432.03  Size Distribution of Star Clusters and Stellar Groups in IC2574
Author(s): Anne Pellerin\textsuperscript{2}, Martin J. Meyer\textsuperscript{1}, Daniela Calzetti\textsuperscript{3}
Institution(s): \textsuperscript{1} International Centre for Radio Astronomy Research, The University of Western Australia, \textsuperscript{2} SUNY Geneseo, \textsuperscript{3} University of Massachusetts Amherst

433 Stars of Many Stripes Late Poster Session
Saturday, 1:00 pm - 2:00 pm; Longhorn D

433.01  Investigation into the Morphology and Temporal Variability of Auroral H\textalpha Emission from LSR J1835+3259
Author(s): J. Sebastian Pineda\textsuperscript{1}, Gregg Hallinan\textsuperscript{1}, Stuart Littlefair\textsuperscript{4}, Chris Watson\textsuperscript{2}, Gibor S. Basri\textsuperscript{3}
Institution(s): \textsuperscript{1} Caltech, \textsuperscript{2} Queen's University - ARC, \textsuperscript{3} UC Berkeley, \textsuperscript{4} University of Sheffield

433.02  Using Model Point Spread Functions to Identifying Binary Brown Dwarf Systems
Author(s): Kyle Matt\textsuperscript{1}, Denise C. Stephens\textsuperscript{1}, Leanne T Lunsford\textsuperscript{1}
Institution(s): \textsuperscript{1} Brigham Young University

433.03  Searching for GALEX FUV and NUV Detections of BOSS Ultracool Dwarfs
Author(s): Jonathan Wheatley\textsuperscript{2}, Sarah J. Schmidt\textsuperscript{1}, Barry Welsh\textsuperscript{2}
Institution(s): \textsuperscript{1} AIP Leibniz, \textsuperscript{2} University of California Berkeley

433.04  The Red Supergiants of M33: Determining Physical Properties
Author(s): Madeleine Beck\textsuperscript{2}, Philip Massey\textsuperscript{3}
Institution(s): \textsuperscript{1} Lowell Observatory, \textsuperscript{2} Wellesley College

433.05  Regimes of Internal Rotation in Differentially Rotating White Dwarfs
Author(s): J. Craig Wheeler\textsuperscript{2}, Pranab Ghosh\textsuperscript{1}
Institution(s): \textsuperscript{1} Tata Institute of Fundamental Research, \textsuperscript{2} Univ. of Texas

433.06  The Betelgeuse Project: Constraints from Rotation
Author(s): Manuel Diaz\textsuperscript{2}, Sarafina Nance\textsuperscript{1}, James Sullivan\textsuperscript{1}, J. Craig Wheeler\textsuperscript{1}
Institution(s): \textsuperscript{1} The University of Texas at Austin

433.07  Magnesium Amplification: The Last Missing Piece in Integrated Light Studies
Author(s): Guy Worthey\textsuperscript{1}
Institution(s): \textsuperscript{1} Washington State Univ.

433.08  The Diversity of Chemical Composition and the Effects on Stellar Evolution and Planetary Habitability
Author(s): Amanda Truitt\textsuperscript{1}, Patrick A. Young\textsuperscript{1}
Institution(s): \textsuperscript{1} Arizona State University, School of Earth and Space Exploration

433.09  BVRI Photometric Study of V1695 Aquilae, an Extreme Mass Ratio, High fill-out Contact Binary
Author(s): Ronald G. Samec\textsuperscript{2}, Daniel B. Caton\textsuperscript{1}, Danny R. Faulkner\textsuperscript{4}, Walter V. Van Hamme\textsuperscript{3}, Christopher R Gray\textsuperscript{2}
Institution(s): \textsuperscript{1} Dark Sky Observatory, Appalachian State University, \textsuperscript{2} Emmanuel College, \textsuperscript{3} Florida International University, \textsuperscript{4} University of South Carolina, Lancaster
433.10 Characterization of Detached Main Sequence Binaries Observed by Kepler, SDSS(APOGEE) and Gaia
Author(s): Christina Oleander Solis¹, Paul A. Mason¹
Institution(s): ¹ NMSU-DACC

433.11 Eclipsing Binary Star Detection Using Kepler
Author(s): Ekaterina Vydra¹, Derek L. Buzasi¹
Institution(s): ¹ Florida Gulf Coast University

433.12 Dynamical Tide in Action: Tidally Excited Oscillations in Kepler Heartbeat Stars
Author(s): Zhao Guo¹, Douglas R. Gies¹, Avi Shporer², Jim Fuller², Howard T. Isaacson¹
Institution(s): ¹ Georgia State University, ² JPL, Caltech, ³ University of California, Berkeley
Contributing team(s): Kepler Eclipsing Binary Working Group

433.13 BVRI Photometric Study of the Twin, Detached, Near-Contact W UMA Binary, GQ Cancri
Author(s): Daniel B. Caton¹, Ronald G. Samec², Amber Olsen², Walter V. Van Hamme³, Danny R. Faulkner⁴
Institution(s): ¹ Appalachian State Univ., ² Emmanuel College, ³ Florida International Observatory, ⁴ Johnson Observatory

433.14 Numerical Simulations of Close and Contact Binary Systems Having Bipolytropic Equation of State
Author(s): Kundan Kadam², Geoffrey C. Clayton², Patrick M. Motl¹, Dominic Marcello², Juhan Frank³
Institution(s): ¹ Indiana University Kokomo, ² Louisiana State University

433.15 Characterizing RR Lyraes using SDSS, Single-Epoch Spectroscopy
Author(s): Stacy Scott Long¹, Ronald J. Wilhelm², Nathan M. De Lee¹
Institution(s): ¹ Northern Kentucky University, ² University of Kentucky

433.16 In Search of Stellar Music: Finding Pulsators for the TESS Mission
Author(s): Tyler Richey-Yowell¹, Joshua Pepper²
Institution(s): ¹ Dickinson College, ² Lehigh University
Contributing team(s): KELT Collaboration

433.17 Searching for frequency multiplets in the pulsating subdwarf B star PG 1219+534
Author(s): John Crooke¹, Ryan Roessler¹, Michael Reed¹
Institution(s): ¹ Missouri State University

433.18 Mira Period-Luminosity Relations at Near-Infrared
Author(s): Wenlong Yuan¹, Lucas M. Macri¹, Shiyuan He³, James Long¹, Jianhua Huang³, Chow-Choong Ngeow⁴, Shashi Kanbur²
Institution(s): ¹ Department of Physics & Astronomy, Texas A&M University, ² Department of Physics, SUNY Oswego, ³ Department of Statistics, Texas A&M University, ⁴ Graduate Institution of Astronomy, National Central University
SATURDAY, 7 JANUARY 2017

433.19 The Initial-Final Mass Relation: Analysis of White Dwarfs in the M7 Open Cluster
Author(s): Jeff D Cummings, Jason S. Kalirai, Douglas Geisler, Pier-Emmanuel Tremblay, Francesco Mauro, Constantine P. Deliyannis
Institution(s): 1 Indiana University, 2 Johns Hopkins University, 3 STScI, 4 Universidad de Concepcion, 5 University of Warwick

433.20 Planet-Planet Scattering and White Dwarf Pollution
Author(s): Arielle Joasil, Matthew John Payne, Dimitri Veras
Institution(s): 1 Harvard-Smithsonian Center for Astrophysics, 2 University of Warwick

433.21 Low States of Polars from CRTS Optical Light Curves
Author(s): Joshua Santana, Paul A. Mason
Institution(s): 1 New Mexico State University

433.22 Shaping the Outbursts of Dwarf Novae with Convection and Magnetorotational Turbulence
Author(s): Matthew S. B. Coleman
Institution(s): 1 UCSB

433.23 The Habitable Zone of the Binary System Kepler-16
Author(s): Sarah Moorman, Manfred Cuntz
Institution(s): 1 The University of Texas at Arlington

434 Supernovae et Multo Amplius Late Poster Session
Saturday, 1:00 pm - 2:00 pm; Longhorn D

434.01 Observations of the Ultraviolet-Bright Type IIP Supernova ASASSN-14ha
Author(s): Andrew Quick, Peter J Brown, Nicholas B. Suntzeff
Institution(s): 1 Texas A&M University

434.02 Correlations Between Hubble Residuals and Local Stellar Populations of Type Ia Supernovae
Author(s): Benjamin Rose, Peter M. Garnavich
Institution(s): 1 University of Notre Dame

434.03 SuperNovae Analysis aPplication (SNAP): A new analysis tool for understanding the physics of supernovae
Institution(s): 1 Arizona State University, 2 Los Alamos National Laboratory, 3 Southwest Research Institute, 4 University of Texas, San Antonio

434.04 Two Years and Five Images of Supernova Refsdal
Author(s): Patrick Kelly
Institution(s): 1 California - Berkeley, University of
434.05  Creation of a Unified Set of Core-Collapse Supernovae for Training of Photometric Classifiers
Author(s): William D’Arcy Kenworthy\textsuperscript{1}, Daniel Scolnic\textsuperscript{2}, Richard Kessler\textsuperscript{2}
Institution(s): \textsuperscript{1} University of Cambridge, \textsuperscript{2} University of Chicago

434.06  Post-Merger Evolution of Betelgeuse
Author(s): James Sullivan\textsuperscript{1}, J. Craig Wheeler\textsuperscript{1}, Sarafina Nance\textsuperscript{1}, Manuel Diaz\textsuperscript{1}
Institution(s): \textsuperscript{1} University of Texas at Austin

434.07  Modeling Type-IIn Interacting Supernovae
Author(s): Austin McDowell\textsuperscript{1}, Paul Duffell\textsuperscript{1}, Daniel Kasen\textsuperscript{1}
Institution(s): \textsuperscript{1} UC Berkeley

434.08  Asymmetry in Supernovae
Author(s): Angela Collier\textsuperscript{1}, Harrison Bachrach\textsuperscript{1}, Chris Fryer\textsuperscript{1}, Carola Ellinger\textsuperscript{1}
Institution(s): \textsuperscript{1} LANL

434.09  Asymmetries in the bright and moderately extinguished SN Ia ASASSN-14lp
Author(s): Amber L. Porter\textsuperscript{1}, Peter Milne\textsuperscript{3}, Grant Williams\textsuperscript{1}, Jon Mauerhan\textsuperscript{2}, Mark D. Leising\textsuperscript{1}, Paul S. Smith\textsuperscript{3}
Institution(s): \textsuperscript{1} Clemson University, \textsuperscript{2} UC Berkeley, \textsuperscript{3} University of Arizona

434.10  A Chandra Observation of the Luminous Northeastern Rim of the Galactic Supernova Remnant W28 (G6.4-0.1): Spatially-Resolved Spectroscopic Analysis and Radial Fitting
Author(s): Thomas Pannuti\textsuperscript{3}, Glenn E. Allen\textsuperscript{1}, Bradley Mahaffey\textsuperscript{3}, Parker Poulos\textsuperscript{2}
Institution(s): \textsuperscript{1} MIT, \textsuperscript{2} Montgomery County High School, \textsuperscript{3} Morehead State University

434.11  Synthesizing Planetary Nebulae for Large Scale Surveys: Predictions for LSST
Author(s): George Vejar\textsuperscript{2}, Rodolfo Montez\textsuperscript{2}, Margaret Morris\textsuperscript{1}, Keivan G. Stassun\textsuperscript{4}
Institution(s): \textsuperscript{1} Brandeis University, \textsuperscript{2} Fisk University, \textsuperscript{3} Harvard Smithsonian Center for Astrophysics, \textsuperscript{4} Vanderbilt University

434.12  The Korean 1592—1593 Record of a Guest Star: A Luminous Transient of the Cassiopeia A Supernova?
Author(s): Bon-Chul Koo\textsuperscript{2}, Changbom Park\textsuperscript{3}, Sung-Chul Yoon\textsuperscript{2}
Institution(s): \textsuperscript{1} Korea Institute for Advanced Studies, \textsuperscript{2} Seoul National University

435  The ISM, Dust and Circumstellar Disks Late Poster Session
Saturday, 1:00 pm - 2:00 pm; Longhorn D

435.01  Revisiting the Trend of Debris Disks with regards to the Improved Ages of Early-Type Stars
Author(s): Brianna P. Thomas\textsuperscript{2}, Lynne Hillenbrand\textsuperscript{1}
Institution(s): \textsuperscript{1} California Institute of Technology, \textsuperscript{2} Howard University
435.02 Characterizing Dusty Debris Disks with the Gemini Planet Imager
Author(s): Christine Chen8, Pauline Arriaga10, Sebastian Bruzzone16, Elodie Choquet9, John H. Debes8, Jessica Donaldson2, Zachary Draper15, Gaspard Duchene9, Thomas Esposito9, Michael P. Fitzgerald10, David A. Golimowski9, Dean C. Hines8, Sasha Hinkley12, A. Meredith Hughes17, Paul Kalas9, Ludmilla Kolokolova14, Samantha Lawler15, Brenda C. Matthews15, Johan Mazoyer9, Stanimir A. Metchev16, Max Millar-Blanchaer6, Amaya Moro-Martin9, Erika Nesvold2, Deborah Padgett7, Jenny Patience1, Marshall D. Perrin8, Laurent Pueyo8, Fredrik Rantakyro9, Timothy Rodigas2, Glenn Schneider11, Remi Soummer8, Inseok Song13, Chris Stark8, Alycia J. Weinberger2, David J. Wilner4

435.03 A Discovery of a Compact High Velocity Cloud-Galactic Supershell System
Author(s): Geumsook Park2, Bon-Chul Koo4, Ji-hyun Kang4, Steven J. Gibson3, Joshua Eli Goldston Peek7, Kevin A. Douglas1, Eric J. Korpela6, Carl E. Heiles5
Institution(s): 1. Department of Physics and Astronomy, Okanagan College, 2. Department of Physics and Astronomy, Seoul National University, 3. Department of Physics and Astronomy, Western Kentucky University, 4. Korea Astronomy and Space Science Institute, 5. Radio Astronomy Lab, UC Berkeley 601 Campbell Hall, 6. Space Sciences Laboratory, University of California Berkeley, 7. Space Telescope Science Institute

435.04 The generation, destination, and astrophysical applications of magnetohydrodynamic turbulence
Author(s): Siyao Xu1, Alex Lazarian3, Bing Zhang2
Institution(s): 1. Peking University, 2. University of Nevada Las Vegas, 3. University of Wisconsin-Madison

435.05 Spatial Variations of Turbulent Properties in Neutral Hydrogen Observations of the Small Magellanic Cloud Using Structure Function Analysis
Author(s): David Nestingen-Palm2, Snezana Stanimirovic2, Brian L Babler2, DIEGO GONZALEZ CASANOVA2, Katherine Jameson1, Alberto D. Bolatto1
Institution(s): 1. University of Maryland, 2. University of Wisconsin-Madison

435.06 Toward a Kinetic Model of Silicon Carbide Condensation in Type II Supernovae
Author(s): Ethan A.N Deneault1
Institution(s): 1. Univ. Of Tampa

436 GRBs and Space Missions Late Poster Session
Saturday, 1:00 pm - 2:00 pm; Longhorn D

436.01 Comparing Data from Telescopic X-Ray Instruments: Can We Trust All Satellites?
Author(s): Quianah T. Joyce1, Alexander Fortenberry1, Bruce Gendre1
Institution(s): 1. University of the Virgin Islands
436.03 Image Analysis of OSIRIS-REx Touch-And-Go Camera System (TAGCAMS) Thermal Vacuum Test Images  
Author(s): Kenneth Everett Gordon¹, Brent J Bos²  
Institution(s): ¹ James Madison University, ² NASA Goddard Space Flight Center

436.04 Updated Status and Performance of the Cosmic Origins Spectrograph on the Hubble Space Telescope  
Author(s): Mees Bernard Fix¹, Gisella De Rosa³, Andrew Fox¹, Nick Indriolo¹, Bethan James¹, Robert I. Jedrzejewski², Cristina M. Oliveira¹, Steven V. Penton¹, Rachel Plesha¹, Marc Rafelski¹, Julia Roman-Duval¹, David J. Sahnow¹, Paule Sonnentrucker¹, Elaine M. Snyder¹, Joanna M. Taylor¹, James White¹  
Institution(s): ² Space Telescope Science Institute

437 From the Earth, We Peer Outward…Late Poster Session

Saturday, 1:00 pm - 2:00 pm; Longhorn D

437.01 The CCAT-prime Extreme Field-of-View Submillimeter Telescope on Cerro Chajnantor  
Author(s): Brian Koopman¹, Frank Bertoldi³, Scott Chapman², Michel Fich⁶, Riccardo Giovanelli¹, Martha P. Haynes¹, Terry L. Herter¹, Norman W. Murray⁵, Michael D. Niemack¹, Dominik Riechers¹, Peter Schilke⁴, Gordon J. Stacey¹, Juergen Stutzki⁴  
Institution(s): ¹ Cornell University, ² Dalhousie University, ³ University of Bonn, ⁴ University of Cologne, ⁵ University of Toronto, ⁶ University of Waterloo  
Contributing team(s): CCAT-prime Collaboration

437.02 Development of Real-Time Image Stabilization for an Airborne Infrared Spectrometer  
Author(s): Samuel Fedeler¹, Jenna Samra², Giora Guth²  
Institution(s): ¹ North Carolina State University, ² Smithsonian Astrophysical Observatory

437.03 Absorber Coatings for Mid-Infrared Astrophysics  
Author(s): Dahlia Anne Baker¹, Edward Wollack², Karwan Rostem²  
Institution(s): ¹ Coe College, ² NASA Goddard Space Flight Center, Observational Cosmology Lab

437.04 Development of a Low Cost Telescope System for VHE Astronomy  
Author(s): Rodney Querrard², Jeremy S Perkins¹  
Institution(s): ¹ NASA-GSFC, ² University of the Virgin Islands

437.05 Innovative polarization-holographic imaging Stokes polarimeter for observational studies of the solar spicules: the first results  
Author(s): Teimuraz Kvernadze¹, George Kurkhuli¹, George Kakauridze², Barbara Kilosanidze², Vazha Kulijanishvili¹, Eldar Khutsishvili¹, David Khutsishvili¹  
Institution(s): ¹ Abastumani Astrophysical Observatory, ² Institute of Cybernetics at Georgian Technical University
SATURDAY, 7 JANUARY 2017

437.06 Economical Emission-Line Mapping: ISM Properties of Nearby Protogalaxy Analogs
Author(s): Jacqueline A. Monkiewicz
Institution(s): 1. Arizona State University

438 Catalogs, Surveys, Computation, etc. Late Poster Session

Saturday, 1:00 pm - 2:00 pm; Longhorn D

438.01 Searching for short-duration transients in the Chandra archive
Author(s): Giacomo Vianello, Nitika Yadlapalli
Institution(s): 1. Rutgers, The State University Of New Jersey, 2. Stanford University
Contributing team(s): the EXTraS project (http://wwwextrasfp7.eu/)

438.02 A Jupyter-based Interactive Visualization Tool for Astronomical Catalogs
Author(s): Weixiang Yu, Matias Carrasco Kind, Robert Brunner
Institution(s): 1. University of Illinois at Urbana-Champaign

438.03 MeerKAT Large Area Survey
Author(s): Lerothodi Leeuw
Institution(s): 1. University of South Africa

438.04 The JWST North Ecliptic Pole Survey Field for Time-domain Studies

438.05 Extended X-ray Objects in the Galactic Bulge Survey
Author(s): Brandon Matthews
Institution(s): 1. Texas Tech University

438.06 Ultra-deep Large Binocular Camera U-band Imaging of the GOODS-North Field: Depth vs. Resolution
Author(s): Teresa Ashcraft, Rogier A. Windhorst, Rolf A Jansen, Seth H. Cohen, Andrea Grazian, Konstantina Boutsia, Adriano Fontana, Emanuele Giallongo, Robert W. O’Connell, Diego Paris, Michael J. Rutkowski, Claudia Scarlata, Vincenzo Testa
**438.07** Hot Star Extension to the Hubble Space Telescope Stellar Spectral Library  
Author(s): Islam Khan¹, Guy Worthey¹  
Institution(s): ¹ Washington State University

**438.08** PyXel: A Python Package for Astronomical X-ray Data Modeling  
Author(s): Georgiana Ogrean¹  
Institution(s): ¹ Stanford University

**438.09** What's New in CASA: ‘tclean’ and the Cycle 4 ALMA Pipeline  
Author(s): Jennifer Donovan Meyer¹  
Institution(s): ¹ NRAO  
Contributing team(s): CASA Development Team, ALMA Pipeline Working Group, NAASC Software Support Team

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**439 Education and Public Outreach Late Poster Session**

Saturday, 1:00 pm - 2:00 pm; Longhorn D

**439.01** Starry Campus: Reducing Light Pollution at Smith College  
Author(s): Alexandria Brenon¹  
Institution(s): ¹ Smith College

**439.02** ASTRO 850: Teaching Teachers about Exoplanets  
Author(s): Daniel Barringer¹, Christopher Palma¹  
Institution(s): ¹ Pennsylvania State University

**439.04** Virtual Reality Astronomy Education Using AAS WorldWide Telescope and Oculus Rift  
Author(s): A. David Weigel¹, Christina D Moraitis¹  
Institution(s): ¹ Samford University

**439.05** Youth for Astronomy & Engineering Program: Engaging Local Families and Partners  
Author(s): Tania Anderson¹  
Institution(s): ¹ Space Telescope Science Institute

**439.06** Adding Interferometer Restoration and Upgrade: Learning by Doing with the NINE Program  
Author(s): Linnea Saby¹  
Institution(s): ¹ Piedmont Virginia Community College

**439.07** Reaching for the Stars: NASA Science for Girl Scouts (Girl Scout Stars)  
Author(s): Edna DeVore², Pamela Harman¹  
Institution(s): ² SETI Institute  
Contributing team(s): Girl Scouts of the USA, Girl Scouts of Northern California, University of Arizona, Astronomical Society of the Pacific, and Aires Scientific

**439.08** Exploring Systems Engineering (and the Universe) Through the RadioJOVE telescope  
Author(s): Anya Aditi Raj¹  
Institution(s): ¹ University of Washington
413 Extrasolar Planets: Characterization & Theory VII

Saturday, 2:00 pm - 3:30 pm; Texas A

Chair: Laura Schaefer (Washington Univ.)

413.01D Optical-to-UV correlations and particle fluxes for M dwarf exoplanet host stars
Author(s): Allison Youngblood
Institution(s): 1. University of Colorado at Boulder

413.02 Leveraging Ensemble Dynamical Properties to Prioritize Exoplanet Follow-Up Observations
Author(s): Sarah Ballard
Institution(s): 1. MIT

413.03 Identifying Young Kepler Planet Host Stars from Keck-HIRES Spectra of Lithium
Author(s): Travis Allen Berger, Andrew Howard, Ann M. Boesgaard
Institution(s): 1. University of Hawaii at Manoa

413.04 A New Method for the Quick Determination of S-Type and P-Type Habitable Zones in Binary Systems
Author(s): Zhaopeng Wang, Manfred Cuntz
Institution(s): 1. University of Texas at Arlington

413.05 Jupiter’s Phase Variations from Cassini: a testbed for future direct-imaging missions
Author(s): Laura Mayorga, Jason Jackiewicz, Kathy Rages, Robert A. West, Ben Knowles, Nikole K. Lewis, Mark S. Marley
Institution(s): 1. CICLOPS/Space Science Institute, 2. JPL, 3. NASA Ames Research Center, 4. New Mexico State University, 5. SETI Institute, 6. Space Telescope Science Institute

413.06 Compositions of Small Planets & Implications for Planetary Dynamics
Author(s): Jennifer Johnson, Johanna Teske, Diogo Souto, Katia M. L. Cunha, Cayman T. Unterborn, Wendy Panero
Contributing team(s): SDSS/APOGEE team

413.07 Ray-tracing base integrated Earth system and instruments model for characterization and detection of exoplanets
Author(s): Dongok Ryu, Sug-Whan Kim
Institution(s): 1. Yonsei University

414 AGN, QSO, Blazars: Nuclear Regions & Black Holes

Saturday, 2:00 pm - 3:30 pm; Texas C

Chair: Valerie Connaughton (NASA/MSFC)
414.01 The Sloan Digital Sky Survey Reverberation Mapping Project: Quasar Reverberation Mapping Studies
Author(s): Catherine Grier
Institution(s): 1 Pennsylvania State University
Contributing team(s): The SDSS-RM Collaboration

414.02D Reverberation Mapping of AGN Accretion Disks
Author(s): Michael Fausnaugh
Institution(s): 2 The Ohio State University
Contributing team(s): AGN STORM Collaboration

414.03 Reverberation Mapping Results for NGC 4151
Author(s): Caroline Anna Roberts, Misty C. Bentz, Merida Batiste
Institution(s): 1 Georgia State University

414.04 The Lick AGN Monitoring Project 2016: Extending Reverberation Mapping to Higher Luminosity AGNs
Author(s): Vivian U
Institution(s): 1 UC Riverside
Contributing team(s): LAMP2016 Collaboration

414.05 Optical Variability Signatures from Massive Black Hole Binaries
Author(s): Vishal P. Kasliwal, Koby Alexander Frank, Adam Lidz
Institution(s): 1 University of Pennsylvania

414.06 Diagnostic Power of Broad Emission Line Profiles in Searches for Binary Supermassive Black Holes: Comparison of Models with Observations
Author(s): Khai Nguyen, Tamara Bogdanovic, Michael Eracleous, Jessie C. Runnoe, Steinn Sigurdsson
Institution(s): 1 Georgia Institute of Technology, 2 Pennsylvania State University

415 Extrasolar Planets Detection: Methodology

Saturday, 2:00 pm - 3:30 pm; Texas D
Chair: David Kipping (Harvard-Smithsonian Center for Astrophysics)

415.01 Identifying Long-period Planets from Single Transit Events with the MEarth Project
Author(s): Jason Dittmann, Jonathan Irwin, David Charbonneau, Xavier Bonfils, Nicola Astudillo, Elisabeth R. Newton, Zachory K. Berta-Thompson
Institution(s): 1 Colorado University, 2 Harvard Smithsonian, CfA, 3 Massachusetts Institute of Technology, 4 Observatoire de Geneve, 5 Universite de Grenoble

415.02 Searching for the First Exomoon in the Radio: A Report on GMRT Data
Author(s): Marialis Rosario-Franco, Joaquin Noyola, Suman Satyapal, Zdzislaw E. Musielak, Jitendra Kodilkar
Institution(s): 1 Giant Metrewave Radio Telescope, 2 University of Texas at Arlington
SATURDAY, 7 JANUARY 2017

415.04 Transit Clairvoyance: Enhancing TESS follow-up using artificial neural networks
Author(s): Christopher Lam¹, David M. Kipping¹
Institution(s): ¹ Columbia University

415.05D The Past, Present, and Future of Planetary Systems
Author(s): Andrew Vanderburg¹
Institution(s): ¹ Harvard-Smithsonian Center for Astrophysics

415.06 Updated Starshade Technology Gap List
Author(s): Brendan P. Crill¹, Nicholas Siegler¹
Institution(s): ¹ Jet Propulsion Laboratory

415.07 How, when and where Life will begin on another planet after Earth by Duky’s Theory
Author(s): Satveer Deol², Amritpal Singh Nafria¹
Institution(s): ¹ Lovely Professional University, ² Punjabi University

416 Dwarf & Irregular Galaxies II
Saturday, 2:00 pm - 3:30 pm; Grapevine A
Chair: David Sand (UC Santa Barbara)

416.01D Galactic Building Blocks: Dwarf Galaxies Near and Far
Author(s): Andrew Lipnicky¹, Sukanya Chakrabarti¹
Institution(s): ¹ Rochester Institute of Technology

416.02 A new dwarf detection algorithm applied to M101
Author(s): Paul Bennet¹, David J. Sand¹, Denija Crnojevic¹
Institution(s): ¹ Texas Tech University

416.03 Effects of Tides on Milky Way Dwarf Satellite Galaxies
Author(s): Mei-Yu Wang³, Louis Strigari³, Azadeh Fattahi⁶, Carlos S Frenk¹, Andrew Cooper¹, Mark Lovell³, Julio F. Navarro⁶, Till Sawala⁴, Andrew Zentner⁵
Institution(s): ¹ Durham University, ² Texas A&M University, ³ University of Amsterdam, ⁴ University of Helsinki, ⁵ University of Pittsburgh, ⁶ University of Victoria

416.04 The First Data Release of the Survey of the MAgellanic Stellar History (SMASH)
Author(s): David L. Nidever¹
Institution(s): ¹ NOAO
Contributing team(s): SMASH

416.05 The Survey of the MAgellanic Stellar History (SMASH): Tracing Stellar Structures in the southern disk of LMC
Author(s): Yumi Choi², David L. Nidever¹, Knut A. Olsen¹, Gurtina Besla²
Institution(s): ¹ NOAO, ² University of Arizona
Contributing team(s): SMASH team
416.06 The Magellanic Satellites Survey: Searching for Hierarchical Structure Formation within the Local Group
Author(s): Keith Bechtol
 Institution(s): 1. LSST
 Contributing team(s): Magellanic Satellites Survey (MagLiteS)

416.08 The Dark Matter Content of the Triangulum II Ultra-Faint Dwarf Galaxy
Author(s): Evan N Kirby, Judith G. Cohen, Joshua D. Simon
 Institution(s): 1. California Institute of Technology, 2. Carnegie Observatories

417 Binary Stellar Systems
Saturday, 2:00 pm - 3:30 pm; Grapevine B
Chair: Andrej Prsa (Villanova University)

417.01D Tidal Interaction among Red Giants Close Binary Systems in APOGEE Database
Author(s): Meng Sun, Phil Arras, Steven R. Majewski, Nicholas William Troup, Nevin N. Weinberg
 Institution(s): 1. Department of Physics and MIT Kavli Institute, MIT, 2. University of Virginia

417.02 Resolving M-dwarf Binaries in Young Moving Groups (YMGs) with MagAO
Author(s): Yutong Shan, Jennifer C Yee, Brendan P. Bowler
 Institution(s): 1. Harvard University, 2. University of Texas at Austin

417.03 Spatial Distribution and Evolution of Massive Stars
Author(s): Mojgan Aghakhanlootakanloo, Jeremiah W Murphy
 Institution(s): 1. fsu

417.04 KIC 9832227: a red nova precursor
Author(s): Lawrence A. Molnar, Daniel Van Noord, Karen Kinemuchi, Jason P. Smolinski, Cara E. Alexander, Henry A. Kobulnicky, Evan M. Cook, Byoungchan Jang, Steven D. Steenwyk
 Institution(s): 1. Apache Point Observatory, 2. Calvin College, 3. University of Wyoming

417.05 Estimating Parallax Error Due to Orbital Motion for HST/WFC3 Spatial Scan Observations of 19 Long-period Classical Cepheids
Author(s): Richard Irving Anderson, Stefano Casertano, Adam G. Riess
 Institution(s): 1. STScI, 2. The Johns Hopkins University

418 Dark Matter, Dark Energy & CMB
Saturday, 2:00 pm - 3:30 pm; Grapevine C
Chair: Lindsay King

418.02D Hidden Sector Hydrogen as Dark Matter: Predictions for Small-scale Structure
Author(s): Anna Kwa, Kimberly Boddy, Manoj Kaplinghat, Annika Peter
 Institution(s): 1. The Ohio State University, 2. University of California, Irvine, 3. University of Hawaii
418.03 SimulatedStudies of Supernova Cosmology for LSST
Author(s): Rahul Biswas
Institution(s): 1. University of Washington

418.04D Complex Scalar Field Dark Matter and the Stochastic Gravitational Wave Background from Inflation: New Cosmological Constraints and Detectability
Author(s): Bohua Li, Paul R. Shapiro, Tanja Rindler-Daller
Institution(s): 1. The University of Texas at Austin, 2. University of Vienna

418.05D Using Galaxy Simulations to Examine Dark Matter in the Solar Neighborhood with Implications for Direct Detection
Author(s): Jonathan D Sloane
Institution(s): 1. Rutgers, The State University of New Jersey

418.06 Decaying sterile neutrino dark matter in the Local Group
Author(s): Brandon Bozek, Michael Boylan-Kolchin, Shunsaku Horiuchi, Shea Garrison-Kimmel, Kevork Abazajian, James Bullock

419 Star Formation II
Saturday, 2:00 pm - 3:30 pm; Grapevine D
Chair: John Tobin (National Radio Astronomy Observatory)

419.01 Probing the EBL evolution at high redshifts using 22 GRBs detected with the Fermi-LAT
Author(s): Abhishek Amitbhai Desai, Marco Ajello, Nicola Omodei, Dieter Hartmann
Institution(s): 1. Clemson University, 2. Stanford University
Contributing team(s): Fermi-LAT collaboration

419.02 Five-Steps Star Formation Histories across M51: Hybrid FUV+IR Star Formation Rates and the Contribution of Older Stars to the IR Emission
Author(s): Rafael T. Eufrasio, Bret Lehmer, Andreas Zezas, Ann E. Hornschemeier

419.03D Star Formation in Edge-on Galaxies and its Relation to Radio Continuum Halos
Author(s): Carlos J. Vargas, Silvia Carolina Mora Partiarroyo, Philip Schmidt, Rene A.M. Walterbos, Judith Irwin, Daniel Wang, Richard J. Rand, Yelena Stein
Institution(s): 1. Max Planck Institute for Radio Astronomy, 2. New Mexico State University, 3. Queen’s University, 4. Ruhr University Bochum, 5. University of Massachusetts Amherst, 6. University of New Mexico
Contributing team(s): CHANG-ES
419.04 Are We Correctly Measuring Star-Formation Rates?
Author(s): Kristen B. McQuinn¹, Evan D. Skillman², Andrew E. Dolphin¹, Noah P. Mitchell¹
Institution(s): ¹ Raytheon Company, ² Univ. of Minnesota, ³ University of Chicago

419.05D Swift/UVOT Measurements of the UV Dust Extinction Curve and the Recent Star Formation History of the SMC and M33
Author(s): Lea M. Z. Hagen², Michael Siegel², Erik A. Hoversten², Caryl Gronwall², Stefan Immler¹, Angelica Vargas²
Institution(s): ¹ NASA/GSFC, ² Penn State

419.06 Tracing magnetic fields and identifying star formation with velocity gradients
Author(s): Alex Lazarian¹, DIEGO GONZALEZ CASANOVA¹, Ka Ho YUEN¹
Institution(s): ¹ Univ. of Wisconsin

419.07 Observations of the Zeeman effect in Class I methanol masers
Author(s): Anuj Pratim Sarma¹, Emmanuel Momjian²
Institution(s): ¹ DePaul University, ² National Radio Astronomy Observatory (NRAO)

420 Circumstellar & Debris Disks
Saturday, 2:00 pm - 3:30 pm; Grapevine 1
Chair: Marshall Perrin (STScI)

420.01 A New M Dwarf Debris Disk Candidate in a Young Moving Group Discovered with Disk Detective
Author(s): Steven M. Silverberg⁷, Marc J. Kuchner³, John P. Wisniewski⁷, Jonathan Gagne¹, Alissa Bans⁸, Shambo Bhattacharjee⁶, Thayne M. Currie⁴, John H. Debes⁵, Joseph R. Biggs², Milton Bosch⁴, Katharina Doll², Hugo A. Durantini Luca², Alexandru Enachioaie⁲, Phillip Griffith², Michiharu Hyogo², Fernanda Piniero²
Institution(s): ¹ Carnegie Institution of Washington, ² Disk Detective, ³ NASA's GSFC, ⁴ National Astronomical Observatory of Japan, ⁵ Space Telescope Science Institute, ⁶ University of Leeds, ⁷ University of Oklahoma, ⁸ Valparaiso University
Contributing team(s): Disk Detective Collaboration

420.02D Modeling gas–dust interactions in debris disks
Author(s): Alex J.W. Richert³, Marc J. Kuchner², Wladimir Lyra¹
Institution(s): ¹ California State University, Northridge, ² NASA Goddard Space Flight Center, ³ The Pennsylvania State University

420.03 Modeling Mid-Infrared Polarization from Protoplanetary Disks and YSOs
Author(s): Han Zhang², Eric Pantin¹, Dan Li⁰, Charles M. Telesco²
Institution(s): ¹ Service d’Astrophysique CEA, ² University of Florida

420.04 In Outburst, the Seeds of Planet Formation
Author(s): Joel D. Green¹
Institution(s): ¹ Space Telescope Science Institute
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420.05 Evidence for Magnetically Driven Protoplanetary Disk Winds
Author(s): Molly Simon, Ilaria Pascucci, Suzan Edwards, Wanda Feng, Elisabetta Rigliaco, Uma Gorti, David J. Hollenbach, James Tuttle Keane
Institution(s): 1 Arizona State University, 2 ETH Zurich, 3 SETI, 4 Smith College, 5 University of Arizona

420.06 Probing the debris disks of nearby stars with Fermi-LAT
Author(s): Alexander Riley, Louis Strigari
Institution(s): 1 Texas A&M University, 2 University of Texas at Dallas

420.07 Pushing the limits of high contrast with STIS/BAR5
Author(s): John H. Debes, Bin Ren
Institution(s): 1 Johns Hopkins University, 2 STScI

421 Astronomy Picture of the Day: Creative Uses in the Classroom & Beyond

Saturday, 2:00 pm - 3:30 pm; Grapevine 2
Do you use APOD in your class? In addition to finding relevant astronomy images, teachers around the world leverage APOD to help educate their students and the public in creative and engaging ways. The session will start with a "behind the scenes" look of how the popular Astronomy Picture of the Day (APOD; main NASA address http://apod.nasa.gov/) is created and the most spectacular APODs of 2016 will be reviewed. Next, speakers will share their APOD-related resources and how they use APOD with their classes and in public outreach. After the presentations, the floor will be opened so audience members can share their experiences with using APOD in their own activities, make general comments, ask questions, and provide criticisms. If you are curious about APOD, use APOD in your classroom, want ideas for using APOD in your classroom or for outreach, want to know how to get APOD to promote your astronomy outreach activity, or would like to make suggestions for changing APOD, this session is your chance to provide direct feedback.
Chair: Robert Nemiroff (Michigan Technological Univ.)

421.01 Can My Image Appear on APOD?: How APOD Really Works
Author(s): Robert J. Nemiroff, Jerry T. Bonnell
Institution(s): 1 Michigan Technological Univ., 2 NASA’s GSFC

421.02 Beyond APOD
Author(s): Alice Allen
Institution(s): 1 Astrophysics Source Code Library

421.03 After APOD: From the Website to the Classroom and Beyond
Author(s): Teresa Wilson
Institution(s): 1 Michigan Technological University
Contributing team(s): APOD

421.04 Spacetime Symphony: APOD and Gravitational Waves
Author(s): Lynn R. Cominsky, Aurore Simonnet
Institution(s): 1 Sonoma State Univ.
Contributing team(s): LIGO-Virgo Scientific Collaboration
SATURDAY, 7 JANUARY 2017

421.05  Teaching Astronomy with Podcasts of the APOD  
Author(s): Robert M. Wagner
Institution(s): 1 Harrisburg Area Community College

421.06  Fake! Astronomy picture forgeries and how to find them  
Author(s): Matipon Tangmatitham
Institution(s): 1 Michigan Technical University
Contributing team(s): APOD Team

422 Plenary Talk: The 2017 Total Solar Eclipse: Through the Eyes of NASA, Alex Young (NASA GSFC)  
Saturday, 3:40 pm - 4:30 pm; Texas A  
Chair: James Lowenthal (Smith College)

422.01  The 2017 Total Solar Eclipse: Through the Eyes of NASA  
Author(s): C. Alex Young, Louis Mayo, Carolyn Ng, Troy Cline, Elaine Lewis, Shannon Reed, Asidesach Debebe, Bryan Stephenson, Sten Odenwald, Steele Hill, Ernest Wright
Institution(s): 1 NASA’s GSFC, 2 NASA/GSFC/ADNET, 3 NASA/GSFC/WYLE

423 Plenary Talk: How Supermassive Black Hole Feedback Might Work, Megan Donahue (Michigan State University)  
Saturday, 4:30 pm - 5:20 pm; Texas A  
Chair: Jack Burns (Univ. of Colorado at Boulder)

423.01  How Supermassive Black Hole Feedback Might Work  
Author(s): Megan Donahue
Institution(s): 1 Michigan State Univ.

AAS Closing Reception  
Saturday, 5:30 pm - 6:30 pm; Grapevine C  
Please join us as we close the 229th AAS Meeting, and say goodbye to old friends and new, with light refreshments provided.
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