

# AAS Newsletter

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*Items of general interest* to be considered for publication in the *AAS Newsletter* should be sent to [crystal@aas.org](mailto:crystal@aas.org). Appropriate pictures are welcome. For information about deadlines and submitting articles, see <http://aas.org/publications/newsletter.php>. Items submitted to the *AAS Newsletter* are not automatically included in the AAS Electronic Announcements or vice versa. Submit electronic announcement items to [crystal@aas.org](mailto:crystal@aas.org).

### Front Cover

Astronomers Find One of the Youngest and Brightest Galaxies in the Early Universe. Image credit: NASA [<http://www.nasa.gov/>], ESA [<http://www.spacelab.org/>], and G. Bacon (Space Telescope Science Institute [<http://www.stsci.edu/>])

# President's Column

David J. Helfand, [president@aas.org](mailto:president@aas.org)



Forty-nine years ago, the American Astronomical Society met in our 49th state; 49 papers were presented. The Society's President was C.S. Beal; Donald MacRae, Bob Kraft, and Ivan King were inducted as Councilors. The Society had just established an Executive Office the year before with one part-time employee, Paul Routly. The Treasurer, in the middle of his 20-year term, was Frank Edmondson. There were no posters, no NASA display booths—and no beer at the Business Meeting. Things have changed.

This June, we met again in our 49th state, “we” now being over 1200 astronomers, solar physicists, planetary scientists, laboratory astrophysicists and astrochemists. Over 836 papers were presented—as posters, Prize Lectures, plenary presentations, meeting-in-a-meeting contributions, and five-minute talks. While I do not have all the data (that has never stopped an astronomer before), I strongly suspect the median age is now lower, the gender balance more even, and the coffee more expensive.

AAS meetings are planned up to a decade in advance (January 2022 is in Washington DC in case you want to mark your calendar). However, even the meticulous and ever-perspicacious planning of the Executive Office meeting staff could not have foreseen the emotional highlight of the Alaska meeting when the 2011 Nobel Laureate in Physics, Brian Schmidt, began his public talk on the accelerating universe by inviting a half dozen of his teachers from his Anchorage high school to take a bow.

Another meeting highlight was the opening invited lecture by Prof. Ewine van Dishoeck who celebrated the debut of the first new AAS Division in over thirty years, the Laboratory Astrophysics Division. She also provided the startling—to me at least—revelation that, accounting for all three states of water, the HDO/H<sub>2</sub>O ratio in star formation regions is the same as that in the Earth's oceans. In addition, Prof. Sandy Faber's Russell Lecture spun the dauntingly complex tale of galaxy formation with elegant simplicity; with only 3% of the baryons ending up in stars, and baryons accounting for only 7% of the mass, she noted: “Small changes in the dog can make big changes in the tail.”

The same could be said of the federal budget for astronomical research, and there is very little in the Washington scene these days to make scientists feel confident they have a good grasp on the dog. We heard one federal official at the meeting describe a 25% success rate for grants as a “healthy oversubscription.” Since this year's NSF grants program success rate is likely to end up at half that value, one could conclude its competition is even

healthier (although in general our goal is to maximize the level of science, not the level of competition). While the NSF Portfolio Review (to be released shortly after you read this) will undoubtedly mete out substantial pain, it is, in my view, an essential exercise if we are to maintain the overall health of ground-based astronomy (that done by people, as well as telescopes, on the ground). More on this next time.

And more on the overall budget situation in Washington next time as well. Even if you can remain optimistic that the expiration of the Bush tax cuts, the expiration and the Obama payroll tax cut, the raising of the national debt ceiling, and the planned sequestration of a trillion dollars or so can *all* be finessed in a three-week lame-duck session of Congress, it is not going to get better. Congressman Frank Wolf (Chair of the House Appropriations Subcommittee on Commerce, Justice, and Science—that is *all* of *our* science) has some strikingly edifying graphics on the fate of federal discretionary spending as the entitlement locomotive bears down on us—I will share them next time.

To return to my historical theme (since the past can seem more comfortable these days), September 17th this year marks the hundredth anniversary of one of the most important astronomical observations ever made: Vesto Slipher's Lowell 24-inch telescope spectrum of the "spiral nebula" Andromeda. Reporting his surprising result the following year in the *Lowell Observatory Bulletin* (Vol.1, pp.56-57—astronomers were less prolix then, even though page charges were nil), Slipher noted the "swift flight through space" of the nebula, and opined "That the velocity of the first spiral observed should be so high intimates that spirals as a class have higher velocities than do normal stars [standard astronomical reasoning from one object—some things do not change] and that *it*

*might not be fruitless to observe some of the promising spirals for proper motion.*" (emphasis added.)

Fortunately, Slipher did not devote himself to that task, and, instead, kept taking nebular spectra. Two years later, he had amassed a sample of several dozen objects and found that most were flying away from us at speeds up to 1100 km/s. "Origins of the Expanding Universe," a meeting to be held on the centenary at Lowell Observatory this September, will bring together some of today's leading astronomers and historians to discuss the evolution of our understanding of the cosmos over the past century (<http://www2.lowell.edu/workshops/slipher>). Speaking of meetings, it will not be long before abstracts are due for Long Beach in January, and it is too late for Meeting-in-a-Meeting proposals to be held next June in Indiana (Vesto Slipher's home state).

I will close by reiterating my remarks at the (beer-enabled) Business Meeting upon receiving the gavel from our outgoing President, Debbie Elmegreen. It is traditional at such moments to say one has a tough act to follow, but that is not the case this time: I have an impossible act to follow. Debbie has devoted herself to the Society with an unmatched passion for its mission: "To enhance and share humanity's scientific understanding of the Universe." I am enormously grateful for the wisdom of the bylaws drafters who long ago decreed that a Past President remains on the Executive Committee for an additional year; that meant I, and the Society, can continue to profit from Debbie's unstinting commitment to our profession.

With best wishes for a productive and/or enjoyable summer.

I am sincerely yours,  
David

## The Unintended Consequences of Astronomical Humor

Notwithstanding the reputation of our profession as composed of socially dysfunctional geeks, many astronomers, astrophysicists, planetary scientists, and solar physicists have a sense a humor (e.g., you can always pick out an extroverted astrophysicist—he is the one staring at your shoes when he is talking to you). In the current political climate (speaking of dysfunctionality), however, it is highly advisable to keep one's humor out of official, professional documents. Allow me to explain.

Some *Newsletter* readers are old enough to remember the late Senator William Proxmire, a five-term Senator from Wisconsin who was famous for his Golden Fleece Awards which excoriated federally funded projects that he thought were a waste of taxpayer money. NSF and NASA were not infrequent awardees. In fact, some Fleece Award winners represented important, fundamental research, but

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# From the Executive Office

Kevin B. Marvel, Executive Officer, [marvel@aas.org](mailto:marvel@aas.org)



Well, your elected leaders surprised me and the rest of the AAS staff with recognition of the 50th anniversary of the AAS Executive Office. I was presented with a lovely crystal obelisk with some appropriate words etched in at the opening session of our Anchorage meeting. It is an honor for all of us to serve the astronomical community here at

the Executive Office and a deep pleasure to be 'in-house' for this 50<sup>th</sup> anniversary year. It is hard to imagine that we started out with a part time executive officer and no support staff just fifty years ago. My intent in this column is to give you a snapshot of the activities going on this summer and beyond in support of the mission of the Society and guided by Council's goals.

The Anchorage meeting saw the transition of our elected leaders who have served you so well for their terms and the induction of five new volunteer leaders. Ed Prather comes on board as Education Officer, Anne Cowley formally takes up duties as Publications Board Chair, Paula Szkody comes on board as junior vice president and Todd Henry, Steve Kawaler and Nancy Brickhouse come on board as new councilors. Debbie Elmegreen switched hats and is now our past president, while our former president-elect, David Helfand, takes on his duties as president by dropping his 'elect' status. Lee Anne Willson steps down as VP, Tim Slater ends his term as Education Officer, Richard Green steps down as publications board chair and Jennifer Wiseman, James Lowenthal and Richard French step down as Council members.

If you have not thanked your elected leaders lately, you should, they work tirelessly on your behalf and devote a significant fraction of their personal time to AAS duties. Thank you to one and all. It is heartening to reflect that much happiness and excitement accompanied this formal transition (along with some tears, too) because of the passionate energy and connection these volunteer leaders feel while in their elected office.

We have a busy summer in front of us. The AAS is helping organize and host a workshop at the IAU General Assembly in August on scholarly authorship and Publishing Director Chris Biemesderfer is working with colleagues from the other major astronomy journals to bring these workshops to fruition.

The AAS office never stands still and we have several recruitments under way to fill empty spots in our roster, including for a new Director of Public Policy. We are also happy to begin working with our new *ApJL* editor, Fred Rasio, who is busy setting up his editorial office and hiring staff at his home institution of Northwestern University. Fred takes over from Chris Sneden in January 2013 and we thank Chris for his years of excellent service at the *ApJL* along with his managing editor Elizabeth Korves. We also executed a move of the *ApJ* editorial office (without any noticeable disruption to the editorial flow I might add, kudos to all involved!). Editor-in-Chief Ethan Vishniac and Managing Editor Janice Sexton are now firmly ensconced on the campus of the University of Saskatchewan in Saskatoon, Canada. The *ApJ* office is now officially further north than our publishing partner IOP, based in Bristol, England. I have requested that Dr. Vishniac not move the editorial office to Yellowknife or points further north, having now secured this geographic record handily. We also welcome Ata Sarajedini as associate editor in chief for the *Astronomical Journal*. Ata is based at the University of Florida and took up his formal duties this June. We say farewell to Margaret Hanson who served in this role since 2005 and thank her for sticking with us through the transition to IOP.

We are also working hand-in-hand with the DPS leadership to ensure a successful meeting this fall in Reno. The help of an engaged LOC has been wonderful and we are sure the annual DPS meeting will be a success. Please note that AAS members who are not members of the DPS division are welcome to attend the meeting and may attend at member rates simply by joining the Division and paying the annual dues (currently \$15). The high desert near Reno is lovely in the fall and will be made even more interesting with the addition of the science results shared at the annual DPS meeting. Lodging costs are also at an all time low (recently anyway) of \$95!

The AAS Long Beach meeting in January 2014 is just six short months away and planning is already under way for that meeting. Your vice presidents met in Anchorage to select the sessions and invited speakers and help structure the meeting flow. It is gearing up to be an excellent meeting and I hope you consider attending. Long Beach is particularly attractive as a meeting location financially and the science program will be excellent. Finally, we

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## Astronomical Humor continued

the titles or abstracts of the (successful) grant proposals in question were easy targets for ridicule in the popular press.

Proxmire was, it turns out, both bright and fair-minded, and in more than one instance, he publicly retracted his criticism after the designated research was explained to him. It is not obvious we can expect the same thoughtful treatment today. In a significantly nastier tone, Senator Tom Coburn, identified by the *Washington Times* as the “top waste watcher” in Congress, released last year a report in which he charged that NSF had “mismanaged” \$3B in federal funds (nearly half its annual budget (see <http://www.washingtontimes.com/news/2011/may/26/tax-dollars-shrimp-treadmills-jell-o-wrestling/>)).

Unfortunately, unlike the 1970s when Senator Proxmire was dishing out awards, science no longer holds a high level of respect in much of our society. It is, therefore, incumbent upon every member of the scientific community to act in the public sphere in a manner that works toward rebuilding that respect, rather than undermining it.

I will freely admit here that I have given cute/humorous/pun-encrusted titles to papers, grant proposals, and other official documents in the past. I have yet to name something after myself, but that is perhaps only a consequence of not having discovered anything significant (although I have given funky names to some of my discoveries, and one of them—a duck—has been officially “decapitated” in the *Astrophysical Journal* (*ApJL* 573, L111)). My reading of the situation in Washington these days is that this fun, freewheeling approach is no longer wise.

First, US astronomy is an adherent to the International Astronomical Union which is the official, international body for naming astronomical objects and events. Its nomenclature is adopted by the software of the Virtual Observatory, and it represents a uniform, internationally accepted standard that all astronomers should use. Secondly, our Society’s journals have explicit policies, consistent with those of the IAU, for naming conventions in published work. All authors should conform to these standards.

Finally, all grant proposals, paper titles and abstracts are now—fortunately—available within a few keystrokes. This is an enormous boon to our field which has been among the leaders in creating online access to the literature. However, this facility is also available to any 27-year-old Congressional aide or interning journalism student who wants to generate a sound-bite to please his employer. The 24-7 news cycle is a voracious consumer of such bites.

For your talks to colleagues and the engagement of the public, please continue to illuminate, inform, and entertain with witticisms aplenty. But before you submit your next proposal or paper, please think three times before giving it a title that will end up in Senator Coburn’s hall of shame.

David J. Helfand, President, AAS

## Member Deaths

The Society is saddened to learn of the deaths of the following members, former members, and affiliate members:

**William A. Baum**  
**K. Michael Merrill**

## Letters to the Editor Policy

The Letters to the Editor section of the Newsletter provides a forum for Society members to comment on the operation of the Society, as well as to alert the readership to policy issues of broad interest in matters germane to our mission. Letters must be signed and should not exceed 250 words. The Associate Editor may edit letters, but will consult with authors before doing so. Letters will be published at the discretion of the Editors.

Send to Jeff Linsky, Associate Editor, Letters, ([jlinsky@jila.colorado.edu](mailto:jlinsky@jila.colorado.edu); 303-492-7838 phone; or 303-492-5235 fax) one week prior to the *AAS Newsletter* deadline.

## Opting In and Out of AAS Publications

If you would no longer like to receive paper copies of the *AAS Membership Directory* or the *AAS Calendar*, please send an email to [address@aaas.org](mailto:address@aaas.org) or log in to your member record at [aaas.org](http://aaas.org).

To unsubscribe from AAS emails, contact [address@aaas.org](mailto:address@aaas.org)

For address changes, email [address@aaas.org](mailto:address@aaas.org)

## From the Executive Officer continued

received a competitive range of proposals for the new AAS Topical Conference Series and we are looking forward to holding our first of these meetings late next summer.

The IT, Membership and Communications staff have been working hard all year on two key projects: the roll-out of our new web page and underlying content management system (we are looking forward to making a formal delivery of the new system soon and will inform our membership as it comes online); and a major upgrade to our membership management and e-commerce infrastructure. This last item was a non-trivial upgrade and everyone involved made the transition nearly transparent with the help of our external software provider.

As usual, public policy work has continued with many visits under the Communicating with Washington program.

This summer some visits are taking place in home districts, which can often have higher impact than here in DC.

The Finance staff and CFO Kelly Clark manage to support all of these activities by timely and accurate processing of financially related paperwork and making payments for services rendered and maintaining payroll and benefits provision as well as handling innumerable other administrative details. It is a non-trivial task to keep the AAS 'engine' supplied with 'gas,' believe me.

So, enjoy your summer and rest easy with the knowledge that your Executive Office is hard at work ensuring your Society can meet the Council's goals and fulfill our mission to enhance and share humanity's understanding of the Universe.

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# Secretary's Corner

G. Fritz Benedict, [aassec@aas.org](mailto:aassec@aas.org)

## Preliminary Slate for 2013 Elections

### President:

Chris Impey  
C. Megan Urry

### Vice President:

Chryssa Kouveliotou  
Nancy B. Morrison

### Secretary:

G. Fritz Benedict (unopposed)

### Council:

Sarbani Basu  
Geoffrey C. Clayton  
Dawn M. Gelino  
Jeffrey Mangum  
Dara J. Norman  
Nicole S. Van Der Blik

### Publications Board:

Timothy S. Bastian  
Alberto Conti  
Dieter Hartmann  
Joseph B. Jensen  
Edward M. Sion

### Astronomy Education Board:

Gina Brissenden  
Matthew W. Muterspaugh  
Aaron Price  
Rica Sirbaugh French

### Nominating Committee:

Jacob Noel-Storr  
Massimo Marengo  
Rica Sirbaugh French  
Virginia L. Trimble

Additional nominations for Officer or Councilor may be submitted by mail and must be accompanied by a written statement from the nominee indicating a willingness to serve and by the signatures of at least 30 voting Full Members of the Society. Additional nominations for the Nominating Committee must be proposed by at least 5 Full Members of the Society and must also be accompanied by the nominee's written statement indicating a willingness to serve.

All nominations and supporting materials must be received by 14 September 2012 in the Office of the Secretary. Send nominations to: G. Fritz Benedict, McDonald Observatory, University of Texas, 1 University Station, Austin, TX 78712.

# Journals Update

Chris Biemesderfer, Director of Publishing, [biemesderfer@aaas.org](mailto:biemesderfer@aaas.org)

## Access to research results

One of the responsibilities of the Executive Office is to monitor the dialog and the activities regarding access to research results. Some of the discussions are concerned with financing scholarly communication, some are directed at public access to research, and all have some bearing on the mechanisms we use to communicate research results in the academy.

This spring has been a busy time particularly with respect to Open Access, which is the name given to the notion that resources should be available online at no charge, without restrictions. In December 2011, the US Office of Science and Technology Policy (OSTP) requested further comments on public access to the research literature as well as to research data. In the UK, the Working Group on Expanding Access to Published Research Findings (the “Finch Group”) released its report in June, and the Research Councils UK (RCUK) circulated a new draft of their Open Access policies in April. The Open Access community has increased its advocacy efforts in the wake of the reintroduction of two bills earlier in the Congressional session (the Research Works Act, or RWA, H.R. 3699, and the Federal Research Public Access Act, or FRPAA, H.R. 4004). A grass-roots outcry against the Dutch publisher Elsevier, rooted in objections to Elsevier’s business model, was initiated in late January, and continues to the present. In May, a petition to “[r]equire free access over the Internet to scientific journal articles arising from taxpayer-funded research” was submitted to the Obama administration via the White House’s “We the People” website.

The AAS employs a business model for its journals that permits the Society to distribute our journals in ways that we think are entirely consistent with broad dissemination to the community and to the general public, and we have policies and programs that contribute to the goal of wide accessibility. *Astronomy Education Review* and the *Bulletin of the AAS* are fully open access titles, and the *Astronomical Journal* and the *Astrophysical Journal* employ a policy of “delayed open access” that makes articles freely available 12 months after their publication. Of the more than 120,000 articles published in the Society’s journals, more than 115,000 of them are available for no charge.

The AAS now has a program that enables the remaining articles to be accessible in public libraries in the US (see related announcement following).

The AAS’s business model focuses primarily on two groups of stakeholders in scholarly research: those who produce research articles and those who consume (read) them in the course of their scientific investigations. We tend to label those groups as “authors” and “librarians”—the librarians being proxies for researchers studying the literature—since those are the customers we interact with in our publishing business. Those are also the groups in the academy that benefit most from the publication of research journals, and our business model entails getting revenue from each group. We believe our approach is sensible, fair, and appropriate for acknowledging the importance of the value—intellectual and structural—that is added to articles by our publishing process. Obviously, the Society will not violate laws nor fail to comply with regulations; however, we don’t think changing our business to eliminate subscriptions would improve access to our journals, especially not among the professionals for whom the journals are targeted. Furthermore, we have serious reservations about mandated open access, partly for philosophical and fiscal (of the Society’s Journals) reasons, but also because of the potential disruption to research funding at the agency level.

On the other end of revenue balance, we realize there is some concern in the community about author fees as well. In the next issue I will discuss the publishing activities that benefit you as a scholar, and help you understand the justifications for author fees.

## AAS journal access for US public libraries

Following the lead of the American Physical Society, who launched a similar program in 2010, the AAS now makes our online journals available at no charge to public libraries in the US. The program is intended to enable the accessibility of the Society’s journals to the taxpaying public in the United States. Public libraries with an interest in our journals must register, and we make a nominal attempt to verify that the request is from

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a bona fide public library. A promotional campaign was undertaken by our publishing partner IOP Publishing at the beginning of June, and a number of public libraries have already signed up. The AAS regards this effort as another mechanism the Society provides to enhance and share humanity's scientific understanding of the Universe.

### AAS journals to use CrossCheck

John S. Gallagher III, Thomas A. Hockey, Christopher Sneden, Ethan T. Vishniac

The AAS ethics policy for papers published in its journals, like those of other publishers, calls for the submission of original work. This requirement extends to the language in the paper, which must not replicate wording used elsewhere. With the availability of software tools, it now is standard practice to check the language of submitted manuscripts against that of other work. The AAS journals are making use of this capability to check all submitted manuscripts for problems with replicated text. When difficulties occur, which rarely happens, editors will contact authors and seek ways to remedy the difficulty. The best practice, however, remains, ensuring that your submitted manuscript does not contain text reproduced from other sources.

### Ata Sarajedini Joins the AJ as Associate Editor-in-Chief

In May 2012 Professor Ata Sarajedini from the University of Florida joined the *AJ* editorial team as the Associate Editor-in-Chief. He will replace Professor Margaret Hanson, who currently holds this position and is retiring from the *AJ* after promotion to Associate University Dean of the Graduate School at the University of Cincinnati. During the summer, Margaret will phase out of her *AJ* duties and Ata will gradually assume this role. Our thanks go to Margaret for her contributions to the *AJ*. We expect to complete this transition before the end of 2012.

Ata received his Astronomy Ph.D. from Yale University in 1992 and, following a Hubble Fellowship and two years at Wesleyan University in Connecticut, joined the Astronomy faculty at the University of Florida where he is now a Professor and Associate Department Chair. As a member of the *AJ* editorial team, Ata brings wide experience in stellar and Galactic astronomy, as well as knowledge gained from a spectrum of professional activities that provide a strong foundation for his interest in communicating the results of astronomical research.

We look forward to Ata's contributions in helping the *AJ* better serve our community.

Let me also take this opportunity to remind you of some of the services we offer at the *AJ*:

- Electronic special issues in the form of "Article Compilations," which make scientifically related articles by an author team available in one location for the convenience of readers.
- Publication of papers that describe surveys, instrumentation, and software, so long as this information currently is or is likely to be relevant to understanding scientific results presented in the AAS journals.
- A flexible approach to publishing astronomical results; we are interested in exploring new and better ways to publish, such as the option to connect data tables and figures ("data behind the figures," pioneered by the *AJ*).

I also would like to invite you to take advantage of the resources available from *AJ*'s home page hosted by IOP Publishing: <http://aj.aas.org>. The IOP Science site is especially useful if you want to know more about the *AJ* or wish to browse the astronomical research literature.

John S. Gallagher, Editor-in-Chief



# Washington News

Bethany Johns, John Bahcall Public Policy Fellow, [bjohns@as.org](mailto:bjohns@as.org)



## Looming Spending Cuts: Will Congress Act In Time?

Sequestration spending cuts are coming up fast and Congress is posturing for the debate, but will they reach an agreement before it is too late?

Sequestration spending cuts are the result of the failed attempt of the Joint Committee on Deficit Reduction to find \$1.2 trillion dollars to cut from the federal budget over the next ten years. The law stated that if no cuts could be agreed upon, then all agencies will be cut an equal percentage. Half of the cuts are to be from both defense discretionary spending and from non-defense discretionary spending.

For agencies like NASA and NSF, which are non-defense discretionary agencies, this means they will be cut by 8-10%. Ten percent of NASA's total budget is \$1.771 billion. This is about equal to the total sum of the budgets for Heliophysics, Astrophysics, and half of Planetary Science. Ten percent of NSF's total budget is \$737.3 million. This is three times the \$245 million NSF Astronomy budget. Sequestration cuts are scheduled to happen 2 January 2013.

There are four scenarios that could happen.

**Congress Acts Before the Election:** Quickly reaching a deal to avert sequestration will help the already fragile economy and provide some economic certainty for those companies who contract with the federal government. Defense contractors and others who rely on federal funding to support their employees are providing an incentive for policy makers to act quickly. According to the law, contractors have to give workers a 60-day notice if they're facing layoffs. Notices for employees would have to go out on 2 November, a mere four days before election day.

**Solution During Lame-Duck Session:** After the election Congress could be in more of a mood to negotiate and the public knows which party will control the House,

Senate and White House in 2013. In fact, Congresspeople are already working to lay a groundwork for negotiations. However, the situation is compounded by the debate that has to happen on extending the Bush-era tax rates, the payroll tax cut, and Medicare reimbursement rate for doctors. Also, the federal government is reaching our debt limit spurring another possible debate similar to the fight of 2011 that could push the nation closer to default.

**Punting until Next Year:** Congress may delay the sequestration cuts because of little time to debate the issue with the rest of the year full of worries about elections and debates during the lame-duck session. There could also be a partial fix, at least for defense spending. Congress could try to push off the 2 January date to buy time to reach a deal.

**The Budget Ax Falls:** Both Democrats and Republicans agree that sequestration is an irrational move. However, they cannot agree on how to prevent the cuts. Cuts will happen if both parties refuse to budge in negotiations. President Obama has said that automatic cuts will stay unless Congress presents a "balanced" deal to him, one that includes revenues increases and spending cuts.

Which scenario plays out depends on you. Yes, you.

These cuts do not have to happen, nor do they have to affect astronomy. You can tell your Congresspeople and policy makers that the astronomical sciences are important to the nation and that you want them to find a solution that puts the United States on the right economic track by supporting science and science education.

Schedule a local visit during the Congressional Summer recess during August. Instructions are found at: [http://as.org/policy/cww\\_instructions](http://as.org/policy/cww_instructions)

Please let us know if you are scheduling local visits and how we can help you. Please contact Bethany Johns at [bjohns@as.org](mailto:bjohns@as.org) or 202-238-2010.

# JWST Update

John Mather, JWST Senior Project Scientist, NASA's Goddard Space Flight Center

In the last AAS newsletter, Eric Smith (JWST Deputy Program Director at NASA HQ) talked about how JWST program management at NASA headquarters has been re-organized to implement the plan for JWST that was developed over a year ago. I am happy to say that we are sticking to this plan, and are exhibiting good cost and schedule performance relative to it. In fact, NASA reports this progress regularly to the science committees in the House and Senate, and you can read about them on our web site here: <http://www.jwst.nasa.gov/recentaccomplish.html>. Our schedule and budget include allowances for delays and for the cost of recovery from technical problems, and as of today we still have 13 months of schedule reserve, as we did at the end of the replan a year ago. We expect JWST to fully meet its performance specifications for image quality, stability, and sensitivity. By the way, the JWST Exposure Time Calculator is up and running at <http://jwstetc.stsci.edu/etc/> and has seen thousands of calculations by the community to date. The calculator was designed to only include a few JWST observing modes for each instrument. In particular, we have not yet implemented the setup details and exposure calculator methods needed for observing very bright objects that could include solar system objects, foreground stars, exoplanet transit monitoring, and much more.

We are particularly pleased that the mid infrared instrument (MIRI) was shipped from the Rutherford Appleton Labs in the UK to Goddard on 29 May. The MIRI was built by a European consortium of 14 institutions (all with their own funding sources), led by Gillian Wright of the UKATC in Edinburgh, in partnership with the Jet Propulsion Laboratory. It was slightly delayed by a few last-minute retests to be sure of its mechanical stability, as required by ESA and NASA review committees. The other three instruments are all on track for delivery to NASA within the next year. The Fine Guidance Sensor (FGS) and Near IR Imaging Slitless Spectrometer (NIRISS) from Canada are on track for delivery this summer as well, due to very successful efforts in Canada to rework this science instrument after a de-scope of its scanning Fabry-Perot etalon to preserve schedule. The Near IR Camera (NIRCam) has two identical modules (A and B) that are about to begin cryogenic vacuum testing at the Lockheed Martin facility in Palo Alto California; it will arrive at GSFC during the Fall. In Europe, the Near IR Spectrograph (NIRSpec) is being reassembled on a backup optical bench after cracks were discovered in the original bench; it will be last to arrive, during spring of 2013. The Integrated Science Instrument Module

(science instrument payload) is now in integration and test with the first of three cryo-vacuum test cycles set to begin during the Spring of 2013.

Manufacturing of new near-infrared detectors for the science instruments has begun (ahead of schedule) after discovery of a design flaw in the original set. The new design has passed all flight qualification tests and flight units are in production.

The replan already included time and budget for the near IR detector replacement. At the moment, the optical telescope simulator (OSIM) is being cooled down in Goddard's giant Space Environment Simulator for the first time, and optical tests confirm that its optics are getting cold and still produce sharp images. The OSIM is needed for the instrument payload testing and will be used to confirm that the instruments are properly aligned, focused, and are still functional after shipment. After the instruments are fully tested and integrated, the package will be aligned with the telescope at Goddard, but at room temperature. Optical analyzers at the center of curvature of the primary mirror will confirm that it can be properly adjusted. Then the telescope and instrument package will be folded and shipped by air to the Johnson Space Flight Center in Houston, where it will be unfolded and installed in the test chamber there. The JSC chamber is being fitted with gaseous helium and liquid nitrogen cooling shrouds capable of getting the telescope down to its operating temperature of about 45 K.

Recently the Space Telescope Science Institute has drafted a new Science Operations Design Reference Mission (SODRM), which mocks up a year of representative science observations, as an aid to planning, analysis, systems engineering, and the design of the ground system. The SODRM includes a wide range of potential observations, including programs that execute the major JWST science themes (Gardner et al. 2006), as well as programs suggested by subsequent science whitepapers (<http://www.stsci.edu/jwst/doc-archive/whitepapers/>) and by the "Frontier Science Opportunities with JWST" conference held in June 2011 (<http://www.stsci.edu/institute/conference/jwst2011>). The actual first year of JWST science programs will be selected by peer review; the SODRM merely tries to simulate a realistic mix of observing programs. STScI is currently creating mock schedules from the SODRM, in order to understand how quickly angular momentum builds up in the observatory's reaction wheels, and how long the observatory spends slewing and settling to each new target. STScI has begun

characterizing the overheads in these mock schedules, due for example to slew time, filter wheel moves, and guide star acquisitions, in order to optimize observing schemes in ways that minimize overheads.

We invite you to follow our progress. You can watch our technicians in the clean room at Goddard on our web-

cam, you can see status updates on our web page ([http://www.jwst.nasa.gov/status\\_main.html](http://www.jwst.nasa.gov/status_main.html)) and you can follow us on Twitter (@NASAWebbTelesc) and Facebook (NASA Webb Telescope). You can also invite members of the science team to visit your university and give a more in-depth presentation about the technical status and scientific potential of the observatory.

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## STEM Higher Education

Robert Mathieu, [mathieu@astro.wisc.edu](mailto:mathieu@astro.wisc.edu)

A critical leverage point for change in STEM higher education is the training of doctoral students at research universities. In the United States, roughly 100 research universities produce 80% of all doctoral degrees, and the vast majority of the faculty members in the nearly 4000 colleges and universities pass through these research universities. Thus research universities have the opportunity, and the challenge, to lead the way in advancing change and innovation in graduate training, with the goal of systematically and rigorously preparing the future STEM faculty to be both superb researchers and excellent teachers.

In fact, the improvement of teaching is itself a research problem addressing the question, “What have my students learned?” The enhancement of student learning is a question subject to the experimental method of hypothesis, experiment, observation, analysis, and improvement. Thus the concept of teaching-as-research can engage STEM future and current faculty in reform of teaching practice. Like STEM disciplinary research, teaching becomes a dynamic and progressive activity rather than a static task. Our ultimate goal is to develop STEM faculties who themselves continuously inquire into their students’ learning and thereby their own teaching.

A powerful concept requires a community in which to flourish and develop. Thus we have integrated the teaching-as-research concept with the idea of a learning community. Within learning communities members connect and support each other around specific learning objectives and principles. Learning communities also foster strong relationships among members across an institution and thus build a foundation for institutional change. Of course, learning communities are familiar to STEM future and current faculty in the forms of research groups and academic departments.

Teaching-as-research also is deeply and naturally linked to the issue of success for all students. Research into

the question of “What have my students learned?” necessarily will reveal whether the findings are the same for all students. Likely they will not be the same, which will immediately raise the next research question of why not. Investigation into this question, and the associated foundational knowledge, will raise the wide variety of challenges associated with diverse learning styles, student demographics and previous education, and so on.

The development, implementation, and evaluation of these ideas is the mission of the NSF-funded Center for the Integration of Research, Teaching and Learning (CIRTL; [www.cirtl.net](http://www.cirtl.net)). Begun in 2003, CIRTL is now a network of 25 major research universities. Each of these universities is nurturing local learning communities for the preparation of future faculty based on these CIRTL ideas, as well as an on-line learning community that connects the future faculty with the diversity provided by the Network.

The prototype CIRTL learning community, the Delta Program in Research, Teaching and Learning ([www.delta.wisc.edu](http://www.delta.wisc.edu)) at the University of Wisconsin – Madison, engages nearly 100 STEM future faculty in teaching-as-research-based graduate courses and teaching-as-research assistantships each semester. The Delta Program is now fully institutionalized and independent of NSF CIRTL funding. The Delta Program is also the subject of an extensive NSF-funded longitudinal study tracking the careers paths and teaching implementations of Delta participants as they become the nation’s STEM faculty. Of course, the beauty of the teaching-as-research ideas is that ultimately these STEM faculty themselves will establish the enhanced learning of their students.

*This article is another in a series spotlighting innovative STEM education programs. Previous articles were published in Newsletter #160, September 2011 and additional articles are welcome.*

# Committee on the Status of Women in Astronomy

Edmund Bertschinger, edbert@mit.edu, Dara Norman, dnorman@noao.edu, and  
Chanda Prescod-Weinstein, chanda@mit.edu

[Note: I would like to thank the authors for attending this important workshop on behalf of the AAS and its mission.  
Kevin B. Marvel]

## AWARDS: There is a problem and we can solve it

One year ago in this Newsletter<sup>1</sup>, A. B. Popejoy and Phoebe S. Leboy of AWIS (Association for Women in Science) described the under-representation of women for awards and prizes in the AAS and other scientific societies and suggested possible causes and corrective actions. This article followed their presentation on this important topic to the AAS Council at the AAS 218<sup>th</sup> meeting in Boston. They described a three-year project funded under the NSF ADVANCE program called AWARDS (Advancing Ways of Awarding Recognition in Disciplinary Societies). The AAS Council, recognizing the problem, agreed to participate in the AWARDS project by sending the three of us – representing the Committee on the Status of Women in Astronomy, the Committee on Minorities in Astronomy, and the Working Group on LBGTIQ Equality – to the second AWARDS Program Workshop in May, 2012<sup>2</sup>.

During the decade 1992-2001, women earned nearly 20% of the PhDs awarded in astronomy, about double the percentage from the preceding twenty years. In 2006, 28% of astronomy assistant professors were women. These two groups represent the pools from which awards are selected for senior and early career astronomers. The percentages of women in these pools differ significantly from the percentages of women among the award winners: During the period 2001-2011, excluding women-only awards, women earned 4.7% of the senior society awards (Russell, Tinsley, Weber, Heineman, Lancelot) and 14.3% of the junior awards (Pierce and Warner) but 33% of the education awards (including Chambliss). It is particularly striking that the Beatrice M. Tinsley Prize was awarded to a woman in its inaugural year of 1986 (Jocelyn Bell Burnell) and not since. And while women are systematically underrepresented in scholarly awards for their research, they are not underrepresented among service and teaching award winners (Van Biesbroeck, Chambliss, and Education Prize).

This pattern is not unique to the AAS. At the workshop, we saw similar statistics from seven societies that

AWIS began working with two years ago, including the American Geophysical Union, our partner in the American Institute of Physics. More importantly, we learned that these societies have already made significant strides toward reducing numerical inequities by instituting some best practices recommended by AWIS. We learned that implicit bias continues to plague selection processes and that all people are subject to it. We learned that AWIS has produced a wonderful set of short training videos<sup>3</sup> (half are narrated by our own Meg Urry, so watch them and recommend them to others, including hiring committees!). We learned that the mathematicians and statisticians have developed guidelines for avoiding implicit bias which are required reading for their selection committees. We learned how certain kinds of language trigger implicit bias—words like “leader, dynamic, innovator” are used more often in letters for men than women while “conscientious, citizen” are used more often for women, in addition to reference to personal attributes. We learned that women are nominated for awards at lower rates than men.

Responsibility for equitable and impartial awards processes rests jointly on the leadership, committees, and members of the AAS. Each of us can avoid explicit bias<sup>4</sup> and can call it out when we see it. Each of us can become better informed about implicit bias; the AWIS videos are an excellent resource—please view them and share them with your hiring and promotion committees. Committees and societies can review their processes to find ways to clarify and simplify them; new committee members can be informed about implicit bias and procedures to ensure equitable consideration of all candidates. We all can nominate more candidates for awards, and self-nominations (as are now permitted for the Pierce and Warner prizes) may increase the numbers of highly qualified candidates. Some societies (e.g., American Chemical Society) have established an awards canvassing committee to gather names from society members who have broad awareness of member contributions (e.g., journal editors and associate editors). The AAS Council can work with the committees we represent (CSWA, CSMA, WGLE)



## AWARDS: There is a problem and we can solve it continued

to identify best practices for increasing nominations. The AAS can send its Officers and Councilors to attend future AWARDS workshops or similar ones offered by other organizations. More ideas are available in the workshop presentations at the AWARDS project page.

We are convinced that the underrepresentation of women and others in awards is not a result of their choices or abilities but instead reflects the tendency of both men and women to apply unconscious stereotypes. In the era of visual and photographic observations, each astronomer had a “personal equation” for measurement bias that she or he learned and corrected. Similar but more subtle biases apply to judgments about people. We encourage 21st century astronomers to learn their personal equations and apply them to reduce bias and improve the quality of decisions about awards, promotions, and selection in every context. More information is available at the AWIS websites in the footnotes.

*Acknowledgements:* We thank the AAS Council for supporting our travel to the AWIS workshop, and the AWIS organizers for a stimulating, informative program. We mourn the passing of Phoebe Leboy on 16 June 2012—she was a founding member and past president of AWIS and was PI on the NSF ADVANCE grant supporting the AWARDS project.

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<sup>1</sup>A.B. Popejoy & Phoebe S. Leboy, “AAS and the Under-recognition of Women for Awards and Prizes”, *AAS Newsletter*, July/August 2011, Issue 159, p. 18.

<sup>2</sup>AWIS AWARDS project: <http://www.awis.org/display-common.cfm?an=1&subarticlenbr=397>

<sup>3</sup>AWIS training videos: <http://www.awis.org/display-common.cfm?an=1&subarticlenbr=415>

<sup>4</sup>E.g., <http://www.amstat.org/awards/acguidelines.cfm>

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## Committee on Employment

Louis-Benoit Desroches ([lidesroches@lbl.gov](mailto:lidesroches@lbl.gov))

### Three Rules for Transitioning

My name is Louis and I am, or rather I was, an astronomer. I now work in the field of energy analysis and policy research at Lawrence Berkeley National Laboratory, mostly supporting the U.S. Department of Energy’s Appliance and Commercial Equipment Standards program. That may seem like an odd fit for someone with an astronomy background, but the truth is the transition was quite natural. Astronomers are highly trained professionals who can contribute and excel in a variety of industries outside academia. In our group at LBNL, for example, there are several former astronomers and physicists. My hope is that the lessons I have learned in my transition will help those who are contemplating a transition of their own.

My story begins in graduate school, specifically about mid-way through. Until then there was never any doubt in my mind about my future academic astronomy career. The subject was interesting, the people were great. But

then a funny thing happened—I began to pay more and more attention to current events and less attention to *astro-ph*. In particular I was drawn to stories related to climate science and the economics of carbon emissions. My social conscience was really starting to nag at me, and I wanted to do *something* about this problem. My astronomy research started to slip in priority. At first, I mostly ignored all of this, blaming my falling interest in astronomy on the usual grad school blues and assumed it would pick up again. My classmates, however, taught me an important lesson. I saw in them true passion for astronomy. They lived and breathed astronomy. And that is when I realized I was in the wrong field—my passion was elsewhere. I came to this conclusion about a year or two before finishing my thesis (which in hindsight should have been much earlier). This leads me to:

*continued on page 14*

## Three Rules for Transitioning continued

Lesson 1: Be truthful to yourself, sooner rather than later. Take a cold, hard look at your interests and motivations. Astronomy is a great field to work in, but it is best for those with a dedicated passion.

If you decide to transition out, that does not mean that you should stop right away. There is plenty of value in completing an astronomy degree. But knowing your motivations earlier rather than later will aid you in transitioning. In my case, I talked to many people to get a feel for this new field I was interested in, to help narrow my focus. I spent some time attending seminars and lectures on energy and resource management. I sat in on a weekly energy analysis group lunch (with the professor's permission, of course). I talked to energy analysis graduate students. I attended a few energy-related conferences on campus. I audited a graduate seminar course on energy efficiency policy and I did a lot of reading in my spare time (trying not to interfere with my astronomy research obligations). As a side bonus, starting these activities early helps to build up your networking skills. It is through student contacts in the energy and resources group that I learned of an opening at LBNL. Which brings me to:

Lesson 2. Prepare yourself for the transition. Talk to lots of people and narrow your focus. Over the years I have talked to some people who get their astronomy degrees and then say “now what?” Also, I sometimes meet people with only a vague interest in sustainability. Your chances of a successful transition are much higher with preparation and a focused search, which requires you to know what you want. Plus, you will be familiar with all the jargon of your new field.

One of the biggest hurdles astronomers face looking for jobs outside academia is trying to sell themselves to an audience that may not understand astronomy. This is a huge barrier. Submitting a technically detailed CV is pretty much useless outside academia. Astronomers, however, are expertly trained in many highly valued skills: quantitative analysis, written and oral communication (both technical and non-technical), statistical literacy, programming, database management, funding/budgeting, and supervising. The trick is not to focus on the technical details of your thesis, but on the transferable skills. My first few job applications focused way too much on my astronomy research, without properly highlighting the above skills. Not surprisingly, there were no takers.

Once I learned to emphasize the right things, I landed an interview. Which leads me to:

Lesson 3. Know how to sell yourself to a non-astronomy crowd. Write a résumé, not a CV. Focus on transferable skills, and avoid getting lost in technical details. Explain why you are switching fields. And remember above all else—the point of the résumé is to stand out and get an interview, not a job. Make yourself interesting so that employers want to talk to you, and then wow them during the interview so you get the job.

Once you start your new non-academic job, you will be surprised at how valuable your astronomy training is. The scientific process, the analytical reasoning, the ability to handle a huge amount of data, the big-picture thinking, the communication skills—all will serve you well. Of course, there will always be new challenges in whatever field you transition to. For me, I now live in a world of sparse economic “data” with poorly understood errors, stronger deadline pressures, and the reality of political sensitivities. It has taken me a while to become comfortable with these, but I have always felt prepared. I have never regretted my astronomy education and in fact I believe it has given me a unique perspective which has added lots of value to my new line of work.

*The AAS Committee on Employment is pleased to highlight useful resources for astronomers, and welcomes your comments and responses to this and previous columns. Check out our website ([www.aas.org/career/](http://www.aas.org/career/)) for additional resources and contact information for the committee members. We are always looking for guest columnists in non-academic careers. If you are willing to contribute, or have an idea for a future column, please contact the Employment Column Editor, Liam McDaid ([mcdaidl@sc.losrios.edu](mailto:mcdaidl@sc.losrios.edu)). The AAS committee on employment exists to help our members with their careers. Your ideas are important, so let's hear them!*

# News from NSF Division of Astronomical Sciences (AST)

Jim Ulvestad, Division Director, [julvesta@nsf.gov](mailto:julvesta@nsf.gov)

## Portfolio Review Schedule

The AST Portfolio Review Committee is still on track to report out, and have their report presented to the Mathematical and Physical Sciences Advisory Committee, before the end of summer. AST is developing a plan to present the report to the community and to discuss its implementation. We expect to present a first version of a response and an evolving implementation plan by late in the 2012 calendar year. Of necessity, this implementation plan will be somewhat general at first. This is particularly true because the period between August 2012 and February 2013 will be the period when the federal budget request for Fiscal Year (FY) 2014 is under development, and the contents of that budget request will be embargoed.

## Grants Success Rate for FY 2012

As reported in the last edition of this newsletter, the Astronomy and Astrophysics Research Grants (AAG) program was reduced from \$48M to \$43M in FY 2012; this was necessitated by competing calls on funds from a very constrained budget. Because a substantial fraction of the AAG budget is pre-committed to proposals that have been awarded in previous years, and because the number of proposals received increased by another 10% in FY 2012, the funding rate for AAG is declining much more steeply than one might guess from the fractional budget decrease. The expectation is that the final AAG funding rate for FY 2012 will be in the range of 12-13%, far below the 20% rate achieved in FY 2011.

## Historical AAG Success Rate, FY 1992 to FY 2011

The achieved funding rates for AAG result from many different factors in a given year, but the long-term trends are clear. Between FY 1992 and FY 2011, the number of

reviewed AAG proposals increased from 266 to 658, far faster than the fractional increase of full AAS members. The total budget for the program increased from \$18.2 million to \$48.1 million over the same period, a much steeper increase than would be expected due to inflation. Thus, even though the number of awards increased from 120 to 131, the increase in proposal numbers and in award size caused the funding rate to drop from 45% to 20% from 1992 to 2011. The likelihood of constrained budgets for the next several years makes it unlikely that the funding rate will increase significantly in the near future.

## PAARE in FY 2013

The program Partnerships in Astronomy and Astrophysics Research and Education (PAARE) will not be accepting new proposals for FY 2013 funding. Because of constrained overall funding, AST is converting this program to a biennial opportunity. We expect that the next call for PAARE proposals will be in 2013, with a submission deadline in August 2013.

## Job Opportunities in AST

AST has several positions that are open now or are expected to be open in the near future. These include (1) Deputy Division Director, closing 2 July 2012; (2) Program Director, closing 31 July 2012; (3) Program Officer for Spectrum Management, to be advertised in the near future, with a tentative closing date in September 2012; and (4) Rotator Program Officer (1-3 yr term), tentatively available in February/March 2013. Please contact the Division Director, or any colleagues you may know in the Division, for further information.

# Honored Elsewhere

## **AAS Members Named 2012 Guggenheim Fellows**

The John Simon Guggenheim Memorial Foundation has awarded Fellowships to a diverse group of 181 scholars, artists, and scientists in its eighty eighth annual competition for the United States and Canada.

Congratulations to the following members: Sheperd S. Doeleman, MIT-Haystack Obs (Astronomy/Astrophysics); Scott A. Hughes, MIT (Physics); and Robert P. Kirshner, Harvard-Smithsonian, CfA (Physics).

Since its establishment in 1925, the Foundation has granted over \$298 million in Fellowships to more than 17,300 individuals. Scores of Nobel, Pulitzer, and other prize winners are listed among the rolls of the Foundation's Fellows.

## **AAS Members Receive 2012 Shaw Prize in Astronomy**

Awarded in equal shares to David C Jewitt, Professor of Astronomy and Director of Institute for Planets and Exoplanets, University of California, Los Angeles, and Jane Luu, Technical Staff of Lincoln Laboratory at Massachusetts Institute of Technology, for their discovery and characterization of trans-Neptunian bodies, an archeological treasure dating back to the formation of the solar system and the long-sought source of short period comets.

## **Charbonneau & Seager Awarded Sackler Prize**

The 2012 Raymond and Beverly Sackler Prize is being awarded to David Charbonneau and Sara Seager for observational or theoretical achievements in the study of extrasolar planets.

David Charbonneau (Department of Astronomy, Harvard University, Cambridge, MA) "For his breakthrough discoveries, including the first detections of transiting extra-solar planets and spectroscopic observations of their atmospheres."

Sara Seager (Class of 1941 Professor of Planetary Science and Physics, Department of Earth Atmospheric and Planetary Science, Massachusetts Institute of Technology,

Cambridge, MA) "For her brilliant theoretical studies, including analysis of the atmospheres and internal compositions of extra-solar planets."

## **AAS Members Among 2012 Kavli Prize Winners**

The Kavli Prize in Astrophysics is shared between David C. Jewitt, University of California, USA; Jane X. Luu, Massachusetts Institute of Technology, Lincoln Laboratory, USA; and Michael E. Brown, California Institute of Technology, USA. They received the prize "for discovering and characterizing the Kuiper Belt and its largest members, work that led to a major advance in the understanding of the history of our planetary system."

## **AAS Members Among American Academy of Arts and Sciences 2012 Class of Members**

Some of the world's most accomplished leaders from academia, business, public affairs, the humanities, and the arts have been elected members of the American Academy of Arts and Sciences. Astronomers among the new class include:

- Debra Ann Fischer, Professor of Astronomy, Yale University
- Abraham Loeb, Professor of Astronomy, Harvard University; Director, Institute for Theory and Computation
- David Nathaniel Spergel, Charles A. Young Professor of Astronomy, Professor of Astrophysical Sciences, Princeton University
- William Ward, Institute Scientist, Department of Space Studies, Southwest Research Institute

One of the nation's most prestigious honorary societies, the Academy is also a leading center for independent policy research. Members contribute to Academy publications and studies of science and technology policy, energy and global security, social policy and American institutions, the humanities and culture, and education.

## **Kissler-Patig Named New Gemini Observatory Director**

William Smith, President of the Association of Universities for Research in Astronomy Inc. (AURA), announced the selection of Markus Kissler-Patig as the new Director of the Gemini Observatory.



## Honored Elsewhere continued

Patig has served as the Project Scientist for the European Southern Observatory Extremely Large Telescope project and as an instrument scientist for a variety of Very Large Telescope instruments. Patig begins his Gemini appointment on 1 August 2012 and succeeds Fred Chaffee, the Interim Director who has served since May 2011.

The Gemini Observatory is operated by AURA under a cooperative agreement with the National Science Foundation.

### **Tycho Brahe Prize 2012 Awarded to Genzel**

The European Astronomical Society announced that the 2012 Tycho Brahe Prize has been awarded to Reinhard Genzel, in recognition of his outstanding contributions to European near-infrared instrumentation and for groundbreaking work in galactic and extragalactic astronomy.

German astronomer Reinhard Genzel, director of the Max Planck Institute for Extraterrestrial Physics, and his team were responsible for building SINFONI, a near-infrared integral-field spectrograph attached to the ESO Very Large Telescope. Since its first light in 2005, SINFONI has become a key instrument for the study of the structure and dynamics of distant galaxies and, in particular, of the dynamics of our home galaxy, the Milky Way.

### **AAS Members Win 2012 Committee on Space Research (COSPAR) Awards**

COSPAR Space Science Award: Janet G. Luhmann, is a Senior Fellow at the Space Sciences Laboratory of the University of California Berkeley and the Principal Investigator of the IMPACT suite of instruments on the twin spacecraft STEREO mission. Following her Ph. D. in Astronomy from the University of Maryland, she joined the particles and Fields Department of the Aerospace Corporation in El Segundo California. In 1980 she joined the Institute of Geophysics and Planetary Physics at the University of California, Los Angeles, moving to her current position in Berkeley in 1994.

COSPAR International Cooperation Medal - The career of Roger-Maurice Bonnet has been very closely linked to the promotion of international cooperation for at

least thirty years. Important ESA projects producing a wealth of findings were executed during or had their origins in the period when Professor Bonnet headed the ESA Science Directorate. Furthermore, pioneering scientific links with Russia and China were established due to the persistent and personal involvement of Professor Bonnet. The results of his efforts include the very successful Giotto-Vega-Sakigake and Cluster-Double Star missions. The joint Cassini-Huygens mission, which returned spectacular results from Saturn and Titan, also was originally planned under the leadership of Bonnet.

COSPAR Massey Award - Neil Gehrels received his B.S. (Honors) in physics from the University of Arizona and his Ph.D. in physics from Caltech in 1982. He began his career at Goddard as an experimental physicist working in gamma-ray astronomy, active in instrument development, data analysis, and theory. Dr. Gehrels has been Project Scientist for the Compton Observatory and now is Mission Scientist for INTEGRAL (2002-present) and Deputy Project Scientist for the Fermi Space Telescope (2008-present). Dr. Gehrels is the Principal Investigator for the SWIFT mission and his main interests include gamma-ray bursts and supernovae explosion processes. He now serves as Chief of the Astroparticle Physics Laboratory, NASA/GSFC, is College Park Professor of Astronomy at the University of Maryland, and is Adjunct Professor of Astronomy & Astrophysics, Penn State.

COSPAR/CAS Jeoujang Jaw Award - Robert P. Lin led the pioneering RHESSI (Ramaty High Energy Solar Spectroscopic Imager) mission that made the high resolution imaging and spectroscopy of the x-rays and gamma-rays emitted by energetic particles accelerated by solar flares. The accomplishments of this mission include the first hard X-ray imaging spectroscopy, the first high-resolution spectroscopy of solar gamma-ray lines, the first imaging above 100 keV, and the first imaging of solar gamma-ray lines. The mission is still returning excellent data after almost ten years in orbit and has detected more than 30,000 solar flares referenced in more than 800 refereed publications.

# DPS 2012 Prize Winners

The Division for Planetary Sciences (DPS) of the American Astronomical Society (AAS) is pleased to announce its 2012 prize winners:

**Gerard P. Kuiper Prize** for outstanding contributions to the field of planetary science:

Darrell Strobel received his undergraduate education at North Dakota State University where he graduated with honors in 1964. He moved on to Harvard where he completed a Masters in Physics in 1965 and was awarded a PhD in Applied Physics in 1969. After graduation he went to work at the Naval Research Lab rising to Head of the Atmospheric Dynamics Section which he led from 1976-1984. He joined Johns Hopkins University in 1984 where he is a Professor associated with both the Department of Earth & Planetary Sciences and the Physics & Astronomy Center for Astrophysical Sciences. He is a member of the DPS, AGU and the International Academy of Astronautics, and a Fellow of the IAU. He served as a co-investigator and science team lead for the Ultraviolet Spectrometer Experiment on Voyager, he is an Interdisciplinary Scientist for Aeronomy for the Cassini Mission and is a co-investigator on the New Horizons mission. He has served on numerous study groups and boards and has served as editor of several AGU publications and *Icarus*.

**Harold C. Urey Prize** for outstanding achievement in planetary research by a young scientist:

Alberto Fairen is a research scientist at the SETI Institute's Carl Sagan Center for the Study of Life in the Universe in Mountain View, California. He completed a Master dissertation at the Universidad Autonoma de Madrid in 2005 with a thesis on the "Inhibition of carbonate synthesis in extreme acidic environments: a comparative study of the martian aqueous environments and Rio Tinto." In 2006 he received a Ph.D. with the dissertation "Dating possible biological processes on Mars according to the tectonic history and hydrogeological and geochemical evolution of the planet." He was a postdoctoral fellow at Ames Research Center with Chris McKay before joining the SETI Institute.

**Harold Masursky Award** for outstanding service to planetary science and exploration:

Susan Niebur started her advanced education with a BS in Physics, with high honors, from Georgia Tech in 1995. She followed with Masters and PhD degrees in Physics from Washington University in St. Louis

with a thesis titled "Observation of Energy-Dependent Electron-Capture Decay in Galactic Cosmic Rays." While still in graduate school she founded and led the National Association of Graduate-Professional Students, dedicated to advocating for graduate and professional students nationwide. After receiving her PhD Susan went to NASA Headquarters where she was the Discovery Program Scientist until 2006. While at HQ she co-founded the Early Career Fellowships and Workshops for Planetary Scientists. In 2008, while running Niebur Consulting, she founded the Women in Planetary Science Project dedicated to community building and removing barriers to success. In 2007 Dr. Niebur learned that she had inflammatory breast cancer, a disease that eventually led to her death in February 2012. While fighting this disease, she continued to work to raise awareness and build community through her online blog, Toddler Planet. Her husband and two children, her family, and countless friends and acquaintances mourn her premature passing at the same time they continue to celebrate the gifts she left behind.

**Carl Sagan Medal** for outstanding communication by an active planetary scientist to the general public:

Patrick Michel is a planetary scientist who began his advanced education with a degree in Aeronautical Engineering and Space Techniques in 1993 whereafter he moved to the study of asteroids. He received his PhD in 1997 for a thesis titled "Dynamical Evolution of Near-Earth Asteroids." He has been a Permanent Researcher at CNRS where he leads the Lagrange Laboratory Planetology group. He is a co-chair of the MarcoPolo-R sample return mission science team and is a co-investigator on the OSIRIS-REx and Hayabusa 2 missions. He has wide involvement in the IAU and other international organizations. In 2006 he received the "Young Researcher" prize from the French Society of Astronomy and Astrophysics.

**Jonathan Eberhart Planetary Sciences Journalism Award** to recognize and stimulate distinguished popular writing on planetary sciences:

Michael Carroll is a science journalist, astronomical artist, and children's book author. He fell in love with the images returned to Earth from the Rangers, Lunas, and Surveyors, the Apollo astronauts, the Mariners, Vikings, and Voyagers, and began to paint these worlds at the age of 11. Michael has authored more than 20 books and many more articles in magazines such as *Astronomy*, *Popular Science*, *Astronomy Now* (UK), *Sky & Telescope*,

*Clubhouse*, and *Odyssey*. In his winning entry, “Storm Warning” from *Astronomy* magazine’s August 2011 issue, Michael expertly explains weather phenomena that occur on the solar system’s planets in language that any “armchair astronomer” can understand. In recognition of his effort to promote planetary sciences in popular media, the Division for Planetary Sciences of the American

Astronomical Society is delighted to present the 2012 Jonathan Eberhart Planetary Sciences Journalism Award to Michael Carroll.

The 2012 DPS prizes will be presented at the DPS meeting in Reno, Nevada, 14-19 October 2012. <http://www.psi.edu/dps12/>

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## Announcements

### NSO Observing Proposal Deadline 15 Aug

The current deadline for submitting observing proposals to the National Solar Observatory is 15 August 2012 for the fourth quarter of 2012. Information is available from the NSO Telescope Allocation Committee at P.O. Box 62, Sunspot, NM 88349 for Sacramento Peak facilities ([sp@nso.edu](mailto:sp@nso.edu)) or P.O. Box 26732, Tucson, AZ 85726 for Kitt Peak facilities ([kptac@nso.edu](mailto:kptac@nso.edu)). Instructions may be found at <http://www.nso.edu/observe/>. A web-based observing-request form is at <http://www.nso.edu/obsreq>. Users’ Manuals are available at <http://nsosp.nso.edu/dst/> for the SP facilities and <http://nsokp.nso.edu/mp> for the KP facilities. An observing-run evaluation form can be obtained at [ftp://ftp.nso.edu/observing\\_templates/evaluation.form.txt](ftp://ftp.nso.edu/observing_templates/evaluation.form.txt).

Proposers are reminded that each quarter is typically oversubscribed, and it is to the proposer’s advantage to provide all information requested to the greatest possible extent no later than the official deadline. Observing time at National Observatories is provided as support to the astronomical community by the National Science Foundation.

### Kepler Community Follow-up Observing Program

The Kepler Community Follow-up Observing Program (CFOP) is a web-based tool with the principal aim to optimize resources and facilitate collaboration in follow-up studies of planet candidates in the Kepler field. CFOP currently contains information from the Kepler Input Catalog (KIC), publicly available parameters on the Kepler planetary candidates, target finder charts and information on multiplicity, and links to analysis tools such as ephemeris calculations and periodograms at the NASA Exoplanet Archive, to help plan and execute follow-up studies. In addition, CFOP serves as a repository

for community-gathered follow-up data by allowing upload and display of data and derived astrophysical parameters and in the future will contain follow-up data from the Kepler team. All data will be clearly associated with the user who provided it and contact information is available to facilitate additional discussion and begin collaborations. CFOP is available at <http://cfop.ipac.caltech.edu/>.

### Keck Observatory Archive Releases NIRC2 Data

The Keck Observatory Archive (KOA) has released raw and calibrated images from the Near Infrared Camera 2 (NIRC2). This is the first imaging instrument archived in KOA, and the third instrument altogether. As of May 7, 1240 nights of NIRC2 data have been archived, and 932 nights are public. These data include all four observing modes: narrow-imaging, medium-imaging, wide-imaging, and spectroscopy. New data will be added whenever NIRC2 is scheduled on the telescope. The NIRC2 data may be accessed through the KOA search page: <https://koa.ipac.caltech.edu/cgi-bin/KOA/nph-KOALogin>

### Rice to Offer Professional Master’s in Space Studies

Rice University has approved a new non-thesis, professional graduate degree program in Space Studies. The program will create new options for engineering and science students interested in space technology and government relations.

The track includes advanced engineering, biological and physical science classes and introduces students to economics, public policy and management disciplines. Astrophysics courses will focus on phenomena in the universe, the observational targets that can drive engineering designs. Courses in solar and space science and

*continued on page 19*

## Announcements continued

engineering will help students understand the challenges of developing hardware and instrumentation for orbit. Life science courses will provide background in systems biology with applications in long-duration missions and biological experimentation. Computational courses will include the economics of engineering management, a key component of the Professional Science Master's program.

David Alexander, director of the Rice Space Institute and a professor in physics and astronomy, helped develop the new track and will serve as the track's director.

The degree will require 40 credit hours to complete and will require a three- to six-month internship. Applications for fall 2012 are being accepted. For more on the PSM program at Rice, visit [www.profms.rice.edu](http://www.profms.rice.edu) or contact the program at [profms@rice.edu](mailto:profms@rice.edu).

### General Mission Analysis Tool (GMAT)

NASA Goddard Space Flight Center is pleased to announce the release of the General Mission Analysis Tool (GMAT) Release 2012a Beta. R2012a is our feature-complete beta release in preparation for the first production release (non-beta) of GMAT scheduled for early 2013. If you are interested or willing to help us in beta testing, please join the beta test mailing list. For a complete listing of new features, see our Release Notes.

GMAT is a space trajectory optimization and mission analysis system developed by NASA and private industry in the spirit of the NASA Vision. GMAT is a collaboratively developed, open-source tool that enables the development of new mission concepts and provides capabilities that can improve current mission support in a transparent and verifiable way through release of source code.

The system has been used in support of the Lunar Crater Observation and Sensing Satellite (LCROSS), ARTEMIS (Acceleration, Reconnection, Turbulence and Electrodynamics of the Moon's Interaction with the Sun), Lunar Reconnaissance Orbiter (LRO), the Magnetospheric Multiscale (MMS) Mission, and OSIRIS (Origins Spectral Interpretation Resource Identification Security Regolith Explorer).

This release was developed with contributions by Thinking Systems, Inc., and a.i. solutions, Inc. GMAT is offered free of charge to use, modify, and share as described under the terms of the NASA Open Source Agreement v1.3.

This is a one-time announcement. For further information, please visit the project web site: <http://gmat.gsfc.nasa.gov/>. To receive future announcements, please subscribe to the project mailing list: <https://lists.sourceforge.net/lists/listinfo/gmat-info>

## 220th Chambliss Medal Winners

Through the generosity of Carlson Chambliss, the AAS established the Astronomy Achievement Student Awards to recognize exemplary research by undergraduate and graduate students who present posters at the semi-annual AAS meetings. Awardees are honored with an engraved bronze Chambliss medal. Graduate and undergraduate posters are considered separately. Students with Honorable Mentions receive a certificate.

The AAS thanks all the students who participated in the 220th Meeting of the American Astronomical Society Chambliss Student Achievement Awards and who made the judges' job difficult indeed due to the high quality of the presentations. We also thank all the judges who volunteered their time.

#### Graduate Medals:

Scott Engle (Villanova Univ.)  
Carl Ferkinhoff (Cornell Univ.)

Susanna Kohler (Univ. of Colorado, Boulder)  
Laura Vican (Univ. of California, Los Angeles)  
Spencer Wolfe (West Virginia Univ.)  
Katherine Wyman (Wesleyan Univ.)

#### Graduate Honorable Mentions:

James Davenport (Univ. of Washington)  
Jithin George (Univ. of Maryland)  
Alex Hagen (Pennsylvania State Univ.)

#### Undergraduate Medals:

Caitlin Heath (Mesa State College)  
Zachary Kaplan (Yale Univ.)  
Steven Lentine (Rensselaer Polytechnic Institute)  
Andrew Sturmer (Haverford College)

#### Undergraduate Honorable Mentions:

Amelia Christensen (Univ. of California, San Diego)  
Jordan Robertson (Villanova Univ.)



# Calendar of Events

## AAS & AAS Division Meetings

### 44<sup>th</sup> Annual DPS Meeting

14-19 October 2012, Reno, NV  
<http://dps.aas.org/meetings/>

### 221<sup>st</sup> AAS Meeting

6-10 January 2013, Long Beach, CA  
<https://aas.org/meetings>

## Other Events

### Star Formation and Gas Reservoirs in Groups and Clusters

8-11 July 2012, Schenectady, NY  
Rebecca Koopmann  
(koopmanr@union.edu)  
<http://muse.union.edu/galaxygroups2012/>

### X-ray Binaries - Celebrating 50 years since the Discovery of Sco X-1

10-12 July 2012, Boston, MA  
Paul J Green (xrb12@cfa.harvard.edu)  
<http://cxc.cfa.harvard.edu/cdo/xrb12/>

### NASA Lunar Science Forum

17-19 July 2012, Moffett Field, CA  
<http://lunarscience.nasa.gov/LSF2012/>

### 2012 Gemini Science and User Meeting

17-20 July 2012, San Francisco, CA  
P. Barmby, SOC chair  
(pbarmby@uwo.ca)  
<http://www.gemini.edu/gsm12>

### 2012 Sagan Summer Workshop: Working with Exoplanet Light Curves

23-27 July 2012, Pasadena, CA  
Dawn Gelino  
(sagan\_workshop@ipac.caltech.edu)  
<http://nexsci.caltech.edu/workshop/2012/>

### SciCoder Workshop 2012

23-27 July 2012, NYC  
Demitri Muna (demetri.muna@nyu.edu)  
<http://scicoder.org/workshop>

### The Pluto System on the Eve of Exploration by New Horizons: Perspectives and Predictions

24-26 July 2013, Columbia, MD  
<http://pluto.jhuapl.edu/conference/>

### Rattle and Shine: Gravitational Wave and Electromagnetic Studies of Compact Binary Mergers

30 July-3 Aug 2012, Santa Barbara, CA  
<http://www.kitp.ucsb.edu/activities/dbdetails?acro=chirps-c12>

### Introduction to Astronomical Instrumentation: Tools and Techniques for Pioneering Astronomers

30 July-3 August 2012, Toronto, Canada  
summer.school@di.utoronto.ca  
<http://www.di.utoronto.ca/instrumentation-school/>

### Black Hole Feedback 2012: What is the role of AGN in the evolution of galaxies?

30 July-3 August 2012, Hanover, NH

### Communicating Science: The 124th Annual Meeting of the Astronomical Society of the Pacific

4-8 August 2012, Tucson, AZ  
meeting@astrosociety.org  
<http://www.astrosociety.org/events/meeting.html>

### 13th Annual Summer School on Adaptive Optics

5-10 August 2012, Santa Cruz, CA  
cfao@ucolick.org

### Optical Engineering + Applications 2012 - Part of SPIE Optics + Photonics

12-16 August 2012, San Diego, CA  
customerservice@spie.org  
[http://spie.org/Optical-Engineering.xml?WT.mc\\_id=RCal-OPOW](http://spie.org/Optical-Engineering.xml?WT.mc_id=RCal-OPOW)

### Double-Diffusive Systems

27-29 August 2012, UC Santa Cruz  
Pascale Garaud (pgaraud@ams.ucsc.edu)  
<http://dd2012.soc.ucsc.edu>

### GALEX Fest: Exploring the UV Universe: A Conference to Celebrate Nine Years of Exploration

4-7 September 2012, Pasadena, CA  
<http://www.galex.caltech.edu/galexfest/>

### \*Origins of the Expanding Universe: 1912-1932

13-15 September 2012, Flagstaff, AZ  
Michael Way (michael.j.way@nasa.gov)  
<http://www.lowell.edu/workshops/slipher/>

### \*30 Doradus: The Starburst Next Door

17-19 September 2012, Baltimore, MD  
Danny Lennon (lennon@stsci.edu)

### \*Outstanding Problems in Massive Star Research—the final stages

30 Sept-3 Oct 2012, St. Paul, MN  
<http://www.astro.umn.edu/massive>

New or revised listings

Note: Listed are meetings or other events that have come to our attention. Due to space limitations, we publish notice of meetings 1) occurring in North, South and Central America; 2) meetings of the IAU; and 3) meetings as requested by AAS Members. Meeting publication may only be assured by emailing crystal@aas.org. Meetings that fall within 30 days of publication are not listed.

A comprehensive list of world-wide astronomy meetings is maintained by the Canadian Astronomy Data Centre, Victoria, BC. The list may be accessed and meeting information entered at [cadcwww.hia.nrc.ca/meetings](http://cadcwww.hia.nrc.ca/meetings).

## Calendar of Events continued

### **\*Radio Stars and Their Lives in the Galaxy**

3-5 October 2012, Westford, MA  
haystars@haystack.mit.edu  
<http://www.haystack.mit.edu/workshop/Radio-Stars/>

### **\*Nature's Particle Accelerator**

22-25 October 2012, Annapolis, MD  
<http://jsi.astro.umd.edu/conferences/2012-jsi-workshop.html>

### **\*Conference on Intelligent Data Understanding**

24-26 October 2012, Boulder, CO  
Michael Way (michael.j.way@nasa.gov)  
<https://c3.nasa.gov/dashlink/events/1>

### **\*Fourth International Fermi Symposium**

28 Oct-2 Nov 2012, Monterey, CA  
Julie McEnery  
(julie.e.mcenery@nasa.gov)  
<http://fermi.gsfc.nasa.gov/science/symposium/2012/>

### **Astronomical Data Analysis Software and Systems XXII**

4-8 November 2012, Urbana, IL  
adass-xxii@ncsa.illinois.edu  
<http://www.ncsa.illinois.edu/Conferences/ADASS2012/>

### **Multi-Messenger Time Domain Astronomy**

13-15 November 2012, NASA's Goddard Space Flight Center, Greenbelt, MD  
Joan M. Centrella  
(joan.m.centrella@nasa.gov)  
[http://asd.gsfc.nasa.gov/conferences/TDA\\_conference.html](http://asd.gsfc.nasa.gov/conferences/TDA_conference.html)

### **\*Maui International Double Star Conference**

8-10 February 2013, Pukalani, Maui, HI  
Russ Genet (russmgenet@aol.com)  
<http://www.AltAzInitiative.org>

### **\*Exoplanets in Multi-body Systems in the Kepler Era**

9-16 February 2013, Aspen, CO  
Eric Ford (acp2012-soc@astro.ufl.edu)  
<http://www.astro.ufl.edu/~eford/meetings/aspen2013/>

**\*Huntsville in Nashville: The Seventh Huntsville Gamma-ray Burst Symposium**  
14-18 April 2013, Nashville, TN  
michael.briggs@nasa.gov

### **F.O.E. - fifty-one ergs**

13-17 May 2013, Raleigh, NC  
Davide Lazzati (davide\_lazzati@ncsu.edu)

### **\*IAU Symposium 299: Exploring the Formation and Evolution of Planetary Systems**

2-7 June 2013, Victoria, BC, Canada  
Brenda Matthews  
(iaus-299@di.utoronto.ca)

### **\*Reionization in the Red Center: New windows on the high redshift Universe**

15-19 July 2013, Ayers Rock Resort, Uluru-Kata Tjuta National Park, Northern Territory, Australia  
uluru2013@caastro.org  
<http://www.caastro.org/event/caastro-annual-science-conference>

### **Structure and Dynamics of Disk Galaxies**

12-16 August 2013, Winthrop Rockefeller Institute, Petit Jean Mountain, AR  
Marc Seigar (mxseigar@ualr.edu)  
<http://astro.host.ualr.edu/conferences/galaxies2013/>

### **\*Vatican Observatory Conference on Exoplanets & Biomarkers**

17-21 March 2014, Tucson, AZ  
Pavel Gabor (pgabor@specola.va)

### **SEC2014 Solar Eclipse Conference**

23-26 October 2014, Sacramento Peak Observatory and New Mexico Museum of Space History

Patrick Poitevin  
(patrick.poitevin@yahoo.com)  
<http://www.eclipse-chasers.com/SEC2014.html>

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