

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. 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.

Front Cover

Reflection Nebula NGC 1999. Image credit Z. Levay (STScI/AURA/NASA), T.A. Rector (University of Alaska Anchorage) and H. Schweiker (NOAO/AURA/NSF)

http://www.noao.edu/image_gallery/html/im1086.html

President's Column

David J. Helfand, president@aas.org



At 1:32AM Eastern time on 6 August, the Mars Science Laboratory and its charmingly named rover, Curiosity, executed a perfect landing in Gale Crater. President Obama called the highly complex landing procedure “an unprecedented feat of technology that will stand as a point of pride far into the future.” While we certainly hope Curiosity’s lifetime on Mars is a long one, we must all continue to make the case that we do not want to see this success as the only “point of pride” generated by a solar system mission in the coming

decade. And we must make this case in very trying circumstances.

By the time you are reading this column, the NSF Portfolio Review results will have been made public. While I write this in complete ignorance of what those results will be, I am confident that the fiscal reality it portrays, and the hard decisions these realities enforce, will not make all astronomers happy. Looking beyond these immediate concerns, however, the future looks considerably grimmer. It is not a matter of priorities within NSF AST, or within MPS, or within NSF or NASA as a whole. It is the fiscal reality of the nation.

I am not talking about the much ballyhooed “fiscal cliff” that Congress is facing in its lame duck session; I suspect some short-term fix will be found for the debt ceiling limit, tax cut extensions and sequestration. Rather, I am speaking of the decade after decade shift in government spending from investment in the future—where science holds pride of place—to transfer payments commonly known as entitlements.

The shift in the balance between these two fundamental roles of government over the past 50 years is frightening. Representative Frank Wolf (R-Va), Chair of the House Subcommittee on Commerce, Justice, Science, and Related Agencies (CJS—the committee that oversees the funding of both NASA and NSF) has produced several documents that highlight this evo(devo?)lution in federal spending. Figure 1 shows how the ratio of investments to entitlements has changed from 1.15 to 0.27 over the past 50 years. This is not a graph that describes a society focused on the future.

And there is no comfort in the fact that the federal budget has grown a lot in the past 50 years (both in absolute terms and in terms of its fraction of GDP); entitlements are growing much faster. In a 28 March speech on the House floor, Representative Wolf quoted the conclusion of the non-partisan

Congressional Budget Office “[under laws currently in place] every penny of the federal budget will go to interest on the debt and entitlement spending by 2025.” Every penny. That leaves \$0 for defense, \$0 for education, and, most certainly, \$0 for scientific research.

When AAS President Elmegreen testified in March before the House CJS subcommittee, Chairman Wolf had no criticisms of our astronomical priorities or our facilities management—he just wanted to know why we were not up in arms and doing something about entitlements and corporate tax breaks. The obvious answer is that it is the job of his colleagues to fix those problems, but I think he has a point—because those colleagues report to us.

In April, I participated in Congressional Visiting Day, an event coordinated by the AAAS and involving the participation of several hundred members of various scientific societies who descend on Capitol Hill to make the case for the nation’s investment in scientific research. Under the expert coordination of our John Bahcall Science Policy Fellow Dr. Bethany Johns, fourteen AAS members made dozens of visits to Congressional offices. Using the Decadal Surveys as the blueprint for our priorities, we engaged staff members in lively conversations about the importance of astronomical research in the context of the larger STEM agenda. We were well-received in the vast majority of offices, and it is clear that our science—and science in general—enjoys widespread interest.

Indeed, science is one of the few remaining issues garnering bipartisan support. However, when I suggested in several Congressional offices that science was doomed unless the entitlement issue was addressed (and I was careful to avoid advocacy of a particular approach: increased taxes, decreased spending, or, what every bipartisan commission has recommended, a combination of the two), the reception suddenly changed. In one office, traditionally very supportive of the scientific enterprise, I was told that even raising that issue would greatly surprise and disturb some of our most loyal allies.

That is profoundly troubling. To me, it is akin to the attitude of climate change deniers. The issues surrounding a response to climate change—social, political, and economic—are vexed, and reasonable people can reasonably advocate different paths. Detailed predictions of climate change consequences are uncertain. But to deny that we are on track to double the pre-industrial atmospheric concentration of CO₂ on roughly the same

timescale that the federal discretionary budget goes to zero represents a disconnect from reality. Ignoring the federal budget’s trajectory is, likewise, untenable. Congressman Wolf is right: whether in the interest of the country, or the narrower self-interest of support for future research, we all need to express our outrage at this looming fiscal catastrophe.

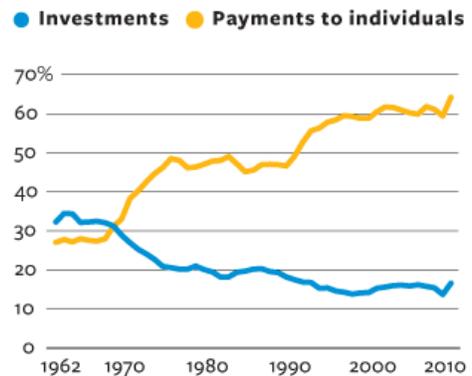
We are still making remarkable progress in our field. Since my last column, the NuSTAR mission successfully deployed its 10-meter-long mast which allows it to focus X-rays in the 8-80 keV band to sub-arcminute precision. This provides, for the first time, human-vision-level resolution in this hard-X-ray band, allowing us, as PI Fiona Harrison said in a recent NPR story on the mission, to “use these new glasses to read the secrets of black holes.” And, the National Science Board has just approved the number one ground-based priority from the 2010 Decadal Survey, LSST. This allows that exciting project to proceed to the final design stage and directs the NSF to include construction costs in future budget requests.

Yes, we continue to live in a golden age of astronomical discovery. The length of that age in the US, however, will depend not only on our effectiveness at selling Congress and the public on how exciting and compelling the questions we pose really are, but on an escape from the fiscal nightmare toward which we are careering. There is no reason we cannot be astronomers and citizens at the same time. Unless a fundamental restructuring of the federal budget occurs, it is difficult to see a bright future for research and discovery.

After Sputnik

The decline in federal investments has accompanied the inexorable rise of federal entitlement payments.

Investments and payments to individuals as a percentage of total outlays, fiscal 1962-2010



Source: Fiscal 2011 budget historical tables

From the Executive Office

Kevin B. Marvel, Executive Officer, marvel@aaas.org



As I write this column, I am preparing and packing for the long trip across the Pacific Ocean to the 28th International Astronomical Union (IAU) General Assembly in Beijing, China. More than 500 US astronomers will be attending as well, more than a hundred of which had their travel enabled through support provided by a grant from the NSF and

administered by the AAS as our International Travel Grant Program.

The IAU is an important organization in world astronomy and represents the highest aspirations of the scientific endeavor, a coordinated, collaborative approach to scientific pursuits. The International Scientific Unions took shape around the 1900s, and many exist today. The IAU, however, is one of the most active and engaged in its discipline. This has been enhanced recently by the IAU's establishment of some long term goals, including utilizing astronomy as a vehicle for international development and the establishment of an office in South Africa leading this effort.

The IAU hosts symposia each year, but the General Assembly is the most exciting meeting the IAU organizes. This two week meeting hosts numerous symposia, meetings of the various IAU divisions, topical sessions, invited speakers, cultural events and so dramatic opening and closing ceremonies. Truly, they are very impressive events.

The AAS, with the help and cooperation of the Institute for Astronomy of the University of Hawaii are hosting the 2015 General Assembly, which will be held in Honolulu, Hawaii from 2-14 August 2015 at the Honolulu Convention Center. Affordable hotel rooms have been secured and the meeting will take over the entire convention center during the two-week period. We plan on a large exhibit hall, with a special rate being established for 2015 for exhibitors wanting to exhibit at both the AAS winter meeting and the IAU General Assembly. With the vibrant Hawaiian culture and landscapes providing the backdrop for the scientific conference, it will be a meeting not to miss.

As the meeting is hosted by the US, it would be great to have US members of the IAU present in bulk as well as proposing symposia for the assembly. As well, US astronomers who are not members of the IAU should consider joining and pay attention to the deadlines for membership, which usually appear in the fall prior to the General Assembly year. Announcements will appear in AAS and other communication vehicles. Deadlines for Symposia proposals are staggered. First, a letter of intent must be submitted by 1 September 2013, while formal proposals are due 15 December 2013. Details will be available soon on the 29th General Assembly website astronomy2015.org and are already available on the IAU.org website.

The US participates in the IAU through the United States National Committee of the IAU, which is hosted by the National Academies Board on International Scientific Organizations. National dues are paid for through a grant from the NSF to the National Academies. The US is the largest single dues payer to the IAU, as dues scale with the number of national members. The US represents roughly 1/4 of the total IAU membership. USNC-IAU Committee members are appointed based on rules laid out in the USNC-IAU bylaws, which includes certain participation from some officers of the AAS.

However, the AAS does not run or operate the USNC-IAU, which ensures a truly national representation to the IAU, not biased by the AAS as a professional membership organization. Membership application deadlines, processing and so on, are handled by the USNC-IAU and their competent staff. The AAS works to help and assist the USNC-IAU whenever and wherever we can, but do not administer their activities. The USNC-IAU website is: <http://sites.nationalacademies.org/pga/biso/IAU/>

The US has not hosted a General Assembly in more than 20 years (Baltimore, 1988), so this is a significant event for US Astronomy. We want and need US astronomers to attend this important meeting and ask that you start planning now to do so. We have the opportunity, with the help of strong international attendance of breaking all records for the largest astronomy conference and I have pledged to our meeting team that if we break 4,000 attendees, we will have fireworks on the beach at Waikiki...so all you fireworks fans (and everyone else too!) plan to attend the 2015 General Assembly!

What Makes an Astronomy Story Newsworthy?

Rick Fienberg, Press Officer, rick.fienberg@aaas.org

Former AAS Press Officer Steve Maran once said, “News is what reporters want to cover, not necessarily what organizations, agencies, and institutions want to publicize.” In other words newsworthiness, like beauty, is in the eye of the beholder—or, in this case, the journalist. So what do journalists consider to be important? In *Science and Journalists—Reporting Science as News* (Free Press, 1986), Sharon M. Friedman wrote, “Editors and reporters tend to value stories that contain drama, human interest, relevance, or application to the reader, criteria that don’t always map easily onto scientific importance.”

If scientific importance does not guarantee newsworthiness, what other criteria might apply? In *The Hands-On Guide for Science Communicators* (Springer, 2007), Lars Lindberg Christensen of the European Southern Observatory offers the following criteria, noting that the more of them are satisfied, the better are the chances that you have a “good story” on your hands:

- *Timing*: the event has just taken place, or the work has just been published.
- *Relevance*: the issue has influence on people’s lives or on the way they think about the world.
- *Proximity*: there’s a local angle for readers, or the event happened in a special location.
- *Implications*: the result has profound consequences.
- *Conflict*: the discovery involves a hotly debated topic or resolves a hotly contested issue.
- *Human interest*: there’s something special about the scientist or the circumstances of the discovery.
- *Mystery*: the finding involves a mysterious or unexpected phenomenon.
- *Significance*: an entirely new phenomenon or class of object, or a key finding in a critical field.
- *Unusual angle*: a new twist on an old result or a quantum leap in certainty about something.
- *A record*: the discovery is the first, last, oldest, youngest, biggest, smallest, fastest, slowest, etc.
- *Sexiness*: not in the usual sense, but in the sense that people are always interested, e.g., in black holes.
- *Aesthetics*: the finding is accompanied by an exceptionally beautiful image or spectacular video.
- *Distinguished publication*: the work is published in a leading, prestigious journal.
- *Coattails*: the result is related to, or piggybacks on, something else currently in the news.

In *Making the News* (Westview, 1998), Jason Salzman offers some additional criteria: *novelty, shock, simplicity, humor, involvement of a prominent person, or an anniversary*. He then lists some things that will send reporters running in the other direction. Of particular relevance to science news, that list includes *complexity*.

Here is a useful way to tell if you have a newsworthy story: In a single paragraph of no more than 75 words, answer the questions who?, what?, when?, where?, why?, how?, and, most importantly, so what?, then show it to someone who is not an astronomer. If he or she is intrigued, you have got news. If not, you probably do not.

Member Deaths

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

Kinsey A. Anderson
Roger A. Bell
Kenneth M. Yoss
Craig Waff

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; 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 or log in to your member record at aaas.org.

To unsubscribe from AAS emails, contact address@aaas.org

For address changes, email address@aaas.org

Journals Update

Chris Biemesderfer, Director of Publishing, biemesderfer@aas.org

The reasons for author fees

The AAS' 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, in the forms of fees from authors and subscriptions from libraries.

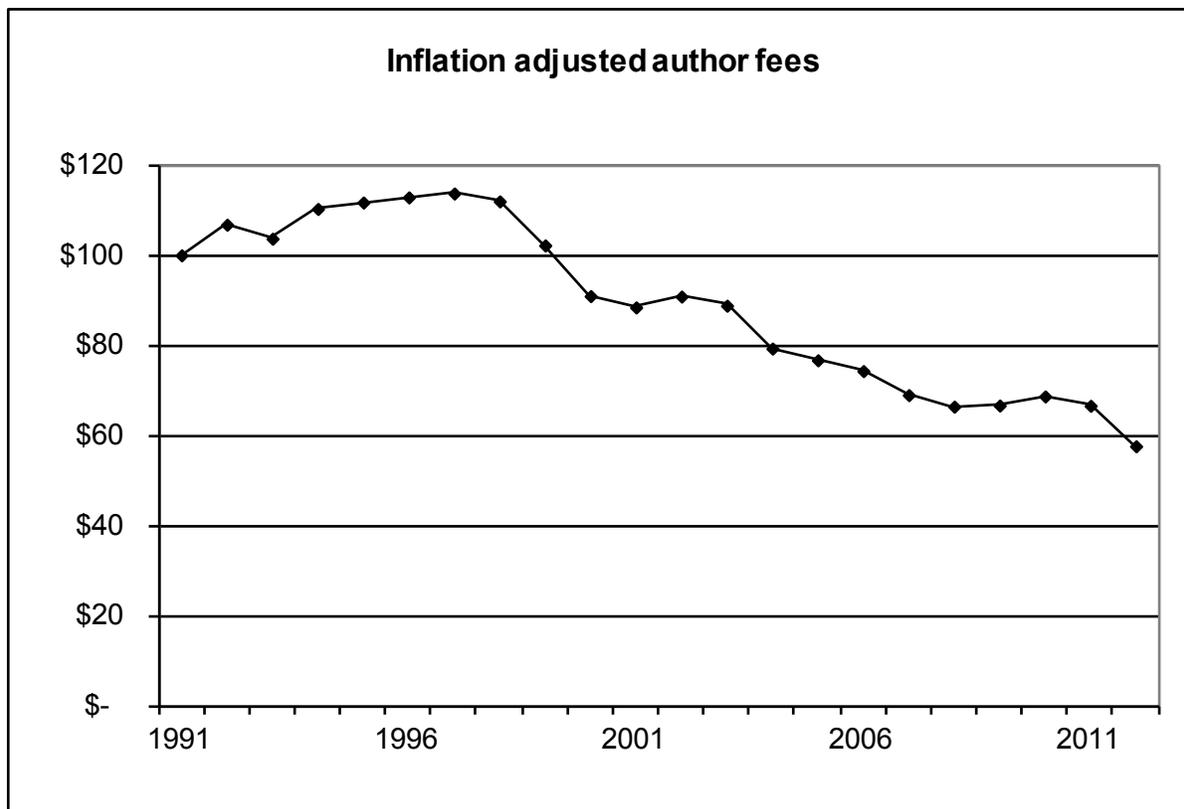
We believe our approach is sensible, fair, and appropriate for acknowledging the importance of the value—intellectual and structural—that is added to articles by our publishing processes. Despite the increased urgency about Open Access in recent months, we don't think changing our business to eliminate subscriptions would improve access to our journals, especially not among the professionals for whom the journals are targeted. (See my column in the July/August 2012 issue of the *Newsletter*.) On the other end of revenue balance are the fees that are charged to authors when articles are accepted for publication.

Historically, fees charged to authors were designed to cover what used to be called “first copy costs”—that is, everything in the publishing process except for printing, handling, and shipping. The remaining value-adding activities in the publishing process were, and still are, deemed to be beneficial primarily to the individual scholars that authored the article, so those activities are paid for through author fees. What are those actions? What actually happens when you have your article “published?” Broadly speaking, the formal scholarly publishing process involves: selecting and validating articles, normalizing content and organizing material, distributing articles and (now that we are publishing digitally online) actively curating them, and preserving the corpus for posterity. Let me describe at a high level the people and tools that are necessary for these activities.

Selection and validation: peer review. The critical scientific evaluation of your article is conducted by an editorial team appointed by the Society in conjunction

with authors' peers who are experts in the area of astronomy being reported in the paper. The peer review process has evolved over the last century, and it is now regarded by the majority (84%) of researchers as a crucial control in scientific communication.^[1] To oversee the peer review process for its journals, the AAS has four editors, three deputy editors, 20 scientific editors, and six consulting editors. There are four editorial offices with eight staff providing about 6.5 FTE of effort to manage peer review for the editors, referees, and authors. All of the editors except for the consulting editors are compensated; for the three senior editors of the *AJ*, *ApJ*/*ApJS*, and *ApJL*, the AAS underwrites a substantial portion of their academic salaries. The logistics of peer review are managed by a sophisticated online database system that the AAS licenses from a publishing services provider based in the Washington DC area. The staff and systems handle well over 5,000 submissions annually. Over 4,500 individual referees perform nearly 9,000 reviews each year.

Normalization and organization. Content received from authors is transformed in many ways to convert the materials provided into final versions that can be published. The AAS contracts with major physics publishers (the Institute of Physics Publishing in the UK and the American Institute of Physics in the US) to handle the elaborate editorial production processes. Personnel at these publishers (and their subcontractors) copy edit manuscripts, mark up the digital articles in standard XML vocabularies, rationalize file formats, ensure metadata completeness and accuracy, add and validate links, compose typeset and online versions of the articles, and proofread articles, all the while interacting with authors to clarify meaning and sometimes to obtain better quality digital files. Copy editing is a broad label for activities that include making changes to the text to improve comprehension, cleaning up abbreviations, punctuation, measurement units, references lists, and so on for journal style, making sure that figures are legible at different resolutions and that the caption accurately describes the graphic, and checking tables for column headings and complete data. The article assets that the staff is working with are all digital, and the staff uses a wide array of digital tools, so all our publishing contractors have IT departments to support the operations, to develop purpose-built applications and automatons, and so on.



Our publishers and their support systems handle nearly 4,000 articles every year that are published in AAS journals. The average paper in the *AJ* and *ApJ* has 13 typeset pages with over 7,200 words, and it contains 10 figures and three tables. On average, in each paper 56 references are scrutinized for accuracy and submitted to CrossRef for linking. In 2011, our staff handled 1,400 machine-readable tables, 60 figure sets, and 300 “other” digital-only files.

Distribution and curation. The AAS journals have been publishing digital articles since the mid-1990s, and we consider the digital form to be the article of record. Consequently, we feel that the online publication determines the publication date of an article, and we regard the online publishing platform to be the most important publication mechanism. At the same time, we continue to have print subscribers, so it is still necessary to manufacture printed issues. Our publishing contractors must therefore create delivery products for both online and print distribution. Article content must be composed into typeset pages, and the typeset files must be generated at low resolution for online consumption stage and high resolution for high quality printing presses. Content must

also be rendered for the online platform: each article must flow into an HTML framework, graphics must be down-sampled to appropriate resolution for web browsers, thumbnail images must be created and properly linked to full-size images, and all of the article’s online-only material—machine-readable tables, data files, animations, etc.—must also be staged and properly linked in the article. When journal articles are published, metadata about each article is sent to external partners, such as ADS, CrossRef, and the Web of Science, and technicians make sure the metadata are complete for each partner and that the transmissions are successful. The journals are printed by a printing subcontractor and prepared for shipping by another subcontractor who specializes in efficient delivery of print products all over the globe. Our publishers market the journals in the library community, manage subscriptions and online subscriber access, and handle customer service (missing issue fulfillment, network address range changes, forgotten password assistance, etc.).

The online environment is not static. Readers expect online content to be presented with modern features, and

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so we actively curate the online journals. This includes such features as providing forward links to articles that cite and adding outbound links to virtual observatory services for celestial objects. We are in the process of a substantial overhaul of the online delivery architecture that will permit better on-demand semantic analysis of articles, and will position us to offer improvements in author identification and disambiguation (through ORCID) and in the tracking of funding sources and facility utilization.

Preservation. The AAS has commitments to ensuring both the quality and the longevity of the scholarly record, and we achieve those goals by using rigorous and consistent publishing practices, for both our digital and our print products. However, we also recognize that the long-term maintenance of a large collection of digital articles requires scale and expertise beyond that of the Society and its immediate publishing partners. Consequently, the AAS is a publisher partner of Portico, a trusted third-party repository for digital scholarly articles. (See my column in the November/December 2011 issue of the *Newsletter*.) Portico is based in Princeton NJ, and employs personnel and systems that specialize in digital preservation. Our publishers supply a feed of the fundamental digital assets (XML, TIFF/EPS, FITS, PDF, etc.) for each article to systems at Portico, where those assets are validated for completeness and renormalized for preservation. Portico will manage all the assets indefinitely, forward migrating as necessary when formats evolve, and they ensure conformance with preservation best practices for all our articles. Our agreement with Portico stipulates policies and circumstances under which Portico would assume online delivery of AAS journal articles, notably in the event of the disappearance of the Society.

Management. The AAS provides overall management of these operations, primarily with staff at the Executive Office in Washington. It is our responsibility to keep the various teams synchronized, to maintain awareness of and compliance with industry standards, to manage the journal budgets and finances, to engage with Society leadership, to interact with a non-trivial number of external partners, and to determine strategic development priorities.

I hope you can see that there is significant apparatus required to publish articles in the AAS journals. It is tempting to assert that none of this is necessary because we can blog and tweet our way onto the laptops of our

colleagues, but by and large researchers seem to recognize that the processes of formal scholarly communication are important. Even with their complexity and high performance, the costs to authors for all these services are quite reasonable. Beginning in 2011, author charges were computed from the digital components of the articles, and in 2012, author fees were reduced by 12.5%, to \$35 per digital quantum. The mean author charge in 2012 for the *AJ*, *ApJ*, and *ApJS* is \$1,260, while the median is \$1120; for the *ApJL*, the mean is \$455 and the median is \$490. Adjusted for the US Consumer Price Index (CPI), unit author fees in 2012 are 40% below what they were in 1991.

Apart from the philosophical goal of sharing costs among stakeholders, why does the AAS charge both author fees and subscription fees? From a business perspective, it is more resilient for the Society to derive revenue from several sources. But the most important reason for you is that by defraying substantial expenses through author fees, the AAS is able to provide its journals to the wider academic community at favorable rates to libraries. As a result of the lower subscription prices, more libraries are able to subscribe, and your research is therefore available to a broader cross section of the community. That may seem like an abstract benefit, but you reap the rewards by having your papers read more often and cited more often, and that is good for your CV.

However, the most direct benefit is that your paper is vetted and improved by peers and then entered in the scholarly record in a uniform way. It will be of the highest quality, and it will be available to researchers forever. The AAS is committed to scholarship and scientific research in general, and to you as an author and a scientist, and we are proud of the outstanding work that is done by the Society and dozens of dedicated people to make your articles the best they can be.

1. Sense About Science. 2009, Peer Review Survey, <http://www.senseaboutscience.org/pages/peer-review-survey-2009.html>

Secretary's Corner

G. Fritz Benedict, aassec@as.org

Prize Committee Vacancies

Vacancies for AAS Prize committees will be filled by Council at its meeting in Long Beach, California in January 2013. Current committee members are listed under "Committees" on the AAS homepage, <http://as.org>.

Committees that will have vacancies, followed by the number of vacancies on each (in parenthesis) are:

Russell Lectureship Committee (2)
Heineman Prize Committee (2)
Warner and Pierce Prize Committee (3)
Annie J. Cannon Prize Committee (1)
AAS Education Prize Committee (2)
Weber Award Committee (2)
Henri Chrétien Grant Committee (2)
Van Biesbroeck Prize Committee (3)

The Council takes advice from the Committee on Appointments for committee posts, AAS Members may themselves volunteer to serve on a committee, or suggest other Members for one of the vacancies. For the latter, to aid the Committee on Appointments, who do not know

every AAS member, please include the date of Ph.D., as well as a few sentences conveying to the Committee the background and area of expertise of the named individual. Please assist us with this. We need to have both quality and breadth on our committees for them to make wise and fair recommendations to the Council. Input must be received no later than 1 December 2012. Submit suggestions to Fritz Benedict, AAS Secretary, by email to aassec@as.org, or at the McDonald Observatory, University of Texas, 1 University Station, C1402, Austin, TX 78712, Fax: (512) 471-6016.

Message to Associate Members

Only (Full) AAS Members have the right to hold office or to chair committees of the Society. Many Associate members who are eligible to upgrade to Full Membership and whose expertise could benefit the Society, cannot serve. Associate members, please consider upgrading, and becoming more involved with Society activities. There is no increase in dues! (See a description of the different membership classes in the Bylaws, Article I.1, or on the membership application form.) If you have questions, please contact me at aassec@as.org.

Council Actions

Council Actions from the 220th Meeting in Anchorage AK, 10 June 2012

1. Adopted final minutes of the 219th meeting.
2. Approved interim Executive Committee actions taken during the time between the AAS 219 and AAS 220 meetings.
3. Accepted the 2012 election results for Vice President, Education Officer, Councilors, USNC-IAU representative, and the Nominating Committee.
4. Approved the agenda for the annual business meeting held 13 June 2012.
5. Accepted annual reports from the AAS Divisions, Committees, and Working Groups.
6. Accepted annual reports from the AAS Journals.
7. Approved 2011 financial reports, the Audit Committee report, and the external audit report.
8. Approved the selection of an external auditor for 2012
9. Approved the revised 2012 Budget.
10. Approved the creation of a Strategic Initiatives Fund to be administered by the Executive Officer.
11. Approved the adoption of the 2013 budget.
12. Elected new members to the Publications Board and the Astronomy Education Board.
13. Approved the proposed membership of the various AAS Standing Committees.
14. Approved the proposed membership of the various AAS Presidential Committees.
15. Approved AAS Bylaws revisions as required by recent changes to DC law.
16. Approved the selection of Prof. Ewine van Dishoek of Leiden University and MPE as the Honorary Member selection for 2012.
17. Approved the Division on Dynamical Astronomy proposed Bylaws changes.
18. Approved the formation of a new AAS working group: Astroinformatics and Astrostatistics.

The AAS Heeds the Call of the Wild

With 1,225 registered participants, the AAS's 220th meeting in Anchorage, Alaska, last 10-14 June did not break the official attendance record for a summer meeting (1,350, Boston, May 2011), but it came close. Unofficially, the meeting almost certainly drew a record number of people. For one thing, many attendees brought their families along to experience the "Big Wild Life" that makes Alaska such a popular tourist destination. For another, two public lectures and a special student-outreach program attracted hundreds of visitors from the surrounding area. Whatever the final tally, the meeting was a huge success—both scientifically and logistically. The Dena'ina and William A. Egan Civic & Convention Centers were spacious and comfortable, the weather was pleasant most of the time, and the science program grabbed hold early Monday morning and did not let go till late Thursday afternoon.

Many attendees were surprised to learn that this was not the first AAS meeting in Alaska. The 114th meeting was held in College, outside Fairbanks, in July 1963. Given how much everyone at the 220th meeting enjoyed the venue and the conference, it is probably a safe bet that the Society will not wait a half century before returning to the Last Frontier for a third time.

The photos on these pages capture a small slice of the Anchorage meeting. They were shot by Imelda Joson and Edwin Aguirre, two of my former colleagues from *Sky & Telescope*. These and additional pictures will appear online in our Facebook and Picasa galleries. All AAS photos are © 2012 Joson Images.

—Rick Fienberg, AAS Press Officer and Education & Outreach Coordinator



Left: The weekend before every AAS meeting features workshops conducted by the Center for Astronomy Education (CAE) and Collaboration of Astronomy Teaching Scholars (CATS). Here Kathryn Williamson (Montana State Univ.) makes a point during a workshop focused on the use of technology to improve Astronomy 101 students' understanding of fundamental concepts. *Middle:* Kelsey Braxton (Univ. of Washington), Jeremy Bailin (Univ. of Michigan), and AAS Councilor Pat Knezek (NOAO/WIYN Obs.) were all smiles at the undergraduate reception on Sunday evening. *Right:* AAS Executive Officer Kevin Marvel and outgoing AAS President Debbie Elmegreen (Vassar College) welcomed students to the undergraduate reception and offered tips on how first-time attendees could get the most out of the meeting.



Far left: Attendees pouring in to the opening reception on Sunday evening were serenaded with Alaska-style country music by the Carhartt Brothers, featuring "Billy Bob," "Regular Bob," and "Banjo Bob." *Left:* Food and drink aplenty were available; nobody left hungry.



Left: AAS meetings offer a terrific opportunity to renew acquaintances and make friends. Among those seizing the opportunity in Anchorage were junior members Michael Kirk (New Mexico State Univ.), Alexandra Truebenbach (Wesleyan Univ.), Andrew Sturner (Haverford College), and Maya Barlev (Haverford). *Middle:* These local performers kicked off the first plenary session on Monday morning with a demonstration of native Alaskan music and dance. *Right:* Tom Case, Chancellor of the University of Alaska Anchorage, warmly welcomed the AAS to town.



Left: As part of the welcoming festivities on Monday morning, Debbie Elmegreen surprised Kevin Marvel with a crystal obelisk commemorating the 50th anniversary of the founding of the Executive Office. *Middle:* In Anchorage we celebrated the creation of the Laboratory Astrophysics Division (LAD), the Society's first new division in more than 30 years. Debbie Elmegreen presented a commemorative certificate to LAD's leadership team, which includes Farid Salama (NASA/Ames), Daniel Wolf Savin (Columbia Univ.), R. Paul Drake (Univ. of Michigan), and Steven Federman (Univ. of Toledo). *Right:* Kavli Lecturer Ewine van Dishoeck (Leiden Univ. & MPI for Extraterrestrial Physics) is flanked by Debbie Elmegreen and AAS Senior Vice-President Lee Anne Willson (Iowa State Univ.). Van Dishoeck's plenary presentation was entitled, "Laboratory Astrophysics as Key to Understanding the Universe."



Left: AAS Press Officer Rick Fienberg emceed the meeting's first news briefing, which included presentations by Nicola Omodei (Stanford Univ.), Dibyendu Nandy (Indian Institute of Science Education & Research), Piet Martens (Montana State Univ.), Michael Hahn (Columbia Univ.), and SPD Press Officer Craig DeForest (Southwest Research Institute). *Middle:* Solar Physics Division (SPD) chair David Alexander (Rice University) presented the SPD Hale Prize to Don Reames (Univ. of Maryland). *Right:* Jim Ulvestad (NSF) tried to put his agency's funding constraints in the best possible light at the NSF Town Hall on Monday. As he put it, "We're in a really good situation relative to zero."



Left: Joan Schmelz (Univ. of Memphis) introduced the concept of astronomical bullying at a Town Hall organized by the Committee on the Status of Women in Astronomy (CSWA) and offered advice on how to combat the problem. *Middle:* Participants in Monday afternoon’s news briefing included Spencer Wolfe (West Virginia Univ.), Jay Lockman (NRAO), James Rhoads (Arizona State Univ.), and Akos Bogdan (Harvard-Smithsonian Center for Astrophysics). They described new findings about galaxies from the Local Group to the high-redshift universe. *Right:* AAS Vice-President Ed Churchwell (Univ. of Wisconsin) had the honor of introducing several of the invited speakers.



Left: In her invited talk on Monday afternoon, Fran Bagenal (Univ. of Colorado) described how NASA’s Juno mission will explore Jupiter’s magnetosphere more thoroughly and at higher resolution than ever before. *Middle:* Invited speaker Sean Solomon (Carnegie Institution of Washington), principal investigator on the MESSENGER mission to Mercury, highlighted some of the surprises revealed during the probe’s first year in orbit. *Right:* Thanks to generous support from spacecraft contractor Ball Aerospace, attendees at NASA’s Kepler Town Hall on Monday evening arrived to find a tasty spread of food and drink awaiting them.



Left: Steve Howell (NASA Ames), Doug Hudgins (NASA HQ), and Roger Hunter (NASA Ames) described plans for Kepler’s extended mission at the Kepler Town Hall on Monday evening; some of those plans may be in jeopardy now that the spacecraft has lost a gyro. *Middle:* At the “New Horizons for Science from the Moon” splinter meeting on Monday evening, Scott Norris (Lockheed Martin), Greg Schmidt (NASA Lunar Science Institute), and Jack Burns (Univ. of Colorado) described some of the unique scientific opportunities that astronomers hope to pursue from lunar orbit or from the lunar surface. *Right:* Denise Smith (STScI), Vivian Hoette (Yerkes Obs.), and Pamela Harman (SETI Institute) were among the many who came to the “New Horizons for Science from the Moon” reception.



Left: Jay Pasachoff (Williams College) flew to Alaska straight from Hawaii, where he had only days earlier observed the transit of Venus from atop Haleakala on Maui. In his public talk on Monday evening, he showed his own spectacular images and videos as well as others from his global network of scientific collaborators. *Middle:* Winners of this year's SPD Studentship Awards were budding solar physicists Elana Urbach (College of William and Mary), Chris Lowder (Montana State Univ.), Sean Brannon (Montana State), David Graham (Univ. of Glasgow), Ernest Amouzou (Montana State), Meriem Alaoui (NASA Goddard), Heather Ratcliffe (Univ. of Glasgow), and Tom Schad (Univ. of Arizona). *Right:* Dibyendu Nandy (Indian Institute of Science Education and Research) received the Harvey Prize from SPD chair David Alexander, then gave a lecture on understanding and, eventually, forecasting the solar cycle.



Left: Among the 10 multisession Meetings-in-a-Meeting in Anchorage was one on whether Einstein or Schwinger deserves the last word on gravity. Participating in a Tuesday-morning news briefing based on their sessions were Stacy McGaugh (Univ. of Maryland), Virginia Trimble (Univ. of California, Irvine), David Bartlett (Univ. of Colorado), and Gerrit Verschuur (Univ. of Memphis). *Right:* When galaxy-formation expert Sandra Faber (Univ. of California, Santa Cruz) was honored with the Russell Prize and a standing ovation on Tuesday, many of her former graduate students showed up to celebrate her brilliant career. Pictured are Kai Noeske (ESA/STScI), Alan Dressler (Carnegie Obs.), Anne Metevier (Sonoma State Univ.), Stéphane Courteau (Queen's University), Faber, Caryl Gronwall (Penn State Univ.), Tod Lauer (NOAO), James Lowenthal (Smith College), and Carl Grillmair (Caltech).



Left: The AAS invited local schoolchildren, teachers, and families to drop by the Dena'ina Center for a special presentation by the "Hubble Repairman," NASA astronaut John Grunsfeld. *Middle:* In the Exhibit Hall after his talk, Grunsfeld had no trouble finding young volunteers to help swap out a circuit board in a simulated Hubble repair. *Right:* Lynn Cominsky (Sonoma State Univ.) showed local schoolchildren, teachers, and families how to build their own pulsars.



Left: Tim Puckett (Apogee Imaging Systems) showed visiting students and teachers a selection of gorgeous astronomical images when they came by his exhibit booth. *Middle:* At Tuesday morning's press conference Arne Henden (AAVSO) described a new sky survey, Scott Engle (Villanova Univ.) reported new results on assessing planetary habitability around M dwarfs, and Ted Gull (NASA Goddard) and Manuel Bautista (Western Michigan Univ.) told how observations of Eta Carinae and laboratory studies of ionized gases are converging to solve longstanding astrophysical problems. *Right:* Katherine Rawlins (Univ. of Alaska Anchorage) didn't have to travel far to attend the meeting, but everyone else was glad they had traveled to hear her Tuesday-afternoon invited talk on the highest-energy cosmic rays.



Left: Ellen Zweibel (Univ. of Wisconsin) followed Rawlins with an invited presentation on using cosmic rays to probe galactic and intergalactic magnetic fields over cosmic time. *Middle:* At the Solar Physics Division's members meeting on Tuesday evening, chair David Alexander presented the SPD Popular Writing Award to Daniel Baker (Univ. of Colorado), who, with his coauthor James L. Green (NASA Headquarters), published "The Perfect Solar Superstorm" in *Sky & Telescope's* February 2011 issue. *Right:* AAS Vice-President Nick Suntzeff (Texas A&M Univ.) congratulated his collaborator Brian Schmidt (Australian National Univ.) who, along with Adam Riess and Saul Perlmutter, won the 2011 Nobel Prize in Physics for the discovery of dark energy. Brian gave a public talk at the Anchorage meeting and we look forward to talks from Adam and Saul at a future AAS meeting.



Left: Wednesday led off with an SPD Parker Lecture by Yvonne Elsworth (Univ. of Birmingham), who said these are "very exciting times" for studying stellar interiors, thanks largely to the Kepler mission. *Right:* Travis Rector (Univ. of Alaska Anchorage) visits Kim Coble (Chicago State Univ.) and her intern, high-school student K'Maja Bell (center), who presented a poster on involving students in scientific research as a way to increase participation by minorities in astronomy. Also checking out the poster were Kevin Hardegree-Ullman (Univ. of Arizona), Meredith Hughes (Univ. of California, Berkeley), and Leslie Looney (Univ. of Illinois).



Left: At Wednesday morning's press conference, Tristan Guillot (L'Obs. de la Côte d'Azur & Univ. of Calif., Santa Cruz) suggested that we do not see more brown dwarfs because they have been engulfed by their stars. Lars Buchhave (Univ. of Copenhagen) reported that, in contrast with Jupiter-mass planets, small ones do not require a metal-rich environment. And Thomas Beatty (Ohio State Univ.) described the first discoveries from the KELT-North transit survey. *Middle:* Govert Schilling, a freelance journalist from the Netherlands who has been covering AAS meetings for decades, can always be counted on to ask insightful questions at news briefings. *Right:* On Wednesday morning, AAS President Debbie Elmegreen (Vassar College) presented the Warner Prize to Steven Furlanetto (Univ. of Calif., Los Angeles), who then gave a prize lecture describing what we can expect to learn in the coming decade as new instruments probe the "cosmic dawn" when the first stars began to shine.



Left: The new AAS Working Group on LGBTIQ Equality (WGLE) convened a Town Hall on Wednesday to explore anti-discrimination practices, workplace climate, and pay and benefit policies in four employment sectors: industry, the federal government, private colleges, and public universities. Here Rolf Danner (Northrop Grumman) makes a point while session chair Laura Lopez (MIT) looks on. *Middle:* At the final press conference on Wednesday, Douglas Currie (Univ. of Maryland), who participated in the Apollo lunar laser ranging experiments, showed how the next generation of lunar landers will extend such work. Wesley Fraser (Herzberg Institute of Astrophysics) revealed new clues to the composition and structure of dwarf planet Quaoar and its moon Weywot. And Mike A'Hearn (Univ. of Maryland) told reporters about how new data from comets is changing our view of solar-system evolution. *Right:* AAS Press Officer Rick Fienberg was grateful for stalwart assistance from Deputy Press Officer Inge Heyer (Loyola Univ. Maryland).



Left: On Wednesday afternoon, Miller Goss (NRAO) told the oft-overlooked story of Australian scientist Ruby Payne-Scott (1912-1981), who did pioneering work in radar and radio astronomy, including the first interferometric observations. If you missed the talk you can read the book, which will be published by Springer in 2013. *Right:* In addition to his public talk earlier on Tuesday, Nobel laureate Brian Schmidt (Australian National Univ.) gave an invited talk on Wednesday afternoon about SkyMapper, the new southern sky survey that will be undertaken at Mt. Stromlo Observatory.

Committee on Employment

Bruce Balick (balick@astro.washington.edu)

A Guide for Students and Mentors

One of the more visible and unnerving outcomes of the AAS meeting in Anchorage was the five-year budget projections by NSF and NASA officials. Bottom line: Job seekers and their mentors may wish to reflect about preparing for alternatives to the standard academic pathways.

Students enter astronomy for the love of the field. Their aspirations are to be expected. Discouragement is never welcome or embraced. Sadly, the President's remarks on the national research funding climate requires that optimism be tempered with realism in order to prepare for a rewarding post-degree career.

Based on anecdotal conversations with several students, some corporate friends, and concerned colleagues at the Anchorage meeting, I would like to offer some informal advice¹. Here is my compilation of some concrete steps for graduating students who are considering creating a "Plan-B" for their career:

1. Some far-sighted and established physics and astronomy departments have started to offer new or augmented industry-oriented curricula in response to looming job realities. You may wish to look locally for a master's degree in applied physics, computer sciences, applied math, or statistics—or perhaps law and business. Be ready to seize opportunity in some of the fields of interest to you. See if there is an appealing program at a university near you. For example Rice University has launched an array of Professional Science Masters programs that aim to prepare advanced students with industrial skills (www.profms.rice.edu, www.sciencemasters.com). We hear of other institutions elsewhere offering roughly similar programs.

2. When applying outside the field of astronomy be aware of and be particularly well prepared to describe the unusual and high-level skills that you have acquired. Human Resource reps with whom I spoke say that they like hiring PhD grads in physics and astronomy for several reasons:

- They are smart—so they learn fast and independently

- They generally have an ability to grasp the big picture
- They adapt well to the structure and dynamics of any major project
- They are accustomed to developing fresh ideas and presenting them thoughtfully
- They are comfortable in teams of many people with different types of skills
- Finally, they can learn how to lead a successful project team after a few years of experience

Most also come from workplaces that encourage respect for diversity of all sorts. As TA's they have learned how to make effective, concise presentations to people of different attitudes and aptitudes. If you have any of these skills, then spotlight them!

3. If you have developed a major research project, written a complex grant proposal, or been involved in the formulation and implementation of an innovative research program, be sure to stress your management qualifications in your resume. Although you may not be especially qualified in writing code or designing new chips, you could have the uncommon advantage of demonstrated project leadership in a diverse and highly technical team. These skills may set you well apart from applicants with deeper but much narrower backgrounds.

4. Find out how former students in your department fared in the commercial market and listen attentively to any recommendations they may have for optimizing your credentials. Speak to your department chair to see if a reunion and networking session with your local astronomy alumni can be arranged. Also, make an appointment to chat with local HR managers who review the applications of highly skilled and specialized applicants. Find out which skills and qualifications should be emphasized for positions that are open now or may soon open as the economy begins to recover. Be ready to join the next wave of technology—and it works best to start early.

5. Find out how human resource offices handle job applications. The following story (located at <http://www.npr.org/2012/06/12/154845321/trouble-finding->

Committee on Employment continued

jobs-it-might-be-the-software) is very sobering. A brief summary is that to save time and money, many HR offices do an automated “triage” through submitted application materials (not unlike that used to sort through stacks of graduate applications). They purchase software that looks for keywords or phrases showing that you are ready to be effective in a job the day that you arrive, and they look for people who might accept below-market wages. It is a game, and computer software can always be gamed. For example, mentioning “PhD” is not always an asset since PhDs have high salary and perquisite expectations. You might use another term.

The upcoming winter meeting of the AAS in Long Beach will feature sessions on employment opportunities. Be sure to attend. This meeting will be in an area (Los Angeles) where many large technical companies and financial institutions are situated. Set up a few interviews if you can, but do your background homework before you do. Of course, always keep one eye on the AAS Job

Register at the AAS website. It is one of the finest of any professional society, and it is there for you!

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/) 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@scc.losrios.edu). The AAS committee on employment exists to help our members with their careers. Your ideas are important, so let's hear them!

¹The AAS' Committee on Employment is methodically exploring new types of services that the AAS can provide job seekers. Watch for announcements of special activities at the Long Beach AAS meeting.

Committee on the Status of Women in Astronomy

Nancy Morrison, CSWA Committee Member, NMorris@UTNet.UToledo.Edu

On-Line Resources from the CSWA

The AAS Committee on the Status of Women in Astronomy has fulfilled its goal of becoming a source of on-line information on issues relevant to women in science: we have been obtaining helpful information on various topics and consolidating it in one place on our web site. Now, we have completed the list of topics in our 2009 strategic plan, and more besides. Many of the resources may be of interest to anyone, regardless of gender.

To our long-standing “Advice” page and “External Links” page, we have added a “Resources” page, <http://www.aas.org/cswa/resources.html>. It includes links to pages on the following topics.

The “two-body problem:” how to locate two careers within an acceptable commuting distance of each other. Various couples' experiences are described.

“Work-life” balance. Resources here are subdivided into sections on employment policies and on shared parenting. Men's and women's points of view are represented.

Mentoring. Included are resources on how to be a good mentor and on recognition for outstanding mentors, as well as the importance of mentoring for a science career.

continued on page 18

Committee on the Status of Women in Astronomy continued

Sexual harassment as it applies to employees in the workplace, to students, and to anyone. Policies of universities and governments are described as they apply to the harassers, the harassed, and their supervisors.

Unconscious bias, with sections on “impostor syndrome,” “stereotype threat,” and the “Matilda effect.” Research shows that unconscious bias affects virtually everyone and is most insidious when people think they are unbiased.

Restarting a science career after a break: information for those seeking re-employment after taking a break to raise a family or after retirement.

Benefits of diversity to organizations and how to increase diversity: everyone says diversity is a good thing, but why exactly? And how can organizations become more diverse?

The main “Resources” page lists resources that don’t fit easily into the other topics, such as job-hunting advice, general information on careers in science, and advice on conducting public outreach about science. This main page also directs users to resources elsewhere on our site.

All these pages are updated frequently, with the most recent updates highlighted. Some additions are tweeted on our Twitter account, @AAS_Women. Additional online resources are available through the archive of CSWA blog posts: <http://womeninastronomy.blogspot.com/>

In an effectively infinite universe of information, more is available. If you know of a resource that has been omitted or of an additional topic that you would like included, please let us know.

News from NSF Division of Astronomical Sciences (AST)

Jim Ulvestad, Division Director, julvesta@nsf.gov

Portfolio Review Report

At this writing (10 August), the AST Portfolio Review Committee is scheduled to present its report for acceptance by the Directorate for Mathematical and Physical Sciences Advisory Committee, at a meeting to be held on 16 August. Assuming acceptance of the report, it will be made public via the AST Portfolio Review web page very shortly thereafter. Please see http://www.nsf.gov/mps/ast/ast_portfolio_review.jsp to access the report and related information from the Division. We anticipate holding a community webinar briefing sometime after the Beijing IAU meeting; that webinar is likely to occur before distribution of this newsletter.

AST wishes to express its sincere gratitude to the Portfolio Review Committee for the Committee’s diligent efforts on behalf of the U.S. astronomy community. The recommendations of the Committee’s report clearly are derived from the National Academy decadal survey priorities, and portray a robust scientific program even in the face of significant budget challenges. AST understands that decisive actions are crucial for ensuring the future health of the ground-based astronomy enterprise in the United States, so that U.S. scientists can continue as leaders at the forefront of astronomy through the next decade.

Thus AST intends to respond to the recommendations of the report as diligently and expeditiously as possible. An initial response to the report will be made public shortly after the report’s release, and will be posted at the above web site. A more detailed plan, with the capacity to evolve over time in response to changing conditions, is under development. Given the complex nature of the implementation of facilities-related recommendations, the many stakeholders involved, and the relation to the embargoed budget process for Fiscal Year 2014 (FY 2014), it is not possible to make a more detailed plan for implementing facilities recommendations available now; such a plan probably will not be available until after the President’s FY 2014 budget request is released in February 2013. AST will keep the community informed as implementation evolves.

New AAG Solicitation for Upcoming Deadline

The previous Astronomy and Astrophysics Research Grants (AAG) solicitation NSF 05-608 has been replaced by NSF 12-589; see http://www.nsf.gov/publications/pubsumm.jsp?WT.z_pims_id=13630&ods_key=nsf12589.

The proposal submission window remains 15 September to 15 November, with a firm submission deadline of

15 November 2012 at 5 p.m. local time of the submitting institution. The program theme descriptions are updated, and information is included about special proposals that are described in the NSF Proposal & Award Policies & Procedures Guide (PAPPG) Guide Part I: Grant Proposal Guide (GPG). These special proposals include conference and workshop proposals, requests for supplemental funding, and proposals related to the Computational and Data-enabled Science and Engineering (CDS&E) program.

General proposal preparation requirements remain in effect, as described in the GPG. These requirements should be followed diligently to avoid having the proposal returned without review. Changes that are permitted by the new AAG solicitation consist of an increase of the page-limit for biographical sketches to a maximum of three pages each to accommodate extensive collaborator listings, as well as guidance on collaboration letter format. Please see section V.A in the revised solicitation for details. If you have questions about submitting a proposal to the AAG program, contact the NSF program officer identified for your program theme in the solicitation.

Electromagnetic Spectrum Management Unit

The NSF Electromagnetic Spectrum Management Unit may have a vacancy beginning on or about January 2013, to assist the community and the NSF in spectrum management duties and, possibly, with duties related to regular grant program and facilities management within AST. The position may be filled as either a permanent appointment or as a Federal Temp or Visiting Scientist, Engineer, and Educator (VSEE) appointment.

The vacancy announcement for the permanent position is available at:

<http://www.usajobs.gov/GetJob/ViewDetails/320337400>

The vacancy announcement for the Fed Temp/VSEE appointment is available at:

<http://www.usajobs.gov/GetJob/ViewDetails/320336200>

There is only one position available. Interested applicants may apply for either type of appointment, or for both types of appointments if they do not know at this time whether they desire a permanent or temporary position. Both vacancy announcements close on Friday, 28 September.

Please contact Andrew Clegg (aclegg@nsf.gov) or Tom Gergely (tgergely@nsf.gov) for additional information about the Electromagnetic Spectrum Management Unit. For information about the vacancy announcements and how to apply, please contact the human resources specialist indicated in the announcements.

AST Staff Changes

Don Terndrup and Scott Fisher have completed their terms as rotators in AST, and Christer Watson has completed his term as a Science and Technology Policy Fellow from the American Association for the Advancement of Science. AST wishes to express its great thanks to these individuals for their excellent service on behalf of the NSF and the astronomy community.

Aizenman Retires from NSF

On Thursday, 16 August 2012, Morris Aizenman, the Senior Science Associate in the Directorate for Mathematical and Physical Sciences (MPS), will have completed 36 years of Federal service—all of them with the National Science Foundation. Morris plans to retire at the end of the month, and his last day in the office will be Friday, 31 August 2012.

We have all been influenced personally and professionally by Morris's passion for scientific discovery and his exceptional commitment to supporting the global research enterprise. Morris has made remarkable contributions to the NSF community which have benefited both the Foundation and the greater scientific community.

Before moving up to our Office, Morris served 24 years in a variety of roles in the Division of Astronomical Sciences (AST), from Program Director for the, then, Stars and Stellar Evolution program, to Deputy Division Director. Many Society members benefitted from his genuine interest in all facets of the science, his devotion to our merit review process, and his conviction that the individual investigators were the lifeblood of astronomical research.

We will be celebrating his 36 years of service to NSF, to MPS, and to AST, on Wednesday, August 29th; and we wish Morris all the best in his retirement!

Ed Seidel, Assistant Director, MPS

Celeste Rohlfling, Deputy Assistant Director, MPS

JWST Update

Dr. Eric Smith (NASA HQ), JWST Deputy Program Director

The past several months have been highly productive ones for the JWST program with major hardware deliveries. On 29 May, NASA took delivery of the first flight instrument to enter into the Integrated Science Instrument Module (ISIM) integration and testing. The mid-infrared instrument, MIRI, developed by a consortium of European countries in partnership with JPL has since passed all of its receiving inspections and is ready for integration. Congratulations to Gillian Wright (Royal Observatory Edinburgh) and her team in Europe, Kalyani Sukhatme and Mike Ressler at JPL, and George Rieke at the University of Arizona on “winning the gold.” JWST’s “navigator instrument” also just arrived on 31 July. The Canadian Space Agency’s Fine Guidance Sensor/Near-infrared Imager and Slitless Spectrograph, joined MIRI at the Goddard Space Flight Center and is undergoing its receiving inspections with good results so far. The FGS/NIRISS effort for JWST, which is Canada’s top priority in its decadal survey, was led by project scientists John Hutchings (Dominion Astrophysical Observatory) and René Doyon (Université de Montréal). Both instruments have passed their instrument level testing at their home institutions and will now be attached to the ISIM for testing in the Spring of 2013.

The cryogenic systems (nitrogen and helium cooling shrouds) installed in the enormous thermal vacuum chamber (16.8m in diameter, 27.4m height) at the Johnson Space Center are installed and working successfully. Temperatures within the He shroud have reached below the 20K required to test the combined telescope and science instrument configuration of JWST later in its integration stages. The chamber at JSC is now the world’s largest cryogenic thermal vacuum chamber for achieving a deep space environment simulation.

Instrument performance testing continues on JWST’s NIRCam at Lockheed-Martin, Palo Alto. It is finishing its first cycle of cryogenic testing and will be coming to GSFC later in the Fall of this year. The European Space Agency’s NIRSpec instrument is being re-assembled at Astrium in Germany after last year’s finding that its initial flight optics bench had flaws. Flight optics are being installed on a flight spare bench and they expect to re-enter instrument level testing this Fall.

Richard Howard retired from NASA, leaving his position as JWST Program Director. Geoff Yoder, former Deputy Director of the Astrophysics Division, was appointed as the new Program Director. Mr. Howard was awarded the NASA Outstanding Leadership medal for his work in developing the replan that has put JWST on its current successful path, both in budget and schedule. Since the program began its replanned effort (early 2011) it has remained within budget and has actually increased its funded schedule reserve from 13 to 14 months to the October 2018 launch readiness date. Mr. Yoder brings years of large program management experience to JWST as well as his familiarity with the US astronomical community goals from his time as Astrophysics Deputy Director.

The JWST team is looking forward to community engagement at several upcoming large meetings. First, JWST will be represented at the Division of Planetary Science Annual Meeting in Reno on 14-19 October 2012. In addition to our booth presence, we are organizing a special workshop titled “Planning your Solar System Observations with JWST.” This workshop will take place from 9am to noon on Sunday, 14 October, and will cover topics such as moving target capabilities, bright observing modes, imaging and spectroscopic sensitivities for Solar System objects, and much more. The JWST team will also have a strong presence at the winter AAS Long Beach meeting (6-10 January 2013). Scientists will be on hand at the STScI/JWST booth, and will be available to answer questions about the observatory status and science potential. This year’s meeting will also feature a special JWST science session on Monday, January 7th at 2 pm, featuring a half dozen science talks by members of the AAS. Finally, we will organize a JWST Town Hall meeting on Wednesday, 9 January at 12:45pm to provide a quick update on the status of JWST. The science speaker at this year’s Town Hall meeting will be Caltech astronomer, and recent Kavli Prize winner in Astrophysics, Mike Brown. Stop by the JWST booths to learn more about how you can use the incredible capabilities of JWST to advance your science!

HAD News

Joseph S. Tenn, HAD Secretary-Treasurer

The Historical Astronomy Division (HAD) will host three special sessions, one of them a first-ever joint session with the High Energy Astrophysics Division (HEAD), at the January AAS/HAD/HEAD meeting in Long Beach.

As usual, HAD will begin its special sessions Sunday, the day before the main AAS meeting begins. That afternoon will start with “Making Astronomy Public, Los Angeles Style,” organized by Peter Abrahams, David H. DeVorkin, and Thomas R. Williams. John Briggs, Lew Chilton, Anthony Cook, David DeVorkin, E.C. Krupp, and Thomas Williams will speak.

The second special session that afternoon will be “Preservation of Astronomical Heritage and Archival Data,” organized by Wayne H. Osborn and James Lattis. Speakers will be Clive Ruggles, Sara Schechner, David DeVorkin, and Wayne Osborn.

“Fifty Years of Celestial X-ray Astronomy” will be presented Monday morning by HEAD and HAD.

Organized by Hale Bradt and Richard Rothschild, it will consist of brief statements and panel discussions by the participants: Lynn Cominsky, Martin Elvis, Kathryn Flanagan, Christine Jones, Frederick Lamb, Stephen Murray, Laurence Peterson, George Ricker, Daniel Schwartz, Peter Serlemitsos, Fred Seward, Luigi Stella, Jean Swank, Wallace Tucker, Melville Ulmer, C. Megan Urry, Martin Weisskopf, and Nicholas White.

Monday afternoon HAD will present the second Donald E. Osterbrock Book Prize for Historical Astronomy, to be followed by an invited talk by the author(s) of the winning book. There will also be contributed posters on Monday, and oral presentations on Monday and Tuesday.

For more information see the HAD website at <http://had.aas.org/meetings/2013ameeting.html>. This is updated regularly.

Honored Elsewhere

Arnett and Frontera Awarded 2012 Marcel Grossmann Awards

David Arnett: for exploring the nuclear physics and yet unsolved problems of the endpoint of thermonuclear evolution of stars, leading to new avenues of research in physics and astrophysics.

Filippo Frontera: for guiding the Gamma-ray Burst Monitor Project on board the BeppoSAX satellite, which led to the discovery of GRB X-ray afterglows, and to their optical identification.

The Marcel Grossman Awards are given at the meetings that bear the same name every three years. These meetings, founded in 1975 by Remo Ruffini and Abdus Salam, are organized with the aim of reviewing developments in gravitation and general relativity with major emphasis on mathematical foundations and physical predictions.

Each recipient is presented with a silver casting of the TEST sculpture by the artist A. Pierelli. The original casting was presented to His Holiness Pope John Paul II on the first occasion of the Marcel Grossmann Awards.

Townes Wins Fizeau Prize

The Fizeau Prize for 2012 is awarded for lifetime achievement to Professor Charles Hard Townes for his long-term commitment to and support of optical interferometry, especially in the mid-infrared, as evidenced by his work on the McMath prototype and Berkeley Infrared Spatial Interferometers. Townes’ development of heterodyne techniques, high-spectral resolution and closure phases at the ISI has produced dozens of highly cited and transformative papers in the studies of dust production and time-evolution of evolved stars.

The Fizeau prize (<http://www.oca.eu/fizeau-prize>) is sponsored by the Observatoire de la Côte d’Azur and is administered jointly by the sponsors and the International Astronomical Union Commission 54, Optical and Infrared Interferometry, and is offered in order to provide recognition within the community and to encourage contributors to the rapidly growing field of optical interferometry. The prize was announced on 5 July 2012 in Amsterdam at the SPIE conference.

Announcements

Small Research Grants Program on Hold

Like volcanoes the world over, the Small Research Grants (SmRG) program has gone dormant. Begun in 1979 by the AAS Executive Office, the program was funded by a series of grants from NASA to support U.S. astronomers working on NASA-relevant projects. A small amount of additional funding was provided occasionally by income from the AAS operating-reserve fund to support meritorious proposals from outside the U.S. and/or not strictly relevant to current or future NASA missions. Over the last 13 years the SmRG program has awarded more than \$1 million in small grants (\$500 to \$7,000 each) to more than 500 researchers.

With Council approval, the AAS Executive Office has decided not to pursue renewal of our NASA SmRG grant. Managing the program takes a considerable amount of staff time that we feel should be devoted to other AAS activities that are better aligned with our mission and strategic plan. Another scientific society has expressed interest in taking over the SmRG program and is submitting a proposal to NASA with our help and encouragement. We hope that this proposal will be successful and that we will be able to announce the resumption of the SmRG program under new management in the very near future.

Meanwhile, I would like to thank the many AAS members who volunteered to review SmRG proposals over the years. We could not have done it without you!

Kevin B. Marvel
AAS Executive Officer

ARO Observing Proposal

Deadline: 10 September 2012

Proposals are being solicited for observing time for the period 1 October 2012–1 February 2013, at the University of Arizona, Arizona Radio Observatory, for the Sub-Millimeter Telescope (SMT) and the Kitt Peak 12 Meter telescope, Tucson, AZ.

Information and submission instructions:
<http://aro.as.arizona.edu>

Remote observing information:
<http://aro.as.arizona.edu/remote/remote.htm>

For observing questions, contact Tom Folkers - tfolkers@email.arizona.edu

NSO Observing Proposal

Deadline: 15 November 2012

The current deadline for submitting observing proposals to the National Solar Observatory is 15 November 2012 for the first quarter of 2013. Information is available from the NSO Telescope Allocation Committee at P.O. Box 62, Sunspot, NM 88349 for Sacramento Peak facilities (sp@nso.edu) or P.O. Box 26732, Tucson, AZ 85726 for Kitt Peak facilities (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.

Please note that the NSO will conduct a scheduling experiment at the DST/Sacramento Peak in preparation for ATST scheduling and operations. This experiment in service mode scheduling will take place in the first half of the quarter, leaving only the second half of the quarter available for regular scheduling. Further information will be forthcoming before the 15 November deadline.

2012 U.S. Physics Team Brings Home Three Gold Medals and Two Silver Medals

While the eyes of the world were turning to London for the Olympics, physics was in the air in Estonia as America's best high-school physics students participated in the 43rd International Physics Olympiad (IPhO). Teams from 88 countries joined in the competition, held 15-23 July 2012 in the Estonian capital, Tallinn, and the old university town of Tartu.

China and Taiwan tied for first place with five gold medals. Singapore was second with four golds. The U.S., Korea, and Russia tied with three golds and two silvers each. Members of the 2012 U.S. Physics Team:

- Jeffrey Cai, Ridge High School, Basking Ridge, NJ – Silver Medalist
- Allan Sadun, Liberal Arts and Science Academy High School, Austin, TX – Gold Medalist
- Eric Schneider, High Technology High School, Lincroft, NJ – Gold Medalist. Eric was third overall and received a Special Prize for the Best Solution of the Theoretical.

Announcements continued

- Jeffrey Yan, Palo Alto High School, Palo Alto, CA – Silver Medalist
- Kevin Zhou, High Technology High School, Lincroft, NJ – Gold Medalist

Traveling as part of the delegation were academic director Paul Stanley and coach Andrew Lin.

The U.S. Physics Olympiad Program is a joint initiative of the American Association of Physics Teachers (AAPT) in partnership with the University of Maryland Physics Department, the Joint Quantum Institute, and the member societies of the American Institute for Physics (AIP), including the AAS.

More information:

<http://www.aapt.org/aboutaapt/pr29129724.cfm>
<http://www.aapt.org/physicsteam/2012>
<http://www.aapt.org/Contests/olympiad.cfm>
<http://www.ipho2012.ce/home>

IPAC Visiting Graduate Student Fellowship - Spring 2013

The Infrared Processing and Analysis Center at Caltech announces the availability of six-month graduate student fellowships beginning in the Spring of 2013. The program is designed to allow students from other institutions to visit IPAC-Caltech and perform astronomical research in close association with an IPAC staff member during Spring 2013. In addition to existing projects at IPAC, several new projects are in their early stages, and students will expect to share in the excitement of these times at Caltech. Applicants would normally be expected to have completed preliminary course work in their graduate program and be available for research during the period of the award. Funding from IPAC will be provided for a 6-month period via a monthly stipends, airfare to the IPAC from the home institution, and some start-up expenses. We expect several students will be accepted on the program this year subject to funds being available. Students will come to IPAC in early January 2013. Please see the announcement at: <http://www.ipac.caltech.edu/community/GraduateFellowship>.

Calendar of Events

AAS & AAS Division Meetings

44th Annual DPS Meeting
14-19 October 2012, Reno, NV
<http://dps.aas.org/meetings/>

221st AAS Meeting with HAD
6-10 January 2013, Long Beach, CA
<https://aas.org/meetings>

13th HEAD Divisional Meeting
7-11 April 2013, Monterey, CA
<http://www.aas.org/head/meetings.html>

44th Annual DDA Meeting
5-9 May 2013, Paraty, Brazil
<http://dda.harvard.edu/meetings/2013/>

45th Annual DPS Meeting
6-11 October 2013, Denver, CO
<http://dps.aas.org/meetings>

Other Events

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**
13-16 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

***CAASTRO Workshop: The Epoch of Reionisation Global Signal**
19-21 Nov 2012, Sydney, Australia
r.wayth@curtin.edu.au
<http://caastro.org/event/eor-global-signal-workshop>

***Binary Black Holes and Dual AGN, a Workshop in Memory of David S. De Young**
29-30 November 2012, Tucson Marriott

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Calendar of Events continued

University Park, Tucson, AZ
Tod R. Lauer (lauer@noao.edu)
<http://www.noao.edu/meetings/bbh/>

Maui International Double Star Conference

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

Exoplanets in Multi-body Systems in the Kepler Era

9-15 February 2013, Aspen, CO
Eric Ford (acp2012-soc@astro.ufl.edu)
<http://www.astro.ufl.edu/~eford/meetings/aspen2013/>

***Infrared and Submillimeter Probes of Gas in Galaxies: From the Milky Way to the Distant Universe**

17-20 March 2013, Pasadena, CA
Vandana Desai (desai@ipac.caltech.edu)

***SnowPAC 2013—Black Hole Fingerprints: Dynamics, Disruptions & Demographics**

17-23 March 2013, Snowbird Ski Resort, Utah
snowpac@physics.utah.edu
<http://www.physics.utah.edu/snowpac/index.php/snowpac-2013>

***The Next Generation CFHT: A 10m, Wide-Field, Spectroscopic Telescope for the Coming Decade**

26-28 March 2013, Institute for Astronomy, Univ of Hawaii at Manoa
simons@cfht.hawaii.edu

***From Stars to Life - Connecting our understanding of star formation, planet formation, astrochemistry and astrobiology**

3-6 April 2013, Gainesville, FL
starstolife@astro.ufl.edu
<http://conference.astro.ufl.edu/STARSTOLIFE/>

***Transformational Science with ALMA: From Dust to Rocks to Planets Formation and Evolution of Planetary Systems**

8-12 April 2013, Hilton Waikoloa Village, The Big Island of Hawaii
loc2013alma@asiaa.sinica.edu.tw
<http://www.cv.nrao.edu/rocks/index.html>

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)

***Requirements for UTC and Civil Timekeeping on Earth: A Colloquium Addressing a Continuous Time Standard**

29-31 May 2013, Charlottesville, VA
info@futureofutc.org
<http://futureofutc.org>

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)
<http://www.iaus299.org>

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/>

***IAUSymp 303, The Galactic Center: Feeding and Feedback in a Normal Galactic Nucleus**

30 Sept-4 Oct 2013, Santa Fe, NM
iau303@aoc.nrao.edu
<https://science.nrao.edu/science/meetings/IAU303-GC2013>

Vatican Observatory Conference on Exoplanets & Biomarkers

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

***The 18th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun**

9-13 June 2014, Flagstaff, AZ
Gerard van Belle (gerard@lowell.edu)
<http://www2.lowell.edu/workshops/coolstars18/>

*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 cadwww.hia.nrc.ca/meetings.

Washington News

Bethany Johns, John Bahcall Public Policy Fellow, bjohns@as.org



Congratulations to the Mars Science Laboratory Curiosity Rover team!

If you have not heard, Curiosity's 7 minutes of terror during entry, descent, and landing, or EDL, ended with success. I stayed up all night on the east coast to see the landing live and the press conference afterwards. This was a moment that all of America and the world shared.

"It felt great being here in Times Square with everyone around and everyone cheering," Owen Herterich, a student at Parsons School of Design in New York told *Time* (<http://techland.time.com/2012/08/06/curiosity-takes-center-stage-as-crowds-cheer-in-times-square/>). "I mean, I'm only 22 years old. This is my first big space moment."¹

The public may be excited, but we scientists have work to do to make sure they understand how NASA is applicable to their everyday lives. Dr. Mike Lubell, from American Physical Society recently said on NPR's Science Friday (<http://www.npr.org/2012/07/27/157489673/why-science-is-a-non-issue-in-the-election-again>) that recent polling showed that, "The good news is the public does appreciate science. They actually love scientists, think they're wonderful people...The bad news is that when you probe, they really don't know why. Their knowledge is

poor. They don't know what the benefits are other than medicine."²

Deals are now being made behind closed doors on how Congress will handle the upcoming budget sequestration. Policy makers are figuring out what is important to them to protect from budget cuts. Some Congresspeople were actually at JPL in mission control during the EDL of MSL. They understand the excitement and importance of protecting science. However, a handful out of 541 members of Congress is not enough to save the cuts that threaten scientific innovation. Not all policy makers understand the importance of space science and exploration to the Nation.

The federal budget debate is focused on cuts, protecting defense, and creating jobs. Have you told your member of Congress how much your science contributes to society? Have you told your members of Congress how your science and a federal investment in scientific research can boost the economy, enable defense, and create jobs?

If not, then do. The time is now. To find out how, you can use the instructions for the AAS program Communicating With Washington: http://aas.org/policy/cww_instructions.

Election Day is on 6 November. Tell your policy makers now what is important to you and to the nation. And tell them again on Election Day.



Part of the left side of NASA's Curiosity rover and two blast marks from the descent stage's rocket engines. Rim of Gale Crater in the distance. 10 August 2012

¹Accessed 6 August 2012: <http://techland.time.com/2012/08/06/curiosity-takes-center-stage-as-crowds-cheer-in-times-square/>

²Accessed 27 July 2012: <http://www.npr.org/2012/07/27/157489673/why-science-is-a-non-issue-in-the-election-again>