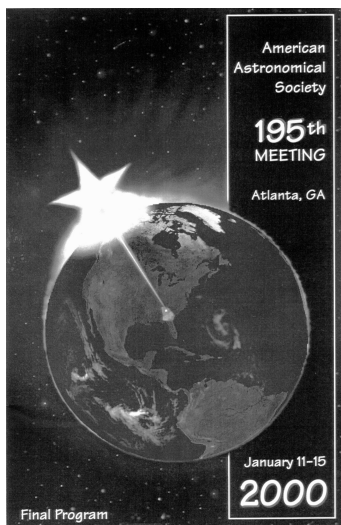


# NEWSLETTER

The American Astronomical Society • 2000 Florida Avenue, NW, Suite 400 • Washington, DC 20009-1231 • 202-328-2010 • aas@aas.org



## ATLANTA! Winter Meeting

Tuesday–Saturday,  
11–15 January 2000

Atlanta, Georgia:  
Sunshine — Peaches —  
Georgia State University —  
and the AAS 195<sup>th</sup> Meeting.

The **Hyatt Regency Atlanta** is the location of the AAS Winter Meeting. As Atlanta claims to have the largest airport in the US with the most flights in and out, it is easily accessible from almost anywhere.

With its 23,000 students and 915 full-time faculty, host **Georgia State University** is the second largest institution of higher education in the state. The University is located in downtown Atlanta, and its six colleges awarded more than 5,000 degrees in 1998. Georgia State's astronomy program is housed in the **Department of Physics and Astronomy** with eight faculty carrying out the academic programs in astronomy. The Department offers the PhD degree in astronomy with 15 full-time students currently enrolled in the graduate program. The **Center for High Angular Resolution Astronomy** is building the CHARA Array on Mt. Wilson, California. The facility consists of six 1-meter aperture telescopes comprising an interferometric array with a maximum baseline of 354 meters, providing limiting resolutions of 200 microarcseconds at visible wavelengths and 1 milliarcsecond at the K-band infrared. Construction of the array should be complete this year with full operation in early 2001. Funding for the CHARA Array has been provided by the University, the National Science Foundation, the W. M. Keck Foundation, and the David and Lucille Packard Foundation.

### Invited Speakers and Prize Lectures

LOC chair, **Hal McAlister** will open the meeting with an invited talk. Pierce Prize winner, **Dennis Zaritsky**; Warner Prize winner **Lars Bildsten**; Heineman Prize winner **Ken Freeman**; and HEAD's 1999 Rossi Prize winners (see page 14), **Hale Bradt** and **Jean Swank** will present their lectures. There will also be a number of other exciting and timely invited talks and special sessions. The first scientific results from the **Chandra X-Ray Observatory** will be featured in a series of invited talks on Friday.

### Divisions Meeting With Us

Two Divisions will be meeting with the AAS during this meeting. The **Historical Astronomy Division** has sessions on Saturday and the **High Energy Astrophysics Division** has planned sessions on Thursday.

*Continued on page 4*

## PRESIDENT'S COLUMN

Bob Gehrz, President, [gehrz@ast1.spa.umn.edu](mailto:gehrz@ast1.spa.umn.edu)

### Making the Hill See "Stars"

At the beginning of the summer, astronomy and space science appeared to be in good shape for the upcoming federal appropriations process. NASA's space science budget had an increase that beat inflation and NSF was poised to begin a major new information technology initiative.

This overall good situation came to a bitter end with a draft report from the House Appropriations Subcommittee for VA-HUD-Independent Agencies, which recommended extreme cuts to the NASA budget, including cancellation of a number of major programs beginning with SIRTF, drastic reductions to the R&A account, which funds individual researchers and essentially a shut-down budget for the successful Explorer and Discovery programs.

Immediately, the AAS Committee on Astronomy and Public Policy sent letters to all members of the full Appropriations Committee explaining the benefits of astronomy to our Nation and asked that in the final bill all funds cut by the Subcommittee be restored. This letter was faxed to Congressional offices with a statement by Anneila Sargent, AAS President-Elect, and myself deploring the cuts (see <http://www.aas.org/policy/NASACTION.html>). An AAS ACTION ALERT was distributed by email asking AAS members to contact their Representatives and Members of the House and Senate Appropriations Committees regarding the cuts.

Our voice was heard on the Hill as many of our members responded. Less than a week later, the full Appropriations Committee reduced the cuts significantly, although funding is still insufficient to maintain the continued vitality of NASA's Office of Space Science.

Following this minor victory, we found out that no action on the President's Budget would be taken on the Senate side until after the August recess.

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## LETTERS TO THE EDITOR

Letters to the Editor on current issues of importance to astronomers are welcomed. Letters must be signed and should not exceed 250 words. For inclusion in the December 1999 issue, letters must be received by Jeff Linsky, Associate Editor, Letters, prior to 15 October 1999. You may contact Jeff Linsky via phone 303-492-7838, FAX 303-492-5235 or email at [jlinsky@jila.colorado.edu](mailto:jlinsky@jila.colorado.edu). The Associate Editor may edit letters, but will consult with authors before doing so. Letters will be published at the discretion of the Editors.

### Concerning Ammunition for Creationists-I

Dear Editor:

While sympathetic with Adrian L. Melott's problems with creationists at a Kansas school board, I must question whether it would help for scientists to tone down their emphasis on controversy, conflict, and open issues in science. Science progresses, inevitably, with many false starts, many branches of theory which often wander into the wilderness. The excitement of science comes from both the initiation of new branches or "shoots" and from the later pruning. So many fossils of dead theories and so many areas of conflict are already in the literature that to limit the appearance of conflict is operationally hopeless, and could even discourage not only funding, but also the entry of those young minds which are attracted by the apparent conflict! Do we want a generation of scientists whose thrust is to refine existing experiments and theories?

My last real experience with creationists was at Michigan State University, where the proponents cited a paper, "Binary Stars and the Velocity of Light," by Parry Moon and Domina Eberly Spencer (*J. Opt. Sci. Am. V. 43, #8, 1953, pp. 635-641*), purporting to show that light could reach us from "the most distant stars" in only 15 years, enabling the Universe to have begun in 4004 BC or even later. Moon was a distinguished professor of electrical engineering at MIT and author of the *Encyclopedia Britannica* article on illumination in 1956. Spencer is still active in alternate science theories. (See: *The Boston Globe*, "Ideas," 9 August 1998, article by John Yemma, with the theme that Dr. Spencer asserts Einstein was wrong. See: <http://www.boston.com/globe/magazine/8-9/ideas/>). Other variant theories, such as steady state cosmology of Hoyle and Narlikar, I. E. Segal's "chronometric theory," the ejection theory of "discordant redshifts," by Arp and others, variants on Weyl's conformal theory recently presented by Mannheim and Kazanas, and Milgrom's altered gravity theory, have been widely published and can always serve as grist for one or another parties who use any disagreement in science as a wedge to open the door to all kinds of nonsense.

If we de-emphasize the real conflicts of greatest interest today, these perhaps unlikely theories remain, to serve as grist for the creationist mill. The same applies to observations: would we prefer to see the creationists exhibiting Adriaan van Maanen's old work showing the rotation of galaxies transverse to the line of sight within decades instead of conflict arising from solar neutrinos, supernova data or from ultra-high cosmic rays apparently violating the Greisen-Zatsepin-Kuzmin limit? No, in fact we should do our best to emphasize, within reason, the existence of real areas of disagreement, of surprise, and even of bewilderment, damning the creationist torpedoes. It's a hard

road, but one we must travel, if we wish to enrapture young minds with the lure of the most current and intriguing puzzles in science.

Peter D. Noerdlinger  
pdnoerd@ix.netcom.com  
<http://pw1.netcom.com/~pdnoerd>

### Concerning Ammunition for Creationists - II

Dear Editor:

As a follow-up to the recent Letter by Adrian Melott concerning creationists (*AAS Newsletter*, August 1999, No. 96), there are several points that we need to keep in mind concerning this argument:

1. Darwin did not propose a theory about *whether* evolution occurred; his theory discussed *how* it occurred. Thus the name "Theory of Evolution" does not mean that evolution is "only a theory," but rather "this is a theory about how evolution happened."
2. The alternative to evolution of species is creation *ex nihilo*; present-day species must have evolved from earlier ones, or they were placed on earth as-is, right from the start. There are no other alternatives. Framed this way, it is clear that we must keep the debate focused on the key issue: were species created out of nothing, or did they evolve?

The former position is not a scientific one, but a religious one. That is, one can only hold this as a matter of faith, and belief in this view requires that there be a malicious creator who sprinkles false evidence in the historical record. It is possible to hold such a view, but it is not possible to call such a view "scientific."

Leon Golub  
[lgolub@cfa.harvard.edu](mailto:lgolub@cfa.harvard.edu)

### NASA's Name — Who Done It?

Over 500 members answered our recent call for address updates. A few inquired why the AAS naming convention for NASA Centers includes an apostrophe, *ie.* NASA's Goddard Space Flight Center. We would like to assure you that the possessive naming standard was set by NASA, not by the AAS Executive Office.

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The \$105.00 annual membership dues for the American Astronomical Society include \$3.00 that is applied toward a subscription to the *AAS Newsletter*. Periodical postage paid at Washington, DC.

POSTMASTER: Send address changes to AAS, 2000 Florida Avenue, NW, Suite 400, Washington, DC 20009-1231.

Items of general interest to be considered for publication in the *AAS Newsletter* should be sent to [lscholz@aas.org](mailto:lscholz@aas.org). Appropriate pictures are welcomed. The remaining 1999 deadline is 13 October (for December).

Items submitted for the *AAS Newsletter* are not automatically included in the AAS Electronic Announcements or vice versa. Submit electronic announcement items to [ela@aas.org](mailto:ela@aas.org).

<b>AAS Publications Coordinator:</b>	Judy Johnson
<b>Editor:</b>	Robert W. Milkey
<b>Associate Editor:</b>	Lynn Scholz
<b>Associate Editor, Letters:</b>	Jeffrey Linsky, U. Colorado

## On Creationism

*Adopted by the AAS Council, 10 January 1982, Boulder, CO*

During the past year, religious fundamentalists have intensified their effort to force public school science classes to include instruction in "creationism." As defined in publications of the Institute for Creation Research and in laws passed or under consideration by several state legislatures, this doctrine includes the statement that the entire universe was created relatively recently, i.e. less than 10,000 years ago. This statement contradicts results of astronomical research during the past two centuries indicating that some stars now visible to us were in existence millions or billions of years ago, as well as the results of radiometric dating indicating that the age of the earth is about 4 ½ billion years.

The American Astronomical Society does not regard any scientific theory as capable of rigorous proof or immune to possible revision in the light of new evidence. Such evidence should be presented for critical review and confirmation in the appropriate scientific journals. In this case, no such evidence for recent creation of the earth and universe has survived critical scrutiny by scientific community. It would therefore be most inappropriate to demand that any science teacher present it as a credible hypothesis.

We agree with the findings of Judge William Overton that the Arkansas creationism law represents an unconstitutional intrusion of religious doctrine into the public schools, that "creation science" is not science, and that its advocates have followed the unscientific procedure of starting from a dogmatically held conclusion and looking only for evidence to support that conclusion.

The American Astronomical Society deplores the attempt to force creationism into public schools and urges Congress, all state legislatures, local school boards and textbook publishers to resist such attempts.

## Final Slate for AAS Elections Ballot

The following have been nominated for office; most of the terms begin June 2000.

**Vice-President** **Luis F. Rodriguez**  
**Robert E. Williams**

**Councilors** **Charles Alcock**  
**Charles J. Lada**  
**Jonathan I. Lunine**  
**Dimitri M. Mihalas**  
**Nicholas B. Suntzeff**  
**Ellen G. Zweibel**

**USNC-IAU** **Ramesh Narayan**  
**Yoji Kondo**

**Nominating Committee** **Daniel E. Harris**  
**Charles Liu**  
**Blair D. Savage**  
**Ethan J. Schreier**  
**Donna Weistrop**

These candidates will appear on a ballot inserted into the December *Newsletter*, which will also publish their candidate statements.

## SECRETARY'S CORNER

*Arlo U. Landolt, AAS Secretary*

### Committee Vacancies Need Filling

Vacancies for several AAS committees will be filled by Council, at its meeting in January 2000. Current committee members are listed on the AAS homepage, <http://www.aas.org>. Committees which have vacancies, together with the number of vacancies on each (in parenthesis immediately following), are:

- Russell Lectureship Committee (2),
- Heineman Prize Committee (2),
- Warner and Pierce Prize Committee (3),
- Annie J. Cannon Prize Committee (1), and
- Van Biesbroeck Prize Committee (3).

AAS Members may themselves volunteer, or suggest other Members for one of the vacancies. To be most useful to the Committee on Appointments, such input also should include the date of PhD, as well as a few sentences conveying to the Committee the background and area of expertise of the named individual. The idea is to have both quality and breadth across the AAS committee structure.

Input should be received in the Office of the Secretary no later than 15 December 1999. Submit suggestions to Arlo U. Landolt, AAS Secretary, Department of Physics & Astronomy, Louisiana State University, Baton Rouge, LA 70803-4001 Tel: 225-388-1160, Fax: 225-334-1098, [aassec@rouge.phys.lsu.edu](mailto:aassec@rouge.phys.lsu.edu).

### Atlanta Sessions Need Chairs

AAS members are invited to volunteer to chair one of the oral paper sessions at the AAS's meeting in Atlanta, GA in January 2000. A session chair should be at least a few years beyond the PhD, and have had experience, i.e., being the lead author, in presenting at least two or three oral papers at AAS meetings. Watch for the Final Program on the Web, and after it has been posted, review its contents, and then list in order of preference two, three or four oral sessions that you would be willing to chair, in or near your field of expertise. Email your preferences to Arlo U. Landolt, AAS Secretary, at [aassec@rouge.phys.lsu.edu](mailto:aassec@rouge.phys.lsu.edu), and he will respond once final chair assignments are known.

### Membership Invoices for 2000 Mailed

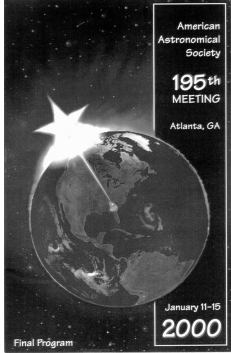
The 2000 AAS Membership Renewal Invoices were mailed in mid-September. If you have not received your invoice by now, please contact Sharon Savoy via email at [ssavoy@aas.org](mailto:ssavoy@aas.org).

If an error has been made with your membership class, journal subscription information, or divisional membership, refer to the 2000 Membership Renewal Brochure which accompanied the invoice. To assure continuity of your subscriptions, payments for your Dues and Journals should be received by **1 December 1999**.



## ATLANTA MEETING

*Continued from page 1*



### Employment Opportunities

Employment issues will be addressed with a career workshop; a new industrial-sector employment component added to our traditional Job Center; and a session by renowned author **Peter J. Feibelman** (see a review of his book, *A PhD Is Not Enough* on page 7). With help from the American Institute of Physics, AAS Career Services will have a special display area and human resources representatives from some business-sector companies available

on-site for interviews and information. Keep up with the latest employment events, including a list of employers who will be interviewing, on the AAS web page, <http://www.aas.org/career/career.html>.

### NASA Events and NSF's 50th Anniversary

NASA and NSF Town Meetings will be held again at this meeting. The AAS will be recognizing the National Science Foundation's Fiftieth Anniversary by featuring a Public Policy talk by Director **Rita Colwell**. Dr. Colwell has become a vocal leader for the NSF, recently stating her opposition to the extreme cuts to the requested NSF FY 2000 budget suggested by the House Appropriations Committee. There will also be a poster session for the NSF Faculty Early Career Development (CAREER) awardees (see page 15 for AST 1999 Grantees). NSF CAREER awardees are encouraged to attend and present the results of their projects to integrate education and research and present the results of their research that has been supported by NSF during the five years of this program.

### Education Sessions

The AAS Education Office has several offerings planned for the Atlanta Meeting. On Tuesday afternoon before registration, there will be a half-day session entitled, "Astro 101: A Continuing Dialogue." All members are invited to share their experiences teaching college introductory courses here and at the Astronomy and Education oral and display sessions. On Saturday, education turns to outreach in K-12, with a workshop entitled, "Astronomy in the Classroom: Hands on Teaching Ideas for Middle and High School Teachers and Astronomers Who Want to Work With Them." All attendees are invited to join local area teachers and astronomers to share experiences and effective techniques for teaching students.

### Special Session on Women in Astronomy

A Special Session on the Status of Women in Astronomy will be held Saturday, 15 January at 10 a.m. It has been organized by **Meg Urry** (STScI), **Claude Canizares** (MIT), and **Priscilla Benson** (Wellesley, and Chair of the AAS Committee on the Status of Women in Astronomy). The organizers and **Lotte Bailyn** (Chair of the Faculty at MIT and the T. Wilson Professor of Management at the Sloan School) will give short talks on the statistics in astronomy and related fields, possible barriers to the advancement of women, and potential remedies for unequal situations. A panel discussion moderated by **Steve Beckwith** (STScI Director) will follow. The AAS has a large stake in ensuring that women have equal access to the profession, at all levels. This special session will bring the issue before the full AAS community at the dawn of the new century.

### Public Policy

The Committee on Astronomy and Public Policy will sponsor an evening panel session to discuss both the basics of the funding process and the most effective way AAS members can influence the process.

### LOC and Banquet's Entertainment

The Local Organizing Committee, chaired by **Hal McAlister**, is working hard to make this meeting special. Come and enjoy the banquet on Friday evening and the entertainment – "Gone with the Wind in 20 Minutes!"

For full details on the 195th Meeting, see the AAS Homepage: <http://www.aas.org>.

## PRESIDENT'S COLUMN

*Continued from page 1*

Another ACTION ALERT requested AAS members to perform three simple tasks during the month of August:

- thank members of the Appropriations Committee for their action,
- contact members of the Senate Appropriations Committee to ask for their support for the President's proposed NASA budget and finally
- contact their Representatives while they were in their home districts during the August Recess regarding the funding situation.

Throughout this period, the AAS Public Policy Web page was updated daily with late-breaking news, comment, background material, advice and copies of all important legislation, email alerts and news articles. The very large community of amateur astronomers, including the AAVSO, the ASP and the IDA, also helped in the efforts in one way or another; an article by Kevin Marvel also appeared in the Aug/Sept *Mercury* magazine to educate amateurs how to support professional astronomy by contacting their members of Congress.

As I write this column, the House is now preparing to return to Washington to decide the fate of space science in the United States. House lawmakers are negotiating for some amendments to the funding bill, and I hope a reasoned piece of legislation will emerge from the House chamber.

We cannot expect a positive result from Congress without a high level of action on our part. Imagine the impact we could have in Congress if every member of AAS — as do members of some other large associations — took a half-hour each week to contact his or her Representative.

In September, when the full appropriations bill reaches the floor of the House, the CAPP and the Executive Office will undertake an active lobbying effort to secure a positive result. At least one more AAS ACTION ALERT will be issued when (and if) the Senate Appropriations Committee passes a funding bill. An AAS statement will be distributed to every member of Congress. We will release at least one press release on this topic and attempt to bring the issue to a wider audience through an op-ed piece.

If you are visiting Washington in the fall, be sure to notify Kevin Marvel so he can arrange for you to visit your Representative.

Like it or not, decisions made by Congress will effect each and every one of us in both our professional and private lives. Since the future of space science in our country will be decided *with* or *without* our input, let us make it "*with!*"

# PUBLISHING AND PUBLICATIONS

## **ApJ Editorial Transition Update**

Robert Kennicutt, *Editor-in-Chief*, apjrck@as.arizona.edu

The *ApJ* editorial transition continues to proceed smoothly. Two editorial offices are currently running in Tucson, with Helmut Abt's office handling papers submitted before 1 July, and our office at Steward Observatory handling newly submitted manuscripts. At the end of the year the Kitt Peak offices will close and all remaining papers will be transferred to my office. The smooth transition owes much to the hard work of the support staffs and to Helmut Abt's help during the start-up phase at Arizona.

This fall will see several visible changes to the *Journal*. We are in the midst of automating the handling of manuscripts through a central web site. Soon referees will be able to download manuscripts off the web, and web submission of manuscripts and referee reports will be implemented by early next year. We also plan to shorten the production schedule, and together these improvements should trim the end-to-end publication time by 4–6 weeks, with further improvements planned in the future.

In a few weeks we will release a new on-line version of the *ApJ*, which will provide easier navigation within and between papers and enhanced capabilities for displaying tables and figures. The *ApJ* home page is also being redesigned, to provide easier access to information for authors and readers. And we are in the final stages of recruiting a staff scientist, who will enhance our capabilities to publish on-line ASCII tables with papers in *ApJ* and *AJ*. Comments and feedback about the *ApJ* are always welcome; you can contact me directly at apjrck@as.arizona.edu.

## **New ApJ Author Instructions**

Julie Steffen, *Astronomy Publications Manager*, U. Chicago Press

We are happy to announce the release of new general author instructions for the *Astrophysical Journal*. Effective 1 September 1999 you will find them at <http://www.journals.uchicago.edu/ApJ/instruct.html> with new additional pages on the peer review and publication process.

Further pages on specific electronic art and authoring tools will be added over the next several months. The new *ApJ* author instructions will also be printed in the 99 Oct 1 issue of the *Journal*. We encourage you to use these new instructions when making your next submission to the *ApJ*.

## **AASTeX 5.0.1 Bugfix Release**

Chris Biemesderfer, *Seagoat Consulting*, chris@seagoat.com

A bugfix release for AASTeX 5.0 is available from the AAS website, <http://www.aas.org/publications/aastex/>. The package is the v5.0 release with several bugs repaired, including one that caused the graphics command “\plotone” to fail.

A release of AASTeX v5.1, which repairs all the known extant bugs, is planned for the fall.

## **Extra Charge for Air Shipment of *Physics Today***

AAS Members in Europe have been receiving *Physics Today* by air freight, while the rest of our members outside the US have been receiving this magazine by surface mail. The costs of air shipment have become prohibitive for AIP. Thus, air shipment will be an extra cost item for all members with addresses outside the US. The next AAS renewal invoices will have an option to

## **Manuscript Submissions using AASTeX**

The *AJ* and *ApJ* accept manuscripts electronically that are prepared using the AASTeX manuscript package. Following are some important addresses for obtaining information about AASTeX and electronic manuscript submission.

### **AASTeX Homepage:**

<http://www.journals.uchicago.edu/AAS/AASTeX/>

### **User Support:**

[aastex-help@aas.org](mailto:aastex-help@aas.org)

### **Journal Homepages/Manuscript Submission:**

*AJ*: <http://www.journals.uchicago.edu/AJ/>

*ApJ*: <http://www.journals.uchicago.edu/ApJ/>

*ApJL*: <http://cfa-www.harvard.edu/apjl/>

select air shipment at an additional cost of \$15, beginning with the January 2000 issue.

## **Meeting Programs: Only to Registrants Now**

Due to a steady increase in production and mailing costs, we are going to discontinue mailing the program book to all members of the Society beginning with the Atlanta meeting in January 2000. We will continue to print the program book. It will be mailed to all who register by the early registration deadline of 8 December 1999, and distributed to other attendees at the meeting.

All information in the program book is available on the web site, well in advance of when the program is printed, and members who can obtain this information from the web are requested to do so. Any member who is unable to access the web information may obtain a copy by special request to the Executive Office. This request may be sent by email ([reg-help@aas.org](mailto:reg-help@aas.org)), FAX, phone or mail.

## **AAS Webpage for Donations**

The AAS has established a Donation Forum site to bring together persons with astronomy-related materials – journals, books, equipment – to donate and institutions seeking such materials. The site is located at <http://www.aas.org/donation/>. The AAS cannot provide funds to ship materials but the site does contain information about shipping options. Ed Anderson ([anderson@schubert.phy.nau.edu](mailto:anderson@schubert.phy.nau.edu)) of Northern Arizona University will be maintaining the donation pages and monitoring the postings. Questions may be sent to Ed or to Kevin Marvel ([marvel@aas.org](mailto:marvel@aas.org)).

## **REMINDER - Policy on Unpaid Journal Subscriptions**

### *Member Subscriptions Only*

To help control rising Journal costs, the AAS has shortened the grace period for unpaid Journal subscriptions. After **1 January**, no unpaid subscriptions will be mailed. In the event a subscription is reinstated, there will be a surcharge for shipping the back issues — \$25 for the *ApJ* and \$15 for the *AJ* or *ApJ Supplement*, in addition to any membership reinstatement fee. If no back issues are required, no surcharge will be imposed.

## COMMITTEE NEWS

### Employment

*In our continuing series on the variety of employment opportunities for astronomers, Doug Duncan discusses a recent trend in planetaria hiring. Contributions on all career tracks are welcomed. — Kevin Marvel, Associate Executive Officer for Policy Programs.*

#### **Astronomers at Planetaria: Combining Research and Presentation to the Public**

*Doug Duncan, AAS Education Office*

Over the past several years about a dozen new permanent astronomy jobs have been created combining research and teaching or outreach to the public. There may be more such jobs in the future, but the people in these innovative positions need the understanding and support of the astronomical community if they are to be successful. I believe this success would benefit us all, so I will describe these positions, their benefits, and risks.

In the summer of 1991, while preparing for my tenure review at STScI, I received a surprise call from the retiring and new Directors of the Adler Planetarium (Joe Chamberlain and Paul Knappenberger, respectively), offering me the Assistant Directorship of the greatly expanding Planetarium. I politely declined, explaining that I believe research and teaching belong together, and that a big problem with Planetariums is that they don't give their astronomers any time for research.

Consequently, they fall behind the times and miss out on the astronomy most people find exciting. After months of discussion between Paul, the University of Chicago (UC), and myself, a position was created which called for me to oversee the Education and Astronomy Departments of the Planetarium, and to serve as Associate Professor at UC, with reduced teaching load but full expectation of active research. I was then asked to design and justify more planetarium-astronomer jobs.

Why is it important to have active astronomers in Planetariums? Planetariums do enormous public outreach and represent our field in the eyes of most of the public. The message which gets presented there is how most people view all astronomers. Have you been to a Planetarium recently to hear what messages are being conveyed?

From the Planetarium point of view, hiring an active astronomer should bring many benefits. These include an increased talent pool from which to recruit, greater variety in the programs which can be presented, and greater enjoyment and excitement experienced by visitors when they are given access to new discoveries in a timely and understandable way. Adler trustee and UC professor Bob Rosner put it this way, "If you allow a person to do a certain amount of research, as well as teaching, you can attract a different kind of person. That person tends to be highly motivated and excited about his or her work." Such scientists can ensure content is current, including discoveries such as new planets, supernovae and cosmology that the public would like to find at a Planetarium. Active astronomers can present science as a process. They know that science is fun to do, and can design programs that allow the public to be active, not passive, astronomy learners. They can use their thorough knowledge to present simpler explanations. Being an expert doesn't necessarily make you a good explainer, but people who

don't know a topic well usually skip it or dumb it down. People like the late Bill Kaufmann, with his with clear and exciting presentations on relativity and cosmology, could routinely fill 600 seat Planetarium theaters. Researchers bring up-to-date knowledge of the technology of a discovery, which may be lacking in Planetarium staff. In my case, I introduced ideas such as using the Internet, hiring the first computer system manager, performing the first multi-lingual translation (done by using email to talk to astronomers in other countries.) A more complete discussion including how to finance and evaluate such jobs is available on request.

What are the risks? A newly-hired astronomer may find that some review panels will discriminate against those who work in Planetariums. This is unfair: a good proposal from any institution ought to have the same chance for funding, telescope time, or computer time. Nowadays there are excellent scientists at many institutions, not just a few, so this attitude seems to be improving. A surprise to me was how often Planetarium staff have a poor perception of astronomers. Descriptions like, "arrogant," or "poor communicator," come to mind. An active astronomer may be a good teacher, but a Planetarium will challenge one's ability to communicate to a diverse audience. When I was at Caltech, diversity meant a biology major. At UC, it might mean a focus in English Literature. In a Planetarium it means, grandma, the kids, some inner city students, and two people on a date. To be effective at a Planetarium, real-world teaching and teamwork skills are required, which may or may not have been taught in graduate school. Another surprise was that the Planetarium community is often uncomfortable with modern astronomy concepts and with change, and wants mainly to teach constellations and the seasons. An insidious risk is that the time an astronomer spends doing research or at conferences will be considered "wasted" by some Planetarium staff, who tend to travel much less than academics, compounding the insularity of the field. Only if Planetarium management stresses the importance of this, will the astronomer not be penalized for it.

What can we do to help? First, support and encourage your colleagues who have taken these positions. Secondly, allow interested graduate students to get off-campus teaching or tutoring experience, and communication and teamwork skills. The University of Washington and UC do this very well, and thereby gives its students an advantage competing for jobs like these. Recently, I served as a hiring advisor for a NASA position with a major public outreach component. Only 20% of the applicants had any experience working with the public and they were the only applicants considered for the position. Finally, visit your local Planetarium. Study it quietly for a while and then offer to help — maybe you could even bring a NASA IDEA grant. Eventually, if appropriate, mention the creation of this sort of job and its benefits.

After moving to Adler, I was consulted about the design of these jobs by the Hayden Planetarium and the Denver Museum of Natural History. The Hayden hired Neil Tyson jointly with Princeton, and has created an excellent astronomy department. The Denver Museum hired Laura Danly. Adler hired Evalyn Gates, who hired additional astronomers, and two other institutions plan to do the same. Our support can encourage the creation of more jobs as well as better educational opportunities for the public.



## A Quick and Helpful Read for Young Scientists:

*A PhD is Not Enough: A Guide to Survival in Science*,  
by Peter J. Feibelman

Dr. Feibelman's fundamental premise in writing this book is that behaviors appropriate to launching a scientific career can be learned. He has effectively outlined those behaviors and skills that an early-career scientist needs to meet the expectations of both a tenure committee and the scientific community in general. Whether they can truly be learned or not is left to the reader, but Dr. Feibelman presents them in an easily read, concise format.

The book is broken down by topical chapters, each detailing a particular skill area. The chapters on establishing a research program and choosing a thesis topic and advisor are particularly useful. He also outlines the basic elements of a good scientific talk, proposal and paper. His advice is succinct; at times, brevity limits the usefulness of his message such as when the subject of preparing talks is addressed, but fortunately, only a few areas get "short-changed."

Overall the book is an excellent choice for students just beginning the final years of their dissertation work or early-career scientists, who have not yet obtained tenure. The book costs about \$12 and is easily read in one afternoon.

*Dr. Feibelman will present a special lunch-time seminar at the Atlanta AAS meeting discussing aspects of his book. Copies will be available for purchase at the session, or may be ordered through online book dealers.*

## Summer Opportunities Web List Available

A new "Summer Employment Opportunities" list is available on the AAS Career Services page <http://www.aas.org/career/career.html>. This list will serve as a comprehensive source of all summer employment opportunities, especially for observatory programs, undergraduate opportunities and graduate fellowship positions. It augments the *Job Register* in a unique way by summarizing specific summer opportunities and providing web links to the offering institutions.

The list is growing quickly. We seek listings from all institutions and individuals with summer placements. Please submit to Kevin Marvel, [marvel@aas.org](mailto:marvel@aas.org), a brief (4-5 sentence) summary of the program, including the deadline for applications, along with a link to a web page describing the program in detail. There is no deadline for submissions.

## ATLANTA Career Workshop

The AAS Career Workshop will take place once again at the January 2000 Winter Meeting. The Workshop will provide participants with valuable information on the many career choices open to astronomers today as well as sharpen their job-hunting skills.

Astronomer **Dennis Ebbets** of Ball Aerospace will present the program. Topics discussed will include How to Prepare an Effective Resume, Interviewing Skills, Networking, Job Search Skills, and much more.

Workshop participants can participate in one-on-one sessions at the program's conclusion and will receive career development materials.

## Working Group on Professional-Amateur Collaboration

### Professionals and Amateurs: Toward Stronger Ties

*J. Kelly Beatty, Senior Editor, Sky & Telescope*

#### Background

In the past decade a quiet revolution has taken place among the ranks of amateur astronomers. The availability of sophisticated electronic detectors, highly capable software, and inexpensive telescopes of 0.2- to 0.5-meter aperture now permit many backyard stargazers to pursue research-grade observations that were once the sole province of professionals. Moreover, amateur astronomers use the Internet extensively to exchange ideas, techniques, and data. With plenty of observing time, wide geographic coverage, and a love of astronomy, they are eager and capable of doing real science.

The first major forum on the theme of expanded pro-am ties took place in June 1987, when IAU Colloquium 98 drew professional and amateur astronomers alike to Paris, France. Since then there have been sessions showcasing amateur's work at the AAS's Summer 1997 meeting in Winston-Salem, North Carolina, at the October 1998 AAS Division for Planetary Sciences meeting in Madison, Wisconsin, and three major pro-am gatherings in 1999. Many of these past efforts were organized or sponsored by *Sky & Telescope*, whose editors continue to foster pro-am partnerships at many levels.

Next April, the American Association of Variable Star Observers (AAVSO) and gamma-ray-burst specialists at the NASA/Marshall Space Flight Center are organizing a workshop just for amateur observers to participate in observational collaborations in the high-energy universe.

Amateur astronomers have demonstrated over and over their value to research projects requiring long-term monitoring or large numbers of discrete observations and professionals have taken steps officially to incorporate their contributions. In 1998, the Committee of the AAS Division for Planetary Sciences approved a resolution endorsing the furthering of professional-amateur cooperation. In January 1999, the AAS Council created a Working Group for Professional-Amateur Collaboration (WGPAC). Janet A. Mattei, director and staff astronomer of the AAVSO, has agreed to chair the Working Group. Members of its Steering Committee were chosen to include those who have worked closely with amateurs in coordinated observing programs. The WGPAC has been granted an initial five-year charter.

#### Initial Goals

Fortified with results from past and planned initiatives, the WGPAC convened for its inaugural meeting on 7 July 1999, during the joint meeting of the Astronomical Society of the Pacific, the AAVSO and the Royal Astronomical Society of Canada. WGPAC's Steering Committee created short- and long-term plans to define the types of activities with the greatest promise for fruitful collaboration, and to inform AAS members of the accomplishments, capabilities, and availability of potential amateur partners. "Action items" for the coming year include:

**COMMITTEE NEWS***Continued from page 7*

- Creating a WGPAC web page on the AAS server, which will provide links to the web pages of other amateur astronomical societies and associations;
- Organizing a poster session at the Summer 2000 AAS meeting in Rochester, New York. This will highlight successful professional-amateur partnerships, as well as the specialties and capabilities of various amateur organizations. WGPAC will also propose having an invited lecture on pro-am collaboration.
- Building a database of potential amateur participants, indicating their experience, instrumentation, and observing interests. This registry will be paired with a database of professionally sponsored research projects with potential for amateur collaboration, to include project descriptions, observing requirements, and hardware/software preferences. These two databases will be developed in cooperation with the Astronomical League, whose 17,000 members make it the largest organization of amateur astronomers in the world (<http://www.astroleague.org>).
- Publicizing the activities and initiatives of the AAS WGPAC via articles in the *AAS Newsletter*, *Sky & Telescope*, and other appropriate publications.

Of course, with the WGPAC still in its formative stages, Janet Mattei ([jmattei@aavso.org](mailto:jmattei@aavso.org)) welcomes any ideas for furthering professional-amateur collaborations.

*WGPAC Steering Committee:* **Janet A. Mattei**, Chair, AAVSO; **James F. Bell**, Cornell University; **Stephen J. Edberg**, Jet Propulsion Laboratory; **Brian G. Marsden**, Harvard-Smithsonian Center for Astrophysics; **Terry D. Oswalt**, National Science Foundation; **Donald C. Parker**, Association of Lunar and Planetary Observers; **Joseph Patterson**, Columbia University; **John R. Percy**, University of Toronto; **Leif J. Robinson**, *Sky & Telescope*; **Janet A. Stevens**, Astronomical League; and **Christine Halas Wood**, Harvard-Smithsonian Center for Astrophysics.

**APS Group Insurance Available to AAS Members**

The AAS is a member society of the American Institute of Physics and therefore its members are entitled to participate in insurance programs offered through the American Physical Society Insurance Trust. These programs include life insurance, long-term disability insurance, hospital indemnity insurance, accidental death and dismemberment insurance, and long-term care insurance. The program has been designed to provide competitive rates for all age groups. A program obtained through your professional society may be of special value to those who are changing employment frequently or who experience periods of unemployment between jobs. Younger members may wish to give special consideration to long-term disability coverage.

The AAS does not receive any benefit from the participation of its members in this program – this program is offered solely for the benefit of the members, should they choose to participate.

AAS members interested in complete information on available APS Group Insurance programs should contact Herbert V. Friedman, Inc., 119 North Park Avenue, Rockville Centre, NY 11570-4179, Tel: 1-800-272-1637, [apsit@hvfinc.com](mailto:apsit@hvfinc.com) or see <http://www.hvfinc.com>.

**FROM THE TREASURER'S DESK***Leonard V. Kuhi, Treasurer***The AAS Second Century Fund**

In celebration of its first hundred years, the Society has established **The AAS Second Century Fund** to raise monies for endowments in order to increase support of existing programs and to establish several new ones. As announced at the Chicago summer meeting, these include a Centennial Lecture Series, new prizes for outstanding work in instrumentation and astronomy education, a special projects fund and the enhancement of existing prize funds.

The Society is grateful for many past donations which have been used to establish some of the most prestigious prizes (such as the Henry Norris Russell Lectureship) awarded by the AAS. The current Council of the AAS is continuing that tradition of generosity by having already contributed close to \$20,000 to the AAS Second Century Fund.

As the Society enters its second century it hopes to raise a total of \$2 Million distributed as follows:

<b>Centennial Lecture Series</b>	<b>\$500,000</b>
<b>Special Projects Fund</b>	<b>\$500,000</b>
<b>Education Prize</b>	<b>\$250,000</b>
<b>Instrumentation Prize</b>	<b>\$250,000</b>
<b>Other Prize Endowments</b>	<b>\$500,000</b>
<b>Total</b>	<b>\$2,000,000</b>

A complete description of the initiatives included in the Second Century Fund is included in the brochure enclosed with the recently mailed AAS Membership invoices for the year 2000.

**Challenge Grant – New Education Prize**

The AAS is pleased to announce a matching Challenge has been issued by Professor Donat Wentzel to Society members in an effort to get the new Education Prize underway as soon as possible. He will match every two dollars raised by the Society for the Education Prize (up to \$100,000) with one dollar from his own very generous gift to the Society.

The Society is delighted to take up this challenge, and asks everyone with an interest in any aspect of astronomy education to contribute to the Education Prize Fund. Contributions will not only go 50% further because of the challenge grant, but will help ensure that the first prize can be awarded for the year 2000. The Society thanks you in advance for your contribution. Donations should be sent to the AAS Executive Office and are tax deductible to the extent allowed by law.



## AAS Centennial Book Order Form

Name \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Country \_\_\_\_\_

*The American Astronomical Society's First Century*, David DeVorkin, Editor  
(To be shipped from Washington DC)

Number of copies for domestic shipment \_\_\_\_\_ @ \$35.00 per copy \$ \_\_\_\_\_

Number of copies for foreign shipment \_\_\_\_\_ @ \$45.00 per copy \$ \_\_\_\_\_

Total amount due \$ \_\_\_\_\_

*Payment Method:*

\_\_\_\_\_ Cash                      Check # \_\_\_\_\_ Amount \$ \_\_\_\_\_

Credit Card:    \_\_\_\_\_ VISA    \_\_\_\_\_ MasterCard    \_\_\_\_\_ American Express

Card Number \_\_\_\_\_

Expiration \_\_\_\_\_

Signature \_\_\_\_\_

Completed forms may be submitted by Fax or email to:

American Astronomical Society  
2000 Florida Avenue, NW, Suite 400  
Washington, DC 20009-1231  
Fax: 202-234-2560

Credit card payments may be made by email by providing all the above information to [dues@aaas.org](mailto:dues@aaas.org).

### Order Remaining AAS Histories Now

A number of copies of *The American Astronomical Society's First Century* are still available for sale to members at the special member rate. The book, published to celebrate the AAS Centennial, is a fascinating look at the founding and development of the Society through its first 100 years, a century of spectacular progress in astronomy.

This special volume was printed in only a limited number; when these remaining copies are gone, we do not plan a second printing. Send in a copy of the order form above to the Executive Office and to be sure to get one for your library.

### Finding Your AAS Membership Number

The Executive Office requests the use of the AAS membership number for correspondence. The number is listed on the annual membership invoice or in the AAS Membership Online Directory at <http://directory.aas.org/>. Should your name not appear in the Online Directory, contact the Membership Department at 202-328-2010 or send an email to Sharon Savoy at [ssavoy@aaas.org](mailto:ssavoy@aaas.org). Should the information be incorrect, send updates to [address@aaas.org](mailto:address@aaas.org).

### Order the Special Centennial *ApJ*

The AAS is also celebrating its Centennial with the publication of a special edition of the *Astrophysical Journal*.

Organized by Editor-in-Chief, Helmut A. Abt, this durable, cloth-bound edition collects fifty of the most significant articles ever published in the *AJ* and the *ApJ*. Arranged in chronological order of publication, beginning with Schuster, Hale, Russell, Shapley ... on to Michelson, Hubble, Hoyle, Chandrasekhar through the 1970s, the articles are selected and placed in historical and scientific context by some of the great names of Twentieth Century astronomy and astrophysics.

To order for \$40.00 each — 20% off the retail price of \$50.00 — print out the order form at <http://www.journals.uchicago.edu/ApJ/centennial.pdf>.

The entire Table of Contents is posted with the Order Form for your perusal. This collection will certainly become a major reference in your library.

## CALENDAR

Listed below are meetings that have come to our attention; new listings or listings with updated information are flagged with an asterisk. Due to space limitations, we publish notice of meetings 1) occurring in North and Central America; 2) meetings of the IAU Commissions and Colloquia; and 3) other meetings as requested by AAS Members. Meetings that fall within 30 days of publication generally are not listed.

A complete list of international astronomy meetings is maintained by Liz Bryson, Librarian C-F-H Telescope ([library@cfht.hawaii.edu](mailto:library@cfht.hawaii.edu)) in collaboration with the Canadian Astronomy Data Centre, Victoria, BC. The list may be accessed at <http://cadcwww.dao.nrc.ca/meetings/meetings.html>

### AAS and AAS Division Meetings

#### 195th AAS Meeting

11–15 January 2000 — Atlanta, GA

Contact: Hal McAlister ([hal@chara.gsu.edu](mailto:hal@chara.gsu.edu))

#### \*Historical Astronomy Division (with AAS)

11–15 January 2000 — Atlanta, GA

Contact: David DeVorkin ([david.devorkin@nasm.si.edu](mailto:david.devorkin@nasm.si.edu))

#### \*High Energy Astrophysics Division (with AAS)

13 January 2000 — Atlanta, GA

Contact: Alice Harding ([harding@twinkie.gsfc.nasa.gov](mailto:harding@twinkie.gsfc.nasa.gov))

#### Division on Dynamical Astronomy

9–12 April 2000 — Yosemite National Park, CA

Contact: Roy Laubscher ([laubcorp@impulse.net](mailto:laubcorp@impulse.net))

#### 196th AAS Meeting

4–8 June 2000 — Rochester, NY

Contact: Judy Pipher ([jlpipher@sheram.pas.rochester.edu](mailto:jlpipher@sheram.pas.rochester.edu))

#### Solar Physics Division

18–22 June 2000 — Stateline (Lake Tahoe area), NV

Contact: Janet Biggs ([biggs@sag.lmsal.com](mailto:biggs@sag.lmsal.com))

#### \*Division for Planetary Sciences

23–27 October 2000 — Pasadena, CA

Contact: Rosaly Lopes-Gautier ([rlopes@issac.jpl.nasa.gov](mailto:rlopes@issac.jpl.nasa.gov))

#### \*High Energy Astrophysics Division

6–10 November 2000 — Honolulu, HI

Contact: John Vallerga ([head2K@netcom.com](mailto:head2K@netcom.com))

<http://www.eurekasci.com>

#### \*197th AAS Meeting (w. AAPT)

7–11 January 2001 — San Diego, CA

Contact: Diana Alexander ([diana@aas.org](mailto:diana@aas.org))

### Other Events

#### \*Washington Area Astronomers Meeting

4 November 1999 — Washington, DC

Contact: George Kaplan ([gkaplan@usno.navy.mil](mailto:gkaplan@usno.navy.mil))

<http://aa.usno.navy.mil/waa>

#### \*XIII Reunión Anual de Astronomía

3–5 November 1999 — Guanajuato, Mexico

Contact: Laura Parrao ([reunion@astrocu.unam.mx](mailto:reunion@astrocu.unam.mx))

<http://www.astrocu.unam.mx/~reunion>

#### 9th Midwest Relativity Meeting

12–13 November 1999 — Urbana-Champaign, IL

Contact: Thomas Baumgarte ([thomas@astro.physics.uiuc.edu](mailto:thomas@astro.physics.uiuc.edu))

<http://www.physics.uiuc.edu/groups/relativity/MRM9/mrm9.html>

#### \*Cosmic Evolution and Galaxy Formation: Structure, Interactions, and Feedback

15–19 November 1999 — Puebla, Mexico

Contact: [cosmo99@inaoep.mx](mailto:cosmo99@inaoep.mx)

<http://www.inaoep.mx/~cosmo99/>

#### \*ISTP Fall Workshop

16–18 November 1999 — Los Angeles, CA

Contact: Nicola Fox ([nicola.fox@gsfc.nasa.gov](mailto:nicola.fox@gsfc.nasa.gov))

<http://www-istp.gsfc.nasa.gov/istp/admin/workshopMarch99>

#### Darwin and Astronomy: The Infrared Space Interferometer

17–19 November 1999 — Stockholm, Sweden

Contact: [darwin@astro.su.se](mailto:darwin@astro.su.se)

<http://www.astro.su.se/~darwin>

#### Colloquium on Quantitative Socio-Dynamics of Astronomy

21–24 November 1999 — Bischenberg, France

Contact: Andre Heck ([heck@astro.u-strasbg.fr](mailto:heck@astro.u-strasbg.fr))

<http://astro.u-strasbg.fr/socio99.htm>

#### IAU Symp. No. 198, “The Light Elements and Their Evolution”

22–26 November 1999 — Natal, Brazil

Contact: Monique Spite ([iau198@dfte.ufrn.br](mailto:iau198@dfte.ufrn.br))

<http://www.dfte.ufrn.br/iau198>

#### IAU Symp. No. 199, “The Universe at Low Frequencies”

30 November–4 December 1999 — Pune, India

Contact: Govind Swarup ([gswarup@ncra.tifr.res.in](mailto:gswarup@ncra.tifr.res.in))

#### Joint MPE, AIP, ESO Workshop: “Observational and Theoretical Progress in the Study of Narrow-Line Seyfert 1 Galaxies”

8–11 December 1999 — Bad Honnef, Germany

Contact: Thomas Boller ([bol@mpe.mpg.de](mailto:bol@mpe.mpg.de))

<http://wave.xray.mpe.mpg.de/conferences/nls1-workshop>

#### \*Workshop on Helioseismology at Low Angular Degree

9–11 December 1999 — Stanford, CA

Contact: A. Kosovichev ([AKosovichev@solar.stanford.edu](mailto:AKosovichev@solar.stanford.edu))

<http://soi.stanford.edu/general/meetings/LOWL99>

#### PASCOS '99, 7th International Symp. on Particles, Strings and Cosmology

11–16 December 1999 — Tahoe City, CA

Contact: John Gunion ([jfgucd@pc90.ucdavis.edu](mailto:jfgucd@pc90.ucdavis.edu))

<http://pc90.ucdavis.edu/pascos99.html>

#### IAU Coll. No. 179, “Cyclical Evolution of Solar Magnetic Fields: Advances in Theory and Observations”

13–16 December 1999 — Kodaikanal, India

Contact: P. Venkatakrishnan ([iauc179@iiap.ernet.in](mailto:iauc179@iiap.ernet.in))

<http://www.ernet.in/~iauc179>

#### \*Sources and Detection of Dark Matter in the Universe (DM20)

23–25 February 2000 — Marina del Ray, CA

Contact: DM20 ([dm20@physics.ucla.edu](mailto:dm20@physics.ucla.edu))

<http://www.physics.ucla.edu/dm20>

#### \*Mapping the Hidden Universe: The Universe Behind the Milky Way—The Universe in HI

23–29 February 2000 — Guanajuato, Mexico

Contact: Renee Kraan-Korteweg ([zoahi@astro.ugto.mx](mailto:zoahi@astro.ugto.mx))

<http://www.astro.ugto.mx/~kraan/zoahi>

#### Space and Robotics 2000

28 February–2 March 2000 — Albuquerque, NM

Contact: Darel Preble ([preble@netdepot.com](mailto:preble@netdepot.com))

<http://www.spaceandrobotics.org>

- 31<sup>st</sup> Lunar and Planetary Conference  
13–17 March 2000 — Houston, TX  
Contact: LeBecca Simmons (simmons@jsc.nasa.gov)
- \*STAR2000, Dynamics of Star Clusters and the Milky Way  
20–24 March 2000 — Heidelberg, Germany  
Contact: Rainer Spurzem (star2000@ari.uni-heidelberg.de)  
<http://www.ari.uni-heidelberg.de/star2000>
- \*Rossi 2000 : Astrophysics with the Rossi X-ray Timing Explorer: A Survey at the Close of the Millennium  
22–24 March 2000 — Greenbelt, MD  
Contact: Tod Strohmayer (stroh@clarence.gsfc.nasa.gov)
- \*Washington Area Astronomers Meeting  
23 March 2000 — College Park, MD  
Contact: George Kaplan (gkaplan@usno.navy.mil)  
<http://aa.usno.navy.mil/waa>
- \*Astronomical Telescopes and Instrumentation  
27–31 March 2000 — Munich, Germany  
Contact: SPIE (spie@spie.org)  
<http://www.spie.org>
- \*IAU Colloq. No. 180, “Toward Models and Constants for Sub-Microarcsecond Astrometry”  
27–31 March 2000 — Washington, DC  
Contact: Ken Johnston (johnston.kenneth@usno.navy.mil)  
<http://aa.usno.navy.mil/colloq180>
- \*Internat’l Astronautical Fed., “Bringing Space into Education”  
3–5 April 2000 — Paris, France  
Contact: iaf@wanadoo.fr  
<http://www.iafastro.com>
- XXV Gen. Assembly of the European Geophysical Society (EGS)  
3–7 April 2000 — Florence, Italy  
Contact: EGS Office (egs@copernicus.org)  
<http://www.copernicus.org/EGS/EGS.html>
- \*IAU Coll. 181, “Dust in the Solar System and Other Planetary Systems”  
10–14 April 2000 — Canterbury, UK  
Contact: M. L. Watts (M.L.Watts@ukc.ac.uk)  
<http://www.ukc.ac.uk/physical-sciences/space>
- \*IAU Symp. 200, “The Formation of Binary Stars”  
10–15 April 2000 — Potsdam, Germany  
Contact: Hans Zinnecker (hzinnecker@aip.de)  
<http://www.aip.de/IAU2000>
- \*IAU Coll. 182: “Sources and Scintillations: Refraction and Scattering in Radio Astronomy”  
17–21 April 2000 — Guiyang, China (PRC)  
Contact: Richard Strom (strom@nrao.edu)
- \*APS Meeting, Astrophysics Division Sessions include Origin of Magnetic Fields, Engine of Gamma Ray Bursts, First Chandra Results, Cosmic Rays, Highlights of 20th Century Astronomy.  
29 April–2 May 2000 — Long Beach, CA  
<http://www.aps.org>
- \*37th Space Congress  
1–5 May 2000 — Cape Canaveral, FL  
Contact: Michael Sumner (michael.sumner-1@ksc.nasa.gov)  
<http://www.SpaceCongress.org>
- 4th IAA Int’l. Conf. on Low-Cost Planetary Missions  
2–5 May 2000 — Laurel, MD  
Contact: R.W. Farquhar (diana.whitman@jhuapl.edu)  
<http://sd-www.jhuapl.edu/IAA>
- \*Gas and Galaxy Evolution  
21–24 May 2000 — Socorro, NM  
Contact: Michael Rupen (mrupen@nrao.edu)  
<http://info.aoc.nrao.edu/doc/vla/html/Y2K/hiconf.shtml>
- 7<sup>th</sup> Conf. on Intersections Between Particle and Nuclear Physics  
22–28 May 2000 — Quebec City, Canada  
Contact: Anne MacInnis (macinnis@mit.edu)  
<http://cipanp.mit.edu>
- \*Annual Meeting of the Canadian Astronomical Society  
25–28 May 2000 — Vancouver, BC, Canada  
Contact: Mark Halpern (halpern@physics.ubc.ca)
- \*4<sup>th</sup> Tetons Summ. Conf., “Galactic Structure, Stars, and the ISM”  
28 May–1 June 2000 — Grand Teton National Park, WY  
Contact: Chick Woodward (tetons4@wapiti.uwoyo.edu)  
<http://wapiti.uwoyo.edu/tetons4>
- \*Galaxy Disks and Disk Galaxies  
12–16 June 2000 — Rome, Italy  
Contact: George Coyne (gcoyne@specola.va)  
<http://deborapd.astro.it/disks>
- \*XIX Int’l Conf. on Neutrino Physics and Astrophysics  
16–21 June 2000 — Sudbury, ONT, Canada  
Contact: Pierre Lamoureux (nu2000@nrc.ca)  
<http://www.nrc.ca/confserv/nu2000>
- \*NATO ASI on Space Storms and Space Weather Hazards  
19–29 June 2000 — Crete, Greece  
Contact: Anastasios Anastasiadis (anastasi@creator.space.noa.gr)  
<http://sat2.space.noa.gr/~daglis/asi2000.html>
- 1<sup>st</sup> Guillermo Haro Adv. Lect. on the Starburst-AGN Connection  
26–30 June 2000 — Tontantzintla, Puebla, Mexico  
Contact: Secretaria del Programa Guillermo Haro (agn00@inaoep.mx)  
<http://www.inaoep.mx/~agn00/>
- Catastrophic Events and Mass Extinctions: Impacts and Beyond  
9–12 July 2000 — Vienna, Austria  
Contact: Elizabeth Wagganer (wagganer@lpi.jsc.nasa.gov)  
<http://cass.jsc.nasa.gov/meetings/impact2000>
- 33<sup>rd</sup> COSPAR Scientific Assembly  
16–22 July 2000 — Warsaw, Poland  
Contact: COSPAR Secretariat (cospar@paris7.jussieu.fr)  
<http://www.copernicus.org/cospar/cospar.html>
- \*112<sup>th</sup> Meeting of the Astronomical Society of the Pacific  
13–19 July 2000 — Pasadena, CA  
Contact: S. Milanello (meeting@aspsky.org)  
<http://www.aspsky.org/meetings.html>
- \*The Cosmos in the Classroom 2: Teaching Astronomy to Non-Science Majors (Part of ASP Meeting)  
17–19 July 2000 — Pasadena, CA  
Contact: Andy Fraknoi (fraknoi@admin.fhda.edu)  
<http://www.aspsky.org>
- \*Astrobiology: The Early Solar System (Part of ASP Meeting)  
17–19 July 2000 — Pasadena, CA  
Contact: Laura Danly (ldanly@dmnh.org)  
<http://www.aspsky.org/meetings.html>
- XXIV Gen. Assembly of the International Astronomical Union  
7–19 August 2000 — Manchester, United Kingdom  
Contact: iau@iau.org  
<http://www.iau.org>



## EDUCATION NEWS

Bruce Partridge, Education Officer

### Open Letter to Peter Gilman

Max Mutchler, mutchler@stsci.edu

Thank you for sharing your visit to a third grade classroom in the last *AAS Newsletter* (August 1999, No. 97). You made so many excellent points — they resonated with my own voluntary educational outreach experiences.

As you attest, kids excitedly gobble up the fundamental scientific concepts (as reflected by the progressive nature of their questions), when delivered to them with natural enthusiasm by a real scientist. I've found this to be the case whether I am in front of the so-called "gifted and talented" students in the Johns Hopkins summer program, or the "at risk" students in Baltimore's inner city. Those labels have become meaningless to me, because I've seen firsthand that all of those students are equally gifted, talented, and at risk, in one way or another.

And yes, over time the students might not retain much of the content of your presentation, but that is not the point of a one hour visit. There is no substitute for years of academic study. But an injection of enthusiasm and excitement like your visit can propel many students through those years they might otherwise have spent avoiding science, because nobody ever sparked their interest. Everyone who is a scientist today (or a scientifically literate citizen), probably owes thanks to someone like you who made science interesting and relevant to them when they were young.

Thanks for challenging all AAS members to visit one classroom per year — it truly would have a profound effect. As you mention, we shouldn't wait around for uninspired education bureaucrats to solve our nation's math/science illiteracy problem. It's great to "think globally" and try to reform science education, but if scientists don't "act locally" and get directly involved with teachers and students themselves, then I don't think positive reform will ever come about.

In the past five years, I have given dozens of presentations to hundreds of students and teachers — all voluntary work that really doesn't consume much of my time and energy. In fact, as you expressed, I feel that I draw at least as much energy and enthusiasm from the kids as they get from me, which is why I have found it easy to continue visiting classrooms. I hope you continue in your outreach, and that your letter encourages others to do the same.

### For Astronomers Who Brave K-12

Andrew Fraknoi, Director, ASP's Project ASTRO,  
fraknoi@admin.fhda.edu

AAS members inspired by Peter Gilman's enthusiastic column on p. 15 of the last *Newsletter* (August 1999, No. 96) to try a visit to a local school may be interested to learn that there is an ongoing national project that assists astronomers who want to "adopt" a class or after-school group.

Project ASTRO was developed at the Astronomical Society of the Pacific, and has been supported by NSF, NASA, and several foundations and corporations. The program links volunteer astronomers in one-on-one partnerships with 4th–9th grade teachers in ten regional sites around the country. Together with their classroom teachers, astronomers receive training in a two

day workshop that provides them with a wide range of effective techniques, age-appropriate hands-on activities, and useful resources. In return, astronomers commit to making at least four visits to their classroom each year. Over 600 astronomers and over 700 teachers have already been trained.

At the workshop, astronomers and teachers focus on classroom-tested activities that don't just convey information, but get the students to think like scientists: asking questions, formulating hypotheses, and making observations. Among these are investigating the phases of the Moon (with models and journals), calculating and walking off a scale model of the solar system (unrolling toilet paper squares as your unit of measurement, to the delight of the students), or organizing a celestial treasure hunt at an evening star party. We also encourage astronomers to talk about their own work and background in science.

Each of ten regional ASTRO sites is administered by a lead institution, with the assistance of a coalition of astronomy and science education organizations. All the sites are listed at [http://www.aspsky.org/project\\_astro.html](http://www.aspsky.org/project_astro.html).

We have distilled our experience with the program into three guides — an 813-page resource and activity manual, a how-to-guide, and a video — for astronomers and teachers who are participating in the program, joining with a local partner on their own, or perhaps considering setting up a Project ASTRO site in their own communities: All three are available at reasonable cost through the ASP Catalog at <http://www.aspsky.org>.

We have offered shorter training sessions on how astronomers can be effective in the classroom at ASP, AAS, and Astronomical League meetings, and hope to continue doing so in the future.

### Helping Students Evaluate Pseudo-Science

In the wake of the recent decision of the Kansas State Board of Education to leave evolution (biological and cosmological) out of the state science standards, it might be useful to review briefly some of the Project ASTRO materials relevant to helping students deal with pseudo-science.

For a bibliography of materials for responding to astronomical pseudo-science (astrology, UFO's, creationism, full-moon madness, etc.), see the web site: <http://www.aspsky.org/education/pseudobib.html>. The Project ASTRO resource book, *The Universe at Your Fingertips*, has several activities for helping students to evaluate paranormal claims. One of these, on astrology, is also on the web at: <http://www.aspsky.org/astro/act3/astrology.html>.

The Committee for the Scientific Investigation of Claims of the Paranormal works to present the scientific side of pseudo-science controversies and to encourage testing of all hypotheses. Their magazine, *The Skeptical Inquirer*, is a wonderful island of sanity in the great ocean of media credulity and cynicism. Their web site is: <http://www.csicop.org>.

The symposium on college astronomy teaching at the Summer 2000 ASP meeting in Pasadena 17–19 July 2000 will have a special session on treating such controversial issues in introductory astronomy courses.



Terry Oswalt (NSF) with Bok Award recipients Lintott and Zaretzky.

### 1999 Bok Winners

Terry Oswalt, National Science Foundation

During the 50th annual Intel International Science and Engineering Fair (ISEF), 2–8 May 1999 in Philadelphia, PA, two high school students,

**Stephanie Renae Zaretzky** and **Christopher John**

**Lintott**, were presented

with the 1999 Priscilla and Bart Bok Awards by the American Astronomical Society (AAS) and Astronomical Society of the Pacific (ASP) for outstanding astronomical research projects.

Zaretzky, a freshman from Red Rock High School in Sedona, Arizona, won the Bok Award and \$500 for her project, “Cost-Effective Method of Accurately Parabolizing a Spherical Telescope Mirror.” Zaretzky constructed a mirror cell which parabolizes small spherical telescope objective mirrors by applying mechanical pressure—a low-budget analog of methods used to actively configure many large multi-mirror telescopes at major observatories. Zaretzky’s teacher/sponsor was **Laurel Romm**.

Lintott, a graduating senior from Torquay Boys’s Grammar School in Torquay, UK, won the Bok Honorable Mention for his project, “Dust Around Young Stellar Objects.” Lintott computed radiative transfer and polarization properties for various dust models in accretion disks and jets around protostars. Lintott’s teacher/sponsor was **Graheme Veale**.

The AAS-ASP judging team consisted of Drs. **Terry Oswalt** of the National Science Foundation, **Douglas Duncan**, AAS Education Coordinator, and **Stephen McMillan** of Drexel University.



Stephen McMillan (Drexel U.), AAS Education Coordinator Doug Duncan (U. Chicago), & Terry Oswalt (NSF) judging for AAS-ASP at the ISEF.

Also awarded at the ISEF was the Richard D. Lines Special Award in Astronomy, presented annually by the International Amateur-Professional Photoelectric Photometry

(IAPPP). The Lines Award was won by **Jocelyn Lorena Salaz**, a junior from Cuba High School in Cuba, New Mexico for her project, “Variable Stars—Determining Changes in the Period of W UMa Using Polynomial Regression: Phase II.” Using data collected with a small telescope, Salaz determined the light curves and times of minima for W UMa and looked for period changes by comparing her results to earlier epochs. Salaz’s teacher/sponsor was **Peggy McCracken**.

All three award-winning students have been invited to publish papers describing their projects in the *IAPPP Communications*, an international journal specializing in collaborative astronomy research projects involving students, amateurs and professional astronomers.

The Intel-sponsored ISEF has been described as the “World Cup, World Series and Olympics of science fairs.” More than 1000 finalists reached the ISEF this year from over 5 million students in grades 9–12 who competed in nearly 500 ISEF-affiliated fairs held in the 50 United States and 40 nations.



Lines award winner Salaz with her winning poster.

## Session/Speaker Proposals Invited for Summer Meeting

The science program for the summer meeting in Rochester, NY will be planned at the Atlanta meeting. Topics for special and topical sessions may be proposed *only* by AAS members. Send all proposals to Diana Alexander at [diana@as.org](mailto:diana@as.org).

### Topical Session Proposals:

At summer meetings, two of the four days of the meeting are set aside for Topical Sessions organized around selected themes and emphasizing invited talks. These sessions can run from half a day to 1 ½ days. See the guidelines for Topical Sessions on the AAS homepage and submit all proposals by **15 November 1999**.

### Invited Speakers & Special Sessions:

Proposals for invited speakers and special sessions for the Rochester meeting will be accepted through **10 December 1999**. Special sessions are 1-1/2 hours long and run in parallel with other oral sessions. They may be organized in a variety of formats including invited speakers, contributed papers, a combination, or panel discussions. Please realize that there are often more requests for these than the schedule can accommodate.

### The Directory is Coming ! . . .

The 2000 AAS *Membership Directory* is shipping Third Class about the end of October. If your institution mail room has a policy of discarding Third Class Mail, please ask them to make an exception for the *Directory*. We cannot replace Directories discarded by Members’ institutions.

If you have not received your *Directory* by mid-December, contact Sharon Savoy at [ssavoy@as.org](mailto:ssavoy@as.org).

## DIVISION NEWS

### Historical Astronomy Division

*Virginia Trimble, Chair*

#### Atlanta Meeting

The annual business meeting will take place in Atlanta, mid-day on Saturday, 15 January 2000. All AAS members are welcome to attend (and to join the Division!). Invited and contributed oral and poster sessions will also be on 15 January. Every AAS member is encouraged to contribute to the sessions, "The Papers of the Century," in which the speaker (or poster presenter) identifies a key paper published since 1900 (not necessarily in an AAS journal) and indicates why it was important and what has become of the subject later. Contributions on all other aspects of historical astronomy are also welcome.

#### Committee Revived

The Committee on Archaeo- and Ethno-Astronomy is being re-established. The Division was largely founded by people interested in this topic, but the topic has gradually faded from our programs and newsletters in recent years. If you like Stonehenge, Southwest Indian sites, or pyramids, are interested in astronomical aspects of cultures and calendars other than our own, and, especially, if you would be interested in organizing a future session on archaeo- and/or ethno astronomy or in otherwise being active in the group, please get in touch with the Division chair.

#### Doggett Prize 2002

The deadline for nominations for the Doggett Prize for 2000 has passed, but there will be another chance for the 2002 Prize.

### High Energy Astrophysics Division

#### HEAD's 1999 Rossi Prize to Swank and Bradt

Dr. **Jean Swank** and Prof. **Hale Bradt** were named as the winners of the 1999 Bruno Rossi Prize "for their key roles in the development of NASA's Rossi X-Ray Timing Explorer (RXTE) spacecraft and for the resulting important discoveries related to high time resolution observations of compact astrophysical objects."

Dr. Swank is the project scientist for RXTE at the Laboratory for High Energy Astrophysics within NASA's Goddard Space Flight Center. Hale Bradt is Professor of Physics at Massachusetts Institute of Technology and is the principal investigator for the RXTE All Sky Monitor. Their Rossi prize lectures will be given at the AAS winter meeting in Atlanta, Georgia in January 2000.

The RXTE observatory has made it possible to obtain measurements of cosmic X-ray sources at unprecedented high time resolutions, which has allowed astronomers around the world to observe fast moving, energetic and rapidly spinning objects, such as apparent supermassive black holes, active galactic nuclei and millisecond pulsars. For more information about RXTE and its three main instruments, refer to [http://heasarc.gsfc.nasa.gov/docs/xte/xte\\_1st.html](http://heasarc.gsfc.nasa.gov/docs/xte/xte_1st.html).

The Rossi Prize recognizes significant contributions as well as recent and original work in High Energy Astrophysics. It is awarded annually in honor of Professor Bruno Rossi, an authority on cosmic rays whose experimental techniques at the Los Alamos Laboratory and at MIT gave birth to the field of X-ray astronomy. The prize also includes a \$1,500 award.

### Solar Physics Division

#### Committee Seeks Sun Articles for 1999 Awards

*Jeffrey W Brosius, brosius@comstoc.gsfc.nasa.gov*

The SPD Popular Writing Awards Committee seeks articles about the Sun or heliosphere published in newspapers or magazines during calendar year 1999. The purpose of the Popular Writing Awards is to encourage scientists, science writers, and journalists to write about the Sun and thereby educate the public about results from contemporary solar research. To nominate authors in the category of either Scientist author or Journalist author for the 1999 Popular Science Writing Awards, send copies of articles published in 1999

**before 1 May 2000**, to Jeff Brosius, Code 682, NASA's Goddard Space Flight Center, Greenbelt, MD 20771 or by email. All contributions — including self-nominations — are welcomed!

### Dynamical Astronomy Division

#### Student Stipend Program

To increase student participation at DDA meetings, the Division makes available up to two student stipends of \$400 each. Any full or part-time student presently enrolled in an academic program at a college or university is eligible. For the 2000 meeting in Yosemite National Park, submit by **1 February 2000** a 2–3 page summary of a paper for presentation along with a short curriculum vitae and a letter of recommendation from an advisor to Dr. R. H. Miller, University of Chicago, Astronomy and Astrophysics Center, 5640 S. Ellis Avenue, Chicago, IL 60637 or [rhm@oddjob.uchicago.edu](mailto:rhm@oddjob.uchicago.edu). For complete information, see <http://dda.harvard.edu/>.

#### Member Deaths Noted

Since the August *Newsletter*, the Society is saddened to learn of the deaths of the following members:

Arthur A. Hoag  
Sidney O. Kastner  
Oscar E. Monnig  
Paris Pişmiş  
Daniel M. Popper



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## NEWS FROM NSF

*Hugh M. Van Horn, Director, Division of Astronomical Services, NSF*

### New Faces at NSF

The Division of Astronomical Sciences (AST) at the National Science Foundation (NSF) is experiencing substantial changes in personnel this year. **Seth Tuttle** retired as Program Manager for the National Radio Astronomy Observatory (NRAO) in March 1999 after decades of service to NSF. **Ben Snavely** retired in April 1999 as Program Manager for the National Optical Astronomy Observatories (NOAO) and as Program Director for Advanced Technologies and Instrumentation; he is now serving as Secretary for the American Institute of Physics. **Sethanne Howard** completes her two-year term as Program Director for Extragalactic Astronomy and Cosmology in September 1999. I also want to give credit to **Eileen Friel**, who remained at NSF a year longer than she had originally planned in order to serve as Acting Coordinator for the Astronomy Research Grants Unit as well as Program Director for Planetary Astronomy and for Galactic Astronomy while **Vern Pankonin** has been on leave from NSF. All of them deserve our thanks for the excellent jobs they have done for NSF and for the benefit of the U.S. astronomical community.

As a result of these numerous departures, AST has been busy recruiting this year to fill the open positions. In addition, AST has been authorized to create a new position to serve as Program Manager for the National Astronomy and Ionosphere Center (NAIC), Program Director for the University Radio Observatories, and to assist with Electromagnetic Spectrum Management. Three of our four positions have now been filled, and negotiations are well along to complete the process. In this article, I am delighted to introduce AST's new Program Officers to the astronomical community:

**Richard E. Barvainis** has accepted a two-year appointment as Program Manager for NAIC and for the NSF-supported University Radio Observatories. As time permits he will also assist **Tom Gergely** with the important Electromagnetic Spectrum Management activities for NSF. Rich received his PhD in 1984 from the University of Massachusetts at Amherst. He subsequently held postdoctoral appointments at NRAO and at the Haystack Observatory. Prior to coming to NSF he had been a Research Scientist at Haystack for almost a decade, where he conducted research on quasars and maser sources in the Milky Way Galaxy. He is currently working on molecular and dust observations of high-redshift quasars and galaxies. His strong background in radio astronomy will serve NSF well in this new position, freeing time for **Bob Dickman**, his predecessor in management of these radio observatories, to devote the necessary effort to the major, new, international Atacama Large Millimeter Array (ALMA) project. Rich can be reached by email at [rbarvai@nsf.gov](mailto:rbarvai@nsf.gov) or by telephone at 703-306-1828.

**Susan M. Simkin** has accepted a two-year appointment as Program Director for Extragalactic Astronomy and Cosmology, effective 13 September 1999. She received her PhD from the University of Wisconsin (Madison) in 1967, subsequently held several professional appointments, and has been a Professor of Physics and Astronomy at Michigan State University since 1983. She has conducted research on the theory of spiral structure in galaxies and has done extensive observational research utilizing optical, radio, and space facilities. Her current research interests involve the analysis of emission lines generated by gas clouds that have been disturbed by active radio jets. She can be reached at [ssimkin@nsf.gov](mailto:ssimkin@nsf.gov) or by telephone at 703-306-1827.

**Daniel W. Weedman** has accepted a permanent appointment as Program Director for the National Optical Astronomy Observatories, effective in August 1999. He is well-respected in Washington, having served as Director of the Astrophysics Division at NASA Headquarters from 1993 to 1995. He received his PhD from the University of Wisconsin in 1967 and held faculty appointments at the University of Texas, Vanderbilt University, and the University of Minnesota prior to joining the Pennsylvania State University as Professor of Astronomy and Astrophysics in 1979. He created the initial design concept for the Hobby-Eberly Telescope and served in several key roles during the development and construction of this large telescope. He has conducted research in various areas of astronomy and astrophysics, which included several important discoveries in extragalactic astronomy, and he authored the book "Quasar Astronomy" in 1986. Dan can be reached at [dweedman@nsf.gov](mailto:dweedman@nsf.gov) or by telephone at 703-306-1829.

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## HONORED ELSEWHERE

### 1999 NSF CAREER Winners

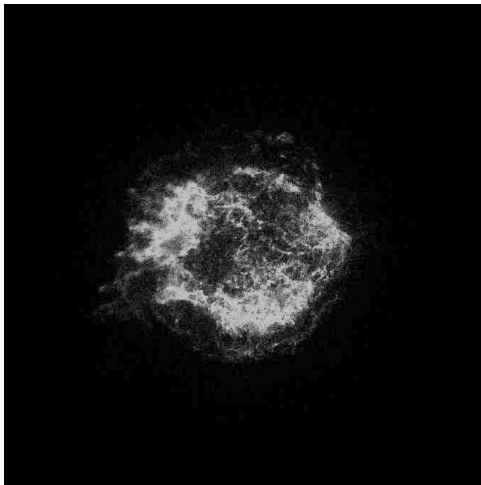
The National Science Foundation Astronomical Science Division has announced the FY1999 winners of its Faculty Early Development Career Program Grants, known as CAREER Grants. The following AAS members are among this year's winners of NSF CAREER Grants:

- **Richard J. Elston**, Department of Astronomy, University of Florida; "Exploring the Evolution of Galaxies and Large Scale Structure at  $Z > 1$ ;"
- **Victoria M. Kaspi**, Center for Space Research, Massachusetts Institute of Technology; "Astrophysics and Radio Pulsars: From the Forefront to the Classroom;"
- **Peter R. McCullough**, Astronomy Department, University of Illinois at Urbana-Champaign; "The Faint Interstellar Medium and Stardial;"
- **J. Christopher Mihos**, Department of Astronomy, Case Western Reserve University; "The Dynamical Evolution of Galaxies and Galaxy Clusters;"
- **Bharat Ratra**, Department of Physics, Kansas State University; "Cosmology: Theoretical Research, Data Analysis with Student Involvement, and Curriculum Development;"
- **Silvain Veilleux**, Department of Astronomy, University of Maryland, College Park; "Superwinds, Galactic Fountains, and Gaseous Halos in Disk Galaxies;" and
- **Eric M. Wilcots**, Department of Astronomy, University of Wisconsin, Madison; "Accretion, Asymmetric Galaxies, and Outreach."

## GENERAL NEWS

### NASA's Chandra "Sees" First Light

Gordon Garmire, ACIS (Advanced CCD Imaging Spectrometer) Instrument PI, Penn State University



Cas A as recorded by the Chandra X-ray Observatory in a 5000 second exposure.

The atmosphere was tense in the "ACIS Chapel"\* after the sunshade and last mirror cover were opened on the Chandra X-ray Observatory on 12 August 1999. Photons from space began to form an image on the ACIS CCDs which at first appeared random, since the telescope was pointing at no particular source, but within minutes

a bright spot began to appear indicating that the mirrors were intact and working as well as could be expected before focus adjustments. Dr. Leon van Speybroeck, the telescope scientist for the Chandra X-ray Observatory, was all smiles at the news that his mirrors had survived the launch. The first image of the quasar PKS0637-75 revealed not only the near point-like image of the quasar, but an X-ray jet some 10 arcseconds away lying directly at the position of the radio jet.

A few days after focusing the mirror, the first image of the Cas A supernova remnant showed the exquisite detail on arcsecond scales and a possible point-like source near the center of the remnant which could be either a neutron star or a black hole accreting debris left over from the explosion. Subsequent tests reveal that the mirrors possess resolution better than an arcsecond.

The next big event was the first grating observation of Capella. Within hours, Dr. Claude Canizares, the grating PI, saw the first spectrum of Capella's corona, bristling with emission lines. From this we know that the gratings are intact and even a rough look shows our best spectral resolving power is around 1000, as it should be. The H-like and He-like triplets of O, Ne, Mg, and Si stand up like soldiers, and there is a forest of lines from Fe and possibly Ni.

Clearly, X-ray astronomy is entering a new era of discovery. If this is the portent of the future of X-ray astronomy, then the launch of XMM in December and ASTRO-E in January will provide a rich source of discoveries at the beginning of the next millennium.

Thanks are due to those who worked for many years to make this happen: in the HETG team, the ACIS team, the CXC team, and all the other people at CSR who supported this in so many ways; at SAO, PSU, MSFC, TRW and Kodak. The whole astronomical community owes them a debt of gratitude for helping to open a new era of X-ray astronomy.

\*The ACIS Chapel is the room at the Chandra Operations Center in Cambridge, Massachusetts, where the data first appeared.

### Astronomers Drop the Ball This New Year's Eve

Steven J. Dick, US Naval Observatory, dick.steve@usno.navy.mil

In conjunction with the arrival of the years 2000 and 2001, the US Naval Observatory and Commission 41 (History of Astronomy) of the International Astronomical Union are coordinating a worldwide time ball drop on New Year's Eve. As the New Year sweeps around the world, time balls will be dropped at midnight local time beginning in New Zealand, then Australia, South Africa, Sweden, UK, New York City Times Square, the Naval Observatory in Washington, and several other sites in the United States.

Each site will be responsible for any associated celebrations. At the Naval Observatory in Washington, DC, the public is invited from 10pm to 1am to celebrate the beginning of 2000 by watching the time ball drop from a mast near the dome of the 12-inch refractor atop the Main Building. This drop will be followed by fireworks. As part of the celebration, tours of the Observatory and views through the telescope will be offered. The event is part of the White House Millennium Program.

To obtain tickets for the USNO event, send a post card with name and address to U.S. Naval Observatory, Attn: Millennium Committee, 3450 Massachusetts Avenue, NW, Washington, DC 20392-5420. Specify the number of tickets requested (limit 5 tickets per address), otherwise only one ticket will be sent.

A consortium of broadcast media will include these events in its 25 hours of continuous coverage worldwide for the inauguration of Y2K (not to be confused with the new millennium the following year!).

Time balls were historically an important means of time dissemination, and therefore an important part of the history of practical astronomy. The Naval Observatory dropped the first time ball in the United States in 1845, and at the beginning of the century, 19 were being dropped in the United States alone. It is hoped this worldwide coordinated effort will not only draw attention to the historical importance of time balls and to an interesting part of the history of astronomy, but also will emphasize the modern means of time dissemination via the Global Positioning System, for which the Naval Observatory is the sole source of time.

More information on the USNO Millennium Program may be obtained at <http://www.usno.navy.mil>. Information on the first time balls, erected in Portsmouth and Greenwich, is found in Ian R. Bartky and Steven J. Dick, "The First Time Balls," *Journal for the History of Astronomy*, 12 (1981), 155-74. On North American time balls, see Ian R. Bartky and Steven J. Dick, "The First North American Time Ball," *Journal for the History of Astronomy*, 13 (1982), 50-54. For the spread of time balls in the United States see Ian R. Bartky, "Naval Observatory Time Dissemination Before the Wireless," in *Sky with Ocean Joined*, Steven J. Dick and LeRoy Doggett, eds. (Washington, 1983), 1-28. The latter contains numerous illustrations of time balls, as does Bartky's article, "The Bygone Era of Time Balls," *Sky and Telescope* (January 1987), 32-35.

## The SIRTf Legacy Science Program

Michael D. Bica, Office of Community Support, SIRTf Science Center (SSC), mdb@ipac.caltech.edu

The Space InfraRed Telescope Facility (SIRTf), the final element in NASA's Great Observatories program, and an important cornerstone of the new Origins Program, is rapidly moving towards a December 2001 launch. About 80 percent of observing time in the nominal 5-year mission will be available to the general astronomical community, via Calls for Proposals (CPs) issued by the SIRTf Science Center (SSC) at Caltech.

An important element of SIRTf is the innovative Legacy Science Program (LegSci). This program will be comprised of a handful of large-scale, community-initiated and peer-reviewed scientific investigations that will be executed early in the mission. The SSC anticipates that ~3000 hours of observing time could be allocated to LegSci projects within the first year of the mission. Depending on the nature and scope of submitted proposals, it is conceivable that an additional ~1500 hours might be devoted to LegSci investigations early in SIRTf's second year. The primary purpose of this *Newsletter* contribution is to alert the astronomical community to this opportunity to propose LegSci projects, in advance of next year's formal proposal solicitation.

SIRTf LegSci projects will be distinguished from the usual General Observer (GO) programs by these requirements: (i) they must be large and coherent scientific investigations, not reproducible by any reasonable number or combination of smaller GO programs; (ii) they are projects whose scientific data, upon archiving, are of general and lasting importance to the broad community; and (iii) all data processed by the SSC pipeline enter the public domain immediately, thereby enabling timely and effective opportunities for follow-on observations - with SIRTf and with other observatories.

Although there is no specific requirement on the size of projects, it is expected that LegSci projects will typically utilize many hundreds of hours of SIRTf observing time. Investigations that do not satisfy all of the above requirements should be submitted in response to subsequent GO CPs, to be issued on an annual basis shortly before launch.

The LegSci CP will be issued electronically by the SSC, with a draft version available in April 2000. A final version of the CP, incorporating the Guaranteed Time Observer programs, will be released in July 2000. The submission deadline for LegSci proposals will be September 2000, and the approved teams selected and funded by December 2000. The LegSci Program is open to any research topic for which SIRTf's capabilities can make a major scientific contribution, and is available to all qualified investigators worldwide.

For the latest SIRTf science schedule, general information about the mission, and additional details on technical specifications and science capabilities, please visit the Internet site <http://sirtf.caltech.edu>. Additional details pertaining to the SIRTf Legacy Science Program are available by clicking the LegSci button on the home page. Questions pertaining to the Legacy Science Program can be sent to [sirtf@ipac.caltech.edu](mailto:sirtf@ipac.caltech.edu).

SIRTf and the SSC will have a significant presence at the upcoming January Atlanta AAS meeting, during which we will plan on conducting demonstrations of our Science User Tools at an expanded exhibit display.

## ANNOUNCEMENTS

### 2000-2001 APS/AIP Congressional Science Fellowship Program

The American Institute of Physics and the American Physical Society are accepting applications for their 2000-2001 Congressional Science Fellowship Programs. Fellows serve one year on the staff of a Member of Congress or congressional committee, learning the legislative process while they lend scientific expertise to public policy issues. Qualifications include a PhD or equivalent research experience in physics or a closely related field. Fellows are required to be U.S. citizens and, for the AIP Fellowship, members of one or more of the AIP Member Societies. A stipend of up to \$49,000 is offered, in addition to allowances for relocation, in-service travel, and health insurance premiums. Applications should consist of a letter of intent, a 2-page resume, and three letters of recommendation. Please see <http://www.aip.org/pubinfo> or [http://www.aps.org/public\\_affairs/fellow.html](http://www.aps.org/public_affairs/fellow.html) for detailed information on applying. If qualified, applicants will be considered for both programs. All application materials must be postmarked by **15 January 2000**, and sent to: APS/AIP Congressional Science Fellowship Programs, One Physics Ellipse, College Park, MD 20740-3843.

### In Memory of Those Who Died in July Near the Plateau de Bure Observatory

A fund has been established to benefit the families of those who died on 22 July 1999 in a tragic cable car accident on the mountain of the Plateau de Bure Observatory, near Grenoble, France. Particulars about the fund and the names of those who died can be found at <http://iram.fr/accident-a.html>. The AAS mourns with the rest of the world the loss of its observatory colleagues.

### Call for 2000 Annie Jump Cannon Award Nominees

The Annie Jump Cannon Award in Astronomy honors a woman postdoctoral scholar for significant research in astronomy. Nominees must be women in the early stages of a career in astronomy. Preference is given to nominees who have held a doctorate in astronomy or a related field for at least one year. There are no restrictions on the nominees nationality or the location of her research. The award is \$5,000.

By **10 February 2000** all nominating materials must be received by the AAUW. Notification of the award will be mailed by 30 April 2000. The award disbursement will be made in July 2000. Questions about the award and nominations should be directed to the American Association of University Women Foundation at 202-728-7631, by fax at 202-463-7169, by mail, 1111 Sixteenth Street, NW, Washington, DC 20036, or by email at [foundation@aauw.org](mailto:foundation@aauw.org).

### Pollock Proposals Due

Dudley Observatory announces its annual Pollock Award for the year 2000, in the amount of \$5000 for an innovative project in the history of astronomy and astrophysics. The deadline for proposals is **10 December 1999**. For further information, or to be put on the mailing list for the flier, contact Ralph A. Alpher, Administrator, Dudley Observatory, Union College, Schenectady, NY 12308, or [alpherr@union.edu](mailto:alpherr@union.edu).



## NEWS FROM CANADA

### Astronomy North of the Border: 30th CASCA Meeting in Halifax



(From the left) Helen Sawyer Hogg lecturer Paul Chodas (JPL) with LOC Chair Dave Turner (St. Mary's U.) and Roy Bishop, representing RASC, which co-sponsors with CASCA the Hogg Lecturership.

Kevin Marvel, AAS;  
photos by Kevin Marvel.

The 30th Annual Meeting of the Canadian Astronomical Society/Société Canadienne d'Astronomie (CASCA) took place 27-30 June 1999 in Halifax, Nova Scotia. **St. Mary's University**, the host institution, organized a scientifically exciting meeting flavored with

the happy coincidence that the number one band on the maritime province music charts, Kilt, was performing at a local drinking establishment. Nearly 200 Canadian Astronomers and foreign guests enjoyed the interesting scientific sessions and posters.

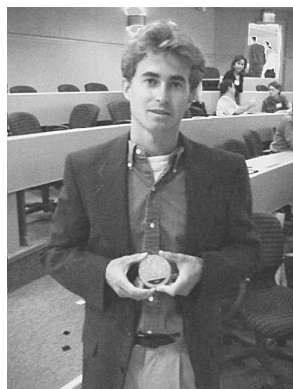
The first day was dedicated to a special GEMINI Workshop organized by the **Graduate Student Committee** and **OIRAC (Organisé et parrainé par les étudiants et le OIRAC)**. The workshop covered the capabilities of the GEMINI telescopes as well as the procedures for applying for observing time.

**Sidney van den Bergh** presented the RM Petrie Prize lecture and discussed our current knowledge of the Local Group. **John Huchra** presented an invited lecture on the age and ultimate fate of the Universe, which covered the current status and future efforts planned in cosmology. The Helen Sawyer Hogg Public Lecture by **Paul Chodas** presented an astronomer's view of the threat of impact from celestial objects. Many local residents and most of the meeting participants were present for a lively discussion.

The second day opened with an exciting seminar presented by **Doug Duncan**, AAS Education Coordinator. With a standing-room-only crowd present, Doug presented new techniques in astronomy

education and engaged the attendees using the methods. During lunch, **Ralph Pudritz** led a discussion of the **Canadian Long Range Planning Panel**. An excellent discussion began, and the session was extended into the final day of the meeting.

**Stéphane Charpinet** presented work from his dissertation, which won him the JS Plaskett Medal for 1999. The medal is presented by CASCA and the Royal Astronomical Society of Canada (RASC) every two years to the Canadian graduate student judged to have the most exciting dissertation results. Charpinet presented his work entitled "The Potential of Asteroseismology for Subdwarf B



For his dissertation on asteroseismology in subdwarf B stars, Stéphane Charpinet (CFHT) received the 1999 JS Plaskett Medal.

Stars." The work combined theory and observations to open up a new area for asteroseismological studies.

The posters were highlighted by a web presentation from the **Canadian Astronomy Data Centre Services**, [cadcwww.dao.nrc.ca](http://cadcwww.dao.nrc.ca), and results from the **Canadian Galactic Plane Survey**

(<http://www.ras.ucalgary.ca/CGPS/>). The Astronomy Data Centre provides access to a wide range of data products from all around the world, while especially focusing on Canadian astronomical data products (e.g. CFHT archive). The Canadian Galactic Plane Survey team handed out large posters presenting a sample from their survey and hinting at the enormous amount of information to be gleaned from such a comprehensive, multi-wavelength survey. 35 other posters and 40 oral presentations were made in total. Astronomy is truly thriving North of the Border!



A Poster Session at the CASCA Meeting



The banquet was an indoor BBQ aboard the Harbour Queen as she cruised in Halifax Harbour

#### CALENDAR

Continued from page 11

\*IAU Symp. 202, "Planetary Systems in the Universe: Observation, Formation and Evolution"

7-10 August 2000 — Manchester, UK

Contact: Alan J. Penny ([symp202@ast.star.ac.uk](mailto:symp202@ast.star.ac.uk))

<http://ast.star.rl.ac.uk/symp202/>.

\*IAU Symp. 204, "The Extragalactic Infrared Background and its Cosmological Implications"

15-18 August 2000 — Manchester, UK

Contact: Martin Harwitt ([harwit@bellatlantic.net](mailto:harwit@bellatlantic.net))

<http://www.iau.org/symp204>

\*IAU Symp. 205, "Galaxies and their Constituents at the Highest Angular Resolution"

15-18 August 2000 — Manchester, UK

Contact: R.T. Schilizzi ([schilizzi@jive.nfra.nl](mailto:schilizzi@jive.nfra.nl))

<http://www.nfra.nl/jive/iausymp.htm>

The New Era of Wide-Field Astronomy

21-24 August 2000 — Preston, UK

Contact: Roger Clowes ([r.g.clowes@uclan.ac.uk](mailto:r.g.clowes@uclan.ac.uk))

[http://www.uclan.ac.uk/new\\_era](http://www.uclan.ac.uk/new_era)

\*Eta Car and Other Mysterious Stars: The Hidden Opportunities of Emission-line Spectroscopy

24-26 August 2000 — Hven, Sweden

Contact: K. Davidson ([kd@ea.spa.umn.edu](mailto:kd@ea.spa.umn.edu))

<http://ferrum.fysik.lu.se/hven2000>

4th INTEGRAL Workshop

4-8 September 2000 — Alicante, Spain

Contact: V. Reglero ([loc@castor.daa.ua.es](mailto:loc@castor.daa.ua.es))

<http://www.integral.ua.es>

## WASHINGTON NEWS

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- *Thirdly, federal funds for astronomy are prudently spent.* Both NASA and NSF have, for the most part, completed projects on reasonable time scales and generally within budgets. Astronomy, as a field, is fiscally responsible.
- *Finally, we should never forget that because we are federally funded, we have a responsibility to those who fund*

*us: the American people.* Astronomers have fulfilled this obligation adequately in the past, but must continue to improve in the future. NASA makes data and images available almost instantly to the public through the Internet. NSF and NASA have extensive public outreach and educational activities that help convey the excitement of scientific results to the public. Astronomical databases are freely available to any who may want to access the information.

These points listed above may not be the points astronomers think are important about justifying federal funding for research, but they are arguments that carry weight with Congress. As you send letters or faxes to your representatives, or any member of the government, remember the points above and try and include them in your communication. By addressing Congress' points of concern, we will greatly enhance the image of our field on the Hill and help ourselves in the current funding environment.

### Late-Breaking Budget News

*As this issue of the AAS Newsletter goes to press, the action of Senate Subcommittee injects a ray of hope into an otherwise unhappy budget picture for astronomy.*

#### *The House of Representatives*

The House passed HR 2684, the VA-HUD-Independent Agencies funding bill, on 9 September 1999. It contains significant reductions from the FY 1999 budget levels for both NASA (- \$1 billion, or down 7.4%) and NSF (- \$74 million or down 1.7%). The NASA reduction is particularly harmful to the **Office of Space Science**, which would lose in FY 2000 more than \$163 million (8%) of its budget compared to FY 1999 funding. (The House reduced the President's request by \$241 million or 12%.)

#### *The Senate*

The Senate VA-HUD-IA Appropriations Subcommittee met on 15 September and funded NASA and NSF at, or above, the President's budget request, although the funding for the Office of Space Science is still \$42.6 million (-2.1%) below what they have to spend this year, and \$120 million (-6%) below the President's requested budget for next year. Now, if the full Senate Appropriations Committee and then the full Senate ratifies the mark set by the Subcommittee, the battle will be joined on 1 October when a Conference Committee will meet to iron out the differences between the House and Senate appropriations.

*Consequently, it is vital that you contact your Senators and request that they speak with members of the Appropriations Committee, especially the Chairman **Ted Stevens** (R-Alaska) and ranking minority member, **Robert Byrd** (D-West Virginia). Continued contact with the VA-HUD-IA Subcommittee leadership would be of value as well. The Chairman of this Subcommittee is **Christopher S. Bond** (R-Missouri) and the ranking minority member (and strong NASA supporter) is **Barbara A. Mikulski** (D-Maryland).*

### *Why Cuts?*

Each Appropriations Subcommittee may vote to appropriate only the amount mandated by the so-called 302(b) allocations, which are severely limited by the provisions of the 1997 "Balanced Budget Act," which calls for a total budget reduction in FY 2000 of more than \$30 billion below the FY 1999 levels. The AAAS has an excellent summary of the situation online at <http://www.aaas.org/spp/dspp/rd/upd812.htm>.

### *What to Do?*

The best thing AAS members can do is stay informed of the situation and regularly contact their members of Congress. Make the points outlined in the preceding article. Point out the broader benefits of NASA and NSF programs to our Nation, the broad-based support these agencies provide to University researchers and the recent triumphs of both agencies. NASA in particular has done more with less and has been perhaps the most fiscally responsible government agency in recent years.

By the time you read this article, a broad budget battle may be underway between the House and Senate, who will appoint a single, joint Committee to thrash out any differences between the appropriations levels set by the two bodies. Stay in touch through the AAS Public Policy Webpage and take a small amount of time each week to write your Congressional representatives to let them know you care about NASA and NSF astronomy programs.

## INTERNATIONAL NEWS

### IAU XXIV<sup>th</sup> General Assembly Important Dates

9-16 August 2000 — Manchester, UK

01 Oct 99	Preliminary Announcement
15 Feb 00	Submit Abstracts to Symposia/JD SOCs
15 Feb 00	Symposium Travel Grant Applic. to SOCs
15 Feb 00	GA Travel Grant Applic. to Gen. Secretary
07 Mar 00	Adher. Orgs. Subm. Recomm. for new Members
01 May 00	Deadline for Early Registration to GA
07 Aug 00	Beginning of first GA Symposia
09 Aug 00	Opening Session of GA XXIV
16 Aug 00	Closing Session of GA XXIV
19 Aug 00	End of Last GA Symposia

### IAU Member Applications Due 15 October 1999

An application form for membership in the International Astronomical Union was published in the August AAS Newsletter (No. 96) and is also available at <ftp://ftp.aas.org/iaufiles/>

### International Travel Grants

The AAS has submitted an application to the National Science Foundation requesting support for an international travel grant program. This program would provide funds for round trip airline fare to/from selected international meetings and the IAU General Assembly in the UK. As of late August 1999, the grant application was still in NSF's review process. Members should check the AAS Web Page "What's New" link as well as the monthly email exploders for late-breaking details on the status of this program funding.



## AAS NEWSLETTER 97 ✦ OCTOBER 1999

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## WASHINGTON NEWS

Kevin B. Marvel, Associate Executive Officer for Policy Programs

### The Budget: What Cuts with Congress



When Congress is returned to Washington it was, and still is, unclear what they will do regarding the budget situation. The new fiscal year for the federal government begins 1 October by which time new funding bills are supposed to be passed by Congress. At this point, the only completed bill is the Military Construction bill. Close behind are the District of Columbia

appropriations bill and the Legislative branch funding bill. Is Congress falling down on their job? In a way yes, but in reality larger forces are at work behind this year's funding process.

As we approach 2000 and the beginning of a new Presidential race, both political parties are starting to position themselves carefully for the campaign trail. One of the most important aspects of this process involves performing actions that can be touted as fulfilling some portion of the party platform, past or present. For the Republicans this means fiscal responsibility (meaning that they followed the Budget Reduction Act, also known as "the caps," passed in 1997 after they attained majority in Congress). For the Democrats, this means sticking with their party platform of caring for the elderly, education, careful control of governmental spending and prudent federal investment in a variety of areas.

How can we influence the federal astronomy budget when broader issues are the focus of the national debate? **Astronomy has several "power points" that can leave a lasting impression on legislators.**

- *First, the public likes astronomy.* They value the results provided by astronomers, especially the intriguing images from NASA and NSF instruments. The public values the educational benefits of astronomy and space science, especially space exploration. They like seeing their children excited about science. In a recent poll, conducted by the Space Awareness Alliance, more than two-thirds of respondents had a favorable opinion of space exploration, three out of four voters had a favorable opinion of NASA and more than three-quarters of voters surveyed rated NASA's job approval as excellent or good. Although similar data for NSF is not readily available, we can safely assume that the voting public likes astronomy, whether it is done from ground or from space. The fact is that astronomy can provide a wide and wonderful context for life on Earth. The public values this and we must not forget it.
- *Secondly, the astronomy and space science community have a prioritized set of goals for the field as a whole.* Congress has great respect for the astronomy community, which united to list priorities for the 1990's, outlined in the Bahcall Decadal Survey. As proof of this respect, it has funded most of the priority items. The next Decadal Survey will be released early next year. It is always worth reminding them that for the past 60 years, astronomers have responsibly prioritized the projects, instruments and initiatives they feel the federal government should fund.

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