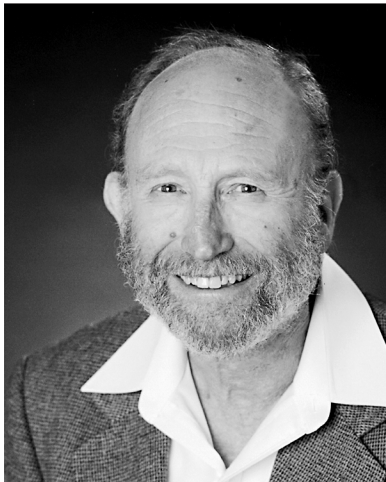


NEWSLETTER

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



George Wallerstein of the University of Washington will deliver his Russell Lecture at the Seattle Meeting in January 2003.

AAS NEWS Wallerstein is Russell Lecturer

This year, the AAS bestows its highest honor, the Henry Norris Russell Lectureship on **George Wallerstein**, Professor Emeritus of Astronomy at the University of Washington. Wallerstein is recognized in the award citation for "...his contributions to our understanding of the abundances of the elements in stars and clusters. He has worked

for over 40 years at the frontiers of these fields. From the first high-dispersion analyses of globular cluster giants in the 1950s to the recent explorations of ages and abundances of remote Galactic globulars and dwarf ellipticals, he has led the way towards an understanding of the oldest stars and of the nucleosynthesis processes that explain their surface compositions. He has also served as a notable teacher whose many students' accomplishments have indeed been abundant."

Wallerstein earned an undergraduate degree at Brown University. After military service in the US Navy during the Korean War, he entered the California Institute of Technology to complete his studies, earning a PhD there in 1958. He continued another year at Caltech as Research Fellow then moved to the astronomy faculty at the University of California, Berkeley in 1958. In 1965 he joined the faculty and became Chair of the Department of Astronomy at the University of Washington; he served as department chair for fifteen years.

In pursuit of his research, in the 1970s through the 1990s, he was often Visiting Scientist at the world's elite astronomical institutions. He has served the community on many committees over the years and has held governance positions with the AAS; he was Councilor from 1968 to 1971 and Vice-President from 1979-1981. He is a Fellow of the American Association for the Advancement of Science and, in addition to the AAS, he is a member of The Royal Astronomical Society and the International Astronomical Union.

Among Wallerstein's non-astronomical academic activities are five years' service on the Brown University Board of Trustees and on several committees at Brown and successful fund-raising for the United Negro College Fund with a special effort to find support for faculty research at the colleges. Wallerstein will receive his certificate and give his Russell lecture at the January 2003 Seattle meeting.

OTHER 2002 AAS PRIZES continued on page 4

PRESIDENT'S COLUMN

Anneila I. Sargent, Caltech, afs@astro.caltech.edu

My term as President of the American Astronomical Society will end with our meeting in Albuquerque in June 2002. Usually this letter would be the appropriate place to consider my expectations and goals when I took up the gavel and compare these with what actually happened.

The events of 11 September 2001 caused me to write that kind of reflective letter in the December issue of this *Newsletter*. I won't repeat myself here except to note that at that time there seemed to be less enthusiasm to fund research in the physical sciences than we had grown to expect when I took office.

As I write this column, the prospects look much less bleak. In another part of this *Newsletter*, Kevin Marvel discusses how astronomy fared in the President's FY '03 budget request. NASA's Office of Space Science is doing very well indeed. In fact, the OSS budget has been increasing steadily since 1996 and seems poised to continue in this way. Funding for the construction of the NSF-supported Atacama Large Millimeter Array (ALMA) has also been approved recently. More and more of our members are making NSF's astronomy program a priority item in their communications to Congress – and this is helping. On the other hand, the overall budget for NSF astronomy is not growing, as it must if the programs we advocate are to reach fruition.

Perhaps most disconcerting is the fact that the latest decade report, *Astronomy and Astrophysics in the New Millennium*, does not appear to be having the same impact as its predecessors in terms of improving astronomy funding. This is particularly surprising since we have an Administration that sets much store by the kind of accountability and prioritization that is embodied in our decade reports. What has happened? Two explanations

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Who Served Us Well...



Albert E. Whitford, Former Director of Lick Observatory.

Photo Courtesy of UC Santa Cruz

Albert E. Whitford, 1905–2002.

Albert Whitford, “a true pioneer of precision photoelectric measurements of the spectra of galaxies and their components,” has died at the age of 96. Whitford is also known as a teacher and observatory director; he brought the lagging construction of the Lick Telescope (then the second largest telescope in the world) to completion during the first year of his ten-year directorship there. He was the chair of the

first NAS-organized survey of astronomy in 1962. In keeping with being “one of the leaders of American astronomy for many years,” Whitford served in many capacities in the governance of the AAS; he was councilor (1950-53), vice-president (1965-67) and president (1967-70). In 1986, he was awarded the Russell Lectureship. *From materials by Donald Osterbrock.*

(Editor’s note: Full obituary tributes are published annually in the last number of the Bulletin of the American Astronomical Society (BAAS) and generally not in the AAS Newsletter. However, an exception is made in the instance of the death of a past AAS president or prize winner when a brief notice is published in the AAS Newsletter in addition to the complete tribute in the BAAS.)

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Items of general interest to be considered for publication in the *Newsletter* should be sent to lscholz@aas.org. Appropriate pictures are encouraged. Further information about deadlines and submitting articles, see <http://www.aas.org/publications/newsletter.html>.

Letters to the Editor on current issues of importance to astronomers are welcomed. Letters must be signed and should not exceed 250 words. Letters must be received by Jeff Linsky, Associate Editor, Letters, no later than one week prior to the Newsletter deadline (above). You may contact Jeff Linsky by email jlinsky@jila.colorado.edu, Tel: 303-492-7838, or FAX: 303-492-5235. The Associate Editor may edit letters, but will consult with authors before doing so. Letters will be published at the discretion of the Editors.

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.

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

Warner Prize Rules Change

Arlo U. Landolt, Secretary, aassec@aas.org

History of the Prize: The Minutes of the 88th meeting of the AAS Council (December 1952) reflect that it “was the sense of Council” to establish a prize “for young astronomers, under 30 or 35 years of age,” with the funding to come from the Warner Fund. Council decided to name the prize the Helen B. Warner Prize, after the donor of the Fund.

The 1952 Council decided that “the prize was to be awarded for a significant contribution to astronomy made during the five years preceding the award. The recipient of the award shall be a resident of North America, and at the time of the announcement of the award, the recipient shall be less than thirty-five years of age.” Procedures were written (the essence of which appear on the AAS Website) to identify a prize recipient each year.

The Call For Change: Off and on over at least the last twenty years, the Council has noted that more individuals received their PhDs later in life than was customary when the Warner Prize was established. Hence, due to the prize age limit, such individuals have a lesser chance to be recognized with the award of the Warner Prize.

The AAS Council, in session at its meeting in Washington, DC in January 2002, voted to change the rules governing the Warner Prize so that “The recipient of the award shall be a resident of North America, and no older than 35 years in the calendar year of the award, or less than eight years beyond obtaining their PhD at the time of the voting of the award by the Council.” The motion also specified that the Council would assess the effect of the Warner Prize rules change in five years. The new rule took effect on the date of the Council meeting, 6 January 2002.

Members may be interested to know that the Pierce Prize rules also contain the statement that the prize recipient must “be a resident of North America, and no older than 35 years in the calendar year of the award.” Since that rule was stipulated by the donor, Mrs. Beatrice Pierce Hess, and since she emphatically re-affirmed that age stipulation when queried some years ago (writing that she wanted recognition for young observational astronomers no older than 35 years of age), Council has not attempted to change the donor’s bequest. On the other hand, the Council could change the age rule for the Warner Prize because Council had established that rule itself years ago when it created the Warner Prize.

Member Deaths Noted

Since the March *Newsletter*, the Society is saddened to learn of the deaths of the following members, affiliates and former members:

Jack M. Grant
 Karen L. Harvey
 James H. (Harvey) Hensley
 Leonid Ozernoy
 Peter Meyer
 Thomas J. Sodroski
 Malcolm M. Thomson
 Randy Tufts (Division Affiliate)
 Natarajan Visvanathan
 Albert E. Whitford

Deaths noted elsewhere:

Yuji Hyakutake (of Comet (C/1996 B2) Hyakutake)

New Education Journal Endorsed

Arlo U. Landolt, Secretary, aassec@aas.org

On 6 January 2002 at its 199th meeting in Washington, DC, the Council passed the following resolution:

“The Council of the American Astronomical Society appreciates the need for an appropriate venue in which those involved in astronomy education can publish their work with appropriate scholarly review and recognition. Given this, we wish to recognize the experiment being undertaken by Sidney Wolff, Andrew Fraknoi, and NOAO in founding the electronic journal *Astronomy Education Review*. If successfully executed, this journal has the potential to become a significant vehicle for the improvement of the astronomical education enterprise. The *Astronomy Education Review* offers the added benefit of making the results of research in astronomy education more accessible to astronomy educators.

“We recommend that people working in astronomy education give serious consideration to publishing their scholarly work in this journal. We also encourage those who teach astronomy to consider *Astronomy Education Review* as one source, among others, for information on how to teach more effectively.

“The Council of the AAS endorses the concept of the electronic journal *Astronomy Education Review*, while recognizing that the total responsibility for the content rests with the editors and the publishing organization.”

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The AAS and the Annual Reviews, Inc. are pleased to offer for another year discounted subscriptions to the 2002 *Annual Review of Astronomy and Astrophysics*. AAS Members with 2002 dues paid in full are eligible to order Volume 40 at a substantial savings off the list price.

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Fax or mail the order form below to the AAS before **2 August 2002**. The volume will be shipped in October 2002 directly from the publisher. If you have questions, call the AAS Membership Department at 202-328-2010 or the Annual Reviews, Inc. at 1-800-523-8635.

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2002 AAS PRIZES
Continued from page 1

Heineman Prize to CITA's Bond

J. Richard Bond has been awarded the 2002 Dannie Heineman Prize in Astrophysics by the AAS and the American Institute of Physics. Bond is recognized for "pioneering research on the generation of microwave background fluctuations in the cold dark matter paradigm, the growth of these fluctuations, and the analysis of CMB (cosmic microwave background) fluctuations as examples of outstanding work in the field of astrophysics."

Since 1996 Bond has been director of the Canadian Institute for Theoretical Astrophysics (CITA) at the University of Toronto where he is also University Professor. He has been a Fellow in the Canadian Institute for Advanced Research's Cosmology and Gravity Program since 1986.

Bond received his PhD in physics at Caltech in 1979. Afterwards he taught and pursued research at UC Berkeley, the Institute of



Canadian Richard J. Bond wins the 2002 Heineman Prize for his work on the cosmic microwave background.

Astronomy in Cambridge and Stanford University. With the inception of CITA in 1985, he left the US to return to Canada.

Most recently, Prof. Bond and collaborators in Toronto have been analyzing the implications of cosmic background anisotropy

experiments, in particular Boomerang and the Cosmic Background Imager, determining key cosmological parameters such as the curvature of the Universe and the densities in ordinary matter, dark matter and dark energy.

Bond will receive his award and give a lecture at the June 2002 Albuquerque meeting.

Butler, Marcy & Vogt Win 2002 Tinsley

The American Astronomical Society's Tinsley Prize for 2002 goes to **Geoffrey W. Marcy** of The University of California, Berkeley and San Francisco State University; **R. Paul Butler**, Department of Terrestrial Magnetism (DTM), Carnegie Institution of Washington, and **Steven S. Vogt**, of the UCO/Lick Observatory and the University of California, Santa Cruz. The three were cited "for their pioneering work in characterizing planetary systems orbiting distant stars. After developing a method to enable the highest precision Doppler measurements currently possible in astrophysics, they used first the 3m telescope at Lick Observatory and now a



Keck 10m telescope to discover a number of firsts: the first system of multiple planets around a solar-like star; the first planet that transits another star, and the first planets that are likely to have masses comparable to Saturn. Approximately 60 percent of the planets now known outside our solar system were discovered by Marcy, Butler and Vogt and their collaborators, and their systematic and long-term program has established that solar systems exist that are substantially different from our own, with “hot Jupiters” and highly eccentric orbits. These surprising results have stimulated much new theoretical work on the theory of planet formation and on how the history of our solar system differs from the evolution of the other planetary systems discovered to date.”

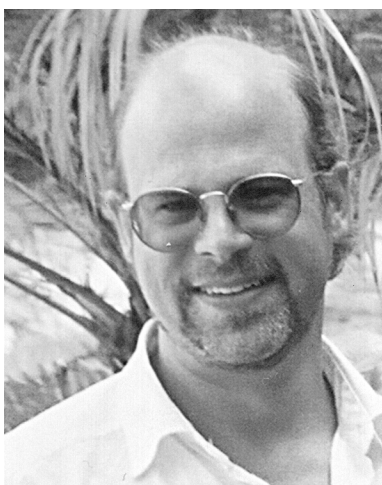
Paul Butler has been staff scientist at DTM since 1999. He earned a PhD from the University of Maryland in 1993 and went on to research positions at San Francisco State University, UC Berkeley and the Anglo-Australian Observatory. As early as 1995 and often since then, he has been featured in the press and has won a number of major awards, including the National Academy of Sciences Henry Draper Medal in 2001 which he shared with Geoff Marcy. In January 1996, he was ABC News Person of the Week, and a year later was named by *Newsweek* as one of “100 Americans for the Next Century.” He was AAS Centennial Lecturer in 2000.

In 1982, **Geoff Marcy** received his PhD in astronomy and astrophysics from the University of California, Santa Cruz and for two years afterwards was a Carnegie Fellow at the Carnegie Institution of Washington. He joined the faculty of San Francisco State University in 1984 where he continues as adjunct professor of physics and astronomy. In 1999 he became professor of astronomy at the University of California, Berkeley. He has won many distinguished honors, including in 2001 the Henry Draper Medal from the National Academy of Sciences which he shared with Paul Butler. He was elected to the California Academy of Sciences in 1996, was voted California Scientist of the Year in 2000, and was elected to the National Academy of Sciences in 2002.

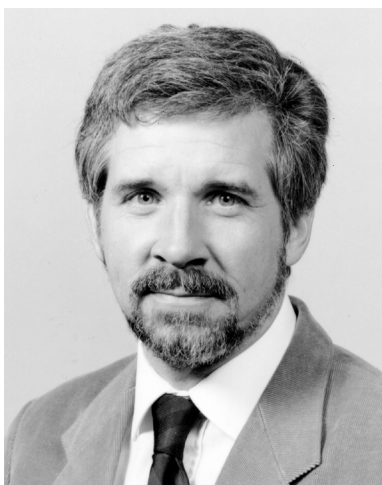
Steve Vogt has been at UCO/Lick Observatory and the University of Santa Cruz for the past 24 years where he is currently an astronomer and professor of astronomy and astrophysics. He obtained his PhD in astronomy at The University of Texas at Austin. His professional activities



Geoff Marcy of the University of California, Berkeley and San Francisco State University has won the 2002 Tinsley Prize for his discoveries of new planetary systems.



DTM's Paul Butler has won the 2002 Tinsley Prize for finding new planets orbiting distant stars.



Steve Vogt of the University of California, Santa Cruz and the Lick Observatory has won the 2002 Tinsley Prize with Marcy and Butler for his work with new planetary systems.

at Santa Cruz involve graduate and undergraduate teaching, scientific research, and development of instrumentation for UCO/Lick Observatory and for the Keck Observatory. He was the builder of the Hamilton Spectrograph at Lick, with which most of the early known extrasolar planets were discovered and was Principal Investigator of the HIRES spectrometer on the Keck 10m telescope. His current research interests primarily concern using HIRES in an extensive survey for extrasolar planets around nearby stars. He is a past recipient of the Muhlmann Award from the Astronomical Society of the Pacific, and the Grand Prix Andre Lallemand from the French Academy of Sciences.

The Beatrice M. Tinsley Prize is awarded every two years to recognize an outstanding research contribution to astronomy or astrophysics of an exceptionally creative or innovative character.

Gunn Wins First Weber

James E. Gunn of Princeton University and the Astrophysics Department at Princeton University (photo, next page) is the first winner of the newly established AAS Joseph Weber Award for Astronomical Instrumentation. The award committee has cited Gunn for “...his outstanding contributions to astronomical instrumentation which have influenced the development of instruments on major telescopes worldwide. He has been deeply involved in the conception and realization of an impressive series of science-driven instruments, such as the early CCD spectrographs and cameras of Palomar Observatory, the Wide Field/Planetary Camera of the Hubble Space Telescope, and the extremely imaginative and powerful Sloan Digital Sky Survey Project. His research with these instruments has had a profound influence on astronomy, and the research accomplishments by others using the instruments are an extensive, highly influential body of contributions to astronomical research.”

Gunn earned a PhD at the California Institute of Technology in 1966 and served two years in the military while at the Jet Propulsion Laboratory. After a year teaching at Princeton, he taught at Caltech for the next ten years. In 1977 he became Deputy Principal Investigator on HST's Wide Field/Planetary Camera. In 1980, he joined the Princeton faculty as Eugene Higgins

Continued on page 6

2002 AAS PRIZES*Continued from page 5*

Professor of Astronomy. Since then he has also taken on management positions with the ARC Apache Point Observatory and the Sloan Digital Sky Survey for which he has served as Project Scientist since the project's inception.

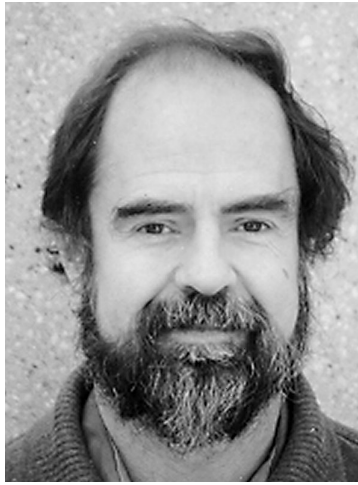
Gunn's work has been recognized with numerous important grants and awards: MacArthur Fellow (1983-1988), the AAS/AIP Dannie Heineman Prize (1988); Gold Medal of the Royal Astronomical Society (1993); the Canadian Astronomical Society's Petrie Prize (2001); and the Oort Visiting Professorship (2002). He was elected to the National Academy of Sciences in 1977.

Warner Prize To Riess

Adam Riess of the Space Telescope Science Institute is awarded the Warner Prize for 2002 "in recognition of his significant contribution towards measuring cosmological distances unimaginable a decade ago through the study of SNe Ia and for the astonishing discovery of the acceleration of the universe and a non-zero cosmological constant." The Prize recognizes early career astronomers for significant contributions in observational or theoretical astronomy during the past five years.

Riess earned an AM and PhD in astrophysics at Harvard University in 1996 after having completed undergraduate work at MIT. Robert Kirshner was his advisor for a dissertation entitled "Cosmological Measurements from Multicolor Light Curve Shapes of Type Ia Supernovae." While at Harvard Riess was a GSAS Merit Fellow, a Margaret Weyerhauser Jewett Memorial Fellow and he won the Harvard Distinction in Teaching Award in 1994. After the completion of his doctorate, he was a Miller Fellow at the University of California, Berkeley from 1996-1999 after which he joined the staff of the Space Telescope Science Institute.

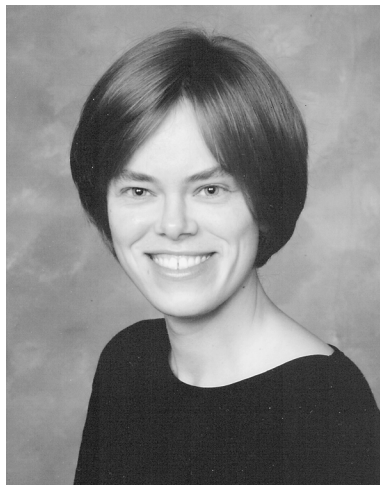
In addition to the Warner Prize, he has been recognized for his findings in support of an accelerating universe by *Science Magazine's* "Breakthrough of the Year" (1998), ASP's Trumpler Award (1999), Space Telescope Science Institute's Science Merit Award (2000, 2001), the AURA Science Award (2000) and *Time Magazine's* Innovator Award (2000). Last year he was selected for Harvard's Bok Prize.



The first Joseph Weber Award for Astronomical Instrumentation goes to James E. Gunn of Princeton University.



Adam Riess of the Space Telescope Science Institute has won the 2002 Warner Prize for his measurements of cosmological distances and acceleration.



Amy Barger's explorations for distant galaxies using frequencies from X-rays through radio waves has won her the 2002 Pierce Prize.

Pierce Prize To Barger

Amy J. Barger of the University of Wisconsin-Madison has been awarded the Newton Lacy Pierce Prize for 2002 "in recognition of her outstanding achievement in observational cosmology using data from X-ray through radio wavelengths to explore previously unknown populations of distant galaxies, giving a view of galaxies early in the history of the universe and showing that they are major contributors to the extragalactic background."

Barger was a British Marshall Scholar at King's College, University of Cambridge, where she earned her PhD in astronomy in 1997. She was then a Hubble Fellow and a Chandra Fellow at Large at the Institute for Astronomy, University of Hawai'i before being appointed Assistant Professor in the Department of Astronomy at the University of Wisconsin in 2000. She also holds an affiliate graduate faculty appointment in the Department of Physics and Astronomy at the University of Hawai'i. In 2001 she won the Annie Jump Cannon Award of the American Association of University Women, and she was recently named an Alfred P. Sloan Research Fellow.

Zeilik Wins 2002 AAS Education Prize

The 2002 Education Prize is awarded to **Michael Zeilik**, professor of physics and astronomy at the University of New Mexico. In making the award, the committee noted that "For the past thirty years, Mike Zeilik has been an innovator in the field of astronomy education and science education more generally. His tireless championing of teaching strategies which go beyond the usual lecture and the research which he has done on the success of or challenges faced by these strategies have provided a major contribution to our understanding of student learning. He has led our profession in developing collaborations, both with other astronomy education faculty and with researchers in the area of science education."

Zeilik specializes in introductory courses for the novice, non-science major student and is a pioneer in astronomy education research at the university level. He has been supported in these undertakings by the National Science Foundation and NASA. Dr. Zeilik's recent research activities have focused on astronomy in the historic and prehistoric Pueblo world and a cognitive approach to teaching science.

Zeilik earned his PhD in astronomy at Harvard University. He has been a Woodrow Wilson Fellow, a National Science Foundation Fellow, and a Smithsonian Astrophysical Observatory Predoctoral Fellow. At the University of New Mexico, he has been named a Presidential Lecturer, the highest award for all-around performance by a faculty member. He is the author of four widely used textbooks *Astronomy: The Evolving Universe* (9th edition, Cambridge University Press, 2002), *Astronomy: The Cosmic Perspective* with J. Gaustad (2nd edition, Wiley, 1990), *Conceptual Astronomy* (1st edition, Wiley, 1993), and *Introductory Astronomy and Astrophysics* with S. Gregory (4th edition, Saunders, 1998).

Zeilik will receive his award at the banquet at the June 2002 Albuquerque meeting.

Van Biesbroeck Prize To Victor Blanco

The Council of the AAS has voted to award the 2002 Van Biesbroeck Prize to **Victor M. Blanco**. The Prize recognizes long-term extraordinary or unselfish service to astronomy, often beyond the requirement's of the winner's paid position. Blanco's Prize citation reads, "For outstanding service in building the Cerro Tololo Inter-American Observatory and in leading its scientific, technical and support staff. He was instrumental in constructing the first large telescope in the southern hemisphere. Under his leadership CTIO became the model for a national observatory, providing first-rank research facilities and making important technical innovations without sacrificing its deep sense of commitment to the astronomical community it served. His diplomacy and personal warmth created a climate of cooperation that has made CTIO the prime example of a successful and productive international scientific organization."

Blanco began his career with a BS in meteorology from the University of Chicago. Most of the time he spent earning a PhD at the University of California Berkeley he was also serving in the US Air Force as radar specialist and weather officer. After the war, he served in the US Air Force Reserves for nearly twenty years. His research interests have focused on galactic structure and distribution of galactic and Magellanic clouds, red giant stars and RR Lyrae stars.



University of New Mexico's Michael Zeilik has won the 2nd AAS Education Prize for thirty years of innovations in astronomy education.



Victor Blanco, former director of the Cerro-Tololo Inter-American Observatory has won the 2002 George Van Biesbroeck Prize.

A native of Puerto Rico, Blanco taught at the University of Puerto Rico for a year and then spent the next fifteen years teaching astronomy at Case-Western Reserve University. In 1965, he moved to Washington, DC to head the Astrometry and Astrophysics Division of the US Naval Observatory. Two years later he left for the Cerro Tololo Inter-American Observatory in La Serena, Chile where he was director and a staff astronomer until he retired in 1993.

He is a corresponding member of the Academy of Science of Chile and served as AAS Vice-President from 1973 to 1975.

PRESIDENT'S COLUMN

Continued from page 1

spring to mind. First, other disciplines have begun to follow our lead and the astronomy report is no longer unique. Second, the new Administration has brought with it new people who are unaware of astronomy's proud history of decadal surveys and responsible planning.

The challenge of changing this situation is ours. Efforts by the AAS membership to inform and educate their congressional representatives about our prioritized goals for the decade have been effective in the past and must continue in to the future. To paraphrase what I wrote in August 2000, "make sure the McKee-Taylor Report does not languish on the shelf of the congressional staff." Your enthusiasm is what will make it come alive for our legislators. *Time and again in my term as President, I have seen that AAS members can make a difference.*

Third AAS Astronomy Chair Meeting

Robert Rood, University of Virginia,
rtr@virginia.edu

The Third Biennial AAS Astronomy Chairs Meeting will take place on **19–21 October 2002** at Chicago O'Hare in the Embassy Suites Hotel. Astronomy department chairs and astronomy program directors in combined departments are invited to attend. See <http://www.astro.virginia.edu/~rtr/astro-chairs>, a primitive Website containing a summary of the 2000 Dallas Meeting. If you would like to attend please email me at rtr@virginia.edu.

Rough Program Time frame:

Friday, 18 October:

Mid- to late afternoon: Special topic if interest warrants;

Evening: Dinner and informal interaction time.

Saturday, 19 October:

9:00a–5:00p: Main Business meeting with topics of broadest interest

Evening: Dinner and informal interaction time.

Sunday, 20 October,

9:00a–Lunch: Possibly another special topic session that could include things like "Concerns of liberal arts colleges, "Issues facing state institutions," etc.

COMMITTEES

Status of Women in Astronomy

Meg Urry, Chair, meg.urry@yale.edu

CSWA Session At the Albuquerque Meeting

In March 2002 an international meeting on women in physics was held in Paris, under the aegis of the International Union of Pure and Applied Physics (the physics equivalent of the IAU). The three astrophysicists in the US delegation to that meeting, **Meg Urry**, **Jennifer Sokoloski**, and **Aparna Venkatesan**, will describe their experiences and discuss the resolutions and recommendations that ensued. The panel will meet from 1:00-2:00 on Thursday, 6 June. There will be ample time for questions and discussion.

Revamped Website and DataBase

Amy Simon-Miller, simon@lepassm.gsfc.nasa.gov

Just in time for spring, the CSWA has decided to do some cleaning of its website! We are in the process of overhauling all the pages and updating links, while removing outdated information. All of the pages have been moved to our main site on the AAS servers: <http://www.aas.org/~cswa>.

Database Updated: The largest change has been in the *Women in Astronomy Database*. The original database, designed in 1997 by Lisa Frattare, received overwhelming interest with nearly 200 entries posted over the past five years. The design was such that new entries and modifications were emailed directly to the database administrator who had to manually add/change the entries. Many of the entries are out of date and it is impossible to maintain the data in its current database format. We have instituted a new database that should streamline entries and modifications.

- Check out the new database information at <http://www.aas.org/~cswa/WIAD.html>. Women may register as database users and then add or modify their own information at any time. In addition, a guest account will allow anyone to search the database to look for speakers or job applicants and to do statistical searches. Virtually any information or keyword can be used for a search and you can also sort alphabetically by any of the information areas.
- *Browser Requirements:* Netscape 4.6+, Internet Explorer 5.1+. Unfortunately, we can not post the old data into the new format. We encourage all women, including prior users, to submit (or re-submit) their information into the new database! The old database will remain open through 2002 for searches, but no further entries will be accepted on that site.
- *Updated Links:* Another change to the website has been the updating of our Related Links page. It now includes links to organizations, articles and meetings relevant to women in astronomy and other physical sciences. Please feel free to submit suggestions for links that should be included.
- *FAQ:* Future improvements to the web site will include a Frequently Asked Questions page and possibly online surveys. All comments and suggestions on ways to improve the website are always welcome! Finally, we wish to thank Lisa Frattare for her many years of service as the CSWA Webmaster - her hard work has been truly appreciated!

Highlights of STATUS, June 2002

Upcoming in the June 2002 issue of *STATUS* are articles in two key areas. The first concerns positive actions toward progress for women in science:

- a report by Meg Urry about the IUPAP meeting on women in physics;
- highlights of the Caltech report on women faculty; and
- news about the recent MIT reports on women faculty.

The second key focus is on how family issues affect women in science:

- a reprint from the *Chronicle of Higher Education* on the effects of having children on tenure rates; and
- an *American Prospect* article on equality in marriage, an important prerequisite for combining family and career successfully.

In addition, there are:

- a review of Susan Estrich's "Sex and Power;"
- a description of the revamped CSWA website and, especially, the new database on women in astronomy, by Amy Simon-Miller; and
- a clarification of the statistics reported in the January 2002 *STATUS* about the University of Arizona astronomy department with a letter from members of the department.

Copies will be mailed to all subscribers and will be available at the June AAS Albuquerque meeting. To subscribe, send your mail address to drenner@aas.org. *STATUS* also appears online at <http://www.aas.org/~cswa/pubs.html>.

Employment

Andrea Schweitzer, Chair, schweitzer@frii.com

Astronomy At Boeing without a PhD

Mike Kaplan, Director, NASA Electro-Optics Programs, Boeing-SVS, michael.s.kaplan@boeing.com

Many students and recent graduates may think that a PhD on an academic career track — the "traditional path" — is the necessary path to make contributions in astronomy. When I was an undergraduate, I thought this was true. My career, however, demonstrates that a non-traditional path led to even bigger contributions to astronomy than I could have imagined. I do not have a PhD; I have a bachelor's degree in Aerospace Engineering and two employer-sponsored masters degrees, one in Electrical Engineering and one in R&D Management. And I have never spent a day working in an academic setting. However, I worked at NASA Headquarters for seven years, planning future programs in astrophysics such as SOFIA, SIM and NGST, and now I am responsible for NASA space telescope business at the largest aerospace company in the world.

So what skills should you acquire to pursue a "non-traditional" career path in astronomy? Here's my suggested shopping list of skills to develop:

- Get a broad technical background. Given that the design and construction of astronomical hardware involves many disciplines, it's helpful to have a broad technical background. Engineering can be an even more useful academic discipline

than astronomy. As an example: optics, structures, and controls are all closely intertwined in telescope performance.

- Learn how hardware is designed and built. Typically, this isn't taught in school; these skills are acquired through experience. Find a mentor through an internship, or join an existing project team to learn this set of skills. And get some exposure to systems engineering.
- Understand how projects are organized. It's important to see how all of the disciplines required to make a project come together are effectively integrated. Working as part of a project team, asking questions of lead scientists and managers, and looking at the "big picture" are good ways to gain this perspective.
- Develop good communication skills. Even if you are armed with the skills above, if you can't clearly communicate, your effectiveness will be severely limited. Keys to good communication include understanding who your audience is, what their needs, interests and expectations are, and getting to the point. The "inverted pyramid" style of communication used by journalists is a good model for writing and presentations.
- Broaden your experience and perspectives. It's pretty unlikely that you will learn all of these skills at the same job, or even in different positions in the same organization. So don't be afraid to move around. Working at a research laboratory, a government agency and in industry has enabled me to see things from a variety of perspectives, and this has helped tremendously in my ability to make important contributions to astronomy.

I hope that this brief column has been useful to those of you thinking about your career direction. I would be happy to answer questions and offer career advice, so please feel free to contact me at michael.s.kaplan@boeing.com. I will also be attending the Albuquerque AAS meeting, and the graduate student reception there, if you'd like to talk in person.

Status of Minorities in Astronomy

Chick Woodward, Chair, chelsea@astro.umn.edu, and Keivan Stassun, Editor, SPECTRUM, keivan@astro.wisc.edu

Highlights of the June 2002 SPECTRUM

In the June 2002 issue of *SPECTRUM*, we highlight the important role played by "Minority Serving Institutions" in preparing future minority physicists and astronomers.

Related articles include:

- Historically Black Colleges and Universities (HBCUs): Key Production Sites for Black Physicists, Astronomers
- Thin Ice: "Stereotype Threat" and Black College Students
- In addition, this issue also includes statistics on under-representation, an article on astronomy outreach to Native Americans, and an article on strategies for enhancing faculty diversity.

TRANSITIONS

Beebe New Chair of NRC's COMPLEX

Reta Beebe (New Mexico State University) has been appointed to succeed John Wood (Smithsonian Astrophysical Observatory) as the next chair of the Committee on Planetary and Lunar Exploration (COMPLEX). Dr. Beebe's term begins immediately and ends on 30 June 2005. A prime activity for COMPLEX during Beebe's term will be to monitor the implementation of the recommendations contained in the report of the SSE Survey – the first decadal-planning study conducted by the planetary science community.

Cordova Chancellor of UC Riverside

France Cordova has been named Chancellor of the University of California at Riverside, effective 1 July 2002. Since 1996, Dr. Cordova has been a professor of physics and Vice Chancellor for Research at the University of California at Santa Barbara. She has served as Chief Scientist at the National Aeronautics and Space Administration and has chaired the Department of Astronomy and Astrophysics at Pennsylvania State University. She was also deputy group leader of the Space Astronomy and Astrophysics Group at Los Alamos National Laboratory.

McDonald Observatory's Bash To Step Down

Effective 31 August 2003, **Frank Bash** will resign as director of the University of Texas at Austin's McDonald Observatory. Bash has been director of the Observatory since 1991. He is currently the Frank N. Edmunds Regent's Professor of Astronomy.

Fisher Heads NASA's Sun-Earth Connection

Richard R. Fisher became director of the Sun-Earth Connection (SEC) Division of the Office of Space Science on 11 March 2002. He was previously Chief of the Laboratory for Astronomy and Solar Physics (LASP) at Goddard Space Flight Center and participated in several SEC missions over the years (SMM, SPARTAN, SOHO, TRACE and STEREO). He can be reached at NASA Headquarters at 202-358-1544 and rfisher@hq.nasa.gov.

CALENDAR

Continued from page 15

33rd Saas-Fee Course: "Gravitational Lensing: Strong, Weak and Micro"

6–11 April 2003 — Grimentz, Switzerland
Contact: Georges Meylan (gmeylan@stsci.edu)

Sixth Biennial History of Astronomy Meeting

19–22 June 2003 — Notre Dame, IN
Contact: Matthew F. Dowd (matthew.f.dowd.11@nd.edu)

*XXVth International Astronomical Union General Assembly

13–26 July 2003 — Sydney, Australia
Contact: IAU Secretariat (iau@iap.fr)
<http://www.astronomy2003.com>

EDUCATION

Bruce Partridge, Education Officer, bpartrid@haverford.edu

A Haverford colleague of mine works on the labor force in science. I thought a brief summary of some of her recent work on why men and women leave science would be of interest to AAS Members.

Why Do They Leave Science?

Anne Preston, Professor of Economics, Haverford College

Using personally collected work histories of 1700 science and engineering graduates of a large public university in the Northeast, together with interview data from 100 of the respondents, I have been investigating the topic of occupational exit of scientifically trained men and women. The results, consistent with earlier estimates which I constructed using information from a longitudinal survey conducted by NSF in the 1980s, show that each year almost 1.5 percent of men employed in the sciences leave science permanently for reasons other than retirement. In addition the exit rate for women is twice the exit rate of men.

Reasons for exit vary by gender. A large majority of the exiting men leave in search of higher income and better career opportunities with a small minority also voicing discontent with the field. Women leave for a variety of reasons, the most prevalent being discontent with the field of science, lack of mentoring, and difficulties balancing career and family. Both men and women voicing discontent with science speak of the "narrowness" of science.

Interview data reveal large differences in the incidence and effectiveness of mentoring for men and women. As undergraduates, 13.5 percent of the women and 40 percent of the men had mentors, while as graduate students, 20.5 percent of the women and 66 percent of the men had mentors. Having a mentor in graduate school increased the probability of completing the degree from 0.6 to 1.0 for women, but did not affect the probability of completion for men which was constant at 0.75. Similarly, having a mentor in early employment increased the probability of a successful work experience from 0.5 to 1 for women and from 0.7 to 0.8 for men.

The difficulties balancing family and career arise at different stages of family formation for women with PhDs and for women with masters or bachelor's degrees. Women with PhDs often find marriage the stumbling block as they attempt to balance the geographic mobility of the early academic career with the needs of a dual career couple. Women with masters and bachelors degrees, however, face hard issues balancing the needs of young children and the demands of industrial employers.

Education Policy Items Reported By AIP

I have excerpted below a couple of items gleaned from the FYI electronic publication of the American Institute of Physics. These may be of interest to AAS Members involved in undergraduate and K-12 education.

Legislation Encouraging S&T Careers

From FYI, the American Institute of Physics Bulletin of Science Policy News, Number 30: 15 March 2002

Renewed attention is now being focused on a bill, introduced in both chambers last year, that would attempt to encourage more US students to pursue careers in science, math, engineering, and technology (SMET) fields. A 7 March hearing addressed the "Technology Talent" Act and the related issue of undergraduate science and math instruction.

The bipartisan bill was introduced in the House as H.R. 3130 by Reps. Sherwood Boehlert (R-NY), John Larson (D-CT), Melissa

Hart (R-PA), Mike Honda (D-CA), and Mark Udall (D-CO), and in the Senate as S. 1549 by Sens. Joseph Lieberman (D-CT), Barbara Mikulski (D-MD), Christopher Bond (R-MO), Bill Frist (R-TN) and Pete Domenici (R-NM). It would authorize NSF to award competitive grants to institutions of higher education (including community colleges) for programs aimed at increasing the number of US citizens and permanent residents obtaining degrees in SMET fields. Acceptable program objectives include increasing the number of women and under-represented groups in these fields, assisting students not adequately prepared to pursue technical subjects in college, improving the quality of undergraduate teaching and student learning, exposing students to research opportunities and possible S&T careers, and providing financial incentives to students who pursue these subjects. Although this authorizing legislation has not yet been passed, \$5 million was appropriated in FY 2002 for a pilot program at NSF (the authorizers sought \$25 million), and the FY 2003 request includes \$2 million for a continuation of the program.

From Various Science Education Bills

Excerpted from FYI #43, 10 April 2002:

At a March 20 House Science Committee hearing spotlighting the 2001 Presidential Math and Science Teaching Awardees, teachers had an opportunity to comment on what the federal government can do to help improve K-12 science and math education. Almost unanimously, over a dozen educators emphasized federal support for mentoring and professional development programs. Without assistance for the first three to five years, and ongoing training in the latest teaching methods and curricula, they said, teachers often end up teaching as they were taught, and history has shown that this has failed the majority of students in math and science.

Teacher after teacher reiterated that they, now receiving recognition as the nation's best educators, had achieved that level of success through the professional development opportunities made available by Education Department and NSF funding; good teachers are made, not born.

Several pointed out that, although federal funds have supported development of new and better curricular materials and teaching methods, a great many teachers, especially those in rural areas and those who have not specialized in science and math teaching, are not aware of those resources or are hesitant to try them. Many decried the loss of the Eisenhower funding and wished to see the program reestablished.

Another common theme was concern over the current emphasis on annual standardized tests. While well-crafted continuing assessment linked to the curriculum can provide effective feedback on teaching, one witness said, standardized testing often reflects student socio-economic factors instead. Research Subcommittee Chairman Nick Smith (R-MI), whose subcommittee will draft the NSF reauthorization, noted that he was carefully recording the witnesses' comments.

(Editor's note: The AIP publishes an excellent email newsletter entitled "FYI; the AIP Bulletin of Science Policy News." To receive a free subscription send email to listserv@aip.org, leave the subject line blank and in the message type "add fyi".)

PUBLICATIONS

WHY OBSERVATORY REPORTS?

Virginia Trimble and Bob Milkey

This is the advice offered by your Council and members thereof who were responsible for such a report/such reports in the last few years. (Published originally in Newsletter No. 100, June 2000.)

Why bother to prepare an annual report; after all, we have a web page?

There are several answers to this:

- *Comparison shopping.* Think of graduate students wanting to compare the various institutions they might apply to or attend. There is your institution and the competition all in one place, saving the sequential search.
- *Reprints.* These can be sent to potential students and strong candidates for postdoctoral and faculty positions as a tangible expression of your interest in them.
- *Raising your profile.* Editors seeking referees, nominating committees seeking candidates, and staff at sponsoring agencies seeking peer reviewers have all told us they consult these reports for names of people working on particular topics at institutions they might not have thought of. Of course you feel a certain ambivalence about being asked to referee, run, or review. But collectively it is good for your institution (and you) to be doing these things.
- *Think of the historians.* Web pages come and go and are generally not archived. Records of who was where, when and what they were working on and with whom are of long-range value, and a *BAAS* report is one of the easiest ways of preserving this information.

Should we submit one? What if I have to write it?

No, it isn't entirely beer and skittles. In particular, when your colleagues finally send you the information needed, they seem to think they are doing you (rather than themselves and your communal institution) a favor. BUT, much of what you need is relatively easy to come by:

Lists of staff and staff changes, including PhD and MS recipients and where they have gone. You already have much of this on your departmental directory (real or virtual). The observatory or department administrator or the boss's secretary probably has the rest;

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@as.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/>

Honors and such. This is an easy part. Most of your colleagues will respond promptly to a blanket email asking them to brag if they were elected to something (from the NAS on down to AAS Council), received a prize or a major grant, or were otherwise recognized as among the great and good;

Education and outreach. If you don't know what your department is doing, now is the time to find out!

Major institutional initiatives. Have you joined a telescope consortium, built a major instrument, or any other thing worthy of description for the record? Have you closed or decommissioned a telescope, instrument, or other major facility?

Lists of publications. These can, if necessary, be culled from CVs on file. But a good place to start is to ask the graduate students for publications bearing their names. Most of them are still rather pleased to be publishing and to have other people know about it. You can even list theirs first if you want to.

Summary of ongoing, not yet published, work. Yeah, this is the hard one. But again, students and junior staff are likely to respond quickly, and their projects will include many joint ones with senior staff or faculty, thereby picking up some of their work as well. And, finally, just ask, with a back up threat of some sort (*e.g.* if you don't provide the requested paragraph about what you are doing, I'll write it myself!).

Deadlines. What ever you do, someone will be angry. If you are honest and say exactly when you must have the information to make *BAAS* deadlines, you will be accused of rigidity (or anal retentiveness or worse). If you cheat and allow a little slop, you will be accused of dishonesty. But no worthwhile task was ever accomplished without a few harsh words being said (and usually regretted).

For publication in the paper edition of the *BAAS* (distributed in February of the following year), Observatory reports may be submitted anytime before **1 November**. Electronically submitted reports will be posted in the electronic *Bulletin of the American Astronomical Society (BAAS)* within three weeks of receipt. Follow the instructions at <http://www.aas.org/publications/baas/baas.html>.

AAS Privacy Policy

The AAS has a policy of keeping member data as private as possible. We *do not* sell our members' email addresses to anyone, much less spammers. In the event that you have received email that appears to have originated from the AAS, rest assured that we are not sending it, nor is it being relayed through our servers.

Unfortunately, the users of spam have gotten quite clever. Mail tools allow users to change the "From:" line in the header, to make it look like it came from a 'friendly' user. Some spammers have gotten into the habit of using 'webmaster@as.org' in their header.

There are tools available to your system administrators to try and filter mail before it arrives at your desktop. Speak with them about installing junk mail filters, subject filters, and unrecognized domain filters. Desktop email clients like Outlook and Eudora allow the individual user to filter email based on a variety of criteria. We hope this explains some of the concerns that you may have regarding email practices at the AAS. We are continuously looking for ways to combat the problem of unwanted email.

DIVISION NEWS

Dynamical Astronomy

Marc Murison, Secretary, murison@usno.navy.mil.
Photos by James Hilton

The 2002 Annual Meeting

The 2002 DDA meeting, held at the Timberline Lodge high up on Mt. Hood, Oregon, 21–24 April, was organized by **Dave Merritt** (Program Chair) and **Alan Harris** (Local Host). The facilities were excellent, the support staff was very helpful and professional, and the views from the Lodge were fabulous. The weather gods were kind, giving us intermittent fog the first day, the eeriness of which was in keeping with an evening viewing of Kubrick's movie "The Shining," part of which was filmed at Timberline. The second and third days were bright and sunny, with clear air and fantastic views of Mt. Hood, Mt. Jefferson (50 mi. away), and even the Three Sisters (150 mi. distant). The meeting program, prepared by **Dave Merritt**, was printed in a useful booklet with a beautiful image of the Andromeda Galaxy on the cover.

Brouwer Award: The 2002 Brouwer Award was formally presented to **Jack Wisdom** (MIT), for pioneering the application of modern nonlinear dynamics and the theory of Hamiltonian chaos to the field of solar system dynamics. His invited lecture at the 2002 meeting was an illuminating review of the history and development of the symplectic mapping method and its applications to various solar system dynamics problems.

It was announced that the 2003 Brouwer Award winner is **James Binney** (U. Oxford).

Invited Talks: Invited papers at the 2002 meeting were presented on the dynamical evolution of asteroids and meteoroids via Yarkovsky forces (**William F. Bottke**, SwRI), the structure and dynamics of galactic bulges (**Matija Bureau**, Columbia Astrophysics Lab.), the application of the GRAPE-6 to the N-body problem and star clusters (**J. R. Hurley**, AMAH), chaos and galaxy evolution (**Henry Kandrup**, U. Florida), the dynamics of narrow planetary rings (**Eugene Chiang**, UC Berkeley), and the current status and dynamical applications of the LISA project (**Peter Bender**, JILA).

Student Stipend Program: For the eighth consecutive year, two student stipends were awarded at the annual DDA meeting. The outstanding recipients were **Miros Milosavljevic** (Rutgers), who spoke



Pete Bender (JILA) giving an invited talk on "Dynamical Astronomy with LISA."



Student Stipend winner Milos Milosavljevic (Rutgers University) speaking on "Dynamics of Galactic Nuclei."



Eugene Chiang (UC Berkeley) giving an invited talk on "Dynamics of Narrow Planetary Rings."

on "Dynamics of Galactic Nuclei," and **Matija Cuk** (Cornell) who presented results on "New Secular Resonances Involving the Irregular Satellites of Saturn."

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 and encouraged to apply. For next year's Cornell meeting, submit an abstract of a paper for presentation, along with a letter of recommendation from an adviser, by **1 March 2003** to: William I. Newman, UCLA, Dept. of Earth & Space Science, 4640 Geology Bldg., Box 951567, Los Angeles, CA, 90095-1567, win@ucla.edu.

Call for Brouwer Nominations

The Brouwer Award Selection Committee (BASC) of the DDA invites nominations from any member of the AAS for an award competition. The Brouwer Award has been established to recognize outstanding contributions to the field of dynamical astronomy, including celestial mechanics, astrometry, stellar systems, galactic and extragalactic dynamics. It is open to candidates of any age or nationality, occupation, or specific field of interest. The Award consists of an honorarium of \$2000 plus an appropriate certificate.

Letters of nomination should cite the achievements in or contributions to dynamical astronomy that might appropriately be recognized by the Award. Nominations should be supported by copies of the vitae and bibliography of the nominee and by letters of recommendation from three knowledgeable people testifying to the long-term impact of the nominee's contributions to dynamical astronomy. Nominations and supporting documentation should be sent to the BASC Chair Matthew J. Holman, Smithsonian Astrophysical Observatory, 60 Garden St., MS 18, Cambridge, MA 02138, mholman@cfa.harvard.edu. (from whom further information may be obtained) so as to be received not later than **31 December 2002**: Additional information regarding the Brouwer Award may also be found at the DDA web site, <http://dda.harvard.edu>.

Future DDA Meetings

The next DDA meeting will be held at Cornell, **4-7 May 2003**. The local host will be **Joe Burns** (jab16@cornell.edu), and the program committee will consist of Burns, Bill Newman (Vice Chair), and Marc



From the left, Nader Haghighipour (CIW), Marc Murison (USNO), and Steve Levine (USNO, Flagstaff) with his son, Maxwell at the DDA opening reception. Of course... the baby stole the show!



DDA Officers old and new: (standing, l. to r.) Bill Newman, Fred Adams, Steve Unwin, Hal Levison, Dave Merritt, and Dan Scheeres; (kneeling) Phil Nicholson, Marc Murison, Tom Statler, and Joe Burns.



Jack Wisdom (left, MIT) receiving the Brouwer Award from DDA Chair Hal Levison (SWRI). Below, Hal gives a student stipend check to Matija Cuk (Cornell U.).



2002 Hale Prize winner Eric Priest, of St. Andrew's University, will speak at the June meeting in Albuquerque on the Sun's basic properties and recent progress in answering key questions.

Murison (Secretary). The 2004 meeting is scheduled for Nice, France, with **Alessandro Morbidelli** as local host (precise dates to be determined).

DDA Officers, Members

Officers were elected for 2002-2003, Committee members elected for 2002-2004, and continuing Committee members are:

Officers:

- Chair:* **David Merritt** (Rutgers);
- Vice Chair:* **Bill Newman** (UCLA)
- Past Chair:* **Hal Levison** (SwRI);
- Secretary:* **Marc Murison** (USNO);
- Treasurer:* **Pete Shelus** (U. Texas at Austin)

Committee:

First Year:

- Fred Adams** (U. Michigan);
- Sethanne Howard** (USNO);
- Dan Scheeres** (U. Mich.)

Second Year:

- Robin Canup** (SwRI);
- Phil Nicholson** (Cornell);
- Tom Statler** (Ohio U.)

The Division has continued to grow, reaching 259 regular and affiliate members. We are saddened that two members (**Leonid Ozernoy** and **Julian Schreuer**) passed away.

Solar Physics

Hale Prize Winner Is Eric Priest

The 2002 recipient of the Solar Physics Division's Hale Prize Award is Professor **Eric Priest**, Gregory Chair of Mathematics, St. Andrews University, Scotland for his "seminal contributions to investigations of the role of the magnetic field in solar activity, and for his tireless advocacy of solar physics in all corners of the world."

Priest received his PhD with the legendary T. G. Cowling at Leeds University, and after a postdoc at the High Altitude Observatory, he returned to the UK where he established the equally legendary Solar MHD Theory Group at St. Andrews, which has trained over 70 students and postdocs, 29 of whom hold tenured university teaching positions. His many honors include being named a Fellow of the Royal Society of Edinburgh and elected as Member of the Norwegian Academy of Sciences and Letters, having been invited to give the Marlar Lecture at Rice University and the Arthur Lecture at Harvard University, and service as chair of PPARC's Astronomy Committee and co-chair of its Science Committee.

The Hale Prize is the Solar Physics Division's highest award and it given annually to a scientist for outstanding contributions to the field of solar astronomy over an extended period of time.

Priest will deliver the Hale Prize Lecture on Thursday morning, 6 June at the Albuquerque AAS/SPD meeting.

DIVISION NEWS
Continued on page 16



A lively bunch of dynamicists at the DDA Annual Spring Meeting at the Timberline Lodge at a high altitude on Mt. Hood, Oregon.

CALENDAR

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

A comprehensive list of world-wide astronomy meetings is maintained by Liz Bryson, Librarian C-F-H Telescope in collaboration with the Canadian Astronomy Data Centre, Victoria, BC. The list may be accessed and meeting information entered at <http://cadcwww.hia.nrc.ca/meetings>.

AAS and AAS Division Meetings

*Division for Planetary Sciences

6–11 October 2002 — Birmingham, AL

Contact: J. Hunter Waite (hunter@umich.edu)

201st Meeting of the AAS

5–9 January 2003 — Seattle, WA

Contact: AAS Executive Office (diana@aas.org)

*Division on Dynamical Astronomy

4–7 May 2003 — Ithaca, NY

Contact: Joe Burns (jab16@cornell.edu)

*202nd Meeting of the AAS

25–29 May 2003 — Nashville, TN

Contact: Arnie Heiser (heiser@astro.dyer.vanderbilt.edu)

Other Events

LISA IV: Library and Information Services in Astronomy

2–5 July 2002 — Prague, Czech Republic

Contact: Marek Wolf (lisa4@carolina.cz)

<http://lisa4.cuni.cz>

*Numerical Simulations in Astronomy 2002 (A Satellite Meeting of the IAU 8th Asian-Pacific Regional Meeting)

5–6 July 2002 — Tokyo, Japan

Contact: Kohji Tomisaka (nsa2002@cc.nao.ac.jp)

<http://www.cc.nao.ac.jp/nsa2002>

IAU Symp. 213: “Bioastronomy 2002: Life among the Stars”

8–12 July 2002 — Hamilton Island, Australia

Contact: Ray P. Norris (Ray.Norris@atnf.csiro.au)

Fourth eta Carinae Workshop: Reading the Legend

11–13 July 2002 — Mount Ranier Lodge, WA

Contact: Bruce Balick (balick@astro.washington.edu)

http://www.astro.washington.edu/balick/eta_conf

2002 Pacific Rim Conference on Stellar Astrophysics

11–17 July 2002 — Xi’an, China

Contact: Zhigang Li (lizg@ms.sxso.ac.cn)

<http://bohr.physics.hku.hk/~xian2002>

International Congress on Plasma Physics, ICPP 2002

15–19 July 2002 — Sydney, Australia

Contact: Iver Cairns (cairns@physics.usyd.edu.au)

<http://www.ise.canberra.edu.au/ICPP2002>

*5th International LISA Symposium

19–24 July 2002 — State College, PA

Contact: Lee Samuel Finn (LISALocal@Gravity.PSU.Edu)

<http://cgwp.gravity.psu.edu/lisa>

*Living with a Star Coordinated Data Analysis Workshop on Solar Energetic Particles: Solar and Geospace Connections

22–26 July 2002 — Lanham, MD

Contact: Nat Gopalswamy (gopals@fugee.gsfc.nasa.gov)

<http://cdaw.gsfc.nasa.gov/LWS/>

*3D Stellar Evolution Workshop

22–26 July 2002 — Livermore, CA

Contact: 3DStar@igpp.ucllnl.gov

<http://www.llnl.gov/urp/igpp/3DStar>

International Conference of Theoretical Physics

22–27 July 2002 — Paris, France

Contact: th2002@spht.saclay cea.fr

<http://www-spht cea.fr/th2002>

Active Galactic Nuclei: From Central Engine to Host Galaxy

23–27 July 2002 — Paris, France

Contact: Suzy Collin (suzy.collin@obspm.fr)

<http://www.obspm.fr/savoirs/seminaire/coll02/AGN02>

*Summer School on Adaptive Optics

3–9 August 2002 — Santa Cruz, CA

Contact: Paula Towle (cfao@ucolick.org)

<http://cfao.ucolick.org/aosummer/aosummer2002/index.shtml>

IAU Symp. 214: “High Energy Processes and Phenomena in Astrophysics”

5–10 August 2002 — Suzhou, China

Contact: Virginia Trimble (vtrimble@astro.umd.edu)

<http://cosmos.colorado.edu/IAU214>

Fundamentals of String Theory

5 August–8 September 2002 — Aspen, CO

Contact: Steven Gubser (ssgubser@theory.caltech.edu)

<http://andy.bu.edu/aspen/workshops02.html#string>

The IGM/Galaxy Connection: The Baryon Distribution at $z=0$

8–10 August 2002 — Boulder, CO

Contact: Jessica Rosenberg (jrosenbe@origins.colorado.edu)

<http://origins.colorado.edu/igm>

**“Gamma Ray Bursts Across the Spectrum”

8–10 August 2002 — Brevard, NC

Contact: Michael Castelaz (mcastelaz@pari.edu)

<http://www.pari.edu/gammaworkshop>

IAU-UNESCO 26th International School for Young Astronomers

12–30 August 2002 — San Juan, Argentina

Contact: Nidia Morrell (nidia@fcaglp.edu.ar)

<http://lilen.fcaglp.unlp.edu.ar/isya>

*2nd X-ray Astronomy School

18–22 August 2002 — Berkeley Springs, WV

Contact: Sandy Barnes (xrayschool@milkyway.gsfc.nasa.gov)

<http://xrayschool.gsfc.nasa.gov>

Chemistry as a Diagnostic of Star Formation

21–23 August 2002 — Waterloo, ONT, Canada

Contact: Michael Fich (fich@astro.uwaterloo.ca)

<http://astro.uwaterloo.ca/sfchem2002>

Astronomical Telescopes and Instrumentation–SPIE, USA

22–28 August 2002 — Waikoloa, HI

Contact: spie@spie.org

<http://spie.org/Conferences/calls/02/as>

11th UN/ESA Workshop on Basic Space Science

9–13 September 2002 — Cordoba, Argentina

Contact: Hans Haubold (haubold@kph.tuwien.ac.at)

<http://www.seas.columbia.edu/~ah297/un-esa>

Winds, Bubbles and Explosions: Honoring John Dyson
9–13 September 2002 — Patzcuaro, Michoacán, Mexico
Contact: Jane Arthur (bubbles@astrosmo.unam.mx)
<http://www.astrosmo.unam.mx/~bubbles>

CNO in the Universe
10–14 September 2002 — Saint-Luc (Valais), Switzerland
Contact: Daniel Schaerer (schaerer@ast.obs-mip.fr)
<http://obswww.unige.ch/cno>

Celestial Mechanics 2002
10–14 September 2002 — St. Petersburg, Russian Federation
Contact: N. V. Shuigina (nvf@quasar.ipa.nw.ru)

IAU Colloquium 189: “Astrophysical Tides: The Effects in the Solar and Exoplanetary Systems”
16–20 September 2002 — Nanjing, China
Contact: Yuchua Ma (yhma@mail.pmo.ac.cn)
<http://www.pmo.ac.cn/web/IAU189/1st-announcement.html>

COSMO-02: International Workshop on Particle Physics and the Early Universe
18–21 September 2002 — Chicago, IL
Contact: cosmo02@pancake.uchicago.edu
<http://pancake.uchicago.edu/~cosmo02>

International Meteor Conference 2002
26–29 September 2002 — Frombork, Poland
Contact: Ina Rendtel (treasurer@imo.net)
<http://www.imo.net/news/imc.html>

*Astronomical Society of the Pacific Annual Meeting: “The Cosmic Thread: From Stars to Life”
28–29 September 2002 — Berkeley, CA
Contact: Michael Bennett (mbennett@astrosociety.org)
<http://www.astrosociety.org>

CODATA Conf.: Frontiers of Scientific and Technical Data
29 September–3 October 2002 — Montreal, Canada
<http://www.codata.org>

Huntsville Workshop 2002: “Astrophysical Particle Acceleration in Geospace and Beyond”
6–10 October 2002 — Chattanooga, TN
Contact: Rob Preece (Rob.Preece@nsstc.nasa.gov)

13th Annual October Astrophysics Conference in Maryland: The Emergence of Cosmic Structure
7–9 October 2002 — College Park, MD
Contact: Susan Lehr (October@astro.umd.edu)
<http://www.astro.umd.edu/october>

*2002 Lowell Workshop: “Outer Edges of Dwarf Irregular Galaxies: Stars and Gas”
10–11 October 2002 — Flagstaff, AZ
Contact: Deidre Hunter (lowell02@lowell.edu)
<http://www.lowell.edu/Workshops/Lowell02>

Radio Astronomy at the Fringe
10–12 October 2002 — Green Bank, WV
Contact: J. Richard Fisher (rfisher@nrao.edu)

34th COSPAR Scientific Assembly/World Space Congress
10–19 October 2002 — Houston, TX
Contact: cospar@copernicus.org
<http://www.copernicus.org/COSPAR/COSPAR.html>

Astronomical Data Analysis Software and Systems (ADASS XII)
13–16 October 2002 — Baltimore, MD
Contact: Perry Greenfield (adass@stsci.edu)
<http://www.adass2002.stsci.edu>

*Annual Astronomy Conference of Mexico (Reunion Anual de Astronomía)
16–18 October 2002 — Guadalajara, Mexico
Contact: J. P. Phillips (jpp@udgserv.cencar.udg.mx)

*The 2002 HST Calibration Workshop
17–18 October 2002 — Baltimore, MD
Contact: Dixie Shipley (calworkshop@stsci.edu)
<http://www.stsci.edu/stsci/meeting/cal02>

Carnegie Obs. Centennial Symp. I: “Coevolution of Black Holes and Galaxies”
20–25 October 2002 — Pasadena, CA
Contact: Luis Ho (lho@ociw.edu)
<http://www.ociw.edu/ociw/symposia/symposium1>

International Dark Sky Association National Fall Meeting
25–26 October 2002 — Cambridge, MA
Contact: Dan Green (green@cfa.harvard.edu)
<http://cfa-www.harvard.edu/cfa/ps/nelpag/meetings.html>

*NAS Sackler Coll.: Challenges to the Standard Paradigm: Fundamental Physics and Cosmology
1–3 November 2002 — Irvine, CA
Contact: Miriam Glaser Heston (mheston@nas.edu)
<http://www.nationalacademies.org/nas/colloquia>

Galactic Center Workshop 2002
3–8 November 2002 — Kailua-Kona, HI
Contact: Thomas R. Geballe (tgeballe@gemini.edu)
http://www.gemini.edu/science/gc_conf

*IAU Symposium. 215: “Stellar Rotation”
11–15 November 2002 — Cancun, Mexico
Contact: André Maeder (andre.maeder@obs.unige.ch)
<http://cuevano.astro.ugto.mx/~eenens/iau215>

Carnegie Obs. Centennial Symp. II: “Measuring and Modeling the Universe”
17–22 November 2002 — Pasadena, CA
Contact: Wendy Freedman (wfreedman@ociw.edu)
<http://www.ociw.edu/ociw/symposia/symposium2>

*IAU Coll. 190: “Magnetic Cataclysmic Variables”
8–13 December 2002 — Cape Town, South Africa
Contact: Sonja Vrielmann (sonja@pinguin.ast.uct.ac.za)
<http://mensa.ast.uct.ac.za/mcv.html>

XXIst Texas Symposium on Relativistic Astrophysics
9–13 December 2002 — Florence, Italy
Contact: texas_florence@arcetri.astro.it
<http://www.arcetri.astro.it/~texaflor>

Neutrinos: Data Cosmos and Planck Scale
15 January–15 May 2003 — Santa Barbara, CA
Contact: David Gross (gross@itp.ucsb.edu)
<http://www.itp.ucsb.edu>

Carnegie Obs. Centennial Symp. III: “Clusters of Galaxies: Probes of Cosmological Structure and Galaxy Evolution”
26–31 January 2003 — Pasadena, CA
Contact: John Mulchaey (jmulchaey@ociw.edu)
<http://www.ociw.edu/ociw/symposia/symposium3>

Carnegie Obs. Centennial Symp. IV: “Origin and Evolution of the Elements”
16–21 February 2003 — Pasadena, CA
Contact: Andrew McWilliam (amcwilliam@ociw.edu)
<http://www.ociw.edu/ociw/symposia/symposium4>

DIVISION NEWS

Continued from page 13

High Energy Astrophysics

Division Meeting With APS DAP

Alice Harding, harding@twinkie.gsfc.nasa.gov, and Ilana Harrus, imh@lheapop.gsfc.nasa.gov. Photos by Ilana Harrus.

The High Energy Astrophysics Division 2002 Meeting took place in Albuquerque, NM jointly with the Division of Astrophysics (DAP) of the American Physical Society (APS) at the April APS Spring Meeting. Many other APS divisions participate in the Spring Meeting, including the Divisions of Particles and Fields, Nuclear Physics, Chemical Physics, Physics of Beams, Computational Physics, Plasma Physics and Atomic, Molecular and Optical Physics, as well as a number of APS forums and topical groups [including the Group on Plasma Astrophysics and the Group on Gravitation]. The typical attendance at the APS Spring meeting is around 800, much smaller than the APS March meeting, and with HEAD members adding about 300 more attendees, they constituted a significant presence.

Was the meeting a success? Everyone agreed that it was beneficial to exit the “ivory” tower of the High Energy Astrophysics community. The advantage of having a joint meeting of HEAD and APS is to allow some cross-fertilization between astronomers and physicists interested in similar subjects. This was facilitated by a number of joint sessions of HEAD with DAP and other APS divisions, and by more general plenary talks covering topics in high-energy physics, cosmology and astrophysics. Nature does not separate the sciences and lots of exciting results (neutrino, cosmic rays) which were announced at the meeting are at the interface between the two fields. Still, several HEAD members complained about the organization and the lack of HEAD related social events, not to mention the dread of having to socialize with physicists.

Having a joint meeting run by APS involved a number of compromises for us. The APS meeting runs over a weekend, while HEAD meetings run during the week. The well-organized poster sessions with morning and afternoon coffee breaks that are standard at regular HEAD meetings could not be duplicated at this meeting, given that APS meetings do not emphasize posters and do not normally even provide coffee for

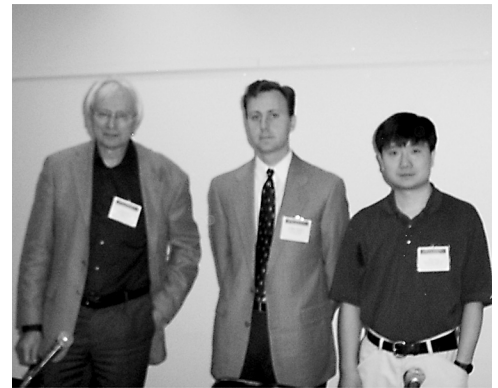
participants. We are grateful to **Virginia Trimble**, **GLAST** and the **Chandra Observatory Science Center** for their sponsorship of the morning coffee breaks at this meeting. Finally, the number of parallel sessions diluted attendance at oral talks that is usually much higher at the unparalleled oral sessions at regular HEAD meetings. These issues will definitely need to be addressed in organizing the next HEAD/DAP joint meeting.

Science Highlights

Despite the logistical and organizational problems, there was no lack of interesting science results presented at the meeting. Plenary sessions included talks by **Josh Frieman** (Fermilab), giving results from the Sloan Digital Sky Survey, **Bruce Remington** (LLNL) on High-Energy-Density Plasma Physics, with Applications to Astrophysics, **Raman Sundrum** (Johns Hopkins Univ) on The Cosmological Constant and Fundamental Physics, **Adrienne Cool** (SFSU), presenting Chandra results on High-Resolution Studies of Globular Clusters, **John Wilkerson** (SLAC) on Solving the Solar Neutrino Problem and **Cole Miller** (UM) on Medium-Sized Black Holes.

Talks in a session on Neutrino Oscillations, by **Andre S. Hamer** (LANL), **James Hill** (SUNY), **Bruce Berger** (LBNL) and **Concha Gonzalez-Garcia** (CERN) reviewed in more detail the recent evidence for neutrino oscillations seen by Sudbury Neutrino Observatory and Super-Kamiokande and how they have solved the 35 year old solar neutrino problem and their implications for particle physics.

A review session on High Energy and Ultra-High Energy Cosmic Rays highlighted the current controversies over whether the cosmic ray composition changes at the “knee” in talks by **John Wefel** (LSU) and **Jorg Hörandel** (Univ. of Karlsruhe). Talks by **Thomas Gaisser** (Bartol Research Institute, U. Delaware), **Masahiro Teshima** (Univ. Tokyo) and **Pierre Sokolsky** (Univ. Utah) focused on how many ultra-high



Press conference with (l. to r.) John Heiser (SRON), R. Marc Kippen (LANL), and Bing Zhang (Penn State) on X-ray flashes.

energy cosmic ray events are detected above the GZK limit in the spectrum.

Cosmology: **Alex Filippenko** (UC, Berkeley) in a session on “The New Cosmology,” reviewed the results from Supernova Type Ia and **Lloyd Knox** (UC, Davis) reviewed CMB anisotropies, both implying an accelerating universe and the presence of dark energy. **David Cline** (UCLA) discussed the theory and methods of detecting dark matter in the universe. **Charles Steidel** (Caltech) summarized the current observational picture of galaxy formation and the associated constraints on cosmological parameters.

Why is High Energy Astrophysics Important? **David Helfand** (Columbia University) gave an entertaining talk to a standing-room-only crowd to explain why high-energy astrophysics is so important. His musical audience cringed when he played Beethoven’s Ninth Symphony modified to include only the acoustic equivalent of the narrow optical range. Truth be told, “X-rays” alone didn’t sound too great either. Beethoven’s (and Helfand’s) message is clear: if you’re not using all the range of wavelengths, you’re missing some good music.

Gamma-ray Bursts: Among the results on Gamma-Ray Bursts, two interesting observations were reported and some tentative theories were presented. The first, reported in talks by **John Heiser** (SRON) and **Marc Kippen** (LANL), is the identification of X-ray flashes as another sub-type of transient events which resemble the traditional GRBs in many aspects except that the main energy output is in X-rays. Some theoretical speculations on the nature of these events were discussed by **Bing Zhang** (Penn State Univ.) and by **Charles Dermer** (NRL), who suggested that the



Press conference with (l. to r.) Todd Strohmayer (NASA-GSFC), Craig Markwardt (UMd-GSFC) and Deepto Chakrabarty (MIT) on millisecond pulsars.

X-ray flashes were dirty fireballs. The second is the identification of a sub-class of the close, “long lag” GRBs, discussed by **Jay Norris** (NASA/GSFC). Invited reviews were presented on the theoretical and observational investigations on GRBs. On the theoretical side, numerical simulations on the two leading progenitor models were presented: these are the collapsar model **Andrew McFadyen** (Caltech) which is the leading candidate of the long GRBs, and the merger model **Maximilian Ruffert** (Univ. Edinburgh) which may be responsible for the short GRBs.

Invited reviews: **Fiona Harrison** (Caltech) reviewed the current status of the GRB afterglow broadband observation campaign, and **Andrew Fruchter** (STSI) reviewed the properties of the host galaxies of the GRBs.

Thermonuclear X-ray Bursts: There were a number of new results on thermonuclear X-ray bursts from neutron stars. **Deepto Chakrabarty** (MIT) presented the discovery of coherent side-band pulsations during bursts, which are separate from, but track the frequency of, the main burst oscillation peak. This suggests the side-bands are related to emission from the neutron star surface. **Edward Brown** (Enrico Fermi Institute and U. Chicago) demonstrated that a layer of accreted Hydrogen can moderate the cooling of a neutron star heated by accretion. An invited session focused on “superbursts,” which are rare bursts of X-rays from neutron stars that last much longer and have a much higher fluence than typical thermonuclear bursts. **Erik Kuulkers** (SRON) showed the results of an extensive monitoring campaign of the galactic center with the BeppoSAX WFC. His collaboration has seen a number of long duration bursts. **Andrew Cumming** (UC Santa Cruz) demonstrated that these

bursts are likely to be the ignition of carbon ashes left over from previous Hydrogen or Helium burning on the neutron star.

High-mass X-ray Binaries: Among the results reported on high-mass X-ray binaries, **Colleen Wilson** (NASA/MSFC) suggested that the pulsar XTE J1946+274 has two outbursts per orbital cycle, which may be due to an accretion disk inclined to the orbital plane, an interpretation which may be confirmed by the optical H alpha profile. **Raymond White** (U. AL) presented Chandra results which suggest that a large number of X-ray binaries in elliptical galaxies are within globular clusters, and many are probably black hole systems.

Isolated Neutron Stars: A number of new results were presented on isolated neutrons stars, pulsars and supernova remnants. **Fred Walter** (SUNY) discussed his new measurements of the spectrum of the isolated neutron star RX J1856-3754, a source that was highlighted the week before in a NASA press conference and newspaper articles as possibly being a new type of extremely compact star made of strange quarks. Walter’s Chandra HRC/LETG measurement and new analysis of the spectrum as a two-component metallic H atmosphere plus power law gave a stellar radius of 15-20 km, that of a normal neutron star and much larger than the previously announced radius of 3.8-8.2 km. He also reported a possible pulsar period of 0.22 s. **Divas Sanwal** (Penn State Univ.) presented spectral results from Chandra ACIS of another isolated neutron star, 1E 1207.4-5209, showing a possible pair of lines at 0.73 and 1.4 keV. If confirmed, this would be the first, and long sought, detection of spectral lines from an isolated neutron star atmosphere.

Pulsars and Supernova Remnants at High Energies: The superior imaging capability of Chandra is revolutionizing our view of pulsar wind nebulae and the spinning-down pulsars that power them. A session on Pulsars and Supernova Remnants at High Energies featured talks by **Bryan**

Gaensler (CfA), reviewing the Chandra images of pulsar nebulae showing new details of the central rings, jets, trails and central point sources/pulsars; by **David Helfand** (Columbia Univ.), discussing whether the central sources in supernova remnants are really “radio-quiet;” by **Isabelle Grenier** (CEA-Saclay) reviewing the connections between the EGRET unidentified gamma-ray sources, pulsars and supernova remnants; and by **Jon Arons** (UC, Berkeley), discussing the theory behind it all.

Black Holes: Highlights of a session on black holes included talks by **Michel Van der Klis**, who reviewed QPO observations from accreting black holes and neutron stars noting correlated variations of all frequencies in power spectrum (QPO or breaks) with flux (increasing frequency with flux) for neutron stars. He also discussed observations of two high frequency QPOs (in frequency ratio 2:3) in BH candidates of frequencies which *do* not change with X-ray flux. **Jeff McClintock** (CfA) reviewed black hole mass determination in binary systems, indicating that the frequencies of the two BH systems at which the twin 2:3 ratio high frequency QPOs exist scale like $1/M$, as expected for the last stable orbit around a Schwarzschild black hole. **Rob Fender** (Univ. Amsterdam) reviewed the radio observations of accreting galactic binaries. There is strong indication that the radio emission is proportional to the X-ray flux across different objects and within variations of the same object.

Active Galaxies: Results on Active Galaxies included a report by **Dirk Petry** (Iowa State) of the discovery of the most distant TeV source to date, the BL Lac 1H146+428, the discovery of spectral variability in another TeV source Mrk 501 and variability at sub-hour timescales by **Deidre Horan** (SAO). An invited session on Extended X-Ray Jets and Radio Galaxies included talks by **Anne Werle** (Caltech/JPL) presenting radio VLBA observations of parsec-scale jets; by **Rita Sambruna** (George Mason Univ.) and **Daniel Schwartz** (SAO) describing Chandra observations of X-ray jets and **Paolo Coppi** (Yale Univ.) reviewing theoretical models for extended jet emission. Theoretical studies were also presented by **Charles Dermer** (NRL), who suggested a synchrotron model for the extended jet emission and a unified model in which the evolution from radio-loud to radio-quiet blazars is due to changes in accretion rate rather than changes in the black-hole spin.

Continued on the next page

DIVISION NEWS HIGH ENERGY ASTROPHYSICS

Continued from the previous page

Galaxy Clusters: A session on Galaxy Clusters featured talks by **John Carlstrom** (Univ. Chicago), discussing recent sensitive detections of the Sunyaev-Zeldovich effect, by **Joseph Mohr** (Univ. Illinois) and **Andrey Kravtsov** (Univ. Chicago) on galaxy cluster evolution and by **Alexey Vikhlinin** (CfA), presenting Chandra observations of "Cold Fronts."

Press activity: The retiring HEAD Press Officer **Lynn Cominsky** (Sonoma State Univ.) and the next HEAD Press Officer **Ilana Harrus** (USRA/GSFC) ran three press conferences during the meeting. **Elihu Boldt** (NASA's GSFC) and **Masahiro Teshima** (Univ. of Tokyo) presented their work on the possible origin of the Ultra High Energy Cosmic Rays (above 10^{20} eV). Boldt's work suggests that they may be produced in so-called "quasar remnants" in which the central black hole acts like a giant particle accelerator. The study uses measurements from the AGASA experiment to which Teshima belongs. The results of both studies await confirmation with larger statistics.

Craig Markwardt (UMd- GSFC) told of the discovery of a binary system in which the companion star is almost gone, destroyed by the neutron star. Dr Markwardt measured a mass of only about 1.4% that of the Sun and an orbital period of only 42 min. The complete system is so small that it could fit into half the volume of the Sun! X-ray flashes and their link to gamma-ray bursts were explored by **R. Marc Kippen** (LANL) and **John Heiser** (SRON). Both researchers confirm the definitive link between the two. Heiser presented the first image of an X-ray flash afterglow, identifying the host galaxy and confirming the overwhelming similarities between X-ray flashes and gamma-ray bursts.

Tod E. Strohmayer (NASA's GSFC) announced the first observational confirmation that X-ray burst oscillations are linked to the spin frequency of the neutron star. Strohmayer and his colleagues observed a "super-burst" which lasted for more than 3 hours, allowing them to detect the Doppler variation of the spin frequency.

2002 Schramm Award

The 2002 David N. Schramm Award for high-energy astrophysics science journalism was presented to **Robert Naeye** for his article published in the journal *California Wild*, entitled "Superman's Telescope: The Achievements of Chandra."

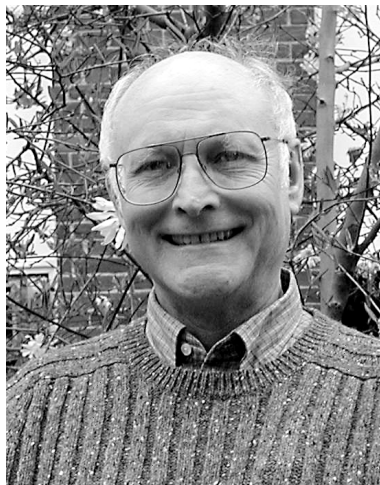


Schramm Award winner Robert Naeye (right) with HEAD Chair Josh Grindlay.

Naeye was presented with his award at a ceremony on Sunday evening.

Rossi to Van Speybroeck

Leon Van Speybroeck of the Harvard-Smithsonian Center for Astrophysics (CfA) won the 2002 Bruno Rossi Prize of the High Energy Astrophysics Division of the AAS, awarded annually to recognize significant recent contributions in the field. The citation for the award reads: "The 2002 Bruno Rossi prize is awarded to Leon Van Speybroeck for his singular contribution to high energy astrophysics leading to the exquisite image quality produced by the X-ray optics and telescope of the Chandra X-ray Observatory."



The HEAD 2002 Rossi Prize goes to Leon Van Speybroeck of the Harvard-Smithsonian Center for Astrophysics.

As telescope scientist for the Chandra, Van Speybroeck led the design and construction effort for the X-ray mirrors on the Observatory, as he has been responsible for designing precision X-ray optics during his entire career. For more than 20 years he has worked with scientists and engineers from the Harvard-Smithsonian Center, NASA's Marshall Space Flight Center, TRW, Inc., Hughes-Danbury (now B. F. Goodrich Aerospace), Optical Coating Laboratories, Inc. and Eastman-Kodak on all aspects of X-ray mirror design and assembly.

Van Speybroeck graduated from Massachusetts Institute of Technology with a thesis in high energy physics. He then joined the American Science and Engineering's X-ray astronomy group designing X-ray mirrors for NASA's Skylab. After moving to the CfA, he began by working on the predecessor to the Chandra, the Einstein X-ray Observatory.

Planetary Sciences

Annual Meeting Moves To Birmingham, Alabama

The October DPS Annual Meeting has experienced a location change, though the dates remain the same. The meeting will be held in **Birmingham, AL** during **6-11 October 2002**. Consult <http://www.aas.org/~dps/> for details and contact LOC Chair **Hunter Waite** (hunter@umich.edu) about the program.

Grün Wins 2002 Kuiper

The Division awards the 2002 Gerard P. Kuiper Prize for outstanding contributions to the field of planetary science to **Eberhard Grün** of the Max-Planck-Institut für Kernphysik in Heidelberg, Germany and at the University of Hawai'i's Institute of Geophysics and Planetology. Grün is a leading expert in the study of dust in the solar system and has spearheaded its *in-situ* exploration for decades. He is recognized for the discovery of interstellar grains passing through the solar system; the discovery of Jovian dust streams in interplanetary space; and major insights into the time evolution of the meteoritic complex by combining impact micro-crater data from lunar rocks, spacecraft meteoroid penetration and impact ionization data and photographic and radar meteor data.

Grün received his doctorate at the University of Heidelberg in 1970 and continued there to become lecturer and senior scientist and leader of the cosmic dust group. He has been a visiting researcher at the Goddard Space Flight Center, Ames Research Center, JPL, and at the Lunar and Planetary Institute in Houston. He has been Principal Investigator for dust experiments aboard Helios 1, Helios 2, Galileo, Ulysses, Cassini, and Nozomi, and provided sensors for Giotto. In 2000, Grün was elected a Fellow of the American Geophysical Union. Minor Planet 1981 EY20 was designated 4240 Grün in honor of his spacecraft measurements of interplanetary dust.

Hammel Wins 2002 Sagan Medal

The DPS awards the 2002 Carl Sagan Medal for Excellence in Public Communication in Planetary Science to **Heidi B. Hammel**, a Senior Research Scientist with the Space Science Institute. Hammel's dedication to communicating the excitement of planetary science is evident in the large number of lectures to children and the general public that have complemented her scientific career. She has a talent for understandable, and enthusiastic descriptions of scientific results.

Hammel achieved national prominence in her outstanding communications during the Shoemaker-Levy 9 impact into Jupiter in 1994, when she tirelessly served as the spokesperson for all planetary scientists involved in that event. Her ability to communicate scientific ideas in plain language with infectious energy gives the public a personal look at the excitement of our field.

Hammel received her undergraduate degree in Earth and Planetary Science from MIT in 1982 and her PhD in Physics and Astronomy from the University of Hawai'i in 1988. After a postdoctoral position at the Jet Propulsion Laboratory, she returned to MIT, where she spent nearly nine years as a Principal Research Scientist in the Department of Earth, Atmospheric, and Planetary Sciences.

In 1996, Hammel won the DPS Harold C. Urey Prize and in 2002 she was elected a Fellow of the American Association for the Advancement of Science. She has won public outreach awards such as the ASP's 1995 Klumpke-Roberts Award; the 1996 Spirit of American Women National Award for encouraging young women to follow non-traditional career paths; and in 1998, the Exploratorium's Public Understanding of



Eberhard Grün of the Max-Planck-Institut für Kernphysik and the University of Hawai'i's Institute of Geophysics and Planetology is this year's Kuiper winner for his work on dust in the solar system.



Heidi B. Hammel of the Space Science Institute has won the 2002 DPS Carl Sagan Medal for Excellence in Public Communication in Planetary Science.



The 2002 Urey Prize for outstanding planetary science by a young scientist goes to Brett J. Gladman.

Science Award. Minor Planet 1981 EC20 was been renamed "3530 Hammel" in her honor.

Gladman Is Urey Prize Winner

The 2002 Harold C. Urey Prize for outstanding achievement in planetary research by a young scientist is awarded to **Brett J. Gladman**. Gladman, is recognized for his studies of orbital evolution combining numerical and analytical results to elucidate the dynamical structure of the solar system; his extensive simulations of the orbital evolution of meteorites from the Moon, Mars, and the main asteroid belt have fundamentally altered our understanding of the delivery paths of these objects. His observational work using CCD cameras on large telescopes to explore the outer solar system has led to the discovery of 5 Uranian and 11 Saturnian satellites, and several dozen Trans-Neptunian Objects.

Gladman received a Master of Science in Physics and Astronomy from Queen's University in 1990, a Master of Science in Astronomy from Cornell University in 1998 where he also received his PhD in astronomy and theoretical and applied mechanics in 1996. He became an Henri Poincaré Fellow at the CNRS Observatoire de la Côte d'Azur in Nice, France, in 1996, then an NSERC fellow at the Canadian Institute for Theoretical Astrophysics in 1997, and returned to the Observatoire de la Côte d'Azur in 1998 as a Chateaubriand International fellow, joining the staff of the observatory as a CNRS research astronomer in 1999.

Gladman has been the recipient of several prizes and honors including the designation of Minor Planet 7638 Gladman in 1999, a collaborative AAS Henri Chrétien International Research Grant in 1998, and the Eleanor York Prize for public service in astronomy by Cornell University in 1996.

DPS Prize Nominations Due

The deadline for nominating for all four Division prizes, Masursky, Kuiper, Urey and the Sagan Medal, is **30 June 2002**. See http://www.aas.org/~dps/prizes_contact.html for complete information about the prizes and past recipients. Fill out the nomination form and with the supporting materials required send it in to **Mark Sykes**, Current DPS Prize Subcommittee Chair, University of Arizona, Steward Observatory, Tucson, AZ 85721 (sykes@as.arizona.edu) to be received no later than the deadline.

HONORED ELSEWHERE

Kalogera Wins 2002 Cannon

Vassiliki (Vicky) Kalogera of Northwestern University has won the 2002 Annie Jump Cannon Award of the American Association of University Women. She won with a research proposal entitled "X-ray Binary Populations in Nearby Galaxies," in which she describes a comprehensive theoretical study of X-ray binary formation and evolution in different galactic environments. Some of the goals are to compare the theoretical results to the recent Chandra observations of point X-ray sources in nearby galaxies and to examine the physical origin of the main observational characteristics of these populations (e.g., luminosity functions and spatial distributions). In addition to her research in X-ray astrophysics, she also works on problems related to compact objects as gravitational-wave sources and their anticipated detection in the coming decade.

Kalogera, a Greek citizen, received a PhD from the University of Illinois at Urbana-Champaign in 1997 for a thesis entitled 'The Formation of Low-Mass X-ray Binaries.' Her thesis advisor was Ronald F. Webbink. She earned a BS in Physics in 1992 at the University of Thessaloniki, Greece, where she studied with John H. Seiradakis. While an undergraduate she also worked with Jan van Paradijs at the University of Amsterdam.

Currently an assistant professor in the Department of Physics and Astronomy at Northwestern University, Kalogera has also been a Center for Astrophysics Postdoctoral Fellow (1997-2000) and a Clay Fellow (2000-2001) at the Smithsonian Astrophysical Observatory. She has external support from the NSF for her work on sources of gravitational waves and she is Co-Principal Investigator on three grants utilizing the Chandra Telescope. She plans to use her Cannon Award as seed money in her research and to support her collaboration with Chandra observers.

Melott Wins APS Award

Adrian Melott, a professor at the University of Kansas has received the APS's Joseph A. Burton Froum Award "for his efforts in helping restore evolution and cosmology to their proper place in the K-12 scientific curriculum."



Vicky Kalogera of Northwestern University wins the 2002 Cannon Award for studies of X-ray binaries in nearby galaxies.

Five Elected To the Academy

The National Academy of Sciences has announced the election of five AAS members to their ranks; they are

- **John E. Carlstrom**, Subrahmanyan Chandrasekhar Distinguished Service Professor, Department of Astronomy and Astrophysics, University of Chicago;
- **Geoffrey W. Marcy**, director, Center for Integrative Planetary Science, and professor, department of astronomy, University of California, Berkeley;
- **Saul Perlmutter**, senior scientist, E.O. Lawrence Berkeley National Laboratory, Berkeley, Calif.;
- **Gerald Schubert**, professor of geophysics and planetary sciences, University of California, Los Angeles; and
- **Scott D. Tremaine**, professor, department of astrophysical sciences, Princeton University.

Gammie Awarded PECASE

Charles F. Gammie, of the University of Illinois at Urbana-Champaign, was honored with the 2001 Presidential Early Career Award for Scientists and Engineers. He is being recognized for his work in the astrophysics of accretion flows around black holes and the development of web-based demonstration and modeling tools

to enhance astronomy and physics instruction. He was nominated by the NSF.

HESSI Renamed for Ramaty

NASA has formally approved the renaming of HESSI to the **Reuven Ramaty** High Energy Solar Spectroscopic Imager. The renaming is in recognition of the enormous contribution that Ramaty made to gamma-ray astronomy in general and to the HESSI program in particular. Reuven died in 2001 after a long and distinguished career in the Laboratory for High Energy Astrophysics at Goddard Space Flight Center. He was a pioneer in the field of solar flare physics, gamma-ray astronomy, and cosmic rays. He is perhaps best known for his work on solar flares, where he used gamma-ray-line and neutron measurements to determine the properties of flare-accelerated particles.

Pipher Wins Anthony Award

Judith Pipher, professor of astronomy in the Department of Physics and Astronomy at the University of Rochester has been named the recipient of the Susan B. Anthony Lifetime Achievement Award. The award is presented annually to a University of Rochester alumna, trustee, faculty member, or administrator who demonstrates leadership qualities, personal and professional success and who has served as a role model for other women. Pipher is known for her work developing with her colleagues the infrared detectors being used in NASA's Space Infrared Telescope Facility and for the NASA Next-Generation Space Telescope.

Herzberg Memorial Prize To GuhaThakurta

Puragra GuhaThakurta, associate professor of astronomy and astrophysics at the University of California, Santa Cruz, has been awarded the 2001 Herzberg Memorial Prize and Fellowship. The award is bestowed by the National Research Council of Canada and recognizes his influential work in a number of areas including interstellar dust, dark matter, planets, supernovae and globular star clusters. Currently he is tracking individual stars in the Andromeda galaxy with the Keck Telescope and analyzing them spectrographically to try to uncover how galaxies formed.

Guggenheim Fellowship to Loeb

Harvard University astronomy professor, **Abraham (Avi) Loeb**, has won a John Simone Guggenheim Memorial Foundation

Fellowship for 2002. Loeb proposes to study the earliest stars and black holes.

Wolszczan On Polish Postage

Alexander Wolszczan, Evan Pugh Professor of Astronomy and Astrophysics at The Pennsylvania State University is depicted on a Polish postage stamp along with N. Copernicus and the Arcibo Telescope. Wolszczan is known for having made the first discoveries of planets outside our solar system. The stamp with Wolszczan's likeness is one of a series entitled "Polish Millennium," and summarizes the last thousand years of life in Poland. Also included in the series is Pope John Paul II and Lech Walesa.

Impey, NSF Teaching Award

The National Science Foundation has awarded **Christopher Impey**, University of Arizona Distinguished Professor of astronomy, the Director's Award for Distinguished Teaching Scholars. The award is NSF's highest honor for excellence in research and teaching. Six University teachers nation-wide were selected for this award this year. Each will receive a \$300,000 award for four years; Impey will apply the award to the development of new instructional technologies for teaching astronomy to non-science majors. Impey joined the University of Arizona Steward Observatory and astronomy department in 1986; he received a doctorate in astronomy in 1981 from the University of Edinburgh.

ASP NEWS

Michael Bennett, Executive Director,
mbennett@astrosociety.org

2002 ASP Award Winners

The Astronomical Society of the Pacific (ASP) is delighted to announce the recipients of our awards for 2002:

- Catherine Wolfe Bruce Gold Medal, awarded for a lifetime of outstanding research in astronomy to Princeton University Observatory's **Bohdan Paczynski**;

- Klumpke-Roberts Award, for outstanding contributions to the public understanding and appreciation of astronomy, jointly awarded to astronomical artists **Don Davis** and **Jon Lomberg**;

- Thomas J. Brennan Award, for excellence in the teaching of astronomy at the high school level in North America: **Philip M. Sadler**, Harvard-Smithsonian Center for Astrophysics;



Bohdan Paczynski, Princeton University Observatory, has won the APS's highest honor, the Catherine Wolfe Bruce Gold Medal for lifetime achievement in astronomical research.

- Robert J. Trumpler Award, to a recent recipient of a PhD degree in North America whose research is considered unusually important to astronomy: **Volker Bromm**, PhD, Yale University, 2000.
- Maria and Eric Muhlmann Award, for recent innovative advances in astronomical instrumentation, software, or observational infrastructure: **Francois Roddier**, Institute for Astronomy, University of Hawai'i;
- Las Cumbres Amateur Outreach Award, for outstanding educational outreach by an amateur astronomer: **Dean Ketelsen**, Tucson, Arizona.

Complete information about the awards and the winners will appear in the July/August issue of *Mercury*. The awards will be presented on 29 September 2002, at the Society's annual meeting.

ASP's Annual Meeting: 28–29 September 2002

The 114th Annual Meeting of the ASP will be held 28–29 September in the San Francisco Bay area. On Saturday, September 28, the ASP will co-host a star party and a free public lecture by noted author and comet-hunter **David Levy**. The Sunday event will be a day-long public lecture series on the UC, Berkeley campus entitled "The Cosmic Thread: From Stars to Life," with talks by **Geoff Marcy**,

Alex Filippenko, Chris McKay, David Morrison, Jill Tarter, Chris Impey, Ben Zuckerman, and Seth Shostak. The annual Society awards banquet will feature noted author **Timothy Ferris**. See <http://www.astrosociety.org/events/meeting.html> for complete information.

**WASHINGTON NEWS:
Congressional Visits Day**
Continued from page 28

Congressional Visits 2002



On 5–6 March more than 200 scientists descended on Washington to participate in the 7th annual Science, Engineering and Technology Workgroup's

Congressional Visits Day. This two day event combines briefings by members of the Executive Branch with a full day of Congressional Office Visits. This year the AAS was represented by six members of the Committee on Astronomy and Public Policy and six early-career AAS members, nominated by committee or council members. The participants were **Harold Reitsema, Paul Vanden Bout, Chris DePree, Rachel Akeson, Joseph Alexander, Deborah Haarsma, Saavik Ford, Jonathan Williams, Jon Morse, Jason Rhodes, Lauren Davis** and former AAS President, **Bob Gehrz**.

After meeting with representatives of NSF and NASA on the morning of the first day of the event, the AAS team attended a briefing by senior Executive Branch representatives, which included Dr. **Rita Colwell**, Director of NSF. The following day was filled with office visits on Capitol Hill.

The AAS crew carried a broad message of support for the sciences and a specific message of support for astronomy to twelve Senators and fifteen Representatives. The overall support for science on the Hill is strong, but knowledge of the astronomy community's priority setting "Decadal Survey" was minimal. Each office received a copy of a new brochure describing the AAS and a summary of the "Decadal Survey" along with a brief discussion of its importance to our community. Several offices have followed up with the AAS executive office to request more information or to inquire about particular issues.

If you are an early-career astronomer and would like to participate in next year's event, please send an email to a member of the CAPP, Council or directly to Kevin Marvel (marvel@aas.org) for consideration.

NEWS FROM CANADA

Gilles Fontaine, Chair, CASCA Awards Committee,
fontaine@astro.umontreal.ca

Landstreet Receives 2002 Beals Award

Professor **John D. Landstreet**, of the University of Western Ontario, is the recipient of the Canadian Astronomical Society (CASCA) Carlyle S. Beals Award, presented to a Canadian astronomer, or an astronomer working in Canada, in recognition of outstanding achievement in research, either as a specific achievement or as a lifetime of innovative research.

Born in Philadelphia, Landstreet earned a PhD in 1966 from Columbia University with a dissertation supervised by L. Woltjer on theoretical neutrino astrophysics. He became interested in stellar magnetism as a postdoctoral fellow at Columbia, and, with the help of his collaborator, Roger Angel, he built the first astronomical photoelectric polarimeter which led, among other things, to the discovery of the first magnetic white dwarf. In 1970, he joined the faculty of the Astronomy Department of the University of Western Ontario and became a full Professor in 1976.

Thommes Awarded the Plaskett Medal

Edward W. Thommes is the recipient of the 2002 Plaskett Medal of the Royal Astronomical Society of Canada and the Canadian Astronomical Society. The award, consisting of a gold medal, is made annually to the PhD graduate from a Canadian university who is judged to have submitted the most outstanding doctoral thesis in astronomy or astrophysics in the preceding two calendar years. Thommes wrote a doctoral dissertation entitled "On the Formation of Uranus and Neptune."

Thommes left his mark as an outstanding graduate student in the Department of Physics and Astronomy at Queen's University. He was recognized with prestigious Natural Sciences and Engineering Research Council of Canada postgraduate scholarships that he received throughout his graduate career. Thommes currently is Postdoctoral Fellow in the Astronomy Department of the University of California at Berkeley.

NEWS FROM NSF

Eileen Friel, NSF Division of Astronomical Sciences, efriel@nsf.gov

HELP WANTED: Program Directors

The Astronomy Division needs reviewers with expertise to evaluate proposals for funding. The Division also needs scientists to manage its grants programs and the national facilities. Without these experts, proposals cannot be reviewed and granted and national facilities run the risk of not operating smoothly. But the Division has been operating with unfilled positions for several years, and more positions will become vacant, as those on temporary positions return to their home institutions.

Currently vacant are positions for Program Director of the *Extragalactic Astronomy and Cosmology* program; and Program Managers for the *International Gemini Observatory*, and the *National Radio Astronomy Observatory* and the *Advanced Technologies and Instrumentation* Program.

The National Science Foundation (NSF) makes every effort to ensure that taking these positions results in no personal financial loss, by making salary adjustments for cost of living differences and providing for relocation expenses. Most positions can be filled either on a temporary basis (for one to three years) or on a permanent basis. NSF encourages scientists to continue independent research and makes funds available for regular visits to home institutions and research-related travel.

Arrangements can be made to carry out a significant amount of work off-site after having acquired some experience at NSF.

We need the help of the AAS membership to bring outstanding scientists in our community to the NSF. Please consider these opportunities and encourage qualified individuals to apply. Contact Wayne Van Citters (gvancitt@nsf.gov, 703-292-4908) or Eileen Friel (efriel@nsf.gov, 703-292-4895) for more information.

Advice to PI's in Preparing Proposals

The *Grant Proposal Guide (GPG)* is the primary reference for instructions on preparing a proposal. The URL for the *GPG* is <http://www.nsf.gov/pubs/2002/nsf022/start.html>. In preparing a proposal please keep these items in mind:

AAS MEMBER-ONLY WEBSITE

The AAS has recently instituted a Members Only Website to provide the following new services not available to the general public:

- View your member record, including member class, dues status, expiration date, all addresses on file with the AAS, Division Memberships, Journal Subscriptions, etc.;
- Register for various AAS and Division meetings;
- Pay dues securely online (coming Fall 2002); and
- Search the Online Member Directory.

You *must* log in before using these ECommerce features.

Logging In: Several weeks ago, members with a valid email address registered with the AAS received an email with a username and password and the following log in procedures:

Go to <http://www.aas.org>

Follow the Members Only link

Login ID: *replace with username provided*

Password: *replace with password provided*

To log in for the first time, you must use the username and password sent to you by the AAS. To change these after your first log in, select the "Change User Name & Password" option appearing in the Profile Information box on the side bar. Enter the new username and/or password and push the Submit button.

If at any time you forget your username or password, or never received the email notification containing these, select the [Email My Password] option appearing on the Log In Page. The email address entered must match the address in our database. If not, you will receive an error message. To resolve this, contact us at 202-328-2010 or use the Online Change of Address Form, <http://www.aas.org/forms/coa.html> to update your current email address. It may take up to three (3) business days to install this new information in our database.

Please *do not share* your access words with colleagues and *please log out* when you have finished in this area of the database. We would appreciate your comments and suggestions sent to webmaster@aas.org as we refine this site.

- There are two principal criteria on which proposals are evaluated:
 1. The intellectual merit of the proposed activity; and
 2. The broader impacts of the proposed activity.
 These are explained in more detail in Chapter III of the *GPG*.
- Pay attention to the proposal preparation instructions in Chapter II of the *GPG*.
- Pay particular attention to *GPG* section II.C.5.e “Collaborators & Other Affiliations.” Follow the definition of a collaborator. It includes co-authors on papers, current collaborations, and future collaborations for which definite plans have been made. Make the list complete. Do not omit names that might appear elsewhere in listings of publications.
- We encourage PIs to suggest reviewers and those who should not review the proposal. Suggested reviewers should not be collaborators.

We do have the authority to return a proposal without review if it does not conform to proposal preparation requirements.

Research Opportunities Awards and Research at Undergraduate Institutions

Many researchers at undergraduate institutions are aware of the NSF Research in Undergraduate Institutions (RUI) program, but perhaps are not aware of a complementary program, the *Research Opportunity Awards (ROA)* (NSF00-144, <http://www.nsf.gov/pubs/2000/nsf00144/nsf00144.htm>). The goals of the RUI/ROA Program are to support high-quality research by faculty members at predominantly undergraduate institutions, to strengthen the research environment in academic departments that are oriented primarily toward undergraduate instruction, and to promote the integration of research and education. The involvement of undergraduate students is an important feature of RUI, but the overriding purpose of RUI/ROA is *the support of faculty research*.

We rarely receive a request for an ROA supplement, and receive relatively few RUI proposals, so we would like to encourage undergraduate faculty to consider the program as a potential source of funding for their research programs. Please contact Dr. Kathy Eastwood (703-292-4910, keastwoo@nsf.gov) or Dr. Eileen Friel (703-292-4895, efriel@nsf.gov) for complete information.

Research Opportunity Awards (ROA) enable faculty members at predominantly undergraduate institutions to pursue research as visiting scientists with NSF-supported investigators at other institutions. ROAs are usually funded as supplements to ongoing NSF research grants, and are submitted by the host institution. An ROA is intended to increase the visitor’s research capability and effectiveness, to improve research and teaching at his or her home institution, and to enhance the NSF-funded research of the host principal investigator (PI). ROA activities are usually summer experiences, but partial support of sabbaticals is sometimes provided.

AST’s Committee of Visitors

Every three years, the Astronomy Division is reviewed by an external committee charged with evaluating and assessing the Division. NSF relies on the judgment of this Committee of Visitors to maintain high standards of program management, to provide advice for continuous improvement of NSF performance, and to ensure openness to the research and education community. The Committee spent 3 days reviewing the Division in early April. Their report will be made public in late May and will be posted on the AST web site at <http://www.nsf.gov/mps/ast/start.htm>.

Astronomy and Astrophysics Postdoctoral Fellows

NSF AST is pleased to announce the 2002 NSF Astronomy and Astrophysics Postdoctoral Fellows:

Philip Arras, Institute for Theoretical Physics, UC Santa Barbara, for “Tidal Interactions in Stars and Planets;”

Chris Conselice, California Institute of Technology, for “Measuring the Merger History of Galaxies;”

Eric Gawiser, Yale University, for “A Square-Degree Survey for Galaxies at $z=3-5$;”

Anthony Gonzalez, University of Florida, for “Galaxy Clusters and the Growth of Structure at $z=1-2$;”

Sera Markoff, Massachusetts Institute of Technology, for “All Jets Great and Small: Understanding the Role of Outflows in the Broadband Spectra of XRBs and LLAGN;”

Jon Miller, Harvard-Smithsonian Center for Astrophysics; for “Expanding the Universe: A Study of Black Hole Accretion;”

Andy Sheinis, UC Santa Cruz/CfAO, for “MEMS Devices and Astronomical Spectroscopy;” and

Aparna Venkatesan, University of Colorado, for “The First Stars in the Universe: An Integrated Program of Cosmological Research and Education.”

These fellowships provide an opportunity for highly qualified young investigators within three years of obtaining their PhD to carry out an integrated program of independent research and education for a period of up to three years at the institution or national facility of their choice.

AST Deadlines for FY2003

Grant opportunities in FY2003 have the following deadlines:

- **25 July 2002:** CAREER (MPS) - Faculty Early Career Development Program (*NB: The eligibility requirements for CAREER have changed from previous years. See the Program Announcement NSF 02-111.*)
- **2 September 2002:** Advanced Technologies and Instrumentation (ATI)
- **15 September 2002:** Research Experiences for Undergraduates (REU) Sites
- **Anytime:** REU Supplements
- **9 October 2002:** NSF Astronomy and Astrophysics Postdoctoral Fellowship Program (AAPF)
- **15 November 2002:** Astronomy & Astrophysics Research Grants, including proposals for Research in Undergraduate Institutions. Proposals for research in all areas of astronomy, from planetary to cosmology, should be submitted to this program.
- **15 January 2003:** Under-represented Minorities Programs: Research Planning Grants (RPG); Career Advancement Awards (CAA)

ASTRONOMY IN MEXICO

Professional Astronomy in Mexico Today

This contribution was prepared by the Organizing Committee of the Annual Meetings of Astronomy (Comité Organizador de la Reunión Anual de Astronomía), CORAA:

- Dr. John Peter Phillips, IoA, U. Guadalajara (current President, (jpp@cencar.udg.mx);
- Dr. Salvador Curiel, IA-UNAM, Mexico City (scuriel@astroscu.unam.mx);
- Dr. Marco Moreno, OAN-SPM, Ensenada (mam@bufadora.astrosen.unam.mx);
- Dr. Luis Felipe Rodríguez, IA-UNAM, Morelia (luisfr@astrosmo.unam.mx);
- Dr. Alberto Carramiñana, INAOE, Tonantzintla (alberto@inaoep.mx);
- Dr. Heinz Andernach, DAUG, Guanajuato (heinz@astro.ugto.mx);
- Dr. Antonio Sánchez-Ibarra, U. Sonora, Hermosillo (asanchez@cosmos.astro.uson.mx); and
- Dr. Pedro Valdés Sada, U. de Monterrey (pvaldes@udem.edu.mx).

Originally conducted at only two universities, Mexican astronomical research has expanded to other universities and is now conducted at eight sites:

The Observatorio Astronómico Nacional (OAN)/ Institute of Astronomy (IA-UNAM) was founded in 1878 and has been part of the National University of Mexico (UNAM) since 1929. In 1967 the name was changed to the Institute of Astronomy of the National University of Mexico (IA-UNAM). The IA-UNAM has research facilities at Mexico City, Morelia (Michoacán) and Ensenada (Baja California), as well as observatories at San Pedro Mártir (Baja California) and Tonantzintla (Puebla) with a total of about 85 scientists and 60 supporting staff. They work in different areas of research, including star formation, the interstellar medium, stellar astrophysics, galactic structure and stellar dynamics, extragalactic astrophysics and astronomical instrumentation.

- *Mexico City facilities:* IA-UNAM has a PhD program with about 40 students, and has housed the editorial offices of *Revista Mexicana de Astronomía y Astrofísica (RMxAA)* since it started in 1974. Researchers at the IA-UNAM are engaged in the design of an *optical/infrared new technology telescope (TIM)*, and are also participating in the *Gran Telescopio de Canarias (GRANTECAN)*, a 10m optical telescope which is being built in the Canary Islands (Spain). See <http://www.astroscu.unam.mx> for further information.
- *Baja California facilities:* The infrastructure and operations of the *Observatorio San Pedro Mártir (OAN-SPM)* are maintained by personnel of the IA-UNAM in Ensenada (Baja California). Here 25 astronomers work in the fields of stellar formation and evolution, the interstellar medium, stellar astronomy, galactic and extragalactic astronomy and astronomical instrumentation. The Observatorio SPM is located at a remote site on Sierra San Pedro Mártir (Baja California) 2840m above sea level. It started to operate regularly in 1971, but was officially inaugurated in 1979. It has telescopes with diameters of 0.84m, 1.5m and 2.1m, equipped with a variety of detectors such as spectrographs, photometers, cameras and interferometers. For more information visit <http://bufadora.astrosen.unam.mx>.
- *Morelia (Michoacán) facilities:* Since 1995 a group of astronomers of IA-UNAM, now totaling 19, established itself in Morelia. Their main research areas are star formation and the interstellar medium. This group will soon become a new independent UNAM Center. They are involved in projects such as the *Expanded Very Large Array (EVLA)* and the *Atacama Large Millimeter Array (ALMA)*, and also participate in the astronomy graduate program of UNAM (see <http://www.astrosmo.unam.mx>).

The Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE) was established at Tonantzintla (Puebla) in 1971, and has grown to a staff of close to 100 researchers in astrophysics, optics, electronics and computer science. INAOE also operates a 2.1m reflector at the *Observatorio Astrofísico Guillermo Haro*, located in Cananea (Sonora). In addition, it is fully engaged with the University of Massachusetts at Amherst in the construction of the *Large Millimeter Telescope (LMT)*, on Sierra Negra, a volcanic peak in the state of Puebla, Mexico, at an altitude of 4580m. The concrete foundation of the 50m antenna is now finished, and the 650 ton steel alidade has been built and is being assembled at the site. For more information on INAOE and the LMT visit <http://www.inaoep.mx> and <http://www.lmtgm.org>.

The Departamento de Astronomía (DAUG), Universidad de Guanajuato (UG) was founded in 1994. Currently with eight astronomers, the main research areas are hot, massive and active stars, star formation, individual and interacting galaxies, starburst and active galaxies, clusters of galaxies, and the large-scale structure of the Universe. The staff participates in undergraduate teaching within the physics program of the UG, and plans to establish a postgraduate program in astrophysics. It maintains the *Observatorio La Luz* (at 2405m) equipped with an 0.57m optical reflector. This is used for public outreach purposes, and is also being prepared as a student laboratory (see <http://www.astro.ugto.mx>).

Institute of Astronomy and Meteorology, University of Guadalajara, has an astronomy group that commenced astrophysical research as recently as 1997. The group currently has five members who work in the areas of astrophysical jets, planetary nebulae, the abundances of elements in the interstellar medium, intergalactic material, and the design of optical systems. It provides public outreach programs, and is also developing education software with emphasis on computer animation of dynamical systems (galaxies, planetary nebulae, star clusters, etc.). An *observatory* with an 0.60m reflector is being developed at Cuxpala for both student training and longer term observational research programs (For more information, see <http://www.astro.iam.udg.mx>).

“The Astronomy Area / DIF-US,” Universidad de Sonora at Hermosillo began its work in 1990 in the fields of solar and extragalactic astronomy. It operates the *Estación de Observación Solar (EOS)*, and the solar-stellar *Observatory Carl Sagan*. The staff includes four professional astronomers (see <http://cosmos.astro.uson.mx>).

Universidad de Monterrey Observatory has a program for minor planet astrometry and photometry that started in 1997. One astronomer works there in the field of planetary science.

Meetings of Mexican Astronomers

The annual meetings of Mexican astronomers were originally held at the UNAM, and then in 1998, extended to four further universities. It has been decided, most recently, to rotate future meetings among the eight venues mentioned above. This year's meeting will be held **16–18 October 2002**, at the University of Guadalajara (contact jpp@udgserv.cencar.udg.mx). Around 100 participants are expected, including students from all over the country. Presentations and activities will be in Spanish, although English is accepted as well, and visitors from overseas are warmly invited to attend.

ANNOUNCEMENTS

Turner's Committee Report Available Soon

The National Academy of Sciences (NAS) National Research Council (NRC) Board on Physics and Astronomy's Committee on the Physics of the Universe, chaired by Michael S. Turner (Univ. Chicago) will be available from the National Academy Press shortly. The report "maps out a new cross-disciplinary, interagency research strategy for physics and astronomy to answer about the cosmos in the coming decades" and the report finds that "a new class of large, wide-field telescopes would allow scientists to explore" the "dark energy" that accounts for much of the matter and energy in the universe. Copies of "Connecting Quarks with the Cosmos: Eleven Science Questions for the New Century," may be ordered at <http://www.nap.edu>.

Letter to NSO Users

With the advent of solar adaptive optics, the National Solar Observatory (NSO) Dunn Solar Telescope (DST) has become significantly oversubscribed. The opportunity to obtain diffraction limited images and to do high spatial resolution spectroscopy and polarimetry have created a strong demand for observing time. Unfortunately, many hours of good seeing are lost at the DST due to the fact that each PI generally changes the observing set-up and most of the set-ups have become quite involved, especially those taking advantage of adaptive optics. A typical set-up uses several simultaneous light paths to various imaging and spectroscopic instruments, must synchronization of several CCD cameras, and often involves complex spectral and spatial scanning. Set-ups often require two or more days. The User committee discussed observing modes in which the instrumental configuration is frozen for some extended period. NSO would then allot time to those proposals that could be accommodated with the fixed set-up. This would reduce our flexibility to accommodate visiting observer schedules as we now do, but should enhance the available observing time on the DST by 20-25% and reduce the amount of time lost to trial and error revision or mistakes in setting up. It would also mean that the PI allocated the time would have to spend less time at the telescope.

NSO plans to phase in this new mode of operation in the upcoming quarters on a trial basis. We will screen new proposals for commonality of set-up and schedule them for contiguous runs. Users can help us with over subscription by: (a) being flexible in accommodating time allocations; (b) providing good scientific rationale for their experiments (especially for repeat runs); (c) making their data available to other users when no scientific conflicts arise, in any case all data will become public domain after an 18 month proprietary period; (d) and, publishing their data in a timely fashion.

We appreciate your help in ensuring that the NSO facilities operate in an optimum fashion for the solar community. We have been gratified that NSO telescopes have provided a unique research, technology development, and experimental test-bed for solar physics research and will strive to continue that service.

We would like your input concerning this proposed change and how it might affect your use of the telescope. Please email Dr. K. S. Balasubramaniam (bala@nso.edu) or call him at (505-434-7134) if you have comments and/or concerns.

INTERNATIONAL

IAU Membership: Criteria, Application Forms

Arlo U. Landolt, Secretary, USNC-IAU,
aassec@rouge.phys.lsu.edu

The US National Committee for the International Astronomical Union (USNC-IAU) invites qualified scientists to apply for membership in the IAU prior to the XXVth General Assembly in Sydney, Australia in late July 2003. Scientists nominated for IAU membership will receive an invitation to attend this General Assembly. IAU Membership Application forms will be printed in the August 2002 AAS *Newsletter*. Should funds to support travel to the General Assembly become available, forms to apply for those funds will be published in the December 2002 AAS *Newsletter*.

The USNC-IAU minimum criteria for IAU membership are a PhD or equivalent advanced degree, received no later than 1 August 2000, and a strong record of continued research activity since then, or an established and somewhat longer record of original research or of substantial contributions to major observational programs. Questions should be emailed to Arlo U. Landolt (aassec@aas.org) or call him at 225-578-1160.

NSO Observing Proposals

The current deadline for submitting observing proposals to the National Solar Observatory is **15 August 2002** for the fourth quarter of 2002. Forms and information are available from the NSO Telescope Allocation Committee at PO Box 62, Sunspot, NM 88349 for Sacramento Peak facilities (sp@nso.edu) or PO Box 26732, Tucson, AZ 85726 for Kitt Peak facilities (nso@noao.edu). A TeX or PostScript template and instruction sheet can be emailed at your request; obtained by anonymous ftp from <ftp.nso.edu> (cd `observing_templates`) or <ftp.noao.edu> (cd `nso/nsoforms`); or downloaded from the WWW at <http://www.nso.edu/>. A Windows-based observing-request form is also available at the WWW site. Users' Manuals are available at <http://www.nso.edu/sunspot/telescopes.html> for the SP facilities and <http://www.nso.noao.edu/nsokp/nsokp.html> for the KP facilities. Proposers to SP may inquire whether the Adaptive Optics system may be available for their use. Observing time at National Observatories is provided as support to the astronomical community by the National Science Foundation.

NASA's Newest Online Publication

The latest issue of *Voyages*, the NASA Office of Space Science Newsletter on Education and Public Outreach is now online at <http://spacescience.nasa.gov/education/news/index.htm>.

Voyages is published three times each year and highlights programs, events and products supported by the NASA Office of Space Science, as well as the many and diverse contributions made by the space science community in support of education as a core mission of NASA.

AAAS Report Published

The following is Chapter 14 in **AAAS Report XXVII Research and Development FY2003** by the Intersociety Working Group of the American Academy for the Advancement of Science, Washington, DC, 2002. It outlines astronomy programs in the President's budget request for 2003. See <http://www.aaas.org/spp/dspp/rd/rd03main.htm> for an online copy of this report. Updates of congressional actions on R&D budget items can be found at <http://www.aaas.org/spp/dspp/rd/approp03.htm>.

Astronomy in the FY2003 Budget

Kevin B. Marvel

Highlights

- The National Aeronautics and Space Administration's (NASA, <http://www.nasa.gov>) Office of Space Science (OSS, <http://spacescience.nasa.gov>) would cancel two outer planet missions that were funded in the final FY 2002 budget, a mission to Jupiter's moon Europa and a congressionally mandated mission to Pluto (<http://pluto.jhuapl.edu>). A new planetary exploration program modeled on the successful Discovery program would use peer review to select large planetary exploration missions that would be cost capped at \$650 million in FY 2003 dollars. The program would be funded initially at a level of \$15 million in FY 2003.
- The National Science Foundation's (NSF, <http://www.nsf.gov>) division of Astronomical Sciences (AST, <http://www.nsf.gov/mps/ast>) budget is proposed to decrease by about 3% from a level of just under \$165.9 million to \$161.3 million. This will likely delay the implementation of ground-based astronomy and astrophysics decadal survey projects (see last bullet item) and decrease the amount of funding available for research grants.
- NASA would initiate a new research program in cooperation with the Department of Energy called the Nuclear Systems Initiative. This program would expand current nuclear-electric power-generation systems and develop new nuclear-electric propulsion technologies to enable expanded exploration missions and decrease travel times to solar system mission targets. The program would be funded at a level of \$46.5 million for nuclear-electric power and \$79 million for the nuclear-electric propulsion technologies.
- NASA's OSS would also continue its successful Mars Exploration Program (<http://mars.jpl.nasa.gov>) with an increased budget requested for FY 2003 of just under \$454 million. Two Mars Exploration Rovers are being prepared for launch in the summer of 2003 and will arrive in early 2004. These rovers will search for water-affected materials on the surface and will, in a sense, serve as robotic field geologists.
- The Astronomy research community is augmenting the successful National Research Council Decadal Survey of Astronomy and Astrophysics (the most recent version is *Astronomy and Astrophysics in the New Millennium*, (<http://books.nap.edu/catalog/9839.html>)). Two new reports will be released during the life cycle of this AAAS book, one that prioritizes the needs of the Planetary Science community (*A New Science Strategy for Solar System Exploration* (<http://www.nationalacademies.org/ssb/ssefrontpage.html>)) and the second that covers the solar and space physics community (*Solar and Space Physics: A Community Assessment and Strategy for the Future* (<http://www4.nationalacademies.org/cpsma/SSBDisc.nsf>)). The

planetary science report is slated for release in June 2002 and the solar report in early 2003.

Introduction

The sky belongs to all of humanity and astronomy has a special role to play in bringing knowledge of the cosmos to us all. Beginning with the earliest recorded history, the sky and the objects to be seen there are described, studied and analyzed. Only in modern times have we truly found our place in the Universe. We live out our lives on a relatively small planet orbiting a rather normal star in an average galaxy. Just in this century, astronomers have determined how the chemical elements that make up our Earth (and us!) were formed in supernova explosions. Astronomers have managed to trace the history of the Universe back to its very first moments when all matter and light were compressed into a dense energetic state that rapidly expanded (for as yet unknown reasons) forming our Universe. This cosmic explosion is now known as the Big Bang. In the past decade, astronomers have finally discovered planets around other stars, confirming that our solar system is not unique and discovered that the Universe is not just expanding, but that it is expanding faster and faster in a kind of "runaway" situation. Each new discovery brings up new questions and new technological needs. Astronomy is truly an exciting, vibrant science that adds meaning to our human existence.

NASA provides roughly 75% of the funding (<http://www.nap.edu/books/0309071399/html>) for astronomical research for individuals in the United States. When the budget for the Office of Space Science is changed, many American astronomers can be affected. NASA continues to provide observing opportunities for astronomers beyond the hindering absorption of the atmosphere. NSF also funds a significant amount of the astronomical research that takes place in the United States, including constructing and operating the US National Observatories (http://www.nsf.gov/mps/divisions/ast/about/c_facilities.htm). These observatories play a critical role for researchers from smaller institutions for which large observing facilities are too expensive to construct and operate. They also provide access for American astronomers to the sky in the southern hemisphere, where many important astronomical objects are located and cannot be observed from Northern hemisphere locations (e.g., the Magellanic Clouds, our nearest galactic neighbors).

A traditional, but arbitrary, split in funding exists between NASA and NSF with NASA funding mostly space-based observing and NSF funding mostly ground-based. This line is often blurred, since both agencies support balloon-based observing and other cross-cutting research. NASA does support ground-based observing when these activities have a direct supporting role for their space missions. A recent example is the Keck Interferometer (<http://huey.jpl.nasa.gov/keck/index.html>) and both agencies are pursuing collaborative efforts such as the National Virtual Observatory (<http://www.srl.caltech.edu/nvo>) program, which will interconnect databases, telescopic observations, space mission archives and research tools for astronomy and astrophysics. These collaborations reflect the way astronomers pursue their research, using any means necessary to study the objects that interest them.

A reform provision in the President's FY 2002 budget called for the formation of a blue ribbon panel to review the implications of moving NSF-funded astronomy research under NASA's control. The panel, named the Committee on the Organization and Management of Research in Astronomy and Astrophysics (COMRAA, <http://www.srl.caltech.edu/nvo>), was formed in late April 2001 and presented its recommendations to the President in September 2001. Among other recommendations, the panel recommended the formation of a dual-agency advisory panel that

would provide guidance on projects and science that would benefit from agency collaboration. The full text of the report, entitled *US Astronomy and Astrophysics: Managing an Integrated Program*, is now available at <http://www.nap.edu/catalog/10190.html>.

Astronomy in the NASA Budget

Once again, the overall NASA budget will be increasing only slightly. From a level of just under \$14.8 billion in FY 2002, NASA would receive an increase of 1.4% to a level of just over \$15.0 billion for FY 2003. The bulk of this increase would go to the Science, Aeronautics and Technology portion of the agency's budget, which would also see an overall increase of 10.3%, or \$836 million to \$8.9 billion. While the Human Space Flight budget would shrink by almost \$600 million.

The Office of Space Science would experience a very healthy budgetary growth of 19% from a level of just under \$2.9 billion to a FY 2003 total of \$3.4 billion. The bulk of this increase (\$547 million) is from increases in the technology program (\$264 million) and the remainder (\$210 million) due to an increase in the mission operations budget line, including the transfer of the Deep Space Network (DSN, <http://deepspace.jpl.nasa.gov/dsn>), an extensive ground-based space communications system, from another portion of the NASA budget into the Space Science Budget. Space Science missions were by far the dominant user of the DSN, so the transfer makes a great deal of sense.

The OSS has four long-term goals, which may be posed as simple, penetrating questions. How did the Universe, galaxies, stars, the Sun and planets form and evolve? How can exploration of the Universe and our solar system revolutionize our understanding of physics, chemistry and biology? Are there Earth-like planets beyond our solar system? Does life in any form, however simple or complex, carbon-based or other, exist elsewhere than on planet Earth?

To attempt to answer these questions, the OSS has undertaken a series of missions (<http://spacescience.nasa.gov/missions/index.htm>) that attempt to answer fundamental scientific questions. Although too numerous to mention here, a few of the missions stand out as particularly exciting (in addition to those mentioned in the *Highlights* section above).

Chandra X-ray Observatory (<http://chandra.harvard.edu/index.html>): Deployed in July of 1999, the Chandra telescope (one of the four "great observatories", which include the Hubble Space Telescope, the Compton Gamma-ray Observatory and the Space Infrared Telescope Facility) has produced dramatic images of supernova remnants, active galactic nuclei and diffuse X-ray emission found in clusters of galaxies. This observatory will continue to produce exciting science results throughout the next several years and is expected to remain operational until 2009.

Space Infrared Telescope Facility (SIRTF): The fourth and final great observatory, this telescope is now slated for launch no earlier than December 2002. The launch was delayed to resolve software and technical problems. The President's budget proposes a continued development expenditure of \$47.4 million in FY 2003. This instrument is sensitive to the infrared portion of the electromagnetic radiation and in its high orbit above Earth will observe the earliest era of galaxy formation as well as sub-stellar mass objects in our own galaxy.

Stratospheric Observatory for Infrared Astronomy: This airborne observatory (<http://sofia.arc.nasa.gov>) replaces the Kuiper Airborne Observatory, which was retired in October of 1995. A Boeing 747SP aircraft will carry a 2.5 meter telescope that will be used to study infrared light from a variety of celestial objects. This challenging and collaborative project with the German Aerospace Center, DLR (<http://www.dlr.de>), has met with some delays during the development process. First light is now planned for October 2004.

Research program: This core NASA-OSS program, part of the wider supporting research and technology line item, supports researchers through peer-reviewed proposal selection. This program would receive an overall increase of about 9.7% in FY 2003 to a level of \$709.6 million. The line item consists of both Research and Analysis (mainly direct funding to researchers) and Data Analysis (funding for reduction of mission data).

Astronomy in the NSF Budget

NSF funds astronomy through its Division of Astronomical Sciences (<http://www.nsf.gov/mps/ast>). This funding is split into two basic units, Astronomy Research and Instrumentation (which funds individual researchers, instrument development projects and some research centers such as the center for adaptive optics (<http://cfao.ucolick.org>)) and Facilities (which supports the National Astronomy facilities such as the National Radio Astronomy Observatory (<http://www.nrao.edu>), National Optical Astronomy Observatories (<http://www.noao.edu>), Gemini 8 meter telescopes (<http://www.gemini.edu>) and the National Astronomy and Ionosphere Center (<http://www.naic.edu>)).

The Astronomy Division budget would decrease in the President's FY 2003 budget by 2.8%. The Astronomy Research and Instrumentation portion would decrease by \$2.75 million to \$64.3 million. This would decrease the amount of funds available for grants to researchers as well as potentially hinder instrumentation development.

The Astronomy Facilities would also receive a decrease of \$1.86 million to a FY 2003 proposed funding level of \$96.9 million. This reduction would slow down the implementation of various decadal survey (<http://books.nap.edu/catalog/9839.html>) initiatives. Reductions would also cut into the operations budgets of these important research tools, reducing the level of service to the community.

Astronomy is also supported within the NSF budget both through the Office of Polar Programs (OPP, <http://www.nsf.gov/opp>) and the Major Research Equipment and Facilities Construction (MREFC) budget line. The exact amounts expended by OPP for astronomy research were not available, but several telescopes reside at the South Pole station (<http://www.nsf.gov/od/opp/antarct/aerastro.htm>), including a unique instrument (AMANDA, <http://alazarin.physics.wisc.edu>) that uses photodetectors buried more than a kilometer deep in the Antarctic ice sheet to detect high energy neutrinos from celestial objects. The long-awaited construction start for the Atacama Large Millimeter Array (ALMA, <http://www.alma.nrao.edu>) telescope is supported in the FY 2003 budget at a level of \$30.0 million. ALMA construction is funded within the MREFC budget line. This telescope, an international collaboration, will be built in the high altiplano (<http://www.raingod.com/angus/Gallery/Photos/SouthAmerica/Bolivia/Altiplano.html>) of Chile where the absorption of celestial millimeter and sub-millimeter radiation by water vapor is significantly less than at other locations on Earth.


Astronomy Elsewhere in the Budget

Both the Navy and Air Force fund fundamental astronomical research for a variety of reasons related to national security. Although exact numbers were not available, the total amount expended is not as large as either NSF or NASA. The Department of Energy also funds astrophysical research under its office of basic science. Again, detailed funding levels are not easily determined. The Smithsonian Institution also supports a wide array of astronomical research through its Center for Astrophysics (<http://cfa-www.harvard.edu>), including telescopes in Hawai'i and Arizona. The Submillimeter Array (<http://sma-www.harvard.edu>), an innovative high-frequency radio telescope is nearing operational completion on the summit of Mauna Kea in Hawai'i.



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WASHINGTON NEWS

Kevin B. Marvel, Deputy Executive Officer



Mikulski, Walsh Honored for Service to Science

On April 10th, the American Astronomical Society, American Mathematical Society and American Physical Society presented the 3rd Annual AAS-AMS-APS Public Service Awards to Senator **Barbara Mikulski** (D-MD) and Representative **James T. Walsh** (R-NY). In a special

award reception held at the Dirksen Senate Office building, former AAS President and current chair of the AAS Committee on Astronomy and Public Policy (CAPP) **Sidney Wolff** presented the award to Senator Mikulski. In her remarks, Senator Mikulski stressed the importance of basic research for our Nation and pledged to work towards a doubled NSF budget in the coming five years. Senator Mikulski is a strong supporter of basic research, especially basic research carried out in her state at the Goddard Space Flight Center, National Institutes of Health and the Space Telescope Science Institute. Congressman Walsh received his award from **David Eisenbud**, president-elect of the American Mathematical Society and thanked the physical scientists for honoring him for his continued work in Congress. Nominations for future awards are always welcome from the AAS membership and may be forwarded to Kevin Marvel (marvel@aas.org) for consideration by the joint public service award committee.



At the presentation ceremony for the 2002 AAS-AMA-APS Public Service Award, (fr. l. to r.) Sidney Wolff (AAS CAPP Chair), Myriam Sarachik (President-elect of the APS) and David Eisenbud (far right, President-elect of the AMS) presented the honors to Sen. Barbara Mikulski (middle, D-MD) and to Rep. James T. Walsh (second from the right, R-NY).

Photograph by David Sims

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