



# ASTROPHYSICS

---

## newsletter

### *Inside:*

Fellowship  
Nominations

Candidate Statements

TGPAP

Ericc IS CRA

Election Ballot

April Meeting  
Schedule

### **Election Issue:**

Please read the Candidate Statements and vote on the enclosed ballot. The deadline for mailing ballots is **March 30**, 2002.

The Division of  
Astrophysics  
●  
American  
Physical Society  
●

February 2002

## **Election of DAP Executive Committee**

*Chuck Dermer, DAP Chair*

We will be electing a new Vice-Chair, a Division Councillor, and two Members-at-Large to be announced at the April 2002 Meeting in Albuquerque. In this issue you will find the slate for these executive committee members, and their

statements. Please take a few moments to read their statements and cast your ballot.

On behalf of the Division of Astrophysics, I would like to thank Tom Gaisser, Bob Rosner, and Frank Jones of our Nominating Committee for their excellent work in assembling the slate of candidates. Please join us at the DAP Business Meeting in Albuquerque where the election results will be announced.

## **DAP Student Travel Grants for APS April Meeting**

*Susan Lamb, Chair-Elect*

There are still travel grants available from DAP for DAP-affiliated students who will be presenting papers at the April APS meeting. If interested students have not yet put in an abstract, they can still do so as a late poster abstract until March 8, 2001. Instructions can be found at

[www.aps.org/meet/APR02/abs.html](http://www.aps.org/meet/APR02/abs.html). To apply for the travel grant, the student should send a short letter of application, including a copy of the abstract, to the DAP Chair Elect (and Program Chair of the April meeting) Susan Lamb ([slamb@astro.uiuc.edu](mailto:slamb@astro.uiuc.edu).) Up to \$500 is available per grant for out-of-town students and \$100 for local students.

## **DAP Business Meeting and NASA Town Meeting**

The Annual Business Meeting of the DAP will be held on Monday, April 22nd, at 6:30 pm in the Albuquerque Convention Center. A NASA Town Meeting will take place earlier in the same room between 5:15 and 6:00 pm. Dr. Paul Hertz of NASA Headquarters will make a presentation and take questions about NASA-related issues. The Division of Astrophysics, in association with the High Energy Astrophysics Division of the American Physical Society, will host a Wine and Cheese reception between the NASA Town Meeting and the DAP Business meeting.

**Future Electronic Elections** – The executive committee is proposing an amendment to division bylaws to allow electronic ballots for future elections. If the APS Council approves this amendment, the division will decide the issue at the upcoming DAP business meeting. It is proposed that "mail ballot" be replaced by "mail or electronic ballot" in Article VII, sections 2 and 3.

## Fellowship Nominations

Every year, our division nominates six or seven APS members for Fellowship. If you would like to recommend a member for Fellowship you may do so by filling out the nomination form that the APS provides at <http://www.aps.org/fellowship/>

Please submit nomination forms by **May 1, 2002** to

*Executive Officer  
American Physical Society  
One Physics Ellipse  
College Park, MD 20740-3844  
ATTN: Fellowship Program*

Unsuccessful nominations submitted for the first time last year will be reconsidered by the Fellowship Committee (additional supporting letters would be still welcome, though not necessary). Beyond one year, nominations must be re-submitted.

## APS-DAP 2002 Election Candidates

### Division Councilor Candidates

#### Edward Kolb

##### *Biographical Information*

Edward Kolb (known to most as Rocky) is a member of the NASA/Fermilab Astrophysics Group at Fermi National Accelerator Laboratory and a Professor of Astronomy and Astrophysics at The University of Chicago. The field of Rocky's research is the application of elementary-particle physics to the very early Universe. He is a Fellow of the APS. Rocky's professional service includes a term on the Executive Committee of the Division of Astrophysics of the American Physical Society from 1993 to 1995. Presently, he is a member of the DOE-NSF long-rang planning subpanel of HEPAP, a member of the NASA Space Science Advisory Committee (SScAC), and Chair of the Structure and Evolution of the Universe Subcommittee (SEUS). In addition to professional activities, Rocky communicates the excitement of astrophysics by writing, lecturing, and participating in public outreach programs

##### *Candidate Statement*

The ties between the physics and astronomy communities have never been stronger. The active participation and representation of astronomers and astrophysicists in the American Physical Society is an important ingredient in the development of those ties. In a period where understanding and support for the physical sciences is eroding, close coordination and cooperation among the various subdisciplines is crucial. Working both in a National Laboratory dedicated to particle-physics research and in a University Department of Astronomy and Astrophysics, I appreciate the tensions that can sometimes arise between astronomy and physics, small science and large science, individual investigators and large groups. As an APS Council Member from the Division of Astrophysics, I will work to make the public more aware of the unity of science, rather than artificial divisions.

#### Virginia Trimble

##### *Biographical Information*

Virginia Trimble is a graduate of Hollywood High School and also some more obvious places (BA UCLA, MS & PhD Caltech, MA Univ. of Cambridge, all a very long time ago). She is in the Department of Physics and Astronomy of the

University of California, Irvine, and is frequently also to be found in the Astronomy Department of the University of Maryland. Trimble's current interests include the structure and evolution of stars, galaxies, and the universe, and of the communities of scientists who study them. She has previously held various positions of rather little authority but remarkable temporal absorptive capacity in APS as well as the American Astronomical Society, the International Astronomical Union, the American Association for the Advancement of Science, Sigma Xi, and so forth. She is currently the astrophysics editor of *Reviews of Modern Physics* and President of the Division of Galaxies and the Universe of the IAU.

##### *Candidate Statement:*

The APS is currently in fairly good shape, with a balanced budget and a constant or even gently growing number of members. Both of these are somewhat precarious and require support from both the official leadership and members-in-the-trenches. The budget rests heavily on journal subscriptions, and Editor Blume and Treasurer McIlrath have been real leaders in keeping us on track into the successive eras of e-also, e-first, and e-only publication. My role in this will be frankly that of an old curmudgeon - I like to read many journals cover to cover, on paper. The part of the membership that participates in the March meeting generally feels that the APS and that meeting serve its interests well, and they come in their thousands. This is not entirely true of the April meeting and its constituency, which includes our DAP as well as the divisions of nuclear physics, particle physics, topical groups on gravitation and plasma astrophysics, and so forth. About a decade ago, as chair of the High Energy Astrophysics Division of AAS, I tried to persuade them and DAP to return to the joint meetings that had inaugurated both divisions around 1970. This is finally happening in Albuquerque in April 2002. That meeting will have two other small innovations relative to earlier "April" meetings. First is an opening reception modeled after the AAS one (which several of us persuaded them to try for the first time in 2001). The other is a real morning coffee break, with actual coffee and food and poster presentations to read. This is being achieved by throwing money at the problem, but it is a secret among us astrophysicists why the anonymous supporter has asked that the contribution be designated as "in honor of Albert Whitford and Jesse Greenstein, Pioneers of the Decadal Surveys". Whether any of this helps to make the April meeting more useful to DAP and other members remains to be

seen. But please come to the Albuquerque meeting whoever you vote for --or, horror of horrors, even if you don't vote!

## Vice-Chair Candidates

### **Steve Holt**

#### *Biographical Information*

Steve Holt received a Ph D degree in Physics from New York University in 1966. He spent the next 34 years as one of the founding members of the X-ray astrophysics program at the NASA Goddard Space Flight Center, where he rose to the position of Goddard's Director of Space Sciences. In 2000 he returned to full-time teaching as Professor of Physics at the new F W Olin College of Engineering. He is a fellow of the American Association for the Advancement of Science and the American Physical Society.

Holt's professional elected service includes the executive committee (and Chair) of the High Energy Astrophysics Division of the American Astronomical Society, the executive committee (and Councilor) of the Astrophysics Division of the American Physical Society, and Vice Chair of the Astrophysics Subcommittee of COSPAR. He has just completed two years on the Executive Committee of the Council of the American Physical Society, and currently serves as the Program Chair for the upcoming World Space Congress.

#### *Candidate Statement*

For those of us in astrophysics who were originally trained as physicists rather than astronomers, the APS/DAP has been our societal connection to the physics community outside of our specialties. Even after we discovered another home for astrophysics in the AAS, the big April APS meeting was the traditional place for us to share our interests with other physicists and, especially, students. DAP continues to provide wonderful invited sessions at the April meeting that demonstrate the vigor and excitement of astrophysics to those who get to attend them. Over the past several years, the March APS meeting (which is not DAP-supported) has become increasingly well-attended, and attendance at the April meeting is monotonically decreasing. Now that I have become more active in the teaching of physics at the undergraduate level, I am more convinced than ever that the DAP has an essential role to play in keeping astrophysics well-enough publicized within mainstream physics to allow students to get a fair exposure to it before becoming committed to other disciplines. This year's combination of our April meeting with that of the High Energy Astrophysics Division of the AAS is a wonderful way to encourage the active participation of our membership, but in the long term we need to find a solution that will attract new students. If elected, I would be committed to increasing student involvement in the DAP.

### **Simon Swordy**

#### *Biographical Information*

Current position: Professor, Enrico Fermi Institute, Dept. of Physics, Dept. of Astronomy and Astrophysics, University of Chicago. I received my PhD from the University of Bristol (UK) in 1979. I have been a member of the University of Chicago Faculty since 1986. I am at present a member of the NASA Structure and Evolution of the Universe Subcommittee and the Roadmap Team. I have been involved in several

experiments for measuring high energy cosmic rays and antiparticles, from the Space Shuttle, high altitude balloons, and ground based detectors. I am at present working on ground-based high energy gamma-ray astronomy and I am part of a group developing a cosmic-ray instrument for a 100-day high altitude balloon flight. I am also a member of the newly established Center for Cosmological Physics at Chicago. My major scientific interests are the origin of cosmic rays and the impact on cosmology of measurements of high energy particles and gamma-rays.

#### *Candidate Statement*

A central role of the APS is to provide a forum for those of us interested in physics, as professionals and/or as curious individuals about how the world works. However it must also adopt an increasingly pro-active role in defining issues and advising the world at large on physics and how it contributes to our society. The Division of Astrophysics is probably the most esoteric part of the APS and as such might be expected to have the most difficulties connecting to the outside world. In fact the reverse is true, there is enormous public interest in astrophysics and cosmology in the contemporary world. The present rapid progress in much of astrophysics provides a great opportunity to communicate our efforts and successes on a broad scale. If elected I would work to make this happen, both with the public-at-large, in the political arena(s), and inside the APS with other divisions. This would involve providing the best DAP meetings I can arrange, but also building on the creative work of recent officers to promote astrophysics with a broad brush.

APS Division of Astrophysics:

## Executive Committee Candidates

### **Elena Aprile**

#### *Biographical Information*

Elena Aprile received a Ph.D. degree in physics from the University of Geneva, Switzerland, in 1982. Her thesis research was in experimental nuclear physics. In 1983 she moved to the USA for a postdoctoral appointment at the High Energy Physics Laboratory of Harvard University. She worked on the Harvard-Purdue-Wisconsin proton decay water Cerenkov experiment and liquid argon detectors R&D. In 1986, she joined the faculty of the Physics Department at Columbia University where she is now professor of physics. Her research interests are in high energy astrophysics and particle astrophysics; gamma-ray spectroscopy and imaging of cosmic sources; space and underground science instrumentation, with a focus on imaging noble gas detectors. She is the Principal Investigator for the balloon-borne Compton telescope LXeGRIT, a novel instrument for MeV gamma-ray astrophysics using a liquid xenon time projection chamber. Aprile's community services include: Member of NASA Small Attached Payloads Working Group 1987-1990; Member of NRC Particle Physics Subcommittee reporting to Astronomy and Astrophysics Survey Committee 1990; Member of SPIE Working Group on Penetrating Radiation 1993-present; Chairperson for SPIE Instrumentation Conferences on Gamma-Ray Detectors, 1992 and 1994; Member of NASA Gamma-Ray Astronomy Program Working Group 1995-present; Organizer of the IEEE-NSS Short Course on Detectors for X-Ray and Gamma-Ray Astrophysics, 2000; Member of the Organizing Committee of

various instrumentation conferences; Member of various NASA and NSF review panels. Aprile is a member of the American Physical Society and its Division of Astrophysics, the American Astronomical Society and its High Energy Astrophysics Division, the Institute of Electrical and Electronic Engineers and the Society of Photo-optical Instrumentation Engineers SPIE. She is a Fellow of the American Physical Society.

*Candidate Statement:*

As a member-at-large of the Executive Committee of the DAP, I would strive to work together with the other members and officers to achieve the goal of a stronger Astrophysics Division with more and better links to the physics community at large. I would in particular work towards: 1) increase participation and contributions at the annual meetings; 2) increase membership among APS members; 3) increase travel support and awards for young members, especially undergraduate and graduate students doing research in astrophysics and related fields; 4) increase contributions of DAP members to science education in primary and secondary schools. In achieving these goals we will contribute to the recognition that astrophysics is a remarkably diverse field, with connection to many other fields in physics, chemistry, mathematics, computer science and engineering. By enhancing and supporting interactions and collaborations with other members of the APS, we will also better attract and retain graduate students and young researchers and maintain the vitality of our discipline. This is becoming increasingly difficult especially in experimental astrophysics, as the opportunities for space missions and thus the prospects for good jobs after the Ph.D. decrease. If we succeed in enlarging the connections with other fields of physics and technology, we will not only gain new insights in our research endeavors but we will also better serve our students as they look for jobs.

## Joshua Frieman

*Biographical information*

Josh obtained his BA at Stanford 1981, PhD in physics at the University of Chicago 1985, and was a postdoc in Theoretical Physics at SLAC 1985-88. He has been on the Fermilab scientific staff in Theoretical Astrophysics since 1988 and was Head of Theoretical Astrophysics 1994-1999. He is also Professor of Astronomy and Astrophysics at the University of Chicago, where he teaches and supervises graduate students and postdocs. His research interests in cosmology and particle astrophysics include the early Universe, large-scale structure, gravitational lensing, and dark energy. For the Sloan Digital Sky Survey, he has been Collaboration Council Chair and Large-scale structure Working Group Co-Chair and coordinated development of the spectroscopic pipeline software. He served on the Particle, Nuclear, and Gravitational Wave Astrophysics panel of the 1999 Astronomy Decadal Survey, on several NASA ATP and NSF review panels, and on the APS DAP Nominating Committee in 1997. He has co-chaired/organized a number of conferences, including the 1996 Texas Symposium, 1999 Schramm Memorial Symposium, 1998-9 Young Cosmologists' Institute, 1999 and 2001 Santa Fe workshops on Structure Formation, and several Aspen summer workshops. He is a Fellow of the APS, currently serves as Scientific Secretary of the Aspen Center for Physics, and is on the Editorial Board of Physics Letters B.

*Candidate Statement*

The role of organizations such as the APS Division of Astrophysics for the health of our community could well be vital in the immediate years ahead. In the last decade of relatively flat research budgets (declining in real terms), with a significant drop in the fraction of funded research proposals, astrophysics has nevertheless flourished. Moreover, the importance and excitement of astrophysics have been increasingly recognized by both the broader physics community and the public. However, given recent world events and the current state of the economy, we must anticipate downward pressure on funding for basic research. The DAP is well situated to work for continued support for astrophysics from the physics community, the funding agencies, and the public in this time when priorities are being re-evaluated. Within the physics community, the APS meetings provide an important forum to communicate the exciting advances being made in our field--it is no accident that a substantial number of physicists from other areas have retrained themselves as astrophysicists in the last few years. Beyond the physics community, the APS has been an effective advocate for basic research support, and the role of the DAP in this effort should be enhanced, especially given the increased public awareness of astrophysics. Finally, many of us are attracted to this field in part because of its interdisciplinary nature--at the confluence of astronomy and physics. Working with Division members, I would like to help the DAP take a more active role in breaking down perceived barriers between these two communities.

## Francis Halzen

*Biographical information*

Francis Halzen is Hildale and Gregory Breit Distinguished Professor at the University of Wisconsin, Madison. His degrees are from the University of Louvain in Belgium, and he has been on the physics faculty at Madison since 1972. He is a member of the Phenomenology Institute at Madison working in particle theory and astrophysics.

*Candidate Statement*

I am a particle physicist who has been swept up by the growing field of nuclear and particle astrophysics. As a theorist working on topics at the boundary of astrophysics, cosmology, cosmic rays and particle physics, I have also become involved with the development of neutrino telescopes. I have very much appreciated the tradition of fuzzy boundaries in the astrophysics community: between theory and experiment, between various disciplines and between national research efforts. My goal is to intensify and broaden these efforts and to bring the growing numbers working on the periphery of astrophysics into the division.

## Rene Ong

*Biographical Information*

Ong is carrying out research in high energy astrophysics and particle astrophysics. His work concentrates on detecting and understanding sources of high energy gamma rays and cosmic rays using ground-based and satellite detectors. He was closely involved with the CASA experiment, the largest air shower array built to study ultrahigh energy particles from

space. He maintains a strong interest in understanding the origin of the cosmic rays, including those near the knee in the spectrum and those beyond the GZK cutoff. Since 1996, Ong has led the effort to construct a ground-based telescope sensitive to gamma rays at energies between 20-250 GeV. This effort resulted in the STACEE project which started full operations in 2001 and has detected sources such as the Crab Nebula and the blazar Markarian 421. He is also a member of the team constructing the VERITAS array of Cherenkov telescopes at the Whipple Observatory in Arizona.

Ong is Professor of Physics and Astronomy at the University of California, Los Angeles. He is actively involved in a number of national and international scientific committees that span research areas from particle physics to astronomy. He served on the Decadal Survey of Astronomy and Astrophysics, the Committee of Visitors for the National Science Foundation, and the High Energy Neutrino Astrophysics Panel (HENAP) of PANAGIC. He is currently a member of the High Energy Physics Advisory Panel (HEPAP) and SAGENAP, the joint NSF/DOE review panel

## Topical Group on Plasma Astrophysics

*Edison Liang, Vice Chair, TGPAP*

Many of you may not be aware of a new subdivision in APS called the "Topical Group on Plasma Astrophysics" (TGPAP), which was formed a few years ago to promote cross-disciplinary exchanges and joint activities between plasma physics and astrophysics. It is separate from APS/DAP and APS/DPP. Details of this topical group can be found in the APS organization web page ([www.aps.org](http://www.aps.org)). As a DAP member it is most likely that you will share some of the interests and scientific goals of TGPAP. We believe that TGPAP has a lot to offer you, but it can do much more as its membership expands. We strongly urge you to consider joining TGPAP, participating in its activities and contributing to its programs.

All you have to do to join TGPAP is to go to the APS website and click on "APS units", and click on "Join Units". Please do not hesitate to contact any of its officers if you have any question about TGPAP or its activities.

for particle astrophysics.

### *Candidate Statement.*

Although there are a number of difficult problems that face research in the physical sciences in this country in general, and in astrophysics in particular, I am most concerned with two issues that I believe need attention and that we can make progress in over the next few years. The first involves finding better mechanisms for the review and approval of joint agency projects in astrophysics. Better communication between the astrophysics community and the agencies and among the agencies themselves helps in overcoming roadblocks. The second issue involves graduate education. Having served on panels studying graduate student enrollment and on graduate admissions committees at three universities, I am convinced that we can do more to attract the best students to physics and astronomy. Astrophysics is one of the most exciting areas of science - we have a unique opportunity to strengthen graduate enrollment by getting the word out and by improving the graduate school experience.

## Relativistic Astrophysics and Cosmology

is the theme for the 25th Anniversary Course of the International School of Cosmic Ray Astrophysics held biennially at the Ettore Majorana Centre in Erice, Italy. The coming course is scheduled for 2--14 June 2002 and is designed for advanced graduate students and post-doctoral researchers in high energy astrophysics. Topics range from X-rays and gamma rays to particles and neutrinos; from nucleosynthesis to cosmology; and from low to the highest energies. Lectures will be presented by leading researchers in the various fields. Interested participants should contact the Director, M. M. Shapiro at [mmshapiro@mailaps.org](mailto:mmshapiro@mailaps.org) (fax: 775-640-8342) as soon as possible to apply for admission.

Details at <http://phacts.phys.LSU.edu/ISCRA/>

### APS-DAP Executive Committee

#### Chair

Chuck Dermer [dermer@gamma.nrl.navy.mil](mailto:dermer@gamma.nrl.navy.mil) (202) 767-2965

#### Chair-Elect

Susan Lamb [slamb@astro.uiuc.edu](mailto:slamb@astro.uiuc.edu) (217) 333-5550

#### Vice-Chair

Chryssa Kouveliotou [chryssa.kouveliotou@msfc.nasa.gov](mailto:chryssa.kouveliotou@msfc.nasa.gov) (256) 544-7711

#### Past-Chair

Virginia Trimble [vtrimble@uci.edu](mailto:vtrimble@uci.edu) (949) 824-6948

#### Secretary-Treasurer

Mark Leising [lmark@clemson.edu](mailto:lmark@clemson.edu) (864) 656-5304

#### At-Large Members

Joel Primack (2001) [joel@lick.ucsc.edu](mailto:joel@lick.ucsc.edu) (408) 459-2580

Mel Ulmer (2001) [m-ulmer2@northwestern.edu](mailto:m-ulmer2@northwestern.edu) (847) 491-5633

Brenda Dingus (2002) [dingus@alizarin.physics.wisc.edu](mailto:dingus@alizarin.physics.wisc.edu) (608) 265-3375

Jacqueline Hewitt (2002) [jhewitt@mit.edu](mailto:jhewitt@mit.edu) (617) 253-3071

APS April 2002 HEAD/DAP Sessions

Invited Sessions  
Contributed Sessions

Saturday, April 20	Sunday, April 21	Monday, April 22	Tuesday, April 23
8:30a-10:30p PLENARY	8:30a-10:30p PLENARY	8:30a-10:30p PLENARY	8:00a-10:30p Thermonuclear Burning on Neutron Stars Astrophysics: Missions & Instruments
10:30a-11:20a COFFEE/POSTERS	10:30a-11:20a COFFEE/POSTERS	10:30a-11:20a COFFEE/POSTERS	10:30a-11:00a COFFEE/POSTERS
11:20a-1:45p 1. Neutrino Oscillations 2. Astrophysics for the 21st Century Active Galactic Nuclei I	11:20a-1:45p 1. Astrophysical MHD Turbulence 2. Planetary session (CSWP) Galaxies and Galaxy Clusters	11:20a-1:45p Detection and Study of Galactic Black Holes Cosmic Rays	11:00a-1:30p Pulsars and Supernova Remnants at High Energies 1. Gamma-Ray Bursts 2. High-Mass X-Ray Binaries, Cataclysmic Variables, and Sources in Dense Clusters
1:45p-2:30p LUNCH	1:45p-2:30p LUNCH	1:45p-2:30p LUNCH	1:30p-2:30p LUNCH
2:30p-5:00p 1. Galaxy Clusters: Structure Formation and the Physics of the Intracluster Medium 2. Cosmic Rays (DPF part until 5:30p) Active Galactic Nuclei II	2:30p-5:00p 1. Extended X-ray Jets and Radio Galaxies 2. Focus Session on High Energy Solar Physics Supernova Remnants and Isolated Pulsars	2:30p-5:00p 1. New Cosmology 2. Focus session on Strong Magnetic Fields and Magnetars Low-Mass X-Ray Binaries	2:30p-5:00p Gamma-ray Burst Sources Cosmology, Particle Astrophysics and Gravitational Wave Astronomy
5:00p-6:00p POSTERS	5:00p-6:00p POSTERS	5:00p-6:00p POSTERS	5:00p-6:00p POSTERS
5:30p-7:30 Welcome Reception	5:30p-7:00 Award Presentation	5:15-6:00p NASA town meeting (tbd) 6:00p DAP Business meeting Wine and Cheese Reception	
7:30p-10:00p Evening Workshops GLAST Science	7:30p-10:00p Evening Workshops 1. TeV Observations of Extragalactic Sources 2. Precessing Neutron Stars		