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DIVISION OF ATOMIC, MOLECULAR, AND OPTICAL PHYSICS

The American Physical Society

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December 1986

Happy Holidays To Members of the AMO Physics Division from Kate Kirby

I. SUBMISSION OF ABSTRACTS FOR THE
EIGHTEENTH ANNUAL MEETING OF THE
DIVISION OF ATOMIC, MOLECULAR, AND OPTICAL PHYSICS
HARVARD-SMITHSONIAN CENTER FOR ASTROPHYSICS
Cambridge, Massachusetts
18-20 MAY 1987

Abstracts for contributed papers should be sent to the Secretary-Treasurer,
Kate P. Kirby, Center for Astrophysics, 60 Garden St., Cambridge, MA 02138. The
deadline for receipt of abstracts is Friday, February 13, 1987. Please note the
following:

- (1) Abstracts should follow the standard APS format (see Bull. Am. Phys. Soc. 31, 1802 (1986)). MAKE SURE YOUR ABSTRACT IS THE CORRECT SIZE as it is photocopied as is.
- (2) Indicate on one corner of the abstract whether you prefer an oral session or a poster session.
- (3) Include an appropriate PACS number on your abstract. The PACS numbers will be used to aid in sorting the abstracts into sessions, and therefore they should be as specific as possible and should indicate what type of audience you wish to address.
- (4) Sign your abstract!

- (5) Submit the original (which will be forwarded to the APS for reproduction in the Bulletin) and two copies of each abstract.
- (6) Mail your abstract early or use one of the overnight delivery services to insure that your abstract arrives by the deadline date.
- (7) Abstracts received after the deadline date will be forwarded to the chairman of the local organizing committee of the AMO Division meeting (William Parkinson at the Center for Astrophysics), and will be included in the program of the meeting as long as space permits. Postdeadline abstracts will not be published in the Bulletin.

II. ELECTION RESULTS

Congratulations to Alex Dalgarno of Harvard University who was elected Divisional Councilor to the A.P.S. from the AMO Physics Division. Thanks to all the candidates who agreed to run and served the Division in so doing. It is encouraging to note that our membership is turning out to vote in unprecedented numbers. (28% in this last election!)

Congratulations also to Pat Dehmer and Rick Freeman who were elected Councilors-at-Large in the general A.P.S. election.

III. REPORT OF THE NOMINATING COMMITTEE

The Nominating Committee, chaired by John Moseley, met on October 21, 1986 in Seattle and chose the following slate of candidates for the Spring elections:

Vice-Chairperson: (1-year term)
Walter Johnson (University of Notre Dame)
Thomas J. McIlrath (University of Maryland)
Donald Lorents (SRI International)

Secretary-Treasurer: (1-year term)
Michael Littman (Princeton University)
Michael Morrison (University of Oklahoma)
Winthrop W. Smith (University of Connecticut)

Executive Committee Member: (3-year term)
Robert Celotta (National Bureau of Standards)
Robert Freund (AT&T Bell Labs.)
Ronald Phaneuf (Oak Ridge National Lab.)

According to the Bylaws of our Division, the Vice-Chairperson automatically becomes Chairperson the following year, and then serves one additional year on the Executive Committee as Most-recent Past Chairperson. Additional nominations for any of the above offices will be recognized and included on the ballot if the nomination is supported in writing by five percent (15%) of the members. Such nominations must reach me no later than February 6, 1987. Biographical information on the nominees will appear in the February/March Newsletter along with the ballot.

The remainder of the Executive Committee is as follows: Richard Deslattes is currently Chairperson and will remain on the Committee for one more year as Most-recent Past Chairperson. Carl Lindeberger is currently Vice-Chairperson and will become Chairperson next year. Alex Dalgarno begins a four-year term as Divisional Councilor (until 12/90). The elected Committee Members are William Wing (until 6/87), Gordon Dunn (until 6/88), Patricia Dehmer (until 6/89). Serving one-year terms appointed by the Chairperson are Steve Lundeen and Gordon Drake (until 6/87). Ronald Stebbings is Most-recent Past Chairperson, serving until 6/87.

IV. SCIENTIFIC PROGRAM AND REGISTRATION INFORMATION FOR EIGHTEENTH ANNUAL MEETING OF THE DIVISION OF ATOMIC, MOLECULAR, AND OPTICAL PHYSICS, CAMBRIDGE, MASSACHUSETTS, 18-20 MAY 1987

The Eighteenth Annual Meeting of the Atomic, Molecular and Optical Physics Division will be held in Cambridge, Massachusetts, on May 18-20, 1987. The host

institution is the Harvard-Smithsonian Center for Astrophysics, and the local organizing committee is chaired by W.H. Parkinson. The scientific sessions will be held at the Hyatt Regency Hotel, located on the Charles River between Harvard University and M.I.T. The hotel is convenient to the major research institutions of Cambridge and to downtown Boston.

Cambridge can easily be reached by air via Logan International Airport (in Boston). The official airline for the conference is Delta Air Lines, which is offering special reduced fares for conference attendees. (To take advantage of these reduced fares, you or a travel agent must call Delta at 1-800-241-6760, and refer to file U0359. Be sure to mention the AMO Physics Division Meeting in Cambridge when making reservations.) A free shuttle bus will be provided between the airport and the Hyatt Regency Hotel on Sunday, May 17, from 15:00 to 21:00, and on Thursday, May 21, from 8:00 to 13:00. A variety of taxis are also available, as well as the subway.

The Boston/Cambridge area boasts of many academic institutions, museums, and historical sites. The Cape Cod seashore, the Maine coastline, the White Mountains, and the Berkshire Mountains are all within 2-3 hour drives. May weather in southern New England is usually quite pleasant, though unpredictable. Temperatures may range from 50° F to 75° F.

The scientific program will consist of a plenary talk, symposia, contributed oral and poster papers, and a special "hot topics" symposium on Wednesday afternoon. In addition to the scientific program, the following events are scheduled:

Sunday, May 17: Registration at the Hyatt from 15:00 to 21:00, plus a reception for meeting participants at the hotel from 19:00 to 22:00.

Monday, May 18: Buffet and entertainment at the New England Aquarium in Boston in the evening.

Although the AMO Physics Division meeting officially ends after the "hot topics" session on Wednesday afternoon, May 20, participants are encouraged to stay through Thursday morning so that they may take advantage of two special events:

Wednesday, May 20: A special series of evening lectures on current, exciting topics in astronomy, sponsored by the Harvard-Smithsonian Center for Astrophysics.

Thursday, May 21: Starting at 9:00, laboratory tours of major academic and industrial research institutions in the area.

Abstracts

Abstracts for contributed papers (one original and two duplicates) in standard Bulletin format should be sent to the Secretary-Treasurer of the AMO Physics Division, Kate P. Kirby, Center for Astrophysics, 60 Garden St., Cambridge, MA 02138. THE DEADLINE FOR RECEIPT OF ABSTRACTS IS FRIDAY, 13 FEBRUARY 1987. Please note on one corner of the abstract whether you prefer an oral session or a poster session.

Registration

The comprehensive registration fee of \$100 (\$110 for late registrants) covers meeting costs, shuttle transportation between the airport and Hyatt Regency, reception food and beverage, coffee break refreshments, and admission, buffet dinner, and entertainment at the New England Aquarium on Monday night. A fee of \$30 is charged for guests of registrants, covering shuttle transportation, reception at the Hyatt, and the Aquarium events on Monday night. The student registration fee is \$40. A registration form accompanies this announcement.

Accommodations

The Cambridge Hyatt Regency Hotel has been reserved for all meeting sessions, and approximately 225 rooms have been set aside for conference accommodations. The Hyatt Regency is situated on the bank of the Charles River with a view across the river to the Boston skyline. During the conference, single, double, and twin-bedded rooms are \$108/night; triple occupancy in a twin room with a roll-away is \$20 extra/night. The rates are quite competitive with other hotels in the Cambridge area. A limited amount of financial assistance toward hotel expenses may be available to students staying at the Hyatt.

A hotel reservation form accompanies this announcement. Confirmation of hotel reservations will be mailed to you by the Hyatt Regency a few weeks after it receives the completed form. Do not send this form with the meeting registration. Mail the hotel reservation form directly to

Hyatt Regency Cambridge
575 Memorial Drive
Cambridge, Massachusetts 02139

You must make hotel reservations before April 17, as our block of rooms will not be reserved after that date. Please bear in mind that May is graduation season for many colleges and universities in Boston and vicinity, so that reservations should be made well in advance. No student/dormitory housing is available at this time of year.

Meals

Boston and Cambridge offer restaurants serving almost every kind of food at a variety of costs. Searching for one or more places to eat during the evening is also a good way to see some of the city. On Tuesday and Wednesday evenings, May 19 and 20, from 17:00 to 22:30, the free shuttle will operate between the Hyatt Regency Hotel and several carefully chosen stops, to allow conference participants a chance to sample Boston's best without having to find a place to park. In addition, food will be provided at the reception on Sunday evening, May 17, and a buffet is included at the New England Aquarium on Monday evening, May 18.

A Word About Cars

Conference participants are strongly urged to make use of the free shuttles and regular public transportation in lieu of bringing/renting an automobile. The traffic, lack of parking, and confusion in finding one's way in Boston are legendary, and deserve to be.

Scientific Program

The plenary speaker will be Dr. Leo Goldberg of Kitt Peak National Observatory. The following symposia are being organized:

1. "Atomic and Molecular Astrophysics" (organizer: John Kohl)
2. "High Energy Atomic Physics" (organizers: Fred Schlachter and Sheldon Datz)
3. "New Atomic Physics Using Lasers" (organizer: Tony Starace)
4. "New Perspectives in Atomic and Molecular Theory" (organizers: Peter Mohr and Lloyd Armstrong, Jr.)
5. "Hot Topics" or "Late-Breaking Discoveries" (organizers: Dick Deslattes and Dan Larson)

A more complete schedule of speakers will be listed in the next newsletter.

V. CALLS FOR NOMINATIONS FOR MEMBERSHIP ON CAMS

The NAS/NRC Committee on Atomic and Molecular Science (CAMS) is seeking nominations for membership on the committee. Appointments to the committee are made by the Board on Physics and Astronomy of the NRC and are for a period of three years. The current members of CAMS are:

L. Armstrong, Jr. (Chair)	M.S. Lubell
R.S. Berry	*C.B. Moore
R. Bersohn	A.R.P. Rau
R. Freeman	- R. Shakeshaft
W. Harper, Jr.	A. Starace
E.J. Heller	*N.H. Tolk
G.S. Hurst	*R.C. Woods
S.R. Leone	J.J. Wynne

Those members whose names are marked by an asterisk will be rotating off CAMS at the end of June, 1987. In addition, CAMS seeks nominations for the position of Vice Chair. The Vice Chair will become Chair when L. Armstrong's appointment to that position expires at the end of June, 1988, and will serve in that position for two years. All nominations should be sent to M. Lubell, Chairman of the Nominating Committee, at

Department of Physics
City College of CUNY
Convent Avenue & 138th Street
New York, New York 10031

Nominations must be received by January 5, 1987.

VI. CAMS WORKSHOP

CAMS is organizing a workshop on "Molecular and Cluster Beam Science". The workshop, which is open to the public, will be held on Friday, April 24, 1987.

at the NAS Building at 2101 Constitution Avenue in Washington, D.C. J.J. Wynne of IBM is the workshop chairman. A tentative list of speakers and their equally tentative titles include:

Yuan Lee - to be announced

Richard Smalley - to be announced

Carl Lineberger and Mark Johnson

- "Photoelectron Spectra of Negative Ion Clusters"

- "Chemical Dynamics in Ion Molecular Clusters"

Dan Auerbach - "Probing the Dynamics of Gas Surface Interactions with Molecular Beams"

A more definitive program will appear in the February/March AMO Physics Newsletter. Questions concerning the workshop should be addressed to either Jim Wynne or Lloyd Armstrong.

VII. NBS FISCAL YEAR 1988 PRECISION MEASUREMENT GRANTS

Applications are being solicited for two new NBS Precision Measurement Grants to be awarded beginning 1 October 1987 (Fiscal Year 1988). Each grant is in the amount of \$30,000 per year, renewable for up to two additional years. NBS sponsors these grants to encourage research in the field of measurement science, and to foster contacts between NBS scientists and those researchers in the U.S. academic community who are actively engaged in such work. Candidates' pre-proposal summaries and biographical information must reach NBS by 1 February 1987. For more information contact Barry N. Taylor, Chairman, NBS Precision Measurement Grants Committee, National Bureau of Standards, Building 220, Room B258, Gaithersburg, MD 20899, (301) 921-2701.

VIII. AMO PHYSICS SYMPOSIA FOR APS MARCH AND APRIL MEETINGS

Steve Chu has organized the following AMO Physics symposium on "Condensation of Dilute Bose Gases and Atom Traps" for the APS meeting to be held in New York City 16-20 March 1987. The session will be chaired by Richard Lovelace. Speakers and titles are:

Andre Ruckenstein (U. of Cal., San Diego)
"In Search of Bose Condensation in Weakly Interacting Gases"

Thomas Greytak (MIT)

"Trapping Without Lasers — Spin Polarized Atomic Hydrogen"

David Pritchard (MIT)

"Bose Condensation in Lase

at the NAS Building at 2101 Constitution Avenue in Washington, D.C. J.J. Wynne of IBM is the workshop chairman. A tentative list of speakers and their equally tentative titles include:

- Yuan Lee - to be announced
- Richard Smalley - to be announced
- Carl Lineberger and Mark Johnson
- "Photoelectron Spectra of Negative Ion Clusters"
- "Chemical Dynamics in Ion Molecular Clusters"
- Dan Auerbach - "Probing the Dynamics of Gas Surface Interactions with Molecular Beams"

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Thomas Greytak (MIT)

"Trapping Without Lasers — Spin Polarized Atomic Hydrogen"

David Pritchard (MIT)

"Bose Condensation in Laser-Cooled Magnetic Traps"

Steve Chu (Bell Labs)

"Laser Traps in Dilute Bose Gases"

Peter Mohr is organizing an AMO Physics Symposium at the APS meeting to be held 20-23 April 1987 in Crystal City, VA, on "Current Topics in Many-Body

"Theory" to be chaired by Hugh Kelly. The invited speakers include Jonathan Sapirostein (University of Notre Dame) and Rodney Bartlett (University of Florida - Gainesville), plus two other speakers from the Nuclear and Condensed Matter Physics communities.

IX. MEMBERS ELECTED TO FELLOWSHIP IN APS

Congratulations to the following Division members who were elected to Fellowship in the American Physical Society:

Robert E. Anholt	H. Brian Gilbody
Paul R. Berman	Yukap Hahn
Gary Carl Bjorkland	Marc David Levenson
Christopher Botcher	Harold J. Metcalf
Steven Chu	Ronald A. Phaneuf
Claude Cohen-Tannoudji	Daniel Phillips
David R. Crosley	Michael H. Prior
Frank Dunning	David J. Wineland

Fellowship certificates will be awarded at the Division Annual Meeting in Cambridge in May.

Congratulations also to the following members who were elected to Fellowship through the Division of Chemical Physics:

Daniel J. Auerbach
Ying-Nan Chiu
Marilyn E. Jacox
Donald G. Truhlar

X. ANNOUNCEMENTS

Nominations for Fellowships in the APS should be sent to Evelyn Bennett at the American Physical Society, 335 E. 45th Street, New York, NY 10017. The nominations should be submitted on the official APS form, which can be obtained by writing to Ms. Bennett at the APS or to P. Richard, Dept. of Physics, Cardwell Hall, KSU, Manhattan, KS 66506, who is Chairman of the DAMOP Fellowship Committee. Nominations must be signed by two members of the APS. The vita of the candidate should be submitted along with this form and any other supporting material (not reprints). Be sure to specify the division in order that the DAMOP Fellowship Committee receives the nomination. The deadline for receipt of nominations is January 15, 1987.

The Fifteenth International Quantum Electronics Conference (IQEC '87) will be held April 27 - May 1, 1987, at the Baltimore Convention Center, Baltimore, MD. This conference, which has been held every two years since 1959, has now become an annual conference. It will be held concurrent with the seventh annual Conference on Lasers and Electro-Optics (CLEO '87). The IQEC '87 technical program will include a joint plenary session with CLEO '87, invited, contributed, poster, and post-deadline papers. For further information, please contact: IQEC '87, c/o Optical Society of America, 1816 Jefferson Place, N.W., Washington, D.C. 20036, (202) 223-0920. The deadline for submission of abstracts from North America was November 17, 1986.

The XVth International Conference on the Physics of Electronic and Atomic Collisions will be held July 22-28, 1987, at Brighton, England. The conference deals with two-body interactions between ions, atoms, molecules, electrons, positrons, and photons. The collision energies of interest range from subthermal to millions of electron volts. Abstracts for contributed papers will be due March 1, 1987. Information about the Conference can be obtained by contacting Dr. William R. Newell, Department of Physics, University College of London, London WC1E 6BT, England, UNITED KINGDOM; Tel. (01) 387 7050, Ext. 488.

The Fourth International Conference on Multiphoton Processes (ICOMP) will be held at the Joint Institute for Laboratory Astrophysics in Boulder, Colorado, USA, 13-17 July, 1987. Previous meetings in this series were held in Rochester (1977), Budapest (1980), and Crete (1984). The purpose of the conference is to bring together scientists from many nations who are interested in various aspects of the interactions of intense laser fields with matter. Topics will include: multiphoton ionization of atoms and molecules, resonant multiphoton processes in atoms and molecules, selectivity in multiphoton processes, multiphoton processes within the continuum, autoionization in strong fields, multiple ionization in strong fields, multiple excitation in atoms, non-linear dynamics of many-photon absorption (chaos), effects of field fluctuations in multiphoton processes wave mixing, generation of short wavelength radiation, laser induced collisions, laser interactions with surfaces, plasmas, and liquids, and others, at the discretion of the program committee.

For further information, please contact: Stephen J. Smith, Chairman, Organizing Committee, JILA, University of Colorado, Boulder, CO 80309-0440. A workshop on Supercomputers in Atomic, Molecular, and Optical Physics will be held at Argonne National Laboratory on March 16 and 17, 1987. Sessions will cover the following topics: Atomic Collisions, Atomic Structure, Plasma Processes, Molecular Processes, Chaos and Optics, and Numerical Methods and Software. Final announcements will be mailed to AMO theorists before the end of January, 1987. For further information, please contact: Dr. Chris Botcher, PHY-203, Argonne National Laboratory, Argonne, IL 60439-4843. Phone: (312) 972-4058; Bitnet: BOTCHER@ANLPHY.

Thanks to all those who filled out the membership survey which appeared in the last newsletter. Approximately 250 people responded. If you have not sent in your survey and it is buried among other papers on your desk, it is not too late to resubmit it and to register your opinions/interests. Responses will be compiled soon and communicated in a subsequent newsletter.

XI. SITE SELECTION FOR 1990 ANNUAL MEETING

A sub-committee of the Executive Committee, consisting of Carl Lineberger, Pat Dehmer and Steve Lundeen, has been formed to evaluate proposals and make recommendations to the Executive Committee regarding a site for the 1990 Division of AMO Physics Annual Meeting. Invitations from institutions for sites and circumstances for the Division's 1990 Annual Meeting should be received by Carl Lineberger before March 15, 1987, in order that the committee's work may be completed before the Annual Meeting in Cambridge, Massachusetts.