



H·A·D NEWS

*The Newsletter of the Historical Astronomy Division
of the American Astronomical Society*

Number 35



August 1995

History in Education

Richard Berendzen

A few years ago, I read the description for my university's General Education program. Our program seemed comprehensive and penetrating, but then I noticed an omission in the Curricular Area called "Ideas that Shape the Western World." It never mentioned science or technology! Should that surprise us? Arnold Toynbee's *A Study of History* omits Copernicus, Galileo, Descartes and Newton. Apparently they contributed nothing to history. That attitude has prevailed in many history books and in the core curricula of some universities.

I argued that the development of science and technology had not only helped shape the Western world, but even had helped define it. Even so, we educators often overlook these effects. Well, he who complains... I now teach my university's first offering in history of science.

As I prepared the course, I surveyed offerings at other colleges and universities, and found that many of them largely ignore history of science and technology in their core programs, and sometimes in their entire curricula. Why? Perhaps some academics without scientific backgrounds—as well as a few *with* scientific backgrounds—do not understand fully the impact science and technology has had on our world. Texts and courses often define history by wars, treaties, inventions, revolutions and finances. In reality, the rise of science and its applications have profoundly altered how people live and think; yet education often gives

History in Education continued on page 4.

From the Chair

Woody Sullivan

Ich bin HAD! ...No, I'm not a megalomaniac, but just expressing the traditional Chair's plaint that extends back to our founding Chair, Jack Eddy, in 1981. It was great being elected, but now I've got to do something! The first thing I want to do is to commend Steve Dick for his hard work as Chair and Vice Chair over the past four years—HAD is much the stronger and more visible in the AAS because of the programs he fostered and led. For example, the BAAS obituaries (now being edited by our current Vice Chair, David DeVorkin) are well established and increasingly appreciated as we publish our fifth set this autumn. HAD has also made a special effort to link with historians of astronomy in the former Soviet Union, resulting in a major symposium on "Astronomy and the State" in January 1994 at the Washington, DC AAS meeting.

So what is on the agenda for the next year or so? One major initiative is the creation of a HAD Prize, which has been informally discussed for several years, but is at last getting close to reality. The regulations and criteria for such a Prize are now being discussed by the HAD Committee and will be presented for approval to the membership at the San Antonio Business Meeting, as well as in a future newsletter. We are still seeking a source of funds to finance or endow (and perhaps name!) such a Prize; if you have any leads along this line, please contact me. Until we have identified such a source, we will do the best we can with our dues

From the Chair continued on page 2.

San Antonio Meeting

Meeting Schedule

Sunday, Jan. 14, 10:30–12:00, 1:00–5:00

Applied History of Astronomy

Monday, Jan. 15, 10:45–12:15

Astronomies and Cultures

Monday, Jan. 15, 12:30– 1:30

Business meeting

Monday, Jan. 15, 2:45– 4:15

The Western Tradition

The next HAD meeting will be on Sunday and Monday, January 14–15, 1996, with the AAS in San Antonio. On Sunday, we'll have a special session on "Applied History of Astronomy," as outlined in the right hand column. On Monday we'll have our usual pair of sessions of contributed papers. "Astronomy and Cultures" will have contributed papers dealing with archaeoastronomy or non-Western cultures. "The Western Tradition" will be contributed papers on traditional history of astronomy ("Sacrobosco to the Space Telescope," I thought of calling it.).

Unfortunately, the notice of this in the AAS meeting announcement is a bit obscure. Usually, these sessions are designated HAD I, HAD II... Trying to add a bit of sex appeal, your faithful Secretary/Treasurer brewed up unconventional titles for the sessions. He promises to discontinue this method of sewing confusion.

Applied History of Astronomy

or

How History Can Inform Modern Astrophysics

In the Sunday session, we'll deal with aspects of the history of astronomy involving "old" observations that are of value to our present science. "Old" is defined as old enough that the modern scientific researcher wanting to use former data will go astray without historiographical sophistication in interpreting the recorded observations.

Examples of topics to be covered are: using ancient eclipse records to trace the slowdown of the earth's rotation rate; using ancient observations of supernovae and novae to place constraints on their light curves and ages; using old observations of comet apparitions to calculate non-gravitational forces acting on their orbits; using old records of sunspots to understand the long-term solar activity cycle; historical examples of this type of work (e.g., Halley's work on former comet apparitions); the question of whether Sirius really was red in ancient times, etc.

The meeting format will be mostly invited papers of 30 minutes length, but will also allow some room for contributed papers. If you would like to present a paper on any aspect of this topic, please contact Woody Sullivan about your proposed subject (woody@astro.washington.edu, 206–543–7773) before submitting your abstract in the usual AAS mannner (due on 27 October).

From the Chair

(continued from page 1)

income, perhaps supplemented by small voluntary contributions that we might solicit from the membership (as is done in some other AAS Divisions).

Another major focus for HAD will be working on the AAS Centennial celebration, to culminate in the summer 1999 meeting at the University of Chicago/Yerkes Observatory. A Centennial Committee chaired by Don Osterbrock is now being formed, with the HAD Chair as ex-officio member. The AAS Council in June authorized the Committee to oversee the production of a Centennial volume and current plans are that David DeVorkin will be editor. If your historical research involves North American astronomy over the past century,

beware—David may well be trying to put you to work over the next couple of years.

After San Antonio, the next winter meeting, in January 1997, involves a slight climactic shift to Toronto. We are now beginning to consider proposals for a HAD symposium in association with this meeting; if you have a topic and/or venue to suggest, and *especially* if you're willing to help organize, please contact me.

Teaser of the day: what is the connection between Grote Reber (early radio astronomer) and Edwin Hubble (nice guy)? Send your answer to woody@astro.washington.edu; the winner will be announced next time. ☆

News from the AIP Niels Bohr Library

The Niels Bohr Library, dedicated in 1962, is part of the Center for History of Physics of the American Institute of Physics. Its mission is to preserve and make known the history of modern physics and allied sciences. The Library's rich and diverse collections of unpublished materials relating to modern physics and allied sciences have now been cataloged in the *Guide to the Archival Collections of the Niels Bohr Library*. This publication points to a wide variety of source materials—not only in the Niels Bohr Library itself but, through its listing of finding aids, to collections worldwide. A comprehensive index of personal and institutional names and topics gives ready access to materials in many areas of modern science.

The Niels Bohr Library is the official repository for the permanent records of the American Institute of Physics, for many of the AIP Member Societies such as the American Physical Society and the American Astronomical Society, and for numerous collections of personal and professional papers of individuals. It holds over 3,000 hours of oral history interviews with eminent scientists.

The *Guide* describes these collections, the Miscellaneous Physics Collection (originals and photocopies of many significant letters, manuscripts, and research and student notebooks), the Manuscript Biography Collection, and the Institutional History Collection. The Library's extensive holdings in papers and correspondence on microfilm are also described, as are the audiovisual holdings, including the Emilio Segrè Visual Archives, video tapes, film footage and tape recordings of public reminiscences.

Contents: Archives, Collections on Microform, Miscellaneous Physics Collection, Manuscript Biographies, Institutional Histories, Oral History Interviews, Audio Visual Materials, Finding Aids, and an Index.

Published by the American Institute of Physics, 1995, 574 pp.; cloth 1-56396-379-5, 135.00; paper 1-56396-435-X, 75.00. To order, call 800-809-2247, or mail check, MO or PO (plus 3.00 shipping) to: American Institute of Physics, c/o AIDC, P.O. Box 20, Williston, VT 05495, Fax 802-864-7626. Outside the US and Canada contact Oxford University Press, Saxon Way West, Corby Northants N18 9ES, England; Tel. +44(0)536-454534, Fax +44(0)536-746337. ☆

History of Physics Grants-in-Aid

The Center for History of Physics of the American Institute of Physics has a program of grants-in-aid for research in the history of modern physics and allied sciences (such as astronomy, geophysics and optics) and their social interactions. Grants can be up to \$2500 each. They can be used only to reimburse direct expenses connected with the work. Preference will be given to those who need part of the funds for travel and subsistence to use the resources of the Center's Niels Bohr Library in College Park, Maryland (easily accessible from Washington, DC), or to microfilm papers or to tape-record oral history interviews with a copy deposited in the Library. Applicants should either be working toward a graduate degree in the history of science (in which case they should include a letter of reference from their thesis adviser), or show a record of publication in the field. To apply, send a vitae plus a letter of no more than two pages describing your research project, and including a brief budget showing the expenses for which support is requested. Send to Spencer Weart, Center for History of Physics, American Institute of Physics, One Physics Ellipse, College Park, MD 20740, tel. 301-209-3174, fax 301-209-0882, e-mail sweart@aip.org. Deadlines for receipt of applications are June 30 and December 31 of each year.

HAD on the Web

<http://www.aas.org/divisions/had/had.html>

Thanks to Debbie Kovalsky of the AAS Executive Office, HAD now has a home page on the World Wide Web! It's not much at this point, but it's a start. David DeVorkin will soon be posting material on the early history of the AAS, and we'll add links to other home pages devoted to the history of astronomy.

By the end of the year we'll post parts of *HAD News*, including information on upcoming meetings. Our goal is to post the complete *HAD News*, including Ruth Freitag's bibliographies. Then you can get it from the Web or by snail mail, as you prefer. ☆

History in Education

(continued from page 1)

short shrift to these engines of philosophical, economic and social change. And it frequently does not show parallels and distinctions between the progress of science with that of technology. On many campuses today, history of science is barely covered and history of technology is ignored entirely.

My new course is not *in* science but *about* science. And it includes technology. Thus it takes on a challenging range of subject matter. Clearly, no single course or textbook could cover it adequately. Therefore I try to emphasize cardinal issues, people and themes, and to use several books for readings. Although there are many books for non-science students about Greek science and the Scientific Revolution, most on other eras are for specialists. I have located few relevant slides and transparencies. Publishers provide ancillary products for Astronomy or Modern Physics, but aside from well-known illustrations and portraits of key scientists, few other visual aides exist for history of science. Publishers have had little motivation to develop them. Also, I have been unable to locate an appropriate textbook on scientific developments from Newton to today. Books about 19th century science are aimed a specialists, and books abound about the rise of physics in this century. But I am unaware of any book that treats the Modern Era as David Lindberg's *The Beginnings of Western Science* masterfully does the preceding era. I would appreciate receiving suggestions for any part of my new course.

Universities are not alone in overlooking the vital pedagogical role of history of science. Until recently, the American Astronomical Society paid little attention to education or history. The Society then commendably established divisions for these specialties. Still, HAD sessions comprise only a small portion of an AAS conference, and education in history usually comprises a fraction of that section.

Attendees at the AAS meeting in Tucson seemed to want more. The HAD session drew good attendance, and the part on use of history in education had a packed room. Its attendees would have stayed far longer if time had permitted. The Notre Dame History of Astronomy Workshop this summer devoted a session to teaching history of astronomy, which again provoked spirited discus-

Pollock Award

The Herbert C. Pollock Award is given each year by Dudley Observatory in support of a research project in the history of astronomy or astrophysics. The amount of the top award is \$10,000. Some additional awards in a lesser amount are given at the discretion of the judging panel.

Applicants must be a faculty member, research associate, or postdoctoral student affiliated with a college, university, nonprofit research institution or observatory, located in North America, including Alaska, Canada, Hawaii, Mexico or Puerto Rico. Applicants not currently affiliated will be considered at the discretion of the judges.

The deadline for submission of proposals is December 8, 1995.

More information, including a poster for your department or institution, can be obtained from Ralph A. Alpher, Department of Physics, Union College and Dudley Observatory, Schenectady, NY 12308, (alpherr@gar.union.edu).

sion that could have lasted longer than the time allotted.

Astronomers, historians and educators face challenging questions: Given that astronomy changes rapidly, what fraction of the courses should be allocated to history? Given that students are interested in current events, how much time should be devoted to the past? Should universities offer courses in history of science for non-science majors? To study history of science, must you first know science itself well?

These issues deserve thorough discussion in all sciences and especially in astronomy, which has the longest and richest history of any field. The AAS should devote more sessions to HAD, and HAD should devote a larger portion of its time to teaching. Fortunately, the planned celebrations of the forthcoming centennial of the AAS will provide ideal opportunities to meet many such goals simultaneously. ☆

Richard Berendzen is a professor of Physics and Astronomy at The American University of Washington, DC. His book *Man Discovers the Galaxies* (with Richard Hart and Daniel Seeley) remains a recommended historical reference.