

# H. A. D. News

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

Number 42 November 1997

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## Program for AAS/HAD Meeting, January, 1998

**HAD I:** LeRoy E. Doggett  
Memorial Session - Tuesday,  
January 6, 1:00 to 5:00 PM  
[See Abstracts, pg 2 - Ed.]

**HAD II:** Modern Astronomical  
History - Wednesday, January 7,  
morning session: 10:00 - 11:30  
am  
Chair: D. DeVorkin  
(Smithsonian Inst.)

Boyce, P. (AAS & MMO); A. P.  
Graham (Virginia and MMO);  
and V. Strel'nitski (MMO)  
"Maria Mitchell's Comet - A  
Challenge Once More?"

Philip, A. G. Davis (ISO and  
Union) and K. Philip (ISO)  
"65 Volumes of Astronomy and  
Astrophysics Abstracts:  
Interesting Statistics"

Osterbrock, D. E. (Lick Obs.)  
"Now We Are Ten: The AAS  
Tenth, Decennial Meeting at  
Yerkes Observatory in August  
1909"

Lattis, M. (Wisconsin)  
"Origins of Space Astronomy at  
the University of Wisconsin"

Sullivan, T., III (Washington)  
"Radio Stars or Radio Nebulae?"

- The Uncertainties of 1953"

Dick., S. J. (USNO)  
"The Old Astronomy Meets the  
New at the U. S. Naval  
Observatory, 1893-1927"

HAD Business Session: 1:00  
PM - 2:00 PM

**HAD III:** From Hamlet to Crop  
Circles - Wednesday, January 7,  
afternoon session: 2:00 PM -  
3:30 PM  
Chair: T. Hockey (Northern  
Iowa)

Gurshtein, A. (Mesa State)  
"The Portraits of Ancient  
Constellations: A Seven Was  
Their Number"

Molnar, M. R. (Rutgers) "New  
Numismatic Evidence about the  
Comets of Mithradates the Great  
of Pontus (134 and 119 B.C.)"

Welther, B. L. (CfA)  
"Astronomy in the Age of  
Leonardo"

Hawkins, G. S. (BU Research)  
"From Euclid to Ptolemy in  
English Crop Circles"

Eichhorn, G. M.; J. Kurtz; A.

Accomazzi and C. S. Grant  
(SAO) "Historical Literature in  
the ADS"

Usher, P. D. (Penn State)  
"Hamlet's Transformation"

**HAD IV:** Poster Session:  
Demographics, Alignments and  
Outreach Thursday, January 8,  
all day

Boyce, P. (AAS & MMO); A. P.  
Graham (Virginia and MMO)  
and V. Strel'nitski (MMO)  
"Maria Mitchell's Comet - A  
Challenge Once More?"

Philip, A. G. Davis (ISO and  
Union) and K. Philip (ISO)  
"65 Volumes of Astronomy and  
Astrophysics Abstracts:  
Interesting Statistics"

Nelson, S. (Denver) and R. E.  
Stencel (Denver)  
"Astronomical Alignments in a  
Neolithic Chinese Site?"

Yanamandra-Fisher, P. A.  
(JPL/CIT)  
"Enhancement of K - 12  
Astronomy Education through  
Multicultural Outreach"

## Abstracts for the Special HAD Memorial Session Honoring the Late LeRoy Doggett: Washington, DC, January 6, 1997

### "Bradley and Lacaille: Praxis as Passionate Pursuit of Exact Science"

Curtis A. Wilson  
St. John's College

From 1700 to 1800, astronomical observation and prediction improved in accuracy by an order of magnitude or more: by century's end astronomers could trust catalogued and predicted positions to within a few arcseconds. Crucial to this improvement were the discoveries of Bradley, which grew out of an endeavor of "normal science," the attempt to confirm with precision Robert Hooke's earlier supposed discovery of annual parallax in Gamma Draconis. On the theoretical side, Bradley's discoveries led to the quiet demise of two earlier doctrines, the Tychonic System and the Aristotelian and Cartesian doctrine of the instantaneous transmission of light.

On the side of praxis, Bradley's discoveries meant that observational astronomy must be re-done from the ground up. In 1742 Nicolas-Louis Lacaille (1713-62), who had been admitted to the Paris Academie des Sciences only the year before, proposed to his astronomer colleagues that they take up this task as a cooperative enterprise. His proposal met with silence, but he undertook the project on his own, making it his life's work. By 1757 he had completed his *Fundamenta Astronomiae*, including a catalogue of 400 bright stars in which for the first time star positions were corrected for aberration and nutation. In 1758 he published his solar tables, the first to incorporate lunar and planetary perturbations as well as aberration and nutation. Lacaille's pendulum clock was not temperature-compensated, and his sextant poorly calibrated, but he was to some extent able to compensate for these flaws by bringing a massive number of

observations to bear. Till the 1790s his *Fundamenta Astronomiae* and *Tabulae Solares* were important for the increments in accuracy they brought about, and for the inspiration they gave to later astronomers such as Delambre.

### "The Paschal Moon, the Easter Calendar, and Lunar Observations in Medieval Europe"

Stephen McCluskey  
West Virginia University

LeRoy Doggett was interested in the calendar, in the motion of the Moon, and in the difficult problem of regulating a lunar calendar. The connections between these matters have long influenced the development of astronomy. In the eleventh and twelfth centuries a series of troubling lunar observations led to an increased concern with the adequacy of the existing luni-solar calendar. These calendric problems led to an interest in lunar theory which contributed directly to the rediscovery of the calculating techniques and geometrical theories of ancient astronomy.

An examination of the activities of a group of English scholars will shed important light on the sources of this astronomical renaissance and its contributions to the broader recovery of Arabic and Greek science in Latin-speaking Europe.

### **"Tycho Brahe's Copernican Campaign"**

Owen Gingerich  
Harvard-Smithsonian CfA

James R. Voelkel  
Dibner Institute

Historians of astronomy have generally assumed that the Ptolemaic and Copernican systems give equivalent predictions of planetary positions, but Tycho Brahe knew that in the Ptolemaic arrangement Mars' distance was always greater than the sun's, whereas in the Copernican system Mars at opposition approached to half the sun's distance. Because Tycho accepted the traditional solar distance scale, 20 times too small, he expected to measure a Martian diurnal parallax of 4.5' at opposition if the Copernican system was true. (In reality the horizontal parallax was too small to measure by naked-eye observations.)

Hence, during the golden decade of the 1580s at Hven, Tycho undertook a major campaign to find Mars' parallax. Observations at the opposition of 1582-83 failed, according to a letter he wrote in 1584. The campaign at the next opposition led to frustration, but after the 1587 opposition he claimed that in fact he had already found the parallax in 1582. Was Tycho merely prevaricating because he wanted to have an observational basis for his new Tychonic cosmology?

During this decade Tycho gradually became aware of the role of refraction, and much of the new instrumentation built at Stjerneborg seems to have been motivated by this problem. Using an erroneously chosen

refraction table Tycho apparently convinced himself of a large parallax for Mars. He may well have discovered his error by 1592, for he never again claimed to have found the large parallax.

Because of the failure of this major goal, Tycho's reputation as a very smart and program-motivated observer has suffered, but because of this particular observational campaign, there were ultimately enough astonishingly accurate Mars observations for Kepler's later studies to succeed in finding the law of areas and the elliptical form of planetary orbits.

### **"Astronomy and Geography vs. Navigation: Defining a Role for an American Nautical Almanac, 1844-1850"**

Craig B. Waff  
MacMillan General Reference, USA

Between 1844 (when he was appointed the first superintendent of what would become the U.S. Naval Observatory) and 1848, Navy Lieutenant Matthew Fontaine Maury repeatedly advocated, both to the Navy Department and members of Congress, the production of an American Nautical Almanac. Maury apparently envisioned a nautical almanac, as its name implies, as being used solely by navigators, and he argued that American ships, both naval and maritime, should not have to rely on the almanacs produced by Great Britain and other European nations. In 1849, however, when an American Nautical Almanac was authorized by Congress, an anonymous writer (possibly Benjamin Apthorp Gould) and Navy Lieutenant Charles Henry Davis (the first superintendent of the Almanac Office) pointed out that astronomers and

geographers also made use of almanacs or astronomical ephemerides (as they are alternatively called), and they argued that, primarily for the benefit of such users, a new almanac/ephemeris more accurate than the European ones should be produced as a showcase of the skills and talents of the emerging American astronomical community.

Whether the newly authorized Almanac should be produced for navigators or for astronomers and geographers was hotly debated in late 1849 and early 1850 after Davis proposed using, primarily for the benefit of the latter group, an American prime meridian as the basis for the Almanac's tables. This debate ultimately led to the Almanac, for many years, having separate sets of tables based on the Greenwich prime meridian (favored by navigators) and on a prime meridian passing through the Naval Observatory. Congress's endorsement of this compromise, which was coupled with a stated preference for an American prime meridian, was another decisive step (following the establishment of the Naval Observatory) in the federal government's promotion of the science of astronomy in the United States.

#### **"Nautical Almanac Office 1975-1996"**

P. K. Seidelmann  
U. S. Naval Observatory

During the period of 1975 to 1996 The Nautical Almanac Office (NAO) underwent a number of changes in the publications and products of the office. There was also an organizational change in 1990, when the NAO name changed from being a department to a division within the

Astronomical Applications Department. LeRoy E. Doggett was responsible for editing and publishing during the period. The Air Almanac was reduced from three to two volumes per year in 1977 and from two to one in 1987. In 1977 the Almanac for Computers was introduced. In 1981 a reformed and single publication, 'The Astronomical Almanac,' replaced 'The Astronomical Ephemeris' published in the U. K. and 'The American Ephemeris and Nautical Almanac' published in the U. S. The bases for the publication were changed in 1984. The Floppy Almanac was introduced in 1986 and MICA was introduced in 1993.

In addition to the publications LeRoy Doggett handled phone calls and letters, particularly about phenomena, calendars, and history. This was done in both a scholarly and user friendly style.

#### **"Crescent Wars"**

B. E. Schaefer  
Yale University

Historically, many calendars are based on lunar months, where the start of the month is based on the sighting of the thin crescent Moon in the evening twilight. Yet the problem of predicting (or postdicting) crescent visibility is a difficult task. In modern times, the Islamic calendar is used by more than a billion people, while its utility is abridged by the ambiguities in knowing the dates. As such, I would claim that crescent visibility is the single (nontrivial) astronomical problem that affects the most people.

LeRoy Doggett spearheaded an effort to

place crescent visibility on a firm observational basis by organizing five Moonwatch campaigns involving thousands of observers spread out across North America. His idea was to collect large numbers of actual observations for direct confrontation with models, and to measure the error rates. This talk will report on his results.

The application of the results are broad; frequently in areas of scholarly, historical, social, or military disputes. For example, lunar visibility is vital for dating the Crucifixion, a task contentious among Biblical scholars. Another example is in testing the historicity of the claimed lunar impact reported by Gervase of Canterbury. The meeting will be held in the middle of the Islamic holy month of Ramadan, while in the past two decades the majority of Ramadans have been started based on reported crescent sightings before the time of New Moon.

### **"LeRoy Doggett and Daylight Saving Time: A Reminiscence"**

Ian R. Bartky

Daylight Saving Time (DST) has been a concern of Congress ever since its adoption in 1918. Yet, not until 1976 did Members of Congress have astronomical, geographic and demographic information in terms of the country's Standard Time zones. This information and various impact analyses were developed by the National Bureau of Standards (NBS) at the request of the House of Representatives, which was reviewing the effects of a two-year, DST experiment on the American public. The displays in the study gave legislators a way to consider

alternate observance periods in a systematic manner.

The leader of the DST study team will detail LeRoy Doggett's involvement during the hectic, three-month analysis period that culminated with NBS officials testifying before Congress.

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## **Roderick S. Webster**

Bruce Stephenson, Adler Planetarium & Astronomy Museum

Roderick S. Webster, Curator Emeritus of the Adler Planetarium's collections of scientific instruments and rare books, died on July 31, 1997, after a mercifully brief illness. He was born September 14, 1915, in Evanston, Illinois, and educated at the U.S. Naval Academy and the University of Michigan. In 1953 he married Marjorie Kelly, a high school friend who became an inseparable companion in his life and his work.

In 1962 Rod and Madge became acquainted with the Scientific Instrument Collection at Chicago's Adler Planetarium. At that time the Collection was not being actively cared for. They volunteered to look after these instruments, to study them and to answer the inquiries that came from scholars all over the world. From 1962 to 1969 they served as volunteer caretakers of the collection.

Although Rod was self-taught in the field of scientific instruments, he became quite expert in many areas. In 1969 he was officially appointed Curator of the Collection, and shortly thereafter Madge

was appointed co-Curator. The two of them worked for many years to build, document, and publicize the Adler collections. They finally "retired" and were named Curators Emeriti in 1991, but they remained active in the Adler's History of Astronomy Department, as well as many professional organizations around the world. They traveled widely to attend meetings and visit collections of scientific instruments. They have written a catalog of the Western Astrolabes in the Adler's collection, which is in the final stages of production.

Rod was well known to many in the scientific-instrument community. His intelligence, modesty, and enthusiasm made him numerous friends around the world. We will miss him.

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## Helen Wright Greuter

David DeVorkin, Smithsonian Institution

Helen Wright Greuter died at age 82 on October 23 in Washington after a heart attack. Known widely to historians of astronomy as the biographer of George Ellery Hale and of Maria Mitchell, Helen Wright was a prolific writer who authored or co-authored over two dozen books on astronomy and the history of astronomy. Of her work on Hale, "Explorer of the Universe," which was first published in 1966 and recently reprinted by the American Institute of Physics (1994), Allan Sandage noted that she brought both the eye of the participant and historian to the task of illuminating the life of the most influential American astronomer of the 20th century.

Helen Wright was born in Washington, D.C.

and experienced astronomy first through her father, Fred Wright of the Carnegie Institution of Washington, who led the CIW Moon Project at Mount Wilson. Fred Wright was also Home Secretary of the National Academy of Sciences, and was part of Hale's world in the 1930s. His daughter as a result came to know many Mount Wilson staff members, and took a master's degree in Astronomy from Vassar College after attending the Madeira School and Bennett Junior College. She became an assistant at the Vassar College Observatory in 1937 and was a junior astronomer at the U. S. Naval Observatory from 1942 to 1943.

Sometime after the war, in the wake of her publication of "Sweeper in the Sky, The Life of Maria Mitchell," Helen Wright began researching and writing her monumental biography of Hale, supported in part by Vannevar Bush of the Carnegie Institution of Washington. Although completed in the 1950s, it was only published in the 1960s, and even then was the first major historical work, based largely on archival documentation, of a pivotal figure in 20th century American astronomy.

Among her many other works we can only mention a few. Her insightful monograph "James Lick's Monument - The Saga of Captain Richard Floyd and the Building of the Lick Observatory" provided new light into the harsh conditions and strong personalities involved in the origins of that great mountain observatory. She also co-authored and co-edited many works on astronomy with astronomers (including Harlow Shapley) and historians alike.

She maintained residences in Washington, New Jersey, Nantucket and in Ontario, and

was an avid student of stone carving. She is survived by two brothers, William Finley Wright of Vestal, N.Y. and Kenneth A. Wright of Lexington, Massachusetts. She was married twice, first to John L. Hawkins and then to Rene Greuter, who died in 1979.

In her last years she remained intellectually active and keenly interested in the astronomical legacy of Mount Wilson.

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## News From the IAU, Commission 41

Steven J. Dick, U. S. Naval Observatory

The General Assembly of the International Astronomical Union was held in Kyoto, the ancient capital of Japan, from August 18-30. Although the weather was steamy, the surroundings were otherwise very pleasant, and the International Conference Center conducive to both social and scientific gatherings. Emperor Akihito, accompanied by the Empress, addressed the opening General Assembly with a brief history of astronomy in Japan. This set the stage for Commission 41 (History of Astronomy), which took advantage of the surroundings to concentrate on the history of Oriental astronomy, broadly conceived.

The entire day Monday, August 25 and the first part of the morning August 26, were devoted to a Joint Discussion on the "History of Oriental Astronomy," largely organized by outgoing Commission 41 President S. M. R. Ansari (India). Approximately 100 people in attendance heard papers on the ancient and medieval periods, including: the earliest stage of Chinese astronomy (Y. Maeyama), Islamic astronomy in China (B. van Dalen), an Arabic commentary on al-Tusi's *Tadhkirah* and its Sanskrit translation (T. Kusuba), Ancient Indian astronomy in China (J. Xiao-Yuan), Korean star maps of the 18th century (Il-S. Nha), Knowledge of the starry sky in Indonesia (B. Hidayat), the projection method of star mapping in the Song Dynasty, astronomy in the Orient to the 12th and 13th centuries (K.-Y. Chen), Vedanga astronomy (Y. Ohashi), spherical trigonometry in the astronomy of the medieval Kerala school (K. Plofker), and astronomical dating and statistical analysis of Shang dynasty oracle bone records (K. Pang, K. Yau and H. Chou).

Among the papers in the modern astronomy session were The *Drkpaksasarani*: A Sanskrit version of de la Hire's *Tabulae Astronomicae* (D. Pingree), Modern astronomy in Indo-Persian sources (S. M. R. Ansari), Takamine and Saha's contacts with western astrophysics (D. DeVorkin), contemporary astronomy in Iran (Y. Sobouti), astronomy education in the East (S. Isobe), Kepler's law in China (K. Hashimoto), the status of astronomy in Uzbekistan (S. Ehgamberdiev), Power and politics in 19th century Australian astronomy (W. Orchiston), old Burmese sky charts (M. Nishiyama), and an overview of Oriental astronomy (S. Nakayama).

In addition to the session on the history of Oriental astronomy, Commission 41 also supported Joint Discussions on "Stellar Evolution in Real Time," "Enhancing Astronomical Research and Education in Developing Countries" and "The Leonid Meteor Stream: Historical Significance and Upcoming Opportunities." S. Dick gave a paper in the latter on "Observations of the Leonids over the Last Millennium." Aside from the activities of Commission 41, of course, every conceivable field of astronomy was discussed, with so many overlapping sessions that anyone with broad interests (or even narrow ones) often had to make a choice.

At other Commission 41 sessions on Country Reports, Rajesh Kochhar spoke on the History of Astronomy in India, Wayne Orchiston on history of astronomy activities in New Zealand, Suzanne Debarbat on the history of astronomy activities in the Department of Fundamental Astronomy at Paris Observatory, and Il.-S. Nha reported on a new Museum of Astronomy in Korea, to open in October, 1998.

A considerable number of issues were discussed in two Commission 41 business meetings. In light of the recent reorganization of the IAU into Divisions, the members voted to support the position that "History of astronomy is a discipline that overarches the entire field of study of the IAU, and therefore should not be confined to one Division. We wish to remain a separate Commission until such time as we can become a separate History of Astronomy Division."

New resolutions included the following:

- 1) Whereas historical astronomical records are important to the heritage of astronomy and may be essential to applied astronomy, The IAU supports the recovery, inventory and preservation of astronomical archives of national and international institutions, including observatories, societies and other institutions.
- 2) That Commission 41 records its serious concern regarding grave losses at Pulkovo as the result of fire, and supports the assessment of these losses to the cultural heritage of astronomy.
- 3) That, in order to facilitate research into the history of astronomy in a country (the "host country") that was subjugated or governed by another country ("governing country"), and where the relevant source material now resides in the governing country, every attempt should be made to provide copies of such source material to the host country.
- 4) Noting that vital primary source material pertaining to history of astronomy in a country (the host country) that was ruled or governed by another (the governing country) resides in the governing country, it is recommended that visiting fellowships be created by IAU, European Union, and bilateral agreements between countries to enable researchers from a host country to consult source material in a governing country.



The Commission endorsed a proposal by Edoardo Proverbio (Italy) that a meeting (probably an IAU colloquium) on "Polar Motion: Historical and Scientific Problems" be held in Italy on the occasion of the centenary of the International Latitude Service (ILS) in 1999. Looking forward to the next General Assembly in Manchester, S. Dick proposed as a possible topic for a Joint Discussion "Applied History of Astronomy", especially since the world's leading scholar in the field (F. R. Stephenson) is in the UK, and he is the new V. P. of Commission 41. This proposal was enthusiastically endorsed by the members. In light of the fact that the next General Assembly will be held in the year 2000, it was suggested that Commission 41 sponsor an Invited Discourse on "The History of Astronomy in the 20th Century."

W. Orchiston (New Zealand) discussed a proposal to form a new "Journal for the History and Heritage of Astronomy." It would replace the current Australian Journal of Astronomy, and John L. Perdrix (Australia) would remain its editor. It would not wish to be competitive with the current Journal for the History of Astronomy, but would seek to publish a wider variety of articles.

Elections resulted in the following officers for the 1997-2000 triennium:

- President: S. J. Dick (USA)
- Vice-President: F. R. Stephenson (UK)
- Immediate Past President: S. M. R. Ansari (India)
- Organizing Committee: Wolfgang Dick (Germany)  
Alex Gurshtein (Russia)  
Il.-S. Nha (Korea)  
Wayne Orchiston (New Zealand)  
Edoardo Proverbio (Italy)  
Woodruff T. Sullivan (USA)  
Xi Zezong (China)

The total membership of the Commission, including the new members, stands at 147, plus 17 consultants. A moment of silence was observed for members deceased since the last G. A., including LeRoy Doggett (U. S. Naval Observatory, Washington) and Bruno Morando (Bureau des Longitudes, Paris).

One of the chief problems of Commission 41 is communication among its members around the world. Emulating the success of *HAD News*, it is hoped that a regular newsletter will help to remedy this.

Altogether, it was a very satisfying meeting. With concerts, a banquet, visits to Buddhist temples and other local sights, we did not forget to have a good time. We all departed with a renewed appreciation of the richness of our field, and how much remains to be done.

## **News from the AIP Center for History of Physics**

### **Grants-in-aid for History of Modern Physics and Allied Sciences**

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, MD (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 the address below. Deadlines for receipt of applications are June 30 and December 31 of each year.

### **Astronomy Portrait Photos Available to Libraries**

A few duplicate sets of a large collection of slides with portraits of astronomers are available gratis for suitable repositories.

The late John Irwin, an astronomer and professor at Kean College, compiled a slide collection of portraits of important astronomers that he photographed while attending IAU and AAS meetings from 1966 to 1988; the collection also includes slides of observatories in South Africa and Chile during the 1950s and 1960s. The set contains over 1,550 photographs.

Irwin donated a complete set of the slide collection to the AIP History Center's Emilio Segrè Visual Archives between 1988 and 1990. Following his death in April 1997 his son, Alan Irwin, has asked the History Center to distribute four partial duplicate sets of the slides to research libraries or archives with related collections that are willing to maintain them and make them accessible to researchers. These sets date primarily from 1966 through the early 1980s, and the slides are identified by name, place and date. Interested parties are encouraged to contact AIP at the address below. If there are more applicants than available sets, a committee will be assembled to choose recipients.

In addition to the identified sets of slides, Dr. Irwin left several duplicate sets of unidentified slides, including photos of individuals, groups, and sites. These slides are kept at the Emilio Segrè Visual Archives, and we would welcome volunteers who are interested in viewing the slides and helping to identify the people and places.

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](mailto:sweart@aip.org).

## AAS Centennial Planning

*[The following is an abstract submitted for presentation at the Washington AAS/HAD Meeting. Donald Osterbrock is Chair of the Centennial Committee. - Ed.]*

### "Now we are Ten: The AAS Tenth, Decennial Meeting at Yerkes Observatory in August 1909"

D. E. Osterbrock (UCO/LO/UCSC)

The tenth meeting of the Astronomical and Astrophysical Society of America (later to become the AAS), held in August 1909, was also its tenth-anniversary (or decennial) meeting. Fifty-three members were present, as contrasted with the 1400 expected for the 194th, Centennial meeting to be held in Chicago in May-June 1999, and forty-one papers were presented, rather than the 1000 predicted for next year. Other similarities and differences between the meetings then and now will be described and illustrated.

Simon Newcomb, the first AAS President, had died in July 1909, and Edward C. Pickering, who had succeeded him in 1905 and was to remain President until 1919, eulogized him at the Yerkes meeting. Two committees, on Luminous Meteors and on Comets, respectively, presented their reports, the latter's dealing with plans for Comet Halley at its 1910 apparition. A high-level Special Committee issued a statement decrying a newspaper furor over establishing communications with Mars, which they said was then "outside the range of contemporary science."

Six of the members present at the 1909 meeting were women. Joel Stebbins, later to be Councilor, Secretary, Vice President and

President, presented his first AAS paper, on his new selenium (photo-resistive) photometry. Frank Schlesinger, another future Society President, was also present and read an instrument-design paper. Ten of the papers were given by Yerkes and University of Chicago astronomers, including three by E. E. Barnard and two by Kurt Laves. Another six papers from distant Lick Observatory members were read in absentia. S. W. Burnham, who was at the Yerkes meeting, was the one famous astronomer who never joined the Society. Finally, the Council authorized publication of a Decennial Book, to provide record of the first ten years of the young Society.

## From the Chair

Once again, the HAD will meet in conjunction with the annual American Astronomical Society winter meeting (January 6-10, 1998). Our hosts will be the AAS Office and other DC-area astronomical institutions.

Tuesday afternoon (Session HAD I), Curtis A. Wilson, Professor Emeritus of St. John's College, Annapolis, MD, will accept the first LeRoy E. Doggett Prize for Historical Astronomy. Professor Wilson will present an address as part of this Special Memorial Session honoring the late LeRoy Doggett's life and scholarship. The Special Session will include a series of invited and contributed papers by historians and astronomers who collaborated with LeRoy Doggett, or worked in areas in which he was interested. These areas include: celestial mechanics, navigation, timekeeping, calendars, and archaeoastronomy. Contributed papers will be presented in

sessions HAD II (morning) and III (afternoon), to be held Wednesday.

All HAD members are invited to attend the HAD business meeting, too. This important meeting will discuss planning for the AAS Centennial and the June, 1998 meeting in San Diego, among other business.

(Skipping a January 1999 meeting will affect the installation of new officers; how this is to be handled has yet to be decided.) In addition, there will be reports from the Secretary-Treasurer and Committee Chairs as well as a call for New Business. Input on these matters from our AAS and affiliate members is both welcome and appreciated.

David DeVorkin

### **Report from the Archeoastronomy Committee**

I will be at the January AAS meeting (unless the college pulls my funding for the trip) and will present a call for members and several ideas I have regarding what we in the Archaeoastronomy Committee might be doing. I hope to see many of you in Washington.

David G. Iadevaia, Chair

### **Report from the International Relations Committee**

The IRC now has its own Web Page:  
<http://www.aas.org/~had/irchad.html>

Let me know if you have any trouble accessing it.

Robert McCutcheon, Chair

### **Report from the Obituary Committee**

Issue #41 of *HAD News* included a list of members provided by the Obituary Committee. The name of Dr. Joe Tenn (Sonoma State University) was accidentally omitted.

Virginia Trimble, Chair

### **From the Secretary**

Yes, our wizened little Astronomer of Old has returned, this time on the return-address stamp of your envelope. Having now prepared a year's worth of *HAD News*, I would like to take the opportunity to especially thank Ruth Freitag. When her FedEx mailer arrives quarterly in my office, I know that my job is half finished. For should I not be able to assemble a single coherent sentence, I then still am assured that the *News* will contain the most thorough history-of-astronomy bibliography available anywhere.

Thanks also to Woody Sullivan for his four 1997 "From the Lucubratory" columns. His current article reminds me of the time I proposed a sundial for my campus building. (A percentage of all state renovation funds in Iowa are set aside for public art.) The idea was rejected because--get this--"art could not be functional"! So much for both western and eastern civilization . . .

Despite the aforesaid demise of civilization, I look forward to visiting with everybody at the January HAD meeting in DC!

Thomas Hockey (address on your envelope)  
Phone: (319) 273-2065 Fax: (319) 273-7124  
I: [hockey@uni.edu](mailto:hockey@uni.edu)

## **Recent Discussion "Threads" on the History of Astronomy Discussion Group (HASTRO-L)**

Congratulations to Stephen McCluskey and HASTRO-L upon passing the 500 subscriber mark!

- Zodiacal Symbols at Ravenna
- The Meaning of "B. C."
- Daytime Observations of Venus
- Beginning of the New Millennium (Ussher Chronology)
- Julian Day Numbers
- John Clacey, Telescope Maker
- Was Ptolemy an Instrumentalist or a Realist?
- Historical Sunspot Data
- Plans for Antique Telescopes
- King's *History of the Telescope*
- The "Cross" Asterism in Cygnus
- Heliocentrism Before Galileo
- Seventeenth Century Comet Observations from Iran
- An Ethno-Archaeoastronomy LISTSERV?
- The Myth of Columbus "discovering" that the World is Round
- Biot's 1803 Report of a Meteor Fall
- The Meaning of "Navigator's Line"
- Is there a Better term for "Archeoastronomy"?
- Mästlin's 14 naked-eye Pleiads
- Measurement of the Speed of Light
- Inuit & Borneo Ethnoastronomy

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## **Web Page of the Winter**

*[Rather than simply listing WWW Pages, I have decided to shine a virtual spotlight on one noteworthy Page in each issue of HAD News. - Ed.]*

This quarter's selection was both obvious and a favorite of mine. It is the Galileo Project Home Page by Albert Van Helden.

At this site, the visitor may tour Galileo's Villa, an image of a sixteenth-century Florentine Villa in which different "rooms" contain hypertext links to various topics. For instance, clicking on the Family quarters will provide you with text about Galileo's family. Information on Galileo's inquiries in mechanics can be found in the Laboratory. The Instrument Closet contains text on and images of Galileo's instruments. The astronomer will want to visit the Observing Terrace, where accounts of Galileo and his contemporaries' astronomical discoveries appear, as well as modern astronomical information and images.

Elsewhere, I have found the Catalog personally useful. It holds 631 biographies on members of the sixteenth- and seventeenth-century scientific communities. These data were compiled by the late Richard S. Westfall (Indiana University).

<http://es/rice.edu/ES/humsoc/Galileo/>

## From the Lucubratory

Woody Sullivan, University of Washington

This time I present a 17th C. passage on how to construct an erect (i.e., on a vertical wall) sundial for an east-facing wall. Rather than just a trivia question, the contest this quarter will be for the best thin-cardboard model of this dial sent to me. (I'll return all models.) Also, try out your model with the real sun! The dial should be for your own latitude and the gnomon should be properly sized and attached, but folded down for passage through the mail. A couple of questions to ponder: (1) which trig function is essentially being defined by the geometrical procedure here described?, and (2) do you see why this sundial works, given its shape and orientation to the sun's daily motion?

In the passage below, punctuation and capitalization have been modernized, but not the spelling; material in brackets [] is mine. In the drawing, the label L is a modification of mine. Note the "American" spelling of center; it turns out this was the standard English spelling until Johnson switched to centre in his famous dictionary of 1755. But by then the Colonials were getting to be a rebellious bunch who weren't about to change--no orthography permutation without representation!

[Winner of last month's question, related to the acrostic on the theme of Einstein, was Laura Woodard Eklund of the Mt. Wilson Institute, who knew that Alexander Graham Bell financed Albert Michelson's "differential refractometer," now better known as the Michelson interferometer, for his first experiments in 1881 in Berlin.]

From *A Tutor to Astronomy and Geography* . . . by Joseph Moxon (London, 1674)

Book V. Shewing the practical use of the

globes. Applying them to the solution of gnomonical problemes. -- Probleme VI. To make an erect direct east dial.

Provide a square board, as ABCD. Draw the straight line ef upon it parallel to the sides AC and BD, and just in the middle between them. Cross this straight line at right angles with another straight line, as gh, quite through the board.

Upon this board with a little pitch or wax fasten the semi-circle of position, so as both the poles thereof may ly in the line gh, and the middle of the semi-circle may ly upon the line ef. So shall it be the center of the semi-circle of position. In this center make a small hole through the board fit to receive a wyer or a nail . . . .

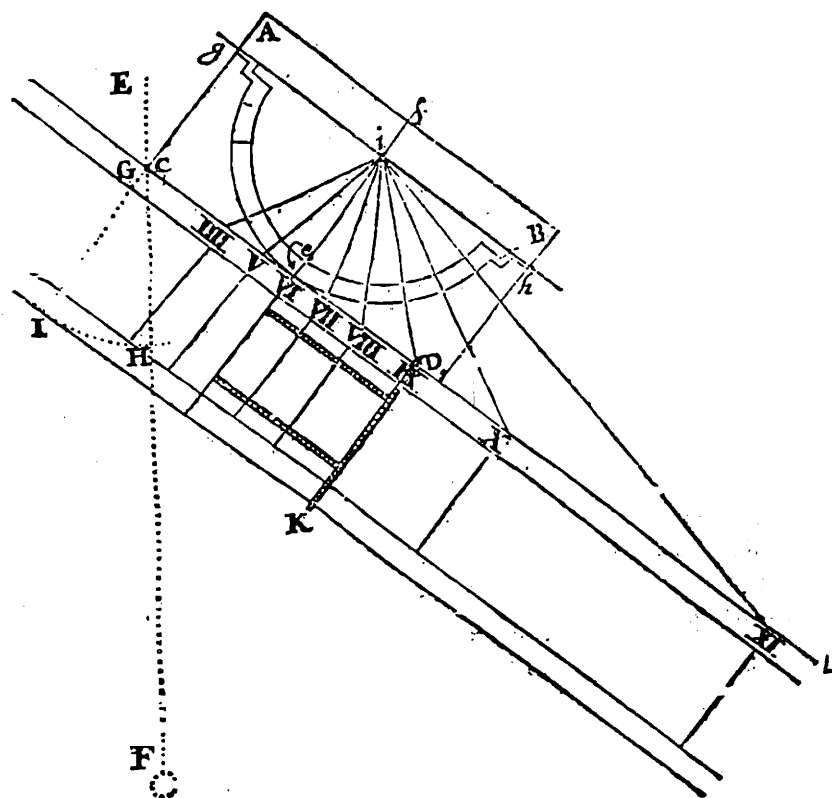
I would make an erect direct east dial for London's latitude [51.5 degrees N.]. Therefore I fasten a plumb-line a little above the place on the wall where I intend to make my dial, and wait till it hangs quietly before the wall. Then if the line be rubbed with chalk (like a carpenter's line) I may by holding the plumbet [plumb bob] end close to the wall, and straining it pretty stiff, strike with it a straight line as carpenters do. This line shall be a perpendicular [vertical] as EF; I chuse a convenient point in this perpendicular, as at G, for a center: whereon I describe an occult arch [temporary arc] as HI. This arch must contain the number of degrees of the elevation of the equinoctial [equatorial plane], counted between H and I (which in our latitude is 38 1/2). Therefore in a quadrant of the same radius with the occult arch I measure 38 1/2 degrees, and set them off in the plain from H in the perpendicular to I. Then from I to the center G in the perpendicular, I draw the prickt line IG, and this line shall represent the axis of the world. I cross this axis at right angles with the line GL, and draw it from G to L, so

long as I possibly can: this line shall be the contingent line. I find a convenient place in this contingent line, as at VI, to which I apply the side of the board CeD, so as that the point e may ly just upon VI in the contingent line. And having a thred fastened in the center of the semi- circle of position, I draw that thred straight over the first 15 degrees of the circle of position, numbered from e towards h, and where the thred cuts the contingent line I make a mark, for that mark shall be the mark for the 7 a clock line. From thence I remove the thred to 30 degrees of the semi-circle and draw it through the contingent line, and where it cuts the contingent line there shall be the mark for the 8 a clock line . . .

[likewise: 45 degrees for 9 am, 60 degrees for 10 am, 75 degrees for 11 am, 15 degrees on the other side of e for 5 am, and 30 degrees on the other side for 4 am - the summer sun rises early in England!] . . . .

The style [shadow-casting edge] of this dial (as well as of others) must stand parallel to the axis of the world. It must be also parallel to all the hour lines, and stand directly over the 6 a clock line, and that so high as is the distance between the center of the semi- circle of position and the point e where the 6 a clock line cuts the contingent line.

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Layout by John Alexander

## RECENT PUBLICATIONS RELATING TO THE HISTORY OF ASTRONOMY

### *Books, Pamphlets, and Special Issues of Periodicals*

Les Astres. Actes du Colloque international de Montpellier, 23–25 mars 1995. Études rassemblées par Beatrice Bakhouché, Alain Moreau et Jean-Claude Turpin. Montpellier, Séminaire d'étude des mentalités antiques, Publications de la recherche, Université Paul Valéry, 1996. 2 v. illus. (part col.)

Contents: t. 1. Moreau, A. Avant-propos. 1. ptie. Les astres et les mythes. ch. 1. Mythologie classique. Moreau, A. Quand Apollon devint Soleil. Wathelet, P. Le soleil et les héros solaires dans l'épopée homérique. Le Bœuffle, A. Autour du Dragon, astronomie et mythologie. Soubiran, J. Mythologie et astronomie (II). Le ciel étoilé vu par la jalousie de Junon (Sénèque, *Herc. fur.*, 3–18). Renaud, J. M. Le catastérisme d'Orion. ch. 2. Mythe et histoire. Santini, C. Divinité des astres et catastérisme dynastique. Martin, P. M. Le soleil comme agent de souveraineté. Recherche sur les fondements italo-étrusques de la mystique solaire à Rome. Ricoux, O. Sirius ou l'étoile des mages.—2. ptie. La description du ciel. ch. 1. Les grands ancêtres. Bottéro, J. L'astrologie mésopotamienne: l'astrologie dans son plus vieil état. Lenthéric, B. À propos du Zodiaque circulaire de Dendera: éléments de réflexion. ch. 2. Naissance d'une science. Aujac, G. Sphère céleste et constellations chez Eudoxe, Aratos, Hipparque, Ptolémée. Novara, A. Cicéron et le planétaire d'Archimède. Caldini Montanari, R. Étoile, constellation et corps céleste dans les mentalités grecque et romaine. Freyburger-Galland, M. L. Thalès, astrologue ou astronome? ch. 3. Mesures et calculs. Freyburger, G. L'harmonie des sphères calculée en stades (Pline, *N.H.*, II, 83–84 et Censorinus, 13, 2–5). Rüpke, J. *Quis vetat et stellas ...?* Les levers des étoiles et la tradition calendaire chez Ovide. Hübner, W. Les divinités planétaires de la *Dodécateopos*.—t. 2. 3. ptie. Les correspondances entre la ciel, la terre et l'homme. ch. 1. Microcosmos et macrocosmos. Bakhouché, B. La terre, petit miroir du ciel ... et vice versa? (Macrobe, *Commentaire sur le Songe de Scipion*, II, 5–9). Toulze, F. Astronomie, mythe et vérité (Vitruve, *De Architectura*, IX et Pline l'Ancien, *Naturalis Historia*, II). Liuzzi, D. L'Europe dans l'œuvre de Manilius (*Astr.*, IV, 681–695; 715–721; 760–769). Martínez-Gázquez, J. *L'homo astrologicus* du ms. 2052 des archives capitulaires de la Seu d'Urgell. ch. 2. L'action des astres. Gourevitch, D. La lune et les règles des femmes. Amignes, S. Les "fiancées du soleil." Abry, J. H. L'horoscope de Rome (Cicéron, *Div.*, II, 98–99).—4. ptie. Les "survivances" de l'astrologie antique. Fuzeau-Braesch, S. Prolongements modernes de l'astrologie antique. Brunon, C. F. Le ciel d'Horapollon. Bauer, F., and G. Gouiran. L'"aube" et les astres. À propos de quelques particularités formelles des *albas* profanes. Viré, G. Quelques continuateurs du *De Astronomia* d'Hygin. Maranini, A. Les *Astronomiques* de M. Manilius et le Manilius français d'Equicola. Picot, J. P. Mythologie de l'étoile chez Edgar Poe. Wathelet, P. Synthèse du colloque.

English summaries of papers appear on p. 239–265 of v. 2.

Les Astres. Préf. de Gérard Mourgue. Avec la collaboration de 270 poètes et 18 illustrateurs. Paris, J. Grassin, 1994. 472 p. illus. (L'Encyclopédie poétique, t. 29)

An anthology of poems relating to celestial objects and phenomena.

Astrologia: arte e cultura in età rinascimentale. Art and culture in the Renaissance. A cura di Daniele Bini. Testi di Ernesto Milano, Grazia Mirti, Leandro Ventura, Anna Rosa Venturi. Schede di Milena Luppi, Paola di Pietro, Paola Ortolani. Modena, Il Bulino, edizioni d'arte, 1996. 286 p. illus., facsim. (part col.), ports. (Il Giardino delle Esperidi, 5)

Italian and English in parallel columns.

Contents: 1. La cultura astrologica: cenni storici. The domain of astrology: some historical notes.—2. De Sphaera estense. The Este De Sphaera.—3. La cultura astrologica in età rinascimentale: testimonianze dai fondi della Biblioteca estense. Astrology in the Renaissance: testimonies from the Biblioteca estense.

Basinio, *da Parma*. Basinii Parmensis poetæ Astronomicon libri II. Edizione in fac-simile del Codice della Cassa di Risparmio di Rimini. Traduzione italiana di Marinella De Luca con una nota codicologica di Donatella Frioli e un saggio di Giordana Mariani Canova sull'apparato illustrativo del codice.



- Rimini, Fondazione Cassa di Risparmio di Rimini, 1994. [78] p. of facsim., 253 p. illus., col. facsim. Contents: pt. 1. Fac-simile del codice.—pt. 2. Traduzione italiana. Saggi.
- Bertola, Francesco. *Imago mundi: la rappresentazione del cosmo attraverso i secoli*. Cittadella, Biblos, 1995. 231 p. illus. (part col.), facsim. (part col.), col. map. Italian and English.  
A French translation, *Imago mundi: la représentation de l'univers à travers les siècles*, was published in 1996 by La Renaissance du livre in Brussels.
- Castiñeiras González, Manuel A. *El calendario medieval hispano: textos e imágenes (siglos XI-XIV)*. Valladolid, Junta de Castilla y León, Consejería de Educación y Cultura, 1996. 335 p. illus., map. (Estudios de arte, no. 7)
- Clay, Roger, and Bruce R. Dawson. *Cosmic bullets: high energy particles in astrophysics*. St. Leonards, NSW, Allen & Unwin, 1997. 194 p. illus. (Frontiers of science)  
"These particles are in many ways deeply mysterious. Despite a century of intensive research, it is still far from certain where they come from or the way they were created. Nevertheless, the little-known story of their discovery and subsequent study has many intriguing twists and wonderful surprises."
- Cramer, Frederick H. *Astrology in Roman law and politics*. Chicago, Ares Publishers, 1996. 291 p. illus., geneal. tables, map, ports.  
Reprint of a work published in 1954 by the American Philosophical Society in Philadelphia, as v. 37 of its *Memoirs*.
- David, Ferdinand. *La cathédrale de Strasbourg et l'astrologie*. Monaco, Éditions du Rocher, 1992. 202 p., [8] p. of plates. illus. (L'Homme et l'univers)  
"Ce livre aborde, pour la première fois, la place de l'astrologie dans l'extraordinaire renouveau intellectuel et artistique des XII<sup>e</sup> et XIII<sup>e</sup> siècles, et plus particulièrement dans l'art gothique."
- Dershowitz, Nachum, and Edward M. Reingold. *Calendrical calculations*. Cambridge, New York, Cambridge University Press, 1997. xxi, 307 p. illus., facsim.  
"This volume will be a valuable resource for working programmers, as well as a source of useful algorithmic tools for computer scientists. It also includes a wealth of historical material of value to anyone interested in chronology."
- Duteuil, Jean P. *Le mandat du ciel: le rôle des jésuites en Chine, de la mort de François-Xavier à la dissolution de la Compagnie de Jésus (1552-1774)*. Préf. de Jean Delumeau. Paris, ap éditions-Arguments, 1994. 411 p. illus.  
Partial contents: 5. ptie. Vers la pensée scientifique universelle. ch. 1. Mesurer le temps, mesurer l'espace. 1. L'horlogerie: pendules et automates.—2. De l'astrologie à l'astronomie. a. Un besoin spécifique: des missionnaires astronomes. b. La découverte des techniques chinoises et la fabrication d'un matériel scientifique. c. L'arrivée des Qing et les difficultés du Père Schall. d. La défense d'une astronomie scientifique, de Ferdinand Verbiest à la fin de la Mission.—3. De l'astronomie à la chronologie. a. La Chine et les origines de l'humanité. b. Le Déluge, l'Égypte et la Chine.
- En toch was ze rond ... *Middeleeuws mens- en wereldbeeld*. Brussel, Universitaire Faculteiten Sint-Aloysius—Gemeentekrediet, 1990. 191 p. illus. (part col.), facsim. (part col.), maps (part col.), ports. (part col.)  
Produced to accompany an exhibition held in Brussels, Mar. 3-Apr. 28, 1990.
- Encyclopaedia of the history of science, technology, and medicine in non-Western cultures. Editor, Helaine Selin. Dordrecht, Boston, Kluwer Academic Publishers, 1997. 1117 p. illus. (1 col.)  
Provides a wealth of material relating to astronomy, astronomical instruments, astrology,

navigation, and calendars, as well as biographical sketches of individual astronomers. While the index lists many relevant topics under the heading Astronomy, others (including the names of astronomers) can be found among the cross references at the end of most essays.

The general articles on astronomy are listed below as an indication of the range of coverage and contributors.

Partial contents: Culver, R. B. Astronomy.—Doyle, L. R., and E. W. Frank. Astronomy in Africa.—Krupp, E. C. Astronomy in native North America.—Haynes, R. D. Astronomy of the Australian aboriginal people.—Ho, P. Y. Astronomy in China.—De Young, G. Astronomy in Egypt.—Langermann, Y. T. Astronomy of the Hebrew people.—Sarma, K. V. Astronomy in India.—Ammarell, G. Astronomy in the Indo-Malay archipelago.—King, D. A. Astronomy in the Islamic world.—Macri, M. J. Astronomy in Mesoamerica.—Ōhashi, Y. Astronomy in Tibet.

Encyclopedia of planetary sciences. Edited by James H. Shirley and Rhodes W. Fairbridge. London, New York, Chapman & Hall, 1997. xxx, 990 p., [32] p. of plates. illus. (part col.), maps (part col.), ports. + 1 computer laser optical disk (4¾ in.)

In addition to two general articles, "History of Planetary Science I: Pre-Space Age," by Patrick Moore, and "History of Planetary Science II: Space Age," by James A. Van Allen, there is a short article on archaeoastronomy by David S. P. Dearborn, and many other articles include treatment of historical aspects. There are also numerous biographical sketches, a list of which can be found on p. 943.

The CD-ROM contains "over 200 relevant planetary and related images and a review of planetary data available from NASA ... specially compiled for the *Encyclopedia* by the United States National Space Science Data Center."

Felsbild- u. Sternbild II und ausgewählte Kapitel aus: "Sie sahen die Sterne von Miroslav Ksička." Graz, GE.FE.BI, 1995. 114 p. illus., maps. (X. Jahrbuch der Gesellschaft für vergleichende Felsbildforschung, 1995/96)

Partial contents: Ksička, M. Sie sahen die Sterne.—Wanke, L. Erläuterungen zu den Ksica angeführten Termini von der GE.FE.BI.—Wanke, L. Zusammenfassung: Überblick über die Solartiere.—Wanke, L. Weiterführende Literatur Himmelskundlicher Vorgeschichte.—Evers, D. Orientierung früher Seefahrer.—Läntzsch, C., and M. Läntzsch. Astronomisch deutbare Felsbilder in Amerika als Ausdruck indianischer Mythologie.

Fernández Castro, Telmo. Historias del universo. Madrid, Espasa, 1997. 320 p. illus. (Espasa hoy)

Contents: Introducción.—1. El universo a través de los ojos y de la mente.—2. Una forma "diferente" de mirar el cielo.—3. Los nuevos "límites" del universo.

Giraud, Fabienne. Recherche des périodicités astronomiques et des fluctuations du niveau marin à partir de l'étude du signal carbonaté des séries pélagiques alternantes. Application au Crétacé inférieur du sud-est de la France (bassin vocontien), de l'Atlantique Central (site 534 DSDP) et du golfe du Mexique (site 535 DSDP). Villeurbanne, Centre des sciences de la terre, Université Claude-Bernard, Lyon I, 1995. 279 p. illus., maps. (Documents des Laboratoires de géologie Lyon, no 134)

Studies of marl-limestone alternations at the sites indicated show a linkage to cyclic variations of the earth's orbit.

Abstract in English.

Gordon, Richard. Image and value in the Graeco-Roman world; studies in Mithraism and religious art. Aldershot, Hants, Variorum; Brookfield, Vt., Ashgate Pub. Co., 1996. [324], 6, 4, 2 p. illus., plan, port. (Collected studies series, C551)

Partial contents: 3. Mithraism and Roman society: social factors in the explanation of religious change in the Roman empire (1972).—4. Authority, salvation and mystery in the Mysteries of Mithras (1988).—6. The sacred geography of a *mithræum*: the example of Sette Sfere (1976).

See additions and corrections to these three papers on p. 1–5 (2d group).

- Harford, James J. Korolev: how one man masterminded the Soviet drive to beat America to the moon. New York, J. Wiley, 1997. xviii, 392 p., [16] p. of plates. illus., ports.
- A History of scientific thought; elements of a history of science. Edited by Michel Serres. Translated from the French. Oxford, Cambridge, Mass., Blackwell Reference, 1995. 760 p. illus., maps.  
Translation of *Éléments d'histoire des sciences*.  
Partial contents: Serres, M. Gnomon: the beginnings of geometry in Greece.—Benoît, P., and F. Micheau. The Arab intermediary.—Stengers, I. The Galileo affair.—Authier, M. Refraction and Cartesian 'forgetfulness.'
- Houtman, Cornelis. Der Himmel im Alten Testament. Israels Weltbild und Weltanschauung. Leiden, New York, E. J. Brill, 1993. 401 p. (Oudtestamentische Studiën, deel 30)
- Ibarra Grasso, Dick E. La ciencia antigua y los zodíacos del Viejo Mundo y América. Buenos Aires, Editorial Kier, 1995. 573 p. illus.  
Contents: Introducción.—cap. 1. La navegación y la astronomía en Micronesia.—cap. 2. La navegación y la astronomía en Polinesia.—cap. 3. La navegación y la astronomía árabe oriental.—cap. 4. Medidas, calendarios y astronomía antiguas.—cap. 5. La más antigua ciencia astronómica y astrológica.—cap. 6. Conjunto de los zodíacos en el Viejo Mundo.—cap. 7. El zodíaco lunar en América del Norte.—cap. 8. La astronomía mesoamericana.—cap. 9. Astronomía y calendarios andinos.—Conclusiones.
- International Astronomical Union. Asian-Pacific Regional Meeting, 7th, Pusan, 1996. Proceedings. Pusan, Pusan National University Press, 1996. S1-S462 p. illus. (Journal of the Korean Astronomical Society, v. 27, Suppl.)  
Partial contents: Park, C. Analysis of the Korean celestial planisphere: Ch'on-Sang-Yul-Cha-Bun-Ya-Ji-Do.—Han, Y., and P. Zhang. Timing records of ancient lunar eclipses in China and long-term variation of the earth's spin speed.—Xu, Z., and Y. Jiang. On the astronomy of oracle bone inscriptions.—Zhou, H., W. Zhuang, and Y. Wang. A study of Chinese ancient cometary records.
- Lang, Harry G., and Bonnie Meath-Lang. Deaf persons in the arts and sciences, a biographical dictionary. Westport, Conn., Greenwood Press, 1995. xvii, 424 p. ports.  
See the sketches of Robert Grant Aitken (p. 1-3), Annie Jump Cannon (p. 63-67), John Goodricke (p. 150-155), Olaf Hassel (p. 175-178), Henrietta Swan Leavitt (p. 219-221), and Konstantin Eduardovich Tsiolkovsky (p. 358-362).
- Le Contel, Jean M., and Paul Verdier. Un calendrier celtique: le calendrier gaulois de Coligny. Paris, Éditions Errance, 1997. 88 p. illus. (Archéologie aujourd'hui)
- Leitz, Christian. Studien zur ägyptischen Astronomie. 2., verb. Aufl. Wiesbaden, O. Harrassowitz, 1991. 108 p. illus. (Ägyptologische Abhandlungen, Bd. 49)  
"Für die Neuauflage wurde die seither erschienene Literatur, soweit sie mir bekannt geworden ist, eingearbeitet. Änderungen ergaben sich hauptsächlich in den Kapiteln X und XII, in geringerem Mass auch in Kapitel I, in den übrigen Kapiteln handelt es sich meist nur um Verbesserungen der Tippfehler."
- Leitz, Christian. Tagewählerei. Das Buch *h3t nhḥ ph.wy dt* und verwandte Texte. Wiesbaden, Harrassowitz, 1994. 2 v. facsims. (part fold.) (Ägyptologische Abhandlungen, Bd. 55)  
Contents: Textband.—Tafelband.  
Provides hieroglyphic texts, transcriptions, translations, and commentary, in an effort to improve understanding of the ancient Egyptian calendar system.

- Lerner, Michel P. *Le monde des sphères. 2. La fin du cosmos classique.* Paris, Les Belles lettres, 1997. 418 p. facsims. (L'Ane d'or)  
Contents: 1. ptie. La disparition des sphères planétaires.—2. ptie. La sphère des étoiles fixes.
- Lupato, Giovanni. SN1054. *Una supernova sul Medioevo.* Padova, Biroma [1996?] 224 p. illus.
- Mathematische Probleme im Mittelalter. Der lateinische und arabische Sprachbereich. Hrsg. von Menso Folkerts. Wiesbaden, Harrassowitz Verlag in Kommission, 1996. 449 p. illus., facsims. (Wolfenbütteler Mittelalter-Studien, Bd. 10)  
Partial contents: King, D. A. The neglected astrolabe.—Lorch, R. P. The transmission of Theodosius' *Sphaerica*.—Kunitzsch, P. Erfahrungen und Beobachtungen bei der Arbeit mit Texten der arabisch-lateinischen Übersetzungsliteratur (Mathematik/Astronomie).—Kaunzner, W. Über einige Zusammenhänge zwischen lateinischen und deutschen mathematischen Texten, die auf arabische Quellen zurückgehen.
- Medieval cosmologies. Edited by J. M. M. H. Thijssen. Leiden, E. J. Brill, 1997. 107–213 p. (Early science and medicine, v. 2, no. 2)  
Contents: Thijssen, J. M. M. H. Introduction.—Gutman, O. On the fringes of the *Corpus Aristotelicum*: the pseudo-Avicenna *Liber celi et mundi*.—Grant, E. Celestial motions in the late Middle Ages.—Rudarsky, T. M. Philosophical cosmology in Judaism.—Langermann, Y. T. Arabic cosmology.
- Moore, Patrick. *Eyes on the universe: the story of the telescope.* London, New York, Springer, 1997. 114 p. illus. (part col.), facsims., col. ports.  
Includes a chronology of telescope history (p. 109–110).
- Nicolaus, *de Paganica*. *Compendium medicinalis astrologiæ.* Ediz. intr. e note a cura di Giuseppe dell'Anna. Galatina, Congedo editore, 1990. 171 p. facsims.
- Oort, Jan Hendrik. *The letters and papers of Jan Hendrik Oort as archived in the University Library, Leiden.* By J. K. Katgert-Merkelijn. Dordrecht, Boston, Kluwer Academic Publishers, 1997. xxx, 198 p. illus., facsims., ports. (Astrophysics and space science library, v. 213)  
Includes a list of Oort's publications (p. 161–172).  
"A Short Biography of Jan Hendrik Oort": p. xv–xxx.  
A portrait of Oort, painted in 1987 by Gerard de Wit, is reproduced in color on the front cover of the volume.
- Ottewell, Guy. *Albedo to zodiac: a glossary of astronomical names and terms with their pronunciation, origin, and meaning.* Greenville, S.C., Universal Workshop, Furman University, 1996. 64 p. illus.
- Ovid. *Ovid's Fasti: Roman holidays.* Translated with notes and introd. by Betty Rose Nagle. Bloomington, Indiana University Press, 1995. 209 p.  
"Written at the end of the first century B.C., the *Fasti* includes religious festivals, historical anniversaries, and astronomical lore from January through June. A valuable source of information about the Roman calendar ..."
- Les Poètes et l'univers; anthologie. Jean-Pierre Luminet [compilateur] Paris, Cherche midi, 1996. 427 p. (Collection "Espaces")
- Religión y sociedad en el área Maya. Edición de Carmen Varela Torrecilla, Juan Luis Bonor Villarejo, Yolanda Fernández Marquinez. Madrid, Sociedad Española de Estudios Mayas, Instituto de Cooperación Iberoamericana, 1995. 327 p. illus., plans. (Sociedad Española de Estudios Mayas. Publicaciones, no. 3)  
Proceedings of the IV Mesa Redonda Internacional, Sociedad Española de Estudios Mayas, held in Madrid, Nov. 29-Dec. 1, 1993.

Partial contents: Graulich, M. Una posible explicación del punto de partida de la cuenta larga.—Nieves, L. M., L. Esparza, and P. Nieto. Trabajos arqueológicos en la Plaza Central de Calakmul, Campeche, México.—Amador Naranjo, A. La desaparición del sol en Yucatán.—Nájera Coronado, M. I. El temor a los eclipses entre comunidades mayas contemporáneas.

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