H. A. D. News

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

Number 46 November 1998

HAD Elections

The time has come to elect a new HAD Vice-Chair and two members of the HAD Committee. The Nominating Committee has submitted the following slate of candidates. Pursuant to the HAD By-Laws: "During the next thirty days, additional candidates may be nominated by petition of at least 10% of the Membership . . ." Such petitions may be sent to the Secretary.

For Vice-Chair: Barbara Welther
Brad Schaefer
For Committee: Sara Schechner Genuth
Steve McCluskey
Tom Williams
Joanne Eisberg
Joe Tenn

You will receive a final ballot (with candidate biographies) in thirty days. The new HAD officers will serve a two-year term, beginning in 1999. At that time, current Vice-Chair Virginia Trimble will assume the Chair.

(The Nominating Committee is chaired by Woody Sullivan. Members are Kate Bracher and Andy Fraknoi.)

Lunar Standstill Alignments?

Brad Schaefer, Yale University

Is there any ethnographic or historical evidence for lunar standstill alignments? I recently asked the HASTRO LISTSRV this question, and it led to a vigorous discussion. I received comments (through HASTRO or privately) from Rolf Sinclair, Sara Gardner, John Carlson, Mary Blomberg, Tom Settle, Steve McCluskey, Michael Zeilik, Ed Krupp, Simon Cassidy, Nick Campion, Peter Nockolds, George Gale, and Dan Purrington. Rolf suggested that I try summarizing the responses:

Five separate historical or ethnographic evidences were advanced:

(1) The biblical book of Joshua [10:12-13] says "and the sun stood still, and the moon stayed." But this happened in the middle of a battle that explicitly lasts only during one (long) day. Also, the event is reported just after various fantastic heavenly prodigies. The moon reference is a poetic allusion to time going slowly, and appears unrelated to lunar standstills.

(2) The palace of Zakros in eastern Crete has some proposed southern lunar standstill orientations, while at the same site was found a libation bowl with a Linear A inscription interpreted as referring to a Moon goddess. (I have been unable to get the referenced conference proceeding, but I had always heard that Linear A was undeciphered, so I cannot verify the strength of the reading.) Lunar orientations can be easily found at many sites and Moon goddesses are common, so on the evidence given, this relation is weak.

(3) It has been suggested that certain minor irregularities in the dates of the Zuni Shalako festival could be explained if the Full Moon was determined by observations relating moonrise to solsticial sunrise. But this carries no implication that the Zuni used, cared about, or recognized the standstill phenomenon.

(4) Hawkins' original historical evidence for Stonehenge standstill alignments was a passage from *Diodorus Siculus* concerning (presumably) Britain, in which the Moon and the nineteen-year Metonic period are mentioned among a jumble of topics [Hawkins, *Stonehenge* Decoded, pg. 130]. This passage could be forced to fit a lunar standstill situation with some liberal interpretation and assuming one textual error (the Metonic cycle is not the standstill cycle). But the record must be heavily "deciphered," and other interpretations are reasonable, so this connection was characterized as "inconclusive."

(5) Hawkins also relates a story [*Mindsteps of the Cosmos*, pg. 89-90] about a (modern?) farmer near a stone circle who connects the circles to something the Moon does every 19 years. If this comment is not from a 20th century farmer, then it might hark back to the *Diodorus* tradition with all its weaknesses yet with two more millennia of separation.

These five connections are the best with which anyone could come up. Compare them with the vast ethnographic and historic sources for alignments to sunrises on significant dates, to cardinal directions, to solsticial positions, and to Mecca. A number of the most widely experienced workers in our field weighed in to say that essentially *no* reliable historical or ethnographic evidence exists that any pre-1900 culture displayed *any* interest in lunar standstills. And a number of these people said that they had been searching long and hard. Given this stunning lack of written or oral evidence, we can only conclude that most (but not necessarily all) cultures have zero or near-zero interest in lunar standstills.

One person raised a separate-but-related question, asking "What is wrong with 'the existence of the alignment itself' as evidence?" He then points to many cases where "historical" data is unreliable by itself and where archaeological data is adequate by itself. It was speculated that the motive for raising this good point is a response to the occasional prejudice where classical historians ignore all nontextual data. From the following responses, it seems that everyone agrees that our "Rules of Evidence" should neither forbid nor require any one type of information. And everyone agrees that the more types of confirming information available, the more confident the result. Hence, the case for lunar alignments would be substantially stronger if we knew that many (or even a few) cultures were interested in standstills, from written or oral data.

Several responses to the side-question ("Is a lunar standstill alignment good enough by itself?") touched close to the heart of the archaeoastronomy paradigm as practiced. Various problems were noted that led people to suspect that an alignment alone was not enough in general.

The first problem is that damage or rebuilding might shift the orientation. The example given was that the popular summer solstice event at Casa Rinconada is a result of the kiva's reconstruction.

The second problem is that artifacts of different eras might-or-might-not be related in the original builder's design. The example given was that a cairn near a stone circle cannot readily be distinguished as from the Bronze Age or from a medieval farmer.

The third problem is that "the artifacts rarely speak for themselves and usually have to be evaluated," which is to place the ideas in the context of the culture. No example was given, but I readily recall the myriad interpretations for Stonehenge when the stones are allowed to speak for themselves.

The fourth and greatest problem is that no case of lunar standstill alignments has been shown to be statistically significant. The example given was the megalithic monuments in Britain for which Ruggles' great surveys and analyses show Thom's claim to be statistically invalid. So in response to the request for a better explanation of the claimed alignments, we merely need advance the null hypothesis of "random" orientation.

Perhaps the most insightful remark was to make the distinction between "orientations" and "alignments," with the latter implying intention on the part of the builders. Orientations are easy to find and prove, but alignments require us to somehow get inside the thoughts of the builder. The mere existence of an orientation does not prove intention by itself. Intent can be shown by some combination of (A) statistical significance over the null case, perhaps with a multi-site analysis, (B) historical documents on the culture in question, (C) ethnographic information on the culture, or more weakly (D) ethnographic analogy with other cultures. For test D, the argument might go something like: "Almost all societies recognize the solstices, while many have alignments to them; it is plausible to think that a solsticial orientation observed for a prehistoric monument like Stonehenge is actually an alignment." The most famous claim of lunar standstill alignments (British megaliths) fails test A, while tests B and C are not possible. That is my reason for posing the history/ethnography question in the first place, so as to evaluate sites by test D.

From the replies, I don't think that our community is in disagreement. So let me be so brash as to try to briefly summarize what I learned: Five ethnographic/historic examples of interest in standstills were advanced, but all taken together are too weak to be considered useful. No reliable written or oral report is known of any culture anywhere before 1900 having any interest in lunar standstills. This is in sharp contrast to the bountiful reports of solar alignments of various types, so that we can realize that few (if any) cultures have any interest in the standstill phenomenon. This conclusion places a heavy burden on anyone who claims that a lunar orientation is actually an alignment, as they must provide evidence of intention when all evidence shows that no one has any interest at all. The lack of ethnographic/historical evidence from cultures worldwide does not in any way refute the idea of lunar alignments, but it does rob the idea of an opportunity to argue by cultural analogy, and it does rob the idea of plausibility.

[Thanks go to Dr. Schaefer for providing a text version of this review at the Editor's request. - T. H.]

Bookmark the HAD Web Page at

http://www.aas.org/~had/had.html

AAS Centennial Meeting

Don Osterbrock
Chair, AAS Centennial Committee

The HAD will hold its 1999 meeting at the AAS Centennial meeting, which will take place in Chicago, May 30 through June 3. In addition to the sessions for historical papers, which the HAD will organize, the AAS will have several historical sessions itself. These AAS sessions, and other activities as well, were recommended to the Council by the Centennial Committee, and these recommendations were all approved by the Council.

The main activity to date has been the preparation of the AAS Centennial book, edited by David DeVorkin (current HAD Chair, who will turn over its gavel to Virginia Trimble at the time of the Austin AAS meeting in January 1999). Entitled *The American Astronomical Society's First Century*, it is an excellent book that is complete and in the hands of the publisher, the AIP Press, at present. Members of the AAS and of the HAD will have a chance to buy a copy of it at the exceptionally reasonable
price of $25 when they pay their dues this fall. Everyone who registers for the AAS Centennial meeting at Chicago will receive a copy of the book it their registration package.

The AAS Centennial exhibit will first be displayed at this Centennial meeting. It is now being prepared under the direction of
Curator Sara Schechner Genuth, with the assistance of Steve Dick and David DeVorkin. It will include pictures, documents, and artifacts from the Society's history, and after the Centennial meeting it will be displayed at the AAS offices in Washington, the AIP headquarters in College Park, Maryland, and at universities, observatories, and research centers throughout the country that wish to exhibit it.

At the AAS Centennial meeting, David will give an invited, one-hour talk before the whole Society, in an unparalleled session on the history of the AAS, based, of course, in large part on the book he has edited. In addition, there will be another unparalleled session, before the whole Society, on the future of the AAS (and of astronomy), with three (or possibly four) invited talks, all by former presidents of the Society. A third session, organized by the Centennial Committee, will be a half-day session, in parallel with other (mainly scientific) sessions, on "My Most Memorable AAS Meeting," at which members of the AAS will describe past meetings that they attended. (There will be a poster session the same day on the same subject, for all the papers submitted on this topic that are not chosen for oral presentation at the session.) Giving an oral or poster paper at these sessions will not be counted as giving a "regular" paper; any AAS member can give one of these "show and tell" papers and also a regular scientific paper.

The Centennial Committee, which developed the plans for the Centennial meeting, is made up of 27 members, of whom 12 are also members of the HAD. It was set up by the AAS Council in 1995 on the recommendation of Woody Sullivan, who was then chair of the HAD, and its chair and vice-chair. Original members were appointed by Frank Shu, then president of the AAS.

Address changed? Be sure to forward your new address to the *HAD News* Editor.

AIP Center for History of Physics Grant-in-Aid for History of Modern Physics and Allied Fields (Astronomy, Geophysics, etc.)

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 funds for travel and subsistence to use the resources of the Center's Neils Bohr Library (near Washington, DC), or to microfilm papers or to tape-record oral history interviews with a copy deposited in the Library. Applicants should name the persons they would interview or papers they would microfilm, or the collections at the Library they need to see; you can consult the *on-line catalog*, and please feel free to make inquiries about the Library's holdings.

Applicants should either be working towards a graduate degree in the history of science (in which case they should include a letter of reference from their thesis advisor), or show a record of publication in the field. To apply, send a vitae, a letter of no more than two pages describing your research project, and a brief budget showing the expenses for which support is requested to:

Spencer Weart, Center for History of Physics
American Institute of Physics
One Physics Ellipse
College Park, MD 20740
phone: 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.

From the HAD Chair

On Sunday, May 30th, 1999, the HAD will meet at the Adler Planetarium for thematic sessions on "Presenting Astronomy to the Public, 1700 - 2000," which will include inspection of the Adler's new galleries. Anyone interested in presenting a paper on contemporary issues relating to the public presentation of astronomical history should contact David DeVorkin, who is coordinating the session with Bruce Stephenson of the Adler and Ron Brashear of the Dibner Library. We also are interested in papers about how astronomy was presented to the public in the past, over the same time period.

And don't forget to sign up for the Saturday (May 29th, 1999) tour of the Yerkes Observatory--a special HAD event also in conjunction with next summer's Centennial AAS Meeting.

David DeVorkin

From the HAD Secretary

This quarter's *HAD News* is brief. However, watch for your officers' election ballot to arrive in about a month.

"Close Out Special." A few issues of *HAD News* #40 remain. Members may request a copy from the Editor. Highlights include the Toronto HAD Meeting, the Conference in Honor of Dorrit Hoffleit's 90th Birthday, and Woody Sullivan's (*From the "Lucubratory"*) thoughts about time. 'Available while supplies last!

Contributors: The deadline for submission to *HAD News* #47 will be January 13, 1999.

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Correspondence

A note from the AAS: "The 1999 renewal notices were generated on Thursday & Friday of this week [September 10-11]. What this means is that all members of the AAS and a Division (excluding DDA) will be receiving the first bill within the next several weeks; foreign mail will take a little longer to receive. Please inform your members of this mailing in your next newsletter. Should someone not receive a bill by the beginning of November, they should contact me [Sharon Savoy] directly.

And from our heroic bibliographer, Ruth Freitag: "When, at the invitation of David DeVorkin in the spring of 1988, I first began to assemble references to recent publications relating to the history of astronomy, the lists were published only in the HAD newsletter. It was felt that recipients would be looking at *Sky and Telescope*, *Astronomy*, the *Journal for the History of Astronomy*, John Carlson's *Archeoastronomy*, and *Istoriko-astronocheskie issledovaniia* themselves, and that therefore it would not be necessary to cite material published in those journals. Since the lists are now being more widely circulated, both electronically and in the Australian *Journal of Astronomical History and Heritage*, it was recently decided, in consultation with Steve Dick and with the approval of the [*HAD News*] Editor, that it was time to abandon this practice. Relevant articles and papers appearing in these sources from 1998 onward will therefore be cited, beginning with [issue #45]."

New Members

I am a professor of astronomy at St. Cloud State University and serve as the director of the SCSU Observatory and Planetarium. I have a particular interest in archaeoastronomy. I introduced an archaeoastronomy course at another institution back in 1986 with a mandatory field trip to the Yucatan to tour the Mayan ruins. I have continued that course here, and the field trip has visited the Yucatan and the Four-Corners region of the US. I also dabble in the general history of astronomy as a way to bring personal interest into astronomy classes and public lectures.

Mark A. Nook
Dept. of Physics, Astronomy & Engineering Sciences
St. Cloud State University

Members in the News

Woody Sullivan (University of Washington) was featured in the October 9, 1998 *Science* (p. 211) for his initiation of the first PhD. program in Exobiology. Woody is a past Chair of the HAD.

Brad Schaefer (Yale University) writes a feature article for next month's *Sky and Telescope*, entitled "Meteors that changed the world."

Upcoming Meetings

The **Fourth Biennial History of Astronomy Workshop** will be held July 1-4, 1999 at the University of Notre Dame. Co-Program Chairs are Mike Crowe and Steve Dick. Matt Dowd will serve as local arrangements chair. Persons having suggestions or proposals should write as soon as possible to either

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3450 Massachusetts Ave. NW
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or to

Michael J. Crowe
Program of Liberal Studies
University of Notre Dame
Notre Dame, IN 46556 USA
Crowe.1@nd.edu
tel. 219-631-6212.

Registration information can be obtained from

Astronomy
Center for Continuing Education
University of Notre Dame
Notre Dame, IN 46556 USA
cce.cce.1@nd.edu

Local Arrangements information can be secured from

Matthew F. Dowd
Graduate Program in History and Philosophy of Science
University of Notre Dame
Notre Dame, IN 46556 USA
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tel. 219-287-7226

The workshop is sponsored by the History and Philosophy of Science Graduate Program of the University of Notre Dame, the History of Astronomy Special Interest Group of the History of Science Society, and the Historical Astronomy Division of the American Astronomical Society.

Regarding transportation, flights come to the South Bend Airport from a number of major cities. Persons arriving *via* Chicago can take the United Limo Bus, which runs from the United Terminal at O'Hare Airport directly to the Notre Dame campus. Round-trip fare is $52. For a schedule and reservations, call United Limo at (800)833-5555. For those driving, ample parking is available. A campus map and parking information will be sent in the CCE information packet.

The conference will include a book exhibit and display tables. Participants are welcome to bring materials to display. Please contact Matt Dowd with regard to how much space will be needed.

The sixty-five historians of astronomy who attended the Third Biennial History of Astronomy Workshop, held at Notre Dame in June, 1997, praised the lively and informed sessions, the comfortable and informal atmosphere, and the reasonable room rates. Further information will be forthcoming.

Call for Papers: ASP July 1999

The Astronomical Society of the Pacific (ASP) will hold its "111th Annual Meeting" jointly with the Royal Astronomical Society of Canada (RASC) and the American Association of Variable Star Observers (AAVSO) in Toronto, Canada on 1-7 July 1999. Three history sessions will be presented by the ASP history committee:

I. Amateur Contributions to Astronomy–Invited lectures for the general public, Sunday morning, 4 July.

II. General History of Astronomy–invited lectures for the general public, Sunday afternoon, 4 July.

III. General History of Astronomy–contributed papers for those particularly interested in the history of astronomy, Monday 5 July.

Both oral and poster papers are solicited for the third session. Poster papers will be displayed Sunday as well as Monday.

The nonhistory portions of the meeting, other than the weekend, will consist mostly of lectures of interest to amateur astronomers. The weekend sessions are for the interested public and will include many talks on current developments in astronomy as well as on history. There will be a tour of the historic David Dunlap Observatory Monday evening. If you are planning to attend the Notre Dame conference, please note that it will end Sunday,

4 July. At least three airlines offer one-stop flights from South Bend to Toronto Saturday evening. For further information:

The overall ASP-RASC-AAVSO meeting:

http://www.aspsky.org/subpages/mtng.html

The ASP History Committee and sessions at this and previous meetings:

http://www.phys-astro.sonoma.edu/people/faculty/tenn/ASPHistory/

The Notre Dame conference:

http://platon.ee.duth.gr/data/mailist-archives/xaos/msg00159.html

If you are interested in contributing a paper, please contact the undersigned:

Joseph S. Tenn, Chair, ASP History Committee, Dept. of Physics & Astronomy
Sonoma State University
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http://www.phys-astro.sonoma.edu/people/faculty/tenn/

[New listings for this column are solicited. - T. H.]

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

- Scientific Bets
- How to Refer to the Earth
- Was Genghis Khan Turned Back by the Planets?
- Astronomy and Religion
- Paris Pismis's Catalogue
- Nebulium
- Origin of the Constellations
- Temple of the Planets
- Astronomy in the Book of Enoch
- Lunar Standstill Alignments
- Finding the Celestial Pole
- Istanbul Observatory Library
- John Strong
- Was Geometry or Astrology First?
- A. P. Herbert
- D. H. Howse
- Hipparchus
- Janssen's Photographic Revolver
- Hadley's Quadrant
- The Analema The Intihuatana
- African Constellations
- Daoist Astronomy
- 1054 Supernova
- Shakespeare as Calendar-maker
- Archeoastronomy URLs
- Ordering of Kepler's Laws
- Hevelius' Observatory
- Hamlet and the Supernova of 1572
- Lunar Alignments
- Right Ascension and Declination

HASTRO-L is provided by Stephen McCluskey at the University of West Virginia.

Web Page of the Autumn

The Space Calendar, by Ron Baalke

Not primarily a history resource, this calendar includes anniversary dates (in five-year increments) significant in the history of astronomy. These are mixed with the Calendar's more usual fare: dates of upcoming space-probe launches, conjunctions, perihelion passages, *etc.* The advantage of TSC's WWW version is links to other sites. For instance, October 8, 1998 was the 125th anniversary of Ejnar Hertzsprung's birth. If you click on "Hertzsprung," you are taken to Joe Tenn's site biographing ASP Bruce Medal winners. Remember Pioneer Venus? On December 4, 1998, it will have been twenty years since that

probe orbited our sister planet. Click on its name, and you are brought to a NASA site describing the mission. All told, there are 1,100 links on the calendar--so far.

http://newproducts.jpl.nasa.gov/calendar/

The Space Calendar is entertaining and is an unusual teaching tool. (It appears as a link on the department Web site frequented by my students.) And don't forget that January 13, 1999 is Olin Wilson's 90th birthday.

From the Lucubratory

Woody Sullivan, University of Washington

PBS-TV recently aired a marvellous production of King Lear, and I was delighted to see that it opened with a person viewing a partial eclipse of the Sun through a smoked glass--the Bard does not call for this, but the director inserted it in order to refer to a later exchange in Act I. This is one of my favorite astronomical/astrological passages in Shakespeare. Unfortunately it was severely edited in the TV production, but here is a more complete version [boldface is mine]:

Gloucester: These late eclipses in the sun and moon portend no good to us: though the wisdom of nature can reason it thus and thus, yet nature finds itself scourged by the sequent effects: love cools, friendship falls off, brothers divide: in cities mutinies; in countries discord; in palaces treason; and the bond cracked 'twixt son and father . . . 'Tis strange

Edmund: This is the excellent foppery of the world, that, when we are sick in fortune,--often the surfeit of our own behaviour,--we make guilty of our own ***disasters*** the sun, the moon, and the stars: as if we were villains by necessity; fools by heavenly compulsion; knaves, thieves, and treachers, by ***spherical*** predominance; drunkards, liars, and adulterers, by an enforced obedience of planetary ***influence***; and all that we are evil in, by a divine thrusting on: an admirable evasion of whoremaster man, to lay his goatish disposition to the charge of a star! My father compounded with my mother under the dragon's tail; and my nativity was under Ursa Major; so that it follows, I am rough and lecherous. Tut, I should have been that I am, had the maidenliest star in the firmament twinkled on my bastardizing.

Edmund is the (disgruntled) bastard son of Gloucester and obviously doesn't put much stock in astrology--did he speak for Shakespeare? A question for HADites: is the reference to Draco and Ursa Major, which of course are not in the ecliptic/zodiac, just a joke, or were these circumpolar constellations also tied into 16th-century astrology?

I also like this passage because it uses three of the many terms that come to us from astrology, but whose origins are not generally appreciated. A *disaster* is a *dis-aster*, *i. e.*, a sign not favorable to one's star. *Spherical* effects are those originating in the Aristotelian spheres, and we still use the phrase *spheres of influence*. And *influence* itself means a "flowing in," specifically of an ethereal fluid that flowed from the stars and affected human lives--hence the term *influenza* from the Middle Ages, when the dis-ease's cause was ascribed to the heavens. Finally, one word not in this passage is *consider*, which is to be "*cum sidus*, with the stars", *i. e.*, contemplating.

[Woody Sullivan invites comment at e-mail: woody@astro.washington.edu - T. H.]

The *HAD News* is supported in part by the Department of Earth Science, University of Northern Iowa. Layout by John Alexander.