



H·A·D NEWS

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

Number 38

November 1996

Toronto Program

Sunday, January 12, 1-5 pm

Special Session "North of the Border: The Development of Canadian Astronomy"

Part 1 General Historical Work

1 pm Peter Broughton (RASC) "Astronomical Work in Canadas' Northwest 200 Years Ago"

1:30 Jean-Louis Trudel (UT) "Astronomical Popularization in Canada"

2:00 Allen Batten (DAO) "Binary Star Studies in Canada"

2:30 David DeVorkin, "Chant and Russell"

BREAK

Part 2 Telescopes and Observatories

3:00 R. A. Jarrell (York) "J. S. Plaskett and the Modern Large Reflector"

3:30 Robert Garrison (DDO) "25 Years of the UTSO Telescope"

4:00 Gene Milone and T. A. Clark (Calgary) "25 Years at the Rothney Astrophysical Observatory"

Monday Morning, January 13

P. D. Usher (PSU) "A New Reading of Shakespeare's Hamlet"

Toronto Program is continued on page 2.

HAD Ballot Enclosed - VOTE!

This issue of HAD News includes the Official Ballot for HAD officers and Committee. Ballots must be received by December 30, 1996. Please exercise your right, provided that you are a full HAD member! Send to Steven J. Dick at the address on the ballot.

Abstracts for HAD Special Session: "North of the Border: The Development of Canadian Astronomy"

E. F. Milone and T. A. Clark (University of Calgary)

"The First 25 Years of the Rothney Astrophysical Observatory"

The RAO began as a twinkle in the eye of Sandy R. Cross, a local rancher from a Calgary pioneering family. His generosity began with an initial gift of a quarter section of land, continued with two block grants to permit the construction of a building to house a 1.5-m telescope in 1981, and, finally, funding of a joint operation with ARC to complete the figuring of a honeycomb 1.8-m mirror. The summer of 1996 saw the completion of the 1.8-m replacement and the restoration of all instrumental facilities formerly in use on the 1.5-

Abstracts is continued on page 2.

Toronto Program, continued from page 1.

S. J. Dick (USNO) "Historical Perspectives on the Discovery of Possible Fossilized Primitive Martian Life"

J. M. Steele (Durham) "Babylonian Predictions of Lunar and Solar Eclipse Times"

A. Athreya (Iowa State) and O. Gingerich (CFA) "An Analysis of Kepler's Rudolphine Tables and Implications for the Reception of his Physical Astronomy."

P. S. Whitesell and P. Seitzer (U. Mich) "Restoration of the Detroit Observatory at the University of Michigan"

A. Uppgren (Yale and Wesleyan), L. H. Aller (UCLA), W. B. Dunham (FAR), A. G. Davis Philip (Union College and ISO), "The Fund for Astrophysical Research: Ten Years of the Small Grants Program"

Other Toronto HAD Activities

The HAD Business meeting will be held at 1 pm. Monday. The Afternoon HAD session has been cancelled. We are planning an informal luncheon before the Sunday session, and a HAD dinner at a nearby restaurant for Sunday night (spouses welcome).

LeRoy E. Doggett Prize For Historical Astronomy Call for Nominations

In accordance with section IV of the Rules for the HAD Prize, nominations for the first LeRoy E. Doggett Prize will be open until December 12, 1996. See HAD 36 (February, 1996) for the Prize criteria. Please send nominations to Dr. Steven J. Dick, U. S. Naval Observatory, 3450 Massachusetts Ave., N.W., Washington, D.C. 20392-5420.

Abstracts, continued from page 1

m telescope. NSERC of Canada provided the funding for the 1.8-m mounting, and for infrastructure grants to assist development and instrumentation; the University of Calgary has provided site support and development and the Department of Physics and Astronomy the operating funds and technical salary support to maintain the facility.

Jean-Louis Trudel (University of Toronto)

"The Popularization of Astronomy in Canada"

In Canada, astronomy has a longer history than most other sciences. The European settlers had to master the rudiments of astronomical practice, while the natural setting promoted geophysical observations of all kinds. In the nineteenth century, astronomy was part of natural theology and a resource for timekeepers and cartographers, but was increasingly pursued for its own sake by laymen. The creation of the Royal Astronomical Society of Canada marks a turning point. Though it appeared to unite professionals and amateurs, it became early on a conduit for the knowledge of the former to flow to the latter, supplementing the purely academic stream. It followed upon the success of new publications meant to acquaint readers with the facts of astronomy, for the hitherto unsuspected pleasures they might bring. In fact, some Canadian works of this kind reached a wide audience, in Canada and abroad, and the post-WWII period saw an almost complete disjunction between the formerly utilitarian aspects of popularization and the catering to interested lay people, distinct from the professionals. By 1976, the transformation was complete. The science mastered by explorers and appealed to by believers had become both a field for professional investigations and a widely popularized corpus of star lore.

Abstracts, continued next page

R. Peter Broughton (Toronto Board of Education)

“The Astronomical Work of Peter Fidler (1769-1822) and others employed by the Hudson’s Bay Company”

The Hudson’s Bay Company, founded in 1670, controlled the vast watershed of Hudson Bay until 1869. Its principal interest in the fur trade required maps and surveys as well as observations of native people and their habits, native species and their habitat, weather and conditions affecting travel.

Accurate astronomical observations in western Canada began in 1768 when William Wales and Joseph Dymond wintered at Fort Churchill on the western shore of Hudson Bay and determined the longitude of that place in preparation for the transit of Venus the following spring.

As competition forced the Company to establish inland posts, an urgent need arose for better maps and so, on the recommendation of Wales, the Company hired its first surveyor, Philip Turnor in 1778. At Buckingham House, a prairie outpost of the Company, Turnor schooled David Thompson and Peter Fidler in the art of astronomical surveying during the summer of 1790. Fidler’s notebook provides a fascinating look at the rigorous training he received.

Over the next twenty years, Thompson and Fidler made definitive maps covering all of western Canada. To achieve this, they made hundreds of astronomical observations using meridian altitudes for latitude and using lunar distances as well as phenomena of Jupiter’s satellites for longitude. Their extensive work will be summarized and used to assess the accuracy of their methods.

In addition, hundreds of observations of the aurora, mainly recorded by Fidler as part of his meteorological journal, will be shown to illustrate a maximum frequency of occurrence about 1795 and 1805, corresponding to the times of maxima in solar activity.

“Twenty-five Years of the University of Toronto Southern Observatory”

The Helen Sawyer Hogg Telescope of the University of Toronto Southern Observatory in Chile saw first light in August 1971. It has shown repeatedly that a small, well-equipped telescope at an excellent site can be very productive. While the discovery of the Shelton supernova brought the observatory to a wider notice, workers using this telescope have also discovered a pure He star, the brightest CV, double-mode RR Lyr stars. Recently, we were able to show that MACHO objects are disks, not point sources; this was possible due to the quality of the site, the equipment and the observer.

Our mode of time assignment, with extensive service observing, is a major factor in recent successes. Small observatories fill an important role in astronomy; while we can’t reach 26th magnitude, there are good research projects which need only clear skies, great seeing and modern equipment, all of which we can provide. And the price is right!

Richard Jarrell (York University)

“J.S. Plaskett and the Origins of the Modern Large Reflecting Telescope”

The large (>60-inch) reflecting telescope, despite 19th-century antecedents, is the technological foundation of 20th-century astronomy. We might assume that Ritchey’s 60- and 100-inch reflectors at Mt Wilson were the first examples of modern telescopes. I will argue that it was 72-inch Victoria telescope, built for J.S. Plaskett’s needs, that became the model for a whole generation of large telescopes throughout the world. It was a state-of-the-art, composite instrument that owed its engineering and design features to several astronomers and engineers, including Ritchey, David Gill, Howard Grubb, the Warner and Swasey team and Plaskett himself. The overall conception of the final product, despite technological improvements over the next four decades, remained remarkably unchanged.

Toronto Abstracts, continued

David H. DeVorkin (NASM/Smithsonian)

“Henry Norris Russell’s Toronto Lectures”

In 1924 Henry Norris Russell was invited to present a series of public lectures on the state of astronomy at Toronto. C. A. Chant hoped that Russell would act as a stimulus for his plans to build a new large observatory. Russell’s lectures were well attended and widely reported upon, and did draw considerable attention to modern astrophysics and to the state of the science and its present needs, both theoretical and observational. Russell was also interviewed by local student newspapers for his opinion regarding a major observatory for Toronto. His response could not have made Chant happy in the least.

IAU Commission 41 Kyoto Program

HISTORY OF ORIENTAL ASTRONOMY

Monday Morning, August 25

Sessions I and II

ORIENTAL ASTRONOMY DURING THE ANCIENT AND MEDIEVAL PERIOD

Development of Astronomy in Ancient China, Y. Maeyama (Germany)

Islamic Astronomy in China. B. van Dhalon (Holland/Japan) and M. Yano (Japan)

An Arabic Commentary on al-Tusi’s Tadhkirah and its Sanskrit Translation, T. Kusuba (Japan)

Assimilation of Observational Instruments of Islamic Astronomy in Indian Astronomy, V. N. Sharma (USA)

Ancient Indian Astronomy in China, J. Xiao-Yuan (China)

Korean Star Maps of the 18th Century, Il-S. Nha (Korea)

Eclipse Records in Early Korean History: The Samguk Sagi and Koryo-sa, F. R. Stephenson (UK)

Knowledge of Starry Sky and Agricultural Activities in Indonesia: A Review, B. Hidayat (Indonesia)

The Projection Method of the Star Map in the Song Dynasty, K. Miyajima (Japan)

Monday, August 25, afternoon, session III

Astronomical Development in the Orient down to the 12th-13th Centuries, Kwan-Yu Chen (USA)

On the Vedanga Astronomy, Y. Ohashi (Japan)
Spherical Trigonometry in the Astronomy of Medieval Kerala School, K. Plofker (USA)

The Solar Altitude below Horizon at Dusk and Dawn According to Ancient Chinese Astronomical Records, W. Shou-Xian (China)

Burmese Star Map, M. Nishiyama (Japan)

**Monday, August 25, afternoon, Session IV
MODERN ASTRONOMY IN THE ORIENT**

The Drkpaksasarani: A Sanskrit Version of de la Hire’s Tabulae Astronomicae, D. Pingree (USA)

Modern Astronomy in Indo-Persian Sources S. M. R. Ansari (India)

Takamine and Saha: Contacts with Western Astrophysics, D. H. DeVorkin (USA)

East Asian Historical Records and Modern Astronomy Xi Zezong (China)

Astronomy Education in the East, S. Isobe (Japan)

Tuesday, August 26, morning

Kepler’s Laws in China, K. Hashimoto (Japan)

Possible Identification of some Periodic Comets, before AD 1760, Zh. Weifeng (China)

Contemporary Astronomy in Iran: A Status Report, Y. Sobouti (Iran)

Changing Historical Trends in Astronomy Education in Australia and New Zealand, W. Orchiston (New Zealand)

“History of Oriental Astronomy: An Overview”, S. Nakayama (Japan)

HAD Elections - Official Ballot

(Two-year terms begin in January, 1997)

HAD Chair

David DeVorkin is curator of the history of astronomy at the National Air and Space Museum. He has been a member of HAD since 1980 and has held every elected and appointed position except Chair. His current HAD project is to act as editor for the AAS Centennial History volume. He is most concerned that the history of the AAS and of American astronomy be preserved and appreciated among astronomers.

HAD Vice-Chair (vote for one)

Robert McCutcheon has an M.A. in Soviet Affairs from Georgetown University and an M.S. in astronomy from Yale University. His research interests are in the history of Soviet/Russian science and technology, and he has several publications on the history of Soviet astronomy--particularly on the political repression of astronomers during the Stalin period. In connection with this, he has been active in the American Association for the Advancement of Slavic Studies. A fluent Russian speaker, he is accredited as a Russian-English translator by the American Translators Association. Since 1993 he has chaired HAD's International Relations Committee, and he helped to organize HAD's January, 1993, session on "Astronomy and the State: U.S. and CIS/ Soviet Perspectives." He was a co-editor of the Proceedings of this session, published as a special issue of Journal for the History of Astronomy (November, 1995). Bob also has a "day job" as a spacecraft attitude analyst with Computer Sciences Corp., a contractor to Goddard Space Flight Center and Space Telescope Science Institute. His current role is as one of the lead "pointing control system analysts (PCS)" for the Hubble Space Telescope Planning and Scheduling systems. He is currently redesigning the HST software systems for antenna command and control.

Virginia Trimble received her degrees from UCLA (physics and astronomy, 1964), the California Institute of Technology (astronomy MS 1965, PhD 1968), and Cambridge University (MA 1969). After a year of teaching at Smith College and two postdoctoral years at Cambridge, she settled down to steady oscillation between the physics department of University of California, Irvine and the astronomy department of the University of Maryland. She has published research and review papers on white dwarfs, supernovae, binary stars, dark matter, nucleosynthesis, and probably some other topics and currently serves as one of the adjectival editors of Astrophysical Journal as well as editor in chief of Comments on Astrophysics. Previous AAS positions include chair of the nominating committee, chair of the High Energy Astrophysics Division, and membership on the Obituary and Cannon Prize Committees. Her interest in the history of astronomy and physics derives at least partly from the fact that she is now old enough that some of the most important events in 20th century astronomy, which are history to many members of the Division, were actually "current events" for her. She believes that it is important to keep studies of the history of the sciences as part of the mainstream of the sciences themselves.

See also other side.

Official HAD Ballot (page 2)

HAD Committee (vote for 2)

Barbara Becker studied physics at Goucher College (1968), and earned both a Master of Liberal Arts (1971) and doctorate (1993) from Johns Hopkins. Barbara taught physics and astronomy (1968-91), and was recently named an adjunct of the University of California, Irvine's history department. At Southwest Regional Laboratory since 1992, Barbara adapted her professional interests as an historian of science to SWRL's K-12 education improvement goals. In 1994, NSF funded Becker's plan to develop a secondary science curriculum based on historical episodes. The curriculum, MindWorks, is being piloted and will be published by Erlbaum. Barbara's research interests include the amateur's role in the development of nineteenth century professional astronomy, the redefinition of disciplinary boundaries in the face of new knowledge and new practice, the transfer of practical knowledge within and outside existing disciplines, controversy's role in shaping the substance and structure of scientific knowledge, and the cumulative impact of incremental individual decisions on acceptable patterns of group thought.

Donald Goldsmith is an astronomer turned science popularizer who has written, co-written, or edited 15 books on astronomy, and has also worked on television programs and CD-ROMs dealing with astronomy and physics. His most recent book, *Einstein's Greatest Blunder? The Cosmological Constant and Other Fudge Factors in the Physics of the Universe* was published by Harvard University Press in 1995. In the same year, the American Astronomical Society awarded him its Annenberg Foundation Award for astronomy education.

Karl Hufbauer has worked on the history of interdisciplinarity since studying the early stages of discipline building in his dissertation, which became his *Formation of the German Chemical Community, 1720-1795* (1982). In particular, he has focused on cases in which astronomers and physicists have cooperated and competed with one another in their endeavors to solve long-standing astronomical problems. This issue is a recurring theme in his NASA-sponsored *Exploring the Sun: Solar Science since Galileo* (1990). It is also prominent in his various studies on the coronal-line and stellar-energy problems and has a modest role in his article on Lyot's development of instruments for observing the corona in full daylight. Besides these researches, Karl has been teaching courses on the history of astronomy about once every two years since the early 1980s.

Kevin Krisciunas. Readers of the history of astronomy might know Kevin as the author of *Astronomical Centers of the World* (Cambridge U. P., 1988) and the translator of Dieter Herrmann's book *The History of Astronomy from Herschel to Hertzsprung* (CUP, 1984). More recently he has written on the star catalogue of Ulugh Beg, and on strange cases from the files of astronomical sociology (*Astronomy* magazine, Nov. 1993). For nearly 20 years he has done software work for infrared astronomy, first on the Kuiper Airborne Observatory, then for the United Kingdom Infrared Telescope (Mauna Kea, Hawaii). This fall he returned to school at the Univ. of Washington to work on a Ph. D. If you saw Kevin in episode 1 of *The Astronomers* (PBS, 1991), perhaps his motto should be, "I'm not a doctor, but I play one on TV."

Craig B. Waff is managing editor of physical and earth sciences and technology for Collier's Encyclopedia. His primary interests are 18th-century celestial mechanics, particularly the introduction of gravitational theory into theories of the moon's motion, and 20th-century unmanned spacecraft exploration of the solar system. His most recent publications include "A History of Project Galileo, Part 1: The Evolution of NASA's Early Outer-Planet Exploration Strategy," *Quest: The Magazine of Spaceflight*, 5, no. 1 (1996), 4-19; and two chapters--"Clairaut and the motion of the lunar apse: the inverse-square law undergoes a test" (pp. 35-46) and "Predicting the mid-eighteenth-century return of Halley's Comet" (pp. 69-82)--in *The General History of Astronomy*, volume 2B (Cambridge University Press, 1995). He is currently working to complete histories of Project Galileo and the Deep Space Network.

Send your ballot to Steven J. Dick, U. S. Naval Observatory, 3450 Massachusetts Ave., NW, Washington, D.C. 20392-5420

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