



EDITORIAL

WHAT IF THE MAN WHO CAME TO DINNER HADN'T?

It must have been about the time I started giving an undergraduate course in the history of astronomy that I saw the hilarious Broadway comedy, "The Man Who Came to Dinner". Monty Woolley played the title role of a flamboyant radio commentator, who had accepted a dinner invitation, fell down the steps, and ended up staying for weeks. The connection with astronomy is that Georg Joachim von Lauchen, alias Rheticus, the brilliant 25-year-old professor of mathematics at Wittenberg, in 1539 asked if he could visit Copernicus for a few days to learn more about the heliocentric theory. He fell so completely under Copernicus' spell that he ended up staying two years. So to me Rheticus has always been the man who came to dinner.

One can make a good case to the effect that without Rheticus Copernicus might never have published the "De Revolutionibus". Copernicus' working manuscript (a facsimile of which is in the U. of T. Library) is a curious document full of cancellations, corrections and addenda. In the view of L.A. Birkenmajer who studied the document in detail, it shows evidence of having undergone two substantial revisions, in 1515-19 and 1523-32; and the final form of it differs appreciably from the 1543 published edition. It is commonly believed that the printers must have worked from a different document, perhaps transcribed by Rheticus under Copernicus' supervision, which was lost. In fact, Copernicus' original MS was all but lost and was only rediscovered in 1873.

If the "De Revolutionibus" had not been published, what might have been the subsequent developments? It is true, of course, that, thanks to the shorter accounts in Copernicus' unpublished "Commentariolus" and Rheticus' published "Narratio Prima", the heliocentric theory had become reasonably well known, but it was the detailed mathematical treatment in the "De Revolutionibus" that practising astronomers found so convincing.

Even so, the impact of the new model was not very great until the time of Galileo and Kepler. It is difficult to imagine who, in those 70 years, would have been able to duplicate Copernicus' detailed analysis. Might not the heliocentric theory, then, have been all but forgotten, as it had been several times before? Then surely Galileo would never have been diverted from physics into Astronomy, and he would have escaped the tragedy of his conflict with the Church. Indeed, if we concur with Thomas Kuhn (in "The Copernican Revolution") concerning the underlying reason for the conflict, it is likely that no serious science vs. religion confrontation would ever have taken place.

Perhaps Kepler, armed with Tycho's observations, would have duplicated Copernicus' work and arrived at a convincing heliocentric model. But then would he have had time left to do what he did do? And, lacking Kepler's laws, would Newton....?

Well, such speculations are entertaining, but fruitless. Perhaps we had better be content with the fact that Rheticus did come to dinner.

J.F.H.

OBSERVING

Radio Astronomy

Dr. Seaquist spent two recent observing periods at A.R.O. with the 46-metre dish on supernovae remnants:

- (i) April 1-2 on a cooperative program with Dr. van den Bergh, searching for extended emission surrounding the Crab Nebula at 9.3 cm. Such emission might be associated with the original explosive event, in which case the well-known emission might be attributed to pulsar activity. The new data have not been reduced as yet. The weather was bad with lots of snow.
- (ii) April 10-15 on a search for radio emission in recombination line 85α at 2.8 cm from the faint H α region surrounding Cas A. Again the data are not yet reduced. On the first day there was 4 inches of snow, then fine weather.

Gamma-2 Vel Again

Dr. Sanyal has analysed the observations recently made over a period of 90 minutes by Barry Madore at Las Campanas using a narrow-band interference filter. He finds evidence of variations with a period of 175 seconds, in good agreement with earlier scanner results.

COMINGS AND GOINGS

USRA

Dr. MacRae was in Washington Mar. 29 - April 1 for the Board of Trustees meeting followed by the Annual meeting of the Council of Institutions of the Universities Space Research Association.

rG in WISC. & CHILE

Dr. Garrison on Apr. 3 gave a colloquium at the University of Wisconsin in Madison on "Spiral Structure, as Observed from the Southern Hemisphere; Circular or Tilted Arms?" On Apr. 6 he gave a lecture in Dr. Morgan's course in spectral classification at the Yerkes Observatory. Between these dates he was consulting with Dr. Morgan on classification work.

On 25 April Dr. Garrison will be leaving for Chile with his family. He plans to stay there until mid-August, when Ada and the children will return to Toronto while he attends the IAU meeting in Australia. During the 3½ month stay in Chile, Dr. Garrison will be observing with the 60-inch and 36-inch telescope at Cerro Tololo as well as with the University of Toronto's 24-inch on Las Campanas. As a visiting professor in the University of Chile, he will be giving a course on spectral classification.

He will return to Toronto for one week in June to attend the June Institute and guide three of his students through critical stages in their thesis projects. He will finally be back in Toronto on 3 September (for a rest!).

Talks

Dr. Hogg on Apr. 4 spoke on "Astronomy as a Career" at a dinner meeting of the University Women's Club in Toronto.

Dr. Heard spoke on "Copernicus" at the regional dinner of the Western Ontario Fellows of the Royal Society of Canada on Apr. 6 at the University of Waterloo. Dr. Hogg also attended the dinner.

Dr. van den Bergh gave talks at the University of Virginia and NRAO on "Evolution of Galaxies", Apr. 12, and on "Supernovae Remnants" Apr. 19.

Copernicus Committee

Drs. Hogg and Heard attended a meeting of the NRC Canadian Committee for the 500th Anniversary of Copernicus on Apr. 18 in Ottawa. This was probably the final meeting of the Committee, and a Review of the Copernicus Year in Canada was given. Among the highlights: the cross-Canada lecture tour of Dr. Iwanowska; the

project on the part of the Canadian National Nicholas Copernicus Quincentenary Committee to present a Richardson spectrograph to the Institute of Astronomy at Torun; a number of radio and television interviews; an up-coming (probably July 20-30) Copernicus exhibit at the National Museum of Science and Technology in Ottawa featuring the only Canadian exhibition of the famous Cracow collection of 15th Century astronomical instruments, a Copernicus portrait commissioned by the Committee and the Copernican Orrery now under construction in the NRC shops; a CBC Tuesday night TV presentation on Copernicus now in the planning stage; a \$20,000 solar telescope for Winnipeg; a statue of Copernicus for the Dow Planetarium in Montreal; a Roy. Soc. Can. Symposium, National Library exhibit and National Arts Centre concert planned for November; the naming of "Copernicus Hill" in the Duck Mountain Provincial Park in Manitoba.

SEMINARS

APRIL As announced with the addition of today's talk by Drs. Sanyal and Jeffers on "Short-time Spectral Variability of Gamma-2 Velorum".

MAY - No visiting speakers are scheduled; some talks by "locals" may be arranged.

JUNE - THE JUNE INSTITUTE, scheduled for June 12 to 15 inclusive, will have as guest speakers Dr. Bart J. Bok, Dr. Dimitri Mihalas, Dr. Gerrit L. Verschurr, and Dr. Olin C. Wilson. More details and registration forms are available from the Department or the Observatory.

The Roy. Soc. Can. Symposium on "Chemical Evolution in the Universe" will take place on Wed. June 6, 9.00 a.m. - 12.00, at Queen's University. All are welcome; more details from Dr. J.D. Fernie.

PAPERS SUBMITTED IN APRIL

- S. van den Bergh "Supernovae of the Second Millennium A.D."
- S. van den Bergh, "A Search for Faint Variable Objects"
W. Herbst +
C.J. Pritchett
- C. Coutts "A Preliminary Investigation of Period Changes for W Virginis Stars in Globular Clusters"
- S.P.S. Anand "On Rotating Isothermal Configurations in the Post
+ M. Shara Newtonian Approximation of General Relativity".

POTPOURRI

Errata

In the March DDD:

In the acknowledgements of help with the Scarborough Open House, for Dr. MacRae - read DR. MARTIN.

In the seminars given by Dr. Walborn, for Grant HII Regions read GIANT etc.

In the story of Dr. Garrison's CFTO-TV interview, for ABWX250 read ABINX250.

The Media

Dr. Racine was interviewed recently on the CBC French network. On Apr. 9 Dr. Kronberg was interviewed by Barbara Fromm on CBL's "As it Happens" on the subject of the new greatest-red-shift quasar.

Promotion

Dr. Percy has been promoted to Associate Professor as of Apr. 1. He will be returning from Cambridge in August.

Appointment

Dr. Walborn has been appointed Assistant Astronomer on the staff of Cerro Tololo Inter-American Observatory effective Sept. 1, 1973.

Invited Papers.

Dr. van den Bergh has been invited to give an introductory talk on Supernovae Remnants at the Joint Discussion on Novae and Supernovae, and Dr. Walborn a talk on "OB Stars" before Commission 45 - both at the Sydney IAU meeting.

Evaluation and Candidate

Dr. van den Bergh has been asked to serve on the new Kitt Peak Evaluation Committee that screens and rates their observing time requests. He has also been nominated for the Vice-Presidency of the IAU Commission on Star Clusters.

New NASA Lunar Program

NASA has just announced a new "Lunar Data Analysis and Synthesis Program" to draw on the many varied data available from the Ranger, Explorer, Surveyor, Lunar Orbiters and Apollo missions. Scientists are encouraged to propose investigations with a view to "building a detailed picture of the origin and history of the moon".

Former Staffer

Ed. Weston, 1952-53 member of our teaching staff, recently phoned Dr. MacRae re the May 5 occultation of Vesta visible in Canada.

Former Student

Douglas Paul, a graduate of 6T2, (same class as John Percy, Richard Larson, Pim FitzGerald, Dick Henry, Mike Marlborough), Assistant Director of Science Teaching for North York, has shared, with George Laundry, an Award for Innovative Teaching given by the American Association of Physics Teachers. Doug and a collaborator are now in the process of writing a High School Physics textbook which will be illustrated by stamps about science and scientists where appropriate. He will be glad of any help in tracking these down. His phones: OFFICE 225-4461 ext. 500, HOME 482-5073.

Born

To Mr. and Mrs. Arthur Lamb, of Knutsford, England on Feb. 16, 1973 a daughter, Alexandra Joan. Margaret Lamb was Observatory Secretary from 1956 - 1958.

Mnemonic Contest

Entries for the vdB Mnemonic contest on the Observatory's postal code (L4C 4Y6) continue to pour in. Closing date will be May 6 after which a committee will judge the winner of the Danish beer, for announcement in the May DDD.

FINAL ITEM

Snowcaps on the Moon

A hot afternoon last December found me lolling on the deck of a 60-ft schooner gliding gracefully through the translucent waters of the Caribbean. To port lay a vista of coconut palms and white beaches, while off to starboard the sun was sliding down the blue sky to a brilliant setting. Sipping my rum swizzle, I reflected with regret on the lack of opportunity for professional optical astronomers among these pleasant islands.

Even historically the pickings are slim. I recalled that Edmond Halley in his days as a British sea captain had once sailed from these very shores of Barbados, dealing with a mutinous first-mate as he did so, while Nevil Maskelyne when Astronomer Royal had had a confrontation in the streets of Bridgetown with William Harrison over rival methods for determining longitude at sea. But to find much in the way of real optical astronomy one must come forward in time to the Harvard station in Jamaica.

At the turn of the century Harvard had conducted fairly extensive site surveys in Jamaica, finally choosing a site some 2000 feet up in the Figuerero Mountains near the small town of Mandeville (which is 10 miles from the hamlet of Richmond Hill!). There was a claim that the summer seeing here was superior to that at Harvard's Arequipa station in the Peruvian Andes. Although the Jamaican site was not fully developed until 1911, work started there in 1900 with a curious 12-inch $f/138$ refractor operating with a siderostat. The person in charge of the station was William Pickering, brother of Edward Pickering, the director of the Harvard College Observatory.

One has to feel sympathy for Edward Pickering in having William as both a brother and a colleague. William, previously a physics instructor at MIT, had been brought to Harvard by Edward in 1887. Within a few years he was operating the Arequipa station in Peru, where he proved to be not only an astonishingly inept and truculent administrator, but given to ignoring the observing programs assigned him by his brother. Instead, enthused by the recent work of Schiaparelli on Mars (it was William who made the famous translation of 'canali' into 'canals') he turned to a close visual study of that planet at its opposition in 1892. In a series of cables to the New York Herald, he vividly reported on the mountain ranges, canals, and the forty lakes he had observed. Edward quickly complained that "this has given you a colossal newspaper reputation. A flood of cuttings have appeared, forty-nine coming this morning", while the Lick observers were reported as reading their newspapers "with a kind of amazement". In no way daunted, William turned his attention to Jupiter, and soon fired off a cable to the Herald to report that "the first satellite is egg-shaped and revolves end over end, and nearly in the orbital plane. Its period is twelve hours and fifty-five minutes." Amazement reached such heights that astronomers queried Edward as to whether the cables had not been garbled in transmission.

Now, eight years later in Jamaica, William enthusiastically began a study of the lunar surface. His first reports were not long in coming, and gave details of the numerous canals, snowcapped peaks, vegetation, and evidence for a lunar atmosphere which he had observed. Writing to his brother some time later he remarked "Whatever reputation as an astronomer I lost when I published my former observations, will be nothing to the destruction produced when these get into print, and especially the drawings. I have seen practically everything except the selenites themselves running round with spades to turn off the water into other channels!". At least he had a realistic idea of his reputation.

Edward Pickering died in 1919, and in 1924 Harvard gave up its Jamaica station. William, however, continued to maintain it as his private observatory, and lived there, observing and writing, until his own death in 1938.

It would be wrong to leave the impression that William Pickering was no more than a charlatan. His bibliography of some 450 entries contains much that is good; for example, he produced a predicted position for a trans-Neptunian planet as good as and long before Lowell's work (plates taken at Mt. Wilson in 1919 to check Pickering's prediction actually show Pluto, but were inadequately blinked at the time), and gave a basically sound interpretation of nova spectra when most people were still talking about collisions between stars. Nevertheless, he remains a fascinating example of a trained professional astronomer, whose eyesight was so good as to be a byword among his friends (he could easily see 13 Pleiads with the naked-eye), who used good instruments in superb climates, and yet who could convince himself of the most palpable nonsense.

(More in 'The Harvard College Observatory' by Bessie Jones and Lyle Boyd, Harvard University Press, Cambridge, Mass. 1971.)

J.D.F.