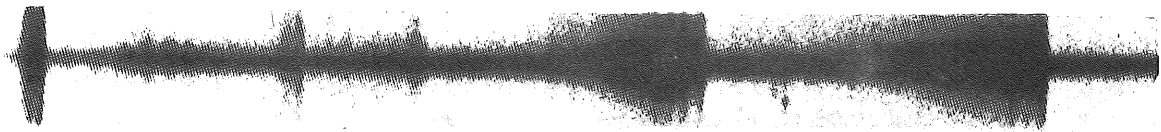


DAVID DUNLAP DOINGS

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*Low-Dispersion Spectrogram of
Comet Kohoutek taken at Las Campanas*

EDITORIAL

Professor Malmquist from Sweden

The date was January 6, 1947 and the weather was similar to that of the early part of January 1974. At that time there were no trees and no road on the windswept upslope from the corner of HillsvieW (then Hunt's Lane) and the tracks. Frank Hogg and I were standing chatting in his office and looking out across the bleak drifts of deep snow when we noticed intermittently between the gusts of blowing snow, the figure of a man trudging up the field from the tracks. As he approached it became clear that he was coming to the building. When we met him at the door Frank recognized him as Gunnar Malmquist, then aged about 50 and Director of the Uppsala Observatory, whom Frank and Helen had met at the IAU General Assembly in Sweden in 1938.

Visiting astronomers, especially from abroad, were rare in those days, before air travel, either domestic or transatlantic, had become commonplace. Prof. Malmquist, it turned out, was enroute across the continent from some eastern seaport and had realized that he could stop over for 12 hours in Toronto and resume his westward journey in the evening. So, on the spur of the moment, he decided to visit the DDO, unannounced and unexpected. It seemed natural to him to come from Toronto by train, so he became the only person, to my knowledge, ever to arrive by train and walk the two miles back along the tracks and across the field. No doubt quite accustomed to deep snow in Sweden, he appeared more exhilarated than exhausted by his walk and was amused at our awed attitude towards his feat of endurance.

Prof. Malmquist was a well-known photometrist and we talked a good deal about photoelectric photometry which just then Frank was trying to get established at our Observatory. We shared our sandwiches with him at lunch time because the road was drifted in and we were all car-less. Towards mid-afternoon I invited him to take the "radial" with me back to our place in North Toronto, have dinner with us and leave in time for his evening train. I tried, dutifully, to warn my wife but right up to five o'clock I was unable to reach her. When we arrived at the North Yonge terminal at 6 o'clock I excused myself to try phoning again, only to find the line busy. So there was nothing to do but surprise her ten minutes before dinner.

As we came into the vestibule I called out a warning in a cheerful voice, "Hello, dear, I've brought Professor Malmquist from Sweden!" My wife, thinking this another of my practical jokes, came from the kitchen followed by three little girls, but her "Ho, ho, ho" died on her lips as she realized that there, indeed, was Professor Malmquist, quite believably from Sweden. Her consternation, only partly disguised, was, it turned out, understandable.

Having been out until late afternoon, she had hurriedly "cleaned out the refrigerator", and prepared the hash-like conglomerate which every frugal housewife inflicts upon her family about once a fortnight.

After a little delay to prepare a salad by way of garnish for the hash we all sat down to what might have been a painful dinner. Instead, Professor Malmquist turned out to be one of those rare individuals who combine a genuine love for children with a talent for entertaining them. He told them about his own children and the toys they had in Sweden and the games they played. He recited little Swedish verses and sang little Swedish songs. They in turn, brought him their toys and eagerly answered all his questions. When finally we stood up from the table Professor Malmquist signalled for silence, made a little bow and said a few solemn Swedish words. What was he doing, cried the children in delight. He was "thanking the table", Professor Malmquist replied - an old Swedish custom used only when that meal had been a particularly memorable one.

When it was time for the children to go to bed nothing would do but for Professor Malmquist to tuck them in and tell them a Swedish story in charmingly accented English translation, and then it was time for him to leave, apparently reluctantly, for his train.

"Bringing Professor Malmquist from Sweden" has ever since been our family expression for a last-minute guest for a meal; and that particular dinner has remained as one of the happiest memories of our family life.

J. F. H.

OBSERVING

74-Inch

We now have had several months' experience using IIIa-J plates. These produce excellent spectrograms; because of their fine grain they are especially useful for work on broad-line spectra and for the detection of very weak features. Unfortunately, they are very slow compared to IIa-O baked or even unbaked emulsions; with our present sensitivity techniques the practical limiting magnitude with the G12 dispersion is about $B=6.5$. Experiments are planned to try to improve this, but meanwhile an exposure chart is available on the observing desk.

Tom Bolton has obtained a dispersion formula for the G16 plates, covering the $H\beta$ -H α region, with IIa-F plates, usable to limiting magnitude about 7.5 with no filter required and iron-arc comparison. Interested observers may obtain a list of comparison-line standard settings from Tom who also has programs for the interactive terminal system which will give standard positions and rVs factors for the G12, G43 and G16 systems.

The Fizzle of the Century

Most of us have manfully observed Comet Kohoutek one way or another so we can at least answer the taunts of our non-astronomical friends.

Actually a fair measure of success has been attained both at Las Campanas at low dispersion and here at 12A/mm in observing the comet's spectrum - as attested by our cover illustration which reproduces (poorly) a Las Campanas spectrogram obtained by Chris Smith on Dec. 5, 1973.

Las Campanas

Bob Garrison was observing spectroscopically Jan. 9-22. Chris Smith returned to Las Campanas on Jan. 16 after a holiday-season furlough back here. At the RASC meeting on Jan. 11 he casually wrote 80 in the list on the board of who-has-seen-the-comet-how-many-times. "Well", he said by way of explanation, "I observed about 80 nights since October and you just looked up and there it was".

P.M. at McD.

Peter Martin spent a week at McDonald Observatory in mid-December, using the 82-inch telescope to complete studies of the circular polarization of the Crab Nebula. At the end of January he used the 50-inch telescope at Kitt Peak to continue his programme with Roger Angel in search of interstellar circular polarization of stars.

COMINGS AND GOINGS

DAM at CFHT Directors' Meeting

Don MacRae was in Ottawa on January 17-18-19. The incorporation of the Canada-France-Hawaii Telescope Corporation had legally and officially taken place in Honolulu earlier in the month and the meeting of the members of the Board, and others representing various agencies of the three countries involved, was to finalize the bylaws and otherwise further advance matters in connection with the telescope project.

JP at N.F.

John Percy recently spoke to the Niagara Centre of the R.A.S.C.

Apprently no one else came or went (officially, that is) since December except as noted above under Observing.

SEMINARS

JANUARY As announced in DDD 6, 12 except with the addition of

Thurs. 17th Dr. J. B. French, Inst. of Aerospace Studies,
McL. U of T, "Mass Spectrometer Analysis of Planetary
Atmospheres" (Joint with Physics)

and the title of Dr. Dunlop's talk on Jan. 22 was
"Lunar Magnetism".

also

Tues. 29th Dr. Derek Sida (visiting this term from Carleton),"
D.D.O. "If it is not Curved it Must be Flat".
4:00 P.M.

FEBRUARY

Tues. 12th Dr. Derek Wills, Univ. of Texas, "The Texas Program
D.D.O. of Extragalactic Radio Source Studies".
4:00 P.M.

Wed. 13th Dr. Derek Wells, "Radio and Optical Studies of Complete
McL. Rm. 137 Samples of Q.S.O.'s".
4:10 P.M.

Thurs. 21st Dr. Barry Newell, Yale University, "Electrographic
McL. Rm. 137 Stellar Photometry".
4:00 P.M.

Tues. 26th Tom Bolton, "Report on Research"; Rene Racine, "The
D.D.O. Metalicity of Globular Clusters in M87".

Thurs. 28th Dr. Michael Ovenden, U.B.C., on the Origin of the
McL. Rm. 102 Solar System. (Joint with Physics).
4:10 P.M.

PAPERS SUBMITTED IN JANUARY

- S. van den Bergh "The Dwarf Spheroidal Companions to the Andromeda
Nebula".
- S. van den Bergh "Tentative Identification of Main Sequence Stars in
the Nuclear Bulge of the Galaxy".
- P. P. Kronberg & J. F. C. Wardle The Linear Polarization of Quasi-Stellar Radio Sources
at $\lambda\lambda$ 3.71 & 11.1 Cm.
- R. F. Garrison & N. R. Walborn Morphological Properties of Some Bright Southern
Galaxies.

Wm. E. Harris &
R. Racine

AC-M Diagram for M80 Obtained With a New Photographic
Calibration Technique

J. P. Vallée &
P. P. Kronberg

Observations at $\lambda\lambda 2.2$ & 4.5 cm of the Linear
Polarization of Radio Galaxies & Quasars

P O T P O U R R I

Christmas Countdown 1973

The usual Annual spoof took place on December 18 and was a pretty good one. Organized by Bruce Campbell and MC'd by Dave Hanes the program included five skits in the following order: René Racine as visiting astronomer, M. Bellyhai, and Jack Heard as bumbling interpreter, M. Airrd, featuring a resurrection of the old "telescope à fourche à trois fourchettes" gag; Don MacRae with the collaboration of Elizabeth Barnes in a clever "search for intelligent life in the universe" gag; Tom Bolton's First Annual Sirgay awards, highlighted by Alan Batten's misprint of the "line of Aspides" (winning submission by John Galt); Dave Hanes' hilarious slide tour of the D.D.O.; and Bruce Campbell's brilliant illustrated lecture on TV sensing systems. As is customary, the 7D3 issue (illustrated!) of David Dunlap Droppings was circulated amid snorts of mirth.

Martine Normandin Bereaved

Our sympathy is extended to Martine, whose father Henri Simard, died in Montreal on Dec. 30. Mr. Simard was known to many of us, having been long prominent in the Centre Français de Montréal of the RASC and having served as National President in 1970-72.

Prominent U.S. Astronomers Die

During December two American astronomers, well known by some of us, died suddenly. Gerard Kuiper had visited the Observatory several times, the first time in 1951 when he called in at the time of a visit to his close friends Mr. and Mrs. van den Hoek, formerly of Sumatra, who had settled in Richmond Hill. Walter Miller, S.J., of Fordham University a dedicated variable star observer and friend of Don MacRae and Jack Heard, died on the eve of the joint celebration by his brother and himself of their 50th anniversary in the Jesuit order.

Comet Chats

Helen Hogg had four involvements with the electromagnetic media over Comet Kohoutek and other comets. On Betty Kennedy's radio interview show she appeared on Nov. 27 with a repeat on Boxing Day. On Jan. 5 she interviewed Carl Sagan on the Norm Perry T.V. show, and on Jan. 7 she had a leading part in CBC's Nature of Things Comet show, interviewing Fred Whipple and discussing comets

generally. All were very good shows and Helen cautiously avoided making any predictions of a spectacular apparition.

Dieter Brueckner gave a talk on the comet at nearby King City.

Alumnus Married

DDD has learned of the marriage in Santiago in December of former Post-doc Ashit Sanyal to a Chilean girl named Angela. Dr. and Mrs. Sanyal are now living in Victoria.

New Phone Line

Long-distance callers are advised of a new number, 884-9562, which will reach the staff (and the dome at night). The old number 884-1396 will henceforth only reach the secretaries' office.

FINAL ITEM

The Abbé de la Who??

Among the host of treasured memories carried away by Ph.D. graduates of our department, a special place must surely be reserved for the Ph.D. General Examination. For the uninitiated, this is an all-afternoon oral exam in which the candidate sits ringed by a semi-circle of a half-a-dozen examiners who fling at him questions on any and every imaginable (and always at least one unimaginable) aspect of astronomy. The afternoon's merriment customarily comes to a close with a section of the exam called People and Places. Here a list of astronomers is produced and the candidate expected to identify them by institution and field of interest. My own contribution towards confusing the candidate at this point has been to sometimes interject a historical name, and I have long had the intention of asking some candidate to identify the Abbé de la Caille. That I haven't so far done this is because I have always foreseen the incredulous rejoinder "The Abbé de la Who??" And after all, even Ph.D. candidates deserve a break by that hour of the afternoon.

Just who was Nicolas Louis de la Caille? Well, for starters, he was the father of southern hemisphere astronomy, and he was also one of the greatest of eighteenth century observers. Observationally at least, had he lived longer or given more of his career to it, he might well have rivalled William Herschel. Yet history, in its capricious way, has pretty well passed him by. In part this is because despite his attainments we know relatively little of La Caille the man. He was born near Rheims in 1713 and received a classical education, acquiring the title of Abbé, although apparently never holding any form of ecclesiastical office. Instead he early became one of the leading savants of French science, working with the Cassinis at the Paris Observatory and then as professor of mathematics at Collège Mazarin. He made a name for himself working on the French determination of the arc of meridian, as the author of important solar eclipse tables, and played a major role in French preparations for the transits of Venus, although he never lived to see the results of these preparations. All of this would have accorded him a minor footnote in history; his real fame was to come beyond the borders of France.

In the 1740's La Caille was working on problems of navigation, by then, with the world opening up in all directions, a matter of prime importance.

A great difficulty for mariners in the southern seas was the fact that very few southern stars had had their positions measured accurately, and so La Caille conceived the idea of going down to the Dutch East India Company's station in South Africa and carrying out these measurements. This he did between 1751 and 1753, in those two years establishing a reputation for himself that was to last almost down to the days of Friday afternoon Ph.D. exams.

If you ever find yourself in downtown Cape Town you might see on the wall of a large department store near the corner of Strand and Adderley streets a small bronze plaque announcing that here, more than two hundred years ago, stood the observatory of the Abbé La Caille. On this site he set up a small transit telescope, and in the course of two years observed the positions of no less than ten thousand stars. That may be the world's record for all I know; certainly it means that he must have observed just about every single clear night during those two years. But that was just part of his work. His daylight hours were taken up with a harbour survey, gravity measurements, daily tide and weather records, extensive geomagnetic studies, correspondence and journal writing, and a bit of just about everything else. Inbetween his ten thousand stars he made a long series of observations to determine his longitude, and catalogued the positions of forty or so nebulae. The latter catalogue resulted in a rare historical case where the southern sky survey was more complete than the northern one; not until the era of Messier and Herschel did the north once again preponderate. In addition, La Caille carried out his side of an agreement with European observers to make accurate measurements of planetary and lunar positions as a basis for determining the distance of the sun and the moon. As it happened, La Caille did better than his colleagues, the rather poor result of 80 million miles for the sun was largely a consequence of inadequate northern observations. In fact, comparison with modern results shows that all of La Caille's work was marked by meticulous accuracy, and his reputation rests as much on this as on the abundance of his results.

Finishing all this ahead of schedule, La Caille looked around for something else to fill the time, and decided to make a geodetic survey to establish the shape of the earth's southern hemisphere. This had never been done before, and it came as a shock when the result indicated that the southern hemisphere is a prolate spheroid. In the early years of the century there had been a long argument between French and British scholars over the shape of the northern hemisphere, the British finally triumphing with an oblate spheroid over the earlier French claim for a prolate spheroid. Now there must have been much hurrumphing in the Royal Society over these damned Frenchmen determined on a prolate spheroid at any cost. This time the matter had to wait eighty years for an answer, when Thomas Maclear and John Herschel repeated La Caille's survey. There had been nothing wrong with La Caille's observations, as accurate as always, but it was Herschel (I think) who realized that some of the observations had been made alongside Table Mountain and that the gravitational attraction of the latter had pulled the plumb-bob out of the vertical and so caused an error in the latitude determination at that point.

Ever wondered where we got those names for the southern polar constellations? Right, it was what La Caille did when time hung heavy on his hands. The early Portuguese navigators had invented a few constellation names, and Edmund Halley had tried his hand at it, but most of the far southern sky was unnamed. La Caille began with a stern rebuke to Halley for what he considered

sheer sycophancy - Halley's naming of one constellation "Robur Carolinum" (King Charles' Oak Tree). To La Caille, child of the Age of Reason and Enlightenment, it seemed clear that the southern constellations should bear the names of instruments of the scientific and philosophic arts. Thus 'Apparatus Sculptoris', today shortened to Sculptoris, 'Antlia Pneumatica' (the air pump), 'Fornax Chimica' (the chemical furnace), and so forth. 'Reticulum' came when his eye happened on part of his own ingenious transit telescope. 'Mensa' (the table) is abbreviated from 'Mons Mensa', named after Cape Town's Table Mountain. In fact, there's more to it than that. When the south-easterly trade winds blow at the Cape, the flat top of the mountain is often covered with a thin white cloud, known locally as 'the tablecloth', and La Caille arranged the constellation Mensa in the sky so that it would forever be overlain by the Large Magellanic Cloud as its tablecloth.

La Caille left the Cape on March 8, 1753 to return to his more prosaic labours in France. Soon thereafter, at the age of 49, his life came to an early end. In tribute, the great Lalande said of him that he had made more observations and calculations than all the astronomers of his time put together; that the quantity of his work was rivalled only by its quality, while the disinterestedness and rectitude of his moral character had earned him universal respect.

Got all that now, you upcoming candidates for the Ph.D. generals?

J. D. F.