

FILM AND BOOK REVIEWS

***Spiral Galaxy: De Melkweg Ontrafeld*, a film by Maarten Roos and Pieter-Rim de Kroon, on DVD, 2009. Dutch, with subtitled English and German versions. €22.95 (includes postage and packing).**

This 45-minute film traces the steps which led from the nineteenth century view of the cosmos (when the Milky Way was synonymous with the Universe), to the first 21-cm hydrogen map of our Galaxy which revealed its spiral structure. The story is related, in the main, by three astronomers and a technician who either participated in the early work, knew the key players and/or witnessed the events first hand as they unfolded (all four are over 80; Adriaan Blaauw recently celebrated his 95th birthday). Much of the filming was done at locations which formed the backdrop to the research effort: the old Leiden and Utrecht Observatories, and Radio Kootwijk where the early 21-cm observations were made. As one might guess from the sub-title (meaning *the Milky Way solved* [or *unravalled*]), it is a Dutch film which emphasizes twentieth century research on our Galaxy done in the Netherlands.

A narrator sets the scene by describing how sixteenth and seventeenth century scientists—Copernicus, Galileo, Kepler, Huygens—changed our world-view from geocentric to heliocentric. Blaauw then recounts Kapteyn's research, culminating in his model of the Milky Way with the Solar System near its centre. The narrative continues with the work of men like Shapley and Curtis (though neither is named) marking another shift in our location away from the centre of things, culminating in Oort's model of the Milky Way with the Sun well-removed from the nucleus. To penetrate the dust which obscures most of the Galaxy including its centre, light of a different colour was to be needed. Kees de Jager tells the story (which he witnessed from Utrecht) of Van de Hulst's 1944 prediction at a Leiden colloquium organized by Oort, that the 21-cm hydrogen line might be detectable. Hugo van Woerden discusses the early results obtained with the 7.5-m Würzburg antenna at Kootwijk, and Arie Hin, one of Kootwijk's first electronics technicians, describes how the observations were done.

The film is quite good in capturing the atmosphere and excitement of the early work. I particularly enjoyed seeing the setup Kapteyn used to measure over 450,000 stars (each twice!), and Van Woerden's demonstration of how hundreds of HI spectra were 'digitised' from chart records using a ruler and pencil (this should be required viewing for astronomy students who are used to seeing their data, calibrated and integrated, flow out of a computer). As history, however, the film is rather selective, mainly following the thread of Dutch research on the Milky Way. English and German versions (the Dutch original with subtitles) are available on the same DVD; the translations are quite faithful. There are a few factual errors (the number attending the 1944 colloquium may have been small, but it was more than double the six De Jager mentions—but then he wasn't there), and the odd technical flaw (an English sub-title creeps into the German version), but they are minor. The film was made in the context of IYA 2009, and will probably mainly appeal to schools and amateur groups in the

Dutch-speaking world. For the historian there are few new facts, though the personal accounts should have lasting value. (The DVD has a bonus: additional reminiscences by Blaauw and Van Woerden.)

There is information on the film on the following web site: www.spiralgalaxy.nl

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***Inventar der historischen Sonnenuhren in Mecklenburg-Vorpommern*, compiled by Jürgen Hamel (Frankfurt am Main Verlag Harri Deutsch, 2007; *Acta Historica Astronomiae*, Volume 34), pp. 205, €19.80, 250 x 145 mm.**

This small book is a catalog of 188 sundials in the German federal state of Mecklenburg-Vorpommern, located on the Baltic (the major city is Rostok). Each dial is described in great detail, accompanied by a black-and-white photograph. The book, however, is only for the über-specialist, as the dials, with rare exception, are not at all attractive or notable. A majority are barely visible in the photos because they are medieval 'scratch dials', often found on churches in northern Europe as crude indicators for the times of mass. The hour lines on such dials, usually poorly preserved incisions in stone, show up only when the lighting is just right, and their gnomons have long rusted away. The remainder of the catalogued dials, of a more conventional nature from mainly the eighteenth and nineteenth centuries, are also mostly in very poor condition.

Such catalogs are nevertheless valuable as records of the architectural, artistic and time-keeping history of a region. But for some reason this region has not produced its share of the wealth of interesting and beautiful sundials that can be found throughout Europe. Or perhaps such dials once existed, but have not been preserved?

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***Cometography. A Catalog of Comets. Volume 4: 1933-1959* by Gary W. Kronk (Cambridge, Cambridge University Press, 2009), pp. xii + 616, ISBN 0-521-58504-X (hardcover), £150:00, 259 x 185 mm.**

It is a great pleasure to see the appearance of Volume 4 in the *Cometography* series (see Figure 1) so soon after the publication of its predecessor, and Gary W. Kronk is to be congratulated on providing cometary enthusiasts with yet another indispensable research tool.

Following the pattern of previous issues, Volume 4 details the progress of each comet, from its discovery through to its disappearance, along with supporting references. In addition, there is a 4-page Introduction, a 13-page Appendix listing "Uncertain Objects" (some of which are undoubtedly legitimate comets but have not been formally accredited because of a lack of adequate documentation), and a long "Person Index".

For me, this book has special appeal because it contains accounts of the first two naked eye comets I

remember observing, back in 1957, under the dark skies of rural New Zealand. Within a span of five months, both Comet C/1956 R1 (Arend-Roland) and C/1957 P1 (Mrkos) captivated me, and—coupled with remarkable views of Mars during its close opposition of 1956—guaranteed that my youthful passion for astronomy would eventually translate into a career in this noblest of the sciences. But it was only when I carefully read Kronk's accounts of these two comets that I discovered that Mrkos was certainly at its best when I viewed it, whereas Arend-Roland—although still an impressive naked eye object—was well past its prime by the time it graced New Zealand skies.

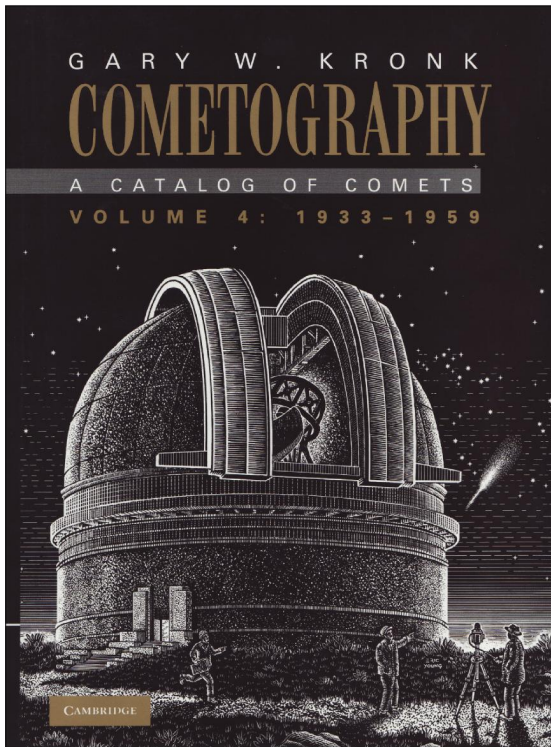


Figure 1: The attractive dust cover of *Cometography Volume 4* features Palomar Observatory.

Another feature of this book that is bound to reverberate with readers over the age of 60 is they will invariably meet up with old departed (and sometimes not yet departed) friends as they leaf their way through the accounts of the various comets in Kronk's portfolio. Soon after leaving school and beginning work as a Technical Assistant in the CSIRO's Division of Radiophysics in Sydney I accepted a part-time evening position at Sydney Observatory, where the then Director,

Harley Wood, became a close friend and great source of inspiration to me. Harley began his own association with Sydney Observatory in 1943, and over the years he observed a number of different comets, recording their positions, describing their nuclei and tails, and from time to time photographing them with the Observatory's astrographs. His work is summarised on pages 128-133, 311 and 317.

Another old friend who features even more prominently is Albert Jones of Nelson, New Zealand, who has made more visual observations of variable stars than any other living astronomer (see Austin, 1994). But Albert has also discovered two comets, and made regular observations of many known comets. His cometary work between 1945 and 1959 (inclusive) is discussed on no fewer than 48 different pages in Kronk's book.

One feature of astronomy that particularly interests me is those cometary discoveries by southern astronomers that were not formally credited, either because of the 'tyranny of distance' in those long-past times before the introduction of intercontinental cables, or because of communication crises during major wars. Two Australian examples I have studied involved Frank Skjellerup (1875–1952) and Mark Howarth (1884–1971), who independently discovered Comets C/1941 B2 (de Kock-Paraskevopoulos) and C/1941 K1 (van Gent) respectively. Australia and the Pacific were in the throes of WWII at the time, and news of their discoveries took far too long to reach the northern hemisphere. In Orchiston (1977: 122) I make a compelling case for the renaming of these comets since "... communication issues conspired to deprive Australian astronomers of credit for the discoveries of the above comets." Kronk discusses these comets on pages 126-133 and 150-156 respectively, where the independent discoveries by Skjellerup and Howarth are recognised.

Like its predecessors, *Cometography Volume 4* is a beautifully-prepared and beautifully-presented book that will appeal to those with a passion for the history of cometary astronomy, but once again I fear that its relatively high price will prevent it from joining the bookshelves of some astronomers.

References

- Austin, R.R.D., 1994. Albert Jones – the quiet achiever. *Southern Stars*, 36, 35-42.
 Orchiston, W., 1997. The 'tyranny of distance' and Antipodean cometary astronomy. *Australian Journal of Astronomy*, 7, 115-126.

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ERRATUM

Strom, Richard G., 2008. The origin and meaning of colourful descriptions in Chinese astronomical records. *Journal of Astronomical History and Heritage*, 11(2), 87-96.

During editing, rewording of one sentence has erroneously changed its meaning. At the beginning of the second full paragraph on page 93, the sentence which begins, "Firearms were invented..." should be replaced by:

The Chinese invention of gunpowder between 850 and 880 CE (Ronan, 1980: 50) was followed some centuries later by firearms. An early example unearthed near Harbin has been dated to 1288 (Needham et al., 1986: 293).