



The only naked-eye asteroid?

From Prof. J. C. Vetterlein

Following two letters in recent *Journals* (119(5), 2009 Oct & 120(1), 2010 Feb) regarding the faintest objects visible to the unaided human eye, I would be interested to hear from anyone who has seen (or knows of anyone who has seen) Vesta without optical aid.

There was a Vesta (mag 6.1) 'spectacular' on 2010 February 17 when the asteroid passed



Vesta imaged on 2010 February 18 at 21h 25m UT. A 20-second exposure with a Nikkor 135mm f/2.8 lens, ISO 400. Vesta appears to the right of Algieba (with 40 Leonis, mag. 4.8, below) and is the third brightest object in the field. John C Vetterlein, Rousay, Orkney.

Observing Saturn this apparition – a note to observers

From Alan W. Heath & Paul Abel

The current apparition of Saturn shows the two main equatorial belts to be faint and difficult in amateur-sized telescopes. It is hoped that CCD observers will not fall into the trap of increasing the contrast so the belts appear as they did during the last apparition – this will make such images lose scientific credibility. We strongly encourage more visual observations of the planet so that good comparisons can be made with all observations, past and present.

Alan W. Heath

6 Harlaxton Drive, Long Eaton, Nottingham NG10 2ER

Paul G. Abel

Dept of Physics & Astronomy, University of Leicester, Leicester LE1 7RH. [paul.abel@yahoo.co.uk]

between Algieba (gamma Leonis) and 40 Leonis. I was able to image Vesta a number of times either side of this date.

Richard Baum made the following interesting comment to me in a communication dated 2010 February 22: 'Had a look at Vesta on Feb 20 with the 15x50s. Being near gamma Leonis I had bookmarked the date and was glad the weather obliged – heavy frost. A most interesting observation that gave me a deeper insight into how the early planet hunters found their prey. The contrast between planet and star was striking. The former shone with a steady light of a yellowish hue, the latter with a cold almost frosty blue-white look. It reminded me of the elder Herschel and how he distinguished between his 'comet' and the stars of Gemini. A simple observation but informative.'

Vesta was at opposition on Feb 22. There was a half-Moon that night, but two or three days earlier a perceptive observer may have found it possible to see Vesta with the naked eye. At the 2011 opposition in Capricornus Vesta will be even brighter at magnitude 5.7, identical to that of Uranus at opposition on 2010 September 21.

I am grateful to Richard Baum for locating a naked-eye observation of Vesta cited by W. F. Denning in his celebrated *Telescopic Work for Starlight Evenings* (1891), page 168, thus: 'In March 1887 Mr Backhouse, of Sunderland, saw an apparently new, yellowish-white star near 103 Piscium, and it was just visible to the naked eye. This proved to be Vesta, though the identity of the object was not known at first, and it formed the subject of two Dun Echt circulars.'

Richard also discusses in some detail Denning's naked-eye observations of Uranus undertaken when the planet was in Leo, in 1880 March. (*The Haunted Observatory*, page 306.) From the early fifties I recall having had a conversation with P. M. Ryves (Mars Section Director 1942–1956 and an assiduous variable star observer) in Burlington House on the subject of seeing Uranus with the unaided eye. I found Ryves a very modest man who displayed great enthusiasm for his subject.

John C. Vetterlein

Springfield, Rousay, Orkney, KW17 2PR. [springastlix@btinternet.com]

The South Polar archive of Harold Hill

From the Director of the Lunar Section

As Richard Baum acknowledges in his elegant account of Harold Hill's extraordinary lifelong study of the lunar South Polar regions (published in the 2010 April issue of the *Journal*), the observational material upon which that paper is based represents only a small portion of the work Hill actually carried out on that area. As Baum notes, the total number of observations made is not known with certainty;¹ but thanks to the kindness of Harold's son Edward Hill, the rest of the surviving work is currently on loan to me, so that it might be scanned and lodged in digital form in the Lunar Section's observational archive.

This work fills two substantial box files, and consists of several hundred of Hill's drawings of the South Polar area, including a very large number of annotated preliminary sketches made at the eyepiece. There are also discursive notes on the project, various redactions of the 96-inch chart mentioned by Baum, and the sketchiest of outline frameworks for a proposed monograph on 'Luna Incognita' that Hill was never to write.

In addition, there is a correspondence with Georges Viscardy (L'Escarene, France), whose photographic atlas Hill admired and made use of, as well as charts and drawings

of the South Polar area made by others, including a chart by R. L. T. Clarkson. Surprisingly, there is no mention of the drawings and chart of the area made by Ben Burrell, a contemporary of Hill's and one-time Assistant Director of the BAA Mars Section. There is a selection of Burrell's work among the materials held by the Lunar Section, including his chart of the South Polar region. Perhaps Hill was unaware of it?

In terms of the history of classical selenography Harold Hill's work is of immense importance. The ongoing cartography of the Moon is now firmly in the realm of space-probe investigation, rather than a pursuit for the amateur telescopist like Hill. But the latter's South Polar archive is itself akin to an unexplored continent awaiting its Columbus. Richard Baum's fine paper has pointed the way, and it is to be hoped that in the near future others will be able to undertake the fuller cataloguing and analysis of the lifetime's work of one of the last of the great British selenographers.

Bill Leatherbarrow

9 Stumperlowe Avenue, Sheffield S10 3QN [w.leatherbarrow1@btinternet.com]

¹ Richard Baum, 'Harold Hill and the South Polar Region of the Moon', *J. Brit. Astron. Assoc.*, 120(2), 96.

A Venus green flash

From Mr Richard Baum, former Director, Mercury & Venus Section

On March 1 of the present year (2010) I was watching the setting Sun from the front bedroom window when at about 18:37hrs UT my son Julian came into the room and almost immediately spotted Venus (first time this elongation), sparkling serenely in the transparent frosty air a degree or so above the WSW horizon. I tracked it with 15x50 binoculars as it arced down through the branches of a distant tree towards a clear bit of Clwyd hillside visible in a narrow gap between trees, houses and TV aerials.

When first seen in the primrose sky, the planet shone with a silvery light but on descent changed successively from argent to pale gold, yellow, and amber, then red-orange as it closed with the apparent horizon then free of cloud, allowing us to watch until it set – Julian with the naked eye, myself with the 15x50 binoculars.

At roughly 18:43hrs, then on the verge of setting and deep amber in hue, it seemed to hesitate, splinter and flash as if winking in friendly recognition. To my astonishment as the last fragment trembled on the verge of extinction as it sat on the skyline it turned a gorgeous shade of olive green tinged with a trace of blue, and disappeared from sight. It all happened so suddenly that Julian sadly did not see the phenomenon. It took me by surprise; the green flash had not even entered my thoughts. Nor did I expect ever to witness such a will 'o the wisp phenomenon from an urban setting. It was in every sense a memorable occasion!

Richard Baum

25 Whitchurch Road, Great Boughton, Chester CH3 5QA. [richard@take27.co.uk]

Captain Ainslie's jack-knife refractor

From Mr Len Clucas

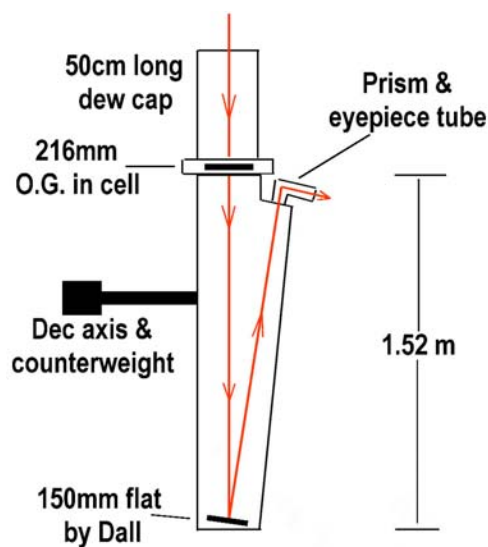
The excellent article by Martin Mobberley on Captain M. Ainslie (*JBAA* 120(1), 2010 Feb) has answered questions which have been in my mind for 50 years, particularly on details of his 'jack-knife refractor'. H. C. King in his 1955 *History of the Telescope* mentions in a short note that Captain Ainslie had built a folded refractor using an 8" Grubb lens. There was also a rough sketch. The idea of building such an instrument intrigued me but I had not the means, or could not otherwise obtain the components until 10 years ago when I did a swap with David Sinden and obtained a 5¼" f17 objective and a 5" quartz flat. I made the instrument. Unsurprisingly perhaps it turned out a smaller replica of the Captain's instrument, with the rack and pinion in line with the reflected ray, and a diagonal flat at the eyepiece position to allow more than 200° of swivel.

There are a number of advantages with this telescope type. It has the Newtonian position, and the swivelling eyepiece makes it almost as good as a rotating tube. A closed tube definitely steadies the image and the blackness of the background is startling. The small field does make pointing difficult unless a well-aligned finder is used. As most of us now have 'go-to' mounts this problem can be eliminated.

I can recommend this design. I am now building a 6".

Len Clucas

6 Cheviot Street, Wooler, Northumberland NE71 61N [len.clucas2@tiscali.co.uk]



The optical layout of Capt. M. A. Ainslie's 'jack-knife' telescope, reproduced from Martin Mobberley's paper in the February *Journal*.



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