



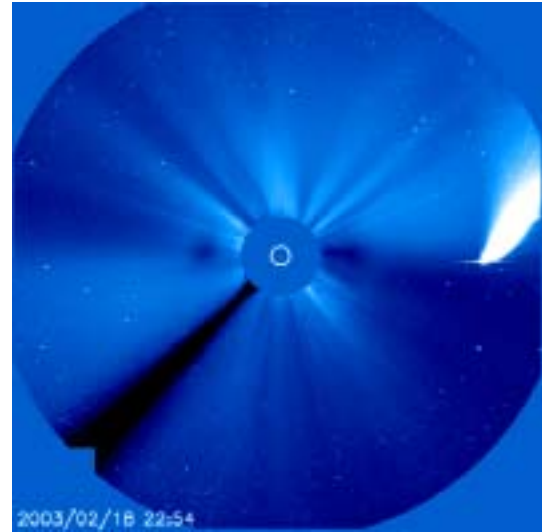
## Multiple green flashes at the sunset eclipse



Sunset after the total solar eclipse of 2002 December 4 at Koolymilka, near Woomera, South Australia, took place in such exceptionally clear atmospheric conditions that several observers reported seeing the elusive green flash. Photographs by Nigel Evans (left) and Graham Cliff (above) show that the observation was not an illusion. Nigel's series of photos was taken with a 1000mm f/10 Russian lens, 1/2000 sec. on Kodak Elitechrome 200 with no filter. The green flash is clearly visible as the curve of the partial eclipse strikes the horizon, and also (on the original image) as the first cusp sets. *N. S. Evans/G. Cliff.*

## Comet C/2002 V1 (NEAT) at perihelion

Comet 2002 V1 (NEAT) became a fine binocular object in the January and February evening sky. Martin Mobberley imaged it very low in the sky with a 3 minute exposure on 2003 February 3 at 1905–1908 UT, with his 0.16m f/3.3 Takahashi refractor + Starlight Xpress MX916 CCD. The comet's orbit then carried it to perihelion on February 18 when it was less than 0.1 AU from the Sun, and moved into the field of view of the LASCO C3 coronagraph on the SOHO satellite (far right). The amount of activity generated on the comet by this close solar passage can be judged from the size of the Sun itself, which is the small white circle on the centre of this image. *M. P. Mobberley/NASA-ESA.* [<http://sohowww.nascom.nasa.gov/data/realtime/>]



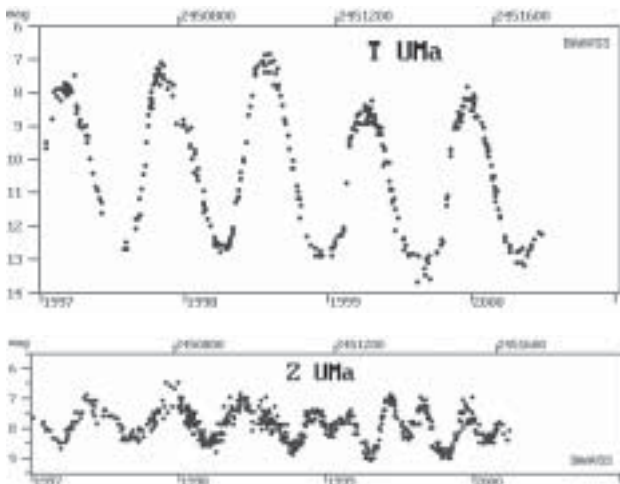


## Variable stars for spring

### Ursa Majoris

**T UMa** This is one of the best Mira stars for small telescope owners in the UK. Lying just 4° from the Plough stars Delta and Epsilon UMa it is circumpolar and always a binocular object at maximum, its range being approximately 6–13 magnitude. The light curve is usually smooth with a classical Cepheid shape and a slightly steeper rise than fall. The period is less than 9 months so two full cycles will occur within 1.5 years, as can be seen from the accompanying graph. The Section has observed this star since 1893 with no gaps in the data since 1950.

**Z UMa** Just over 5° from T and within the bowl of the Plough, you will find Z UMa, a fine SRb star which varies between about magnitude 6 and magnitude 9. This is another circumpolar star but being high in the sky at this time of year you'll need to lie on your back to observe it with binoculars!



### Boötes

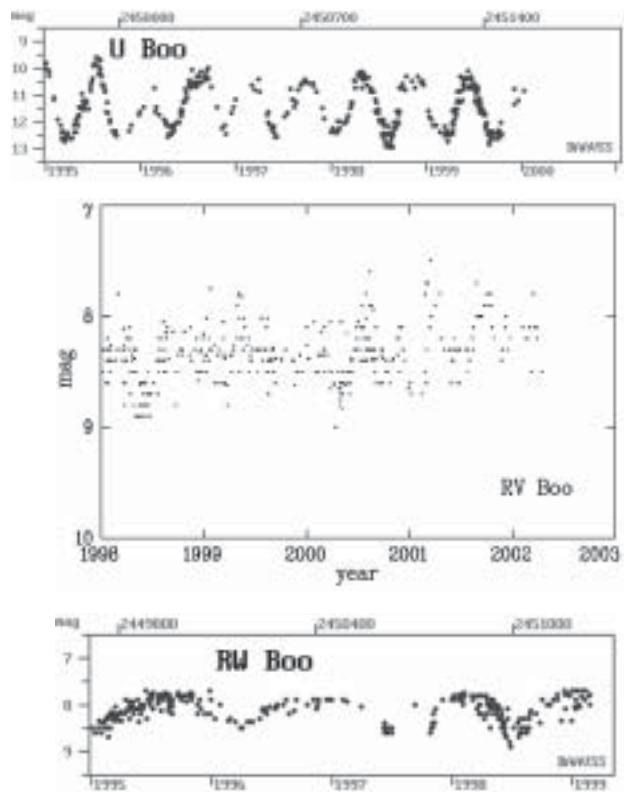
**U Boo** A semi-regular star within 2° of Xi Boo. It has been observed by members of the VSS since 1918 when the variations have been within about 9.8 to 13.0 magnitude, making it an ideal object for the smaller telescope. It has shown periods of fairly constant brightness and others where the activity has been very regular. A star well worth watching.

**RV Boo and RW Boo** In contrast, these two SRb stars, which are located much higher in the sky than U Boo and within about one degree of each other, don't appear to have shown a great deal of activity over the years. RV has varied between about magnitudes 7 and 9,

often with long periods of fairly constant brightness just below 8th mag, but with occasional dips to mag 9 or fainter and occasional brightenings to just below 7th mag. RW has shown even less activity, showing only very slow oscillations between about magnitudes 7 and 9. But who can tell what they will do in the future?

Charts for these stars can be found on the Variable Star Section's web page at <http://www.britastro.org/vss/vscharts.html>.

**Roger Pickard, Director, Variable Star Section**



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