



### Jupiter Section

## Moons over Jupiter: the occultations

It is common for moons to transit across the face of Jupiter (see the cover and pages 128 and 129 of this *Journal*) – but not this moon. In early 2002, British observers had two rare opportunities to witness occultations of Jupiter by Earth's Moon, which was waxing gibbous at the time.

The first, on 2002 January 26, was only visible from northern Britain as Jupiter was grazed by the Moon's south pole. David Gray observed it visually (*opposite, top*) and drew Jupiter gliding behind the lunar

mountains for about 20 minutes – first the dark mountains in silhouette, then bright mountains as a brilliant foreground. He noted that Jupiter looked leaden rather than colourful when viewed beside the much brighter Moon; however the orange-tan colour of the North Equatorial Belt was still relatively vivid. Meanwhile Jon Harper, further south so seeing the planet less fully occulted, took an iconic image (*centre*), in which Jupiter is poised beyond the dark far wall of the great crater Bailly.

The second occultation, on 2002 February 23, was more central; Jupiter was blotted out by the Moon's dark limb in less than 2 minutes, with the great crater Gassendi looming shadow-filled on the terminator. This was drawn by Alan Heath and by John Rogers (*centre right*), in lulls in the stormy weather, both having dragged telescopes to makeshift viewpoints required by the planet's low altitude.

**John H. Rogers, Director**

### Saturn Section

## The great Saturn cover-up



Disappearance of Saturn behind the limb of the Moon on 2002 February 20, 00h 01m–00h 05m UT. 400mm Newtonian + ST9E CCD. *Donald Parker, Coral Gables, Florida, USA.*

According to J. Kelly Beatty, writing in the February 2002 issue of *Sky & Telescope*, the planet Saturn slipped behind the Moon on no less than nine occasions in 2001 and five in 2002. These events happened in part because Saturn lay near the ascending node of the Moon's orbit,

and the next similar series of occultations is predicted to occur in 2006.

Of the 2001 events, the BAA *Handbook* for that year provided details for the occultations scheduled for the evening of November 3 and the morning of December 1, both of which were well placed for observers located in the United Kingdom.

The *Handbook* for 2002 detailed a further two occultations, that of the evening of April 16 and the more difficult event of May 14. For observation at a social hour, the phenomena of 2001 November 3 and 2002 April 16 were likely to be the more widely observed of the series.

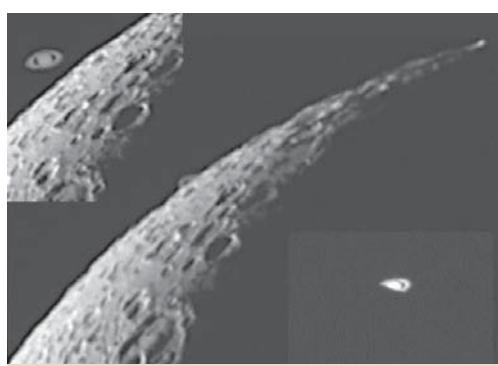
On the evening of Saturday November 3, would-be occultation watchers in the UK had to contend with variable cloud cover and if nature's celestial highlights were not enough, exploding fireworks. From the Director's observing station at Ripon, North Yorkshire, patchy

cloud scudded across the face of the Moon, two days after full. Saturn slipped quietly behind the limb of the Moon at approximately 21h 09m UT and was hidden for slightly less than an hour. The reappearance was quite breathtaking, occurring in the region of Mare Crisium, the Saturnian ring ansa emerging from the lunar limb giving the impression of a geyser on the edge of the Moon.

Skies were fortunately generally clear for the occultation of Tuesday evening, April 16 and from Ripon the crescent Moon, four days after new and resplendent with Earthshine, hung like a silvery jewel above the north west horizon. Saturn appeared to touch the Moon at about 20h 50m UT and had cleared our nearest neighbour by 21h 27m UT.

Some of the images forwarded to the Section, along with an image of an event well placed for observers in North America, are presented here and on the opposite page.

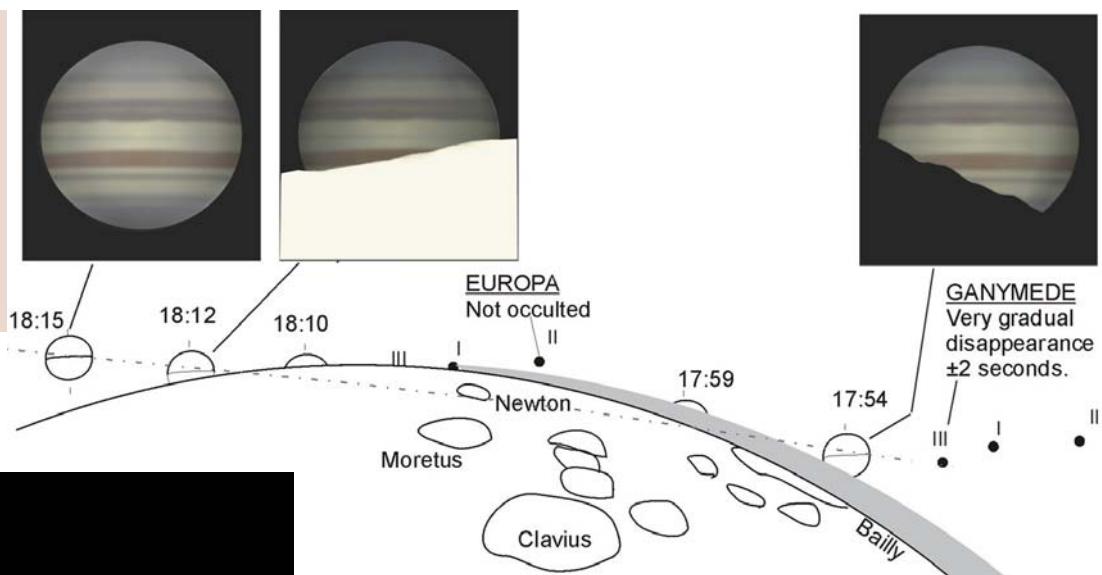
**David Graham, Director**



The occultation of Saturn on 2002 April 16. Top left and centre, the reappearance; lower right, disappearance. *Mike Foulkes & Paul Carter.*

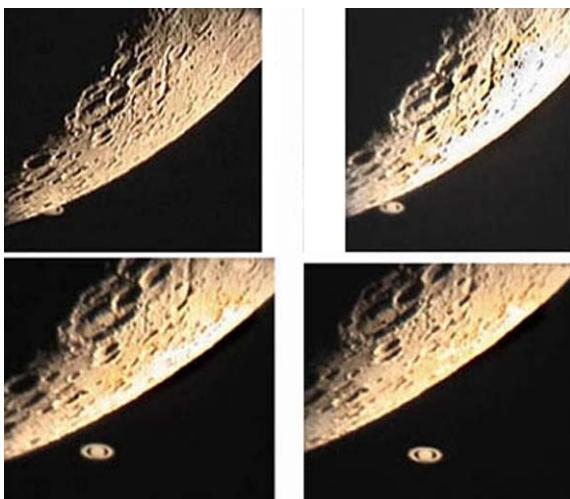


**Right:** The grazing occultation of Jupiter on 2002 Jan.26, 17.54-18.15 UT; David Gray (Kirk Merrington, Durham), 415mm Dall-Kirkham. Frequent cloud. The visual impression was drawn using the Corel Draw 9 computer program.



**Left:** 'Jupiter in the bowl of night'. 2002 Jan.26, 17.59 UT; Jon Harper (Scarborough & District Astro. Soc., Low Dalby, N. Yorkshire), 280mm reflector, hand-held Canon IXUS 300 digital camera.

**Below left:** 2002 Feb.23, before and during disappearance. These are rough sketches showing the crater Gassendi at left. The upper sketch also shows the prior positions of satellites IV, III, and I, which were successively occulted over the following few minutes. (Top) 02.40 UT; Alan Heath (Long Eaton, Notts.), 200mm Schmidt-Cass. (Bottom) 02.52 UT; John Rogers (Linton, Cambs.), 250mm reflector.



Reappearance of Saturn from behind the Moon, 2002 April 16. 21h26m–21h30m UT, 200mm Schmidt-Cass. and digital video camera. G. Austin, Ampthill, Bedford.