

Sky Notes

The purpose of these notes is to give information on astronomical and related topics for those living in the high latitudes of the British Isles. The national daily newspapers mostly cater for the mainland south of the Great Glen. Whereas the aurora (merry dancers) may be a relatively common occurrence for those of us living in Caithness, Sutherland the Northern Isles, folk in England and Wales are fortunate to see sign of them for years on end.

Therefore, without further ado, unless otherwise stated all risings and setting and other times are for the location of Kirkwall, Longitude: 2° 59 W (11m 54 s), Latitude: +59° 09'.

John Vetterlein

Rousay

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Mercury

The planet Mercury is best seen from northern latitudes in the morning skies of autumn and the evening skies in spring. This year the planet is most likely to be observed in the early morning twilight between October 5 to October 23. At greatest elongation (18.1°) on the 13th the planet will be some 3.5° below the much fainter Mars (the two planets are at their closest on 11th).

Mercury alters in brightness over very short periods of time. Thus this October it will brighten twofold in the space of only seven days between the 10th and 17th. Mercury rises slightly south of east at 5 43 am BST on the 12th.

Mercury, true to its name, is fleet of foot and has a reputation for being illusive. (Copernicus is reported never to have seen the planet, though I find this difficult to believe.) Even a small pair of binoculars will assist the observer when looking for the planet in the twilight sky (Mercury can never appear in a dark sky from these latitudes).

For those with suitably mounted small telescopes the opportunity to observe Mercury in full daylight becomes a reality. In fact, daylight is the best time to observe this planet. Nowadays it is possible to acquire compact telescope with computer "go-to" facility which means you don't even have to understand what you are doing! For this very reason exercise great caution when observing in daylight. The fact is people have been blinded by observing the Sun accidentally using small optical devices. TAKE NO CHANCES.

Although as a practical astronomer my main field of work until recently had been binary stars, I always used to take the opportunity to seek out Mercury whenever the opportunity arose. Having access to large refractors made the task easier. More recently I have taken up the study of the planet again using more modest equipment. Readers may be interested in the following extract from a recent letter to the British Astronomical Association prompted by an exchange I had with Andy Cooke of Firth Cameras:

"It was pointed out to me recently by a local amateur astronomer, Andy Cooke, that Mercury on 2002, July 9 appeared in his 7 inch Meade Maksutov "almost as bright as Venus". I made a quick calculation which showed that on this date the surface brightness for Venus compared to Mercury was in the ratio of approximately 2:1. [Venus had an elongation of around 40° compared to Mercury's 13°.]

A similar calculation for 2002 July 17 showed the ratio of perceived brightness per unit surface area for Mercury and Venus would be in the ratio 1:1, in other words, against a similar sky background the two planets would appear of equal brightness. This may surprise some people who assume, because Mercury has a low albedo compared to Venus, that Mercury cannot possibly rival Venus when seen in the telescope. There are occasions, in fact, when Mercury can appear brighter than Venus in the telescope. [Note: we are comparing surface

contrast not perceived naked eye magnitudes.]

The observations I made in 2000 are interesting in this respect. Using a 85 mm Wray equatorial with Sun shield I was able to observe Mercury at an elongation of $2^{\circ}.3$. On June 21 Venus at an elongation of $2^{\circ}.8$ was a little easier when the surface brightness of the two planets was in the ratio (Mercury at Aug. 20) 1: 1.7 in favour of Venus.”

A recent observation of Mercury with my own 7 inch Maksutov at noon was accomplished without too much difficulty. I had observed the planet, along with Mars, earlier in the dawn sky. In the space of just six hours the planet's phase had gone from 19.8% to 21.0%. There is to be a transit of Mercury on May 7th next year. These notes will feature the event in detail.

Venus

Venus will be at inferior conjunction on October 31. This is of interest in two ways, first the planet will be close enough to Earth to give a diameter greater than 1 arc minute, second the separation from the Sun will be sufficient to enable the planet to be observed through the conjunction using a small telescope. Details will follow shortly.

Forthcoming notes on Saturn and Jupiter, meteors and photographs of recent aurora.

J V

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