

A summary of the main sky events, May to June 2024. All times Universal Time (UT)

Moon phases

Last quarter

30 May, 17:13
28 Jun, 21:53

New

08 May, 03:22
06 Jun, 12:38

First quarter

15 May, 11:48
14 Jun, 05:19

Full

23 May, 13:53
22 Jun, 01:08

Apsides

Date	Apsis	Dist (km)	Size	Date	Apsis	Dist (km)	Size
05 May, 22h	Perigee	363,163	32' 54"	02 Jun, 07h	Perigee	368,102	32' 28"
17 May, 19h	Apogee	404,640	29' 32"	14 Jun, 14h	Apogee	404,077	29' 34"

Occultations

Disappearance

Bright limb

Dark limb

Reappearance

The position angle (PA) of the occultations given below is measured anticlockwise from the north-point of the Moon's disc (use the Moon's north pole as a guide).

0°

90°

180°

270°

Event				Greenwich				Edinburgh			
Date	Star	Mag	Phase	Time UT	Alt	Az	PA	Time UT	Alt	Az	PA
12 May	76 Geminorum	5.3	DD	23h 00m	14	294	77	22h 55m	18	289	76
16 May	37 Leonis	5.4	DD	00h 33m	12	277	87	00h 25m	15	272	86
20 Jun	HIP 78650	5.0	DD	00h 19m	8	209	143	Too low			

These are the only lunar occultations of stars brighter than mag +6 for this period that are observable with small telescopes in a sky dark enough to be seen without difficulty. Abbreviations: Mag: Visual magnitude. Phase: (R)eappearance, (D)isappearance or (G)raze at (D)ark or (B)right lunar limb. Alt: Altitude. The Moon's height. Az: The angular position along the horizon measured clockwise from true north (through E, S, W back to N). PA: Position Angle, measured anticlockwise from the direction of the celestial North Pole. For data specific to your own locality or details of fainter occultations, contact Occultation Section Director Jeff Stevens (address on p46).

Occultation notes

There are only three lunar occultation events for this period that are suitable for observing using a small aperture telescope (60 mm). All of them occur when the Moon is at a relatively low altitude.

Perhaps the most challenging is the final one in the sequence – with the occultation of the magnitude +5 star HIP 78650 – on 20 June at 00:19 UT (this will be 01:19 BST). The Moon will be a little under eight degrees in the south-south-west, slightly to the upper left of Pi Scorpii and nestling in the claw of the Scorpion. While it will be a disappearance at the dark limb, the Moon will be close to full (95 per cent illuminated), so you will need a keen eye to focus on the moment of disappearance, and as much magnification as you can comfortably manage.

The fascinating aspect of this challenging observation will be how slender the unlit portion of the lunar disc really is. You may well be convinced that there is no unlit portion, and then the star will suddenly disappear when it seems almost within touching distance of the illuminated disk. The event will be too low to be observed in Edinburgh, unless you have a very clear view to the horizon, as the Moon will be a little over four degrees in altitude at 00:10.

If you are successful in observing any of these events, then do please come and share your observation notes on the

Popular Astronomy online forum at popastro.com/forum. Alternatively, email your observation notes to me via the email address occultation@popastro.com. You can also send me written notes via my address, which can be found on page 46.

Jeff Stevens

■ The occultation of HIP 78650 on 20 June.

Planets

Mercury is at greatest western elongation (GWE) from the Sun on the morning of 9 May but this is very poorly seen from the UK, being much better from equatorial and southern latitudes. The low angle the ecliptic makes with the eastern horizon means Mercury rises only shortly before the Sun, despite this elongation being more than 26 degrees. If you wish to see it in mid-May you will need an accurate GoTo or setting circles on your mount and a clear, low, eastern horizon; even then you will be lucky – consider it a challenge!

Mercury passes behind the Sun (superior conjunction) on 14 June and is at its highest point with respect to the ecliptic on 20 June, as it returns to the evening sky. It will, however, still be too low for easy observation, even by the end of the month.

Venus is too close to the Sun to see in May and passes through its own superior conjunction on 4 June. Even by late June the Sun and Venus will be too close to allow us to observe our sister planet safely.

Mars rises around one hour ahead of the Sun in early May but suffers from the same problem of the low ecliptic angle with the horizon that plagues Mercury. It reaches perhaps 8 degrees of elevation in the east at sunrise but is hard to spot in the bright morning skies of late spring. By early June Mars can be seen rising in astronomical twilight, around 02:15 UT, and can be followed to higher altitudes, but is not bright or obvious. The 15 per cent illuminated crescent Moon rises with Mars on 3 June and sits just 3 degrees left (north) of the red planet.

By late June Mars rises around 01:00 but, even then, the skies will not be fully dark except, perhaps, at the extreme south coast of the UK. At magnitude +1.0 it will first appear on a compass bearing around 65 degrees and be nearly 20 degrees up and due east by sunrise. At just above 5 arcseconds in apparent size, surface detail will be scant but Mars will improve steadily as we move through the year.

Jupiter is lost to the Sun in May but will start to make an appearance in late June, rising after Mars in the north-east. Rise time is around 02:00 on the last day of

the month and the planet can then easily be followed for an hour and a quarter before being lost to daylight; telescopically it can be followed much longer and to higher altitudes. At magnitude –2.02 it will be quite obvious, sitting 20 degrees to the left and below Mars, along the line of the ecliptic. Its disk will be 33.5 arcseconds across making cloud detail easy to spot once the planet has gained some elevation.

In early May Saturn rises 80 minutes ahead of the Sun but is sitting slightly below the ecliptic, itself at a shallow angle to the morning horizon. This makes Saturn very hard to spot and follow before the sky brightens. At magnitude +1.07 Saturn is just barely brighter than Mars. It should be noted that the ring system is at a very shallow angle as seen from the Earth with the tilt towards us being just 2.5 degrees at the start of this period, closing to 1.8 degrees late in June before opening somewhat, to a maximum of 5 degrees, later in the year. This shallow ring angle reflects much less sunlight back towards us, explaining the relative dimness of Saturn.

Saturn does improve steadily and by late June is rising at 23:30, more than four hours before the Sun. By 02:00 on 30 June Saturn will gain some 20 degrees of elevation in the south-east, still in morning twilight. This approximates to the best altitude it reached during the whole of the last apparition, as seen from the UK, and it improves further from then on. At 18 arcseconds across the disc and 41.6 degrees across its pencil-thin disc structure, Saturn will be a large target, well worth seeking out.

Uranus will be hidden behind the Sun, at solar conjunction, on 13 May and then moves into the morning sky. At the very end of June it sits midway between Mars and Jupiter, rising around 01:20. At magnitude +5.85 you will need great skill to track it down before the sky brightens too much. At that time Neptune rises near Saturn but at magnitude +7.8 will be near-impossible to find.

Alan Clitherow

Meteor notes

The Eta Aquariids (ETA) peaks on 5 May and this year are not impacted by moonlight. However, the radiant rises just before dawn, so you'll need to be an early riser! Rates of ten per hour are possible if skies are clear.

The Eta Lyrids (ELY) peak on 10 May. An hourly rate of three is possible, and the new Moon on the 8th means that viewing is favourable.

All other showers during May and June are daytime showers and so you'll need a radio receiver to detect them. There are details of how to build one on our website.

Mark McIntyre

Variable star notes

Eclipsing variables: During May, RZ Cassiopeiae will be in mid-eclipse at 23:06 UT on 2 May. However, there are no eclipses of RZ Cassiopeiae visible from the UK during June. Also, there are no eclipses of Algol readily visible from the UK in either May or June.

Long-period variables: Chi Cygni will be rising to a predicted maximum in July, but at the moment it will

still be very faint. T Cephei will also be rising from its last minimum in February, but again will still be very faint. R Leonis will be slowly fading to a minimum in September. R Serpentis will be slowly fading from its last maximum in April. R Ursae Majoris will be fading to a minimum in August; however, both S Ursae Majoris and T Ursae Majoris are predicted to reach maximum brightness in June.

Matthew Barrett

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