

Lunar phases

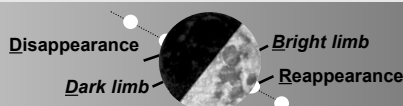


	First quarter	Full Moon	Last quarter	New Moon	First quarter
January	1 Jan, 06:15	9 Jan, 07:30	16 Jan, 09:08	23 Jan, 07:39	31 Jan, 04:10
February		7 Feb, 21:54	14 Feb, 17:04	21 Feb, 22:35	

Apsides

Date	Apsis	Dist (km)	Diameter	30 Jan, 18h	Apogee	404,325	0.4926°
2 Jan, 20h	Apogee	404,588	0.4922°	11Feb, 18h	Perigee	367,928	0.5413°
17 Jan, 22h	Perigee	369,899	0.5384°	27 Feb, 14h	Apogee	404,841	0.4919°

Occultations



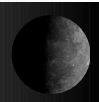
The position angle (PA) of the occultations given below is measured anticlockwise from the northpoint of the Moon's disc (use the Moon's north pole as a guide).

Date	Star	Mag	Phase	Data for Greenwich			Data for Edinburgh				
				Time	Alt°	Az°	PA°	Time	Alt°	Az°	PA°
6 Jan	51 Tauri	5.6	DD	00h 25m	43	248	85	00h 17m	44	239	74
6 Jan	56 Tauri	5.3	DD	01h 23m	35	261	30	01h 31m	35	260	1
11 Jan	60 Cancri	5.4	RD	05h 02m	32	245	223	04h 56m	33	238	231
11 Jan	Alpha Cancri	4.3	RD	06h 05m	24	259	352	05h 53m	26	252	357
14 Jan	87 Leonis	4.8	RD	04h 01m	35	181	317	03h 54m	31	175	322
6 Feb	29 Cancri	5.9	DD	23h 42m	53	188	117	23h 34m	48	180	108
8 Feb	Omega Leonis	5.5	RD	04h 20m	25	252	295	04h 10m	27	245	298
9 Feb	62 Leonis	5.9	RD	21h 37m	17	112	284	21h 40m	14	111	296
17 Feb	ZC2595	5.7	RD	05h 55m	10	148	241	05h 58m	5	146	245

Mag: Visual magnitude. Phase: (R)eappearance, (D)isappearance or (G)raze at (D)ark or (B)right limb of the Moon. Alt: Altitude. The Moon's height at the time of the occultation. Az: The angular position along the horizon measured clockwise from true north (through E, S, W back to N). PA: Position Angle of the event, measured anticlockwise from the direction of the Celestial North Pole. This listing shows lunar occultations of stars brighter than mag +6, observable with small telescopes in a sky dark enough for the event to be seen without difficulty. Specific data for your own locality or for details of fainter occultations, contact Occultation Section Director Mell Jeffery.

Mercury

	Mag	Dia"	Illum
1 Jan	+0.37	5.7	81%
31 Jan	-1.02	4.8	99%
29 Feb	-0.86	6.4	68%



During January Mercury heads back towards the Sun is visible in the morning skies during the first week the month. Through a telescope the planet is a waxing gibbous disk over 5 arcseconds across. By 7 January Mercury's distance west of the Sun has decreased to less than 18° and is just 7° high at sunrise. Mercury is at superior conjunction on 6 February and then heads east of the Sun to show up in the evening skies. By the end of February the planet is 17° east of the Sun and is 14° at sunset, visible above the western horizon as twilight deepens.

Venus

	Mag	Dia"	Illum
1 Jan	-3.99	13.0	83%
31 Jan	-4.08	15.0	74%
29 Feb	-4.21	18.0	64%



Venus is an evening object slowly drawing away from the Sun. At the beginning of January the planet is 18° above the southwest horizon at sunset and easily visible as a brilliant object at twilight. Through a telescope Venus is a waning gibbous phase and slowly increasing in diameter. Between 9 and 17 January the planet moves within 5° of Neptune (magnitude +7.9), close enough to be seen together in 10x50 binoculars; the two are closest on 13 January, just over a degree apart. On 26 January the 3.4 day old crescent Moon, adorned with earthshine, passes 6° north of the planet on 26 January. By mid-February Venus is 33° high at sunset, 42° in elongation, shines at magnitude -4.14 and sets four hours after the Sun.

Mars

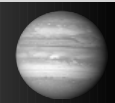
	Mag	Dia"	Illum
1 Jan	+0.19	9.0	92%
31 Jan	-0.53	12.0	96%
29 Feb	-1.20	14.0	100%



Mars is now bright enough to be 'noticed' and its ruddy colour is evident with the unaided eye. Its apparent daily motion against the stars slows down through January and on the 23rd the planet is stationary in western Virgo, 1.5° west of Nu Virginis (mag +4.0). Following this Mars retrogrades, taking it back through Leo. At the beginning of January the Red Planet rises at around 22:30, transits the meridian at 05h at an altitude of around 45° and remains visible at the respectable altitude of 40° until the end of astronomical twilight at around 07h. By the end of February Mars rises at around 18h, transits at 00:45 and is around 17° above the western horizon by the end of astronomical dawn twilight. During January and February the Martian disk grows from 9 to 14 arcseconds in apparent diameter (its apparent area doubling) while its phase grows from 92 to 100 percent illuminated.

Jupiter

	Mag	Dia"	Illum
1 Jan	-2.57	43	100%
31 Jan	-2.35	39	99%
29 Feb	-2.18	36	99%



Jupiter continues to dazzle in the evening skies, but the time allotted for viewing it against a dark sky at a good altitude are reducing. In early January it transits at 19:30 more than 50° high. By the end of February Jupiter is high in the southwest at sunset and sets at 23h. At the time of writing its most prominent features are the Great Red Spot (172° System II) and dark 'barges' along the NEB.

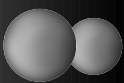
Saturn

	Mag	Dia"	Illum
1 Jan	+0.70	17	100%
31 Jan	+0.58	18	100%
29 Feb	+0.44	18	100%



Saturn is becoming an increasingly attractive morning object, slowly growing in brightness in eastern Virgo just a few degrees east of Spica. At the start of January the Ringed Planet rises at 02h and transits at 07:20 at an altitude of 30° nearly an hour before sunrise. Things have improved considerably by the end of February, when it rises at 22h and transits the meridian at 03:30. Saturn's north pole is tilted towards us, and the broad shadow of the globe on the rings is a reminder that we're viewing the planet months from opposition. The rings are tilted by about 15°, so the observer's chances of discerning the diaphanous inner C Ring and the narrow Encke Gap in the planet's outer A Ring are good, given a 150 mm telescope, excellent seeing and an acute eye.

Uranus and Neptune



Uranus, shining at magnitude +5.8, is an evening object in southwestern Pisces between 30 Piscium and Omega Piscium. At the beginning of the year it is 37° high at the beginning of astronomical night. Heading ever closer towards the Sun it becomes increasingly difficult to observe, and by the end of February is just a few degrees above the western horizon at astronomical twilight, some six degrees east of Mercury. Neptune, magnitude +7.9, is in mid-Aquarius near Iota Aquarii and can just be glimpsed during the first half of January. Venus passes less than 1.5° south of Neptune on 12-13 January. The outermost planet becomes overwhelmed by twilight in late January and reaches conjunction on 19 February.

Comets



Comet 2009 P1 (Garradd) reached perihelion at 1.6 AU just before Christmas, 2 AU from the Earth and around 7th magnitude. In the new year it will be receding from the Sun, but our distance from it decreases, and the comet could become a little brighter. It accelerates northwards through eastern Hercules until February, passing close to globular cluster M92 in Hercules on 3 February, with the comet probably a similar magnitude but sporting a short tail. It reaches its most northerly declination at just over 70° in March, when it is in Draco, but will fade as it heads south.

Comet P/Levy (2006 T1) reaches perihelion at 1.0 AU in mid-January 2012, when it passes 0.19 AU from the Earth. It is well placed prior to perihelion and UK. However it has not yet been recovered and it seems probable that it was in outburst at discovery. This means that despite the favourable return, it may not be seen.

For cometary updates, details, finder charts and ephemerides, please visit the SPA Comet Section website at www.popastro.com/comet/index.php or www.ast.cam.ac.uk/~jds

Jonathan Shanklin

Meteor notes

Waxing gibbous moonset for UK observers on January 3-4 (roughly between 03:30-04:30 UT) will still leave a few pre-dawn hours to see what the **Quadrantid** near-peak rates may be. The shower's maximum is due soon after 07h on January 4, just too late for Britain, although the shower's circumpolar radiant in northern Boötes (an area once called **Quadrans Muralis**, the Wall Quadrant, hence the shower's otherwise obscure name) will be near culmination then. From British sites, Quadrantid observing is only practical from about midnight onwards, even without the Moon. Best Quadrantid Zenithal Hourly Rates (ZHRs) can vary from year to year, but have recently been about 120, while the maximum tends to be short and quite sharp, and its timing is not always constant. An earlier prediction for stronger than normal activity this year, perhaps between 01h-10h on January 4, has more recently been suggested as less likely.

Quadrantids have long been thought active from January 1-5 or so, though recent video evidence suggests weak activity may persist from December 28 to January 12 instead.

After the Quadrantids, there is the poorly-studied, but apparently long-lasting, minor shower of the December **Leo Minorids**, active till around February 4 (its maximum probably falls around December 20), and the Antihelion Source. The Antihelion radiant area passes from Gemini at the start of January roughly along the ecliptic to western Virgo by the end of February. Antihelion ZHRs are liable to be no better than 2-3 this quarter, most probably in the second week of January only.

Alastair McBeath

