

Crewkerne & District Astronomical Society

Sky Notes : February 2015

All timings are Universal Time. (G.M.T.)

Moon's Phases

Full	February	03d. 23h. 09m.	
Last Quarter	"	12d. 03h. 50m.	
New	"	18d. 23h. 47m.	
First Quarter	"	25d. 17h. 14m.	
Moon at apogee (furthest from Earth)	February	06d. 06h.	Diam. 29' 24"
Moon at perigee (nearest to Earth)	"	19d. 07h.	" 33' 27"

The Planets

Mercury : Now a late morning object, following inferior conjunction with the Sun on Jan. 30th. Greatest western elongation (27°), occurs on the 24th. At the start of the month it rises at 07.10, 30 minutes before dawn, and at the end at 06.05, 40 minutes before the Sun. It begins the month in eastern Capricornus, near the border with Aquarius, and travels 6° S.W. to a stationary point on the 11th. It then returns 10° N.E. to the end of the month. Mid month it will be mag. +0.5, 8.2" diam., elong. 24° W. and rising at 06.10.

Venus : Remains an early evening object, but getting later. On the 1st. it sets at 18.45, two hours after sunset, and by the 28th. at 20.20, 2¼ hours after the Sun. It starts the month in western Aquarius. Moving N.E. it enters Pisces around the 16th., and ends the month close to the border with Cetus, a total distance of some 33° during the month. On the 21st. it will pass ½° S. of Mars. Mid month it will be mag. -3.9, 11.4" diam., elong. 26.5 E., and setting at 19.40, 2½ hours after sunset.

Mars : Also an early evening object. At the start of the month it sets at 19.50, 3 hours after sunset, and by the end at 20.00, 2¼ hours after the Sun. Mars starts the month in eastern Aquarius. Travelling N.E. it enters Pisces around the 9th., and also ends it near the border with Cetus, a total travel of 18°. As previously mentioned, Venus will pass ½° S. of Mars on the 21st. Mid month it will be mag. +1.2, 4.3" diam., elong. 31° E. and setting at 19.55, 2¼ hours after sunset.

Jupiter : At opposition on the 6th., when it will be above the horizon all the hours of darkness. It will then be due S. at midnight, at an altitude of 55.5° above the horizon. At the end of the month it will set at 06.10, 40 minutes before dawn. It starts the month in the far West of Leo. Moving N.W. it enters Cancer around the 5th., ending the month in eastern Cancer, a total movement of 4°. Mid month Jupiter will be mag. -2.5, 45.3" diam. and elong. 170° E.

Saturn : Remains a morning object, but getting earlier. On the 1st. it rises at 03.10, 4½ hours before dawn, and by the 28th. at 01.30. Continuing to lie in N.W. Scorpius, it travels 1½° E. during the month.

Mid month it will be mag. +0.5, disc diam. 16.5", rings 37.5" (inclined at 25°), elong. 82° W. and rising at 02.20. Titan, mag 8.2 & elong. 170". Greatest E. elong. on Feb. 1 & 17. Greatest W. elong. on Feb.9 & 25.

Uranus : An evening object. At the beginning of the month it sets at 22.30 and by the end at 20.50, just over 3 hours after sunset. Still in southern Pisces, a few degrees N. of the Cetus border it moves just over 1° N.E. during the month, ending it 2.3° S.E. of the 6th. mag. star 60 Piscium. Mid month it will be mag. 5.9, 3.5" diam., elong. 48° E.. and setting at 21.40, 3 hours after the Sun.

Neptune : Neptune reaches conjunction with the Sun on the 26th., so is best seen early in the month. On the 1st. it sets at 19.00, 2½ hours after sunset, but by the 24th. at 17.30, sunset. In eastern Aquarius, it travels just over 1° N.E. during the month. Mid month it will be mag. 8.0, 2.2" diam., elong. 11° E. and setting at 18.00, 40 minutes after the Sun.

Meteors

There are no major (or minor) showers this month or in March. The next shower will be the Virginids, peaking around April 11th. & 12th.

Deep Sky Objects

NGC 2237 (C49) : The 49th. object in Patrick Moore's 'Caldwell Catalogue' of 109 objects that were not listed by Charles Messier. It also includes objects in the southern skies. Known as the 'Rosette Nebula', it is a large emission nebula in Monoceros, discovered by William Herschel in 1787. Near the centre is the open star cluster NGC 2244, whose extremely hot young 'O' type stars provide the ultra violet radiation which energises the nebula material. The cluster with an estimated age of 3 million years, has some 100 members, the brightest (12 Mon.) being mag. 5.8. The whole nebula is over 1° in apparent diameter, actual 90 Light Years, at a distance of 4,000 L.Y. and an integrated magnitude of 5.4. There are several bright areas within it, including NGC 2237, 38, 39, & 40. Because of its large Size and low contrast it is best seen with binoculars or a low power rich field telescope - and dark skies !

To find it, start from Betelgeuse, 1st. mag. star Alpha Orionis, and go 7½° S.E. to mag. 4.3 Epsilon (8) Mon. The Rosette lies 2¼° E. of it. In mid February it will lie due South around 8.45 pm., 44° above the horizon. R.A. 6h. 32.3m., Dec. +4° 59'.

NGC 2261 (C46) : Hubble's Variable Nebula. A bright emission and reflection nebula, also in Monoceros, and also discovered by William Herschel, in 1783. It can be mistaken for a comet with its fan shaped appearance, but it was missed by Messier ! The star embedded in the nebula (R Mon.), and the source of the emissions, was found by J.F. Julius Schmidt in 1861, using a 6" refractor at Athens Observatory, to vary irregularly by up to 4 mags. around its average brightness of mag. 11. Since then it has been recorded as varying between mag. 9.5 and 13. In 1916 Edwin Hubble studied photographs of the nebula taken over 16 years and found that its shape and brightness also varied over time scales ranging from a few weeks to months. Ever since, NGC 2261 has been called Hubble's Variable Nebula, and many people mistakenly assume that he actually discovered the nebula. It was thought that R Mon. was a very active hot young star around 300,000 years old with occasional outbursts dispersing and /or illuminating the material from which it was first formed. R Mon. was the first object photographed by the 200" telescope at Palomar in 1949. More recent studies using the Hubble Space Telescope and the 3.6 metre Canada- France-Hawaii telescope have found it to be a binary star some 2,500 L.Y. distant. The primary is probably a young hot B-type luminary 10 times as massive as our Sun. The secondary lies 0.7" from the primary and is 200 times fainter, with a mass of 1.5 Suns. Each star is buried in a dense mass of dust that can only be penetrated by infrared radiation. Their observations also suggest that the nebula is really a large cone hollowed out by a jet of hot gas flowing out from the primary's disc. NGC 2261 has an apparent size of 3'x1.5' and an average mag of 10. A telescope of at least 100mm.aperture is required to see any detail. R.A. 6h.39.2m.. Dec. +8° 44'. To find it, start again from Betelgeuse. Go 9° due E. to 4.5 mag. 13 Mon. NGC 2261 lies 2° N.E.of it. It is also 1½° E. & 3½° N. of 2237.

Arthur Davis Jan. 2015