

# Crewkerne & District Astronomical Society

## Sky Notes :February 2016

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

### Moon's Phases

Last Quarter	February	01d. 03h. 28m.
New	"	08d. 14h. 29m.
First Quarter	"	15d. 07h. 46m.
Full	"	24d. 01h. 46m.
Moon at perigee (nearest to Earth)	Feb. 11d. 03h.	Diam. 33' 48"
Moon at apogee (furthest from Earth)	" 27d. 03h.	" 29' 29".

### The Planets

**Mercury** : Continues to be a morning object. At the start of the month it rises at 06.30, 1½ hours before dawn, and by the end at 06.40, only ¼ hour before the Sun. At the beginning of the month it lies in mid Sagittarius. Travelling E.N.E. it moves 14° to enter Capricornus around the 13<sup>th</sup>, and ends it in eastern Cap., some 5° from the border with Aquarius. A total travel of 40°. It is at its greatest western elongation, 26°, on the 7<sup>th</sup>.

Mid month Mercury will be -0.1 mag., 6.0" diam., elong. 24° W. and rising at 06.35, 40 mins. before dawn.

**Venus** : Also a late morning object, like Mercury. On the 1<sup>st</sup>. it rises at 06.20, an hour and ½ before dawn, and on the 29th. at 06.20, ½ hour before the Sun. Also in Sagittarius at the start of the month, N.E. of the 'Teapot's Lid'. Travelling 21° E.N.E. it enters Capricornus around the 20<sup>th</sup>, and ends it half way across the constellation, a total distance of 42°. Before dawn on the 6<sup>th</sup>. Venus, Mercury and a very thin crescent Moon will all lie within a 5° circle. On the 12<sup>th</sup>. Venus and Mercury will be closest, only 4° apart.

Mid month it will be -4.0 mag., 11.8" diam., elong. 28° W. and rising at 06.25, an hour before dawn.

**Mars** : Remains an early morning object, getting earlier. At the beginning of the month it rises at 01.40, and by the end at 00.45. In Libra all month it starts it 1½° N. of the 2.7 mag. star Alpha (9) Librae. Moving E.S.E. it travels 15° during the month, ending it some 3° N.W. of the border with Scorpius.

Mid month it will be mag. +0.6, 7.6" diam., elong. 90° W. and rising at 01.15.

**Jupiter** : An evening object. It rises at 20.30 on the 1<sup>st</sup>., 3½ hours after sunset, and on the 29<sup>th</sup>. at 18.30, 40 mins. after the Sun. Jupiter continues to lie in eastern Leo, close to the border with Virgo. During the month it moves 3° N.W.. to lie 1° S. of 4<sup>th</sup>. mag. star Sigma (77) Leonis. On the 24<sup>th</sup>. at 04.00 Jupiter will be 1.7° N. of the 14 day old Moon.

Mid month it will be mag. -2.4, 44" diam., elong. 154° W. and rising at 19.30, just over 2 hours after sunset.

**Saturn** : A morning object. At the start of the month it rises at 04.15, 3½ hours before dawn, and by the end. at 02.30. Still in S.W. Ophiuchus, near the border with Scorpius. During the month it travels 2° E., ending it 8° N.E. of Antares, 1<sup>st</sup>. mag. star Alpha Scorpis.

Mid month it will be mag. +0.5, disc diam. 16.2", rings 36.6" (inclined at 26°) elong. 70° W. and rising at 03.20.

Titan, mag. 8.2 & max. elong. 170". Greatest E. elong. on Feb. 3 & 19. Greatest W.. elong. on Feb. 12 & 28.

**Uranus** : An evening object.. On the 1<sup>st</sup>. it sets at 23.00, and by the 29<sup>th</sup>. at 21.15, 3½ hours after sunset. Remaining in S. Pisces, near the Cetus border, it moves 1° N.E. during the month, ending it 0.9° N. of the 5.5 mag. star Epsilon (80) Piscium.

Mid month Uranus will be mag. 5.9, 3.4" diam., elong. 52° E. and setting at 22.00.

**Neptune** : An early evening object, heading for solar conjunction on the 28<sup>th</sup>., when it sets at sunset, 17.30. On the 1<sup>st</sup>. it sets at 19.20, 1½ hours after the Sun. Continuing to lie in central Aquarius, it travels 1° N.E. during the month, ending it 2° N.N.W. of the 6.2 mag. star 70 Aqu.

Mid month Neptune will be mag. 8.0, 2.2" diam., elong. 13 ° E. and setting at 18.20, an hour after sunset.

### Meteors

There are no major (or minor) showers this month .

### Deep Sky Objects

**M36, M37 & M38** : Three open star clusters in Auriga. First noted by the Sicilian observer Giovanni Batista Hodierna some time before 1654 and described by him as 'nebulous patches'. Messier observed and listed them in 1764. He described them as 'clusters of faint stars'. M38 lies 10° S.S.E of Capella, Alpha Aurigae, at mag. 0.01 the 6<sup>th</sup>. brightest star. M36 lies 2½° S.E. of M38 and M37 is 3½° S.E. of M36. See also their positions relating to Al Nath, the 1.6. mag. star Beta (112) Tauri.

**M36 (NGC 1960)** : M36 is the least rich of the 3 clusters, with 178 recognised members. The brightest is mag. 8.8, a blue giant with 360 times the Sun's luminosity. There are no red giants. The cluster's age is around 30 million years - very young ! It lies 4,300 L.Y. from us, at the outer edge of our spiral arm with a diam. of 15 L.Y. (apparent size 12'). Its magnitude is 6, just visible with the naked eye under excellent viewing conditions. M36 lies 6° N.N.E. of Al Nath. R.A. 5h. 36.1m., Dec.+34° 8'.

**M37 (NGC 2099)** ; With over 2,000 members, 150 brighter than mag. 12.5 and 500 brighter than mag. 15, M37 is one of the richest Messier clusters. Its brightest star is a red giant, one of 35. It is mag.9.2. It is generally considered to be the finest of the clusters. C.E. Barns described it as 'a diamond sunburst', and T.W.Webb said 'it is extremely beautiful, one of the finest in its class. Messier made an independent discovery of M37 on Sept. 2 1764 and described 'a cluster of faint stars, at little distance from the previous (M36) : the stars are very faint, close and contain some nebulosity'. M37 lies 4510 L.Y. away from us. Its age is reckoned to be 500 million years, which probably accounts for a significant population of white dwarf stars. M37's apparent diameter is 25' and visual magnitude is 5.6. M37 lies 7° N.E. of Al Nath. R.A. 5h. 52.5m., Dec.+32° 33'

**M38 (NGC 1912)** : On the 25<sup>th</sup>. Sept. 1764 Charles Messier noted 'Cluster of faint stars at small distance from the two previous clusters (M36 & M37), this one is of square shape and does not contain nebulosity'. Admiral Smyth saw 'an oblique cross, with a pair of large stars in each arm and a conspicuous single one at the centre'. John Herschel noticed the 'irregular figure' and wrote 'large and small stars, very rich'. M38 lies some 3,500 L.Y. away from us with a diameter of 15 L.Y., giving it an apparent diam. of 15'. Its age is reckoned to be 150 to 200 million years. The brightest star is a yellow G0 giant, mag. 7.9 and with 900 times our Sun's luminosity. M38's visual magnitude is 6.4. M38 lies 7° N. of Al Nath. R.A. 5h. 28.7m., Dec. +35° 51'.