

# Crewkerne & District Astronomical Society

## Sky Notes : November 2014

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

### Moon's Phases

Full	November	06d. 22h. 23m.		
Last Quarter	"	14d. 15h. 16m.		
New	"	22d. 12h. 32m.		
First Quarter	"	29d. 10h. 06m.		
Moon at perigee (nearest to Earth)	Nov.	03d. 01h.	Diam.	32' 28"
Moon at apogee (furthest from Earth)	"	15d. 02h.	"	29' 32"
Moon at perigee	"	27d. 23h.	"	32' 18"

### The Planets

**Mercury** : A morning object, best seen early in the month. At the start it rises just after 5 am., 2 hours before sunrise, and by the end at 07.30, only 20 minutes before dawn. It reaches greatest western elongation from the Sun, 19°, on the 1<sup>st</sup>. At the beginning of the month it lies in mid Virgo. Travelling S.E. it passes 5° N. of 1<sup>st</sup>. mag. star Spica, Alpha Virginis at 06.00 on the 3<sup>rd</sup>. It enters Libra around the 14<sup>th</sup>. and crosses it to enter northern Scorpius on the 27<sup>th</sup>. A total travel of nearly 50° during the month.

Mid month it will be mag. -0.8, 5.3" diam., elongation 14° W. and rising just after 06.00, an hour before the Sun.

**Venus** : A very early evening object following solar conjunction late last month. On the 1<sup>st</sup>. it sets at 16.35, a few minutes after sunset, and even by the end of the month at 16.15, only 25 minutes after the Sun. It starts the month in western Libra. Moving S.E. it crosses northern Scorpius between the 16<sup>th</sup>. & 23<sup>rd</sup>., ending it half way across southern Ophiuchus, a total distance of 40° during the month.

Around the 24<sup>th</sup>. it passes some 4° N. of 1<sup>st</sup>. mag. star Antares, Alpha Scorpii.

Mid month it will be mag. -3.8, 9.8" diam., elong. 5° E., and setting at 16.20, some 10 minutes after sunset.

**Mars** : Continues to be an early evening object. At the start it sets at 19.10, 2¾ hours after sunset, and at the end also at 19.10, but 3¼ hours after the Sun. Mars starts the month in western Sagittarius, above the 'Teapot'. Travelling E. and slightly N., it remains in Sagittarius ending it some 4° W. of the border with Capricornus, a total movement of 23°. On the 26<sup>th</sup>. at 10.00 it will lie 7° S. of the 4 day old Moon

Mid month it will be mag. +1.0, 5.3" diam., elong. 52° E. and setting at 19.10, 3 hours after sunset.

**Jupiter** : A late evening object, but getting earlier. On the 1<sup>st</sup>. it rises at 23.30, and by the 30<sup>th</sup>. at 21.45. Remaining in western Leo, it moves 2½° S.E. during the month, ending it 7½° W.N.W. of the 1<sup>st</sup>. mag. star Regulus, Alpha Leonis.

Mid month it will be mag. -2.2, 38" diam., elong. 91° W. and rising at 22.40.

**Saturn** : Solar conjunction occurs on Nov. 18<sup>th</sup>., making Saturn difficult, if not impossible, to observe. At the start of the month it sets at 17.10, ¾ hour after sunset, and gets earlier. At the end of the month it does not rise until 06.30, 1¼ hours before dawn. Continuing to lie in eastern Libra, it travels 4° S.E. during the month, to end it 3° N.W. of the border with northern Scorpius.

Mid month it will be mag. +0.5, disc diam. 15.2", rings 34.5" (inclined at 23°), elong. 3° E. It sets at 16.20, 15 minutes after sunset and rises on the 16<sup>th</sup>. at 07.30, 10 minutes after dawn.

Titan, mag 8.2 & elong. 140". Greatest W. elong. on Nov. 5 & 21. Greatest E. elong. on Nov.13 & 29.

**Uranus** : Following opposition last month, is an evening and early morning object. On the 1<sup>st</sup>. it sets at 04.30, 2½ hours before dawn, and by the 30<sup>th</sup>. at 02.30. Still lying in southern Pisces, only a few degrees N. of the border with Cetus, it moves ¾° S.W. during the month, ending it 2½° S. of the 6<sup>th</sup>. mag. star 60 Piscium.

Mid month it will be mag. 5.7, 3.7" diam., elong. 140° E. and setting at 03.30.

**Neptune** : An evening object, getting earlier. At the beginning of the month it sets at 00.50, and by the end at 22.50. Remaining in western Aquarius, it moves a few arc minutes S.W. to a stationary point on the 16<sup>th</sup>., then moves back N.E. a few more arc minutes to the end of the month. It will then lie 0.9° W.N.W. of the 4.8 mag. star Sigma (57) Aquarii.

Mid month it will be mag. 7.8, 2.3" diam., elong. 102° E. and setting just before midnight.

### Meteors

**Taurids** : October 20 – November 30. Two maxima, on Nov. 5<sup>th</sup>. & 12<sup>th</sup>. Radiants at R.A. 03h. 44m., Dec. +14° & +22°, around 10° S.W. and 10° N.W. of Aldebaran (Alpha Tauri). Culmination at 01.00, altitudes 53° & 61°. Zenith Hourly Rate 10. The Moon is very unfavourable on the 5<sup>th</sup>., 1 day before Full and rising at 16.15. Only slightly better on the 12<sup>th</sup>., 2 days before L.Q., rising at 21.30.

**Leonids** : One of the major annual showers. November 15 - 20. Maximum on Nov.18, at 01.00. Radiant at R.A. 10h.08m., Dec. +22°, around 10° N. of Regulus (Alpha Leonis). Culmination at 06.30, altitude 61°. Z.H.R. 20. Moon quite favourable, 4 days before New, rising at 02.45.

### Deep Sky Objects

**M15 (NGC 7078)** : A globular star cluster in Pegasus. It was discovered by Jean-Dominique Maraldi in September 1746 whilst searching for the comet discovered by de Chéseaux earlier that year. It was observed and listed by Charles Messier in 1764.

At mag. 6.0 it is one of the half dozen brightest globulars, and can just be detected with the naked eye under good conditions. It lies at a distance of 39,010 L.Y. from us, with a diam. of 200 L.Y. (apparent diam. 18') and a mass of 450,000 solar masses, and is approaching us at 66 miles/sec. It has an extraordinary dense centre, with 30 stars per square arc second. The brightest stars within it are red giants, shining at mag. 12.6. Their absolute luminosity is 1,000 times brighter than our Sun. At least 180 variable stars have been found in M15. In 1928 the American astronomer Francis Pease noticed an unusually bright 'star' lying in the outer fringes on photographic plates taken with the 100 inch telescope at Mount Wilson. Further investigation revealed that this was in fact a planetary nebular. It has a total magnitude of 14.6, with the central star at mag. 15 at a temperature of 40,000k. with a mass of 0.6 Suns. Pease 1, as it became known, is about 0.6 L.Y. diameter with an age of 4,200 years. The best example of the few planetaries found in globular clusters. R.A. 21h.30m., Dec. +12° 10'

To find M15, start from the S.W. corner of the 'square', 2.5 mag. Markab (Alpha). Go 16° S.W. to 3.5 mag. Baham (Theta). Then go 7° N.W. to 2.3 mag. Enif (Epsilon) and continue on another 4° to M15.

Arthur Davis Oct. 2014