

Crewkerne & District Astronomical Society

Sky Notes November 2016

All timings are Universal Time. (G.M.T.), which is now the same as local time

Moon's Phases

First Quarter	November	7d. 19h. 51m.	
Full	"	14d. 13h. 52m.	
Last Quarter	"	21d. 08h. 33m.	
New	"	29d. 12h. 18m.	
Moon at perigee (nearest to Earth)	Nov. 14d. 11h.	Diam. 34' 31"	
Moon at apogee (furthest from Earth)	Nov. 27d. 20h.	" 29' 24" (nearest this year).	

The Planets

Mercury : Following superior conjunction on Oct. 27th., is an evening object for the rest of the year. On the 1st. it sets at sunset, 16.30 and on the 30th. again at 16.30, 40 minutes after the Sun. It starts the month just inside W. Libra. Travelling E.S.E., it crosses into Scorpius around the 15th. and into Ophiuchus around the 19th. It ends the month a few degrees W. of the border with Sagittarius, some 12° N.W. of the 'Teapot'. A total travel of 42°. On the 18th. it will pass 3° N. of Antares, 1st. mag. star Alpha Scorpii.

Mid month Mercury will be mag. -0.6, 4.8" diam., solar elongation 9° E. and setting at 16.20, 12 minutes after the Sun.

Venus : Continues to be an early evening object. At the start of the month setting at 18.00, 1½ hours after sunset. By the end it sets at 18.40, nearly 3 hours after the Sun. Beginning the month in mid Scorpius, it moves E.S.E and crosses into Sagittarius around the 9th., and ends the month 8° W. of the border with Capricornus. On the 18th. it will pass less than 1° N. of Lambda, 3rd. mag. top of the 'Teapots' line. A total movement of 46°.

Mid month Venus will be mag. -4.1, 15.2" diam., elong. 40.6° E. and setting at 18.10, 2 hours after sunset.

Mars : Remains an early evening object. On the 1st. it sets at 20.50, 4½ hours after sunset. On the 30th. it sets at 21.00, over 5 hours after the Sun. It starts the month in eastern Sagittarius, 6° W. of the border with Capricornus which it enters around the 8th., travelling E.N.E. It ends the month in eastern Capricornus, 10° W. of the border with Aquarius. It will then lie 7° W.S.W. of the 3rd. mag. star Delta Algedi, Delta Cap. A total distance of 21°.

Mid month it will be mag. +0.5, 7" diam., elong. 71° E. and setting at 20.55, 4¾ hours after sunset.

Jupiter : A late morning object, at the start of the month rising at 04.20, 2½ hours before dawn. By the end it rises at 02.50, 5 hours before the Sun. Remaining in western Virgo it starts the month 2° S. of Porrima, 2.7 mag. Gamma Vir. Moving S.E. it ends the month 6° N.E. of the 1st. mag. star Spica, Alpha Virginis. A total travel of 11°.

Mid month Jupiter will be mag. -1.7, 32" diam., elong. 39° W. and rising at 04.40, 3¾ hours before dawn.

Saturn : Heading for solar conjunction on December 10th., it is a barely visible very early evening object. On the 1st. it sets at 18.10, hour and 40 mins. after sunset and by the 30th. at 16.30, only 40 minutes. after the Sun. Continuing to lie in S.W. Ophiuchus, it begins the month 7° N.W. of 1st. mag. Antares, Alpha Scorpii. Travelling E.S.E. it moves only 3° during the month, ending it 5½° S.S.W. of Sabiense

Mid month Saturn will be mag. +0.5, disc 15.2" diam., rings 34.4" diam., elong. 23° E. and setting at 17.20, 70 mins. after sunset. Titan, mag. 8.3 & max. elong. 160". Greatest W. elong. on Nov. 8 & 24, Greatest E. elong. Nov. 16.

Uranus : Following solar opposition last month., Uranus is visible much of the night. At the start of the month it sets at 05.20, 1½ hours before dawn. By the end it sets at 03.20, 4½ hours before sunrise. Remaining in S.E. Pisces, near the border with Cetus, it travels 48 arc minutes S.W. during the month. And ends it 44' West and slightly South of the double star, mag. 4.5 Zeta (86) Piscium.

Mid month it will be mag. 5.7, 3.7" diam., elong. 147° E. and setting at 04.20, 3 hours before dawn.

Neptune : An evening object. On the 1st. it sets at 01.20, and by the 30th. at 23.20. Continuing to lie in central Aquarius it moves a few arc minutes S.W. to a stationary point on the 20th., then moves back N.E. a few arc minutes to the end of the month when it will again be 1° 50' N.N.W. of the mag. 6.2 star 70 Aqu.

Meteors

Taurids : October 20 - November 30. Two maxima, on Nov. 5 & Nov. 12. Radiant of the first at R.A. 03h. 33m., Dec. +13°, around 10° S.W. of Aldebaran, Alpha Tauri. Culmination at 01.00, altitude 53°. Zenith Hourly Rate 10. Moon not too favourable - 2 days before F.Q., rising at 11.50 and setting at 20.48. Radiant of the second at R.A. 03h. 54m., Dec. +22°, around 10° N.W. of Aldebaran. Culmination at 01.00, altitude 51°. Z.H.R. 10. Moon very unfavourable - 2 days before Full, rising at 15.33 and setting at 03.53 on the 1st.

Leonids : One of the major showers. November 15 - 20. Maximum Nov. 17, 04h. Radiant at R.A. 10h. 16m., Dec. +22°, around 10° N. of Regulus, Alpha Leonis. Culmination at 06.30, altitude 61°. Z.H.R. 20. Moon again unfavourable - 2 days after Full, rising at 21.00 on the 16th. and setting at 07.34 on the 17th.

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 a comet. It was observed and listed by Messier in 1764. At mag. 6 it is one of the 6 brightest globulars, and can just be seen with the naked eye under good conditions. It lies 39,010 L.Y. away, with a diam. of 200 L.Y. (apparent diam. 18') and a mass of 450,000 Suns, and is approaching us at 66 miles/sec. It has an extremely dense centre, with 30 stars per square arc second. Its brightest stars are red giants, shining at mag. 12.6. Their absolute luminosity is 1,000 times greater 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 its outer fringes on plates taken with the 100 inch telescope. Further investigation revealed that this was in fact a planetary nebula. It has a total mag. 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. diam. with an age of 4,200 years. The best example of the few planetaries found in globular clusters. M15 position :- R.A. 21h.30m., Dec. +12° 10'. To find M15, start from the S.W. corner of the Pegasus '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. 2016.