

Crewkerne & District Astronomy Society

Sky Notes : November 2015

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

Moon's Phases

Last Quarter	November	03d. 12h. 24m.	
New	"	11d. 17h. 47m.	
First Quarter	"	19d. 06h. 27m.	
Full	"	25d. 22h. 44m.	
Moon at apogee (furthest from Earth)	Nov.	07d. 22h.	Diam. 29' 26"
Moon at perigee (nearest to Earth)	"	23d. 20h.	" 32' 55"

The Planets

Mercury : At the start of the month a morning object, rising just before 06.00, an hour before dawn. It reaches superior conjunction with the Sun on the 17th., then becoming an evening object. At the end of the month it sets at 16.00, only 10 minutes after sunset. It will then be mag. -0.8, 6.7" diam. and elongation from the Sun 6.4° E. At the start of the month it lies in eastern Virgo some 7° N.E. of 1st. mag. star Spica, Alpha Virginis. Travelling S.E. it crosses into Libra around the 7th., then crosses northern Scorpius around the 22nd. and ends the month 5° inside S.E. Ophiuchus, a total travel of 46°.

Venus : Continues to be an early morning object. On the 1st. it rises at 02.30, 4 hours before dawn, and by the 30th. at 03.30, again 4 hours before the Sun. It starts the month in eastern Leo. Moving S.E. it crosses into Virgo around the 3rd. when it will lie 0.7° S. of Mars. It ends it 5° N. of Spica, having travelled 33°.

Mid month it will be -4.3 mag., 20.4" diam., elong. 45.5° W. and rising at 03.00.

Mars : Also a morning object - until next spring ! At the beginning of the month it rises at 02.35, over 4 hours before dawn. At the end it rises at 02.20, 5½ hours before the Sun. Starting the month in the extreme eastern side of Leo, it moves S.E. to enter Virgo around the 4th. and ends it 2° S.W. of the double star Gamma Virginis (mags. 3.5 & 3.5, separation 1"). A total distance of 16°. As mentioned before, on the 3rd. it will be 0.7° N. of Venus.

Mid month it will be mag. +1.6, 4.4" diam., elong. 51° W. and rising at 02.30.

Jupiter : Yet another morning object, but getting earlier to become nominally an evening object next month. On the 1st. it rises at 02.00, nearly 5 hours before dawn, and by the 30th. at 00.30. Continuing to move S.E. in eastern Leo it travels 4½° to end the month 2½° from the Virgo border.

Mid month it will be mag. -1.9, 34" diam., elong. 64° W. and rising at 01.20.

Saturn : An early evening object, but approaching solar conjunction on the 30th. At the start of the month it sets at 17.40, 1¼ hours after sunset, and at the end at sunset, just before 16.00. Saturn starts the month just inside the N.W. corner of Scorpius, some 8° N.W. of Antares, 1st. mag. Alpha Scorpii. Travelling E. it ends the month on the border with Ophiuchus - a total travel of 3½°.

Mid month it will be mag. +0.5, disc diam. 15.2", rings 34.4", (inclined at 25.5°), elong. 14° E. and setting at 04.00.

Titan, mag. 8.2 & elong. 160". Greatest W. elong. on Nov. 7 & 23. Greatest E. elong. on Nov. 15.

Uranus : An evening / early morning object, following opposition on Oct. 12th. On the 1st. it rises just before 16.00, 40 minutes before sunset, and sets at 05.00, 1¼ hours before dawn. On the 30th..it sets at 03.00, 4½ hours before dawn. Remaining in S.E. Pisces, near the Cetus border, it moves just over 1° S.W. during the month, ending it 1.4° N.W. of the double star 77 Piscium (mags. 6.3 & 7.7, Sep. 33").

Mid month it will be mag. 5.7, 3.7" diam., elong. 144° E. and setting at 04.00.

Neptune : An evening object, at the beginning of the month setting at 01.10, and by the end at 23.10. Continuing to lie in N.E. Aquarius, it moves only a few arc minutes S.W. to a stationary point at the end of the month. It will then lie 1.5° N.E. of the mag. 6.4 star 58 Aqu.

Mid month it will be mag. 7.9, 2.3" diam., elong. 104° E. and setting at 00.10.

Meteors

Taurids : October 20 - November 30. Two maxima, on Nov. 5th. & 12th. 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° & 51°. Zenith Hourly Rate 10. Moon favourable on the 5th., L.Q., rising at 01.20 on the 6th., and on the 12th., New, setting at 17.06.

Leonids : One of the major showers. November 15 - 20. Maximum on Nov 18, 07h. 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 fairly favourable, 6 days old, setting at 21.33 on the 17th.

Variable Stars

Algol (Beta Persei) : Known to the early Arabian astronomers as the 'Winking Demon', it is not a true variable star, but an eclipsing binary where a bright star is partially eclipsed by a fainter companion every 69 hours. Normally at mag. 2.1, over a period of 5 hours it drops to 3.4, then rises over 5 hours back to 2.1. Both stars are roughly the same size - about 3 or 4 times the size of our Sun and are separated by 57". However the companion is much cooler and fainter at mag. 12.7. They lie 93 L.Y. from us. Their orbital plane is nearly coincidental to our line of sight, so they partially eclipse each other. However, when the brighter member passes the fainter there is only a slight drop in the total brightness - less than 0.05 mag., hardly detectable. The reason for the variation was established by the British astronomer John Goodricke in 1782. In more recent times, two more members of the group have been discovered spectroscopically. They are reckoned to be mag. 10.5 and 12.5. They are not in our line of sight to their 'big brother'. From our latitude Algol is circumpolar - it never sets. A star is circumpolar when its angular distance from the pole is less than the latitude of the observing site. With a declination of 40° 57' it lies 49° 03' from the pole, whilst our latitude is around 51° N. A good comparison star to Algol is Rho (25) Persei, which lies 2° south of it at mag. 3.5. (see the current chart)

Algol R.A. 03h.08m.10s., Dec. +40° 57' 20".
Times of minima observable during nighttime from the U.K. 16 Oct 01.9h., 18 Oct 22.8h., 5 Nov. 03.7h., 8 Nov. 00.5h., 10 Nov. 21.3h., 28 Nov. 02.2h, 30 Nov. 23.0h, 3 Dec. 19.8h., 18 Dec. 03.9h., 21 Dec. 00.7h., 23 Dec. 21.5h.