Crewkerne & District Astronomical Society

Sky Notes : October 2013

All timings are Universal Time. (G.M.T.) (B.S.T. - 1 hour)
Note : B.S.T. ends at 02.00 on Sunday 27th.

Moon's Phases

New	October	05d. 00h. 35m.	
First Quarter	"	11d. 23h. 02m.	
Full	"	18d. 23h. 38m.	
Last Quarter	"	26d. 23h. 40m.	
Moon at perigee	(nearest to Earth)	Oct. 10d. 23h.	Diam. 32' 18"
Moon at apogee	(furthest from Earth)	" 25d. 14h.	" 29' 33"

Penumbral Lunar Eclipse

On Friday / Saturday the 18th. / 19th. Oct. the Earth's outer shadow (penumbra) will cross ¾ of the Full Moon's surface. First contact will be at 21.48 U.T., maximum occurs at 23.50 U.T. and it ends at 01.52 U.T. The Moon rises at 16.45 U.T. and sets at 07.10 U.T. on the 19th. Around maximum the Moon will lie some 45° above the southern horizon. Unfortunately under all these circumstances it will be far from a spectacular event. In fact you will be lucky to see much difference in the Moon's brightness ! !.

The next Total Lunar Eclipse when the whole event – lasting over 5 hours – is visible from the U.K. will be on September 28 2015. First contact will be at 00.11. Totality starts at 02.11 and ends at 03.25. The eclipse ends at 05.25.

The Planets

Mercury : Continues to be a very early evening object, close to the Sun for all the month to reach inferior conjunction (between the Sun and the Earth) on Nov.1st. It travels 17° S.E. to reach a stationary point on the 23rd. Starting in eastern Virgo, it enters Libra around the 7th. Oct. It reaches its greatest E. elongation, 25° on the 10th., although even then it sets only ½ hour after sunset, at 17.40. It will then be mag. +0.0 and 6.8" diam.

Venus : Also an early evening object all month, but better placed than Mercury. At the beginning of the month it sets at 18.45 U.T., just over an hour after sunset, and by the end at 18.15, 1¾ hour after the Sun. During the month it moves 35° E.S.E. Starting in eastern Libra, it crosses N.W. Scorpius between the 8th. & 24th., then enters S.E. Ophiuchus, near the border with Sagittarius. On the 16th. it will pass 1.6° N. of the 1st. mag. star Antares, Alpha Scorpii. Mid month it will be mag. –4.2, 20.9" diam., elong. 46° E. and setting at 18.25, nearly 1 ½ hours after sunset.

Mars : Remains a morning object, travelling 15° S.E. in Leo during the month. On the 14 / 15th. it will pass 1° N. of 1st. mag. Regulus, Alpha Leonis. Mid month it will be mag. +1.6, 4.6" diam., elong. 52° W. and rising at 01.30 U.T.

Jupiter : A late evening object in eastern Gemini, moving 2° E. during the month. At the end it will lie 7° S.W. of Pollux, the 1st. mag. star Beta Geminorum. On the 25th. it will be 5° N. of the L.Q. Moon. Mid month it will be mag. –2.3, 39.2" diam., elong. 92° W. and rising at 21.40.

Saturn : A very early evening object, close to the Sun, and difficult to observe as it approaches solar conjunction on Nov. 6th. At the beginning of the month it sets at 18.45, 1¼ hours after sunset, and by the end at 17.00 , ½ hour after the Sun. Still in western Libra, it travels 4° S.E. during the month. Mid month it will be mag. +0.7, disc diam. 15.4", rings 34.9" (inclined at 19.7°), elong. 20° E. and setting at 17.50, 50 minutes after sunset
Titan, mag. 8.7 & elong. 170". Greatest W. elong. on October 1st. & 17th . Greatest E. elong. on Oct. 9th. & 26th.

Uranus : At opposition on the 3rd., when it will be above the horizon all night. At midnight then it will be due S., at an altitude of 42°. and mag. 5.7, 3.7" diam. & elong. 180°. (At R.A. 0h. 39.5m., Dec.+3° 30'.) It is still in southern Pisces, only 1° N. of the border with Cetus. During the month it moves just over 1° S.W. Around the 18th. it will pass 8 minutes N. of the 6.4 mag. star SAO 109315.

Neptune : An evening object, at the start of the month setting at 02.30 and by the end at 00.30. Continuing to lie in western Aquarius, near the border with Capricornus, it travels ½° S.W. during the month. On the 15th. it will lie 6° S. of the 10 day old Moon. At the end of the month it will lie 2° N. of the 6th. mag. star 45 Aquarii. Mid month it will be mag. 7.8, 2.3" diam., elong. 131° E. and setting at 01.45.

Meteors

Piscids : September – October. The third maximum (two were in Sept.) occurs this month on the 13th. Its radiant is at R.A. 01h. 44m., Dec. +14°. 10° S.W. of Hamal (Alpha Arietis). Culmination at 01.20, altitude 53°. Zenith Hourly Rate 10. The Moon is unfavourable, 3 days past F.Q., setting at 02.00 B.S.T. on the 14th.

Orionids : October 16 – 30. Maximum Oct. 21 / 24. Radiant at R.A. 06h.24m., Dec. +15°, around 10° N. of Betelgeuse (Alpha Orionis). Culmination at 04.30, altitude 54°. Z.H.R. 25. Moon very unfavourable, 2 days after Full on the 21st. rising at 19.30 B.S.T. and at 22.00 B.S.T. on the 24th.

Deep Sky Objects

NGC 7331 (C30 in Patrick Moore's Caldwell Catalogue). A spiral galaxy in Pegasus, discovered by William Herschel in 1784. (His Cat. No. HI-53). His description "Very bright, considerably large, much extended. Much brighter in the middle. Resolvable". One of the 35 known members of the Pegasus group. It is one of the largest spirals, comparable in size to M31, outranking our Milky Way, but at 47 million L.Y. away, over 20 times the distance. Its diam. is 130,000 L.Y., with a mass of 30 billion Suns, an apparent size 10'x4' and integrated mag. 9.5. It is nearly edge-on to our line of sight, inclined at 17°, and receding from us at 820 km/sec.

To find it, start from the square of Pegasus. From Scheat, mag. 2.6 Beta (53) Peg. at the N.W. corner, go 5° N.W. to Matar, mag. 3.1 Eta (44) Peg. and then another 3½° N.W. to 5.5 mag. 38 Peg. NGC 7331 lies 2¼° N.E. of it. R.A. 22h. 37m., Dec. +34° 25'.

Arthur Davis Aug. 2013