# Crewkerne & District Astronomical Society

## *Sky Notes : October 2015*

All timings are Universal Time. (G.M.T.) (Deduct 1 hour from B.S.T. which ends at 02.00 on Sunday 25th.)

### Moon's Phases

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| Last Quarter | October | 04d. 21h. 06m. |
| New | " | 13d. 00h. 06m. |
| First Quarter | " | 20d. 20h. 31m. |
| Full | " | 27d. 12h. 05m. |

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| Moon at apogee | (furthest from Earth) | Oct. 11d. 13h. | Diam. 29' 23" |
| Moon at perigee | (nearest to Earth) | " 26d. 13h. | " 33' 19" |

### The Planets

**Mercury :** Following solar conjunction on Sept. 30th. is a morning object. On the 1st. it rises at dawn, 06.00, and on the 31st. just before 06.00, an hour before the Sun. In Virgo all month. From the start it travels 5° N.W. to a stationary point on the 8th., then turns back and moves 23° S.E. to the end of the month. On the 28th. Mercury will pass 4° N. of Spica, 1st. mag. Alpha Virginis.
It is best seen mid month as it reaches greatest solar elongation, 18° W. on the 16th. when it will be mag. +0.4, 7.1" diam., and rising at 04.40, one hour and 20 minutes before dawn..

**Venus :** Remains a morning object - until next year ! At the start of the month it rises at 02.05, nearly 4 hours before dawn. On the 26th. it reaches its greatest solar elongation this year, 46° W. At the month's end it rises at 02.30, over 4 hours before the Sun. Continuing to lie in Leo, it moves 27° S.E., during the month, ending it near the border with Virgo. On the 9th./10th. Venus will pass 3° S. of 1st. mag. Regulus, Alpha Leonis. On the 26th. it will pass 1° S. of Jupiter.
Mid month it will be -4.5 mag., 27.4" diam., elong. 36.5° W. and rising at 02.10.

**Mars :** Another morning object. On the 1st. it rises at 02.45, 3¼ hours before dawn, and on the 31st. at 02.35, 4 hours before the Sun. In eastern Leo all month, starting 3° S.E. of 1st. mag. star Regulus, Alpha Leonis. It travels 18° S.E. to end the month some 3° from the border with Virgo. On the 17th./18th. it will pass ½° N. of Jupiter.
Mid month Mars will be mag. +1.8, 4" diam., elong. 39° W. and rising at 02.40.

**Jupiter :** Yet another morning object. At the beginning of the month it rises at 03.30, 2½ hours before dawn, and by the end at 02.00, 4¾ hours before the Sun. Remaining in eastern Leo, it moves 6° S.E. during the month, ending it some 7° from the border with Virgo. On the 28th. Jupiter will form part of a close triangle with Venus and Mars, all wihin a 5° circle.
Mid month it will be mag. -1.97, 32" diam., elong. 39° W. and rising at 02.50.

**Saturn :** An early evening object, but getting earlier as it heads for solar conjunction at the end of November. On the 1st. it sets at 19.40, 2 hours after sunset, and on the 31st. at 17.45, 1¼ hours after the Sun. It starts the month in the far eastern side of Libra, and ends it 2° inside the N.W. corner of Scorpius, some 8° N.W. of Antares, 1st. mag. Alpha Scorpii. A total travel of 3° E.S.E.
Mid month it will be mag. +0.6, disc diam. 15.5", rings 35.1" (inclined at 25°), elong. 40° E. and setting at 18.40, 1½ hours after sunset. Titan, mag. 8.2 & elong. 170". Greatest W. elong. on Oct. 6 & 22. Greatest E. elong. on Oct. 14 & 30.

**Uranus :** An evening / morning object, well placed as it approaches opposition on Oct. 12th. On the 1st. it rises at 20.00, 1¼ hours after sunset. On the 30th.. at 18.00, 20 minutes after the Sun sets and it sets at 07.00, an hour after dawn. Still in S.E. Pisces, near the Cetus border, it starts the month 1.3° S.W. of Zeta (86) Piscium and it moves just over 1° S.W. to the end of the month, ending it 1° N.W. of 5.5 mag. Epsilon (80) Piscium.
Mid month it will be mag. 5.7, 3.7" diam., elong. 176° E. and rising at 19.00, ¾ hour after sunset.

**Neptune :** A good evening object. At the beginning of the month it rises at 16.50, an hour before sunset, and sets at 03.10. At the end it sets at 01.10. Continuing to lie in N.E. Aquarius, it travels ½° S.W. during the month, ending it 1.6° N.E. of the mag. 6.4 star 58 Aqu.
Mid month it will be mag. 7.8, 2.3" diam., elong. 135° E. and setting at 02.10.

### Meteors

**Orionids :** October 16-30. Maximum Oct 21-24. Radiant at 06h. 24m., Dec.+15°, around 10° N. of Betelgeuse (Alpha Orionis). Culmination at 04.30, altitude 54°. Zenith Hourly Rate 25. The shower produced as the Earth crosses the trail of dust left behind by Halley's Comet. Moon not very favourable - F.Q., setting at 23.45 on the 21st, and by the 24th. at 03.45 the next morning.

### Deep Sky Objects

**C30 (NGC 7331) :** A spiral galaxy in Pegasus. The 30th. item in Patrick Moore's Caldwell Catalogue of 110 objects not listed by Charles Messier. It was discovered by William Herschel in 1784. (His Cat. No. H1-53). His description "Very bright, considerably large, much extended. Much brighter in the middle. Resolvable". One of the 35 members of the Pegasus Spur 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 300 billion Suns, an apparent size of 10'x4' and integrated mag. of 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. Then go 4° N. & 1° W. to C30. R.A. 22h. 37m.,Dec. +34° 25'.

**C44 (NGC 7479) :** A barred spiral galaxy, also in Pegasus, and again discovered by Herschel in 1784. He described it as "Considerably bright, much extended, gradually brighter in the middle. 4' long & 2' broad" (H1-55). It is one of 51 members of the Pegasus Cloud. The galaxy appears half way between edge-on and face-on, but is quite distorted. There is a bright central N.to S. bar, but whilst the western spiral arm is relatively sharply defined, the eastern one is very ragged. This may have been caused by a small satellite system merging with it. C44 is much further away from us than C30, at 106 million L.Y., and with a mass of 230 billion Suns and a diam of 120,000 L.Y. it is 20% larger than our galaxy. Its apparent size is 3.9'x 3.0' and visual magnitude 10.8. To find it, start from Markab, the mag. 2.5 star Alpha (54) Peg., the S.W. corner star of the square. C44 lies 3.9° South of it. R.A. 23h. 05m., Dec. +12° 19'.

Arthur Davis Aug. 2015