

# South Somerset Astronomical Society

## Sky Notes : October 2012

All timings are Universal Time. ( Add one hour for B.S.T. which ends at 02.00 on Sunday 28<sup>th</sup> ).

### Moon's Phases

|               |         |                |
|---------------|---------|----------------|
| Last Quarter  | October | 08d. 07h. 33m. |
| New           | "       | 15d. 12h. 03m. |
| First Quarter | "       | 22d. 03h. 32m. |
| Full          | "       | 29d. 19h. 49m. |

|                                      |         |           |       |         |
|--------------------------------------|---------|-----------|-------|---------|
| Moon at apogee (furthest from Earth) | October | 05d. 01h. | Diam. | 29' 30" |
| Moon at perigee (nearest to Earth)   | "       | 17d. 01h. | "     | 33' 08" |

### The Planets

**Mercury** : Following conjunction last month, is now an evening object, but very close to the Sun all month. Even by the end it sets at 17.00, only ½ hour after sunset. During the month it travels 38° S.E. Starting in Virgo, 1.8° N. of Spica, Alpha Virginis, it enters Libra around the 12<sup>th</sup>, crossing it to reach Scorpius at the very end. Greatest E. elongation (24°) occurs on the 26<sup>th</sup>.

Mid month it will be mag. -0.3, 5.6" diam., elong. 22° E. and setting at 17.30, 25 minutes after the Sun.

**Venus** : Remains a morning object, moving S.E. in Leo most of the month to enter Virgo around the 23<sup>rd</sup>, a total distance of 34°. On the 3<sup>rd</sup>, at 08.00 it passes 0.1° S. of Regulus, 1<sup>st</sup> mag. Alpha Leonis.

Mid month it will be mag. -3.9, 14.5" diam., elong. 38° W. and rising at 02.45.

**Mars** : Also an early evening object, but setting slightly later than Mercury, all month 1½ hours after sunset. On the other hand it's further South ! Starting in Libra it enters Scorpius around the 9<sup>th</sup>, crossing the N.W. tip of it to enter southern Ophiuchus on the 19<sup>th</sup>. During the month it travels some 23° S.E. On the 20<sup>th</sup>, it will pass 4° N. of Antares, 1<sup>st</sup> mag. Alpha Scorpii. It will then be mag. +1.2, 4.6" diam., elong. 42° E. and setting at 18.30.

**Jupiter** : Continues to be a late evening / morning object in Taurus. From a stationary point on the 4<sup>th</sup>, it moves 1° W. to the end of the month. On the 5<sup>th</sup>, at 21.00 it will be occulted by the F.Q. Moon, but this will only be visible from the southern Pacific. From the U.K. Jupiter will lie just North of the Moon, but in any case it does not rise until 20.15.

Mid month it will be mag. -2.6, 45" diam., elong. 127° W., and rising at 19.30, 2¼ hours after sunset.

**Saturn** : With solar conjunction occurring on the 25<sup>th</sup>, it is practically invisible this month. It might be glimpsed at the very start of the month, when it sets at 18.30, only ¾ hour after sunset, when the sky is still very bright. Its elongation then is 22° E., magnitude +0.7, disc diameter 14.1", and rings 35.3" (inclined at 15.4°). In Virgo, it travels 3½° S.E. during the month, starting 6° N.E. of 1<sup>st</sup> mag. Spica, Alpha Virginis.

**Uranus** : Following opposition at the end of September, it is still well placed for observation all evening and most of the night. In southern Pisces, still close to the border with Cetus, it moves 1.3° S.W. during the month, starting it a few arc minutes S.W. of the mag. 5.8 star 44 Piscium. Mid month it will be mag. 5.8, 3.6" diam., elong. 164° E. and setting at 04.45, 1¾ hours before dawn.

**Neptune** : An evening object, best seen once it gets fully dark, as by the end of the month it sets just after midnight. Remaining in western Aquarius near the border with Capricornus, it moves ¼° S.W. during the month to end ¼° S. of mag. 5.5 star 38 Aqr.

Mid month it will be mag. 7.9, 2.2" diam., elong. 129° E. and setting at 01.30.

### Meteors

**Piscids** : September - October. The third maximum (two were in Sept.) occurs this month on the 13<sup>th</sup>. 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. Moon very favourable, nearly New, setting at 16.10 on the 13<sup>th</sup> and rising at 05.20 on the 14<sup>th</sup>.

**Orionids** : October 16 – 30. Maximum on 20/22. 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 not too favourable – F.Q., setting at 21.20 on the 20<sup>th</sup>, 22.30 on the 21<sup>st</sup> and 23.45 on the 22<sup>nd</sup>.

### Deep Sky Objects

**NGC 6822 (C57)** : 'Barnards Galaxy', an irregular barred dwarf galaxy in Sagittarius. Number 57 in Patrick Moore's 'Caldwell Catalogue'. It was discovered by Edward Barnard in 1884 using the Byrne 5" refractor at Vanderbilt Observatory. It became famous as the first galaxy in which Edwin Hubble detected Cepheid variable stars using the 100" Hooker telescope at Mount Wilson in 1924. This enabled him to estimate its distance and show that these 'faint fuzzies' were in fact external galaxies, far removed from our own Milky Way. It is 2.3 million L.Y. from us, and is a member of the 'Local Group' which includes M31 and M33. With a diameter of 10,000 L.Y. its apparent size is 20' x 10' and integrated magnitude 8.5.

To find it, start from 4<sup>th</sup> mag. Rho (44) Sag., the tip of the 'teaspoon's handle', some 10° N.E. of the 'teapot's handle'. NGC 6822 is 6° N.E. of it. Three 5<sup>th</sup> mag. stars, including 54 & 55 Sag., 2° S.S.W. of it act as pointers. R.A. 19h. 45m., Dec. -14° 48'.

**NGC 7009 (C55)** : The 'Saturn Nebula' a planetary nebula in Aquarius discovered by William Herschel in 1782. In 1850 Lord Rosse observed it with his 72" telescope and noted that it "had a fairly uniform luminous disc with ansae which probably indicates a surrounding nebulous ring seen edgewise". He dubbed it the 'Saturn Nebula', although modern astronomers are more likely to call it the 'Ghost of Saturn Nebula'. It lies some 1,400 L.Y. from us, with a diam. of ¼ L.Y., an apparent size 29" x 23" and mag. 8.0. The 11.5 mag. central star is a hot bluish dwarf with a temperature of 55,000°K. Ultra-violet radiation from it illuminates the nebula.

To find it start from 1<sup>st</sup> mag. star Altair, Alpha Aquilae. Go 11° S.S.E. to 3<sup>rd</sup> mag. Theta (65) Aql., then another 12° S.E. to 4<sup>th</sup> mag. Epsilon (2) Aquarii. Finally another 5° E.S.E. to the nebula. Do not confuse it with M72 & M73 a few degrees S.W. of it.

R.A. 21h. 04.2m., Dec. -11° 21.8'.