Crewkerne & District Astronomical Society

Sky Notes : December 2013

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

Moon's Phases

New	December	03d. 00h. 22m.	
First Quarter	"	09d. 15h. 12m.	
Full	"	17d. 09h. 28m.	
Last Quarter	"	25d. 13h. 48m.	
Moon at perigee	(nearest to Earth)	Dec. 04d. 10h.	Diam. 33' 11"
Moon at apogee	(furthest from Earth)	" 20d. 00h.	" 29' 25"

The Planets

Mercury : A morning object until the 29th., when in superior conjunction with the Sun, then becoming an evening object. Best seen during the first half of the month. On the 1st. it rises at 06.45, 1½ hours before dawn, and by mid month 07.30, ½ hour before the Sun. It will then be mag. –0.8, 4.8" diameter and elongation 7° W. During the month it travels 50° E.S.E. Starting in Libra, it enters northern Scorpius around the 7th. and crosses into Ophiuchus around the 12th., and finally into Sagittarius on the 22nd.

Venus : Remains an early evening object, at the start of the month setting at 18.30, 2½ hours after sunset, and by the end at 17.30, 1½ hours after the Sun. In eastern Sagittarius all month it moves some 10° E.N.E. to a stationary point on the 20th., then moves back 3° W.S.W. to the end of the month. At its brightest (mag. –4.7) this year at mid month, when it will be 46" diam., elong. 35° E. and setting at 18.20, 2¼ hours after sunset.

Mars : Continues to be a morning object, getting slightly earlier. At the beginning of the month rising just before 01.00 and by the end at 00.20. Starting just inside the eastern border of Virgo, it travels 15° S.E. during the month. On the 24th. at 03.00 it will lie 5° N. of the L.Q. Moon. Mid month it will be mag. +1.1, 6.1" diam., elong. 79° W. and rising at 00.40.

Jupiter : An evening object, and visible nearly all night as it approaches opposition on 5th. January 2014. Still in Gemini, it moves 3° W. during the month. On the 19th. at 07.00 it will lie 5° N. of the 16 day old Moon.
Mid month it will be mag. –2.5, 42.9" diam., elong. 121° W. and rising at 19.45.

Saturn : Now a morning object. At the start of the month rising at 05.40, 2 hours before dawn, and by the end at 04.00, 4 hours before the Sun. Remaining in Libra, it travels 3½° S.E. during the month. Mid month it will be mag. +0.6, disc diam. 15.6", rings 35.3" (inclined at 21.7°), elong. 34° W. and rising at 05.00, 3 hours before dawn.
Titan, mag. 8.8 & elong. 165". Greatest W. elong. on December 5th. & 21st. Greatest E. elong. on Dec. 13th. & 29th.

Uranus : Continues to be an evening object in southern Pisces, close to the border with Cetus. It moves a few arc minutes S.W. to reach a stationary point on the 18th., then moves back a similar distance N.E. Around the 18th. it will be mag. 5.8, 3.6" diam., elong. 102°E. and setting at 01.00. It will then lie 0.6° S.S.W. of the 7th. mag. star SAO 109278. On the 11th. at 07.00 it will be 3° S. of the F.Q. Moon.

Neptune : Remaining an evening object in western Aquarius, near the border with Capricornus, it travels ¾° N.E during the month. Mid month it will lie 3½° S.S.E of the 4th. mag. star Theta (43) Aqu. and 2½° N.N.W. of 6th. mag. star 50 Aqu.
It will then be mag. 7.9, 2.3" diam., elong. 70° E. and setting at 21.45. On the 8th. at 17.00 it will lie 6° S. of the F.Q. Moon.

Meteors

Geminids : December 08 – 17. Maximum Dec. 14 03h. One of the most prolific showers, with a Zenith Hourly Rate of 100. Believed to originate from minor planet 3200 Phaethon. Radiant at R.A. 07h. 32m., Dec.+33°, around 1° N. of Castor, mag. 1.6 Alpha Geminorum. Culmination at 02.00, altitude 72°. Unfortunately the Moon is unfavourable – 3 days before Full, setting at 02.36.

Ursids : December 17 – 25. Maximum on Dec. 22 &23. Originated from Comet Tuttle. Radiant at R.A. 14h. 28m., Dec. +78°, around 5° N. of 2nd. mag. Delta Ursa Minoris. Circumpolar. Z.H.R. 10. Moon again unfavourable, 3 days and 2 days before L.Q. , rising at 21.25 and 22.30

Comet C/2012 S1 'ISON'

During December ISON will travel North 83° from Scorpius to Draco, if it survives its close encounter (perihelion) with the Sun on the 28th. of November without disintegrating. A distinct possibility as it swings round it only 730,000 miles from its surface – that's less than the Sun's diameter (865,000 miles). The main problem is that recent observations have found that the comet's nucleus is possibly smaller than that required to provide sufficient mass (gravity) to hold it together. This may also explain why it is currently at least 2 mags. fainter than originally predicted, observed on Nov. 6th. at mag 7.9.
At the start of the month it will be too close to the Sun for easy observation. On the 6th. it will rise around 05.45 (sunrise at 08.00). It will then be 22° N.N.W. of the Sun, at R.A. 16h.12m., Dec. -2° 35'. It will pass ½° W. of mag. 2.7 star Delta (1) Ophiuchi.
On the 17th. ISON rises around 02.55 (sunrise at 08.12). It will lie 49° N.N.W. of the Sun at R.A. 16h.12m., Dec. 21°. It does not set until 18.35 (sunset at 16.05), thus it can be seen both early in the morning and early in the evening, although condition are better in the morning. During the night it will pass 5° W. of the 2.8 mag star (27) Herculis.
On the 22nd. it rises at 00.30 and sets at 21.15 (sunset at 16.12). In the morning its R.A.is 16h.15m. & Dec +36.5°. It will pass 6° W. of the globular cluster M13 which is mag.5.9.
Still travelling northwards, a day later the comet becomes circumpolar, from our latitude is above the horizon all day.
On the 29th. ISON will be 30° above the N.N.W. horizon at 19.00, and 25° above the northern horizon at 23.00. Its evening position will be R.A. 16h.30m., Dec. +63°. It will pass only 1° E. of the 2.7 mag. star Eta (14) Draconis.
Around the 6/7 January 2014 the comet will pass 2½° S. of Polaris, the Pole Star, as it goes through Ursa Minor towards Cassiopeia to begin its travel southwards.

Arthur Davis Nov. 2013