

# Crewkerne & District Astronomical Society

## Sky Notes : June 2014

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

Note : Add 1 hour for B.S.T

### Moon's Phases

First Quarter	June	05d. 20h. 39m.		
Full	"	13d. 04h. 11m		
Last Quarter	"	19d. 18h. 39m.		
New	"	27d. 08h. 08m.		
Moon at apogee (furthest from Earth)	June	03d. 04h.	Diam. 29' 30"	
Moon at perigee (nearest to Earth)	"	15d. 04h.	" 32' 59"	
Moon at apogee	"	30d. 19h.	" 29' 25"	

### The Planets

**Mercury** : At the start of the month an early evening object, but it reaches inferior conjunction with the Sun on the 19<sup>th</sup>., and then becomes a late morning object. On the 1<sup>st</sup>. it sets just before 22.00, nearly 2 hours after sunset, and on the 30<sup>th</sup>. it rises at 03.20, 20 minutes before dawn. It remains in eastern Taurus, close to the border with Gemini. From the 1<sup>st</sup>. it travels 2° S.E. to a stationary point on the 7<sup>th</sup>., then turns back to move 9° S.W. to the end of the month. On the 7<sup>th</sup>. it will be mag. +2.3, diam. 10.8", elongation 17° E. and setting at 21.20, 1¼ hours after sunset.

**Venus** : Remains a morning object, at the beginning of the month rising at 02.30, 1¼ hour before dawn, and at the end at 02.00, 1¼ hours before the Sun. It starts the month in western Aries. Moving N.E. it enters Taurus around the 18<sup>th</sup>., and ends it just N. of the Hyades open cluster and 4° N.W. of 1<sup>st</sup>. mag. Aldebaran, Alpha (87)Tauri, a total travel of 35°. Around the 22<sup>nd</sup>. it will pass 5° S. of the Pleiades star cluster, M45. Mid month Venus will be mag. -3.8, 12.9" diam., elong. 34° W. and rising at 02.10.

**Mars** : An evening object, at the start of the month setting at 01.40, and at midnight by the end. Remainingt in Virgo, it travels 9° S.E. to end the month 6° N.W. of 1<sup>st</sup>. mag. star Spica, Alpha (67)Virginis. On the 8<sup>th</sup>., at 01.00 it will lie 1.6° S. of the setting 10 day old Moon. Mid month it will be mag. -0.2, 10.6" diam., elong. 109° E. and setting at 00.45.

**Jupiter** : An early evening object, at the beginning of the month setting at 23.00, and at the end at 21.20, an hour after sunset Continuing to move E.S.E. in eastern Gemini, it travels 7° during the month, to end it 1° from the Cancer border. Around the 21<sup>st</sup>.it will pass 6° S. of 1<sup>st</sup>.mag. star Pollux, Beta (78) Geminorum. Mid month it will be mag. -1.8, 32.3" diam., elong. 29°E. and setting at 22.10, 1¼ hours after sunset.

**Saturn** : An evening / early morning object following opposition last month. On the 1<sup>st</sup>. it sets just after 03.00 and on the 30<sup>th</sup>. just after 01.00. Remaining in Libra, it travels 1½° W.N.W. during the month, ending it 3° N.E. of mag. 2.7 star Alpha (9) Librae. Mid month it will be mag. +0.2, disc diam. 18.3", rings 41.5" (inclined at 21.2°), and elong. 144°E. Its southern declination, -14° 47', means that it is fairly low in the sky, at the best 24° above the horizon..

Titan, mag. 8.4 and elong. 190". Greatest E. elong. on June 6<sup>th</sup>.. & 22<sup>nd</sup>.. Greatest W. elong on June 14<sup>th</sup>. & 30<sup>th</sup>.

**Uranus** : A morning object all month, on the 1<sup>st</sup>.rising just before 02.00, 1¼ hours before dawn. However, by the 29<sup>th</sup>. it rises at midnight, nominally becoming an evening object. Still in southern Pisces near the border with Cetus, it moves ¾° N.E. during the month to end it 1¼° W. of 6<sup>th</sup>. mag. star 73 Piscium. On the 21<sup>st</sup> at 03.00 it will lie 1.6° S. of the L.Q. Moon. Mid month it will be mag. 5.9, 3.4" diam., elong. 68° W. and rising at 01.00.

**Neptune** : It starts the month as a morning object, rising at 00.45. On the 15<sup>th</sup>. it rises at midnight, also becoming nominally an evening object. By the end of the month it rises just before 23.00. Remaining in western Aquarius, it travels a few arc minutes N.E. to a stationary point on the 10<sup>th</sup>., then moves back S.W. 7 arc minutes to the end of the month. It will then lie 2° N.E. mag. 4.8 star Alpha (57) Aqu. Mid month it will be mag. 7.9, 2.3" diam., elong. 106° W. and rising at midnight.

### Meteors

**Ophiuchids** : May 19 – July. Two maxima and radiants. First on June 10<sup>th</sup>. Radiant at R.A. 17h. 56m., Dec. -23°, in N.W. Sagittarius Culmination at 00.45, altitude 15°. Zenith Hourly Rate 5. Moon unfavourable, 12 days old, setting at 02.49 on the 11<sup>th</sup>.

Second on June 20<sup>th</sup>., radiant at R.A. 17h. 20m., Dec. -20° in N.E. Scorpius. Culmination at 23.20, altitude 18°. Z.H.R. 5. Moon fairly favourable, L.Q., rising at 00.35 on the 21<sup>st</sup>.

### Deep Sky Objects

**M51 (NGC 5194 & 5195)** : The 'Whirlpool', a nearly face-on spiral galaxy in Canes Venatici with an interacting companion. Discovered by Charles Messier in October 1773 when he was following the comet of that year. He later gave credit to Pierre Mechain for discovering the companion (NGC 5195) in March 1781. Johann Bode made an independent discovery of M51 in January 1775. He described the galaxy as 'a small, weakly luminous nebula, probably of elongated shape', which is pretty much the visual appearance in a small modern telescope. It is famous as the first galaxy which the Third Earl of Rosse observed in September 1845 to have a spiral structure, although it was another 80 years before it was realised that it was an external galaxy, rather than a nebulosity within our own Milky Way galaxy. He observed it with the 72" reflector (then the largest telescope in the world) at Birr Castle in Ireland. The telescope has been refurbished in recent years and is worth a visit. The first photos to show its spiral structure were taken in 1889.

M51 has a size of 87,000 / 43,000 L.Y., a little smaller than our Milky Way. NGC 5195 orbits the large spiral with an inclination to the spiral's galactic plane of 73°. Currently the companion is located about 500,000 L.Y. behind the northern spiral arm of the main galaxy, and the last close encounter was about 400 million years ago. A striking feature is the spiral arms that are asymmetrically bent towards the companion. The Hubble Space Telescope enabled an accurate distance measure of M51 from us to be made in 2003, amounting to 26.8 million L.Y. The mass of NGC 5194 is reckoned to be only 10% of the mass of the milky Way. Its apparent size is 11.2' x 6.9'. 5195 is 5.6' x 4.5'. M51 total magnitude is 8.4.

R.A. 13h. 29.9m., Dec. +47° 12'.

To find it, start from the end star of the handle of the plough – 2<sup>nd</sup>. mag. Alkaid, Eta (85) Ursa Majoris. Go 2° W.S.W. to 5<sup>th</sup>. mag. star 24 Canes Venatici. M51 is another 2° S.S.W. Under good conditions it can be found in binoculars. An indication of spiral structure can be seen with an 8" telescope.

Arthur Davis May 2014