

# Crewkerne & District Astronomical Society

## Sky Notes June 2018

All timings are Universal Time. (G.M.T.) U.K. local time is now 1 hour more. (B.S.T.)

**Summer Solstice** occurs on June 21<sup>st</sup>., when daylight is longest (16½ hours) and night shortest (7½ hours)

### Moon's Phases

Last Quarter	June	06d. 18h. 33m.		
New	"	13d. 19h. 44m.		
First Quarter	"	20d. 10h. 52m.		
Full	"	28d. 04h. 54m.		
Moon at apogee (furthest from Earth)	June	02d. 16h.	Diam.	29' 34"
Moon at perigee (nearest to Earth).	"	14d. 23h.	"	32' 58".
Moon at apogee	"	30d. 02h.	"	29' 33"

### The Planets

**Mercury** : An early evening object. On the 6<sup>th</sup>. it sets at sunset, 20.15. On the 30<sup>th</sup>. it sets at 21.40, an hour & 20 mins. after the Sun. It starts the month in western Taurus. Travelling N.E. it passes N. of the Hyades star cluster around the 5<sup>th</sup>. and enters Gemini around the 13<sup>th</sup>. It crosses it to enter Cancer on the 28<sup>th</sup>. and ends the month 3° inside it. A total distance of 60°.

Mid month Mercury will be mag. -1.1, 5.3" diam., elong. 12° E. and setting at 21.20, an hour after sunset.

**Venus** : Continues to be an early evening object, which it will be until September. At the start of the month it sets at 22.30, 2¾ hours after sunset. By the end it sets at 22.30, 2 hours after the Sun. It starts the month in eastern Gemini. Travelling E. it passes some 5° S. of Pollux (Beta Gem.) on the 9<sup>th</sup>. and around the 17<sup>th</sup>. it passes 1½° N. of M44, the Beehive Cluster. At the end of the month it crosses into Leo, a total distance of 35°.

Mid month it will be mag. -4.0, 14.2" diam., elong. 38° E. and setting at 22.20, 2 hours after sunset.

**Mars** : A late evening and morning object. On the 1<sup>st</sup>. it rises at midnight, and by the end of the month at 22.20, 2 hours after the Sun. On the 1<sup>st</sup>. it lies 6° inside Capricornus. Moving E.N.E. it moves 5° to a stationary point at the end of the month and then turns back W.S.W. A total travel of 11°.

Mid month it will be mag. -1.6, 17.5" diam., elong. 120° W. and rising at 23.10.

**Jupiter** : A morning object, following opposition last month. At the start of the month it sets at 03.00, ¾ hour before dawn. At the end it sets at 01.00, 2¾ hours before dawn. Remaining in western Libra, it travels W.N.W. just over 2°, ending the month 5° E. of the border with Virgo.

Mid month Jupiter will be mag. -2.4, 43" diam., elong. 135° W. and setting just before 02.00.

**Saturn** : At opposition on the 27<sup>th</sup>. when it rises at 20.10, 10 minutes before sunset and is due S. at midnight, but only 15° high. It will then be mag. 0.1, disc diam. 18.4", rings 41.7", elong. 180°. On the 1<sup>st</sup>. it rises at 22.00, an hour & 50 mins. after sunset. It continues to lie in western Sagittarius, North of the "Teapot". It starts the month 4° N.E. of Lambda. It moves 4° W. during the month, ending it 3° N. of the globular cluster M28 (NGC 6626).

Titan, mag. 8.3 & elong. 180". Greatest W. elong. on June 7 & 23. Greatest E. elong. on June 15 & 30.

**Uranus** : A morning object. On the 1<sup>st</sup>. it rises at 02.20, 1½ hours before dawn. By the 30<sup>th</sup>. it rises at 00.20. It starts the month in the S. W. corner of Aries. During the month it travels 1¼° N.E.

Mid month Uranus will be mag. 5.9, 3.4" diam., 50° W. elong., rising at 01.20, 2 hours & 20 minutes before dawn.

**Neptune** : A morning and late evening object. At the start it rises at 01.05, 2½ hours before dawn. By the end it rises at 23.10, nearly 3 hours after sunset. Remaining in N.E. Aquarius, near the border with Pisces, it barely moves N.E. during the month, ending it at a stationary point ¾° S.W. of 5<sup>th</sup>. mag. star Phi (90) Aqu.

Mid month Neptune will be mag. +7.9, 2.2" diam., elong. 77° W. and rising at 02.10, 2 hours before dawn.

### 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 fairly favourable. 4 days after L.Q. on the 6<sup>th</sup>. rising at 02.35 on the 11<sup>th</sup>. Second max. on June 20<sup>th</sup>., radiant at R.A. 17h.20m., Dec. -20° in N.E. Scorpius. Culmination at 23.30, altitude 18°, Z.H.R. 5. Moon not very favourable, F.Q. setting at 00.42 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 M51's 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 2.68 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'.

NGC 5195 is 5.6' x 4.5'. M51's total magnitude is 8.4. R.A. 13h. 29m., Dec. +47°.

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 2018