

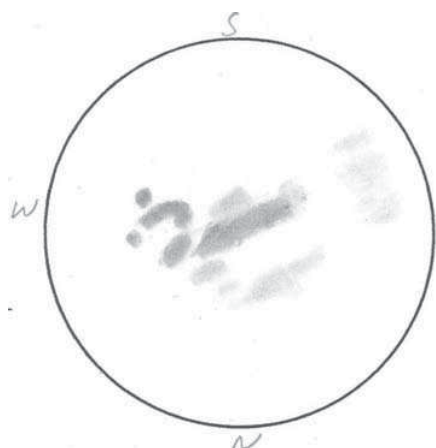
Messier 17 – the Swan Nebula

For the deep sky observer, especially one interested in diffuse nebulae, Sagittarius is a wonderful constellation. As we look towards it we are gazing towards the centre of our galaxy with its huge concentration of stars, gas and above all dust – the material from which star-studded nebulae are made. It is no surprise therefore that Sagittarius contains more Messier objects than any other constellation. Unfortunately, for the UK

observer at a typical latitude of 52°N, the constellation is always low on the horizon and many of its treasures are obscured by haze and light pollution.

Luckily however one splendid object lies well away from the galactic centre on the border with Serpens Cauda and Scutum. This is M17 (NGC 6618), commonly known as the Swan or Omega nebula, which culminates at a respectable 22° above the horizon from central England. Located at RA 18h 20.8m and Dec -16° 11' (2000.0) it lies at a distance of 5,900 light year and shines with a visual magnitude of 6. The bright nebula extends to around 15 light years but the complete gas and dust cloud is much larger, probably covering 40 light years.

M17 was discovered by the Swiss observer de Chéseaux in 1746 and re-discovered by Messier in June 1764. de Chéseaux only saw the brighter regions, which he thought of as a rectangle and looking somewhat like the rays of a comet. Its common names were given to it by observers using more powerful telescopes. John Herschel referred to it as looking like the Greek letter omega, and William Smyth likened it to a swan floating on water.



Drawing by Andrew Robertson

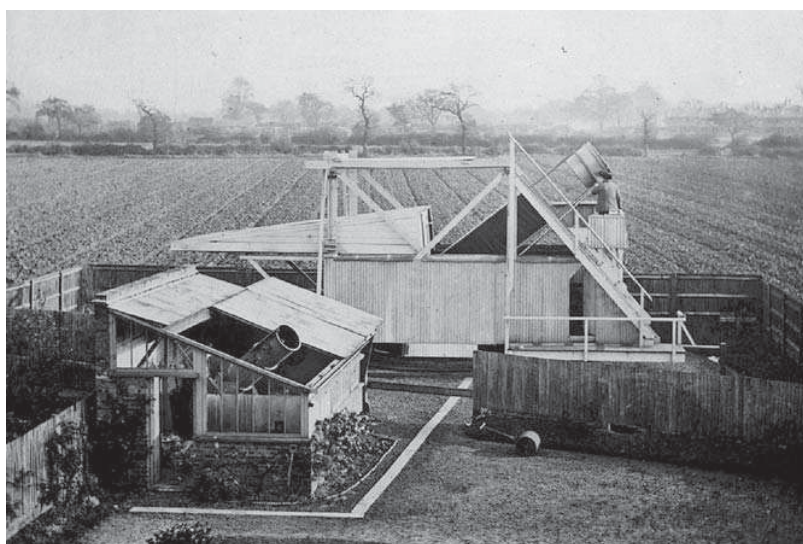
Nowadays many deep images destroy these fanciful representations as they show faint tendrils of nebulosity surrounding the main body of M17, but to the visual observer, particularly one with an inverting telescope, it is still easy to imagine M17 as a celestial swan.

Although M17 may look peaceful and serene through the telescope, in reality it is anything but, the dust hiding a star factory of enormous proportions distorted by enormous stellar winds. Infrared observations suggest almost 10,000 young stars may be hidden in its dusty cloak with enough material still available for several thousand more.

Andrew Robertson's drawing shown here was made from his home observatory near Bungay in Suffolk in 2010 July using a 30cm Dall-Kirkham telescope and 27mm Panoptic eyepiece, giving a magnification of $\times 135$. The field size is 0.5°. Seeing was Ant. IV with a limiting magnitude in the area of observation of 5.0. South is up in the drawing with west to the left. M17 is an emission nebula (Andrew's drawing was made using a UHC filter) and nebula filters can help in seeing fine detail, particularly if your site is at all light polluted. Some observers prefer a UHC filter, with its wide band-pass, whilst others prefer the narrower band [OIII] filter. Certainly an OIII filter will give greater contrast between various parts of the nebula and under good skies show more of a lacy structure to the object, although aesthetically a UHC filter often gives a more pleasing view.

lescopes, with Suggestions for mounting Reflectors (MNRAS, 1879 April) Common proposed the use of silver on glass mirrors and laid out ten criteria for their successful use, including a skeleton tube to avoid air currents and save weight, equatorial mounting, rigid as possible, free from friction as possible, capable of observing past the meridian, capable of observing the entire sky and the mirror mounted to eliminate flexure. Common's design for what he called his five-foot reflecting telescope included a polar axis in the form of a wrought-iron cylinder partially buoyed by water (an idea which may have resulted from his experience as a builder, plumber and metalworker gained while working for his uncle Matthew). The telescope was designed in 1884 and built (including the grinding of the mirror) and housed at his Ealing address. He took a number of photographs, with typical exposure times of one to two hours, with this instrument in 1890 but none of them were published or survive.

Between 1890 and 1903 Common made several attempts to convert the five-foot to a Cassegrain with inconclusive results, built a coelostat which Turner took to eclipses in Japan (1896) and India (1898), and joined the RAS/BAA expedition to the Norway solar eclipse. At this time his interest in other engineering problems seem to have pushed



astronomy into the background and he advertised his astronomical instruments for sale. There are a number of patents in his name covering such inventions as improvements in telescopes for gun-sighting, and improvements in apparatus for use in steering of power driven road vehicles. Andrew Ainslie Common died suddenly in 1903. Following his death his wife donated the 60-inch telescope to the Harvard College Observatory and his library was sold in 1910.

Following applause for Dr Arditti's talk the President adjourned the meeting until 2011 January 26 at the same venue.

Roger Dymock



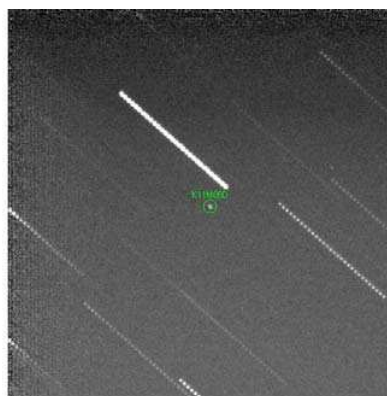
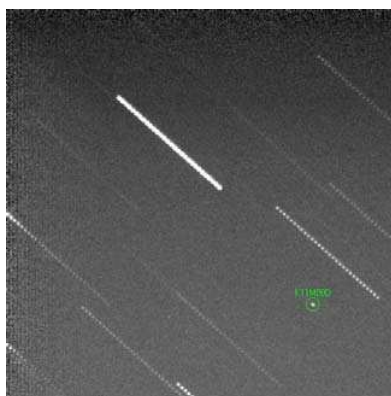
Paul and Liz Downing imaged M17 from their observatory in southern Spain, also in 2010 July, using a Celestron C14 at f/7 and SBIG ST10-XE CCD. Total exposure time was 90min through Don Goldman LRGB filters (30, 20, 20, 20min respectively). There is much in common between their image and Andrew's drawing and this is clearly the same object, but the extra nebulosity recorded behind the swan's neck, for example, is beginning to cloud the traditional swan shape. Deeper images show even less resemblance between photographs and drawings; see, for example, Astronomy Picture of the Day for 2007 August 10 (<http://apod.nasa.gov/apod/ap070810.html>).

M17 is well displayed during August evenings and, as always, the Deep Sky Section would be delighted to receive your observations.

Stewart L. Moore, Director, Deep Sky Section



Paul & Liz Downing



NEO 2011 MD makes a close approach

Left: Near Earth Object 2011 MD approached to within 16,000km of the Earth on 2011 June 27 at around 16:41UT. Nick James imaged it at 22:45 on June 26, when it was 195,000km away, moving at 53 arcsec/minute.



British Astronomical Association Radio Astronomy Group

2011 GENERAL MEETING

Saturday 12th November 10:00 – 17:00 The Humfrey Rooms, Castilian Terrace, Northampton

Keynote speakers:

- **Prof. Paul Alexander** Head of Astrophysics Group at the Cavendish Laboratory and project leader for the UK contribution to the Square Kilometre Array project
- **Dr Ben Stappers** Senior lecturer in the Jodrell Bank Centre for Astrophysics and Head of the Pulsar Science Working Group for the LOFAR telescope.

This will be an all-day event featuring two keynote speakers plus presentations on the observing work being carried out by members and displays of their results and the equipment used to obtain them. Further information will appear at <http://www.britastro.org/radio/> or please contact radiogroup@britastro.org

Tickets are £15 (£12 for BAA members) which will include a buffet lunch and morning and afternoon tea/coffee.

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