

M73, Asterism, Aquarius

Continuing a series of photograph's of the Messier Objects



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Rugby & District Astronomical Society

www.rugbyastro.org.uk

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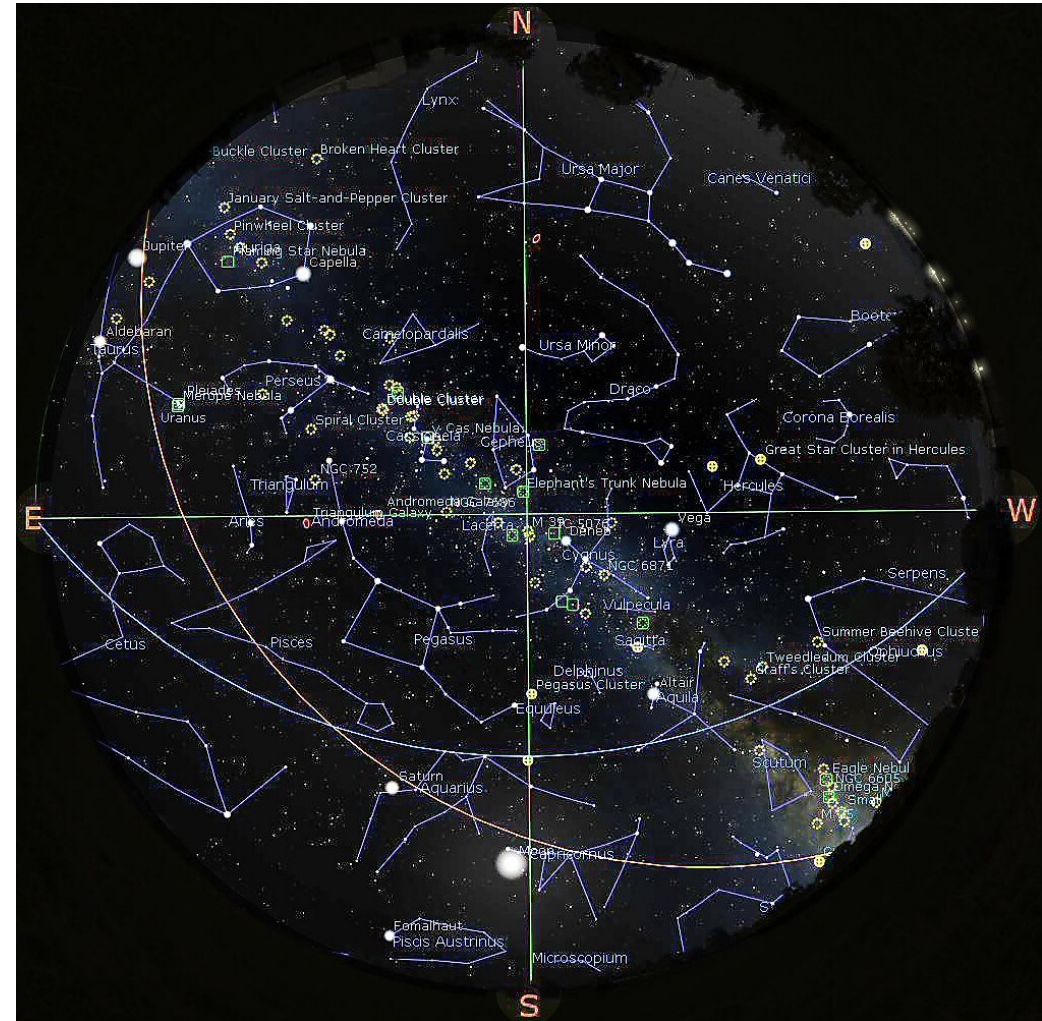
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Rugby & District Astronomical Society

Monthly Sky Notes

No. 177, September 2024, by Chris Longthorn



The night sky at 23:00 U.T.C., Sept 15th, 2024

Sky Events for Sept 2024

- 03 01:55 NEW MOON
- 05 02:00 Mercury at Greatest Elong: 18.1°W
- 05 10:13 Venus 1.2°N of Moon
- 05 18:56 ISS, 33°, SE
- 08 04:00 Saturn at Opposition
- 11 06:06 FIRST QUARTER MOON
- 12 04:48 ISS, 86°, NE
- 15 19:30 R&DAS Monthly Meeting
- 17 10:14 Saturn 0.3°S of Moon: Occn?
- 18 02:34 FULL MOON
- 18 02:44 Partial Lunar Eclipse; mag=0.085
- 20 23:00 Neptune at Opposition
- 22 10:17 Pleiades 0.2°S of Moon
- 22 12:44 Autumnal Equinox
- 24 18:50 LAST QUARTER MOON
- 30 21:00 Mercury at Superior Conjunction

August Image of the Month



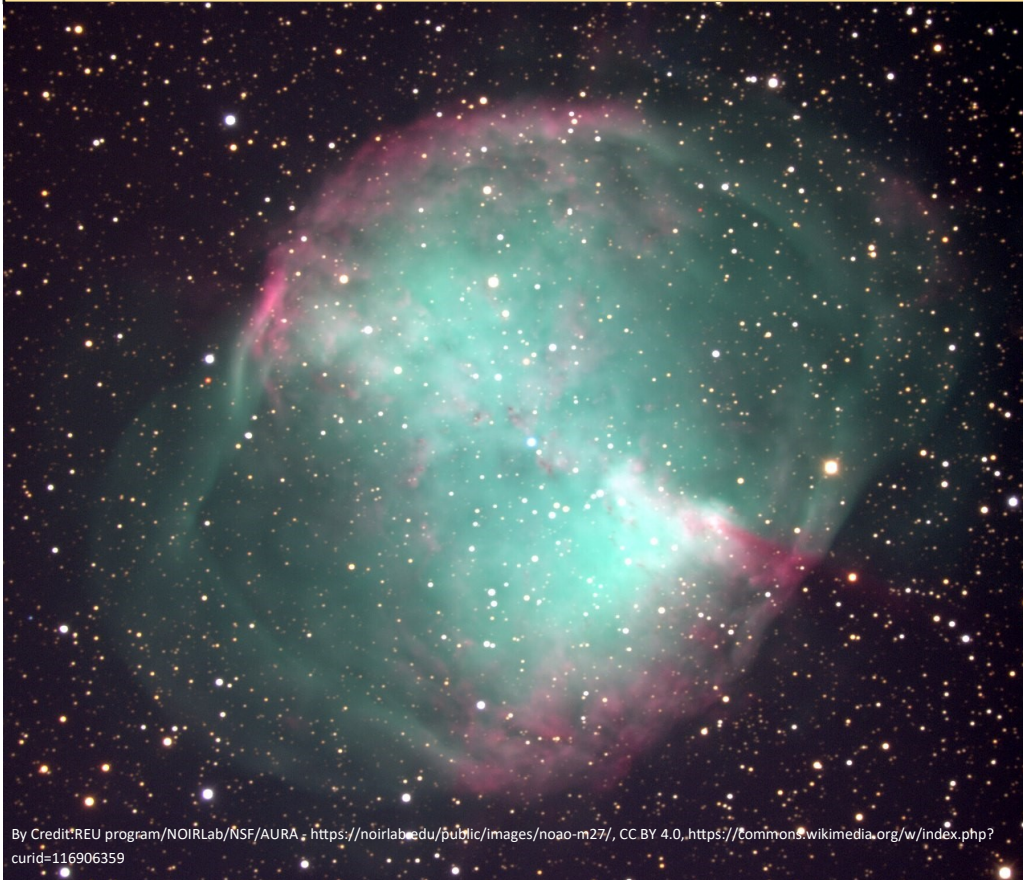
David produced this mosaic from a set of images that he sent in for the August meeting. There are 8 x 180 second exposures in each frame. The image shows the complexity of this area of the sky in great detail.

A very large constellation, Cygnus is bordered by Cepheus to the north and east, Draco to the north and west, Lyra to the west, Vulpecula to the south, Pegasus to the southeast and Lacerta to the east.

Cygnus culminates at midnight on 29 June, and is most visible in the evening from the early summer to mid-autumn in the Northern Hemisphere

Cygnus contains Deneb one of the brightest stars in the night sky and the most distant first-magnitude star – as its "tail star" and one corner of the Summer Triangle the constellation forming an east pointing altitude of the triangle. It also has some notable X-ray sources and the giant stellar association of Cygnus OB2. One of the stars of this association, NML Cygni, is one of the largest stars currently known. The constellation is also home to Cygnus X-1, a distant X-ray binary containing a supergiant and unseen massive companion that was the first object widely held to be a black hole. Many star systems in Cygnus have known planets as a result of the Kepler Mission observing one patch of the sky, an area around Cygnus.

Object of the Month for September

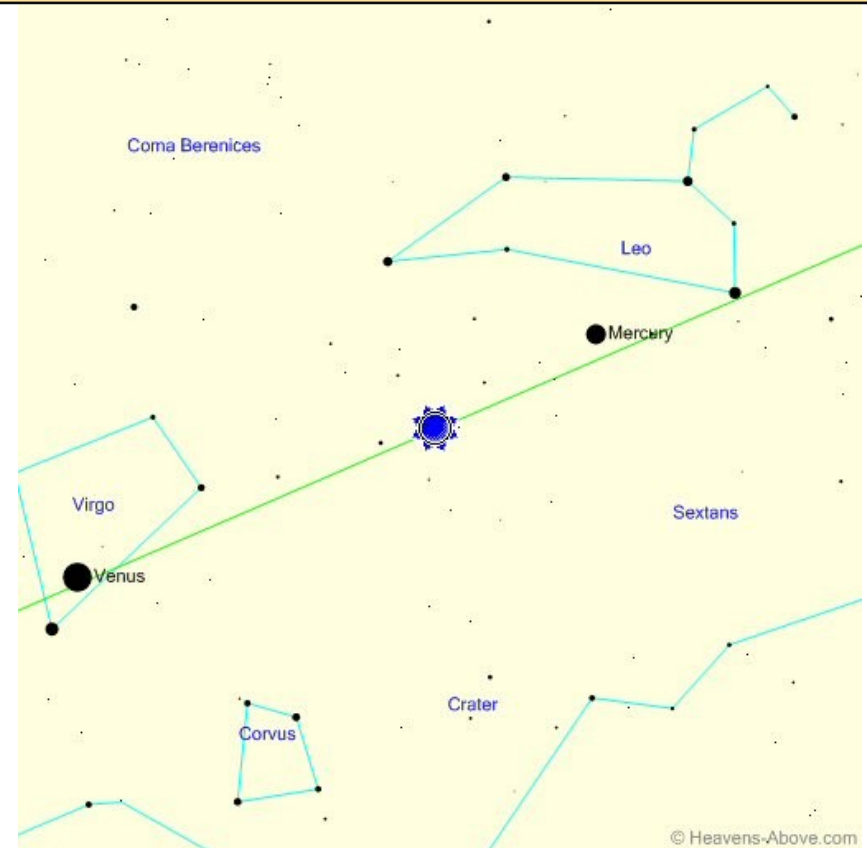


The Dumbbell Nebula (also known as the Apple Core Nebula, Messier 27, and NGC 6853) is a planetary nebula (nebulousity surrounding a white dwarf) in the constellation Vulpecula, at a distance of about 1360 light-years. It was the first such nebula to be discovered, by Charles Messier in 1764. At its brightness of visual magnitude 7.5 and diameter of about 8 arcminutes, it is easily visible in binoculars and is a popular observing target in amateur telescopes.

The Dumbbell Nebula appears shaped like a prolate spheroid and is viewed from our perspective along the plane of its equator. In 1992, Moreno-Corral et al. computed that its rate of expansion angularly was no more than 2.3 arcseconds per century. From this, an upper limit to the age of 14,600 years may be determined. In 1970, Bohuski, Smith, and Weedman found an expansion velocity of 31 km/s. Given its semi-minor axis radius of 1.01 ly, this im-

M27, The Dumbbell Nebula

The Sun, mid-September



Event	Time	Altitude	Azimuth
Astronomical twilight begins:	04:43	-18.0°	87°
Nautical twilight begins:	05:07	-12.0°	87°
Civil twilight begins:	05:31	-6.0°	87°
Sunrise:	05:52	-0.8°	87°
Maximum altitude:	11:55	87.3°	0°
Sunset:	17:58	-0.8°	273°
Civil twilight ends:	18:19	-6.0°	273°
Nautical twilight ends:	18:43	-12.0°	273°
Astronomical twilight ends:	19:07	-18.0°	273°
Minimum altitude:	23:55	-87.5°	1°

All data courtesy of Heavens-Above (www.heavens-above.com)

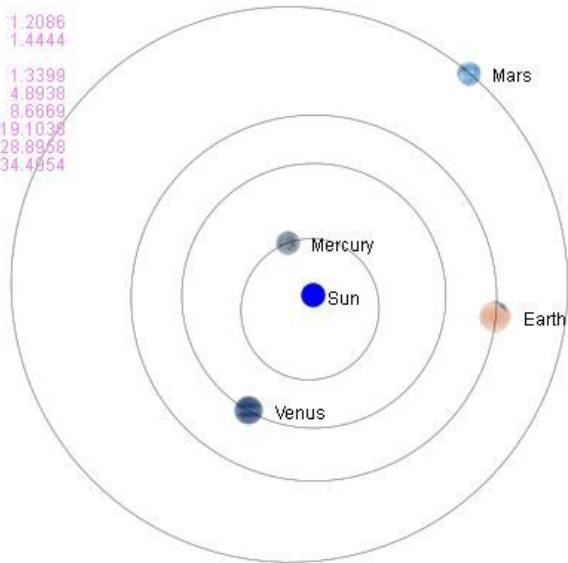
The Planets, mid September, 2024

Inner Solar System

2024-09-15 (BST)

23h00m

	Sun	Earth
Mercury	0.3196	1.2086
Venus	0.7249	1.4444
Earth	1.0054	
Mars	1.4833	1.3399
Jupiter	5.0490	4.8938
Saturn	9.6626	8.6669
Uranus	19.5712	19.1038
Neptune	29.8971	28.8958
Pluto	35.0983	34.4954

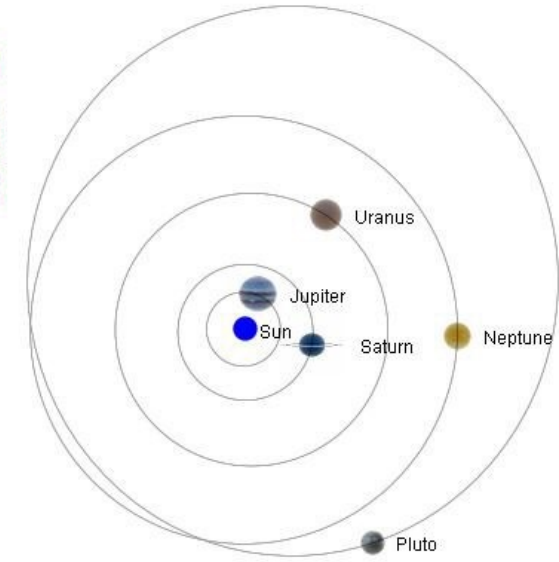


Outer Solar System

2024-09-15 (BST)

23h00m

	Sun	Earth
Mercury	0.3196	1.2086
Venus	0.7249	1.4444
Earth	1.0054	
Mars	1.4833	1.3399
Jupiter	5.0490	4.8938
Saturn	9.6626	8.6669
Uranus	19.5712	19.1038
Neptune	29.8971	28.8958
Pluto	35.0983	34.4954



	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	Pluto
Right ascension	10h 50m 47.1s	13h 18m 4.7s	6h 27m 9.3s	5h 17m 9.9s	23h 8m 29.6s	3h 38m 22.2s	23h 55m 53.2s
Declination	9° 12' 10"	-7° 45' 1"	23° 29' 6"	22° 21' 42"	-7° 54' 2"	19° 11' 9"	-1° 53' 26"
Range (AU)	1.21	1.444	1.34	4.893	8.667	19.103	28.896
Elongation from Sun	12.8°	27.7°	77.0°	93.1°	171.6°	116.4°	174.8°
Brightness	-1.1	-3.8	0.6	-2.2	0.6	5.7	7.8
Equatorial Diameter	5.56"	11.56"	6.99"	40.29"	19.18"	3.69"	2.36"
Phase Angle	44.2°	40.2°	41.3°	11.5°	0.9°	2.6°	0.2°
Constellation	Leo	Virgo	Gemini	Taurus	Aquarius	Taurus	Pisces
Meridian transit	11:08	13:36	06:47	05:38	23:27	04:00	00:18
Rises	05:07	07:36	00:47	23:36	17:28	21:57	18:15
Sets	17:09	19:36	12:46	11:37	05:30	09:59	06:17
Altitude	-80.5°	-50.2°	-24.1°	-8.2°	79.6°	14.9°	71.3°
Azimuth	346.1°	257.8°	64.1°	67.4°	139.8°	70.1°	95.9°