

Messier 8 - the Lagoon Nebula

The Lagoon Nebula (catalogued as Messier 8 or M8, NGC 6523, Sharpless 25, RCW 146, and Gum 72) is a giant interstellar cloud in the constellation Sagittarius. It is classified as a diffuse emission nebula, or H II region. The Lagoon Nebula was discovered by **Giovanni Hodierna** before 1654 and is one of only two star-forming nebulae faintly visible to the eye from mid-northern latitudes.

Seen with binoculars, it appears as a distinct oval cloudlike patch with a definite core. In the foreground is the open cluster NGC 6530. When seen through a

telescope of any size, the cluster is easily resolved and some of the details of the nebula can be seen. To see the entire Lagoon Nebula, it is best to use low magnification, as it is an exceptionally large object. The Lagoon Nebula contains at its centre a structure known as the Hourglass Nebula named by **John Herschel**, which should not be confused with the better known Hourglass Nebula discovered later with the Hubble Space Telescope in the constellation of Musca.

CHARACTERISTICS

The Lagoon Nebula is estimated to be between 4,000-6,000 light-years from the Earth. In the sky of Earth it spans 90' by 40', which translates to an actual dimension of 110 by 50 light years. Like many nebulas, it appears pink in time-exposure colour photos but is gray to the eye peering through binoculars or a telescope, human vision having poor color sensitivity at low light levels. The nebula contains a number of Bok globules (dark, collapsing clouds of proto-stellar material), the most prominent of which have been catalogued by **E. E. Barnard** as B88, B89 and B296. It also includes a funnel-like or tornado-like structure caused by a hot O-type star that emanates ultraviolet light, heating and ionizing gases on the surface of the nebula. In 2006 the first four Herbig–Haro objects were detected within the Hourglass, also including HH 870. This provides the first direct evidence of active star formation by accretion within it. *Herbig–Haro (HH) objects are small patches of nebulosity associated with newly born stars, and are formed when narrow jets of gas ejected by those stars collide with nearby clouds of gas and dust at speeds of several hundred kilometres per second. Herbig–Haro objects are ubiquitous in star-forming regions, and several are often seen around a single star, aligned with its rotational axis.*

The best time of year to observe the Lagoon Nebula is from mid-summer to mid-fall. However, as it is located in the southern sky (-24 degrees declination), it is much easier to observe the nebula from southern latitudes because it appears higher in the sky there. **M8 lies to the north of the spout of the Teapot, the asterism Sagittarius is well known for. It is easily seen without binoculars on winter nights in the southern latitudes as it lies in a dark part of the Milky Way.**

MOVIE FICTION

"Treasure Planet" (2002), an animated film written and directed by Ron Clements and John Musker. Teenage inkeeper and protagonist Jim Hawkins acquires a holographic map to the legendary Treasure Planet at the Lagoon Nebula from a dying space pilot.

"Home", Part 2 (2005), Battlestar Galactica science fiction television series, written by David Eick and Ronald D. Moore. Commander Adama and President Roslin lead the human forces to the Tomb of Athena on Kobol where, it is said, the pathway to the legendary planet Earth may be found. With the Arrow of Apollo, the mystic homing compass, the pilgrims realize that the alignment of the Lagoon Nebula, Caprica, and the Earth shows them at long last a pathway to their destination.

AK, with EarthSky and Wikipedia Notes



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This close-up shot of the centre of the Lagoon Nebula (Messier 8) clearly shows the delicate structures formed when the powerful radiation of young stars interacts with the hydrogen cloud they formed from. This image was created from exposures taken with the Wide Field Channel of the Advanced Camera for Surveys on Hubble. Light from glowing hydrogen (through the F658N filter) is coloured red. Light from ionised nitrogen (through the F660N filter) is coloured green and light through a yellow filter (F550M) is coloured blue. The exposure times through each filter are 1560 s, 1600 s and 400 s respectively. The blue-white flare at the upper-left of the image is scattered light from a bright star just outside the field of view. The field of view is about 3.3 by 1.7 arcminutes