

Jupiter

Jupiter is the largest planet in the Solar System and the fifth planet from the Sun. Mostly composed of hydrogen and helium, it is one of four gas giants. When observed from Earth, Jupiter can appear as the third-brightest object in the night sky, after the Moon and Venus.

Distance: 40 light-minutes
Instrument: MAD
Telescope: Melipal/Very Large Telescope (VLT)
Observatory: Paranal

The Lagoon Nebula — M8

This attractive and intriguing object is a giant interstellar cloud, 100 light-years across, mostly composed of hydrogen, where stars are forming. The name of the Lagoon Nebula derives from the wide lagoon-shaped dark lane located in the middle of the nebula that divides it into two glowing sections.

Distance: 4500–5000 light-years
Constellation: Sagittarius
Instrument: WFI
Telescope: MPG/ESO 2.2-metre
Observatory: La Silla



Towards the Galactic Centre

This stunning true-colour mosaic of the Galactic Centre, extending 34 by 20 degrees, shows the region spanning the sky from the constellation of Sagittarius (the Archer) to Scorpius (the Scorpion). The very colourful Rho Ophiuchi and Antares region is a prominent feature to the right, although much darker areas, such as the Pipe and Snake Nebulae also stand out. The dusty lane of the Milky Way runs obliquely through the image and is dotted with remarkable bright, reddish nebulae, such as the Lagoon and the Trifid Nebulae, as well as NGC 6357 and NGC 6334. This dark lane also hosts the very centre of our galaxy, where a supermassive black hole is lurking.

This mosaic was assembled from 52 different sky fields made from about 1200 individual images totalling 200 hours exposure time, with the final image having a size of 24 403 x 13 973 pixels.

Constellations: Scorpius, Sagittarius
Instrument: SBIG STL CCD
Telescope: 10-cm Takahashi FSQ106Ed f/3.6, NJP160 mount
Site: Paranal
Photographer: Stéphane Guisard/ESO



Omega Centauri

Thought to contain some ten million stars and around twelve billion years old, Omega Centauri is the most massive of all the Milky Way's globular clusters. Recent research suggests that there is a medium-size black hole sitting at its centre, which may indicate that Omega Centauri is in fact the heart of a dwarf galaxy that was largely destroyed in an encounter with the Milky Way.

Distance: 17 000 light-years
Constellation: Centaurus
Instrument: WFI
Telescope: MPG/ESO 2.2-metre
Observatory: La Silla



GIGAGALAXY ZOOM

ESO's GigaGalaxy Zoom: The Sky, from Eye to Telescope

Through three giant images, the GigaGalaxy Zoom project reveals the full sky as it appears with the unaided eye from one of the darkest deserts on Earth, then zooms in on a rich region around the centre of the Milky Way using an amateur telescope, and finally uses the power of a professional telescope to reveal the details of the iconic Lagoon Nebula.

In the context of the International Year of Astronomy 2009 (IYA2009) ESO's GigaGalaxy Zoom project aimed at connecting the sky as seen by the unaided eye with that seen by amateur and professional astronomers.

Most of the photographs comprising the three images were taken from two of ESO's observing sites in Chile, La Silla and Paranal. The wonderful quality of the images is a testament to the splendour of the night sky at these ESO sites, which are the most productive astronomical observatories in the world.

As a guide, the GigaGalaxyZoom trilogy is supplemented by other images — taken by ESO's telescopes — of remarkable objects that appear in the panorama.

Be ready for the most breathtaking dive ever made into our galaxy, linking the sky seen by us all with the cosmos studied by astronomers.

Visibility of the astronomical objects



The Carina Nebula

This region of intense star formation is one of the largest and brightest nebulae in the sky. It contains over a dozen monstrously large "baby" stars, such as Eta Carinae, which, with a mass of over 100 times that of the Sun, is one of the most massive stars in our Milky Way.

Distance: 9000 light-years
Constellation: Carina
Instrument: WFI
Telescope: MPG/ESO 2.2-metre
Observatory: La Silla



The Trifid Nebula — M20

This colourful stellar nursery owes its name to dark lanes that divide it into three reddish lobes, containing heated hydrogen gas that is being heated up by young hot stars. The bluish, smoky region that noticeably extends to the upper north and is due to dust, which scatters blue starlight more efficiently than other colours (the same phenomenon that gives us our blue skies).

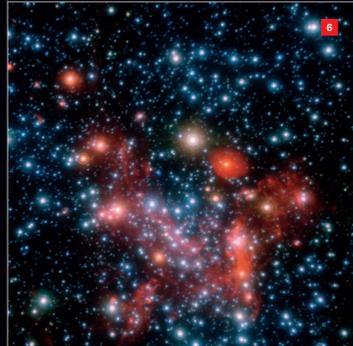
Distance: 5500 light-years
Constellation: Sagittarius
Instrument: WFI
Telescope: MPG/ESO 2.2-metre
Observatory: La Silla



The Galactic Centre

Hidden behind gigantic clouds of interstellar dust, the centre of the Milky Way contains a large number of stars orbiting a supermassive black hole known as Sagittarius A*. Thanks to ESO telescopes, these stars have been monitored for more than 16 years, revealing that the black hole has a mass about four million times that of the Sun.

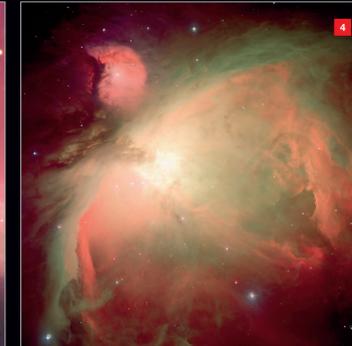
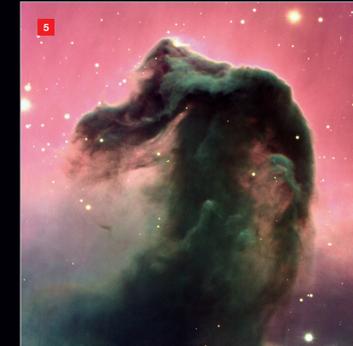
Distance: 27 000 light-years
Constellation: Sagittarius
Instrument: NACO
Telescope: Yepun/Very Large Telescope (VLT)
Observatory: Paranal



The Horsehead Nebula

This famous dark nebula, which owes its name to its distinctive shape, caused by thick dust, is situated in the Orion molecular cloud complex.

Distance: 1600 light-years
Constellation: Orion
Instrument: FORS2
Telescope: Yepun/Very Large Telescope (VLT)
Observatory: Paranal



The Orion Nebula — M42

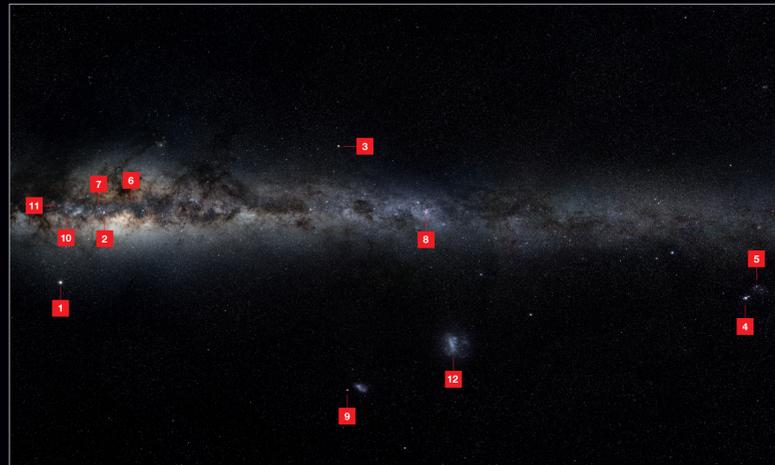
Located inside the constellation of Orion — one of the most recognisable groupings of stars in the night sky — this nebula is host to the Trapezium cluster, a grouping of about 1000 very young stars crowded into a space less than the distance between the Sun and its nearest neighbouring stars, the Alpha Centauri trio.

Distance: 1350 light-years
Constellation: Orion
Instrument: WFI
Telescope: MPG/ESO 2.2-metre
Observatory: La Silla

47 Tucanae

This is the second largest globular cluster in our galaxy and is close on the sky to the Small Magellanic Cloud.

Distance: 16 000 light-years
Constellation: Tucana
Instrument: FORS1
Telescope: Kueyen/Very Large Telescope (VLT)
Observatory: Paranal



The Magellanic Clouds

These two irregular dwarf galaxies are among the largest distant objects we can observe with the unaided eye. Together with our galaxy, the Milky Way, they belong to the so-called Local Group of galaxies. The Clouds take their modern name from the explorer Ferdinand Magellan, who first recorded their existence on his voyage of circumnavigation in 1519–1522.



The Tarantula Nebula

A gigantic star-forming region in the Large Magellanic Cloud.

Distance: 160 000 light-years
Constellation: Doradus
Instrument: WFI
Telescope: MPG/ESO 2.2-metre
Observatory: La Silla

This spectacular and highly active star-forming region hosts the famous "Pillars of Creation", which are gigantic towers of gas and dust within which matter clouds collapse under their own weight to form new stars.

The Eagle Nebula — M16



Distance: 7000 light-years
Constellation: Serpens
Instrument: WFI
Telescope: MPG/ESO 2.2-metre
Observatory: La Silla

The Swan Nebula — M17



Distance: 5000 light-years
Constellation: Sagittarius
Instrument: EMMI
Telescope: NTT
Observatory: La Silla

Also known as the Omega Nebula, this dazzling stellar nursery has recently spawned a cluster of massive, hot stars.