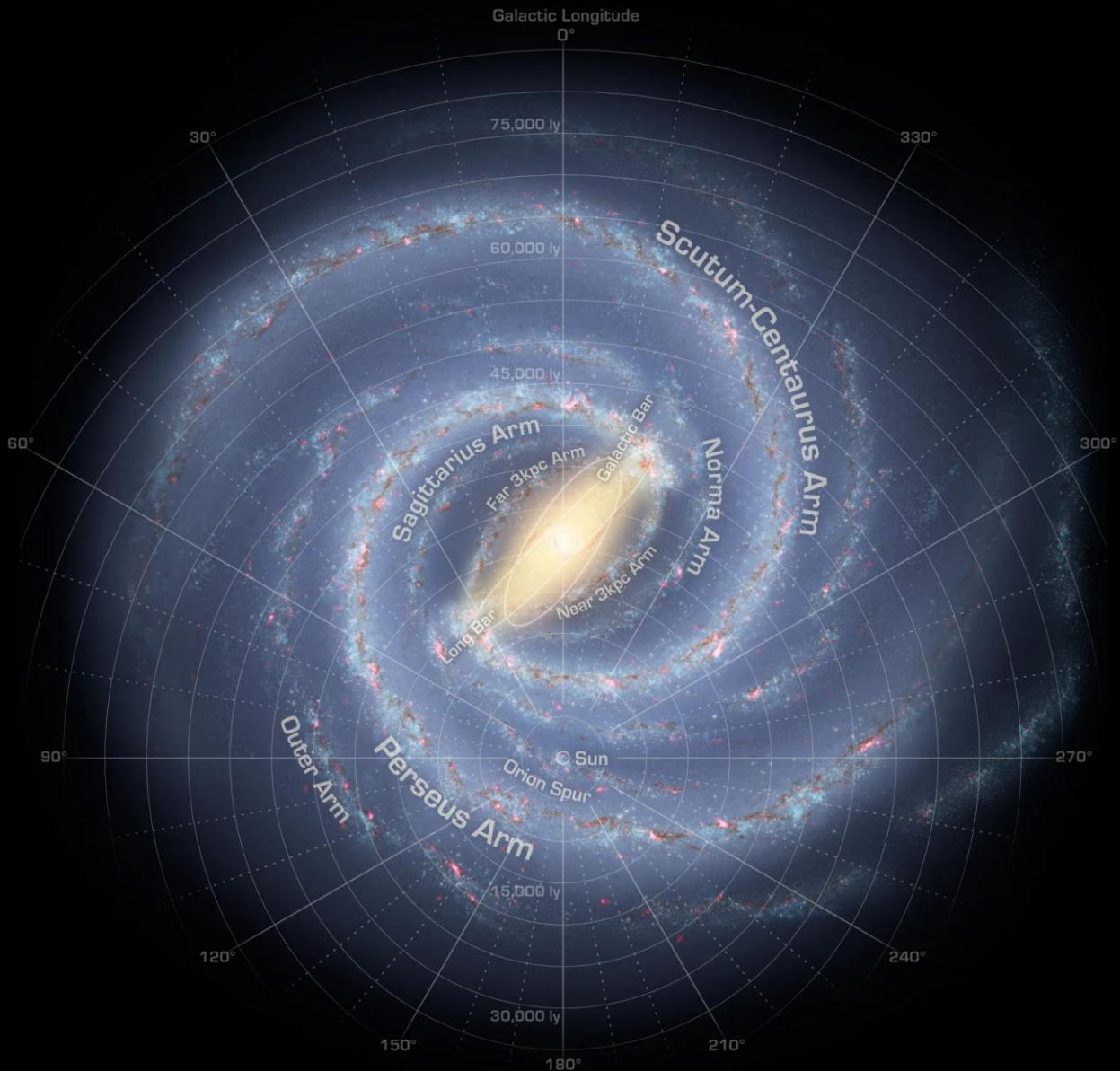


# THE MILKY WAY GALAXY

- The name "Milky Way" comes from a Greek myth involving the goddess Hera. According to the myth, Hera was nursing the infant Hercules when he suckled too forcefully, causing her to pull him away and spill her milk across the sky, creating the Milky Way.
- The Milky Way is a galaxy, one of perhaps 200 billion other galaxies in the observable Universe.
- The Milky Way is around 13.6 billion years old and contains about 200 to 400 billion stars.



- In visual wavelengths, just about everything we can see within the Milky Way is a star or energised gas, mainly hydrogen.
- The main components of the Milky Way, by proportion of mass, are stars at 5-10%, molecular hydrogen gas at 1-5%, dust at 0.1%, dark matter at 85-90%, and other components such as hot ionised gas and metals at 1-5%.
- Our solar system is located in the Orion-Cygnus Arm, about 26,000 light-years from the galactic centre.
- At the centre of the Milky Way lies a supermassive black hole called Sagittarius A\*, which has a mass of about 4 million times that of the Sun.

# THE MILKY WAY GALAXY

- There are an estimated 400 million smaller black holes scattered through the galaxy. These are remnants of supernova explosions of large stars, much bigger than our Sun.
- The Milky Way rotates, and it takes our solar system approximately 250 million years to complete one orbit around the galactic centre. The Sun's orbital speed around the Milky Way is about 220 km/s.
- The Milky Way has several spiral arms, including the Orion-Cygnus Arm where our solar system is located, and larger arms like the Perseus, Norma, and Sagittarius arms.
- The central region of the Milky Way, known as the galactic bulge, is densely packed with stars, gas, and dust, and is about 10,000 light-years across.
- The Milky Way has several smaller satellite galaxies, including the Large and Small Magellanic Clouds.
- The Milky Way is part of the Local Group, a cluster of over 30 galaxies, including the Andromeda Galaxy and the Triangulum Galaxy.
- The Milky Way is on a collision course with the Andromeda Galaxy, and they are expected to merge in about 4 to 4.5 billion years. The galaxies are racing toward each other at about 110km/s.
- The Milky Way is also being drawn by the gravitational pull of a cluster of galaxies called the Great Attractor, about 250 million light years away. We are approaching the Great Attractor at about 600km/s.
- From a dark-sky location, the Milky Way disk of stars appears as a hazy band of light stretching across the night sky, which is the combined light of billions of stars that cannot be individually distinguished by the naked eye.

