

All About Galaxies

- Galaxies are large collections of stars and gas and dust.
- Most galaxies are flat, but there are different shapes — some are spirals, some are elliptical, and some are irregular.
- A light year is the distance that light can travel in one year in a vacuum — about 6 trillion miles or 9.46053×10^{12} kilometers (farther than we can imagine!).
- Our Milky Way Galaxy is a spiral galaxy (looks a little like a pinwheel) about 100,000 light years across, with a bulge in the center, a flat disk with distinct spiral arms, and a surrounding halo of stars.
- We are in one of the spiral arms about two-thirds of the way from the center.
- On a very dark night, away from bright lights, you can see the Milky Way as a faint, hazy — or milky — band in the sky.
- The hazy appearance is because there so many stars that are very distant; your eyes cannot distinguish the stars as separate points of light. By using binoculars or a telescope, you can see the individual stars.
- Ancient Greeks believed the faint band they observed in the sky was a stream of milk — this band became our Milky Way. Interestingly, the Greek word “galaktos” — translated to the word “galaxy” — means “milk.”
- All the stars we see with our unaided eyes – about 6000! - are part of our Milky Way Galaxy.
- Our galaxy slowly spins and our solar system spins with it.
- Our solar system takes about 250 million years to make one complete orbit around the center of the galaxy.
- A black hole may reside at the very center of our galaxy.
- Our nearest galactic neighbor is Canis Major, a small galaxy orbiting the Milky Way at a distance of about 25,000 light years.
- The Andromeda Galaxy can be seen as a small blur of light near the constellation Andromeda.
- The Andromeda Galaxy, one of our nearest neighbors, is bigger than the Milky Way.
- The Andromeda Galaxy is about 2 million light years away.
- There are billions of other galaxies in our universe.