



The major arms consist of the highest densities of both young and old stars; the minor arms are primarily filled with gas and pockets of star-forming activity. The artist's concept also includes a new spiral arm, called the "Far-3 kiloparsec arm," discovered via a radio-telescope survey of gas in the Milky Way. This arm is shorter than the two major arms and lies along the bar of the galaxy. Our Sun lies near a small, partial arm called the Orion Arm, or Orion Spur, located between the Sagittarius and Perseus arms.

## BEYOND OUR SOLAR SYSTEM

Our Sun is one of at least 100 billion stars in the Milky Way, a spiral galaxy about 100,000 light-years across. The stars are arranged in a pinwheel pattern with four major arms, and we live in one of them, about two-thirds of the way outward from the center. Most of the stars in our galaxy are thought to host their own families of planets. Thousands of "exoplanets" have been discovered so far, with thousands more candidates detected and awaiting confirmation. Many of these newly discovered solar systems are quite different from our own.

All of the stars in the Milky Way orbit a supermassive black hole at the galaxy's center, which is estimated to be four million times as massive as our Sun. Fortunately, it is a safe distance from Earth, at around 28,000 light-years away. Our galaxy is one of countless billions in the universe, each having millions, or more frequently billions, of stars of its own.

We call our galaxy the Milky Way because it appeared to ancient observers to be a milky band of light—like a cosmic roadway—stretching across the dark sky.

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