

In the night sky Orion MOOC

Different types of galaxy

Monica Grady: Galaxies are categorized according to their apparent shape. These shapes are typically divided into elliptical, spiral or irregular. The shape of a galaxy gives a clue to the age and types of star within the galaxy.

Spiral galaxies have a central bulge of stars surrounded by a disk that contains 'arms' which form a spiral structure. Stars in the bulge of a spiral galaxy tend to be older and redder than the rest. There's also a much fainter, roughly spherical stellar halo encompassing the disc. An example of a spiral galaxy is one of our nearest neighbours, the Andromeda galaxy.

Barred spiral galaxies are spiral galaxies with a bar of stars across the middle of the galaxy. The Milky Way is thought to be a barred spiral galaxy, as are about two thirds of all observed spiral galaxies.

Spiral and barred spiral galaxies are sub-classified by how tightly wound the spiral arms appear.

Elliptical galaxies don't show any structure, but have a smooth ellipsoidal shape, appearing as large spherical or elliptical balls of stars. Elliptical galaxies can be classified in terms of how long and thin they appear. Elliptical galaxies don't actively create new stars, but usually contain very old stars and little gas and dust. The stars in an elliptical galaxy are often close together, making the centre seem like one giant star. If the Earth were inside an elliptical galaxy, the amount of light coming from the surrounding stars would mean that it would be bright all the time - no day and night.

Irregular galaxies are those with no defined shape. Many irregular galaxies probably used to be spiral or elliptical until they were disrupted by the pull of neighbouring galaxies.