

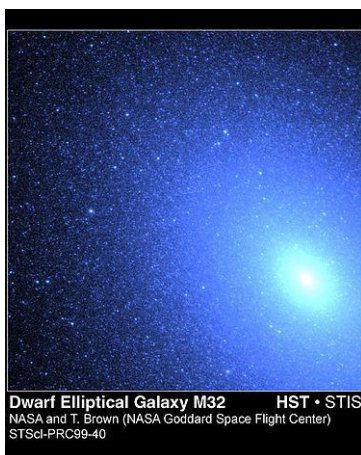
**Answer on Question #61096, Physics / Astronomy | Astrophysics**

Distinguish between elliptical, spiral and elliptical galaxies and give one example of each type of galaxy.

**Solution:**

**Elliptical galaxies** are not divided into sub-groups. The internal structures of these galaxies were no found. They have the appearance of spots. They resemble the correct ellipses which have different degrees of flattening. These galaxies have an ellipsoidal profile, giving them an elliptical appearance regardless of the viewing angle. Their appearance shows little structure and they typically have relatively little interstellar matter. Consequently, these galaxies also have a low portion of open clusters and a reduced rate of new star formation. Instead they are dominated by generally older, more evolved stars that are orbiting the common center of gravity in random directions.

Examples: IC 1101, one of the largest galaxies in the observable universe; Maffei 1, the closest giant elliptical galaxy.



Dwarf Elliptical Galaxy M32 HST • STIS  
NASA and T. Brown (NASA Goddard Space Flight Center)  
STScI-PRC99-40

**Spiral galaxies** depending on the degree of spirals are divided into subgroups Sa, Sb, Sc. In type Sa the major part is a nucleus, spirals are mild. In type Sb the spirals developed more. In type Sc almost all the material is concentrated in the spiral arms, while the core is weak. Spiral galaxies resemble spiraling pinwheels. Though the stars and other visible material contained in such a galaxy lie mostly on a plane, the majority of mass in spiral galaxies exists in a roughly spherical halo of dark matter that extends beyond the visible component.

Examples: Andromeda Galaxy, Triangulum Galaxy.



Pinwheel Galaxy

More recently allocated the galaxies type SO, which are intermediate between elliptical E and spiral S.

#### **The rotation of galaxies**

In 1917 it was discovered the rotation of spiral galaxies. The core of the galaxy rotates as a solid. Time intervals: of 50 to 500 million years. Elliptical galaxies rotate much more slowly.