

Classifying Galaxies

Week 21

Elliptical Galaxies

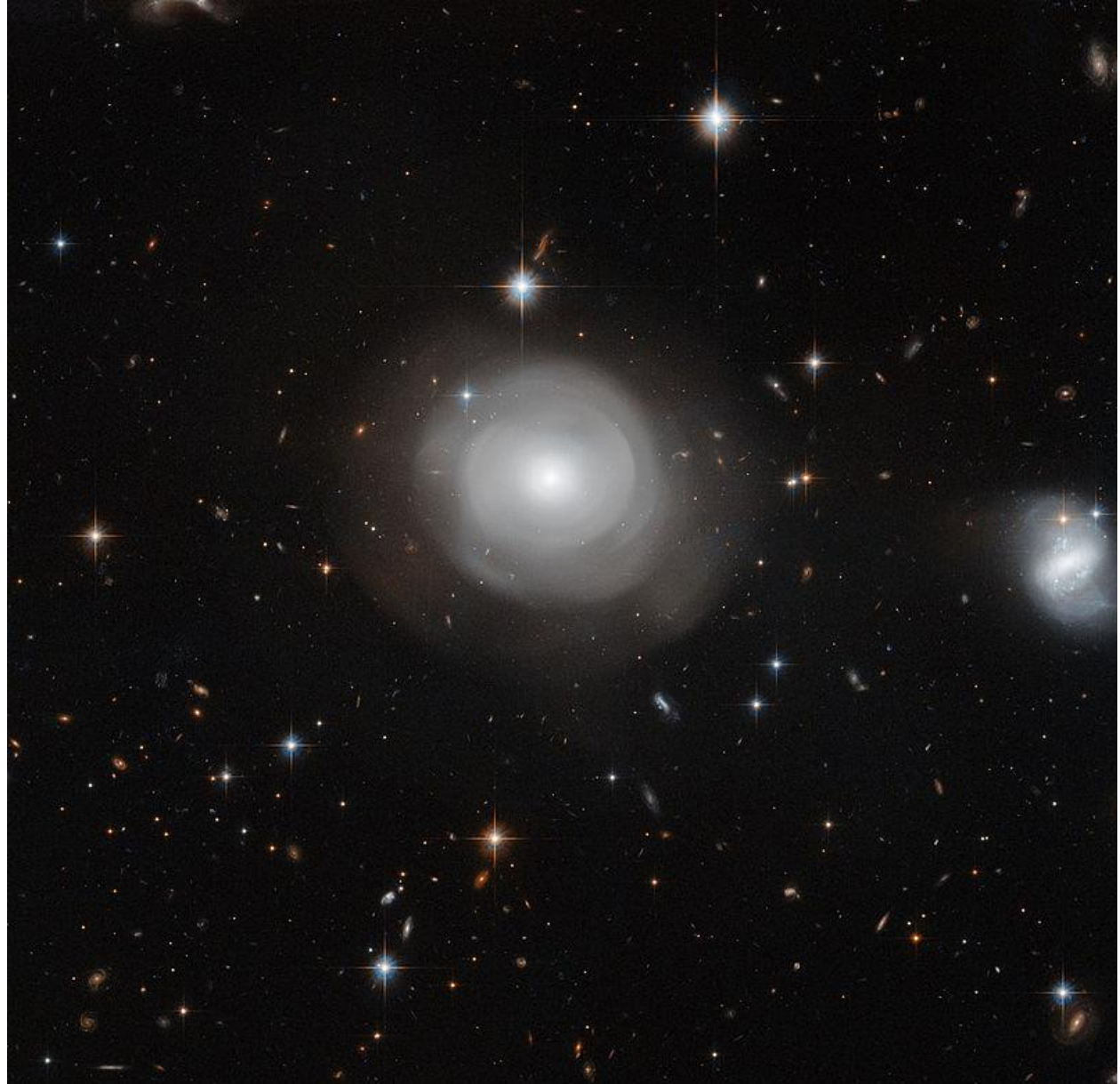
The galaxy has an elliptical shape and the stars are in random orbits around the centre. The appearance is much smoother than spiral galaxies.



Lenticular Galaxies

The galaxy has a disc shape but doesn't have spiral arms (or at least they aren't prominent).

There is very little gas in a lenticular galaxy.



Spiral Galaxies

The stars and gas are concentrated in one or more spiral 'arms'
There is a central point called the bulge



Barred Spiral Galaxies

Same as a spiral galaxy except the central bulge is long like a bar.

Bars are found in roughly two-thirds of all spiral galaxies.



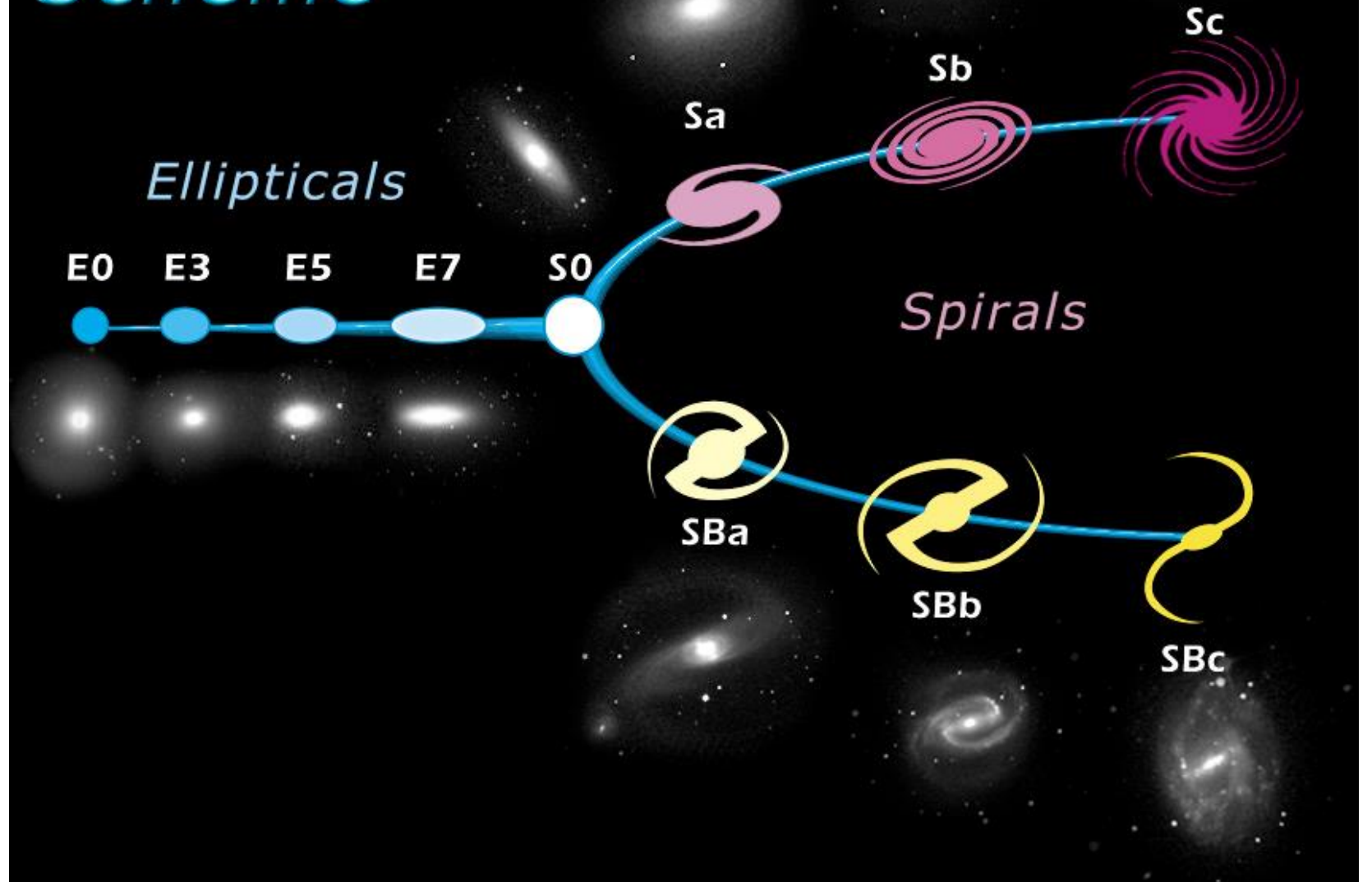
Irregular Galaxies

The doesn't have a regular shape or a central 'bulge' or spiral arm structure. About 3% of galaxies are classified as irregular.



Hubble 1926

Edwin Hubble's Classification Scheme



Classifying spiral and barred spiral galaxies

- Sa or SBa tightly wound, smooth arms; large, bright central bulge
- Sb or SBb less tightly wound spiral arms than Sa (SBa); somewhat fainter bulge.
- Sc or SBc loosely wound spiral arms, clearly resolved into individual stellar clusters and nebulae; smaller, fainter bulge.

Classifying Elliptical Galaxies

- E_0 Ellipticity of the galaxy = 0 (meaning it's round)
- $E_1 - E_7$ Ellipticity increases as the number increases.