

Kim McAlpine

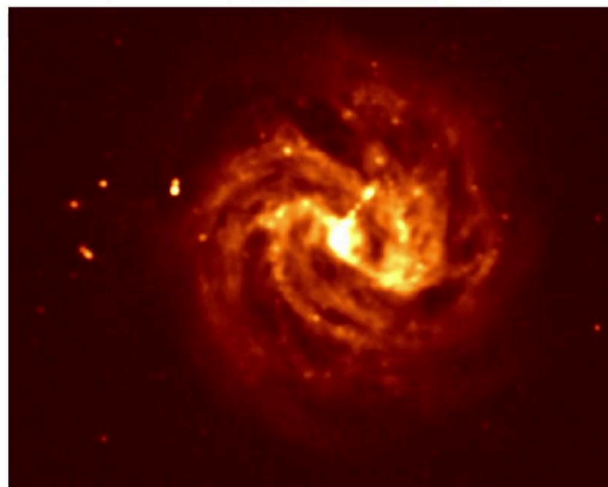
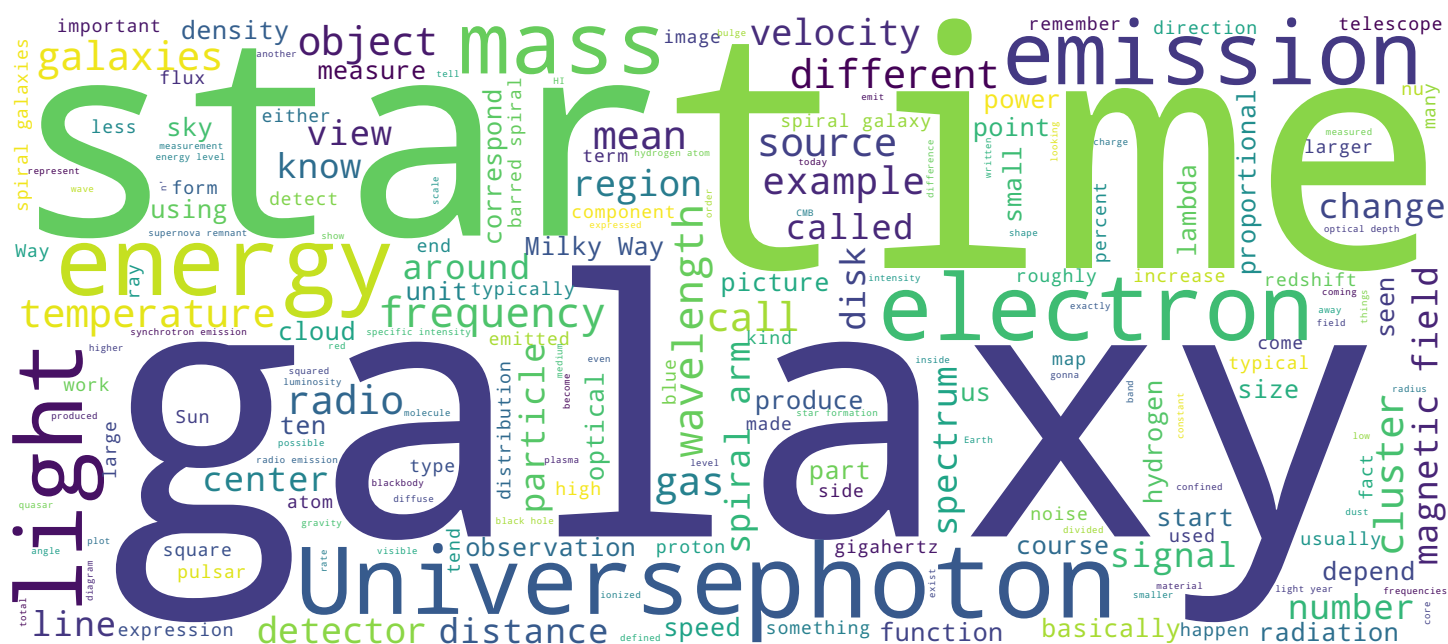


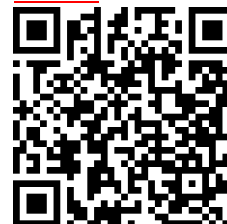
Image courtesy of SARAO

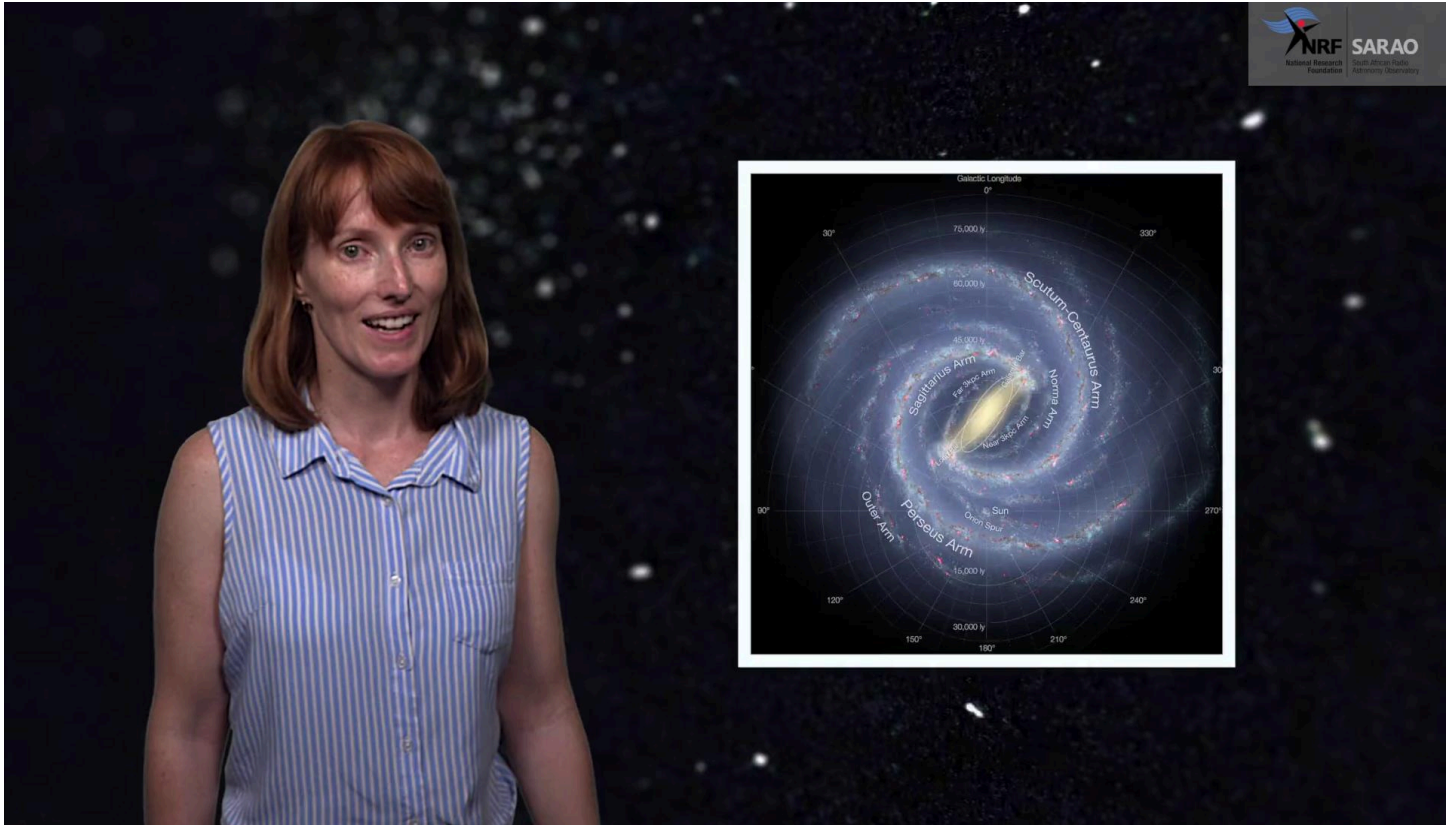


## Search MOOC



## Video





The Sun our closest star is just one of the 200 billion stars that make up our galaxy the Milky Way. A galaxy is a system of stars, gas and interstellar dust that are all bound together by gravity. The Milky Way is a spiral galaxy and behind me is an artist's impression of what our galaxy would look like if we were able to view it from afar. Our Sun is located in one of the spiral arms about 25,000 light-years from the center of the galaxy.

Notes


Summary

0m 05s



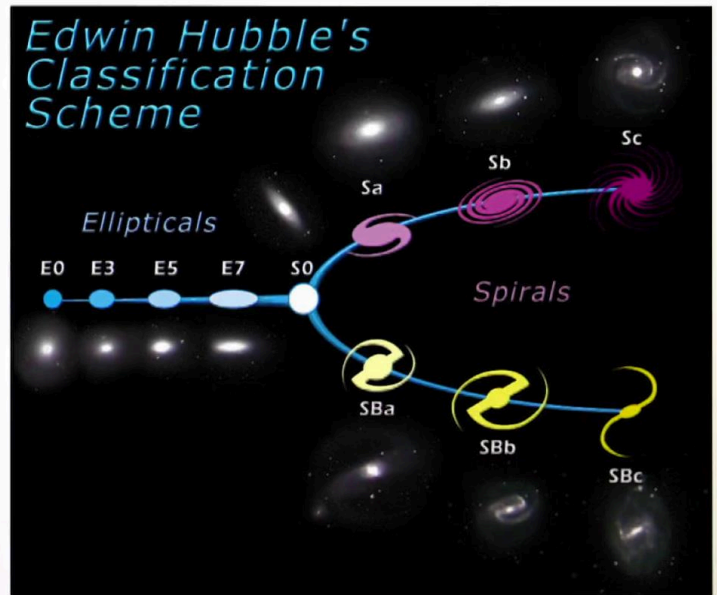
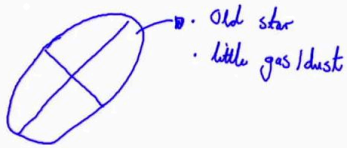
- Notes

Summary





# Normal Galaxies



The Radio Universe

Galaxies come in a variety of types and they are classified according to Edwin Hubble's classification scheme which is schematically drawn in this figure. This is sometimes called the tuning fork because of these two arms in the diagram. One of the main kinds of galaxies are elliptical galaxies. These galaxies are roughly spherical in shape but they can be slightly elongated in one axis giving them a kind of rugby ball type shape. All the ellipticals are in this part of the diagram and they go from a classification of 'E0' to 'E7' where the increasing number just represents an increase in the ratio between the major axis and the minor axis so that E0's are the most circle and E7's are the most elliptical or elongated. Elliptical galaxies consist mostly of old stars so they are not actively forming stars and they appear to have very little gas or dust within the galaxy. The other major kind of galaxies are spiral galaxies. So spiral galaxies have spiral arms which exists in a disk like structure and there are two major kinds of spirals. You get ordinary spirals which are in this part of the diagram or you get barred spirals where a barred spiral is just a spiral galaxy which has a stellar bar so elongated bar like shape with stars in them as well as spiral arms.

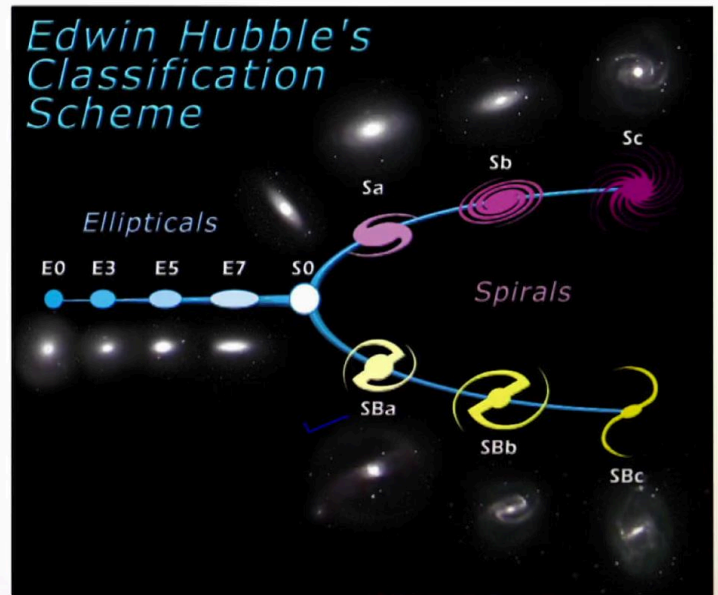
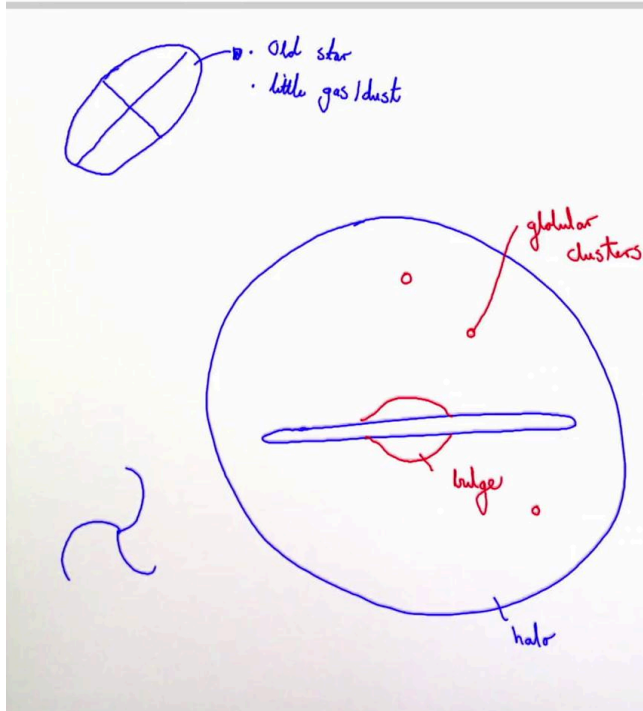
Notes

Summary





# Normal Galaxies



The Radio Universe

So spiral galaxies have a stellar disk. What that means is that if you view them from the top so face-on then you see the familiar spiral arms of the galaxy. But if you were to view this galaxy from the side, if you were to view it edge-on, you'd see that the spiral arms are confined in a flat disk like region. In the center of this disk like region is a stellar bulge so this is a region that sticks up slightly above and below the disk with a large concentration of extra stars. Both the disk and the bulge are embedded in a larger spherical halo of hot gas which is called the Galactic halo. Most of the gas, dust and active star formation in this galaxy are confined to the disk and the bulge. However, there are clusters of all the stars that sit in the halo of the galaxy and these are called globular clusters. The spiral galaxies are classified according to how large their bulge is and how tightly wound these spiral arms are. So 'Sa' galaxies, for example, have larger bulges and tightly wound spiral arms while Sc's have smaller bulges and more loosely wound spiral arms and the same classification applies for the barred spiral galaxies. Our galaxy, the Milky Way, is thought to be a barred spiral galaxy.

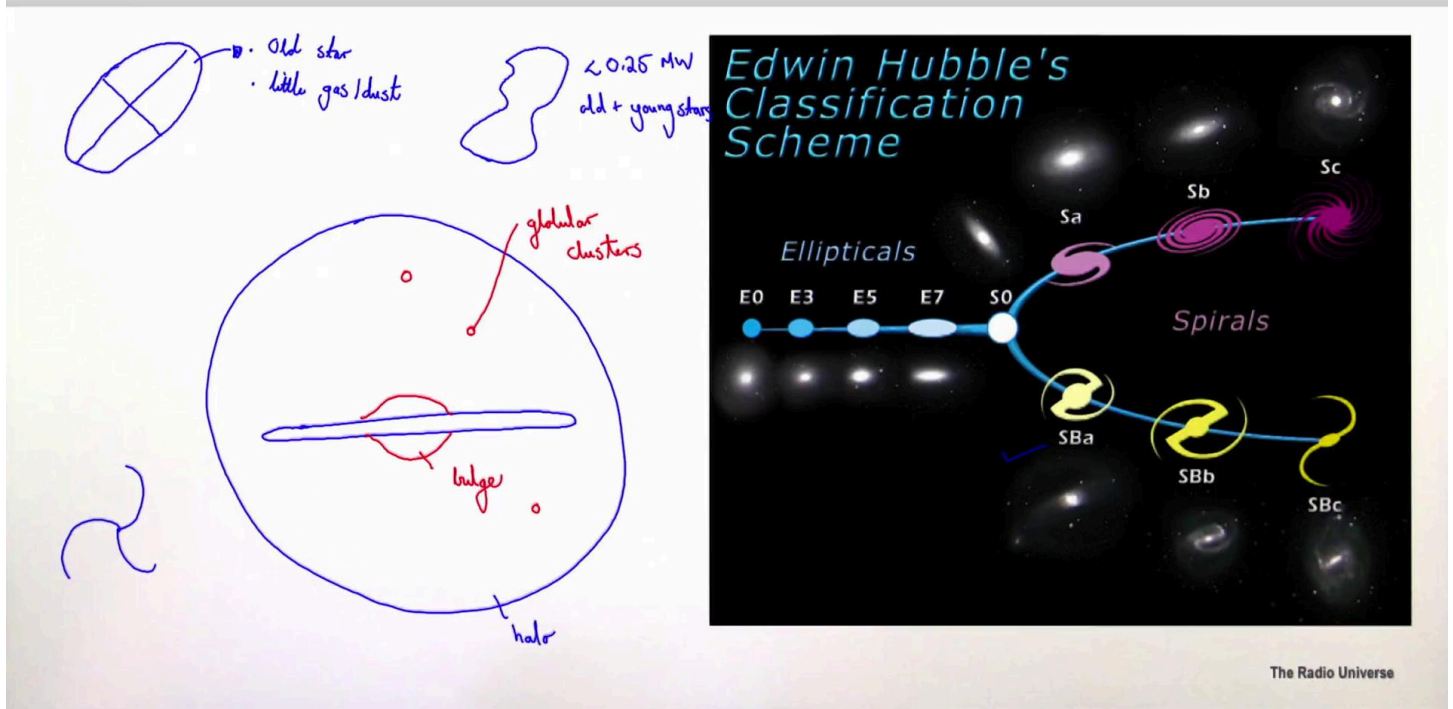
Notes

Summary



3m 03s

# Normal Galaxies



Another kind of galaxy that exists are irregular galaxies. These are exactly what they sound like. These are smaller galaxies which have a slightly irregular shape that doesn't fit into the elliptical classical disk spiral galaxy classification. These tend to be very small with masses that are less than a quarter of the mass of the Milky Way and they tend to have a mix of old and young stars.

Notes

Summary



4m 39s