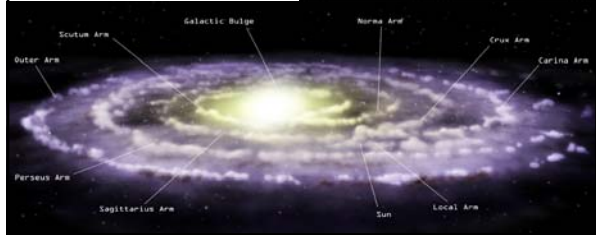


# Milky Way Galaxy

Cosmology:  
 W. Herschel  
 H. Shapley  
 Shapley vs. Curtis  
 Structure of our galaxy  
 Mapping our galaxy (21cm size, population, motion)



# Telescope of the Mid-nineteenth Century



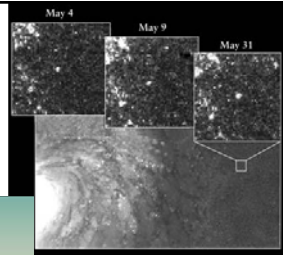
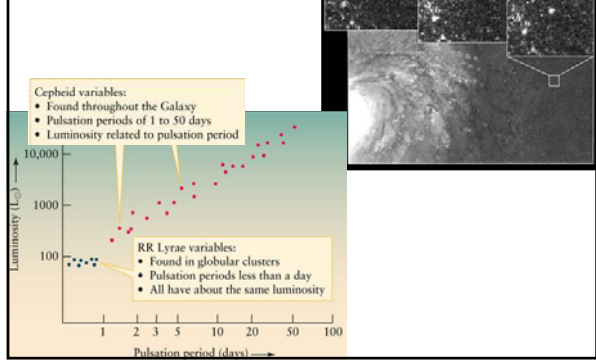
Built by the Earl of Rosse in 1845, a 1.8-m-diameter telescope.



b. Lord Rosse's sketch of the spiral structure of the galaxy M51  
 c. A modern photograph of M51 (also called NGC 5194)



# Messier 100 and Cepheids

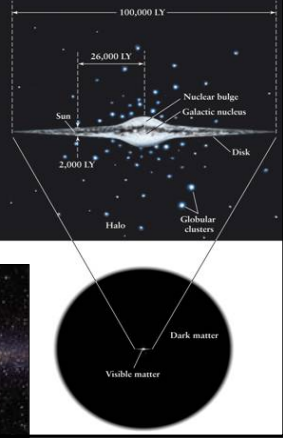


# Mapping the Galaxy

Above: Synchrotron radiation or 21cm line  
 Top Right: Measure the Doppler shift of 21cm line to determine the structure / motion  
 Right: structure of MWG

# Our Galaxy

- Diameter is about 100,000 ly
- Sun about 26,000 ly from the galactic center
- Disk contains gas, dust and Population I stars
- Halo is composed mostly of Population II stars.



# Galactic motion

