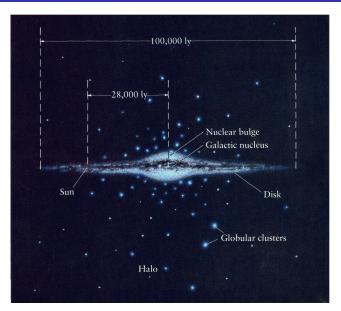
How Much Does a Galaxy Weigh?



NGC3198

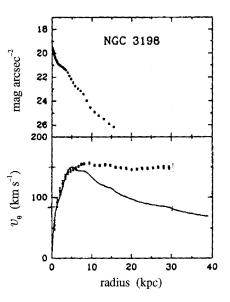
Dark Matter

Galactic Structure

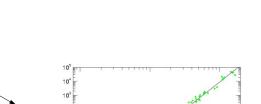


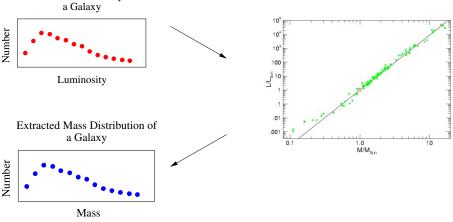
How Much Does a Galaxy Weigh?

Consider the light profile (top panel) and rotation curve (bottom panel) for the spiral galaxy NGC3198. The bottom panel shows the observed rotation curve (dots) and the rotation curve (solid line) expected for the light distribution of the top panel. (1) What is the rotation curve implied by the measured light curve? (2) What is the density curve implied by the measured rotation curve? (3) What is the ratio of the masses calculated in Parts 1 and 2.

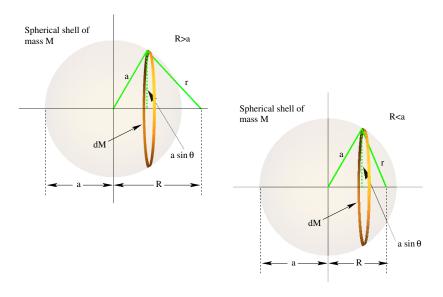


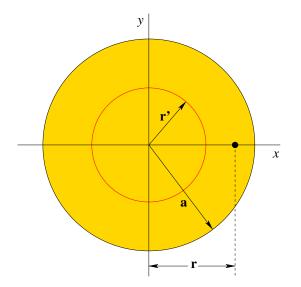
Measured Luminosity of





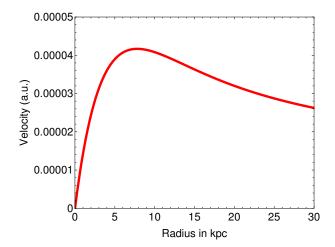
Potential From a Uniform Spherical Mass

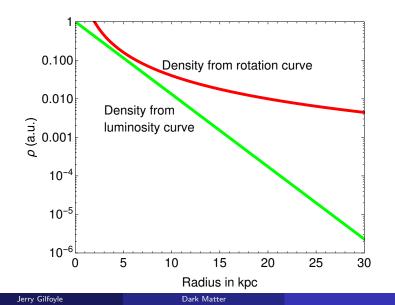


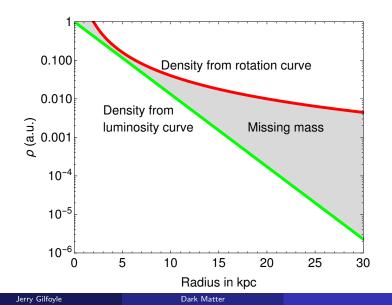


6

Rotation Curve Based on Observed Luminosity Distribution for NGC3198 7

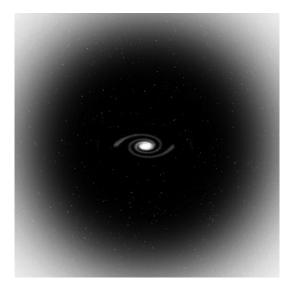




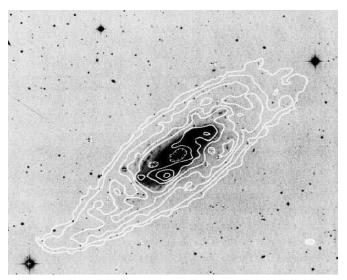


What Do Galaxies Really Look Like?





How big is NGC3198?



Radio image of NGC3198 atop a negative of an optical picture.