

Astro400B Research Topic Assignment

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1 Research Project Topic 1

Topic 4: MW/M31 Dark Matter Halo Major Merger Remnant

2 Research Question 1

Density Profile of the Merged Dark Matter Remnant What is the density profile of the combined MW + M31 halo? How does this compare to the original profile of each galaxy halo? How does this compare to a Hernquist profile or other dark matter profile (e.g., NFW, Isothermal Sphere)?

3 Research Project Topic 2

Topic 3: MW/M31 Galaxy Major Merger Remnant

4 Research Question 2

Stellar Density Profile of the Merged Bulges and Disks How well is the remnant described as a classical elliptical galaxy based on its surface density profile? What is the best fit Sersic profile?

The topics are listed in order of preference