

Research Assignment

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Here are my top three choices for the research assignment. Please note that I would prefer one of the MW/M31 Dark Matter Halo Major Merger Remnant options over the bar evolution question, but do not have a strong preference between the two. Feel free to assign me which ever is most convenient for you.

1 MW/M31 Dark Matter Halo Major Merger Remnant

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)?

What is the contribution of the MW vs. M31 halo particles to the density profile/shape/or kinematics of the merged remnant? Does the contribution from each galaxy have the same spatial orientation/angular momentum direction?

2 Galaxy Merger Sequence of MW and/or M31: stellar evolution through close encounters

How do the bars within both galaxies evolve? What happens to those bars after the merger?