

1. In this simulation, the total mass of the Milky Way and of M31 are the same, at $2.06 \cdot 10^{12} M_{\text{sun}}$. However, M31 has nearly twice the amount of disk mass and bulge mass as the Milky Way, making it much more star filled. This is why M31 appears much larger than the Milky Way, because a lot more of the Milky Way's mass comes from the dark matter in the halo.
2. Since M31 has nearly twice the amount of stellar mass as the Milky Way, it should be more luminous. This is assuming that the stellar population is approximately the same as the Milky Way's stellar population in terms of fraction of high and low mass stars. Since both galaxies are spiral and therefore star forming, we can assume that.
3. The ratio of dark matter between M31 and the Milky Way is 0.975, which is really high considering the ratio was closer to 2.0 for both the disk and bulge mass.
4. The baryon fraction for each of the galaxies is $f_{\text{bar,MW}} = 4.1\%$, $f_{\text{bar,M33}} = 4.6\%$, and $f_{\text{bar,M31}} = 6.7\%$. All of these values are much lower than the 16% quoted for the Universe. This could be bias, as we have only taken into account the three galaxies in our local group, when in reality there are hundreds of thousands of galaxies in the universe. Elliptical galaxies likely have a much higher f_{bar} ratio, which could contribute to this difference