2/6/2020 GalaxyMass

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In [67]: table
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Out[67]:

	Galaxy name	Halo Mass ($10^{12} M_{\odot}$)	Disk Mass ($10^{12} M_{\odot}$)	Bulge Mass ($10^{12} M_{\odot}$)	Total Mass ($10^{12} M_{\odot}$)	Bayron Fraction
0	MW	1.975 solMass	0.075 solMass	0.01 solMass	2.06 solMass	0.04126213592233009
1	M31	1.921 solMass	0.12 solMass	0.019 solMass	2.06 solMass	0.0674757281553398
2	M33	0.187 solMass	0.009 solMass	0	0.196 solMass	0.04591836734693877
3	Local Group				4.316 solMass	0.053985171455050975

- 1.- The mass of MW and M31 are very similar in this simulation. They are almost identical, so they both dominate the total mass.
- 2.- The stellar mass of M31 is actually bigger than that of MW. Therefore I would think M31 is more luminous that MW.
- 3.- The total dark matter of MW is about the same for M31. The ratio MW/M31~1.03. It is a little bit surprising that even though MW has about the same total dark matter, M31 has a stellar mass ~1.6 MW
- 4.- The baryon fraction for each galaxy is about ~4%-6% with the local group having ~5% of baryon mass vs dark matter. Is is much smaller that the universal baryon fraction. Maybe this ratio is much smaller for this galaxies because they've been expelling material through AGN and SN feedback. Maybe also by interacting with nearby satellite galaxies that might pull material out of them.

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