

A SYNOPTIC VIEW OF THE MAGELLANIC CLOUDS:
VMC, GAIA AND BEYOND

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Planes of Satellite Galaxies

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Both the Milky Way and the Andromeda galaxy are known to host highly flattened planes of satellite galaxies. These display coherent kinematics, which is consistent with many of their satellite galaxies co-orbiting along the structures. In addition, we recently discovered that a similar satellite structure around Centaurus A also shows coherent kinematics, constituting the third such system studied in detail and the first clear evidence of a plane of satellites outside the Local Group. I will discuss the observational evidence for these structures (in particular in light of Gaia proper motions), how they compare to expectations derived from cosmological simulations based on the Λ CDM model, and whether there is evidence that the inclusion of baryonic processes in simulations can alleviate the existing tension. Particular emphasis will be put on the satellite and dwarf galaxy structures in the Local Group and how they relate to the Magellanic Clouds and the Magellanic Stream.