

Commission 33: Structure and Dynamics of the Galactic System

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1. Meetings and Reviews

The commission supported the following IAU symposia and colloquia during the period 2002 to 2005: *Dark Matter in Galaxies* (IAUS220), *Gravitational Lensing Impact on Cosmology* (IAUS225); *Transit of Venus: New Views of the Solar System and Galaxy* (IAUC196); *Populations of High-Energy Sources in Galaxies* (IAUS230); *Scientific Requirements for Extremely Large Telescopes* (IAUS232).

There were of course numerous other meetings of interest to members of the commission and in which commission members participated. Listing only conferences of very direct relevance to the science of commission 33, and which have published proceedings, we find the following between 2002 and 2005: *Galaxy and Stellar Dynamics* (Boily *et al.* 2003); *The central 300 parsecs of the Milky Way* (Cotera *et al.* 2004); *How Does the Galaxy Work?* (Alfaro *et al.* 2004); *Satellites and Tidal Streams* (Prada *et al.* 2004); *From Cosmological Structures to the Milky Way* (Rösser 2005); *The Three-Dimensional Universe with Gaia* (Turon *et al.* 2005); *Resolved Stellar Populations* (Valls-Gabaud & Chavez 2005); *The Local Group as an Astrophysical Laboratory* (Livio & Brown 2005); *The Initial Mass Function 50 years later* (Corbelli 2005).

In addition to the reviews presented in the above and other conference proceedings Freeman & Bland-Hawthorn's (2002) overview of the formation of the Galaxy, and Reid's (2005) discussion of white dwarfs and their velocities are worth noting.

2. Discussion

The field has advanced on many fronts during the last three years and progress is accelerating as ever more survey results (SDSS, HESS, ChaMPPlane, 2MASS, DENIS, QUEST, GLIMPSE, IGPS, various HI and CO surveys, assorted SiO and other Maser surveys, plus continuing micro-lensing investigations, GSC-II and many more) become available, particularly as it becomes easier to cross-correlate and link the results from widely disparate projects. The surveys of import to galactic structure studies cover the full spectral range from the radio HI and stellar maser work up to the very high energy γ -ray coverage of the galactic plane, even if insight into galactic structure is sometimes simply a spin-off from the original objective.

Evidence for substructure in the halo of our Galaxy has increased dramatically since the discovery of the Sagittarius Dwarf in 1994 and this is perhaps the most outstanding development in the field in recent years. The important, possibly dominant, contribution of accreted dwarf galaxies to the structure and substructure of the Milky way is generally

acknowledged and much recent effort has been concentrated on using this insight to probe the distribution of dark matter.

References

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