

Title: New adventures of an Old Bulge; the Milky Way Bulge in the 21st century

Abstract: The last decade has seen a revolution in our understanding of galaxy bulges, including the bulge of our own Milky Way galaxy. Containing a significant fraction of the stellar mass in most disk galaxies, these roughly spheroidal structures are important players in the formation and evolution of galaxies through cosmic time. Since the Milky Way bulge is so much closer than those of even the nearest galaxies, models can be tested to a level of detail simply not observationally feasible for any exterior galaxy, and thus our own bulge is a vital object to understand if we wish to make progress in understanding structure formation in the Universe.

Despite careful observation, however, several basic parameters of the Milky Way bulge have been controversial for decades, since measurement of a major galactic component from within the same galaxy presents special challenges of its own. Some of the questions to be settled include: (i) exactly which way is our own Milky Way bulge oriented? (ii) Are bulge stars indeed entirely "old," or have there been recent waves of star formation within the bulge over the last few billion years? For that matter, (iii) how many structures are present (e.g. single "bulge" vs "bar" vs "bar plus bulge")?

A number of highly complementary observing campaigns are starting to shed light on these questions, with some startling recent results. I will present current indications from a number of these campaigns, both from the ground and space, and highlight some of the exciting opportunities we can expect as the next generation of large ground-based surveys come online in the next decade.