



X-RAY ASTRONOMY 2019

Current Challenges and New Frontiers in the Next Decade

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XMM-Newton Survey of Magellanic Bridge

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Along with available optical data of the Magellanic Bridge (the interconnecting region between the Small & Large Magellanic Cloud), we aim to characterise the X-ray binary population as a function of the local stellar population (in terms of age, metallicity, and stellar density) in the Bridge. Gardiner & Noguchi (1996) suggests that closest approach between Small & Large Magellanic Cloud, as evidenced by dramatic phase shift in star formation, occurred approximately ~200 Myr ago. During the approach, gas had been tidally stripped (most likely from the Small Magellanic Cloud) into the interconnecting Bridge. According to models of star formation history (Harris 2007), alongside optical surveys of the Bridge, there is strong evidence to suggest that the young, low metallicity stellar population formed in situ, rather than being tidally stripped from either Magellanic Cloud. Studying this region enables for a closer look at galaxy mergers, as well as how this environment (gas density, metallicity) affects star formation. Thus the Magellanic Bridge gives us a window into galaxy interaction mechanics, as it contains resolvable X-ray and optical sources. X-ray data is obtained through the XMM-Newton from three separate fields, located near the Western Bridge, which coincides with available optical data. X-ray binary candidates will be followed up with spectroscopic analysis, using the 1.9m telescope located in Sutherland.

Topic

Compact and diffuse sources in galaxies and in the Galactic Center

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