



- RAY ASTRONOMY 2019

Current Challenges and New Frontiers in the Next Decade

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Feeding neutron stars and black holes by fresh stellar winds

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High-mass X-ray binaries (HMXB) represent an important evolutionary stage in lives of many massive stars. Significant fraction of HMXBs consists of a neutron star or a black hole deeply embedded in massive donor star wind and accreting its material. We have conducted a survey of HMXBs with the Hubble Space Telescope, and determined stellar wind parameters from measured UV and optical spectra. I will briefly review the main results of this observing campaign which question the leading models explaining different sub-types of HMXBs. I will also briefly review what recent X-ray observations of HMXBs reveal about the structure of donor stellar winds, stellar wind clumping, and large scale corotating interaction regions. Finally, new types of HMXBs with unusual X-ray properties will be presented. These exotic objects may represent still missing links in the evolution of massive binaries towards double degenerate binaries.

Topic

Compact and diffuse sources in galaxies and in the Galactic Center

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