

**BOSTON
UNIVERSITY**

**Boston University College of Arts & Sciences
Institute for Astrophysical Research**

2018 - 2019 ASTROPHYSICS SEMINAR SERIES

MYStIX: A New Look at Clustered Star Formation

Most stars form in clusters of hundreds or thousands of stars, but the origins of rich star clusters in giant molecular clouds is quite uncertain. Do they form quickly or slowly? Do they form as a coherent structure or by merging subclumps? How does OB stellar feedback affect the natal clouds? Progress impeded by the difficulties of acquiring a reliable stellar census in massive star forming regions due to stellar crowding, HII region nebulosity, and contamination by Galactic field stars. I describe a project, Massive Young Star-Forming Complex Study in Infrared and X-ray (MYStIX) that combines X-ray sources from the Chandra X-ray Observatory with infrared sources from UKIRT and Spitzer Space Telescope to produce a catalog of >30,000 probable young stars in 20 massive Galactic star-forming regions at distances 0.4-4 kpc in the Milky Way disk. Results based on this star sample include: diversity in star cluster morphology, dynamical relaxation, and mass segregation; clear evidence for dynamical expansion of clusters; expected age gradients across star formation regions and unexpected age gradients within rich clusters. This last result gives indirect evidence for subcluster merging during cluster formation.



Monday, December 10th

3:30 - 4:30 p.m.

725 Commonwealth Avenue | Room 502

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