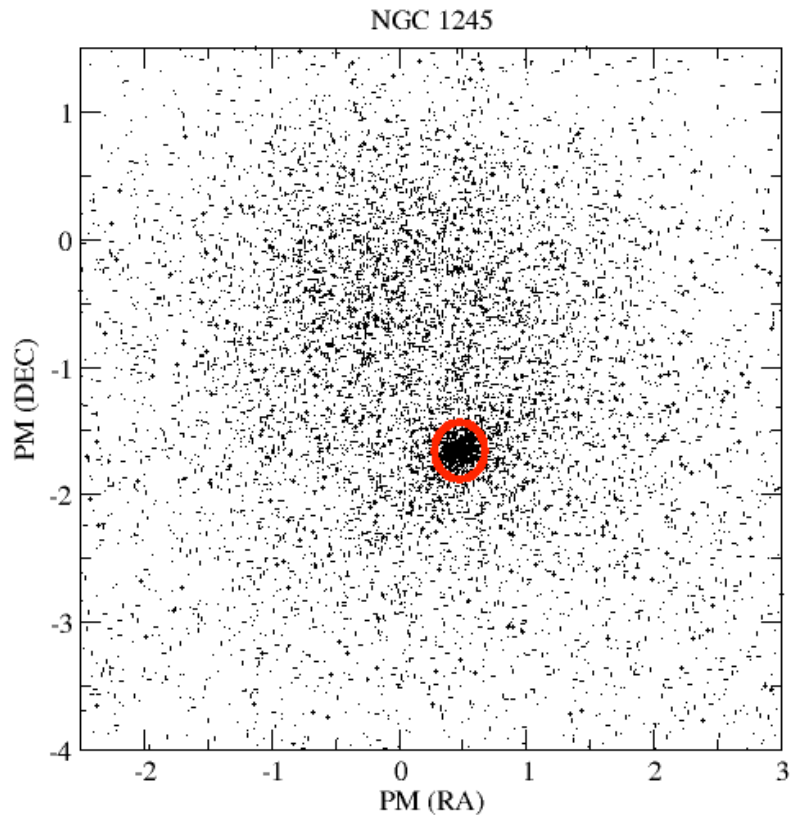


# Open Clusters as Galactic Laboratories

Open Clusters are gravitationally bound groupings of 100s to about 10,000 stars, span ages from essentially zero to about 8 Gyrs, and trace the star formation of the Galactic disk. Stellar clusters larger than Open Clusters (i.e., Globular Clusters) are difficult to model dynamically and thus Open Clusters provide a direct comparison with modern N-body simulations. Dynamics of the stars in stellar clusters are predicted to produce a plethora of compact binaries such as cataclysmic binaries and low mass X-ray binaries. However, these specific compact binaries are rare in Open Clusters and thus other tracers of dynamical interactions such as blue stragglers and main sequence binaries are needed to test N-body simulations.



- old ( $>1$  Gyr) Open Clusters
- All are in GAIA-DR3
- There are 74 Clusters in Zwicky Transient Factory database (ZTF)
- All clusters are also in PanStars
- Some Clusters have Galex and SWIFT/OM data. Most is Near Ultraviolet (when it exists)
- All are in TESS and about 4 are in Kepler/K2.

