Unmasking massive forming stars using mid-IR observations and 3D radiative transfer modelling

- Abigail Frost

Young massive stars have huge influence, spanning from their own natal cradles to the galaxy as a whole. Despite their influence, the rarity of young massive stars combined with the fact that they are often deeply dust-embedded has limited our understanding of their formation. Work on single objects has given us valuable snapshots of the massive star formation process, but the fact remains that a lack of observational data prevents us from conclusively confirming the details. In order to truly understand the environments which are birthing these monsters, as many different observations and techniques must be combined and consolidated. My work fits 3D radiative transfer models to three different types of observational data simultaneously, thereby constraining the physical characteristics of the objects. I have interferometric data, images and SEDs for a sample of over 20 MYSOs and the overall goal is to search for trends between their features as the aforementioned analysis is performed on each individual object. My talk will briefly cover the topics of mid-infrared interferometry and imaging, my RT modelling, the work done on my sample so far and future work involving techniques such as sparse aperture masking.

Galactic Scale