

Probing Massive Protoclusters in Infrared Dark Clouds

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In what stage of cluster formation do massive stars come about remains one of the most challenging problems in star formation. In the past five years, a large number of infrared dark clouds (IRDCs) have been discovered as extinction features against the Galactic infrared background light. Their extraordinarily large mass and column density make them the most promising sites to form massive clusters that delineate most of the visible universe. This project will aim at probing the massive clusters in the making with emissions of warm dust and molecular gas so as to constrain theoretical models/scenarios. The student shall expect to learn 1) general concepts related to massive star formation and cluster formation and 2) interferometric data reduction (SMA or ALMA SV data). A weekly discussion with the advisor through the summer program is required.