

Astrochemistry in sites of star formation

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Abstract

This talk will summarize recent observational and theoretical advances in understanding the chemistry of star formation. Chemical processes associated with the formation and evolution of dense molecular clouds will be described. These clouds are sites of low-mass star formation, the earliest phases of which, from the prestellar core through to the Class I protostar, exhibit remarkable chemical diversity and provide insight into the likely chemistry of the forming Solar System. Observational studies and theoretical astrochemistry modeling both rely heavily on the availability of specific laboratory datasets; several areas where such data are urgently needed will be highlighted.