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Time-Domain Astrochemistry During Planet Formation

Tuesday, 15 October 2019 12:10 (15 minutes)

Invited talk

Abstract:
"The chemistry of protoplanetary disks sets the initial composition of newly formed planets and may regulate the efficiency by which planets form. Disk chemical abundances typically evolve over timescales spanning thousands if not millions of years. Consequently, it was a surprise when ALMA observations taken over the course of a single year showed significantly variable emission in H13CO+ relative to the otherwise constant thermal dust emission in the IM Lup protoplanetary disk. HCO+ is a known X-ray sensitive molecule, and one possible explanation is that stellar activity is perturbing the chemical ""steady state"" of the disk. If confirmed, simultaneous observations may provide a new tool to measure (and potentially map) fundamental disk parameters, such as electron density, as the light from X-ray flares propagates across the disk."

Presenter: Dr CLEEVES, Ilse

Session Classification: Circumstellar Disks