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CSO SPECIAL SCIENCE SEMINAR

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TIME: 3:00 PM, Friday 18th July 2008

PLACE: CSO Conference Room

TITLE: Hydrogen Isocyanide in the ISM and Comets

SPEAKER: Dr. Darek Lis
California Institute of Technology

ABSTRACT:

I discuss the current understanding of the origin of hydrogen isocyanide in the interstellar medium and comets. HNC, first detected in comet Hyakutake by means of submillimeter spectroscopy, has now been observed in a dozen moderately bright comets, not including the very active comets Hale-Bopp and McNaught. The existing data suggest that HNC production has to be efficient in the inner coma, just as the material leaves the nucleus. The process has to be temperature dependent to explain the observed variation in the HNC/HCN abundance ratio with the heliocentric distance. Thermal degradation of macromolecules or polymers produced from ammonia and carbon compounds, such as acetylene, methane, or ethane appears to be a process consistent with the existing observational data, including the very low HNC/HCN ratio measured recently in comet 73P/Schwassmann-Wachmann 3.

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