

Chemistry of Protoplanetary Disks

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In the last decade, it has been well established that many pre-main sequence stars are surrounded by disks of gas and dust with sizes and masses comparable to those of our own primitive solar system. While much attention has been paid to the analysis of continuum data, line observations can provide important complementary information on the physical structure and chemical composition of disks. Observations of simple gas-phase molecules other than CO obtained with (sub)millimeter telescopes will be reviewed, including the recent detections of deuterated species. Complementary infrared absorption data of ices toward edge-on disks from Spitzer and ground-based facilities will be presented as well. The results will be discussed within the context of chemical models of flared and non-flared disks and their evolution from protostellar regions.

