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The molecular emission structure of the Flying Saucer protoplanetary disk

Bright CN emission is a common characteristic of protoplanetary disks. Since the production of CN is expected to be driven by intense UV radiation, this molecule should serve as a tracer of disk irradiation, potentially providing insights about the dispersal mechanisms of disks as well as their chemical evolution. The advent of ALMA has revolutionized such studies of disk structure and evolution. I will present a novel analysis of unpublished ALMA CN (as well as CO and CS) archival data for a nearby, edge-on disk (known as the Flying Saucer). I demonstrate how the vertical and radial distributions of CN in the Flying Saucer, and the comparison with the corresponding distributions of CS and CO, should place stringent constraints on theoretical models of CN production and its connection to disk irradiation.