Cloud to Planets: The Disk Formation, Disk Clearing and Planet Formation Processes in Intermediate-Mass Stars

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We know that planetary systems around stars are common and exhibit a wide variety of configurations. A necessary step in understanding planet formation requires the investigation of circumstellar disks in which they form (known as protoplanetary disks). Observations of protoplanetary disks around young stars allow us to view the environmental constraints on planetary systems as they form. I will outline how stars form, the formation of protoplanetary disks, the removal of protoplanetary disks, and the formation of secondary disks of proto-planetary/planetary debris. I will place particular emphasis on the disk-clearing phase (known as a transition disk), which may be the most important phase in the standard planet formation scenario (especially for gas giants) as it places the greatest constraints on planet formation by the removal of the raw materials. I will highlight areas where eager young minds may contribute to this area of research.