

Project 14/2014: "**Dispersal of proto-planetary discs by X-ray photoevaporation and planet formation**"

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Abstract:

Proto-planetary discs provide the building blocks for the formation of planets. The so-called transition discs show evidence for an inner hole and are interpreted as discs caught in the act of dispersal. Possible explanations are photo-evaporation and planet formation. As both theories have problems in explaining the measured hole sizes and mass accretion rates, we have studied in a previous paper their combined effect. The interplay can significantly alter the picture, dispersing the disc at earlier times, and creating bigger holes for a given accretion rate that photoevaporation alone would predict. The previous study was restricted to only a few cases in the parameter space to explore the feasibility of the process. We thus propose to scan the parameter space, with the goal of being able to yield statistical predictions to be compared with observations. In addition, we will include a new effect in the model, thermal sweeping, to study the lifetime of the outer part of the disc.