

ABSTRACT

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Water in Protoplanetary Disks

Water is a fundamental molecule for the formation of giant planets as well as for the origin of life on Earth. However, how Earth acquired its water is still a matter of debate. Protoplanetary disks are the ideal laboratories to study the distribution and evolution of water and other volatiles at times when giant and terrestrial planets are forming. Observations in the near- and mid-infrared wavelength range have found abundant amount of hot (~1000 K) water vapor in the inner region of protoplanetary disks around solar type stars (or T Tauri). Disks around higher mass young stars (Herbig Ae/Be) instead lack hot water vapor in their inner region but show abundant vapor of the hydroxyl radical (OH). I will present the result of an L-band VLT/CRIRES survey of Herbig AeBe stars aimed at searching water vapor in the disk atmosphere. Multi-wavelength observations with CRIRES, Herschel and ALMA have the potential to measure the water reservoir in disks at the time of planet formation.