Detection of crystalline silcate in T Tauri-type stars by mid-infrared spectroscopic observation

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Crystalline silicates have already observed in comets,IDPs,beta Pic(Vega-like star),though ISM silicates and younger objects such as protostars,T Tauri stars and Herbig Ae/Be stars have not.In recent years, ISO and other ground-based instruments showed that some Herbig Ae/Be stars posses crystalline silicates, which imply some crystallization event must occur at Herbig Ae/Be stage in intermediate stars(2 to 10 solar-mass stars). But low-mass young stellar objects such as T Tauri stars show no evidence of existence of crystalline silicates,so when crystallization of silicates have occurred in low mass stars that is believed to be a precursor of our Solar-System, is a interesting matter.

We have carried out mid-infrared spectroscopic observations of older T Tauri stars using COMICS with SUBARU, and for the first time, We have detected crystalline silicates in some T Tauri stars.

We will discuss it further from the view of planet formation and try to compare with our early Solar-System formation events.