

P210a Multiple Rings and Asymmetric Structures in SR 21 Disk

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In recent years, high-resolution sub-millimeter observations using ALMA telescope have revealed that some protoplanetary disks hold crescent-like asymmetric structures. These asymmetric structures indicate dust aggregation process in protoplanetary disks, therefore, the research towards them is crucial to learn planet formation process in protoplanetary disks.

In this talk, I will introduce the observation result of the protoplanetary disks around the young star SR 21. Our observation using ALMA Band 6 (about 1.1-1.4 mm) successfully resolved its disk at a spatial resolution of about $0.03''$. We report that two rings, as well as 3 asymmetric structures are found around the star. After comparing with the Band 3 (about 2.6-3.6 mm) data of SR 21, we suggest that the two asymmetric structures in the outer ring indicate the observed asymmetric structures are breaking into small clumps, and the asymmetric structure in the inner ring could be related to the spiral arms detected in the near-infrared band. This discovery will be quite helpful for us to understand the evolution of such asymmetric structures, and improve our understanding of planet formation process.