

P218a

**すばる戦略枠観測 SEEDS による原始惑星系円盤および系外惑星探査 IV**

田村元秀 (東大), 工藤智幸 (国立天文台), 橋本淳 (オクラホマ大), 葛原昌幸 (東工大), 松尾太郎 (京大), 臼田知史 (国立天文台), 神鳥亮 (名市大), SEEDS/HiCIAO/AO188 team.

SEEDS (Strategic Explorations of Exoplanets and Disks with Subaru) is the first Subaru Strategic Program, whose aim is to conduct a direct imaging survey for giant planets as well as protoplanetary and debris disks at a few to a few tens of AU region around 500 nearby solar-type or more massive young stars devoting 120 Subaru nights for 5 years. The targets are composed of five categories spanning the ages of  $\sim 1$  Myr to  $\sim 1$  Gyr. Some RV-planet targets with older ages are also observed. The survey employs the new high-contrast instrument HiCIAO, a successor of the previous NIR coronagraph camera CIAO for the Subaru Telescope. We describe the outline of this survey and present its first three years results. The survey has published more than 20 refereed papers by now. The main results are as follows: (1) detection and characterization of the most unequivocal and lowest-mass planet via direct imaging. (2) detection of a super-Jupiter around the most massive star ever imaged, (3) detection of companions around retrograde exoplanet, which supports the Kozai mechanism for the origin of retrograde orbit. We also report (4) the discovery of unprecedentedly detailed structures of more than a dozen of protoplanetary disks and some debris disks. The detected structures such as wide gaps and spirals arms of a Solar-system scale could be signpost of planet. Preliminary statistics of wide-orbit planets in each category will be also mentioned. The latest status of this project and the future plan are presented.