

## **Direct Imaging of Exoplanets and Their Forming Disks with the Subaru Telescope**

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I have been developing high contrast imaging instruments for the Subaru 8.2-m telescope nearly 20 years. The first generation instrument is CIAO (Coronagraphic Imager with Adaptive Optics), the dedicated cold NIR coronagraph, was successful to discover the morphological diversity of protoplanetary disks and detected several planetary-mass companions around young stars. These were most useful to study the details of the disks and companions beyond 100 AU. The second generation instrument is HiCIAO (Hi-Contrast Instrument for the next generation Adaptive Optics), currently being used for a strategic and extensive (120 Subaru nights over 5 years) direct imaging survey of exoplanets and disks as the SEEDS project. With a much better high contrast performance than CIAO, HiCIAO/SEEDS is exploring both planetary-mass companions and many disks of our outer Solar System size (<50 AU). A number of planet candidates and disks gaps/dips as a signpost of planets have already been discovered. In this talk, I will introduce both the instrument developments and the most recent results of SEEDS.