

P301b Search for $H\alpha$ from Accreting Protoplanets with Subaru/SCEXAO+VAMPIRES

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High-contrast imaging with adaptive optics and various imaging techniques enable to detect and characterize exoplanets and helps to discuss planet formation and evolution mechanisms. The Visible Aperture Masking Polarimetric Interferometer for Resolving Exoplanetary Signatures (VAMPIRES) is a new high-contrast imaging capability at the visible wavelengths equipped with Subaru Coronagraphic Extreme Adaptive Optics (SCEXAO) mounted on the 8-m Subaru telescope. This instrument allows a variety of imaging modes of polarization differential imaging (PDI), aperture masking, and spectral differential imaging (SDI) with a $H\alpha$ filter. Currently Subaru/SCEXAO+VAMPIRES is the only instrument that allows $H\alpha$ high-contrast imaging in the northern hemisphere. The $H\alpha$ SDI mode is a unique and useful way to promote characterizations of protoplanets; there is relationship between intensity of hydrogen emissions and mass accretion mechanisms and one can estimate physical parameters on mass accretion onto the protoplanet (e.g., LkCa 15b; Sallum et al. 2015). In this presentation, we introduce the $H\alpha$ observations and their reduction schematics with SCEXAO+VAMPIRES in detail.