

A planetary candidate with a very wide separation to a binary T Tauri star

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Direct imaging of extrasolar planets is useful to survey the massive gas giants with the wide separations to their parent stars and long orbital periods. Those observations result in revealing the probability of exsistances of gas giants in the outer regions around parent stars, which is a important clue to understand the theory of planetary formation.

In order to reveal the probability of massive gas giants around young solar analogues, we surveyed the planetary mass objects in the rho Ophiuchi star forming region with IRSF and SUBARU telescopes. Thus, we detected a planetary companion candidates widely distributed in distance

(~1100AU) around its parent binary T Tauri star and observationally confirmed the membership of the planetary candidate to the parent star. In addition, we estimated the absolute luminosity of the planetary candidate from its effective temperature (~2400K) and brightness derived from the spectroscopic observation and photometric observation to it, respectively. Moreover, we assumed its age as the age of rho Ophiuchi star forming region and estimated that the mass of this object is 6-20 M_{JUP} by comparing the age and absolute luminosity to the theoretical evolutionary model. Thus, this object is a planetary mass companion candidate with the widest separation among the similar planetary candidates directly imaged so far and the first planetary candidate detected around a binary star.