

[초ST-01] Observational Study from AGB Stars to Pre-Planetary Nebulae Using the KVN

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한국우주전파관측망(KVN)은 2009년 후반기부터 단일경으로 연구관측을 계속하면서 이제 22/43 GHz 대 VLBI로서의 연구관측을 앞두고 있다. 여기에서는 KVN의 중요한 연구분야의 하나인 점근적색거성에서 진행성상성운에 이르기까지 진화과정에 대한 KVN 단일경 관측연구를 소개하고 앞으로의 VLBI 연구방향을 소개하고자 한다. 단일경 연구에는 SiO 및 H₂O 메이저선 동시관측에 의한 점근적색거성과 후점근적색거성 등에 대한 서베이 및 상대적으로 강한 메이저선 강도를 보이는 각 단계별 관심 천체에 대한 시간 모니터링 관측 결과를 소개한다.

[구ST-02] Detection of exoplanet around evolved K giant HD 66141

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We present high-resolution radial velocity (RV) measurements of K2 giant HD 66141 from December 2003 to January 2011 using the fiber-fed Bohyunsan Observatory Echelle Spectrograph (BOES) at Bohyunsan Optical Astronomy Observatory (BOAO). We find that the RV measurements for HD 66141 exhibit a periodic variation of 480 days with a semi-amplitude of 146 m/s. We do not find the correlation between RV variations and a chromospheric activity indicator (H γ line). The Hipparcos photometry as well as bisector velocity span (BVS) also do not show any obvious correlations with RV variations. Thus, Keplerian motion is the most likely explanation, which suggests that the RV variations arise from an orbital motion. Assuming a possible stellar mass of 1.5 M \odot , for HD 66141, we obtain a minimum mass for the planetary companion of 7.4 MJup with an orbital semi-major axis of 1.4 AU, and an eccentricity of 0.07. We support that planet occurrence rate around evolved stars is more than 10 % (Dollinger et al. 2009) as well as more massive stars do form significantly more massive planetary companions (Johnson et al. 2007; Lovis & Mayor 2007; Dollinger et al. 2009).