

[구KVN-01] Recent Activities of the KVN

Do-Young Byun (변도영), KVN group in KASI
Korea Astronomy and Space Science Institute(한국천문연구원)

KVN은 현재 연간 3000시간 이상의 VLBI 관측 시간을 운영하는 안정적인 운영단계에 들어섰다. 또한 일본의 VLBI 관측망인 VERA와 연결한 KaVA (KVN and VERA Array)도 한일상관센터의 운영시작과 더불어 연간 1000 시간의 관측 운영을 하고 있으며 KaVA를 이용한 연구 성과가 나오기 시작하였다. KVN은 다과장 Astrometry를 위해 다과장 P-Cal 시스템을 개발하고 있으며 관측 감도를 높이기 위해 8Gbps 운영을 준비하고 있다. KVN의 운영 및 시스템 개선 계획, 국제 협력 내용 등을 소개한다.

[구KVN-02] Simultaneous Monitoring of KVN 4 Bands toward Evolved Stars

Se-Hyung Cho and KVN Evolved Star Working Group Members
Korea Astronomy and Space Science Institute

We propose simultaneous monitoring observations of 22 GHz H₂O and 43/86/129 GHz SiO masers toward ~15 evolved stars in order to investigate spatial structure and dynamical effect from SiO to H₂O maser regions including mass-loss process and development of asymmetry in circumstellar envelopes. We also aim at investigating mutual association and difference between SiO and H₂O masers for establishing SiO and H₂O maser models coupled to hydrodynamical model of circumstellar envelope. In addition, the correlation and difference of SiO maser properties among J=1-0, J=2-1, and J=3-2 transition masers are traced according to different type of stars for constraining SiO pumping models. These scientific goals and target sources were determined based on KVN single dish and VLBI feasibility test observations at 4 bands. As a total observing time of every 2 month monitoring, about 90 and 360 hours (in average per year) are required for single dish and VLBI observations, respectively. From the 2014B observing season, these monitoring observations will be derived as one of KVN key science programs.