

[KVN-09] Simultaneous observations of SiO and H₂O masers toward OH/IR stars

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We performed simultaneous observations of SiO $v=1, 2$, ²⁹SiO $v=0, J=1-0$ and H₂O $6_{16}-5_{23}$ maser lines toward 252 OH/IR stars using the Korean VLBI Network 21m telescopes. The observations were carried out from 2011 November to 2012 July for studying SiO and H₂O maser properties associated with the evolutionary stages of OH/IR stars. Both H₂O and SiO masers were detected from 49 sources, one-side maser of SiO and H₂O was detected from 109 and 11 sources, respectively. Mutual relations between SiO and H₂O maser properties are investigated based on statistical analyses. We also investigate these maser properties in the IRAS two-color diagram related with stellar evolutionary sequence.

[KVN-10] Monitoring of Gamma-ray Bright Quasars 3C279 and 1510-089 at 22, 43 and 86GHz using KVN Single Dish Telescopes

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AGN(Active Galactic Nucleus) consists of a supermassive black hole located at its center, an accretion disk around the black hole, and bipolar jets. Since May 2011, we have performed the MOGABA(Monitoring Of GAMMA-ray Bright AGN) project for observing gamma-ray bright AGN once a week at multifrequencies using KVN(Korean VLBI Network) 21m radio telescopes. The MOGABA project is the observations for measuring the degree of polarization, polarization angle, and total flux of about 20 AGN at 22, 43 and 86GHz. By this project, we are able to investigate polarization characteristics, spectral index, and variation of rotation measure at radio wavelengths of gamma-ray bright AGN and to study possible relation between gamma-ray flares and magnetic field structure change in AGN. According to previous research, gamma-ray flares of some AGN are coincident with large changes in angle of linear polarization. In this paper we report the preliminary results of linear polarization and total flux at 22, 43, 86GHz of gamma-ray bright quasars 3C279 and 1510-089 showing noticeable variation of total flux at 22GHz in late 2011, and discuss possible correlation with gamma ray light curves.