[구KVN-05] Simultaneous observations of SiO v=1 and v=2, J=1-0 masers toward WX Pisces with the KVN+VERA

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We present the results of simultaneous observations of SiO v=1 and 2, J=1-0 maser lines which were carried out with the combined network of the KVN and VERA in 2012 April. The observations were performed toward a long period OH/IR star, WX Psc in order to test the technical and scientific feasibilities of the KVN+VERA combination. The resultant (u, v) coverage of the KVN+VERA combined array enhances the image quality. We confirmed that the distribution and intensity of individual maser spots using the combined network are more reliable compared with the images using the KVN or VERA only. This observation also provides a chance to find a high sensitivity and imaging quality which are comparable to those of VLBA.

In addition, the simultaneous observations of two SiO v=1 and 2, J=1-0 maser lines enable us to trace the detail physical environments close to the central star due to different high excitation conditions between two lines at a time.

[구KVN-06] Toward early scientific results on AGNs: 'KAVA'(KVN and VERA array) joint AGN WG report

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We report the results of KVN-VERA('KAVA'; KVN and VERA Arrary) AGN WG test observation in 2011 and 2012. The results from these commisioning years show that 'KAVA' is able to produce noble images of radio loud AGNs at 22 and 43GHz. This dedicated high frequency VLBI facility will be especially competitive for the regions where conventional low freuquency facilities see the optically thick part of synchrotron radiation. In the second part of this talk, we report the early science activities of the AGN WG. Sgr A*, Jet acceleration zone of M87, extremely young radio galaxies are the prime cadidates of the joint activities. Lastly we will stress how the phase-referencing 'KAVA' does enhance the imaging sensitivity and open new era of VLBI AGN researches.