

Interferometric Monitoring of Gamma-ray Bright AGNs: J1159+2914

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We present the results of multi-epoch monitoring of a blazar J1159+2914, one of the targets of a Very Long Baseline Interferometry (VLBI) monitoring program: Interferometric MOnitoring of GAmma-ray Bright AGNs (iMOGABA), as a Korean VLBI Network (KVN) Key Science Program (KSP). The observations were conducted simultaneously at 22, 43, 86, and 129 GHz, for 4 years from December 2012 to December 2016. Obtained total fluxes range between 0.26 and 2.88 Jy at all frequencies with a mean rms noise of 0.026 Jy. We also used the 15 and 230 GHz data observed by Owens Valley Radio Observatory and Sub-Millimeter Array. In order to analyze the characteristics of variabilities, we estimated variability timescales from 15 GHz data, using three different functions, structure function, Gaussian distribution function, and exponential function. Also in order to study the multi-frequency correlations, we compared the

light curve of 15 GHz with that of 22, 43, and 86 GHz, using cross-correlation analysis. Moreover we estimated B-field strength using core sizes from VLBA 43 GHz data, turnover frequency and maximum total flux from KVN data, and variability timescales from OVRO data, in order to study the variability of B-field nearby the radio emission region.