

Multi-frequency flux density monitorings of S5 0716+714

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In the first part, We present the results of multi-epoch simultaneous dual-frequency high cadence radio observations interval using the 21-meter radio telescope of the Korean VLBI Network (KVN) at 21.7 GHz (K-band) and 42.4 GHz (Q-band) for search the existence of intrinsic intraday variability (IDV) of BL Lac object S5 0716+714. Over the whole set of epochs, the source showed significant inter-month variations in flux density at both frequencies. In all epochs, no clear intraday variability was detected. The source shows monotonic flux density increase in epoch 1 and 3 and monotonic flux density decrease in epochs 2 and 4. In the flux density increasing phases, the flux densities at the Q-band increase more rapidly. In the decreasing phase, no significant spectral change We find an inverted spectrum in epoch 1 and 3. On the other hand, we find relatively steep indices in epochs 2 and 4, respectively. We concluded that the frequency dependence of the variability and the change of the spectral index are caused by source-intrinsic effects rather than by any extrinsic scintillation effect. The second part of our talk presents the results of long-term monitoring of S5 0716+714 using the data of OVRO (15 GHz), KVN (22 and 43 GHz) and SMA (230 GHz) to study radio flares . The single dish observations using the KVN were conducted over 4 years from 2010 November to 2014 June with a few days of interval. The source shows several flares during our observing period. We discuss the characteristics of the flares we have found.