

Simultaneous VLBI monitoring observations of H₂O and SiO masers toward VX Sagittarii

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The red supergiant VX Sagittarii is a strong emitter of both H₂O and SiO masers which trace a dynamic of the circumstellar envelope. However, previous VLBI observations of H₂O and SiO masers have been performed separately, which make it difficult to spatially trace the outward transfer of the material consecutively from the SiO to H₂O maser regions. In addition, previous VLBI observations were limited to mainly low frequencies less than 86 GHz. Therefore, we performed simultaneous monitoring observations of 22.2 GHz H₂O and 43.1/42.8/86.2/129.3 GHz SiO masers toward VX Sgr using the Korean VLBI Network. We obtained the VLBI images at 25 epochs from Nov. 2014 to Apr. 2018 together with the single-dish data at 27 epochs. Here, we present the variations of spatial distributions and kinematics in these maser lines according to stellar pulsation. The broken features of SiO ring structure and peak intensity maximum of corresponding optical maximum at a certain epoch will be included.