

日本天文学会早川幸男基金渡航報告書

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職あるいは学年	D3
任期 (再任昇格条件)	
渡航目的	研究集会での口頭発表
講演・観測・研究題目	The Water Fountain Source W43A: A Key Source for Future VLBI Observations on Evolved Stars
渡航先 (期間)	韓国済州島 (2013年6月16日～6月20日)

I attended “The 6th East Asia VLBI Workshop 2013” organized in Jeju, South Korea and gave an oral presentation titled “The Water Fountain Source W43A: A Key Source for Future VLBI Observations on Evolved Stars”. The East Asia VLBI Workshop has been organized as an annual meeting aiming to provide a platform for knowledge exchange among astronomers and to promote international cooperations on the next-generation telescope array development and large-scale surveys in Asia. The workshop gathered professionals from not only East Asian countries but all over the world, working towards the goal that the future East Asian VLBI Network will be comparable to existing VLBI systems in Europe and America. In order to set up hardwares (telescope front-ends and back-ends) and design softwares best for survey and individual observation needs, scientific advantages in all aspects were discussed and technical opinions were collected from different projects including galaxies, interstellar and circumstellar environments, and so on.

I presented my analysis results on the circumstellar environment around the “water fountain” source (WF) W43A with data obtained in over ten years with the Very Long Baseline Array (VLBA) in America. The results showed the importance of long-term VLBI monitoring of water maser emissions in evolved stars. WFs are believed to be the key objects for studying the transition phase from an AGB star to the central star of a planetary nebula, the late evolutionary stages of intermediate mass stars. Among the fifteen WFs ever discovered, W43A is the only one whose water maser emissions have been observed for longer than a decade. Our long-term observations on W43A revealed that the maser features were concentrated in six clumps instead of continuous spatial distributions. We believed that the positions of maser features reflect the geometry and density of the circumstellar envelope.

With my oral presentation, I was glad to have provoked enthusiastic discussions and received compliments on my presentation skills. I made well use of my language profi-

ciency in English, Chinese and Japanese to exchange ideas with participants of various backgrounds and extend my academic and private networks. In this workshop, I learned about the current operations and future directions of VLBI networks in Asia including VERA in Japan, KVN in South Korea, and CVN in China. In addition to technical aspects, there were also interesting presentations on scientific results achieved by VLBI by different institutions. Sea fog along the southern coast had made Jeju Island optically thick, but it did not block the light which shine the way to the future of the East Asian VLBI Network.

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