

The VSOP 5 GHz AGN Survey

Shinji Horiuchi¹, Bill Scot², Ed Fomalont³ and the VSOP Survey project team

¹ Centre for Astrophysics and Supercomputing, Swinburne University of Technology, Mail No 31, P.O. Box 218, Hawthorn, Vic. 3122, Australia, Email: shoriuchi@swin.edu.au

² Calgary University, Canada

³ National Radio Astronomy Observatory, 520 Edgemont Road, Charlottesville, VA 22903, USA

Abstract

The VSOP mission is a Japanese-led project to study radio sources with sub-milliarcsec resolution using an orbiting 8 m telescope, HALCA, along with global arrays of Earth-based telescopes. Approximately 25 % of the observing time is devoted to a survey of compact AGN which are stronger than 1 Jy at 5 GHz---the VSOP AGN Survey. This paper presents the results from the analysis of the first 102 Survey sources.

We present high resolution images and plots of visibility amplitude versus projected baseline length. In addition, model-fit parameters to the primary radio components are listed, and from these the angular size and brightness temperature for the radio cores are calculated. A significant fraction of the sources have core brightness temperatures in excess of 10^{12} °K in the source frame. To explain these high brightness temperatures requires processes such as relativistic Doppler beaming. A statistical analysis we develop to compile a complete sample of flat-spectrum source which overlap VLBA observations agrees with these results.