The VLBI Space Observatory Programme (VSOP) mission is the first space VLBI mission for routine science observations. It consists of an orbiting Japanese telescope (HALCA) that observes in concert with a global array of ground radio telescopes at 1.6 and 5 GHz. By providing interferometer baselines up to ~30,000 km, it is able to achieve an angular resolution roughly three times that of ground-only arrays at these observing frequencies. Since its launch in 1997, the data obtained with HALCA have led to new insights into the nature of pulsars, masers, and active galactic nuclei. We present a selection of recent scientific results from HALCA, which demonstrate the extraordinary capabilities of this unique space observatory.

This research was performed in part at the Jet Propulsion Laboratory, California Institute of Technology, under contract to NASA.