

Report on Collocation Survey at VERA-Ogasawara Station, National Astronomical Observatory of Japan

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We report our local survey at VERA-Ogasawara Station of NAO. This survey was aimed to tie geodetic positions obtained by different methods, VLBI and GPS, and to establish a consistent coordinate system. Our survey also provides a precise position of the VERA antenna, which is still in an initial adjustment after its construction, and promotes radio interferometry observation.

Our survey was made in December, 2003. Based on a method described in Matsuzaka et.al. (2002) or Hasegawa et.al.(2002), we attached a reflector (a target for total-stations) on a rigid support of the antenna, and obtained relative positions to ground monuments. Global cartesian positions of the monuments are given by GPS 24-hour survey. We have measured relative positions from the monuments to the target for many times. The position of the antenna is obtained as the center of a spherical shell traced by the target positions in 3-D. Then, we can make a local tie between VLBI and GPS.

GSI plans to make a collocation survey at another VLBI station on Chichi-jima island in 2004. Chichi-jima VLBI Station of our GSI network is operated monthly for a domestic radio observation program for geodesy. When this survey will be completed, we obtain a new local tie between two VLBI stations on Chichi-jima island.

We will report details of our survey and some results at this meeting.