A Proposal to Extend the ICRF to Multiple Frequencies

by

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The International Celestial Reference Frame (ICRF) now forms the basis for all astrometry and establishes the inertial coordinate system that is used to navigate our deep space missions. This frame was defined using 2.3 GHz, and 8.4 GHz observations made over the past 20+ years. We propose to begin what will be a long effort to extend the ICRF to three higher frequencies. We describe a proposal to the NRAO to make a series of observations using the VLBA at 22, and 43 GHz bands on a selected sample of ICRF sources. The immediate objectives are: a) extend the VLBA calibration source list at these frequencies and, b) provide a candidate list for 32 GHz observations with the Deep Space Network (DSN) and the Kashima station. The recent decision to use 32 GHz (i.e. Ka-band) for the Mars '05 mission provides a strong sense of urgency to this effort. We invite the IVS community to join us in this undertaking.