

THE CELESTIAL FRAME AT FOUR RADIO FREQUENCIES

C. S. JACOBS

Jet Propulsion Laboratory, California Institute of Technology/NASA

4800 Oak Grove Dr., Pasadena CA 91109

e-mail: Chris.Jacobs@jpl.nasa.gov

ABSTRACT.

The International Celestial Reference Frame was adopted by the IAU in 1997 based on VLBI measurements at S/X-band (2.3/8.4 GHz) and complemented by HIPPARCOS measurements at optical frequencies. At that time, the IAU encouraged the astrometric community to extend the ICRF to other frequencies. In response, VLBI measurements have been made at 24, 32, and 43 GHz.

This paper will discuss the programmatic and scientific motivations for extending the ICRF to these higher frequencies. A summary of results to date will be presented including evidence that these new high frequency frames are rapidly approaching the accuracy of the S/X-band ICRF. Finally, prospects for future improvements of high frequency radio reference frames will be discussed.

See the full paper at the end of the Volume, on page 251 (late paper)