

VLBA FREQUENCY COVERAGE: FINAL SPECIFICATION

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The precise frequency coverage of the VLBA was specified in VLBA Memo No. 295. With one exception, described below, no changes have been found to be needed. The coverage of all bands is summarized in Table I.

The 1.3 cm band coverage has been shifted down 0.5 GHz from VLBA Memo 295 in order to allow observations of redshifted water masers. The previous specification was 22.2-24.6 GHz. Observations of extragalactic water masers, with the possibility of using the statistical parallax method to measure distances to other galaxies, are very important and, in fact, are part of the scientific justification of the VLBA. By shifting the band down, some of the weaker ammonia lines will no longer be observable but it is not clear that the VLBA will be a useful instrument for ammonia observations anyway. Also, it will not be possible for continuum observations to be as far from the center of the water lines as before but this is not considered to be a major problem.

Please consider all of the frequency bands carefully. They are about to be cast in concrete (or metal for feeds, anyway). It is only by chance that the poor performance for redshifted water in the old specification was caught. Let's not have other late realizations of problems!

TABLE I: VLBA FREQUENCY COVERAGE

Band Name	Specified Coverage* GHz	Accessible Range* GHz	Comments
90 cm	.312 - .342	same	
50 cm	.580 - .640	same	
20 cm	1.35 - 1.75	1.30 - 1.80	
13 cm	2.15 - 2.35	2.10 - 2.60	
6 cm	4.60 - 5.10	same	
[5 cm]	[5.90 - 6.40]	same	Optional**
3.6 cm	8.0 - 8.8	7.9 - 8.9	
[2.8 cm]	[10.2 - 11.2]	same	Optional**
2 cm	14.4 - 15.4	same	
1.3 cm	21.7 - 24.1	20.0 - 26.3	Revised
0.7 cm	42.3 - 43.5	same	

* See VLBA Memo 195 for definitions.

** Optional receivers will not be built unless sufficient funds remain in the receiver budget after all others are complete.