VLB ARRAY MEMO No. 554

VLBA Electronics Memo No. 71

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**NATIONAL RADIO ASTRONOMY OBSERVATORY**
Charlottesville, Virginia

June 6, 1986

TO: VLBA Electronics Group
FROM: Dick Thompson
SUBJECT: VLBA Electronics Meeting, June 5, 1986

Attendees: Bradley, Brundage, Campbell, Dill, Mauzy, Napier, Oty, Romney, Simon, Thompson

The feed cone for the first antenna is due to be received in early July, and drawings of many of the feed mounting brackets are complete. The 4.8 GHz feed is complete, the 10.7 GHz feed is being fabricated in Green Bank, and the 15 and 23 GHz feeds will also be machined in Green Bank. We are about to go out for bids on the sheet metal parts for the 1.5 GHz feed. Some testing has been done on the first 1.5 GHz polarizer at the VLA site. The question of whether the instrumentation for 2.3 GHz should extend up to 2.7 GHz to cover the radio astronomy band was briefly discussed. It would not be difficult to construct a broadband feed, but the Atlantic Microwave design of polarizer does not have sufficient bandwidth. An orthomode junction of the type used in the 1.5 GHz front end, and a quarter-wave plate, would be necessary. These would be more expensive than a narrower band polarizer.

The first 4.8 GHz front end was ready for the first cool-down tests at Green Bank this week. The cool-down took 6 hours. Assembly of the 15 GHz front end is in progress in Charlottesville. Two gas samples have been sent to CTI for analysis. One is from the cryogenics test setup at Green Bank and one from the He supply cylinder. Next week one of the refrigerators that has been showing temperature excursions will be opened for examination of dust and wear.

The two 2-16 GHz Synthesizer modules have been completed at Green Bank and only a test of phase stability versus temperature remains to be performed on them. The LO Transmitter, LO Receiver, and Round Trip Monitor modules are essentially complete in breadboard form and packaging will begin this month.

There was some discussion of documentation in the form of reports and drawing packages for the modules. The system used at the VLA has worked well, but since the VLBA antennas are widely distributed, the need to keep the documentation at the sites up to date is an especially important consideration. It was concluded that all reports should contain a revision number and date on the first page, and that a listing of report titles with the latest revision numbers and dates should be kept in a readily accessible computer file.