

NATIONAL RADIO ASTRONOMY OBSERVATORY

Charlottesville, Virginia

1987 October 6

To: VLBA Electronics Group

From: P. Sebring

Subject: VLBA Electronics Meeting, 1987 October 6

Present: Thompson (moderator), Schlecht, Balister, Sebring, Napier, Stetten, Brundage, Campbell, Lilie, C. Walker, Norrod, Simon, Beale

UHF Problems at Pie Town

In setting up the 330 and 610 MHz receivers on the antenna for first fringe tests, the sensitivities of the receivers appeared unaccountably low at both frequencies. Tsys at 330 measured about 500K.

The system, including the feed, was returned to the lab, where Tsys measured about 100K, as expected. Lilie says they are now trying to simulate the field setup more closely, using long cables, etc. Schlecht suggested that there may be power supply oscillation, since regulation sensing is done at the load end of long cables. Rhodes had already checked for this. Efforts continue, including checks at Pie Town for outside interference.

Green Bank

Norrod reports the #3 L-band front end will be shipped by surface this week. Testing of #4 L-band is going on this week. Some Miteq amplifiers have been found to oscillate at a low frequency (<20 MHz) when connected to filters, and are being returned to the vendor. Parts for #5 L-band and C-band systems are now coming in. Amplifiers from Charlottesville are needed for the #5 and subsequent L-band systems. Balister says these will be built in the first quarter of 1988.

Norrod reports little progress on the 2.3-GHz system. A new layout of the amplifier board is being made to reduce undesired couplings and sensitivity to the covers being installed.

Beale is still building 2-16 GHz synthesizers, and parts are coming in.

Charlottesville

Thompson reports that all three racks for system #4 are wired, and modules are going together. Front end interface modules, power supplies, converters, etc., are being started.

Parts are expected for a redesigned 8.4/23 GHz converter which will have the increased first IF (in 23 GHz operation) required to eliminate the spurious response described at the last meeting (see VLBA Electronics Memo No. 96).

Racks for system #5 are expected to be done by the end of the year.

Thompson mentioned the specialized M/C interface designed for the B rack, and said that another specialized interface may have to be designed for the DAR when the requirements are clear.

VLA

Some 23 Model 22 refrigerators are being operated, 14 of them on antennas. Brundage mentioned that, although no failures were reported last time, there have been three failures this past month - not due to bushings, but due to 1st-stage seal failure. Rudy Latasa is having some of Harry Dill's redesigned couplings made up to try as a remedy for this problem. Cumulative hours on the failed units were not known as yet.

Campbell said the Mk II formatter being set up for the first Pie Town fringe tests had no power supplies, and that its initial failure to operate was probably due to use of inadequate supplies. It was not known whether the Mk II formatters being obtained from Italy will have supplies.

With regard to hydrogen masers, Larry Beno recommends we now accept Maser #1, but that #2 not be accepted until the multiplier chain has been changed and its proper operation verified.

Sigma Tau quotes date of Nov. 15 for delivery of #3 and #4. The Business Office will arrange to fund the next phase of the Sigma Tau contract next month.