

EL71103

NATIONAL RADIO ASTRONOMY OBSERVATORY

Charlottesville, Virginia

1987 November 3

To: Electronics Group
From: P. B. Sebring
Subject: VLBA Electronics Meeting, 1987 November 3
Present: Thompson (moderator), Morris, Wireman, Schlecht, Sebring, Norrod, Srikanth, Beale, Simon, Stetten, C. Walker, Bagri, Oty, Lillie, Dooley, Campbell

Status of Pie Town Electronics

Craig Walker reported last week's first fringe test, in which two problems were observed:

- 1) Although Tsys was about 150K as expected, sensitivity seemed about a factor of two less than anticipated. Is antenna efficiency down?
- 2) During the observations, polarization was changed, and no change in fringe amplitude appeared to result.

It was suggested that one of the dipoles might not be working, and that this might explain both of the above observations. Tests using a test signal radiated from a hand-rotated dipole or a helix at the vertex of the dish were suggested.

It worries Craig also that the drift rate of the crystal standard used for this test was near the expected fringe rate of the observations. Craig also saw a correlated signal near bottom edge of the band at all delays. It was questioned whether the basic 10 KHz LO step, or its harmonics, could get into the baseband converters to cause this. Might there be problems with this system at very low fringe rates?

Craig also reported problems in getting good playbacks from the Mk II units. The so-called "blue box", which contains electronics inserted between formatter and recorder appeared at fault, and the unit was sent to Charlottesville for repair. Additional Mk II fringe tests will be planned.

It was reported that relative phase checks at 500 MHz between different IF cables as the antenna was rotated showed tracking within 5-7 degrees.

Documentation

On his visit to Charlottesville last week, Jack Campbell asked for a better index of Electronics documentation. Dick Thompson said we plan to produce a chart which will summarize the status of documentation on all modules of the Electronics systems. It was suggested that data of this sort be put in a computer - perhaps the MicroVAX at Socorro - so that updating is easy.

Dick cited Electronics Memo #66 for a listing and nomenclature for Electronics modules, and said documentation is available for the 1.5, 4.8 and 8.4 GHz systems and the 2-16 GHz Synthesizer. Schlecht has completed a report on seven of the Converter modules, though photos are needed before these will be printed. Someone requested interim xerox copies.

How much should be kept in the computer? Text, at least, should be there, possibly in WordPerfect. The question of diagrams, etc., was not resolved, though they could be stored in one of the CAD formats.