VLB ARRAY MEMO No. 440

VLBA Electronics Memo No. 40

NATIONAL RADIO ASTRONOMY OBSERVATORY
Charlottesville, Virginia

March 14, 1985

To: VLBA Electronics Group

From: Dick Thompson

Subject: VLBA Electronics Meeting, March 7, 1985

Attendees: Ballster, Bradley, Brundage, Campbell, D'Addario, Dill, Kellermann, Latasa, Schlecht, Simon, Thompson, Walker.

This was a short meeting which mainly reviewed progress during the last month. At Green Bank, the parts for the prototype of the modified 1.5 GHz front end (with model 350 refrigerator) are being fabricated and assembled. A new polarizer unit has been received and satisfactorily tested. It weighs 16 lbs, which may be compared with the weight of the earlier model which was originally 19 lbs, and was reduced to 17.5 lbs after machining off 1.5 lbs of excess metal.

The performance of the refrigerator on dewar No. 0 of the test system became unsatisfactory during February. The second stage temperature exceeded 20 K and showed erratic variations. This is the refrigerator that had not had any intentional warm-up during the test period, and thus had effectively cold-trapped the rest of the system. The refrigerator was dismantled and found to show contamination and some wear of the seals, but the carbon bushings were still in satisfactory condition. The refrigerator had been operated for 5214 hours, and after maintenance was returned to the test system. There are currently three other units on the test system: two model 22 refrigerators that were overhauled by CTI in January and a model 350 refrigerator.

The second 8.4 GHz front end is in final testing in Charlottesville, and should be shipped to the VLA site this month.

It was noted that the improved-precision subreflectors are now included in the electronics budget, and the water vapor radiometers are considered one of the optional items. Ken Kellermann emphasized that the water vapor radiometers are important, and we will probably want to obtain them for at least three sites when choices are finally made between the optional items.

Mike Ballster is looking into the possibility of borrowing an uncooled 86 GHz receiver for aperture efficiency tests on the first antenna in late 1986 and early 1987.

Erich Schlecht is working on the design of the monitor and control interface for the front ends.