# VLB ARRAY MEMO No. 132

Minutes of the VLBA recorder group meeting held Tuesday 5 Oct 82 at 1430 EDT.

Attendees:

Hans Hinteregger, Alan Rogers, Alan Yen, Rich Lacasse, Marty Ewing and Ken Kellermann.

## MK III density enhancement

Hans reported that Benno (who was unable to join the teleconference) was pleased with the performance of a commercial positioner for moving the record/reproduce head in the density enhanced MK III. The positioner which uses a D.C. driven motor micrometer screw and optical encoder has shown only 3 m shift in 3000 hours of operation. Marty Ewing reported that while the contract for the assembly of narrow track heads by Barger has encountered no serious problems the work was held up awaiting delivery of the VHS like head chips. Hans reported that in a test of the LVDT head position sensor at Haystack zero point stability of $\pm$ .03 $\mu$m peak to peak was observed over a period of 10 days with no kind of drift of a time scale longer than a day. An upper limit of about 1 $\mu$m/year can be placed on long term drift of zero point under stable mechanical and environmental conditions on the basis of this test. A complete prototype positioner is under construction.

## VCR Development

Alan Yen (Toronto) joined the teleconference to report that he had spent some time showing Ray Escoffier of NRAO the VCR based recroding system being developed in Canada. Alan reported that with NRZ recording and partial response decoding (using 3-levels) he can reliably (P.E. = $10^{-4}$) achieve 12 Mbits/sec. Alan also reported that the Betamax has somewhat better bandpass and might support 15 Mbits/sec. A further increase might be acheived with adaptive equalization. Both the VHS and Betamax appear to have cross-talk problems in the very long play 6 hour mode. A special meeting of the recorder group is now proposed for 19 October to get Ray Escofffier's impression of the high density VCR systems and to discuss further research needed to augment the Canadian work.

## Ken Kellermann's direction to the recorder group

Ken reminded us that we must define the system specifications by Spring 1983. He urged us to work out plans for demonstration and field tests of the VCR system (in case the MK III density enhancement should have problems). Marty Ewing suggested the possible upgrading of the MK II to 12 Mbits/sec.