VLB ARRAY MEMO No. 76

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TO: K.I. Kellerman

FROM: Alan E.E. Rogers & Hans Hinteregger

SUBJECT: Comments for VLBA design group

1) Receiver block diagrams (VLB memo No. 48)

S/X system should be compatible with the NASA system covering the following frequency range:

X-band	8.1 - 8.6 GHz	RCP
S-band	2.2 - 2.3 GHz	RCP

In addition receivers should have high image rejection (>50 dB) and have delay calibration. I suggest a first L.O. frequency of 2.02 for S-band and 8.08 GHz for X-band. Or numbers in memo No. 52 which look fine.

2) Recording systems (VLB memo No. 44)

We suggest that Tables 1 and 2 be changed to include 2 MK III options. MK III (X12) which is what we have proposed to NASA and a MK III (X36) which is what we consider to be the upper range of track density for MK III. In addition we suggest that the MK II upgrade options be 8, 12 and 16 Mbit as 20 Mbit is much too optimistic. Relative feasibility should be judged on the basis of a similar transition density (37.5 Kfci for MK III A) and SNR margin for both systems (both X12 and X36 MK III seek to maintain a 23 db worstcase broadband SNR). We enclose a revised table 1 for the MK III (X12) upgrade in which we have great confidence along with projected numbers for X36.