NORTHEAST RADIO OBSERVATORY CORPORATION
HAYSTACK OBSERVATORY

15 August 1983

VLBA CORRELATOR MEMO
VC 009

TO: Marty Ewing & VLBA Coordinating Committee

FROM: Alan E. E. Rogers

SUBJECT: Chapter VII correlator system - Review.

1) Signal distribution

If subchannels are multiplexed on to high speed serial lines they have to be demultiplexed (at least in some modes) in the correlator. If any multiplexing and demultiplexing is done it will result in an architecture that should logically be carried all the way to packet switching using optical fiber transmission at Gb/s rates. While many aspects of a packet switching design are especially attractive for a bigger correlator I would suggest we keep the data rate on individual wires at 16 Mb/s maximum.

2) Fractional bit correlation

It is not at all clear how this important function will be accomplished. I suggest the Haystack hardware/software method be considered. The scheme involves simultaneously changing the fringe rotator phase by + or - 90° with shift changes along with applying further software correlations on accumulated data. The method is well tested for continuum data and is being tested at SAO on spectral line data.