NATIONAL RADIO ASTRONOMY OBSERVATORY

Charlottesville, Virginia

February 25, 1975

MEMORANDUM

TO: C. Wade, K. Kellermann

FROM: B. Clark

SUBJECT: Single Dish VLA Software

As per our discussions the synchronous group will assume the responsibility for providing the following software.

1. The standard VLA control software will provide an on/off program. The standard input format will be used for the source cards. A card control of telescope pluging and azimuth wrap overlap will be provided.

The offsets for half power and for the single off position are given in (Az, el) coordinates by

$$h_e = (0, \ 0\overset{.}{!}8 \ \lambda)$$

$$h_a = (0\overset{.}{!}8 \ \lambda \ \text{CSC el}, \ 0)$$

$$\text{off} = (4\overset{.}{!}0 \ \lambda \ \text{CSC el}, \ 0)$$

λ is in cm.

The telescope will step through the following positions.

Time	Offset	Time	Offset
1	$+h_a$	7	$-h_e$
2	off	8	off
3	$-h_a$	9	0
4	off	10	off
5	$+h_e$	11	off (cal on)
6	off	12	off

and repeat until the given stop time.

During this time, the synchronous detector data will be streamed onto disk. In the above table, time is in units of 20 seconds; therefore, a complete cycle is four minutes.

2. A program will be provided to be run every time the system goes down, or at least every eight hours, which takes the streamed synchronous detector data and averages for each position. The first 10 seconds of each position will be ignored, allowing time for the telescope to move. The data will be averaged over the second ten seconds.

Because of the fixed allowance of ten seconds to move from the "off" position to the "on" position, there is a restriction on how close the observations may be carried to the zenith, as approximately given by the following table (allowing two seconds settling time on source).

Band	L	C	KU	K
el max	71°.6	84°.2	89°.1	89°.6

The output of this program will be binary, Modcomp Fortran compatible, usually on disk.

3. A program will be provided to produce, from the twelve numbers given by the program of paragraph 2, the two pointing offsets, the source height and the cal height.

Outputs will be provided a) in Modcomp Fortran binary format, card or card image format, and/or line printer format.

A limited amount of additional programming aid can be provided on a time available basis but unless I hear otherwise very soon, the above is all we shall provide on a "besteffort" basis.

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