

E. Stobie

National Radio Astronomy Observatory
Tucson, Arizona

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Memorandum

To: Addressee

From: J. M. Payne *JP*

Subject: 8-Feed Rotation

Attached is a simple block diagram of the positioning system for the eight-feed system. The eight-feed receiver is mounted on a rotating table within the front-end box. The eight feeds are defined to be at 0° when the line of the feeds is parallel to the elevation axle. Normal operation will be confined to 90° - 270° with hard limits at 45° and 315° . Increasing angle is defined as CW when viewed down into the receiver box. The positioning accuracy will be better than 0.1° and the speed of rotation will be $20^\circ/\text{second}$.

The electronics will be a slightly modified version of the central mirror positioning electronics. Position information is derived from a 14 bit encoder attached to the table. The encoder reading is subtracted from digital commanded position and a D/A converter provides an error signal for a velocity loop driving the feed table.

All commands and status are transmitted vertically, one twisted pair for up data, one twisted pair for down. In computer control the input will be a 16 bit word (probably from DMUX II) and in manual control from either a 10 turn pot (followed by an A/D) or thumbwheels. The feed position will be continuously monitored and displaced in a decimal format with 0.1 resolution. A position error $>0.1^\circ$ will result in an error bit being set. We need to limit the commanded position to the range $+45^\circ$ to 315° . What is the simplest way to do this?

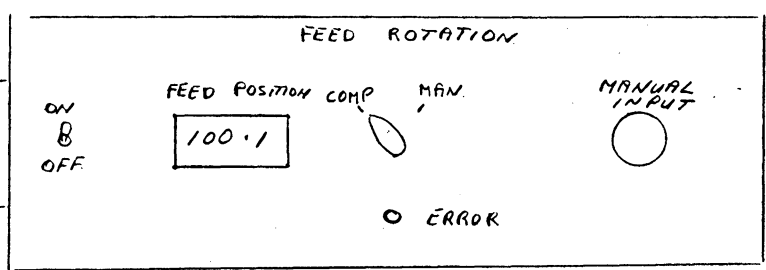
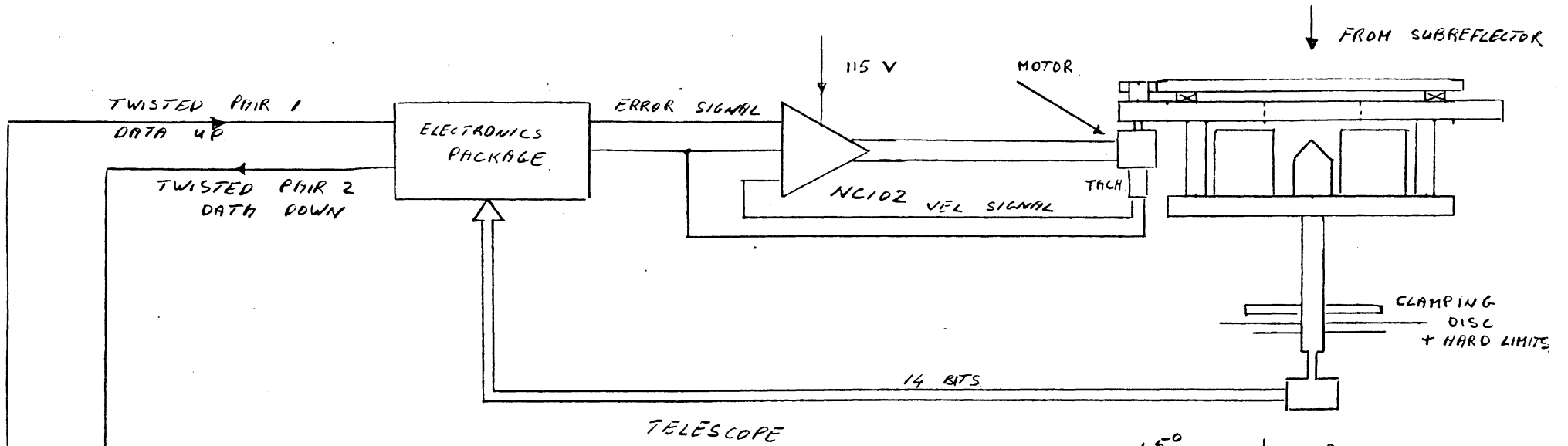
Jobs

<u>Job</u>	<u>Person</u>
Build up cards and card cage. Order components.	Ralph
Get chassis drawn up and sent to GB.	Ralph
Finish mechanical design.	Jeff
Decide on interfaces, etc.	Bob, John

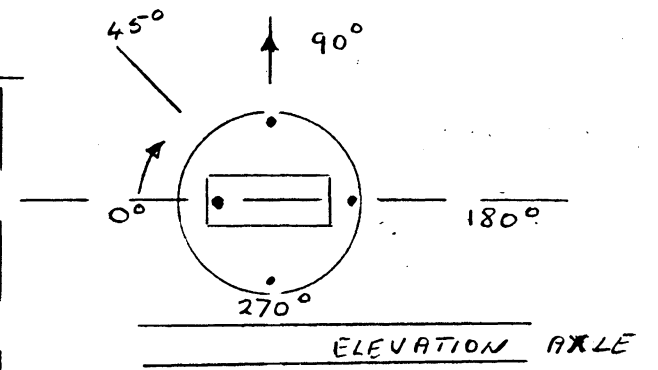
Bob, John, Jeff, and Ralph should meet sometime this week
(3rd August) to discuss this.

JMP:jcn

cc: Darrel Emerson
Phil Jewell
Bob Freund
Jack Cochran
Jeff Kingsley
Ralph Becker
Betty Stobie



16 BIT POSITION COMMAND
 FROM DMUX II



CONTROL ROOM.

+ VE DIRECTION IS CW
 VIEWED LOOKING INTO
 TOP OF RECEIVER BOX.
 NORMAL RANGE OF OPERATION
 IS 90° → 270°. HARD
 MECHANICAL LIMITS AT
 45° AND 315°.