

National Radio Astronomy Observatory

12-Meter Telescope Meeting No. 2

April 14, 1981, 1300 EST

1. Present: M. Balister, J. W. Findlay, M. A. Gordon, W. G. Horne, H. Hvatum, L. King, J. M. Payne, W. Y. Wong
2. H. Hvatum: Project has a high rating from the AUI Visiting Committee. He will discuss it next with the NSF and the AUI Trustees.
3. The Surface: JWF visited ESSCO on April 1st. Subsequently HH and Al Cohen had talked. A price of around \$161,000 had been suggested. There was general agreement that our first choice would be to try to use ESSCO--the price is much lower than cast Al panels and the delivery quicker.
4. Back-up Structure: WGH is working on a design. Lee King had run a gravity deflexion analysis (giving an RMS error of about 30 microns), but so far no thermal analysis.

WGH hopes to retain existing elevation axle and bearings and the elevation gear wheel.

JMP and WGH discussed electronic box mounting and general access. JMP will work with WGH on this.

JMP thinks a 12-meter dish will hit the present control building, but will look into this.

WGH hopes back-up could be built by NRAO.

5. Pre-assembly: JWF requests that the reflector support structure be assembled on the ground (Green Bank a possible site) and that surface plates be mounted and set on it. This is to confirm measuring techniques and to uncover possible difficulties. Then take apart, ship to Tucson, erect and re-align surface. All techniques are known--mounts for the reflector are needed at Green Bank, together with some instrument supports.
6. PERT: Total task could be complete by summer of 1982. HH will sketch out a first PERT chart.
7. Tasks: The following main areas of work were noted:
JMP - Decide on the telescope optics. Cost of a sub-reflector. Work with WGH on electronics locations in the back-up structure.

WGH - Get details of panels, particularly F/D, mounting points, etc., from ESSCO.

HH - Will work on PERT.

JWF - Will work on all aspects of the surface, from ESSCO to the final setting and testing.

8. An Error Budget for the Surface: A "first look" surface error budget be:

| | |
|------------------------------|-------------------|
| Plate manufacture | 40 microns |
| Measuring and setting plates | 25 microns |
| Gravity effects | 30 microns |
| Thermal effects | <u>30 microns</u> |
| RSS = | <u>63 microns</u> |

HH said we should try to remain below RSS = 70 microns.

9. Pointing Errors: This is still somewhat unknown, since the contributions of the tower and reflector structure are not easily separable. It was agreed not to change the azimuth bearing.
10. Next Meeting: Was set for May 11th, but later was advanced to April 28th.

JWF/pj