GBT Systems Reports on Project Coordination for July 1999
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The proposal for setting GBT surface panels states that the panel corners will be set to an accuracy of 0.002 inch and that most actuator assemblies will be positioned to an accuracy of 0.25 inch. Since the maximum deflection which can be measured with holography is a quarter wavelength, or 0.25 inch at 12 GHz, a consequence of this proposal is that the GBT holography receiver will not be able to accurately measure the large deformations in the surface as originally set. The large deformations will need to be removed with the active surface, using photogrammetry data or laser rangefinder measurements, before holography measurements can be made. Detailed commissioning plans may need to be revised to account for current surface setting plans.

The setting of panels and checking of actuator cables will place large demands upon the NRAO staff, particularly in the Electronics Division. The full impact of these activities will not be completely understood until ComSat begins laying panels, at which time it may be necessary to readjust project priorities.

Scheduled activities completed over the month of July include the fabrication of laser access platforms for installation on the GBT, the gold-plating of the S-band amplifier cold plate, and the moving of the GBT X-band receiver and VLBA Data Acquisition Rack from the 140-Foot Telescope to the Jansky laboratory. A potential location for the new site radios was identified.

The metrology group measured ranges to a retroreflector on the GBT feedarm. Measurement accuracies were on the order of 10 microns; a factor of 10 less than anticipated.

The GBT holography receiver was tested on the 140-Foot Telescope on July 20-22. Maddalena reported that the large bandwidth accepted by the receiver limits its dynamic range and may affect its system temperature. White is considering the installation of a tunable narrow band filter to overcome the dynamic range problem. The receiver is also being modified so that it can be operated at the GBT Gregorian focus in addition to prime focus.