

**GBT Systems Report on Project Coordination for September 1999**  
**M. McKinnon**

COMSAT announced that it would begin testing surface actuator cables after the S70 derrick has been disassembled. COMSAT personnel who disassemble the derrick will also test the cables. COMSAT estimates that the disassembly of the derrick will be complete in late October or early November. NRAO originally planned to test the cables in September. These cable testing plans will be postponed, and NRAO-internal priorities will be adjusted accordingly.

The spectral processor was moved from the 140-Foot Telescope to the GBT Electronics Room. The SAO maser at the 140-Foot supplied a 5 MHz reference signal to the Interferometer Control Building. Mike Stennes changed the source of the reference signal to the Sigma Tau maser so that the SAO maser can be moved to the Electronics Room. Once the SAO maser is moved, all GBT equipment installed at the 140-Foot, with the exception of a computer, will have been removed.

John Shelton and Jody Bolyard developed a laser safety training program that complies with ANSI standards. Different levels of safety training will be given to Green Bank personnel, depending upon the degree of their interaction with the lasers. General laser safety at the GBT site was also briefly reviewed by Bolyard, Shelton, Parker, and McKinnon. A fence will be installed around the entire perimeter of the GBT (at about 10m outside the ground laser rangefinders) to limit access to the lasers and the telescope. Backstops will also be installed behind the lasers so that an inadvertent and unlikely stray laser beam cannot propagate beyond the new fence.

On September 8, Don Wells showed how a servo-shaping technique called "Posicast" could be used to effectively eliminate the oscillations which occur in the GBT feedarm when the telescope is abruptly moved in azimuth. The technique employs two impulses which are properly timed such that the oscillations induced by each impulse add in antiphase and, therefore, cancel one another. Posicast appears to be much more effective than other servo control methods (e.g. CPP-B) in removing feedarm oscillations. Wells is publishing his results in a GBT memorandum entitled "Jerk-Minimizing Trajectory Generator in C".

Tim Weadon completed the GBT cable routing plan.

Simon Radford at NRAO-Tucson is developing a two-element, 12 GHz interferometer to monitor atmospheric phase stability near the GBT. Radford's preliminary estimates indicate that the interferometer may be ready for installation by the first of next year.

A relatively simple and stand-alone enhancement to the GBT spectrometer can be made to bypass the long term accumulators so that raw spectrometer lags can be sent directly to disk or tape. This spectrometer observing mode is particularly useful for pulsar searches. Jim Cordes (Cornell) expressed an interest in implementing the mode and is recruiting an electrical

engineering graduate student (Steve Kuebler) to do the work. Cordes and Kuebler will decide if they can undertake the project after a review of relevant spectrometer engineering documents.