

MPH 8/5/83 *mph*

Summary of Green Bank Hardware Needs

Computing in Green Bank encompasses a wide variety of users and requirements. It is both telescope-oriented and lab-oriented and serves a broad spectrum of applications in such areas as reduction of data taken both with the Green Bank and other NRAO telescopes, astrophysical analysis, computer-aided design and numerical simulation.

The present state of Green Bank computing is insufficient to meet either our current or future needs.

Our physical isolation, limited manpower and demand for reliability weigh heavily in our choice of possible solutions.

There are two immediate major objectives of our computer plan: first, the replacement of the RJE station with a full-capability stand-alone system for general purpose computing in the Jansky Lab, and second, the development of a new on-line telescope control system at the 300-foot telescope. The latter project will occur in conjunction with the development of the new 300-foot spectral processor, which itself involves a major computer effort.

The minimum system which will replace our present (and terribly unsatisfactory) link to the CV IBM4341 for general purpose computing must have an interactive user-friendly operating system, two tape drives, a 300 Mbyte disk, high resolution interactive graphics (terminals, plotter and hard copy), and multi-user accessibility starting with a minimum of eight terminals. To meet our immediate needs we propose to purchase a 68000-based super-microcomputer; the MassComp version running UNIX seems to offer the best combination for our purposes. The final system will require additional terminals and full AIPS capability with I²S, AP and two disk drives. Software such as an interactive graphics/plotting package and special purpose electronics packages will be necessary for this machine.

The new 300-foot control computer will replace the DDP116 which even now severely restricts current observing strategies such as sampling rates for multi-channels, slaves us to punch card input and disallows remote observing. The construction of the spectral processor and new multifeed receivers and the desire to develop a modern, interactive and user friendly telescope control system demand the capabilities of a supermicro as well.

The longer term Green Bank plan sees the eventual replacement of the 140-foot control system with one similar to that being developed now for

the 300-foot and a rewrite of the current data reduction software for both line and continuum, incorporating such programs into a single-dish AIPS environment. The inclusion of our computers into an observatory-wide network remains an important objective; the link to the IBM4341 is required until such time as it is no longer needed, particularly for observing on the 300-foot for which it is currently vital (but not desirable).