

Center for Astrophysics

Harvard College Observatory
Smithsonian Astrophysical Observatory

TECHNICAL MEMORANDUM

MEMO #43

November 29, 1990

To: Files
From: Paul Ho
Subject: Programming Plan

Allocation for Outside Observers. It is envisioned that up to 50% of the total observing time on the SMA will be available to scientists not affiliated with Smithsonian. This is appropriate since this instrument will be constructed and operated with federal funds. The presence of external users is extremely important for bringing in fresh scientific and instrumentation ideas as well as for pushing and extending the reliability and range of the array.

Program Selection. All of the scientific programs for the SMA will be reviewed by an external committee whose task will be to rank order the proposals in terms of merit and to recommend the amount of time to be assigned to each project. An internal scheduling committee will then review such recommendations and proceed to schedule the experiments. Because of the difficult atmospheric conditions, the daily schedule must be flexible in order to make use of the best weather conditions for the most critical experiments. Hence, each proposal will be assigned a weather quality code (0,1,2) which rank orders its priority in a dynamic schedule. Proposals of similar weather quality codes will be merged into schedule blocks of 1 day duration. A queue of schedule blocks rank-ordered based on scientific merit will then be established for each weather quality code. The site director will make realtime decisions each day on the best guess for the quality code for the day. The experiments to be executed that day will then be drawn from the appropriate queue. Because of uneven data quality and equipment failure, the scheduling committee will periodically readjust the schedule queues to ensure that the best science will be done.

Proposal Cycles. As the best observing conditions are probably at night, sources will become available for study at different times of the year. We will establish a 6 month cycle for the call for proposals. Proposals will be due 3 months prior to each 6 month observing period. Each successful proposal will then be carried for 12 months in order to ensure a second pass if weather or equipment failures preempted the schedule. Reconfigurations of the array within each 6 month observing period will be driven by proposal pressures, with a minimum number of moves to be scheduled. It is of course expected that for the first few years, the smaller configurations will be tried first in order to sort out systematic effects inherent in the array. It is also expected that the larger configurations will also be studied early on in the lower frequencies in order to sort out effects at these pad locations.

Interactions with Proposing Scientists. After the proposals are reviewed by the outside committee, the ratings, the assigned quality code, and the intention to schedule will be communicated to the proposing scientists. This should occur 2 months after the

closing date of each proposal cycle. During operations, at the end of every two months, the status of each proposal within each quality-code queue will be passed on to the principal investigators. Realtime monitoring of the status of the queue can be done via a publically accessible file. Since the schedule is dynamic, all observations will be set up and programmed by the local staff. Hence the presence at the telescope by the investigating team will not be easy to arrange. However, if investigators wish to be present for high priority projects requiring special setups, we will make every effort to arrange for observations to be completed within say a one-week period. Visits to either the array itself or to Cambridge are encouraged. Realtime monitoring of the data will be available at both sites plus over modems and internet, as will be extensive processing capabilities.