

## National Radio Astronomy Observatory

Charlottesville, Virginia

January 22, 1983

To: Computer Planning Group

From: R. Burns *RBS*

Subject: Computer Plans

This memo outlines the development of a computer plan for the Observatory.

The development of the plan involves two groups: (1) a Computer Planning Group (CPG) made up of H. Hvatum, M. Gordon, M. Haynes, R. Ekers, K. Kellermann, G. Hunt, B. Stobie, B. Clark, and R. Burns; and (2) a Scientific Review Committee made up of a small number of NRAO staff and outside observers. The latter group has not yet been selected.

A numbered memo series will be set up and maintained by Nancy Wiener, the Charlottesville Computer Division Secretary.

## 1. SITE PLANS

Each site, including Charlottesville, shall produce a plan. For each site, the site director shall be responsible for the plan's development. Burns will develop the Charlottesville plan and will work with the site directors or their designates in the development of the other plans.

Time Scale - The planning period shall be five years - 1983 through 1987. This period should be used in considering impact due to changes in observing instrumentation.

Each plan should contain:

- a. An estimate of the scientific demand for the various observing modes of the instrument.
- b. The computing services each site will provide, including the point at which the site's responsibility ends. Standard products, i.e. tape, hardcopy, etc. should be described along with an estimate of the fractional number of observers producing each product.
- c. The computing requirements dictated by the scientific demand (see a.) coupled with the services provided (see b.). This may be in units of number of maps per day or other measures to which readers can relate.
- d. The policy on return visits not associated with observing along with current estimates.
- e. The policy on remote dial-in, detailing for which functions dial-in is to be supported, the number of planned lines and the protocols supported.
- f. Development and Procurements - This will include a very general description of the developments which will take place over the five year period and a detailed description of the first three years. All OOE computer equipment requests anticipated during the three year period in excess of \$25K should be described. In the case of the

VLA, a request for funds outside OOE for a large computing procurement is a possibility. If so, the proper development of this request will be a major part of the plan.

- g. Manpower - To first order manpower should be assumed constant at current levels. Increases are unlikely unless they can be taken from other site operations. However, if increases are necessary, suitable support information should be given. Also important, if the necessary increases are not possible, the resulting changes in the plan should be indicated.

## 2. COG PLAN

The NRAO Communications Group (COG) shall produce a five year communications plan. Burns will be responsible for this plan. The outline should follow those guidelines set in item 1 (SITE PLANS). This plan should be coordinated with the various computer plans, the observatory's general telecommunication/telephone growth, and the observatory's word processing and facsimilie requirements.

## 3. VLBA PLAN

It is difficult to consider the impact of VLBA on the overall computer plan because of several uncertainties. One could imagine a center where VLBA, VLA, and perhaps other data are all processed. The VLBA, however, has not yet been funded and therefore time schedules have a great deal of uncertainty. Also, the location of the VLBA processing center is not definite. As such, only those aspects of VLA processing which could usefully be moved from the VLA site could, at this point in planning, be considered candidates for such a combined facility.

Current VLBA construction plans consider VLBA processing performed in a dedicated facility up to the post-processing stage. The plan provides some post-processing hardware but considers NRAO's and other post-processing facilities available for use with VLBA data.

Burns, Kellermann and Ekers will summarize the VLBA plan, estimating its impact on general post-processing. They will also review the question of a combined processing facility.

## 4. PREPARATION OF INTEGRATED PLAN

Burns will collect the various plans described above, will distribute them to all parties, and will prepare an integrated plan. This plan will reflect the integration of the plans submitted both from the point of view of technical compatibility and overall cost. As such, the integrated plan may suggest alternative solutions to those proposed in the individual plans. Any such integration involves a degree of subjectivity, as do the individual plans themselves, and the result can be expected to reflect Burns' views. The integration should therefore be viewed as only a starting point for the development of the best overall plan.

## 5. PLAN REVIEW

The integrated plan along with the various site plans shall be presented to a Scientific Review Committee. This committee shall be chaired by Dr. Hvatum and will act in an advisory capacity to Dr. Roberts. It shall be made up of NRAO staff and outsiders. The role of the committee is to review and suggest improvements, options, etc. to the proposed plan.

## 6. TECHNICAL REVIEW

Using the report of the scientific advisory committee, Dr. Roberts will accept, reject, or modify the plan. Further technical work will then be done both reflecting possible changes in the plan and developing what might be called Phase 2 of the technical portions. Phase 2 involves developing the technical details considerably further. A further development would be more appropriate once some of the more general considerations have been settled. At the conclusion of Phase 2, a technical report shall then be prepared for technical evaluation by the Computer Advisory Committee. This committee is the group of technical experts convened in March 1982 with perhaps some slight modifications. The committee will convene at an appropriate time to technically evaluate the plan.

## 7. TIME SEQUENCE

- Jan. 29 - Invite committee members.
- Feb. 21 - Site plans complete.
- Mar. 4 - Integrated plan complete.
- Mar. 14 - Scientific advisory committee begins discussion.
- Mar. 25 - Preliminary document outlining major procurements for NSF presentation April 7.
- May 14 - Formal report due
  - Changes/modifications made by Dr. Roberts. Technical Phase 2 begins.
  - Phase 2 complete. Technical advisory group meeting planned.
  - Technical advisory group meets.

wrb/ndw

cc: M. Roberts