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CPG MEMO NO. 17

National Radio Astronomy Observatory

Charlottesville, Virginia

July 15, 1983

To: Computer Planning Group

From: R. Burns

Subject: Tuesday's CPG meeting (7/19/83)

During the first part of Tuesday's meeting we will discuss the Charlottesville site plan. Time permitting, during the second part, we will discuss the Green Bank plan.

Although I have discussed the Charlottesville site plan with some of you in depth and with others briefly, there remains no written documentation. This has not been due to lack of effort but rather due to the lack of clear and obvious answers, particularly in the area of the IBM. I feel our upcoming discussion will be helpful in comparing the alternatives. I hope to give some background for the discussion in this memo.

Charlottesville Plan

1. The most obvious part of the CV plan is to replace the Modcomp with a VAX. The CV VAX is the most heavily used VAX in the observatory, reaching extended periods of loading at near 100% utilization. It supports 28 terminals and is in heavy use. It is used as the primary CV-AIPS machine, for AIPS development, for VLBI processing, for VLBI development, and for miscellaneous things. The Modcomp, which acts as the second AIPS machine, is used only for single dish work and AIPS. Several points make it a less attractive AIPS machine. It therefore is only used as a second choice and it seems to be growing less attractive with time. Additionally, major pieces, the disks for example, need replacing. I think all people involved feel it should be replaced with a large VAX as quickly as possible.

2. CV should develop and maintain a 68000 UNIX-based single user AIPS system. The purpose is twofold: First, a number of universities plan to run these systems and they and the NSF have made frequent queries as to whether we will support such and when. Second, it is attractive to run AIPS on two different architectures. The University of Texas UNIX-based AIPS system runs well on a VAX but does not come close to running on a non-VAX architecture.

3. The IBM situation is far from clear. Work on the IBM over the last four years has fallen off sharply. Also, it has moved from a nearly all batch machine to a some batch and some interactive use machine. As such, like the DEC10, it is overloaded in the afternoon and underused or not used at night. The IBM is not competitive with the VAX in attracting users and we encourage this even more since we have program development on the VAX and not the IBM, and since we have not purchased hardware to make the IBM more friendly. We could put some money into the IBM and make it more friendly, but I question that this is the way to go. A possible solution is simply to phase out the IBM. I think in such a case we could make arrangements to migrate current users to a VAX or to buy some remote IBM time or both.

The problem is that although the IBM is not heavily used, its use could not, I think, be absorbed by the second VAX (Modcomp replacement), at least not for long; we might be OK for a while. Removing the IBM probably has to include replacing it, at least within a year or two, by a third VAX. This is unattractive because the VAX is currently not a particularly competitive machine. I'm not sure we should buy a third.

A possible scenario might be to replace both the Modcomp and the IBM by the new larger VAX. The problem here is that the time scale is unknown and the Modcomp replacement is becoming somewhat urgent.

Another scenario is simply to keep the IBM since it is largely owned (we owe yet a total of ≃ $150K). This would eliminate the conversion problems. Also, there is the possibility that the next generation VLA system will use a plug compatible IBM mainframe. If so, there might be more development of IBM-based applications. The problem with this scenario is that we would be keeping a machine that does not appear to be very attractive for our current needs. I may be too negative on the IBM here; the fact is it does some useful things pretty well. We will need to discuss this.