



RADIO ASTRONOMY LABORATORY

BERKELEY, CALIFORNIA 94720

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Dr. Morton S. Roberts
National Radio Astronomy Observatory
Edgemont Road
Charlottesville, VA 22901

Dear Mort:

We endorse the view that NRAO must locate the VLBA operations center in close proximity to a major university with an active astronomy research program. Astronomy is an academic subject and the center of academic activity is the university. Colocation of a new NRAO activity with a university will attract the best scientists to work at and with the NRAO, and will strengthen the educational system in the United States. These general statements presuppose that colocation will lead to significant interaction on a day-to-day basis. Significant interaction requires interest, both personal and institutional, and effort from both sides.

As a practical matter we do not see a wide range of options available to the NRAO that satisfy the above recommendation. An existing NRAO site is desirable for economic reasons unless the NRAO chooses to consolidate present activities with the VLBA operation center at a new site. Choice of a nonexisting NRAO site might delay the VLBA project. Of the existing NRAO sites, only Tucson and Charlottesville are located near major universities. Of the two, we strongly recommend Tucson as the site for the VLBA operations center.

Tucson is attractive to us for the following reasons:

- [1] The planned NRAO building is located on the University of Arizona campus near the Astronomy Department/Steward Observatory/Optical Sciences Center/Lunar and Planetary Lab/MMT Observatory/Kitt Peak National Observatory.
- [2] Scientists at the aforementioned institutions are actively engaged in many areas of astronomical research from the solar system to the most distant quasar. Crossfertilization of subject matter is likely.
- [3] Technical staff and scientists at these institutions are actively engaged in the development of modern astronomical instrumentation. Crossfertilization of technical information is likely.
- [4] Radio astronomy has matured dramatically over the past two decades. This development has taken place often in isolation from other branches of astronomy. The commission on radio astronomy in the IAU and URSI give witness to this. While the isolation has not hurt the past development of

radio astronomy, we sense that the future of radio astronomy requires full integration with other astronomical endeavors. For reasons stated above, Tucson is an attractive site for achieving this merger.

- [5] The Southwest is the site of the VLA, the 12m antenna, a concentration of the VLBA sites and, perhaps, the eventual site of an NRAO millimeter array.
- [6] Tucson is readily accessible by major air carriers from both coasts.

The principal arguments against this recommendation are:

- [1] The VLBA and VLA operations should be merged at a site as physically close to the Plains of St. Augustine as possible. The options in decreasing order of desirability are Socorro, Albuquerque, Tucson.
- [2] There is no water in Tucson (or Albuquerque).
- [3] Charlottesville has a long standing NRAO/radio astronomy tradition, and is more accessible to astronomers located on the East Coast.
- [4] Charlottesville is near Washington, DC, the source of funding, the source of funding.
- [5] The multitude of other astronomy institutions in Tucson could lead to destructive competition rather than constructive interaction.

With regard to item [1], we feel that a site as close to the VLA as Socorro or Albuquerque might diminish the activity at the VLA itself.

In conclusion, our view is that none of the above are strong objections to placing the VLBA operations center in Tucson.

Sincerely yours,

Wm. J. Welch

D.C. Backer

DCB/cjl