



NAAPO (North American AstroPhysical Observatory)

"NAAPO News"
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Editorial Intern -- Beth Helwig; Otterbein
College, Westerville, Ohio 43081

7 March WORKING SESSION

IN ATTENDANCE: Manchester College SPS students: John Leininger, Brian Proffitt, Norman Coots, Jon Hess, Norman Rohrer, Verne Leininger, and Rick Thomson, Dwight Beery, Hain, Rogers, James, Mikesell, Huck, Mitchell, Abbott, Dixon, Bolinger, Barnhart.

An abbreviated meeting for the purpose of clearing the way for a tour of the facility for the Manchester group and a cleanup session for the remainder of the staff dealt mainly with the issue of the changing of the lock on Dreese Radobs office, Dixon's trip to Detroit, the NASA SETI project and the machining being done for the Synthesizer Interface. The flow of work in a volunteer environment seems painfully slow. Progress was not noted in many of the areas discussed.

The educational enrichment program being developed by Dick Helwig and the

suggestion for establishing a NAAPO Logo contest were brought up.

Barnhart shared his ideas for a Management Team approach to the operation of the Radio Observatory. He promised to share it more generally in the next issue of NAAPOnews.

Meeting adjourned at 11:05 so that the Manchester team could examine the feed horn cart, Big Ear, Perkins Observatory, Halfway House and the Dreese Lab facilities and Physics and Astronomy facilities at OSU. Next Meeting was scheduled to occur 21 March.

A NOTE FROM HAY RIVER R.O.

Just as we are going to press the mail brings a note from Bob Stephens at Hay River, NWT. He sends word that he is planning a trip to Green Bank WV for the SARA Symposium '87 at NRAO.

This means we should get a visit from him at Big Ear. When travel plans are complete we will announce when he will be available and perhaps even arrange a special NAAPO ad hoc seminar with food for body and thought and a chance to visit Bob without icicles hanging from his fingertips.

Bob requested anyone who has travel funds to contact him to help with his transportation from Hay River to Toronto. Unfortunately, NAAPO has no travel funds available in its treasury. Any help for Bob will be greatly appreciated.

MOOK CITES RESEARCH FUND SOURCES

In accessing a database service for Grants and Funds available, Bill Mook turned up the following list of possible sources for funds for NAAPO.

National Geographic Society Research Grants
Center for Field Research Grants
NSF Presidential Young Investigator Awards
Henry Marshall Tory Medal
AAS Small Research Grants
NSF Astronomical Sciences Research Grants

Anyone interested in more information about any of these programs or awards may

contact Barnhart at NAAPO Headquarters.

COORDINATOR'S CORNER

It is time to get serious. NAAPO is in need of an active organizational shake-up. We have operated rather ineffectively in a casual, informal, catch-as-catch-can, crisis intervention mode for as long as I have been attached to the organization. Because we are a largely volunteer organization this technique has proven less effective than many of us would like to see.

It is a difficult task to marshal the efforts of a number of volunteer workers who of necessity have job commitments, family obligations and social activities that rightly and necessarily take precedence over the work volunteered to the Radio Observatory. In my view the efficiency of such an operation can only suffer when important decisions are made in isolation by different interested parties without thorough consultation with a management team capable of assessing plans, proposals and critical utilization of all available resources.

Our bi-weekly working sessions have not accomplished this vital management function for a variety of reasons. As coordinator of these meetings I must shoulder responsibility for this failure. The working session does perform vital functions: informational, problem assessment, problem solving, to say nothing of the provision of inspiration and guidance for those of us most directly involved in the week to week operation of our mission.

What is lacking is a coherent management program. As NAAPO coordinator I have hesitated to act decisively and unilaterally because I have only recently become affiliated with Big Ear -- which seems at first glance to have run quite well without my intervention. I see now that continued indecisiveness may well cost us a future. I do not propose that I become an autocratic nor dictatorial leader. I will always lack the wisdom and skill to perform such a function. In fact, I believe sincerely for the benefit of NAAPO, **NO ONE HAS THE ABILITY TO UNILATERALLY DECIDE HOW THE AVAILABLE RESOURCES OF NAAPO** should best be utilized.

I appreciate the skill and expertise residing among the trustees of NAAPO. I value that resource sufficiently to suggest that as NAAPO coordinator I want to tap as much of that skill and knowledge as possible. I regret that after two years of being

affiliated with NAAPO I have not personally met more than four of the trustees. This I intend to remedy shortly.

I am going to propose a general meeting of NAAPO trustees in the near future to have them consider adoption of the following organizational guidelines to enhance the management effectiveness of NAAPO:

1. Management responsibility of NAAPO will rest in an EXECUTIVE COMMITTEE consisting of the active observatory director, any associate observatory directors, the chief engineer, two members of the board of trustees of the observatory willing to serve on this committee, any principal investigator(s) involved in a funded research project, and the NAAPO coordinator.

This committee will meet quarterly and upon special calling at times when critical decisions must be made affecting the operation, maintenance, modification or funding of the Radio Observatory or the Consortium. Important decisions needing immediate action will require a telephone polling of the executive committee.

2. The financial structure of the NAAPO will be reorganized to allow the executive committee to draw up an annual projected budget and to allocate from available funds and projected income an established monthly account from which approved expenditures may be drawn. These budgets will be continually monitored and adjusted at the quarterly meetings of the executive committee.

3. The executive committee will draw up an acceptable program to coordinate and allocate various branches of the NAAPO Consortium. Thus, allocations of resources in various locations will be managed through the executive committee.

I propose to address invitations to the trustees of NAAPO to attend a meeting this spring to discuss these proposals and to allow me to get to know them on a more personal basis. I welcome any and all input from those interested in our common mission.

NOTE FROM ARGENTINA

Guillermo A. Lemarchand sent a copy of the August-October 1986 issue of ASTROFISICA, a publication of the Faculty of the Exact and Natural Sciences of the University of Buenos Aires. Included in this issue is an article describing the past 50 years of SETI with some kind Spanish words for Big Ear and the work Dixon-R has been carrying out.

Anyone interested in reading this issue let me know and we will get it to you.

Big Ear

The Best SETI instrument available

by William H. Mook

Recent interest in Big Ear from NASA is welcome, although not unexpected news.

When compared to any instrument in the world today few instruments compare with the sensitivity and resolution of Big Ear. When compared to any instrument available full time for SETI, Big Ear wins all competitions hands down!

To make a radio-telescope a state of the art instrument for SETI requires electronics specifically designed for the task. Electronics like that designed by Horowitz at Harvard, or Oliver at NASA.

This means that any prospective SETI instrument should be judged by what I call the 'heavy metal'. That is the resolution and sensitivity limit of its primary focusing element. Consideration should also be paid to the availability of the instrument over the long term.

By its very nature SETI is likely to be a long term survey commitment. Any instrument selected for SETI surveys should be available to thoroughly comb the cosmic haystack.

Instruments like those at Arecibo and the NRAO are somewhat more sensitive and have higher resolution limits than Big Ear, but they are not available for the type of long term commitment to SETI that Big Ear is. Instruments like those at the Goldstone facility are less sensitive than Big Ear, and are available for SETI only on a standby basis. After all their primary mission is the collection of data from our

deep space probes, such as Pioneer flybys of Uranus and Neptune.

Big Ear is also located near one of the best astronomy departments in the country. The Ohio State University astronomy department could be a fine analytical resource for the follow up analysts, of the reams of data a dedicated SETI survey would produce.

While Big Ear is a meridian transit instrument specifically designed for survey work, it is also capable of tracking objects in Right Ascension for over 30 minutes.

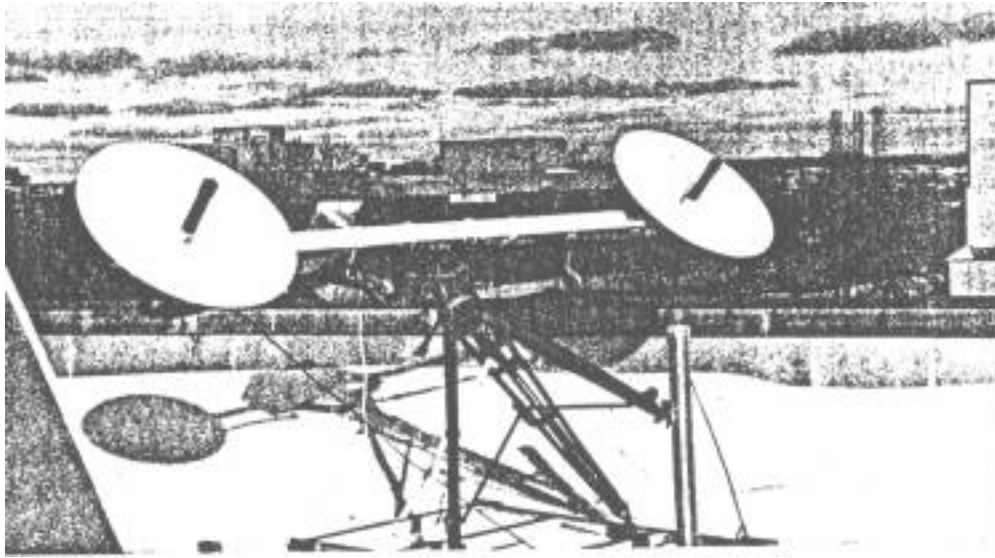
Big Ear's unique design also allows for the possible tracking of several declinations at once. This would increase the speed at which surveys could be done. Also the copious space available in its focus room and easy access to the focus permits low cost support and modification of its electronics.

The instrument could be equipped with a laser theodolite to automate the time consuming manual setting of the declination. This could easily be added to the control system designed to operate the Right Ascension tracking.

So we welcome interest from NASA and others! Your world class, dedicated SETI survey instrument is here in central Ohio!

LONC SENDS NEWS OF 3-CM INTERFEROMETER

NAAPO faculty representative William Lonc of St. Mary's University, Halifax, Nova Scotia sends this picture of his 2.7 meter baseline, polar axis mounted interferometer designed to operate at 10 GHz. He uses a tunnel diode preamplifier giving about 5 dB N. F, and 100 MHz bandwidth. For more information feel free to contact Bill at St. Mary's University, Dept. of Physics, Halifax, Nova Scotia B3H 3C3 or by phone (902) 425-3210.



ASTRONOMY SUFFERS IN CONGRESSIONAL BUDGET

The American Astronomical Society Newsletter reports the distressing news that although NSF is averaging over 17% increase for FY88-89, the increase for astronomy is only 8.8%! This comes at a time when the Challenger disaster is draining very large amounts from the NASA space exploration necessitating long postponements and elimination of many projects. With more and more of the budgeted funds going to the national facilities there is a dwindling supply for the small independent research projects.

The overall impact of this move was predicted many years ago by Jesse Greenstein. In the decades ahead, we will begin to see the chickens come home to roost. There are obvious, often ignored advantages to the small independent researcher. The course of astronomical discovery is strongly linked to the existence of the small, dedicated scientist.

EDITORIAL PROMOTES UNDERGRADUATE RESEARCH INVOLVEMENT

In an editorial in the 23 March 1987 issue of THE SCIENTIST Eugene Garfield makes a strong case for undergraduate participation in basic research. Citing the NSB report on undergraduate education in science and the Oberlin Report he points to the outstanding success of those institutions that give hands-on research experience to their undergraduate students.

Principle thrust of the editorial is to point up the need for other than federal support for such programs. The federal budget will come nowhere near the needed funds to

effectively implement the needed activities at the undergraduate level.

For those of you who do not receive this Journal, I will be happy to send a facsimile copy to you if you just request it from the NAAPO Headquarters. It would be nice if the request came on the back of a healthy check made out to NAAPO.

NEXT WORKING SESSION:

4 April 1987

10:00 am

at BIG EAR

21 March - - WORKING SESSION

IN ATTENDANCE: Guthrie, Mook, Foster, Abel (with donuts), Huck, Bolinger and Barnhart. Helwig-B flew in and out.

Recent progress reported included:

Ron Huck reports he removed, repaired and reinstalled the integrator panel from the focus room. It now seems to operate according to specs.

Bill Mook reports the fabrication of the circuit boards for the synthesizer interface is in progress and should be done in a few weeks. The machinist has had to work through a netlist by hand which is taking a long time. We will know to ask the CAD/CAM operator to provide one the next time when the schematics are produced.

The synthesizer panels are being machined at FluidCircuits in Lancaster. Barnhart was ordered to contact Abbott-C to try get them to Huck before the week is out, since classes start Monday the 30th. [Note: The panels are done and were delivered to Dreese RO office Wednesday morning.] [Many thanks, Carol !!!!!]

Guthrie-J volunteered to re-attach the tiles to the floor in the conference room at the Radio Observatory. He will coordinate this task with James-H.

Considerable discussion was devoted to the question of funding, NASA and ways to get more community involvement in the support of the Radobs and its programs.

ESL is back on the groundplane.

The development of a school enrichment program was announced. Helwig-R submitted some outlines for involvement on the part of local staff. More will be mentioned of this at the next working session.

The meeting adjourned at 11:50 am.

RADIO ASTRONOMERS SOUGHT BY NASA

Applied Research Corporation lists two openings for radio astronomers with experience in Very Long Baseline Interferometry. The work will center at NASA/Goddard Space Flight Center, Greenbelt, Maryland and will deal primarily with compact source mapping, geodesy and reduction of VLBI data.

For further information, contact:

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