

National Radio Astronomy Observatory  
Tucson, Arizona  
May 25, 1989

MEMORANDUM

To: D. T. Emerson and J. M. Payne

From: P. R. Jewell *PRJ*

Subject: Summary of Pointing Meeting on Monday, May 22

We discussed and reached decisions on the following projects to improve 12 m pointing:

1. Laser Quadrant Detector

A top priority project. John will expedite construction of FEDAL units to digitize the output. Antonio will proceed with the conversion to a switched power detector. Tom will program the data acquisition from the IEEE-488 bus.

2. Thermistors

Another priority project. Requires completion of a FEDAL and a weather-tight electronics box for the telescope. John will supervise. Tom will program data acquisition.

3. Weather Station

Lower priority than items 1 or 2, although still important. I will ask Dennis to proceed this summer with digging a trench and laying fiber optic conduit so that the project can be completed later this year.

4. New Sterling Mount

High priority project for Jeff. We should stay out of his way so he can get it done.

5. Elevation yoke inclinometers

High priority. We will receive a sample electrolytic level from Spectron within a few days. John and I will test. If it works well, we will consider using it, since it is cheaper. However, it is likely that we will have to go with the more expensive Schaevitz models. If it is necessary to buy the Schaevitz's, we will do so. John will put the VLA

temperature control boxes (2 of them) into the Green Bank shop for construction. Tom will program data acquisition.

6. New Optical Telescope

We decided to proceed with this. We will get a 10" Schmidt-Cassegrain. Ray Lichtenhan will be asked to do the mechanical work (we must clear this with Dennis). We decided that there was no advantage to mounting it on the X-Y translation stage of the new focus-translation mount, although it should be integrated into Jeff's project in a reasonable way.

7. Video Frame Grabber

We will also proceed with this. Phil will pick out a model within the next couple of weeks; he is inclined to go with one of the models used by Steward Observatory so that we can use their code as a sample. Tom will do the programming, but he is not to start on it until the data acquisition for the quadrant detector, thermisters, weather station and inclinometers is completed.

COSTS:

Major capital outlays for the projects outlined above are:

Inclinometers (4)	\$5440 (for the Schaevitz; \$1980 if the Spectron suffices)
New Telescope	\$975
Frame Grabber	\$1995 (PCVision model)
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Total	\$8410 (\$4950 if the Spectron levels work)

We have \$5k in the RE budget for pointing projects; the extra \$3.4k will be scrounged from other RE or Operations accounts.

Darrel: Please authorize these purchases with Dale before you leave for Europe!

TIME SCALES:

We did not specifically discuss time scales, but I am assuming the following -- let me know if you differ in opinion.

End of Summer Shutdown:

Quadrant Detector  
Thermistors  
Sterling Mount  
Optical telescope  
Trench and conduit for weather station

Considerable progress by end of Shutdown, with intention to complete as soon as possible after Shutdown:

Inclinometers (may depend on speed of Green Bank shop)  
Frame grabber software (will probably be finished by the  
end of shutdown)  
Weather station

I did not mention it during the meeting, but I will be doing quite a bit of programming during the summer to analyze the results of these instruments.

POINTING PC:

We did not decide about how to retrieve the pointing AST PC, which will be needed for the frame grabber. I suggest that we let Jeff keep it until August 10-15 -- he should be finished with design work on the Sterling Mount by then. Also, this will keep Tom from starting on the frame grabber before he has the data acquisition code for the other instruments finished. What do you think?