Junior Lab is in the process of replacing the 21-cm experiment hardware with a Small Radio Telescope (SRT) acquired from Haystack Observatory. This work includes the removal of outdated satellite hardware, construction of antenna foundation, mounting and wiring of drive assemblies, and testing hardware and software. The following paper is an overview of the progress made so far as well as what is left to be completed.

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CONSTRUCTION

Progress

The original hardware for the SRT has been taken completely down and is currently sitting to the side on the roof of building 26. Progress has been made in assembly of the base mount of the SRT. The base is now ready to receive the azimuth and elevation drive assembly.

The following has been completed:

1. SRT Base secured (special thanks to Micheal Grossman)
2. New Computer installed. Currently running Windows XP
4. Communication with receiver through com port 1 and Hyperterminal successful
5. Communication with receiver through java scripts successful (using JDK 1.4.1)

Needed

1. Order 15m 16 AWG, 9 conductor control cable, Belden part number: 9621
2. Receiver should be mounted on an instrument panel
3. Mount SRT antenna and dish (be generous with the RTV)
4. Run control cable from receiver to Pro-Form H180 Mounts
5. Run RG-59 Coaxial cable from receiver to antenna

Time Line

Assembly of the drive systems should be a straightforward process. Mounting both drives should take approximately 1 to 2 hours. The wire assembly will follow and may take an additional 5 hours depending on physical barriers between the drive assembly and the 21-cm computer.

Assembly of the dish and the collection hardware will take approximately 3 to 4 hours but must be preceded by a strong roof mount support system (see Needed subsection).

Testing and alignment should initially take 20 to 30 hours. Fine tuning and periodic adjustments will follow.

SCHEDULE

I will be taking two weeks off in June. With the assistance of Andy Neely mounting the drive system should be completed by May 25. Dish assembly should be completed by the 2nd or 4th week of June depending on agreement over the permanent mounting of the SRT.
Testing and alignment should occur during the 1st and 2nd week of July. The entire system will be operational no later than July 31, 2003.

ADDITIONAL INFORMATION

Visit the following web pages for a more indepth description of the SRT we are building.

www.cassicorp.com

www.haystack.mit.edu

APPENDIX

Acquisition

SRT Cable Packing List

We have received the following:

1) 1 roll 100ft, 16 AWG, 9 conductor cable with PCP connector attached

2) 2 rolls 125ft, RG-59 coax cable

3) 1 roll 25ft, 18 AWG, 2 conductor cable

4) 4 cable end F connectors (twist on)

5) 4 twist on wire nuts

6) 7 crimp spade lugs

7) 1 roll 5ft, AZ-EL ground jumper wire

8) SRT-II Digital Controller Serial #227740270C

9) SRT-II Digital Receiver Serial #22770270R

10) PVC PIPE Sections

11) Apex Plate

12) Dish (4 sections)

13) Azimuth Drive Assembly

14) Elevation Drive Assembly

15) Mounting system

SRT Timeline

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