

Precision Telescope Control System
Conceptual Design Review
Green Bank, WV 8/9th April 2003

Day One - Tuesday 8th April

09:00 - 09:30 Introduction to the Project and Review - Richard Prestage

09:30 - 10:00 Scientific Requirements - Jim Condon

10:00 - 10:20 Current GBT Performance - Dana Balsler

10:20 - 10:40 Break

10:40 - 11:00 Overview of the High Frequency Observing System - Richard Prestage

11:00 - 12:00 PTCS System Design - Kim Constantikes

12:00 - 13:00 Lunch

13:00 - 14:00 PTCS Observing Scenarios - Richard Prestage

14:00 - 15:10 Laser Rangefinder Overview and Current Performance
- Dave Parker, Don Wells, Fred Schwab

15:10 - 15:30 Break

15:30 - 16:15 Engineering Measurement System Presentation- Kim Constantikes

16:15 - 17:00 Engineering Measurement System Demo - Ray Creager, Paul Marganian

Day Two - Wednesday 9th April

09:00 - 09:30 Antenna Instrumentation - Kim Constantikes

09:30 - 10:00 Critical Experiments - Jim Condon

10:00 - 10:15 Break

10:15 - 11:15 Short Term System Improvements

- OOF Beam Maps - Claire Chandler

- Holography - Ron Maddalena

- Pointing/Focus Tracking - Jim Condon

11:15 - 12:00 Project Plan - Richard Prestage

12:00 - 13:00 Lunch

13:00 - 14:00 Open discussion/questions/follow-up

14:00 - 17:00 Panel compose draft report



NATIONAL RADIO ASTRONOMY OBSERVATORY

R. M. Prestage

Head, Green Bank Computing Division

P.O. Box 2, Green Bank, WV 24944 USA

Phone: 304-456-2222 Fax: 304-456-2229 Email: rprestag@nrao.edu

To: PTCS Conceptual Design Review Panel Members

From Richard Prestage

Date: March 27, 2003

Re: Conceptual Design Review Material

Dear All –

Perhaps not too surprisingly, we are falling slightly behind in our production of written material for the Conceptual Design Review on 8/9th April. So, I've decided to Fedex to you all the material which we have completed; I plan to get the remainder of the documents to you early next week, either by Fedex or electronic means. This packet contains the following documents:

PTCS/SN/1 Overview of the PTCS Project (in preparation – will be electronically mailed Monday)
PTCS/SN/2 Overview of the GBT
PTCS/SN/3 Scientific Requirements for High-Frequency Observations with the GBT
PTCS/SN/4 Current GBT Performance
PTCS/SN/5 The High Frequency Observing System
PTCS/SN/6 PTCS System Design
PTCS/SN/7 PTCS Observing Scenarios

The following documents are not yet finalized, but you should receive them prior to the review meeting.

PTCS/SN/8 Critical Experiments
PTCS/SN/9 Laser Rangefinders
PTCS/SN/10 Antenna Instrumentation
PTCS/SN/11 PTCS Project Plan

In addition, I've enclosed some additional documents which summarize some of the most relevant prior work. We do not expect you to study all of these documents in detail! However, they may be of interest as you study the review material proper. These documents are listed on the attached page.

I look forward to seeing you in April, and should be in touch further next week. In the mean time, please don't hesitate to call or email me if you have any questions.

Regards,

Richard Prestage

Additional Background Material for the PTCS Conceptual Design Review:

Optics Design

GBT Memo 155: "A Summary of the GBT Optics Design". Norrod, R & Srikanth, S., 1996.

GBT Drawing C35102M081 "Foci arrangement and coordinate systems for the GBT".

GBT Archive L0554: "Confirmation of S. Srikanth's Pointing Coefficients for GBT Single Subreflector Optics". Goldman, M., 1999.

Pointing Accuracy

NRAO GBT Technical Memo No. 52: "GBT Pointing Accuracy". Boulanger, G. & Benson, M., 2000.

Surface Accuracy

GBT Memo 119: "GBT Surface Accuracy", Norrod, R., 1995.

Laser Rangefinders

GBT Archive L0037: "Rangefinder with a fast multiple range capability". Payne, J.M., Parker, D. & Bradley, R.F., 1992.

"Large-Scale Metrology – An Update. Estler, W.T., Edmundson, K.L., Peggs, G.N. & Parker, D.H.

"Sources of error in a laser rangefinder". Hashemi, K.S, Hurst, P.T. & Oliver, J.N., 1994.

Active Surface

GBT Memo 184: "The Green Bank Telescope Active Surface System", Lacasse, R., 1998.

Servo System

GBT Memo 129: "Modeling and Analysis of the GBT Control System". Gawronski, W. & Parvin, B., 1995.