W. W. Hansen Experimental Physics Laboratory

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Gravity Probe B Relativity Mission

**PROCEDURE FOR**

# Artificial Star #2 Wide Field Scan

## GP-B P0224 Rev -

**January 15, 1998**

| | |
|---|---|
| Prepared by: Suwen Wang<br>Engineer | Date |
| Approved by: John Lipa<br>Manager, Telescope Development | Date |
| Approved by: B. Taller<br>Quality Assurance | Date |
| Approved by: J. Turneaure<br>Hardware Manager | Date |

# GP-B Procedure Document 224

## Artificial Star #2 Wide Field Scan

R.E.: Suwen Wang
ESTIMATED DURATION: N/A.

Objective:

To raster scan the star beam on the telescope with a range of 260 arc sec and grid size of 5.2 arc sec.

Success Criteria:

No reproducible major glitches in the signal.

Requirements:

- Procedure to be performed by certified personnel only.
- Certified personnel include:
  Suwen Wang

Authority to redline this procedure:

Suwen Wang

Precautions:

- Science Telescope is well protected in the test probe in this procedure. No direct or indirect mechanical contact will be made to the telescope. Therefore, no special caution is needed in handling in this procedure.
- No special electrostatic handling precaution required.

Calibration:

- The scan data related to verifying the telescope performance specifications is in a format of relative numbers. Therefore, no calibration is required for the procedure.

Ground Support Equipment required:

- Telescope room remperature readout electronics.
- Centris 650 computer with data acquision system.
- ScanStar program version 1.0
- LabView software version 3.1.1

Expendable Materials required:

- None.

Initial Configuration:

- Telescope under test:
  Dwg No: 25091-201 Rev - _____.
  Telescope Serial No. _____.

- Telescope probe attached to Artificial Star #2.
- Procedure Start Date: _____.

1. Procedure for a scan:

1.1. Align the star so that the image forms on the telescope axis to within 1 arc sec.

1.2. Open the application ScanStar v. 1.0 if it is not already open. The application is on MacIntosh Centris 650 located in Telescope Lab.

1.3. Set all the parameters as indicated in table 1 below.

1.4. Click the run arrow in the application to start the scan.

1.5. Make sure that no one is allowed to touch the star during the scan.

1.6. When the scan is complete, the run busy signal will disappear.

1.7. A file of the name: Scan_2d1_(today's date) will be created. The file is of the type ascii.

1.8. Record the file names in table 2 below.

1.9. Procedure 1 complete.

Signed: _____ Date: _____

2. Completion status:

Success: _____

Fail: _____

Symptoms if fail: _____

Table 1. Application Parameter Settings

| Button Name | Setting | Check |
|---|---|---|
| Function | Init & Run | |
| Serial Port | IP Serial B | |
| Scan Type | 2D | |
| Init Mtr Mvmnt | Rewind | |
| Mtr Spd (stps/sec) | 50 | |
| Mtr/PZT | Stp Mtr | |
| # Grids | 50 | |
| Tot # Stps | 1200 | |
| Init A | 0.50 | |
| Init B | 0.50 | |
| A Mtr # | Dewar X | |
| B Mtr # | Dewar Y | |
| Init Mov Dirtn | Positive | |
| Sample Rate (1/sec) | NOT USED | |
| # Samples/Chan | NOT USED | |
| Sample Mode | Slope | |
| Seq # | 1 | |
| A/D Brd # | 6 | |
| Chan Seq. | 0 - 0, 1-1, ... 7-7 | |
| Gains | 0-7: 100 | |
| Starting | 0.2 | |
| Fit | 0.6 | |
| Preamp Gain | 1 for RT and 100 for LT | |
| # pts | 250 | |
| # of slp Avrg | 10 | |
| Data Rate | 2500.00 | |

Table 2. File Names for Wide Field Scans

File Path Name: _____.

| Temperature | Date | Inspector Stamp |
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