W. W. Hansen Experimental Physics Laboratory

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Gravity Probe B Relativity Mission

PROCEDURE FOR

Artificial Star #2 Narrow Field Scan

GP-B P0226 Rev -

January 15, 1998

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GP-B Procedure Document 226

Artificial Star #2 Narrow Field Scan

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

Objective:

To raster scan the star beam on the telescope with a range of 10 arc sec and grid size of 0.2 arc sec.

Success Criteria:

No major reproducible glitches in the signal.

Requirements:

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

Autority 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 temperature readout electronics.
- Centris 650 computer with data acquisition system.

Expendable Materials required:

- None.

Initial Configuration:

- Telescope under test:
  Dwg No: 25091-201 Rev - _____.
  Telescope Serial No. _____.
- Telescope probe being 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	Inspector Stamp
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	8000	
Init A	0.50	
Init B	0.50	
A Mtr #	Tip X	
B Mtr #	Tip 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