



W. W. Hansen Experimental Physics Laboratory  
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Gravity Probe B Relativity Mission

**PROCEDURE FOR**  
**Science Telescope Room Temperature Saturation Range**  
**GP-B P0231 Rev -**  
**January 15, 1998**

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Prepared by: Suwen Wang  
Engineer

Date

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Approved by: John Lipa  
Manager, Telescope Development

Date

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Approved by: B. Taller  
Quality Assurance

Date

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Approved by: J. Turneure  
Hardware Manager

Date

## GP-B Procedure Document 231

### Science Telescope Room Temperature Saturation Range

RE: Suwen Wang  
ESTIMATED DURATION: 4 hours.

Objective:

Measure the saturation range of the telescope at room temperature by analyzing the data collected from P230.

Success Criteria:

The slope of the signal vs. incoming beam angle be nominally positive within 1 arc sec of the optical axis on both readout axes.

Requirements:

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

Authority to redline this procedure:

Suwen Wang

Precautions:

- No special precautions 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:

- Centris 650 computer.
- IgorPro Version 2.0.2 software.

Expendable Materials required:

- None.

Initial Configuration:

- Telescope under test:  
Dwg No: 25091-201 Rev -  
Telescope Serial No. \_\_\_\_\_.
- Procedure Start Date: \_\_\_\_\_.

1. Procedure measuring the saturation range:

- 1.1. Make a back up of the original data. Loss of original data would cause the need for reacquisition of the data which might have schedule impact.
- 1.2. Select a data set from an X axis scan.
- 1.3. Normalize the output from both channels.
- 1.4. Locate the center of the optical axis.
- 1.5. Examine the slope within 1 arc sec of the axis and the sign of the slope should not change.
- 1.6. Repeat the process of 1.2 through 1.5 for Y axis scan.
- 1.7. Procedure 1 complete.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

2. Completion status:

Success: \_\_\_\_\_

Fail: \_\_\_\_\_

Comments if fail: \_\_\_\_\_