



W. W. Hansen Experimental Physics Laboratory
STANFORD UNIVERSITY
STANFORD, CALIFORNIA 94305 - 4085

Gravity Probe B Relativity Mission

Performance Testing Procedure (Gyroscope Acceptance Test)

GP-B P0311 Rev -B

**26 July, 1998
ECO #835**

Prepared by: Yueming Xiao **Date**
Manager, Gyroscope Commissioning

Approved by: Sasha Buchman **Date**
Manager, Gyroscope Development

Approved by: B. Taller **Date**
Quality Assurance

Approved by: J. Turneure **Date**
Hardware Manager

Performance Testing Procedure

This procedure is to be performed only by persons listed as certified operators of the gyroscope acceptance facilities.

Purpose: To obtain additional gyroscope performance information.

Experimental Conditions: Completed P0204, P0273,P0276, P0274, P0298, P0307.
Gyroscope levitated.

Equipment: DDC Suspension System
SQUID Electronics
Data acquisition system
Vacuum gauges

Procedure:

1. Use SQUID outputs to monitor gyroscope motion.
2. Spin the gyroscope to 0.3 Hz per **P0310**.
3. Use the data acquisition system to record all available SQUID outputs and at least one of the six suspension voltages. Make sure the data acquisition system is providing accurate gyroscope spin speed data.
4. Spin the gyroscope to about 1 Hz.
5. Open the vacuum can to the pumping system and pump the can out to about 0.1 μ torr.
6. Switch the spin speed monitor outputs to the suspension voltage outputs and monitor the spin speed for about 712 hours. Record the spin down rate in **section IV. of FGT #3**.

(optional additional information)

10. From the data acquired in 6.determine mass unbalance and the torque parameters. Record the values in **section V. of FGT #3.**