W. W. Hansen Experimental Physics Laboratory

STANFORD UNIVERSITY

STANFORD, CALIFORNIA 94305 - 4085

Gravity Probe B Relativity Mission

PROCEDURE FOR UV WINDOW POLISHING AND ASSEMBLY
GP-B P0086 Rev -
November 21, 1997

Prepared by: Chris Gray Engineer	Date
Approved by: Sasha Buchman Manager, Gyroscope Development	Date
Approved by: B. Taller Quality Assurance	Date
Approved by: J. Turneaure Hardware Manager	Date

November 21,1997
C. Gray

P0086 Rev -
PROCEDURE FOR UV WINDOW POLISHING AND ASSEMBLY

Purpose:

Prepare UV fixture assembly for gyroscope with gold plated fixture, polished window holder, assemble fixture, and ready for UV transmission test.

Subassembly 23248-101

Process Conditions:

- Authorized personnel only to assemble fixtures and make measurements.
- Use only factory calibrated equipment.
- Use ONLY non-magnetic tools.
- UV fixture parts have passed magnetic screening.
- Assemble hardware using UV Assembly drawing 23208-101 Rev- and 23248-101 rev-
- Gyroscope assembly traveler is available.

Procedure:

1. Sputter 23209-101 UV Holder with 0.1 micrometer of 99.99% gold per drawing 23209-101 Rev C.
2. Screen Au plated 23209-101 for magnetics at zone 1 per GP-B spec. P0057.
3. Epoxy fiber (Ref. Dwg 23213-101) to a magnetically screened UV window holder 23214-101 using Tra-Con 2115 epoxy per 23238-101.
4. Polish 23214-101 after epoxy has cured with 0.3 micron polishing paper.
5. Inspect polished surfaces using Fiber-Vue microscope. Both polished ends should be free of any scratches.
6. Epoxy the 23214-101 to the 23209-101 using Tra-Con 2115 epoxy. Place 1 drop of epoxy onto the middle of the 23214-101 and insert into the 23209-101 UV Holder. Let the epoxy cure for 12 hrs. at room temperature.
7. After epoxy has cured for at least 12 hrs, bake the fixture at 60° C for minimum of 4 hrs.

8. Inspect fixture using Olympus SZH microscope at 40X to confirm fiber is free of scratches or obstructions.
9. UV fixture assembly is ready for gyro integration.