W. W. Hansen Experimental Physics Laboratory

STANFORD UNIVERSITY

STANFORD, CALIFORNIA 94305 - 4085

Gravity Probe B Relativity Mission

PROCEDURE FOR COMMISSIONING GYROSCOPES FOR THE SCIENCE MISSION PROBE

GP-B P0281 Rev -A

December 5, 1997

Prepared by: David Hipkins **Date**
Engineer

Approved 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. Turneaure **Date**
Hardware Manager

P0281
revision A
DECEMBER 5, 1997
D. Hipkins

PROCEDURE FOR COMMISSIONING GYROSCOPES FOR THE SCIENCE MISSION PROBE

Purpose To perform relevant performance tests to qualify a gyroscope to be considered for use in the science mission probe.

Conditions This procedure will include all handling of the gyroscope from its assembly through the completion of the tests and procedures described below in the Outline of Gyroscope Acceptance Testing. All gyroscope parts have been magnetically screened before beginning the assembly of a potential science mission gyroscope.

Description The gyroscope commissioning consists of the completion of the tasks described in the Outline of Gyroscope Acceptance Testing. A copy of this outline is found on the following page. For each gyroscope a folder consisting of the following forms will accompany the gyroscope through the commissioning process:

* Room Temperature Testing,Gyroscope (Traveler)
* Low Temperature Testing,Gyroscope (Traveler)
* Flight Gyroscope Table #1, (F.G.T. #1)
* Flight Gyroscope Table #2, (F.G.T. #2)
* Flight Gyroscope Table #3, (F.G.T. #3)
* Room Temperature Operations Table #1, (RT-Op#1)
* Room Temperature Operations Table #2, (RT-Op#2)
* Low Temperature Operations Table #1, (LT-Op#1)
* Low Temperature Operations Table #2, (LT-Op#2)
* Low Temperature Operations Table #3, (LT-Op#3)
* Low Temperature Operations Table #4, (LT-Op#4)
* Low Temperature Operations Table #5, (LT-Op#5)
* Low Temperature Operations Table #6, (LT-Op#6)
* Low Temperature Operations Table #7, (LT-Op#7)
* Low Temperature Operations Table #8, (LT-Op#8)

P0281
revision A
DECEMBER 5, 1997
D. Hipkins

Outline of Gyroscope Acceptance Testing

Description: Housing :_____ Rotor:_____ Test # _____

Assembly Drawing # _____ Revision _____

I. Gyroscope is cleaned and assembled in the class 10 room. The procedure entitled ***Pre-Commissioning Test Inspections of SM Gyroscopes, P0296*** is completed. Relevant data is entered into the database as well as the **Flight Gyroscope Table #1**. Upon completion the gyroscope is put into its holder and then placed in a stainless steel pot used to transport it to the room temperature testing clean room facility.

Completedby:_____date_____

Witness/Q.A.:_____date_____

II. The gyroscope is installed in the room temperature facility. The ***Preliminary Room Temperature Test***; **P0272** is completed. Relevant data is then entered into the database as well as **Flight Gyroscope Table #2, RT-Op#1 and RT-Op#2**. When the tests are completed the gyroscope uninstalled from the test facility and placed again into the holder and pot and returned to clean room 132.

Completed by:_____on_____

Witness/Q.A.:_____on_____

Notes:_____

_____

III. The mounting hardware for the Gyroscope Commissioning Probe is installed onto the gyroscope according to **P0277**. Upon completion the gyro is placed in the holder and the pot in order to transport it to the commissioning probe cleanroom.

Completed by:_____date_____

Witness/Q.A.:_____date_____

Notes:_____

_____

IV. The ***Low Temperature Commissioning,*** **P0275** is performed. Relevant data is then entered into the database as well as **Flight Gyroscope Table #3, LT-Op#1, LT-Op#2, LT-Op#3, LT-Op#4, LT-Op#5, LT-Op#6, LT-Op#7 and LT-Op#8**.

Completed by:_____on_____

Witness /Q.A.:_____on_____

Notes:_____

_____

_____

_____

_____

V. The gyroscope is removed from the Gyroscope Acceptance Facility and returned to the class 10 clean room 132 for storage according to the ***Post Commissioning Procedure, P0278***.

Completed by:_____on_____

Witness /Q.A.:_____on_____

Notes:_____

_____

_____

VIII. **Disposition:** ___Accepted ___Rejected

Reason for Rejection:_____

_____

_____

_____

_____

_____

_____

_____

_____

R.E.signature_____Date_____