Gravity Probe B Relativity Mission

PROCEDURE FOR COMMISSIONING GYROSCOPES FOR THE SCIENCE MISSION PROBE

GP-B P0281 Rev -A

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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)
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.

Completed by:__________________________________________ 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__________________