W. W. Hansen Experimental Physics Laboratory

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Gravity Probe B Relativity Mission

**PROCEDURE FOR**

# GP-B P0253 Rev -

**July 8, 1997**

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## GP-B Procedure Document 253

# Deintegration of Science Telescope and Telescope Test Probe After Cryo Focal Test

RE: Suwen Wang
DATE: July 8, 1997
DATE OF PERFORMANCE: July 8, 1997
ESTIMATED DURATION: 1 day

Objective:

To remove Science Telescope from Telescope Test Probe upon completion of a cryogenic focal test.

| | Signed |
|---|---|
| 1. Procedures to be performed in Artificial Star #2 Lab: | |
| 1.1.Detach Telescope/Probe/Dewar assembly from Artificial Star #2. | ____ ____ |
| 1.2.Roll the dewar assembly out of the Artificial Star #2 space. | ____ ____ |
| 1.3.Remove 10 screws which attaches the telescope probe to the dewar. See fig. 1. | ____ ____ |
| 1.4.Attach top lifting plate to the top of the probe with 10 1/4-20 screws. Note the orientation of the top notch. See fig. 2. | ____ ____ |
| 1.5.Lower down the hoist and remove the hook at the end of the chain if it's not already removed. Attach the end of the chain to the lifting notch of the top plate. | ____ ____ |
| 1.6.Lift the probe out of the dewar with a speed no faster than .1"/sec. Watch for the clearance between the o.d. of the probe and i.d. of the dewar. | ____ ____ |
| 1.7.Move the dewar out of the way and lower down the probe. | ____ ____ |
| 1.8.Remove the copper sleeve from the probe by removing 6 1/4-20 screws. See fig. 3. | ____ ____ |
| 1.9.Put the telescope probe on the transportation cart. See fig. 4. | ____ ____ |
| 1.10.Remove the end of the chain from the lifting notch of the top plate. | ____ ____ |

2. Procedures for transportation:

2.1.Roll the cart slowly from the artificial star #2 lab to the clean room gowning area along the tiled floored hall way. ____ ____

2.2.Bring the telescope carrying box to the gowning area. ____ ____

2.3.Clean the outside of the probe and transportation cart, including wheels, and outside of the carrying box with clean room wipe and alcohol. ____ ____

2.4.Move the cart and carrying box to class 1000 clean room. ____ ____

2.5.Repeat procedure 2.3. ____ ____

2.6.Roll the cart from class 1000 clean room to class 10 clean room. ____ ____

3. Procedures in class 10 clean room:

3.1.Lower down the probe onto the base fixture with precision manipulator.

3.2.Undo all screws on the vacuum can. ____ ____

3.3.Lift probe up about 1/4". ____ ____

3.4.Vent the vacuum space by opening the vacuum valve if it's not already vented. See fig. 5. ____ ____

3.5.Push the vacuum can out with two pushing screws on the top flange and remove vacuum can. ____ ____

3.6.Lower the probe onto the base fixture. Note the orientation. See fig. 6. ____ ____

3.7.Disconnect the connectors for the thermometers and quad detector.

3.8.Undo three screws at the bottom of the probe. See fig. 7. ____ ____

3.9.Slowly lift the probe up at a speed no faster than .1"/sec. Lift the probe up by about 2 ft. Watch for the clearance between the o.d. of the telescope and i.d. of the probe. ____ ____

3.10.Remove the retaining spring for the quartz block simulator and remove the telescope spring and reattach the retaining spring one at a time. See fig. 8. ____ ____

3.11.Move the telescope from the quartz block simulator to the plastic cover. Fix it by applying Kapton tapes. ____ ____

3.12.Remove the quad detector assembly from the telescope.

3.13.Put top cover on the corrector plate and fix it with Kapton tape. ____ ____

3.14.Put the telescope in a clean bag and seal the bag with Kapton tape. ____ ____

3.15.Put the bagged telescope in the telescope carrying box in class 1000 clean room. ____ ____

3.16.Deintegration complete. ____ ____

____ ____