GRAVITY PROBE B

MISSION OPERATIONS CENTER

SIMULATION #1

P0617 REV. –

OCTOBER 20, 1999

Prepared by: *M. Smith*

Approvals:

Program Responsibility	Signature	Date
M. Smith *Simulation Director*		
G. Green *MOC Manager*		
Tl Langenstein *Dep. Project Mgr.*		
D. Ross Quality Assurance		

NOTES:

Level of QA required during performance of this procedure:
_X_ Stanford QA Representative
___ Government QA Representative

All redlines must be approved by QA

Revision Record:

Rev	Rev Date	ECO #	Summary Description

Acronyms and Abbreviations:

Acronym / Abbreviation	**Meaning**
AI	Action Item
ATC	Attitude and Translational Control
C&DH	Command and Data Handling
D-Log	Discrepancy Log
FEP	Front End Processor
ITF	Integrated Test Facility
kbps	kilo-bits per second
LMMS	Lockheed Martin Missiles and Space
MOC	Mission Operations Center
TCAD	Telemetry Checking, Analysis and Display software package

Table of Contents

A Scope

This document details the Gravity Probe B (GP-B)'s Mission Operations Center (MOC) simulation #1 test procedure. The purpose of this test is to verify data and command flow between the Stanford MOC and the Lockheed Martin Missiles and Space (LMMS)'s Integrated Test Facility (ITF).

B Requirements Verification

Telemetry: Verification of telemetry flow as displayed on the MOC Pod-D monitors via OASIS and RTWorks for all three telemetry rates: 1 kbps, 2 kpbs, 32 kbps. Records will be kept on telemetry received but there is not a requirement that 100% of the telemetry blocks are received at the MOC.

Command: Verification in telemetry that commands are being received by the ITF. Records will be kept to track the number of commands received, but again, 100% reception is not required for test success.

Data Analysis: The data format of level 0 data will be verified by executing the star sensor science algorithms via TCAD. This step in the procedure will not be completed until December 15, 1999.

C Configuration Requirements

This test requires that the Stanford MOC and the LMMS ITF be connected via the IONET. The connections to this net are documented in Operations Order No. ITF-030 MOC Sim 1 Rev A.XLS.

D Hardware Required

See Operations Order No. ITF-030 MOC Sim 1 Rev A.XLS.

E Software Required

See Operations Order No. ITF-030 MOC Sim 1 Rev A.XLS.

F Procedures Required

Procedure Name	Procedure No.
MOC Sim 1 Timeline Rev A	Ops Order ITF-030
C&DH checklist	draft
ATC checklist	draft
Logbook	draft
Timeline	draft
TCAD procedures	TBD
Star Sensor Data Analysis procedures	TBD

The only procedure requiring signoff for this simulation is the Operations Order, since it affects engineering equipment in the ITF. The other procedures will be completed but will be draft only. We expect to learn about these procedures and refine them through the simulation itself. If an electronic logbook application is not available for the test, a paper log will be kept. The data analysis procedures for TCAD and the star sensor will be reviewed December 9, 1999, prior to completion of these functions of the simulation.

G Equipment Pretest Requirements

None

H Personnel Requirements

Required positions with primary names for each position. No personnel are required to be certified for this procedure.

H.1	Sim Director:	Marcie Smith	650/725-5440
H.2	Lead Controller:	Karl Allmendinger	650/424-2932 pager www
H.3	Controllers:	Dave Meriwether	650/725-9332 pager 317-7912
		Ric Campo	650/725-6348
H.4	C&DH Engineer:	Frank Mendoza	650/424-2898
H.5	ATC Engineer:	Phil Rittmuller	650/424-3211
H.6	FEP/ITF Controller:	Bill Given	650/424-2937
H.7	Timeline:	Jim Burns	650/723-2907
H.8	Observers:	Tom Langenstein	650/725-4108
		Tony Lyons	256/544-2281
		Norm Bennett	650/424-3130 pager www

Personnel on call:

H.9	Telemetry Engineer:	Sharon Euley	209/826-1872
H.10	Database Administration:	Jennifer Mullins	650/725-6856 pager 317-2664
H.11	Science Analysis:	Mac Keiser	650/725-4116
H.12	System Software:	Pete Carley	650/424-2816
H.13	System Administration:	Jeff Wade	650/725-4117 pager 599-8032
H.14	IONET:	Marvin Candee	650/424-2666 pager www
H.15	SU QA	Dorrene Ross	650/725-6403 pager www

The web address for pagers is:http://einstein.stanford.edu/private/pagers/pagers.html
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I Safety Requirements

Standard safety practices to ensure safety of personnel and prevent damage to equipment shall be observed during performance of this test.

J References and Applicable Documents

J.1 Operations Order No. ITF-030 MOC Sim 1 Rev A.XLS

J.2 SCSE 06 Command and Telemetry Handbook, Appendices: 3.0.4

Date Initiated_____

K **General Instructions**

Redlines can be initiated by Marcie Smith or her designee. Any non-conformance or test anomaly should be reported per the Quality Plan, P0108. do no alter or break test configuration if a test failure occurs, notify quality assurance.

	TIME:
Real-time simulation: Verify personnel are present as listed in section E, and that procedures listed in Section D are available.	
Execute Op Order # ITF-030 MOC Sim 1 Rev A.XLS. Complete appropriate checklists and logbook entries.	
Post Test Review After the real-time simulation, a post test debrief will be held to review the following: Discrepancy log – assign action items and generate closure plans; Review of timeline format, Operations Order No. ITF-030 MOC Sim 1 Rev A.XLS, LogBook, Engr Checklists, etc. to improve procedures for future simulations and flight operations.	
Data Analysis procedure: A meeting to review the schedule and procedures for completing the simulation data analysis portion will be held November 4, 1999.	N/A
On December 16, 1999, a debrief will be held to review all D-Logs from the real-time simulation, as well as to review procedures, D-Logs, Ais, and results of the data analysis processes.	N/A

Test completed.

	Date	Sim Director	QA
Real-time simulation completed			
Data analysis completed			
Test report generated.			

L **D-Logs**

D-Log Number	Anomaly