XMM Optical Monitor

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DPU FLIGHT SOFTWARE TEST REPORTS FOR RELEASE 10b

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Section 1: Scope of Document

This document contains the test reports for software modifications for Release 10b of the DPU flight software, a delta release, released in June 2000 to fix a problem with field acquisition in Release 10. The software modifications themselves are described in document XMMOM/UCSB/TC/0051. A complete description of the DPU testing philosophy and setup is given in XMMOM/UCSB/RP/0002.

Section 2: Test Reports

2.1 Test report for NCR 203

Problem

Field acquisition was failing due to the DPU expecting the incorrect word ordering of the encoded reference star positions in the IC_LOAD_REF_STARS (A428) command. This caused the positions to be corrupted, as seen in the DP_REF (A202) priority data packet which echoes back the uploaded reference star positions.

Action

The DPU code was fixed to correctly read in the reference star positions from the IC_LOAD_REF_STARS command.

Test

Corrected the EGSE part of the QM to upload the correct IC_LOAD_REF_STARS command. Ran a simulation with known reference star positions, comparing the IC_LOAD_REF_STARS command with the echoed reference star positions in the DP_REF.

Results

The positions of the reference stars were correctly echoed in the DP_REF data packet, in the correct format.

Affected codes

`cwhite.c v.1.48.2.1`

Appendix 1: List of Acronyms

CPU	Central Processor Unit
CVS	Concurrent Version System
CH	Cheng Ho
DEM	Digital Electronics Module (made up of DPU and ICU)
DPU	Digital Processing Unit (supplied by US)
ECR	Engineering Change Request
EOB	Electro-Optical Breadboard
ICU	Instrument Control Unit (supplied by MSSL)
LANL	Los Alamos National Laboratory
MSSL	Mullard Space Sciences Laboratory
NCR	Non-Conformance Report
SNL	Sandia National Laboratory
UCSB	University of California at Santa Barbara