RPC-LAP
OPERATIONS REPORT
MARS SWING-BY MISSION PHASE

July 29, 2006 - May 28, 2007

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Document history

Revision	Date	Comment
1.0	2019-08-31	Initial release

1   Introduction

This is the report from the operations of RPC-LAP in the Mars swing-by (MARS) phase of the Rosetta mission, covering the period July 29, 2006 - May 28, 2007. This included the following operational slots for LAP:

- August 29, 2006: Payload checkout 3 (PC3)
- December 19, 2006: Payload checkout 4 (PC4)
- February 23-27, 2007: The Mars swing-by itself (MSB)
- May 22, 2007: Payload checkout 5 (PC5)

2   Operations overview

Payload checkout (PC) operations occured regularly during the pre-comet phases of the mission. For LAP, the minimum PC operations consisted of offset determination and probe bias voltage sweeps for photoemission determination. LAP was activated for such minimal checkout operations in August 29, 2006 for PC3.

For PC4 in December 19, 2006, new LAP macros were uploaded and tested, for use in the MSB. Minimum PC operations were also executed (see PC3 above).

In February 23-27, 2007, LAP was active during all the Mars swing-by proper (MSB), except for being turned off (with the rest of the Rosetta orbiter payload) for power reasons between 00:22 and 02:45 UT in February 25 as the spacecraft for a short while in this slot crossed the shadow of Mars. Closest approach occured at 01:56 UT.

In PC5 (May 22, 2007), LAP performed minimum PC operations (see PC3 above).

All operations worked as planned.

3   Operations list

Below is a list of all LAP operations blocks during this mission phase. A LAP operations block is defined as a continuous run of an instrument macro, though as the archive is organized by calendar days, blocks are defined to break at midnight even if the instrument operation is continuous over this artificial border. If you find operations blocks running the same macros on both sides of midnight, this is likely to actually be a continuous operation. The list is based on the science data stream are included, so pure maintenance operations or periods with LAP idle between macro runs are not shown.

The macro concept is described in the EAICD, and the macro definitions are tabulated in the macro table, both available in the documents directory of the LAP archives in the ESA Planetary Science Archive (PSA). A LAP macro defines all aspects of the instrument operations, though particularly when a probe is in electric field mode, the probe bias (current in the case of electric field mode, otherwise bias voltage) may often be tuned by manual commands.

Block start	Block end	Macro	Notes
PC3			
2006-08-29T04:13:16.233	2006-08-29T04:37:16.233	104	
2006-08-29T04:42:36.233	2006-08-29T04:57:32.233	105	
2006-08-29T05:02:20.233	2006-08-29T05:58:20.234	204	
2006-08-29T06:02:36.234	2006-08-29T06:17:00.234	104	
2006-08-29T06:22:20.234	2006-08-29T06:34:36.234	105	
PC4			
2006-12-19T04:13:17.937	2006-12-19T04:37:17.938	104	
2006-12-19T04:42:37.938	2006-12-19T04:57:33.938	105	
2006-12-19T05:02:21.938	2006-12-19T05:58:21.939	204	
2006-12-19T06:02:37.939	2006-12-19T06:17:01.939	104	
2006-12-19T06:22:21.939	2006-12-19T06:34:37.939	105	
2006-12-19T10:27:49.941	2006-12-19T10:37:57.941	104	
2006-12-19T10:45:25.941	2006-12-19T10:58:45.942	600	
2006-12-19T11:03:33.942	2006-12-19T12:19:50.487	700	
2006-12-19T12:23:33.942	2006-12-19T12:43:49.943	300	
MSB			
2007-02-23T00:11:02.907	2007-02-23T00:30:14.907	104	
2007-02-23T00:35:34.907	2007-02-23T01:05:58.907	600	
2007-02-23T01:12:23.452	2007-02-23T23:59:51.466	700	
2007-02-24T00:00:00.325	2007-02-24T20:36:39.479	700	
2007-02-24T20:40:54.934	2007-02-24T23:59:50.936	300	
2007-02-25T00:00:00.002	2007-02-25T04:42:06.939	300	Off 00:22-02:45
2007-02-25T04:45:18.939	2007-02-25T23:59:59.496	700	
2007-02-26T00:00:00.603	2007-02-26T23:59:59.511	700	
2007-02-27T00:00:00.618	2007-02-27T02:20:47.512	700	
PC5			
2007-05-22T00:12:48.192	2007-05-22T00:37:20.192	104	
2007-05-22T00:42:40.192	2007-05-22T00:57:36.192	105	
2007-05-22T01:02:24.192	2007-05-22T01:58:24.193	204	
2007-05-22T02:02:40.193	2007-05-22T02:17:04.193	104	
2007-05-22T02:22:24.193	2007-05-22T02:34:40.193	105	