

# RPC-LAP OPERATIONS REPORT STEINS FLY-BY MISSION PHASE

August 4 - October 5, 2008

IRFU-ROS-OPR-AST1  
Version 1.0  
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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 Steins fly-by (AST1) phase of the Rosetta mission, covering the period August 4 - October 5, 2008. The only LAP operations slot in this mission phase was for the fly-by itself:

- September 1-10, 2008: Fly-by of asteroid (2867) Šteins

## 2 Operations overview

Densities in the solar wind are generally too low for direct observation of the plasma by LAP Langmuir probe bias sweeps. In consequence, LAP was mainly operated in electric field mode for this flyby, mainly in normal mode telemetry rate (55 bps, macro 0x503) with burst mode (2.2 kbps, macros 0x504 and 0x704) for 26 h around closest approach (800 km at 18:38:20 in Sep 5). LAP handed over probe 2 to MIP for use in its LDL mode during part of this time (macro 0x704). Sweeps (macro 0x600) were executed at the start and end of the period to obtain photo-electron emission characteristics, and here also offset determination (macro 0x104) was performed.

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
(2867) Šteins flyby			
2008-09-01T00:12:55.496	2008-09-01T00:38:31.496	600	
2008-09-01T00:42:15.496	2008-09-01T00:51:51.496	104	
2008-09-01T00:57:11.496	2008-09-01T23:59:36.056	503	
2008-09-02T00:00:00.416	2008-09-02T23:59:36.072	503	
2008-09-03T00:00:00.432	2008-09-03T23:59:36.088	503	
2008-09-04T00:00:00.448	2008-09-04T23:59:36.104	503	
2008-09-05T00:00:00.464	2008-09-05T04:35:20.107	503	
2008-09-05T04:40:07.563	2008-09-05T17:36:07.571	504	
2008-09-05T17:39:19.571	2008-09-05T23:59:35.575	704	
2008-09-06T00:00:00.004	2008-09-06T06:36:55.580	704	
2008-09-06T06:40:07.580	2008-09-06T23:59:36.136	503	
2008-09-07T00:00:00.496	2008-09-07T23:59:36.152	503	
2008-09-08T00:00:00.512	2008-09-08T23:59:36.168	503	
2008-09-09T00:00:00.528	2008-09-09T23:59:36.184	503	
2008-09-10T00:00:00.544	2008-09-10T05:00:56.188	503	
2008-09-10T05:05:11.643	2008-09-10T05:14:47.643	104	
2008-09-10T05:20:07.643	2008-09-10T05:54:47.643	600	