BepiColombo

FLIGHT REPORTS of MPO-MAG

BC-MAG-TR-1011

Issue: 1 Revision: 0

2023-05-26

OVERVIEW OF AVAILABLE MPO-MAG DATA AND DATA QUALITY ASSESSMENT

Mission Phase:	MGA-2
Time Period	June 20, 2022 - June 25, 2022

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1 Introduction

This document provides information about all available data and its quality for the time period between June 20, 2022 until June 25, 2022. This covers the Mission Phase Mercury Gravity Assist 2 (MGA-2).

For every year, month and day where measurement data are available overview plots have been created. The data availability plots show all data calibration levels available. The science modes of the data are distinguished by different colors. An overview table of available data completes the data overview.

Furthermore a list of known relevant events happening onboard the s/c is present to give a hint, where the data quality might be diminished by s/c interference.

1.1 Relevant Events for MPOMAG

Switch on	Switch off	EVENTS	VISIBLE	REFERENCE
	2022-06-16T12:00	Switch off by MTL due to TCM		DR-16-06
2022-06-17T12:11		Switch on by MTL after TCM		DR-17-06
		2022-06-20T14:54:51 Start MEPS SEP		DR-20-06
		2022-06-20T15:12:28 release MCF relock safety TC to MTL exe 2022-06-20T18:57:00		
		2022-06-20T15:29:23 MCF reaches START UP stat		
		2022-06-20T15:39:29 MEPS function unlocked		
		2022-06-20T15:55:48 HPRS enters Init Regulation		
		2022-06-20T15:56:49 Fill performed, plenum pressure from 3.028 to 3.11 bar,stabilizes around 3.095 bar.		
		2022-06-20T17:35:49 HPRS enters Regulation		
		2022-06-20T17:56:50 MEPS function re-locked		
		2022-06-20T17:57:19 MCF back in BASIC		
		2022-06-22T12:39 HGA to MGA antenna swap cmd by MTL		DR-22-06
		2022-06-22T12:44 – 15:44 slew to BIASED pointing		
		2022-06-22T12:54 AOS on MGA		
		2022-06-22T15:34 MGA to HGA antenna swap cmd by the MTL		
		2022-06-22T15:48 AOS at MLG after the ant swap, but no TM is seen on VC0/VC7. Good TM flow on VC6 (Ka idle frames). After a reset, good TM was received on VC0/VC7 at 15:52.		
		2022-06-22T16:05 SSMM dumps resumed as the slew is over and the S/C is inertial pointing again.		

Switch on	Switch off	EVENTS	VISIBLE	REFERENCE
		2022-06-23T02:44 WOL 2022-06-23T03:09 HGA to MGA antenna swap cmd by the MTL 2022-06-23T03:09 – 15:44 slew to Close Approach pointing 2022-06-23T03:26 AOS at NNO after the antenna swap, but no TM seen on VC0/VC7. After pulsing the TTCP DMD, good TM was received on VC0 and VC7 at 03:28. 2022-06-23T03:39 HGA in hold 2022-06-23T04:53 Bepi enters Mercury sphere of influence 2022-06-23T05:14 Prime comms line to MLG is down. Automatic failover to backup. VC0 NIS link had to be reconnected again. 2022-06-23T05:54 backup line stability problems. 2022-06-23T06:04 MGA to HGA antenna swap cmd by MTL 2022-06-23T06:14 Slew ends. C/A inertial pointing. HGA in Earth tracking. 2022-06-23T06:19 WOL 2022-06-23T06:21 AOS at NNO. comms problems 23-Jun-22: Mercury swingby 2: C/A at 09:44:21.98 Eclipse: 18 minutes 16 seconds(penumbra entry to exit) Earth occultation 12 minutes 10 seconds. Periherm distance is 2628.514 km (198 km altitude) +- 2m		DR-23-06 MOR #151

2 2022

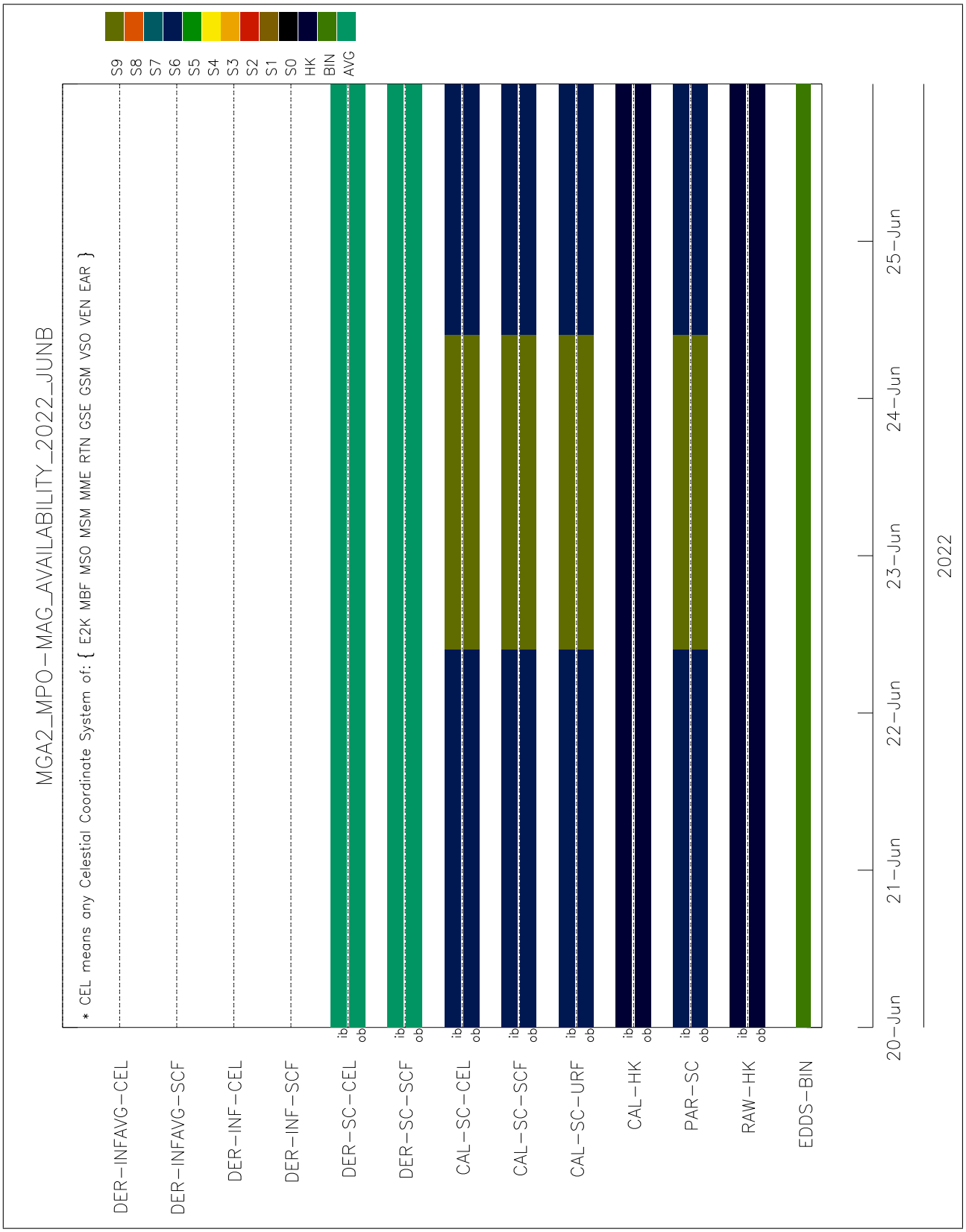

Figure 1: Overview June 2022

DATE	CALIBRATION LEVEL	COORDINATES	SAMPLE RATES (Hz)	
2022-06-20	edds_bin	URF	all available	
2022-06-20	raw_hk_ob	URF	standard HK rate	
2022-06-20	cal_hk_ob	URF	standard HK rate	
2022-06-20	par_sc_ob	URF	16	
2022-06-20	cal_sc_ob	URF	16	
2022-06-20	cal_sc_ob	SCF	16	
2022-06-20	cal_sc_ob	E2K MSO	16	
2022-06-20	der_sc_ob	URF	N / A	
2022-06-20	der_sc_ob	SCF		AVG
2022-06-20	der_sc_ob	E2K MSO		AVG
2022-06-20	raw_hk_ib	URF	standard HK rate	
2022-06-20	cal_hk_ib	URF	standard HK rate	
2022-06-20	par_sc_ib	URF	16	
2022-06-20	cal_sc_ib	URF	16	
2022-06-20	cal_sc_ib	SCF	16	
2022-06-20	cal_sc_ib	E2K MSO	16	
2022-06-20	der_sc_ib	URF	N / A	
2022-06-20	der_sc_ib	SCF		AVG
2022-06-20	der_sc_ib	E2K MSO		AVG
2022-06-20	der_inf	URF	N / A	
2022-06-20	der_inf	SCF	N / A	
2022-06-20	der_inf		M I S S I N G ! !	
2022-06-21	edds_bin	URF	all available	
2022-06-21	raw_hk_ob	URF	standard HK rate	
2022-06-21	cal_hk_ob	URF	standard HK rate	
2022-06-21	par_sc_ob	URF	16	
2022-06-21	cal_sc_ob	URF	16	
2022-06-21	cal_sc_ob	SCF	16	
2022-06-21	cal_sc_ob	E2K MSO	16	
2022-06-21	der_sc_ob	URF	N / A	
2022-06-21	der_sc_ob	SCF		AVG
2022-06-21	der_sc_ob	E2K MSO		AVG
2022-06-21	raw_hk_ib	URF	standard HK rate	
2022-06-21	cal_hk_ib	URF	standard HK rate	
2022-06-21	par_sc_ib	URF	16	
2022-06-21	cal_sc_ib	URF	16	
2022-06-21	cal_sc_ib	SCF	16	
2022-06-21	cal_sc_ib	E2K MSO	16	
2022-06-21	der_sc_ib	URF	N / A	
2022-06-21	der_sc_ib	SCF		AVG
2022-06-21	der_sc_ib	E2K MSO		AVG
2022-06-21	der_inf	URF	N / A	
2022-06-21	der_inf	SCF	N / A	
2022-06-21	der_inf		M I S S I N G ! !	

DATE	CALIBRATION LEVEL	COORDINATES	SAMPLE RATES (Hz)		
2022-06-22	edds_bin	URF	all available		
2022-06-22	raw_hk_ob	URF	standard HK rate		
2022-06-22	cal_hk_ob	URF	standard HK rate		
2022-06-22	par_sc_ob	URF	16	128	
2022-06-22	cal_sc_ob	URF	16	128	
2022-06-22	cal_sc_ob	SCF	16	128	
2022-06-22	cal_sc_ob	E2K MSO	16	128	
2022-06-22	der_sc_ob	URF	N / A		
2022-06-22	der_sc_ob	SCF			AVG
2022-06-22	der_sc_ob	E2K MSO			AVG
2022-06-22	raw_hk_ib	URF	standard HK rate		
2022-06-22	cal_hk_ib	URF	standard HK rate		
2022-06-22	par_sc_ib	URF	16	128	
2022-06-22	cal_sc_ib	URF	16	128	
2022-06-22	cal_sc_ib	SCF	16	128	
2022-06-22	cal_sc_ib	E2K MSO	16	128	
2022-06-22	der_sc_ib	URF	N / A		
2022-06-22	der_sc_ib	SCF			AVG
2022-06-22	der_sc_ib	E2K MSO			AVG
2022-06-22	der_inf	URF	N / A		
2022-06-22	der_inf	SCF	N / A		
2022-06-22	der_inf		M I S S I N G ! !		
2022-06-23	edds_bin	URF	all available		
2022-06-23	raw_hk_ob	URF	standard HK rate		
2022-06-23	cal_hk_ob	URF	standard HK rate		
2022-06-23	par_sc_ob	URF		128	
2022-06-23	cal_sc_ob	URF		128	
2022-06-23	cal_sc_ob	SCF		128	
2022-06-23	cal_sc_ob	E2K MSO		128	
2022-06-23	der_sc_ob	URF	N / A		
2022-06-23	der_sc_ob	SCF			AVG
2022-06-23	der_sc_ob	E2K MSO			AVG
2022-06-23	raw_hk_ib	URF	standard HK rate		
2022-06-23	cal_hk_ib	URF	standard HK rate		
2022-06-23	par_sc_ib	URF		128	
2022-06-23	cal_sc_ib	URF		128	
2022-06-23	cal_sc_ib	SCF		128	
2022-06-23	cal_sc_ib	E2K MSO		128	
2022-06-23	der_sc_ib	URF	N / A		
2022-06-23	der_sc_ib	SCF			AVG
2022-06-23	der_sc_ib	E2K MSO			AVG
2022-06-23	der_inf	URF	N / A		
2022-06-23	der_inf	SCF	N / A		
2022-06-23	der_inf		M I S S I N G ! !		

DATE	CALIBRATION LEVEL	COORDINATES	SAMPLE RATES (Hz)		
2022-06-24	edds_bin	URF	all available		
2022-06-24	raw_hk_ob	URF	standard HK rate		
2022-06-24	cal_hk_ob	URF	standard HK rate		
2022-06-24	par_sc_ob	URF	16	128	
2022-06-24	cal_sc_ob	URF	16	128	
2022-06-24	cal_sc_ob	SCF	16	128	
2022-06-24	cal_sc_ob	E2K MSO	16	128	
2022-06-24	der_sc_ob	URF	N / A		
2022-06-24	der_sc_ob	SCF			AVG
2022-06-24	der_sc_ob	E2K MSO			AVG
2022-06-24	raw_hk_ib	URF	standard HK rate		
2022-06-24	cal_hk_ib	URF	standard HK rate		
2022-06-24	par_sc_ib	URF	16	128	
2022-06-24	cal_sc_ib	URF	16	128	
2022-06-24	cal_sc_ib	SCF	16	128	
2022-06-24	cal_sc_ib	E2K MSO	16	128	
2022-06-24	der_sc_ib	URF	N / A		
2022-06-24	der_sc_ib	SCF			AVG
2022-06-24	der_sc_ib	E2K MSO			AVG
2022-06-24	der_inf	URF	N / A		
2022-06-24	der_inf	SCF	N / A		
2022-06-24	der_inf		M I S S I N G ! !		
2022-06-25	edds_bin	URF	all available		
2022-06-25	raw_hk_ob	URF	standard HK rate		
2022-06-25	cal_hk_ob	URF	standard HK rate		
2022-06-25	par_sc_ob	URF	16		
2022-06-25	cal_sc_ob	URF	16		
2022-06-25	cal_sc_ob	SCF	16		
2022-06-25	cal_sc_ob	E2K MSO	16		
2022-06-25	der_sc_ob	URF	N / A		
2022-06-25	der_sc_ob	SCF			AVG
2022-06-25	der_sc_ob	E2K MSO			AVG
2022-06-25	raw_hk_ib	URF	standard HK rate		
2022-06-25	cal_hk_ib	URF	standard HK rate		
2022-06-25	par_sc_ib	URF	16		
2022-06-25	cal_sc_ib	URF	16		
2022-06-25	cal_sc_ib	SCF	16		
2022-06-25	cal_sc_ib	E2K MSO	16		
2022-06-25	der_sc_ib	URF	N / A		
2022-06-25	der_sc_ib	SCF			AVG
2022-06-25	der_sc_ib	E2K MSO			AVG
2022-06-25	der_inf	URF	N / A		
2022-06-25	der_inf	SCF	N / A		
2022-06-25	der_inf		M I S S I N G ! !		