BepiColombo

FLIGHT REPORTS of MPO-MAG

BC-MAG-TR-1003

Issue: 2 Revision: 1

2022-12-09

OVERVIEW OF AVAILABLE MPO-MAG DATA AND DATA QUALITY ASSESSMENT

Mission Phase:	EARTH-FLYBY
Time Period:	April 7, 2020 - April 12, 2020

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Contents

1 Introduction

This document provides information about all available data and its quality for the time period between April 7, 2020 and April 12, 2020. This covers the Mission Phase EARTH-FLYBY.

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
2020-02-26T19:00		MAG Switch on after OCM, MODE S6, Range 4		
		2020-04-08T16:24:58 during the MPOMAG reconfiguration,		DR-08-04
		apparently the first command ZME02705 to change instrument		DR-08-04
		mode caused a reboot of MPOMAG for reasons unknown,		DR-08-04
		causing the subsequent commands to be lost.		DR-08-04
	2020-04-08T19:28	MPO-MAG Power cycle		DR-08-04
2020-04-08T19:33		REBOOT, S9=128 Hz , Range 1 =1048 nT, successful		DR-08-04
		2020-04-09T05:00 MTM pre-heating, MTM heater power 1300W		DR-09-04
		2020-04-09T18:40 MMO switch ON to Cruise Standby mode		DR-09-04
		2020-04-09T20:39:46 Wheel offloading		DR-09-04
		2020-04-09T21:09:58 Start of slew to closest approach attitude		DR-09-04
		2020-04-10T00:10:08 End of slew to closest approach attitude		DR-10-04
		2020-04-10T00:10:58 reducing the wheel speeds		DR-10-04
		2020-04-10T01:10:58 Wheel offloading		DR-10-04
		2020-04-10T04:24:57.213 C/A EARTH at an altitude of 12686 km.		DR-10-04
		Perigee distance: 19063.905 km,3-sigma uncertainty: 0.001 km		
		2020-04-10T04:55:46 MTM heater settings for eclipse		DR-10-04
		MTM heater power remained below 200W during eclipse.		DR-10-04
		2020-04-10T04.58.46 MTM-MPO Powerlink OFF,		DR-10-04
		start of MPO battery discharge		MOR#67
		2020-04-10T05:00:46 to 05:34:41 Eclipse (penumbra),		DR-10-04
		MTM battery discharge		MOR#67
		2020-04-10T05:36:41 MTM-MPO Powerlink ON ,		DR-10-04
		stop of MPO battery discharge,		DR-10-04
		2020-04-10T05:37:37 by manual setting of MPO battery End of		DR-10-04
		Charge voltage to 22.2V (40%) to prevent recharge to 100%		DR-10-04
		2020-04-10T08:09:46 WOL		DR-10-04
		2020-04-10T09:53 start discharge of MPO battery to 40%(22.2V)		DR-10-04
		completed at 2020-04-10T11:03:04		DR-10-04
		2020-04-10T13:39:46 WOL		DR-10-04

Switch on	Switch off	EVENTS	VISIBLE	REFERENCE
		2020-04-11T04:25 wheel offloading (WOL)		DR-11-04
		2020-04-11T04:45 MMO to Dormant		DR-11-04
		2020-04-11T04:50 reset of thruster firing delays and reset of		DR-11-04
		MPO TCS line 15 (MOSIF) settings following MMO to Dormant		DR-11-04
		2020-04-11T13:30 move of HGA from elevation +90 deg to +77 deg		DR-11-04
		2020-04-11T13:55 WOL		DR-11-04
		2020-04-11T14:25 start of slew to post-ESB attitude		DR-11-04
		2020-04-11T16:25 MPOMAG post-flyby configuration, S6 , Range 4		DR-11-04
		2020-04-11T17:24:28 MGA resumed Earth tracking		MOR#67
		2020-04-11T17:25 end of slew to post-ESB attitude		DR-11-04
		2020-04-11T17:30 WOL		DR-11-04
		2020-04-13T07:40:00 the HGA was moved back to Safe Position		MOR#67
		2020-04-14T04:24:58 the MTM S/A are offset again from the Sun.		MOR#67

2 2020

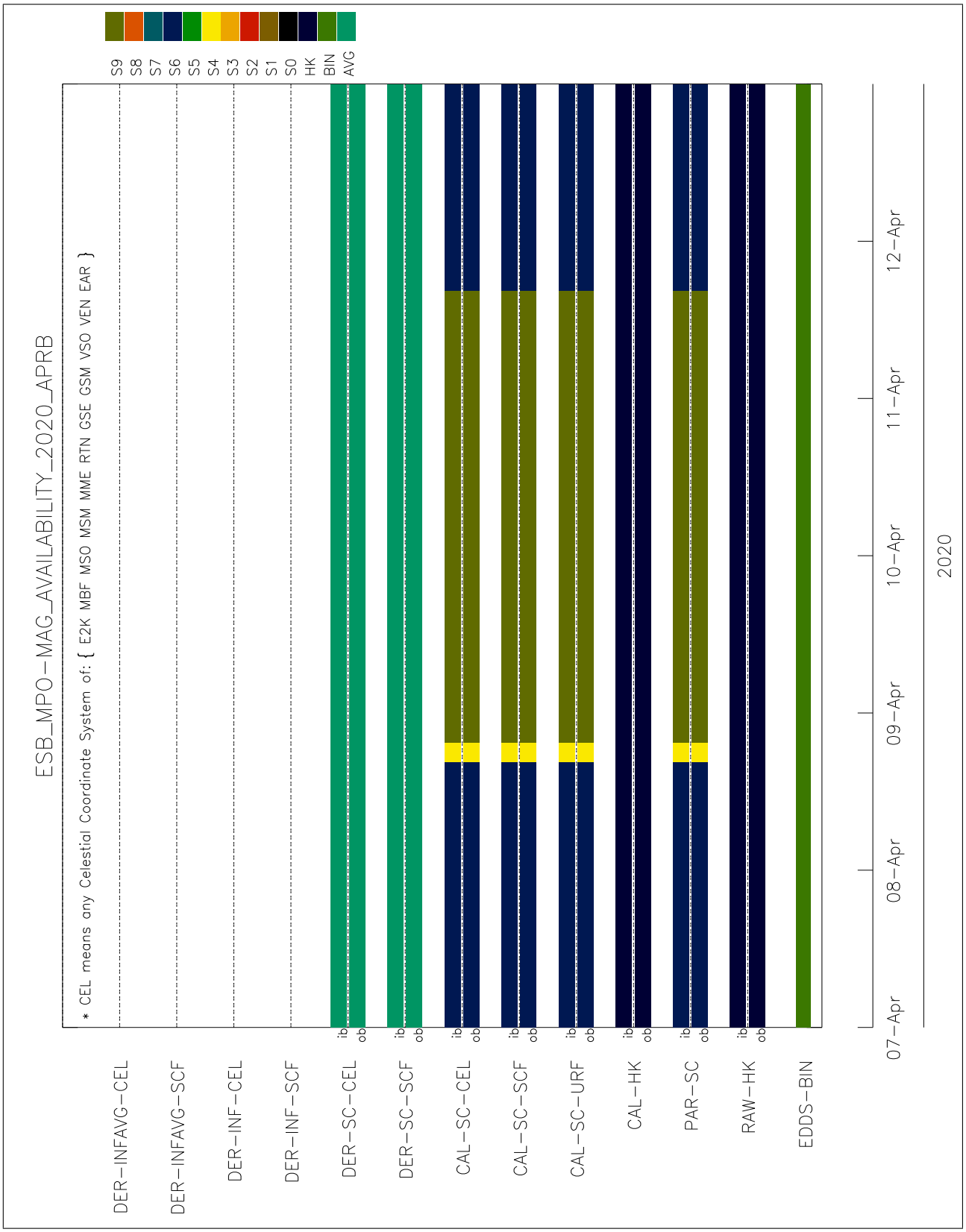

Figure 1: Overview April 2020

DATE	CALIBRATION LEVEL	COORDINATES	SAMPLE RATES (Hz)			
2020-04-07	edds_bin	URF	all available			
2020-04-07	raw_hk_ob	URF	standard HK rate			
2020-04-07	cal_hk_ob	URF	standard HK rate			
2020-04-07	par_sc_ob	URF	16			
2020-04-07	cal_sc_ob	URF	16			
2020-04-07	cal_sc_ob	SCF	16			
2020-04-07	cal_sc_ob	E2K GSE	16			
2020-04-07	der_sc_ob	URF	N / A			
2020-04-07	der_sc_ob	SCF				AVG
2020-04-07	der_sc_ob	E2K GSE				AVG
2020-04-07	raw_hk_ib	URF	standard HK rate			
2020-04-07	cal_hk_ib	URF	standard HK rate			
2020-04-07	par_sc_ib	URF	16			
2020-04-07	cal_sc_ib	URF	16			
2020-04-07	cal_sc_ib	SCF	16			
2020-04-07	cal_sc_ib	E2K GSE	16			
2020-04-07	der_sc_ib	URF	N / A			
2020-04-07	der_sc_ib	SCF				AVG
2020-04-07	der_sc_ib	E2K GSE				AVG
2020-04-07	der_inf	URF	N / A			
2020-04-07	der_inf	SCF	N / A			
2020-04-07	der_inf		M I S S I N G ! !			
2020-04-08	edds_bin	URF	all available			
2020-04-08	raw_hk_ob	URF	standard HK rate			
2020-04-08	cal_hk_ob	URF	standard HK rate			
2020-04-08	par_sc_ob	URF	4	16	128	
2020-04-08	cal_sc_ob	URF	4	16	128	
2020-04-08	cal_sc_ob	SCF	4	16	128	
2020-04-08	cal_sc_ob	E2K GSE	4	16	128	
2020-04-08	der_sc_ob	URF	N / A			
2020-04-08	der_sc_ob	SCF				AVG
2020-04-08	der_sc_ob	E2K GSE				AVG
2020-04-08	raw_hk_ib	URF	standard HK rate			
2020-04-08	cal_hk_ib	URF	standard HK rate			
2020-04-08	par_sc_ib	URF	4	16	128	
2020-04-08	cal_sc_ib	URF	4	16	128	
2020-04-08	cal_sc_ib	SCF	4	16	128	
2020-04-08	cal_sc_ib	E2K GSE	4	16	128	
2020-04-08	der_sc_ib	URF	N / A			
2020-04-08	der_sc_ib	SCF				AVG
2020-04-08	der_sc_ib	E2K GSE				AVG
2020-04-08	der_inf	URF	N / A			
2020-04-08	der_inf	SCF	N / A			
2020-04-08	der_inf		M I S S I N G ! !			

DATE	CALIBRATION LEVEL	COORDINATES	SAMPLE RATES (Hz)
2020-04-09	edds_bin	URF	all available
2020-04-09	raw_hk_ob	URF	standard HK rate
2020-04-09	cal_hk_ob	URF	standard HK rate
2020-04-09	par_sc_ob	URF	128
2020-04-09	cal_sc_ob	URF	128
2020-04-09	cal_sc_ob	SCF	128
2020-04-09	cal_sc_ob	E2K GSE	128
2020-04-09	der_sc_ob	URF	N / A
2020-04-09	der_sc_ob	SCF	AVG
2020-04-09	der_sc_ob	E2K GSE	AVG
2020-04-09	raw_hk_ib	URF	standard HK rate
2020-04-09	cal_hk_ib	URF	standard HK rate
2020-04-09	par_sc_ib	URF	128
2020-04-09	cal_sc_ib	URF	128
2020-04-09	cal_sc_ib	SCF	128
2020-04-09	cal_sc_ib	E2K GSE	128
2020-04-09	der_sc_ib	URF	N / A
2020-04-09	der_sc_ib	SCF	AVG
2020-04-09	der_sc_ib	E2K GSE	AVG
2020-04-09	der_inf	URF	N / A
2020-04-09	der_inf	SCF	N / A
2020-04-09	der_inf		M I S S I N G ! !
2020-04-10	edds_bin	URF	all available
2020-04-10	raw_hk_ob	URF	standard HK rate
2020-04-10	cal_hk_ob	URF	standard HK rate
2020-04-10	par_sc_ob	URF	128
2020-04-10	cal_sc_ob	URF	128
2020-04-10	cal_sc_ob	SCF	128
2020-04-10	cal_sc_ob	E2K GSE	128
2020-04-10	der_sc_ob	URF	N / A
2020-04-10	der_sc_ob	SCF	AVG
2020-04-10	der_sc_ob	E2K GSE	AVG
2020-04-10	raw_hk_ib	URF	standard HK rate
2020-04-10	cal_hk_ib	URF	standard HK rate
2020-04-10	par_sc_ib	URF	128
2020-04-10	cal_sc_ib	URF	128
2020-04-10	cal_sc_ib	SCF	128
2020-04-10	cal_sc_ib	E2K GSE	128
2020-04-10	der_sc_ib	URF	N / A
2020-04-10	der_sc_ib	SCF	AVG
2020-04-10	der_sc_ib	E2K GSE	AVG
2020-04-10	der_inf	URF	N / A
2020-04-10	der_inf	SCF	N / A
2020-04-10	der_inf		M I S S I N G ! !

DATE	CALIBRATION LEVEL	COORDINATES	SAMPLE RATES (Hz)		
2020-04-11	edds_bin	URF	all available		
2020-04-11	raw_hk_ob	URF	standard HK rate		
2020-04-11	cal_hk_ob	URF	standard HK rate		
2020-04-11	par_sc_ob	URF	16	128	
2020-04-11	cal_sc_ob	URF	16	128	
2020-04-11	cal_sc_ob	SCF	16	128	
2020-04-11	cal_sc_ob	E2K GSE	16	128	
2020-04-11	der_sc_ob	URF	N / A		
2020-04-11	der_sc_ob	SCF			AVG
2020-04-11	der_sc_ob	E2K GSE			AVG
2020-04-11	raw_hk_ib	URF	standard HK rate		
2020-04-11	cal_hk_ib	URF	standard HK rate		
2020-04-11	par_sc_ib	URF	16	128	
2020-04-11	cal_sc_ib	URF	16	128	
2020-04-11	cal_sc_ib	SCF	16	128	
2020-04-11	cal_sc_ib	E2K GSE	16	128	
2020-04-11	der_sc_ib	URF	N / A		
2020-04-11	der_sc_ib	SCF			AVG
2020-04-11	der_sc_ib	E2K GSE			AVG
2020-04-11	der_inf	URF	N / A		
2020-04-11	der_inf	SCF	N / A		
2020-04-11	der_inf		M I S S I N G ! !		
2020-04-12	edds_bin	URF	all available		
2020-04-12	raw_hk_ob	URF	standard HK rate		
2020-04-12	cal_hk_ob	URF	standard HK rate		
2020-04-12	par_sc_ob	URF	16		
2020-04-12	cal_sc_ob	URF	16		
2020-04-12	cal_sc_ob	SCF	16		
2020-04-12	cal_sc_ob	E2K GSE	16		
2020-04-12	der_sc_ob	URF	N / A		
2020-04-12	der_sc_ob	SCF			AVG
2020-04-12	der_sc_ob	E2K GSE			AVG
2020-04-12	raw_hk_ib	URF	standard HK rate		
2020-04-12	cal_hk_ib	URF	standard HK rate		
2020-04-12	par_sc_ib	URF	16		
2020-04-12	cal_sc_ib	URF	16		
2020-04-12	cal_sc_ib	SCF	16		
2020-04-12	cal_sc_ib	E2K GSE	16		
2020-04-12	der_sc_ib	URF	N / A		
2020-04-12	der_sc_ib	SCF			AVG
2020-04-12	der_sc_ib	E2K GSE			AVG
2020-04-12	der_inf	URF	N / A		
2020-04-12	der_inf	SCF	N / A		
2020-04-12	der_inf		M I S S I N G ! !		