



14 August 2023 (report covers data release for 1 November – 30 November 2022)

Report Version	2	L2 ground processing software version:	V2.25
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MAG IM	Helen O'Brien h.obrien@imperial.ac.uk		
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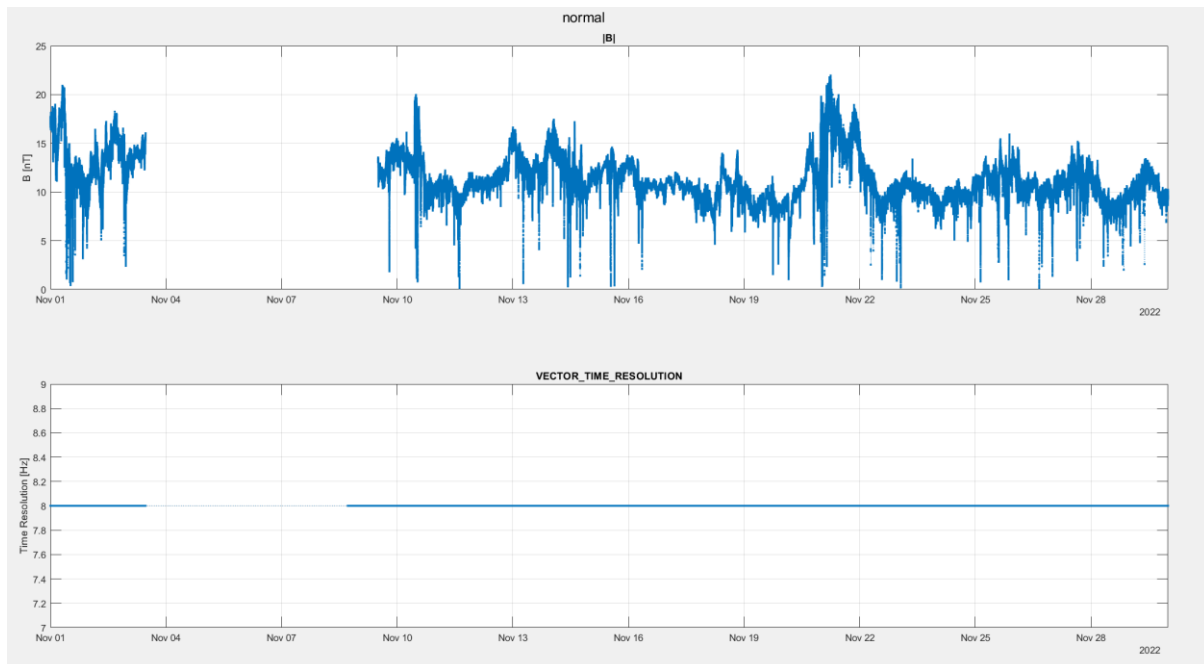
Data Summary

MAG was powered on for November, except for the 3 Nov – 8 Nov when it was OFF due to a spacecraft FDIR event. Considering the FDIR event and as a precaution against further offset shifts, for the period 8 Nov to 5/12 12:10, the sensors temperatures were raised to -60C, rather than the nominal ~-90C. BM is available through the month at a minimum of 64 vectors per second.

The spacecraft started the month at 0.49AU on the 1st of November and at the end of the month it was at 0.80AU from the Sun.

After an investigation by ESA, Airbus and Imperial, the unexplained SC interference has been confirmed not to impact the science quality of the OBS data so this is no longer being removed from these periods. Cleaning of data around thruster firings requires use of the contaminated IBS data so users should beware of data during these periods, which can be identified by the thruster flag.

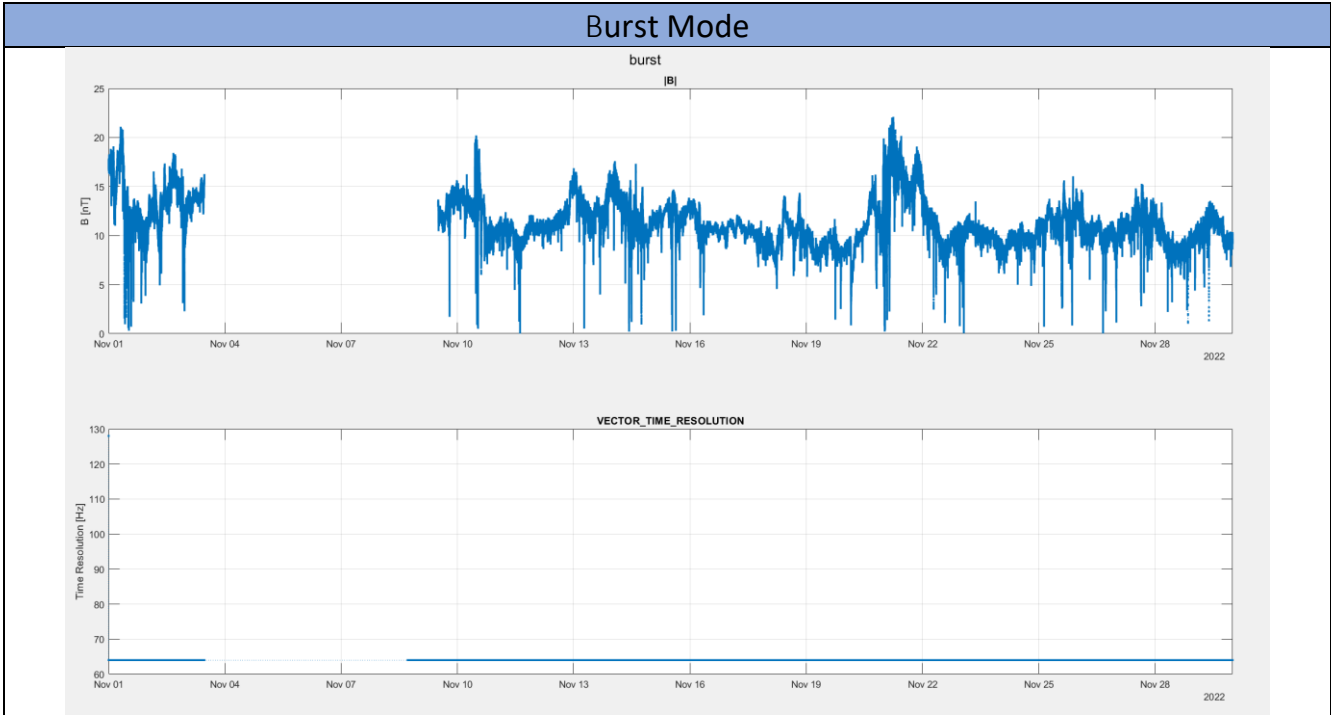
Normal Mode



Operations	1 November – 30 November	Science phase throughout period, normal data produced, except for Mag OFF 3-8/11.
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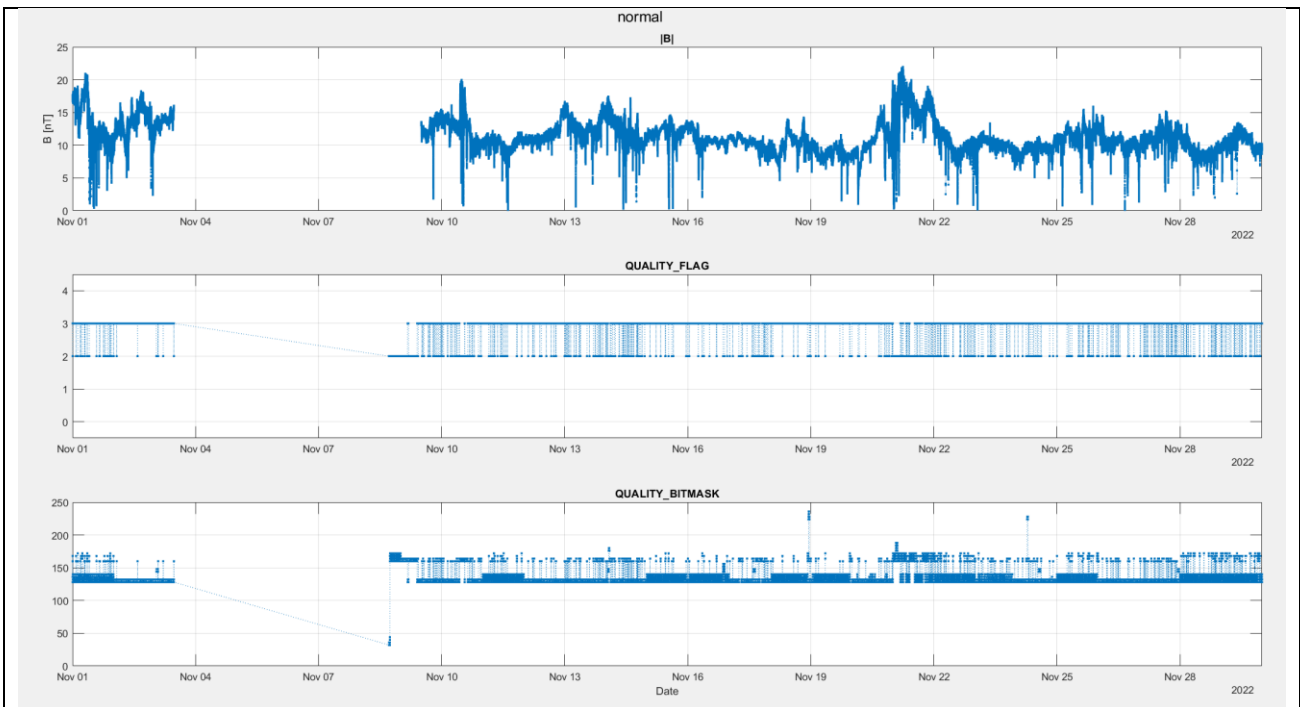
Operational Events of Note	Mag OFF 3-8/11. Sensor temperature set point at 213.15K
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Normal mode data is produced from the burst mode stream when it is available, as is the case this month. This can produce small changes in the time sampling of the data over the transition; these are smaller than the cadence of 1/8 of a second.



Coverage	From	To	Coverage
	01/11	30/11	24h of 64 vectors/s

Quality bitmask	

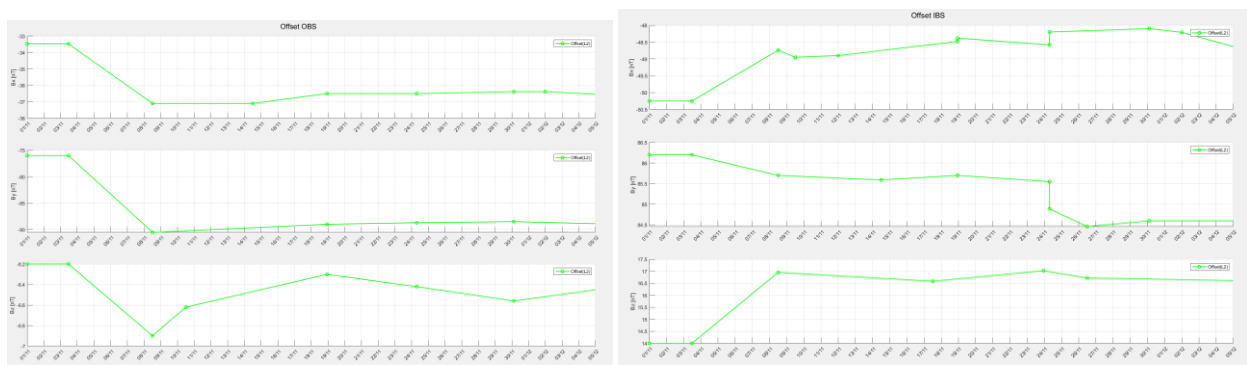


Quality bit mask events

<p>SC events which disturb the field</p>	<ol style="list-style-type: none"> 1. Solar array movements (solar array angle is changed, and then remains at new angle due to sun-SC distance thermal constraints) 2. High gain antenna movements 3. Battery Top Up
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<p>SC related issues</p>	<table border="1"> <thead> <tr> <th>Time</th> <th>Reason</th> </tr> </thead> <tbody> <tr> <td>26/11/2022 04:20 - 05:30</td> <td>Battery top up event interference affecting IBS</td> </tr> <tr> <td>05/11/2022 16:47 -18:08</td> <td>SA movement from 70.05 to 59.95 deg</td> </tr> <tr> <td>18/11/2022 22:38 – 22:48</td> <td>SA movement from 59.95 to 56.07 deg</td> </tr> <tr> <td>24/11/2022 06:18 – 06:39</td> <td>SA movement from 56.07 to 30.05 deg</td> </tr> </tbody> </table>	Time	Reason	26/11/2022 04:20 - 05:30	Battery top up event interference affecting IBS	05/11/2022 16:47 -18:08	SA movement from 70.05 to 59.95 deg	18/11/2022 22:38 – 22:48	SA movement from 59.95 to 56.07 deg	24/11/2022 06:18 – 06:39	SA movement from 56.07 to 30.05 deg
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Offsets



1 Oct – 3 Nov:

The OBS and IBS changed significantly as expected after the reboot on the 8th. The OBS offsets followed a linear trend throughout the rest of the month. The IBS offsets step changes on the 18th, 24th due to solar array (SA) movement. Between these events, the offset linearly changed, and the trend has been chosen accordingly.

OffsetNumber	Date	OBSX	OBS Y	OBS Z	IBSX	IBSY	IBSZ	Comment
220926	31/10/2022 23:59	-33.47	-76	-6.2	-50.25	86.2	14	Linear trend in OBS X,Y,Z
220927	03/11/2022 11:21	-33.47	-76	-6.2	-50.25	86.2	14	MAG OFF
220928	08/11/2022 12:00	-37.1	-91	-6.9	-48.74	85.7	16.95	MAG ON
220929	09/11/2022 12:00				-48.95			LW IBS X trend from MAG OFF
220930	10/11/2022 12:00			-6.6				LW OBS Z trend from MAG OFF
220931	12/11/2022 00:00				-48.9			IBS X trend
220932	14/11/2022 12:00	-37.1				85.59		LW OBS X trend from MAG OFF
220933	17/11/2022 12:00						16.58	LW IBS Z trend from MAG OFF
220934	18/11/2022 22:38	-36.5	-89	-6.3	-48.48	85.7		SA event -3.88
220935	18/11/2022 22:39				-48.38	85.7		SA event step change IBS
220936	23/11/2022 23:00						17.02	Following IBS Z trend
220937	24/11/2022 07:20	-36.5	-89	-6.4	-48.58	85.55		Temp change -48 to -51
220938	24/11/2022 07:21				-48.2	84.89		SA event -26.02 step change IBS
220939	26/11/2022 12:00					84.46	16.72	Following IBS Y,Z trend
220940	30/11/2022 02:50	-36.38	-89	-6.6	-48.1	84.6		Temp change -51 to -48

Appendix

Appendix A: Files within this release 23/05/2023

Files 1-3/11 were delivered with October Data on the 22/05/2023. An update to solo_L2_mag-rtn-normal-1-minute_20221103_V01.cdf to remove one erroneous data point was made on 08/08/2023 and it is included in this DRR for clarity. It was produced with V2.26.1.

File Name	Date Released
solo_L2_mag-rtn-burst_20221103_V02.cdf	08/08/2023
solo_L2_mag-rtn-burst_20221109_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221110_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221111_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221112_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221113_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221114_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221115_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221116_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221117_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221118_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221119_V01.cdf	23/05/2023

solo_L2_mag-rtn-burst_20221120_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221121_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221122_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221123_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221124_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221125_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221126_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221127_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221128_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221129_V01.cdf	23/05/2023
solo_L2_mag-rtn-burst_20221130_V01.cdf	23/05/2023
solo_L2_mag-rtn-normal-1-minute_20221109_V01.cdf	23/05/2023
solo_L2_mag-rtn-normal-1-minute_20221110_V01.cdf	23/05/2023
solo_L2_mag-rtn-normal-1-minute_20221111_V01.cdf	23/05/2023
solo_L2_mag-rtn-normal-1-minute_20221112_V01.cdf	23/05/2023
solo_L2_mag-rtn-normal-1-minute_20221113_V01.cdf	23/05/2023
solo_L2_mag-rtn-normal-1-minute_20221114_V01.cdf	23/05/2023
solo_L2_mag-rtn-normal-1-minute_20221115_V01.cdf	23/05/2023
solo_L2_mag-rtn-normal-1-minute_20221116_V01.cdf	23/05/2023
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