



25 September 2023 (report covers data release for 1 May – 31 May 2023)

Report Version	1	L2 ground processing software version:	V2.26.1
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MAG IM	Helen O'Brien h.obrien@imperial.ac.uk		
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Data Summary

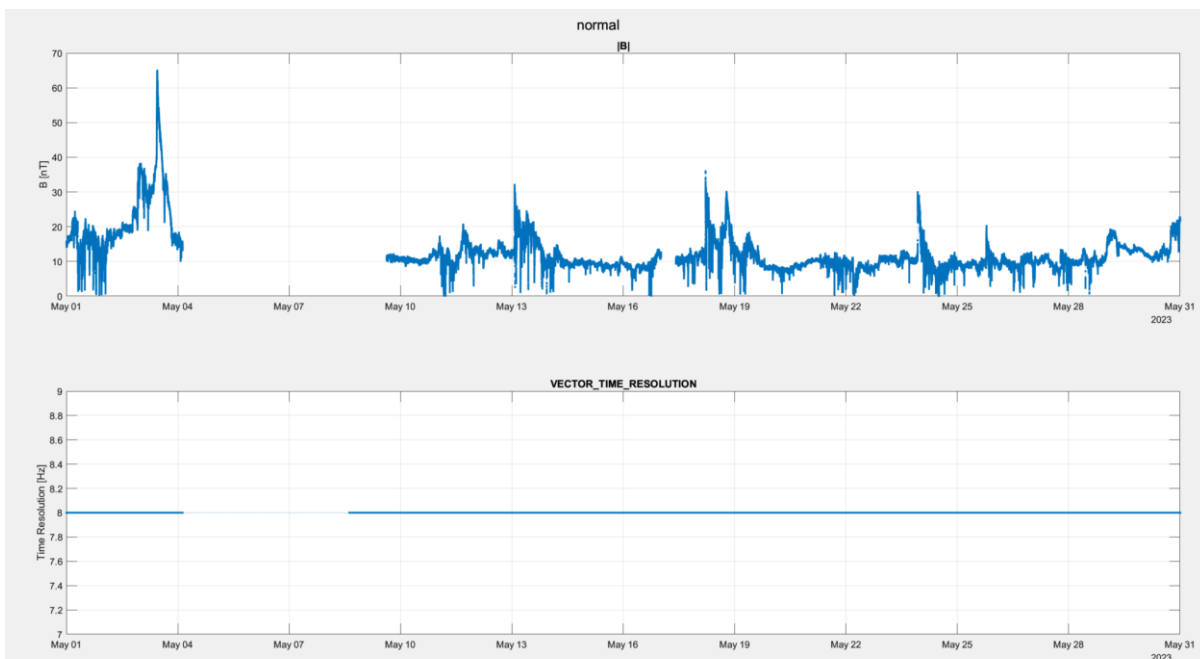
MAG was powered on for May except for 04-08/05 due to a FDIR triggered payload switch off. Following the payload switch off, the sensors temperatures were raised to -60C, rather than the nominal -90C. At 17/05/2023 02:29 the temperatures were lowered back to the nominal temperature of -90C. The offsets were disturbed by these temperature changes and the MAG OFF. During the calibration process this disturbance was not able to be characterised with sufficient accuracy, therefore the data during these periods (08/05/2023-09/05/2023 15:00 and 17/05/2023 00:30-10:00) has not been released. Please contact the team if you have a special need for this data.

There was a calibration roll at 2023/05/29 20:30 until 2023/05/30 10:46. There were some small data gaps on 21/05 due to downlink issues at CEB (Cebreros).

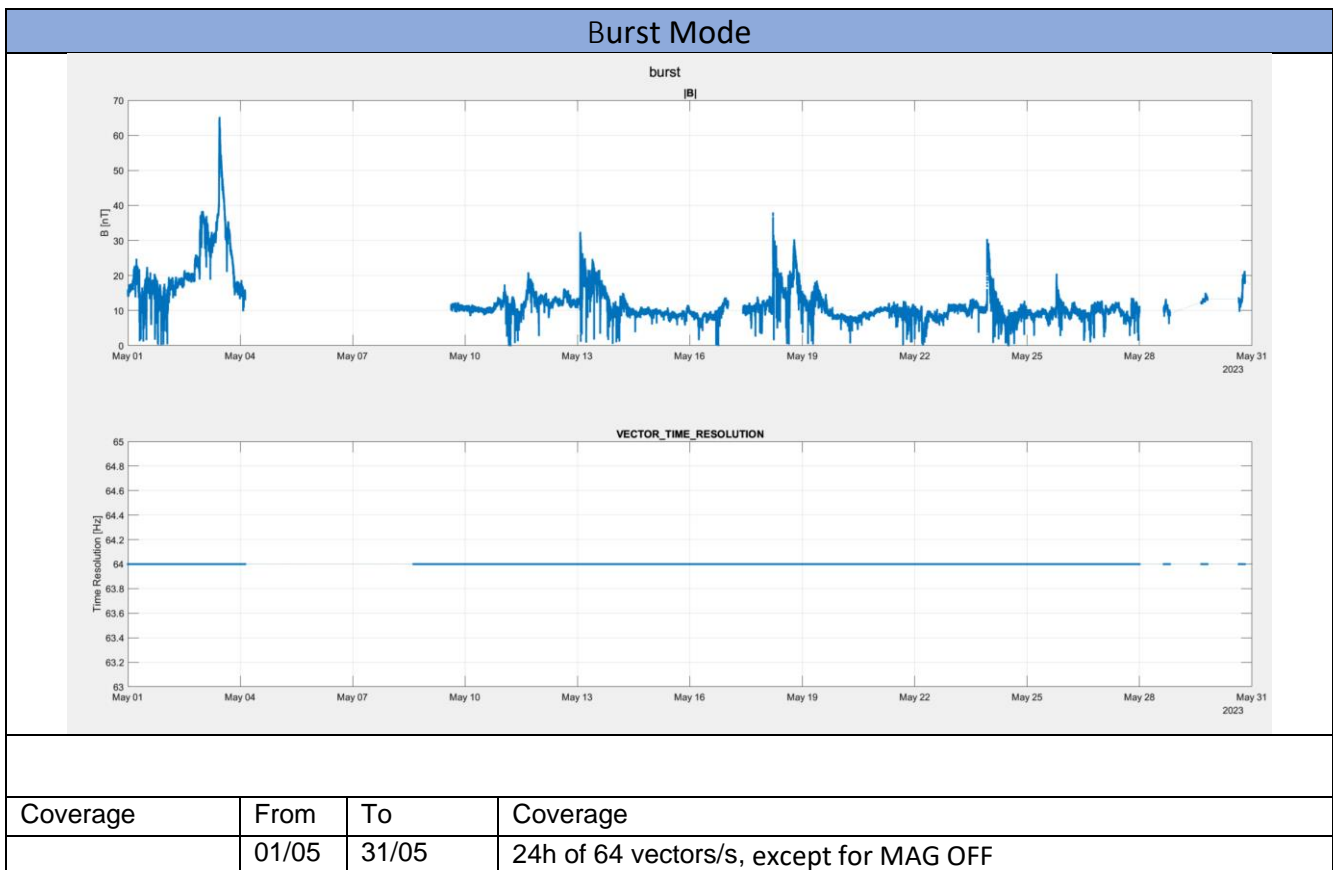
BM is available at 64 vectors/s from 01-28/04. From 28-31/05 it was available for 4 hours a day at 64 vectors/s.

The spacecraft started the month at 0.51AU on the 1st of May and at the end of the month it was at 0.82AU from the Sun.

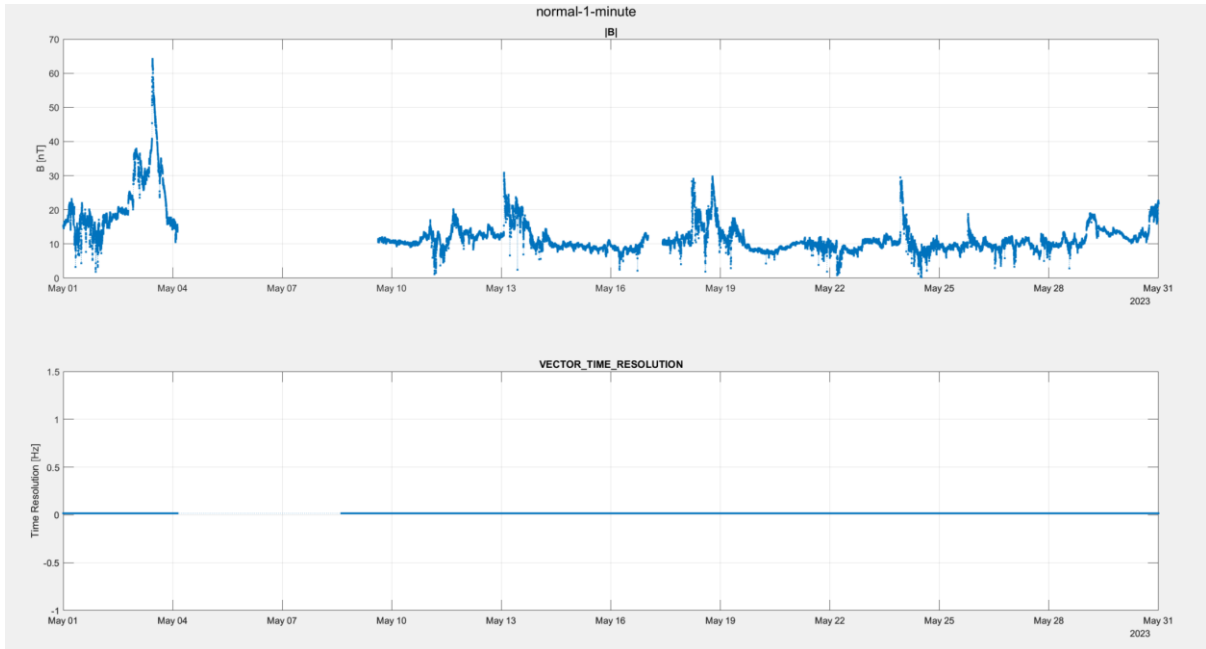
Normal Mode



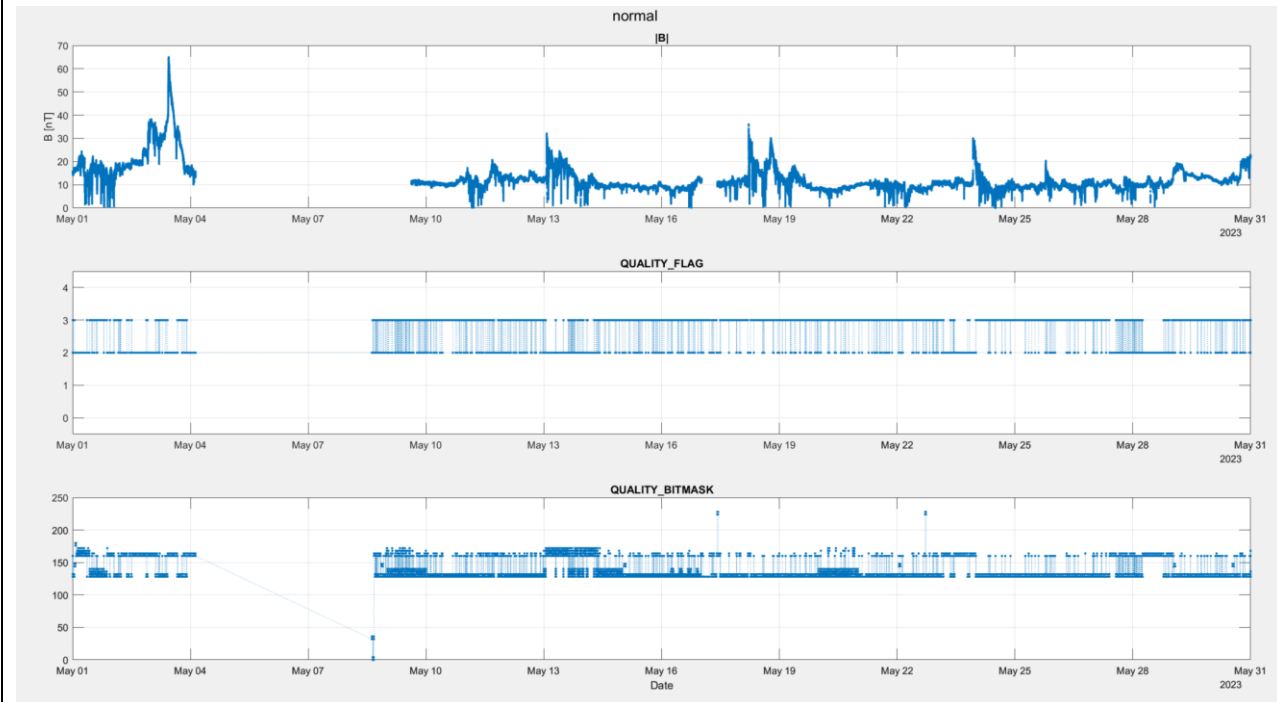
Operations	1 May– 31 May	Science phase throughout period, except for 04-08/05 due to a FDIR triggered payload switch off, normal data produced.
Operational Events of Note	04-08/05/2023 - Mag OFF, temperature raised to -60C 17/05/2023 02:29 -Temperature lowered to nominal temperature of -90C 21/05/2023 - Small data gaps due to downlink issues at CEB (Cebreros) 2023/05/29 20:30 2023/05/30 10:46 - Calibration roll	
Normal mode data is produced from the burst mode stream when it is available for a full day, 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.		



Normal – 1min



Quality bitmask



Quality bit mask events

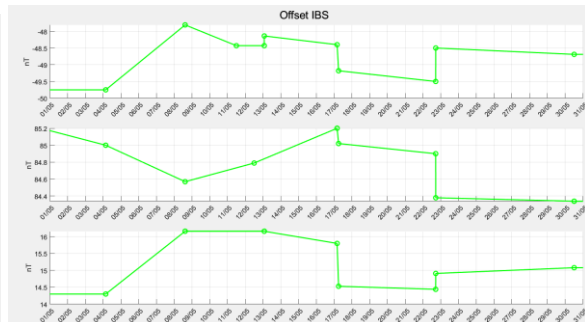
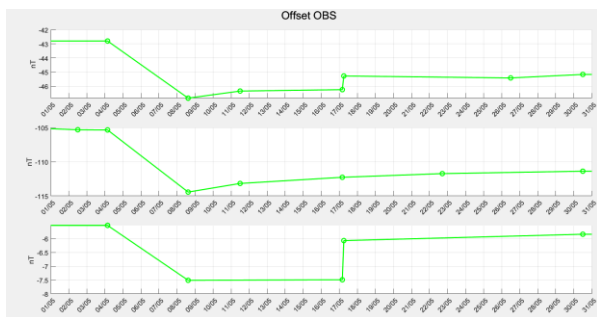
SC events which disturb the field

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

SC related issues

N/A

Offsets



1 May – 31 May:

The OBS offsets initially recovered from the MAG reboot in beginning of the month and followed a linear recovery after this. The offsets were disturbed by the temperature change on the 17th, with a step change. IBS offsets changed on the 22nd due to a solar array event. Between these events, the OBS & IBS offset linearly changed, and the trend has been chosen accordingly.

OffsetNumber	Date	OBSX	OBSY	OBSZ	IBSX	IBSY	IBSZ	Comment
221014	30/04/2023 12:00	-42.8	-105.12	-5.52	-49.75	85.2	14.3	April end of month offsets
221015	02/05/2023 12:00		-105.32					OBS Y trend
221016	04/05/2023 03:38	-42.8	-105.35	-5.52	-49.75	85	14.3	Pre MAG OFF offsets
221017	08/05/2023 14:50	-46.85	-114.43	-7.51	-47.81	84.57	16.16	IBS & OBS offsets step after MAG OFF
221018	11/05/2023 12:00	-46.35	-113.17		-48.43			Recovery in OBS & IBS offsets
221019	12/05/2023 12:00					84.79		Recovery in IBS Y offsets
221020	13/05/2023 01:40				-48.43		16.16	IBS X,Y trend
221021	13/05/2023 01:43				-48.14			IBS Range change 2 to 3
221022	17/05/2023 04:00	-46.25	-112.27	-7.49	-48.4	85.2	15.8	Temperature change
221023	17/05/2023 06:00	-45.28		-6.07	-49.18	85.02	14.53	Offsets step after temperature change
221024	22/05/2023 17:05		-111.73		-49.5	84.9	14.44	SA event
221025	22/05/2023 17:11				-48.5	84.38	14.91	SA event
221026	26/05/2023 12:00	-45.42						OBS X trend
221027	30/05/2023 12:00	-45.17	-111.38	-5.84	-48.69	84.34	15.08	Recovery in offsets after temperature change
221028	31/05/2023 23:59	-45.17	-111.38	-5.84	-48.69	84.34	15.08	Recovery in offsets after temperature change

Appendix

Appendix A: Files within this release

Filename
solo_L2_mag-rtn-burst_20230501_V01.cdf
solo_L2_mag-rtn-burst_20230502_V01.cdf
solo_L2_mag-rtn-burst_20230503_V01.cdf
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