



16 February 2024 (report covers data release for 1 November – 30 November 2023)

Report Version	1	L2 ground processing software version:	V2.26.1
MAG PI	Tim Horbury <a href="mailto:t.horbury@imperial.ac.uk">t.horbury@imperial.ac.uk</a>		
MAG IM	Helen O'Brien <a href="mailto:h.obrien@imperial.ac.uk">h.obrien@imperial.ac.uk</a>		
Report prepared by	Jean Morris <a href="mailto:j.morris23@imperial.ac.uk">j.morris23@imperial.ac.uk</a>		

Data Summary

MAG was powered on for November. Burst Mode (BM) was available at 64 vectors/s for 24 hours per day for the whole month.

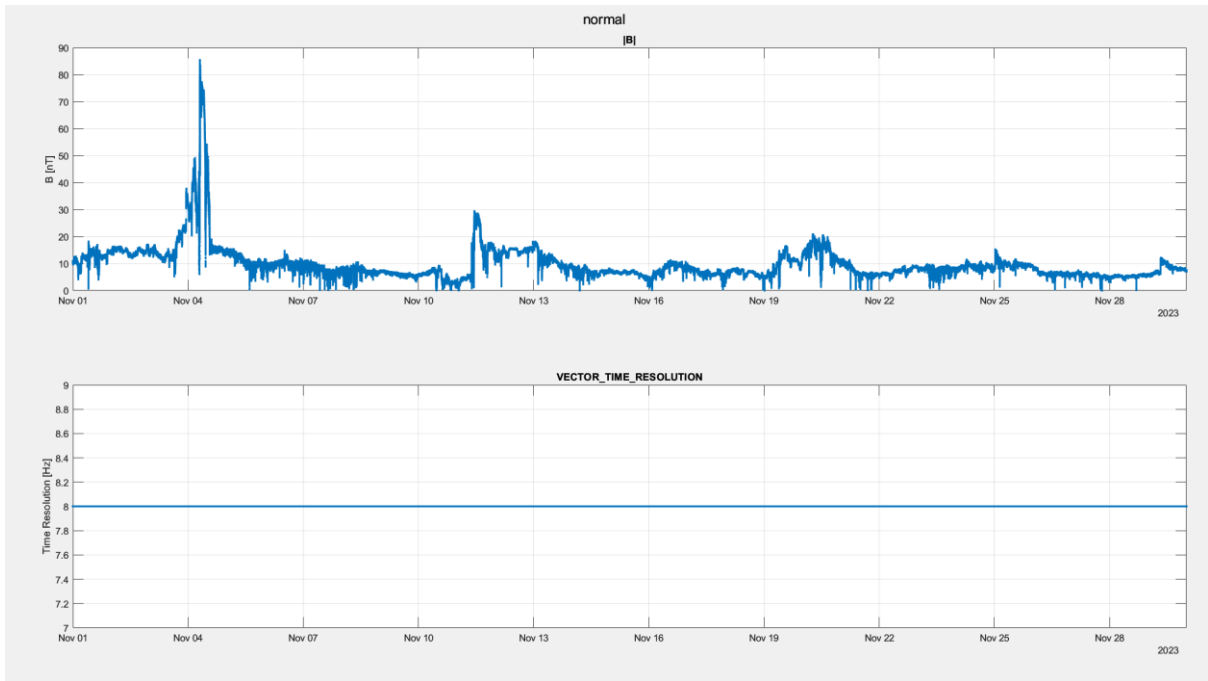
There was a large CME on the 4<sup>th</sup>.

To remove magnetic field interference generated by our MAG heaters, we create a profile for our heaters using a superposed epoch analysis and average these profiles over 3 days. This method assumes that the natural background signal variations will average to 0 over the span used to generate the profile. For days with events such as CMEs that generate large magnetic fields, this assumption does not necessarily hold. Therefore, for the 3<sup>rd</sup>-5<sup>th</sup> due to the large CME on the 4<sup>th</sup> we have created profiles for the 3<sup>rd</sup> and 5<sup>th</sup> without using the 4<sup>th</sup> and used the 3<sup>rd</sup> profile for the 4<sup>th</sup>. We discovered there was still some contamination in the 5<sup>th</sup> profile, so have used the 6<sup>th</sup> for this day, and now no clear signal near the heater duty cycle is observed. Users should still be aware of the potential for heater signal contamination and check the quality bitmask, bit 3, for the MAG heater ON times.

There was a MAG calibration roll on the 2023-11-22T11:10 until 2023-11-23T01:26

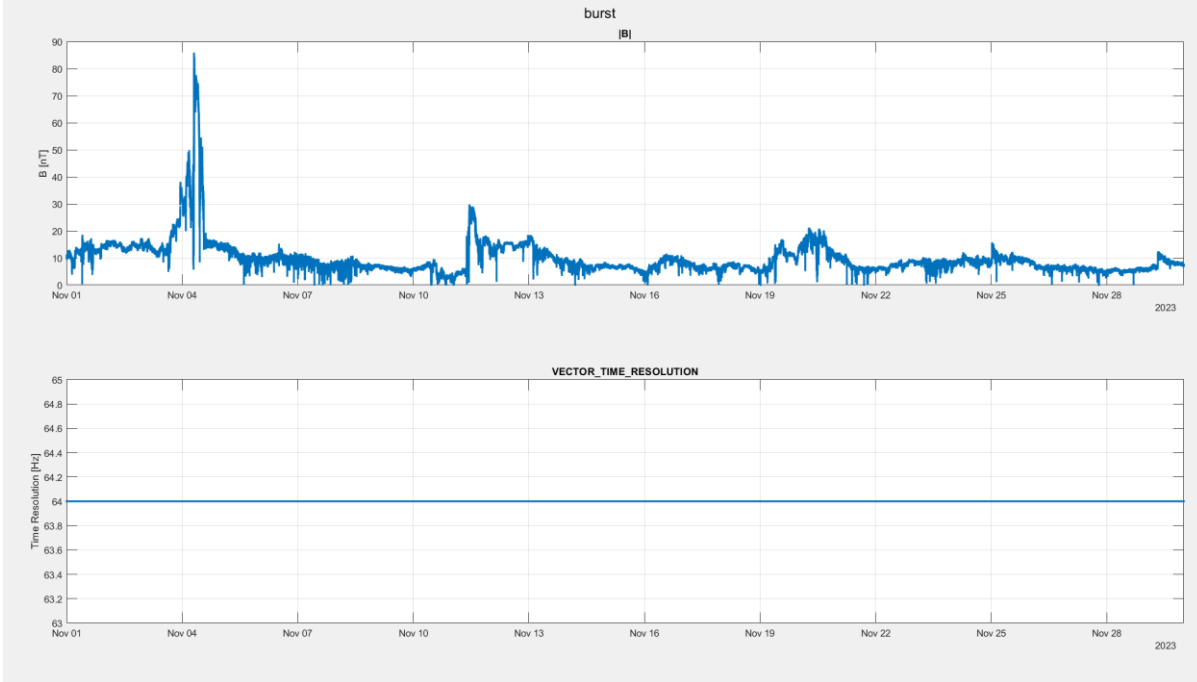
The spacecraft started the month at 0.56AU on the 1<sup>st</sup> of November and at the end of the month it was at 0.84AU.

## Normal Mode



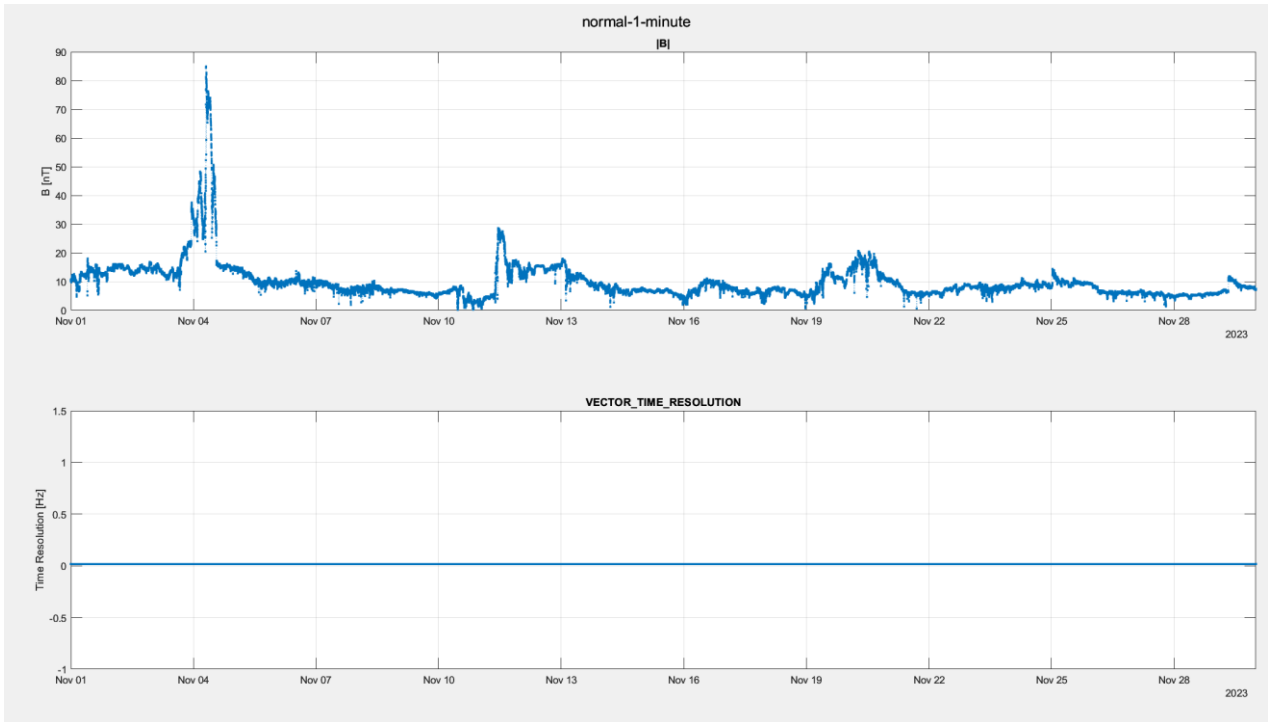
Operations	1 November – 30 November	Science phase throughout period, normal data produced.
Operational Events of Note		

## Burst Mode

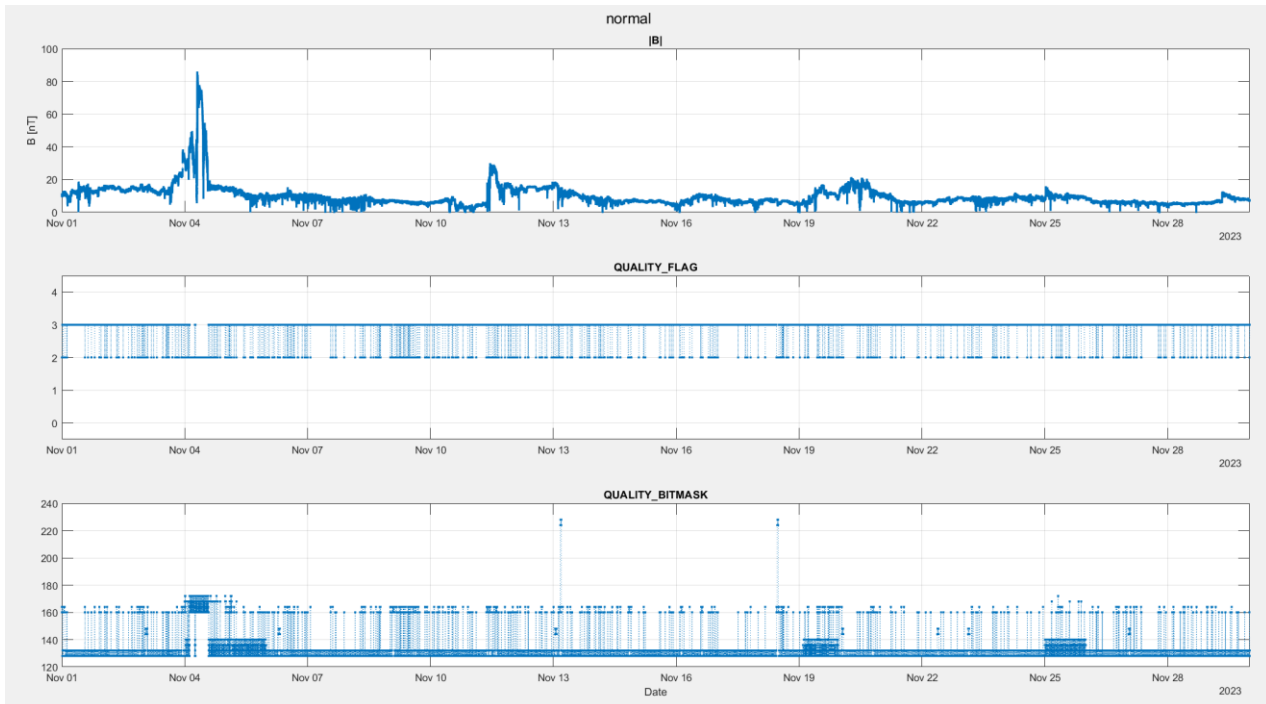


Coverage	From	To	Coverage
	01/11	30/11	24h per day of 64 vectors/s

## Normal – 1min



## Quality bitmask



### Quality bit mask events

SC events which disturb the field	<ol style="list-style-type: none"> <li>1. Solar array movements (solar array angle is changed, and then remains at new angle due to sun-SC distance thermal constraints)</li> <li>2. High gain antenna movements</li> <li>3. Battery Top Up</li> </ol>
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SC related issues	18/11/2023 11:13-12:13	SA event causing significant temp change in IBS
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### Offsets

#### 1 Nov – 30 Nov

The OBS Z offsets were very stable throughout November, changing by less than 0.5nT in all axes. The OBS Z offset was disturbed by an SA event on the 18<sup>th</sup> that also affected IBS. The IBS offsets were disturbed by several SA events (8<sup>th</sup>, 18<sup>th</sup>), after which the temperature of the sensor rose.

OffsetNumber	Date	OBSX	OBSY	OBSZ	IBSX	IBSY	IBSZ	Comment
220996	28/10/2023 12:00			-5.4				OBS trend
220997	29/10/2023 12:00	-44.1						OBS trend
220998	31/10/2023 12:00	-44.1	-109.9		-50.24	85.92	15.45	IBS & OBS trend
220999	01/11/2023 12:00					85.82		IBS trend

221000	02/11/2023 12:00	-44		-5.22	-50.27	85.6		OBS & IBS trend
221002	04/11/2023 12:00				-50.38		15.34	CME
221003	05/11/2023 12:00			-5.11				OBS Z trend
221005	10/11/2023 12:00			-5.2				OBS Z trend
221006	12/11/2023 12:00		-109.7			85.64	15.37	OBS & IBS trend
221007	18/11/2023 11:13	-44			-50.29	85.54		Sa event
221008	18/11/2023 11:18	-44.38			-49.5	84.59		Sa event
221009	22/11/2023 12:00							Calibration roll
221011	26/11/2023 12:00	-44.25	-109.43	-5.2			16.27	OBS & IBS trend
221012	30/11/2023 12:00				-49.78	84.62	15.88	IBS trend

## Appendix

### Appendix A: Files within this release

Filename
solo_L2_mag-rtn-burst_20231101_V01.cdf
solo_L2_mag-rtn-burst_20231102_V01.cdf
solo_L2_mag-rtn-burst_20231103_V01.cdf
solo_L2_mag-rtn-burst_20231104_V01.cdf
solo_L2_mag-rtn-burst_20231105_V01.cdf
solo_L2_mag-rtn-burst_20231106_V01.cdf
solo_L2_mag-rtn-burst_20231107_V01.cdf
solo_L2_mag-rtn-burst_20231108_V01.cdf
solo_L2_mag-rtn-burst_20231109_V01.cdf
solo_L2_mag-rtn-burst_20231110_V01.cdf
solo_L2_mag-rtn-burst_20231111_V01.cdf
solo_L2_mag-rtn-burst_20231112_V01.cdf
solo_L2_mag-rtn-burst_20231113_V01.cdf
solo_L2_mag-rtn-burst_20231114_V01.cdf
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solo_L2_mag-rtn-burst_20231121_V01.cdf
solo_L2_mag-rtn-burst_20231122_V01.cdf
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solo_L2_mag-rtn-burst_20231124_V01.cdf
solo_L2_mag-rtn-burst_20231125_V01.cdf
solo_L2_mag-rtn-burst_20231126_V01.cdf
solo_L2_mag-rtn-burst_20231127_V01.cdf
solo_L2_mag-rtn-burst_20231128_V01.cdf
solo_L2_mag-rtn-burst_20231129_V01.cdf

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