



27 July 2023 (report covers data release for 1 January – 31 January 2022)

Report Version	1	L2 ground processing software version:	V2.26.1
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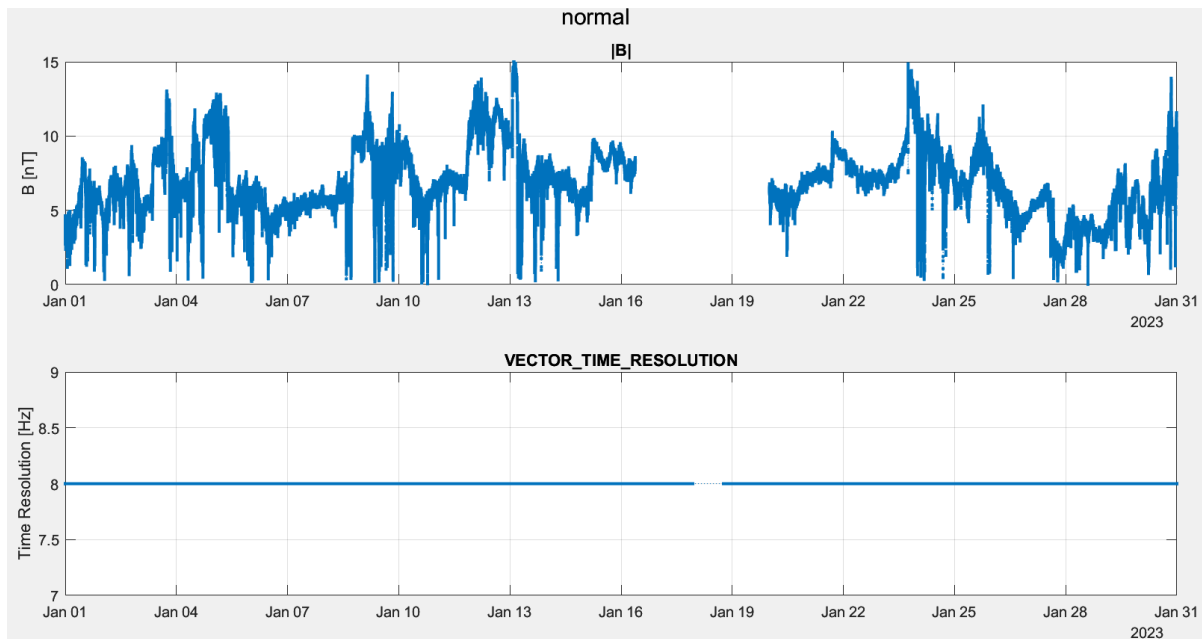
**Data Summary**

MAG was powered on for January, except for the 17/01 22:38 - 18/01 18:18 due to a SSMM FDIR triggered payload switch off. Considering the FDIR event and as a precaution against further offset shifts, for the period 18/01 13:05 to the end of the month, the sensors temperatures were raised to -60C, rather than the nominal --90C. On 16/01 there was a TCM, for which the sensor temperatures were also raised to -60C between 16/01 09:16 and 17/01 03:17.

BM is available at 128 vectors/s from 01-19/01, after which BM is available at 64 vectors/s for the rest of the month.

The spacecraft started the month at 0.94AU on the 1<sup>st</sup> of January and at the end of the month it was at 0.92AU from the Sun.

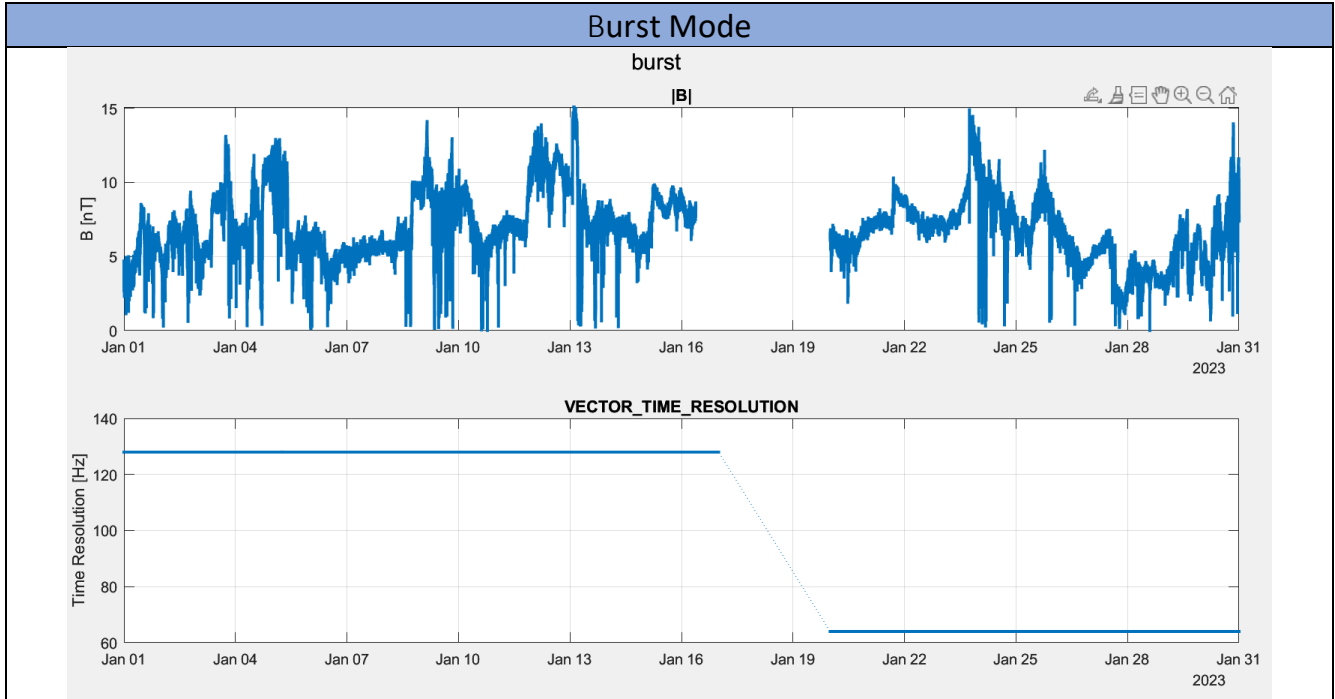
**Normal Mode**



Operations	1 January – 31 January	Science phase throughout period, normal data produced, except for Mag OFF 17/01 22:38 - 18/01 18:18.
Operational Events of Note	MAG OFF 17/01 22:38 - 18/01 18:18 Sensor temperature set point at -60C from 18/01 13:05-31/01.	

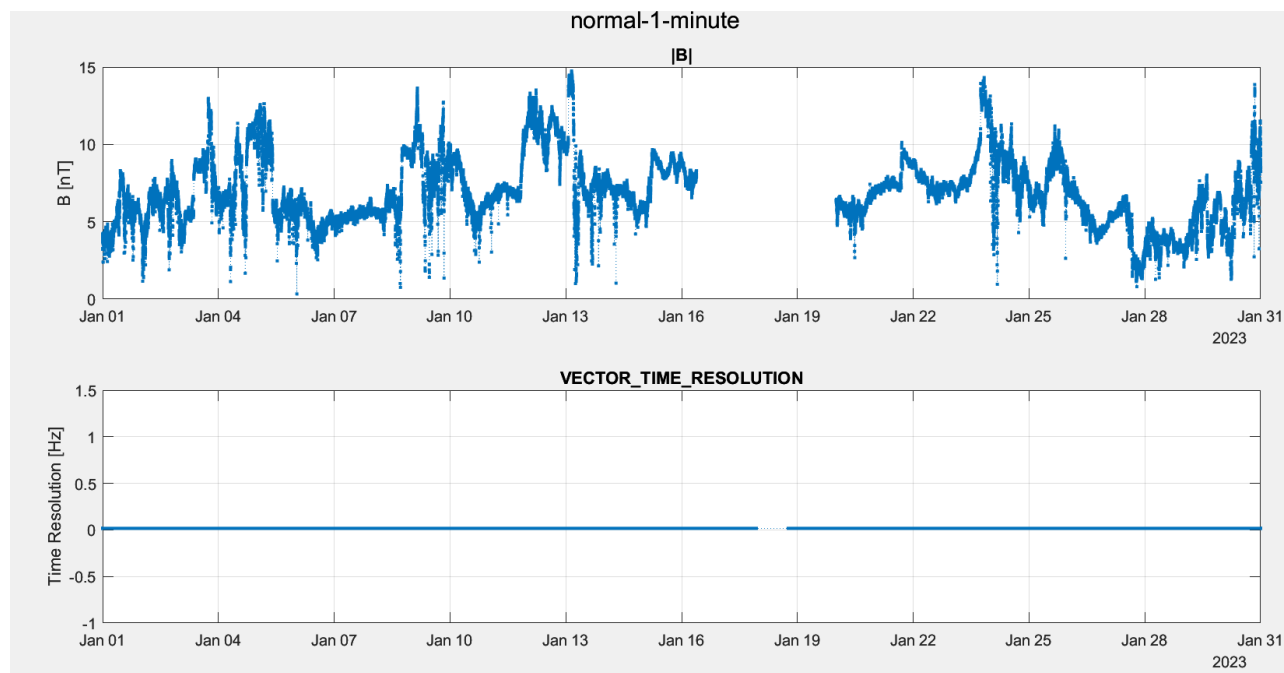
16/01 TCM @ 03:15, duration: 06:00. Sensor temperature set point at -60 from 16/01 09:16 to 17/01 03:17

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.

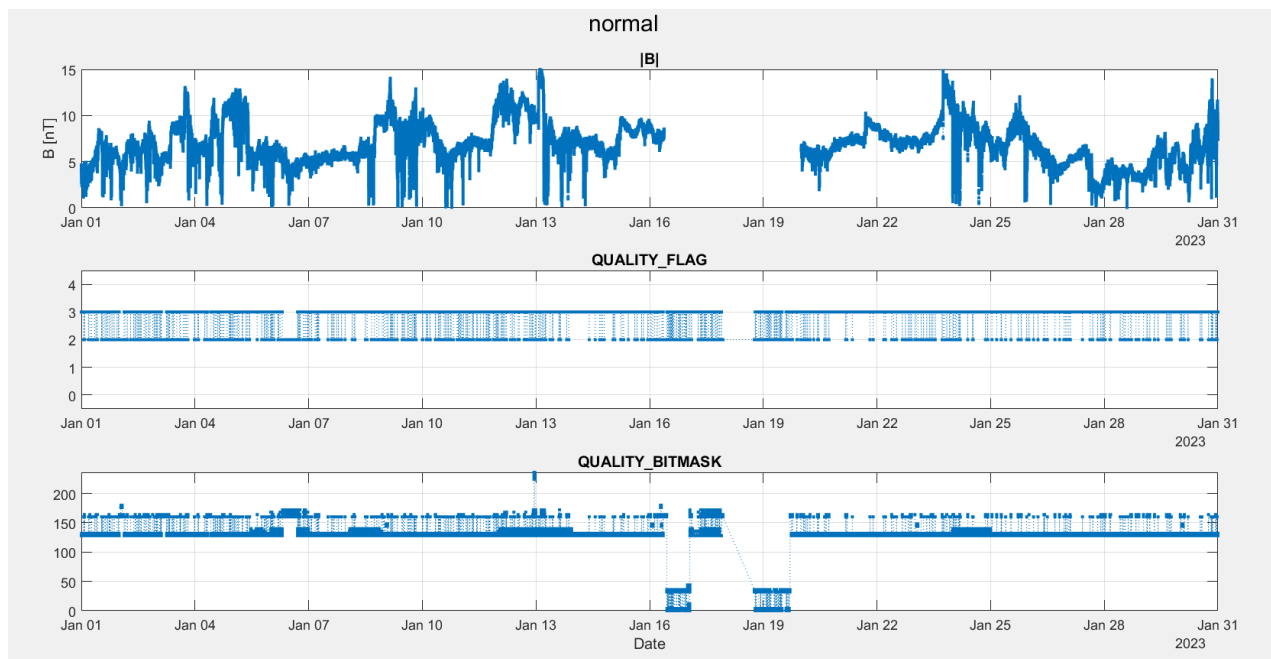


Coverage	From	To	Coverage
	01/01	18/01	24h of 128 vectors/s
	19/01	31/01	24h of 64 vectors/s

## Normal – 1min

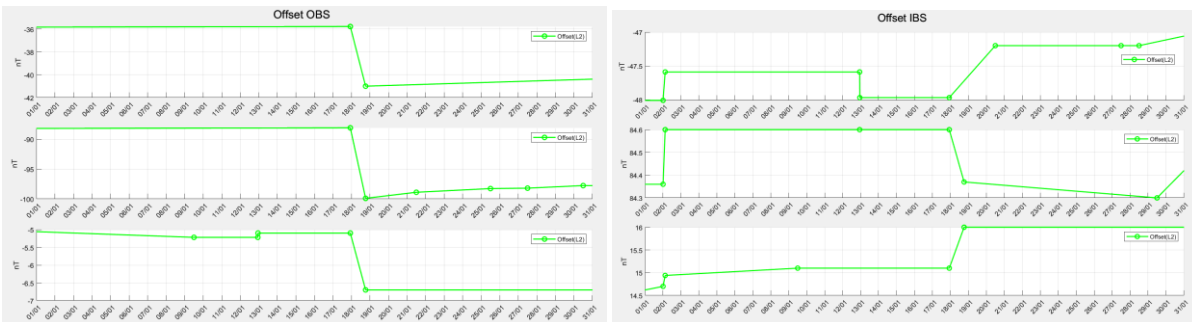


## Quality bitmask



Quality bit mask events		
SC events which disturb the field	<ol style="list-style-type: none"> <li>Solar array movements (solar array angle is changed, and then remains at new angle due to sun-SC distance thermal constraints)</li> <li>High gain antenna movements</li> <li>Battery Top Up</li> </ol>	
SC related issues	Time	Reason
	02/01/2023 00:09 - 03:02	Battery top up event interference affecting IBS
	12/01/2023 22:45 - 22:52	SA Lubrication event affecting IBS & OBS

### Offsets



#### 1 Jan– 31 Jan:

The OBS and IBS changed significantly as expected after the reboot on the 18<sup>th</sup>. The OBS offsets followed a linear trend throughout the rest of the month, with the OBS Z offset being affected by a solar array (SA) event on the 13<sup>th</sup>. The IBS offsets step changes on the 13<sup>th</sup> due to SA movement and on the 2<sup>nd</sup> due to a battery top up. Between these events, the offset linearly changed, and the trend has been chosen accordingly.

OffsetNumber	Date	OBSX	OBSY	OBSZ	IBSX	IBSY	IBSZ	Comment
220951	31/12/2022 12:00	-35.83	-88.2	-5.05	-48.01	84.36	14.58	
220952	02/01/2023 00:09				-48.01	84.36	14.7	Battery top up event affecting IBS
220953	02/01/2023 03:00				-47.59	84.6	14.94	Battery top up event affecting IBS
220954	09/01/2023 12:00			-5.22			15.1	Trend in OBSZ and IBSZ
220955	12/01/2023 22:45			-5.22	-47.59	84.6		SA event affecting OBS Z and IBS
220956	12/01/2023 22:59			-5.1	-47.97			SA event affecting OBS Z and IBS
220957	17/01/2023 22:28	-35.78	-88.1	-5.1	-47.97	84.6	15.1	Offsets set before temperature change
220958	18/01/2023 18:18	-41	-99.9	-6.7		84.37	16	Offsets IBS,OBS after reboot
220959	20/01/2023 12:00				-47.2			IBS X linear trend
220960	21/01/2023 12:00		-98.89					OBS Y trend

220961	25/01/2023 12:00		-98.27					OBS Y trend
220962	27/01/2023 12:00		-98.2		-47.2			OBS Y,IBS X trend
220963	28/01/2023 12:00				-47.2			IBS X linear trend
220964	29/01/2023 12:00					84.3		IBS Y trend
220965	30/01/2023 12:00		-97.77					OBS Y trend
220966	01/02/2023 12:00					84.54		IBS Y trend
220967	02/02/2023 12:00	-40.26	-97.77	-6.65		84.54	16	OBS,IBS trend
220968	04/02/2023 13:59				-46.8		16	SA event

## Appendix

### Appendix A: Files within this release

File Name
solo_L2_mag-rtn-burst_20230101_V01.cdf
solo_L2_mag-rtn-burst_20230102_V01.cdf
solo_L2_mag-rtn-burst_20230103_V01.cdf
solo_L2_mag-rtn-burst_20230104_V01.cdf
solo_L2_mag-rtn-burst_20230105_V01.cdf
solo_L2_mag-rtn-burst_20230106_V01.cdf
solo_L2_mag-rtn-burst_20230107_V01.cdf
solo_L2_mag-rtn-burst_20230108_V01.cdf
solo_L2_mag-rtn-burst_20230109_V01.cdf
solo_L2_mag-rtn-burst_20230110_V01.cdf
solo_L2_mag-rtn-burst_20230111_V01.cdf
solo_L2_mag-rtn-burst_20230112_V01.cdf
solo_L2_mag-rtn-burst_20230113_V01.cdf
solo_L2_mag-rtn-burst_20230114_V01.cdf
solo_L2_mag-rtn-burst_20230115_V01.cdf
solo_L2_mag-rtn-burst_20230116_V01.cdf
solo_L2_mag-rtn-burst_20230120_V01.cdf
solo_L2_mag-rtn-burst_20230121_V01.cdf
solo_L2_mag-rtn-burst_20230122_V01.cdf
solo_L2_mag-rtn-burst_20230123_V01.cdf
solo_L2_mag-rtn-burst_20230124_V01.cdf
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solo_L2_mag-rtn-burst_20230126_V01.cdf

solo_L2_mag-rtn-burst_20230127_V01.cdf
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