



2 November 2023 (report covers data release for 1 July – 31 July 2023)

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

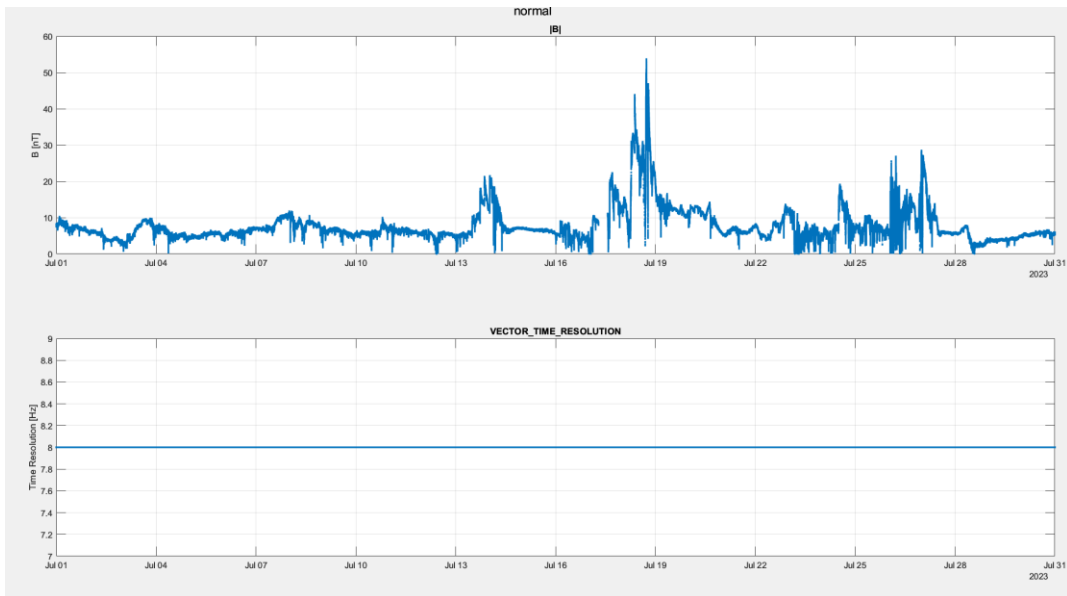
MAG was powered on for July. BM was available for 4 hours a day for the entire month, except for the 17th (3 hours), and the 23rd (5 hours).

We use a method based on Leinweber [2008] to produce our magnetometer offsets, and we then curate these offsets and apply them to the field. For early July, between 1-9/07, this method produced a set of offsets that were 4nT higher than the surrounding days. These changes in offsets produced were of equal values in IBS & OBS, leading us to believe that these are not reflective of a real spacecraft disturbance, and we have interpolated the offsets across this period. We have used an alternative offset calculation method to verify this approach, and confirmed with the Spacecraft Operations Manager that there were no spacecraft events that should have caused a 4nT rise in offset.

On 17/07 there is a period (~7hours) not released due to spacecraft maintenance activities.

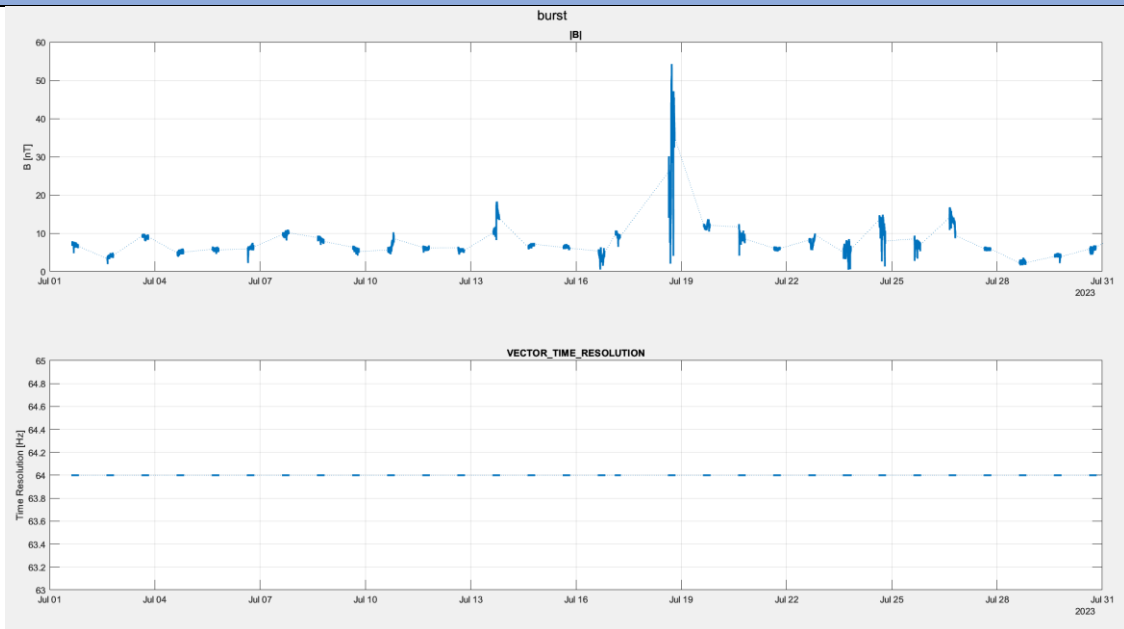
The spacecraft started the month at 0.95AU on the 1st of July and at the end of the month it was at 0.91AU from the Sun.

Normal Mode



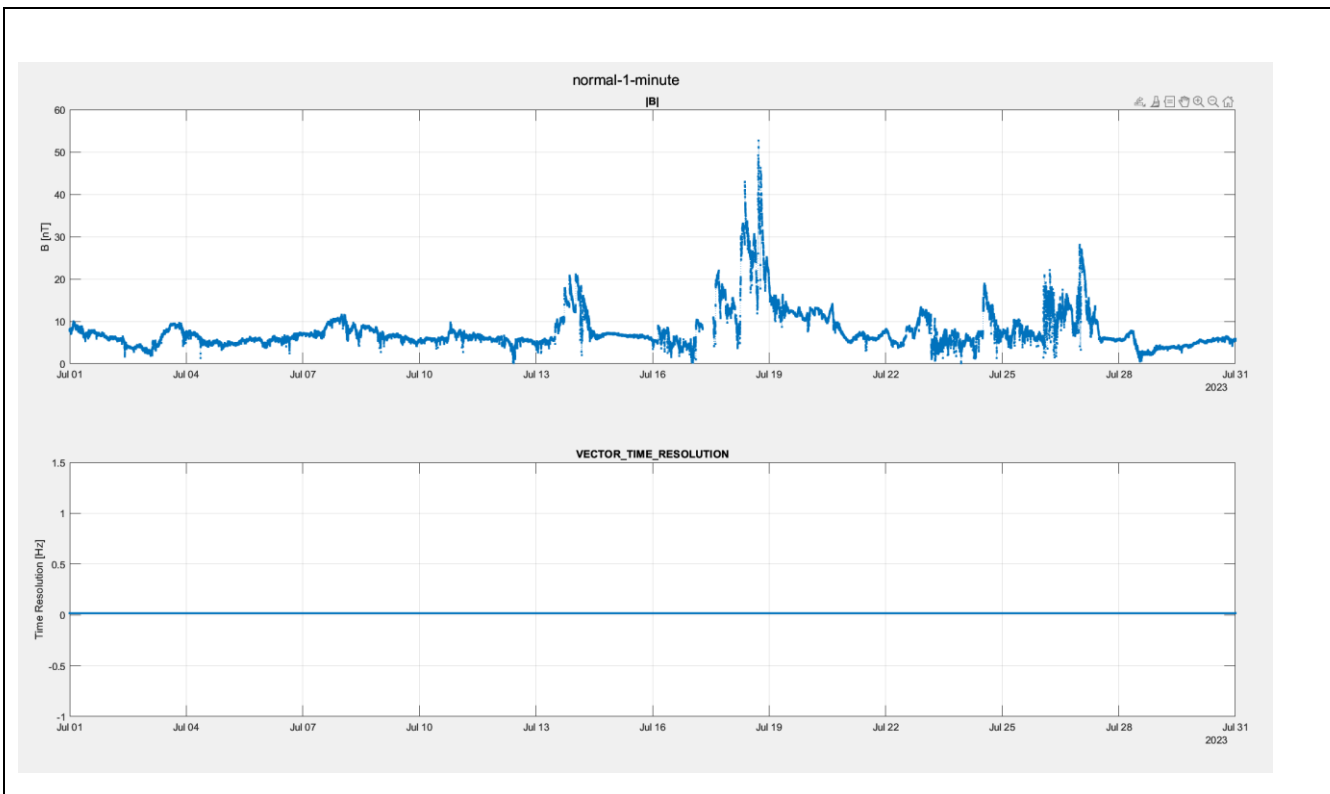
Operations	1 July – 31 July	Science phase throughout period, normal data produced.
Operational Events of Note		

Burst Mode

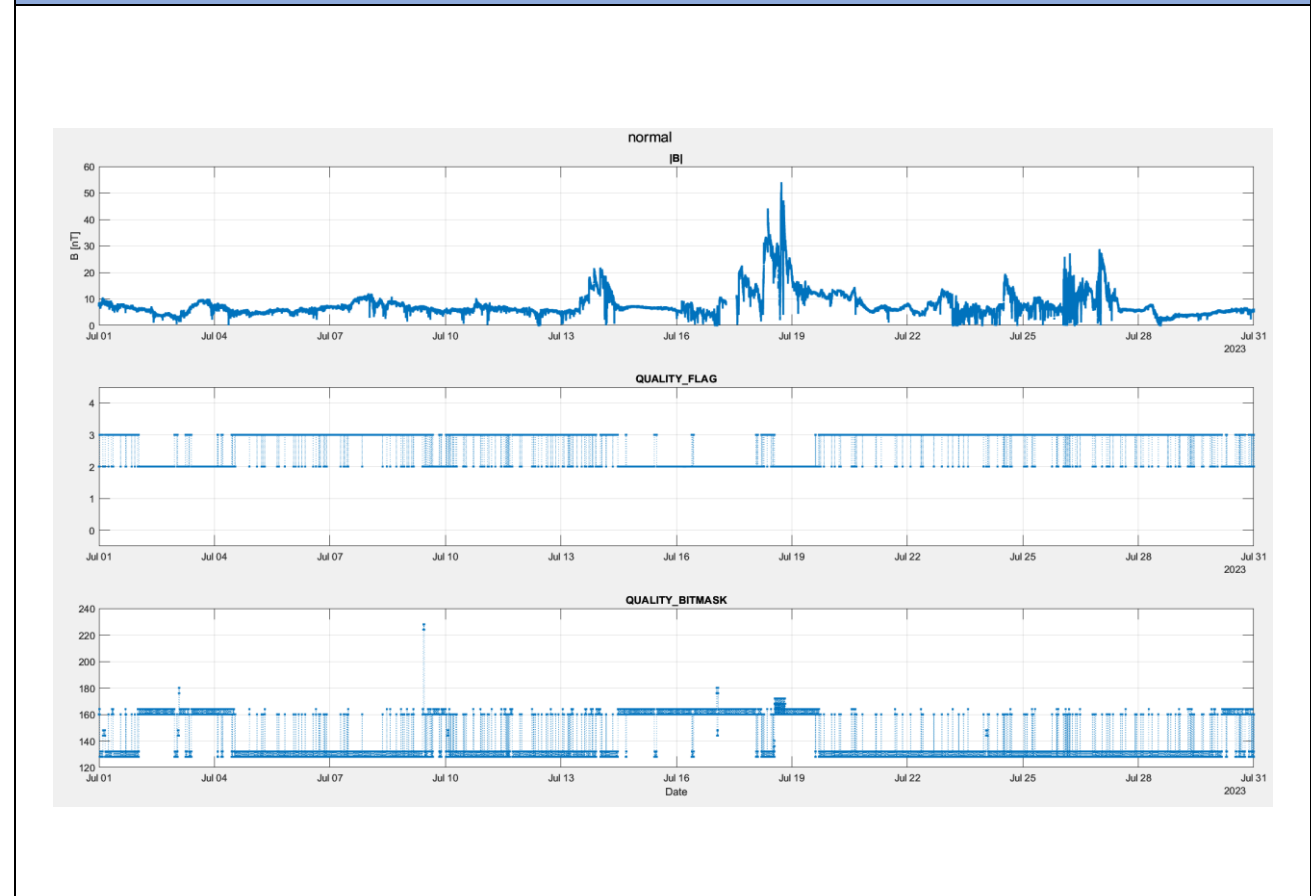


Coverage	From	To	Coverage
	01/07	31/07	4h per day of 64 vectors/s except for the 17 th (3 hours), and the 23 rd (5 hours).

Normal – 1min



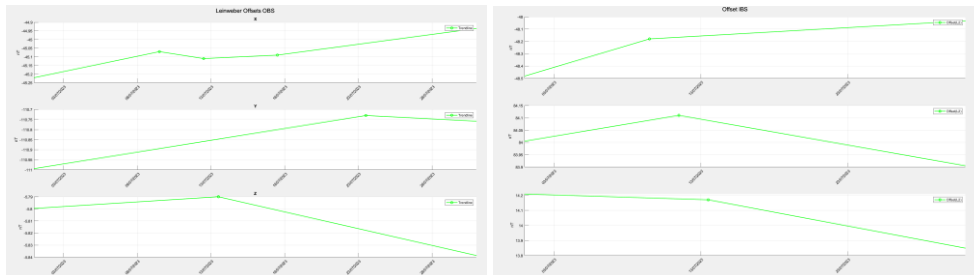
Quality bitmask



Quality bit mask events

SC events which disturb the field	<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
SC related issues	N/A

Offsets



1 July – 31 July:

As discussed in the summary section, the offsets were interpolated between 1-9/07. The OBS offsets are stable, changing by no more than 0.2nT throughout the month. The IBS offsets were also relatively stable throughout the month, with a trend selected from the offsets produced.

OffsetNumber	Date	OBSX	OBSY	OBSZ	IBSX	IBSY	IBSZ	Comment
220959	30/06/2023 12:00	45.23	-111	-5.8	-48.5	84	14.21	Flat offset chosen between 01/07-09/07 IBS & OBS
220966	09/07/2023 12:00	45.07			48.18			Flat offset chosen between 01/07-09/07 IBS & OBS
220967	11/07/2023 12:00					84.11		Offset trend IBS Y
220968	12/07/2023 12:00	45.11						Offset trend OBS X
220969	13/07/2023 12:00			-5.79			14.17	Offset trend OBSZ & IBSZ
220972	17/07/2023 12:00	45.09						Offset trend OBS X
220973	23/07/2023 12:00		-110.73					Offset trend OBS Y
220974	31/07/2023 12:00	44.93	-110.76	-5.84	48.03	83.9	13.84	Offset trend OBS & IBS

Appendix

Appendix A: Files within this release

Filename
solo_L2_mag-rtn-burst_20230701_V01.cdf
solo_L2_mag-rtn-burst_20230702_V01.cdf
solo_L2_mag-rtn-burst_20230703_V01.cdf
solo_L2_mag-rtn-burst_20230704_V01.cdf
solo_L2_mag-rtn-burst_20230705_V01.cdf

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