



30 June 2023 (report covers data release for 1 December – 31 December 2022)

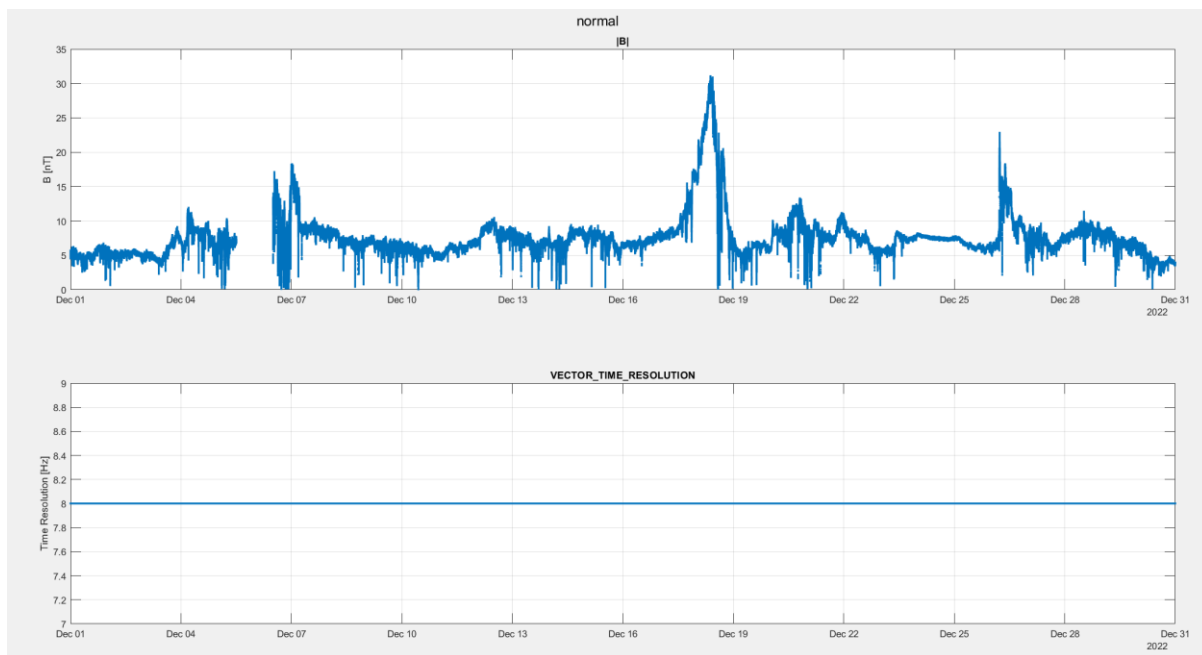
Report Version	1	L2 ground processing software version:	V2.26.1
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MAG IM	Helen O'Brien h.obrien@imperial.ac.uk		
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Data Summary

MAG was powered on for December. BM is available throughout the month, at 64 vectors per second 1/12-25/12, and 128 vectors per second 26/12-31/12. The sensor temperature was changed from -60C to -90C on 5/12 at 12:00 and the offsets were disturbed by this temperature change. During the calibration process this change was not able to be characterised with sufficient accuracy, therefore the data 24 hours after the temperature change has not been released. Please contact the team if you have a special need for this data.

The spacecraft started the month at 0.81AU on the 1st of December and at the end of the month it was at 0.94AU from the Sun.

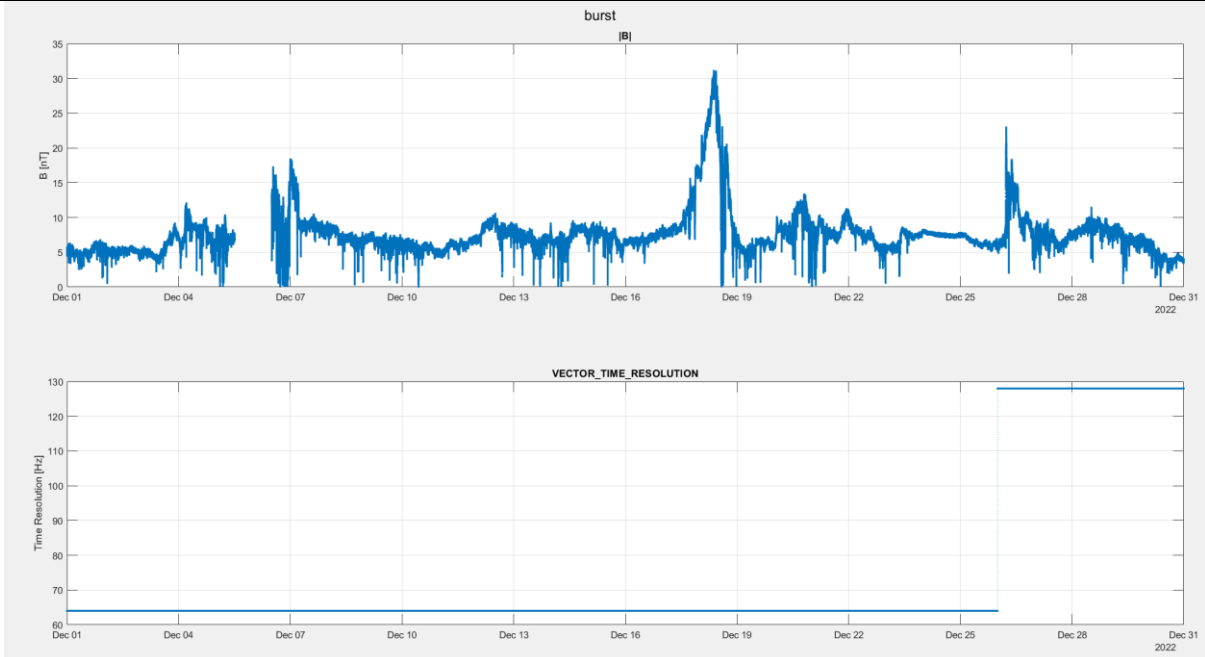
Normal Mode



Operations	1 December – 31 December	Science phase throughout period, normal data produced.
Operational Events of Note	The sensor temperature was changed from -60 to -90 on the 5/12 at 12:00.	

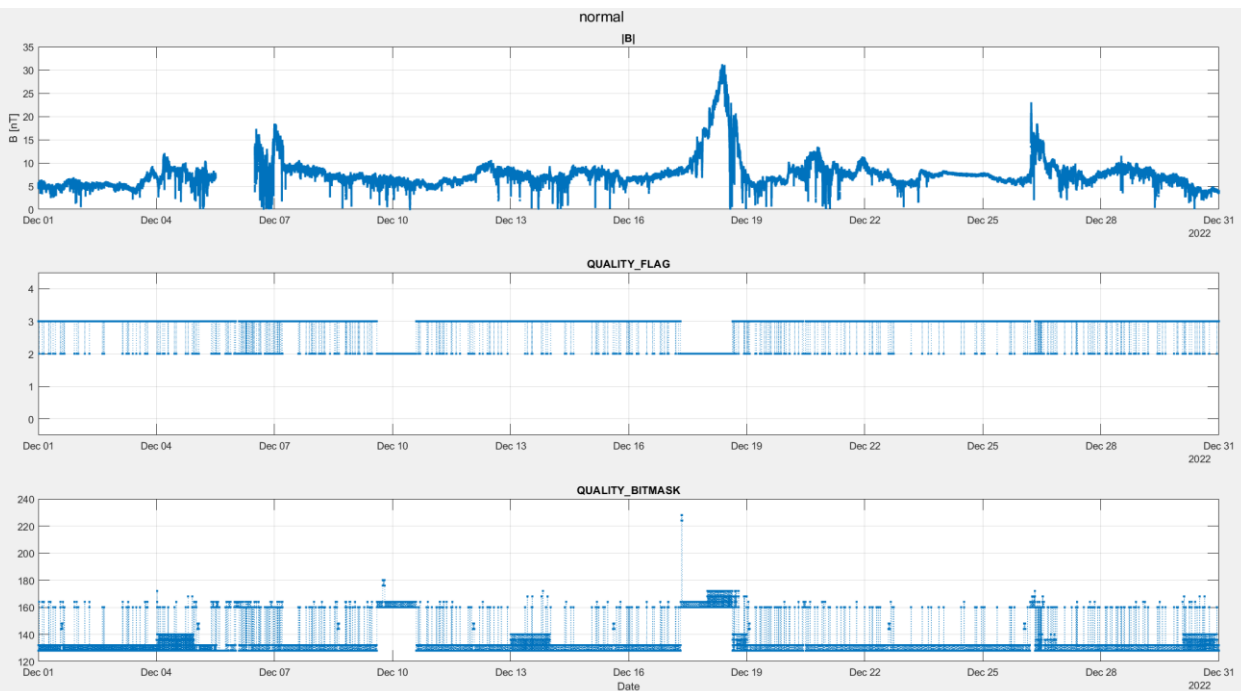
Normal mode data is produced from the burst mode stream when it is available, as is the case this month. This can produce small changes in the time sampling of the data over the transition between 64Hz and 128Hz; these are smaller than the cadence of 1/8 of a second.

Burst Mode



Coverage	From	To	Coverage
	01/12	31/12	24h of 64 vectors/s 1-25/12, 128 vectors/s 25-31/12,
	05/12 12:10	06/12 12:00	Offsets disturbed by temperature change; data not released.

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	StartTime	EndTime	Comment
	17/12/2022 07:50	18/12/2022 15:03	SA Event from 0.07 deg to -29.98 deg
	09/12/2022 14:29	10/12/2022 14:29	HGA event from 74.56 to -74.56

Offsets



1 Dec -31 Dec:

The OBS and IBS offsets changed after the temperature change on 5/12, with a step change in x and y. The OBS offsets followed a linear trend throughout the rest of the month, with solar array movement affecting the offsets on 17-20/12, as also with IBS. Between these events, the offset linearly changed, and the trend has been chosen accordingly.

OffsetNumber	Date	OBSX	OBSY	OBSZ	IBSX	IBSY	IBSZ	Comment
220939	26/11/2022 12:00					84.46	16.72	Following IBS Y,Z trend
220940	30/11/2022 02:50	-36.38	-88.5	-6.56	-48.1	84.6		Temp change -51 to -48
220941	02/12/2022 00:00	-36.38			-48.21			IBS X trend
220942	05/12/2022 12:10	-36.57	-88.93	-6.44	-48.7	84.6	16.6	Temp change from -60 to -90
220943	05/12/2022 12:20	-35.62	-88.93	-5.19	-49.16	84.82	16.07	IBS X,Y,Z trend
220944	17/12/2022 07:50	-35.62	-88.46	-5.04	-49.1	84.82	15.76	SA Event from 0.07 deg to -29.98 deg
220945	17/12/2022 08:28				-48			SA Event from 0.07 deg to -29.98 deg
220946	20/12/2022 11:13	-35.92	-88.37	-5.16	-48.01	84.5	14.77	SA Lubrication Event
220947	23/12/2022 12:00					84.67	14.92	IBS trend Y,Z
220948	25/12/2022 12:00					84.47		IBS trend Y
220949	27/12/2022 12:00		-88.32	-5.24	-48.01		14.6	OBS trend Y,Z following leinweber
220950	28/12/2022 12:00	-35.88						OBS trend X following leinweber
220951	31/12/2022 12:00	-35.83	-88.2	-5.05	-48.01	84.36	14.58	OBS trend X following leinweber

Appendix

Appendix A: Files within this release

File Name

solo_L2_mag-rtn-burst_20221201_V01.cdf
solo_L2_mag-rtn-burst_20221202_V01.cdf
solo_L2_mag-rtn-burst_20221203_V01.cdf
solo_L2_mag-rtn-burst_20221204_V01.cdf
solo_L2_mag-rtn-burst_20221205_V01.cdf
solo_L2_mag-rtn-burst_20221206_V01.cdf
solo_L2_mag-rtn-burst_20221207_V01.cdf
solo_L2_mag-rtn-burst_20221208_V01.cdf
solo_L2_mag-rtn-burst_20221209_V01.cdf
solo_L2_mag-rtn-burst_20221210_V01.cdf
solo_L2_mag-rtn-burst_20221211_V01.cdf
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solo_L2_mag-rtn-burst_20221213_V01.cdf
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