

1. Overview

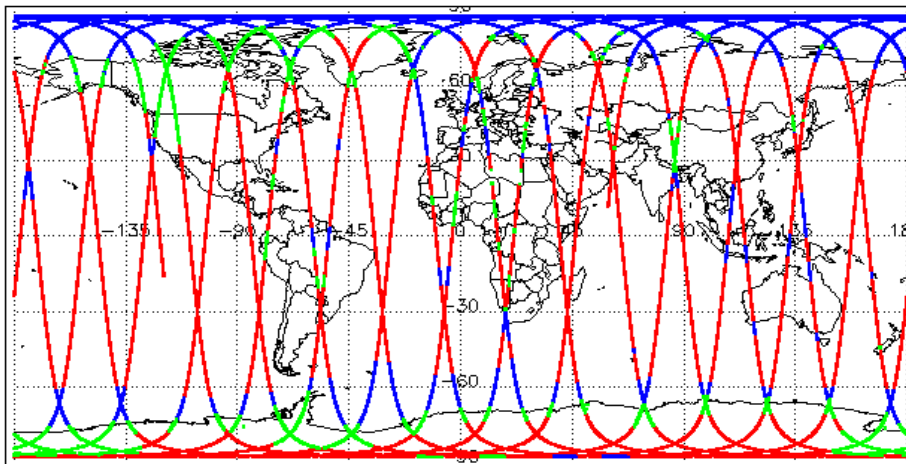
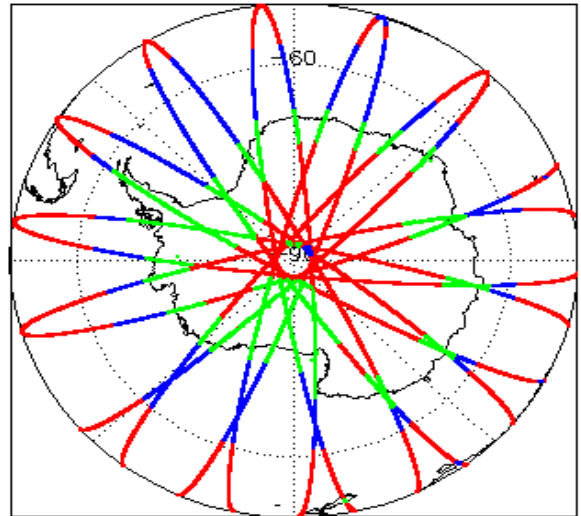
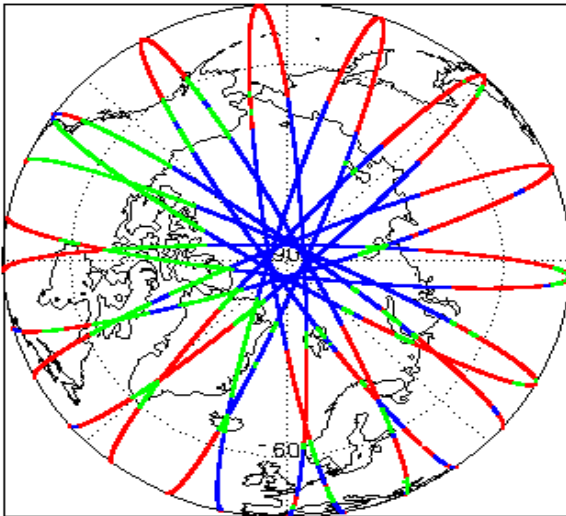
Report Production Date:	28-Sep-2021
Processor Used:	CryoSat Ice Processor
Data Used:	L1B and L2 OFFLINE Data

Check	Status
Server check: science-pds.cryosat.esa.int	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal
Product Software Check	Nominal
Product Format Check	Nominal
Product Header Analysis	Nominal
Star Tracker Usage Check	Nominal
L1B Tracking Flag Check	See Section 4.4
L1B Calibration Usage Check	See Section 4.5
L1B & L2 Auxiliary Data File Usage Check	Nominal
L1B & L2 Auxiliary Correction Check	Nominal
L1B & L2 Measurement Confidence Data Check	See Section 4.8 and 5.5
QCC Errors/ Warnings	See Section 6.1, 6.2 and 6.3

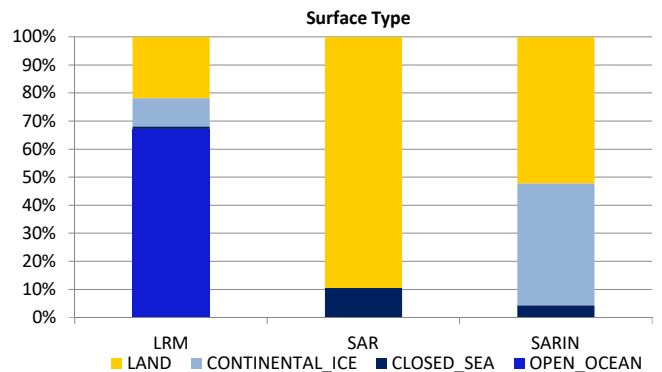
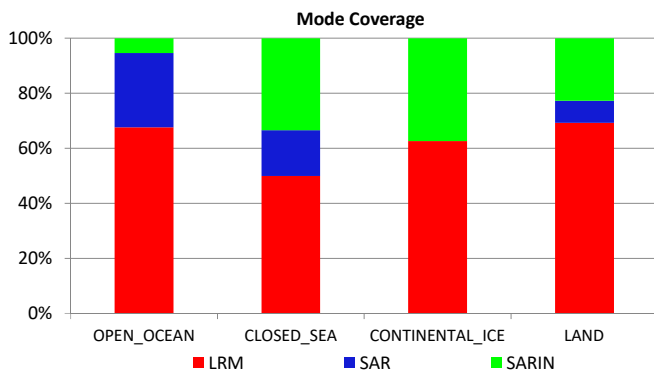
Mission / Instrument News

23-Aug-2021	None
24-Aug-2021	None
25-Aug-2021	Data unavailabilities on 25/08/2021: SAR from 09:09:18 to 12:39:25, SARIN-1 from 09:15:52 to 12:09:00 and SARIN-2 from 07:00:20 to 12:09:00

2. Global Coverage



Mode Coverage (%)		
	LRM	67.3
	SAR	20.0
	SARIn	12.7



### 3. Instrument Configuration

The SIRAL instrument configuration for the day of acquisition is provided below.

SIRAL instrument(s) in use:	SIRAL - A
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### 4. Level 1B Data Quality Check

#### 4.1 L1B Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a product file (.DBL).

Number of products with errors: 0

#### 4.2 L1B Product Header Analysis

For all products, a series of pre-defined checks are carried out on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain.

Number of products with errors: 0

#### 4.3 Star Tracker Usage Check

Each product is checked in order to ensure a valid star tracker file has been used in processing.

Number of products with errors: 0

#### 4.4 L1B Tracking Flags Check

CryoSat L1B data includes a tracking flag for each measurement record. The bit value of this flag indicates any problems when set.

**Loss of Echo Flag:** This flag is currently set for some products over land, but this is to be expected.

Number of products with errors: 91

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20210824T003355_20210824T004016_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T004105_20210824T004310_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T004312_20210824T010925_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T011746_20210824T012119_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T012622_20210824T015900_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T021041_20210824T021410_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T021621_20210824T022013_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T022037_20210824T022108_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T022655_20210824T023148_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T023207_20210824T023653_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T023759_20210824T024023_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T024027_20210824T024056_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T032907_20210824T034039_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T035013_20210824T035437_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T035824_20210824T035944_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T035950_20210824T035957_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T040009_20210824T040025_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T040156_20210824T040700_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T043327_20210824T043710_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T044429_20210824T044912_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T044922_20210824T045655_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T045723_20210824T052050_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T061424_20210824T061617_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T063004_20210824T063552_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T063747_20210824T064041_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T064521_20210824T065213_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T065350_20210824T065726_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T065732_20210824T065931_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T072035_20210824T072924_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T073138_20210824T073256_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T073258_20210824T073436_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T073543_20210824T074554_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T081024_20210824T081710_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T081849_20210824T083408_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T083410_20210824T083421_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T083459_20210824T083714_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T083716_20210824T083948_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T084008_20210824T084030_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T085225_20210824T085421_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T085543_20210824T085855_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T090415_20210824T090716_E001	Loss of echo	The tracking echo is missing for one or more records

CS_OFFL_SIR_LRM_1B_20210824T090719_20210824T090903_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T093059_20210824T093937_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T101149_20210824T101214_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T101216_20210824T101217_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T101234_20210824T101811_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T103255_20210824T110631_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T111302_20210824T111735_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T112602_20210824T114609_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T114617_20210824T115014_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T115121_20210824T115430_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T115430_20210824T115751_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T121659_20210824T121732_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T130126_20210824T132232_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T132236_20210824T132709_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T132750_20210824T132856_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T133051_20210824T133143_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T133143_20210824T133202_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T133236_20210824T133409_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T133603_20210824T133655_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T144815_20210824T144856_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T144900_20210824T145535_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T145609_20210824T145906_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T150051_20210824T150235_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T150419_20210824T150558_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T151047_20210824T151052_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T154219_20210824T160327_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T163239_20210824T163948_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T164033_20210824T164514_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T170720_20210824T174217_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T184539_20210824T185032_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T185034_20210824T185116_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T185118_20210824T185212_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T185215_20210824T190451_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T190655_20210824T192147_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T193854_20210824T194908_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T195015_20210824T195243_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T195528_20210824T201130_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T202435_20210824T203842_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T211640_20210824T215207_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T220306_20210824T221056_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T221203_20210824T221206_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T221209_20210824T221248_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T221656_20210824T221752_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T224820_20210824T225146_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T225512_20210824T232323_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T234429_20210824T234519_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T234542_20210824T235300_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T235307_20210824T235308_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T235312_20210824T235437_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210824T235441_20210825T001845_E001	Loss of echo	The tracking echo is missing for one or more records

#### 4.5 L1B Calibration Usage Check

Each product is checked in order to ensure that the necessary calibration files have been used in processing.

Number of products with errors: 1

Product	Test Failed	Description
CS_OFFL_SIR_SIN_1B_20210824T144856_20210824T144900_E001	Cal1 corr. missing	The Cal1 correction has not been applied

#### 4.6 L1B Auxiliary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.

Number of products with errors: 0

#### 4.7 L1B Auxiliary Correction Error Check

CryoSat L1B data includes a correction error flag (field 54) for each measurement record. The bit value of this flag indicates any problems when set.

Number of products with errors: 0

#### 4.8 L1B Measurement Confidence Data Check

CryoSat L1B data includes a measurement confidence flag (field 18) for each measurement record. The bit value of this flag indicates any problems when set.

Currently, there are several common error flags raised in the Level 1B products which are expected due to operational mode or surface type. All common flags are summarised in the list below, followed by a table of any additional issues arising from this test.

**Block Degraded Flag:** This flag is currently set for a number of individual records generally at the start or end of products (all modes), but this is to be expected.

**Phase Perturbation Flag:** This flag is currently set for all L1B SARIn products, indicating that the ADC correction application is deactivated, but this is in line with the current configuration.

**Number of products with errors:** 2

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20210824T211640_20210824T215207_E001	Echo error, TRK echo error	The tracking echo has returned an error and the Rx1 Echo Error flag is set, indicating a degraded echo
CS_OFFL_SIR_SIN_1B_20210824T144856_20210824T144900_E001	Cal1 Correction missing,	The Cal1 Correction has not been applied

## 5. Level 2 Data Quality Check

### 5.1 L2 Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a product file (.DBL).

**Number of products with errors:** 0

### 5.2 L2 Product Header Analysis

For all products, a series of pre-defined checks are carried out on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain.

**Number of products with errors:** 0

### 5.3 L2 Auxiliary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.

**Number of products with errors:** 0

### 5.4 L2 Auxiliary Correction Error Check

CryoSat L2 data includes a correction error flag (field 30) for each measurement record. The bit value of this flag indicates any problems when set.

**Number of products with errors:** 0

### 5.5 L2 Measurement Quality Flag Check

CryoSat L2 data includes a quality flag (field 50) for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

Currently, there are several common error flags raised in the Level 2 products which are expected due to operational mode or surface type. All common flags are summarised in the list below, followed by a table of any additional issues arising from this test.

**Freeboard error:** This flag is correctly set in all L2 SAR products that are not discriminated as sea-ice, and for which freeboard cannot be calculated.

**Height and Backscatter errors:** These flags are currently set for products over land, but this is to be expected. Retracker 1 Height and Backscatter error flags are also set for products over sea-ice, but this is to be expected.

**Peakiness error:** This flag is currently set for products over sea-ice, but this is to be expected.

**SARIn X-Track Angle Error:** This flag is set when the difference between the computed surface elevation and the DEM is >50 m. The DEM is only available over Greenland and Antarctica and as a result this flag is set for L2 SARIn products in all other locations as expected.

**SSHA interpolation error:** This flag is currently set for a number of SAR products occurring at surface type boundaries, but this is to be expected.

**Number of products with errors:** 204

Product	Test Failed	Description
CS_OFFL_SIR_LRM_2_20210823T234553_20210824T001248_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20210824T001414_20210824T001722_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20210824T003355_20210824T004016_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2), Surface model unavailable	There is a height and backscatter error for Retracker 2 and no DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_2_20210824T004312_20210824T010925_E001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_2_20210824T012622_20210824T015900_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2), Surface model unavailable	There is a height and backscatter error for Retracker 2 and no DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_2_20210824T021041_20210824T021410_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20210824T030515_20210824T032621_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20210824T032907_20210824T034039_E001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2), Surface model unavailable	There is a height and backscatter error for Retracker 2, a height error for Retracker 3 and no DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_2_20210824T035013_20210824T035437_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20210824T041028_20210824T041514_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20210824T041701_20210824T042710_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20210824T044429_20210824T044912_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records















CS_OFFL_SIR_SIN_2__20210824T084956_20210824T085225_E001	Backscatter Error (Retracker 2), Backscatter Error (Retracker 3), SARIn X-track Angle Error, Surface model unavailable	There is a backscatter error for Retracker 2 and 3, an ambiguous angle was detected for SARIn mode, and no DEM or Slope Model was used for the location for one or more records
CS_OFFL_SIR_SIN_2__20210824T090252_20210824T090414_E001	Backscatter Error (Retracker 2), Backscatter Error (Retracker 3)	There is a backscatter error for Retracker 2 and 3 for one or more records
CS_OFFL_SIR_SIN_2__20210824T090903_20210824T091159_E001	Backscatter Error (Retracker 2), Backscatter Error (Retracker 3), SARIn X-track Angle Error, Surface model unavailable	There is a backscatter error for Retracker 2 and 3, an ambiguous angle was detected for SARIn mode, and no DEM or Slope Model was used for the location for one or more records
CS_OFFL_SIR_SIN_2__20210824T092916_20210824T093058_E001	Backscatter Error (Retracker 2), Backscatter Error (Retracker 3), SARIn X-track Angle Error	There is a backscatter error for Retracker 2 and 3 and an ambiguous angle was detected for SARIn mode for one or more records
CS_OFFL_SIR_SIN_2__20210824T093938_20210824T094140_E001	Backscatter Error (Retracker 2), Backscatter Error (Retracker 3), SARIn X-track Angle Error	There is a backscatter error for Retracker 2 and 3 and an ambiguous angle was detected for SARIn mode for one or more records
CS_OFFL_SIR_SIN_2__20210824T100619_20210824T100934_E001	SARIn X-track Angle Error, Surface model unavailable	An ambiguous angle was detected for SARIn mode and no DEM or Slope Model was used for one or more records
CS_OFFL_SIR_SIN_2__20210824T101026_20210824T101149_E001	SARIn X-track Angle Error, Surface model unavailable	An ambiguous angle was detected for SARIn mode and no DEM or Slope Model was used for one or more records