

### 1. Overview

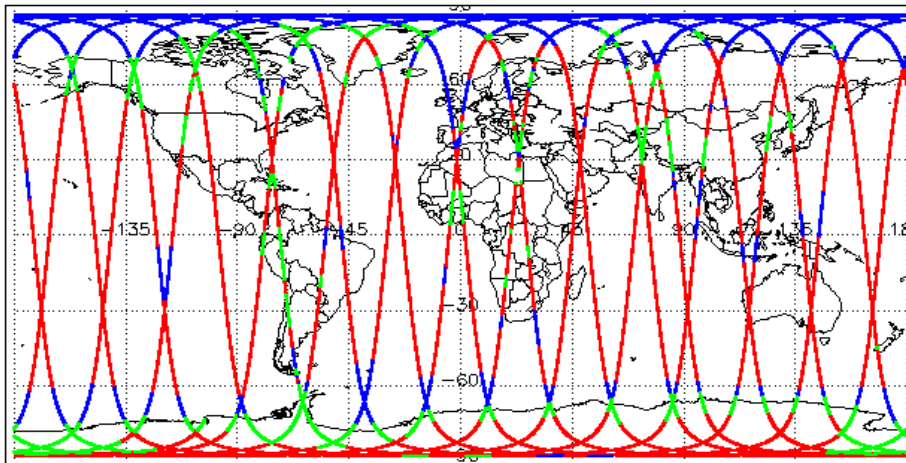
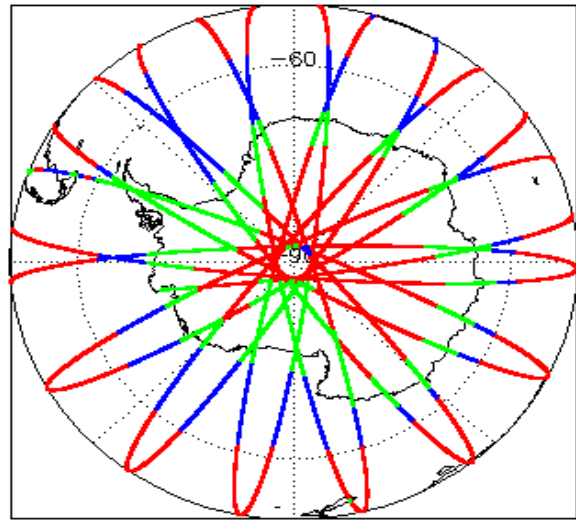
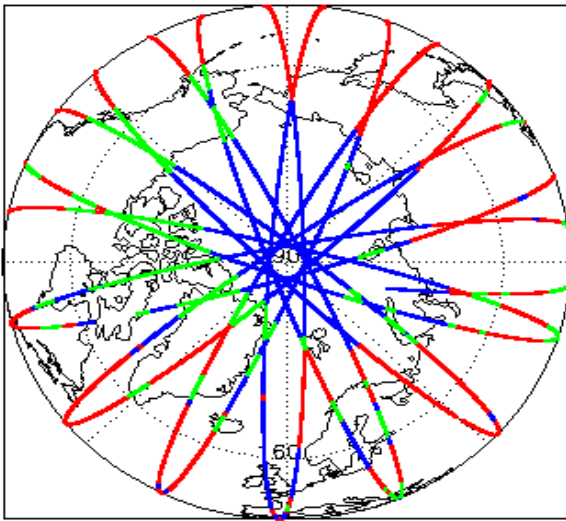
Report Production Date:	28-Aug-2019
Processor Used:	CryoSat Ice Processor
Data Used:	L1B and L2 OFFLINE Data

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	Nominal
L1B & L2 Auxiliary Data File Usage Check	Nominal
L1B & L2 Auxiliary Correction Error Check	Nominal
L1B & L2 Measurement Confidence Data Check	See Section 4.8 and 5.5

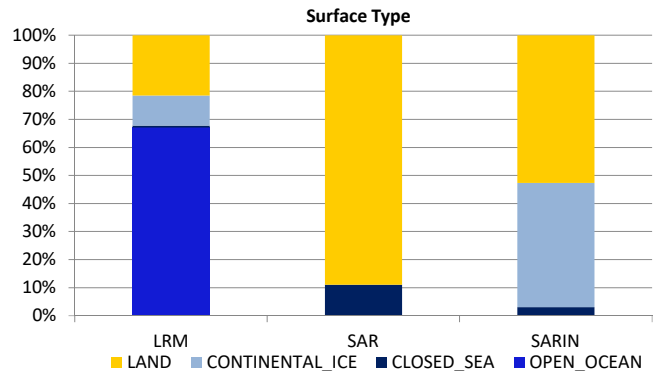
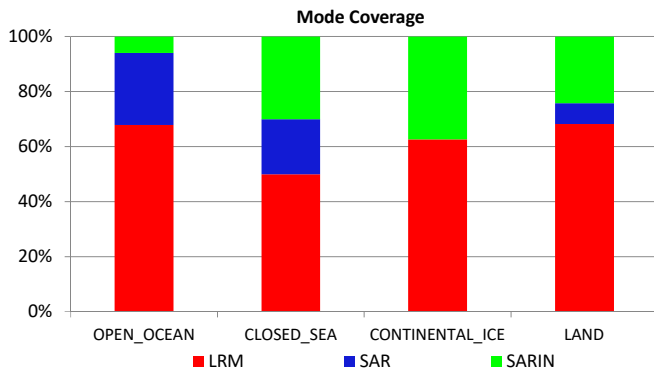
#### Mission / Instrument News

27-Jul-2019	None
28-Jul-2019	None
29-Jul-2019	Nothing planned

### 2. Global Coverage



Mode Coverage (%)		
	LRM	67.2
	SAR	19.2
	SARIn	13.6



### 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: 85

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20190728T000313_20190728T000854_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T001302_20190728T003651_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T004044_20190728T004536_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T004552_20190728T004705_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T010029_20190728T010110_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T010234_20190728T010529_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T010822_20190728T010823_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T010826_20190728T010828_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T010830_20190728T010902_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T010909_20190728T011951_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T015154_20190728T021805_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T021808_20190728T021933_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T021937_20190728T021939_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T021942_20190728T022229_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T022303_20190728T022906_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T033855_20190728T034459_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T034607_20190728T035300_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T035835_20190728T035930_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T035942_20190728T040217_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T042120_20190728T045409_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T053116_20190728T053610_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T053643_20190728T053823_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T055735_20190728T063254_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T063808_20190728T064102_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T064119_20190728T064518_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T073608_20190728T075041_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T075522_20190728T075643_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T075646_20190728T081221_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T083052_20190728T084336_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T091549_20190728T092135_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T092514_20190728T093055_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T093058_20190728T093445_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T093720_20190728T095113_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T101143_20190728T101416_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T101741_20190728T101923_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T102504_20190728T102715_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T102718_20190728T102928_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T103051_20190728T103743_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T105407_20190728T105937_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T105959_20190728T110301_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T110304_20190728T110320_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T110622_20190728T110746_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T113409_20190728T113828_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T113849_20190728T114032_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T114545_20190728T121923_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T123631_20190728T124102_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T124508_20190728T130914_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T131748_20190728T132113_D001	Loss of echo	The tracking echo is missing for one or more records

CS_OFFL_SIR_LRM_1B_20190728T141253_20190728T141919_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T142011_20190728T144848_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T150509_20190728T153750_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T155213_20190728T155305_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T155530_20190728T155918_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T155935_20190728T160010_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T160553_20190728T161048_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T161108_20190728T161553_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T161659_20190728T161906_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T161908_20190728T162031_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T163149_20190728T163708_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T170803_20190728T171943_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T173714_20190728T173828_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T173835_20190728T173853_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T173903_20190728T173949_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T174002_20190728T174007_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T174057_20190728T174556_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T181253_20190728T181608_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T182322_20190728T182759_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T182809_20190728T185945_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T195320_20190728T195514_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T200243_20190728T201935_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T202206_20190728T203107_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T203251_20190728T203840_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T211034_20190728T211334_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T211440_20190728T212520_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T213204_20190728T213429_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T214205_20190728T215603_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T215743_20190728T221304_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T221337_20190728T221926_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T223204_20190728T223314_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T223437_20190728T224147_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T224310_20190728T224802_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T234354_20190728T234433_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T235043_20190728T235057_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T235100_20190728T235408_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20190728T235427_20190728T235519_D001	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: 0

#### 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: 1

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20190728T114545_20190728T121923_D001	Echo error, TRK echo error	The tracking echo has returned an error and the Rx1 Echo Error flag is set, indicating a degraded echo

### 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: 60

Product	Test Failed	Description
CS_OFFL_SIR_LRM_2__20190728T001302_20190728T003651_D001	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__20190728T010909_20190728T011951_D001	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__20190728T012527_20190728T013551_D001	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__20190728T015154_20190728T021805_D001	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__20190728T022303_20190728T022906_D001	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__20190728T024240_20190728T031406_D001	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__20190728T040631_20190728T040854_D001	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__20190728T042120_20190728T045409_D001	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__20190728T051126_20190728T052758_D001	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__20190728T054555_20190728T054620_D001	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__20190728T055735_20190728T063254_D001	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__20190728T065004_20190728T071619_D001	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__20190728T071634_20190728T072353_D001	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__20190728T073608_20190728T075041_D001	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__20190728T075522_20190728T075643_D001	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__20190728T075646_20190728T081221_D001	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__20190728T083052_20190728T084336_D001	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__20190728T084550_20190728T090307_D001	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__20190728T090325_20190728T090347_D001	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__20190728T092514_20190728T093055_D001	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__20190728T093058_20190728T093445_D001	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__20190728T093534_20190728T093541_D001	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__20190728T093720_20190728T095113_D001	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__20190728T232146_20190728T234313_D001	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__20190728T235557_20190728T235702_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records

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