







# 1. Overview

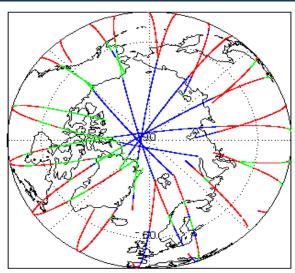
| Report Production: | 04-Sep-2019                         |  |
|--------------------|-------------------------------------|--|
| Processor Used:    | CryoSat Ocean Processor             |  |
| Data Used:         | Near Real Time Ocean Products (NOP) |  |

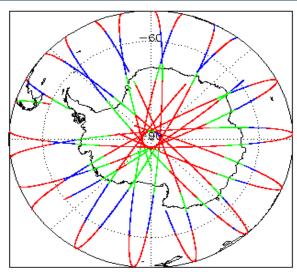
| Check                                     | L1 & L2                      |
|---|------------------------------|
| Server check: science-pds.cryosat.esa.int | Nominal                      |
| Server check: calval-pds.cryosat.esa.int  | Nominal                      |
| Product Software Check                    | Nominal                      |
| Product Format Check                      | Nominal                      |
| Product Header Analysis                   | Nominal                      |
| Auxiliary Data File Usage Check           | Nominal                      |
| Auxiliary Correction Error Check          | See Section 5.4              |
| Measurement Confidence Data Check         | See Section 4.5, 4.6 and 5.5 |
| Measurement Quality Flag Check            | See Section 5.6              |
| Ocean Retracking Quality Check            | See Section 5.7              |

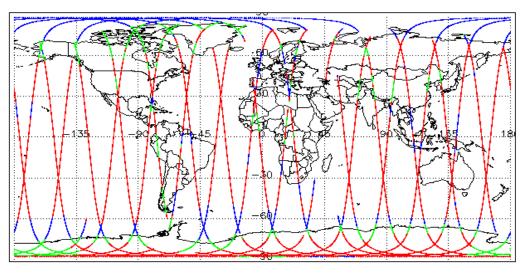
| Mission / Instrument News |      |
|---------------------------|------|
| 02-Sep-2019               | None |
|                           |      |

03-Sep-2019 None 04-Sep-2019 Nothing planned

# 2. Global Coverage









# 3. Instrument Configuration

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

SIRAL instrument(s) in use: SIRAL - A

# 4. NOP 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 binary product file (.DBL).

#### 4.2 L1B Product Header Analysis

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

L1B Processing Quality HR: The I1b\_proc\_flag\_hr flag is currently set all L1B IOPR and IOPN products because the I1b\_processing\_quality\_hr field is not correctly configured in the OSAR and OSARIn chains. A modification is required in the pert release

Number of products with errors:

# 4.3 L1B Auxilary 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.

Dynamic Atmospheric Correction: The DAC is missing in all products because the auxiliary files required are not available in time for processing. This known and expected behaviour.

Number of products with errors:

0

## 4.4 L1B Auxiliary Correction Error Check

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

Number of products with errors:

0

#### 4.5 L1B Measurement Confidence Data Check

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

> Attitude Correction Missing: This flag is currently set in error for NOPR products due to a configuration issue. This is being investigated and will be updated in the next SW update.

Number of products with errors:

5

| Product   | Test Failed         | Description  |
|---|---------------------|--|
| CS_OFFL_SIR_NOPM1B_20190903T020318_20190903T021250_C001 |                     | There is an error in the scaling of the L1B waveform for one or more records |
| CS_OFFL_SIR_NOPM1B_20190903T074025_20190903T074726_C001 | Power scaling error | There is an error in the scaling of the L1B waveform for one or more records |
| CS_OFFL_SIR_NOPM1B_20190903T085723_20190903T090312_C001 | Power scaling error | There is an error in the scaling of the L1B waveform for one or more records |
| CS_OFFL_SIR_NOPM1B_20190903T101106_20190903T103401_C001 |                     | There is an error in the scaling of the L1B waveform for one or more records |
| CS_OFFL_SIR_NOPM1B_20190903T171901_20190903T172438_C001 | Power scaling error | There is an error in the scaling of the L1B waveform for one or more records |

## 4.6 L1B Waveform Group Data Check

CryoSat L1B data includes a waveform data 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 products over land, but this is to be expected.

Number of products with errors:

9

| Product   | Test Failed  | Description  |
|---|--------------|--|
| CS_OFFL_SIR_NOPM1B_20190903T024609_20190903T025510_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_NOPM1B_20190903T071256_20190903T072820_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_NOPM1B_20190903T183137_20190903T185551_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_NOPN1B_20190903T055338_20190903T055403_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_NOPN1B_20190903T073101_20190903T073317_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_NOPN1B_20190903T122237_20190903T122706_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_NOPN1B_20190903T222953_20190903T223437_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_NOPR1B_20190903T005510_20190903T010329_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_NOPR1B_20190903T142007_20190903T142111_C001 | Loss of Echo | The tracking echo is missing for one or more records |

## 5. NOP 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 binary 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 performed 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.

## 5.4 L2 Auxiliary Correction Error Check

For all products, the auxiliary corrections within the Geophysical Group are checked for the default error value (32767).

Currently, there are some common auxiliary correction errors raised in the Level 2 products which are expected due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues which may arise from this test.

- > ECMWF Meteo Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Correction, Wet Tropospheric Correction, Inverse Barometric Correction and the U-Wind and V-Wind components of the ECMWF model wind vector. This is a known anomaly (CRYO-COP-3) and will be resolved in a future IPF update.
- > Mean Sea Surface: The error value is currently set for products over land and sea ice, but this is to be expected.
- > Mean Dynamic Topography: The error value is currently set for products over land and sea ice, but this is to be expected.
- > Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.

Number of products with errors:

39

| Provident A  | T4 F-11-4   | Description   |
|--|---|---|
| Product  CS_OFFL_SIR_NOPM_2_20190903T105751_20190903T110016_C001 | Test Failed  Mean Dynamic Topography (1)  | Description  There is an error with the Mean Dynamic Topography height for one or more records  |
| CS_OFFL_SIR_NOPM_2_20190903T183137_20190903T185551_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T000352_20190903T000513_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T014340_20190903T014707_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T023015_20190903T023102_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T024223_20190903T024452_C001          | Mean Dynamic Topography (1), Total<br>Geocentric Ocean Tide (FES), Non-<br>Equilibrium Long Period Ocean Tide | There is an error with the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 2: FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records |
| CS_OFFL_SIR_NOPN_2_20190903T032246_20190903T032607_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T033124_20190903T033247_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T041237_20190903T041501_C001          | Mean Sea Surface (1), Mean Dynamic Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T051016_20190903T051036_C001          | Mean Sea Surface (1), Mean Dynamic Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T055338_20190903T055403_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T064720_20190903T064920_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T073101_20190903T073317_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T090638_20190903T091151_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T100629_20190903T100851_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T104559_20190903T105014_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T122237_20190903T122706_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T132525_20190903T132638_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T140447_20190903T140632_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T145533_20190903T145659_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T150214_20190903T150518_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T163529_20190903T163836_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T164115_20190903T164251_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T173220_20190903T173325_C001          | Mean Sea Surface (1)  | There is an error with the MSS height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T181552_20190903T181827_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T191103_20190903T191220_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T191521_20190903T191727_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T205034_20190903T205209_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T205339_20190903T205606_C001          |   | There is an error with the Total Geocentric Ocean Tide (solution 2: FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T213312_20190903T213451_C001          | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_NOPN_2_20190903T222953_20190903T223437_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20190903T232129_20190903T232406_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPR_2_20190903T005510_20190903T010329_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPR_2_20190903T023424_20190903T024223_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPR_2_20190903T041501_20190903T042256_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPR_2_20190903T055403_20190903T060125_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPR_2_20190903T073317_20190903T073853_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPR_2_20190903T091151_20190903T091906_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPR_2_20190903T222437_20190903T222953_C001          | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |

#### 5.5 L2 Measurement Confidence Data Check

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

Number of products with errors:

| Product   | Test Failed         | Description   |
|---|---------------------|---|
| CS_OFFL_SIR_NOPM_2_20190903T020318_20190903T021250_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |
| CS_OFFL_SIR_NOPM_2_20190903T074025_20190903T074726_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |
| CS_OFFL_SIR_NOPM_2_20190903T085723_20190903T090312_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |
| CS_OFFL_SIR_NOPM_2_20190903T101106_20190903T103401_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |
| CS_OFFL_SIR_NOPM_2_20190903T171901_20190903T172438_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |

## 5.6 L2 Measurement Quality Flag Check

## L2 Quality Flags (20Hz)

CryoSat L2 data includes Quality Flags for each 20 Hz, 20 Hz PLRM and 1 Hz measurement record. The bit value of this flag indicates any problems when set.

Currently, there are several common flags raised in the Level 2 products, which are summarised below. The table provides the full list of products flagged.

- > Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags: These flags are currently set for some records over ocean.
- > OCOG Altimeter Range and Backscatter Quality Flags: These flags are currently set for some records over continental ice.

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| CS_OFFL_SIR_NOPM_2_20190903T000513_20190903T000608_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality  The OCOG Altimeter Range and Backscatter Quality for one or more records.   | / Elogo boyo haan ast  |
|--|------------------------|
| 2222 1111 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2  | r riags flave been set |
| CS_OFFL_SIR_NOPM_2_20190903T000758_20190903T001403_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality  for one or more records.  | / Flags have been set  |
| CS_OFFL_SIR_NOPM_2_20190903T010716_20190903T013902_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |
| CS_OFFL_SIR_NOPM_2_20190903T014707_20190903T015235_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records.   | / Flags have been set  |
| CS_OFFL_SIR_NOPM_2_20190903T015641_20190903T020026_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |
| CS_OFFL_SIR_NOPM_2_20190903T023120_20190903T023424_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |
| CS_OFFL_SIR_NOPM_2_20190903T024609_20190903T025510_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |
| CS_OFFL_SIR_NOPM_2_20190903T025754_20190903T031912_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |
| CS_OFFL_SIR_NOPM_2_20190903T032607_20190903T032711_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records.   | / Flags have been set  |
| CS_OFFL_SIR_NOPM_2_20190903T032714_20190903T033124_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records.   | / Flags have been set  |
| CS_OFFL_SIR_NOPM_2_20190903T033652_20190903T035303_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |
| CS_OFFL_SIR_NOPM_2_20190903T041105_20190903T041151_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |
| CS_OFFL_SIR_NOPM_2_20190903T042256_20190903T045757_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |
| CS_OFFL_SIR_NOPM_2_20190903T050134_20190903T050609_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records.   | / Flags have been set  |
| CS_OFFL_SIR_NOPM_2_20190903T050628_20190903T051016_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality  The OCOG Altimeter Range and Backscatter Quality for one or more records.   | / Flags have been set  |
| CS_OFFL_SIR_NOPM_2_20190903T051711_20190903T054856_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |
| CS_OFFL_SIR_NOPM_2_20190903T060125_20190903T061547_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |
| CS_OFFL_SIR_NOPM_2_20190903T062028_20190903T062240_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |
| CS_OFFL_SIR_NOPM_2_20190903T062346_20190903T063720_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records. |                        |

| CS_OFFL_SIR_NOPM_2_20190903T063949_20190903T064507_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
|---|--|--|
| CS_OFFL_SIR_NOPM_2_20190903T065526_20190903T070848_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T071102_20190903T071241_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T071256_20190903T072820_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T072842_20190903T073033_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T075025_20190903T075905_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T080227_20190903T081602_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T081915_20190903T082418_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T082424_20190903T082436_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T083251_20190903T083356_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T083903_20190903T084518_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T085011_20190903T085440_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T085723_20190903T090312_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T090434_20190903T090638_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T093421_20190903T095430_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T095942_20190903T100334_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T100355_20190903T100629_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T101106_20190903T103401_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T105751_20190903T110016_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T111030_20190903T113354_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T113726_20190903T114248_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T114254_20190903T114620_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T115010_20190903T122237_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T123606_20190903T123714_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T123749_20190903T124303_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T130916_20190903T131315_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T131726_20190903T132525_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
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| CS_OFFL_SIR_NOPM_2_20190903T133109_20190903T140237_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
|---|--|--|
| CS_OFFL_SIR_NOPM_2_20190903T141446_20190903T141700_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T142111_20190903T142415_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T144406_20190903T145123_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T145659_20190903T150214_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T150937_20190903T153029_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T153314_20190903T154440_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T155358_20190903T155816_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T160612_20190903T161113_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T161316_20190903T161919_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T162106_20190903T163103_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T164844_20190903T171754_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T171901_20190903T172438_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T173713_20190903T180850_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T182229_20190903T182527_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T182756_20190903T183059_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T183137_20190903T185551_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T191727_20190903T193327_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T200727_20190903T202115_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T205254_20190903T205339_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T205943_20190903T210533_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T210816_20190903T213059_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T213451_20190903T214337_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T214713_20190903T221044_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T223651_20190903T231027_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPM_2_20190903T231707_20190903T232129_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPM_2_20190903T232634_20190903T235035_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
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| CS_OFFL_SIR_NOPN_2_20190903T113602_20190903T113726_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
|---|--|--|
| CS_OFFL_SIR_NOPN_2_20190903T200427_20190903T200609_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T205339_20190903T205606_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T210654_20190903T210816_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T023424_20190903T024223_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T155816_20190903T160401_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPR_2_20190903T210533_20190903T210654_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |

## L2 Quality Flags (20Hz PLRM)

Currently, there are several common flags raised in the Level 2 products, which are summarised below. The table provides the full list of products flagged.

- > Ocean Altimeter Range, SSHA, SWH and Backscatter PLRM Quality Flags: These flags are currently set for occasional records over sea ice.
- > OCOG Altimeter Range and Backscatter PLRM Quality Flags: These flags are currently set for occasional records over continental ice.

| Product   | Test Failed   | Description  |
|---|---|--|
| CS_OFFL_SIR_NOPN_2_20190903T000352_20190903T000513_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T000608_20190903T000746_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T010329_20190903T010439_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T015235_20190903T015352_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T024223_20190903T024452_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T033124_20190903T033247_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T035303_20190903T035629_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T051016_20190903T051036_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T064720_20190903T064920_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T074727_20190903T075025_C001 | OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality   | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T081727_20190903T081915_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T083632_20190903T083903_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T084518_20190903T084950_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T090312_20190903T090434_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T090638_20190903T091151_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T092743_20190903T093142_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T095633_20190903T095942_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |

| CS_OFFL_SIR_NOPN_2_20190903T103833_20190903T104036_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for comore records.  |
|---|---|---|
| CS_OFFL_SIR_NOPN_2_20190903T104433_20190903T104555_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for omore records.   |
| CS_OFFL_SIR_NOPN_2_20190903T104559_20190903T105014_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality F and the OCOG Altimeter Range and Backscatter Quality Flags have set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T110016_20190903T110139_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for omore records.   |
| CS_OFFL_SIR_NOPN_2_20190903T110858_20190903T111030_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for omore records.   |
| CS_OFFL_SIR_NOPN_2_20190903T122237_20190903T122706_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for omore records.   |
| CS_OFFL_SIR_NOPN_2_20190903T140237_20190903T140352_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for omore records.   |
| CS_OFFL_SIR_NOPN_2_20190903T140447_20190903T140632_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality F and the OCOG Altimeter Range and Backscatter Quality Flags have set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T141700_20190903T141732_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality F and the OCOG Altimeter Range and Backscatter Quality Flags have set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T141844_20190903T142007_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for omore records.   |
| CS_OFFL_SIR_NOPN_2_20190903T142526_20190903T142649_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for omore records.   |
| CS_OFFL_SIR_NOPN_2_20190903T143240_20190903T143424_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for omore records.   |
| CS_OFFL_SIR_NOPN_2_20190903T145533_20190903T145659_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T173220_20190903T173325_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality F and the OCOG Altimeter Range and Backscatter Quality Flags have set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T181552_20190903T181827_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality F and the OCOG Altimeter Range and Backscatter Quality Flags have set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T182022_20190903T182229_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T191521_20190903T191727_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T193840_20190903T193854_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T205034_20190903T205209_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality F and the OCOG Altimeter Range and Backscatter Quality Flags have set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T205339_20190903T205606_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality F and the OCOG Altimeter Range and Backscatter Quality Flags have set for one or more records. |
| CS_OFFL_SIR_NOPN_2_20190903T205821_20190903T205943_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T210654_20190903T210816_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T221945_20190903T222108_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T222953_20190903T223437_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for omore records.   |
| CS_OFFL_SIR_NOPN_2_20190903T223530_20190903T223651_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for omore records.   |
| CS_OFFL_SIR_NOPN_2_20190903T231248_20190903T231420_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for more records.  |
| CS_OFFL_SIR_NOPN_2_20190903T231555_20190903T231707_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for more records.  |

| 00 OFFI AID NODN A 004000000000000000000000000000000000 | OCOG Altimeter Range Quality PLRM,  | The OCOG Range and Backscatter Quality Flags have been set for one or  |
|---|---|--|
| CS_OFFL_SIR_NOPN_2_20190903T232129_20190903T232406_C001 | OCOG Backscatter Quality Ocean Altimeter Range, SSHA, SWH   | more records.  |
| CS_OFFL_SIR_NOPR_2_20190903T005510_20190903T010329_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM                                     | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T013902_20190903T014340_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T015352_20190903T015641_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T022720_20190903T023002_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPR_2_20190903T023424_20190903T024223_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T031912_20190903T032246_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T033247_20190903T033652_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T045757_20190903T045950_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T051131_20190903T051711_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T055403_20190903T060125_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T064920_20190903T065526_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T070848_20190903T071102_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPR_2_20190903T073317_20190903T073853_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T081602_20190903T081727_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T091151_20190903T091906_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T095430_20190903T095633_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T114743_20190903T115010_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM          | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T131315_20190903T131602_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T132638_20190903T133109_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T140352_20190903T140447_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPR_2_20190903T141814_20190903T141844_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPR_2_20190903T145123_20190903T145533_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM          | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T150518_20190903T150937_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T155816_20190903T160401_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPR_2_20190903T163103_20190903T163529_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T164621_20190903T164844_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
|   |   |  |

| CS_OFFL_SIR_NOPR_2_20190903T180850_20190903T181552_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
|---|---|--|
| CS_OFFL_SIR_NOPR_2_20190903T193327_20190903T193539_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPR_2_20190903T202115_20190903T202254_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T202741_20190903T203004_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_NOPR_2_20190903T204408_20190903T204549_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T214535_20190903T214713_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |
| CS_OFFL_SIR_NOPR_2_20190903T232406_20190903T232634_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. |

## L2 Quality Flags (1 Hz & 1Hz PLRM)

Currently, there are several common flags raised in the Level 2 products, which are summarised below.

> 1Hz and 1Hz Ocean SSHA Quality Flags: These flags are currently set for products over sea ice, which is to be expected.

Number of products with errors:

## 5.7 L2 Ocean Retracking Quality Check

## L2 Retracking Flags (20Hz)

CryoSat L2 data includes an ocean retracking quality flag for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

Ocean Retracking Quality Flag: This flag is currently set for products falling at ocean/ land boundaries, but this is expected.

Number of products with errors:

## L2 Retracking Flags (20Hz, PLRM)

CryoSat L2 data includes an ocean retracking quality flag for each 20-Hz PLRM measurement record. The bit value of this flag indicates any problems when set.

Ocean Retracking Quality Flag (PLRM): This flag is currently set for products NOPR and NOPN products over sea ice, but this is to be expected.