

## **QA4EO Daily Report for NOP data:**

<u>26/02/2023</u>

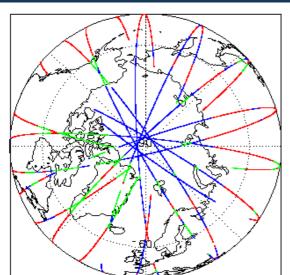
# IDEAS-QA4E0

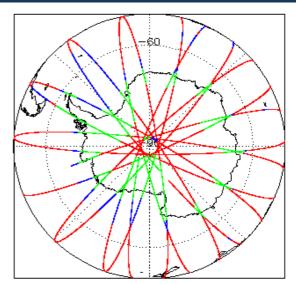
| Panart Draduation   | 28-Feb-2023                         | Check                                     | L1 & L2                      |
|---|-------------------------------------|---|------------------------------|
| Report Production:  | 20-FED-2023                         | Server check: science-pds.cryosat.esa.int | Nominal                      |
| Processor Used:   | CryoSat Ocean Processor             | Server check: calval-pds.cryosat.esa.int  | Nominal                      |
| Processor Used:   | CryoSal Ocean Processor             | Product Software Check                    | Nominal                      |
|   | Near Real Time Ocean Products (NOP) | Product Format Check                      | Nominal                      |
| Data Used:  | L1B & L2 Science Data               | Product Header Analysis                   | Nominal                      |
|   |                                     | Auxiliary Data File Usage Check           | Nominal                      |
| We would love to hear from you!<br>Please let us know your feedback about these daily<br>quality reports: What do you like/ dislike? What quality<br>information do you need? Send your feedback to<br>cs2_qc_team@telespazio.com |                                     | 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              |
|   |                                     | QCC Error/ Warning Check                  | See Section 7.1 and 7.2      |

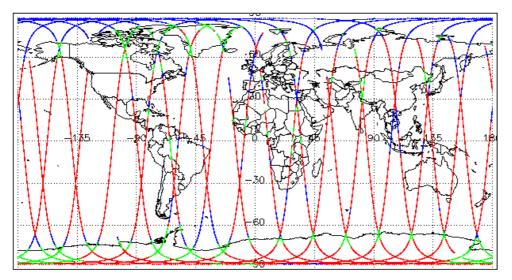
1. Overview

26-Feb-2023 None 27-Feb-2023 Nothing planned

# 2. Global Coverage







| Mode Coverage |       |  |
|---------------|-------|--|
|               | LRM   |  |
|               | SAR   |  |
|               | SARIn |  |

## 3. Instrument Configuration

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

| SIRAL instrument(s) in use: | SIRAL - A      |
|-----------------------------|----------------|
| Star Tracker(s) in use:     | Star Tracker 1 |

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 NetCDF product file (.nc). Number of products with errors: 0

| 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 NOPR and NOPN products because the I1b_processing_quality_hr field is not correctly configured in the OSAR and OSARIa choice A modification is required in the part release |   |  |  |  |
| OSARIn chains. A modification is required in the next release.           Number of products with errors:         0  |   |  |  |  |
|   |   |  |  |  |
| 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 va      | alidity of Auxiliary Data Files is correct.  |  |  |
| > Dynamic Atmospheric Correction: The DAC is missing in all products beca   | use the auxiliary files required are not availab  | le 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 proble | ems when set.  |  |  |
| Number of products with errors: 0   |   |  |  |  |
| 4.5 L1B Measurement Confidence Data Check   |   |  |  |  |
|   | ant record. The hit value of this flag indicates  | any problems when set  |  |  |
| CryoSat L1B data includes a measurement confidence flag for each measurement  |   |  |  |  |
| > Attitude Correction Missing: This flag is currently set in error for NOPR pro-<br>updated in the next SW update.  | ducts due to a configuration issue. The attitud   | le correction is not actually missing, i his is being investigated and will be                               |  |  |
| Number of products with errors: 1   |   |  |  |  |
| Product   | Test Failed                                       | Description  |  |  |
| CS_OFFL_SIR_NOPM1B_20230226T055738_20230226T060328_C001   | Power scaling error                               | There is an error in the scaling of the L1B waveform for one or more<br>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 proble   | ms when set.   |  |  |
| > Loss of Echo Flag: This flag is currently set for occasional products over lan  | d, but this is to be expected.                    |  |  |  |
| Number of products with errors: 9   |   |  |  |  |
| Product   | Test Failed                                       | Description  |  |  |
| CS_OFFL_SIR_NOPM1B_20230226T060612_20230226T063024_C001   | Loss of Echo                                      | The tracking echo is missing for one or more records   |  |  |
| CS_OFFL_SIR_NOPM1B_20230226T124418_20230226T130634_C001<br>CS_OFFL_SIR_NOPN1B_20230226T023013_20230226T023356_C001  | Loss of Echo<br>Loss of Echo                      | The tracking echo is missing for one or more records<br>The tracking echo is missing for one or more records |  |  |
| CS_OFFL_SIR_NOPN1B_20230226T054829_20230226T055015_C001   | Loss of Echo                                      | The tracking echo is missing for one or more records   |  |  |
| CS_OFFL_SIR_NOPN1B_20230226T130729_20230226T131149_C001   | Loss of Echo                                      | The tracking echo is missing for one or more records   |  |  |
| CS_OFFL_SIR_NOPN1B_20230226T230940_20230226T231255_C001   | Loss of Echo                                      | The tracking echo is missing for one or more records   |  |  |
| CS_OFFL_SIR_NOPR1B_20230226T085814_20230226T090825_C001   | Loss of Echo                                      | The tracking echo is missing for one or more records   |  |  |
| CS_OFFL_SIR_NOPR1B_20230226T171306_20230226T171356_C001   | Loss of Echo                                      | The tracking echo is missing for one or more records   |  |  |
| CS_OFFL_SIR_NOPR1B_20230226T222509_20230226T222709_C001   | Loss of Echo                                      | The tracking echo is missing for one or more records   |  |  |
| 5. NO   | P Level 2 Data Quality Ch                         | eck  |  |  |
| 5.1 L2 Product Format Check   |   |  |  |  |
| Each product, retrieved and unpacked from the science server, is checked to en  | nsure it consists of both an XML header file (.   | HDR) and a NetCDF product file (.nc).  |  |  |
| 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 a    | ind/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 va     | alidity of Auxiliary Data Files is correct.  |  |  |
| Wind Model File Usage: This file is currently not included in all L2 products.  |   |  |  |  |
| Number of products with errors: 0   |   |  |  |  |
| 5.4 L2 Auxiliary Correction Error Check   |   |  |  |  |
|   | align the default array value (20707)             |  |  |  |
| For all products, the auxiliary corrections within the Geophysical Group are check<br>Currently, there are some common auxiliary correction errors raised in the  | . ,   | e to surface type. All common flags are summarised in the list below.  |  |  |
| followed by a table highlighting any additional issues which may arise fro  |   | ,  |  |  |
| > ECMWF Meteo Corrections: Currently the following corrections are not comp<br>Correction and the U-Wind and V-Wind components of the ECMWF model wind  |   |  |  |  |
| > 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 on<br>Number of products with errors: 44   | ver iand and sea ice, but this is to be expecte   | .د   |  |  |
| Number of products with errors: 44  |   |  |  |  |
| Product   | Test Failed                                       | Description  |  |  |
| CS_OFFL_SIR_NOPM_2_20230226T032931_20230226T035343_C001   | Mean Dynamic Topography (1)                       | There is an error with the Mean Dynamic Topography height for one or<br>more records                         |  |  |

| CS_OFFL_SIR_NOPN_2_20230226T000005_20230226T000308_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
|---|--|--|
| CS_OFFL_SIR_NOPN_2_20230226T013322_20230226T013629_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20230226T013907_20230226T014412_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20230226T023013_20230226T023356_C001   | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T031346_20230226T031620_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20230226T041318_20230226T041521_C001   | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T044844_20230226T045456_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20230226T054829_20230226T055015_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20230226T063107_20230226T063247_C001   | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T072748_20230226T073233_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)   | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_NOPN_2_20230226T081926_20230226T082202_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20230226T095028_20230226T095418_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide  | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1) and the tidal corrections for one or more records  |
| CS_OFFL_SIR_NOPN_2_20230226T105129_20230226T105253_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)   | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_NOPN_2_20230226T113010_20230226T113324_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20230226T113838_20230226T113954_C001   | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T122113_20230226T122132_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_20230226T131744_20230226T131900_C001   | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPN_2_20230226T131744_20230226T131900_C001<br>CS_OFFL_SIR_NOPN_2_20230226T135702_20230226T135909_C001  | Topography (1)<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide  |  |
|   | Topography (1)<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period  | Topography height (solution 1) for one or more records<br>There is an error with the MSS height (solution 1), the Mean Dynamic   |
| CS_OFFL_SIR_NOPN_2_20230226T135702_20230226T135909_C001   | Topography (1)<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period   | Topography height (solution 1) for one or more records<br>There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1) and the tidal corrections for one or more records<br>There is an error with the MSS height (solution 1), the Mean Dynamic  |
| CS_OFFL_SIR_NOPN_2_20230226T135702_20230226T135909_C001<br>CS_OFFL_SIR_NOPN_2_20230226T135956_20230226T140120_C001  | Topography (1)<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide<br>Mean Sea Surface (1), Mean Dynamic   | Topography height (solution 1) for one or more records<br>There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1) and the tidal corrections for one or more records<br>There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1) and the tidal corrections for one or more records<br>There is an error with the MSS height (solution 1), and the Mean Dynamic<br>There is an error with the MSS height (solution 1) and the Mean Dynamic  |
| CS_OFFL_SIR_NOPN_2_20230226T135702_20230226T135909_C001<br>CS_OFFL_SIR_NOPN_2_20230226T135956_20230226T140120_C001<br>CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T154028_C001   | Topography (1)<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1)<br>Mean Sea Surface (1), Mean Dynamic   | Topography height (solution 1) for one or more records<br>There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1) and the tidal corrections for one or more records<br>There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1) and the tidal corrections for one or more records<br>There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records<br>There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records<br>There is an error with the MSS height (solution 1) and the Mean Dynamic  |
| CS_OFFL_SIR_NOPN_2_20230226T135702_20230226T135909_C001<br>CS_OFFL_SIR_NOPN_2_20230226T135956_20230226T140120_C001<br>CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T154028_C001<br>CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T163552_C001  | Topography (1)<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1)<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records 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_20230226T135702_20230226T135909_C001<br>CS_OFFL_SIR_NOPN_2_20230226T135956_20230226T140120_C001<br>CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T154028_C001<br>CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T163552_C001<br>CS_OFFL_SIR_NOPN_2_20230226T171719_20230226T171830_C001   | Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide         Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Dynamic Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the Mean Dynamic Topography height for one or more records 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_20230226T135702_20230226T135909_C001         CS_OFFL_SIR_NOPN_2_20230226T135956_20230226T140120_C001         CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T140120_C001         CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T154028_C001         CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T163552_C001         CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T163552_C001         CS_OFFL_SIR_NOPN_2_20230226T171719_20230226T171830_C001         CS_OFFL_SIR_NOPN_2_20230226T181230_20230226T181607_C001   | Topography (1)         Mean Sea Surface (1), Mean Dynamic         Topography (1), Total Geocentric Ocean         Tide (GOT), Total Geocentric Ocean         Tide (FES), Non-Equilibrium Long Period         Ocean Tide         Mean Sea Surface (1), Mean Dynamic         Topography (1), Total Geocentric Ocean         Tide (GOT), Total Geocentric Ocean         Tide (FES), Non-Equilibrium Long Period         Ocean Tide         Mean Sea Surface (1), Mean Dynamic         Topography (1)  | Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records 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_20230226T135702_20230226T135909_C001<br>CS_OFFL_SIR_NOPN_2_20230226T135956_20230226T140120_C001<br>CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T154028_C001<br>CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T163552_C001<br>CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T163552_C001<br>CS_OFFL_SIR_NOPN_2_20230226T171719_20230226T171830_C001<br>CS_OFFL_SIR_NOPN_2_20230226T181230_20230226T181607_C001<br>CS_OFFL_SIR_NOPN_2_20230226T185401_20230226T185752_C001  | Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide         Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Dynamic Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MAS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records 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_20230226T135702_20230226T135909_C001         CS_OFFL_SIR_NOPN_2_20230226T135956_20230226T140120_C001         CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T140120_C001         CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T154028_C001         CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T163552_C001         CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T163552_C001         CS_OFFL_SIR_NOPN_2_20230226T171719_20230226T171830_C001         CS_OFFL_SIR_NOPN_2_20230226T181230_20230226T181607_C001         CS_OFFL_SIR_NOPN_2_20230226T185401_20230226T185752_C001         CS_OFFL_SIR_NOPN_2_20230226T185401_20230226T185752_C001   | Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide         Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Dynamic Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the Mass Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an er |
| CS_OFFL_SIR_NOPN_2_20230226T135702_20230226T135909_C001         CS_OFFL_SIR_NOPN_2_20230226T135956_20230226T140120_C001         CS_OFFL_SIR_NOPN_2_20230226T135956_20230226T140120_C001         CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T154028_C001         CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T154028_C001         CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T163552_C001         CS_OFFL_SIR_NOPN_2_20230226T171719_20230226T171830_C001         CS_OFFL_SIR_NOPN_2_20230226T181230_20230226T181607_C001         CS_OFFL_SIR_NOPN_2_20230226T185401_20230226T185752_C001         CS_OFFL_SIR_NOPN_2_20230226T190301_20230226T190336_C001         CS_OFFL_SIR_NOPN_2_20230226T195342_20230226T195525_C001   | Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide         Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Dynamic Topography (1)         Mean Dynamic Topography (1)         Mean Dynamic Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height f |
| CS_OFFL_SIR_NOPN_2_20230226T135702_20230226T135909_C001         CS_OFFL_SIR_NOPN_2_20230226T135956_20230226T140120_C001         CS_OFFL_SIR_NOPN_2_20230226T135956_20230226T140120_C001         CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T154028_C001         CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T154028_C001         CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T163552_C001         CS_OFFL_SIR_NOPN_2_20230226T171719_20230226T171830_C001         CS_OFFL_SIR_NOPN_2_20230226T181230_20230226T181607_C001         CS_OFFL_SIR_NOPN_2_20230226T185401_20230226T185752_C001         CS_OFFL_SIR_NOPN_2_20230226T190301_20230226T190336_C001         CS_OFFL_SIR_NOPN_2_20230226T195342_20230226T195525_C001         CS_OFFL_SIR_NOPN_2_20230226T230940_20230226T231255_C001 | Topography (1)       Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide         Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Dynamic Topography (1)         Mean Dynamic Topography (1)         Mean Dynamic Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         Mean Sea Surface (1), Mean Dynamic<br>Topography (1) | Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the Mean Dynamic Topography height for one or more records There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records There is an error with the MSS he |

| CS_OFFL_SIR_NOPR_2_20230226T104148_20230226T104936_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_20230226T122132_20230226T123235_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)                                       | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_NOPR_2_20230226T140121_20230226T140831_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_20230226T154029_20230226T154553_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_20230226T163552_20230226T163820_C001 | Mean Sea Surface (1)   | There is an error with the MSS height (solution 1) for one or more records   |
| CS_OFFL_SIR_NOPR_2_20230226T170909_20230226T171012_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT) | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T171929_20230226T172626_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_20230226T174005_20230226T174820_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T185753_20230226T190300_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_20230226T203514_20230226T204324_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_20230226T221402_20230226T222134_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_20230226T222509_20230226T222709_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T223046_20230226T223233_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height 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_20230226T055738_20230226T060328_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 (20 Hz)

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.

91

1

#### Number of products with errors:

| Product   | Test Failed  | Description   |
|---|--|---|
| CS_OFFL_SIR_NOPM_2_20230226T000528_20230226T002819_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T003104_20230226T004039_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T011108_20230226T011711_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T011859_20230226T013226_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T013629_20230226T013907_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T014515_20230226T021545_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T021654_20230226T021722_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T023443_20230226T023447_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T023506_20230226T030643_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |

| CS_OFFL_SIR_NOPM_2_20230226T031620_20230226T031815_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
|---|--|---|
| CS_OFFL_SIR_NOPM_2_20230226T032022_20230226T032319_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T032445_20230226T032852_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T032931_20230226T035343_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T041014_20230226T041318_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T041521_20230226T041715_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T041935_20230226T043121_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T044746_20230226T044844_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T045456_20230226T045734_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T045754_20230226T050222_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T050412_20230226T051909_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T052048_20230226T052331_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T053612_20230226T053650_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T055738_20230226T060328_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T060612_20230226T063024_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T063247_20230226T064133_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T064339_20230226T070839_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T073448_20230226T080928_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T081504_20230226T081926_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T082217_20230226T084900_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T091618_20230226T094833_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T095418_20230226T100006_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T100129_20230226T100751_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T101046_20230226T101856_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T105253_20230226T110333_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T110344_20230226T112754_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
|   |  |   |

| CS_OFFL_SIR_NOPM_2_20230226T113325_20230226T113838_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
|---|--|---|
| CS_OFFL_SIR_NOPM_2_20230226T114016_20230226T114325_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T114503_20230226T115400_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T115518_20230226T115944_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T121557_20230226T121745_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T121810_20230226T121834_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T123235_20230226T124132_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T124418_20230226T130634_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T131149_20230226T131326_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T131333_20230226T131743_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T131954_20230226T134157_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T134244_20230226T134711_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T141343_20230226T141700_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T141840_20230226T142847_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T142851_20230226T143737_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T143740_20230226T144533_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T144700_20230226T145225_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T150331_20230226T151423_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T151652_20230226T153355_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T154743_20230226T154750_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T155729_20230226T160655_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T160858_20230226T162442_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T162628_20230226T163124_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T163144_20230226T163155_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T164020_20230226T165246_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T165727_20230226T170908_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
|   | Ι  | 1   |

| CS_OFFL_SIR_NOPM_2_20230226T173027_20230226T173043_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
|---|--|---|
| CS_OFFL_SIR_NOPM_2_20230226T173136_20230226T173138_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T174820_20230226T180332_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T180556_20230226T181038_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T181117_20230226T181230_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T181642_20230226T183958_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T184001_20230226T184400_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T191748_20230226T193834_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T193925_20230226T194329_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T194614_20230226T194953_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T195016_20230226T195342_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T205405_20230226T205554_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T205557_20230226T212246_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T212413_20230226T212908_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T213552_20230226T221050_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T222343_20230226T222508_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T223808_20230226T224108_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T224439_20230226T224519_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T225921_20230226T230230_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPM_2_20230226T230412_20230226T230940_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPM_2_20230226T231510_20230226T234908_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T013907_20230226T014412_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T070840_20230226T071115_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPN_2_20230226T104936_20230226T105045_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T154028_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T221051_20230226T221205_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
|   |  |   |

| CS_OFFL_SIR_NOPR_2_20230226T023356_20230226T023443_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
|---|--|---|
| CS_OFFL_SIR_NOPR_2_20230226T164011_20230226T164020_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T221239_20230226T221246_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records   |
| CS_OFFL_SIR_NOPR_2_20230226T225722_20230226T225921_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |

### L2 Quality Flags (20 Hz PLRM)

Manufacture design and the second design and

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.

| Number of products with errors: 68                      |   |   |
|---|---|---|
| Product   | Test Failed   | Description   |
| CS_OFFL_SIR_NOPN_2_20230226T010905_20230226T011108_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T013322_20230226T013629_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T031815_20230226T031924_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T032320_20230226T032442_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T035344_20230226T035611_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T044844_20230226T045456_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T054344_20230226T054409_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T054829_20230226T055015_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T055134_20230226T055401_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T060449_20230226T060612_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T081352_20230226T081504_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T081926_20230226T082202_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T095028_20230226T095418_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T101856_20230226T102028_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T102525_20230226T102630_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T103837_20230226T103914_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T104936_20230226T105045_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T105129_20230226T105253_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T113838_20230226T113954_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |

| CS_OFFL_SIR_NOPN_2_20230226T130729_20230226T131149_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_20230226T131744_20230226T131900_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T135548_20230226T135620_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T144537_20230226T144700_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T153925_20230226T154028_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T163155_20230226T163202_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T163322_20230226T163552_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T165322_20230226T165727_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T171022_20230226T171146_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T181230_20230226T181607_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T185143_20230226T185306_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T185401_20230226T185752_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T190301_20230226T190336_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T195342_20230226T195525_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T204325_20230226T204346_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T221247_20230226T221344_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPN_2_20230226T223702_20230226T223808_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPN_2_20230226T230940_20230226T231255_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T004039_20230226T004153_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T005610_20230226T010153_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T021722_20230226T021948_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T022240_20230226T022404_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T030643_20230226T031345_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T043122_20230226T043334_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T052517_20230226T052758_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T054409_20230226T054829_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |

| CS_OFFL_SIR_NOPR_2_20230226T055041_20230226T055133_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality         | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
|---|---|---|
| CS_OFFL_SIR_NOPR_2_20230226T055510_20230226T055616_C001 | PLRM<br>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_20230226T080929_20230226T081045_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T085244_20230226T085255_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T085814_20230226T090825_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T103540_20230226T103610_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T104148_20230226T104936_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T122132_20230226T123235_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T140121_20230226T140831_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T145655_20230226T145959_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T154029_20230226T154553_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T154645_20230226T154743_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T163552_20230226T163820_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T171306_20230226T171356_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T171929_20230226T172626_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T174005_20230226T174820_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T184401_20230226T184509_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T185753_20230226T190300_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T190337_20230226T190521_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T203514_20230226T204324_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T221402_20230226T222134_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records |
| CS_OFFL_SIR_NOPR_2_20230226T222509_20230226T222709_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| CS_OFFL_SIR_NOPR_2_20230226T223556_20230226T223632_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records   |
| L2 Quality Flags (1 Hz & 1 Hz PLRM)                     |   |   |

L2 Quality Flags (1 Hz & 1 Hz PLRM)

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

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

Number of products with errors: 175

## 5.7 L2 Ocean Retracking Quality Check

## L2 Retracking Flags (20 Hz)

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.

58

117

Number of products with errors:

#### L2 Retracking Flags (20 Hz 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.

#### Number of products with errors:

## 7. NOP QCC Report Analysis

The Quality Control for CryoSat (QCC) facility performs a primary survey of data products immediately after production by the PDS and LTA processing facilities. A list of the tests which raised errors or warnings is provided below.

| Product type | No. Products | No. QCC Reports | No. Valid | No. Warnings | No. Errors |
|--------------|--------------|-----------------|-----------|--------------|------------|
| SIR_NOPM1B   | 175          | 175             | 5         | 170          | 0          |
| SIR_NOPR1B   | 141          | 141             | 0         | 141          | 0          |
| SIR_NOPN1B   | 98           | 98              | 3         | 95           | 0          |
| SIR_NOPM_2   | 175          | 175             | 120       | 55           | 0          |
| SIR_NOPR_2   | 141          | 141             | 75        | 65           | 1          |
| SIR_NOPN_2   | 98           | 98              | 42        | 56           | 0          |

### 7.1 QCC Errors

| Number of QCC report | rts with eri | rors:           | 4          |   |                  |                 |               |   |   |   |   |
|----------------------|--------------|-----------------|------------|---|------------------|-----------------|---------------|---|---|---|---|
|                      |              |                 |            |   | Total number     | of occurrences  | of each error |   |   |   |   |
| Product Type RLOB    | OPNCDF       | RL              | RLOBOPNCDF | RL  | -                | -               | -             | - | - | - | - |
| SIR_NOPR_2           | 1            | 1               | 1          | 1   |                  |                 |               |   |   |   |   |
|                      |              |                 |            |   |                  |                 |               |   |   |   |   |
| Test Description Key | :            |                 |            |   |                  |                 |               |   |   |   |   |
| Abbreviation         | Test nar     | ne              |            | Details   |                  |                 |               |   |   |   |   |
| RLOBOPNCDF           | RangeLat     | itudeOrBlankOP  | _7NetCDF   | Latitude should be                                    | between -90E7 an | d 90E7 - NetCDF |               |   |   |   |   |
| RL                   | RangeLat     | itude_7         |            | Latitude should be between -90E7 and 90E7             |                  |                 |               |   |   |   |   |
| RLOBOPNCDF           | RangeLor     | ngitudeOrBlankC | DP_7NetCDF | Longitude should be between -180E7 and 180E7 - NetCDF |                  |                 |               |   |   |   |   |

#### 7.2 QCC Warnings

| mber of QCC repo | orts with warnings | 1550          |              |                           |                   |                    |                   |
|------------------|--------------------|---------------|--------------|---------------------------|-------------------|--------------------|-------------------|
|                  |                    |               | Total nu     | Imber of occurrences of e | each warning      |                    |                   |
| Product Type     | BCSHNCDF           | IOHHMOOR      | MVIOEPFDNCDF | MVIOEPNCDF                | MVIONCDF          | RBSZOPOEPFDNCDF    | RBSZOPOEPFDPLRMNC |
| SIR_NOPM1B       | 170                | 0             | 0            | 0                         | 0                 | 0                  | 0                 |
| SIR_NOPM_2       | 0                  | 0             | 39           | 39                        | 0                 | 47                 | 0                 |
| SIR_NOPN1B       | 95                 | 0             | 0            | 0                         | 0                 | 0                  | 0                 |
| SIR_NOPN_2       | 0                  | 0             | 6            | 23                        | 5                 | 18                 | 22                |
| SIR_NOPR1B       | 137                | 0             | 0            | 0                         | 0                 | 0                  | 0                 |
| SIR_NOPR_2       | 0                  | 1             | 13           | 29                        | 1                 | 19                 | 15                |
|                  |                    |               |              |                           |                   |                    |                   |
| Product Type     | RBSZOPOEPNCDF      | RMSSGHOPONCDF | RNELPOTONCDF | RPEPOPFDLRMNCDF           | RPEPOPFDPLRMSARNO | ERPEPOPFDPLRMSINNC | DIRPEPOPFDSARNCDF |
| SIR_NOPM1B       | 0                  | 0             | 0            | 0                         | 0                 | 0                  | 0                 |
| SIR_NOPM_2       | 39                 | 1             | 0            | 33                        | 0                 | 0                  | 0                 |
| SIR_NOPN1B       | 0                  | 0             | 0            | 0                         | 0                 | 0                  | 0                 |
| SIR_NOPN_2       | 10                 | 0             | 2            | 0                         | 0                 | 9                  | 0                 |
| SIR_NOPR1B       | 0                  | 0             | 0            | 0                         | 0                 | 0                  | 0                 |
| SIR_NOPR_2       | 11                 | 0             | 3            | 0                         | 32                | 0                  | 37                |

| Product Type | RPEPOPFDSINNCDF | RPEPOPLRMNCDF | RPEPOPSARNCDF | RPEPOPSINNCDF | RSSBCONCDF | RSSHAOFDNCDF | RSSHAOFDPLRMNCDF |
|--------------|-----------------|---------------|---------------|---------------|------------|--------------|------------------|
| SIR_NOPM1B   | 0               | 0             | 0             | 0             | 0          | 0            | 0                |
| SIR_NOPM_2   | 0               | 27            | 0             | 0             | 6          | 26           | 0                |
| SIR_NOPN1B   | 0               | 0             | 0             | 0             | 0          | 0            | 0                |
| SIR_NOPN_2   | 27              | 0             | 0             | 18            | 12         | 42           | 47               |
| SIR_NOPR1B   | 0               | 0             | 0             | 0             | 0          | 0            | 0                |
| SIR NOPR 2   | 0               | 0             | 33            | 0             | 3          | 45           | 27               |

| Product Type | RSSHAONCDF | RSWHOEPFDNCDF | RSWHOEPFDPLRMNCDF | RSWHOEPNCDF | SOOHHIFHD | SCSTODHRNCDF | SCSTODNCDF |
|--------------|------------|---------------|-------------------|-------------|-----------|--------------|------------|
| SIR_NOPM1B   | 0          | 0             | 0                 | 0           | 0         | 0            | 0          |
| SIR_NOPM_2   | 4          | 35            | 0                 | 3           | 0         | 0            | 0          |
| SIR_NOPN1B   | 0          | 0             | 0                 | 0           | 0         | 45           | 0          |
| SIR_NOPN_2   | 25         | 24            | 23                | 6           | 0         | 0            | 0          |
| SIR_NOPR1B   | 0          | 0             | 0                 | 0           | 0         | 141          | 10         |
| SIR NOPR 2   | 9          | 16            | 33                | 4           | 3         | 0            | 0          |

| Test Description Key:   | iest Description Key:                                       |  |  |  |  |  |  |
|-------------------------|---|--|--|--|--|--|--|
| Abbreviation            | Test name   | Details  |  |  |  |  |  |
| BCSHNCDF                | BurstCounterStep20HzNetCDF                                  | The burst counter should be one higher with regard to the previous burst counter   |  |  |  |  |  |
| IOHHMOOR                | IndexOf1Hzin20HzMappingOutOfRange                           | The mapping of 20 Hz to 1 Hz measurements should be in the range 0 to (number of 1 Hz samples - 1)                                       |  |  |  |  |  |
| MVIOEPFDNCDF            | MissingValueIntOceanExcludingPolarFD2NetCDF                 | The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees                               |  |  |  |  |  |
| MVIOEPNCDF              | MissingValueIntOceanExcludingPolarNetCDF                    | The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees                               |  |  |  |  |  |
| MVIONCDF                | MissingValueIntOceanNetCDF                                  | The value should not be a 'missing value' for surface type 0 only  |  |  |  |  |  |
| RBSZOPOEPFDNCDF         | RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2NetCDF     | The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees |  |  |  |  |  |
| RBSZOPOEPFDPLRM<br>NCDF | RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2PLRMNetCDF | The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees |  |  |  |  |  |
| RBSZOPOEPNCDF           | RangeBackscatterSigmaZeroOPOceanExcludingPolarNetCDF        | The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees |  |  |  |  |  |
| RMSSGHOPONCDF           | RangeMSSGeoidHeightOPOceanNetCDF                            | #N/A   |  |  |  |  |  |
| RNELPOTONCDF            | RangeNELPOceanTideOceanNetCDF                               | The Non-equilibrium long period ocean loading tide height should be between -40mm and 40mm (or missing) for<br>surface type = ocean      |  |  |  |  |  |
| RPEPOPFDLRMNCDF         | RangePeakinessExcludingPolarOPFD2LRMNetCDF                  | The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70<br>and 70 degrees             |  |  |  |  |  |
| RPEPOPFDPLRMSAR<br>NCDF | RangePeakinessExcludingPolarOPFD2PLRMSARNetCDF              | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees               |  |  |  |  |  |
| RPEPOPFDPLRMSINN<br>CDF | RangePeakinessExcludingPolarOPFD2PLRMSINNetCDF              | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70<br>and 70 degrees            |  |  |  |  |  |
| RPEPOPFDSARNCDF         | RangePeakinessExcludingPolarOPFD2SARNetCDF                  | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees               |  |  |  |  |  |

| RPEPOPFDSINNCDF       | RangePeakinessExcludingPolarOPFD2SINNetCDF                 | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                      |
|-----------------------|--|---|
| RPEPOPLRMNCDF         | RangePeakinessExcludingPolarOPLRMNetCDF                    | The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70<br>and 70 degrees                    |
| RPEPOPSARNCDF         | RangePeakinessExcludingPolarOPSARNetCDF                    | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                      |
| RPEPOPSINNCDF         | RangePeakinessExcludingPolarOPSINNetCDF                    | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                      |
| RSSBCONCDF            | RangeSeaStateBiasCorrectionOceanNetCDF                     | The sea state bias correction should be between -500mm and 0mm (or missing) for surface type = ocean  |
| RSSHAOFDNCDF          | RangeSeaSurfaceHeightAnomalyOceanFD3NetCDF                 | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type =<br>ocean                                    |
| RSSHAOFDPLRMNCD<br>F  | RangeSeaSurfaceHeightAnomalyOceanFD3PLRMNetCDF             | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type =<br>ocean                                    |
| RSSHAONCDF            | RangeSeaSurfaceHeightAnomalyOceanNetCDF                    | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type =<br>ocean                                    |
| RSWHOEPFDNCDF         | RangeSignificantWaveHeightOceanExcludingPolarFD2NetCDF     | The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for<br>latitudes between -70 and 70 degrees |
| RSWHOEPFDPLRMNC<br>DF | RangeSignificantWaveHeightOceanExcludingPolarFD2PLRMNetCDF | The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for<br>latitudes between -70 and 70 degrees |
| RSWHOEPNCDF           | RangeSignificantWaveHeightOceanExcludingPolarNetCDF        | The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for<br>latitudes between -70 and 70 degrees |
| SOOHHIFHD             | SameOrOneHigher1HzIndexFor20HzData                         | The 1 Hz index of a 20 Hz sample should be the same or 1 higher than its previous sample  |
| SCSTODHRNCDF          | SequenceCounterStepTODHRNetCDF                             | The sequence counter should be modulo 4 higher with regard to the previous sequence counter   |
| SCSTODNCDF            | SequenceCounterStepTODNetCDF                               | The sequence counter should be one higher (modulo 16384) with regard to the previous sequence counter   |
|                       |  | ·   |

## 7.3 Missing QCC Reports

Number of products with missing QCC reports:

0