

# QA4EO Daily Report for GOP data:

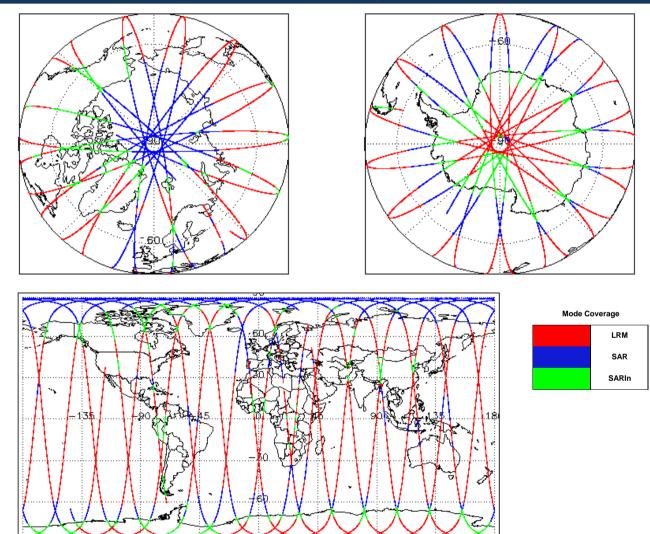
<u>29/09/2021</u>

| eport Production:          | 02-Nov-2021                      | Check                                      | L1 & L2                      | P2P             |
|----------------------------|----------------------------------|--|------------------------------|-----------------|
| report Froduction.         | 02-1100-2021                     | Server check: science-pds.cryosat.esa.int  | Nominal                      | Nominal         |
| Processor Used:            | CryoSat Ocean Processor          | Server check: calval-pds.cryosat.esa.int   | Nominal                      | Nominal         |
| Processor Used:            | CryoSal Ocean Processor          | Product Software Check                     | Nominal                      | Nominal         |
| Data Used:                 | Geophysical Ocean Products (GOP) | Product Format Check                       | Nominal                      | Nominal         |
| L1B, L2 & P2P Science Data |                                  | Product Header Analysis                    | Nominal                      | Nominal         |
|                            |                                  | Auxiliary Data File Usage Check            | Nominal                      | Nominal         |
|                            |                                  | Auxiliary Correction Error Check           | See Section 5.4              | See Section 6.4 |
|                            |                                  | Measurement Confidence Data Check          | See Section 4.5, 4.6 and 5.5 | See Section 6.5 |
|                            |                                  | Range, SWH & Backscatter Measurement Check | See Section 5.6              | See Section 6.6 |
|                            |                                  | Ocean Retracking Quality Check             | See Section 5.7              | See Section 6.7 |
|                            |                                  | QCC Error/ Warning Check                   | See Section 7.1 and 7.2      | See Section 7.2 |

1. Overview

|             | Mission / Instrument News |                 |  |
|-------------|---------------------------|-----------------|--|
|             | 28-Sep-2021               | None            |  |
| 29-Sep-2021 |                           | None            |  |
| 30-Sep-2021 |                           | Nothing planned |  |

2. Global Coverage



## 3. Instrument Configuration

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

SIRAL instrument(s) in use:

SIRAL - A

4. GOP Level 1B Data Quality Check

## 4.1 L1B Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a binary product file (.DBL). 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 11b_proc_flag_hr flag is currently set all L1B GOPR and GOPN products because the 11b_processing_quality_hr field is not correctly configured in the OSAR and 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-deter  | rmined baseline and also to check the valio    | lity of Auxiliary Data Files is correct.   |  |
| 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 problem   | is when set.   |  |
| Number of products with errors: 0   |  |  |  |
| 4.5 L1B Measurement Confidence Data Check   |  |  |  |
| CryoSat L1B data includes a measurement confidence flag for each measurement r  | ecord. The bit value of this flag indicates ar | v problems when set.   |  |
| Attitude Correction Missing: This flag is currently set in error for GOPR products d  |  |  |  |
| Number of products with errors: 1   |  |  |  |
| Broduct   | Test Failed                                    | Description  |  |
| Product<br>CS_OFFL_SIR_GOPM1B_20210929T081733_20210929T082557_C001  | Power scaling error                            | There is an error in the scaling of the L1B waveform for one or more records                                 |  |
| 4.6 L1B Waveform Group Data Check   |  |  |  |
| CryoSat L1B data includes a waveform data flag for each measurement record. The   | bit value of this flag indicates any problem   | s when set   |  |
| Loss of Echo Flag: This flag is currently set for some products over land, but this is  |  |  |  |
| Number of products with errors: 25  |  |  |  |
| Product   | Test Failed                                    | Description  |  |
| CS_OFFL_SIR_GOPM1B_20210928T235658_20210929T000128_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPM1B_20210929T023031_20210929T030619_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPM1B_20210929T042529_20210929T042659_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPM1B_20210929T063839_20210929T065312_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPM1B_20210929T082650_20210929T083026_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPM1B_20210929T094537_20210929T094600_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPM1B_20210929T174329_20210929T175844_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPN1B_20210929T045323_20210929T045443_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPN1B_20210929T045722_20210929T045838_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPN1B_20210929T081150_20210929T081701_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPN1B_20210929T090424_20210929T090706_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPN1B_20210929T130044_20210929T130133_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPN1B_20210929T144304_20210929T144542_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPN1B_20210929T180144_20210929T180400_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPN1B_20210929T193728_20210929T194233_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPN1B_20210929T225338_20210929T225754_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPR1B_20210929T030621_20210929T031324_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPR1B_20210929T044554_20210929T045215_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPR1B_20210929T053449_20210929T053608_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPR1B_20210929T062551_20210929T062748_C001<br>CS_OFFL_SIR_GOPR1B_20210929T112550_20210929T113412_C001  | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPR1B_202109291125758_20210929113412_C001  | 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_GOPR1B_202109291172005_202109291172601_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPR1B_20210929T230610_20210929T230650_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
| CS_OFFL_SIR_GOPR1B_20210929T234404_20210929T234653_C001   | Loss of Echo                                   | The tracking echo is missing for one or more records   |  |
|   |  |  |  |

## 5. GOP Level 2 Data Quality Check

### 5.1 L2 Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a binary product file (.DBL). 0

## Number of products with errors:

## 5.2 L2 Product Header Analysis

For all products, a series of pre-defined checks are performed on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain. Number of products with errors: 0

### 5.3 L2 Auxiliary Data File Usage Check

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

Number of products with errors:

### 5.4 L2 Auxiliary Correction Error Check

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

0

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

> ECMWF Meteo Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Correction, Wet Tropospheric Correction, Inverse Barometric Correction and the U-Wind and V-Wind components of the ECMWF model wind vector. This is a known anomaly (CRYO-COP-3) and will be resolved in a future IPF update. The affected products are not reported in the table below.

> Sea State Bias & Sea State Bias PLRM: The error value is currently set for products over sea ice, but this is to be expected.

> Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.

54

| Product   | Test Failed   | Description  |
|---|---|--|
| CS_OFFL_SIR_GOPM_2_20210928T235658_20210929T000128_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPM_2_20210929T174329_20210929T175844_C001 | Mean Sea Surface (1), I otal Geocentric<br>Ocean Tide (GOT), Total Geocentric<br>Ocean Tide (FES), Non-Equilibrium Long<br>Period Ocean Tide                  | There is an error with the MSS height (solution 1), the Total Geocentric<br>Ocean Tide (GOT), Total Geocentric Ocean Tide (FES) and the Non-<br>Equilibrium Long Period Ocean Tide for one or more records   |
| CS_OFFL_SIR_GOPM_2_20210929T212836_20210929T213103_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210929T003744_20210929T003906_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210929T004434_20210929T004749_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_GOPN_2_20210929T013548_20210929T013701_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210929T021714_20210929T021828_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_GOPN_2_20210929T022332_20210929T022650_C001 | Mean Sea Surtace (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean Tide<br>(FES). Non-Equilibrium Long Period | Inere is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1), Total Geocentric Ocean Tide (GOT), Total<br>Geocentric Ocean Tide (FES) and the Non-Equilibrium Long Period Ocean<br>Tide for one or more records |
| CS_OFFL_SIR_GOPN_2_20210929T035807_20210929T040044_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_GOPN_2_20210929T040237_20210929T040904_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_GOPN_2_20210929T045323_20210929T045443_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) and the Mean Dynamic Topography height (solution 1) and the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210929T053608_20210929T053942_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_GOPN_2_20210929T063236_20210929T063342_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_GOPN_2_20210929T071540_20210929T071738_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210929T081150_20210929T081701_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) and the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide height<br>(solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210929T085513_20210929T085631_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210929T103644_20210929T103839_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean Tide<br>(FES). Non-Equilibrium Long Period | Inere is an error with the MSS height (solution 1) and the Mean Uynamic<br>Topography height (solution 1), Total Geocentric Ocean Tide (GOT), Total<br>Geocentric Ocean Tide (FES) and the Non-Equilibrium Long Period Ocean<br>Tide for one or more records |
| CS_OFFL_SIR_GOPN_2_20210929T121424_20210929T121749_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_GOPN_2_20210929T131309_20210929T131644_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210929T135327_20210929T135648_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_GOPN_2_20210929T140206_20210929T140330_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210929T144304_20210929T144542_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), 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), the Total Geocentric Ocean Tide (solution 2: FES)<br>and the Non-Equilibrium Long Period Ocean Tide for one or more records                                 |
| CS_OFFL_SIR_GOPN_2_20210929T154048_20210929T154214_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_GOPN_2_20210929T162341_20210929T162444_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_GOPN_2_20210929T171803_20210929T172005_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_GOPN_2_20210929T180144_20210929T180400_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_GOPN_2_20210929T190453_20210929T190851_C001 | Mean Dynamic Topography (1), Total<br>Geocentric Ocean Tide (GOT), Total<br>Geocentric Ocean Tide (FES), Non- | There is an error with the Mean Dynamic Topography height (solution 1),<br>Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES)<br>and the Non-Equilibrium Long Period Ocean Tide for one or more records |
| CS_OFFL_SIR_GOPN_2_20210929T193728_20210929T194233_C001 | Equilibrium Long Period Ocean Tide<br>Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPN_2_20210929T203728_20210929T203941_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPN_2_20210929T211518_20210929T212056_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPN_2_20210929T225338_20210929T225754_C001 | Mean Sea Surface (1), Total Geocentric<br>Ocean Tide (GOT)  | There is an error with the MSS height (solution 1) and the Total Geocentric<br>Ocean Tide height (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210929T234653_20210929T234818_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20210929T000540_20210929T000726_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20210929T012642_20210929T013425_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_GOPR_2_20210929T013425_20210929T013548_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_GOPR_2_20210929T014150_20210929T014343_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20210929T030621_20210929T031324_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_GOPR_2_20210929T031324_20210929T031645_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the GPD Wet Tropospheric correction, the MSS height (solution 1) and tidal corrections for one or more records   |
| CS_OFFL_SIR_GOPR_2_20210929T044554_20210929T045215_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_GOPR_2_20210929T045215_20210929T045323_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_GOPR_2_20210929T053449_20210929T053608_C001 | Mean Sea Surface (1)  | There is an error with the MSS height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20210929T062551_20210929T062748_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20210929T062908_20210929T063236_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_GOPR_2_20210929T074935_20210929T075106_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20210929T080614_20210929T081150_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_GOPR_2_20210929T094706_20210929T095210_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_GOPR_2_20210929T112551_20210929T113412_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_GOPR_2_20210929T130504_20210929T131309_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_GOPR_2_20210929T143419_20210929T143751_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20210929T144542_20210929T145338_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_GOPR_2_20210929T162445_20210929T163208_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_GOPR_2_20210929T180400_20210929T181101_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_GOPR_2_20210929T194233_20210929T194755_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_GOPR_2_20210929T212056_20210929T212836_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_GOPR_2_20210929T225754_20210929T230535_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   |

## 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.

1

| Product   | Test Failed         | Description   |
|---|---------------------|---|
| CS_OFFL_SIR_GOPM_2_20210929T081733_20210929T082557_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |

## 5.6 L2 Measurement Quality Flag Check

#### L2 Quality Flags (20Hz)

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

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

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

91

> OCOG Altimeter Range and Backscatter Quality Flags: These flags are currently set for some records over continental ice.

| Product   | Test Failed  | Description  |
|---|--|--|
| CS_OFFL_SIR_GOPM_2_20210929T002100_20210929T002802_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_GOPM_2_20210929T003053_20210929T003215_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T003906_20210929T004434_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_GOPM_2_20210929T005158_20210929T011519_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T011521_20210929T012642_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T013701_20210929T013911_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T015641_20210929T021259_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T021828_20210929T022332_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_GOPM_2_20210929T023031_20210929T030619_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T032812_20210929T035108_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T040044_20210929T040237_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_GOPM_2_20210929T041032_20210929T042130_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T042221_20210929T042446_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T043140_20210929T044554_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T045838_20210929T051549_C001 |  | 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_GOPM_2_20210929T051754_20210929T053212_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T054241_20210929T054652_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_GOPM_2_20210929T054931_20210929T060106_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T060217_20210929T060405_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T060637_20210929T061527_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T063527_20210929T063710_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T063839_20210929T065312_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T070014_20210929T071304_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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. |

| 30 1011 - Bit CORV 2 3270200000000000000000000000000000000   |   |   |  |
|--|---|---|--|
| CG, OFFL, SH, OOPL J, SOT INSTITUTE (LIGE YOUT HAD, COT)         Carl Backward, Color Annuel Andre, Sotti, Sot               | CS_OFFL_SIR_GOPM_2_20210929T071738_20210929T072555_C001 |   |  |
| QL ONL_SPL COMPLEX_DOUBLE_TOTAL_COMPAND_COM       and basedone Cubing web basedone Cub                       | CS_OFFL_SIR_GOPM_2_20210929T072916_20210929T074432_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Colume Call         Decision Call         Decision Call         Decision Call         Decision Call           Colume Call  | CS_OFFL_SIR_GOPM_2_20210929T074724_20210929T074935_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Column Column         Column Column         Column Column         Terror or mice record.           Column Column         Column Annual Rugs, SBM, SMM, SMM, SMM, SMM, SMM, SMM, SMM  | CS_OFFL_SIR_GOPM_2_20210929T075133_20210929T075241_C001 |   |  |
| <ul> <li>CS, OFFL, SR, GOPML2, 322 100211028050, 2021102911182597, 2001</li> <li>CS, OFFL, SR, GOPML2, 322 1002110281050, 2021102911182597, 2001</li> <li>CS, OFFL, SR, GOPML2, 322 10021102810, 2021102911182597, 2001</li> <li>CS, OFFL, SR, GOPML2, 322 10021102810, 322 100211182597, 2001</li> <li>CS, OFFL, SR, GOPML2, 322 10021102810, 322 100211182597, 2001</li> <li>CS, OFFL, SR, GOPML2, 322 10021102810, 322 100211182597, 2001</li> <li>COGA Altheuter Range SMA, SWH and Backsatter Gualary Flags have been ast the rest of the res</li></ul> | CS_OFFL_SIR_GOPM_2_20210929T075759_20210929T075953_C001 |   |  |
| CBL_OFFL_SRL_GOML2_302100287108008_0221022108008_C000         Immed Backstater Coulty, COOQ Atment and ECCOR Atments Frage and Backstater Coulty Flags Have been at the root and month.           CBL_OFFL_SRL_GOML2_302100297108008_202100297108008_000         Coor Atments Range, SB4, WM, The Coor Atments Frage and Backstater Coulty Flags Have been at the root and month.           CBL_OFFL_SRL_GOML2_302100297108008_202100297108008_000         Coor Atments Range, SB4, WM, The Coor Atments Frage and Backstater Coulty Flags Have been at the root and month.           CBL_OFFL_SRL_GOML2_302100297108008_202100297108008_000         Coor Atments Range, SB4, WM, The Coor Atments Frage and Backstater Coulty Flags Have been at the root and month.           CBL_OFFL_SRL_GOML2_302100297108008_202100297108042_C000         Coor Atments Range, SB4, WM, The COor Atments Frage and Backstater Coulty Flags Have been at The Same Coor Atments Range, SB4, WM, The Coor Atments Frage and Backstater Coulty Flags Have been at the root and month.           CBL_OFFL_SRL_GOML2_302100297108008_202109297108022_C000         Coor Atments Range, SB4, WM, The Coora Atments Range, SB4, WM, The Goara Atments Range, SB4, WM, The Range and Backstater Coulty Flags Have been at the root and monthaneterater on antity.   | CS_OFFL_SIR_GOPM_2_20210929T081733_20210929T082557_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS_0FFL_SR_00FM_2.302109287083028_30210928705830_C001     and Baskcaster Quality, COC0 Alteres in the COC0 Alteres Reage and Backcaster Quality Flags have been set for on removals.       CS_0FFL_SR_00FM_2.302109287088501_302109287058503_C001     COC0 Alteres Reage SAL QUALITY Equation (COC) Alteres Reage SA  | CS_OFFL_SIR_GOPM_2_20210929T082650_20210929T083026_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| US 0FFL SR C0PM_2 202100201108081_000108081_0001     Bardscatter Cuality     evr ne or note monts.       C3_0FFL_SR_C0PM_2_002100201108012_00210920108042_0001     Bardscatter Cuality     The COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatter Cuality COGR Altereter Range and Backscatter Cuality Flags have been and backscatte  | CS_OFFL_SIR_GOPM_2_20210929T083029_20210929T085247_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CSLOPTL_SPLQUPIL_2_02110827100023_J0210927109327_0001         Badscoater Quality         for one or more records.           CSLOPTL_SPL_00PL_2_0210927109023_J0210927109327_0001         Coden Almeter Range, SSHA, SWH<br>and Badscoater Quality Code Minimer<br>and the COCE Almeter Range and Badscoater Quality Page<br>and Badscoater Quality.         The OCE Almeter Range and Badscoater Quality Page<br>and the COCE Almeter Range and Badscoater Quality.           CSLOPFL_SPL_00PL_2_02100207109453_J02109271094600_0011         Range ASHA, SWH<br>and Badscoater Quality.         The OCE Almeter Range ASHA, SWH<br>and Badscoater Quality.         The OCE Almeter Range ASHA, SWH<br>and Badscoater Quality.           CSLOPFL_SPL_00PL_2_02100207109453_J021002071103126_O011         Coden Almeter Range ASHA, SWH<br>and Badscoater Quality.         The OCE Almeter Range ASHA, SWH<br>and Badscoater Quality.           CSLOPFL_SPL_00PL_2_022100207109453_J021002071103126_O011         Coden Almeter Range ASHA, SWH<br>and Badscoater Quality.         The OCE Almeter Range ASHA, SWH<br>and Badscoater Quality.           CSLOPFL_SPL_00PL_2_022100207109459_J021002071103126_O011         Coden Almeter Range.SSHA, SWH<br>and Badscoater Quality.         The OCE Almeter Range ASHA, SWH<br>and Badscoater Quality.           CSLOPFL_SPL_00PL_2_02100207113747_J02109207109460_O011         Coden Almeter Range.SSHA, SWH<br>and Badscoater Quality.         The OCE Almeter Range ASHA, SWH and Badscoater Quality Fage<br>and Badscoater Quality.           CSLOPFL_SPL_00PL_2_02100207113747_J02109207120140_O011         Coden Almeter Range.SSHA, SWH<br>and Badscoater Quality.         The OCE Almeter Range ASHA, SWH and Badscoater Quality Fage<br>and Badscoater   | CS_OFFL_SIR_GOPM_2_20210929T085631_20210929T085833_C001 |   |  |
| CEL_OFFL_SR_GOPM_2_20210227100423_022100227100420_0001       and Backsatter Quality       main Backsatter Quality         CEL_OFFL_SR_GOPM_2_20210227100437_2021002271004500_0001       Chean Altimeter Range, SSH, SWH and Exclosuter Quality Flags have been and backsatter Quality       The Ocean Altimeter Range, SSH, SWH and Exclosuter Quality Flags have been and backsatter Quality         CEL_OFFL_SR_GOPM_2_20210227100437_2021002271004500_0001       Ocean Altimeter Range, SSH, SWH and Exclosuter Quality Flags have been and backsatter Quality       The Ocean Altimeter Range, SSH, SWH and Exclosuter Quality Flags have been and backsatter Quality         CEL_OFFL_SR_GOPM_2_202100227100423_202100227100420_0001       Ocean Altimeter Range, SSH, SWH and Exclosuter Quality Flags have been and backsatter Quality       The Ocean Altimeter Range, SSH, SWH and Exclosuter Quality Flags have been and backsatter Quality         CEL_OFFL_SR_GOPM_2_2021002971103439_2021002071104405_2021002971111510_0001       Decen Altimeter Range, SSH, SWH and Exclosuter Quality Flags have been and backsatter Quality       The Ocean Altimeter Range, SSH, SWH and Exclosuter Quality Flags have been and backsatter Quality         CEL_OFFL_SR_GOPM_2_202100297113747_202100297112316_0001       Decen Altimeter Range, SSH, SWH and Exclosuter Quality Flags have been and backsatter Quality         CEL_OFFL_SR_GOPM_2_202100297113747_202100297112316_0001       Decen Altimeter Range, SSH, SWH and Exclosuter Quality Flags have been set for on or noe crods.         CEL_OFFL_SR_GOPM_2_202109297113747_20210929712316_0001       Decen Altimeter Range, SSH, SWH and Exclosuter Quality Flags have been set for on or noe crods.  | CS_OFFL_SIR_GOPM_2_20210929T085913_20210929T090424_C001 |   |  |
| CS. OFFL_SIR_GOPM_2_2021029110423_20210929110423_0210929110128_0001       and the COCA Alterneter Range and Backscatter Quality       The COCA Alterneter Range and Backscatter Quality         CS. OFFL_SIR_GOPM_2_20210929110423_20210929110423_0210929110128_0001       Cocan Alterneter Range SIMA_SVML       The COCA Alterneter Range and Backscatter Quality         CS. OFFL_SIR_GOPM_2_20210929110423_0210929110443_C001       Cocan Alterneter Range Quality       The COCAG Alterneter Range and Backscatter Quality         CS. OFFL_SIR_GOPM_2_202109291104805_20210929110443_C001       Cocon Alterneter Range Quality, COCG Alterneter Range and Backscatter Quality       The COCAG Alterneter Range and Backscatter Quality         CS_OFFL_SIR_GOPM_2_202109291104805_20210929111010_C001       Cocan Alterneter Range Quality, COCG Alterneter Range, SSHA_SVML and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_2021092911104805_20210929112949_C001       Cocan Alterneter Range, SSHA_SVML and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929112749_202109291122915_C001       Cocan Alterneter Range, SSHA_SVML and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929112749_202109291122915_C001       Cocan Alterneter Range, SSHA_SVML and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929112749_20210929112915_C001       Cocan Alterneter Range, SSHA_SVML and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929113013_20210929113050   | CS_OFFL_SIR_GOPM_2_20210929T090929_20210929T093227_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS. DFRL_SIR_GOPM 2.20210929T104432.20210929T104443_C001       and Backscatter Quality.COCG Attimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM 2.20210929T104805_20210929T11010_C001       COCG Attimeter Range Quality.COCG Backscatter Quality.COCG Backscatter Quality.Flags have been set for one or more records.         CS_OFFL_SIR_GOPM 2.20210929T104805_20210929T11010_C001       COCG Attimeter Range SIA4, SWH and Backscatter Quality.Flags have been set for one or more records.         CS_OFFL_SIR_GOPM 2.20210929T104805_20210929T11010_C001       Cocan Attimeter Range Attimet  | CS_OFFL_SIR_GOPM_2_20210929T094537_20210929T094600_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS_DFFL_SR_GOPM_2_20210929T104805_20210929T11510_C001       Backscatter Quality       for one or more records.         CS_OFFL_SR_GOPM_2_20210929T104805_20210929T111510_C001       Ocean Altimeter Range, SSHA, SWH       mard backscatter Quality       SSHA, SWH         CS_OFFL_SR_GOPM_2_20210929T113747_20210929T120149_C001       CSean Altimeter Range, SSHA, SWH       mard backscatter Quality       The OCEOA Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SR_GOPM_2_20210929T121749_20210929T12215_C001       CCGO Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.       The OCEOA Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SR_GOPM_2_20210929T120152_010209T12215_C0011       CCGO Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.       The OCEOA Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SR_GOPM_2_20210929T13013_20210929T130504_C001       CCGa Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.       The OCEAA Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SR_GOPM_2_20210929T130504_C001       CCGA Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SR_GOPM_2_20210929T13   | CS_OFFL_SIR_GOPM_2_20210929T100423_20210929T103126_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS_OFFL_SIR_GOPM_2_20210829T104805_20210929T113101_C001       nand Backscatter Quality       CGG Allimeter Range and Backscatter Quality       Figure Core         CS_OFFL_SIR_GOPM_2_20210829T113747_20210829T1120449_C001       CGean Allimeter Range, SSHA, SWH and Backscatter Quality       The Ocean Allimeter Range, SSHA, SWH and Backscatter Quality       The Ocean Allimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210829T122724_20210829T122735_C001       CCGG Allimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.       The Ocean Allimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210829T122724_20210929T122735_C001       Ocean Allimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210829T13013_20210929T130504_C001       Ocean Allimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210829T131544_20210829T132551_C001       Ocean Allimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210829T132855_20210829T134858_C001       Ocean Allimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210829T132855_20210929T132855_C001       Ocean Allimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210829T132854_20210929T132855_C001       Ocean A  | CS_OFFL_SIR_GOPM_2_20210929T103839_20210929T104443_C001 |   |  |
| CS_OFFL_SIR_GOPM_2_20210929T120949_C001       and Backscatter Quality. COCG Allimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T121749_20210929T122315_C001       CoCG Allimeter Range Quality, COCG Allimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T122724_20210929T122310_C001       CocG Allimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T122724_20210929T123107_C001       Cocan Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T130133_20210929T130504_C001       Cocan Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T131644_20210929T132551_C001       Cocan Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T132635_20210929T132651_C001       Cocan Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T132648_20210929T132654_C001       Cocan Altimeter Range Quality, OCCG       The OCCG Altimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T132648_20210929T132654_C001       Cocan Altimeter Range Quality, OCCG       The OCCG Altimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T142643_C001       <  | CS_OFFL_SIR_GOPM_2_20210929T104805_20210929T111510_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS_OFFL_SIR_GOPM_2_20210929T122724_20210929T123107_C001       Backscatter Quality       for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T122724_20210929T123107_C001       Docean Altimeter Range, SSHA, SWH and Backscatter Quality CoCG Altimeter Range and Backscatter Quality CoCG Altimeter Range and Backscatter Quality CoCG Altimeter Range, SSHA, SWH and Backscatter Quality CoCG Altimeter Range and Backscatter Quality CoCG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T132655_02010       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T132635_0210929T132655_02010       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T132635_0210929T132635_0210929T132635_0210929T132635_0210929T132635_0210929T132635_0210929T132635_0210929T132635_0210929T132635_0210929T135754_C001       OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T140735_0210929T142243_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.       The OCCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or   | CS_OFFL_SIR_GOPM_2_20210929T113747_20210929T120949_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS_OFFL_SIR_GOPM_2_20210929T122724_20210929T123107_C001       and Backscatter Quality, CCG Altimeter Range and Backscatter Quality Flags have been Range and Backscatter Quality CCG Altimeter Range, SSHA, SWH       The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been Range and Backscatter Quality CCG Altimeter Range, SSHA, SWH         CS_OFFL_SIR_GOPM_2_20210929T131644_20210929T132551_C001       Ocean Altimeter Range, SSHA, SWH       The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been Range and Backscatter Quality Flags  | CS_OFFL_SIR_GOPM_2_20210929T121749_20210929T122315_C001 |   |  |
| CS_OFFL_SIR_GOPM_2_20210929T130133_20210929T130504_C001       and Backscatter Quality, OCGG Altimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T131644_20210929T132551_C001       Ccean Altimeter Range, SSHA, SWH and Backscatter Quality and Backscatter Quality CGG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T132835_20210929T132835_C001       Ccean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T132835_20210929T134958_C001       Ccean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T135648_20210929T135754_C001       Ccean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T145648_20210929T142343_C001       CCGG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T142243_C001       Coean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T144227_C001       Coean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T144227_C001       Ccean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T144227_C001   | CS_OFFL_SIR_GOPM_2_20210929T122724_20210929T123107_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS_OFFL_SIR_GOPM_2_20210929T131644_20210929T132551_C001       and Backscatter Quality       and Backscatter Quality       and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T132835_20210929T134958_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T132636_20210929T135754_C001       OCGG Altimeter Range Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T135648_20210929T135754_C001       OCOG Altimeter Range Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T140735_20210929T142343_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T140735_20210929T142343_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T144227_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T145338_20210929T152843_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T145338_20210929T152843_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T145338_2021092   | CS_OFFL_SIR_GOPM_2_20210929T130133_20210929T130504_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS_OFFL_SIR_GOPM_2_20210929T132835_20210929T132835_20210929T132835_20210929T132835_20210929T132835_20210929T132835_20210929T132835_20210929T132835_20210929T135754_C001       and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T135648_20210929T135754_C001       OCOG Altimeter Range Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T140735_20210929T142343_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T1442343_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T144227_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T144227_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T152843_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T145338_20210929T152843_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T145338_20210929T152843_C001       Ocean Altimeter Range Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records. <td>CS_OFFL_SIR_GOPM_2_20210929T131644_20210929T132551_C001</td> <td>and Backscatter Quality, OCOG Altimeter</td> <td>and the OCOG Altimeter Range and Backscatter Quality Flags have been</td>   | CS_OFFL_SIR_GOPM_2_20210929T131644_20210929T132551_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS_OFFL_SIR_GOPM_2_20210929T143664_20210929T1436764_C001       Backscatter Quality       for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T140735_20210929T142343_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags are been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T144227_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and Backscatter Quality.         CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T144227_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and Backscatter Quality, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags ande Backscatter Quality Flags and Backscatter  | CS_OFFL_SIR_GOPM_2_20210929T132835_20210929T134958_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS_OFFL_SIR_GOPM_2_20210929T140735_20210929T142343_C001       and Backscatter Quality, OCOG Altimeter<br>Range and Backscatter Quality       and Backscatter Quality, OCOG Altimeter<br>Range and Backscatter Quality       and Backscatter Quality       and the OCOG Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>Range and Backscatter Quality, OCOG Altimeter<br>Range and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH<br>and the OCOG Altimeter<br>Range and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH<br>and the OCOG Altimeter<br>Range and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH<br>and the OCOG Altimeter<br>Range and Backscatter Quality         CS_OFFL_SIR_GOPM_2_20210929T145338_20210929T152843_C001       Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>Range and Backscatter Quality, OCOG Altimeter Range, and Backscatter Quality Flags have been set<br>for one or more records.   | CS_OFFL_SIR_GOPM_2_20210929T135648_20210929T135754_C001 |   |  |
| CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T144227_C001       and Backscatter Quality, OCOG Altimeter       and the OCOG Altimeter Range and Backscatter Quality         CS_OFFL_SIR_GOPM_2_20210929T145338_20210929T152843_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T145338_20210929T152843_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T145338_20210929T152843_C001       OCEAN Altimeter Range Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPM_2_20210929T145336_20210929T152843_C001       OCOG Altimeter Range Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.   | CS_OFFL_SIR_GOPM_2_20210929T140735_20210929T142343_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS_OFFL_SIR_GOPM_2_20210929T145338_20210929T152843_C001 and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.   | CS_OFFL_SIR_GOPM_2_20210929T144146_20210929T144227_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
|  | CS_OFFL_SIR_GOPM_2_20210929T145338_20210929T152843_C001 | and Backscatter Quality, OCOG Altimeter | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
|  | CS_OFFL_SIR_GOPM_2_20210929T153206_20210929T153652_C001 |   |  |

| CS_OFFL_SIR_GOPM_2_20210929T154753_20210929T161935_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T162113_20210929T162341_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_GOPM_2_20210929T163240_20210929T164631_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T165113_20210929T170800_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T171036_20210929T171552_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_GOPM_2_20210929T171610_20210929T171623_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_GOPM_2_20210929T172601_20210929T173858_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T174329_20210929T175844_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T175935_20210929T180120_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T182111_20210929T183008_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T183313_20210929T184647_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T185002_20210929T185504_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_GOPM_2_20210929T185528_20210929T185538_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_GOPM_2_20210929T190338_20210929T190453_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T190851_20210929T191622_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T192037_20210929T192525_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T193518_20210929T193728_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T200412_20210929T202510_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T203034_20210929T203421_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_GOPM_2_20210929T204152_20210929T210920_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T214108_20210929T220444_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T220817_20210929T221336_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_GOPM_2_20210929T221342_20210929T221709_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_GOPM_2_20210929T222101_20210929T225338_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T230650_20210929T230819_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T231723_20210929T232640_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T232645_20210929T233611_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T234008_20210929T234404_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPM_2_20210929T234818_20210929T235614_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_GOPN_2_20210929T065455_20210929T070014_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_GOPN_2_20210929T093227_20210929T093326_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_GOPN_2_20210929T131309_20210929T131644_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPN_2_20210929T171803_20210929T172005_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPN_2_20210929T181825_20210929T181922_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_GOPN_2_20210929T184814_20210929T185002_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_GOPN_2_20210929T185538_20210929T185542_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_GOPN_2_20210929T230819_20210929T230828_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPR_2_20210929T030621_20210929T031324_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPR_2_20210929T075111_20210929T075117_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_GOPR_2_20210929T130504_20210929T131309_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPR_2_20210929T154214_20210929T154753_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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_GOPR_2_20210929T174211_20210929T174329_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG Altimeter<br>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 (20Hz PLRM)

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

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

> OCOG Altimeter Range and Backscatter PLRM Quality Flags: These flags are currently set for occasional records over continental ice.

| Number of products with errors: | 107 |
|---------------------------------|-----|
|                                 |     |

| Product   | Test Failed   | Description  |
|---|---|--|
| CS_OFFL_SIR_GOPN_2_20210929T001154_20210929T001232_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_GOPN_2_20210929T001756_20210929T001901_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_GOPN_2_20210929T002009_20210929T002100_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_GOPN_2_20210929T003744_20210929T003906_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_GOPN_2_20210929T004434_20210929T004749_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_GOPN_2_20210929T013548_20210929T013701_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_GOPN_2_20210929T013911_20210929T013924_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_GOPN_2_20210929T014411_20210929T014554_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_GOPN_2_20210929T015404_20210929T015641_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_GOPN_2_20210929T040237_20210929T040904_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_GOPN_2_20210929T045323_20210929T045443_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_GOPN_2_20210929T045722_20210929T045838_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_GOPN_2_20210929T053316_20210929T053449_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_GOPN_2_20210929T053608_20210929T053942_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_GOPN_2_20210929T054652_20210929T054828_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_GOPN_2_20210929T061527_20210929T061726_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_GOPN_2_20210929T063236_20210929T063342_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_GOPN_2_20210929T063430_20210929T063523_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_GOPN_2_20210929T065455_20210929T070014_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_GOPN_2_20210929T071540_20210929T071738_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_GOPN_2_20210929T072555_20210929T072742_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_GOPN_2_20210929T075241_20210929T075628_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_GOPN_2_20210929T081150_20210929T081701_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_GOPN_2_20210929T085513_20210929T085631_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_GOPN_2_20210929T093227_20210929T093326_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_GOPN_2_20210929T093512_20210929T093528_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_GOPN_2_20210929T094646_20210929T094706_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_GOPN_2_20210929T103435_20210929T103555_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_GOPN_2_20210929T121424_20210929T121749_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_GOPN_2_20210929T122315_20210929T122433_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_GOPN_2_20210929T124336_20210929T124354_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_GOPN_2_20210929T130044_20210929T130133_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_GOPN_2_20210929T135327_20210929T135648_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_GOPN_2_20210929T142343_20210929T142709_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.  |
|   | 1   |  |

| CS_OFFL_SIR_GOPN_2_20210929T144304_20210929T144542_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_GOPN_2_20210929T153010_20210929T153206_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_GOPN_2_20210929T154048_20210929T154214_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_GOPN_2_20210929T161935_20210929T162039_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_GOPN_2_20210929T170859_20210929T171036_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_GOPN_2_20210929T171623_20210929T171627_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_GOPN_2_20210929T175844_20210929T175935_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_GOPN_2_20210929T181825_20210929T181922_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_GOPN_2_20210929T190453_20210929T190851_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_GOPN_2_20210929T191622_20210929T192037_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_GOPN_2_20210929T193728_20210929T194233_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_GOPN_2_20210929T195833_20210929T200232_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_GOPN_2_20210929T202721_20210929T203034_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_GOPN_2_20210929T203728_20210929T203941_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_GOPN_2_20210929T211518_20210929T212056_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_GOPN_2_20210929T213103_20210929T213226_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_GOPN_2_20210929T213710_20210929T213838_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_GOPN_2_20210929T220647_20210929T220817_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_GOPN_2_20210929T225338_20210929T225754_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_GOPN_2_20210929T230535_20210929T230610_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_GOPN_2_20210929T234653_20210929T234818_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_GOPR_2_20210929T000540_20210929T000726_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_GOPR_2_20210929T000839_20210929T001123_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_GOPR_2_20210929T003215_20210929T003744_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_GOPR_2_20210929T004749_20210929T005158_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_GOPR_2_20210929T012642_20210929T013425_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_GOPR_2_20210929T013425_20210929T013548_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_GOPR_2_20210929T014150_20210929T014343_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_GOPR_2_20210929T021259_20210929T021714_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_GOPR_2_20210929T022650_20210929T023031_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_GOPR_2_20210929T030621_20210929T031324_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_GOPR_2_20210929T031324_20210929T031645_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_GOPR_2_20210929T035108_20210929T035807_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_GOPR_2_20210929T042130_20210929T042221_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_GOPR_2_20210929T044554_20210929T045215_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_GOPR_2_20210929T045215_20210929T045323_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_GOPR_2_20210929T051549_20210929T051754_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_GOPR_2_20210929T062551_20210929T062748_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_GOPR_2_20210929T062908_20210929T063236_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_GOPR_2_20210929T063524_20210929T063527_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_GOPR_2_20210929T071304_20210929T071540_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_GOPR_2_20210929T072743_20210929T072916_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_GOPR_2_20210929T074433_20210929T074724_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_GOPR_2_20210929T074935_20210929T075106_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_GOPR_2_20210929T080614_20210929T081150_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_GOPR_2_20210929T085247_20210929T085513_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_GOPR_2_20210929T104612_20210929T104805_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_GOPR_2_20210929T111517_20210929T111549_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_GOPR_2_20210929T112551_20210929T113412_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_GOPR_2_20210929T120949_20210929T121424_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_GOPR_2_20210929T122433_20210929T122724_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_GOPR_2_20210929T130504_20210929T131309_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. |
|   |   |  |

|   | 1   |  |
|---|---|--|
| CS_OFFL_SIR_GOPR_2_20210929T132551_20210929T132835_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_GOPR_2_20210929T135754_20210929T135758_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_GOPR_2_20210929T140330_20210929T140735_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_GOPR_2_20210929T144542_20210929T145338_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 Hags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records.  |
| CS_OFFL_SIR_GOPR_2_20210929T152843_20210929T153010_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_GOPR_2_20210929T154214_20210929T154753_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_GOPR_2_20210929T162445_20210929T163208_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_GOPR_2_20210929T172005_20210929T172601_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_GOPR_2_20210929T173933_20210929T174146_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_GOPR_2_20210929T180400_20210929T181101_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_GOPR_2_20210929T183133_20210929T183313_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_GOPR_2_20210929T192648_20210929T192809_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_GOPR_2_20210929T194233_20210929T194755_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_GOPR_2_20210929T194811_20210929T194947_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_GOPR_2_20210929T203941_20210929T204152_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_GOPR_2_20210929T212056_20210929T212836_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_GOPR_2_20210929T220444_20210929T220647_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_GOPR_2_20210929T221832_20210929T222101_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_GOPR_2_20210929T225754_20210929T230535_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_GOPR_2_20210929T234404_20210929T234653_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_GOPR_2_20210929T235727_20210930T000202_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. |
| 12 Quality Flags (1 Hz & 1Hz DI DM)                     |   |  |

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

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

191

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

#### Number of products with errors:

## 5.8 L2 Ocean Retracking Quality Check

#### L2 Retracking Flags (20Hz)

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

Ocean Retracking Quality Flag: This flag is currently set for products over land and sea ice, but this is to be expected. The number of products with this error flag set is given below.

#### L2 Retracking Flags (20Hz, PLRM)

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

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

Number of products with errors:

## 6. GOP L2 Pole-to-Pole Data Quality Check

#### 6.1 P2P 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:

#### 6.2 P2P Product Header Analysis

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

Number of products with errors:

### 6.3 P2P Auxiliary Data File Usage Check

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

Number of products with errors:

#### 6.4 P2P Auxiliary Correction Error Check

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

133

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

> ECMWF Meteo Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Correction, Wet Tropospheric Correction, Inverse Barometric Correction and the U-Wind and V-Wind components of the ECMWF model wind vector. This is a known anomaly (CRYO-COP-3) and will be resolved in a future IPF update. The affected products are not reported in the table below.

> Sea State Bias & Sea State Bias PLRM: The error value is currently set for products over sea ice, but this is to be expected.

> Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.

29

| Product  | Test Failed   | Description   |
|--|---|---|
| CS_OFFL_SIR_GOP_2_20210928T235404_20210929T004343_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography height for one or<br>more records  |
| CS_OFFL_SIR_GOP_2_20210929T004343_20210929T013319_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_GOP_220210929T013319_20210929T022257_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_GOP_2_20210929T022257_20210929T031233_C001 | Mean Sea Surrace (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean Tide<br>(FES). Non-Equilibrium Long Period | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1), the Total Geocentric Ocean Tide height<br>(solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height<br>for one or more records |
| CS_OFFL_SIR_GOP_220210929T031233_20210929T040212_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_GOP_2_20210929T040212_20210929T045148_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_GOP_2_20210929T045148_20210929T054126_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) and the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide height<br>(solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOP_2_20210929T054126_20210929T063103_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_GOP_2_20210929T063103_20210929T072041_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_GOP_2_20210929T072041_20210929T081017_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_GOP_2_20210929T081017_20210929T085956_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) and the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide height<br>(solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOP_220210929T085956_20210929T094932_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_GOP_2_20210929T094932_20210929T103911_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean Tide<br>(FES) Non-Equilibrium Long Period  | Inere is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1), the Total Geocentric Ocean Tide height<br>(solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height<br>for one or more records |
| CS_OFFL_SIR_GOP_2_20210929T103911_20210929T112847_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_GOP_2_20210929T112847_20210929T121825_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_GOP_2_20210929T121825_20210929T130801_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_GOP_220210929T130801_20210929T135740_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_GOP_2_20210929T135740_20210929T144716_C001 | Mean Sea Surace (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide                          | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1), the Total Geocentric Ocean Tide height<br>(solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height<br>for one or more records |
| CS_OFFL_SIR_GOP_2_20210929T144716_20210929T153655_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_GOP_2_20210929T153655_20210929T162631_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_GOP_220210929T162631_20210929T171609_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_GOP_220210929T171609_20210929T180545_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean Tide<br>(FES). Non-Equilibrium Long Period | I here is an error with the MSS height (solution 1) and the Mean Uynamic<br>Topography height (solution 1), the Total Geocentric Ocean Tide height<br>(solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height<br>for one or more records |
| CS_OFFL_SIR_GOP_220210929T180545_20210929T185524_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_GOP_220210929T185524_20210929T194500_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean Tide<br>(FES). Non-Equilibrium Long Period | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1), the Total Geocentric Ocean Tide height<br>(solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height<br>for one or more records  |
| CS_OFFL_SIR_GOP_220210929T194500_20210929T203439_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_GOP_220210929T203439_20210929T212415_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_GOP_220210929T212415_20210929T221353_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_GOP_220210929T221353_20210929T230329_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) and the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide height<br>(solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOP_220210929T230329_20210929T235308_C002 | 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  |
| C C DOD Macaurament Confidence Date Obeck             |   |  |

## 6.5 P2P Measurement Confidence Data Check

CryoSat P2P 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_GOP_2_20210929T081017_20210929T085956_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |

## 6.6 P2P Measurement Quality Flag Check

#### P2P Quality Flags (20Hz)

CryoSat P2P data includes Quality Flags for each 20 Hz, 20 Hz PLRM and 1 Hz measurement record, copied from the corresponding L2 products.

Since the P2P Quality Flags are copied directly from the L2 Quality Flags, please see Section 5.6 for the full list of products affected.

1

| Since the FZF quality Flags are copied un   | ectly from the L2 quality ridgs, please see Section 3.0 for the full list of products an ected.                           |
|---|---|
| Number of products with errors:             | 29  |
| P2P Quality Flags (20Hz PLRM)               |   |
| Since the P2P Quality Flags are copied dir  | rectly from the L2 Quality Flags, please see Section 5.6 for the full list of products affected.                          |
| Number of products with errors:             | 30  |
| P2P Quality Flags (1 Hz & 1Hz PL            | RM)   |
| Since the P2P Quality Flags are copied dir  | rectly from the L2 Quality Flags, please see Section 5.6 for the full list of products affected.                          |
| Number of products with errors:             | 30  |
| 6.8 P2P Ocean Retracking Qua                | lity Check  |
| P2P Retracking Flags (20Hz)                 |   |
| Cryosat P2P data includes an ocean retracki | ng quality flag (field 19) for each 20-Hz measurement record. The bit value of this flag indicates any problems when set. |
| Ocean Retracking Quality Flag (PLRM): Th    | nis flag is currently set for products GOPR and GOPN products over sea ice, but this is to be expected.                   |
| Number of products with errors:             | 28  |

#### P2P Retracking Flags 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 GOPR and GOPN products over sea ice, but this is to be expected.

30

#### Number of products with errors:

## 7. GOP 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_GOPM1B   | 160          | 160             | 3         | 157          | 0          |
| SIR_GOPR1B   | 98           | 98              | 0         | 98           | 0          |
| SIR_GOPN1B   | 100          | 100             | 1         | 99           | 0          |
| SIR_GOPM_2   | 160          | 160             | 101       | 59           | 0          |
| SIR_GOPR_2   | 98           | 98              | 26        | 71           | 1          |
| SIR_GOPN_2   | 100          | 100             | 39        | 61           | 0          |
| SIR_GOP_P2P  | 29           | 29              | 0         | 29           | 0          |

### 7.1 QCC Errors

#### Number of QCC reports with errors

| Number of QCC                             | Number of QCC reports with errors: |                    |            |   |                   |      |   |   |   |   |   |
|---|------------------------------------|--------------------|------------|---|-------------------|------|---|---|---|---|---|
| Total number of occurrences of each error |                                    |                    |            |   |                   |      |   |   |   |   |   |
| Product Type                              | RLOBOPNCDF                         | RL                 | RLOBOPNCDF | RL  | -                 | -    | - | - | - | - | - |
| SIR_GOPR_2                                | 1                                  | 1                  | 1          | 1   |                   |      |   |   |   |   |   |
|   |                                    |                    |            |   |                   |      |   |   |   |   |   |
| Product Type                              | -                                  | -                  | -          | -   | -                 | -    | - | - | - | - | - |
| 0   |                                    |                    |            |   |                   |      |   |   |   |   |   |
|   |                                    |                    |            |   |                   |      |   |   |   |   |   |
| Test Description Key:                     |                                    |                    |            |   |                   |      |   |   |   |   |   |
| Abbreviation                              | Test na                            | Ime Details        |            |   |                   |      |   |   |   |   |   |
| RLOBOPNCDF                                | RangeLa                            | atitudeOrBlankOP_7 | NetCDF     | Latitude should be between -90E7 and 90E7 |                   |      |   |   |   |   |   |
| RL  | RangeLa                            | atitude_7          |            | Latitude should be                        | between -90E7 and | 90E7 |   |   |   |   |   |
|   |                                    |                    |            |   |                   |      |   |   |   |   |   |

| RL RangeLongitude_7 Longitude should be between -180E7 and 180E7 |  |
|--|--|

7.2 QCC Warnings

| Product Type               | BCSHNCDF      | IOHHMOOR            | MVIOEPFDNCDF      | ber of occurrences of<br>MVIOEPNCDF | MVIONCDF             | RBSZOPOEPFDNCDF    | RBSZOPOEPFDPLRMNC |
|----------------------------|---------------|---------------------|-------------------|-------------------------------------|----------------------|--------------------|-------------------|
| SIR GOPM1B                 | 157           | 0                   | 0                 | 0                                   | 0                    | 0                  | 0                 |
| SIR_GOPM_2                 | 0             | 0                   | 42                | 47                                  | 1                    | 39                 | 0                 |
| SIR GOPN1B                 | 97            | 0                   | 0                 | 0                                   | 0                    | 0                  | 0                 |
| SIR_GOPN_2                 | 0             | 0                   | 11                | 32                                  | 7                    | 24                 | 28                |
| SIR GOPR1B                 | 96            | 0                   | 0                 | 0                                   | 0                    | 0                  | 0                 |
| SIR_GOPR_2                 | 0             | 1                   | 42                | 39                                  | 0                    | 39                 | 35                |
|                            | -             |                     |                   |                                     |                      |                    |                   |
| Product Type               | RBSZOPOEPNCDF | RNELPOTONCDF        | RPEPOPFDLRMNCDF   | RPEPOPFDPLRMSARN                    | CD RPEPOPFDPLRMSINNC | OF RPEPOPFDSARNCDF | RPEPOPFDSINNCDF   |
| SIR GOPM1B                 | 0             | 0                   | 0                 | 0                                   | 0                    | 0                  | 0                 |
| SIR GOPM 2                 | 31            | 1                   | 40                | 0                                   | 0                    | 0                  | 0                 |
| SIR_GOPN1B                 | 0             | 0                   | 0                 | 0                                   | 0                    | 0                  | 0                 |
| SIR GOPN 2                 | 21            | 0                   | 0                 | 0                                   | 23                   | 0                  | 35                |
| SIR GOPR1B                 | 0             | 0                   | 0                 | 0                                   | 0                    | 0                  | 0                 |
| SIR_GOPR_2                 | 23            | 0                   | 0                 | 46                                  | 0                    | 52                 | 0                 |
|                            | - I -         | -                   |                   | 1 -                                 |                      | 1                  |                   |
| Product Type               | RPEPOPLRMNCDF | RPEPOPSARNCDF       | RPEPOPSINNCDF     | RSSBCONCDF                          | RSSHAOFDNCDF         | RSSHAOFDPLRMNCDF   | RSSHAONCDF        |
| SIR_GOPM1B                 | 0             | 0                   | 0                 | 0                                   | 0                    | 0                  | 0                 |
| SIR_GOPM_2                 | 31            | 0                   | 0                 | 8                                   | 28                   | 0                  | 3                 |
| SIR_GOPN1B                 | 0             | 0                   | 0                 | 0                                   | 0                    | 0                  | 0                 |
| SIR_GOPN_2                 | 0             | 0                   | 29                | 18                                  | 49                   | 52                 | 29                |
| SIR_GOPR1B                 | 0             | 0                   | 0                 | 0                                   | 0                    | 0                  | 0                 |
| SIR_GOPR_2                 | 0             | 46                  | 0                 | 0                                   | 66                   | 42                 | 20                |
|                            |               |                     |                   |                                     | 1                    | 4                  |                   |
| Product Type               | RSWHOEPFDNCDF | RSWHOEPFDPLRMNCDF   | RSWHOEPNCDF       | SPHRTASCNSNCDF                      | SOOHHIFHD            | SCSTODHRNCDF       | SCSTODNCDF        |
| SIR_GOPM1B                 | 0             | 0                   | 0                 | 0                                   | 0                    | 0                  | 0                 |
| SIR_GOPM_2                 | 36            | 0                   | 3                 | 0                                   | 0                    | 0                  | 0                 |
| SIR_GOPN1B                 | 0             | 0                   | 0                 | 1                                   | 0                    | 47                 | 1                 |
| SIR_GOPN_2                 | 30            | 31                  | 14                | 0                                   | 1                    | 0                  | 0                 |
| SIR_GOPR1B                 | 0             | 0                   | 0                 | 0                                   | 0                    | 98                 | 4                 |
| SIR_GOPR_2                 | 41            | 47                  | 0                 | 0                                   | 5                    | 0                  | 0                 |
|                            |               |                     |                   |                                     |                      |                    |                   |
| Product Type               | IOHHMOOR      | MVIOEPFDNCDF        | MVIOEPNCDF        | MVIONCDF                            | RBSZOPOEPFDNCDF      | RBSZOPOEPFDPLRMNC  | DRBSZOPOEPNCDF    |
| SIR_GOP_2_                 | 13            | 29                  | 29                | 8                                   | 29                   | 18                 | 28                |
|                            |               |                     |                   |                                     |                      |                    |                   |
| Product Type               | RNELPOTONCDF  | RPEPOPFDPLRMSINNCD  | FRPEPOPFDSINNCDF  | RPEPOPSINNCDF                       | RSSBCONCDF           | RSSHAOFDNCDF       | RSSHAOFDPLRMNCDF  |
| SIR_GOP_2_                 | 1             | 17                  | 28                | 24                                  | 20                   | 29                 | 19                |
|                            |               |                     |                   |                                     |                      |                    |                   |
|                            |               |                     | <b>D</b>          |                                     |                      |                    |                   |
| Product Type<br>SIR_GOP_2_ | RSSHAONCDF    | RSWHOEPFDNCDF<br>29 | RSWHOEPFDPLRMNCDF | RSWHOEPNCDF                         | SPHLPQWNCDF<br>29    | -                  | •                 |

| Test 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<br>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        |
| 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 and<br>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 and<br>70 degrees                   |
| RPEPOPFDSARNCDF         | RangePeakinessExcludingPolarOPFD2SARNetCDF                  | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and<br>70 degrees                   |
| RPEPOPFDSINNCDF         | RangePeakinessExcludingPolarOPFD2SINNetCDF                  | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and<br>70 degrees                   |
| RPEPOPLRMNCDF           | RangePeakinessExcludingPolarOPLRMNetCDF                     | The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                       |
| RPEPOPSARNCDF           | RangePeakinessExcludingPolarOPSARNetCDF                     | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and<br>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 = ocean                                       |
| RSSHAOFDPLRMNCD<br>F    | RangeSeaSurfaceHeightAnomalyOceanFD3PLRMNetCDF              | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean                                       |
| RSSHAONCDF              | RangeSeaSurfaceHeightAnomalyOceanNetCDF                     | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = 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 |
| SPHRTASCNSNCDF          | SPH_Rel_Time_ASC_Node_Start_v2_NetCDF                       | Rel_Time_ASC_Node_Start mismatch (DBL ASC, rounded up to 0.1)   |
| 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 |  |  |  |