

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

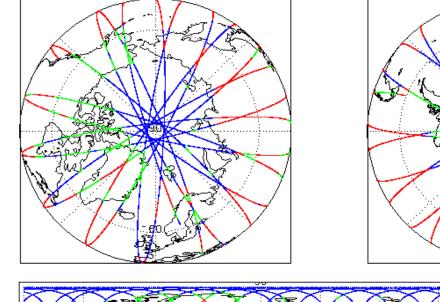
<u>19/02/2021</u>

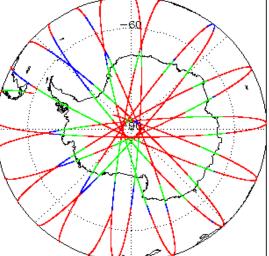
|                    | 22 Mar 2021                      | Check                                      | L1 & L2                      | P2P                    |
|--------------------|----------------------------------|--|------------------------------|------------------------|
| Report Production: | 23-Mar-2021                      | Server check: science-pds.cryosat.esa.int  | Nominal                      | Nominal                |
| <b>.</b>           | CryoSat Ocean Processor          | Server check: calval-pds.cryosat.esa.int   | Nominal                      | Nominal                |
| Processor Used:    |                                  | 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 7.1 and 7. |

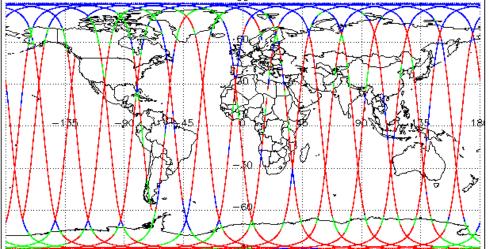
1. Overview

| Mission / Instru | Mission / Instrument News |  |  |
|------------------|---------------------------|--|--|
| 18-Feb-2021      | None                      |  |  |
| 19-Feb-2021      | None                      |  |  |
| 20-Feb-2021      | Nothing planned           |  |  |













## 3. Instrument Configuration

SIRAL instrument(s) in use:

SIRAL - A

0

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

# 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:

| 1.0.1.4.D. Das dassé literatura é a service  |   |   |  |  |
|--|---|---|--|--|
| 4.2 L1B Product Header Analysis  |   |   |  |  |
| For all products, a series of pre-defined checks are performed on the MPH and L1B Processing Quality HR: The I1b_proc_flag_hr flag is currently set all L1E OSARIn chains. A modification is required in the next release. Number of products with errors: 0 |   | istencies and/or errors raised by the ground-segment processing chain.<br>se the I1b_processing_quality_hr field is not correctly configured in the OSAR and    |  |  |
|  |   |   |  |  |
| 4.3 L1B Auxilary Data File Usage Check   |   |   |  |  |
| Each product is checked for missing Data Set Descriptors with respect to a pre<br>Number of products with errors: 0  | e-determined baseline and also to ch    | neck the validity of Auxiliary Data Files is correct.   |  |  |
| 4.4 L1B Auxiliary Correction Error Check   |   |   |  |  |
| CryoSat L1B data includes a correction error flag for each measurement recorr  | d. The bit value of this flag indicates | any problems when set.  |  |  |
| Number of products with errors: 0  | 5                                       |   |  |  |
| 4.5 L1B Measurement Confidence Data Check  |   |   |  |  |
| CryoSat L1B data includes a measurement confidence flag for each measurem<br>Attitude Correction Missing: This flag is currently set in error for GOPR prod<br>Number of products with errors: 1   | -                                       |   |  |  |
| Product  | Test Failed                             | Description   |  |  |
| CS_OFFL_SIR_GOPM1B_20210219T165228_20210219T170414_C001  | Power scaling error                     | There is an error in the scaling of the L1B waveform for one or more<br>records   |  |  |
| 4.6.L.4.B. Wayefarm Crayer Data Chaok  |   |   |  |  |
| 4.6 L1B Waveform Group Data Check  |   |   |  |  |
| CryoSat L1B data includes a waveform data flag for each measurement record<br>Loss of Echo Flag: This flag is currently set for some products over land, but   | -                                       | any problems when set.  |  |  |
| Number of products with errors: 13   |   |   |  |  |
| Product  | Test Failed                             | Description   |  |  |
| CS_OFFL_SIR_GOPN1B_20210219T000048_20210219T000135_C001  | Loss of Echo                            | The tracking echo is missing for one or more records  |  |  |
| CS_OFFL_SIR_GOPN1B_20210219T063719_20210219T064230_C001<br>CS_OFFL_SIR_GOPN1B_20210219T091703_20210219T091825_C001   | Loss of Echo<br>Loss of Echo            | The tracking echo is missing for one or more records<br>The tracking echo is missing for one or more records  |  |  |
| CS_OFFL_SIR_GOPN1B_20210219T141200_20210219T141711_C001  | Loss of Echo                            | The tracking echo is missing for one or more records  |  |  |
| CS_OFFL_SIR_GOPN1B_20210219T150305_20210219T150651_C001  | Loss of Echo                            | The tracking echo is missing for one or more records  |  |  |
| CS_OFFL_SIR_GOPN1B_20210219T172137_20210219T172748_C001  | Loss of Echo                            | The tracking echo is missing for one or more records  |  |  |
| CS_OFFL_SIR_GOPN1B_20210219T182121_20210219T182334_C001  | Loss of Echo                            | The tracking echo is missing for one or more records  |  |  |
| CS_OFFL_SIR_GOPN1B_20210219T200042_20210219T200527_C001  | Loss of Echo                            | The tracking echo is missing for one or more records  |  |  |
| CS_OFFL_SIR_GOPN1B_20210219T223259_20210219T223421_C001  | Loss of Echo                            | The tracking echo is missing for one or more records  |  |  |
| CS_OFFL_SIR_GOPR1B_20210219T045343_20210219T045853_C001  | Loss of Echo                            | The tracking echo is missing for one or more records  |  |  |
| CS_OFFL_SIR_GOPR1B_20210219T132838_20210219T133445_C001  | Loss of Echo                            | The tracking echo is missing for one or more records  |  |  |
| CS_OFFL_SIR_GOPR1B_20210219T171559_20210219T172039_C001  | Loss of Echo                            | The tracking echo is missing for one or more records  |  |  |
| CS_OFFL_SIR_GOPR1B_20210219T213107_20210219T214120_C001  | Loss of Echo                            | The tracking echo is missing for one or more records  |  |  |
| 5. GC  | P Level 2 Data Qual                     | ity Check   |  |  |
| 5.1 L2 Product Format Check  |   |   |  |  |
| Each product, retrieved and unpacked from the science server, is checked to e Number of products with errors: 0  | ensure it consists of both an XML he    | ader file (.HDR) and a binary product file (.DBL).  |  |  |
| 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 incons     | istencies and/or errors raised by the ground-segment processing chain   |  |  |
| Number of products with errors: 0  |   | stereies and/or errors raised by the ground-segment processing drain.   |  |  |
| 5.3 L2 Auxiliary Data File Usage Check   |   |   |  |  |
| Each product is checked for missing Data Set Descriptors with respect to a pre   | e-determined baseline and also to ch    | neck the validity of Auxiliary Data Files is correct.   |  |  |
| Number of products with errors: 0  |   |   |  |  |
| 5.4 L2 Auxiliary Correction Error Check  |   |   |  |  |
| For all products, the auxiliary corrections within the Geophysical Group are che   | ecked for the default error value (32   | 767).   |  |  |
| followed by a table highlighting any additional issues which may arise from  | om this test.                           | ected due to surface type. All common flags are summarised in the list below,   |  |  |
| > ECMWF Meteo Corrections: Currently the following corrections are not con<br>Correction and the U-Wind and V-Wind components of the ECMWF model win<br>not reported in the table below.   |   | y Tropospheric Corection, Wet Tropospheric Correction, Inverse Barometric<br>CRYO-COP-3) and will be resolved in a future IPF update. The affected products and |  |  |
| > 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 of  | over land and sea ice, but this is to b | e expected.   |  |  |
| Number of products with errors: 54   |   |   |  |  |
| Product  | Test Failed                             | Description   |  |  |

| CS_OFFL_SIR_GOPM_2_20210219T051044_20210219T051404_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
|---|---|---|
| CS_OFFL_SIR_GOPM_2_20210219T051406_20210219T051406_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPM_2_20210219T051409_20210219T051442_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPM_2_20210219T051448_20210219T051540_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPM_2_20210219T051542_20210219T051552_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPM_2_20210219T051554_20210219T051559_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPM_2_20210219T051603_20210219T051610_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPM_2_20210219T051613_20210219T051623_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPM_2_20210219T051626_20210219T051628_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPM_2_20210219T051630_20210219T051704_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPM_2_20210219T051706_20210219T051809_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPM_2_20210219T052105_20210219T052925_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPM_2_20210219T052928_20210219T053127_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPM_2_20210219T053307_20210219T054803_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPM_2_20210219T054955_20210219T055457_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPM_2_20210219T055504_20210219T055515_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPM_2_20210219T195157_20210219T195244_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records  |
| CS_OFFL_SIR_GOPM_2_20210219T204757_20210219T205219_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPN_2_20210219T001300_20210219T001531_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records  |
| CS_OFFL_SIR_GOPN_2_20210219T005321_20210219T005642_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_20210219T010200_20210219T010323_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records  |
| CS_OFFL_SIR_GOPN_2_20210219T014305_20210219T014537_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:<br>FES) and the Non-Equilibrium Long Period Ocean Tide for one or more<br>records |
| CS_OFFL_SIR_GOPN_2_20210219T024050_20210219T024208_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_20210219T032335_20210219T032440_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_20210219T041758_20210219T041958_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_20210219T050140_20210219T050355_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_20210219T051809_20210219T052104_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPN_2_20210219T054807_20210219T054955_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPN_2_20210219T060439_20210219T060926_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records  |
| CS_OFFL_SIR_GOPN_2_20210219T063719_20210219T064230_C001 | Mean Dynamic Topography (1), Total<br>Geocentric Ocean Tide (GOT)   | There is an error with the Mean Dynamic Topography (solution 1) and the<br>Total Geocentric Ocean Tide (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210219T073713_20210219T073933_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records  |
| CS_OFFL_SIR_GOPN_2_20210219T081514_20210219T082054_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_20210219T095323_20210219T095747_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_20210219T104646_20210219T104810_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records  |
| CS_OFFL_SIR_GOPN_2_20210219T105608_20210219T105720_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records  |
| CS_OFFL_SIR_GOPN_2_20210219T113525_20210219T113714_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records  |
| CS_OFFL_SIR_GOPN_2_20210219T122618_20210219T122744_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records  |
| CS_OFFL_SIR_GOPN_2_20210219T123258_20210219T123601_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the GPD Wet Tropospheric correction, the MSS<br>height (solution 1) and tidal corrections for one or more records  |
| CS_OFFL_SIR_GOPN_2_20210219T140617_20210219T140924_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_GOPN_2_20210219T141200_20210219T141711_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_GOPN_2_20210219T150305_20210219T150651_C001 | Mean Dynamic Topography (1), Total<br>Geocentric Ocean Tide (GOT)   | There is an error with the Mean Dynamic Topography (solution 1) and the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOPN_2_20210219T154638_20210219T154913_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_20210219T164150_20210219T164307_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1), Total Geocentric Ocean Tide (GOT), Tota<br>Geocentric Ocean Tide (FES) and the Non-Equilibrium Long Period Ocear<br>Tide for one or more records |
| CS_OFFL_SIR_GOPN_2_20210219T164534_20210219T164807_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<br>height (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOPN_2_20210219T172137_20210219T172748_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_GOPN_2_20210219T182121_20210219T182334_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_GOPN_2_20210219T190400_20210219T190540_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_20210219T200042_20210219T200527_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_GOPN_2_20210219T205219_20210219T205457_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_GOPN_2_20210219T222321_20210219T222711_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1), Total Geocentric Ocean Tide (GOT), Tota<br>Geocentric Ocean Tide (FES) and the Non-Equilibrium Long Period Ocean<br>Tide for one or more records |
| CS_OFFL_SIR_GOPN_2_20210219T232422_20210219T232547_C001 | Total Geocentric Ocean Tide (GOT)   | There is an error with the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20210219T000415_20210219T001300_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_20210219T014537_20210219T015320_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_20210219T032440_20210219T033154_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_20210219T045343_20210219T045853_C001 | Total Geocentric Ocean Tide (GOT)   | There is an error with the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20210219T050355_20210219T051044_C001 | GPD Wet Tropospheric Correction,<br>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 the Mean Dynamic Topography height (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20210219T053127_20210219T053307_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPR_2_20210219T054804_20210219T054807_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPR_2_20210219T055457_20210219T055504_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPR_2_20210219T064230_20210219T064753_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_20210219T064802_20210219T064852_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_20210219T073933_20210219T074021_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPR_2_20210219T082054_20210219T082222_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_20210219T082222_20210219T083005_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_20210219T095748_20210219T100530_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_20210219T113714_20210219T114353_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_20210219T114353_20210219T114658_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_20210219T131537_20210219T132253_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_20210219T132253_20210219T132506_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_20210219T132838_20210219T133445_C001 | Total Geocentric Ocean Tide (GOT)                    | There is an error with the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records                           |
| CS_OFFL_SIR_GOPR_2_20210219T145713_20210219T150150_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_20210219T150150_20210219T150305_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_20210219T163520_20210219T164028_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_20210219T164028_20210219T164150_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_20210219T181701_20210219T182121_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_20210219T195245_20210219T195252_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_20210219T195252_20210219T195620_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_20210219T195628_20210219T200042_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_20210219T213107_20210219T214120_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_20210219T230337_20210219T230447_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_20210219T231441_20210219T232228_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.

Number of products with errors:

| Product   | Test Failed         | Description   |
|---|---------------------|---|
| CS_OFFL_SIR_GOPM_2_20210219T165228_20210219T170414_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |

### 5.6 L2 Measurement Quality Flag Check

#### L2 Quality Flags (20Hz)

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

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

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

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

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|  | errors: | with | ucts | i prod | of | Number |
|--|---------|------|------|--------|----|--------|
|--|---------|------|------|--------|----|--------|

| Product   | Test Failed  | Description  |
|---|--|--|
| CS_OFFL_SIR_GOPM_2_20210219T000153_20210219T000415_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T001721_20210219T002545_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T002830_20210219T005125_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T005642_20210219T005747_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_0FFL_SIR_GOPM_2_20210219T005751_20210219T010200_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_20210219T010330_20210219T012338_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T013239_20210219T013413_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |

| CS_OFFL_SIR_GOPM_2_20210219T015536_20210219T022924_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
|--|--|--|
| CS_OFFL_SIR_GOPM_2_20210219T023208_20210219T023646_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_20210219T024252_20210219T024530_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T024748_20210219T031918_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T032056_20210219T032335_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_20210219T033919_20210219T034625_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T035403_20210219T040851_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T041028_20210219T041545_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_20210219T041620_20210219T041758_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_20210219T042602_20210219T043927_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T044141_20210219T044258_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T044335_20210219T045342_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T051626_20210219T051628_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_20210219T052105_20210219T052925_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T053307_20210219T054803_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T054955_20210219T055457_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_20210219T060926_20210219T061602_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T062041_20210219T062520_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T062804_20210219T063351_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_20210219T064853_20210219T0655331_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_20210219T065421_20210219T065431_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_20210219T070442_20210219T072714_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T073025_20210219T073415_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_20210219T074022_20210219T080815_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T084111_20210219T090643_C001  | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T090808_20210219T091330_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_20210219T091943_20210219T095323_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
|---|--|--|
| CS_OFFL_SIR_GOPM_2_20210219T101754_20210219T103630_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T104000_20210219T104631_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T104810_20210219T105608_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_20210219T105851_20210219T113315_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T121430_20210219T122614_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T122744_20210219T123258_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_20210219T123821_20210219T130113_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T130358_20210219T131331_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T132506_20210219T132535_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T132641_20210219T132837_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T134359_20210219T135004_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T135151_20210219T140519_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T140924_20210219T141200_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_20210219T141808_20210219T144852_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T144944_20210219T145011_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T150751_20210219T153935_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T155312_20210219T155613_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_20210219T155738_20210219T160147_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T160213_20210219T162633_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T164307_20210219T164534_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_20210219T164807_20210219T165001_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T165228_20210219T170414_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T172039_20210219T172137_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T172748_20210219T173028_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_20210219T173046_20210219T173515_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.   |
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| CS_OFFL_SIR_GOPM_2_20210219T173707_20210219T175202_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
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| CS_OFFL_SIR_GOPM_2_20210219T175342_20210219T175625_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T183031_20210219T183621_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T183904_20210219T184144_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T184146_20210219T190317_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T190540_20210219T191424_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_20210219T191631_20210219T194138_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T195157_20210219T195244_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T201659_20210219T204220_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T204757_20210219T205219_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_20210219T205510_20210219T212315_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T214907_20210219T222125_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T222711_20210219T223259_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_20210219T223421_20210219T224044_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T224401_20210219T225127_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20210219T225322_20210219T225818_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_20210219T232548_20210220T000047_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20210219T014305_20210219T014537_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20210219T055532_20210219T055535_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_20210219T064754_20210219T064802_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20210219T091330_20210219T091336_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_GOPN_2_20210219T115611_20210219T115729_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20210219T182909_20210219T183031_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_GOPN_2_20210219T225127_20210219T225322_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_GOPR_2_20210219T001643_20210219T001720_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20210219T013153_20210219T013238_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
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| CS_OFFL_SIR_GOPR_2_20210219T014537_20210219T015320_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_20210219T095748_20210219T100530_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20210219T104631_20210219T104645_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20210219T144853_20210219T144944_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20210219T160147_20210219T160213_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20210219T181515_20210219T181637_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |

### L2 Quality Flags (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.

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#### Number of products with errors:

| Product   | Test Failed   | Description  |
|---|---|--|
| CS_OFFL_SIR_GOPN_2_20210219T000048_20210219T000135_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_20210219T005321_20210219T005642_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_20210219T010200_20210219T010323_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_20210219T014305_20210219T014537_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_20210219T031933_20210219T032038_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_20210219T032335_20210219T032440_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_20210219T050140_20210219T050355_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_20210219T060439_20210219T060926_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_20210219T061602_20210219T062030_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_20210219T063719_20210219T064230_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_20210219T065825_20210219T070223_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_20210219T073713_20210219T073933_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_20210219T083702_20210219T083837_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_20210219T090643_20210219T090808_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_20210219T091703_20210219T091825_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_20210219T095323_20210219T095747_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_20210219T100530_20210219T100606_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_20210219T100801_20210219T100829_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality                 | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been   |
|---|---|--|
| CS_OFFL_SIR_GOPN_2_20210219T105608_20210219T105720_C001 | PLRM<br>Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | set for one or more records.<br>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_20210219T113322_20210219T113430_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_20210219T114744_20210219T114817_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_20210219T114927_20210219T115050_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_20210219T120758_20210219T120838_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_20210219T134159_20210219T134359_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_20210219T140617_20210219T140924_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_20210219T141200_20210219T141711_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_20210219T145658_20210219T145713_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_20210219T150305_20210219T150651_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_20210219T154638_20210219T154913_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_20210219T164534_20210219T164807_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_20210219T172137_20210219T172748_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_20210219T173515_20210219T173656_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_20210219T182121_20210219T182334_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_20210219T182425_20210219T182653_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_20210219T182909_20210219T183031_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_20210219T183742_20210219T183904_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_20210219T190400_20210219T190540_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_20210219T191425_20210219T191620_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_20210219T194501_20210219T194623_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_20210219T195621_20210219T195628_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_20210219T200042_20210219T200527_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_20210219T205219_20210219T205457_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_20210219T225127_20210219T225322_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_20210219T225818_20210219T225924_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_20210219T230447_20210219T230509_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_20210219T230903_20210219T231026_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_20210219T000415_20210219T001300_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_20210219T013414_20210219T013740_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_20210219T013740_20210219T014305_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_20210219T014537_20210219T015320_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_20210219T015426_20210219T015536_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_20210219T031918_20210219T031932_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_20210219T032440_20210219T033154_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_20210219T033417_20210219T033919_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_20210219T034625_20210219T035106_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_20210219T041959_20210219T042602_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_20210219T043927_20210219T044141_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_20210219T045343_20210219T045853_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_20210219T045924_20210219T045959_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_20210219T045959_20210219T050139_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_20210219T050355_20210219T051044_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_20210219T064230_20210219T064753_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_20210219T070317_20210219T070442_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_20210219T082222_20210219T083005_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_20210219T095748_20210219T100530_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_20210219T100606_20210219T100801_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_20210219T100829_20210219T101021_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_20210219T104631_20210219T104645_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_20210219T105721_20210219T105851_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_20210219T113714_20210219T114353_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been                                   |
|---|--|--|
| CS_OFFL_SIR_GOPR_2_20210219T123601_20210219T123821_C001 | PLRM<br>Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been                                   |
| CS_OFFL_SIR_GOPR_2_20210219T131537_20210219T132253_C001 | PLRM<br>Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been                                   |
| CS_OFFL_SIR_GOPR_2_20210219T132253_20210219T132506_C001 | PLRM<br>Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags   |
| CS_OFFL_SIR_GOPR_2_20210219T145011_20210219T145319_C001 | PLRM<br>OCOG Altimeter Range Quality PLRM,   | set for one or more records.<br>The OCOG Range and Backscatter Quality Flags have been set for one or  |
| CS_OFFL_SIR_GOPR_2_20210219T145533_20210219T145658_C001 | OCOG Backscatter Quality<br>Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG   | more records.<br>The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been                  |
| CS_OFFL_SIR_GOPR_2_20210219T145713_20210219T150150_C001 | Altimeter Range and Backscatter Quality<br>PLRM<br>Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | set for one or more records.<br>The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been   |
| CS_OFFL_SIR_GOPR_2_20210219T150150_20210219T150305_C001 | PLRM<br>Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality  | set for one or more records.<br>The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been   |
| CS_OFFL_SIR_GOPR_2_20210219T153936_20210219T154638_C001 | PLRM<br>Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality  | set for one or more records.<br>The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been   |
| CS_OFFL_SIR_GOPR_2_20210219T163520_20210219T164028_C001 | PLRM<br>Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality  | set for one or more records.<br>The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been   |
| CS_OFFL_SIR_GOPR_2_20210219T175711_20210219T180052_C001 | PLRM<br>OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality   | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_GOPR_2_20210219T181515_20210219T181637_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_20210219T181701_20210219T182121_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_20210219T182334_20210219T182425_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_20210219T182653_20210219T182728_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_20210219T182737_20210219T182909_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_20210219T183621_20210219T183741_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_20210219T195628_20210219T200042_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_20210219T204220_20210219T204338_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_20210219T213107_20210219T214120_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM  | set for one of more records.   |
| CS_OFFL_SIR_GOPR_2_20210219T222125_20210219T222321_C001 | Ocean Animeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality   | and the OCOG 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_20210219T230015_20210219T230240_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_20210219T231026_20210219T231059_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_20210219T231441_20210219T232228_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_20210219T232339_20210219T232353_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.  |

L2 Quality Flags (1 Hz & 1Hz PLRM)

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

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> 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.       |   |   |  |  |  |  |  |
| Number of products with errors: 60  |   |   |  |  |  |  |  |
| L2 Retracking Flags (20Hz, PLRM)  |   |   |  |  |  |  |  |
| CryoSat L2 data includes an ocean retracking quality flag for each 20-Hz PLRM m   |   |   |  |  |  |  |  |
| 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: 140   |   |   |  |  |  |  |  |
| 6. GOP L2 F   | Pole-to-Pole Data Quality   | / Check   |  |  |  |  |  |
| 6.1 P2P Product Format Check  |   |   |  |  |  |  |  |
| Each product, retrieved and unpacked from the science server, is checked to ensu  | re it consists of both an XML header file (.  | HDR) and a NetCDF product file (.nc).   |  |  |  |  |  |
| Number of products with errors: 0   |   |   |  |  |  |  |  |
| 6.2 P2P Product Header Analysis   |   |   |  |  |  |  |  |
| ·   | 111 ··································  |   |  |  |  |  |  |
| For all products, a series of pre-defined checks are performed on the MPH and SP Number of products with errors: 0  | H in order to identity any inconsistencies a  | ind/or errors raised by the ground-segment processing chain.  |  |  |  |  |  |
| 6.3 P2P Auxiliary Data File Usage Check   |   |   |  |  |  |  |  |
| Each product is checked for missing Data Set Descriptors with respect to a pre-det  | termined baseline and also to check the va  | alidity of Auxiliary Data Files is correct.   |  |  |  |  |  |
| Number of products with errors: 0   |   |   |  |  |  |  |  |
| 6.4 P2P Auxiliary Correction Error Check  |   |   |  |  |  |  |  |
| For all products, the auxiliary corrections within the Geophysical Group are checke   | d for the default error value (32767)   |   |  |  |  |  |  |
| Currently, there are some common auxiliary correction errors raised in the L  |   | e to surface type. All common flags are summarised in the list below,   |  |  |  |  |  |
| followed by a table highlighting any additional issues which may arise from t   |   |   |  |  |  |  |  |
| > ECMWF Meteo Corrections: Currently the following corrections are not comput<br>Correction and the U-Wind and V-Wind components of the ECMWF model wind ve<br>not reported in the table below. |   |   |  |  |  |  |  |
| > Sea State Bias & Sea State Bias PLRM: The error value is currently set for pro  | ducts over sea ice, but this is to be expect  | ed.   |  |  |  |  |  |
| > Altimetric Wind Speed Error: The error value is currently set for products over   | land and sea ice, but this is to be expected  | 1.  |  |  |  |  |  |
| Number of products with errors: 29  |   |   |  |  |  |  |  |
| Product   | Test Failed   | Description   |  |  |  |  |  |
| CS_OFFL_SIR_GOP_220210218T231807_20210219T000745_C002   | 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_220210219T000745_20210219T005722_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_220210219T005722_20210219T014659_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) 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_220210219T014659_20210219T023636_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_220210219T023636_20210219T032614_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_220210219T032614_20210219T041551_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_220210219T041551_20210219T050528_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<br>height (solution 1: GOT) for one or more records   |  |  |  |  |  |
| CS_OFFL_SIR_GOP_220210219T055506_20210219T064443_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<br>height (solution 1: GOT) for one or more records   |  |  |  |  |  |
| CS_OFFL_SIR_GOP_220210219T064443_20210219T073420_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_220210219T073420_20210219T082358_C001   | GPD Wet Tropospheric Correction,<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the GPD Wet Troposheric Correction, the MSS height (solution 1) and the Mean Dynamic Topography (solution 1) for one or more records   |  |  |  |  |  |
| CS_OFFL_SIR_GOP_220210219T082358_20210219T091335_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_220210219T091335_20210219T100313_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<br>height (solution 1: GOT) for one or more records   |  |  |  |  |  |
| CS_OFFL_SIR_GOP_220210219T100313_20210219T105250_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_220210219T105250_20210219T114227_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_220210219T114227_20210219T123205_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_20210219T123205_20210219T132142_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_20210219T132142_20210219T141119_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<br>height (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOP_2_20210219T141119_20210219T150056_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_20210219T150056_20210219T155034_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<br>height (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOP_2_20210219T155034_20210219T164011_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_220210219T164011_20210219T172948_C001  | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide | There is an error with the MSS height (solution 1) 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_20210219T172948_20210219T181926_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_20210219T181926_20210219T190903_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_20210219T190903_20210219T195841_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_20210219T195841_20210219T204818_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_20210219T204818_20210219T213755_C001 | GPD Wet Tropospheric Correction,<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the GPD Wet Troposheric Correction, the MSS<br>height (solution 1) and the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOP_220210219T213755_20210219T222733_C001  | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide | There is an error with the MSS height (solution 1) 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_20210219T222733_20210219T231710_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_220210219T231710_20210220T000647_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<br>height (solution 1: GOT) for one or more records   |
| 6.5 P2P Measurement Confidence Data Check              |   |   |

#### 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_220210219T164011_20210219T172948_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

29

29

28

29

Number of products with errors:

P2P Quality Flags (20Hz PLRM)

Number of products with errors:

#### P2P Quality Flags (1 Hz & 1Hz PLRM)

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. 29

Number of products with errors:

### 6.8 P2P Ocean Retracking Quality Check

P2P Retracking Flags (20Hz)

Cryosat P2P data includes an ocean retracking 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): 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:

### 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.

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   | 184          | 184             | 2         | 182          | 0          |
| SIR_GOPR1B   | 113          | 113             | 0         | 113          | 0          |
| SIR_GOPN1B   | 103          | 103             | 2         | 101          | 0          |
| SIR_GOPM_2   | 184          | 184             | 130       | 54           | 0          |

| SIR_GOPR_2  | 113 | 113 | 38 | 73 | 2 |
|-------------|-----|-----|----|----|---|
| SIR_GOPN_2  | 103 | 103 | 41 | 62 | 0 |
| SIR_GOP_P2P | 28  | 28  | 0  | 27 | 1 |
|             |     |     | L  | L  |   |

## 7.1 QCC Errors

| Number of QCC reports with en | rors: | 3          |    |              |                |               |   |   |   |   |
|-------------------------------|-------|------------|----|--------------|----------------|---------------|---|---|---|---|
|                               |       |            |    | Total number | of occurrences | of each error |   |   |   |   |
| Product Type RLOBOPNCDF       | RL    | RLOBOPNCDF | RL | -            | -              | -             | - | - | - | - |

| SIR_GOPR_2   | 2          | 2  | 2          | 2  |   |   |   |   |   |   |   |
|--------------|------------|----|------------|----|---|---|---|---|---|---|---|
|              |            |    |            |    |   |   |   |   |   |   |   |
| Product Type | RLOBOPNCDF | RL | RLOBOPNCDF | RL | - | - | - | - | - | - | - |
| SIR_GOP_2_   | 1          | 1  | 1          | 1  |   |   |   |   |   |   |   |
|              |            |    |            |    |   |   |   |   |   |   |   |

| Test Description Key: |                                 |  |  |  |  |
|-----------------------|---------------------------------|--|--|--|--|
| Abbreviation          | Test name                       | Details                                      |  |  |  |
| RLOBOPNCDF            | RangeLatitudeOrBlankOP_7NetCDF  | Latitude should be between -90E7 and 90E7    |  |  |  |
| RL                    | RangeLatitude_7                 | Latitude should be between -90E7 and 90E7    |  |  |  |
| RLOBOPNCDF            | RangeLongitudeOrBlankOP_7NetCDF | Longitude should be between -180E7 and 180E7 |  |  |  |
| RL                    | RangeLongitude_7                | Longitude should be between -180E7 and 180E7 |  |  |  |

## 7.2 QCC Warnings

### Number of QCC reports with warnings

2042

| Total number of occurrences of each warning           Product Type         BCSHNCDF         INCHIMOOR         MVOEPPROEF         MOCEP         RBSZOPOEPPDLED         RBSZOPOEPPDLED         RBSZOPOEPPDLENDCF         RBSZOPOEPPDLENDCF         RBSZOPOEPPDLENDCF         RBSZOPOEPPDLENDCF         RBSZOPOEPPDLENDCF         RBSZOPOEPPDLENDCF         RBSZOPOEPPDLENDCF         RBSZOPOEPPDLENDCF         REFORT         RC         RBSZOPOEPPDLENDCF         REFORT         RFEOPPDLENDCF         RFEOPPDLENDCF         RFEOPPDLENDSCOF         RFEOPPDLENDCF         RFEOPPDLENDCF         RFEOPPDLENDCF         RFEOPPDLENDSCOF         RFEOPPDLENDCF         RFEOPPDLENDSCOF         RFEOPPDLENDCF         RFEOPPDLENDCF         RFEOPPDLENDSCOF         RFEOPPDLENDCF         RFEOPPDLENDSCOF         RSSHAOFDDLENDSCOF         RSSHAOFDDLENDSCOF         RSSHAOFDDLENDSCOF         RSSHAOFDDLENDSCOF         RSSHAOF | Number of QCC repo | orts with warnings | 2042              | Total numb                            | or of occurronces of o | ach warning     |                     |                    |
|---|--------------------|--------------------|-------------------|---------------------------------------|------------------------|-----------------|---------------------|--------------------|
| SiR_GOPM15         182         0 <t< th=""><th>Product Type</th><th>BCSHNCDF</th><th>IOHHMOOR</th><th></th><th></th><th></th><th>RBSZOPOEPFDNCDF</th><th>RBSZOPOEPFDPLRMNCD</th></t<>   | Product Type       | BCSHNCDF           | IOHHMOOR          |                                       |                        |                 | RBSZOPOEPFDNCDF     | RBSZOPOEPFDPLRMNCD |
| SIR_GOPM_2         0         0         40         42         3         43         0           SIR_GOPN_2         0         0         0         0         0         0         0         0           SIR_GOPN_2         0         0         0         0         0         0         0         0         0           SIR_GOPN_2         0         2         18         55         6         25         15           Product Type         RBSZOPGEPNCDF         RPEPOPFDLRMANCDF         RPEPOPFDLRMSINNCO[RPEPOPFDSARNCDF         RPEPOPFDSARNCDF         RPEPOPFDSARNCDF         RPEPOPFDLRMSDF           SIR_GOPNIB         0         0         0         0         0         0         27           SIR_GOPNIB         0         0         0         0         0         0         27           SIR_GOPNIB         0         0         0         0         0         0         0         0           SIR_GOPNIB         0         0         0         0         0         0         0         0           SIR_GOPNIB         0         0         0         0         0         0         0         0         0 <t< td=""><td></td><td></td><td>0</td><td></td><td></td><td></td><td></td><td>0</td></t<>  |                    |                    | 0                 |                                       |                        |                 |                     | 0                  |
| SiR_GOPNE         99         0  | _                  |                    | 0                 |                                       | -                      |                 |                     | 0                  |
| SIR_GOPU_2         0         0         8         34         10         27         27           SIR_GOPR1B         109         0 <td></td> <td>-</td> <td>0</td> <td></td> <td>0</td> <td>0</td> <td></td> <td>0</td>  |                    | -                  | 0                 |                                       | 0                      | 0               |                     | 0                  |
| SR_GOPR1B         109         0 <th< td=""><td>-</td><td></td><td>0</td><td>8</td><td>34</td><td></td><td></td><td>27</td></th<>  | -                  |                    | 0                 | 8                                     | 34                     |                 |                     | 27                 |
| SIR_GOPR_2         0         2         18         35         6         25         15           Product Type         RBSZOPCEPNCOF         RPEPOPFDLRMSCP         RPEPOPFDLRMSARNCURPEPOPFDPLRMSINNCD/RPEPOPFDSINNCDF         RPEPOPFDSINNCDF         RPEPOPFDLRMSCDF         RST         GOPM 18         0 <td></td> <td>-</td> <td>0</td> <td>-</td> <td></td> <td></td> <td></td> <td></td>   |                    | -                  | 0                 | -                                     |                        |                 |                     |                    |
| Product Type         RBS20P0EPNCDF         RPEP0PFDLRMNCDF         RPEP0PFDPLRMSARNCERPEP0PFDSARNCDF         RPEP0PFDSINNCDF         RPEP0PLRMNCDF           SIR_GOPM1B         0         0         0         0         0         0         0         0           SIR_GOPM2         35         36         0         0         0         0         0         0         0           SIR_GOPN1B         0  |                    |                    |                   |                                       |                        |                 |                     |                    |
| SIR_GOPM1B         0  |                    |                    |                   |                                       |                        | -               |                     | ļ                  |
| SiR_GOPM_2         35         36         0         0         0         0         27           SiR_GOPN1B         0  | Product Type       | RBSZOPOEPNCDF      | RPEPOPFDLRMNCDF   | RPEPOPFDPLRMSARNC                     | RPEPOPFDPLRMSINNCD     | RPEPOPFDSARNCDF | RPEPOPFDSINNCDF     | RPEPOPLRMNCDF      |
| SIR_GOPNIB         0         0         0         0         0         0         0         0           SIR_GOPN_2         18         0         0         21         0         35         0           SIR_GOPR_1         0         0         0         0         0         0         0         0           SIR_GOPR_2         9         0         33         0         39         0         0           Product Type         RPEPOPSARNCDF         RPEOPOSINNCDF         RSSBCONCDF         RSSHAOFDNCDF         RSSHAOFDDLRMNCDF         RSSHAOPDLRMNCDF         RSWHOEPFDNCDF           SIR_GOPN1B         0   | SIR_GOPM1B         | 0                  | 0                 | 0                                     | 0                      | 0               | 0                   | 0                  |
| SIR_GOPN_2         18         0         0         21         0         35         0           SIR_GOR1B         0   | SIR_GOPM_2         | 35                 | 36                | 0                                     | 0                      | 0               | 0                   | 27                 |
| SIR_GOPR1B         0  | SIR_GOPN1B         |                    | 0                 | 0                                     | 0                      | 0               |                     | 0                  |
| SIR_GOPR_2         9         0         33         0         39         0         0           Product Type         RPEPOPSARNCDF         RPEPOPSINNCDF         RSSBCONCDF         RSSHAOFDNCDF         RSSHAOFDPLRMNCDF         RSSHAONCDF         RSSHAONCDF         RSSHAONCDF         RSSHAONCDF         RSSHAONCDF         RSSHAONCDF         RSSHAONCDF         RSSHAOFDPLRMNCDF         SCONDUCT         -           SIR_GOPN_2         0         32         18         43         48         32         32         32           SIR_GOPN_2         0         32         18         43         48         32         32         32           SIR_GOPR_2         31         0         1         57         25         8         26         33           SIR_GOPM1B         0         0         0         0         0         0         0         33         33         0         0         0         0  | SIR_GOPN_2         | 18                 | 0                 | 0                                     | 21                     | 0               | 35                  | 0                  |
| Product Type         RPEPOPSARNCDF         RPEPOPSINNCDF         RSSB0CNCDF         RSSHAOFDPLCPF         RSSHAOFDPLCPF         RSSHAONCDF         RSSHAOFDPLCDF           SIR_GOPM_2         0   | SIR_GOPR1B         | 0                  | 0                 | 0                                     | 0                      | 0               | 0                   | 0                  |
| SIR_GOPM1B         0         0         0         0         0         0         0           SIR_GOPM2         0         0         6         26         0         2         34           SIR_GOPN1B         0         0         0         0         0         0         0         0           SIR_GOPN2         0         32         18         43         48         32         32           SIR_GOPN1B         0         0         0         0         0         0         0         0           SIR_GOPN2         31         0         1         57         25         8         26           Product Type         RSWHOEPFDPLRMNCDF         RSWHOEPNCDF         SPHRTASCNSNCDF         SOOHHIFHD         SCSTODHRNCDF         SCSTODNCDF         -           SIR_GOPN2         0         0         0         0         0         0         0         SIRGOPN2         27         8         0         0         0         0         SIRGOPN2         27         8         0         1         0         0         SIRGOPN2         33         0         0         0         0         SIRGOPN2         33         0         0 <td< td=""><td>SIR_GOPR_2</td><td>9</td><td>0</td><td>33</td><td>0</td><td>39</td><td>0</td><td>0</td></td<>   | SIR_GOPR_2         | 9                  | 0                 | 33                                    | 0                      | 39              | 0                   | 0                  |
| SIR_GOPM1B         0         0         0         0         0         0         0           SIR_GOPM2         0         0         6         26         0         2         34           SIR_GOPN1B         0         0         0         0         0         0         0         0           SIR_GOPN2         0         32         18         43         48         32         32           SIR_GOPN1B         0         0         0         0         0         0         0         0           SIR_GOPN2         31         0         1         57         25         8         26           Product Type         RSWHOEPFDPLRMNCDF         RSWHOEPNCDF         SPHRTASCNSNCDF         SOOHHIFHD         SCSTODHRNCDF         SCSTODNCDF         -           SIR_GOPN2         0         0         0         0         0         0         0         SIRGOPN2         27         8         0         0         0         0         SIRGOPN2         27         8         0         1         0         0         SIRGOPN2         33         0         0         0         0         SIRGOPN2         33         0         0 <td< th=""><th></th><th>1</th><th></th><th></th><th>i</th><th></th><th></th><th></th></td<>  |                    | 1                  |                   |                                       | i                      |                 |                     |                    |
| SIR_GOPM_2       0       0       6       26       0       2       34         SIR_GOPN1B       0       0       0       0       0       0       0       0         SIR_GOPN12       0       32       18       43       48       32       32         SIR_GOPN1B       0       0       0       0       0       0       0       0         SIR_GOPN12       31       0       1       57       25       8       26         Product Type       RSWHOEPFDPLRMNCDF       RSWHOEPNCDF       SPHRTASCNSNCDF       SOOHHIFHD       SCSTODHRNCDF       SCSTODNCDF       -         SIR_GOPM1B       0       0       0       0       0       0       0       1       57       25       8       26         SIR_GOPM1B       0       0       0       0       0       0       0       1   |                    |                    |                   |                                       | RSSHAOFDNCDF           |                 |                     |                    |
| SIR_GOPN1B         0         0         0         0         0         0         0         0           SIR_GOPN1B         0         32         18         43         48         32         32         32           SIR_GOPR1B         0         0         0         0         0         0         0         0         0           SIR_GOPR1B         0         0         1         57         25         8         26           Product Type         RSWHOEPFDPLRMNCDF         RSWHOEPNCDF         SPHRTASCNSNCDF         SOOHHIFHD         SCSTODHRNCDF         SCSTODNCDF         -           SIR_GOPM1B         0         0         0         0         0         0         0         0           SIR_GOPM1B         0   |                    |                    | 0                 | 0                                     | 0                      | 0               | 0                   | •                  |
| SIR_GOPN_2         0         32         18         43         48         32         32           SIR_GOPR1B         0 <td></td> <td></td> <td>-</td> <td>· · · · · · · · · · · · · · · · · · ·</td> <td></td> <td>-</td> <td>-</td> <td></td>   |                    |                    | -                 | · · · · · · · · · · · · · · · · · · · |                        | -               | -                   |                    |
| SIR_GOPR1B         0         0         0         0         0         0         0           SIR_GOPR_2         31         0         1         57         25         8         26           Product Type         RSWH0EPFDPLRMNCDF         RSWH0EPFDPLRMNCDF         SPHRTASCNSNCDF         SOOHHIFHD         SCSTODHRNCDF         SCSTODNCDF         -           SIR_GOPM1B         0  | _                  |                    | -                 |                                       |                        |                 |                     |                    |
| SR_GOPR_2         31         0         1         57         25         8         26           Product Type         RSWH0EPFDPLRMNCDF         RSWH0EPNCDF         SPHRTASCNSNCDF         SOOHHIFHD         SCSTODHRNCDF         SCSTODNCDF         -           SIR_GOPM1B         0 <td></td> <td>· ·</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td>  |                    | · ·                |                   | -                                     |                        |                 |                     |                    |
| Product Type         RSWH0EPFDPLRMNCDF         RSWH0EPNCDF         SPHRTASCNSNCDF         SOOHHIFHD         SCSTODHRNCDF         SCSTODNCDF         -           SIR_GOPM1B         0 <t< td=""><td></td><td></td><td></td><td>0</td><td></td><td></td><td></td><td></td></t<>   |                    |                    |                   | 0                                     |                        |                 |                     |                    |
| SIR_GOPM1B         0  | SIR_GOPR_2         | 31                 | 0                 | 1                                     | 57                     | 25              | 8                   | 26                 |
| SIR_GOPM1B         0  |                    |                    | DOWNOFDWODE       |                                       |                        | 00070000000     | 0007000000          |                    |
| SIR_GOPM_2       0       2       0       0       0       0       0         SIR_GOPN1B       0       0       0       0       49       4         SIR_GOPN_2       27       8       0       1       0       0         SIR_GOPN_2       27       8       0       1       0       0         SIR_GOPN_2       27       8       0       1       0       0         SIR_GOPR_1B       0       0       1       0       113       9         SIR_GOPR_2       33       0       0       6       0       0         Verduct Type       IOHIMOOR       MVIOEPFDNCDF       MVIOEPNCDF       RBSZOPOEPFDNCDF       RBSZOPOEPFDNCDF         SIR_GOP_2_       16       27       28       10       28       15       28         Product Type       RPEPOPFDPLRMSINNCD/RPEOPFDSINNCDF       RPEPOPSINNCDF       RSSBCONCDF       RSSHAOFDNCDF       RSSHAOFDPLRMNCDF         SIR_GOP_2_       16       27       25       19       28       18       24         Product Type       RSWHOEPFDNCDF       RSWHOEPFDNCDF       SPHLPQWNCDF       -       -       -   |                    |                    |                   |                                       | SUUNNIPHU              |                 |                     | -                  |
| SIR_GOPNIB         0         0         0         0         49         4           SIR_GOPN_2         27         8         0         1         0         0           SIR_GOPN_1B         0         0         1         0         0         0           SIR_GOPR1B         0         0         113         9         0         0           SIR_GOPR_2         33         0         0         0         0         0         0           Product Type         IOHHMOOR         MVIOEPFDNCDF         MVIOEPSNCDF         RBSZOPOEPFDNCDF   | —                  |                    | 0                 |                                       | 0                      |                 | -                   |                    |
| SIR_GOPN_2         27         8         0         1         0         0         1           SIR_GOPR1B         0         0         1         0         113         9         113         9         113         9         113         9         113         9         113         9         113         9         113         9         113         9         113         9         113         9         113         9         110         113         9         110         113         9         110         113         110         113         110         11   |                    |                    | 2                 | 0                                     | 0                      | -               | 0                   |                    |
| SIR_GOPRIB         0         1         0         113         9           SIR_GOPR_2         33         0         0         6         0         0         0           Product Type         IOHIMOOR         MVIOEPFDNCDF         MVIOEPNCDF         MVIONCDF         RBSZOPOEPFDNCDF         RBSZOPOEPFDNCDF           SIR_GOP_2         16         27         28         10         28         15         28           Product Type         RPEPOPFDPLRMSINNCD[RPEPOPFDSINNCDF         RPEPOPSINNCDF         RSSBCONCDF         RSSHAOFDNCDF         RSSHAONCDF           SIR_GOP_2         16         27         25         19         28         18         24           Product Type         RSWHOEPFDNCDF         RSWHOEPFDNCDF         SPHLPQWNCDF         -         -   | -                  |                    | 0                 | 0                                     | 0                      |                 | 4                   |                    |
| SIR_GOPR_2       33       0       0       6       0       0         Product Type       IOHHMOOR       MVIOEPFDNCDF       MVIOEPNCDF       MVIONCDF       RBSZOPOEPFDNCDF       RBSZOPOEPFDPLRMNCC       RBSZOPOEPFDNCDF       RSSHAOFDNCDF       RSSHAOFDNCDF       RSSHAOFDNCDF       RSSHAOFDPLRMNCDF       RSSHAORCDF         SIR_GOP_2_       16       27       25       19       28       18       24         Product Type       RSWHOEPFDNCDF       RSWHOEPFDNCDF       SPHLPQWNCDF       -       -       -   |                    |                    | 0                 | 0                                     | 1                      | -               | •                   |                    |
| Product Type       IOHHMOOR       MVIOEPFDNCDF       MVIOEPNCDF       MVIONCDF       RBSZOPOEPFDNCDF       RBSZOPOEPFDNCDF         SIR_GOP_2_       16       27       28       10       28       15       28         Product Type       RPEPOPFDPLRMSINNCD[RPEPOPFDSINNCDF       RPEPOPSINNCDF       RSSBCONCDF       RSSHAOFDNCDF       RSSHAOFDPLRMNCDF       RSSHAONCDF         SIR_GOP_2_       16       27       25       19       28       18       24         Product Type       RSWHOEPFDNCDF       RSWHOEPFDNCDF       SPHLPQWNCDF       -       -       -   |                    |                    |                   | 1                                     | 0                      |                 |                     |                    |
| SIR_GOP_2         16         27         28         10         28         15         28           Product Type         RPEPOPFDPLRMSINNCD[RPEPOPFDSINNCDF         RPEPOPSINNCDF         RSSBCONCDF         RSSHAOFDNCDF         RSSHAOFDDNCDF         RSSHAOFDPLRMNCDF         RSSHAOFDPLRMNCDF         RSSHAONCDF         RSSHAOFDPLRMNCDF         RSSHAONCDF         RSSHAOFDPLRMNCDF         RSSHAONCDF         RSSHAOFDPLRMNCDF         -         -         -         -           Product Type         RSWHOEPFDNCDF         RSWHOEPFDNCDF         SPHLPQWNCDF         -   | SIR_GOPR_2         | 33                 | 0                 | 0                                     | 0                      | 0               | 0                   |                    |
| SIR_GOP_2         16         27         28         10         28         15         28           Product Type         RPEPOPFDPLRMSINNCD/RPEPOPFDSINNCDF         RPEPOPSINNCDF         RSSBCONCDF         RSSBAOFDNCDF         RSSBAOFDNCDF         RSSBAOFDPLRMNCDF         Product Type         RSWHOEPFDPLRMNCDF         SPHLPQWNCDF         -         -         -   | Broduct Type       | IOHHMOOR           | MVIOEPEDNCDE      | MVIOEPNODE                            | MVIONCDE               |                 | RBSZOPOEPEDPI RMNCI | RBSZOPOEPNCDE      |
| Product Type       RPEPOPFDPLRMSINNCD[RPEPOPFDSINNCDF       RPEPOPSINNCDF       RSSBCONCDF       RSSHAOFDNCDF       RSSHAOFDPLRMNCDF       RSSHAONCDF         SIR_GOP_2_       16       27       25       19       28       18       24         Product Type       RSWH0EPFDNCDF       RSWH0EPFDPLRMNCDF       RSWH0EPFDPLCDF       SPHLPQWNCDF       -       -   |                    |                    |                   |                                       |                        |                 |                     |                    |
| SIR_GOP_2         16         27         25         19         28         18         24           Product Type         RSWHOEPFDNCDF         RSWHOEPFDPLRMNCDF         SPHLPQWNCDF         -         -         -         -   | 011_001_2_         |                    |                   |                                       |                        |                 |                     |                    |
| SIR_GOP_2         16         27         25         19         28         18         24           Product Type         RSWH0EPFDNCDF         RSWH0EPFDPLRMNCDF         SPHLPQWNCDF         -         -         -         -   | Product Type       | RPEPOPFDPLRMSINNCD | RPEPOPFDSINNCDF   | RPEPOPSINNCDF                         | RSSBCONCDF             | RSSHAOFDNCDF    | RSSHAOFDPLRMNCDF    | RSSHAONCDF         |
| Product Type     RSWHOEPFDNCDF     RSWHOEPFDPLRMNCDF     SPHLPQWNCDF     -     -  |                    | 16                 | 27                | 25                                    | 19                     | 28              | 18                  | 24                 |
|   | L                  |                    |                   |                                       |                        |                 |                     |                    |
|   | Product Type       | RSWHOEPFDNCDF      | RSWHOEPFDPLRMNCDF | RSWHOEPNCDF                           | SPHLPQWNCDF            | -               | -                   | -                  |
|   | SIR_GOP_2_         | 28                 | 16                | 9                                     | 28                     |                 |                     |                    |

| 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    |
| RPEPOPFDLRMNCDF         | RangePeakinessExcludingPolarOPFD2LRMNetCDF                  | The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                   |
| RPEPOPFDPLRMSAR         | RangePeakinessExcludingPolarOPFD2PLRMSARNetCDF              | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                  |
| RPEPOPFDPLRMSINN        | RangePeakinessExcludingPolarOPFD2PLRMSINNetCDF              | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                  |
| RPEPOPFDSARNCDF         | RangePeakinessExcludingPolarOPFD2SARNetCDF                  | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                  |
| RPEPOPFDSINNCDF         | RangePeakinessExcludingPolarOPFD2SINNetCDF                  | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                  |
| RPEPOPLRMNCDF           | RangePeakinessExcludingPolarOPLRMNetCDF                     | The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                   |
| RPEPOPSARNCDF           | RangePeakinessExcludingPolarOPSARNetCDF                     | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                  |
| RPEPOPSINNCDF           | RangePeakinessExcludingPolarOPSINNetCDF                     | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                  |
| RSSBCONCDF              | RangeSeaStateBiasCorrectionOceanNetCDF                      | The sea state bias correction should be between -500mm and 0mm (or missing) for surface type = ocean  |
| RSSHAOFDNCDF            | RangeSeaSurfaceHeightAnomalyOceanFD3NetCDF                  | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type =<br>ocean                                |
| RSSHAOFDPLRMNCD         | RangeSeaSurfaceHeightAnomalyOceanFD3PLRMNetCDF              | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type =<br>ocean                                |
| RSSHAONCDF              | RangeSeaSurfaceHeightAnomalyOceanNetCDF                     | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type =<br>ocean                                |

| RSWHOEPFDNCDF   | RangeSignificantWaveHeightOceanExcludingPolarFD2NetCDF     | The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for<br>latitudes between -70 and 70 degrees |
|-----------------|--|---|
| RSWHOEPFDPLRMNC | 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_Stop_v2_NetCDF                       | Rel_Time_ASC_Node_Stop mismatch   |
| 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