## 1. Overview

| Report Production Date: | 10-Jul-2017 |
|---|---|
| Processor Used: | CryoSat Ocean Processor |
| Data Used: | Geophysical Ocean Products (GOP) L1B and L2 Science Data |

| Check | Status |
|---|---|
| Server check:  science-pds.cryosat.esa.int | Nominal |
| Server check:  calval-pds.cryosat.esa.int | Nominal |
| Product Software Check | Nominal |
| Product Format Check | Nominal |
| Product Header Analysis | Nominal |
| Auxiliary Data File Usage Check | Nominal |
| Auxiliary Correction Error Check | See Section 5.4 |
| Measurement Confidence Data Check | See Section 4.6, 5.6, 5.7 and 5.8 |

| Mission / Instrument News | |
|---|---|
| 09-Jun-2017 | None |
| 10-Jun-2017 | None |
| 11-Jun-2017 | Nothing planned |

## 2. Global Coverage



Global Coverage - North Pole



Global Coverage - South Pole



| Mode Coverage | |
|---|---|
| | LRM |
| | SAR |
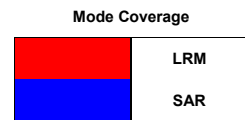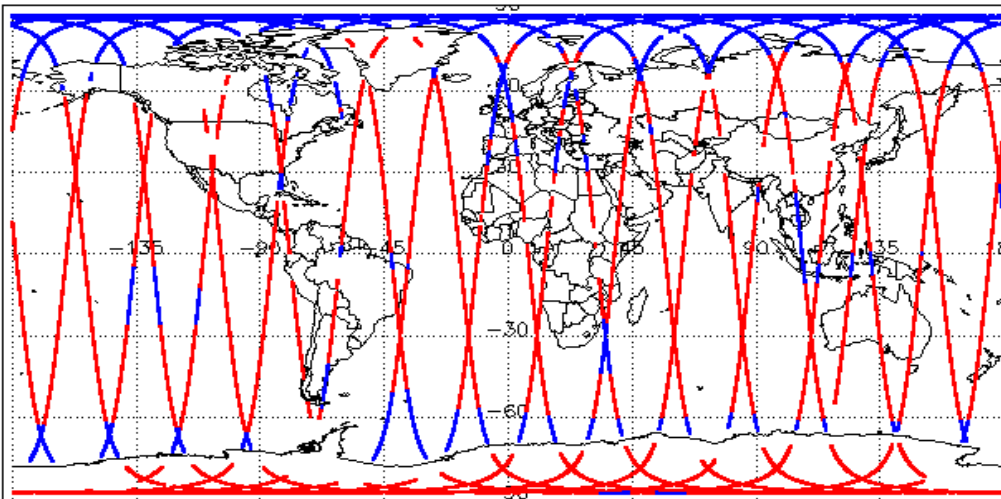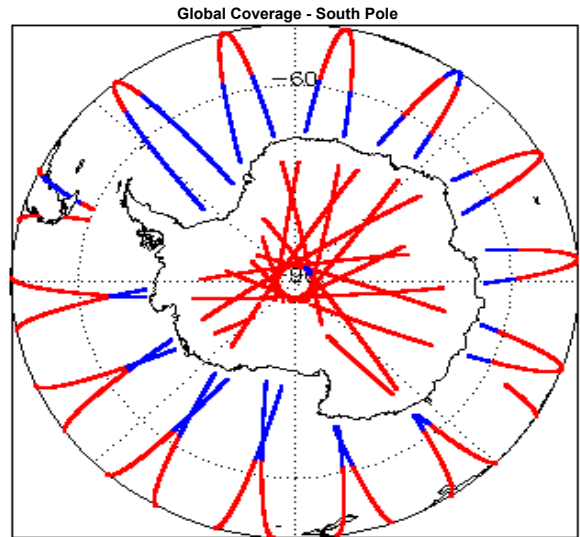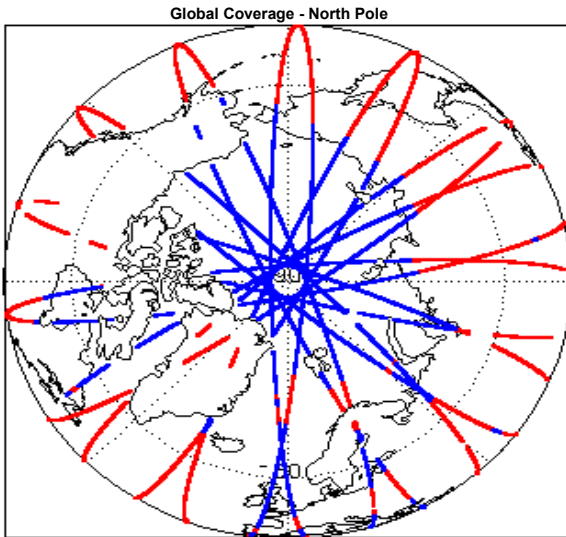
## 3. Instrument Configuration

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

| SIRAL instrument(s) in use: | SIRAL - A |
|---|---|

## 4. GOP Level 1B Data Quality Check

### 4.1 L1B Product Format Check

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

**Number of products with errors:**          0

### 4.2 L1B Product Header Analysis

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

**Number of products with errors:**          0

## 4.3 L1B Auxiliary Data File Usage Check

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

**Number of products with errors:** 0

## 4.4 L1B Auxiliary Correction Error Check

CryoSat L1B data includes a correction error flag (field 60) for each measurement record. The bit value of this flag indicates any problems when set.

**Number of products with errors:** 0

## 4.5 L1B Measurement Confidence Data Check

CryoSat L1B data includes a measurement confidence flag (field 12) for each measurement record. The bit value of this flag indicates any problems when set.

**Number of products with errors:** 0

## 4.6 L1B Waveform Group Data Check

CryoSat L1B data includes a waveform data flag (field 65) for each measurement record. The bit value of this flag indicates any problems when set.

**Loss of Echo Flag:** This flag is currently set for products over land, but this is to be expected.

**Number of products with errors:** 12

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_GOP_1B_20170610T000506_20170610T000701_B001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOP_1B_20170610T003652_20170610T003832_B001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOP_1B_20170610T013205_20170610T013326_B001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOP_1B_20170610T014745_20170610T015306_B001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOP_1B_20170610T032607_20170610T033540_B001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOP_1B_20170610T064222_20170610T065155_B001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOP_1B_20170610T065516_20170610T065741_B001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOP_1B_20170610T071423_20170610T072855_B001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOP_1B_20170610T082054_20170610T083026_B001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOP_1B_20170610T083236_20170610T084001_B001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOP_1B_20170610T114026_20170610T114706_B001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOP_1B_20170610T194701_20170610T194825_B001 | Loss of Echo | The tracking echo is missing for one or more records |

# 5. GOP Level 2 Data Quality Check

## 5.1 L2 Product Format Check

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

**Number of products with errors:** 0

## 5.2 L2 Product Header Analysis

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

**Number of products with errors:** 0

## 5.3 L2 Auxiliary Data File Usage Check

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

**Wind Model File Usage:** This file is currently not included in all L2 products.

**Number of products with errors:** 0

## 5.4 L2 Auxiliary Correction Error Check

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

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

**Sea State Bias Error:** The error value is currently set for products over land and sea ice, but this is to be expected.

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

**Number of products with errors:** 23

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_GOP_2__20170610T000118_20170610T000333_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T000916_20170610T001608_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T011254_20170610T012236_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T014301_20170610T014326_B001 | Total Geocentric Ocean Tide (FES) | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T020824_20170610T020930_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T051328_20170610T051544_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T060601_20170610T063854_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T065516_20170610T065741_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |

| | | |
|---|---|---|
| CS_OFFL_SIR_GOP_2__20170610T071422_20170610T072855_B001 | Total Geocentric Ocean Tide (FES) | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T083236_20170610T084001_B001 | Total Geocentric Ocean Tide (FES) | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T092442_20170610T100050_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T100051_20170610T100201_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T110345_20170610T111851_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T111851_20170610T112054_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T112054_20170610T113036_B001 | Mean Sea Surface (1) | There is an error with the MSS height (solution 1) for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T115250_20170610T120931_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2__20170610T132026_20170610T132630_B001 | Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide | There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |

## 5.5 L2 Measurement Confidence Data Check

CryoSat L2 data includes a measurement confidence flag (field 14) for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

**Number of products with errors:**                          0

## 5.6 L2 Range Measurement Check

CryoSat L2 data includes an Ocean (field 25) and Ice (field 30) Range Averaging Status flag for each measurement record. The bit value of this flag indicates any problems when set.

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

**Ocean Range Averaging Status Flag:** This flag is currently set for products over land and sea ice, but this is to be expected.

**Ice Range Averaging Status Flag:** This flag is currently set for products over land, but this is to be expected.

**Number of products with errors:**                          30

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_GOP_2__20170610T010022_20170610T010028_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T010028_20170610T010040_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T010101_20170610T010203_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T023555_20170610T023938_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T023945_20170610T023953_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T023959_20170610T024256_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T041337_20170610T041852_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T041858_20170610T042225_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T055337_20170610T055925_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T055937_20170610T060127_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T073306_20170610T073818_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T091456_20170610T091719_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T105431_20170610T105627_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T105810_20170610T110130_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T123258_20170610T123549_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T123600_20170610T124031_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T141100_20170610T141934_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T155026_20170610T155154_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T155313_20170610T155731_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T173225_20170610T173811_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T191130_20170610T191642_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T204940_20170610T205129_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T205130_20170610T205136_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T205136_20170610T205550_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T213715_20170610T213800_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T222505_20170610T223028_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T223028_20170610T223034_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T223041_20170610T223047_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T223047_20170610T223301_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |

| CS_OFFL_SIR_GOP_2__20170610T231632_20170610T231712_B001 | Ice Range Averaging Status | The Ice Range Averaging Status Flag has been set for one or more records. |
| --- | --- | --- |

## 5.7 L2 SWH and Backscatter Measurement Check

CryoSat L2 data includes a SWH Averaging Status flag (field 49) and an Ocean (field 55) and Ice (field 61) Backscatter Averaging Status flag for each measurement record. The bit value of this flag indicates any problems when set.

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

**SWH Averaging Status Flag:** This flag is currently set for products over land and sea ice, but this is to be expected.

**Ocean Backscatter Averaging Status Flag:** This flag is currently set for products over land and sea ice, but this is to be expected.

**Ice Backscatter Averaging Status Flag:** This flag is currently set for products over land, but this is to be expected.

**Number of products with errors:**    24

| Product | Test Failed | Description |
| --- | --- | --- |
| CS_OFFL_SIR_GOP_2__20170610T010028_20170610T010040_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T010101_20170610T010203_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T023555_20170610T023938_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T023959_20170610T024256_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T041337_20170610T041852_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T041858_20170610T042225_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T055337_20170610T055925_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T055937_20170610T060127_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T073306_20170610T073818_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T091456_20170610T091719_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T105431_20170610T105627_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T105810_20170610T110130_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T123258_20170610T123549_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T123600_20170610T124031_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T141100_20170610T141934_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T155026_20170610T155154_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T155313_20170610T155731_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T173225_20170610T173811_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T204940_20170610T205129_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T205136_20170610T205550_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T213715_20170610T213800_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T223028_20170610T223034_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T223047_20170610T223301_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_GOP_2__20170610T231632_20170610T231712_B001 | Ice Backscatter Averaging Status | The Ice Backscatter Averaging Status Flag has been set for one or more records. |

## 5.8 L2 Ocean Retracking Quality Check

CryoSat L2 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:** 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:**    147

# 6. 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_GOP_1B | 239 | 239 | 239 | 0 | 0 |
| SIR_GOP_2 | 239 | 239 | 239 | 0 | 0 |

## 6.1 QCC Errors

**Number of products with QCC errors:**    0

## 6.2 QCC Warnings

**Number of QCC reports with warnings**    0

## 6.3 Missing QCC Reports

**Number of products with missing QCC reports:**    0