Surface Water and Ocean Topography (SWOT) Project

Release Note
Version S 2.01 Geophysical Data Record Release

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SWOT is a joint mission between NASA and CNES and was launched on December 16, 2022. The onboard nadir altimeter (NALT) is a Jason-class dual frequency (Ku/C) altimeter.

This release includes the version S 2.01 SWOT NALT Operational Geophysical Data Record (OGDR), Interim Geophysical Data Record (IGDR) and Geophysical Data Record (GDR).

Product description documents for these products can be found at:
https://podaac.jpl.nasa.gov/swot?tab=datasets

Users are advised of the following changes to the datasets:

1. Transition dates from GDR-F 1.04 to GDR-S 2.01 are:
    a. **OGDR**: May 5, 2025 (cycle 32, pass 221, sensing time 20250505_221058).
    b. **IGDR:** May 5, 2025 (first product: cycle 32, pass 223, sensing time 20250505_231228).
    c. **GDR:** February 24, 2025 (first product: cycle 29, pass 001, sensing time 20250224_103601).
2. Reprocessed GDR-S 2.0.1 observations from the start of the mission (January 16, 2023) through the end of cycle 28 (~February 23, 2025) is ongoing and scheduled to be released in late June 2025.

Users are advised of the following differences between the OGDR, IGDR and GDR products:

- The **OGDR** is a non-validated product that is available with a typical latency of < 7 hours.
- The **IGDR** is not a fully validated product that is available with a typical latency of < 2 days.
- The **GDR** is a validated product that will become available with a typical latency of < 45 days after the start of release.

The **GDR-S 2.01 standard** is the new standard applicable to **SWOT Level 2 NALT products**. The modifications relative to the previous **GDR-F 1.04 standard** are detailed below.

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1 Changes Synthesis

1.1 Model Changes

Impact on-flow & reprocessed data:

- **MSS CNES-CLS:** Upgraded from MSS_CNES_CLS_2015 to 2023 CNES/CLS/SIO/DTU HYBRID.
- **MSS DTU:** Upgraded from DTU-2015 to DTU-2021.
- **MDT:** Upgraded from MDT-CNES-CLS-2018 to MDT-CNES-CLS-2022.
- Long-**period equilibrium ocean tide (ocean_tide_eq):** Updated to conserve mass.
- **FES tide model:** Upgraded from 2014B to 2022B (impact on FES ocean & load tides (ocean_tide_fes, ocean_tide_non_eq, load_tide_fes).
- **GOT tide model:** No change to short period tide model, but ocean_tide_got impacted by an update to long-period equilibrium ocean tide).
- **Surface Type:** Upgraded to use of *surface_type_7states_20230717T102530_v101.nc*.

- **Geoid:** Fixes anomaly in implementation of EGM 2008 geoid.

1.2. Processing Changes

Impact on-flow & reprocessed data:

- Adjustment on MLE4 Wind-Speed Sig0 bias.
- Improved radiometer calibration coefficients to improve alignment between two sides.
- MDT Interpolation upgrades from spline to bi-linear.
- Improvement on *rad_wet_tropo_cor_interp_qual* flag to better detect radiometer interpolation artifacts.
- Correction of an anomaly in Range Rate reconstruction.

Impact reprocessed data only:

- Update of antennae aperture value in ground processing for Calval Phase (was already active for Science Phase).
- Update of instrumental LUT with new antenna aperture for Calval Phase (was already active for Science Phase).
- New AGC correction table in PSWOT_CH1 for Calval Phase (was already active for Science Phase).
- Benefit from USO_drift DAD improvement between June 2023 and September 2023.

1.3. Format Changes

Impact on-flow & reprocessed data:

- **Filename change:** f→s
  - Format:
    SWOT_<O/I/G>P<N/R/S>_2P<v><S/P><ccc>_<ppp>_<yyyymmdd_hhnnss>_<yyyymmdd_hhnnss>.nc
  - <v> updates from f to s
- **Global attribute source:** Processing Baseline S v2.01
- **Minor evolution on comments:**
  - model_dry_tropo_cor_measurement_altitude:comment.
  - model_wet_tropo_cor_measurement_altitude:comment.
- **Minor typo evolution on long_name:**
  - rad_wet_tropo_cor_interp_qual:long_name.