SWOT Level 2 Nadir Altimeter and Advanced Microwave Radiometer Geophysical Data Record Release

The Surface Water and Ocean Topography (SWOT) project is pleased to announce the public release of Level 2 Geophysical Data Record products from the onboard nadir altimeter (NALT) and the advanced microwave radiometer (AMR).

This release includes the Geophysical Data Record (GDR) from each of the NALT and AMR instruments. The onboard NALT is a Jason-class dual frequency (Ku/C) altimeter. The onboard AMR is also a Jason-class radiometer but with two active strings that facilitate measurements on the left and right sides of the satellite nadir point.

Product description documents for these products can be found online at:

- https://podaac.jpl.nasa.gov/swot?tab=datasets
- https://www.aviso.altimetry.fr/en/missions/current-missions/swot.html

The datasets in this release include Cycles 400 to 578 (January 15 – July 10, 2023) during the SWOT commissioning and calibration phases (1-day repeat orbit), and Cycles 1-6 (July 21 – November 23, 2023) during the science phase (21-day repeat orbit). Note that some passes are not available in the later portion of cycle 578, and very early portions of Cycles 402 and 1 during orbit transitions as well as instrument turn on.

Starting with this release, NALT and AMR GDR products will continue to be routinely released with a latency of < 90 days from the end of each repeat cycle.

Users are advised of the following known limitations in the dataset:

- The adaptive retracker has not yet been calibrated, so the adaptive retracker variables should be used with caution.

Users are advised of the following upcoming changes in the datasets:

- In the coming weeks, the processing baseline of the SWOT L2 Nadir altimeter products will evolve to use the same MSS (CNES_CLS_2022) and the same MDT (CNES_CLS_2022) as the SWOT KaRIn L2_LR_SSH products.

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

- The OGDR is a non-validated product that is available with a typical latency of < 7 hours.
- The IGDR is a partially 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 < 90 days after the start of release.

Provenance of auxiliary data in OGDR, IGDR, and GDR products:

Auxiliary Data	Impacted Parameter	OGDR	IGDR	GDR
Orbit	Satellite altitude, Doppler correction, …	DORIS Navigator	Preliminary (MOE using DORIS data	Precise (POE using DORIS and/or

			and/or GPS data*)	Laser and/or GPS data)
Meteo Fields	Dry/wet tropospheric corrections, U/V wind vector, Surface pressure, Inverted barometer correction, …	Predicted	Restituted	
	MFWAM Waves	Not Available	Available	
	Sea Ice Concentration	Predicted		Restituted
Pole Location	Pole tide height	Predicted		Restituted
Tides	Ocean & Load Tide	Precise		
DAC	HF ocean dealiasing correction	Predicted	Preliminary	Precise
GIM	Ionosphere correction	Not available	Available	
Radiometer calibration	Wet tropospheric correction, Sigma0 rain attenuation, …	Preliminary		Restituted

Altimeter retracker outputs in OGDR, IGDR, and GDR:

Retracker	Impacted Parameter	OGDR	IGDR	GDR
MLE3	range_ocean_mle3 swh_ocean_mle3 sig0_ocean_mle3	Available	Available	Available
MLE4	range_ocean swh_ocean sig0_ocean off_nadir_angle_wf_ocean	Available	Available	Available
Adaptive	range_adaptive swh_ adaptive sig0_ adaptive	Not Available	Not Available	Available
OCOG	range_ocog sig0_ocog	Available	Available	Available
Ice 2	range_ice2 sig0_ice2	Available	Available	Available
Sea Ice	range_seaice sig0_seaice	Available	Available	Available
TFMRA	range_tfmra sig0_tfmra	Available	Available	Available

The NALT and AMR data products in this release are accessible at both NASA's PO.DAAC and CNES AVISO distribution centers. Information on accessing these data is provided below.

CNES AVISO

The SWOT Nadir Altimeter and Radiometer (O/I)-GDR products can be accessed on the AVISO+ web portal and through a new platform of the AVISO+ CNES Data Center's long-term archive catalog, accessible directly using AVISO+ credentials. Further information on SWOT data access can be found via the dedicated webpage on AVISO+:

https://www.aviso.altimetry.fr/en/missions/current-missions/swot/access-to-data.html

The GDR products in this release are listed below along with the corresponding Digital Object Identifier (DOI) landing pages:

Poseidon-3C Nadir Altimeter
* SWOT_L2_NALT_GDR (https://doi.org/10.24400/527896/a01-2023.009)

Advanced Microwave Radiometer
* SWOT_L2_RAD_GDR (https://doi.org/10.24400/527896/a01-2023.010)

NASA PO.DAAC

The datasets in this release are listed below with links to the corresponding dataset landing pages on the PO.DAAC web portal (https://podaac.jpl.nasa.gov/swot).

Poseidon-3C Nadir Altimeter
* SWOT_L2_NALT_GDR_2.0 (https://doi.org/10.5067/SWOT-NALT-GDR-2.0)

Advanced Microwave Radiometer
* SWOT_L2_RAD_GDR_2.0 (https://doi.org/10.5067/SWOT-RAD-GDR-2.0)

Subscriber example

$ podaac-data-subscriber -c SWOT_L2_NALT_GDR_2.0 -d ./data/SWOT_L2_NALT_GDR_2.0 --start-date 2023-03-29T00:00:00Z

Resources for users of SWOT datasets distributed by the PO.DAAC

- PO.DAAC Cookbook - SWOT Chapter (Selected User Resources)
- PO.DAAC Data Subscriber/Downloader (Download Access)
  - Video tutorial on using the podaac-data-subscriber
- Data search
  - Earthdata Search Client
  - PO.DAAC Cloud Earthdata Search Portal
  - Earthdata Search tutorial
- General information about Earthdata (AWS) cloud
  - Obtain Earthdata Login Account
  - Earthdata Cloud Primer documents
  - Earthdata Common Metadata Repository (CMR) API