

# Community Review of Southern Ocean Satellite Data Needs

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## **Appendix 1: Southern Ocean Satellite Data Requirements Survey**

What are your requirements for Southern Ocean satellite data? Are your data needs being met? Take this quick online survey NOW!

This joint initiative of Southern Ocean Observing System (SOOS), Climate and the Cryosphere (CliC), and World Meteorological Organization Polar Space Task Group (WMO PSTG) aims to identify the satellite data requirements for the Southern Ocean (across all temporal/spatial scales) and to compile this information into a community report of Southern Ocean satellite data requirements.

This is a great opportunity to voice your needs, and feed information directly into the strategic planning for future missions. Provide feedback on current data streams, issues with data access, validation issues, gaps in data products, spatial and temporal coverage etc. This survey is open to all Southern Ocean data users, across all data types (air-sea flux, sea-ice, biological, physical, *etc.*)

If you have any questions please contact Louise Newman ([newman@soos.aq](mailto:newman@soos.aq)) or Jenny Baeseman ([jenny.baeseman@npolar.no](mailto:jenny.baeseman@npolar.no))

### **Background Information**

This section provides us with some basic information on the expertise and location of people undertaking the survey.

1) Expertise\*

*Please provide some keywords that explain your expertise (e.g., Remote Sensing Sea Ice)*

2) Country\*

### **A) Key Data Requirements**

This section of the survey invites information on your satellite product requirements for the Southern Ocean, unrestricted by a specific satellite or technology.

1) Product Description

*e.g., Altimetry for sea-level variability*

2) Required frequency

*e.g., daily*

3) Seasonality of required observation

*e.g., seasonally continuous (radar), or seasonally restricted (optical)*

4) Required Resolution

*Low*

*High (~10m, non-commercial optical satellite)*

*Very high (m scale, requires commercial satellite and associated costs for data)*

5) Is this data already being collected for the Southern Ocean?

*Yes*

*No*

*I do not know*

5a) If Yes, are there any issues associated with the existing data product(s)?

6) Is there other data that should be collected at the same time to compliment this Satellite data?

*e.g., in situ for validation, or other data, include description of space/time requirements for collocated measurements*

7) Other Comments on this Data Product?

### **B) Focussed Satellite Data products for a Specific Geographic Region of high Scientific Interest**

This section of the survey invites suggestions of priority regions of the Southern Ocean that could be targeted for a focussed, integrated, multi-product project, beyond the scope of existing satellite products and planning.

1) Region

*include coordinates where possible*

2) What combination of complementary and overlapping (spatially/temporally) measurements are required?

*List Product, Frequency, Resolution, Seasonality and any comments for each item*

3) What is the maximum separation in time between observations?

4) Ancillary data requirements

*e.g., concurrent/complementary in situ data*

5) General Comments / thoughts

### **General Comments**

*Please provide any comments/thoughts or additional information you would like to provide.*

Do you want to be kept informed on the outcomes of this survey? If yes, provide your name below and email.

## **Appendix 2: Acronyms**

ACRE: Atmospheric Circulation Reconstructions over the Earth Initiative

AIRS: Atmospheric Infrared Sounder

AMI: Advanced Microwave Instrument

AMSR: Advanced Microwave Scanning Radiometer

AMSR-2: Advanced Microwave Scanning Radiometer 2

AMSR-E: Advanced Microwave Scanning Radiometer – Earth Observing System

AMSU: Advanced Microwave Sounding Unit

AMV: Atmospheric Motion Vector

ARTEMIS: Advanced Data Relay and Technology Mission

ASCAT: Advanced Scatterometer

ASPECT: Antarctic Sea Ice Processes and Climate

ATMS: Advanced Technology Microwave Sounder

AUV: Autonomous Underwater Vehicle

AVHRR: Advanced Very High Resolution Radiometer

AVISO: Archiving, Validation and Interpretation of Satellite Oceanographic data

BYU: Brigham Young University

CALIPSO: Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations

CATDS: Centre Aval de Traitement des Données SMOS / SMOS Endorsed Data Processing Center

CCAMLR: Commission for the Conservation of Antarctic Marine Living Resources

CCI: Climate Change Initiative

CEDA: Centre for Environmental Data Analysis

CERES: Clouds and Earth's Radiant Energy System

CFSR: Climate Forecast System Reanalysis

CliC: Climate and the Cryosphere Project

CONAE: Comisión Nacional de Actividades Espaciales

CZCS: Coastal Zone Color Scanner

DAAC: Distributed Active Archive Center

DCM: Deep Chlorophyll Maximum

DLR: Deutsches Zentrum für Luft- und Raumfahrt / German Aerospace Center

DMSP: Defense Meteorological Satellite Program

ECMWF: European Centre for Medium-Range Weather Forecasting

ECV: Essential Climate Variable

EOV: Essential Ocean Variable  
EM: Electromagnetic  
ERA-40: ECMWF reanalysis for the period September 1957 through August 2002  
ERA-Interim: ECMWF reanalysis global atmospheric reanalysis from 1979, continuously updated in real time  
ERS-1/2: European Remote Sensing Satellite 1/2  
ESA: European Space Agency  
ESRL: Earth Systems Research Laboratory  
EU: European Union  
EUMETSAT: European Organisation for the Exploitation of Meteorological Satellites  
GCOM: Global Change Observation Mission  
GCOM-W1: Global Change Observation Mission Water 1, “Shizuku”  
GCOM-W2: Global Change Observation Mission Water 2  
GCOS: Global Climate Observing System  
GES DISC: Goddard Earth Sciences Data and Information Services Center  
GHRSSST: Group for High Resolution Sea Surface Temperature  
GLIMS: Global Land Ice Measurements from Space  
GMI: GPM Microwave Imager  
GPM: Global Precipitation Measurement  
HICO: Hyperspectral Imager for the Coastal Ocean  
HOAPS: Hamburg Ocean Atmosphere Parameters and Fluxes from Satellite Data  
IAATO: International Association of Antarctica Tour Operators  
ICEMAR: Sea Ice Service for Maritime Operations  
ICESat: Ice, Cloud, and land Elevation Satellite  
ICESat/GLAS: Ice, Cloud, and land Elevation Satellite / Geoscience Laser Altimeter System  
IICWG: International Ice Chart Working Group  
IMOS: Integrated Marine Observing Systems  
INPE: Brazilian National Institute of Space Research  
IOCCG: International Ocean Colour Coordinating Group  
ISRO: Indian Space Research Organisation  
JAXA: Japanese Aerospace Exploration Agency  
JPL: Jet Propulsion Laboratory  
JRA: Japanese Reanalysis  
KNMI: Koninklijk Nederlands Meteorologisch Instituut / Royal Netherlands Meteorological Institute

LiDAR: Light Data And Ranging  
LIMA: Landsat Image Mosaic of Antarctica  
MERIS: Medium Resolution Imaging Spectrometer  
MERRA: Modern-Era Retrospective Analysis for Research and Application  
MIZ: Marginal Ice Zone  
MLD: Mixed Layer Depth  
MODIS: Moderate Resolution Imaging Spectroradiometer  
NASA: National Aeronautics and Space Administration  
NCEP: National Centers for Environmental Prediction  
NCAR: National Center for Atmospheric Research  
NERC: Natural Environment Research Council  
NIC: National Ice Center  
NIS: National Ice Service  
NISAR: NASA-ISRO SAR Mission  
NOAA: National Oceanic and Atmospheric Administration  
NSCAT: NASA Scatterometer  
NSF: National Science Foundation  
NSIDC: National Snow and Ice Data Center  
NWP: Numerical Weather Prediction  
OBPG: Ocean Biology Processing Group  
OCI: Ocean Color Imager  
OCM-3: Ocean Color Monitor 3  
OCO-2: Orbiting Carbon Observatory 2  
OCTS: Ocean Color and Temperature Scanner  
OLCI: Ocean and Land Colour Instrument  
OOPC: Ocean Observations Panel for Climate Change  
OSCAT: OceanSat Scatterometer  
OSI-SAF: Oceans & Sea Ice Satellite Application Facility  
PGC: Polar Geospatial Center  
POC: Particulate Organic Carbon  
PODAAC: Physical Oceanography Distributed Active Archive Center  
QA4EO: Quality Assurance Framework for Earth Observation  
QuikSCAT: Quick Scatterometer  
RADAR: Radio Distance and Ranging

READER: REference Antarctic Data for Environmental Research  
REMSS: Remote Sensing Systems  
SAOCOM: SAtélite Argentino de Observación COon Microondas  
SAR: Synthetic Aperture Radar  
SASS: Seasat-A Scatterometer System  
SCAR: Scientific Committee on Antarctic Research  
SCOR: Scientific Committee on Ocean Research  
SeaBASS: SeaWiFS Bio-optical Archive and Storage System  
SeaWiFS: Sea-Viewing Wide Field-of-View Sensor  
SGLI: Second-Generation Global Imager  
SIR: Scatterometer Image Reconstruction  
SIRF: Scatterometer Image Reconstruction Filter  
SIRAL: Synthetic Aperture Interferometric Radar Altimeter  
SMAP: Soil Moisture Active Passive (Mission)  
SMOS: Soil Moisture and Ocean Salinity  
SOCCOM: Southern Ocean Carbon and Climate Observations and Modeling project  
SMMR: Scanning Multichannel Microwave Radiometer  
SOCRATES: Southern Ocean Clouds, Radiation, Aerosol Transport Experimental Study  
SOOS: Southern Ocean Observing System  
SSH: Sea Surface Height  
SSM/I: Special Sensor Microwave Imager  
SSMIS: Special Sensor Microwave Imager Sounder  
SSS: Sea Surface Salinity  
SST: Sea Surface Temperature  
SWOT: Surface Water Ocean Topography  
TRMM: Tropical Rainfall Measuring Mission  
UAS: Unmanned Aircraft System  
ULS: Upward Looking Sonar  
USGS: United States Geological Survey  
VGPM: Vertically Generalized Primary Production Model  
VIIRS: Visible Infrared Imaging Radiometer Suite  
VSWIR: Visible/Short Wave Infrared  
WCRP: World Climate Research Programme  
WMO: World Meteorological Organization

