JPL Publication 90-49, Rev. 6

Data Catalog for JPL Physical Oceanography Distributed Active Archive Center (PO.DAAC)

User Services Office

Physical Oceanography DAAC
Distributed Active Archive Center
JET PROPULSION LABORATORY

November 1, 1994

National Aeronautics and Space Administration

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, California

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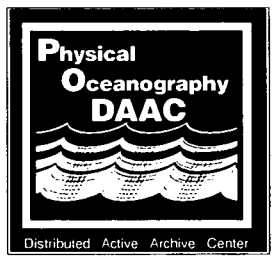
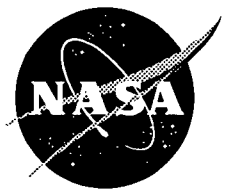
User Services Office



JET PROPULSION LABORATORY

November 1, 1994



National Aeronautics and
Space Administration

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, California

ABSTRACT

The Physical Oceanography Distributed Active Archive Center (PO.DAAC) archive at the Jet Propulsion Laboratory contains satellite data sets and ancillary *in-situ* data for the ocean sciences and global-change research to facilitate multidisciplinary use of satellite ocean data. Geophysical parameters available from the archive include sea-surface height, surface-wind vector, surface-wind speed, surface-wind stress vector, sea-surface temperature, atmospheric liquid water, integrated water vapor, phytoplankton pigment concentration, heat flux, and *in-situ* data. PO.DAAC is an element of the Earth Observing System Data and Information System and is the United States distribution site for TOPEX/POSEIDON data and metadata.

ACKNOWLEDGMENT

The research described in this publication was carried out by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not constitute or imply its endorsement by the United States Government or the Jet Propulsion Laboratory, California Institute of Technology.

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List of Tables

I. INTRODUCTION

The Role of the Physical Oceanography Distributed Active Archive Center

This publication contains descriptions of the data in the archive of the Physical Oceanography Distributed Active Archive Center (PO.DAAC) at the Jet Propulsion Laboratory (JPL), California Institute of Technology, Pasadena, California. This document is provided on the Worldwide Web (WWW), where it is updated as changes to data products occur. The URL address is: http://seazar.jpl.nasa.gov.

As one element of the Earth Observing System Data and Information System (EOSDIS), URL: http://eos.nasa.gov, the mission of the PO.DAAC is to archive and distribute data relevant to the physical state of the oceans (see Table 1). The goals of the PO.DAAC are to serve the needs of the oceanographic and geophysical sciences research communities and to provide data in support of interdisciplinary research. The primary means of achieving these goals are through: acquiring, compiling, processing, and distributing data obtained from spaceborne and conventional instruments; producing and distributing higher level data products; and providing an increasing range of data services to the broad research community.

This document revision contains data sets in addition to those reported previously. As new data are added to the PO.DAAC holdings, a note will be posted on two Usenet groups: sci.geo.oceanography and sci.geo.eos. The PO.DAAC data holdings are also described in the National Aeronautics and Space Administration (NASA) Global Change Master Directory (GCMD), an on-line directory of data maintained by NASA's Goddard Space Flight Center (http://gcmd.gsfc.nasa.gov).

JPL Physical Oceanography DAAC (PO.DAAC) Data Distribution Policy

To facilitate the full and open access to quality data for global-change research, the data archived by the PO.DAAC will be freely available upon request to the scientific community, to educators, and to the community at large. Data sets listed in this catalog do not carry periods of exclusive use or access. The cost of reproduction and distribution for all data sets included in the PO.DAAC inventory will be borne by the PO.DAAC as a service to the community.

The use of the data sets provided by the PO.DAAC implies an obligation that proper credit be given to the data source, including the author of the data set. Should the data obtained from the PO.DAAC be used in a publication, the PO.DAAC requests the following acknowledgment: "These data were obtained from the NASA Physical Oceanography Distributed Active Archive Center at the Jet Propulsion Laboratory, California Institute of Technology."

Investigators are asked to send the PO.DAAC two reprints of all published papers or reports that utilize these data.

To assist the PO.DAAC in providing the best service to the scientific community, we request notification if you transmit these data to other researchers.

The PO.DAAC wishes to foster data sharing whenever possible. If you have data sets or software you would like to share with other members of the research community, the PO.DAAC will be happy to manage and distribute these products for you.

Data Media and Formats

The PO.DAAC distributes data on a variety of media and in a variety of formats, as listed in Table 2. The PO.DAAC supports data distribution by electronic file transfer (FTP) where practical, and data available in the PO.DAAC public account can be accessed electronically via Internet. The PO.DAAC will be increasing the number of data sets that are available via FTP. Currently, data listed in Table 2 as available via FTP are either staged for immediate access or can be staged upon request. Procedures for downloading PO.DAAC data over Internet are presented below:

1. Log on to a host at your site that is connected to Internet and is running software that supports the FTP command. If you have questions about step 1, contact your system operator for assistance.
2. Invoke FTP on most systems by entering the Internet address % FTP podaac.jpl.nasa.gov (137.78.32.15).
3. Log in by entering **user** at the prompt. (This step will vary depending upon the equipment used.)
4. When prompted for foreign user name, enter **anonymous.**
5. When prompted for password, enter your user name, e.g. ssd@somewhere.town.edu (this is for our record-keeping purposes). For Pathfinder sea surface temperature (SST) data enter avhrr as the password.
6. Enter **dir** to get a directory listing.
7. By entering a **cd** command, move to the directory that contains the files of interest to you.
8. Files are transferred by entering **get "filename "**. (Reminder: files need to be transferred in binary by entering "**binary**" at the prompt.)
9. If more than one file is needed, enter **mget** and specify the filename with wildcards.
10. To exit from podaac.jpl.nasa.gov, enter **exit**.

Selected data sets are distributed on CD-ROM media as indicated in Table 2. The PO.DAAC supports data distribution on magnetic media, including 8-mm tape, 4-mm tape, 6250-bpi 9-track tape, and 3480 cartridge tape. In general, data will be supplied in VAX VMS backup, ANSI, UNIX (unlabeled tape) and UNIX TAR format as requested. Please check the individual product descriptions in Section III for available format and media. Read and display software is available for most data sets and will be provided with documentation of the data.

EOSDIS has adopted the hierarchical data format (HDF) as the data format standard. Where practical, the PO.DAAC will distribute the data sets in HDF. For data provided in HDF, the read and display software and documentation are available from the National Consortium for Supercomputer Applications (NCSA), (softdev@ncsa.uiuc.edu, URL: http://hdf.ncsa.uiuc.edu:8001).

Data Requests and Information

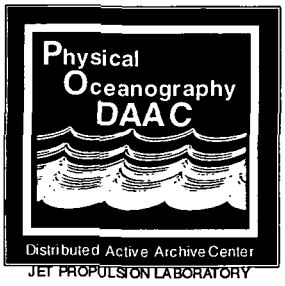
Requests for data may be made by mailing the completed User Request Form on the following page or by sending the same information electronically to PO.DAAC. Data can also be requested via a form capability on the PO.DAAC homepage. When ordering data, please provide precise information as to computer type and requested data format to facilitate timely and appropriate data transfer from the PO.DAAC.

Data can also be selected and ordered through the Information Management System (IMS), which is a search and order system which provides access to all DAACs. It can be accessed through: telnet eosims.jpl.nasa.gov 12345. IMS information is available on the WWW, URL: http://harp.gsfc.nasa.gov:1729/eosdis_documents/eosdis_home.html

To place an order or for information on order status and general information regarding PO.DAAC data holdings and services, contact:

User Services Office
Physical Oceanography Distributed Active Archive Center (PO.DAAC)
Jet Propulsion Laboratory
MS 300-320, 4800 Oak Grove Drive
Pasadena, CA 91109, U.S.A.
Phone: (818) 354-9890
FAX: (818) 393-2718
Internet: podaac@podaac.jpl.nasa.gov
URL : http://seazar.jpl.nasa.gov

For technical information regarding data sets, data usage, and data formats, contact:
Susan Digby: ssd@podaac.jpl.nasa.gov
Phone: (818) 354-0151
FAX: (818) 393-6720 (Attention: S. Digby)



Physical Oceanography
Distributed Active Archive Center

USER REQUEST FORM

Name _____ Date _____

Institution _____

Department _____

Building _____

Street _____

_____

City _____ State /Country _____ Zip Code _____

Phone ( ) _____ FAX ( ) _____

E-mail _____

DATA REQUEST

Number and Title of data set (from this publication) _____

_____

Region _____

Time period _____

Computer type _____

Preferred media (see product options*) _____

Preferred data format (see product options*) _____

Other information _____

*Product options are found with listings for each product and in Table 2.

Please be specific; your order can be filled promptly only if we have all the information.
V. Oct. -94

II. SUMMARY OF PO.DAAC DATA

The following two tables provide a listing of the PO.DAAC data. Software available from PO.DAAC is listed in Section IV.

Table 1 provides a listing of the data available from PO.DAAC, together with the geophysical parameter(s) available from the data. Section III provides further details for each data set.

Table 2 provides information on the media and format of the standard products. In the event that you require data in a media or format that has not been indicated for a given product, in most cases your request can be custom-produced as time permits. This is particularly true for data that are available via FTP. Please check Section III for further details on the data set of interest.

Table 1. PO.DAAC Data Sets and Geophysical Parameters

#	PO.DAAC DATA SETS	Sea-Surface Height	Surface-Wind Vector (and Sigma-Naught)	Surface-Wind Speed	Surface-Wind Stress Vector	Integrated Water Vapor	Atmospheric Liquid Water	Sea-Surface Temperature	Sea-Ice Extent and Concentration	Heat Flux	In-Situ Data	Phytoplankton Pigment Concentration
	GEOPHYSICAL PARAMETERS											
015	AVHRR monthly global MCSST coregistered with CZCS data (Miami, GSFC) CD-ROM							X				X
038	AVHRR weekly global and regional 18km gridded daytime MCSST (Miami)							X				
037	AVHRR weekly global and regional 18km nighttime MCSST (Miami)							X				
050	AVHRR Oceans Pathfinder global equal-angle all SST (NOAA, NASA)							X				
051	AVHRR Oceans Pathfinder global equal-angle best SST (NOAA, NASA)							X				
052	AVHRR Oceans Pathfinder global equal-area all SST (NOAA, NASA)							X				
053	AVHRR Oceans Pathfinder 0.5-degree spatial resolution global SST (NOAA, NASA)							X				
054	DMSP F-8 SSM/I Pathfinder ocean wind speed level 2 and browse data (MSFC, Wentz)			X								
033	DMSP F-8 SSM/I ocean wind speed, liquid water, water vapor '87-'91 (Wentz)			X		X	X					
034	DMSP F-10 SSM/I ocean wind speed, liquid water, water vapor '90-'92 (Wentz)			X		X	X					
011	Geos-3 altimeter geophysical data record '75-'78	X		X								
012	Geosat altimeter geophysical parameters colocated with NDBC buoy data (Glazman)	X	X	X							X	
001	Geosat sea-surface height, SSM/I wind speed, AVHRR SST '87 '89 '90 '91 (Halpern)	X		X				X			X	
030	Nimbus-7 SMMR global 60km gridded ocean parameters '79-'84 (Wentz)			X		X	X					

Table 1. PO.DAAC Data Sets and Geophysical Parameters (cont.)

#	PO.DAAC DATA SETS / GEOPHYSICAL PARAMETERS	Sea-Surface Height	Surface-Wind Vector (and Sigma-Naught)	Surface-Wind Speed	Surface-Wind Stress Vector	Integrated Water Vapor	Atmospheric Liquid Water	Sea-Surface Temperature	Sea-Ice Extent and Concentration	Heat Flux	In-Situ Data	Phytoplankton Pigment Concentration
014	SMMR, GOES-W VISSR Tropical Pacific surface thermal forcing parameters (Liu)									X		
004	SSM/I derived global heat and momentum fluxes (Atlas, Jusem, Ardizzone)				X					X		
044	SSM/I derived global ocean surface wind vectors (Atlas, Ardizzone)		X								X	
032	SSM/I wind speed, water vapor, cloud water at Geosat altimeter locations (Wentz)			X		X	X					
007	Seasat SMMR polar gridded brightness temperature statistics (Carsey, Pihos)								X			
019	Seasat altimeter geophysical data record level 2 '78	X		X								
017	Seasat altimeter sensor data record level 1a '78	X		X								
018	Seasat altimeter sensor data record level 1b '78	X		X								
024	Seasat scanning multichannel microwave radiometer geophysical data record level 2			X		X	X	X	X			
025	Seasat scanning multichannel microwave radiometer sensor data record level 1a			X		X	X	X	X			
023	Seasat scanning multichannel microwave radiometer sensor data record level 1b			X		X	X	X	X			
021	Seasat scatterometer geophysical data record level 1b '78		X	X	X							
022	Seasat scatterometer geophysical data record level 2 '78		X	X	X							
031	Seasat scatterometer global 50km sigma-0 data '78 (Wentz)		X									
029	Seasat scatterometer global dealiased surface wind vectors '78 (Wentz et al.)		X									

Table 1. PO.DAAC Data Sets and Geophysical Parameters (cont.)

#	PO.DAAC DATA SETS / GEOPHYSICAL PARAMETERS	Sea-Surface Height	Surface-Wind Vector (and Sigma-Naught)	Surface-Wind Speed	Surface-Wind Stress Vector	Integrated Water Vapor	Atmospheric Liquid Water	Sea-Surface Temperature	Sea-Ice Extent and Concentration	Heat Flux	In-Situ Data	Phytoplankton Pigment Concentration
002	Seasat scatterometer global gridded dealiased surface wind vectors (Atlas)		X									
013	Seasat scatterometer global gridded dealiased wind vectors (JPL-UCLA-AES)		X									
008	Seasat scatterometer global gridded monthly surface wind vectors (Chelton)		X		X							
006	Seasat scatterometer polar gridded daily sigma-0 statistics (Carsey, Pihos)		X						X			
020	Seasat scatterometer sensor data record level 1a '78		X	X	X							
026	Seasat visible and infrared radiometer sensor data record '78							X				
027	TOGA related satellite and in-situ data CD-ROM '85-'90	X	X	X	X	X	X	X	X	X	X	
036	TOPEX altimeter geophysical data record	X										
035	TOPEX altimeter sensor data record	X										
028	TOPEX/Poseidon altimeter merged geophysical data record (NASA/PO.DAAC)	X		X								

Table 2. Standard Media and Formats for PO.DAAC Data
(Data are available on other media and in other formats on an "as time permits" basis.)

#	PO.DAAC DATA SETS	MEDIA AND FORMATS: FTP	CD-ROM	Tapes: 9-Track Tape (6250 bpi) or 3480 Tape	Tapes: 8-mm (8200) or 4-mm Tape	Tape Formats: VMS Backup (VAX and Alpha)	Tape Formats: Unlabeled (UNIX Compatible)	Tape Formats: ANSI Labeled	Tape Formats: UNIX TAR
015	AVHRR monthly global MCSST coregistered with CZCS data (Miami, GSFC) CD-ROM		X						
038	AVHRR weekly global and regional 18km gridded daytime MCSST (Miami)	(X)		X	X	X	X	X	only on 4 or 8 mm
037	AVHRR weekly global and regional 18km nighttime MCSST (Miami)	(X)		X	X	X	X	X	only on 8 mm
050	AVHRR Oceans Pathfinder global equal-angle all SST (NOAA, NASA)	(Y)			X				X
051	AVHRR Oceans Pathfinder global equal-angle best SST (NOAA, NASA)	(Y)			X				X
052	AVHRR Oceans Pathfinder global equal-area all SST (NOAA, NASA)	(Y)			X				X
053	AVHRR Oceans Pathfinder 0.5-degree spatial resolution global SST (NOAA, NASA)	(Y)			X				
054	DMSP F-8 SSM/I Pathfinder ocean wind speed level 2 and browse data (MSFC, Wentz)	X			X				X
033	DMSP F-8 SSM/I ocean wind speed, liquid water, water vapor '87-'91 (Wentz)			X	X	X	X	X	X
034	DMSP F-10 SSM/I ocean wind speed, liquid water, water vapor '90-'92 (Wentz)			X	X	X	X		X
011	Geos-3 altimeter geophysical data record '75-'78			X	X		X		
012	Geosat altimeter geophysical parameters colocated with NDBC buoy data (Glazman)	X		X	X	X	X	X	X
001	Geosat sea-surface height, SSM/I wind speed, AVHRR SST '87 '89 '90 '91 (Halpern)	X		X	X	X	X	X	only on 4 or 8 mm

(X) indicates regions only, (Y) to a maximum of 250 MB at time of printing.

Table 2. Standard Media and Formats for PO.DAAC Data (cont.)
(Data are available on other media and in other formats on an "as time permits" basis.)

#	MEDIA AND FORMATS PO.DAAC DATA SETS	FTP	CD-ROM	Tapes		Tape Formats			
				9-Track Tape (6250 bpi) or 3480 Tape	8-mm (8200) or 4-mm Tape	VMS Backup (VAX and Alpha)	Unlabeled (UNIX-Compatible)	ANSI Labeled	UNIX TAR
030	Nimbus-7 SMMR global 60km gridded ocean parameters '79-'84 (Wentz)	X		X	X	X	X	X	only on 4 or 8 mm
014	SMMR, GOES-W VISSR Tropical Pacific surface thermal forcing parameters (Liu)	X		X	X	X	X	X	only on 4 or 8 mm
004	SSM/I derived global heat and momentum fluxes (Atlas, Jusem, Ardizzone)	X		X	X	X	X	X	only on 4 or 8 mm
044	SSM/I derived global ocean surface-wind vectors (Atlas, Ardizzone)	X		X	X	X	X		X
032	SSM/I wind speed, water vapor, cloud water at Geosat altimeter locations (Wentz)			X	X		X		
007	Seasat SMMR polar gridded brightness temperature statistics (Carsey, Pihos)			X	X		X		
019	Seasat altimeter geophysical data record level 2 '78			X	X		X		
017	Seasat altimeter sensor data record level 1a '78			X	X		X		
018	Seasat altimeter sensor data record level 1b '78			X	X		X		
024	Seasat scanning multichannel microwave radiometer geophysical data record level 2			X	X		X		
025	Seasat scanning multichannel microwave radiometer sensor data record level 1a			X	X		X		
023	Seasat scanning multichannel microwave radiometer sensor data record level 1b			X	X		X		
021	Seasat scatterometer geophysical data record level 1b '78			X	X		X		
022	Seasat scatterometer geophysical data record level 2 '78			X	X		X		

Table 2. Standard Media and Formats for PO.DAAC Data (cont.)
(Data are available on other media and in other formats on an "as time permits" basis.)

#	MEDIA AND FORMATS / PO.DAAC DATA SETS	FTP	CD-ROM	Tapes		Tape Formats			
				9-Track Tape (6250 bpi) or 3480 Tape	8-mm (8200) or 4-mm Tape	VMS Backup (VAX and Alpha)	Unlabeled (UNIX Compatible)	ANSI Labeled	UNIX TAR
031	Seasat scatterometer global 50km sigma-0 data '78 (Wentz)			X	X		X		
029	Seasat scatterometer global dealiased wind vectors '78 (Wentz et al.)			X	X		X		
002	Seasat scatterometer global gridded dealiased surface wind vectors (Atlas)			X	X		X		
013	Seasat scatterometer global gridded dealiased wind vectors (JPL-UCLA-AES)			X	X		X		
008	Seasat scatterometer global gridded monthly surface wind vectors (Chelton)			X	X		X		
006	Seasat scatterometer polar gridded daily sigma-0 statistics (Carsey, Pihos)			X	X		X		
020	Seasat scatterometer sensor data record level 1a '78			X	X		X		
026	Seasat visible and infrared radiometer sensor data record '78			X	X		X		
027	TOGA related satellite and in-situ data CD-ROM '85-'90		X						
036	TOPEX altimeter geophysical data record			X	X	X	X		
035	TOPEX altimeter sensor data record				X	X			
028	TOPEX/Poseidon altimeter merged geophysical data record (NASA/PO.DAAC)		X						

III. DESCRIPTIONS OF PO.DAAC DATA

This section contains descriptions of the PO.DAAC data arranged alphabetically. The names of the products have been changed in the last year to make them internally consistent. The current names are limited to 80 characters and contain the following information in order of appearance:

1. Source (spacecraft, satellite, etc.).
2. Sensor (e.g., altimeter, radiometer, scatterometer).
3. Description (e.g., monthly, weekly, binned, gridded, global, regional, parameter, etc.).
4. Dataset type (e.g., Sensor Data Record, Geophysical Data Record).
5. Processing level and year.
6. Producer name (in parentheses).

In some cases not all the information appears in the title owing to the length restriction. In cases where not all the information appears, the least important items have been dropped. The order of the items in the above list does not necessarily indicate their relative importance.

All data products are associated with a unique product number which stays with the product regardless of name changes and retires with the product. The product number is kept as more data are added to the product, e.g., the TOPEX/POSEIDON MGDR will remain Product 028 as more cycles of data are added.

Summaries of the products and associated geophysical parameters are provided in Table 1. Summaries of media and format information for each product are provided in Table 2.

Product Number: 015
Product Title: **AVHRR monthly global MCSST coregistered with CZCS data (Miami, GSFC) CD-ROM**

Source/sensor: Nimbus-7 Coastal Zone Color Scanner (CZCS), Tiros-N/NOAA Advanced Very-High-Resolution Radiometer (AVHRR).

Coverage: 1978–1986 for Nimbus-7 CZCS, 1981–1986 for NOAA AVHRR, both regional and global.

Abstract: The AVHRR MCSST and CZCS phytoplankton pigment concentration data set contains monthly averaged sea-surface temperatures (day and night) derived from NOAA satellite AVHRR which are temporally and spatially coregistered with phytoplankton pigment concentration data acquired from the CZCS instrument on Nimbus-7. The CZCS data cover 1978-1986 and AVHRR data cover the period from 1981-1986, giving 5 years of coregistered data. The data has a resolution of approximately 18 km by 18 km at the equator and is presented on an equal angle grid. DN values can be used to derive the actual SST in degrees Celsius and the phytoplankton content in milligrams per cubic meter. The MCSST SST data was derived from the University of Miami weekly analysis and the CZCS data was acquired from NASA Goddard. For both the phytoplankton and SST data are presented as global and regional images. Three sets of global and regional data are provided: valid images where all data are measured values, interpolated images where missing values are interpolated, and flag images which provide metadata (land, ice, or the number of values used to compute the average value). Selected reduced resolution global browse images have also been included. The data are in HDF format and comes with a copy of NCSA IMAGE S/W for display of the images. The data is provided as a set of 5 CD-ROMs together with a user manual.

Data Set Vol: Approximately 3.5 GB

Smallest order: Set of 5 CD-ROMs

References: (a) Tran, A. V., E. Smith, J. Hyon, R. Evans, O. Brown, and G. Feldman, "Satellite-Derived Multichannel Sea-Surface Temperature and Phytoplankton Pigment Concentration Data: A CD-ROM Set Containing Monthly Mean Distributions for the Global Oceans," JPL D-10351 (internal document), Jet Propulsion Laboratory, Pasadena, California, 1992 (Document PO.DAAC O015.D001) provided with data.

Comments: A second set of CD-ROMs will be issued in December 1995 that will contain monthly MCSST data for 1987–1992.

Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup			Yes, HDF	
ANSI labeled				
Unlabeled				
UNIX Tar				

Product Number: 038
Product Title: **AVHRR weekly global and regional 18km gridded daytime MCSST (Miami)**
Source/sensor: Tiros-N/NOAA Advanced Very-High-Resolution Radiometer (AVHRR)
Coverage: October 1981– March 1994 , global and regional
Abstract: The AVHRR MCSST data set contains weekly averaged multichannel sea-surface temperatures (MCSSTs) derived from the daytime NOAA Advanced High Resolution Radiometer (AVHRR). The data is available as a global set (2048 x 1024 pixels) or as specific regions (512 x 512 pixels). The regions are as follows: Agulhas, Indian Ocean, North Atlantic, Northeast Atlantic, South Atlantic, Northeast Pacific, Northwest Pacific, Southeast Pacific, Southwest Pacific. Software to extract spatial subsets from the global or regional images is included with the DSP data, as is a copy of NCSA IMAGE S/W for display of the images. The data cover the period October 1981– December 1992 and more recent data will be added as they become available. The data, prepared by the University of Miami/Rosenstiel School of Marine and Atmospheric Sciences (RSMAS), have a resolution of approximately 18 km by 18 km at the equator and are presented on an equal angle grid. Where data are missing, values have been interpolated and the data are structured such that a flag value provides information on the number of values incorporated in the average. A data flag of 0 indicates interpolated values. DN values can be used to derive the actual Sea Surface Temperature (SST) in degrees Celsius. The data are available in DSP or HDF format on tape. A user's manual is provided. Regional data sets are available via FTP.
Data Set Vol: Each global image is approximately 8.4 MB and the regional images are 1.5 MB. Total data set is approximately 11.5 GB.
Smallest order: One region (see notes under Data/Media Format)
References: (a) McClain, E. P., W. G. Pichel, and C. C. Walton, "Comparative performance of AVHRR-based multichannel sea-surface temperatures," *Journal of Geophysical Research*, 90, 1985, pp. 11587–11601.
(b) Olson, D. B., G. P. Podesta, R. H. Evans, and O. B. Brown, "Temporal variation in the separation of Brazil and Malvinas Currents," *Deep-Sea Research*, 35, 1988, pp. 1971–1990.
(c) Smith, E., "A User's Guide to the NOAA AVHRR MCSST Data Set Produced by The University of Miami/RSMAS," March 1992, 20 pp. plus one-page insert (Document PO.DAAC 037.D001) provided with data.
Comments: Nighttime MCSSTs are available as Product 037. We recommend that you get the data in HDF, as a large number of tools for HDF, have been developed by NCSA. Some S/W for DSP data is provided with DSP data sets.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD ROM	Electronic Transfer
VMS Backup	DSP	DSP		See Note
ANSI labeled	DSP	DSP		
Unlabeled	DSP	DSP		
UNIX Tar	DSP, HDF			

Notes: Regions and extractions from this data set can be produced upon request. FTP data is available in unlabeled (raw) data only. Electronic transfers are available depending on the size of the requested order.

Product Number: 037
Product Title: **AVHRR weekly global and regional 18km nighttime MCSST (Miami)**
Source/sensor: Tiros-N/NOAA Advanced Very-High-Resolution Radiometer (AVHRR)
Coverage: October 1981–March 1994, global and regional
Abstract: The AVHRR MCSST data set contains weekly averaged multichannel sea-surface temperatures (MCSSTs) derived from the nighttime NOAA Advanced High Resolution Radiometer (AVHRR). The data is available as a global set (2048 x 1024 pixels) or as specific regions (512 x 512 pixels). The regions are as follows: Agulhas, Indian Ocean, North Atlantic, Northeast Atlantic, South Atlantic, Northeast Pacific, Northwest Pacific, Southeast Pacific, Southwest Pacific. Software to extract spatial subsets from the global or regional images is included with the DSP data, as is a copy of NCSA IMAGE S/W for display of the images. The data cover the period October 1981– December 1992 and more recent data will be added as they become available. The data, prepared by the University of Miami/Rosenstiel School of Marine and Atmospheric Sciences (RSMAS), have a resolution of approximately 18 km by 18 km at the equator and are presented on an equal angle grid. Where data are missing, values have been interpolated and the data are structured such that a flag value provides information on the number of values incorporated in the average. A data flag of 0 indicates interpolated values. DN values can be used to derive the actual Sea Surface Temperature (SST) in degrees Celsius. The data are available in DSP or HDF format on tape. A user's manual is provided. Regional data sets are available via FTP.
Data Set Vol: Each global image is approximately 8.4 MB and the regional images are 1.5 MB. Total data set is approximately 11.5 GB.
Smallest order: One region (see notes under Data/Media Format)
References: (a) McClain, E. P., W. G. Pichel, and C. C. Walton, "Comparative performance of AVHRR-based multichannel sea-surface temperatures," *Journal of Geophysical Research*, 90, 1985, pp. 11587–11601.
(b) Olson, D. B., G. P. Podesta, R. H. Evans, and O. B. Brown, "Temporal variation in the separation of Brazil and Malvinas Currents," *Deep-Sea Research*, 35, 1988, pp. 1971–1990.
(c) Smith, E., "A User's Guide to the NOAA AVHRR MCSST Data Set Produced by The University of Miami/RSMAS," March 1992, 20 pp. plus one-page insert (Document PO.DAAC 037.D001) provided with data.
Comments: Daytime MCSSTs are available as Product 038. Some files from 1993 and 1994 are missing, but will be added to the product as soon as they are available. We recommend that you get the data in HDF, as a large number of tools for HDF have been developed by NCSA. Some S/W for DSP data is provided with DSP data sets.

Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup	DSP	DSP		See Note
ANSI labeled	DSP	DSP		
Unlabeled	DSP	DSP		
UNIX Tar	DSP,HDF			

Notes: Regions and extractions from this dataset can be produced upon request. FTP data is available in unlabeled (raw) data only. Electronic transfers are available depending on the size of the requested order.

Product Number: 050
Product Title: **AVHRR Oceans Pathfinder global equal-angle all SST (NOAA, NASA)**
Source/sensor: Tiros-N/NOAA Advanced Very-High-Resolution Radiometer (AVHRR)
Coverage: October 1987– 1988 (more data added weekly), global
Abstract: The data product currently consists of global sea surface temperatures (SSTs) from January 1987 to December 1988. By Jan. 1996 data from January 1981-present will be processed and will become part of this product. The product, derived from the five-channel AVHRR instruments onboard the NOAA 7/9/11 polar orbiting satellites, form a high quality data set suitable for global change studies. The product is improved over previously available satellite-derived SST data sets (Products 037, 038) in that the data have been produced using improved data processing, including incorporation of new cloud detection algorithms developed by the University of Miami, inter-calibration among the satellites, and quality analysis procedures implemented through the AVHRR Pathfinder Ocean group at the Jet Propulsion Laboratory. In addition, the data are more complete because they are derived from the original AVHRR data rather than from a subset as provided by NOAA for operational purposes. This product is one of four oceans Pathfinder data products (050, 051, 052, 053). The data from which the four products have been made consist of a set of daily global images where the image size is 4096x2048 with a spatial resolution of 9 km. Product 050 consists of equal-angle data. The equal-angle grid has the same number of SST values in both latitude and longitude for the entire globe. The product is listed as having "all SST values," i.e., the product contains all available values and the associated statistics. Options within Product 050 include daily averaged, weekly averaged, and monthly averaged day and night data. Data is also available with a 9-km resolution and with an 18-km resolution. Initial distribution will be through an anonymous FTP site. Software is also available on the FTP site to permit regional subsets to be made prior to transmitting the data. Instructions for accessing the data via FTP are on pg. 2. The most recently produced products can be obtained via FTP from FTP::/sst-www.jpl.nasa.gov/, where products are maintained prior to transferring them to the main PO.DAAC FTP site. The data are also available through the WWW (http://sst-www.jpl.nasa.gov) and can be provided on tape.
Data Set Vol: Each global image is approximately 8 MB.
Smallest order: Six months unless transfer is via FTP.
References: (a) Vazquez et al., "AVHRR Pathfinder Ocean Data Management Plan," Draft, 9 Aug. 1994, 50 pp., JPL D-12218 (internal document). Document provided with data.
(b) Vazquez et al., "AVHRR Pathfinder Ocean Data User's Manual, Draft, October 1994, 25 pp., JPL D-12217 (internal document). Document provided with data.
Comments: This data product is in work and being added to on a weekly basis.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD ROM	Electronic Transfer
VMS Backup				Yes, see pg. 2
ANSI labeled				
Unlabeled				
UNIX Tar	HDF			

Notes: If not already available on an FTP site, data can be staged.

Product Number: 051
Product Title: **AVHRR Oceans Pathfinder global equal-angle best SST (NOAA, NASA)**
Source/sensor: Tiros-N/NOAA Advanced Very-High-Resolution Radiometer (AVHRR)
Coverage: October 1987– 1988 (more data added weekly), global
Abstract: The data product currently consists of global sea surface temperatures (SSTs) from January 1988 to December 1988. By Jan. 1996 data from January 1981-present will be processed and will become part of this product. The product, derived from the five-channel AVHRR instruments onboard the NOAA 7/9/11 polar orbiting satellites, form a high quality data set suitable for global change studies. The product is improved over previously available satellite-derived SST data sets (Products 037, 038) in that the data have been produced using improved data processing, including incorporation of new cloud detection algorithms developed by the University of Miami, inter-calibration among the satellites, and quality analysis procedures implemented through the AVHRR Pathfinder Ocean group at the Jet Propulsion Laboratory. In addition, the data are more complete because they are derived from the original AVHRR data rather than from a subset as provided by NOAA for operational purposes. This product is one of four oceans Pathfinder data products (050, 051, 052, 053). The data from which the four products have been made consist of a set of daily global images where the image size is 4096x2048 with a spatial resolution of 9 km. Product 051 consists of equal-angle data. The equal-angle grid has the same number of SST values in both latitude and longitude for the entire globe. The product is listed as containing "best SST values," i.e., the value per pixel is not averaged but is selected as being the best based on algorithm analysis of surrounding values. Options within Product 051 include daily averaged, weekly averaged, and monthly averaged day and night data. Data are also available with a 9-km resolution or with an 18-km resolution. Initial distribution will be through an anonymous FTP site. Software is also available on the FTP site to permit regional subsets to be made prior to transmitting the data. Instructions for accessing the data via FTP are on pg. 2. The most recently produced products can be obtained via FTP from FTP::/sst-www.jpl.nasa.gov, where products are maintained prior to transferring them to the main PO.DAAC FTP site. The data are also available through the WWW (http://sst-www.jpl.nasa.gov) and can be provided on tape.
Data Set Vol: Each global image is approximately 8 MB.
Smallest order: Six months unless transfer is via FTP.
References: Vazquez et al., "AVHRR Pathfinder Ocean Data Management Plan," Draft, 9 Aug. 1994, 50 pp., JPL D-12218 (internal document). Document provided with data.
Vazquez et al., "AVHRR Pathfinder Ocean Data User's Manual, Draft, October 1994, 25 pp., JPL D-12217 (internal document). Document provided with data.
Comments: This data product is in work and being added to on a weekly basis.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD ROM	Electronic Transfer
VMS Backup				Yes, see pg. 2
ANSI labeled				
Unlabeled	Yes			
UNIX Tar	HDF			

Notes: If not already available on an FTP site, data can be staged.

Product Number: 052
Product Title: **AVHRR Oceans Pathfinder global equal-area all SST (NOAA, NASA)**
Source/sensor: Tiros-N/NOAA Advanced Very-High-Resolution Radiometer (AVHRR)
Coverage: October 1987– 1988 (more data added weekly), global
Abstract: The data product currently consists of global sea surface temperatures (SSTs) from January 1988 to December 1988. By Jan. 1996 data from January 1981-present will be processed and will become part of this product. The product, derived from the five-channel AVHRR instruments onboard the NOAA 7/9/11 polar orbiting satellites, form a high quality data set suitable for global change studies. The product is improved over previously available satellite-derived SST data sets (Products 037, 038) in that the data have been produced using improved data processing, including incorporation of new cloud detection algorithms developed by the University of Miami, inter-calibration among the satellites, and quality analysis procedures implemented through the AVHRR Pathfinder Ocean group at the Jet Propulsion Laboratory. In addition, the data are more complete because they are derived from the original AVHRR data rather than from a subset as provided by NOAA for operational purposes. This product is one of four oceans Pathfinder data products (050, 051, 052, 053). The data from which the four products have been made consist of a set of daily global images, where the image size is 4096x2048 with a spatial resolution of 9 km. Product 052 consists of equal-area data. The equal-angle grid has the same number of SST values in both latitude and longitude for the entire globe. The product is listed as having "all SST values," i.e., the product contains all available values and the associated statistics. It also contains "best SST values." Options within Product 052 include daily averaged, weekly averaged, and monthly averaged day and night data. Data are also available with a 9-km resolution or with an 18-km resolution. Initial distribution will be through an anonymous FTP site. Software is also available on the FTP site to permit regional subsets to be made prior to transmitting the data. Instructions for accessing the data via FTP are on pg. 2. The most recently produced products can be obtained via FTP from FTP::/sst-www.jpl.nasa.gov, where products are maintained prior to transferring them to the main PO.DAAC FTP site. The data are also available through the WWW (http://sst-www.jpl.nasa.gov), and can be provided on tape.
Data Set Vol: Each global image is approximately 8 MB.
Smallest order: Six months unless transfer is via FTP.
References: Vazquez et al., "AVHRR Pathfinder Ocean Data Management Plan" Draft, 9 Aug. 1994, 50 pp., JPL D-12218 (internal document). Document provided with data.
Vazquez et al., "AVHRR Pathfinder Ocean Data User's manual, Draft, October 1994, 25 pp., JPL D-12217 (internal document). Document provided with data.
Comments: This data product is in work and being added to on a weekly basis.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD ROM	Electronic Transfer
VMS Backup				Yes, see pg. 2
ANSI labeled				
Unlabeled				
UNIX Tar	HDF			

Notes: If not already available on an FTP site, data can be staged.

Product Number: 053
Product Title: **AVHRR Oceans Pathfinder 0.5-degree spatial resolution global SST (NOAA, NASA)**
Source/sensor: Tiros-N/NOAA Advanced Very-High-Resolution Radiometer (AVHRR)
Coverage: October 1987– 1988 (more data added weekly), global
Abstract: The data product currently consists of global sea surface temperature (SST) from January 1988 to December 1988. By Jan. 1996 data from January 1981-present will be processed and will become part of this product. The product, derived from the five-channel AVHRR instruments onboard the NOAA 7/9/11 polar-orbiting satellites, form a high quality data set suitable for global change studies. The product is improved over previously available satellite-derived SST data sets (Products 037, 038) in that the data have been produced using improved data processing, including incorporation of new cloud detection algorithms developed by the University of Miami, inter-calibration among the satellites, and quality analysis procedures implemented through the AVHRR Pathfinder Ocean group at the Jet Propulsion Laboratory. In addition the data are more complete because they are derived from the original AVHRR data rather than from a subset as provided by NOAA for operational purposes. This product is one of four oceans Pathfinder data products (050, 051, 052, 053). The data from which the four products have been made consists of a set of daily global images, where the image size is 4096x2048 with a spatial resolution of 9 km. Product 053 consists of equal-angle data. The equal-area grid has the differing numbers of SST values depending on latitude. The product is listed as having "all SST values," i.e., the product contains all available values and the associated statistics. The product also has "best SST values," i.e., the value per pixel is not averaged but is selected as being the best based on algorithm analysis of surrounding values. Options within Product 053 include daily averaged, weekly averaged, and monthly averaged day and night data. Data can be obtained through the PO.DAAC anonymous FTP site. Software is also available on the FTP site to permit regional subsets to be made prior to transmitting the data. Instructions for accessing the data via FTP are on pg. 2. The most recently produced products can be obtained via FTP from FTP::/sst-www.jpl.nasa.gov, where products are maintained prior to transferring them to the main PO.DAAC FTP site. The data are also available through the WWW (http://sst-www.jpl.nasa.gov), and can be provided on tape.
Data Set Vol: Each global image is approximately 260 kB.
Smallest order: TBD
References: Vazquez et al., "AVHRR Pathfinder Ocean Data Management Plan," Draft, 9 Aug. 1994, 50 pp., JPL D-12218 (internal document). Document provided with data.
Vazquez et al., "AVHRR Pathfinder Ocean Data User's Manual, Draft, October 1994, 25 pp., JPL D-12217 (internal document). Document provided with data.
Comments: This data product is in work and being added to on a weekly basis.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD ROM	Electronic Transfer
VMS Backup				Yes, see pg. 2
ANSI labeled				
Unlabeled				
UNIX Tar	HDF			

Notes: If not already available on an FTP site, data can be staged.

Product Number: 054
Product Title: **DMSP F-8 SSM/I Pathfinder ocean wind speed level 2 and browse data (MSFC, Wentz)**
Source/sensor: DMSP SSM/I
Coverage: July 1987–December 1991, global
Abstract: This product consists of wind speeds calculated over water areas (plus coastal, sea ice, and possible sea ice areas) using the algorithms developed by F. Wentz (Remote Sensing Systems, 1989, 1992). The data were derived from the SSM/I (Special Sensor Microwave Imager) instrument on the DMSP F-8 (Defense Meteorological Satellite Program) satellite and were produced by the Marshall Space Flight Center. The data are global, in swath format, and cover the time period 1987-08-01 to 1988-12-31. This product is similar to PO.DAAC Product 033, however flags that indicate surface type are more accurate in the Pathfinder product. Wentz cautions that wind-speed values over fresh-water lakes are suspect, as are values within 50-100 km of the coast; these values have not been flagged. Values over coastal, possible sea ice, and sea ice areas are flagged because of the questionable validity of the algorithm over these areas. For locations or pixels where the algorithm did not converge, marine wind speed values are not calculated. Cloud/rain liquid water values exceeding 18 mg/cm2 indicate the presence of rain; marine wind speeds are flagged because the accuracy of the wind-speed estimate quickly degrades above this value and the algorithm developer recommends these wind speeds not be used. In Revision 1 of the geophysical tapes user's manual, Wentz includes a correction for the cloud/rain liquid water; this correction has been applied to the Pathfinder data. The corrected value of 18 mg/cm2 corresponds to the value of 25 mg/cm2 shown in the 1989 version of the user manual. The data are in HDF. Browse products are included.
Data Set Vol: Approximately 7.5 GB uncompressed, 2.5 GB compressed.
Smallest order: Entire data set or portion depending upon method of access.
References: (a) Wentz, F. J., "User's Manual: SSM/I Geophysical Tapes," Remote Sensing Systems Technical Report 060989, Remote Sensing Systems, 1101 College Avenue, Suite 220, Santa Rosa, CA 95404, 1989, 16 pp. (Document PO.DAAC 033.D001) provided with data.
(b) Wentz, F. J., "User's Manual: SSM/I Antenna Temperature Tapes,"1988, 36 pp. Document PO.DAAC 033.D002 provided with data.
(c) Wentz, F. J., "Revision 1 Update for SSM/I Geophysical Tapes User's Manual," Remote Sensing Systems Technical Report 040792, Remote Sensing Systems, 1101 College Avenue, Suite 220, Santa Rosa, CA 95404, 1989, 10 pp. (Document PO.DAAC 033.D003) provided with data.
Comments: This product will be availble in October. Further data will be added as it becomes available.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				X (see note)
ANSI labeled				
Unlabeled				
UNIX Tar	X			

Notes: Browse data will be available in Dec '94.

Product Number: 033
Product Title: **DMSP F-8 SSM/I ocean wind speed, liquid water, water vapor '87-'91 (Wentz)**
Source/sensor: DMSP SSM/I
Coverage: July 1987–December 1991, global
Abstract: This data consists of surface wind speed, integrated water vapor content and atmospheric liquid water over the open ocean. The data were derived from the SSM/I (Special Sensor Microwave Imager) instrument on the DMSP F-8 (Defense Meteorological Satellite Program) satellite and were produced by F. Wentz (Remote Sensing Systems). The data cover the period from July 1987 to December 1991, with the exception of a gap between December 3, 1987 to January 12, 1988. The data are organized sequentially by swath. The data consist of logical records which correspond to a single SSM/I scan which contains sixty-four 25-km by 25-km resolution cells. For each cell the following information is given: time, latitude, longitude, a classification index, antenna temperatures, and the three geophysical parameters. The classification index is a flag for surface type, e.g., land, sea-ice. No geophysical data were calculated over land or sea-ice. The data are in a binary integer format and users are provided with a FORTRAN subroutine to unpack the logical records and put the properly scaled parameters in a common area. The data were originally distributed on 9-track tape, where each tape contained 2 weeks of data. The data are also available on 8-mm tape and are available via FTP upon request. User's guides are provided with this data.
Data Set Vol: 14 GB, approximately 8 MB/day. One 8-mm tape holds 6 months of data.
Smallest order: Two weeks of data.
References: (a) Wentz, F. J., "User's Manual: SSM/I Geophysical Tapes," Remote Sensing Systems Technical Report 060989, Remote Sensing Systems, 1101 College Avenue, Suite 220, Santa Rosa, CA 95404, 1989, 16 pp. (Document PO.DAAC 033.D001) provided with data.
(b) Wentz, F. J., "User's Manual: SSM/I Antenna Temperature Tapes,"1988, 36 pp. (Document PO.DAAC 033.D002) provided with data.
(c) Wentz, F. J., "Revision 1 Update for SSM/I Geophysical Tapes User's Manual," Remote Sensing Systems Technical Report 040792, Remote Sensing Systems, 1101 College Avenue, Suite 220, Santa Rosa, CA 95404, 1989, 10 pp. (Document PO.DAAC 033.D003) provided with data.
(d) PO.DAAC, 1991 SSM/I Geophysical Data Gaps, 1987 - 90 (Document PO.DAAC 033.D004) provided with data.
Comments: SSM/I data from the F-10 satellite is provided in Product 034. There is an overlap of approximately a year in the two products. The instruments on F-8 and F-10 have been calibrated so the data can be used in comparative studies. There are separate decode routines for F-8 and F-10 data. SSMR data (Product 030 can also be used to extend the series).

Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup	X	X		
ANSI labeled	X	X		X
Unlabeled	X	X		
UNIX Tar	X			

Notes: The decode routine is available on diskette or via FTP in the subdirectory: product_033. Data are permanently staged on the FTP site.

Product Number: 034
Product Title: **DMSP F-10 SSM/I ocean wind speed, liquid water, water vapor '90-'92 (Wentz)**
Source/sensor: DMSP SSM/I
Coverage: December 1990–December 1992, global
Abstract: This data consists of surface wind speed, integrated water vapor content, and atmospheric liquid water over the open ocean. The data were derived from the SSM/I (Special Sensor Microwave Imager) instrument on the DMSP F-10 (Defense Meteorological Satellite Program) satellite and were produced by F. Wentz (Remote Sensing Systems). The data cover the period from December 1990 to December 1992. Additions are being made to the data set as more data are processed. The data are organized sequentially by swath. The data consist of logical records which correspond to a single SSM/I scan which contains sixty-four 25 km by 25 km resolution cells. For each cell the following information is given: time, latitude, longitude, a classification index, antenna temperatures and the three geophysical parameters. The classification index is a flag for surface type, e.g., land, sea-ice. No geophysical data were calculated over land or sea-ice. The data are in a binary integer format and users are provided with a FORTRAN subroutine to unpack the logical records and put the properly scaled parameters in a common area. The data were originally distributed on 9-track tape where each tape contained 2 weeks of data. The data are also available on 8-mm tape. Documentation is provided with this data.
Data Set Vol: Approximately 8 GB
Smallest order: Two weeks of data.
References: (a) Wentz, F. J., "User's Manual: SSM/I Geophysical Tapes," Remote Sensing Systems Technical Report 060989, Remote Sensing Systems, 1101 College Avenue, Suite 220, Santa Rosa, CA 95404, 1989, 16 pp. (Document PO.DAAC 033.D001) provided with data.
(b) Wentz, F. J., "User's Manual: SSM/I Antenna Temperature Tapes,"1988, 36 pp. (Document PO.DAAC 033.D002) provided with data.
(c) Wentz, F. J., "Revision 1 Update for SSM/I Geophysical Tapes User's Manual," Remote Sensing Systems Technical Report 040792, Remote Sensing Systems, 1101 College Avenue, Suite 220, Santa Rosa, CA 95404, 1989, 10 pp. (Document PO.DAAC 033.D003) provided with data.
(d) Wentz, F. J., "Revision-2 Update for SSM/I Geophysical Tapes User's Manual," Remote Sensing Systems Technical Report 040293, Remote Sensing Systems, 1101 College Avenue, Suite 220, Santa Rosa, CA 95404, 1993, 8 pp. (Document PO.DAAC 034.D001) provided with data.
Comments: SSM/I data from the F-8 satellite are provided in Product 033. There is an overlap of approximately a year in the two products. The instruments on F-8 and F-10 have been calibrated so the data can be used in comparative studies. There are separate decode routines for F-8 and F-10 data. SSMR data (Product 030) can also be used to extend the series.

Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup	X	X		
ANSI labeled	X	X		X
Unlabeled	X	X		
UNIX Tar	X			

Notes: The decode routine is available on diskette or via FTP. Data is permanently staged on the FTP site in the subdirectory: product_034.

Product Number: **011**
Product Title: **Geos-3 altimeter geophysical data record '75-'78**
Source/sensor: Geos-3 altimeter
Coverage: 14 April 1975–1 December 1978, global
Abstract: These data are revised Geos-3 altimeter measurements. The data set was produced by the National Ocean Survey/National Geodetic Survey (NOS/NGS). The data set contains 5,006,956 altimetric sea surface heights and supporting information such as sea state, wind speed, Swiderski ocean tide height, and Cartwright solid-tide height. Measurements are compressed to a rate of 1 per second using a trim mean filter. The compressed records are stored on 9-track, non labeled, 1600 bit-per-inch magnetic tapes. Seven chronological tapes exist with starting days of April 14 and October 22, 1975; April 20 and November 9, 1976; June 21 and December 6, 1977; August 19, 1978. The data end on December 1, 1978. They have a logical record length of 56 bytes and a block size of 30804 bytes.
Data Set Vol: 170 MB
Smallest order: Entire data set
References: Agreen, R. W., "The 3.5-Year Geos-3 Data Set," NOAA Technical Memorandum NOS NGS 33, NOAA, Rockville, MD, 1982, 8 pp. (Document PO.DAAC 011.D001) provided with data.

Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 012
Product Title: **Geosat altimeter geophysical parameters colocated with NDBC buoy data (Glazman)**
Source/sensor: National Data Buoy Center (NDBC), Geosat Altimeter
Coverage: 1986–1988, global
Abstract: The data product "Geosat altimeter geophysical parameters colocated with NOAA/NDBC buoy data" is an oceanographic data set. The data cover 3 years (1986-1988) and are located at data points determined by buoy locations in the North Atlantic and North Pacific Oceans. The data consist of selected Geosat altimeter measurements collocated with measurements from 22 buoys at fixed locations. Measurements derived from Geosat consist of the radar cross section, wind speed based on the algorithm by Brown (1981), and significant wave height. Measurements from the buoys consist of wave spectra, significant wave height, wave period, wind speed, sea and air temperatures and atmospheric pressure. The data consist of three two-dimensional arrays. The Geosat data is collocated with the buoys in time and space. The maximum distance between a satellite footprint and a buoy is 0.5 degrees longitude. The time difference between a satellite overflight and a buoy data is less than 1 hour. The collocated data sets were compiled in 1990-1991 by Roman Glazman and Stuart Pilorz at the Jet Propulsion Laboratory, California Institute of Technology. The data are available via FTP or on magnetic tape.
Data Set Vol: Approximately 140 MB
Smallest order: Entire data set unless accessed via FTP
References: (a) Glazman, R. E., "Statistical Problems of Wind-Generated Gravity Waves Arising in Microwave Remote Sensing of Surface Winds," *IEEE Transactions of Geoscience and Remote Sensing*, 29, 1, 1991, pp. 135–142.
(b) Glazman, R. E., and S. H. Pilorz, "Effects of Sea Maturity on Satellite Altimeter Measurements," *Journal of Geophysical Research*, 95, C3, 1990, pp. 2857–2870.
c) Glazman, R. E., "Description of Glazman GEOSAT-NDBC Buoy Data Set," 1994, 3 pp. (Document PO.DAAC 012.D001) provided with data and available on-line.
Comments: None
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup	X	X		Yes
ANSI labeled	X	X		
Unlabeled	X	X		
UNIX Tar	X			

Notes: Data is permanently staged on the FTP site in the subdirectory: product_012.

Product Number: 001
Product Title: **Geosat sea-surface height, SSM/I wind speed, AVHRR SST '87 '89 -'92 (Halpern)**
Source/sensor: Geosat, SSM/I, AVHRR/2,
Coverage: 1987, 1989, 1990, 1991, 1992, global
Abstract: This product consists of monthly mean global distributions of ocean surface geophysical parameters including sea-surface temperature, surface-wind speed, sea-surface height and ocean currents. The data, produced by D. Halpern et al., are available for 1987, 1989, 1990 and 1991. Data for 1987, 1989, 1990 and 1991, consist of sea surface temperature from AVHRR and surface wind speed derived from SSM/I. Data for 1987 also include sea-surface height derived from GEOSAT. The data set for 1989, 1990 and 1991 also includes ARGOS buoy drift data. Data for 1992 consist of monthly mean distributions of SSM/I wind speed, ARGOS buoy drift, AVHRR sea surface temperature, and ERS-1 AMI surface wind components. Geosat and SSM/I derived data are provided as a 1/3 degree-by-1/3 degree gridded product and the AVHRR derived data are provided on a grid approximately 1/3 degrees by 1/3 degrees. All satellite data are presented as two-dimensional arrays with flags to indicate missing data and land. The data is available electronically via FTP upon request or on magnetic tape. The data set is approximately 30 MB. This data set was also produced as hard copy in the form of an atlas; for information and documentation on this product contact D. Halpern.
Data Set Vol: 24 MB
Smallest order: One year
References: The following are available from Dr. D. Halpern, Jet Propulsion Laboratory, Pasadena, California (FAX) (818) 393-6720, (d.halpern@omnet.com):
(a) Halpern, D., et al., "An Atlas of Monthly Mean Distributions of Geosat Sea-Surface Height, SSM/I Surface-Wind Speed, AVHRR/2 Sea-Surface Temperature, and ECMWF Surface-Wind Components During 1987," JPL Publication 92-3, January 1992, 111 pp.
(b) Halpern, D., et al., "An Atlas of Monthly Mean Distributions of SSM/I Surface-Wind Speed, ARGOS Buoy Drift, AVHRR/2 Sea-Surface Temperature, and ECMWF Surface-Wind Components During 1989," JPL Publication 92-17, July 1992, 112 pp.
(c) Halpern, D., et al., "An Atlas of Monthly Mean Distributions of SSM/I Surface-Wind Speed, ARGOS Buoy Drift, AVHRR/2 Sea-Surface Temperature, and ECMWF Surface-Wind Components During 1990," JPL Publication 93-1, January 1993, 111 pp.
(d) Halpern, D., et al., 1993. An Atlas of Monthly Mean Distributions of SSMI Surface-Wind Speed, ARGOS Buoy Drift, AVHRR/2 Sea-Surface Temperature, AMI surface wind components, and ECMWF Surface-Wind Components During 1991. JPL Publication 93-10, July 1993, 111 pp.
(e) Halpern, D., et al., 1994. An Atlas of Monthly Mean Distributions of SSMI Surface-Wind Speed, ARGOS Buoy Drift, AVHRR/2 Sea-Surface Temperature, AMI surface wind components, and ECMWF Surface-Wind Components During 1992. JPL Publication 94-4, March 1994, 143 pp.
Comments: Data for 1992 were added to this data product in 1994.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup	X	X		Yes
ANSI labeled	X	X		
Unlabeled	X	X		
UNIX Tar	X			

Notes: Data is permanently staged on the FTP site in the subdirectory:product_001.

Product Number: 030
Product Title: **Nimbus-7 SMMR global 60km gridded ocean parameters '79-'84 (Wentz)**
Source/sensor: Nimbus-7 SMMR
Coverage: November 1979–September 1984, global
Abstract: This product consists of three ocean parameters, oceanic wind speed, columnar water vapor and columnar liquid water. The products are derived from the Nimbus-7 Scanning Multichannel Microwave Radiometer (SMMR) and were produced by F. Wentz (Remote Sensing Systems). The data cover a 6-year period from 1979 to 1984. The data are global and were derived from nighttime passes to reduce daytime calibration errors. The data are presented by swath and data exist for 13 cells across the swath, resulting in data records that correspond to cells that are approximately 60 x 60 km on the Earth's surface. Observations within 100 km of land are excluded and there is an ice flag. The products were produced from three of the 10 SMMR channels which closely correspond to SSM/I channels, using the same algorithm as is used to produce products from SSM/I data (PO.DAAC data sets 033 and 034). Consequently the SMMR derived data can be used in conjunction with SSM/I derived data to achieve a longer time series. The data set is approximately 450 MB in size and is available in unlabeled format on magnetic tape or via FTP. This data product also includes monthly averaged data. There is a user's manual for this data set.
Data Set Vol: Approximately 450 MB
Smallest order: One year unless data is accessed via FTP
References: (a) Wentz, F. J., and E. A. Francis, "Nimbus-7 SMMR Ocean Products, 1979–1984," Remote Sensing Systems Technical Report 033192, Remote Sensing Systems, 1101 College Avenue, Suite 220, Santa Rosa, CA 95404, March 31, 1992, 36 pp. (Document PO.DAAC 030.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup	X	X		Yes
ANSI labeled	X	X		
Unlabeled	X	X		
UNIX Tar	X			

Notes: Data is permanently staged on the FTP site in the subdirectory: product_030.

Product Number: 014
Product Title: **SMMR, GOES-W VISSR Tropical Pacific surface thermal forcing parameters (Liu)**
Source/sensor: Nimbus-7 SMMR, GOES-W VISSR
Coverage: January 1980–September 1983, Tropical Pacific (20°S–20°N)
Abstract: The is oceanographic data product SMMR, GOES-W VISSR Tropical Pacific surface thermal forcing parameters (Liu) consists of surface latent heat flux, surface solar irradiance, and net heat flux for January 1980 to September 1983. The data are provided for the tropical Pacific Ocean, i.e., the Pacific Ocean that lies between 20 degrees South and 20 degrees North. The data are monthly averaged and the spatial resolution is 2 degrees by 2 degrees. Latent heat flux fields are derived from Nimbus-7 SMMR data and the insolation fields are derived from the visible radiance measurements from the GOES-W VISSR (Visible/Infrared Spin-Scan Radiometer). The data product consists of 45 monthly files for each of the three parameters for January 1980 - September 1983. Latent heat flux for October 1983 is also available. The data were produced by T. Liu and C. Gauthier (Jet Propulsion Laboratory). The data are available on magnetic tape or via FTP upon request.
Data Set Vol: Approximately 140 MB
Smallest order: Entire data set unless accessed via FTP
References: (a) Liu, W. T., "Moisture and Latent Heat Flux Variabilities in the Tropical Pacific Derived From Satellite Data," *Journal of Geophysical Research*, 93, C6, 1988, pp. 6749–6760.
(b) Liu, W. T., "1982–1983 El Nino Atlas, Nimbus-7 Microwave Radiometer Data," JPL Publication 87-5, Jet Propulsion Laboratory, Pasadena, California, 1987 (Document PO.DAAC 014.D003) provided with data.
(c) Liu, W. T., and C. Gauthier, "Thermal Forcing on the Tropical Pacific from Satellite Data," *Journal of Geophysical Research*, 95, C8, 1990, pp. 13209–13217.
(d) Liu, W. T. "Monthly surface thermal forcing data in the Tropical Pacific," JPL D-12219 (internal document), Jet Propulsion Laboratory, Pasadena, California, June 1992, 2 pp. (Document PO.DAAC 014.D001) provided with data.
(e) Liu, W. T.. et al. "Monthly surface thermal forcing data in the Tropical Pacific from 1980-1983" JPL 89-42, Nov. '89, 11 pp. (Document PO.DAAC 014.D002) provided with data.
Comments: None
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup	X	X		Yes
ANSI labeled	X	X		
Unlabeled	X	X		
UNIX Tar	X			

Notes: Data is permanently staged on the FTP site in the subdirectory product_014.

Product Number: 004
Product Title: **SSM/I derived global heat and momentum fluxes (Atlas, Jusem, Ardizzone)**
Source/sensor: DMSP SSM/I, ECMWF model
Coverage: July 1987–June 1988, global
Abstract: This oceans data product consists of sensible and latent heat fluxes, and wind stress components. Wind vectors resulting from a variational analysis of SSM/I wind speeds (see Product 044) were combined with surface temperature and moisture data from ECMWF to calculate fluxes at the ocean-atmosphere interface. The algorithm employed in the flux estimates uses the similarity theory of Monin-Obukhov and is described in Helfand and Labraga (1988). The data were produced by R. Atlas, J. Jusem, and J. Ardizonne at the Goddard Space Flight Center. The fluxes were calculated every 6 hours for the period July 1987 to June 1988 and then monthly averaged. Extensions will be made as SSM/I data becomes available. All data sets contain sensible and latent heat flux (W/M**2), and U and V wind stress components (N/M**2) on a 2 degree latitude by 2.5 degree longitude grid configured as follows:

rdata(i,j)
i = 1,2,...,144 ==> lon = -180.0,-177.5,...,177.5
j = 1,2,...,91 ==> lat = -90.0,-88.0,...,90.0

Data are available via anonymous FTP (binary mode) to podaac.jpl.nasa.gov (137.78.32.15) or on tape in the Iris Data Format (IDF). IDF makes use of IEEE 2-byte integers and should be easily read on machines adhering to IEEE standards. Documentation and software are available online. Each file contains one set of monthly averaged fields and occupies approximately 100 kB..

Data Set Vol: Approximately 140 MB
Smallest order: Entire data set unless accessed via FTP
References:
(a) Atlas, R., and S. C. Bloom, "Global surface-wind vectors resulting from the assimilation of satellite wind-speed data in atmospheric general circulation models," *OCEANS '89 Proceedings*, IEEE Publication Number 89CH2780-5, 1989, pp. 260–265.
(b) Atlas, R., S. C. Bloom, R. N. Hoffman, J. V. Ardizzone, and G. Brin, "Space-based surface-wind vectors to aid understanding of air–sea interactions," *Eos Transactions*, American Geophysical Union, 72, 1991, p. 18.
(c) Helfand, H. M., and J. C. Labraga, "Design of a Nonsingular Level 2.5 Second-Order Closure Model for the Prediction of Atmospheric Turbulence," *Journal of Atmospheric Sciences*, Volume 45, No. 2, 15 January 1988, pp. 113 - 132.
(d) Atlas, R. "Atlas Heat Fluxes and Wind Stress Vectors from SSM/I model assimilation," June '92, 2 pp. (Document PO.DAAC 004.D001) provided with data.
Comments: None
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup	X	X		Yes
ANSI labeled	X	X		
Unlabeled	X	X		
UNIX Tar	X			

Notes: Data is permanently staged on the FTP site in the subdirectory: product_004.

Product Number: 044
Product Title: **SSM/I derived global ocean surface-wind vectors (Atlas, Ardizzone)**
Source/sensor: Defense Meteorological Satellite Program (DMSP) SSM/I, ship, and buoy reports
Coverage: July 1987–June 1990, global
Abstract: There are three data sets in this product, all of which contain SSM/I derived winds over the oceans. The data are produced by Robert Atlas and Joseph Ardizzone (NASA Goddard Space Flight Center). A 2-D variational analysis method (VAM) was used to combine information from ECMWF surface wind analyses, SSM/I wind speeds (from Frank Wentz, Remote Sensing Systems), ship and buoy winds, and 1000-mbar rawinsondes to produce new surface wind analyses between -78 and 78 degrees latitude. Level 2.5 data sets contain SSM/I wind speeds at SSM/I locations at 6-hour intervals with wind directions assigned from the VAM analysis. Data sets designated as level 3.0 contain gridded surface winds produced by the VAM at 6-hour intervals. Finally, the level 2.5 data are binned to grid points over 5 and 30-day periods; this is designated as the level 3.5. Product SSM/I wind speeds have been assimilated every 6 hours for the period July 1987 to June 1990. Extensions will be made as SSM/I data become available. All data sets contain U and V components of the wind in m/s. Gridded data (level 3.0 and 3.5) is represented on a 2-degree latitude by 2.5-degree longitude grid and is configured as follows:

rdata(i,j)

i = 1,2,...,144 ==> lon = -180.0,-177.5,...,177.5

j = 1,2,...,91 ==> lat = -90.0,-88.0,...,90.0

Data are available via anonymous FTP (binary mode) to podaac.jpl.nasa.gov (137.78.32.15) or on tape in the Iris Data Format (IDF). IDF makes use of IEEE 2-byte integers and should be easily read on machines adhering to IEEE standards. Documentation and software are available online. The data sets are segmented by month. Level 3.0 data occupies ~6.3 MB per month. Level 2.5 constitutes the largest volume at ~17 MB per month. Level 3.5 binned data is ~0.1 MB in size for both 5 and 30-day files.

Data Set Vol: Approximately 280 MB
Smallest order: Entire data set.
References: (a) Atlas, R., and S. C. Bloom, "Global surface-wind vectors resulting from the assimilation of satellite wind-speed data in atmospheric general circulation models," *OCEANS '89 Proceedings*, IEEE Publication Number 89CH2780-5, 1989, pp. 260–265 (Document PO.DAAC 004.D002) provided with data.

(b) Atlas, R., S. C. Bloom, R. N. Hoffman, J. V. Ardizzone, and G. Brin, "Space-based surface-wind vectors to aid understanding of air–sea interactions," *Eos Transactions*, American Geophysical Union, 72, 1991, p. 18.

(c) Atlas, R., S. C. Bloom, R. N. Hoffman, J. V. Ardizzone, and G. Brin, "Global surface wind vectors from SSM/I - July 1987 to June 1988" (Document PO.DAAC 044.D001) provided with data.

Comments: This product used to be Product 003 and 005.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup	X	X		Yes
ANSI labeled	X	X		
Unlabeled	X	X		
UNIX Tar	X	X		

Notes: **Data** is permanently staged on the FTP site in the subdirectory product_034.

Product Number: 032
Product Title: **SSM/I wind speed, water vapor, cloud water at Geosat altimeter locations (Wentz)**
Source/sensor: DMSP SSM/I, Geosat altimeter
Coverage: July 1987–December 1989, global
Abstract: The data set consists of wind speed, water vapor, and atmospheric water over the ocean derived from the SSM/I (Special Sensor Microwave Imager) instrument, interpolated to the Geosat altimeter track. The SSM/I was on the DMSP (Defense Meteorological Satellite Program) satellite. This data set is global and covers the period from July 1987 to December 1989. Each data record contains the time, latitude, and longitude for the Geosat subtrack at 10-s intervals; SSM/I wind speed, water vapor, and cloud water interpolated to the Geosat location; and a flag that indicates ocean, land, ice, or missing Geosat data. The data were produced by F. Wentz (Remote Sensing Systems). The data set is approximately 140 MB and is in unlabeled format. It is available on magnetic tape. A subroutine is provided to read the data, and there is a user's manual.
Data Set Vol: Approximately 140 MB
Smallest order: Entire data set
References: (a) Wentz, F. J., "User's Manual: Collocated Geosat-SSM/I Tape, 1987–1989," Remote Sensing Systems Technical Report 100190, Remote Sensing Systems, 1101 College Avenue, Suite 220, Santa Rosa, CA 95404, 1 Oct. 1990, 4 pp. (Document PO.DAAC 032.D001) provided with data.
(b) Smith, E. ,"Read program information," Oct. 1990, 1 pp. (Document PO.DAAC 032.D002) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 007
Product Title: **Seasat SMMR polar gridded brightness temperature statistics (Carsey, Pihos)**
Source/sensor: Seasat SMMR
Coverage: 7 July 1978–10 October 1978, north and south polar grids
Abstract: These data are brightness temperatures at microwave frequencies ranging from 6.6 to 37 GHz, horizontal and vertical polarization. They show the dependence of the microwave emission spectrum and polarization of sea ice and ice sheets to seasonal and regional variations within the Seasat coverage and lifetime (July-October, 1978). Some open-ocean data are also included for the high latitude seas. This product contains Seasat Scanning Multichannel Microwave (SMMR) antenna-pattern corrected (APC) brightness temperature data over both polar regions for the entire Seasat mission (7 July - 10 October 1978). Averages for each of the ten SMMR channels have been formed on a 100-km, 1-day grid over both polar regions. Each channel in the 100-km, 1-day format contains a mean, standard deviation, number samples, minimum and maximum. Each 100-km box is also classified as land, water, or mixed.
Data Set Vol: 70 MB
Smallest order: Entire data set
References: (a) Carsey, F., and G. Pihos, "SASS Polar Gridded Data," JPL D-8196 (internal document), Jet Propulsion Laboratory, Pasadena, California, 1983.
(b) Njoku, E.G., E.J. Christenson, and R.E. Colfield (1980) "The Seasat Scanning Multichannel Microwave Radiometer (SMMR): Antenna pattern corrections-development and implementation," *IEEE J. Oceanic Eng.* Vol. OE-5, pp. 125-137.
(c) Carsey, F., and G. Pihos, "Seasat Scanning Multichannel Microwave Radiometer Polar Gridded Data User's Guide," JPL D-12220 (internal document), Jet Propulsion Laboratory, Pasadena, California, 1983, 5 pp. (Document PO.DAAC 007.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 019
Product Title: **Seasat altimeter geophysical data record level 2 '78**
Source/sensor: Seasat altimeter
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set contains level 2 automatic gain control data, sea surface height, satellite height (with respect to the reference ellipsoid) and wind speed data. In addition to its main parameters, this data set contains corrections for the influences of wet and dry atmospheric path, ionosphere, and tides. The orbit has a vertical error of about 1 meter at characteristic periods of 100 minutes (1 revolution). The altimeter error is about 10 cm, decommutated over points separated in time by 1 second. Corrections for altimeter bias and electromagnetic bias are not included and orbit corrections must be performed by the user.
Data Set Vol: 20.3 GB
Smallest order: Approximately 140 MB
References: Same as manuals.
Manuals: (a) "JPL Seasat Project, Geophysical Data Record (GDR) User's Handbook: Altimeter," Seasat Document 622-97, Rev. A (internal document), Jet Propulsion Laboratory, Pasadena, California, 1980, 100 pp. (Document PO.DAAC 019.D001) provided with data.
(b) JPL Seasat Project, "Altimeter Geophysical Algorithm Specifications," Seasat Document 622-226 (internal document), Jet Propulsion Laboratory, Pasadena, California, 1980 (Document PO.DAAC 019.D002) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 017
Product Title: **Seasat altimeter sensor data record level 1a '78**
Source/sensor: Seasat altimeter
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set contains level 1a engineering parameters such as satellite height, waveform data, wave height, and automatic gain control. These are primary parameters telemetered to the ground processing system at a 10-second rate and are uncorrected for environmental effects. The objective of the altimeter (ALT) was to determine ocean topography with a height measurement precision of 10 cm. Altitude was determined by measuring the time required for a pulse to be transmitted, reflected from the ocean surface, and received by the altimeter. The altimeter carrier frequency was 13.5 GHz and operated in chirp pulse mode with a 3.2 microsecond uncompressed pulse width and 3.125 nanosecond compressed pulse width. The pulse-limited footprint diameter was 1.2 km for calm seas and up to 12 km for rough seas.
Data Set Vol: 20.3 GB
Smallest order: Approximately 140 MB, which is equivalent to a day.
References: (a) JPL Seasat Project, "Seasat-A Sensor Data Record Tape Specification: Interface Control Document and Telemetry Dictionary," Seasat Document 622-57, Rev. A (internal document), Jet Propulsion Laboratory, Pasadena, California, 1979., 150 pp. (Document PO.DAAC 017.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: **018**
Product Title: **Seasat altimeter sensor data record level 1b '78**
Source/sensor: Seasat altimeter
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set contains level 1b data. The parameters are the satellite height above the sea surface (from the altimeter), sigma-naught, and the satellite height with respect to the reference ellipsoid from orbit determination.
Data Set Vol: 3.5 GB
Smallest order: Approximately 140 MB
References: (a) JPL Seasat Project, "Seasat-A Sensor Data Record Tape Specification: Interface Control Document and Telemetry Dictionary," Seasat Document 622-57, Rev. A (internal document), Jet Propulsion Laboratory, Pasadena, California, 1979, 250 pp. (Document PO.DAAC 017.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 024
Product Title: **Seasat scanning multichannel microwave radiometer geophysical data record level 2**
Source/sensor: Seasat SMMR
Coverage: 7 July 1978–10 October 1978, global
Abstract: The parameters derived from Scanning Multichannel Microwave Radiometer (SMMR) brightness temperatures and available in the geophysical data records are sea surface temperature, rain rate, wind speed at the ocean's surface, integrated column density of water vapor, and liquid water in the atmosphere. The SMMR is a passive microwave radiometer measuring dual polarized microwave radiation from the Earth's surface and atmosphere in five frequencies: 6.63, 10.69, 18.0, 21.0, and 37.0 GHz. SMMR swath width is 600 km. Global coverage was achieved within the orbital extremes: +77/-72 deg. latitude from July 7 - August 17, 1978. From July 7 to August 26, 1978, the ground track was repeated every 17 days. From August 27 to October 10, 1978, the ground track repeated once every 3 days. The measurement temporal resolution is 10 seconds. This data set contains level 2.0 geophysical parameters corrected for environmental effects.
Data Set Vol: Approximately 2.9 GB
Smallest order: Approximately 140 MB
References: (a) JPL Seasat Project, "Geophysical Data Record (GDR) User's Handbook: SMMR," JPL D-110, Seasat Document 622-205, Rev. A (internal document), Jet Propulsion Laboratory, Pasadena, California, Aug. 1982, 65 pp. (Document PO.DAAC 023.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 025
Product Title: **Seasat scanning multichannel microwave radiometer sensor data record level 1a**
Source/sensor: Seasat SMMR
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set contains level 1a data consisting of decommutated Earth-located information about the intensity of radiation emitted from the sea in a microwave band in engineering units (watts, volts). Output is in the form of Sensor Data Record tapes. The Scanning Multichannel Microwave Radiometer (SMMR) is a passive microwave radiometer measuring dual polarized microwave radiation from the Earth's surface and atmosphere in five frequencies: 6.63, 10.69, 18.0, 21.0 and 37.0 GHz. SMMR swath width is 600 km. Global coverage was achieved within the orbital extremes: +77/-72 deg. latitude from July 7 - August 17, 1978. From July 7 to August 26, 1978, the ground track was repeated every 17 days. From August 27 to October 10, 1978, the ground track repeated once every 3 days. The measurement temporal resolution is 10 seconds.
Data Set Vol: 11.9 GB
Smallest order: Approximately 140 MB
References: (a) JPL Seasat Project, "Seasat-A Sensor Data Record Tape Specification: Interface Control Document and Telemetry Dictionary," Seasat Document 622-57, Rev. A (internal document), Jet Propulsion Laboratory, Pasadena, California, 1979 (Document PO.DAAC 017.D001) provided with data.
Comments: Investigators are referred to Product 024 for geophysical products.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 023
Product Title: **Seasat scanning multichannel microwave radiometer sensor data record level 1b**
Source/sensor: Seasat SMMR
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set contains level 1b data consisting of calibrated information about the intensity of radiation emitted from the sea in a microwave band. The parameter is calibrated brightness temperature. Output is in the form of calibrated Sensor Data Records.
Data Set Vol: 45.7 GB
Smallest order: Approximately 140 MB
References: (a) JPL Seasat Project, "Geophysical Data Record (GDR) User's Handbook: SMMR," Seasat Document 622-205, Rev. A (internal document), Jet Propulsion Laboratory, Pasadena, California, 1982, 65 pp. (Document PO.DAAC 023.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 021
Product Title: **Seasat scatterometer geophysical data record level 1b '78**
Source/sensor: Seasat SASS
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set contains the level 1b sigma-naught and backscatter measurements derived from the Sensor Data Record and corrected for atmospheric attenuation. The measurement temporal resolution is 1.89 seconds.
Data Set Vol: 45.3 GB
Smallest order: Approximately 140 MB
References: (a) Boggs, D. H., "Geophysical Data Record (GDR) User's Handbook: Scatterometer," JPL D-129, Seasat Document 622-232 (internal document), Jet Propulsion Laboratory, Pasadena, California, 1982 (Document PO.DAAC 021.D001) provided with data.
(b) Boggs, D. H., "Seasat algorithm development facility scatterometer sensor algorithm specifications," 200 pp., Seasat Document 622-231 (internal document), Jet Propulsion Laboratory, Pasadena, California, May 1981 (Document PO.DAAC 020.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 022
Product Title: **Seasat scatterometer geophysical data record level 2 '78**
Source/sensor: Seasat SASS
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set contains level 2.0 sigma-naught corrected for atmospheric and oceanic attenuation. It also contains wind speed and four possible directions ('ambiguities') derived from the backscatter coefficient. Output is Geophysical Data Record (GDR) magnetic tapes, with a measurement temporal resolution of 1.89 seconds.
Data Set Vol: Approximately 5.7 GB
Smallest order: Approximately 140 MB
References: (a) Boggs, D. H., "Geophysical Data Record (GDR) User's Handbook: Scatterometer," JPL D-129, Seasat Document 622-232 (internal document), Jet Propulsion Laboratory, Pasadena, California, 1982 (Document PO.DAAC 021.D001) provided with data.
(b) Boggs, D. H., "Seasat algorithm development facility scatterometer sensor algorithm specifications," 200 pp., Seasat Document 622-231 (internal document), Jet Propulsion Laboratory, Pasadena, California, May 1981 (Document PO.DAAC 020.D0021) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 031
Product Title: **Seasat scatterometer global 50km sigma-0 data '78 (Wentz)**
Source/sensor: Seasat SASS
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set consists of scatterometer sigma-0 data over the ocean for the entire Seasat mission, July '78 to October '78, and was produced by F. Wentz (Remote Sensing Systems). The data are presented chronologically by swath and consist of the forward and aft values, binned on a 50-by-50 km basis. The data are global in extent. Each data record corresponds to a 50-km strip which contains 50-km boxes oriented perpendicularly to the nadir track. For each box there are 17 elements, including time, location, incidence angles, sigma-0 values, instrument corrections, and data quality flags. A read program and further information is included with the data, as is a written description. The data are a little over 2.5 GB in volume and are available in unlabeled format on magnetic tape.
Data Set Vol: 2.5 GB
Smallest order: Six days, approximately 140 MB
References: (a) Wentz, F. J., "Documentation for Program Order: Collocating SASS Sensor Data in 50-km Bins," Remote Sensing Systems Technical Report 113082, Remote Sensing Systems, 1101 College Avenue, Santa Rosa, CA 95404, Nov. 1982, 23 pp. (Document PO.DAAC 031.D001) provided with data.
(b) Description for Wentz Seasat scatterometer forward and aft sigma-naught binned 50 km x 50 km, 2 pp. (Document PO.DAAC 031.D002) provided with data.
(c) Read program RSIGOTAPE.FOR for Wentz Seasat scatterometer forward and aft sigma-naught binned into 50 km x 50 km cells, 6 pp. (Document PO.DAAC 031.D003) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 029
Product Title: **Seasat scatterometer global dealiased wind vectors '78 (Wentz et al.)**
Source/sensor: Seasat SASS
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set consists of wind vectors over the ocean derived from the Seasat scatterometer and covers a 3-month period from July to October 1978. The data are global and are presented chronologically by swath. Each record contains data for a 100 km-by-1500 km area on the ocean surface; the 100-km side is in the along -track direction. Within this area, data (wind speed and direction) are provided for thirteen of fifteen 100-km cells. No wind vectors are computed for the port and starboard cells adjacent to the nadir cell, and for the nadir cell, only wind speed is available. Ambiguities in the wind direction are resolved by use of a global weather prediction model. The data set is the outcome of a reprocessing effort by F. Wentz, R. Atlas, and M. Freilich, involving new algorithms, which was undertaken in response to systematic errors in the original wind vectors produced by the Seasat Project. The data set is approximately 280 MB and is available in unlabeled format on magnetic tape.
Data Set Vol: 280 MB
Smallest order: Entire data set.
References: (a) Wentz, F., "User's Manual: Seasat Scatterometer Wind Vectors," Remote Sensing Systems Technical Report 081586, Remote Sensing Systems, 1101 College Avenue, Santa Rosa, CA 95404, 1986, 21 pp. (Document PO.DAAC 029.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 002
Product Title: **Seasat scatterometer global gridded dealiased surface wind vectors (Atlas)**
Source/sensor: Seasat SASS
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set consists of wind vectors over the ocean derived from the Seasat scatterometer and covers a 3-month period from July to October 1978. The data are global and are presented chronologically by swath. The data, produced by R. Atlas (NASA Goddard Space Flight Center), are a result of processing the Wentz 100 km-by-100 km scatterometer data (PO.DAAC Product 029) using an objective ambiguity removal scheme. The data set is approximately 240 MB and is available in unlabeled format on magnetic tape. A program to read the tapes is included. There is a user's manual for this product.
Data Set Vol: Approximately 560 MB
Smallest order: Entire data set
References: (a) Atlas, R., A. J. Busalacchi, M. Ghil, E. Kalnay, and S. Bloom, "Global surface wind and flux fields from model assimilation of Seasat data," *Journal of Geophysical Research*, 92, 1987, pp. 6477–6487.
(b) Atlas, R.,"Description of original tapes holding product #002; Seasat scatterometer global gridded dealiased surface wind vectors" 30 pp. (Document PO.DAAC 002.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 013
Product Title: **Seasat scatterometer global gridded dealiased wind vectors (JPL-UCLA-AES)**
Source/sensor: Seasat SASS
Coverage: 6 September 1978–20 September 1978, global
Abstract: This product is one of a series of reprocessed data that were produced from the Seasat scatterometer data. The product contains reprocessed surface wind vector data. The data are dealiased and gridded on a 1-degree by 1-degree grid. Data are binned every 6 hours.
Data Set Vol: 120 MB
Smallest order: Entire data set.
References: (a) Wurtele, M. G., P. M. Woiceshyn, S. Peteherych, M. Borowski, and W. S. Appleby, "Wind direction alias removal studies of Seasat scatterometer derived wind fields," *Journal of Geophysical Research*, 87, 1982, pp. 3365–3377.
(b) "Read program for JPL-UCLA-AES dealiased gridded surface wind vector," 3 pp. (Document PO.DAAC 013.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 008
Product Title: **Seasat scatterometer global gridded monthly surface wind vectors (Chelton)**
Source/sensor: Seasat SASS
Coverage: 7 July 1978–10 October 1978, global
Abstract: This is one of a series of reprocessed data products that were produced from the Seasat scatterometer data. These data are monthly averages of dealiased, gridded surface wind vector for July, August, September, and the first part of October 1978. The spatial resolution is 2.5 degrees. These data are 'dealiased' using an objective ambiguity-removal scheme. A subroutine to read the data is included.
Data Set Vol: 140 MB
Smallest order: Entire data set
References: (a) Chelton, D. B., A. M. Mestas–Nunez, and M. H. Freilich, "Global wind stress and Sverdrup circulation from the Seasat Scatterometer," *Journal of Physical Oceanography*, 20, 1990, pp. 1175–1205.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 006
Product Title: **Seasat scatterometer polar gridded daily sigma-0 statistics (Carsey, Pihos)**
Source/sensor: Seasat SASS
Coverage: 7 July 1978–10 October 1978, north and south polar grids
Abstract: This product consists of Seasat scatterometer (SASS) sigma-naught data over both polar regions for the entire Seasat mission (7 July - 10 October 1978). SASS data were the first large-scale backscatter observations over sea-ice and ice sheets. The data are designed to show incidence angle dependence of sea-ice backscatter at Ku-band and how that dependence varies with season and region within the Seasat coverage and lifetime (July-October, 1978). Similar data exist within this product for ice sheets, but no terrain correction was made to incidence angle. Twelve SASS channels were averaged into a 100-km, 1-day grid. The SASS channels are 5-degree increments in incidence angle. Each channel in the 100-km, 1-day format contains a mean, standard deviation, number samples, minimum and maximum. Each 100-km box is classified as land, water, or mixed.
Data Set Vol: 149 MB
Smallest order: Entire data set.
References: (a) Carsey, F., and G. Pihos, "Seasat Scatterometer Polar Gridded Data, User's Guide," JPL D-12221 (internal document), Jet Propulsion Laboratory, Pasadena, California, 5 pp. (Document PO.DAAC 006.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: **020**
Product Title: **Seasat scatterometer sensor data record level 1a '78**
Source/Sensor: Seasat SASS
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set contains the level 1a backscatter measurements and telemetered parameters in engineering units without atmospheric corrections applied. The measurement temporal resolution is 1.89 seconds.
Data Set Vol: 11.5 GB
Smallest order: Approximately 140 MB
References: (a) JPL Seasat Project, "Seasat-A Sensor Data Record Tape Specification: Interface Control Document and Telemetry Dictionary," Seasat Document 622-57, Rev. A (internal document), Jet Propulsion Laboratory, Pasadena, California, 1979 (Document PO.DAAC 017.D001) provided with data.
(b) Boggs, D. H., "Seasat algorithm development facility scatterometer sensor algorithm specifications" 200 pp., Seasat Document 622-231, Jet Propulsion Laboratory, Pasadena, California (internal document), May 1981 (Document PO.DAAC 020.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 026
Product Title: **Seasat visible and infrared radiometer sensor data record '78**
Source/sensor: Seasat Visible and Infrared Radiometer (VIRR)
Coverage: 7 July 1978–10 October 1978, global
Abstract: This data set contains infrared radiances as level 1 decommutated, Earth-located information in watts. The VIRR operated in the visible band (0.49-0.94 micrometers) and in the infrared band (10.5-12.5 micrometers). The swath of the VIRR is approximately 2280 kilometers wide, centered on nadir. The portions of the scan sampled were the Earth scan (from +/- 51.2 degrees of nadir) containing the scientific information over a 2280 km swath width, and the space (cold reference) and internal housing (warm reference) view that were used for inflight calibration. The function of the VIRR was to provide day and night images of visible reflectance and thermal infrared emission from ocean, coastal, and atmospheric features that could aid in the interpretation of data from other Seasat sensors.
Data Set Vol: 11.5 GB
Smallest order: Approximately 140 MB
References: (a) JPL Seasat Project, "Seasat-A Sensor Data Record Tape Specification: Interface Control Document and Telemetry Dictionary," Seasat document 622-57, Rev. A (internal document), Jet Propulsion Laboratory, Pasadena, California, 1979 (Document PO.DAAC 017.D001) provided with data.
(b) Ronai, P., "Interim Geophysical data record (IGDR) User's Handbook, Initial Version Visual and Infrared radiometer (VIRR)," 75 pp., Seasat Document 622-206 (internal document), Jet Propulsion Laboratory, Pasadena, California, May 1979 (Document PO.DAAC 026.D001) provided with data.
Comments: None.
Formats:

	Media Type			
Media Format	8 mm (8200), 4mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled	X	X		
UNIX Tar				

Product Number: 027
Product Title: **TOGA related satellite and in-situ data CD-ROM '85-'90**
Source/sensor: Multisensor, satellite, and in-situ
Coverage: 1985–1990, global/regional depending on data set
Abstract: The Tropical Ocean and Global Atmosphere (TOGA) CD-ROM product contains TOGA related data sets and PC software to browse and extract the data. There are 15 data sets included in this first release of the package, which covers the period 1985 -1990. These data sets are: ECMWF–many parameters from the European Center for Medium Range Weather Forecasting's Basic Surface data set, Basic Upper Air data set on a 5-deg. grid, and Supplementary data on a 2.5-deg. grid; CAC–monthly analyzed sea-surface temperature fields and climatology-mean monthly fields on a 2.0-deg. grid from the NOAA/NMC Climate Analysis Center; IFREMER–temperature and salinity sub-surface measurements from the TOGA Sub-surface Data Center in France; UHAWAII–sea-level data for the Pacific and Indian oceans from the TOGA Sea Level Centre at the University of Hawaii; UKMO–surface marine observations from Voluntary Observing Ships compiled by the United Kingdom Meterological Office; PMEL–air temperature, air pressure, ocean currents, and temperatures from islands and moorings in the Pacific provided by the NOAA Pacific Marine Environmental Laboratory; FSU and ORSTOM–monthly analyzed pseudo-stress fields and climatology over the Pacific and Indian (FSU), and Atlantic (ORSTOM) from Florida State University and Orstom Center in France; MEDS and AOML–air temperature and pressure, sea surface temperature, and surface wind speed from satellite-tracked drifting buoys provided by the Canadian Marine Environmental Data Service and the NOAA Atlantic Oceanographic and Meteorological Laboratory; ISCCP–monthly average cloud, surface, and atmospheric properties provided by the International Satellite Cloud Climatology Project; GPCP–precipitation data from the Global Precipitation Climatology Project; NCAR–climatologies from the National Center for Atmospheric Research; LODYC–results from an operational model of the tropical Atlantic from the Universit of Pierre et Marie Curie; and Geosat–sea surface height data provided by the NOAA National Ocean Service. Data formats vary with data set but are primarily in ASCII and GRIB. One volume of the CD-ROM contains S/W Products 039, 040, 041.
Data Set Vol: Set of 7 CD-ROMs.
Smallest order: Complete set of 7 CD-ROMs
References: (a) "Tropical Ocean and Global Atmosphere (TOGA) International Implementation Plan," International TOGA Project Office, IPTO no. 1, 70 pp.
(b) Finch, C. J., "TOGA CD-ROM User's' Guide," May 1994, JPL D-11538 (internal document), 126 pp. (Document PO.DAAC 027.D001) provided with data.
(c) "ECMWF: The description of the ECMWF/WCRP Level III-A Global Atmospheric Data Archive, Technical Attachment," January 1993, 49 pp. (Document PO.DAAC 027.D003) provided with data.
(d) "ECMWF: The description of the ECMWF/WCRP Level III-A Global Atmospheric Data Archive," January 1993, 36 pp. (Document PO.DAAC 027.D002) provided with data.
Comments: As S/W changes, updates will be available via FTP, subdirectory: pub.product027.
Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup			Yes	See comments
ANSI labeled				
Unlabeled				
UNIX Tar				

Product Number: 036
Product Title: **TOPEX altimeter geophysical data record**
Source/sensor: NASA TOPEX Altimeter
Coverage: Global
Abstract: The TOPEX Geophysical Data Record contains global coverage altimeter data from the NASA dual-frequency (Ku and C- band) altimeter on TOPEX/Poseidon. The objective of the TOPEX/Poseidon mission, launched in August 1992 and currently operating, is to determine ocean topography with a sea-surface height measurement precision of 3 cm and a sea-level measurement accuracy of 13 cm. The GDR contains the geolocated corrected Sea Surface Height using a precise orbit. The Sea Surface Height has been corrected for instrument and environmental effects. The values of the individual corrections are given and include wet and dry tropospheric path delay, ionospheric path delay and electromagnetic bias. The altimeter also measures significant wave height to within 0.5 m or 10% of the significant wave height and the radar backscatter coefficient to within 0.25-dB precision, 1.0-dB absolute. Estimates of the geoid, mean sea surface, and various tides are also included. Brightness Temperatures at nadir from the TMR at 18, 21, 37 GHz are given. The data are organized into a 'package' containing data from one 10-day repeat cycle. Each data file corresponds to a 'pass' of data, which is one half revolution. Each cycle contains 254 passes, although files for certain passes may not be present because of sharing the antenna with Poseidon or because of missing data. It is emphasized that this product is considered research data because of the form and content of the data. It is swath data and there are no images. S/W to extract the parameters from each record is the responsibility of the investigators. In addition, the data analysis is still in its early stages and there is, as yet, no consensus on how to filter the data. Hence a suite of parameters and flags have been included to allow users to make their own selection criteria. The precision orbit accuracy is better than 4 cm. Images from TOPEX/Poseidon can be accessed on the WWW, URL: http://calypso.jpl.nasa.gov.
Data Set Vol: Each cycle is approximately 120 MB.
Smallest order: One cycle (one pass file, 10 days)
References: (a) Callahan, P.S. , "TOPEX/POSEIDON Project GDR Draft User's Handbook," TOPEX Project 633-721, JPL D-8944, Rev. A (internal document), October 1993 (Document PO.DAAC 036.D001) provided with data.
(b) DeSoto, Y.,"TOPEX Ground System Software Interface Specification, Volume 2: Design (SIS-2), Geophysical Data Record (GDR) Data," TOPEX Project 633-752-23-004 , JPL D-8594, Rev. B (internal document), January 1993 (Document PO.DAAC 036.D002) provided with data.
(c)Algiers, J., "TOPEX Ground System Software Interface Specification, Volume 2: Design (SIS-2), Geophysical Data Record (GDR) Data," TOPEX Project 633-751-23-004; JPL D-8590, Rev. C (internal document), March 1993 (Document PO.DAAC 036.D003) provided with data.
Comments: Investigators may find the Merged Geophysical Data Records (Product 028), which contains data processed from both altimeters, more useful.

Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled		VAX		
Unlabeled		UNIX		
UNIX Tar	VAX/UNIX			

Notes: The data for a corresponding TOPEX cycle fit on one 9-track tape or 8-mm tape. This data set can be ordered in two ways, as VAX or IEEE byte ordered data integer.

Product Number: 035
Product Title: **TOPEX altimeter sensor data record**
Source/sensor: NASA TOPEX Altimeter
Coverage: September 1992–ongoing, global
Abstract: The TOPEX Altimeter Sensor Data Record contains global coverage altimeter data. The objective of the TOPEX/Poseidon mission, launched in August 1992 and currently operating, is to determine ocean topography with a sea-surface height measurement precision of 3 cm and a sea-level measurement accuracy of 13 cm. The data product contains the sensor data from one of the two altimeters, a NASA dual-frequency (Ku and C-band) instrument similar to the Geosat altimeter. The SDR data are distributed on magnetic tape. The Alt SDR contains two types of frames: Engineering and Science. The data consist of pass files containing time-tagged, Earth-located, decommutated, EU converted altimeter science and engineering data records. The Engineering Frames contain only altimeter engineering data and are not described further here, although they are described in the TOPEX Project Alt SDR Data document listed in the references. The Alt SDR Science Frames contain the time-tagged, geolocated (operational orbit), uncorrected Ku and C-band ranges. Both one per frame (approximately 1 second) and 10 per frame ranges are given. It also contains 10 per frame altimeter waveforms. Other information contained in these frames include values; uncorrected significant wave height values; waveform derived attitude; and spacecraft roll, pitch, and yaw. As the mission is still in progress, data becomes available as it is processed. It is emphasized that this product is considered research data because of the form and content of the data. The data consist entirely of files comprising headers and data records which contain over a hundred parameters for each second. It is swath data and there are no images. S/W to extract the parameters from each record is the responsibility of the investigators. In addition, the data analysis is still in its early stages and there is, as yet, no consensus on how to filter the data. Hence a suite of parameters and flags have been included to allow users to make their own selection criteria. The orbit accuracy is better than 10 cm. Read S/W is available via anonymous FTP from disk1:[PUB.SOFTWARE.ASDRT].
Data Set Vol: Each cycle is approximately 1.3 GB.
Smallest order: One cycle (one pass file, 10 days).
References: (a) Desoto, Y., "TOPEX Ground System Software Interface Specifications, Volume 2: Design (SIS-2) Altimeter Sensor Data Record (SDR) Alt SDR," TOPEX Project 633-752-23-021, Rev. B, JPL D-8595, Rev. B (internal document), Jan. 1991, 39 pp. (Document PO.DAAC 035.D001) provided with data.
(b) J. Algiers, "TOPEX Ground System Software Interface Specification Design (SIS-2) - Altimeter Sensor Data Record (SDR) - Alt SDR Data," TOPEX Project 633-751-23-001, Rev. B, JPL D-8591, Rev. C (internal document), March 1993, 80 pp. (Document PO.DAAC 035.D002) provided with data.
Comments: Investigators may find the Merged Geophysical Data Records (Product 028), which contains higher precision data which has been further processed from both altimeters, more useful. However, the MGDR does not contain waveform data.

Formats:

	Media Type			
Media Format	8 mm (8200), 4 mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup				
ANSI labeled				
Unlabeled				
UNIX Tar	VAX			

Notes: The data for a corresponding TOPEX cycle fit on one 8-mm tape.

Product Number: 028
Product Title: **TOPEX/POSEIDON altimeter merged geophysical data record (NASA/PO.DAAC)**
Previous Title: TOPEX/Poseidon Altimeter; Merged Geophysical Data Record
Source/sensor: NASA TOPEX altimeter and CNES Poseidon solid-state altimeter
Coverage: September 1992–ongoing, global
Abstract: The TOPEX/Poseidon MGDR (Merged Geophysical Data Record) contains global coverage altimeter data. The objective of the TOPEX/Poseidon mission, launched in August 1992 and currently operating, is to determine ocean topography with a sea-surface height measurement precision of 3 cm and a sea-level measurement accuracy of 13 cm. The data product combines measurements from two altimeters, a NASA dual-frequency (Ku and C-band) instrument similar to the Geosat altimeter, and a French (CNES) instrument, which is a proof-of-concept solid-state altimeter (Ku-band). The MGDR data are distributed on CD-ROMs (ISO 9660) and in an integer format usable on VAX, UNIX, PC, and Macs. Each CD-ROM contains two 10-day cycles of data, cross-over files for each cycle, and read software for VAX and UNIX. The data from both altimeters is in a common format. CD-ROMs are being produced and are available as the data is processed. It is emphasized that this product is considered research data because of the form and content of the data. The data consist entirely of files comprising headers and data records which contain over a hundred parameters for each second. It is swath data and there are no images. Read S/W is contained on the CD-ROM. Analysis S/W is the responsibility of the user. Calculation of sea-surface height from the altimeter range and environmental corrections is the responsibility of the user. In addition, the data analysis is still in its early stages and there is, as yet, no consensus on how to filter the data. Hence a suite of parameters and flags have been included to allow users to make their own selection criteria. The precision orbit accuracy is better than 4 cm. Images from TOPEX/Poseidon can be accessed on the WWW, URL: http://calypso.jpl.nasa.gov.
Data Set Vol: Cycles 1-68 as of October '94, additional CD-ROMs added approximately every 20 days
Smallest order: 1 CD-ROM containing 2 cycles (20 days)
References: (a) Fu, L.-L., M. Lefebvre, and E. Christensen, "TOPEX/Poseidon: The Ocean Topography Experiment," *Eos Transactions*, American Geophysical Union, 72(35), 1991, pp. 369-373.
(b) Fu, L.-L., and E.J. Christensen, "TOPEX/Poseidon Performance Evaluated," *Eos Transactions*, American Geophysical Union, 74 (27), 1993, pp. 297-302.
(c) Benada, R. , "PO.DAAC Merged GDR (TOPEX/Poseidon) User's Handbook, V. 1.0," JPL D-11007 (internal document), Sept. 1993, 200 pp. (Document PO.DAAC 028.D001) provided with data.
Comments: Waveform data are not included in the MGDR. Waveform data are provided in Product 035, the TOPEX altimeter sensor data record.

Formats:

	Media Type			
Media Format	8 mm (8200), 4mm	9-Track, 3480	ISO-9660 CD-ROM	Electronic Transfer
VMS Backup			Yes	
ANSI labeled				
Unlabeled				
UNIX Tar				

IV. SOFTWARE APPLICATIONS

039 IMAGIC

IMAGIC is an image-processing software package for the Apple Macintosh II, written by Brian Powell, Charles Norris, and William Emery (Colorado Center for Astrodynamics Research, Campus Box 431, University of Colorado, Boulder, Colorado 80309). IMAGIC is useful for working with any data that can be viewed as a two-dimensional image. Though written primarily to process satellite-derived imagery, IMAGIC can also be used for visualizing numerical data and for processing medical images. The current version of IMAGIC being distributed by the JPL PO.DAAC is 0.9d65.0.1. IMAGIC operates on any Apple Macintosh computer with a color monitor, including the Macintosh II, Macintosh IIx, Macintosh IIcx, and Macintosh IIci. The program requires that your Macintosh have System 6.0 or later. Two megabytes of RAM and a hard disk are also recommended. It is distributed on one 3.5-inch disk and has a user's guide. IMAGIC is also contained on the TOGA software CD-ROM (PO.DACC Product 027).

040 ATLAST

ATLAST is a world ocean atlas of hydrography, nutrients, and chemical tracers. This electronic atlas, developed by Professor Peter Rhines (School of Oceanography, University of Washington, Seattle, Washington), allows the scientist to examine and plot hydrographic and tracer section data on an IBM PC or compatible computer. Approximately 100 hydrographic sections are provided with the ATLAST package, which is distributed by PO.DAAC on five 3.5-inch, high-density diskettes with a user's guide. New sections may be imported into the ATLAST format by means of a utility provided with the package. The current version of ATLAST being distributed by the JPL PO.DAAC is 3.51. ATLAST requires an IBM-class microcomputer with CGA, EGA, or VGA graphics capabilities. An 80386-based IBM clone is ideal, and an IBM-AT class machine is adequate. ATLAST is also contained on the TOGA software CD-ROM (PO.DACC Product 027).

041 OceanAtlas

OceanAtlas is a microcomputer application that provides a graphic environment to examine and plot oceanographic section data. OceanAtlas 2.5 (released Feb. '94) is an enhanced version of the original release, developed by John Osborne (NOAA/Pacific Marine Environmental Laboratory [PMEL], Seattle, Washington), Peter Rhines (University of Washington, Seattle, Washington), and James Swift (Scripps Institution of Oceanography, La Jolla, California). The program is a companion to the IBM-PC program ATLAST. OceanAtlas provides plotting capabilities with features such as data filtering and importing from spreadsheets. It also provides the capability to perform calculations such as geostrophic velocities. The OceanAtlas package is distributed on three 3.5-inch, high-density diskettes that include approximately 50 hydrographic sections. New sections may be imported into the OceanAtlas format by means of a utility provided with the package. OceanAtlas requires a Macintosh computer with a 68020 or 68030 microprocessor. It is optimized for System 7.x, but should run on System 6.0x. Although OceanAtlas will run in black and white, its full features are usable only with color monitors capable of displaying 256 colors. An SE30 with an auxiliary color monitor can be used, as can any of the Macintosh II family. A version 2.0 manual and a version 2.5 addendum is included. OceanAtlas is also contained on the TOGA software CD-ROM (PO.DACC Product 027).

V. EDUCATIONAL MATERIAL

042 Educational Materials Document

This 14-page brochure lists materials of interest to educators, including: material designed specifically for educators, research data suitable for educators, conferences and workshops, newsletters, funding, and satellite data in the classroom. Most of the information pertains to Earth Science and Oceanographic study units.

VI. PRODUCTS IN THE NEAR FUTURE

043 AVHRR Monthly Global MCSST CD-ROM '87-'92

A second set of CD-ROMs will be produced in December 1994. These will be a companion data set to Product 015, AVHRR monthly global MCSST coregistered with CZCS data (Miami, GSFC) CD-ROM.

055 Tide Models

PO.DAAC is in the process of acquiring information pertaining to tide models that have been developed as part of the TOPEX/Poseidon effort. These models, or pointers to these models, will become available through Mosaic on the WWW and on the PO.DAAC FTP site. It is anticipated that this product will be on-line by the end of October 1994.

056 OPC Plot

The OPC Plot program is a simple marine charting utility written in QUICKBASIC by Murray L. Brown, Minerals Management Service, U.S. Department of the Interior. The program uses ASCII data files in a simple, standard format called the OPCPLOT format (but also recognizes many other ASCII and basic-binary data formats) to draw charts of the ocean or analytical results. The charts contain notations and symbols depicting the locations of sampling sites or cruises, as well as ocean fronts, buoy trajectories, and other useful information. Because the plottable files can be posted on electronic bulletin boards, the program offers a simple way to communicate charts of marine research activities and charts of important ocean features to the scientific community. The OPC plot is contained on the TOGA CD-ROM and will be released shortly as a stand-alone product. It will be available via FTP.

VII. INDEXES
A. INDEX BY PRODUCT NAME

A. INDEX BY PRODUCT NAME (Continued)

B. INDEX BY PRODUCT NUMBER

B. INDEX BY PRODUCT NUMBER (Continued)

C. INDEX OF PRODUCTS BY SATELLITE

NOAA AVHRR Sea Surface Temperature products

Geos-3 products

Geosat products

SSMR and SSM/I products

C. INDEX OF PRODUCTS BY SATELLITE (Continued)

Seasat products

TOGA products

TOPEX/POSEIDON products

Software

Document

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. JPL Pub 90-49, Rev. 6	2. Government Accession No.	3. Recipient's Catalog No.
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15. Supplementary Notes

16. Abstract

The Physical Oceanography Distributed Active Archive Center (PO.DAAC) archive at the Jet Propulsion Laboratory contains satellite data sets and ancillary *in-situ* data for the ocean sciences and global-change research to facilitate multidisciplinary use of satellite ocean data. Geophysical parameters available from the archive include sea-surface height, surface-wind vector, surface-wind speed, surface-wind stress vector, sea-surface temperature, atmospheric liquid water, integrated water vapor, phytoplankton pigment concentration, heat flux, and *in-situ* data. PO.DAAC is an element of the Earth Observing System Data and Information System and is the United States distribution site for TOPEX/POSEIDON data and metadata.

17. Key Words (Selected by Author(s))	18. Distribution Statement
oceanography, sea surface, Topex satellite	Unclassified--Unlimited

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