

TOGA COARE Tropical Experiment

- A big observing experiment, NE of Australia
- Main period 11/1992 – 02/1993 (4 months)
- Observations for atmosphere, surface ocean, ocean
- Bundle has 9 items and 61 pages

*Roy Jenne
12 Feb 2002*

TOGA COARE Tropical Experiment

Roy Jenne
11 Feb 2002

This large observing experiment was held Nov 1992 – Feb 1993 (4 months) in the region NE of Australia. Some of the enhanced observations lasted for about one year.

The field projects office in UCAR keeps track of a lot of this data. Our Data Support Section in NCAR has a copy of this data, and also has a copy of the “big picture” data such as “global reanalysis” data, satellite OLR, global sea-surface temperature (SST), and observations from the world surface and upper air observing network. All of these data are for many years (often 1948 – 2002).

This bundle of papers has 9 items with 56 pages plus 5 pages in front.

1. Two published papers on TOGA COARE (09/1992, 04/1994) 3 p
2. List of TOGA COARE datasets (Ilana Stern, DSS, Oct 1966) 4 p
3. List of TOGA COARE data (NCDC, 01/1996) 11 p
4. List of data by TOGA COARE Office (UCAR, Feb 1995) 16 p
 - Work by Brigitte Baeuerle, UCAR
 - This has more details, and the volume of each dataset.
5. List of aircraft data for COARE (UCAR, 05/1995) 3 p
6. Ocean data and air-sea fluxes for COARE (UCAR, 05/1995) 6 p
7. High resolution rawinsonde data, TOGA COARE (Jenne, 0/1995) 3 p
 - The raobs are needed for reanalysis.
8. Sounding data for TOGA COARE (Chinman, UCAR, 03/1993) 4 p
9. TOGA COARE raobs (Kippes, UCAR, 02/1994) 6 p

The Data Volume of TOGA COARE Data

Roy Jenne
14 Feb 2002
Rev 27 Feb 2002

I suspect that NCAR Data Support does not have some of the larger sets of radar data for TOGA COARE, taken from aircraft and ships. But then where is the data?

1. GMS Satellite Data (DS745.0) 49.4 GB 49.4 GB
This is on the DSS data list but it may not be on the other lists. We do have this data in NCAR archives.

2. Oct 96 list (aircraft data and other)
 - ▶ Ocean surface winds from ERS-1
8 Exabyte tapes, guess 4 GB each = ~32 GB 32 GB
 - ▶ Lots of items with no volume estimates

3. May 1995 list of data
Ocean circulation and air-sea fluxes
 - ▶ Estimate about 3 GB. We may have this. 3 GB

4. Radar data
 - ▶ Aircraft: Unknown, plus 11 GB, plus 15 GB est 35 GB
 - ▶ Ship radar: 18 GB + 60 GB + 8 GB ~86 GB
 - Total of these items 289.4 GB**

NOTE: Steve Worley added up the volume of our TOGA COARE datasets and got just 39.6 GB. This did not include the GMS satellite data that we do have (49.4 GB).

- ▶ So NCAR Data Support has 89 GB of TOGA COARE data.
- ▶ Is the rest of the data in other archives?

A FIX FOR TOGA COARE RAOB DATA

NOTE: The UCAR field projects only have an archive of the high-resolution rawinsondes from TOGA COARE. The raobs had a dry bias even in the low levels. By Jan 2002, the data from NCAR aircraft was fixed. Now there is work on data from some of the other aircraft. All of the reanalyses used the earlier data.

- Roy Jenne
Feb 2002

(Information from Steve Williams, Feb 2002)

TOGA COARE Data Volume Summary, Steve Worley

DSS File Set Category	Size (MB)
TOGA COARE Air-Sea Fluxes and Sea-Surface Data	9966
TOGA COARE Large Scale Atmospheric Data	378
TOGA COARE Convection and Mesoscale Data	28054
TOGA/COARE Large Scale Ocean Data	299
TOGA/COARE Ocean Mixing Data	907
Total	39604

NCAR has this volume of TOGA
COARE data

⊗ 39.6 GB as above

Plus GMS satellite data

⊗ 49.4 GB

So total of 89.0 GB (Feb 2002)

- Roy Jenne

RJ.txt.ds745.0

Thu Jan 07 12:49:26 1999

1

Jan 99

Toaga Coare

<1999JAN07>

DS745.0 GMS data during TOGA COARE

SUMMARY: GMS SATELLITE DATA IN MCIDAS ARCHIVE FORMAT FOR TOGA COARE
FROM 1992OCT14 TO 1993MAR05.

SUMMARY:

TOTAL VOLUME: 60.8GB TOTAL AS OF 1997AUG14 INCLUDING

VSNS YYYMMDD - YYYMMDD

289, 19921014 - 19930306 21443MB MCIDAS COMPRESSED FORMAT

237, 19921031 - 19930228 27458MB REPROCESSED GMS DATA IN MCIDAS-X FORMAT FROM WISCONSIN
(1992305 - 1993059 YYYDDDD)

3, 19921102 - 19930225 459MB IR DATA IN MCIDAS-X FORMAT FROM TAIWAN,
(1992307 - 1993056 YYYDDDD)

68, 19921103 - 19930227 11362MB PRE-PROCESSED GMS DATA FROM MET RESEARCH INST, JAPAN TO FILL DATA GAPS.

Total 60.7 GB

Satellite Data Info
Jan 1999

Meeting: Archive Toqa Coase data

Toqa Coase

Roy Jenne
19 May 1995

Richard Chinman, project head at UCAR
Brigitte Baeuerle

- 1) About to enter last year of activities for Toqa Coase
 - Data sets for long term maint & disposition
 - end is June 30, 1996 (funds NSF and NOAA)

Genex, Gans, Chivat, etc will need data manage
Some of Toqa Coase data chasis will be in other programs so they may help to use this data group
- 2) Plan is to
 - mixed into general archives in the data centers
 - NOAA funded TOGA Coase - so
 - They view Coase as a show case
 - Been sending the ocean data to NODC. They are happy with the data. All documented.
- 3) They have a list of the ocean datasets with a paragraph
- 4) Several will make record of
 - NMC, ECMWF, Navy, Nasa, Australia
 - All global
 - It is for 4 mo 13 MB/timo, 4x/day NMC
 - Done by Sep 1996
- 5) Interest in accessing mass store datasets
 - maybe give us money, to underwrite costs
- 6) Send Chinman the text
 - Radar data (at CSU & Nasa)
 - ~ 200 Gbytes - this not used
- 7) Same discussion with NCDC and NODC
- 8) Bulk methods of data delivery
- 9) 100 very various users and about ^{users} 500 to 600, overall
- 10) Plan: metadata. Plan to use the def.
NOAA: has a std, NODC has a std

Round

TOGA COARE: The Coupled Ocean- Atmosphere Response Experiment

Peter J. Webster*
and Roger Lukas†

Pages
1377 - 1416

Mainly: Nov 92 - Feb 1993
But more obs: July 1992 to ~ July 1993

Abstract

Despite significant progress in the Tropical Ocean-Global Atmosphere (TOGA) program, a number of major hurdles remain before the primary objective, prediction of the variability of the coupled ocean-atmosphere system on time scales of months to years, can be achieved. Foremost among these hurdles is understanding the physics that maintains and perturbs the western Pacific warm pool, the region of the warmest sea surface temperature in the open oceans, which coexists with the largest annual precipitation and latent heat release in the atmosphere. Even though it is believed that the warm pool is a "center of action" for the El Niño-Southern Oscillation (ENSO) phenomena in the ocean and the atmosphere, successful simulation of the warm pool has remained an elusive goal.

To gain a clear understanding of global climate change, the ENSO phenomenon, and the intraseasonal variability of the coupled atmosphere-ocean system, it is clear that a better specification of the coupling of the ocean and the atmosphere is required. An observational and modeling program, the TOGA Coupled Ocean-Atmosphere Response Experiment (TOGA COARE), has been designed to work toward this goal.

The scientific goals of COARE are to describe and understand:

- 1) the principal processes responsible for the coupling of the ocean and the atmosphere in the western Pacific warm-pool system;
- 2) the principal atmospheric processes that organize convection in the warm-pool region;
- 3) the oceanic response to combined buoyancy and wind-stress forcing in the western Pacific warm-pool region; and
- 4) the multiple-scale interactions that extend the oceanic and atmospheric influence of the western Pacific warm-pool system to other regions and vice versa.

To carry out the goals of TOGA COARE, three components of a major field experiment have been defined: interface, atmospheric, and oceanographic. An intensive observation period (IOP), embedded in a period of enhanced meteorological and oceanographic monitoring, will occur from November 1992 through February 1993 in the western Pacific region bordered by 10°N, 10°S, 140°E, and the date line. The experimental design calls for a complex set of oceanographic and meteorological observations from a variety of platforms that will carry out remote and in situ measurements. The focus of the observational effort will be in an intensive flux array (IFA) centered at 2°S and 156°E. The resulting high-quality dataset is required for the calculation of the interfacial fluxes of heat, momentum, and moisture, and to provide ground truth for a wide range of remotely sensed variables for the calibration of satellite-derived algorithms. The ultimate objective of the COARE dataset is to improve air-sea

interaction and boundary-layer parameterizations in models of the ocean and the atmosphere, and to validate coupled models.

1. Introduction

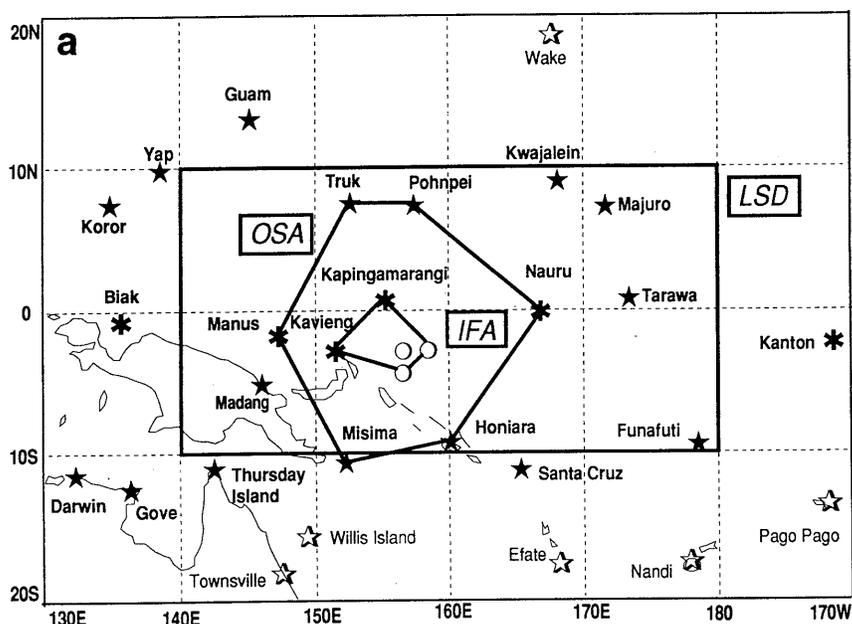
During the last decade there has been an unprecedented interest in the dynamic interactions of the ocean and the atmosphere. Vast amounts of data have been collected, and coupled ocean-atmosphere models have been developed. The purpose of this activity has been to establish the physical basis for the variability of climate on interannual time scales and, if possible, forecast the variability. With these goals in mind, the international community launched the Tropical Ocean-Global Atmosphere (TOGA) program, which allowed considerable resources to be brought to bear on the problem.

TOGA is a major component of the World Climate Research Programme (WCRP 1985) aimed specifically at the prediction of climate phenomena on time scales of months to years. The philosophy upon which TOGA is based purposefully emphasizes the tropical oceans and their relationship to the global atmosphere. Underlying TOGA is the premise that the dynamic adjustment of the ocean in the tropics is far more rapid than at higher latitudes and, therefore, more closely in tune with the atmosphere. The specific goals and scientific objectives of TOGA are (WCRP 1985):

- to gain a description of the tropical oceans and the global atmosphere as a time-dependent system in order to determine the extent to which the system is predictable on time scales of months to years and to understand the mechanisms and processes underlying its predictability;
- to study the feasibility of modeling the coupled ocean-atmosphere system for the purpose of predicting its variations on time scales of months to years; and
- to provide the scientific background for designing an observing and data-transmission system for operational prediction, if this capability is demonstrated, by coupled ocean-atmosphere models.

*Program in Atmospheric and Oceanic Sciences, University of Colorado, Boulder, Colorado

†Department of Oceanography, Honolulu, University of Hawaii
©1992 American Meteorological Society



Legend: ○ - ISS Vessel * - Enhanced Monitoring Station ★ - COARE Priority Station ☆ - Other WMO Station

FIG. 14. Composite structure of the intensive observation period (IOP) of TOGA COARE. The legends beneath the panels refer to the symbols used to represent the observational platforms. (a) The entire COARE Domain. The large-scale domain (LSD), the outer sounding array (OSA) and the intensive flux array (IFA) are outlined. Symbols used in the diagram are shown in the attached legend. The figure presents a horizontal depiction of the schematic design shown in Fig. 13.

mine the interfacial fluxes (i.e., F_d) within a relatively small area of the warm pool and to understand the atmospheric and oceanic context of these fluxes. Simultaneously, the response of the ocean will be carefully monitored within the vicinity of the atmospheric forcing. The larger-scale networks that surround the COARE will be used to determine the transmission of the signals to and from the larger-scale, or far-field, atmosphere and ocean.

TOGA COARE will take place in the western Pacific warm-pool region between 20°N and 20°S, bounded by Indonesia on the west and the date line on the east. Within this broad region are the three principal COARE domains:

- **The COARE large-scale domain:** The region 10°N to 10°S and 140°E to 180°. The region has been chosen because it contains the warmest

ing model development point directly toward studies that will allow assessments of the role of the tropical oceans in their entirety on the global climate.

- **Data assimilation:** The TOGA COARE dataset will offer the opportunity for experimentation of assimilating finescale data into operational models and their nested mesoscale subsets. The dataset can serve as the reanalysis standard for convection in the warm pool.

5. Experimental design

a. Overview of the intensive observation phase of COARE

During the last year, an experimental design has been refined to form an observational framework for TOGA COARE. In this section we summarize the most important features of the design and the anticipated achievements during the experiment. Figure 13 shows a schematic representation of the TOGA COARE experimental design. The vertical box represents the zone of maximum concentration of effort and resources for all components of the experiment. This innermost domain is referred to as the intensive flux array (IFA). The principal aim of the IOP is to deter-

mine the interfacial fluxes (i.e., F_d) within a relatively small area of the warm pool and to understand the atmospheric and oceanic context of these fluxes. Simultaneously, the response of the ocean will be carefully monitored within the vicinity of the atmospheric forcing. The larger-scale networks that surround the COARE will be used to determine the transmission of the signals to and from the larger-scale, or far-field, atmosphere and ocean.

- **The COARE outer sounding array:** The outer sounding array is defined within the large-scale domain by the meteorological sounding stations Truk, Ponape, Nauru, Honiara, Misima, and Kavieng.
- **The intensive flux array:** The IFA is centered at 2°S, 156°E and bounded by the polygon defined by the meteorological stations of Kapingamarangi and Kavieng and ships located near 2°S, 158°E and 4°S, 155°E. A third ship will be located near the center of the IFA (2°S, 156°E). The majority of the meteorological and oceanographic observations will be conducted within the IFA.

The IOP will commence on 1 November 1992 and continue through February 1993. The IOP will be surrounded by an atmospheric enhanced monitoring period, which will commence on 1 July 1992 and continue for one year, and an oceanic enhanced monitoring from September 1991 through October 1993.

Figure 14 represents a composite of the COARE observational network. The central panel (a) shows the entire COARE region. The perimeters of the large-

The Integrated Sounding System: Description and Preliminary Observations from TOGA COARE

April 1994

pages

553-567

David Parsons,* Walter Dabberdt,* Harold Cole,* Terrence Hock,* Charles Martin,*
Anne-Leslie Barrett,* Erik Miller,* Michael Spowart,* Michael Howard,*
Warner Ecklund,+ David Carter,+ Kenneth Gage,+ and John Wilson+

Abstract

An Integrated Sounding System (ISS) that combines state-of-the-art remote and in situ sensors into a single transportable facility has been developed jointly by the National Center for Atmospheric Research (NCAR) and the Aeronomy Laboratory of the National Oceanic and Atmospheric Administration (NOAA/AL). The instrumentation for each ISS includes a 915-MHz wind profiler, a Radio Acoustic Sounding System (RASS), an Omega-based NAVAJD sounding system, and an enhanced surface meteorological station. The general philosophy behind the ISS is that the integration of various measurement systems overcomes each system's respective limitations while taking advantage of its positive attributes. The individual observing systems within the ISS provide high-level data products to a central workstation that manages and integrates these measurements. The ISS software package performs a wide range of functions: real-time data acquisition, database support, and graphical displays; data archival and communications; and operational and posttime analysis. The first deployment of the ISS consists of six sites in the western tropical Pacific—four land-based deployments and two ship-based deployments. The sites serve the Coupled Ocean-Atmosphere Response Experiment (COARE) of the Tropical Ocean and Global Atmosphere (TOGA) program and TOGA's enhanced atmospheric monitoring effort. Examples of ISS data taken during this deployment are shown in order to demonstrate the capabilities of this new sounding system and to demonstrate the performance of these in situ and remote sensing instruments in a moist tropical environment. In particular, a strong convective outflow with a pronounced impact of the atmospheric boundary layer and heat fluxes from the ocean surface was examined with a shipboard ISS. If these strong outflows commonly occur, they may prove to be an important component of the surface energy budget of the western tropical Pacific.

1. Introduction

During the past two decades there have been unprecedented advances in remote and in situ measurement technologies available for atmospheric studies. Tropospheric profiling of meteorological parameters is one area that has seen particularly rapid advancement (e.g., Dabberdt and Hardesty 1990; Hooke et al. 1990), as sensors with increased time resolution have allowed for accurate descriptions of features that were previously unresolvable using conventional rawinsonde data. For example, wind profiler measurements were used to investigate the structure of fronts and jet streams (Shapiro et al. 1984) and of mesoscale convective systems (Augustine and Zipser 1987). In addition, the deployment of networks of a single type of profiling instrumentation, such as arrays of wind profilers, has proven useful for studies of midlatitude weather (Strauch et al. 1984; Zamora et al. 1987) and tropical circulations (Gage et al. 1991).

While these measurement techniques provide important insight into atmospheric circulations, observational studies of mesoscale atmospheric processes frequently require four-dimensional fields of winds, temperature, and moisture with greater time and height resolution in the lower troposphere and lesser resolution in the free troposphere and lower stratosphere. No single observational system, either research or operational, can routinely provide these measurements. For example, wind profilers and other remote sensing systems can provide routine highly resolved wind profiles through the troposphere and stratosphere (and a few into the mesosphere as well). However, current remote sensing devices for temperature and humidity have substantial performance limitations (e.g., Smith et al. 1990), are available only in small numbers, and require significant human and financial resources. In situ surface and sounding systems typically have attributes that are complementary to remote sensors but also have accompanying limita-

*National Center for Atmospheric Research, Boulder, Colorado. NCAR is sponsored by the National Science Foundation.

+National Oceanic and Atmospheric Administration, Aeronomy Laboratory, Boulder, Colorado.

Corresponding author address: Dr. David Parsons, Atmospheric Technology Division, National Center for Atmospheric Research, P.O. Box 3000, Boulder, CO 80307-3000.

In final form 10 December 1993.

©1994 American Meteorological Society

List of TOGA COARE Datasets

(Prepared by Ilana Stern, Data Support, NCAR, Oct 1996)

TOGA COARE

NCAR's Data Support Section is an archive site for data products in support of the Tropical Ocean Global Atmosphere Coupled Ocean Atmosphere Response Experiment (TOGA COARE). For more information on TOGA COARE, see the TOGA COARE Data Information Unit web pages.



Most of the TOGA COARE datasets are also available from other sites. Non-NCAR researchers who need only small datasets, or small subsets of these sets, should consult the TOGA COARE Data Information Unit to see if the data they require are available for free by ftp. Datasets which are not easily available from another source may be ordered from Ilana Stern at DSS. *(None of the TOGA COARE datasets are directly available from the DSS ftp machine.)* Scientists with access to NCAR's Mass Store are welcome to make use of the local archive.

The TOGA COARE data files at NCAR are grouped into datasets by discipline. (For a list of data files by platform type (e.g. aircraft), see the TOGA COARE User's Guide at the COARE Data Information Unit.) The TOGA COARE datasets are part of our regular data archive under the following reference numbers:

(The dataset reference numbers link to our web pages about those datasets. The individual data file descriptions link to the README file for each data file; these are also available through the web page for that dataset.)

ds606.0 Miscellaneous data

ds606.1 Air-sea fluxes

- Annual mean of skin SST based on AVHRR/GAC data
- C130 profile and level-run data
- FIAMS' Cessna slow data
- Ten-km averaged Electra slow data
- R/V Franklin SST data
- R/V Franklin high-resolution surface met data
- Freshwater fluxes
- R/V Hakuho-maru flux data
- IMET buoy flux data
- AL-Processed ISS Surface Winds
- R/V Kexue #1 flux data
- R/V Moana Wave EQ cruises surface met data
- R/V Moana Wave flux data
- R/V Natsushima surface met data
- R/V Natsushima radiation data
- R/V Le Noroit sea surface data

- R/V Le Noroit surface met data
- NOAA WP3D P3 Scanning Radar Altimeter data
- NOAA WP3D P3 C-Band Scatterometer data
- NOAA WP3D P3 slow-rate 1 Hz data
- NOAA WP3D P3 high-rate turbulence data
- Satellite SST data: ATSR / MCSST / SMSST
- R/V Shiyan #3 radiation data
- R/V Shiyan #3 surface met data
- R/V Vickers surface met data
- R/V Xiangyanghong #5 radiation data
- R/V Xiangyanghong #5 sea surface gradient data
- R/V Xiangyanghong #5 surface met data

ds606.2 Large-scale atmospheric data

- surface and upper air WMO GTS data from BoM Australia
- priority sounding station (PSS) logs
- surface and upper air WMO GTS data from CSU
- gms ir images from Taiwan

ds606.3 Convection, mesoscale atmospheric data

- radar data from the R/V Keifu-maru
- Manus Island rainfall
- Manus Island SODAR and AWS
- lightning direction finder data
- Texas Tech radar data
- MIT radar data

ds606.4 Large-scale oceanic data

- French BODEGA drifter data
- R/V Shiyan surface wave data
- Tokai ADCP mooring current data
- TOPEX/POSEIDON Inverted Echo Sounder (IES) (Bushnell)
- TOPEX/POSEIDON Inverted Echo Sounder (IES) (Katz)
- ADCP data (many ships, from U. Hawaii)
- R/V Kexue #1 wave data
- SVP LAGRANGIAN drifter data
- Marisonde GT drifter data
- TOPEX/POSEIDON Bottom Pressure Recorder (BPR)

ds606.5 Ocean mixing data

- R/V Alis towed ADCP observations
- R/V Alis CTD data

- R/V Alis chemistry/nutrient data
- R/V Franklin CTD data
- R/V Franklin SeaSoar data
- R/V Hakuho-maru CTD data
- R/V Hakuho-maru Japanese microstructure profiler
- IMET buoy seacat data
- R/V Kaiyo XBT data
- R/V Kexue #1 chemistry data
- R/V Kexue #1 CTD data
- S/V Malaita CTD data
- R/V Moana Wave leg 2 CHAMELEON microstructure profiler
- R/V Moana Wave EQ1 cruise XBT data
- R/V Moana Wave EQ cruises CTD data
- R/V Moana Wave EQ cruises thermosalinograph data
- R/V Moana Wave leg 1 advanced microstructure profiler
- R/V Moana Wave leg 2 CTD data
- R/V Moana Wave legs 1 and 3 CTD data
- R/V Moana Wave and Le Noroit bow sensor and free-rising profiler data
- R/V Natsushima CTD data
- R/V Natsushima XBT data
- R/V Le Noroit CTD data
- R/V Le Noroit SeaSoar data
- R/V Onnuri CTD data
- ORSTOM XBT network measurements
- R/V Shiyun #3 chlorophyll data
- R/V Shiyun #3 CTD data
- TOPEX seacat and mini-temperature recorder data
- R/V Vickers Bio-Optical Profiling System various data
- R/V Vickers CTD data
- R/V Vickers leg 2 optical and physical data
- R/V Wecoma leg 2 CTD data
- R/V Wecoma legs 1 and 3 CTD data
- R/V Wecoma SeaSoar data
- R/V Wecoma thermosalinograph data
- R/V Xiangyanghong #5 CTD data
- R/V Xiangyanghong #5 surface CTD data

Additional data

GMS Satellite data

Australian GMS data in MCIDAS archive format is available for the TOGA COARE period. This dataset is stored as ds745.0. Contact Chi-Fan Shih. **- 49.4 GB**

Analyses

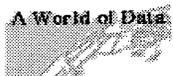
A special subset of ECMWF analyses over the TOGA COARE observing area is available to COARE program researchers only; contact Ilana Stern.

Subsets

A few subsets of other DSS oceanographic, surface, and upper air datasets which may be useful for TOGA COARE researchers are available for free by ftp from the DSS ftp site.



Special projects



DSS home



NCAR home

updated 10/30/96

NODC

Tropical Ocean Global Atmosphere Coupled Ocean Atmosphere Response Experiment (TOGA COARE) Data Users Guide

Version 1.0 (January 1996)

TOGA COARE Data Access Policy

*List of data prepared
by NODC, Asheville*

TOGA COARE Datasets

Aircraft Data

NOAA WP3D (US)

- Mission Summaries (NOAA/AOML/HRD, USA)
- Mission Summaries (U. of Washington, USA)
- Flight-level Data (NOAA/NSSL, USA)
- Slow-rate (1Hz) Data - Matlab format (U. of California, Irvine, USA)
- Slow-rate (1Hz) Data - ASCII format (U. of California, Irvine/SAIC, USA)
- High-rate Turbulence (Fast) Data (U. of California, Irvine, USA)
- Microphysics Data (NOAA/AOML/HRD, USA)
- General Radar Characteristics and Information (U. of Washington, USA)
- Radar Composites and ZEBRA Satellite Imagery (NOAA/NSSL, USA)
- Fifteen-minute LF Radar Reflectivity Composites (CRPE, France)
- C-Band Scatterometer Data (U. of Massachusetts, USA)
- Scanning Radar Altimeter Data (NOAA/ERL/WPL)
- Drosonde Data (NCAR, USA)

NCAR Electra (US)

- Mission Summaries (U. of Washington, USA)
- Aircraft Data (NCAR/ATD/RAF, USA)
- Slow Data (low-level) (Scripps, USA)
- Microphysics Data (NOAA/AOML/HRD, USA)
- ELDORA Radar Data (NCAR/ATD/RSF, USA)

NASA DC-8 (US)

Operations Summary (NASA/Ames, USA)
Mission Summaries (Texas A&M, USA)
Mission Summaries (U. of Washington, USA)
Aerosols (NASA/GSFC, USA)
AMMR - Airborne Multichannel Microwave Radiometer (NASA/GSFC, USA)
AMMS - Advanced Microwave Moisture Sounder (NASA/GSFC, USA)
ARMAR - Airborne Rain Mapping Radar (NASA/JPL, USA)
DADS - Data Acquisition/Navigation System (NASA/Ames, USA)
Dropsonde Data (NCAR, USA)
ESMR - Electronically Scanned Microwave Radiometer (Texas A&M, USA)
LIP - Lightning Instrument Package (NASA/MSFC, USA)
MMP - Microphysical Measurement Package (NCAR/MMM, USA)
RAMS - Radiation Measurement System (Scripps, USA)
VIRL - Visible and Infrared Lidar (NASA/GSFC, USA)

NASA ER-2 (US)

Flight Summary (NASA/Ames, USA)
Mission Summaries (U. of Washington, USA)
AMPR - Advanced Microwave Precipitation Radiometer (NASA/MSFC, USA)
CLS - Cloud Lidar System (NASA/GSFC, USA)
LIP- Lightning Instrument Package (NASA/MSFC, USA)
MAS - MODIS Airborne Simulator (NASA/GSFC, USA)
MIR - Milimeter Imaging Radiometer (NASA/GSFC)
Navigation Data (NASA/Ames, USA)
TSCD - Tilt Scan CCD Camera (NASA/GSFC, USA)

C130 (UK)

Flight Summary (Met Res Flights, UK)
Profile and Horizontal Runs (Met Res Flights, UK)

FIAMS EOS Cessna 340A (Australia)

Operations Summary (FIAMS, Australia)
Slow (in-situ) Data (FIAMS, Australia)

Ship Data

R/V Alis

Meteorological Data

Optical Raingauge Data (NASA/TRMM, USA)

Oceanographic Data

CTD Data (ORSTOM, New Caledonia)

Towed ADCP Data (Hiroshima U., Japan)

Chemistry and Nutrients Data (ORSTOM, New Caledonia)

Publication

Cruise Report (ORSTOM, New Caledonia)

R/V Franklin

Meteorological Data

- Cloud Images (CSIRO, Australia)
- High-resolution Surface Meteorological Data (CSIRO, Australia)
- Optical Raingauge Data (NASA/TRMM, USA)

Oceanographic Data

- CTD Data (CSIRO, Australia)
- Thermosalinograph and Skin Radiometer Data (CSIRO, Australia)
- Underwater Lightmeter and Current Meter Data (CSIRO, Australia)
- ADCP Data (CSIRO, NOAA/SAC)
- Seasoar Data (CSIRO, Australia)

Publication

- Ship Report (CSIRO, Australia)

R/V Hakuho-maru

Meteorological Data

- Routine Surface Meteorological Observations (U. of Tokyo, Okayama U., Japan)
- Eddy Correlation Fluxes (Okayama U., Japan)
- Optical Raingauge Data (NASA/TRMM, USA)
- Upper-air Sounding Data (UCAR/OFPS, USA)

Oceanographic Data

- CTD Data (Hokkaido U., Japan)
- Microstructure Profiler Data (Hokkaido U., Japan)
- XBT Data (Hokkaido U.)

Publications

- Cruise Report (U. of Tokyo, Japan)
- Ship Report (Japan)

R/V Kaiyo

Oceanographic Data

- XBT Data (JAMSTEC, Japan)

RV Keifu-maru

Meteorological Data

- Optical Raingauge Data (NASA/TRMM, USA)
- Radar Data
- Upper-air Sounding Data (UCAR/OFPS, USA) (U. of Tokyo, Japan)

R/V Kexue #1

Meteorological Data

- Flux Data (CAS, U. of California, Irvine, USA)

ISS Upper-Air Data (NCAR/ATD, UCAR/OFPS, USA)
SUDS-generated Skew-t Plots and Analysis Files (NCAR/ATD)
ISS Profiler and RASS Data (NOAA/AL, NCAR/ATD)
ISS Surface Data (NCAR/ATD, FSU, USA)
ISS Surface Wind Data (NOAA/AL, USA)

Oceanographic Data

ADCP Data (CAS/PRC)
CTD Data (U. of Hawaii, USA; CAS, PRC)
Chemistry Data (CAS, PRC)
Surface Wave Data (CAS, PRC)

R/V Le Noroit

Meteorological Data

Sea Surface Meteorological Observations (ORSTOM, New Caledonia)
Optical Raingauge Data (NASA/TRMM, USA)

Oceanographic Data

Sea Surface Data (ORSTOM, New Caledonia)
CTD Data (ORSTOM, New Caledonia)
ADCP Data (ORSTOM, New Caledonia; NODC/SAC, USA)
Seasoar Data (U. of Southampton, UK)
Free Rising Profiler Data (U. of Hawaii, USA)

Publications

Cruise and Data Report (ORSTOM, New Caledonia)
Ship Report (ORSTOM, New Caledonia)
Small-Scale Measurements Data Catalog (U. of Hawaii, USA)

S/V Malaita

Meteorological Data

Cloud Images (CSIRO, Australia)

Oceanographic Data

CTD Data (NIWAR, New Zealand)

R/V Moana Wave

Meteorological Data

Flux Data (IOP) (NOAA/ERL, USA)
Surface Meteorological Observations (EMP) (U. of Hawaii, USA)
ISS Upper-Air Data (NCAR/ATD, UCAR/OFPS, USA)
SUDS-generated Skew-t Plots and Analysis Files (NCAR/ATD)
ISS Profiler Data (NOAA/AL, NCAR/ATD)
Optical Raingauge Data (NASA/TRMM, USA)

Oceanographic Data

CTD Data (IOP, legs 1, 3)(U. of Washington, USA)
CTD Data (IOP, leg 2) (OSU, USA)
CTD Data (EMP) (U. of Hawaii, USA)
ADCP Data (U. of Washington, NOAA/SAC, USA)

Oceanographic Data (leg 2) (OSU, USA)
Advanced Microstructure Profiler Data (leg 1) (U. of Washington, USA)
Bow Sensor Data (leg 3, EMP, EQ2, EQ3) (U. of Hawaii, USA)
Free-Rising Profiler Data (leg 3, EMP, EQ3) (U. of Hawaii, USA)
Thermosalinograph Data (EQ) (U. of Hawaii, USA)
XBT Data (EQ1) (U. of Hawaii, USA)

Publications

Microstructure Report (leg 2) (OSU, USA)
Shipboard Data Catalog (EMP) (U. of Hawaii, USA)
Small-Scale Measurements Data Catalog (U. of Hawaii, USA)

R/V Natsushima

Meteorological Data

Surface Meteorological Observations (MRI, JAMSTEC, Japan)
Shortwave Radiation Data (JAMSTEC, Japan)
Optical Raingauge Data (NASA/TRMM, USA)
Upper-air Sounding Data (UCAR/OFPS, USA)

Oceanographic Data

CTD Data (JAMSTEC, Japan)
XBT Data (JAMSTEC, Japan)

R/V Onnuri

Oceanographic Data

CTD Data (KORDI, S. Korea)

Publications

Ship Report (KORDI, S. Korea)

R/V Shiyan #3

Meteorological Data

Surface Meteorological Observations (SCSIO, PRC)
ISS Upper-Air Data (NCAR/ATD, UCAR/OFPS, USA)
SUDS-generated Skew-t Plots and Analysis Files (NCAR/ATD)
ISS Profiler and RASS Data (NOAA/AL, NCAR/ATD)
ISS Surface Data (NCAR/ATD, FSU, USA)
ISS Surface Wind Data (NOAA/AL, USA)
Optical Raingauge Data (NASA/TRMM, USA)

Oceanographic Data

CTD Data (SCSIO, PRC)
ADCP Data (NMDIS, PRC; NODC/SAC, USA)
Surface Wave Data (SCSIO, PRC)
Chlorophyll Data (SCSIO, PRC)

R/V Vickers

Meteorological Data

Surface Meteorological Data (CSU, USA)
Wind Data (leg 2) (UCSD, USA)
Optical Raingauge Data (NASA/TRMM, USA)
Upper-air Sounding Data (MPI, Germany; UCAR/OFPS, USA)
MIT Radar
SIGMET IRIS Raw Data (CSU, USA)
Reformatted Universal Format Radar Data (NASA/TRMM, USA)
Radar Tape Catalogs (CSU, NASA/TRMM, USA)
Radar Tape Inventories (CSU, NASA/TRMM, USA)
Individual Base Scans and Color Video (CSU, USA)
Radar Rainfall Products (NASA/TRMM, USA))
High-resolution Rainfall Data (Texas Tech, USA)
Radar Data Software (CSU, NASA/TRMM, USA)

Oceanographic Data

Doppler Sonar Data (Scripps, USA)
CTD Data (Scripps, USA)
CTD Data (Soliton Event, 10/11 January 1993) (UCSD, USA)
BOPS Data (leg 2) (UCSD, USA)
Chlorophyll Data (leg 2) (UCSD, USA)
In situ Optical and Physical Data (leg 2) (UCSD, USA)
Ship Navigation Data (NASA/TRMM, USA)

Publications

Ship Report (leg 2)
Report: Navigational Uncertainties in the Shipboard Radar Data (Texas Tech)

R/V Wecoma

Meteorological Data

Cloud Images (CSIRO, Australia)
Surface Meteorological (MIDAS) Data (OSU, USA)
Surface Flux Data (OSU, USA)
Optical Raingauge Data (NASA/TRMM, USA)

Oceanographic Data

CTD Data (leg 1, 3) (OSU, USA)
CTD Data (leg 2) (U. of Hawaii, USA)
ADCP Data (U. of Hawaii, NODC/SAC, USA)
Seasoar Data (OSU, USA)
Thermosalinograph Data (SAIC, USA)

Publications

Seasoar Data Reports (OSU, USA)
Seasoar Inventory (legs 1 and 3) (OSU, USA)

R/V Xiangyanghong #5

Meteorological Data

Surface Meteorological Observations (SOA, PRC)
Radiation Data (SOA, PRC)
Sea Surface Gradient Measurements (SOA, PRC)

Optical Raingauge Data (NASA/TRMM, USA)
Upper-air Sounding Data (UCAR/OFPS, USA)
TOGA Radar Data
 SIGMET IRIS Raw Data (NASA/TRMM, USA)
 Reformatted and Corrected Universal Format Radar Data (NASA/TRMM,
USA)
 Radar Tape Catalogs (CSU, NASA/TRMM, USA)
 Radar Tape Inventory (NASA/TRMM, USA)
 Radar Rainfall Products (NASA/TRMM, USA))
 Radar Data Software (CSU, NASA/TRMM, USA)
Oceanographic Data
 CTD Data (SOA, PRC)
 Surface CTD Data (SOA, PRC)
 ADCP Data (NMDIS, PRC; NODC/SAC, USA)
 Ship Navigation Data (NASA/TRMM, USA)
Publication
 Cruise Summary (SOA, PRC)

Ship-of-Opportunity Program

Oceanographic Data
 XBT Data (ORSTOM, New Caledonia)
 Surface Temperature and Salinity Observations (ORSTOM, New Caledonia)
Publications
 XBT Data Atlases (ORSTOM, New Caledonia)
 SST and SSS Data Reports (ORSTOM, New Caledonia)

Mooring Data

IMET Mooring (1 45S 156E)

Surface Flux Data (WHOI, USA)
Optical Raingauge Data (NASA/TRMM, USA)
Subsurface Data (WHOI, USA)

Profiling Current Meter Mooring Data (1 44S 156 31E; 1 15S 156E)

Acoustic Mooring Data (1 30S 155 45E)

ATLAS and PROTEUS Mooring

TAO Data (NOAA/PMEL, USA)
Optical Raingauge Data (NASA/TRMM, USA)
Inverted Echo Sounder Data (2S 156E) (NOAA/AOML, USA)
Inverted Echo Sounder Data (2S 156E, 2S 164.4E) (U. of Columbia, USA)
Bottom Pressure Recorder Data (2S 164.4E) (NOAA/PMEL, USA)
Seacat Temperature/Conductivity Data (ORSTOM, NOAA/PMEL, UH)
Seacat and MTR Data (2S 156E, 2S 164.4E) (ORSTOM, New Caledonia)

ATLAS/Topex Poseidon Mooring Data Report (ORSTOM, New Caledonia)
ATLAS Mooring Report(NCU, Taiwan)

ADCP Moorings

ADCP Mooring Data (0 147E; 0 154E; 2N 156E; and 2S 156E) (Tokai U., Japan)
ADCP Mooring Data (0 45'N 156E; 0 157 30'E) (U. of South Florida, USA)
ADCP Mooring Data Reports (0 45'N 156E; 0 157 30'E) (U. of South Florida, USA)

Drifter Data

Marisonde GT Drifter Data (IFREMER, France)

Bodega Drifter Data (ORSTOM, New Caledonia)

SVP Lagrangian Drifter Data (U. of California, Santa Barbara, USA)

MSA Toyocom Drifter Data (MSA, Japan)

Ground Station Data

Integrated Sounding Systems

Kapingamarangi

ISS Surface Data (NCAR/ATD, FSU, USA)

ISS Upper-Air Data(UCAR/OFPS, USA)

Archive of SUDS-generated Skew-t plots and analysis files (NCAR/ATD, USA)

ISS RASS and Wind Profiler Data(NOAA/AL, NCAR/ATD, UCAR/OFPS,

USA)

Disdrometer/Tipping Bucket Data(NASA/GSFC, USA)

Lightning Direction Finder Data (Texas A&M, USA)

Kavieng

ISS Surface Data(NCAR/ATD, FSU, USA)

Upper-Air Data(UCAR/OFPS, USA)

Archive of SUDS-generated Skew-t plots and analysis files (NCAR/ATD, USA)

ISS RASS and Wind Profiler Data(NOAA/AL, NCAR/ATD, UCAR/OFPS,

USA)

PROBE Surface Pyranometer and Pyrgeometer data (NREL, USA)

PROBE Solar Photometer Data (PSU, USA)

PROBE Microwave Radiometer Data(NOAA/WPL, USA)

PROBE Narrow Field-of-View Radiometer (NASA/Ames, USA)

PROBE Fourier Transform Infrared Sounder (FTIR) (NOAA/ETL, USA)

PROBE CSIRO LIDAR (CSIRO, Australia)

PROBE Whole Sky Images (UCSD, USA)

Lightning Direction Finder Data (Texas A&M, USA)

Manus

ISS Surface Data (NCAR/ATD, FSU, USA)
ISS Upper-Air data (UCAR/OFPS, USA)
Archive of SUDS-generated Skew-t plots and analysis files (NCAR/ATD, USA)
ISS RASS and Wind Profiler Data (NOAA/AL, NCAR/ATD, UCAR/OFPS,
USA)
Optical Raingauge Data (NASA/TRMM, USA)
Rainfall Data (Hokkaido U., Japan)
SODAR and AWS Data (Seoul National Univ., South Korea)
Doppler Radar Data (Hokkaido Univ., Japan)

Nauru

ISS Surface Data (NCAR/ATD, FSU, USA)
ISS Upper-Air Data (UCAR/OFPS, USA)
Archive of SUDS-generated Skew-t plots and analysis files (NCAR/ATD, USA)
ISS RASS and Wind Profiler Data (NOAA/AL, NCAR/ATD, UCAR/OFPS,
USA)

Priority Sounding Station (PSS) Sites

PSS Surface Data and Logs (FSU, USA)
PSS Upper-Air Data (UCAR/OFPS, USA)
Profiler Data (Biak, Christmas Island) (NOAA/AL, USA)
Lightning Direction Finder Data (Rabaul) (Texas A&M, USA)

GTS Transmissions

GTS Surface and Upper-Air Data (NMC, USA)
GTS Surface and Upper-Air Data (BoM, Australia)
GTS Surface and Upper-Air Data (CSU, USA)

Satellite Data

Defense Meteorological Satellite Program (DMSP)

NESDIS Level 1B SSM/I Data (NASA/MSFC, USA)
SSM/I Data Products (NIES, Japan)
SSM/I Data Atlas (LMD, France)

European Remote Sensing Satellite (ERS-1)

Along Track Scanning Radiometer (ATSR) Data (CU, USA)
Scatterometer Ocean Surface Wind Vectors (NASA/JPL, USA)

Geostationary Meteorological Satellite (GMS)

GMS Imagery (IR, VIS in McIDAS Format) (BoM, Australia; U. of Wisconsin, USA)
GMS Imagery (Video) (BoM, Australia; U. of Wisconsin, USA)
GMS Imagery (IR and VIS) (U. of Hawaii, USA)

GMS Data Products (NASA/Langley, USA)
GMS Imagery (MRI, Japan)
GMS Imagery Atlas (NTW, Taiwan)
GMS Imagery (IR) (NCU, Taiwan)
ISCCP Flux Data (GISS, USA)
ISCCP DX Data (GISS, USA)

NOAA Polar Orbiting Satellite (11, 12)

AVHRR - Annual Mean of Skin SST Image (4 km Global Area Coverage (GAC))
(CU, USA)
AVHRR - High Resolution Picture Transmission (HRPT) Data (CU, USA)
AVHRR - Local Area Coverage (LAC) and HRPT Data (USGS, USA)
AVHRR - Multi-Channel Sea Surface Temperature (MCSST) Maps (CU, USA)
AVHRR - Satellite-measured Skin Surface Temperature (SMSST) Maps (CU, USA)
ISCCP DX Data (GISS, USA)

Topex Poseidon Satellite

Altimeter Data (NASA/PO.DAAC, USA)

Model Products

National Meteorological Center (NMC)

NMC Coupled Model Project Weekly Sea Surface Temperature Analyses (NCAR, USA)
NMC Coupled Model Project's gridded 3D-Fields of Velocity and Temperature (NCAR, USA)
NMC Analysis and Forecast Fields (NCAR, USA)
NMC Operational Analysis Fields (NOAA/CDC, USA)
Synoptic Scale Overview - Atlas (LLNL, USA)

European Centre for Medium-range Weather Forecast (ECMWF)

ECMWF Analysis and Model Fields (ECMWF, UK; NCAR, USA; CNRM, France)
ECMWF Analysis Fields - Atlas (CNRM, France)
Daily Global Analyses - Atlas (NTU, Taiwan)

Fleet Numerical Oceanography Center (FNOC)

Synoptic Scale Overview - Atlas (LLNL, USA)

Japan Meteorological Agency

Global Analysis (GANAL) Data (JMA, Japan)

Cross-Science Group Datasets

TOGA COARE Workshop Integrated Datasets (TCWIDS)

Release 1
Supplement

Flux Algorithms

Climatology Atlas

Volume 1: Kinematic Variables
Volume 2: Thermodynamics and Moisture Variables

Outgoing Longwave Radiation (OLR)

DAO 4D Assimilated Dataset

Appendices

The TOGA COARE International Project Office (TCIPO)

TOGA COARE Project Documentation

[Return to the Top](#)
[Return to the COARE Homepage](#)

Comments and updates to dbowman@ncdc.noaa.gov
Last modified: Tues 14 May 1997

-jw-

List of data from TOGA COARE office

From bb@dcarl.coare.ucar.EDU Mon Feb 6 17:44:21 1995
Received: from ncar.UCAR.EDU by niwot.scd.ucar.EDU (NCAR-local/ NCAR Mail Server 04/10/9
id RAA01973; Mon, 6 Feb 1995 17:44:20 -0700
Received: from dcarl.coare.ucar.EDU by ncar.ucar.EDU (NCAR-local/ NCAR Central Post Offi
id RAA10273; Mon, 6 Feb 1995 17:44:19 -0700
Date: Mon, 6 Feb 1995 17:45:48 -0700
From: bb@dcarl.coare.ucar.EDU (Brigitte Baeuerle)
Message-Id: <9502070045.AA10733@dcarl.coare.ucar.EDU>
Received: by dcarl.coare.ucar.EDU (AIX 3.2/UCB 5.64/ NCAR Mail Server 04/10/90)
id AA10733; Mon, 6 Feb 1995 17:45:48 -0700
To: joseph@ncar.ucar.edu
Subject: Corrections 2
Status: RO

(Ray Jenne)

TOGA COARE

Feb 1995

SATELLITE DATA:

a) AVHRR DATA:

NOAA-11, 12 satellite images (AVHRR SST) collected at
Townsville, Australia (Emery), via anonymous ftp. The data files
contain biweekly and monthly composite images of raw SST data,
raw data with map and contours, and smoothed data with map and
contours.

Data volume: 250 MB
Announced availability 15 June 1993.
/pub/DATA_ACCESS_INFO/air_sea_fluxes/noaa11_12avhrrsst.asc

NOAA-11, 12 satellite data (raw, calibrated, processed HRPT)
Data Volume: ???
Announced availability 1 January 1995
/pub/DATA_ACCESS_INFO/air_sea_fluxes/avhrrhrtp.asc

b) GMS IMAGES:

Animated Satellite Imagery -- University of Wisconsin videotape
showing animated satellite imagery during the TOGA COARE
period of 1 November 1992 - 27 February 1993. This VHS video is
available from the TCIPPO and contains three separate segments:

1. A large-scale overview, showing lower-resolution GMS
infrared (IR) imagery in animation for the
November-December and January-February periods. The
imagery covers a large area (almost full-disk) and is
presented at 6-hour intervals;
2. COARE-domain overview, showing loops of the
highest-resolution GMS IR for month-long segments during
COARE;
3. A series of selected animated satellite observations. Requests
for copies, in any international format, should be addressed to
the TCIPPO.

Data Volume: one video tape
Announced availability 17 August 1993.
/pub/DATA_ACCESS_INFO/atmosphere_large_scale/satellite_video.asc

GMS-4 satellite data (IR and VIS); resolution 5 km; 10N to 10S,
135E to 175E), available on two CD-ROMs from the TCIPPO
(Flament; anonymous ftp access no longer available).
Data Volume: 1.3 GB on two CD ROMS
Announced availability 17 August 1993.
/pub/DATA_ACCESS_INFO/atmosphere_large_scale/gms4_cdrom.asc

Japanese
satellite

GMS satellite data are available on one CD-ROM from Tetsuo
Nakazawa, Meteorological Research Institute, Japan. The data,
collected every hour, has a spatial resolution of approximately 11
km, with a coverage period from 01Z, 1 November 1992 to 00Z, 1
March 1993, and a coverage area from 15N-15S, 130E-180. The CD

16 pages here

is in ISO 9660 format. To receive the CD, Contact Tetsuo Nakazawa by internet at nakazawa@mri-1.mri-jma.go.jp or telephone 81-298-51-7111 ext 518 or fax to 81-298-51-1449.

Data Volume: 650 MB on one CD ROM

Announced availability 22 October 1993.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/gmscdrom_japan.asc

GMS satellite data from Taiwan are available. These GMS data are 5-km resolution, infra-red images, centered on 0 N, 140 E. The images are 2291 x 2291 pixels in size. They are on 8-mm tape, 5.0 GB volume. In addition to the data, two programs are available: latlon.f calculates the latitude and longitude of the TOGA COARE area; gmstmp.f converts the digital count to temperature. Please contact TCIPO for access to the data and programs.

Acknowledgement for the data goes to the Center for Space and Remote Sensing Research, National Central University, Taiwan.

Data Volume: see below

Announced availability 1 July 1994.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/gms_taiwan.asc

GMS satellite data from the Australian Bureau of Meteorology reprocessed in McIDAS file format by the University of Wisconsin are available now from the TCIPO. The data include 5 Km full-disk IR, and 1.25 Km (full resolution) visible imagery over the 15N-15S domain at hourly intervals.

Data Volume: about 35 GB (including Taiwan GMS satellite images to fill gaps)

Announced availability 1 October 1994.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/gms_bom.asc

c) SSM/I DATA:

The NESDIS Level 1B SSM/I data from DMSP satellites F8, F10, and F11 have been subsetted into the outer (30N-30S; 120E-160W) and inner (10N-10S; 140E-180E) regions of the COARE domain.

The subsetted data covers the period 1 November 1992 - 28 February 1993. The data, in sensor counts, is available with a utility program that converts the data into either antenna or brightness temperatures.

Another program is also available to perform further geolocation subsetting. Global SSM/I data may also be obtained for the TOGA COARE period. To obtain data, contact the NASA Marshall Space Flight Center, EOS Distributed Active Archive Center, User Services Office, Code ES44, Huntsville, AL 35812, Voice: 205 544 6365 Fax: 205 544 5147, msfcuser@microwave.msfc.nasa.gov

Data Volume: unknown

Announced availability 1 May 1994.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/ssmi.asc

d) TOPEX POSEIDON

TOPEX-POSEIDON satellite altimetry data are available from NASA's Physical Oceanography DAAC.

Data Volume: unknown

Announced availability 17 August 1993.

/pub/DATA_ACCESS_INFO/ocean_large_scale/topex_poseidon.asc

VARIOUS FIELDS

a) NMC fields:

The Coupled Model Project's weekly sea surface temperature (SST) data grid produced by Dick Reynolds' groups at NMC are available via anonymous ftp.

Data Volume: 115 MB

Announced availability 17 August 1993.

/pub/DATA_ACCESS_INFO/air_sea_fluxes/sst_ocean.asc

NMC and ECMWF (reduced ECMWF model resolution) fields, available from NCAR. Announced availability 15 June 1993.

ds111.0 ECMWF TOGA Global Advanced Operational Upper Air Spectral Analyses
ds111.1 ECMWF TOGA Global Advanced Operational Surface Analyses
ds111.2 ECMWF TOGA Global Basic Surface & Upper Air Analyses
ds111.3 ECMWF TOGA Global Supplementary Fields
ds111.4 ECMWF TOGA Global Initialized Analyses on Model (Hybrid) Levels
ds111.5 DSS-derived Year-Month Means From ECMWF TOGA Basic Analyses

Time frame:

ds111.0, ds111.1, ds111.3 have data for January 1985 - June 1994.
ds111.2 currently has data for January 1985 - June 1994.
ds111.4 has data for the period July 1990 - June 1991 and will not be updated further.

ds111.5 has data for the period January 1985 - June 1994.

Data Volume:

ds111.0 290 MB / month
ds111.1 230 MB / month
ds111.2 130 MB / month
ds111.3 50 MB / month through Dec 89, 110 MB/month begin. Jan 1990
ds111.4 unknown
ds111.5 52 MB/year

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/nmc.asc
/pub/DATA_ACCESS_INFO/atmosphere_large_scale/ecmwf.asc

US-NMC 2.5 x 2.5 degree grid operational analysis fields are available on one Exabyte tape for the period July 1992 to October 1993.

Announced availability 1 April 1994.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/nmc_tape.asc

The Coupled Model Project's gridded 3D-fields ocean model output (parameters include temperature and the u and v components of velocity) produced by Ants Leetma's group at NMC are available via anonymous ftp.

Data Volume: unknown

Announced availability 17 August 1993.

/pub/DATA_ACCESS_INFO/ocean_large_scale/ocean_fields.asc

b) ECMWF fields:

NMC and ECMWF (reduced ECMWF model resolution) fields, available from NCAR. Announced availability 15 June 1993.

Data Volume: unknown

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/nmc.asc
/pub/DATA_ACCESS_INFO/atmosphere_large_scale/ecmwf.asc

Full ECMWF model resolution fields, available from ECMWF.

Data Volume: unknown

Announced availability 15 June 1993.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/ecmwf.asc

c) Other:

OLR data are available either through NCAR or from G. Kiladis: CIRES, University of Colorado, Campus Box 449, Boulder, CO 80309, USA. Tel: 303 492 1401, Internet: gnk@noaacrd.colorado.edu.

Data Volume: 93 MB

Announced availability 1 April 1994.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/olr.asc

SURFACE DATA:

a) Ship and Land Surface Data

R/V Le Noroit surface data are available now via anonymous ftp. The dataset includes 5-minute readings from the thermosalinometer hull thermometer and 3-hour meteorological observations made by the ship's officers.

Data Volume: 2 MB

Announced date of availability 15 November 1993.

Updated 1 October 1994

/pub/DATA_ACCESS_INFO/air_sea_fluxes/noroit_surface.asc

Routine Surface Meteorological Observations from the R/V Hakuho-maru are available now via anonymous ftp to the Japanese TOGA COARE FTP directory at the University of Tokyo (157.82.71.38)

Data Volume: 17 MB

Announced availability 1 October 1994.

/pub/DATA_ACCESS_INFO/air_sea_fluxes/hakuho_met.asc

Eddy correlation fluxes of sensible and latent heat as well as wind, temperature and humidity data from the R/V Hakuho-maru are available now via anonymous ftp from the Japanese TOGA COARE FTP directory at the University of Tokyo (157.82.71.38)

Data Volume: 8 KB

Announced availability 1 November 1994.

/pub/DATA_ACCESS_INFO/air_sea_fluxes/hakuho_flux.asc

Surface data from the six TOGA COARE Integrated Sounding System (ISS) sites are available via anonymous ftp from tcdm.coare.ucar.edu. These data consist of pressure, temperature, wind speed and direction, relative humidity, net, longwave and shortwave radiation, and are the result of 1-minute averages. PLEASE NOTE: these data are quick-look data only and have not been quality-controlled.

Data Volume: 100 MB

Announced availability 15 January 1994.

/pub/COARE_DATA/air_sea_fluxes/ISS_surf_QL

The Mini SODAR and AWS surface observations data collected at the Manus site located at the Momote airport are available via ftp from 147.46.10.28, user name: snucoare, password coare1.

Data Volume: 700 KB

Announced availability 1 March 1994.

/pub/DATA_ACCESS_INFO/convection_mesoscale/sodar_aws.asc

b) Upper Air soundings data from Ships and Land

All ISS data and soundings data will be transferred in bulk by NCAR's OFPS, which produces a high resolution, comprehensive soundings dataset:

Total Data Volume: 800 MB

The TOGA COARE ISS soundings are available for Nauru and Kavieng from the NCAR Mass Storage System (MSS) or from an ATD machine for anonymous ftp. The datasets include 5hPa-interval data ("i"), corrected 5mb-interval data ("c"), raw data ("m"), and 10 second data ("x").

Data Volume: see above

Announced availability 15 November 1993.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/iss_naukav.asc

The TOGA COARE ISS soundings are available for Manus from the NCAR Mass Storage System (MSS) or from an ATD machine for anonymous ftp. The datasets include 5hPa-interval data ("i"), ("c"), raw data ("m"), and 10 second data ("x").

Data Volume: see above

Announced availability 1 March 1994.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/iss_man.asc

The TOGA COARE ISS soundings are available for Kapingamarangi from the NCAR Mass Storage System (MSS) or from an ATD machine for anonymous ftp. The datasets include 5hPa-interval data ("i"), raw data ("m"), and 10 second data ("x").

Data Volume: see above

Announced availability 1 March 1994.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/iss_kap.asc

The TOGA COARE ISS sounding data from the R/V Moana Wave and the R/V Xiangyanghong #5 are available from an ftp.atd.ucar.edu via anonymous ftp. The datasets include raw data ("m"), 10 second data ("x") and 5hPa-interval data ("i"). Hard-copy documentation on these data is available from the TCIPPO.

Data Volume: see above

Announced availability 1 April 1994.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/iss_moa.asc

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/iss_xia.asc

The R/V Vickers radiosonde data is available via anonymous ftp to tcdm.coare.ucar.edu.

Data Volume: 1.4 MB

Announced date of availability 15 November 1993.

/pub/COARE_DATA/atmosphere_large_scale/Vickers_Sondes

ISS omegasonde data (raw, interpolated, and 10-sec data, with corrected data, in addition, for Nauru and Kavieng) are available in non-tarred files (by month) on a single high-density Exabyte tape (available from NCAR's ATD). Please contact Bob Rilling (rilling@ncar.ucar.edu) to obtain these data.

Data Volume: 100 MB

Announced availability 1 June 1994.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/iss_omega.asc

An archive of sounding data information (i.e., SUDS-generated skew-t plots and 'analysis' files) is now available via the NCAR/ATD World Wide Web server at <http://www.atd.ucar.edu>.

Data Volume: *****

Announced availability 1 July 1994.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/iss_skewt.asc

The R/V Natsushima Soundings data are available now via anonymous ftp from the Japanese TOGA COARE FTP directory (pub/TOGA/Natsushima) at the University of Tokyo (157.82.71.38).

Data Volume: 3 MB

Announced availability 1 October 1994

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/natsu_sonde.asc

The soundings data from the R/V Keifu-maru are available via anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 400 KB

Announced availability 15 January 1994.

/pub/COARE_DATA/atmosphere_large_scale/Keifu_maru_sondes

The soundings data from the R/V Hakuho-maru are available via anonymous ftp (TCIPPO) from tcdm.coare.ucar.edu or via anonymous ftp (Tokyo) from the Japanese TOGA COARE FTP directory at the University of Tokyo (157.82.71.38).

Data Volume: 28 MB

Announced availability 15 January 1994.

/pub/COARE_DATA/atmosphere_large_scale/Hakuho-maru_sondes

Preliminary analyses of potential problems in sounding data are available via anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 12 KB

Announced availability 1 March 1994.

/pub/SCIENCE_GROUP_INFO/atmosphere_large_scale/sounding_problems.asc

c) Profiler Data

Cleaned profiler data, both winds and RASS, have been prepared for the ISS stations on Manus, Kavieng, Kapingamarangi, Nauru, and R/Vs Kexue #1 and Shiyun #3 for the IOP. Moana Wave profiler data has been prepared for the same period. In addition 50MHz profiler wind data has been prepared for the period July 92 through June 93. All of this data is available for general use via anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 200 MB

Announced availability 1 June 1994.

/pub/COARE_DATA/atmosphere_large_scale/Wind_Profiler

ISS Quick-look omegasonde and wind profiler sounding data from the six TOGA COARE Integrated Sounding System (ISS) sites (R/V Shiyun #3, R/V Kexue #1, Manus, Nauru, Kavieng, and Kapingamarangi) are available via anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 1.3 MB

Announced availability 19 July 1993.

Recorded-on-site, WMO-message format, ISS omegasonde data are available. This dataset should be more comprehensive than any dataset transmitted over the Global Telecommunication System (GTS) and archived in a GTS center: It does not have gaps due to transmission problems although a few data are missing due to failures in the recording systems.

Announced availability 19 July 1993.

/pub/COARE_DATA/atmosphere_large_scale/ISS_Sounding_GTS

d) GTS data

Surface and upper-air observations collected from the World Weather Watch/Global Telecommunication System (GTS) at the U.S. National Meteorological Center (NMC) (Washington), available from the National Center for Atmospheric Research (NCAR) Mass Storage System (MASSTORE). Data have been quality controlled at NMC. Corrected values and quality control flags are included with native values.

Data Volume: 29 MB

Announced availability 15 June 1993.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/gtsnmc.asc

GTS upper-air messages received at the Bureau of Meteorology (Melbourne, Australia) are available via anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 45 MB

Announced availability 17 August 1993.

/pub/COARE_DATA/atmosphere_large_scale/BoM_GTS

Surface and upper-air observations collected from the World Weather Watch/Global Telecommunication System (GTS) at the

National Meteorological Center (NMC) from the 30N-30S, 90E-160W area during the TOGA COARE Intensive Observing Period (1 November 1992 - 28 February 1993) are available on-line via anonymous ftp from the National Center for Atmospheric Research (NCAR). Data have been quality controlled at NMC. Corrected values and quality-control flags are included together with the native values.

Data Volume: 25 MB

Announced availability 22 October 1993.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/gtsnmc_coare.asc

e) Dropsonde data

All TOGA COARE dropsonde data, quality controlled and processed, are available via anonymous ftp. A data quality report is available as a hard copy document from the TCIPPO.

Data Volume: 6.5 MB

Announced availability 17 August 1993.

/pub/COARE_DATA/atmosphere_large_scale/Dropsondes_QC

f) IMET met data

The IMET wind data are available via anonymous ftp from tcdm.coare.ucar.edu. WARNING: this is a preliminary processed file and should be used with caution.

Data Volume: 1 MB

Announced availability 15 January 1994.

/pub/COARE_DATA/air_sea_fluxes/IMET_wind

IMET Time series of mass, heat, and momentum flux and precipitation compiled for the entire COARE period are available via anonymous ftp from tcdm.coare.ucar.edu. These time series were released during the TOGA COARE International Data Workshop in Toulouse, France.

Data Volume: 500 KB

Announced availability 1 October 1994.

/pub/COARE_DATA/air_sea_fluxes/IMET_flux

g) Aircraft met data

Wind vector estimates derived from ocean surface backscatter measurements by the University of Massachusetts C-Band Scatterometer (installed on N42RF P3) are available now via anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 207 KB

Announced availability 1 November 1994.

/pub/COARE_DATA/air_sea_fluxes/P3_cscat

h) Satellite met data

The ocean surface wind vectors are derived from ERS-1 scatterometer observations, collected between March 92 and June 93, using an algorithm developed at IFREMER, France. The data occupy 8 Exabyte tapes. Investigators interested in obtaining more information and/or the wind data should contact Tim Liu (phone: 818-354-2394).

Data Volume: 8 Exabyte tapes (approx. 40 GB)

Announced availability 15 January 1994.

/pub/DATA_ACCESS_INFO/atmosphere_large_scale/ers1_sfcwind.asc

NASA Optical rain gauge measurements WWW server. Under

Construction.

Information about optical rain gauge measurements.

Announced availability 1 January 1994.

/pub/DATA_ACCESS_INFO/convection_mesoscale/optical_raingauge.asc

Rainfall data from Manus Island are available via anonymous ftp from tcdm.coare.ucar.edu. Observation sites include Nabu, Kitapon, and Bowat. These data were collected by Hokkaido University (Hiroshi Uyeda). Hardcopy images are still available from TCIPO.

Data Volume: 5.5 MB

Announced availability 19 November 1993.

/pub/COARE_DATA/convection_mesoscale/manus_rainfall

Rainfall and navigational data from the optical raingauges on R/Vs Vickers, Wecoma, Natsushima, Franklin, Moana Wave, PRC #5, and Le Noroit are available via anonymous ftp from echo.gsfc.nasa.gov (/pub/coare/gauge). For all but Le Noroit the data consists of color videotape is available from the TCIPO showing the base

1-minute time averaged rain rates. In some cases wind speed, wind direction, temperature, and humidity data is provided. For some sites there were two optical gauges, for others only one.

Data Volume: 11 MB

Announced availability 15 January 1994.

/pub/DATA_ACCESS_INFO/convection_mesoscale/optical_raingauge.asc

i) Radiation Data

Kavieng ISS surface pyranometer and pyrgeometer data are available now from the radiation data processing and archive center at Penn State University via their Mosaic server (<http://wwwarc.psu.edu/datasets/probe/armprobe-orig.html>).

Data Volume: 22 MB

Announced availability 1 January 1995.

/pub/DATA_ACCESS_INFO/air_sea_fluxes/kavieng_sfcrd.asc

Kavieng PSU Solar Photometer data are available now from the radiation data processing and archive center at Penn State University via their Mosaic server (<http://wwwarc.psu.edu/datasets/probe/armprobe-orig.html>).

Data Volume: 4 MB

Announced availability 1 January 1995.

/pub/DATA_ACCESS_INFO/air_sea_fluxes/kavieng_sphot.asc

Kavieng WPL microwave radiometer data are available now from the radiation data processing and archive center at Penn State University via their Mosaic server (<http://wwwarc.psu.edu/datasets/probe/armprobe-orig.html>).

Data Volume: 15 MB

Announced availability 1 January 1995.

/pub/DATA_ACCESS_INFO/air_sea_fluxes/kavieng_mwav.asc

AIRCRAFT DATA:

The first version of the processed Cessna "slow" (1 sample/second) data are available via anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 14 MB

Announced availability 1 October 1994.

/pub/COARE_DATA/air_sea_fluxes/Cessna

TOGA COARE P-3 flight level data, via anonymous ftp.

Data Volume: 46 MB

Announced availability 15 June 1993.

/pub/DATA_ACCESS_INFO/convection_mesoscale/P3flt-leveldata.asc

US Turboprop Mission Summaries, via anonymous ftp.
Data Volume: 110 Kb
Announced availability 15 June 1993.
/pub/DATA_ACCESS_INFO/convection_mesoscale/turboprops.asc

NASA Ames DC8 DADS Data from the TOGA COARE Mission
are available via anonymous ftp. The following files are available:

The full DADS ASCII serial dataset, compressed with the
UNIX compress utility, for each mission.
Data analysis report for each mission.
In-flight Mission Director's comment log.
10-second flight data for use by NASA Ames Airborne
Science Program track-mapping software on PCs.
10-second flight data for use by NASA Ames Airborne
Science Program track-mapping software on UNIX systems.

Data Volume: 61 MB
Announced availability 19 July 1993.
/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_dads.asc

The ER-2 navigation data from the NASA/TOGA-COARE
missions are available via anonymous ftp from NASA's Goddard
Space Flight Center.

Data Volume: 37 MB
Announced availability 17 August 1993 1993.
/pub/DATA_ACCESS_INFO/convection_mesoscale/ER2_navig.asc

Bob Houze's group at the University of Washington has put together
a quick-look atlas of the aircraft missions during TOGA COARE
and of the general features of the satellite cloud patterns during the
experiment. The aircraft mission summaries include flight tracks
from all the NOAA, NCAR, and NASA aircraft. The quick look
atlas is made available electronically via Mosaic.

Data Volume: unknown
Announced availability 1 April 1994.
/pub/DATA_ACCESS_INFO/convection_mesoscale/UofW_summaries.asc

The DC-8 ESMR data information is available through anonymous
ftp directory of eosdata.gsfc.nasa.gov At this time, the ESMR data is
only available off-line in MS-DOS format. Researchers on DOS
systems can be supplied with disk copies upon request to Pat
Hrubiak/GSFC. Address: GSFC DAAC, Code 902.2, Goddard Space
Flight Center, Greenbelt, MD 20771; Phone: (301) 286-1381,
FAX: (301) 286-1775; Internet: hrubiak@eosdata.gsfc.nasa.gov or
hrubiak@nssdca.gsfc.nasa.gov.

Data Volume: 12 MB
Announced availability 15 November 1993.
/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_esmr.asc

NASA DC8 AMMS, AMMR, ARMAR, and MMP, and ER2 MIR,
data are available now via anonymous ftp from daac.gsfc.nasa.gov.

Data Volume: AMMS 55 MB
AMMR 45 MB
ARMAR 3 GB
MMP 26 MB
MIR 111 MB

Announced availability 1 Sep 1994.
/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_amms.asc
/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_ammr.asc
/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_armar.asc
/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_mmp.asc
/pub/DATA_ACCESS_INFO/convection_mesoscale/ER2_mir.asc

NASA ER2 AMPR data are available now via anonymous ftp
from daac.gsfc.nasa.gov.
Data Volume: 100 MB
Announced availability 1 Nov 1994.
/pub/DATA_ACCESS_INFO/convection_mesoscale/ER2_ampr.asc

Microphysics data were collected during the TOGA COARE
Intensive Observing Period from the NOAA WP-3Ds, the NCAR
Electra and the NASA DC8 aircraft. The NOAA/AOML Hurricane
Research Division (HRD, see address below) is acting as a TOGA
COARE Data Processing, Archive and Distribution Center for the
turboprop data. The DC-8 data is being processed by Rudy Pueschel
of NASA/Ames. HRD currently has limited raw PMS data available
via anonymous ftp to aeolus.aoml.erl.gov (192.111.123.31), get data
files from the directory /pub, or contact HRD. For further
information, especially on research performed with the data, please
contact: Frank D. Marks NOAA/AOML Hurricane Research
Division 4301 Rickenbacker Causeway Miami, FL 33149-1097
Internet:marks@ocean.aoml.erl.gov OMNET: F.MARKS PHONE:
(305) 361-4321 FAX: (305) 361-4402.
Data Volume: unknown
Announced availability 15 December 1993.
/pub/DATA_ACCESS_INFO/convection_mesoscale/micro_phys.asc

RADAR DATA

Radar data

a) Aircraft

15-min reflectivity composites from the NOAA-WP3Ds LF radar
data for the different missions flown during the COARE IOP are
available, together with hard-copy documents.
Data Volume: unknown
Announced availability 1 March 1994.
/pub/DATA_ACCESS_INFO/convection_mesoscale/p3_ref.asc

P-3 Lower Fuselage radar composites and Zeb satellite photos with
flight tracks, as X-window dumps via anonymous ftp.
Data Volume: 11 GB
Announced availability 15 June 1993.
/pub/DATA_ACCESS_INFO/convection_mesoscale/P3radar&zebsatell.asc

The NCAR ELDORA radar data for TOGA COARE are ready for
distribution. If you desire a copy of this dataset, contact Bob Rilling,
NCAR ATD, rilling@ncar.ucar.edu, 303-497-8842. When
requesting the data, please indicate your choice of format, media, and
media density. Additionally, provide your e-mail and physical mail
addresses, as well as a phone number.
Data Volume: 15 GB
Announced availability 22 October 1993.
/pub/DATA_ACCESS_INFO/convection_mesoscale/eldora.asc

b) Ship

A color videotape is available from the TCIPO showing the base
scans from the MIT radar based on the R/V Vickers complete from
its full three cruises, a total time of three months. The videotape can
speed up this time so that three month passes in under 25 minutes.
The radar images display the radar reflectivity in colored bands,
overlaid with the date and time, range rings, and azimuth lines.
Data Volume: one videotape
Announced availability 1 April 1994.
/pub/DATA_ACCESS_INFO/convection_mesoscale/mit_radarvideo.asc

NASA has produced comprehensive catalogs of radar data covering

the three cruises of the Xiangyanghong #5. The catalogs and README file are available via anonymous ftp to echo.gsfc.nasa.gov. Please use your e-mail address for your password.
/FTP/pub/coare/radar/catalogs>README.catalogs
For more information, contact: Denis Flanigan

NASA/GSFC/910.1
Greenbelt, MD 20771
Pho: (301) 286-6589
Fax: (301) 286-1626
flanigan@echo.gsfc.nasa.gov
Data Volume: 21.3 MB
Announced availability 22 October 1993.
/pub/DATA_ACCESS_INFO/convection_mesoscale/radar_catalog.asc

A subset of processed Keifu-maru radar data is available on tape from Dr Akimasa Sumi at the University of Tokyo
Data Volume: 18 GB
Announced availability 1 May 1994.
/pub/DATA_ACCESS_INFO/convection_mesoscale/keifu_radar.asc

Validated MIT radar data, available via anonymous ftp
Data Volume: 60 GB
Announced availability 15 June 1993.
Announced validated dataset 15 January 1994.
/pub/DATA_ACCESS_INFO/convection_mesoscale/mit_shipradar.asc

The version 2.0 bulk flux algorithms and accompanying documentation are available now via anonymous ftp from tcdm.coare.ucar.edu.
Data Volume: 2.4 MB
Announced availability 1 October 1994.
/pub/SCIENCE_GROUP_INFO/air_sea_fluxes/algorithms
Note: further corrections to algorithm are in progress

The TOGA COARE Workshop Integrated Data Set is now available through the National Center for Atmospheric Research Atmospheric Technology Division's Research Data Program (NCAR/ATD/RDP) and the TOGA COARE International Project Office (TCIPO). These data come on two exabyte tapes with November and December 1992 on the first tape and January and February 1993 on the second tape. The data appears on the tape in a standard UNIX tar format.
Data Volume: 8 GB
Announced availability 1 February 1995.
/pub/DATA_ACCESS_INFO/air_sea_fluxes/integrated_workshop.asc

A Synoptic-Scale Overview of the TOGA COARE Intensive Observing Period November 1992 - February 1993 Based on Analyses from U.S. Operational Global Data Assimilation Systems. An atlas of fields (wind and precipitation) generated by global assimilation systems of the U.S. Navy Fleet Numerical Oceanography Center (FNOC) and the National Meteorological Center (NMC) is available. The data used in the atlas are also available. Copies of the atlas may be obtained by contacting the TCIPO.
Data Volume: unknown
Announced availability 15 January 1994.
/pub/DATA_ACCESS_INFO/atmosphere_large_scale/synoptic_scale.asc

Feb 1995

From bb@dcarl.coare.ucar.EDU Mon Feb 6 17:44:41 1995
Received: from ncar.UCAR.EDU by niwot.scd.ucar.EDU (NCAR-local/ NCAR Mail Server 04/10/9
id RAA01991; Mon, 6 Feb 1995 17:44:40 -0700
Received: from dcarl.coare.ucar.EDU by ncar.ucar.EDU (NCAR-local/ NCAR Central Post Offi
id RAA10309; Mon, 6 Feb 1995 17:44:38 -0700
Date: Mon, 6 Feb 1995 17:46:07 -0700
From: bb@dcarl.coare.ucar.EDU (Brigitte Baeuerle)
Message-Id: <9502070046.AA16880@dcarl.coare.ucar.EDU>
Received: by dcarl.coare.ucar.EDU (AIX 3.2/UCB 5.64/ NCAR Mail Server 04/10/90)
id AA16880; Mon, 6 Feb 1995 17:46:07 -0700
To: joseph@ncar.ucar.edu
Subject: Corrections 3
Status: RO

The datasets listed below have not been released yet to the COARE community but hopefully become available in the next couple of weeks.

Brigitte

The following datasets will be provided in bulk by the Florida State Group (Jim O'Brien and Dave Legler) which is working on a quality controlled, comprehensive surface met dataset for COARE:

R/V Kexue #1 (Feng et al)
Surface meteorology data (Lyman-Alpha hygrometer, Ultrasonic anemometer-thermometer).
Data volume unknown.

S/V Malaita (Fisher/Crawford)
20-min averaged daily files for the period 13-25 February 1993
These files include time, position, rainfall rate, track, boat speed, radiation, gimbals angle, temperature, dewpoint, wind speed and direction.
Data volume: 500 MB, ASCII, tape (may include CTD data volume as well)

R/V Natsushima (Muneyama et al.)
Radiometer and surface meteorology data
Data Volume: 500 KB in ASCII

R/V Shiyuan #3 (FAN)
Flux measurements (Sonic anemometer-thermometer, Lyman-Alpha hygrometer, Accelerometer and gyro).
Data volume: 1 KB

R/V Keifu-maru (Fujitani/Haginoya)
Routine Marine Meteorological Observations (a), upper air sounding (b), and direct measurement of Turbulent Fluxes (c).
Data Volume and Format
(a) 100 KB of data on floppy disk as a MS-DOS text file;
(b) 20 MB of data on cartridge tape as a formatted text file;
(c) 100 KB of data on floppy disk as a MS-DOS text file.

R/V Kaiyo (Ando)
Surface met data.
Data volume: 500 KB

R/V Alis (Radenac)
Met measurements: Time series of dry and wet air temperature, apparent and real wind measurements, incoming solar radiation, precipitation, and surface temperature and salinity
Volume: unknown

R/V Franklin (Bradley, Coppin)

Bulk surface flux instrumentation: 40 MB raw ASCII data, 80 MB dbase file.
Turbulent surface flux instrumentation: raw data 4000 MB on DAT tape
(Netware/ARCserve backup format), processed data 40 MB dbase files.
Standard mainmast met instruments - unknown
Skinradiometer - unknown

R/V Moana Wave (Fairall)

- System 1: 40 MB HP digital
 - (a) Thermometer (Vaisala HMP-35)
 - (b) Hygrometer (Vaisala HMP-35)
 - (c) Thermistor (YSI 46040)
 - (d) Pyranometer (Eppley PSP)
 - (e) Pyrgeometer (Eppley PIR)
 - (f) Optical raingauge (STI ORG-100)

- System 2: 4 GB HP digital
 - (g) Sonic anemometer (Gill Solent)
 - (h) IR hygrometer (OPHIR IR2000)
 - (i) GPS (Navistar XR4-PC)
 - (j) Gyrocompass (Robertson RGC-10)
 - (k) Strapdown navigation (WPL)
 - (l) Inertial navigation (Pandect VRG-105)

B. Profiling sensors used for shipboard operation by WPL

- System 3: 100 MB DOS ASCII
 - (m) Ceilometer (Vaisala CT-12K)

- System 4: 4 GB DOS digital
 - (n) Wind profiler (915 MHz WPL/AL)
 - (o) RASS (915 MHz/1.9 KHz)

- System 5: 100 MB DOS ASCII
Microwave radiometer (Radiometrics,
WVR-1000)

- System 6: 150 MB DOS digital
Rawinsonde (Omega NCAR)

Sea Surface Gradient Measurements on R/V Xiangyanghong #5 (Wei Hao)
Gradient meter measuring wind, temperature and humidity gradients
Data volume: About 600 KB

Penn State

The following datasets will be provided in bulk by the Penn State Group supervised by Tom Ackerman which produces a comprehensive radiation dataset for COARE:

R/V Kexue #1 (Feng et al)
Radiation data: volume unknown

R/V Shiyan (Xuan)
Microwave Radiometer Measurements
Data Volume: 2.5 MB of data in ASCII format

R/V Shiyan #3 (MA Zhuguo)
Radiation Measurements:
Actinometer (MS-52);
Global and diffuse solar radiation integrator (MS-42);
Balansometer (CN-2);
Reflectometer (MR-21);
Infrared radiometer (PIR).
Data Volume: 0.36 MB

Nauru - Radiation data (Nunez)

- (a) Multi-filter/detector rotating shadowband radiometer;
- (b) Kipp and Zonen CM-11 pyranometer to measure incoming solar irradiance;
- (c) Kipp and Zonen CM-11 pyranometer to measure reflected solar irradiance;
- (d) Eppley pyrgeometer;
- (e) GMS digital satellite data in the visible band;
- (f) One-min average air temperature and humidity data at 1.5 m;
- (g) Sky view factor photographs from 35 mm camera and from Super 8 movie camera;

Data Volume:

- (a) 7.2 MB of spectral solar radiation data, formatted and compressed.
- (b) 14.4 MB of ASCII code data for all other radiation, temperature and humidity data.
- (c) 240 frames of 35 mm film exposures of sky view.
- (d) 4320 frames of Super 8 film exposures of sky view.

Radiation Measurements ER2, DC8 (Valero)

Data Volume: 4 MB per flight per platform (13 flights DC8, 12 flights ER2)

AIRCRAFT DATA

P3 Radome gustprobe (Friehe)

- a) slow data (50 MB per flight per aircraft,)
- b) fast data (500 MB per flight per aircraft)

P3 Scanning Radar Altimeter (SRA) (Walsh)

Data volume unknown but low final volume

DC-8, ER-2 Lightning Instrument Package (LIP) Systems (Blakeslee)

Raw data volume was about 30 MB per flight for the ER-2 LIP (12 flights, total 360 MB) and about 60 MB per flight (13 flights, total 780 MB) for the DC-8 LIP.

UK C130 Flux Measurements (Grant)

- (a) Pitot-static probe;
- (b) Angle of attack vane;
- (c) Angle of sideslip vane;
- (d) Inertial navigation system ;
- (e) GPS/Omega nav aids.
- (f) Platinum resistance thermometer
- (g) Thermoelectric hygrometer
- (h) Lyman-Alpha probe
- (i) Upward- and downward-facing pyrgeometers
- (j) Upward- and downward-facing pyranometers
- (k) Upward- and downward-facing pyranometers
- (l) Modified Barnes PRT4
- (m) PMS precipitation probe

Total data from a single flight is about 240 MB (7 flights)

DC-8, ER-2 Lidar systems and Translinear Scanning CCD Camera (Spinhirne)

- a. Cloud Lidar System on the NASA ER-2 aircraft (CLS).
- b. Translinear Scanning CCD Camera on the NASA ER-2 aircraft (EO camera).
- c. Visible and near Infrared Lidar on the NASA DC-8 aircraft (VIRL).

Data Volumes:

- a. CLS data: 20 GB in unpacked binary format on Exabyte (8 mm) tapes, suggested to be archived at the NASA/GSFC DAAC.
- b. EO camera data: 10-15 GB in unpacked binary format on Exabyte (8 mm) tapes, suggested to be archived at the NASA/GSFC DAAC.
- c. VIRL DC-8 data: 2-4 GB in unpacked binary format on Exabyte (8 mm) tapes, suggested to be archived at the NASA/GSFC DAAC.

ER-2 MODIS Airborne Simulator (Moeller)
Data Volume: Roughly 20 GB

DC-8 Particle Measuring System (Ferry)
(a) 2D-Grey (40 micron) laser spectrometer;
(b) 2D-Grey (25 micron) laser spectrometer;
(c) FSSP-300 laser spectrometer;
(d) PCASP-100X laser spectrometer.
Data Volume: 250 KB of data per instrument per flight (13 flights)

Electra - Radiometer Data (Hagan)
Precision IR multi-channel radiometer measuring
passive thermal IR in the 10 to 12 micron spectral region.
Approximately 100 MB of raw data

SATELLITE DATA

Minnis
Processing of hourly GMS, 4/day AVHRR, and, at least, 2/day SSM/I data.
Data Volume: unknown

Rosow
Satellite-measured radiances from GMS-VISSR, NOAA-AVHRR/HIRS/MSU,
DMSP-SSM/I.
Standard ISCCP data product: 1.6 GB
special high-resolution ISCCP cloud and surface products: 2 GB
cloud particle size retrieval dataset: unknown
Special research version of SST retrievals: 60 MB
top-of-atmosphere radiative fluxes & surface radiative fluxes: 1 GB
Cloud cluster analysis dataset: unknown

RADAR DATA

Manus Island Doppler radar (Uyeda)
(a1) Momote, Manus Island, PNG: 11.5 GB total
(a2) Nabu wharf, Lorengau, PNG: 8 GB total
Data subset on ONE CD ROM

TOGA radar on R/V Xiangyanghong #5 (Thiele et al.)
Data Volume: 65 GB

OTHER DATASETS:

CO2 Measurements on R/V Xiangyanghong #5 (Zhou)
Data Volume unknown

R/V Xiangyanghong #5, Aerosol Measurements
(a) DDAR (atmospheric sounder);
(b) Flux system (Lyman-Alpha hygrometer, anemometer-thermometer);
(c) Aerosol collector.
Data Volume: Acoustic data: 20 MB;
Flux data: 5 MB;
Aerosol samples: more than 30 MB.

Ma Liming
CO2 data from atmospheric and seawater samples R/V Xiangyanghong #5
Data Volume: unknown

Orville
Lightning direction finders and waveform digitizer.
Data volume: unknown

Takahashi
Videoponde video from Manus: 7 VHS tapes

Modelling

MODELLING:

Note: we have hardly any information about modelling efforts and outputs. The volume of these datasets in most cases is therefore unknown:

Redelsperger
Cloud-resolving modeling.

Adler
Production of monthly estimates of rainfall from satellite infrared, microwave, and combined infrared/microwave algorithms.

Desbois, Jobard, Seze, Duvel, Klapisz
Estimates of rainfall rates at different time scales by a combined SSM/I GMS algorithms.

Smith, Neville (BOM)
Data base consisting of temperature measurements gathered via the Melbourne GTS, TAO data, and other delayed information supplied by MEDS and NODC under the IOC IGOSS GTSP project. Analyses and distribution of SST products around mid-1994. The model data assimilation products should be available after July 1994.
DATA VOLUME: Each monthly subsurface analysis (complete with data, analysis statistics) occupies 17 MB.

Steyn Ross
Validation of SST algorithms: Preliminary data available in fall 1994. remote sensing of SST, cloud properties and surface winds

Simpson
cloud modeling studies, Overlays of GMS satellite images with the Willis radiation data (Nauru)

Busalacchi/Rothstein
Development of one- and three-dimensional numerical upper ocean (mixed layer) models.

Frank/McBride
Diagnostic budget analyses and modeling study.
Data volume unknown

Gal-Chen (Wurman)
Processing of 18 February ELDORA data to attempt single and dual-analysis. Reconstruction of full three-dimensional winds and temperature perturbation field.

Houze/Marks
water budget of selected MCS

Lau/Sui
cumulus cloud and dynamical modeling

Starr
Collaborative analysis of cirrus cloud observations.

Sui, Lau, Tao
Interaction of cloud-radiative forcing and air-sea interaction.

Yan, Lau, Schopf
Role of fresh water water input in determining short-term variability of
the upper ocean

— end of list —

From bb@tcdm.coare.ucar.EDU Wed May 10 11:54:48 1995
Received: from tcdm.coare.ucar.EDU by niwot.scd.ucar.EDU (NCAR-local/ NCAR Mail Server 04/10/90)

id LAA18586; Wed, 10 May 1995 11:54:47 -0600
Date: Wed, 10 May 1995 11:53:38 -0600
From: bb@tcdm.coare.ucar.EDU (Brigitte Baeuerle)
Message-Id: <199505101753.LAA06174@tcdm.coare.ucar.EDU>
Received: by tcdm.coare.ucar.EDU (8.6.9/ NCAR Mail Server 04/10/90)
id LAA06174; Wed, 10 May 1995 11:53:38 -0600

• May 1995 •

To: joseph@niwot.scd.ucar.edu
Subject: resend listing
Content-Length: 5940
Status: R

Aircraft Data

(more about aircraft data than is in the big list)

Dennis,

here is the list of all aircraft data that are accessible to COARE researchers via anonymous ftp from various sites across the US:

3 pages here

The first version of the processed Cessna "slow" (1 sample/second) data are available via anonymous ftp from tcdm.coare.ucar.edu.
Announced availability 1 October 1994.
/pub/COARE_DATA/air_sea_fluxes/Cessna
Size: 14MB (uncompressed)

• sfc winds from scatterometer on an aircraft

Wind vector estimates derived from ocean surface backscatter measurements by the University of Massachusetts C-Band Scatterometer (installed on N42RF P3) are available now via anonymous ftp from tcdm.coare.ucar.edu.
Announced availability 1 November 1994.
/pub/COARE_DATA/air_sea_fluxes/P3_cscat
Size: 184KB (compressed)

The ocean surface wind vectors are derived from ERS-1 scatterometer observations, collected between March 92 and June 93, using an algorithm developed at IFREMER, France. The data occupy 8 Exabyte tapes. Investigators interested in obtaining more information and/or the wind data should contact Tim Liu (internet:/DD.UN=T.LIU/O=OMNET/ADMD=TELEMAIL/C=US/@sprint.com; omnet: t.liu; phone:818-354-2394).
Announced availability 15 January 1994.
/pub/DATA_ACCESS_INFO/atmosphere_large_scale/ers1_sfcwind.asc
Size: 8 Exabyte tapes

TOGA COARE P-3 flight level data, via anonymous ftp.
Announced availability 15 June 1993.
/pub/DATA_ACCESS_INFO/convection_mesoscale/P3flt-leveldata.asc
Size: 16.4 MB

US Turboprop Mission Summaries, via anonymous ftp.
Announced availability 15 June 1993.
/pub/DATA_ACCESS_INFO/convection_mesoscale/turboprops.asc
Size: 2.5 MB

P-3 Lower Fuselage radar composites and Zeb satellite photos with flight tracks, as X-window dumps via anonymous ftp.
Announced availability 15 June 1993.
/pub/DATA_ACCESS_INFO/convection_mesoscale/P3radar&zepsatell.asc
Size: 2.3 MB

NASA Ames DC8 DADS Data from the TOGA COARE Mission are available via anonymous ftp. The following files are available:

The full DADS ASCII serial dataset, compressed with the UNIX compress utility, for each mission.

Data analysis report for each mission.
In-flight Mission Director's comment log.
10-second flight data for use by NASA Ames Airborne
Science Program track-mapping software on PCs.
10-second flight data for use by NASA Ames Airborne
Science Program track-mapping software on UNIX systems.

Announced availability 19 July 1993.

/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_dads.asc

The ER-2 navigation data from the NASA/TOGA-COARE
missions are available via anonymous ftp from NASA's Goddard
Space Flight Center.

Announced availability 17 August 1993 1993.

/pub/DATA_ACCESS_INFO/convection_mesoscale/ER2_navig.asc

The NCAR ELDORA radar data for TOGA COARE are ready for
distribution. If you desire a copy of this dataset, contact Bob Rilling,
NCAR ATD, rilling@ncar.ucar.edu, 303-497-8842. When
requesting the data, please indicate your choice of format, media, and
media density. Additionally, provide your e-mail and physical mail
addresses, as well as a phone number.

Announced availability 22 October 1993.

/pub/DATA_ACCESS_INFO/convection_mesoscale/eldora.asc

The DC-8 ESMR data information is available through anonymous
ftp directory of eosdata.gsfc.nasa.gov At this time, the ESMR data is
only available off-line in MS-DOS format. Researchers on DOS
systems can be supplied with disk copies upon request to Pat
Hrubiak/GSFC. Address: GSFC DAAC, Code 902.2, Goddard Space
Flight Center, Greenbelt, MD 20771; Phone:(301) 286-1381,
FAX:(301) 286-1775; Internet:hrubiak@eosdata.gsfc.nasa.gov or
hrubiak@nssdca.gsfc.nasa.gov.

Announced availability 15 November 1993.

/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_esmr.asc

Microphysics data were collected during the TOGA COARE
Intensive Observing Period from the NOAA WP-3Ds, the NCAR
Electra and the NASA DC8 aircraft. The NOAA/AOML Hurricane
Research Division (HRD, see address below) is acting as a TOGA
COARE Data Processing, Archive and Distribution Center for the
turboprop data. The DC-8 data is being processed by Rudy Pueschel
of NASA/Ames. HRD currently has limited raw PMS data available
via anonymous ftp to aeolus.aoml.erl.gov (192.111.123.31), get data
files from the directory /pub, or contact HRD. For further
information, especially on research performed with the data, please
contact: Frank D. Marks NOAA/AOML Hurricane Research
Division 4301 Rickenbacker Causeway Miami, FL 33149-1097
Internet:marks@ocean.aoml.erl.gov OMNET: F.MARKS PHONE:
(305) 361-4321 FAX: (305) 361-4402.

Announced availability 15 December 1993.

/pub/DATA_ACCESS_INFO/convection_mesoscale/micro_phys.asc

15-min reflectivity composites from the NOAA-WP3Ds LF radar
data for the different missions flown during the COARE IOP are
available, together with hard-copy documents.

Announced availability 1 March 1994.

/pub/DATA_ACCESS_INFO/convection_mesoscale/p3_ref.asc

Bob Houze's group at the University of Washington has put together
a quick-look atlas of the aircraft missions during TOGA COARE
and of the general features of the satellite cloud patterns during the
experiment. The aircraft mission summaries include flight tracks
from all the NOAA, NCAR, and NASA aircraft. The quick look

list Wed Oct 30 12:36:25 MST 1996

atlas is made available electronically via Mosaic.

Announced availability 1 April 1994.

/pub/DATA_ACCESS_INFO/convection_mesoscale/UofW_summaries.asc

NASA DC8 AMMS, AMMR, ARMAR, and MMP, and ER2 MIR,

data are available now via anonymous ftp from daac.gsfc.nasa.gov.

Announced availability 1 Sep 1994.

/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_amms.asc

/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_ammr.asc

/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_armar.asc

/pub/DATA_ACCESS_INFO/convection_mesoscale/DC8_mmp.asc

/pub/DATA_ACCESS_INFO/convection_mesoscale/ER2_mir.asc

NASA ER2 AMPR data are available now via anonymous ftp
from daac.gsfc.nasa.gov.

Announced availability 1 Nov 1994.

/pub/DATA_ACCESS_INFO/convection_mesoscale/ER2_ampr.asc

May 19, 1995

From bb@tcdm.coare.ucar.EDU Mon May 15 16:09:14 1995
Received: from tcdm.coare.ucar.EDU by niwot.scd.ucar.EDU (NCAR-local/ NCAR Mail Server 04/10/90)

List is from
Toga Coare office
at UCAR

id QAA04767; Mon, 15 May 1995 16:09:13 -0600
Date: Mon, 15 May 1995 16:08:04 -0600
From: bb@tcdm.coare.ucar.EDU (Brigitte Baeuerle)
Message-Id: <199505152208.QAA09043@tcdm.coare.ucar.EDU>
Received: by tcdm.coare.ucar.EDU (8.6.9/ NCAR Mail Server 04/10/90)
id QAA09043; Mon, 15 May 1995 16:08:04 -0600

To: joseph@niwot.scd.ucar.edu
Subject: COARE oceanographic datasets
Cc: chinman@tcdm.coare.ucar.EDU
Content-Length: 14462
Status: R

Toga Coare

6 pages
here

Dennis, Joseph,

here is the listing for the oceanographic and air-sea fluxes datasets we would like to archive at SCD. Overall, the total volume of these datasets is rather small.

Brigitte

- Large scale ocean circulation & waves
 - Air - sea Fluxes
- Roy Janne
Feb 2002

Air-Sea Fluxes:

NOAA-11, 12 satellite images (AVHRR SST) collected at Townsville, Australia (Emery), via anonymous ftp from bilbo.colorado.edu. The data files contain biweekly and monthly composite images of raw SST data, raw data with map and contours, and smoothed data with map and contours.
Data Volume: 140 MB

AVHRR data (1-km resolution) from the COARE domain, accessible from the U. S. Geological Survey. The USGS provides researchers with an on-line data inventory system which, for AVHRR data, also allows users to preview or browse images via an X-window application. Text-based queries only (no browsing) are also provided for those without x-windows capabilities. For X-windows access: telnet xglis.cr.usgs.gov. From NSI/DECNET: set host glis; username: glis. From Internet: telnet glis.cr.usgs.gov. Direct Dial: set modem to 8 bits, no parity, 1 stop bit; dial 605-594-6888.
Data Volume: unknown

R/V Le Noroit surface data (Henin), available via anonymous ftp from tcdm.coare.ucar.edu. The dataset includes 5-minute readings from the thermosalinometer hull thermometer and 3-hour meteorological observations made by the ship's officers.
Data Volume: 1.8 MB (uncompressed) / 365 KB (compressed)

IMET wind data (Weller), available via anonymous ftp from tcdm.coare.ucar.edu. WARNING: this is a preliminary processed file and should be used with caution.
Data Volume: 1.1 MB (uncompressed) / 282 KB (compressed)

Time series of mass, heat, and momentum flux and precipitation compiled for the entire COARE period, available via anonymous ftp from tcdm.coare.ucar.edu. These time series were released during the TOGA COARE International Data Workshop in Toulouse, France.
Data Volume: 565 KB (uncompressed) / 155 KB (compressed)

Routine Surface Meteorological Observations from the R/V Hakuho-maru (Otohe), available via anonymous ftp from the University of Tokyo (157.82.71.38).
Data Volume: 6.5 MB

Eddy correlation fluxes of sensible and latent heat as well as wind, temperature and humidity data from the R/V Hakuho-maru (Tsukamoto), available via anonymous ftp from the University of Tokyo (157.82.71.38)

Data Volume; 7 KB

Wind vector estimates derived from ocean surface backscatter measurements by the C-Band Scatterometer (installed on N42RF P3, U. of Massachusetts, Carswell), available via anonymous ftp from [tcdm.coare.ucar.edu](ftp://tcdm.coare.ucar.edu).

Data Volume: 208 KB (compressed)

Preliminary results from the Freshwater Fluxes "footprint" product using data from the R/V Vickers (Colleen Leary, Tim Doggett), available via anonymous ftp from [tcdm.coare.ucar.edu](ftp://tcdm.coare.ucar.edu).

Data Volume: 1.2 MB

Surface data from the six TOGA COARE Integrated Sounding System (ISS) sites, available via anonymous ftp from [ftp.atd.ucar.edu](ftp://atd.ucar.edu). The data files are in "NetCDF" format, typically contain 15 days of one-minute average data, and are nominally 1.5 MB in size.

Data Volume: 86 MB

NOAA-11 and NOAA-12 AVHRR HRPT data (raw HRPT, calibrated full pass HRPT and calibrated and navigated HRPT data), available upon request from Phil Misliniski at the University of Colorado.

Data Volume: unknown

Kavieng ISS surface pyranometer and pyrgeometer data (Long), available from the Radiation Data Processing and Archive Center at Penn State University via their Mosaic server (<http://wwwarc.essc.psu.edu/datasets/probe/armprobe-orig.html>).

Data Volume: 40 MB

Kavieng PSU Solar Photometer data (Valero), available from the Radiation Data Processing and Archive Center at Penn State University via their Mosaic server (<http://wwwarc.essc.psu.edu/datasets/probe/armprobe-orig.html>).

Data Volume: 35 MB

Kavieng WPL Microwave Radiometer data, available from the Radiation Data Processing and Archive Center at Penn State University via their Mosaic server (<http://wwwarc.essc.psu.edu/datasets/probe/armprobe-orig.html>).

Data Volume: 11.4 MB

NASA Narrow Field-of-View Radiometer 10 (um) data (Pilewskie), available from the Radiation Data Processing and Archive Center at Penn State University via their Mosaic server

(<http://wwwarc.essc.psu.edu/datasets/probe/armprobe-orig.html>)

Data Volume: 23 MB

Preliminary TOGA-COARE high resolution sounding data for 19 of the Priority Sounding Station (PSS) network, available from UCAR's Office of Field Project Support (OFPS). Data are available via telnet to the OFPS CODIAC system (128.117.90.53, login storm, password research) or through a WWW interface (<http://www.ofps.ucar.edu>).

Data Volume: unknown

Processed NOAA WP3D Slow-rate 1 Hz data, available from the University of California, Irvine, via anonymous ftp ([cafws4.eng.uci.edu](ftp://cafws4.eng.uci.edu)) or via the World Wide Web (<http://cafws4.eng.uci.edu>).

Data Volume: 1.5 GB

Cessna Slow Data Version 2 (Flinders University, Australia), available via anonymous ftp from [tcdm.coare.ucar.edu](ftp://tcdm.coare.ucar.edu).

Data Volume: 64 MB (compressed)

Updated 1km and 4km 10day, 14day and monthly SMSST composites and ATSR (Along Track Scanning Radiometer) data, available via anonymous ftp from [bilbo.colorado.edu](ftp://bilbo.colorado.edu) (/pub/coare/smsst and /pub/coare/atrsr).

Data Volume: 15 MB

Shiyan #3 surface meteorology data, available via anonymous ftp from
tcdm.coare.ucar.edu.

Data Volume: 97 KB (uncompressed) / 35 KB (compressed)

Xiangyanghong #5 sea surface gradient measurements, available via anonymous ftp
from tcdm.coare.ucar.edu

Data Volume: 127 KB (compressed)

Xiangyanghong #5 radiation measurements, available via anonymous ftp from
tcdm.coare.ucar.edu.

Data Volume: 218 KB (uncompressed)/40 KB (compressed)

Xiangyanghong #5 surface meteorology data, available now via anonymous ftp from
tcdm.coare.ucar.edu.

Data Volume: 120 KB (uncompressed) / 33 KB (compressed)

Natsushima surface meteorological and shortwave data, available via
anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 36 KB (uncompressed) / 12.2 KB (compressed)

Large-Scale Ocean Circulation and Waves:

Drifter data transmitted over the GTS, available from MEDS (Canada).

Data Volume: unknow

ATLAS and PROTEUS data (TAO array), together with display software, available
via anonymous ftp from noaapmel.gov (192.68.161.12).

Data Volume: unknow

TOPEX-POSEIDON satellite altimetry data are available from NASA's Physical
Oceanography DAAC at JPL.

Data Volume: unknow

Inverted Echo Sounder data from the Topex Poseidon Enhanced Atlas mooring,
available via anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 361 KB (uncompressed) / 77 KB (compressed)

Marisonde GT drifter data (Blouch), available via anonymous ftp from
ftp.ifremer.fr (pub/ifremer/meteo/misc/maricoar.Z).

Data Volume: 1.06 MB (uncompressed) / 209 KB (compressed)

Bottom Pressure Recorder (BPR) data (Gonzales) from the Topex Poseidon Enhanced
Atlas mooring at 2 0.37S, 164 25.08E, available via anonymous ftp from
ftp.pmel.noaa.gov (anonymous.gonzales).

Data Volume: unknown

R/V Alis towed ADCP data , available via anonymous ftp from the University of
Tokyo (157.82.71.38).

Data Volume: 9.2 MB

BODEGA surface drifter data, deployed from the R/V Le Noroit, available via
anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 4.09 MB (uncompressed) / 913 KB (compressed)

Japanese ADCP mooring data (0,147E, 0,154E, 2N156E, and 2S156E), available via
anonymous ftp from the University of Tokyo (157.82.71.38).

Data Volume: 84 KB

Kexue #1 surface wave data, available via anonymous ftp from
tcdm.coare.ucar.edu.

Data Volume: 67.6 KB (uncompressed) / 24.5 KB (compressed)

Shiyan #3 wave data, available via anonymous ftp from tcdm.coare.ucar.edu.
Data Volume: 1.6 MB (compressed)

Standard subsets of COARE shipboard ADCP data are available through the Shipboard ADCP Center (SAC) established by the National Oceanographic Data Center at the University of Hawaii. Data can be obtained via anonymous ftp from kapau.soest.hawaii.edu or through their WWW server <http://www.soest.hawaii.edu/caldwell/index.html>. The latest version of the CODAS ADCP software is available via anonymous ftp from noio.soest.hawaii.edu.
Data Volume: 212 MB (compressed)

Ocean Mixing:

R/V Le Noroit CTD casts, gathered along 18 repetitive sections at 156E, from 5N-5S, during December 7, 1992- February 24, 1993, available from Thierry Delcroix at ORSTOM, Noumea (delcroix@noumea.orstom.nc).
Data Volume: 2.15 MB (uncompressed)/1.7 MB (compressed)

CTD data from S/V Malaita, available via anonymous ftp from tcdm.coare.ucar.edu.
Data Volume: 364 KB (uncompressed)/855 KB (compressed)

SEACAT data from the IMET buoy, available via anonymous ftp from tcdm.coare.ucar.edu.
Data Volume: 16.2 MB (uncompressed)/3.3 MB (compressed)

TOGA-XBT network measurements taken during the COARE IOP and EOP periods, together with atlases of temperature sections, available from the TOGA Subsurface Data Center (J.P. Rebert, Brest, France).
Data Volume: unknown

ADCP, current meter, surface thermosalinograph, underwater lightmeter, CTD and skin radiometer data, available for the R/V Franklin from Jeff Butt at CSIRO (butt@aqueous.ml.csiro.au). Radiometer data, available from R. Cechet (rpc@atmos.dar.csiro.au). Fax number for both of them is (61) 02 325123.
Data Volume: CTD Data: 2 MB (uncompressed)/650KB (compressed)
other dataset volumes unknown

Thermistor chain data and limited acoustic instrument time series for the acoustic mooring, available upon request from Steven Hill at the Institute of Ocean Sciences, Canada.
Data Volume: unknown

CTD data from the R/V Moana Wave
Data Volume: 57MB (uncompressed)/42 MB (compressed)

CTD data from the R/V Alis, available via anonymous ftp from tcdm.coare.ucar.edu.
Data Volume: 1.7 MB (uncompressed)/390 KB (compressed)

Nutrient data from the R/V Alis, available via anonymous ftp from tcdm.coare.ucar.edu.
Data Volume: 252KB (uncompressed)/165KB (compressed)

BOPS Turner Chlorophyll determinations, mean profile of normalized irradiance at depth from the Bio-Optical Profiling system, CTD variables from the BOPS package during soliton events on 10 and 11 Jan 1993, and true wind speed and direction, available for the 2nd leg of the IOP from the R/V Vickers, available via anonymous ftp from <ftp.crseo.ucsb.edu>.
Data Volume: 3.3 MB

R/V Kaiyo XBT data (Nov 1992) and R/V Natsushima XBT and CTD data (Feb 1993), available in ASCII format via Kaiyo_XBT anonymous ftp, Natsushima_XBT anonymous

ftp, Natsushima_CTD anonymous ftp from tcdm.coare.ucar.edu.
Data Volume: Kaiyo XBT: 371KB (uncompressed)/125KB (compressed)
Natsushima XBT: 1.7 MB (uncompressed)/538 KB (compressed)
Natsushima CTD: 4.2 MB (uncompressed)/1.5 MB (compressed)

R/V Vickers CTD data
Data Volume: 29 MB (uncompressed) / 20 MB (compressed)

Seacat and Mini Temperature Recorder data from the two ATLAS thermistor chain moorings located at TOPEX-POSEIDON orbit cross-over points, available from Joel Picaut at ORSTOM, Noumea (picaut@noumea.orstom.nc). The moorings were deployed from 11 September 1992 to 22 February 1993, and from 26 August 1992 to 22 March 1993 respectively.
Data Volume: unknown

CTD data from the R/V Wecoma
Data Volume: 9.2 MB (uncompressed)/6MB (compressed)

All the XBT files (ASCII) between 01/01/91 and 02/28/93 collected in the TOGA COARE Large Scale Domain by the ship-of-opportunity program is available from the TCIPPO.
Data Volume: unknown

CTD data from the Xiangyanghong #5, available via anonymous ftp from tcdm.coare.ucar.edu.
Data Volume: 844 KB (uncompressed) / 837 KB (compressed)

CTD data from the R/V Shiyan#3 legs, available via anonymous ftp from tcdm.coare.ucar.edu.
Data Volume: 1.1 MB (uncompressed) / 860 KB (compressed)

CTD data from the R/V Kexue #1, available via anonymous ftp from tcdm.coare.ucar.edu.
Data Volume: 10 MB (uncompressed)/4MB (compressed)

Japanese Microstructure Profiler (JMSP) data (R/V Hakuho-maru), available via anonymous ftp from the University of Tokyo (157.82.71.38). Data available for the time periods 12-15 Nov 92 (6-hour intervals), 15-20 Nov (3-hour intervals) and 20-23 Nov 92 (6-hour intervals). Each dataset includes T, S, Density, Dissipation, and Stability frequency averaged over 512 data bins.
Data Volume: 1.2 MB (uncompressed)/440 KB (compressed)

R/V Le Noroit SeaSoar data for 12 north/south sections along 156E, available from Dr. Kelvin Richards at the University of Southampton via anonymous ftp to 152.78.112.41
Data Volume: 12.2 MB (uncompressed)/2.6 MB (compressed)

Profiling Current Meter data, available upon request from Charlie Eriksen at the University of Washington (charlie@ocean.washington.edu).
Data Volume: unknown

CTD data from the R/V Onnuri, available via anonymous ftp from tcdm.coare.ucar.edu.
Data Volume: 1.6 MB (uncompressed)/419 KB (compressed)

R/V Wecoma SEASOAR data
Data Volume: 168 MB (compressed)

R/V Franklin SEASOAR data
Data Volume: 29 MB (uncompressed)/3.5 MB (compressed)

CTD data from the R/V Hakuho-maru, available via anonymous ftp to the

ocean_list Fri May 19 10:59:14 MDT 1995

University of Tokyo (157.82.71.38)

Data Volume: 5.2 MB (uncompressed)/1.2 MB (compressed)

IMET time series of temperature, salinity, and velocity at depths between 52.5 m and 260 m on the WHOI "IMET" mooring. Data are hourly averages spanning the period from 21 October 1992 to 03 March 1993. For information on obtaining documentation and ascii data files contact Al Plueddemann at aplueddemann@whoi.edu.

Data Volume: unknown

Surface Thermosalinograph (TSG) data , collected on the R/V Wecoma, available via anonymous ftp from frazil.nw.saic.com under the directory pub/lager/COARE/TSG.

Data Volume: 6.13 MB (uncompressed)/179 KB (compressed)

Moana Wave Oceanographic Data (Le 2), available via anonymous ftp from tcdm.coare.ucar.edu. Dataset includes salinity, density, zonal and meridional currents, and dissipation rates for turbulent kinetic energy and temperature variance.

Data Volume: 2.6 MB (uncompressed)/603 KB (compressed)

Kexue #1 chemistry data, available via anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 60 KB (uncompressed) / 40 KB (compressed)

Shiyan #3 chlorophyll data, available via anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 22 KB (uncompressed) / 10 KB (compressed)

Xiangyanghong #5 surface layer CTD data, available via anonymous ftp from tcdm.coare.ucar.edu.

Data Volume: 900 KB (uncompressed)

#

Date: Thu, 26 Jan 95 15:13:46 EST
From: wd23ek@sun27.wwb.noaa.gov (Eugenia Kalnay)
To: jenne@ncar.ucar.edu, wd23bk@sun27.wwb.noaa.gov,
wd22sl@sgi39.wwb.noaa.gov,
wd23mk@sun1.UCAR.EDU, jwoolen@sun27.wwb.noaa.gov
Subject: coads data

It would be nice to include the data! Eugenia

----- Begin Included Message -----

>From olivia@niwot.scd.ucar.EDU Wed Jan 25 15:48:38 1995
Date: Wed, 25 Jan 1995 13:46:20 -0700
From: olivia@niwot.scd.ucar.EDU (Olivia Bortfeld)
To: wd23bk@sun7.wwb.noaa.gov, wd23ek@sun27.wwb.noaa.gov,
wd23mk@sun27.wwb.noaa.gov
Subject: memo from roy jenne

NATIONAL CENTER FOR ATMOSPHERIC RESEARCH
Scientific Computing Division & Data Support Section

25 January 1995

*High resolution
Raob Data*

MEMO TO: M. Kanamitsu, E. Kalnay, R. Kistler

FROM: Roy Jenne

Toga Coare

SUBJECT: Status of TOGA COARE Raob Data (late 1992, early 1993)

I just talked with Jim Moore and Steve Williams at NCAR about the status of raob data preparation for TOGA COARE.

They now have the high-resolution data for 19 sites (2-second to 10-second data). Winds have been properly filtered to remove noise. The problems of low humidity and high humidity in instruments have been corrected as best they can.

Most of the 19 stations probably did come in at least part of the time on GTS, but this is better data. It includes three ships that probably did not get on GTS (1 ship, 90 days; 2 other ships, 2 weeks each). Steve Lord at NMC probably has programs that could go from the high-resolution soundings to data with a reasonable number of levels for reanalysis. If the data are used, they say that the new files now on-line at NCAR should be used.

The dataset now has 5000 soundings. When they are finished with everything, there will be 13,000 soundings.

note: These rawinsonde soundings give data at many many levels. For reanalysis, they need rawinsondes that have an ordinary number of levels such as 50 to 90 levels.

I will try to talk with one of you on the phone. I think it may be a 50-50 decision on whether we use this data for the first reanalysis coming soon.

- End of Memo -

----- End Included Message -----

TOGA Coate - and other

Roy James
7 Feb 95

[Gus Shumba called]

1) TOGA Coate ends about Sep 96. NCDC will be permanent archive.

Gus will visit NCAR Mar 27-29

- Arrive Mon Mar 27
- TOGA Coate Mar 28
- Me - more Mar 29

2) If someone else has the data on-line, he will just have good backup

3) Ho doesn't like the Togo Coate data list now.
no: Actually not sound too bad. (R. James)

4) I noted too much coord can be problem. He said so many mtgs in Wash DC that no one knows what is happening

5) Did we send 500 blank tapes to Russia
- Not yet

6) Russia asked again about a 9 GB disk
- NCDC will do it in about 6 weeks
- cost around \$3500

7) Can Gus send us copy of the Russian Daily stn data
- temp & precip
- and updates.
- yes

[will I be here Mar 29?
- tell Gus

From chinman@ghoti.unidata.ucar.EDU Wed Mar 17 15:08:19 1993
Received: from ncar.ucar.edu by niwot.scd.ucar.EDU (5.65/ NCAR Mail Server 04/10/90)
id AA20209; Wed, 17 Mar 93 15:08:13 MST
Received: from niwot.scd.ucar.edu by ncar.ucar.EDU (5.65/ NCAR Central Post Office 07/14/92)
id AA23855; Wed, 17 Mar 93 15:08:12 MST
Received: from ncar.ucar.edu by niwot.scd.ucar.EDU (5.65/ NCAR Mail Server 04/10/90)
id AA20205; Wed, 17 Mar 93 15:08:10 MST
Received: from [128.117.38.1] by ncar.ucar.EDU (5.65/ NCAR Central Post Office 07/14/92)
id AA23851; Wed, 17 Mar 93 15:08:08 MST
Date: Wed, 17 Mar 93 16:15:23 GMT-0700
From: chinman@ghoti.unidata.ucar.EDU (Richard Chinman)
Message-Id: <9303172315.AA05415@ghoti.unidata.ucar.EDU>
Received: by ghoti.unidata.ucar.EDU (5.64/ NCAR Mail Server 04/10/90)
id AA05415; Wed, 17 Mar 93 16:15:23 GMT-0700
To: jenne@ncar.ucar.edu
Subject: COARE soundings

R jenne

17 Mar 1993

*Sounding Data
TOGA COARE*

4 pages

Roy,
The soundings meeting announcement and some background material
as I mentioned are attached.

To: TOGA COARE Soundings Community
Fr: Richard Chinman, TCIPD Data Manager
Re: COARE Soundings Data

16 March 1993 *at Colo State U.*

Dick Johnson has recently made several suggestions to me
regarding the community's discussion of COARE soundings
issues that are well worthwhile considering. I propose them
here to the group.

In light of the complex issues raised and the need to quickly
resolve questions about soundings data processing, QCing,
archiving, etc., it appears that a meeting involving COARE
scientists and data managers to set priorities and standards
would be useful. I propose that this meeting be scheduled to
take place in Boulder on 14 April 1993 and that the COARE
Project Office be responsible for the meeting coordination
and logistics. At this time, the COARE office can provide no
funds for prospective participants to attend the meeting. As
much as possible, I think we need to take advantage of people
already in and around Boulder to attend the meeting and
incorporate the comments of non-attendees via email. I have
included a preliminary agenda (below) prepared by Dick
Johnson for your information and review. Your suggestions
for changes/additions to the agenda and comments about the
issues are most welcome. I especially welcome email from
those people unable to attend the meeting and will post to
the entire community any further messages I receive.

COARE Atmospheric Soundings Meeting Agenda

- Status of sounding data collected
 - research data
 - operational data
 - surface and upper-air observations
- Proposed contents of sounding archive
 - rawinsonde/omegasonde
 - NCAR ISS
 - 50 mHz wind profiler
 - aircraft dropwindsondes
 - pibals, pireps, cloud-drift winds?

- include non-PSS data? how much?
- surface data (land, ships?)
- Resolution of data in archive
 - vertical resolution
 - data from IFA, OSA
 - data from other PSS sites (e.g., Indonesia)
 - time resolution
 - ISS wind profiler/RASS data
 - ISS PAM data
- Post-processing strategies
 - digitization of strip charts
 - how many?
 - which sites?
 - incorporation of GTS-level data into basic archive
 - from NMC, ECMWF, BOM?
 - priorities for post-processing
 - which efforts should begin first?
- Data sets
 - types
 - quick-look
 - validated
 - model assimilated
 - timetables for release
- Data archive center(s)

In addition to proposing the above meeting, I want to present the following information as background to soundings processing and archiving issues. I wonder if a gradient approach to the processing and archiving might be useful. That is, begin processing, QCing, and archiving high-resolution, DIGITAL, PSS soundings data now (this part of the process, as outlined by the OFPS proposal, is relatively easy and inexpensive) with a decision about (and processing of) the PSS hi-res ANALOG data to come later. Another step along this path (the digital path) might be to provide users with access to all the GTS soundings data. This way, we would have some (lo-res) data from the PSS ANALOG sites available relatively soon and as the hi-res PSS ANALOG data are digitized, we insert them into the hi-res archive.

To help put the above idea into perspective, I have included some information about the TOGA COARE sounding sites active during the EMP and IOP and their data format type (the following table, containing 5 columns delimited with tabs, can be legibly aligned within a word-processing document by placing tabs at 1 inch, 2.25 inches, 4 inches, and 6 inches).

WMO Number	Name	Administrating Country or Agency	Period and		
			Hi-Res Data (per day)	Frequency of Launches	
45004	HONG KONG	Hong Kong	Digital File	IOP 2	
48698	SINGAPORE	Singapore	Digital File	IOP 2	
59981	XISHA DAO	PRC	Data Not Available	IOP 2	
91217	GUAM US	Digital File	IOP 2		
91334	CHUUK US	Digital File	IOP 4		
91348	PHONPEI US	Digital File	IOP 4		
91366	KWAJALEN	Aeromet (US)	Digital File	IOP 2	
91376	MAJURO US	Digital File	IOP 2		

91408	KOROR	US	Digital File	IOP 2	
91413	YAP	US	Digital File	IOP 2	
91517	HONIARA	Solomon Islands	Hard Copy Numerical		IOP 4
91541	SANTA CRUZ	Australia	Digital File		IOP 2
91610	TARAWA	New Zealand	Strip Charts	EMP 2	
91643	FUNAFUTI	New Zealand	Strip Charts		IOP 2
91701	KANTON	US	Digital File	EMP 1	
94014	MADANG	PNG	Hard Copy Numerical		IOP 2
94087	MISIMA	Australia	Digital File		IOP 4
94120	DARWIN	Australia	Digital File		IOP 2
94150	GOVE	Australia	Digital File		IOP 2
94175	THURSDAY IS	Australia	Digital File		IOP 2
96163	PADANG	Indonesia	Strip Charts		IOP 2
96413	KUCHING	Malaysia	Strip Charts		IOP 2
96471	KOTA KINA	Malaysia	Strip Charts		IOP 2
97014	MENADO	Indonesia	Strip Charts		IOP 2
97180	UJUNG PADANG	Indonesia	Strip Charts		IOP 2
97372	KUPANG	Indonesia	Strip Charts		IOP 2
97560	BIAK	Indonesia	Strip Charts	EMP 2	
98223	LAOAG	Philippines	Strip Charts		IOP 2
98444	LEGASPI	Philippines	Strip Charts		
98646	MACTAN	Philippines	Strip Charts		IOP 1
98753	DAVAO	Philippines	Strip Charts		
	HAKUHO-MARU	Japan	Digital File	NOV. 4-8	
	KEIFU-MARU	Japan	Digital File	NOV. 4	
	NATSUSHIMA	Japan	Digital File	FEB 4	
PSEX3	SHIYAN#3	NCAR (US)	Digital File		IOP 4
PSKAP	KAPIN'GI	NCAR (US)	Digital File		EMP 2
					IOP 4
PSKAV	KAVIENG	NOAA (US)	Digital File		IOP 4
PSMAN	MANUS	NOAA (US)	Digital File		EMP 2
					IOP 4
					JAN ~8
PSMOA	MOANA WAVE	NOAA (US)	Digital File		IOP 4
PSNAU	NAURU	Taiwan	Digital File	EMP 2	
					IOP 4
PSNO5	XIA'HONG#5	NCAR (US)	Digital File		IOP 4
PSSC1	KEXUE #1	NCAR (US)	Digital File		IOP 4

42 data collecting sites are listed above, however, only 40 were operating as PSS (see note below about Philippine stations) during the observation period(s).

1 site (59981), designated as a COARE Priority Sounding Station, does not have the capability to provide high-resolution data in any form to COARE.

15 sites store high-resolution soundings data in analog format. That is, data are recorded on strip charts or, in the case of two sites (91517, 94014), data are stored as numerical hard-copy. In these latter two cases, the instrumentation acquires the data in digital format, but then outputs the data to a printer only. No data storage device or media is utilized.

26 sites acquire, store, and exchange data digitally.

2 Philippine sites (98444 and 98753) replaced the other Philippine sites at some time during the IOP. Philippine sounding station personnel declared that among the suite of 4 Philippine stations listed above, only two, at any one time, were intended to perform as PSS.

AT THE FOLLOWING NUMBER OF SITES, LAUNCH RATES AND TIME PERIODS:

1 site at 1 per day during the EMP.
2 sites at 2 per day during the EMP.
1 site at 1 per day during IOP.
21 sites at 2 per day during the IOP.
9 sites at 4 per day during the IOP.
1 site at 4-8 (8 during intensive events) per day during
November 92.
1 site at 4 per day during November 92.
1 site at 4 per day during February 93.
1 site at 4 per day during the IOP, ~8 per day during January
93, 2 per day during the interval of time remaining in the
EMP.
2 sites at 2 per day during the EMP and 4 per day during the
IOP.

AND THE NUMBER OF DAYS IN EACH PERIOD:

EMP = 245 days (365 days minus the IOP interval).
IOP = 120 days
November 92 = 30 days.
January 93 = 31 days.
February 93 = 28 days.

THE EXPECTED NUMBER OF SOUNDINGS IS:

$1 * 1 * 245 = 245$
 $2 * 2 * 245 = 980$
 $1 * 1 * 120 = 120$
 $21 * 2 * 120 = 5040$
 $9 * 4 * 120 = 4800$
 $1 * (4 \text{ to } 8) * 30 = 120 \text{ to } 240$
 $1 * 4 * 30 = 120$
 $1 * 4 * 28 = 112$
 $1 * ((4 * 120) + (8 * 31) + (2 * 214)) = 1156$
 $2 * ((2 * 245) + (4 * 120)) = 770$

FOR A TOTAL OF 13,463 - 13,583 SOUNDINGS.

Of the total noted above, data from 3740 soundings are recorded in analog format. Two categories of analog data are available: data from 3020 soundings are recorded on strip charts, and data from 720 soundings are stored as numerals printed out in hard-copy.

Regards,
Richard Chinman

TOGA Coare Raobs

Date: Wed, 23 Feb 1994 11:22:38 -0700
To: coare.lsatmos@tcdm.coare.ucar.EDU, coare.meso@tcdm.coare.ucar.EDU
From: kippes@tcdm.coare.ucar.EDU (Crista Kippes)
Subject: summary of responses

Feb 1994

6 pages late

Please find attached a summary of the responses to a message sent out to both the COARE Large-Scale Atmospheric Circulation and Waves community, and the COARE Atmospheric Convection and Mesoscale Circulation community, on 21 December 1993 (see a copy of this message attached in Appendix). This message was aimed at giving any individual a chance to comment on processes planned in preparation of the COARE sounding data archive. Responses were low in number (5), but had very helpful input. Please find a copy of all the e-mails exchanged on the issue in the anonymous ftp area tcdm.ucar.edu, in the /pub/SCIENCE_GROUP_INFO/atmosphere_large_scale/question_resp.9312 file.

1. CORRECTION SCHEMES TO BE APPLIED TO THE TOGA COARE ISS SOUNDING DATA

All responses emphasized that corrections must be made. One scientist stated that there was no need to apply correction algorithms to the raw data, raw data being intrinsically questioning. E. Miller (NCAR/ATD) responded that correction schemes would generate more accurate corrected values if applied to the raw data, rather than applied to the 10-s data directly. The case for work with raw data was further emphasized in mail exchanged between D. Starr (NASA/GSFC) and H. Cole (NCAR/ATD). Finally, it was noted that the raw data also needed to be made available, which is actually planned. In summary, six types of data files will be made available for each sounding: a raw data file (so-called m), a "raw" corrected file (mc), a 10-second data file (x), a 10-s corrected file (xc), a 5-hPa data file interpolated from 10-s data (i) and an interpolated corrected file (ic). Documentation will be produced accordingly.

2. CORRECTION SCHEMES TO BE APPLIED TO THE TOGA COARE PSS DATA

All respondents agree that both the high and the low relative humidity NWS Micro-ART values should be corrected. It was noted again that it was necessary to make the non-corrected data available, especially because no unique agreed-upon correction algorithm exists for the low humidity data. It was also pointed out that applying these corrections only to the COARE stations during the IOP would require enhancing the assimilation/analysis schemes to appropriately handle these corrected observed values.

3. PROFILER PRODUCTS

The contents of the profiler TOGA COARE archive, as proposed (see question 3.1 in Appendix), has been approved by all respondents. On the contrary, comments on the blended profiler products and blended profiler-radiosonde products were mixed: two scientists mentioned that they would use these products, two that they would not use them, and one had no comment.

There was no consensus in the responses about making use of a common quality control for profilers and radiosonde data (see question 3.3 in Appendix). Firstly, the quality control

information provided to users is not always useful to individual needs, for example, to those performing process studies. Secondly, because there is "no consensus on validity of upper-air data from the various sounding systems", it is unlikely that evaluations made by one group of scientists would meet the criteria of a different group. However, undoubtedly, there is a need for "a complete understanding for the systematic errors/discrepancies between the various observing systems". Flagging the data would be the first step in this process; "developing the understanding necessary to apply corrections to the data" would be "an additional step".

All respondents agree that the radiosonde and profiler data should be put in a common data format, thus facilitating the data access, provided that no information in the datasets is degraded, and that costs involved in reformatting processes are not excessive.

4. CONCLUSIONS

Recommendations on the issues presented are as follows:

- (1) Correction schemes should be applied to the raw ISS data.
- (2) High and low humidity values from the COARE Micro-ART stations should be corrected.
- (3) All non-corrected data should be made available to the scientists.
- (4) The COARE profiler archive should consist of half-hourly 915 MHz wind profiler averaged values, high and low-mode vertical resolutions, from the ISSs and the R/V Moana Wave; half-hourly 50 MHz wind profiler averaged values, one vertical resolution, from Christmas Island and Biak; half-hourly RASS data, one vertical resolution, from the ISSs and the Moana Wave.
- (5) Putting the radiosonde and profiler data into a common data format should be further investigated.
- (6) The COARE sounding data archive is not required to address the development of blended profiler or blended profiler-radiosonde products, or the development of a common quality control for profiler and radiosonde data.

APPENDIX

Date: Tue, 21 Dec 1993 17:11:12 -0700

>From kippes@tcdm.coare.ucar.EDU Tue Dec 21 17:13 GMT 1993

From: kippes@tcdm.coare.ucar.EDU (Crista Kippes)

To: coare.lsatmos@tcdm.coare.ucar.EDU, coare.meso@tcdm.coare.ucar.EDU

Subject: Soundings Data

You are **STRONGLY** encouraged to express your views and suggestions on the following three items. Please return your responses as soon as possible and no later than 31 January 1994. Thank you for your cooperation.

Martine Michou
TOGA COARE Data Management
TOGA COARE International Project Office
UCAR P.O. Box 3000
Boulder, CO 80307-3000
U.S.A.
tel: 1 303 497 8691
fax: 1 303 497 8634
Internet: michou@ncar.ucar.edu
Omnet: m.michou

1. CORRECTION SCHEMES TO BE APPLIED TO THE TOGA COARE ISS SOUNDING DATA

1.1 Presentation of the problem

Spurious behavior of the ISS soundings at low levels was noted during the IOP: an extreme superadiabatic lapse rate near the surface and a drastic drop-off in moisture.

Causes for this behavior were attributed to two factors - excessive radiational heating of the sensor boom prior to launch and an unexpectedly long time lag of the humidity sensor. The humidity sensor lag presented a significant problem at only two of the sites (Nauru and Kapingamarangi) where there were air-conditioned launchers.

Excessive heating of the boom was a problem at all sites and most obvious at sites with no air-conditioned launcher. Surface temperatures were therefore too warm and the humidity too low since the humidity measurement from the sonde humicap is based on the boom temperature. To correct for this error, the boom temperature is calculated and with the measured (corrected) sonde ambient temperature a corrected humidity is obtained. This correction is needed until the boom temperature reaches a reasonable equilibrium with the ambient temperature ~ a couple minutes after launch.

At the two sites with the air-conditioned launcher, the sonde begins in an environment where there is a reduced amount of moisture although the room temperature is close to that of the ambient environment. The initial reduced humidity affects subsequent measurements for a period of up to 40 seconds or more. Testing of the sonde in a chamber and analysis of many launches from an air-conditioned environment lead to a first order approximation of a humidity sensor time constant of about 7.0 seconds plus or minus ~3.5 seconds. The information is then used with independent surface humidity measurements to correct the sonde humidity measurements at lower levels.

1.2 Procedure proposed

The ISS sounding data include three types of data files: a raw data file (so-called m), a 10-second data file (x) and a 5-hPa data file interpolated from 10-s data (i). It is proposed to apply the correction algorithms, to resolve the errors identified under 1.1, to the raw data files (m). This means that, for each sounding, three additional files will be generated: a "raw" corrected file (mc), a 10-s corrected file (xc) and an interpolated corrected file (ic). Early spring 1994 would be a target date for completion of this task.

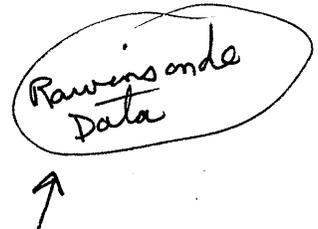
1.3 Documentation available

NCAR 'Technical Report on TOGA COARE ISS Radiosonde Temperature and Humidity Sensor Errors', H. Cole, October 1993.

Please ask for a copy of this report from the TCIPO.

1.4 Do you have any comment on this correcting process?

Rawinsonde
Data



2. CORRECTION SCHEMES TO BE APPLIED TO THE TOGA COARE PSS DATA

2.1 Presentation of the problem

Six of the TOGA COARE Priority Sounding Stations (PSS) consist of NWS Micro-ART sounding sites. Minor problems with the humidity measurement on these soundings are briefly described below:

1) NWS Micro-ART soundings collected prior to 1 Oct 1993 contain an error in the RH measurement which affects primarily the high RH values. The error occurred in that portion of the software which removes the effect of a resistor, connected in parallel with the hygistor on the radiosonde. Prior to 1986 (pre- Micro-ART), the value of the parallel resistor was 1.2 M ohms. With the change in radiosondes which occurred with the change to Micro-ART, the value of this resistor changed to 1.0 M ohms. However, the software continued to use 1.2 M ohms in the equation which removes this effect from the incoming signal. The error produces a downward bias in the highest RH values of 3-4% RH, such that in-cloud humidities probably will not

exceed 94-95% RH under most conditions. Below about 70% RH, the error is generally insignificant.

This problem can be corrected by backing out the resistance measurement from the VIZ humidity equations, applying the correct value for the parallel resistor, and recomputing RH. The 6-sec RH data, recorded to a tenth of a percent RH, which have been collected by the TCIPO, should have sufficient precision to make this recalculation worth-while.

On 1 Oct 1993, the NWS corrected this error in the most recent version of the Micro-ART code.

2) The second problem concerns the low RH measurement. For 30 years the NWS has been deriving the <20% RH values incorrectly. The problem originated as an error in the humidity evaluator, used to convert the radiosonde signal into RH. It has propagated thru the years because of an NWS requirement that computer algorithms, used to automate the reduction process, match the evaluator within 1% RH. The error biases the <20% RH values towards higher values and makes the sensor appear to lose its sensitivity below 20% RH. It was this problem which led the NWS, in 1973, to stop reporting RH values below 20% RH (a practice which was just recently reversed on 1 Oct 1993). The NWS is now reporting the low RH values, but is still using the wrong reduction coefficients below 20%.

As in problem 1, the data can be corrected by backing out the resistance values and using a more correct reduction algorithm. Canadian soundings have been computed using a revised set of coefficients in the VIZ algorithm since about 1989 and show humidities down to <5% RH, rather than the 13-14% RH lower limit observed in the U.S. data.

Note that this problem may also affect the Indonesian TOGA COARE soundings which used VIZ sondes, hygriators, and reduction algorithm. The data need to be examined to see if the problem exists.

2.2 Procedure proposed

It is proposed to apply the corrections algorithms to the highest resolution (6-s or 10-s) data available. Both non-corrected and corrected data sets will be made available.

2.3 Documentation available

Wade, C.G. and B.E. Schwartz, 1993: Radiosonde Humidity Observations near saturation. Proceedings from the Eighth Symposium on Meteorological Observations and Instrumentation, 73rd Annual Meeting, 17-23 January 1993, Anaheim, CA.

Wade, C.G., 1994: An Evaluation of Problems affecting the Measurement of Low Relative Humidity on the U.S. Radiosonde. Accepted for publication JTech.

Please ask for a copy of these reports from the TCIPO.

2.4 Do you have any comment on this correcting process?

3. PROFILER PRODUCTS

It has been proposed that the profiler TOGA COARE archive include:

- (1) half-hourly 915 MHz wind profiler averaged values, high and low-mode vertical resolutions, from the ISSs and the R/V Moana Wave
- (2) half-hourly 50 MHz wind profiler averaged values, one vertical resolution, from Christmas Island and Biak
- (3) half-hourly RASS data, one vertical resolution, from the ISSs and the Moana Wave.

3.1 Do the above proposal satisfy your requirements?

3.2 Do you think you would also work with blended profiler products (high-res (near surface) + low-res (midtroposphere)), if developed?

3.2 Do you think you would also work with a blended profiler (lower troposphere) + radiosonde (aloft) product, if developed?

3.3 Do you think you would make use of a common quality-control for profiler and radiosonde data, if developed?

3.4 Do you think you would make use of a common format for profiler and radiosonde data, if developed?