DYNAMO DATA MANAGEMENT OVERVIEW

Steve Williams and Jim Moore

National Center for Atmospheric Research (NCAR)

Earth Observing Laboratory (EOL)

Boulder, Colorado, USA

CINDY2011/DYNAMO Operations Planning Workshop

JAMSTEC, Yokohama, Japan **8-10 November 2010**

http://www.eol.ucar.edu/projects/dynamo

News

Integration of DYNAMO Observations and Models *(White Paper)*
CINDY 2011/DYNAMO Operation Planning Workshop November 8-10, 2010 Yokohama, Japan

Report from the Site Survey to the Maldives (February 2010) (download PDF version)

Photo Album survey trip(part 1)
Photo Album survey trip(part 2)
Panoramic photos of all Gan radar sites

DYNAMO Scientific Program Overview and Experimental Design Overview documents submitted to NSF (Jan 13, 2010).

Project Overview

There is considerable evidence for the importance of the MJO in weather and climate (e.g., hurricane activity, U.S. West Coast flooding events, and ENSO), and in their seamless prediction. But our ability of simulating and predicting the MJO is severely
limited due to model misrepresentation of processes key to the MJO. Development, improvement, validation of parameterizations for weather and climate models critically
rely on in situ observations. A lack of in situ observations in the region of the tropical Indian Ocean has impeded the progress on the study of MJO, especially its initiation. All these point to an urgent need of a field observation campaign in the tropical Indian Ocean region with a focus on the MJO and tropical intraseasonal variability in general.

The US research, operations and applications communities are poised to join CINDY2011, an international field program that will take place in the central equatorial Indian Ocean in late 2011 - early 2012 to collect in situ observations to advance our understanding of MJO initiation processes and to improve MJO prediction. DYNAMO is the program that organizes the US interest of partaking in CINDY2011. The DYNAMO campaign will be augmented by other field programs (AMIE, HARIMAU, PAC3E-SA, ONR air-sea interaction) also taking place in late 2011 - early 2012. The integrated observation data set from these programs will cover MJO events at different stages of their life cycle with complimentary observational emphases. The opportunity to be an integrated part of these coordinated programs to maximize the value of observational products makes the timing of late 2011 - early 2012 critical for DYNAMO.

The field campaign of DYNAMO/CINDY2011 consists mainly of a sounding-radar array formed by research

Meetings and Presentations

Meetings and Presentations
Introduction to DYNAMO presentation

Organization and Working Groups

Science Steering Committee
Modeling Working Group
Ship Working Group
Gan Island Working Group

Documents

Integration of DYNAMO Observations and Models *(White Paper)*
DYNAMO Overview
"White Paper" *(June 2009)*
DYNAMO timeline
Scientific Program Overview
Experiment Design Overview

Related Projects

Year of Tropical Convection (YOTC)
CINDY-2011
US CLIVAR MJO Working Group
NOAA CPC MJO Forecast
ARM Tropical Western Pacific
India Meteorological Department web site
HARIMAU
RAMA
MISMO Project

Participant Web Sites

hold

Mailing Lists

DYNAMO General List
Modeling Working Group

Contents:

EOL Data Management Philosophy

- **Early involvement in project planning**
- **Involvement with PIs to develop data management strategy (e.g., plan, policy, format, special collection and processing)**
- **Consistent implementation of data management strategy for lifetime of project and beyond (data Stewardship)**
- **Reliable and efficient long-term archive and distribution system**
- **Easy and efficient access to datasets by broader community including educators and students**

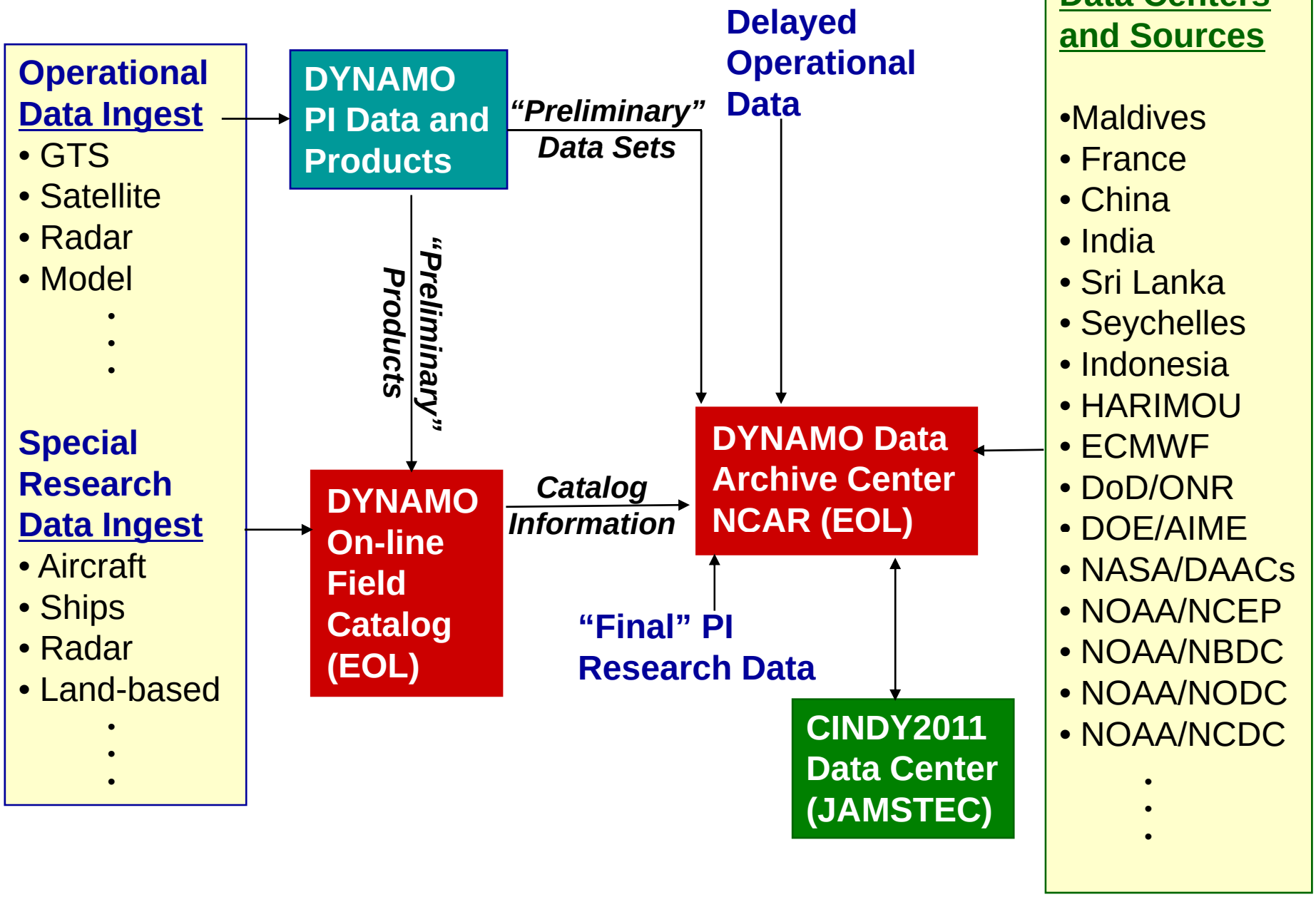
NCAR Earth Observing Laboratory

Project Data Management Considerations

- Develop Data Management Plan
- Data Types
- Data Formats and Documentation
- Data Collection
- Define Real-time Data Requirements
- Data Quality Control
- Data Archival
- Data Distribution
- Coordination with other Programs

NCAR Earth Observing Laboratory

DYNAMO Data Flow (proposed)



DYNAMO Data Policy and Protocol

See: http://www.eol.ucar.edu/projects/dynamo/documents/data_policy.html

The DYNAMO data policy is in compliance with the World Meteorological Organization (WMO) Resolution 40 on the policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities:

"As a fundamental principle of the World Meteorological Organization (WMO), and in consonance with the expanding requirements for its scientific and technical expertise, the WMO commits itself to broadening and enhancing the free and unrestricted international exchange of meteorological and related data and products."

DYNAMO Data Management Strategy

See: http://www.eol.ucar.edu/projects/dynamo/documents/data_policy.html

A DYNAMO Data (field observations and associated satellite data, reanalyses, and model output) **Archive Center (DDAC)** will be established and maintained by NCAR Earth Observing Laboratory (EOL) *[proposed]*.

A real-time web-based **Field Catalog will be implemented by EOL *[proposed]*** to assist the planning and field operation with an overview of the missions carried out during the field campaign. All participants to the DYNAMO field campaign are required to communicate with EOL on a daily basis to report status of their real-time data collection and instruments, which will be included in the Field Catalog. Real time atmospheric sounding observations will be made available to operational centers through GTS (with near real-time Skew-T plots provided in the Field Catalog).

There will be a **CINDY2011 data center at JAMSTEC**. The CINDY2011 data center and DYNAMO DDAC will be linked and the accessibility to publically released data at either center will be transparent to users.

Possible formation of a joint **Data Management Working Group (DMWG)?**

Data Management Working Group (DMWG)
"Typical" Charge

(Reports to the Scientific Steering Committee)

- Coordinate with the Project Participants to define the data requirements
- Design a distributed data management system to provide access to all data sets
- Prepare a data management plan describing the data policy, strategy, and implementation
- Determine special product generation or data integration needs
- Oversee data collection to ensure a permanent archive upon completion of the program
- Coordinate and collaborate with other field projects/programs and data providers

DYNAMO Data Submission and Availability

See: http://www.eol.ucar.edu/projects/dynamo/documents/data_policy.html

Within six months following the end of the field campaign, **all data shall be promptly shared** by DYNAMO investigators responsible for data acquisition to other DYNAMO investigators upon request and notification of the intent of data use.

All DYNAMO investigators participating in the field campaign are required to **submit their field data** to the DDAC no later than **six months** following the end of the field campaign.

During the **first 12 months** following the end of the field campaign, all DYNAMO data will be **accessible only to DYNAMO investigators** to facilitate inter-comparison, quality control checks and inter-calibrations, as well as an integrated interpretation of the combined data set. **No public release** of the data (sharing with non-DYNAMO colleagues, conference presentations, publications, commercial and media use, etc.) is allowed without the permission of the DYNAMO PIs who are responsible for collecting the data.

Quality control procedures should be carried out by DYNAMO investigators within 12 months following the end of the field campaign, unless unforeseeable issues emerge. After that, **DYNAMO field data will be made available to the broader scientific community**. Any remaining data quality issues should be made clear in the data documentation files. Improving DYNAMO data quality will be a continuous effort. The suitability of the released data for scientific investigations and publications should be decided at the discretion of the DYNAMO investigators responsible for field data collection and quality control and data users.

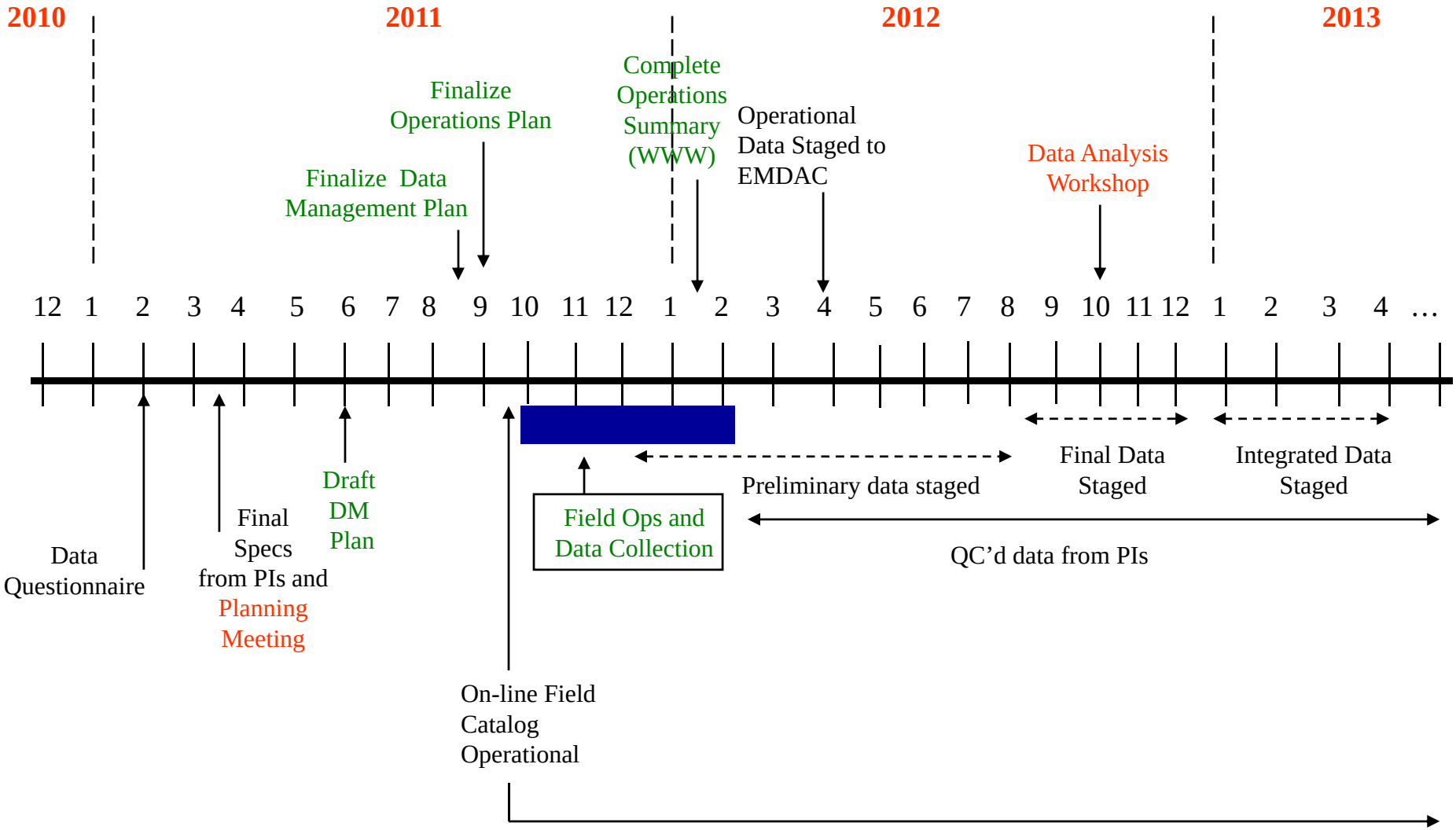
DYNAMO Data Authorship and Acknowledgement

See: http://www.eol.ucar.edu/projects/dynamo/documents/data_policy.html

The authorship decision for publications resulting from using DYNAMO data should follow the ethic rules of the journals and professional organizations (e.g., AMS, AGU). DYNAMO investigators responsible for field data collection are encouraged to make contributions to data analysis and writing of manuscripts, in addition to providing the data, to be **co-authors or acknowledged in the publications** using DYNAMO data.

All publications using DYNAMO data are suggested to include the following acknowledgement: The xxxx data was collected as part of the DYNAMO project, which was sponsored by NSF, NOAA, ONR, DOE, NASA, JAMSTEC, [Indian and Australian funding agencies]. The involvement of the DDAC is acknowledged. [The acquisition of the xxx data was carried out by YYYY using the zzzz instrument and was funded by wwww (if YYYY is not a co-author)].

DYNAMO Data Management Timeline
(proposed)

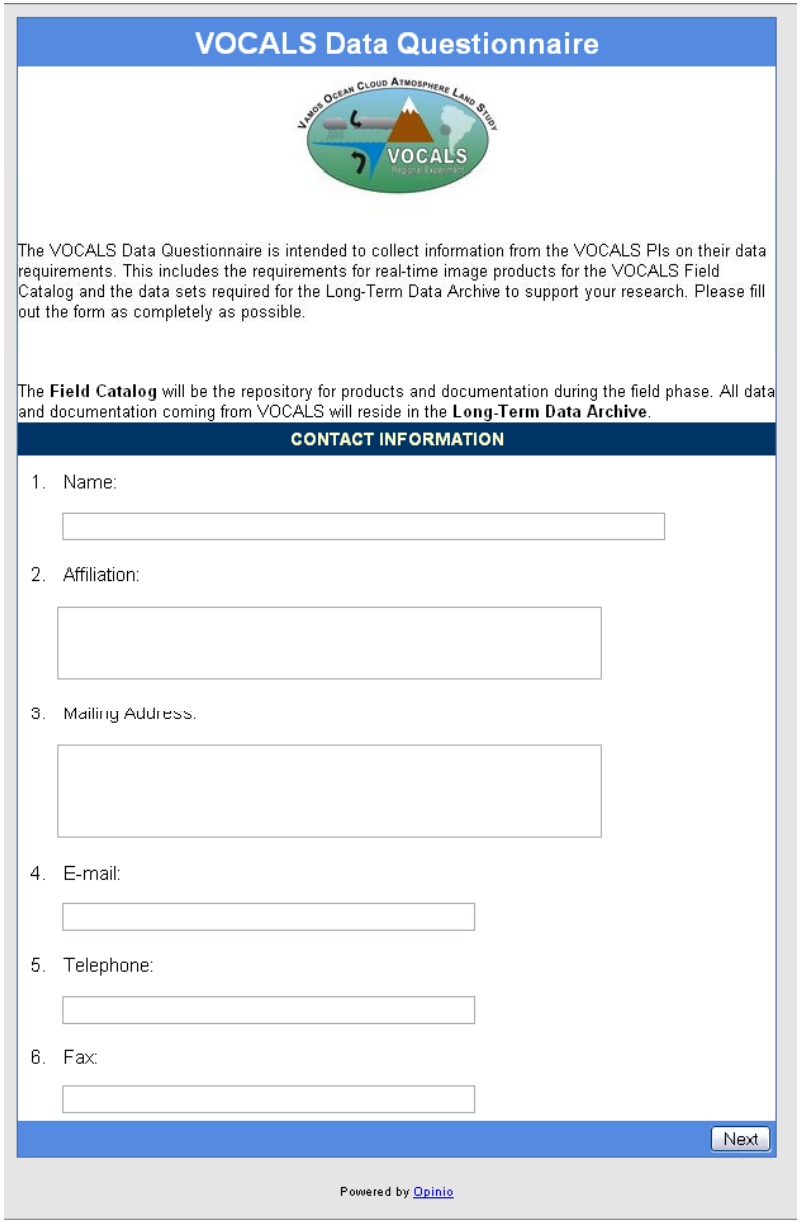


EOL DATA SERVICES

- Data Questionnaire
- Data Management Plans
- Real-time Data Ingest
- Field Operations Catalog and Mapserver
- Data Processing
- Interactive Data Archive and Distribution (EMDAC)
- Web Services
- Special Media Products and Services

NCAR Earth Observing Laboratory

http://survey.ucar.edu/opinio/s?s=3634



VOCALS Data Questionnaire

The VOCALS Data Questionnaire is intended to collect information from the VOCALS PIs on their data requirements. This includes the requirements for real-time image products for the VOCALS Field Catalog and the data sets required for the Long-Term Data Archive to support your research. Please fill out the form as completely as possible.

The **Field Catalog** will be the repository for products and documentation during the field phase. All data and documentation coming from VOCALS will reside in the **Long-Term Data Archive**.

CONTACT INFORMATION

1. Name:
2. Affiliation:
3. Mailing Address:
4. E-mail:
5. Telephone:
6. Fax:

Next

Powered by Opinio

INFORMATION COLLECTED ON:

- Imagery and products needed for the field catalog (real-time ingest)
- Supporting Datasets needed for research
- PI Data to be submitted to the field catalog/archive
- Product transfer to aircraft
- Special products/reports/datasets needed

DATA CATEGORIES

Aircraft	Upper Air
Satellite	Oceanographic
Land-based	Model Output
Radar/Lidar	Other

DYNAMO DATA MANAGEMENT PLAN OUTLINE

(Proposed)

1.0 Introduction/Background
- 1.1 Project Scientific Objectives
- 1.2 Data Management Philosophy/Strategy
- 1.3 Data Management Working Group

2.0 Data Management Policy
- 2.1 Data Protocol
- 2.2 Data Processing/Quality Control
- 2.3 Data Availability
- 2.4 Data Attribution
- 2.5 Community Access to Data

3.0 Data Management Functional Strategy/Description
- 3.1 Data Archive and Analysis Centers
- 3.2 Investigator Requirements
  - 3.2.1 Data Format Conventions
  - 3.2.2 Data Submission Requirements
- 3.3 Data Collection Schedule
  - 3.3.1 On-line Field Catalog
- 3.4 Data Processing following the Field Phase
- 3.5 Data Archival and Long-term Access
  - 3.5.1 Distributed Archive Procedures
- 3.6 Data Integration

4.0 Project Data Sets
- 4.1 Data Collection/Processing
- 4.2 Status Update Procedures
- 4.3 In-field Data Display and Analysis Requirements
- 4.4 Coordination with other Programs
- 4.5 Education and Outreach

APPENDICES
- A. Research Data Sets
- B. Operational Data Sets
- C. List of Acronyms (LOA)

NCAR Earth Observing Laboratory

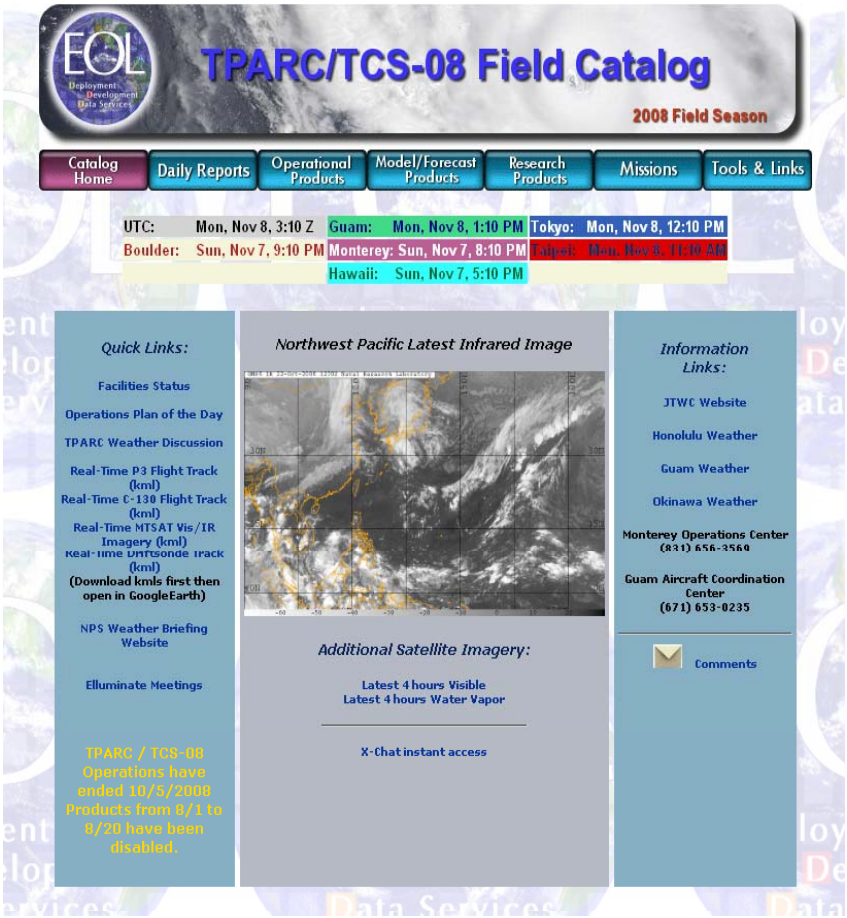
NCAR Earth Observing Laboratory

EOL FIELD CATALOG TOOL

In-field tool to ingest and display operational and preliminary research data and project documentation for making real-time decisions and evaluating project progress

Features:

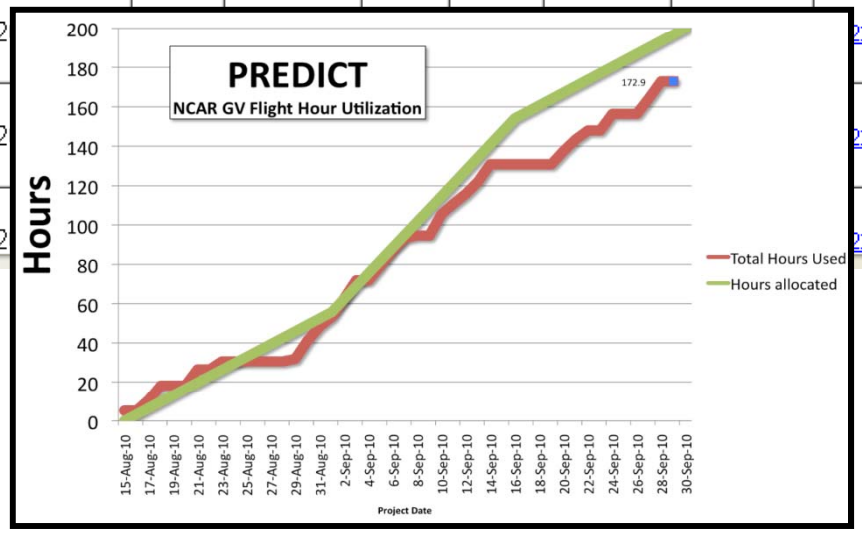
- **Daily Mission Reports**
- **Operations Summary**
- **Facility Status Reports**
- **Data Analysis Products**
- **Authoring Tools**
- **Web-based access**
- **Password Protection capability**



http://catalog.eol.ucar.edu/

FIELD CATALOG REPORTS

Date (UTC)	DLR Falcon status	Driftsonde status	NRL P-3 status	USAF C130 plan of the day	dlr falcon mission summary	driftsonde operations	facilities status summary	forecast brief	forecast graphic	nrl p-3 mission summary	ops plan of the day	usaf c130 mission summary	weather model verification	weather summary	weather targeting blog
2008/09/30			00:09 23:41				22:43	22:29	22:29		00:03		20:44	19:53 21:29 23:00	14:51 15:53
2008/09/29		10:00 22:00			03:50 22:20		22:51	22:38	22:39		00:07		20:36	20:48 23:00	15:14 15:40
2008/09/28	23:07	10:00 22:00	00:55 23:15		03:10		22:00	22:43 22:47	22:41 22:43 22:46		00:33		21:36	20:50 23:00	13:22 20:55
2008/09/27		10:00 22:00	00:11 06:05				22:57	22:11 22:34 22:56	22:12 22:35 23:00		00:02	02:08	20:56	21:15 23:00	13:29 20:53
2008/09/26	23:30	10:00 22:00	00:20	04:15			21:10	22:26 22:	22:30						11:37
2008/09/25	07:37 14:33	10:00 22:00	10:18	07:06		17:30	22:14	22: 22:							
2							22:36	21: 22:							
2							22:48	22: 23:							
2							22:20	19:							

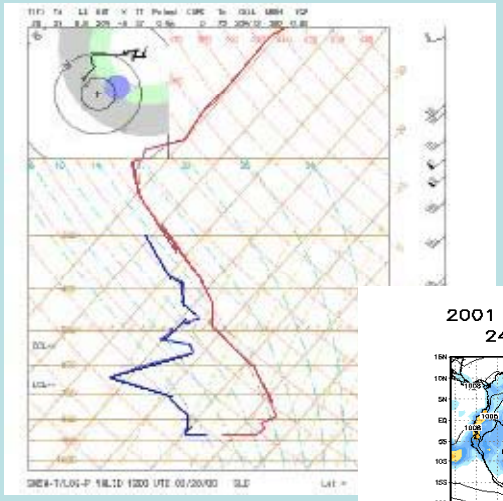


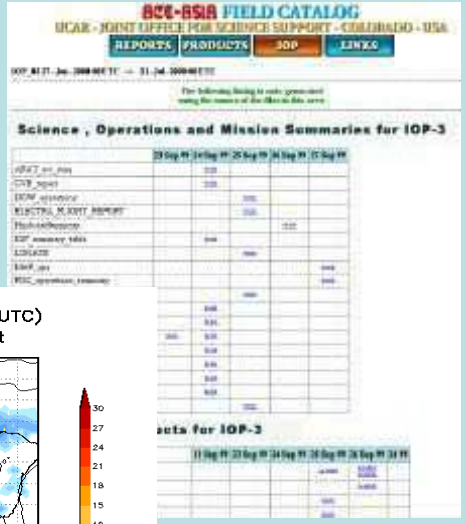
FACILITY STATUS

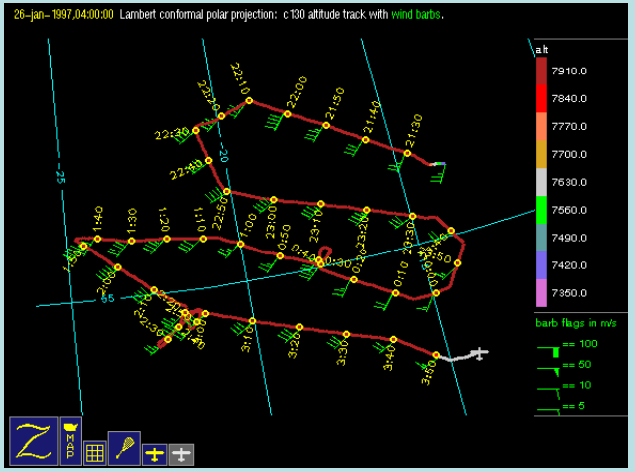
= up; = provisional; = down ; = no report

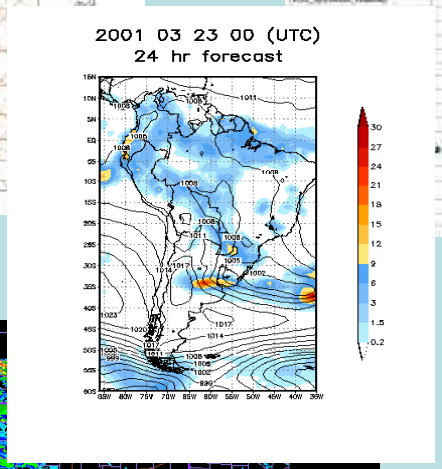
1.	**NRL P-3** (Remaining flight hrs: 6.8+)	**Comment:**	AC problem on airplane, available on 2 Oct., last flight day 5 Oct.
a.	**ELDORA Radar**	**Comment:**	operating at reduced sensitivity
b.	**ONR Wind Lidar**	**Comment:**	
c.	**Dropsonde System**	**Comment:**	
d.	**Data System**	**Comment:**	
e.	**Communications**	**Comment:**	
2.	**USAF C-130** (Remaining flight hrs:)	**Comment:**	Flight operations completed
a.	**Dropsonde System**	**Comment:**	
b.	**Data System**	**Comment:**	
c.	**Communications**	**Comment:**	
d.	**Radar Recording**	**Comment:**	
e.	**AXBT System**	**Comment:**	
3.	**DLR(D-CMET) Falcon** (Remaining flight hrs: 10.5)	**Comment:**	Aircraft is operational, last flight day 3 Oct.
a.	**Water Vapor Lidar**	**Comment:**	
b.	**Doppler Wind Lidar**	**Comment:**	
c.	**Dropsonde System**	**Comment:**	

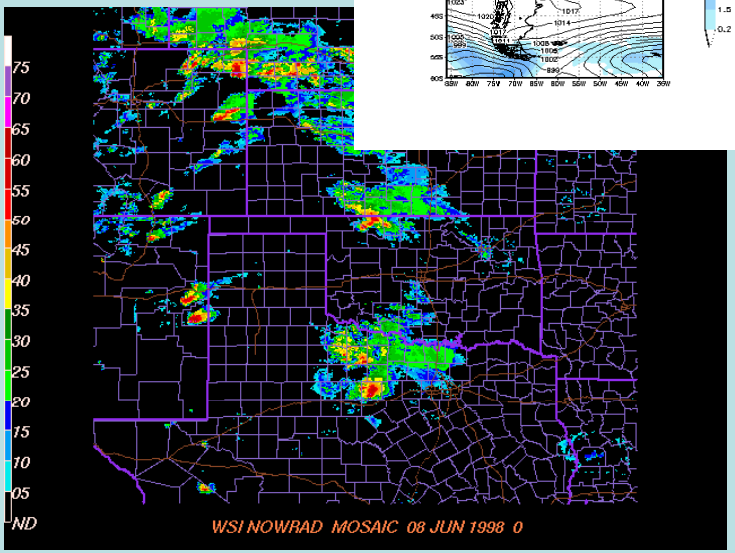
FIELD CATALOG SAMPLE PRODUCTS

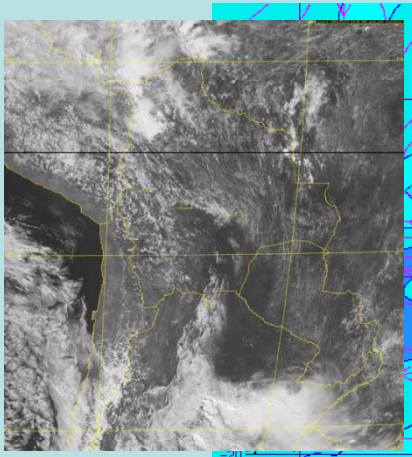


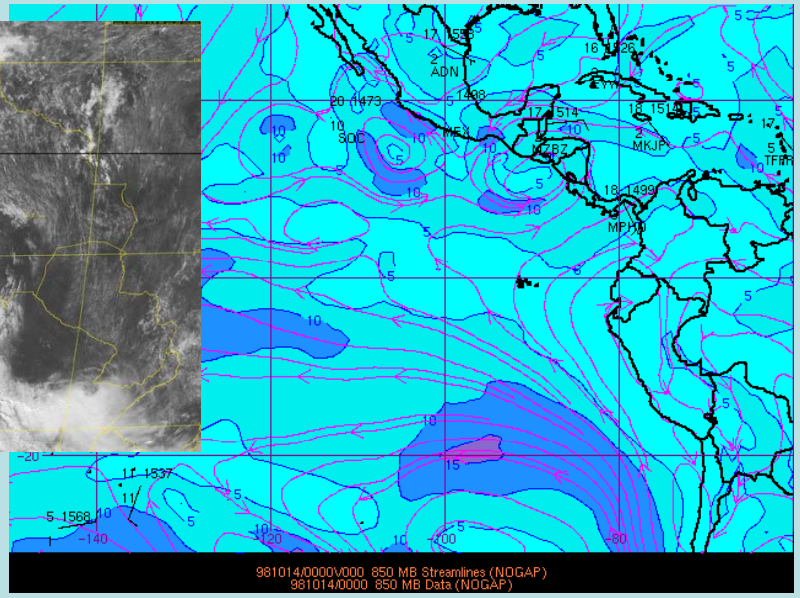








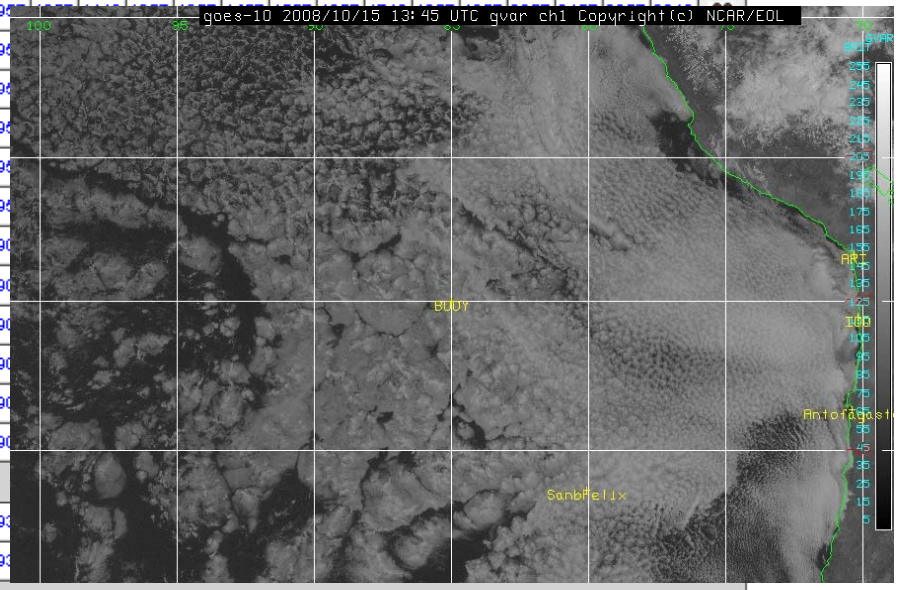




FIELD CATALOG OPERATIONAL PRODUCTS

Satellite Products

Product Times(UTC)	10 Sep 2008																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MTSAT (CIMSS TPARC Satellite Imagery and Products)																								
200_700_layer_mean_wind	0000			0300			0600			0900			1200			1500			1800			2100		
250_850_layer_mean_wind	0000			0300			0600			0900			1200			1500			1800			2100		
300_850_layer_mean_wind	0000			0300			0600			0900			1200			1500			1800			2100		
400_850_layer_mean_wind	0000			0300			0600			0900			1200			1500			1800			2100		
500_850_layer_mean_wind	0000			0300			0600			0900			1200			1500			1800			2100		
700_850_layer_mean_wind	0000			0300			0600			0900			1200			1500			1800			2100		
850_mb_vorticity	0000			0300			0600			0900			1200			1500			1800			2100		
lower_level_convergence	0000			0300			0600			0900			1200			1500			1800			2100		
sat_winds_200strml	0057	0157	0257	0357	0457	0513	0657	0757	0857	0957	1057	1113	1257	1357	1457	1557	1657	1713	1857	1957	2057	2157	2257	2313
sat_winds_200vort	0057	0157	0257	0357	0457	0513	0657	0757	0857	0957	1057	1113	1257	1357	1457	1557	1657	1713	1857	1957	2057	2157	2257	2313
sat_winds_500vort	0057	0157	0257	0357	0457	0513	0657	0757	0857	0957	1057	1113	1257	1357	1457	1557	1657	1713	1857	1957	2057	2157	2257	2313
sat_winds_700vort	0057	0157	0257	0357	0457	0513	0657	0757	0857	0957	1057	1113	1257	1357	1457	1557	1657	1713	1857	1957	2057	2157	2257	2313
sat_winds_850vort	0057	0157	0257	0357	0457	0513	0657	0757	0857	0957	1057	1113	1257	1357	1457	1557	1657	1713	1857	1957	2057	2157	2257	2313
sat_winds_conv	0057	0157	0257	0357	0457	0513	0657	0757	0857	095														
sat_winds_deep_shr	0057	0157	0257	0357	0457	0513	0657	0757	0857	095														
sat_winds_dvg	0057	0157	0257	0357	0457	0513	0657	0757	0857	096														
sat_winds_hi	0057	0157	0257	0357	0457	0513	0657	0757	0857	096														
sat_winds_low	0057	0157	0257	0357	0457	0513	0657	0757	0857	096														
sat_winds_mid_shr	0057	0157	0257	0357	0457	0513	0657	0757	0857	096														
shear_tendency	0000			0300			0600			090														
upper_level_divergence	0000			0300			0600			090														
wavetrak	0000			0300			0600			090														
wind_shear	0000			0300			0600			090														
winds_IR	0000			0300			0600			090														
winds_WV	0000			0300			0600			090														
MTSAT_GOES																								
composite_IR	0030	0130	0230	0330	0430	0530	0630	0730	0830	093														
composite_WV		0130	0230	0330	0430	0530		0730	0830	093														
MTSAT_imagery																								



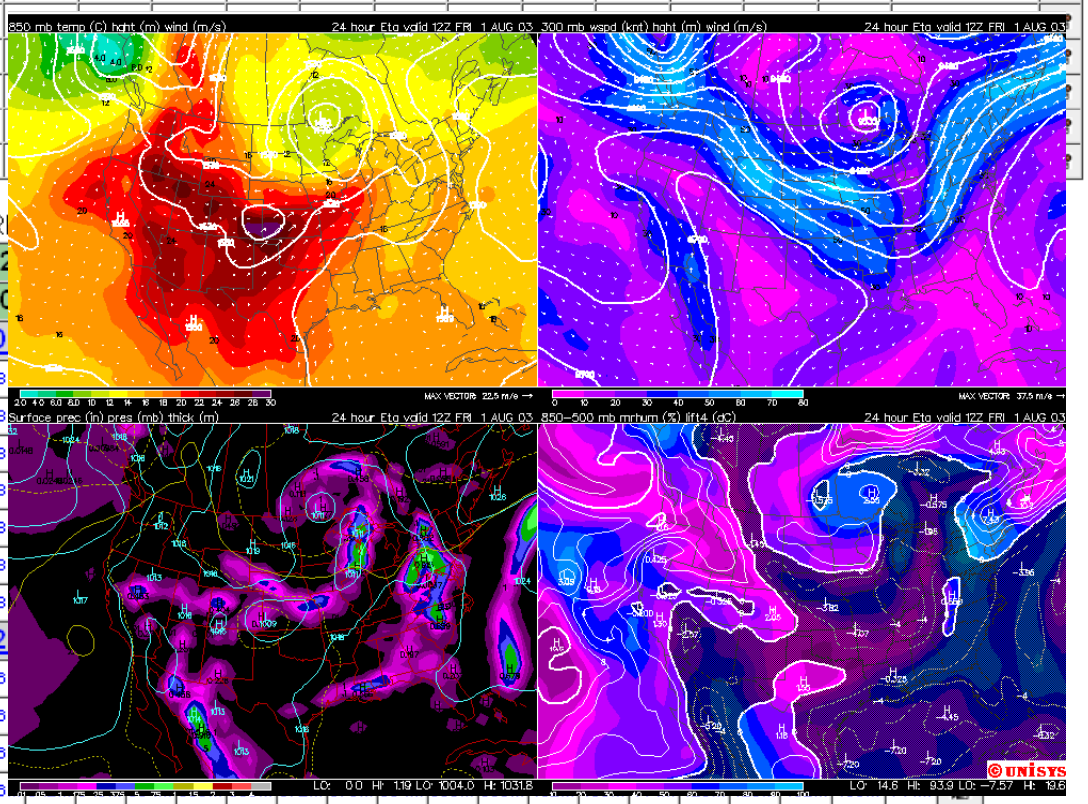
FIELD CATALOG MODEL OUTPUT

Global Ensemble Forecast Products

Forecast Times(UTC)	19 Aug 2010	20 Aug 2010		21 Aug 2010		22 Aug 2010		23 Aug 2010		24 Aug 2010		25 Aug 2010		26 Aug 2010		27 Aug 2010		28 Aug 2010		29 Aug 2010	
	12	00	12	00	12	00	12	00	12	00	12	00	12	00	12	00	12	00	12	00	
ECMWF - Analysis and Forecast from 2010/08/19 00:00 UTC (DLR ECMWF Products)																					
ENS_circ_thick	012hr	024hr	036hr	048hr	060hr	072hr	084hr	096hr	108hr	120hr	132hr	144hr	156hr	168hr	180hr	192hr	204hr	216hr	228hr	240hr	
ENS_div	012hr	024hr	036hr	048hr	060hr	072hr	084hr	096hr	108hr	120hr	132hr	144hr	156hr	168hr	180hr	192hr	204hr	216hr	228hr	240hr	
ENS_pdf	012hr	024hr	036hr	048hr	060hr	072hr	084hr	096hr	108hr	120hr											
ENS_rh	012hr	024hr	036hr	048hr	060hr	072hr	084hr	096hr	108hr	120hr	132hr	144hr	156hr	168hr	180hr	192hr	204hr	216hr	228hr	240hr	
ENS_shear	012hr	024hr	036hr	048hr	060hr	072hr	084hr	096hr	108hr	120hr	132hr	144hr	156hr	168hr	180hr	192hr	204hr	216hr	228hr	240hr	
ENS_vort_700	012hr	024hr	036hr	048hr	060hr	072hr	084hr	096hr	108hr	120hr	132hr	144hr	156hr	168hr	180hr	192hr	204hr	216hr	228hr	240hr	
ENS_vort_850	012hr	024hr	036hr	048hr	060hr	072hr	084hr	096hr	108hr	120hr	132hr	144hr	156hr	168hr	180hr	192hr	204hr	216hr	228hr	240hr	
NCEP - Analysis and Forecast from 2010/08/19 00:00 UTC																					
ENS_circ_thick	012hr	024hr	036hr	048hr	060hr	072hr	084hr	096hr	108hr	120hr	132hr	144hr	156hr	168hr	180hr	192hr	204hr	216hr	228hr	240hr	
ENS_div	012hr	024hr	036hr	048hr	060hr	072hr	084hr	096hr	108hr	120hr	132hr	144hr	156hr	168hr	180hr	192hr	204hr	216hr	228hr	240hr	
ENS_pdf	012hr	024hr	036hr	048hr	060hr	072hr	084hr														
ENS_rh	012hr	024hr	036hr	048hr	060hr	072hr	084hr														
ENS_shear	012hr	024hr	036hr	048hr	060hr	072hr	084hr														
ENS_vort_700	012hr	024hr	036hr	048hr	060hr	072hr	084hr														
ENS_vort_850	012hr	024hr	036hr	048hr	060hr	072hr	084hr														

NR

Forecast Times(UTC)	19 Aug 2010				20 Aug 2010				
	00	06	12	18	00	06	12	18	00
NOGAPS - Analysis and Forecast from 2010/08/19 00									
500mb_Vorticity	000hr	006hr	012hr	018hr	024hr	030hr	036hr	042hr	048
700mb_Vorticity	000hr	006hr	012hr	018hr	024hr	030hr	036hr	042hr	048
850-200mb_Shear	000hr	006hr	012hr	018hr	024hr	030hr	036hr	042hr	048
850-500mb_Shear	000hr	006hr	012hr	018hr	024hr	030hr	036hr	042hr	048
850mb_Vorticity	000hr	006hr	012hr	018hr	024hr	030hr	036hr	042hr	048
950mb_Vorticity	000hr	006hr	012hr	018hr	024hr	030hr	036hr	042hr	048
MSLP	000hr	006hr	012hr	018hr	024hr	030hr	036hr	042hr	048
NOGAPS - Analysis and Forecast from 2010/08/19 12									
500mb_Vorticity			000hr	006hr	012hr	018hr	024hr	030hr	036
700mb_Vorticity			000hr	006hr	012hr	018hr	024hr	030hr	036
850-200mb_Shear			000hr	006hr	012hr	018hr	024hr	030hr	036
850-500mb_Shear			000hr	006hr	012hr	018hr	024hr	030hr	036
850mb_Vorticity			000hr	006hr	012hr	018hr	024hr	030hr	036



FIELD CATALOG MISSIONS TABLE

Flight	Date	Operations Area	Catalog Products	Flight Summary	Notes
RF01	Oct 15	SHOA/DART buoy	Operational Model Research GOES-10 KML	Summary	Shakedown/reconnaissance mission with near-complete payload to SHOA/DART buoy. Mission structure of the Cross-Section flight type with additional deep profile to 20000ft out of Arica.
RF02	Oct 18	20 South	Operational Model Research GOES-10 KML	Summary Evaluation 1 Evaluation 2 Run Table Photos	First VOCALS POC-drift mission, successfully demonstrating POC and 20S patterns and steering of C130 from ops center using xchat to an interesting daytime cloud transition on satellite from closed to open cells, with essentially no drizzle and relatively high droplet concentrations throughout.
RF03	Oct 21	20 South	Operational Model Research GOES-10 KML	Summary Evaluation 1 Evaluation 2 Run Table Photos	First VOCALS 20S Cross-Section Mission, successfully transiting to the IMET Buoy at 20S, 85W, and back at low level, with runs below, in, and above cloud, and profiles to 10000 ft.
RF04	Oct 23	20 South	Operational Model Research GOES-10 KML	Summary Evaluation Run Table Photos	20S Cross Section Mission. Clear example of gradients in ST cloud microphysics and aerosol properties between point Alpha(-20S, 72W) and Buoy(-20S,85W) along with intercomparison flight with the G1 above, in and below clouds on the return leg from point Alpha to Arica.
RF05	Oct 25	20 South	Operational Model Research GOES-10 KML	Summary Evaluation Run Table Photos	20S mission, including first overflight of Brown, in Cu under Sc with solid polluted single-layer Sc near the coast and drizzle shafts and low droplet concentrations further offshore.
RF06	Oct 28	POC	Operational Model Research GOES-10 KML	Summary Evaluation Photos	Second VOCALS POC-drift mission, but first across a mature POC-overcast boundary.
RF07	Oct 31	POC	Operational Model Research GOES-10 KML	Summary Run Table Evaluation	POC Mission along 80W between 20S and 23S followed by intercomparison with BAe146 en-route to point Alpha(-20S, 72W). POC formed recently in last 10 hours or so and was growing and spreading to north during flight legs so should be good example of early POC evolution.
RF08	Nov 2	POC	Operational Model Research	Summary Run Table	POC flight across a pronounced microphysical boundary between a polluted Sc tongue and a very clean airmass with precipitating cumuliform cells, with low-level transits through a polluted solid Sc layer to Arica and a Brown

FIELD CATALOG RESEARCH PRODUCTS

Browse by Date:

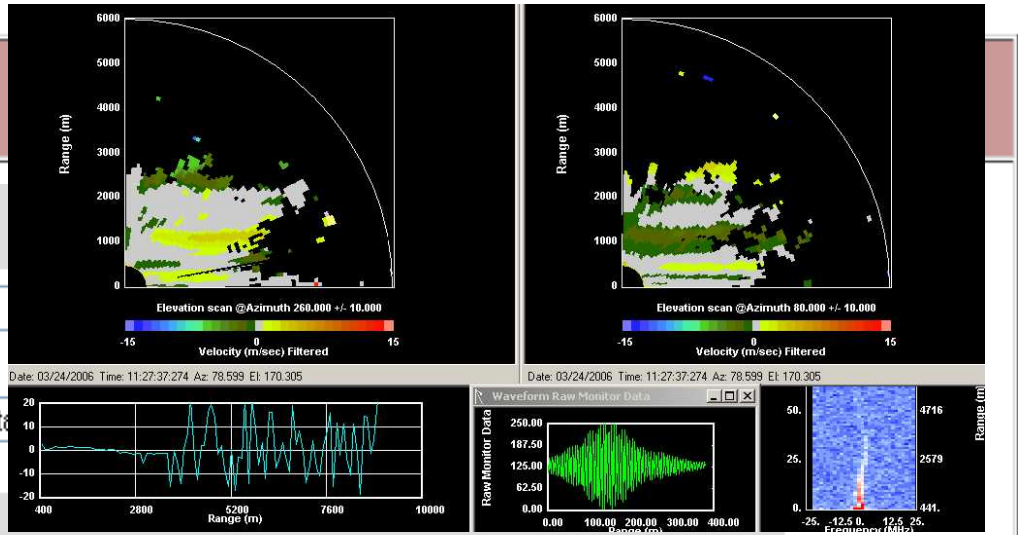
UTC CST

July 2010						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

August 2010						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

September 2010						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Browse by Research Products:



NCAR GV Products

GV flight_track Latest

N677F Sounding Latest St

NASA DC8 Products

NA817 Sounding Latest Start Date End Date **retrieve products**

TPARC/TCS-08 Field Catalog

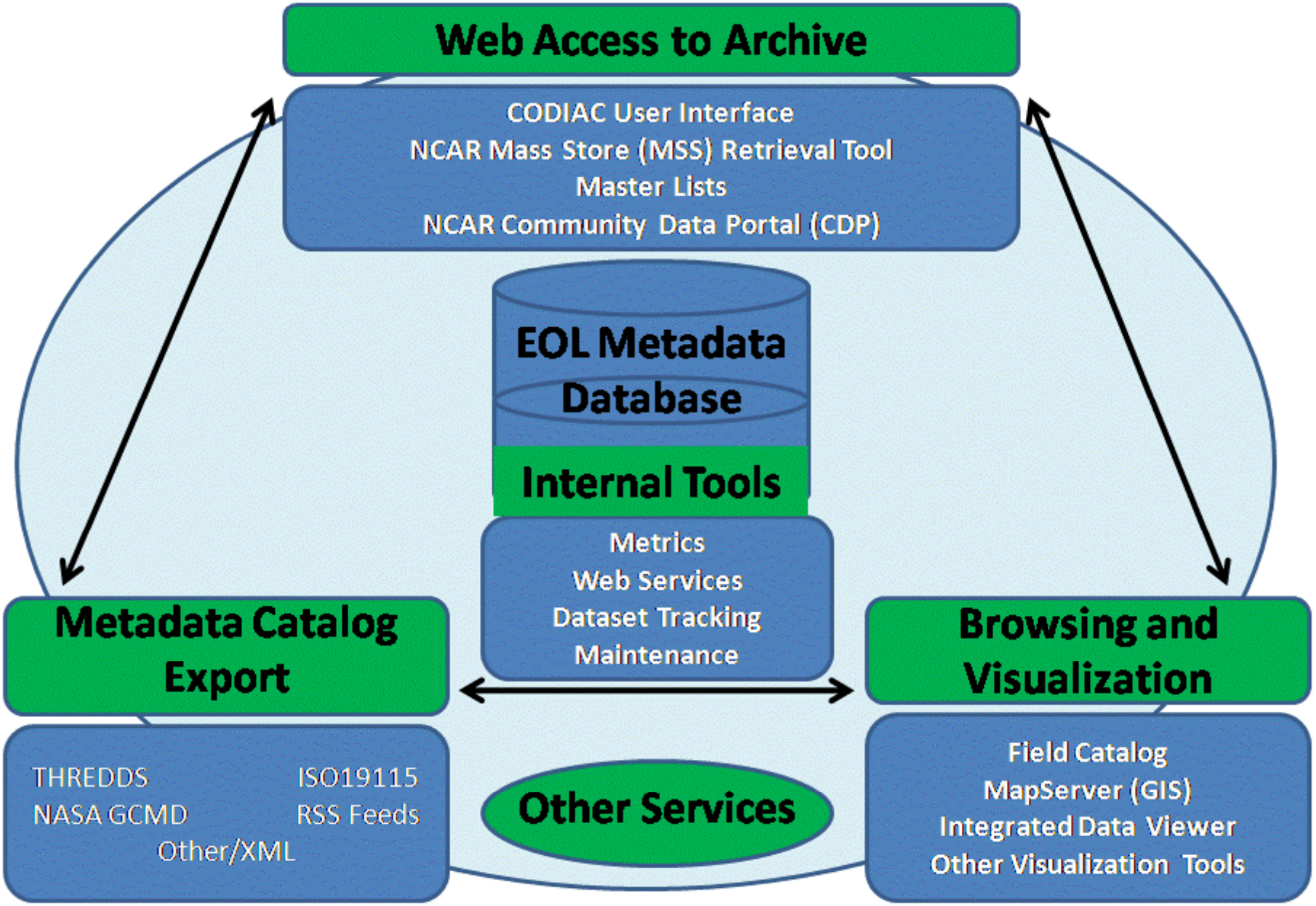
2008 Field Season

http://catalog.eol.ucar.edu/tparc/

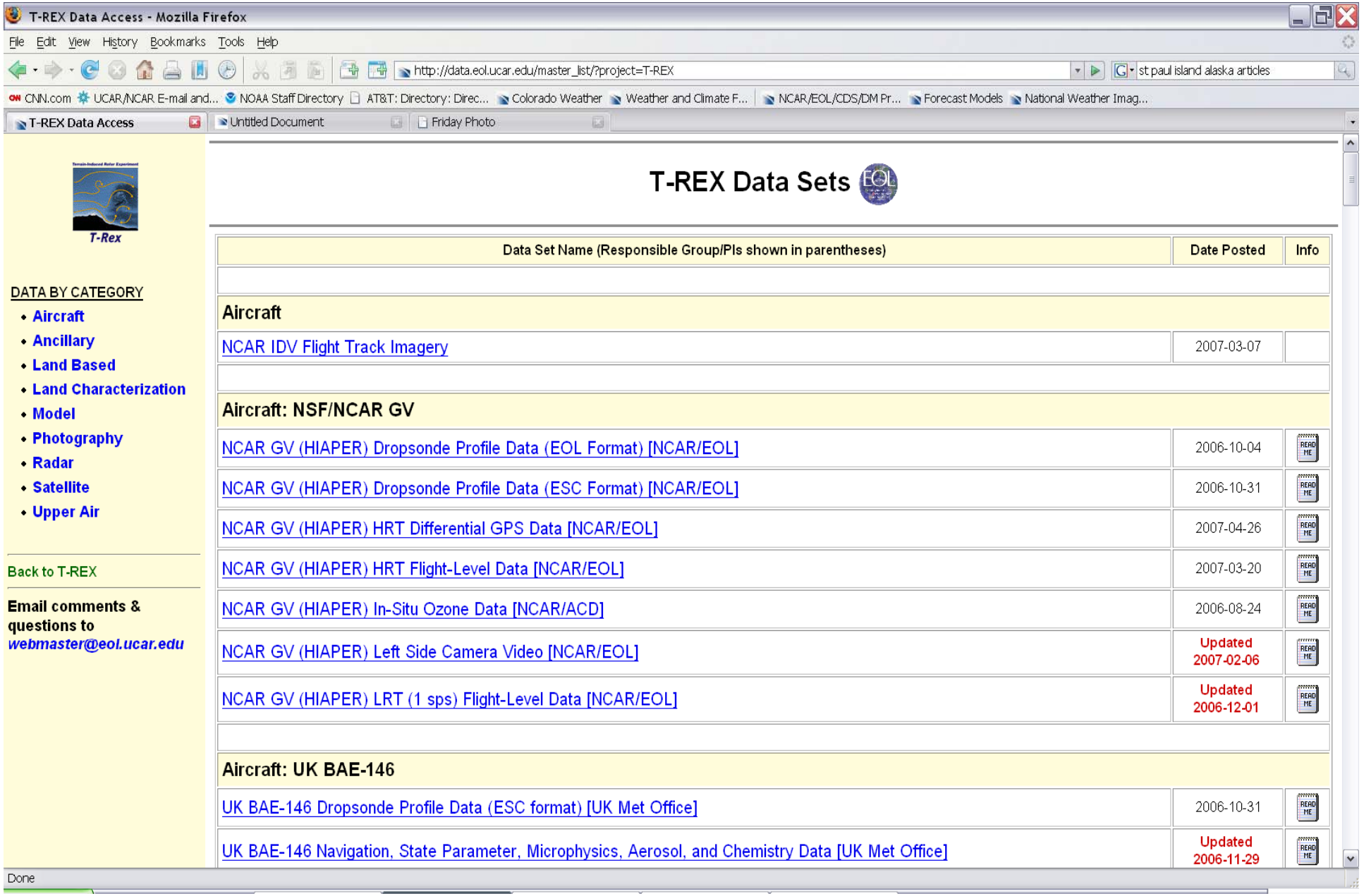
- **Reports/Summaries (Status, Mission, and Operations)**
  1028 documents and 2486 image files (0.62 GB)
- **Research Platform Products (Aircraft, Surface, Lidar, Upper Air)**
  5,210 image files (0.89 GB)
- **Operational Products (Satellite, Surface, Radar, Upper Air)**
  114,632 image files (27 GB)
- **Model Output Imagery (Analysis and Forecast Fields)**
  1,014,180 image files (60 GB)

- **TOTALS: 1,137,536 Files (88.51 GB)**

EOL Metadata Database And Cyberinfrastructure (EMDAC)



PROJECT MASTER LISTS



PROJECT PUBLICATIONS LIBRARY

EPIC Publication References

(How to Submit Publication References to this List)

Convection Research (Cruise Leg 1): Publications, Conference Proceedings

Stratocumulus Research (Cruise Leg 2): Publications, Conference Proceedings

Other Citation Links

Convection Research - Cruise Leg 1

Publications - Convection Research A-D, E-H, I-L, M-P, Q-T, U-Z Back to Top

---

- Cifelli, R., S.W. Nesbitt, W.A. Petersen, S.A. Rutledge, S. Yuter (2007), Radar Characteristics of Precipitation Features in the EPIC and TEPPS Regions of the East Pacific, Monthly Weather Review, 135, 1576-1595.
- Cronin, M. F., N. A. Bond, C. W. Fairall, and R.A. Weller, 2006: Surface Cloud Forcing in the East Pacific Stratus Deck/Cold Tongue/ITCZ complex. J. Climate, 19, 392-409.
- Cronin, M. F., N. Bond, C. Fairall, J. Hare, M. J. McPhaden, R. A. Weller, 7 May 2002: Enhanced Oceanic and Atmospheric Monitoring Underway in Eastern Pacific. EOS, Transactions, AGU, 83(19), pages 205, 210-211.
- Cronin, M. F., C. W. Fairall, and M. J. McPhaden, 2006: An assessment of buoy-derived and numerical weather prediction surface heat fluxes in the tropical Pacific. J. Geophys. Res., 111, C06038, doi:10.1029/2005JC003324.
- Cronin, M. F., S.-P. Xie, and H. Hashizume, 2003: Barometric Pressure Variations Associated with Eastern Pacific Tropical Instability Waves. J. Climate, 16, 3050-3057.
- de Szoeke, S. P., C. S. Bretherton. Quasi-Lagrangian Large eddy Simulations of Cross-Equatorial Flow in the East Pacific Atmospheric Boundary Layer. J. Atmos. Sci., 61, 1837-1858.
- de Szoeke, S. P., C. S. Bretherton, 2005: Variability in the Southerly Flow into the Eastern Pacific ITCZ. J. Atmos. Sci., 62, 4400-4411.
- de Szoeke, S. P., C. S. Bretherton, N. A. Bond, M. F. Cronin, B. M. Morley, 2005: EPIC 95W Observations of the Eastern Pacific Atmospheric Boundary Layer from the Cold Tongue to the ITCZ. J.