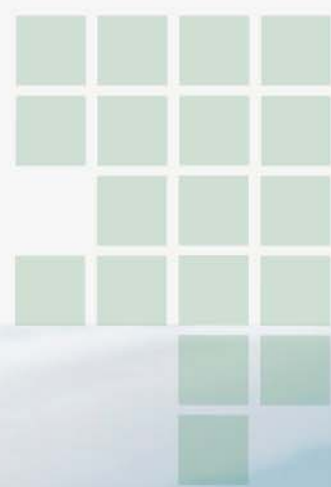




DATA MANAGEMENT OVERVIEW AND SERVICES



Steve Williams

Computing, Data, and Software Facility (CDS)

NCAR Earth Observing Laboratory (EOL)

Boulder, Colorado

DYNAMO Planning Meeting

Boulder, Colorado

13-14 April 2009



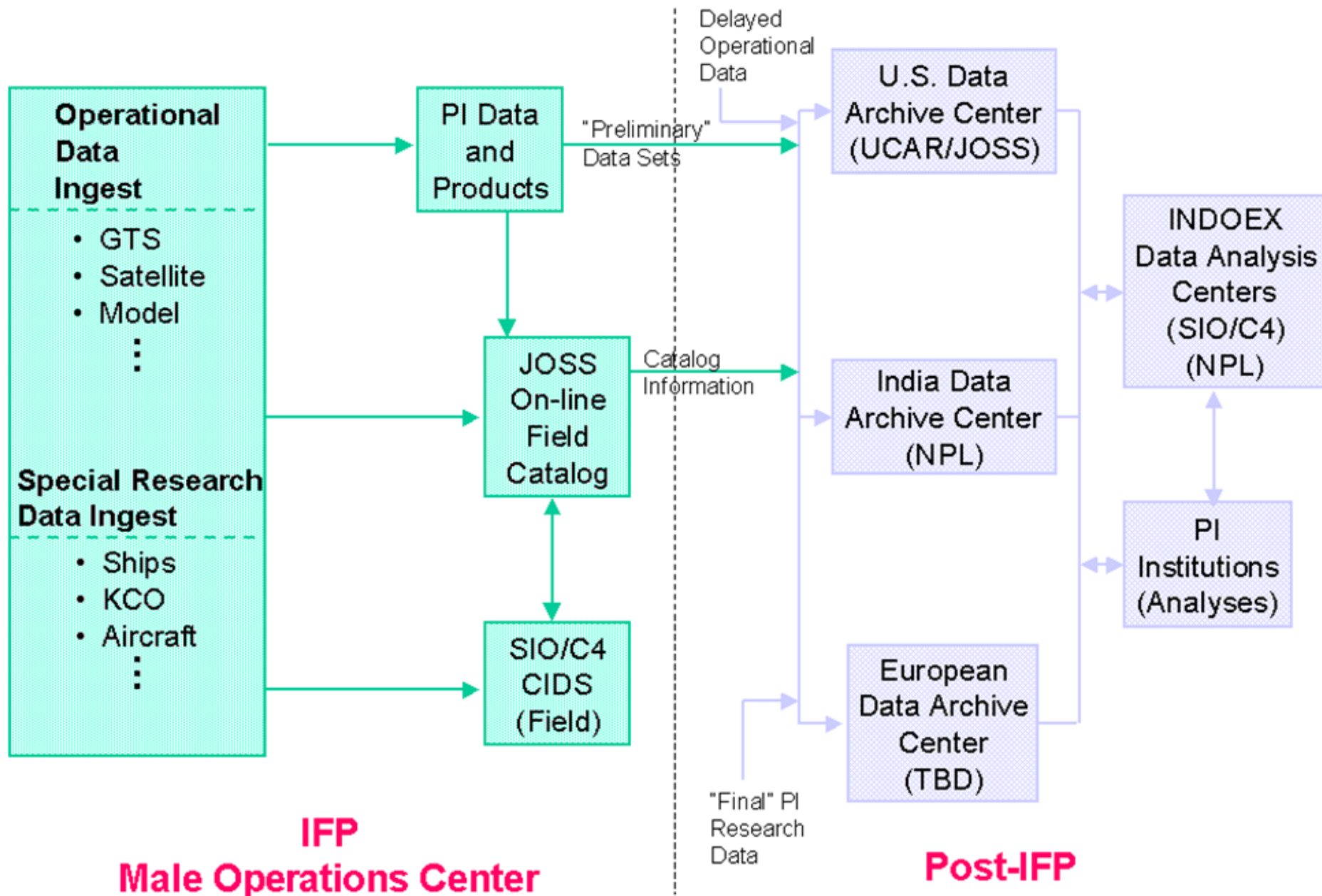
EOL Data Management Philosophy

- **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

Project Data Management Considerations

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

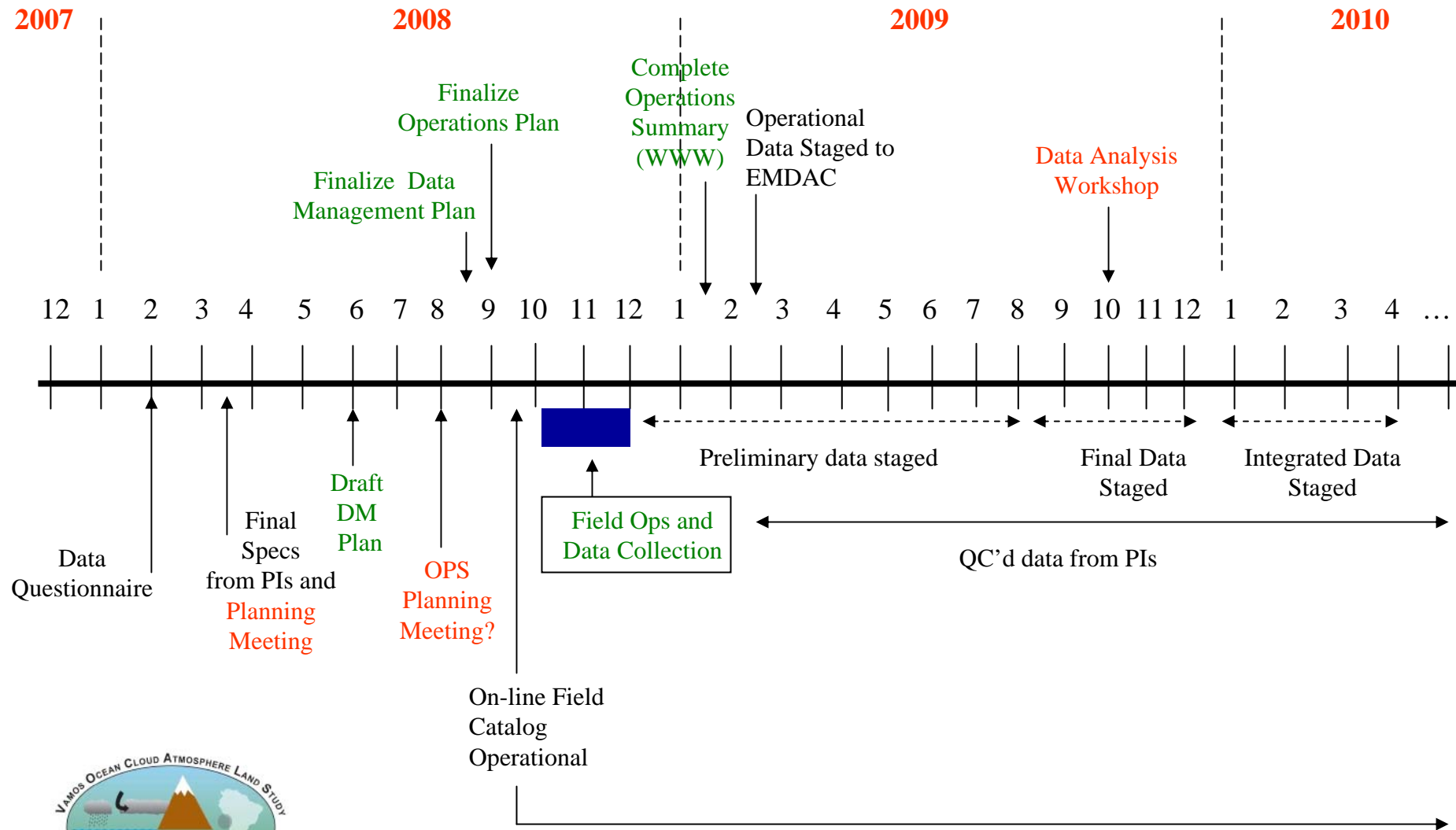
INDOEX IFP Data Flow



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**

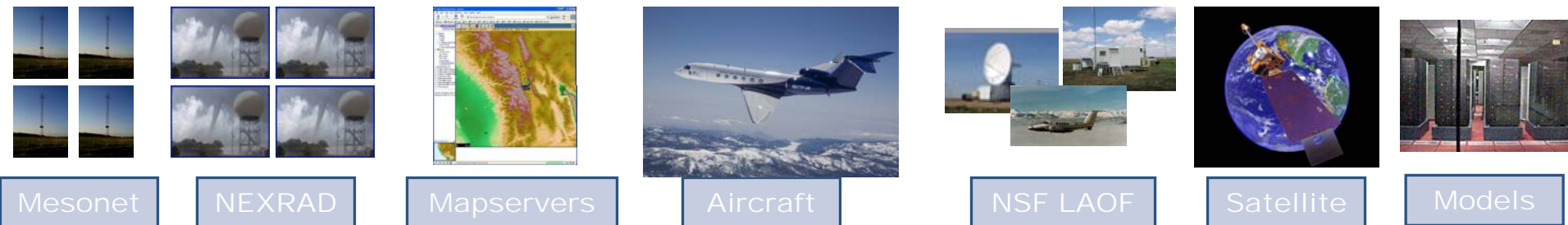
VOCALS Data Management Timeline



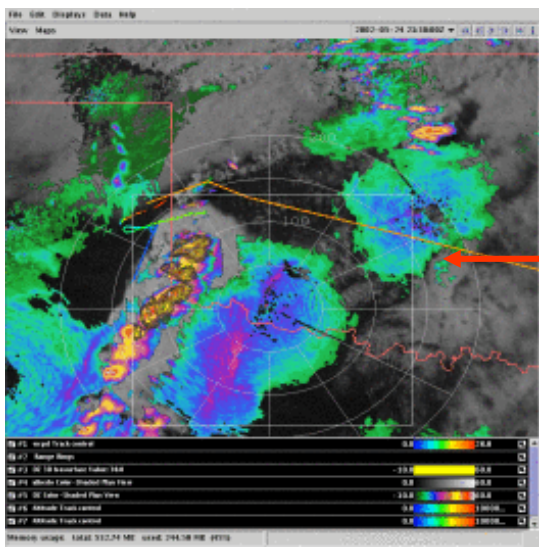
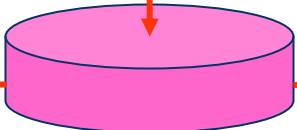


Data Policy and exchange guidelines:

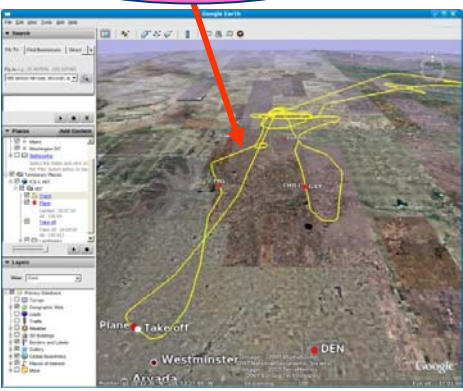
- (1) To comply with WMO Resolutions 40 (CG-XII) and 25 (CG-XIII) in particular: No financial implications.
- (2) CDA and *data users*: Commercial exploitation of CEOP data is prohibited.
- (3) *Data users*: No transfer to third parties.
- (4) Data release to *data users*: Turn-around period.
Category 1 data: 6 months *Category 2 data*: 15 months
- (5) Acknowledgement and citation
- (6) Co-Authorship for Reference Sites' PIs recommended, collaboration base required if PI requests co-authorship (in particular for *category 2 data*)
- (7) CEOP Publication Library at CDA



Data Delivery via Internet
Data Distribution (IDD)/Local
Data Manager (LDM), HTTP or
custom file xfer through
satcom or LAN/WAN



UNIDATA's
Integrated Data
Viewer (IDV)



Google Earth

chat,
wikis/forums,
mapservers,
Field Catalog

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



(The following listing is auto generated. Click reload/refresh often to see new products.)

Available Model Products for 2006/03/15 UTC

◀ Previous Date(UTC) Choose Date(UTC) Next Date(UTC) ▶

FLEXPART Forecast Products

Forecast Times(UTC)	15 Mar 2006				16 Mar 2006				17 Mar 2006				18 Mar 2006				19 Mar 2006				20 Mar 2006									
	03	06	09	12	15	18	21	00	03	06	09	12	15	18	00	06	12	18	00	06	12	18	00	06	12	18	00	06		
FLEXPART - Analysis and Forecast from 2006/03/15 12:00 UTC																														
300_MC_CO2_Height					000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e	SP
500_MC_CO2_Height					000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e	SP
700_MC_CO2_Height					000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e	SP
Total_Column_CO					000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e	SP
FLEXPART - Analysis and Forecast from 2006/03/15 06:00 UTC																														
300_MC_CO2_Height					000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e	SP
500_MC_CO2_Height					000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e	SP
700_MC_CO2_Height					000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e	SP
Total_Column_CO					000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e	SP
FLEXPART - Analysis and Forecast from 2006/03/15 00:00 UTC																														
300_MC_CO2_Height	000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e					SP
500_MC_CO2_Height	000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e					SP
700_MC_CO2_Height	000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e					SP
Total_Column_CO	000e	000e	000e	012e	015e	018e	021e	024e	030e	033e	036e	042e	048e	054e	060e	066e	072e	078e	084e	090e	096e	102e	108e	114e	120e					SP

GES Forecast Products

Forecast Times(UTC)	15 Mar 2006				16 Mar 2006				17 Mar 2006				18 Mar 2006				
	00	06	12	18	00	06	12	18	00	06	12	18	00	06	12	18	
GES - Analysis and Forecast from 2006/03/15 12:00 UTC																	
000_MSLP_500_Heights					000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e	SP
000_MSLP_Winds					000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e	SP
000_Precip_6h					000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e	SP
000_Precipitable_Water					000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e	SP
000_Temperature					000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e	SP
500_Heights_Winds					000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e	SP
700_Heights_Winds					000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e	SP
850_Heights_Winds					000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e	SP
GES - Analysis and Forecast from 2006/03/15 00:00 UTC																	
000_MSLP_500_Heights	000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e				SP	
000_MSLP_Winds	000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e				SP	
000_Precip_6h	000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e				SP	
000_Precipitable_Water	000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e				SP	
000_Temperature	000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e				SP	
500_Heights_Winds	000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e				SP	
700_Heights_Winds	000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e				SP	
850_Heights_Winds	000e	000e	012e	018e	024e	030e	036e	042e	048e	054e	060e	072e				SP	
Forecast Times(UTC)	00	06	12	18	00	06	12	18	00	06	12	18	00	06	12	18	
	15 Mar 2006	16 Mar 2006	17 Mar 2006	18 Mar 2006													



VOCALS-Rex Field Catalog



October-November 2008

Catalog Home

Daily Reports

Operational Products

Model/Forecast Products

Research Products

Missions

Tools & Links

Boulder: Mon, Apr 13, 2:43 PM UTC:

Mon, Apr 13, 21:43 Z

Arica, Chile: Mon, Apr 13, 6:43 PM

Quick Links:

Facilities Status

Operations Plan of the Day

Weather Discussion



Real-Time VOCALS kml

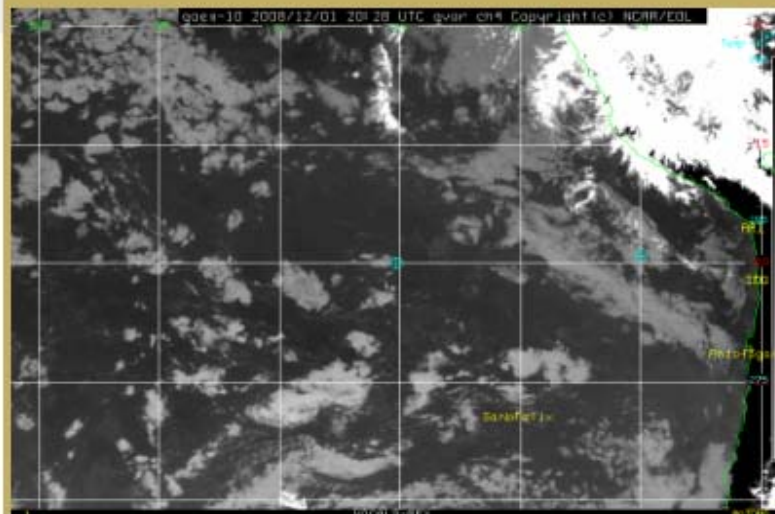
Ops center kml

(Download KML first,
right-mouse click
then open in GoogleEarth)

X-Chat instant access



Current Loop



Additional Satellite Imagery:

Latest 4 hours Visible
Latest 4 hours Ch4-Ch2 Diff

General Information:

All-Hands Science Meeting

Windows to the Universe

The Alternative Guide to Arica

Information from Peru:

VOCALS-Rex Peru

National Weather Service

IMARPE web site

Data Archive access:

VOCALS Master List



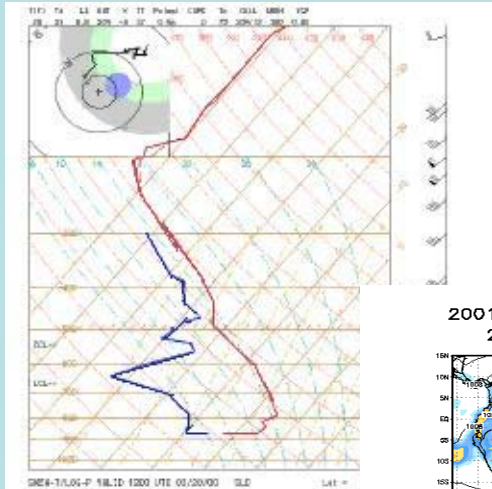
Comments



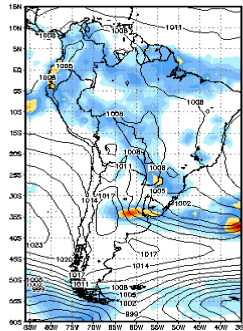
University Corporation for Atmospheric Research
PO Box 3000 Boulder CO 80307 USA



FIELD CATALOG SAMPLE PRODUCTS



2001 03 23 00 (UTC)
24 hr forecast



BCC-BSIA FIELD CATALOG
USCAR - JOINT OFFICE FOR SCIENCE SUPPORT - CHARLESTON - USA

REPORTS PRODUCTS JOP LINKS

00P-0127-00-00040ETC - 01-04-20040ETC

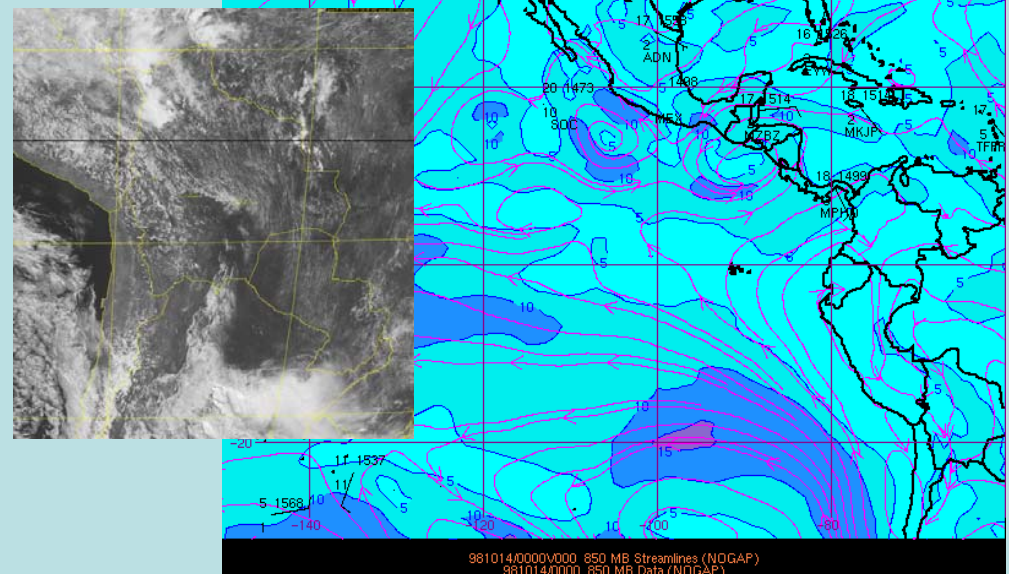
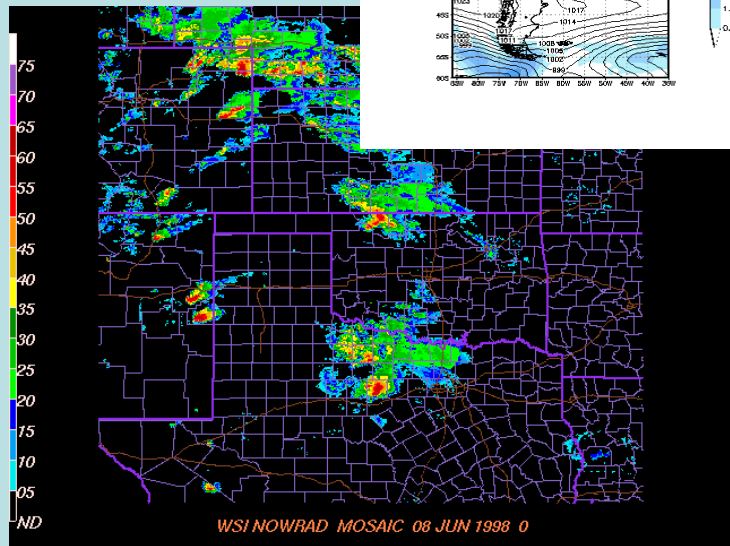
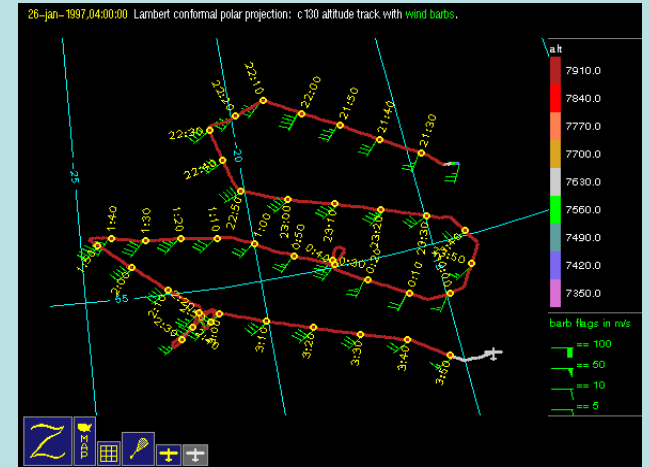
The following listing is auto-generated using the contents of the database file entry.

Science, Operations and Mission Summaries for IOP-3

23 Sep 00	24 Sep 00	25 Sep 00	26 Sep 00	27 Sep 00
0001-001-001	0001-001-001	0001-001-001	0001-001-001	0001-001-001
0001-001-001	0001-001-001	0001-001-001	0001-001-001	0001-001-001
0001-001-001	0001-001-001	0001-001-001	0001-001-001	0001-001-001
0001-001-001	0001-001-001	0001-001-001	0001-001-001	0001-001-001
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0001-001-001	0001-001-001	0001-001-001	0001-001-001	0001-001-001
0001-001-001	0001-001-001	0001-001-001	0001-001-001	0001-001-001

acts for IOP-3

23 Sep 00	24 Sep 00	25 Sep 00	26 Sep 00	27 Sep 00
0001-001-001	0001-001-001	0001-001-001	0001-001-001	0001-001-001
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0001-001-001	0001-001-001	0001-001-001	0001-001-001	0001-001-001
0001-001-001	0001-001-001	0001-001-001	0001-001-001	0001-001-001



981014/0000/0000 850 MB Streamlines (NOGAP)
981014/0000 850 MB Data (NOGAP)



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)**



PROJECT WEB PAGES



Project Description

Cumulus Photogrammetric, In-Situ and Doppler Observations (CuPIDO) is an observational program designed to examine the onset and development of orographic thunderstorms associated with the North American Monsoon. The CuPIDO field program used digital visible spectrum cameras, surface mesonet stations, high temporal resolution soundings and aircraft data.



Data Access

[Master List of All CuPIDO Data Sets](#)

[CuPIDO Field Catalog](#)

[Data Policy](#)

[Dataset Documentation Guidelines](#)

[Data Submission Instructions](#)

Publications

[Publications](#)

Documents

[Project Summary](#) (PDF)

[Non-Technical Summary](#) (PDF)

[Scientific Overview Document](#)

[ISFF Site Survey](#) (PDF)

[ISFF Site Survey](#) (slideshow)

Meetings

[CuPIDO Preparation Meeting](#) (12 April 2006)

[CuPIDO Planning Workshop](#) (11 April 2005)

People

[CuPIDO Participants](#)

CuPIDO Research Web Pages

[Arizona State](#) (Joe Zehnder)

[Wyoming](#) (Bart Geerts)

[NCAR/EOL ISFF](#)

[Wyoming King Air](#)

CuPIDO Media and Animations

[KSAZ-TV Monsoon Story](#) (21 July 2006; 100Mb Quicktime)

[26 July 2005 Thunderstorm](#) (340Mb Quicktime)

[26 July 2005 Microburst](#) (350Mb Quicktime)

[10 July 2004](#) (60Mb Quicktime)

[13 July 2004](#) (33Mb Quicktime)

[14 July 2004](#) (23Mb Quicktime)

[16 July 2004](#) (27Mb Quicktime)

PROJECT MASTER LISTS

VOCALS Data Access - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://data.eol.ucar.edu/master_list/?project: Google

CNN.com Weather and Climate F... UCAR/NCAR E-mail and... NOAA Locator (Public) AT&T: Directory: Direc... Systems Support Online

Mail :: Inbox VOCALS Data Access



DATA BY CATEGORY

- [Aircraft](#)
- [Hydrology](#)
- [Land Based](#)
- [Model](#)
- [Oceanography](#)
- [Radar](#)
- [Radiation](#)
- [Satellite](#)
- [Ship Based](#)
- [Upper Air](#)

[Back to VOCALS](#)

Email comments & questions to webmaster@eol.ucar.edu

Land Based: Precipitation

GPCP Global Daily 1-Degree Combination Data [NASA]	2003-06-03	Document
GPCP Global Daily Merged Precipitation Analyses Imagery [NASA]	2003-06-03	Document
GPCP Global Monthly 1-Degree Combination Data [NASA]	2003-06-03	Document
GPCP Global Monthly Merged Precipitation Analyses Climatology Data [NASA]	2003-06-03	Document
GPCP Global Monthly Merged Precipitation Analyses Imagery [NASA]	2003-06-03	Document
GPCP Global Pentad (5-Day) Precipitation Analysis [NASA]	2003-06-03	Document
NCEP/CPC Global CMAP Precipitation Analyses	2003-06-03	Document
NCEP/CPC Global CMORPH Precipitation Analyses	2003-06-03	Document
PERSIANN 1°x1° Tropical Rainfall Data [NASA]	2003-06-03	Document
TRMM Real-time Rainfall Analyses (3-h) [NASA]	2003-06-03	

Model

ECMWF Global Grids [NCAR/SCD]	2003-05-29	
EDC 30 Arc-Second Elevation Data [EDC]	2003-06-05	Document

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](#)

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- [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.](#)

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