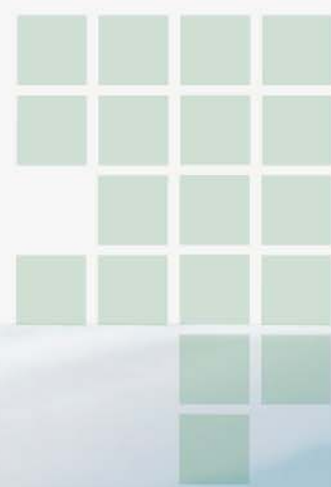




REFERENCE SITE UPDATE



Steve Williams, Scot Loehrer, and Linda Cully

NCAR Earth Observing Laboratory (EOL)

Computing, Data, and Software (CDS) Facility

Boulder, Colorado, USA



3rd CEOP Scientific Steering Group Meeting

Melbourne, Australia

19-21 August 2009



EOL CEOP work supported by NOAA Climate Projects Office



REFERENCE SITE DESCRIPTION

1D Site:

Near surface + surface + sub-surface (Atmospheric sounding* is highly desirable)

2.5D Site:

A few 1D sites + surface heterogeneity with an area of at least 100km²

3D Site:

1D sites network (+3D system) or 2.5D site + 3D atmosphere** with an area of about 10⁴ km²

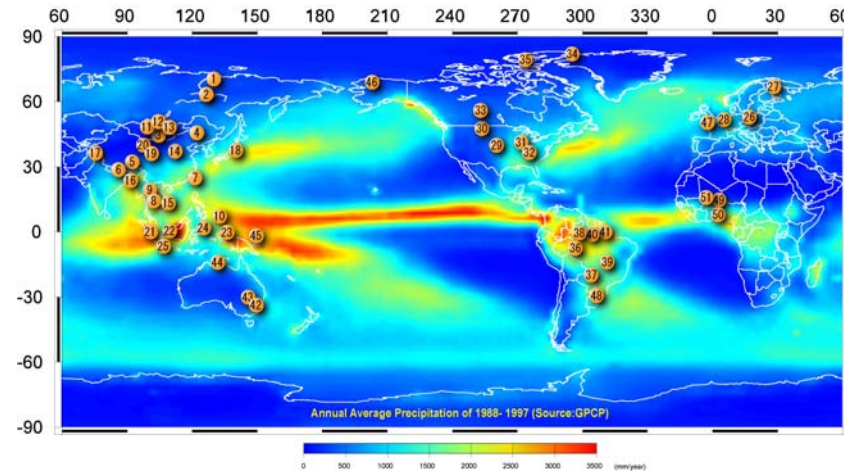
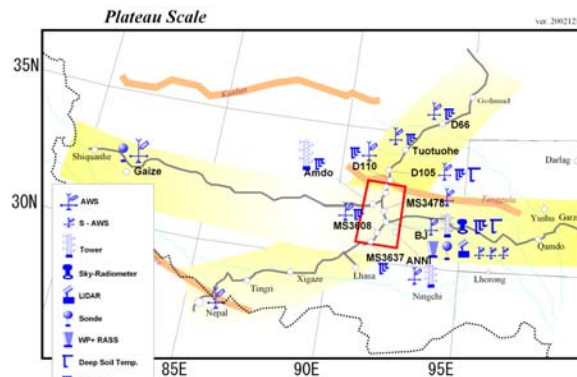
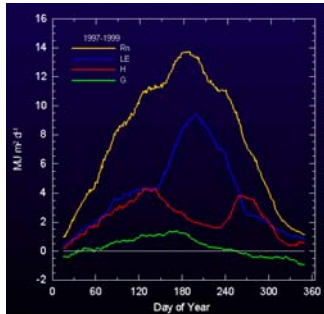
The terminology in summarizing these sites is used in the following manner:

- ◆ **Sub-surface (0 to -1m):** Soil moisture and temperature profile, heat conduction and soil characteristics;
- ◆ **Surface (0 to +2m):** Four-component radiation, PAR, surface temperature, surface soil moisture, precipitation, vegetation type characteristics, snow;
- ◆ **Near surface(+2 to +10m):** Temperature, specific humidity and wind speed profiles, surface pressure, momentum, latent and sensible heat fluxes;

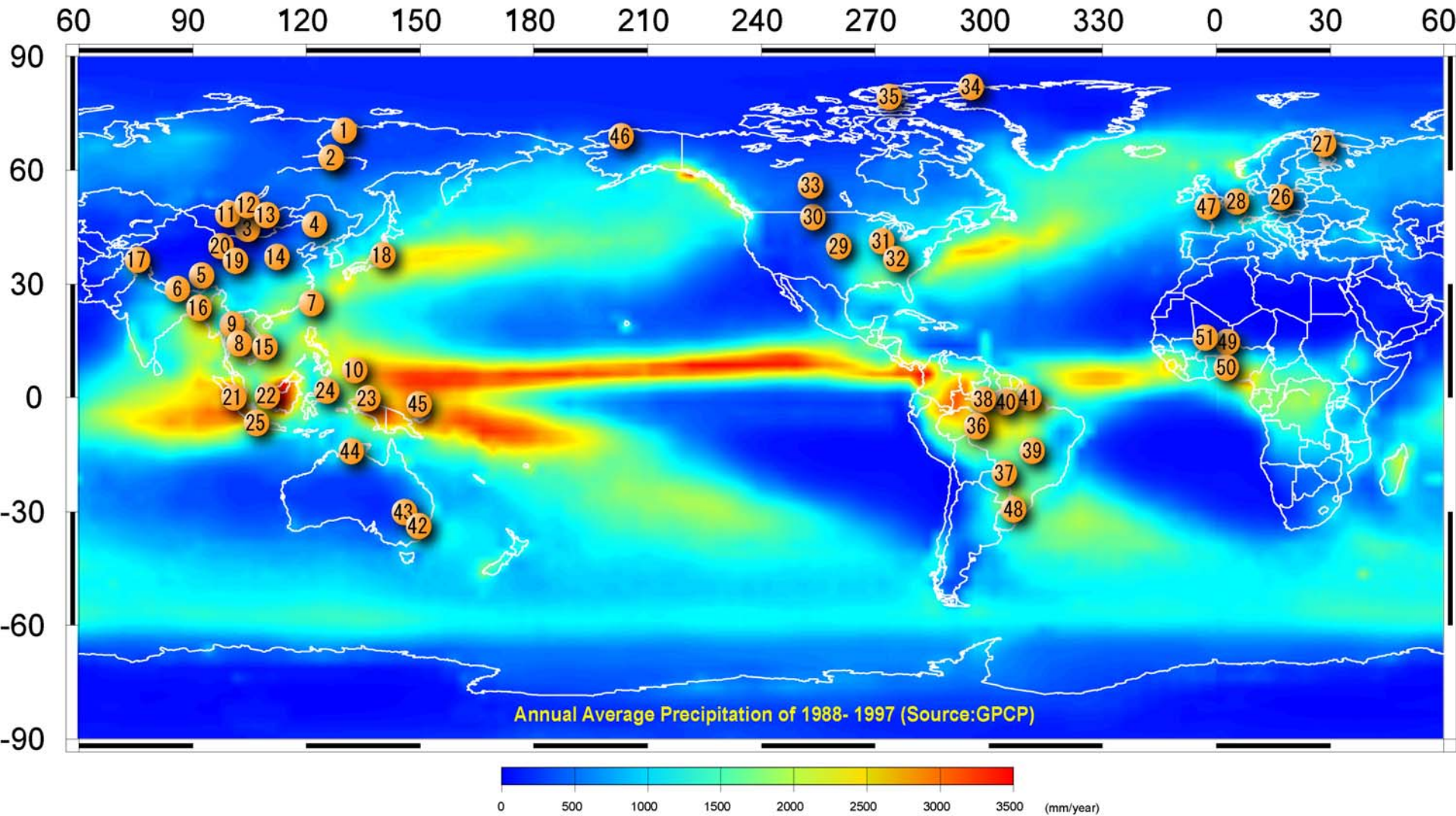


* Atmospheric soundings: Radiosonde, wind profile, LIDAR microwave rain radar

** 3D atmosphere: 3D Doppler radar, cloud radar, aerosonde aircraft.



CEOP Reference Site Map





PHASE-2 REFERENCE SITE REQUIREMENTS

All Reference Sites must:

- Provide commitment for participation
- Provide required metadata/site descriptions
- Abide by CEOP Data Policy
- Perform format conversions and quality control*
- **MUST MEET DELIVERY SCHEDULE!**

- *Data Providers may use DIAS Data System*

REFERENCE SITE GATEWAY

CEOP Reference Site Data Sets - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://data.eol.ucar.edu/master_list/?project=CEOP/EOP-3/4

Most Visited mozilla.org mozillaZine mozdev.org CNN.com NOAA Staff Directory Colorado Weather People Search

CEOP Reference Site Data Sets .be - Google Search

for other ancillary data sets please click here.

The CEOP data formats are described in the [CEOP Reference Site Data Set Procedures Report](#)

To jump to a particular RHP click on the appropriate logo:



RHP	Reference Site Name	Data Set	Oct 2002 Dec 2003	2004	2005	2006	2007	2008
BALTEX	Cabauw	SFC		X (24 Jun 2009) NEW				
		TWR		X (24 Jun 2009) NEW				
		STM		X (21 Oct 2008)				
		FLX		X (21 Oct 2008)				
		Soundings (Raw)		X (22 Oct 2008)				
	Lindenberg	SFC				X (24 Jun 2009) NEW		
		TWR				X (24 Jun 2009) NEW		
		STM				X (24 Jun 2009) NEW		
		FLX				X (24 Jun 2009) NEW		
		Soundings (Raw)			X (18 Jan 2008)			
	Norunda	SFC	X (29 Jun 2006)					
		TWR						
		STM						
		FLX						
		Soundings (Raw)						
Sodankylä	SFC		X (18 Apr 2006)					
	TWR		X (25 Jul 2006)					
	STM		X (24 Jul 2006)					
	FLX		X (25 Jul 2006)					
	Soundings (Raw)		X (02 Aug 2006)					



Lindenberg Reference Site



STATION NAME:

Falkenberg

CONTACT:

Name: Dr. Frank Beyrich

Affiliation:

Meteorologisches Observatorium Lindenberg
Deutscher Wetterdienst (DWD)

Address:

Am Observatorium 12
D - 15848 Tauche - OT Lindenberg
Germany

E-mail: frank.beyrich AT dwd DOT de

Telephone: +49 33677 60228

Fax: +49 33677 60280

WEB PAGES:

- ◆ [Lindenberg Meteorological Observatory Web Page](#)
- ◆ [BALTEX Home Page](#)

STATION LOCATION:

All meteorological, radiation, soil, tower and flux measurements have been performed at the Falkenberg Boundary Layer Field Site of the Meteorological Observatory Lindenberg (MOL).

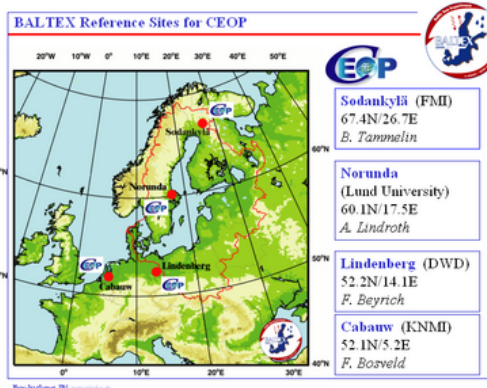
The coordinates of the GM Falkenberg are given by:

52° 10' 01" N (52.17°N) and 14° 07' 27" E (14.12°E) at 73 m elevation.

The radiosondes are released at the site of the Meteorological Observatory Lindenberg (MOL) which is about 5 km to the North of the Falkenberg site.

The co-ordinates of the MOL are given by:

52° 12' 36" N (52.21°N) and 14° 07' 12" E (14.12°E) at 112 m elevation.

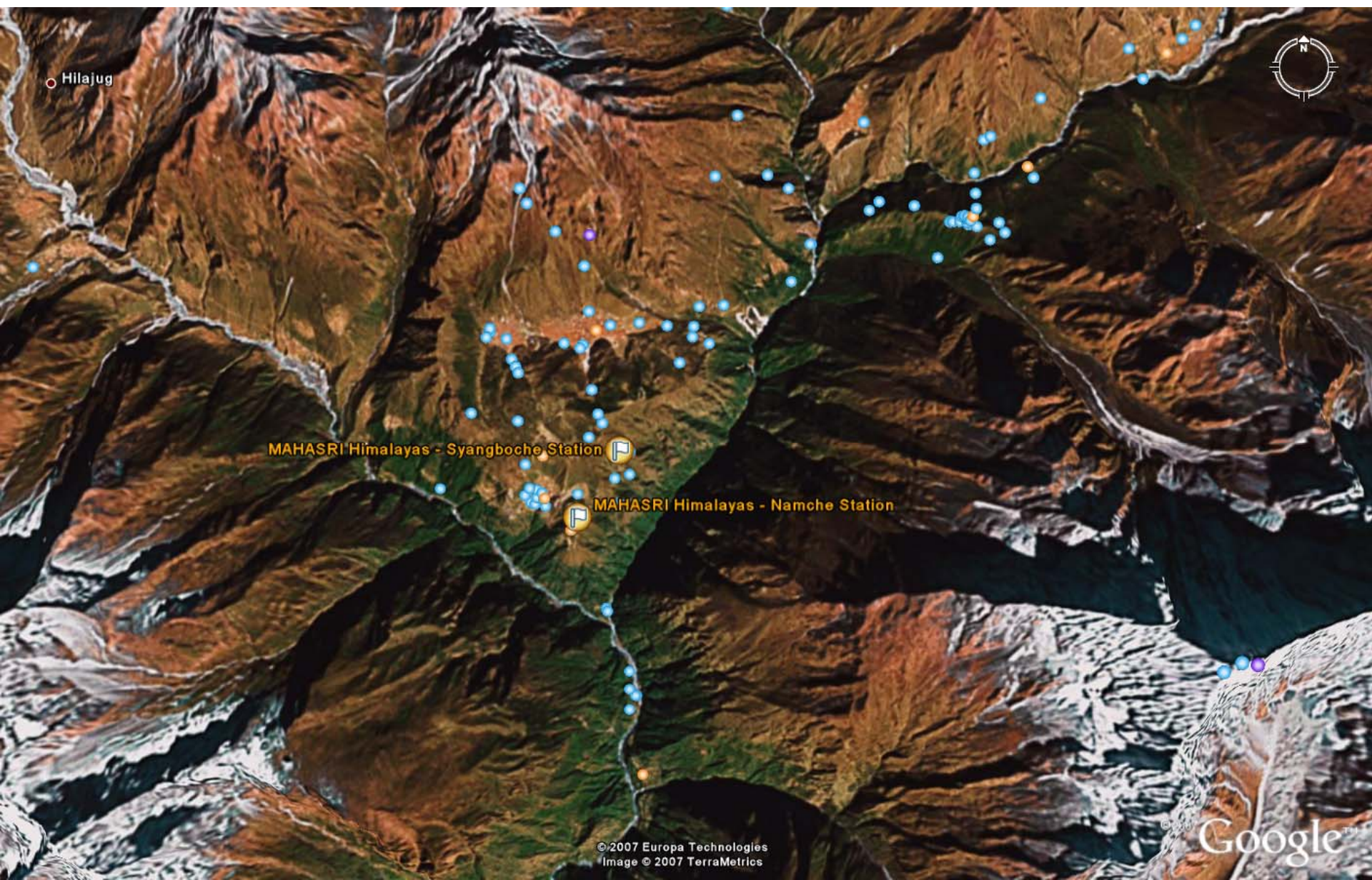


STATION DESCRIPTION:

Individual Site Metadata includes:

- Station (s)
- Contact (s)
- Links to relevant web pages
- Station location (e.g. maps, photos)
- Station description (e.g. vegetation characteristics, soil types, climate)
- Parameters and Instrumentation descriptions (SFC, TWR, STM, FLX, UA)
- Links to presentations
- Links to data sets and additional documentation

REFERENCE SITE GOOGLE EARTH (.KMZ) FILE



CEOP SFC Data Status and Quality

The colors represent the CEOP Data Quality Flags (see [definitions](#)) as follows: green=G, yellow=D, red=B, black=I, gray=U. Note that the time period covered varies from station to station. If a station does not measure any FLX parameters it is not included in this table.

For the Soil Temperature and Moisture Data Status and Quality summary click [here](#).

For the Meteorological Tower Data Status and Quality summary click [here](#).

For the Flux Data Status and Quality summary click [here](#).

RHP	Reference Site	Station	Station Pressure	Air Temp	Dew Point	Relative Humidity	Specific Humidity	Wind Speed	Wind Dir	U Wind	V Wind	Precip	Snow Depth	In Short	Out Short	In Long	Out Long	Net Rad	Skin Temp	In PAR	Out PAR	
BALTEX	Cabauw	Cabauw											None							None	None	
BALTEX	Lindenberg	Falkenberg																				
BALTEX	Lindenberg	Forest						None	None	None	None		None							None	None	
BALTEX	Norunda	Norunda										None	None						None			
BALTEX	Sodankyla	Observatory Site A														None	None	None	None	None	None	None
RHP	Reference Site	Station	Station Pressure	Air Temp	Dew Point	Relative Humidity	Specific Humidity	Wind Speed	Wind Dir	U Wind	V Wind	Precip	Snow Depth	In Short	Out Short	In Long	Out Long	Net Rad	Skin Temp	In PAR	Out PAR	
CIIC (MAGS)	BERMS		No data available yet.																			
RHP	Reference Site	Station	Station Pressure	Air Temp	Dew Point	Relative Humidity	Specific Humidity	Wind Speed	Wind Dir	U Wind	V Wind	Precip	Snow Depth	In Short	Out Short	In Long	Out Long	Net Rad	Skin Temp	In PAR	Out PAR	
CPFA (GAPP)	Bondville	Bondville											None									
CPFA (GAPP)	Ft. Peck	Ft. Peck											None									
CPFA (GAPP)	Mt. Bigelow	Mt. Bigelow	No data available yet.																			
CPFA (GAPP)	Oak Ridge	Oak Ridge											None									
RHP	Reference Site	Station	Station Pressure	Air Temp	Dew Point	Relative Humidity	Specific Humidity	Wind Speed	Wind Dir	U Wind	V Wind	Precip	Snow Depth	In Short	Out Short	In Long	Out Long	Net Rad	Skin Temp	In PAR	Out PAR	
CPFA (GAPP)	SGP (ARM)	C1 Lamont	None	None	None	None	None	None	None	None	None	None	None							None	None	
CPFA (GAPP)	SGP (ARM)	E1 Lamed											None						None	None	None	
CPFA (GAPP)	SGP (ARM)	E2 Hillsboro	None	None	None	None	None	None	None	None	None	None	None						None	None	None	
CPFA (GAPP)	SGP (ARM)	E3 Le Roy											None						None	None	None	
CPFA (GAPP)	SGP (ARM)	E4 Plevna											None						None	None	None	
CPFA (GAPP)	SGP (ARM)	E5 Halstead											None						None	None	None	
CPFA (GAPP)	SGP (ARM)	E6 Towanda											None						None	None	None	
CPFA (GAPP)	SGP (ARM)	E7 Bk Falls											None						None	None	None	

Cloud Measurements - Cloud Cover

2. Total cloud cover available?
 Yes
 No
3. Cloud cover with low clouds available?
 Yes
 No
4. Cloud cover with high clouds available?
 Yes
 No
5. If you answered yes to Question(s) 3, 4, or 5: What method is used to determine the cloud cover?
 Visual Observations
 Other - Please Specify

Cloud Measurements - Cloud Height

6. Cloud base height available?
 Yes
 No
7. If you answered yes to Question 6, what method is used to determine the cloud base height?
 Visual Observations
 Ceilometer
 Other - Please Specify

Cloud Measurements - Cloud Liquid/Ice Water Content

8. Cloud liquid water content available?
 Yes
 No
9. Column Liquid Water Content available?
 Yes
 No
10. Liquid Water Content profile available?
 Yes
 No
11. Cloud ice water content available?
 Yes
 No
12. If you answered yes to question(s) 8-11: What instrument is used to measure the liquid or ice water content?
 Microwave Radiometer
 Cloud Radar
 Other - Please Specify



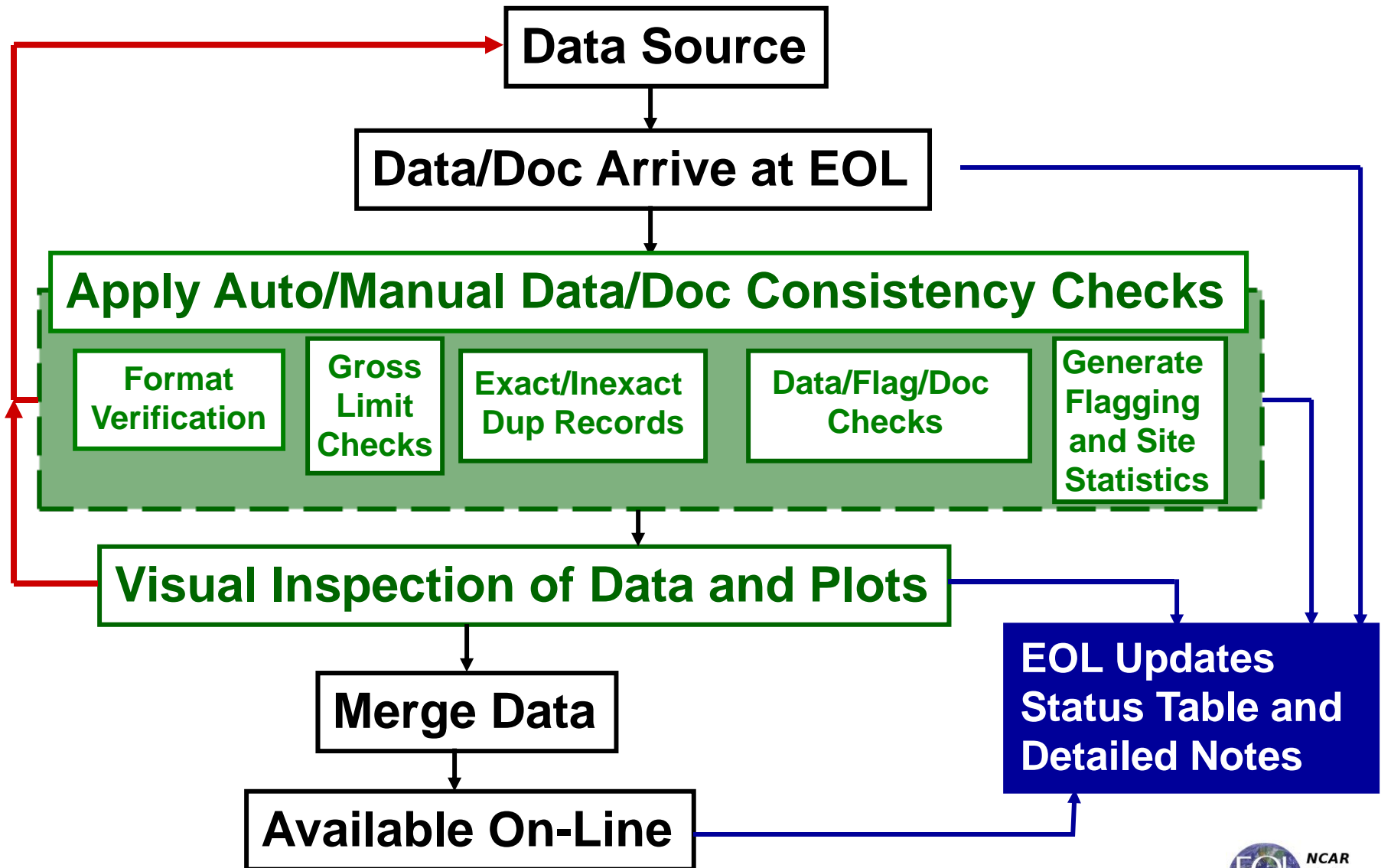
ANCILLARY DATA QUESTIONNAIRE

Questionnaire designed to gather information on additional available measurements/datasets collected at the Reference Sites:

- Cloud Cover
- Cloud Height
- Cloud Liquid/Ice Water Content
- Aerosol Measurements
- Ground Water Measurements

<https://survey.ucar.edu/opinio/s?s=3003>

Reference Site Data Flow





CEOP REFERENCE SITE OpenDAP SERVER STATUS

(August 2009)

- Operating version running at EOL
- Complete data sets from available Reference Sites are available
- Solved firewall issue
- Working on interface to EOL CODIAC Data System
- Working to establish metrics interface
- Began conversion of archive to NetCDF format








DATA BY CATEGORY

♦ **Model**

[Back to WAMME](#)

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

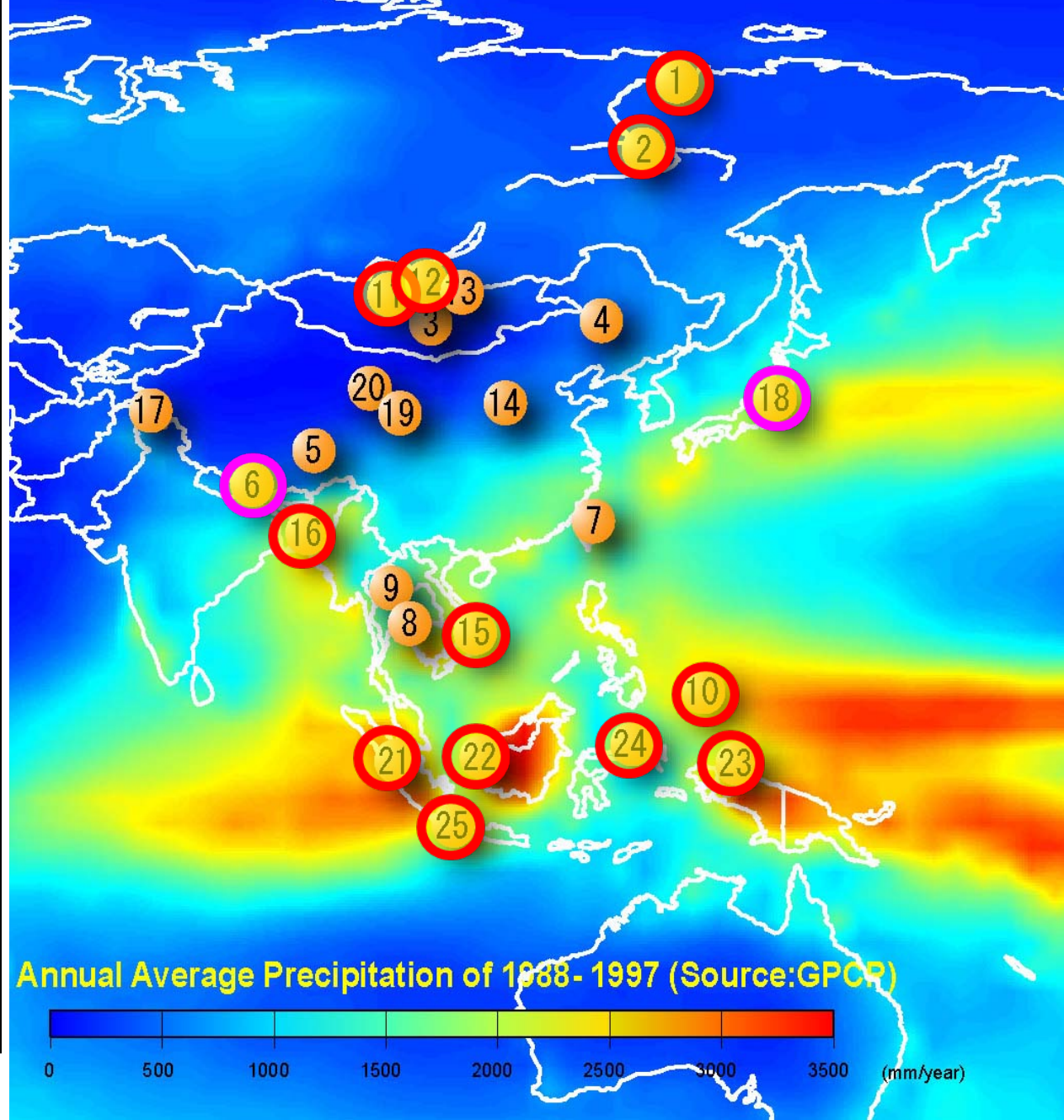
Data Set Name (Responsible Group/PIs shown in parentheses)	Date Posted	Info
Model		
Cornell University MM5 Model Output [Samson Hagos]	Updated 2007-11-16	
GISS Regional Model with Hadley Forcing [Columbia University]	Updated 2008-07-07	
GISS Regional Model with NCEP Forcing [Columbia University]	Updated 2008-07-07	
JMA MRI Global 20km AGCM Output [JMA]	2007-07-09	
NASA GMAO Ensemble Atmospheric Model Output [NASA]	Updated 2008-02-28	
NASA GMAO Ensemble Atmospheric Model SST, Omega and Topography [NASA]	Updated 2008-02-28	
NASA GSFC FVGCM (Finite Volume GCM) Diagnostics With Aerosol Forcing [William Lau]	Updated 2007-11-27	
NASA GSFC FVGCM (Finite Volume GCM) Diagnostics Without Aerosol Forcing [William Lau]	Updated 2007-11-27	
NCAR CAM3 Default Version [Cornell University/NCAR]	2007-12-18	
NCAR CAM3 Dust Interaction Version [Cornell University/NCAR]	2007-12-19	

26 Model output and Forcing datasets available

http://data.eol.ucar.edu/master_list/?project=WAMME

No.	Ref. Site Name
1	Eastern Siberian Tundra
2	Eastern Siberian Taiga
3	Mongolia
4	Tongyu
5	Tibet
6	Himalayas
7	Northern South China Sea - Southern Japan
8	Chao-Phraya River
9	North-East Thailand
10	Western Pacific Ocean
11	Mongolia Arvayheer
12	Mongolia Nalaikh
13	Northern Mongolia
14	Lower Yellow River
15	Central Vietnam
16	Northeast Bangladesh
17	Pakistan Karakorum
18	Tsukuba
19	Lanzhou
20	Heihe River Basin
21	Western Indonesia
22	Central Indonesia
23	Eastern Indonesia
24	Northern Indonesia
25	Southern Indonesia

CEOP_AP (Asia Pacific) Reference sites



CEOP_AP Data Management Status

(as of 2009/08/17)

	<i>Reference Site Name</i>	<i>Basic Info.</i>	<i>Data Uploading (Data Period)</i>	<i>Compile DB</i>	<i>Quality Control</i>	<i>Convert CEOP Format</i>	<i>Submit to NCAR</i>	<i>Remark</i>
01	Eastern Siberian Tundra	O	2007/01/01 - 2007/12/31	O	O			
02	Eastern Siberian Taiga	O	2007/01/01 - 2007/12/31	O	O			
03	Mongolia	O						
04	Tongyu	O						
05	Tibet	O	2007/06/15 - 2008/11/25	O	-			
06	Himalayas	O	Managed by own system					
07	Northern South China Sea - Southern Japan	O	2005/01/01 - 2008/12/31					
08	Chao-Phraya River	O						
09	North-East Thailand	O						
10	Western Pacific Ocean	O	2007/01/01 - 2007/12/31	O				
11	Mongolia Arvayheer	O						
12	Mongolia Nalaikh	O						
13	Northern Mongolia	O						
14	Lower Yellow River	O						
15	Central Vietnam	O						
16	Northeast Bangladesh	O						
17	Pakistan Karakorum	O						
18	Tsukuba	O	Managed by own system					
19	Lanzhou	O						
20	Heihe River Basin	O	2007/01/01 - 2008/12/31					
21	Western Indonesia	O	2007/01/01 - 2007/12/31	O				
22	Central Indonesia	O						
23	Eastern Indonesia	O						
24	Northern Indonesia	O						
25	Southern Indonesia	O						

O: Finished , -: Partially finished

CEOP EOP3/4 Reference Site Data Set Availability (as of 14 August 2009)

CSE	Reference Site	EOP-3	EOP-4
BALTEX	Cabauw	Complete	Complete
	Lindenberg	Complete	Complete
	Norunda	Complete	Complete
	Sodankyla	Complete	Complete
CAMP	Chao-Phraya River	Complete	Complete
	Equatorial Island	Complete	Complete
	Himalayas	Complete	Complete
	Korean Haenam	Complete	Partial
	Korean Peninsula	Partial	Partial
	Mongolia	Complete	Complete
	Northeast Thailand	Complete	Complete
	Northern South China Sea	Complete	Complete
	Siberia Taiga	Complete	Complete
	Siberia Tundra	Complete	Complete
	Tibet	Complete	Complete
	Tongyu	Complete	Complete
	Western Pacific Ocean	Complete	Complete
AMMA	Niamey	SF, Precip	SF, Precip
	Oueme	SF, Precip	SF, Precip

CSE	Reference Site	EOP-3	EOP-4	
GAPP	Bondville	Complete	Complete	
	Ft. Peck	Partial	Partial	
	Mt. Bigelow	Partial	Partial	
	Oak Ridge	Partial	Partial	
	ARM SGP	Complete	Complete	
	LBA	Brasilia	Partial	Partial
LBA	Caxiuana	Partial	Partial	
	Manaus	Partial	Partial	
	Pantanal	Partial	Partial	
	Rondonia	Partial	Partial	
	Santarem	Partial	Partial	
	MAGS	BERMS	Complete	Complete
	MDB	Murrumbidgee	Complete	Complete
Tumbarumba		Partial	Partial	
ARM	North Slope of Alaska	Complete	Complete	
	Tropical Western Pacific	Complete	Complete	



Complete



Partial

CEOP Post-EOP-3/4 Reference Site Data Set Availability (as of 14 August 2009)

BALTEX	Cabauw Lindenberg	2005-2006 2005-2007
CEOP_AP	Himalayas	2005-2006 FLX
ClIC	BERMS	2005-2006 SFC/STM/TWR
LBA	Manaus	Jan-Mar 2005 STM
MDB	Murrumbidgee	2005-2007
Other	ARM/TWP	2005-2007

Also in house for processing and checking:

CPPA	ARM/SGP	2005-2008
LBA	Manaus	Jan-Mar 2005 FLX
Other	ARM/NSA	2005-2008
Other	ARM/TWP	2008

Additional data submitted and checked awaiting response

CEOP_AP	Himalayas	2005-2006 STM/SFC
LBA	Manaus	Jan-Mar 2005 SFC





TOP TEN CEOP REFERENCE SITE UNIQUE DATA ORDERS (EMDAC) (as of 20 August 2009)

1.	BALTEX: Cabauw Surface Meteorology and Radiation Data	118
2.	CPPA/ARM: SGP Surface Meteorology and Radiation Data	111
3.	CAMP: Tibet Surface Meteorology and Radiation Data	108
4.	CAMP: Mongolia Surface Meteorology and Radiation Data	93
5.	CAMP: Himalayas Surface Meteorology and Radiation Data	90
6.	CAMP: Tongyu Surface Meteorology and Radiation Data	89
7.	BALTEX: Cabauw Surface Flux Data	88
8.	CAMP: Tibet Soil Temperature and Moisture Data	85
9.	BALTEX: Lindenberg Surface Flux Data	83
10.	BALTEX: Cabauw Soil Temperature and Moisture Data	83

Total orders: 4,229 (number), 32,207 (files), 79 Gb (data)

CEOP ORDER BY DOMAIN



Total 283 Datasets

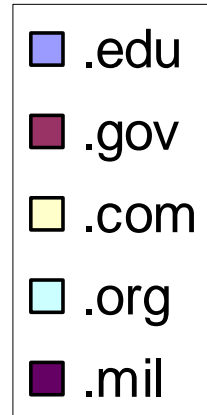
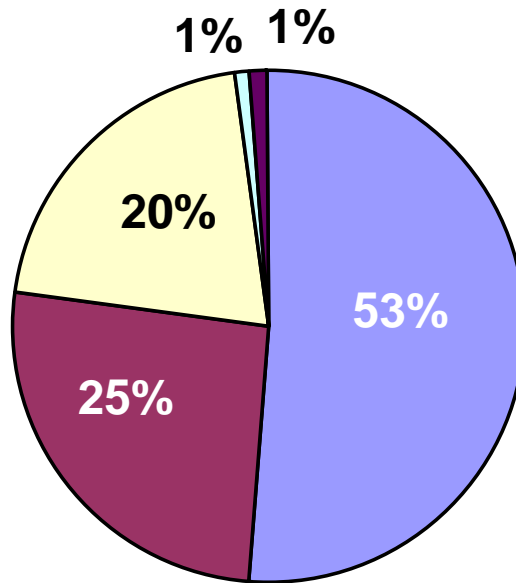
Total 8,929 Files

Total orders:

4229 (number)

32,207 (files)

79 GB (data)



As of August 2009

CEOP REFERENCE SITE TOTAL DATA ORDERS BY COUNTRY

1. United States	1,924	6. Australia	58
2. Japan	1,120	7. Taiwan	35
3. China	451	8. France	29
4. United Kingdom	235	9. Netherlands	26
5. Germany	218	10. Canada	16

CADIS METADATA ENTRY TOOL AND FORM

Contacts

My Profile

Metadata for Datasets

New submission

Previously submitted

Editing

Cancel editing

Submit metadata

Links

Help

CADIS Home

Edit Metadata for Dataset

Required fields are marked with *

1. ***Project:** Oberbauer -- Study of Arctic Ecosystem Changes in the IPY usi... (0632277)

2. ***Title:** 14C of soil CO2 from IPY ITEX Cross Site Comparison

3. ***Data Set Summary:**
Study sites:
Toolik Lake Field Station Alaska, USA 68.63 N, 149.57 W
Atgasuk, Alaska USA 70.45 N, 157.40 W
Barrow, Alaska, USA 71.30 N, 156.67 W
Latnajaure, Sweden 68.35 N, 18.50 E
Falls Creek, Australia:
Site 2-unburned 36.90 S 147.29 E
Site 3-burned 36.89 S 147.28 E
Additional sites will be added summer 2008, but the exact sites are not finalized

Purpose:
Collect soil CO2 for analysis of radiocarbon to evaluate the age of the carbon respired in controls and warmed plots from across the ITEX network

Treatments:
control and ITEX OTC warming experiment (1994-2007).

4. **Begin Date:** 24 July 2007 00 : 00

5. **End Date:** 16 January 2008 00 : 00

6. **Minimum Latitude:** -36.90000

7. **Maximum Latitude:** 71.30000

8. **Minimum Longitude:** -157.40000

9. **Maximum Longitude:** 147.29000

10. ***Location Keyword:** Geographic Region > Arctic

11. ***Discipline:** Terrestrial Ecosystems

12. **Frequency:** annual

13. **Spatial Type:** multiple

14. **Resolution:** 1 meter to 30 meters

15. ***Platform Keyword:** Manned permanent station

16. ***Instrument Name:** CO2 ANALYZERS

17. ***Science Keyword:** Biosphere > Ecological Dynamics > Respiration

18. ***ISO Topic:** Biota

19. ***Metadata Contact:** Tiffany Troxler

20. ***Datacenter Contact:** Don Stott

21. **Data Access:** (URL to data not at CADIS archive)

22. ***Distribution Format:** Microsoft Excel spreadsheet

23. **Progress:** in work

24. **Data Tags:**

25. **Related Resource:** -purpose-

26. **Related Resource:** -purpose-

27. **Dataset Language:** English

28. **Access Restrictions:** Unrestricted access

29. **Use Constraints:** No user constraints

Update this dataset's metadata

Create metadata for a new dataset using this one as a template

Boulder: Mon, Sept 15, 6:20 AM UTC: Mon, Sept 15, 12:20 Z Arica, Chile: Mon, Sept 15, 8:20 AM

Sample Imagery

[Quick Links:](#)
[Facility Status](#)
[Operations Plan of the Day](#)
[Weather Discussion](#)

Additional Sa
 Latest 2 ho
 Latest 4 h
 Latest 4 hou

Information from Chile:

Meteorológica de Chile
[SHOA web site](#)

Information from Peru:

National Weather Service
[IMARPE web site](#)

[Comments](#)

VOCALS-Rex Data Management

VOCALS Data Access - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://data.eol.ucar.edu/master_list/?project=VOCALS

Coordinated Enhanced Obser... La PLata Basin / RHP Home P... VOCALS Data Access

Hydrology: Precipitation

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

Land Based

University of Colorado
 PO Box 300
 Copyr

- DATA BY CATEGORY**
- Aircraft
 - Hydrology
 - Land Based
 - Model
 - Oceanography
 - Radar
 - Radiation
 - Satellite
 - Ship Based
 - Upper Air
- DATA BY SITE**
- Arica, Chile
 - Iquique, Chile
 - Paposo, Chile
 - St. Felix Is., Chile



"I'M SORRY, BUT IT SAYS HERE THAT YOU DIDN'T MEET YOUR PROJECT DELIVERABLES."