

An Introduction to the



IRI

Data Library

K. Verbist
UNESCO-IHP



Objectives

- Become familiar with the organization of the Data Library
- Learn how to find datasets and select spatial and temporal domains
- See how to perform simple arithmetic analyses
- See how to create customized maps and graphs
- Learn how to download data and images
- Understand how the Data Library is related to the Maprooms

Structure of the Short Course

Introduction to the organization and primary tools of the Data Library

Group examples

(Individual: optional)

The Data Library is a...

- Data repository
 - >300 datasets covering all aspects of climate-related characteristics
- Data analysis tool
 - Arithmetic operations → Temporal averaging,...
- Data visualization tool
 - Time series, maps, cross-sections
- Data download resource
 - Free access to text, binary, GIS-compatible, etc. data files

<http://iridl.ldeo.columbia.edu>

<http://www.climatedatalibrary.cl>

Data Library Home Page

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IRI/LDEO Climate Data Library

The IRI/LDEO Climate Data Library contains over 300 datasets from a variety of earth science disciplines and climate-related topics. It is a powerful tool that offers the following capabilities at no cost to the user:

- access any number of datasets;
- create analyses of data ranging from simple averaging to more advanced EOF analyses;
- monitor present climate conditions with maps and analyses in the [Maproom](#);
- create visual representations of data, including animations;
- download data in a variety of commonly-used [formats](#), including GIS-compatible formats.

Are you new to the world of climate data? Check out our [Introduction to Climate Data](#) page.

What's New

Mar 08 - Shapes for [climate zones in Sri Lanka](#) have been added as a new Features data set

Mar 08 - A new "International Federation" Map Room has been added to the IRI Map Rooms and is accessible from the [Map Room front page](#). It contains a forecast precipitation map tool developed in collaboration with the International Federation of Red Cross and Red Crescent Societies that features analyses to provide context for global precipitation forecasts.

Mar 08 - A new "linked pdf" image option has been added to the Figure Viewer pages of the Data Library. Clicking on the "linked pdf" button will produce a clickable PDF version of the image you are viewing that links back to the Figure Viewer page for the image in the Data Library. The following link provides an example: [February 2008 SSTA](#)

Feb 08 - A k-means cluster analysis named [k-means136](#) has been added to the Data Library as a new function

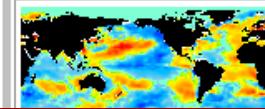
Finding Data

[Datasets by Category](#)[Datasets by Source](#)[Dataset Search](#)[Browse/Search Datasets](#)[Browse/Search Maproom](#)

Help Resources

[Introductory Tutorial](#)[Statistical Analysis Tutorial](#)[Ingrid Function Documentation](#)[Questions and Answers](#)

Monitoring Global Climate



Map Room

A collection of maps and analyses used to monitor climate conditions. Click on any of the maps to modify the figures or access the source data.

Climate Information Digest

A monthly publication covering global climate events, their impacts and the seasonal forecast.

ENSO Web

Information about El Niño-Southern Oscillation.

Climate Highlights

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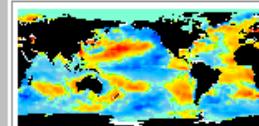
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Datasets By Category

The links below direct you to a brief description of each dataset along with its spatial and temporal limits and resolution. If you can not find data that meets your needs in the categories below, then you may wish to search for it via either the Dataset Searches or Datasets by Source discovery methods (links shown in navigation banner to the left).

[Air-Sea Interface](#) - Datasets focusing on the boundary between the atmosphere and the ocean. Includes sea surface temperature (SST) and wind stress data variables, among others.

[Atmosphere](#) - Datasets focusing on parameters describing the atmosphere. Includes surface weather observations (e.g. temperature, precipitation, etc.) and gridded

- [Air-Sea Interface](#)
- [Atmosphere](#)
- [Climate Indices](#)
- [Cloud Characteristics and Radiation Budget](#)
- [Fisheries](#)
- [Forecasts](#)
- [Historical Model Simulations](#)
- [Hydrology](#)
- [Ice](#)
- [Oceanography](#)
- [Topographic and Land Characteristics](#)



Finding Datasets

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By Source
By Search

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Atmospheric Data in the IRI Data Library

Dataset Name	Spatial Resolution (Lon/Lat) / Number of Stations	Spatial Extent	Time Period	Temporal Resolution
ANEEL prcp sta	13179 STATIONS	[90W,30W], [60S,15N]	1 Jan 1897,31 Dec 2004	DAILY
	Description: Precipitation station data for South America, primarily Brazil .			
CDIAC msu	2.5x2.5	GLOBAL, [58.75S,58.75N]	1 Jan 1979,31 May 1994	DAILY
	Description: MSU-measured precipitation from CDIAC .			
CDIAC tr051	5x4	GLOBAL, [62S,86N]	Dec 1850 - Feb 1851,Sep-Nov 1989	SEASONAL
	Description: Comprehensive precipitation anomaly data set for global land areas .			
DEKLIM VASclimO PrcpClim	0.5x0.5; 1.0x1.0; 2.5x2.5	GLOBAL [59.75S,84.75N]	Jan 1951,Dec 2000	MONTHLY
	Description: Precipitation climatology from the Variability Analysis of Surface Climate Observations (VASclimO) project - a joint project of the German Weather Service (DWD/GPCC)and the Johann Wolfgang Goethe-University Frankfurt.			
ITM	7 REGIONS, 29 SUBDIVISIONS	[65E,98E], [5N,35N]	Jan 1871,Dec 2002; Jan 1901,Dec 1990	MONTHLY
	Description: Subdivision-, region-, and country-level precipitation and temperature data for India.			
INIA	5 stations	[65W,45W], [45S,25S]	1 Jul 1965, Present	DAILY, MONTHLY
	Description: Daily and monthly meteorological observations in Uruguay from the INIA.			
IRI Analyses ENSO-RP	0.5x0.5, 2.5x2.5	GLOBAL	Dec - Feb,Nov - Jan	SEASONAL
	Description: Probabilistic precipitation anomalies associated with ENSO.			

Dataset Page Contents and Structure

Gridded Datasets

Datasets By Category - Atmospheric Data - Microsoft Internet Explorer

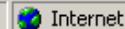
File Edit View Favorites Tools Help

Back Search Favorites Media Stop Go

Address http://iridl.ideo.columbia.edu/docfind/databrief/cat-atmos.html

	Description: Daily and monthly meteorological observations in Uruguay from the INIA.			
IRI Analyses ENSO-RP	0.5x0.5, 2.5x2.5	GLOBAL	Dec - Feb, Nov - Jan	SEASONAL
	Description: Probabilistic precipitation anomalies associated with ENSO.			
IRI Analyses SPI	2.5x2.5; 0.5x0.5	GLOBAL	Various: 1901-Present	MONTHLY
	Description: Standardized Precipitation Index analyses of multiple global precipitation datasets.			
Indices india	NA	NA	Jun-Sep 1813, Jun-Sep 1998	MONTHLY
	Description: Summer monsoon rainfall data from India.			
NASA GPCP V1DD	1x1	GLOBAL	1 Oct 1996, 31 Dec 2005	DAILY
	Description: 1-degree daily combination precipitation estimates.			
NASA GPCP V2	2.5x2.5	GLOBAL	Jan 1979, Feb 2006	MONTHLY
	Description: Combined satellite-gauge precipitation estimates and error estimates from the Global Precipitation Climatology Project.			
NASA GSFC TOMS EPTOMS	1.25x1	GLOBAL	Aug 1996 to Present	DAILY, MONTHLY
	Description: Aerosol index and erythemal UV irradiance data from the Earth Probe TOMS instrument.			
NASA GSFC TOMS NIMBUS7	1.25x1	GLOBAL	1 Nov 1978, 6 May 1993; Jan 1980, Apr 1993	DAILY, MONTHLY
	Description: Aerosol index and erythemal UV irradiance data from the Nimbus-7 TOMS instrument.			
NASA msu	2.5x2.5	GLOBAL, [58.75S, 58.75N]	1 Jan 1979, 31 May 1994	DAILY
	Description: Gridded oceanic rainfall data from the Microwave Sounding Unit.			
NOAA NCDC CIRS ClimateDivision	344 STATIONS	[125W, 65W], [15N, 55N]	Jan 1895, May 2006	MONTHLY
	Description: Time bias corrected temperature, precipitation, and drought index data for United States climate divisions from the National Climatic Data Center.			

1500 STATIONS | STATION | 1 T | 1000 21 D | 1000 | DATA





Data Library

Finding Data

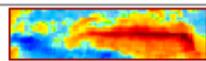
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NASA GPCP V1DD

NASA GPCP V1DD: 1-degree daily combination precipitation estimates.

Documents

[outline](#)

an outline showing all sub-datasets and variables contained in this dataset

[dataset documentation](#)

Datasets and variables

[precipitation](#) NASA GPCP V1DD prcp[X Y | T]

Dataset and Variables
-Access to variables or lower-level datasets

Grids

Time grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Dec 2005) by 1. N= 3379 pts :grid

Longitude grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid

Latitude grid: /Y (degree_north) ordered (89.5N) to (89.5S) by 1. N= 180 pts :grid



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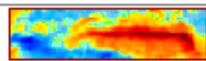
an outline showing all sub-

[dataset documentation](#)

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NASA GPCP V1DD

NASA GPCP V1DD: 1-degree dai

Documents

Grids (Independent Variables)

- Information about grids on which data is dependent
- Latitude (Y)
- Longitude (X)
- Time (T)
- Others (height/depth, ensemble member, etc.)

Grids

Time grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Dec 2005) by 1. N= 3379 pts :grid

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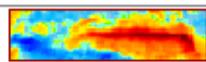
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NASA GPCP V1DD

NASA GPCP V1DD: 1-degree daily combination precipitation estimates.

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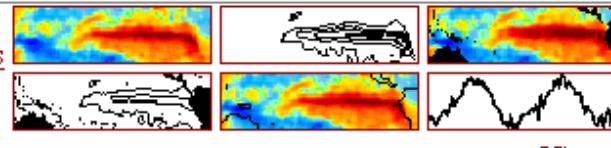
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NASA GPCP V1DD prcp: precipitation data

precipitation from NASA GPCP V1DD: 1-degree daily combination precipitation estimates.

Grids

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Longitude

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Latitude

grid: /Y (degree_north) ordered (89.5N) to (89.5S) by 1. N= 180 pts :grid

Other Info

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datatype

realarraytype

missing_value

0.0000

Note new information

- Selected variable shown in Source Bar
- Datasets and variables heading gone
- More information about variable below



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-99999.

plotfirst

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plotlast

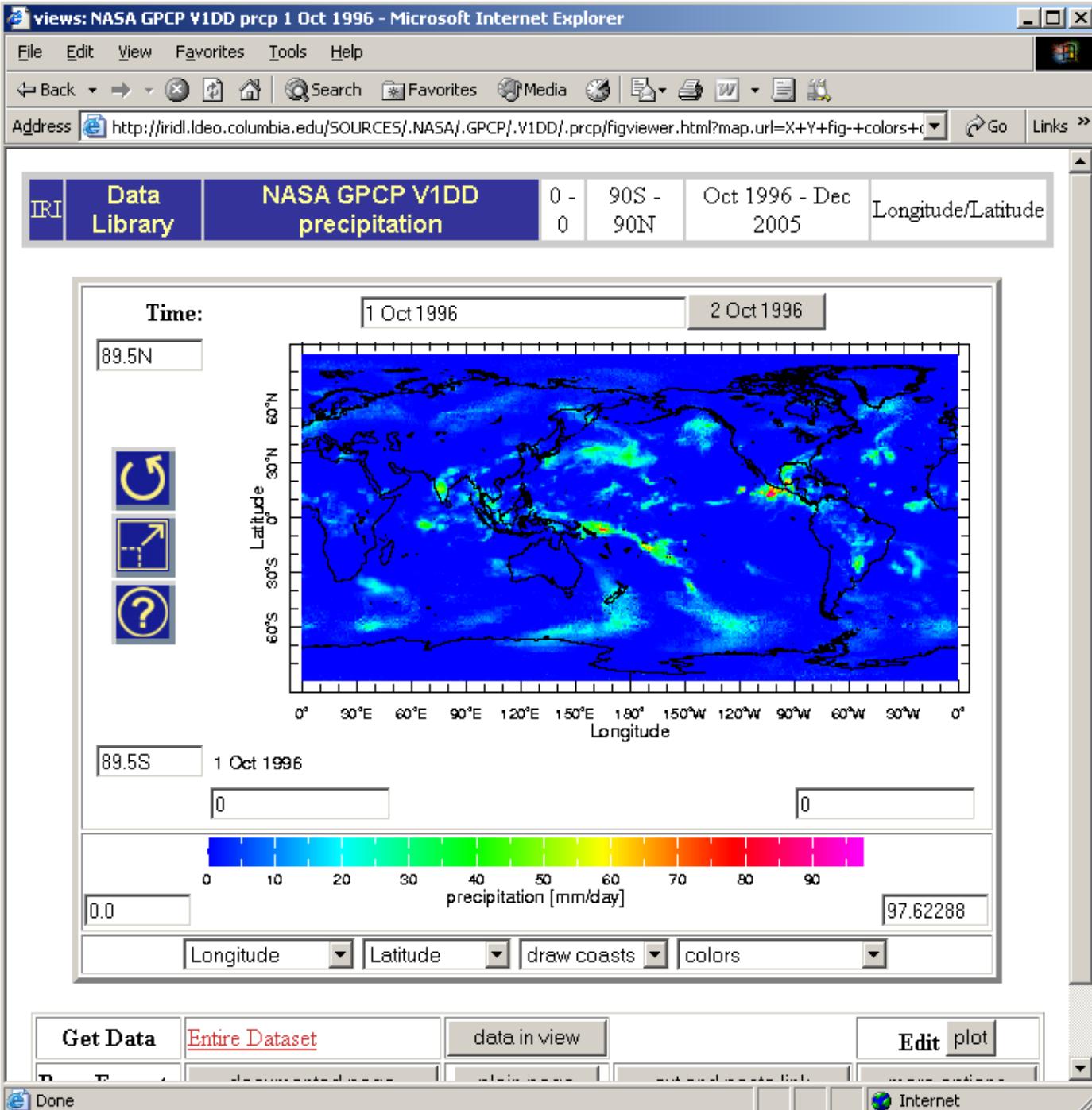
null

pointwidth

0.0

units mm /day

Important information about variable
-Missing value indicator
-Units





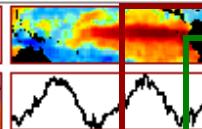
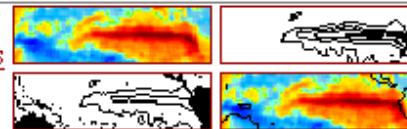
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Data Selection -Data domain selection

Time grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Dec 2005) by 1. N= 3379 pts :grid
Longitude

grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid

Latitude

grid: /Y (degree_north) ordered (89.5N) to (89.5S) by 1. N= 180 pts :grid

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datatype

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NASA GPCP V1DD prcp data selection - Microsoft Internet Explorer

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[NASA GPCP V1DD prcp\[X Y | T\]](#)

Data Selection

You can interactively pick out the data you would like with the [Data Viewer](#).

You can reduce the amount of data by restricting the range of the grids.

The current settings for the grids are

- grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid
- grid: /Y (degree_north) ordered (89.5N) to (89.5S) by 1. N= 180 pts :grid
- grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Dec 2005) by 1. N= 3379 pts :grid

If this is what you want, choose [Stop Selecting](#)

Setting Ranges

If you want to restrict the range along a grid, choose here.

name	range
X Longitude	0.5E to 0.5W
Y Latitude	89.5N to 89.5S
T Time	1 Oct 1996 to 31 Dec 2005

[Restrict Ranges](#)

[Chile?](#)

Done Internet



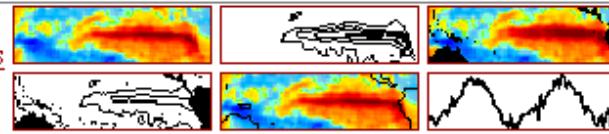
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Filters**-Common data manipulation tools**

Time grid: /T (days since 1996-10-01 12:00:00)

9 pts /grid

Longitude

grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts /grid

Latitude

grid: /Y (degree_north) ordered (89.5N) to (89.5S) by 1. N= 180 pts /grid

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Filters

Here are some filters that are useful for manipulating data. There are actually many more available, but they have to be entered manually. See [General Ingrid Help](#) for more information.

[Monthly Climatology](#) calculates a monthly climatology by averaging over all years.
[anomalies](#) calculates the difference between the (above) monthly climatology and the original data.
Integrate along [X Y T](#)
Differentiate along [X Y T](#)
Take differences along [X Y T](#)

Average over [X Y T](#) | [X Y X T Y T](#) | [X Y T](#)
RMS (root mean square with mean *not* removed) over [X Y T](#) | [X Y X T Y T](#) | [X Y T](#)
RMSA (root mean square with mean removed) over [X Y T](#) | [X Y X T Y T](#) | [X Y T](#)
Maximum over [X Y T](#) | [X Y X T Y T](#) | [X Y T](#)
Minimum over [X Y T](#) | [X Y X T Y T](#) | [X Y T](#)
Detrend (best-fit-line) over [X Y T](#) | [X Y X T Y T](#) | [X Y T](#)

Convert units from mm/day to

[Note on units](#)

- Monthly Climatology/Anomaly
- Average over any ind. variable
- Root mean square
- Find max/min values over any ind. variable

[XY Average Chile?](#)



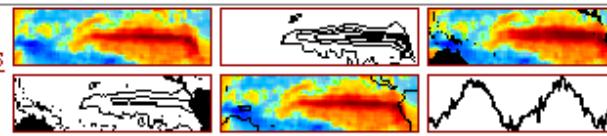
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Data Files**-Access to data downloads**

Time grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Dec 2005) by 1. N= 3379 pts :grid

Longitude

grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid

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NASA GPCP V1DD prcp Data Files

This dataset has 8.7583680E08 bytes (835.26306MB) of data in it, which should give you a rough idea of the size of any file that you ask for.

Download Data To Specific Software

ingrid	The Postscript-based software on which the Data Library is built.
CPT	Climate Predictability Tool More information
ferret	Interactive computer visualization and analysis software. More information
GrADS	Grid Analysis and Display System More information
matlab	Data analysis and visualization software. More information
NCL	NCAR Command Language More information
WinDisp	A public domain software package for the display and analysis of satellite images, maps and associated databases, with an emphasis on early warning for food security. More information

Other Available File Formats

Full Information Formats

These files contain all of the available metadata.

OPeNDAP	A system which downloads data directly to software, such as matlab, Ferret, GrADS, etc. Specific instructions are available in the table above. Note: OPeNDAP was formally known as DODS (Distributed Oceanographic Data System). More Information
netCDF (network Common Data Form)	A commonly supported self-describing data format. More Information



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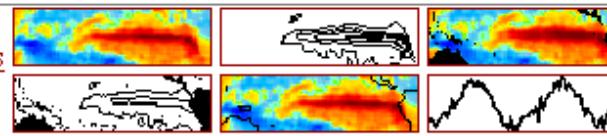
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precipitation from NASA GPCP V1DD: 1-degree daily combination precipitation estimates

Grids

Tables

-Access to tabular data for Excel, etc.

Time grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Dec 2005) by 1. N= 3379 pts :grid

Longitude

grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid

Latitude

grid: /Y (degree_north) ordered (89.5N) to (89.5S) by 1. N= 180 pts :grid

Other Info

bufferwordsize

4

datatype

realarraytype

missing_value

0.0000



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Answers

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NASA GPCP V1DD precipitation 31 Dec 2005 data tables

Rectangular array of data

The following list lets you specify the top and side grids of the table.

[Y X Table](#)
[X Y Table](#)

2D Tab-Separated Tables

The above table is also available as a tab-separated-values file. The following list lets you specify the top and side grids of the table.

[Y X Table](#)
[X Y Table](#)

Columnar Tables

The NASA GPCP V1DD precipitation 31 Dec 2005 data are available as a [columnar table](#), i.e. as multiple columns of data, intended primarily to be read. However, if you have other intentions for this table, or simply do not like the default choices, you may want to choose from the [columnar tables with options](#).



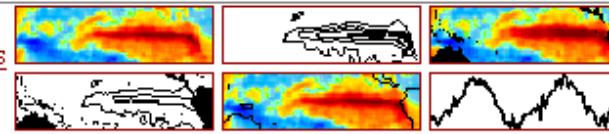
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NASA GPCP V1DD prcp options

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NASA GPCP V1DD prcp: precipitation data

precipitation from NASA GPCP V1DD: 1-degree daily combination precipitation estimates.

Grids

Expert mode**-Manually enter Ingrid code**

Time grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Dec 2005) by 1. N= 3379 pts :grid

Longitude

grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid

Latitude

grid: /Y (degree_north) ordered (89.5N) to (89.5S) by 1. N= 180 pts :grid

Other Info

bufferwordsize

4

datatype

realarraytype

missing_value

0.0000

data: NASA GPCP V1DD prcp - Microsoft Internet Explorer

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Address http://iridl.ldeo.columbia.edu/expert/SOURCES/.NASA/.GPCP/.V1DD/.prcp/ Go Links



T X Y

NASA GPCP V1DD prcp[X Y | T] M M M

expert
SOURCES .NASA .GPCP .V1DD .prcp

OK
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SOURCES NASA GPCP V1DD* precipitation

NASA GPCP V1DD prcp: precipitation data

precipitation from NASA GPCP V1DD: 1-degree daily combination precipitation estimates.

Grids

Time grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Dec 2005) by 1. N= 3379 pts :grid
Longitude

grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid
Latitude

grid: /Y (degree_north) ordered (89.5N) to (89.5S) by 1. N= 180 pts :grid

Other Info

bufferwordsizes

Dataset Page Contents and Structure

Station Datasets

(not presented)

Selecting Data Domain

Gridded Datasets



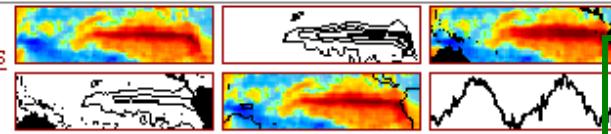
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NASA GPCP V1DD prcp. precipitation data

precipitation from NASA GPCP V1DD: 1-degree daily combination precipitation estimates.

Grids

Data Selection -Data domain selection

Time grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Dec 2005) by 1. N= 3379 pts :grid
Longitude

grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid

Latitude

grid: /Y (degree_north) ordered (89.5N) to (89.5S) by 1. N= 180 pts :grid

Other Info

bufferwordsizes

4

datatype

realarraytype

missing_value

0.0000

NASA GPCP V1DD prcp data selection - Microsoft Internet Explorer

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Address <http://iridl.ldeo.columbia.edu/SOURCES/.NASA/.GPCP/.V1DD/.prcp/?help+dataselection>

IRI

[NASA GPCP V1DD prcp\[X Y | T\]](#)

Data Selection

You can interactively pick out the data you would like with the [Data Viewer](#).

You can reduce the amount of data by restricting the range of the grids.

The current settings for the grids are

- grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid
- grid: /Y (degree_north) ordered (89.5N) to (89.5S) by 1. N= 180 pts :grid
- grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Dec 2005) by 1. N= 3379 pts :grid

If this is what you want, choose **Stop Selecting**

Setting Ranges

If you want to restrict the range along a grid, choose here.

name	range
X Longitude	0.5E to 0.5W
Y Latitude	89.5N to 89.5S
T Time	1 Oct 1996 to 31 Dec 2005

Restrict Ranges

Done Internet

Data Selection

Step 1. Change text in Setting Ranges boxes using same syntax as text already there.

Step 2. Click **Restrict Ranges** button.

Step 3. When satisfied information in top box represents desired domain, click the **Stop Selecting** button.

File Edit View Favorites Tools Help

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Address http://iridl.ldeo.columbia.edu/SOURCES/.NASA/.GPCP/.V1DD/.prcp/T/%281%20Oct%201996%29%2831%2C%20%29%201997%20Jan%201997%2012:00:00%20Z%20to%201997%20Jan%201997%2012:00:00%20Z%20by%201%20N%20=%20123%20pts%20:grid



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[NASA GPCP V1DD prcp\[X Y | T\]](#)

Data Selection

You can interactively pick out the data you would like with the [Data Viewer](#).

You can reduce the amount of data by restricting the range of the grids.

The current settings for the grids are

- grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid
- grid: /Y (degree_north) ordered (59.5S) to (59.5N) by 1. N= 120 pts :grid
- grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Jan 1997) by 1. N= 123 pts :grid

If this is what you want, choose

Stop Selecting

Setting Ranges

to restrict the range along a grid, choose here.

		range
X	Longitude	0.5E to 0.5W
Y	Latitude	60S to 60N
T	Time	1 Oct 1996 to 31 Jan 1997
		Restrict Ranges

Done

Internet



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[SOURCES](#) [NASA](#) [GPCP](#) [V1DD*](#) [precipitation](#) [T \(1 Oct 1996\)](#)
[\(31 Jan 1997\)](#) [RANGEEDGES](#) [Y \(60S\) \(60N\)](#) [RANGEEDGES](#) [Y \(60S\) \(60N\)](#) [RANGEEDGES](#)

Note: New data domain now represented in Source Bar and grid information.

PCP V1DD prcp: precipitation data

Precipitation from NASA GPCP V1DD: 1-degree daily combination precipitation

Grids

Time grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Jan 1997) by 1. N= 123 pts :grid
Longitude

grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid

Latitude

grid: /Y (degree_north) ordered (59.5S) to (59.5N) by 1. N= 120 pts :grid

Other Info

bufferwordsizes

4

datatype

Visualizing Data: Making maps and graphs



Data Library

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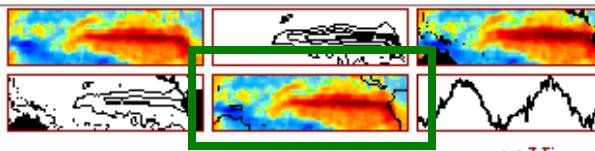
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SOURCES	NASA	GPCP	V1DD*	precipitation	T (1 Oct 1996)	(31 Jan 1997)	RANGEEDGES	Y (60S) (60N)	RANGEEDGES	Y (60S) (60N)	RANGEEDGES
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NASA GPCP V1DD prcp: precipitation data

prcp prcp prcp precipitation from NASA GPCP V1DD: 1-degree daily combination precipitation estimates.

Grids

Time grid: /T (days since 1996-10-01 12:00:00) ordered (1 Oct 1996) to (31 Jan 1997) by 1. N= 123 pts :grid
Longitude

grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid

Latitude

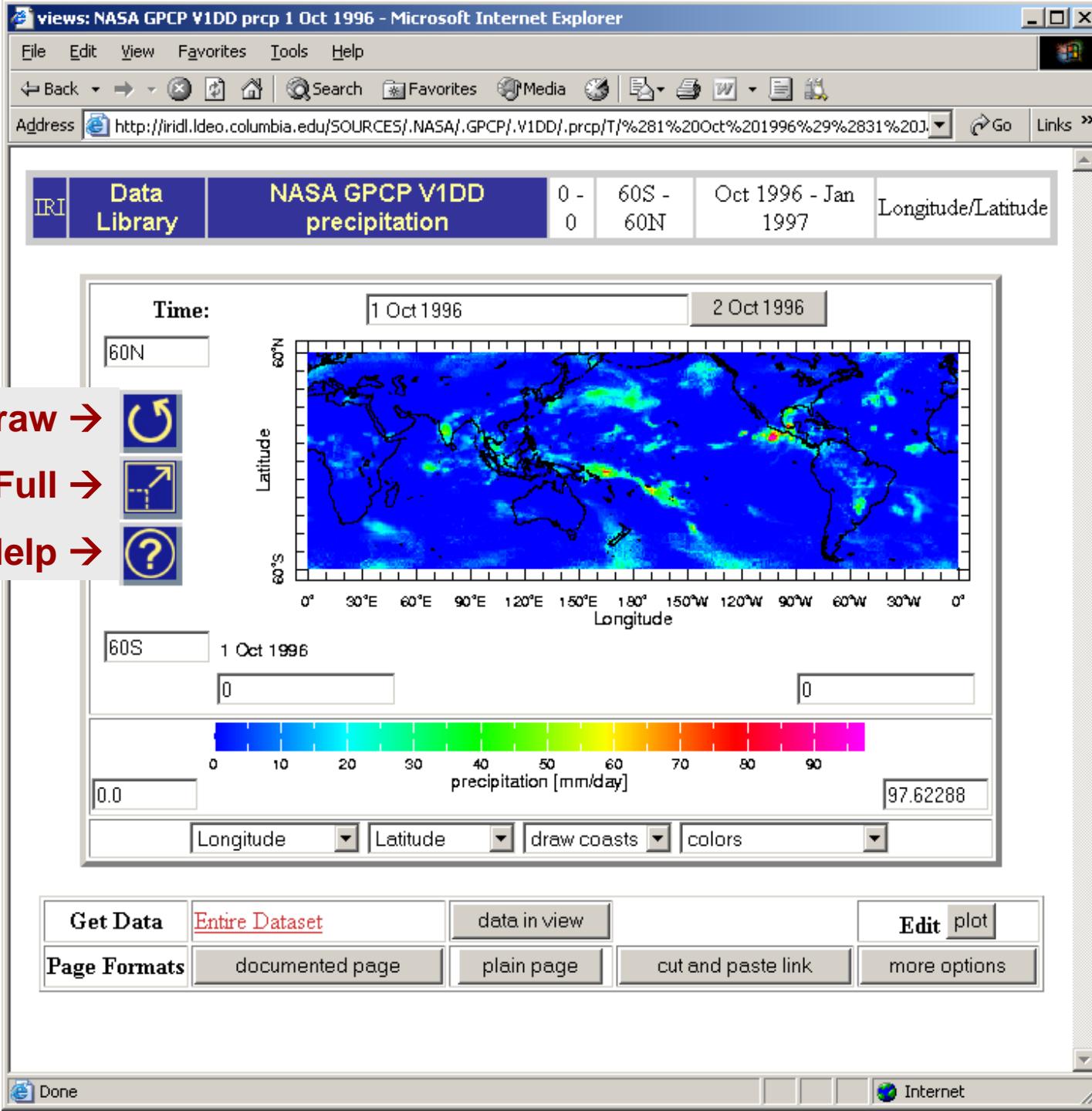
grid: /Y (degree_north) ordered (59.5S) to (59.5N) by 1. N= 120 pts :grid

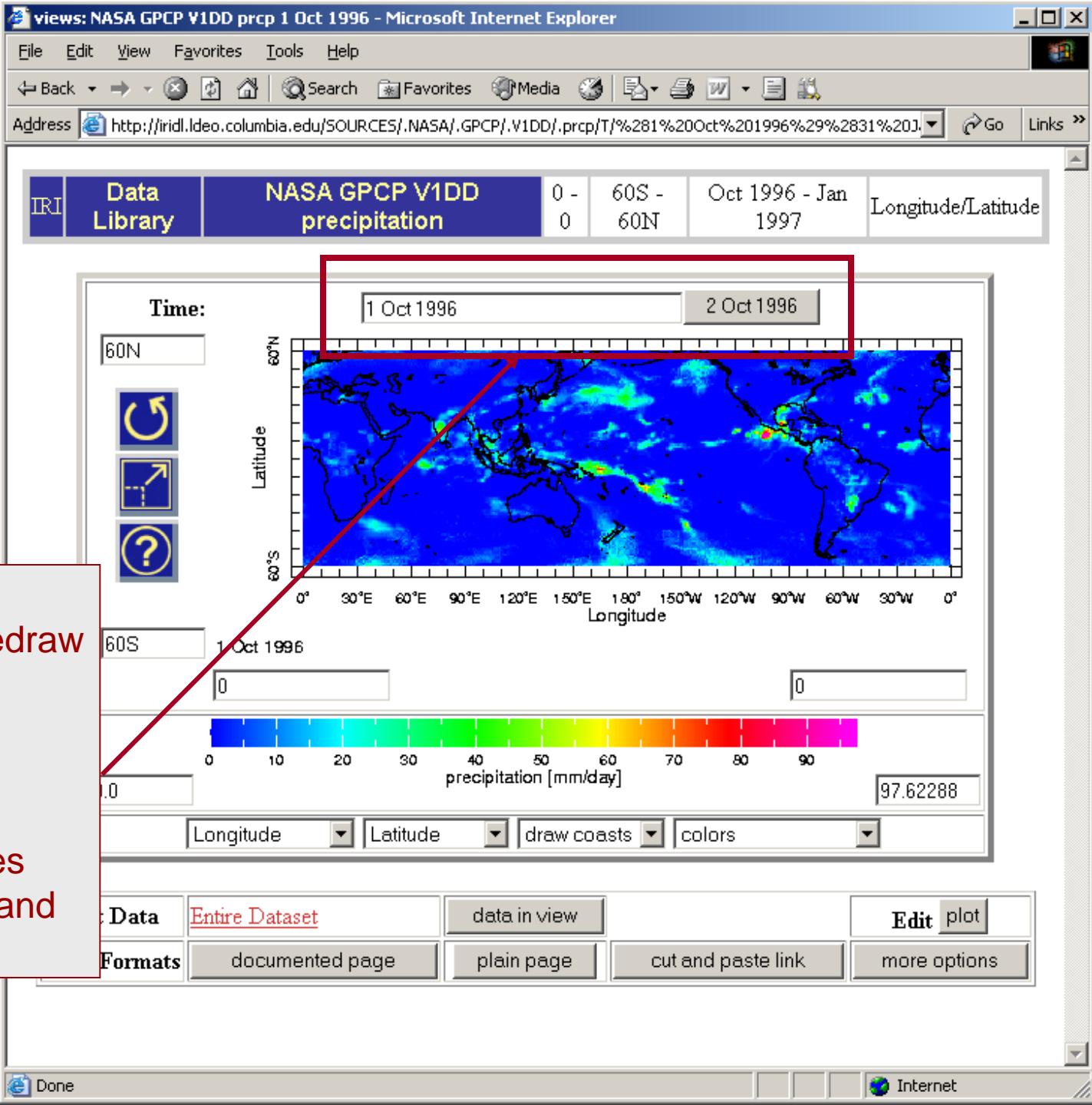
Other Info

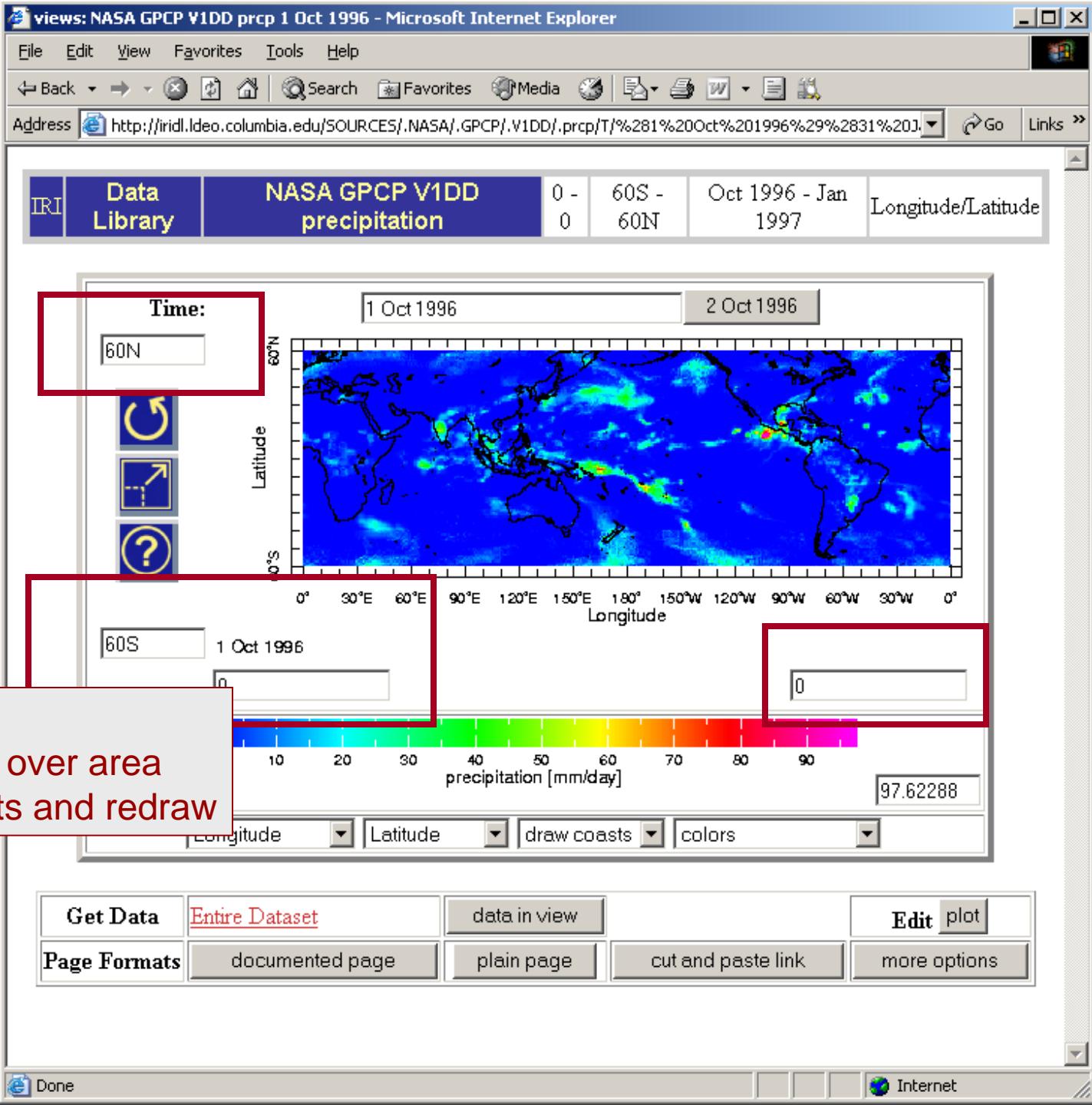
bufferwordsizes

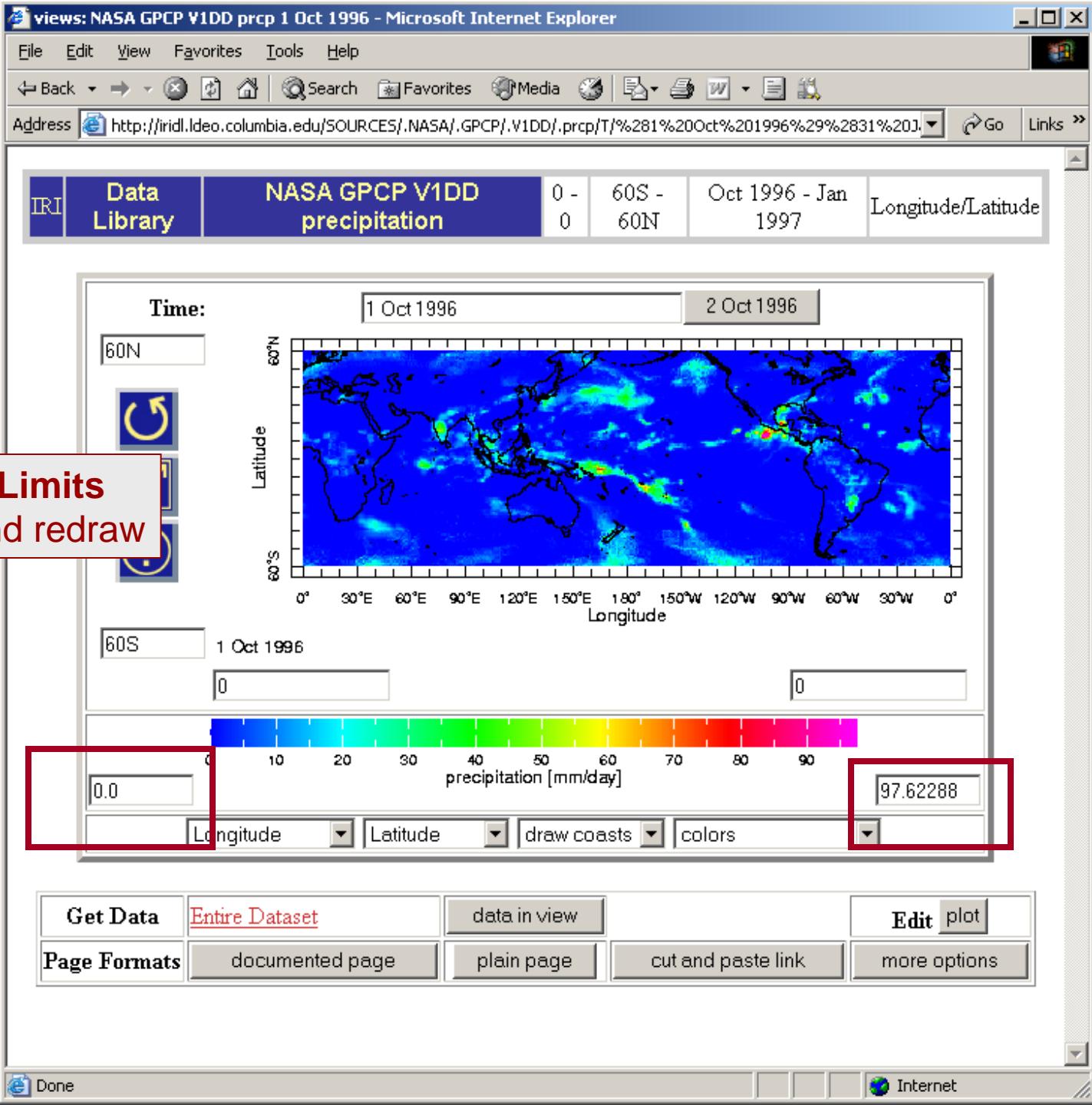
4

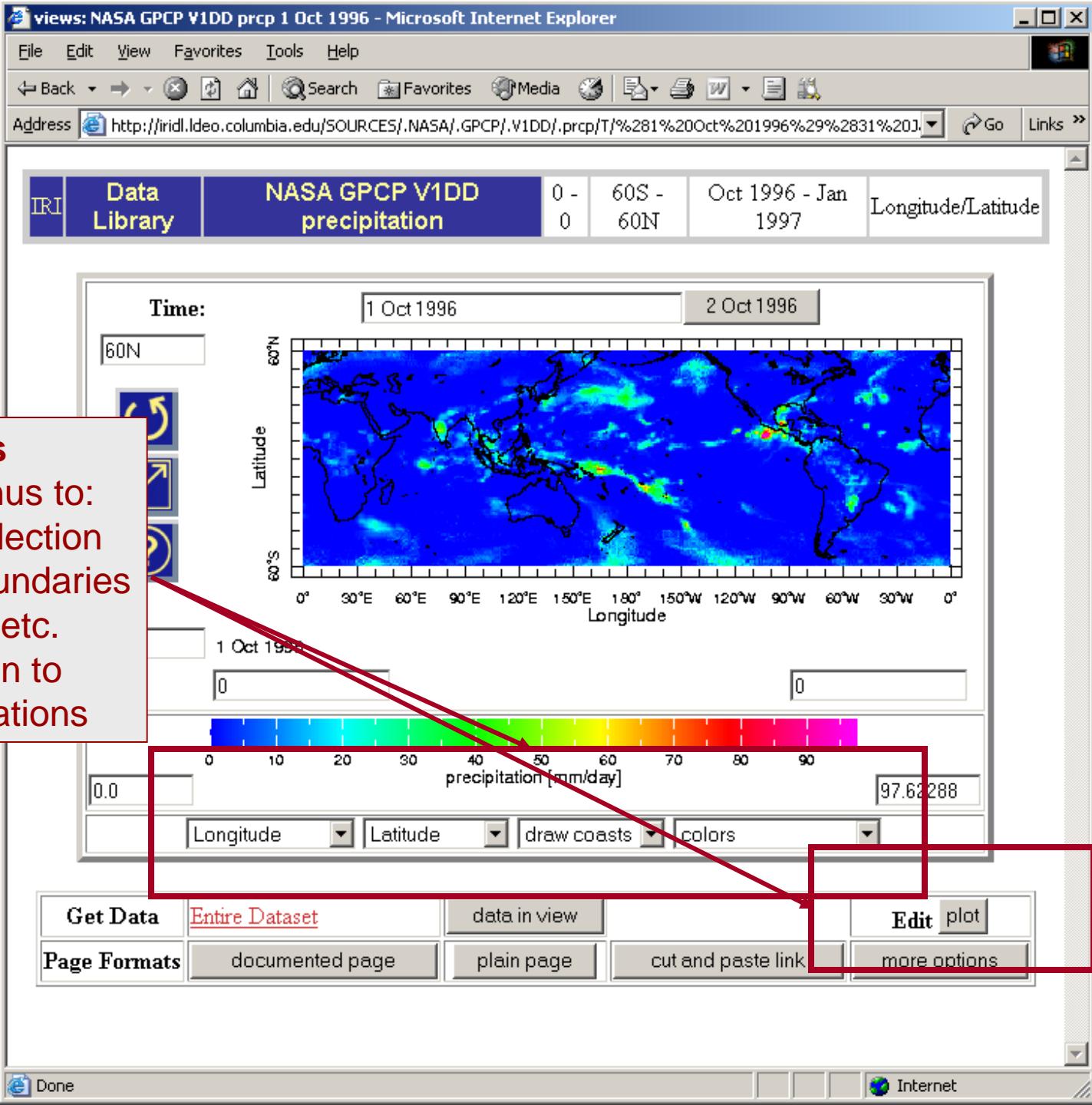
datatype

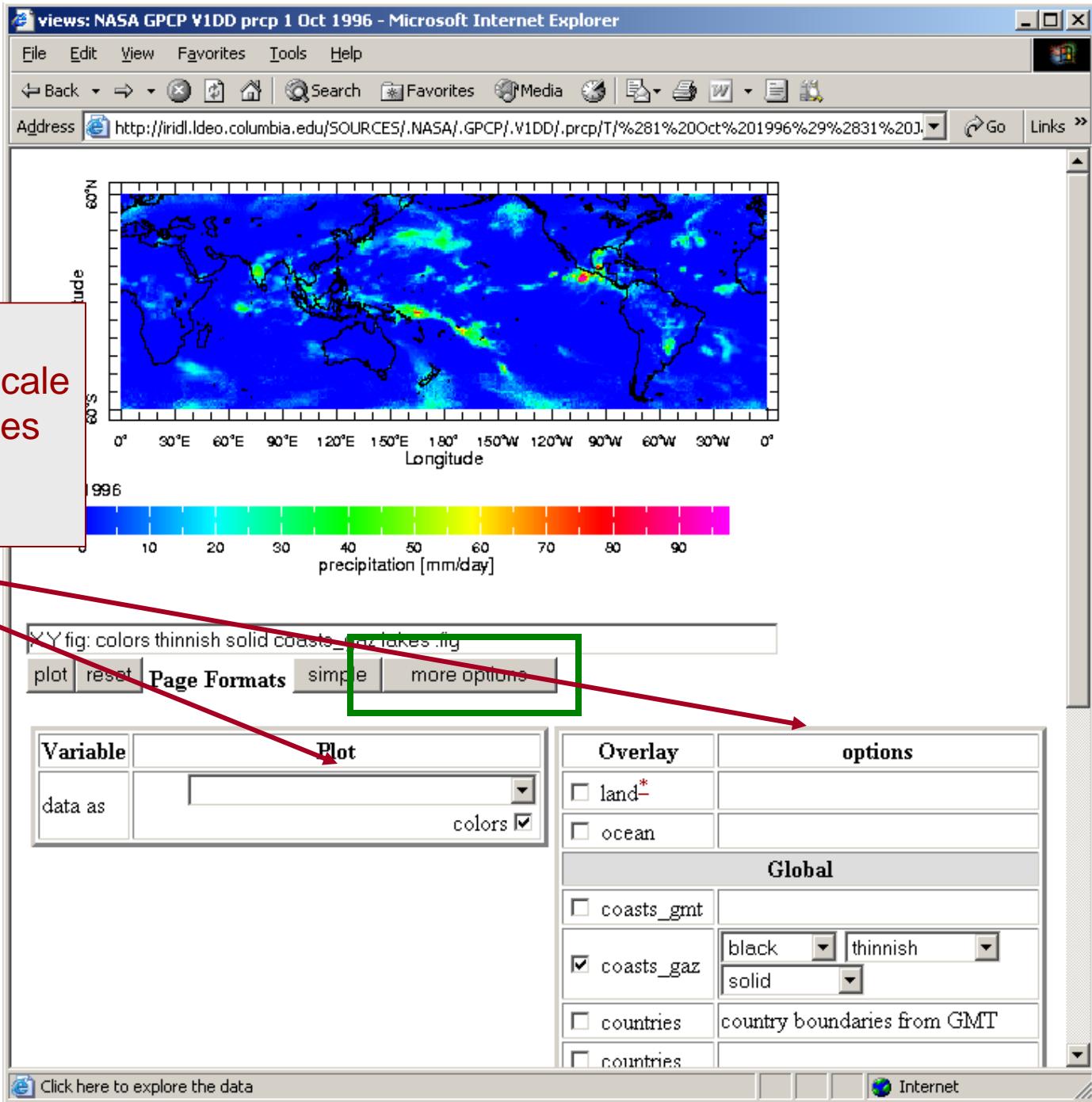


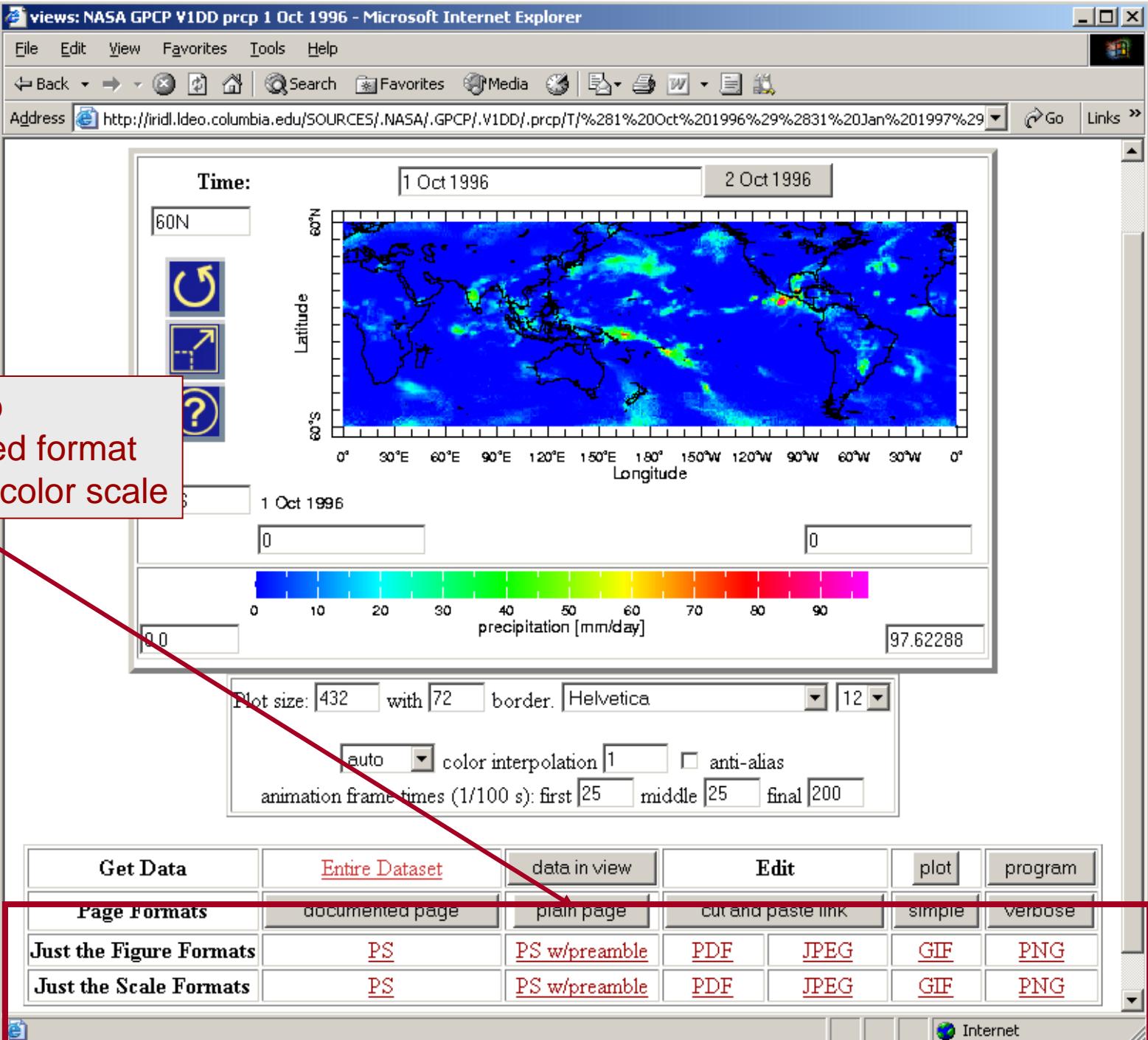


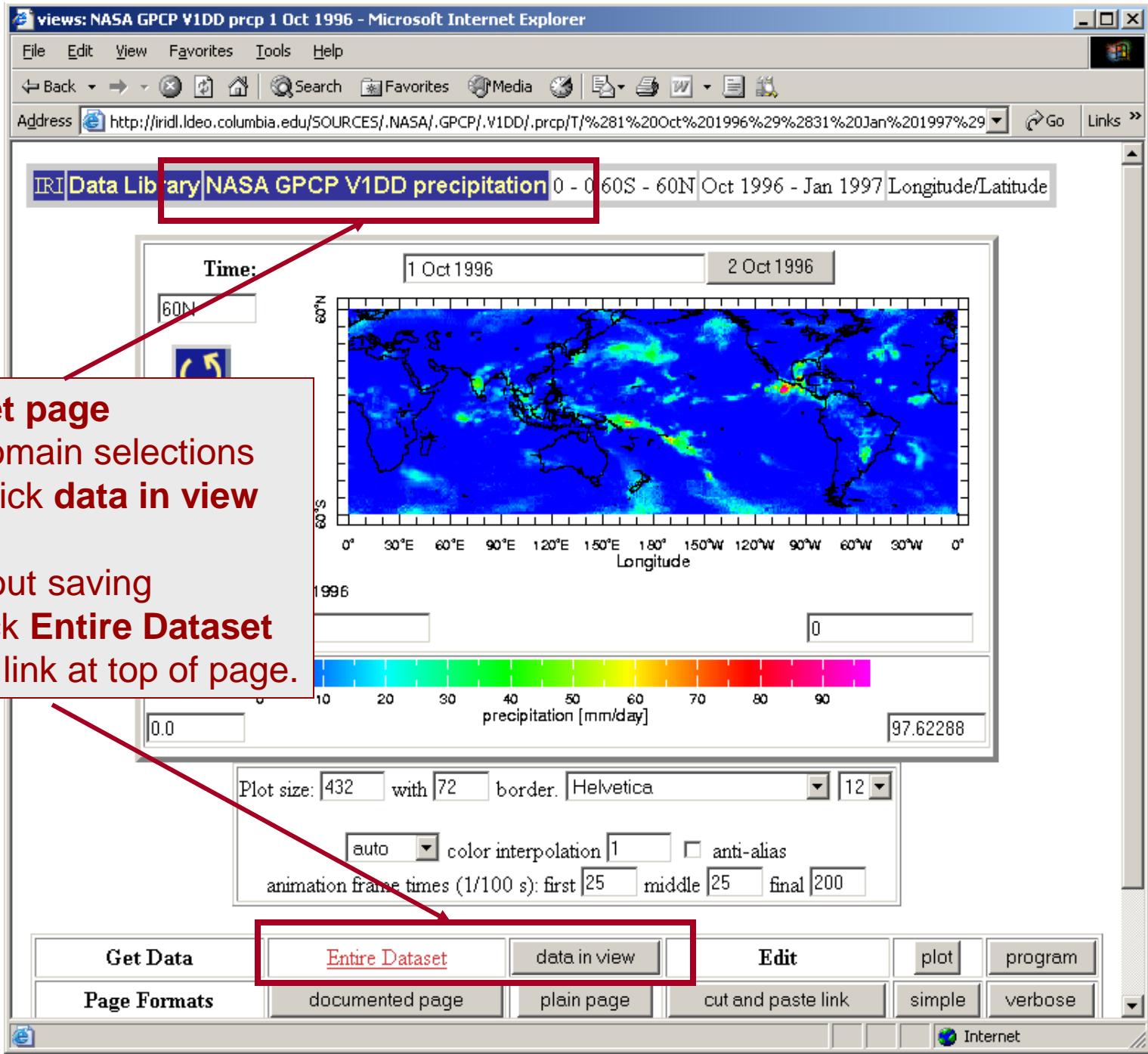








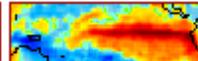
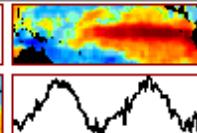
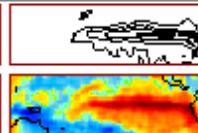
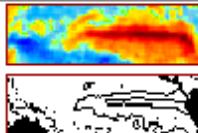




Downloading Data Files



NASA GPCP V2 satellite-gauge prcp options

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NASA GPCP V2 satellite-gauge prcp: precipitation data

Satellite-gauge precipitation from NASA GPCP: Combined satellite-gauge precipitation estimates
and error estimates from the Global Precipitation Climatology Project.

Grids

Time grid: /T (months since 1960-01-01) ordered (Jan 1979) to (Feb 2006) by 1. N= 326 pts /grid

Longitude

grid: /X (degree_east) periodic (1.25E) to (1.25W) by 2.5 N= 144 pts /grid

Latitude

grid: /Y (degree_north) ordered (88.75N) to (88.75S) by 2.5 N= 72 pts /grid

Other Info

 NASA GPCP V2 satellite-gauge prcp data files - Microsoft Internet Explorer

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NASA GPCP V2 satellite-gauge prcp data files - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Hypothetical

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Partial Information Formats

These files contain only some of the available metadata.

Columnar Table	A table with separate columns of numbers for each independent variable (i.e., grids) and for the data. This is an inefficient format, so you would have gotten a HUGE file for dataset of this size. This file will be approximately 54079488 bytes, with 4 columns of 3379968 numbers.
2-Dimensional Tab-Separated Tables Y X Table X Y Table	Tab-separated-values (tsv) file with information about the independent variables (i.e., grids). The list to the left allows you to specify the format of the table. Note: The variable running across the top of the table (identifying columns) is listed first and the variable running down the side of the table (identifying rows) is listed second.

GIS-Compatible Formats

There are three GIS-compatible formats available.

<u>2-Dimensional Table</u>	A 2-dimensional ascii file that includes an ArcInfo Header.
<u>IDA Image</u>	File(s) in the Image Display and Analysis format. Typically used with WinDisp.
<u>LAN Image</u>	File(s) in the ERDAS LAN format. Typically used with various GIS programs, including ArcView and HealthMapper.

Data Only Formats

These files contain just the data without any of the available metadata

<u>Binary direct access</u>	A big-endian, ieee single-precision file in floating-point format. Also known as a binary random access file. This is a random-access file; it is purely data with no record-structuring information. The data is structured to correspond to the independent variables (i.e., grids) in X Y T order, with the first grid varying the fastest.
<u>DEC ALPHA direct access</u>	Same as the binary random/direct access format above except that it is byte-swapped for DEC ALPHA's and PC's (little-endian).

data: NASA GPCP V2 satellite-gauge prcp - Microsoft Internet Explorer

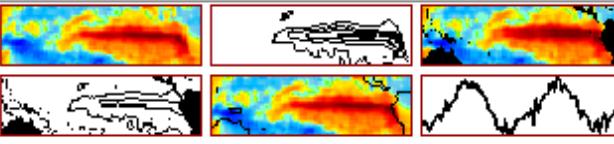
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Address <http://iridl.ldeo.columbia.edu/SOURCES/.NASA/.GPCP/.V2/.satellite-gauge/.prcp/> Go Links

NASA GPCP V2 satellite-gauge prcp options

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[NASA](#) [GPCP](#) [V2*](#) [satellite-gauge](#) [precipitation](#)

A GPCP V2 satellite-gauge prcp: precipitation data

v2 satellite-gauge precipitation from NASA GPCP: Combined satellite-gauge precipitation estimates and error estimates from the Global Precipitation Climatology Project.

Grids

Time grid: /T (months since 1960-01-01) ordered (Jan 1979) to (Feb 2006) by 1. N= 326 pts /grid

Longitude grid: /X (degree_east) periodic (1.25E) to (1.25W) by 2.5 N= 144 pts /grid

Latitude grid: /Y (degree_north) ordered (88.75N) to (88.75S) by 2.5 N= 72 pts /grid

Other Info

[get data as a table in a variety of formats](#)

Internet



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dataset

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NASA GPCP V2 satellite-gauge precipitation Dec 2005 data tables

Rectangular array of data

The following list lets you specify the top and side grids of the table.

[Y X Table](#)
[X Y Table](#)

2D Tab-Separated Tables

The above table is also available as a tab-separated-values file. The following list lets you specify the top and side grids of the table.

[Y X Table](#)
[X Y Table](#)

Columnar Tables

The NASA GPCP V2 satellite-gauge precipitation Dec 2005 data are available as a [columnar table](#), i.e. as multiple columns of data, intended primarily to be read. However, if you have other intentions for this table, or simply do not like the default choices, you may want to choose from the [columnar tables with options](#).

Data Table - Microsoft Internet Explorer

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Address http://iridl.ldeo.columbia.edu/expert/SOURCES/.NASA/.GPCP/.V2/.satellite-gauge/.prcp/T/%28Dec%2020

Data Table

The table will include the following columns:

X
Y
NASA GPCP V2 satellite-gauge prcp

This table is intended primarily to be read. However, you may have other intentions for this table, so we provide a number of options below so that you may generate as useful a table as possible.

Get Table

Option

Note: If planning to import into Excel, select **tsv** format from **columnar tables with options** page.

Column 1 Column 2 Column 3

Missing Data Missing Data Marker File Type End-of-Line Marker

blankNaN html LF (unix)

Options not understood can be left unchanged

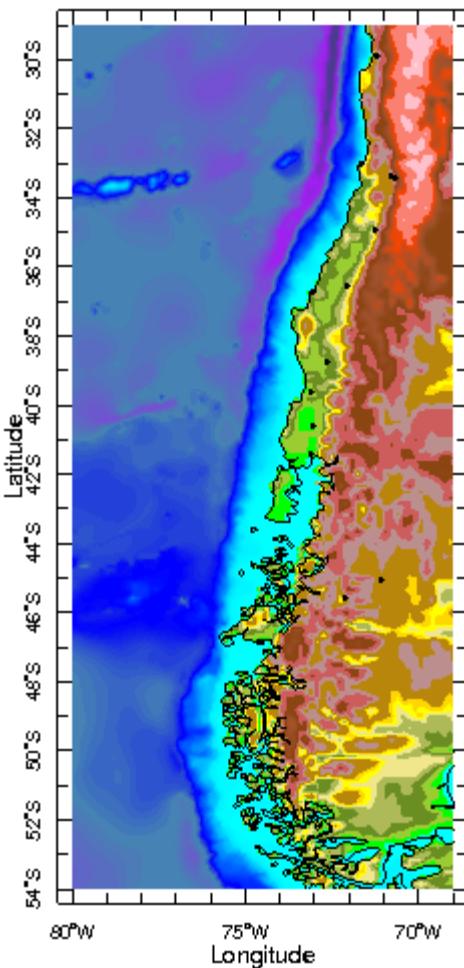
Column 1 ... 3

Numeric gives both the grid values and the data values as numbers; text gives times as month-year while continuing to give the data as numbers.

Missing Data

You have the choice of **skipping** (i.e. omitting) all lines that contain missing data, **blanking** missing data (i.e. there will still be a line), or **marking** missing data. The **Missing Data Marker** lets you specify the missing data marker in that marking case.

Done Internet



The Chilean Datalibrary

<http://www.climatedatalibrary.cl>

...find [the DMC dataset](#)

Group Examples

- Domain selections (spatial and temporal)
- Calculate...
 - Climatologies
 - Anomalies
 - Spatial averages
 - Seasonal averages
- Customize maps/graphs
- Create data masks

Group Example 1

- Use Datasets by Category catalog to find a data set with the following characteristics:
 1. Includes observed sea surface temperatures
 2. Monthly temporal resolution
 3. Spatial resolution at least $1^{\circ}\times 1^{\circ}$
 4. Includes $60^{\circ}\text{S}-60^{\circ}\text{N}$ in spatial domain
 5. Includes 1985-2005 in temporal domain

Group Example 1: Result

The screenshot shows a vintage-style Netscape browser window titled "dataset: NOAA NCEP EMC CMB GLOBAL - Netscape". The address bar displays the URL: <http://iridl.ldeo.columbia.edu/SOURCES/.NOAA/.NCEP/.EMC/.CMB/.GLOBAL/>. The main content area features the IRI logo and navigation links for "Data Library", "Finding Data", "Tutorial", "Questions & Answers", and "help@iri". The title "NOAA NCEP EMC CMB GLOBAL" is prominently displayed, followed by a subtitle: "NOAA NCEP EMC CMB GLOBAL: Global SST data from Reynolds and Smith.". Below this, a section titled "Documents" includes a link to an "outline showing sub-datasets of this dataset". The text "Datasets and variables" is followed by two entries: "[Reyn_SmithOIv1](#) Sea surface temperature fields blended from ship, buoy and bias-corrected satellite data (Reynolds and Smith 1994)." and "[Reyn_SmithOIv2](#) SST fields updated from version 1 with more COADS data, new sea-ice to SST conversion algorithm, and 1971-2000 climatology.". A footer note states "Last updated: Tue, 09 Mar 2004 22:00:18 GMT". The bottom of the browser window includes a toolbar with icons for file operations and a status bar with the text "Expert Mode: even more options".

Group Example 2:

Prepare spatially averaged monthly SSTs in the Tropical Pacific region for 1986-2005 for use in Excel

- From the Reyn_SmithOlv2 monthly data... [START HERE](#)
 - Select the Sea Surface Temperature variable
 - Select Jan 1986 – Dec 2005 time period
 - Select region in Tropical Atlantic (10°S-10°N, 140°E-300°E)
 - Calculate spatial average (XY link on Filters page)
 - View Ingrid in Expert Mode
 - View data in data viewer
 - Download for use in Excel

Group Example 2: Result

data: mean [NOAA NCEP EMC CMB GLOBAL Reyn_SmithOlv2 monthly sst] - Netscape

File Edit View Go Bookmarks Tools Window Help

http://iridl.ldeo.columbia.edu/expert/SOURCES/NOAA/NCEP/EMC/CMB/GLOBAL/Reyn_SmithOl...

views: NOAA NCEP EMC CMB GLO... data: mean [NOAA NCEP EMC CM...

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mean [NOAA NCEP EMC CMB GLOBAL Reyn_SmithOlv2 monthly sst][T] M

expert SOURCES .NOAA .NCEP .EMC .CMB .GLOBAL .Reyn_SmithOlv2 .monthly .sst X (-30) (-10) RANGEEDGES T (Jan 1986) (Dec 2005) RANGEEDGES Y (10S) (10N) RANGEEDGES [X Y] average

Views Viewer Data Selection Filters Data Files Tables

served from IRI/DEO Climate Data Library

GLOBAL Reyn_SmithOlv2 monthly* Sea Surface Temperature X (-30) (-10) RANGEEDGES T (Jan 1986) (Dec 2005) RANGEEDGES Y (10S) (10N) RANGEEDGES [X Y] 0.0 average

mean [NOAA NCEP EMC CMB GLOBAL Reyn_SmithOlv2 monthly sst]: Sea Surface Temperature data

monthly sst sst sst sst Sea Surface Temperature from NOAA NCEP EMC CMB GLOBAL Reyn_SmithOlv2: SST fields updated from version 1 with more COADS data, new sea-ice to SST conversion algorithm, and 1971-2000 climatology.

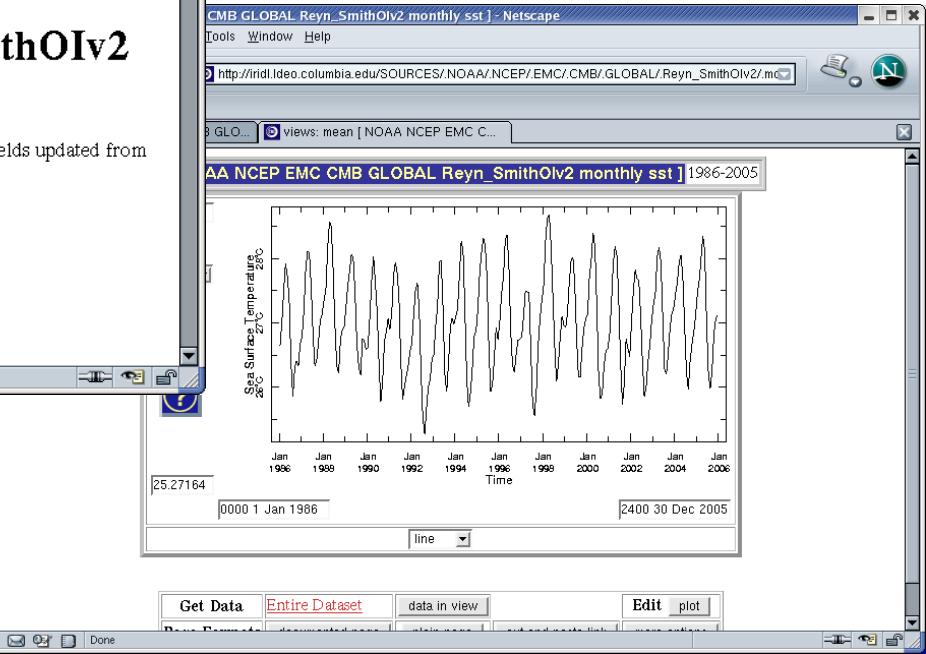
Grids

Time grid: /T (months since 1960-01-01) ordered (Jan 1986) to (Dec 2005) by 1. N= 240 pts :grid

Other Info

VIEW RESULT

To download data:
Click on Tables, select
tsv or csv file type, and
click Get Table button.



Group Example 3:

Make a map of seasonal global SSTAs for Jan 1982 – Dec 2005

- From the Reyn_SmithOlv2 monthly data... [START HERE](#)
 - Select the Sea Surface Temperature variable (Ignore the existing SSTA variable – we’re going calculate it)
 - Select the Jan 1982-Dec 2005 time period
 - Select anomalies link from Filters page
 - View Ingrid in Expert Mode
 - In Expert Mode enter the following text, then click OK.
T 3 runningAverage
- View data in data viewer
- Select a color scale appropriate for SSTA

Group Example 3: Result

views: NOAA NCEP EMC CMB GLOBAL Reyn_SmithOlv2 monthly sst anomalies Jan-Mar 1982 - Netscape

File Edit View Go Bookmarks Tools Window Help

http://iri.ideal.columbia.edu/expert/SOURCES/NOAA/NCEP/EMC/CMB/GLOBAL/Reyn_SmithOl...

Manipulating Data

data: NOAA NCEP EMC CMB GLOB...

NOAA NCEP EMC CMB GLOBAL Reyn_SmithOlv2 monthly sst anomalies [X Y | T] M M N

expert
SOURCES .NOAA .NCEP .EMC .CMB .GLOBAL
.Reyn_SmithOlv2 .monthly .sst
T (Jan 1982) (Dec 2005) RANGEEDGES
yearly-anomalies
T 3 runningAverage

NEW Views Data Selection Filters

CMB GLOBAL Reyn_SmithOlv2 monthly* Sea Surface Temperature T (Jan 1982) (Dec 2005) yearly-anomalies RANGEEDGES

NOAA NCEP EMC CMB GLOBAL Reyn_SmithOlv2 monthly sst anomalies: Sea Surface Temperature data

monthly sst sst sst Sea Surface Temperature from NOAA NCEP EMC CMB GLOBAL Reyn_SmithOlv2: SST fields version 1 with more COADS data, new sea-ice to SST conversion algorithm, and 1971-2000 climatology.

Grids

Time
grid: /T (months since 1960-01-01) ordered (Jan-Mar 1982) to (Oct-Dec 2005) by 1. N= 286 pts :grid

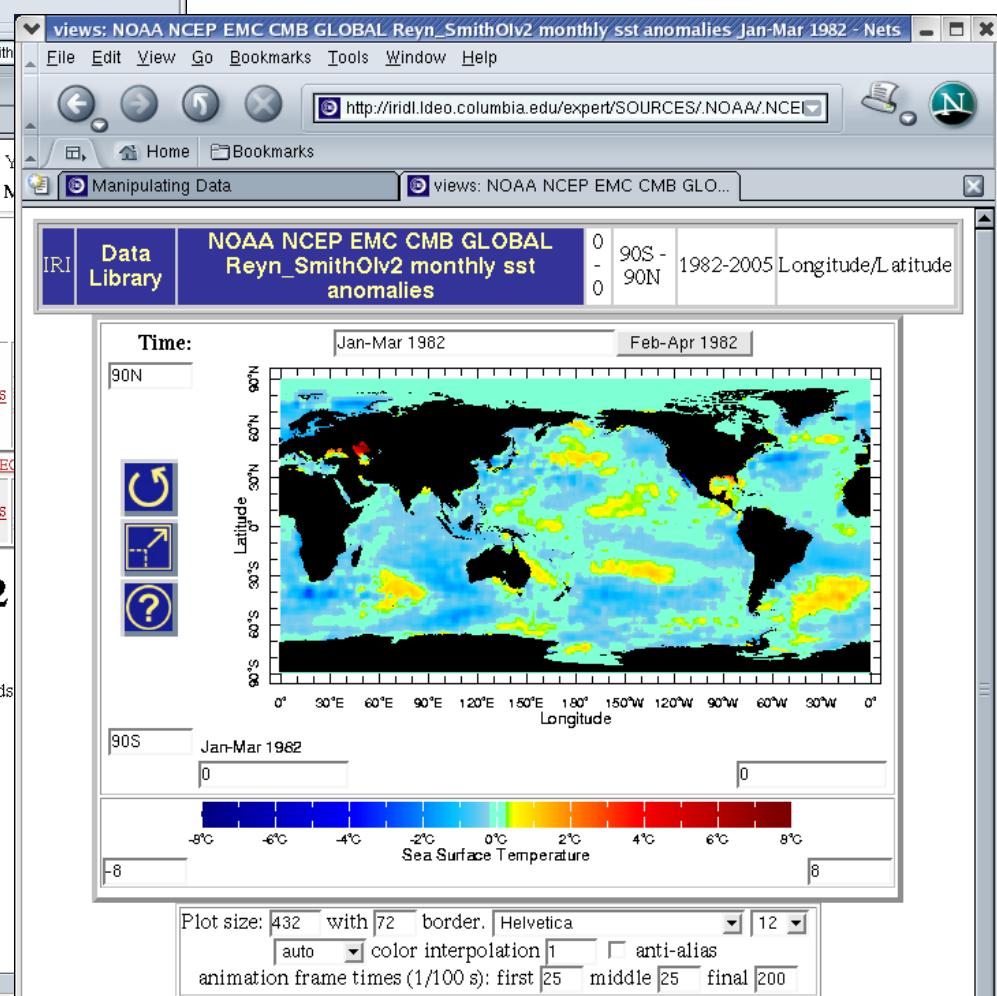
Longitude
grid: /X (degree_east) periodic (0.5E) to (0.5W) by 1. N= 360 pts :grid

Latitude
grid: /Y (degree_north) ordered (89.5S) to (89.5N) by 1. N= 180 pts :grid

Other Info

monthly sst sst Sea Surface Temperature from NOAA NCEP EMC CMB GLOBAL Reyn_SmithOlv2: SST fields updated fr...

VIEW RESULT



Get Data	Entire Dataset	data in view	Edit	plot	program
Page Formats	documented page	plain page	cut and paste link	simple	verbose
Just the Figure Formats	PS	PS w/preamble	PDF	JPEG	GIF
Just the Scale Formats	PS	PS w/preamble	PDF	JPEG	GIF
					PNG

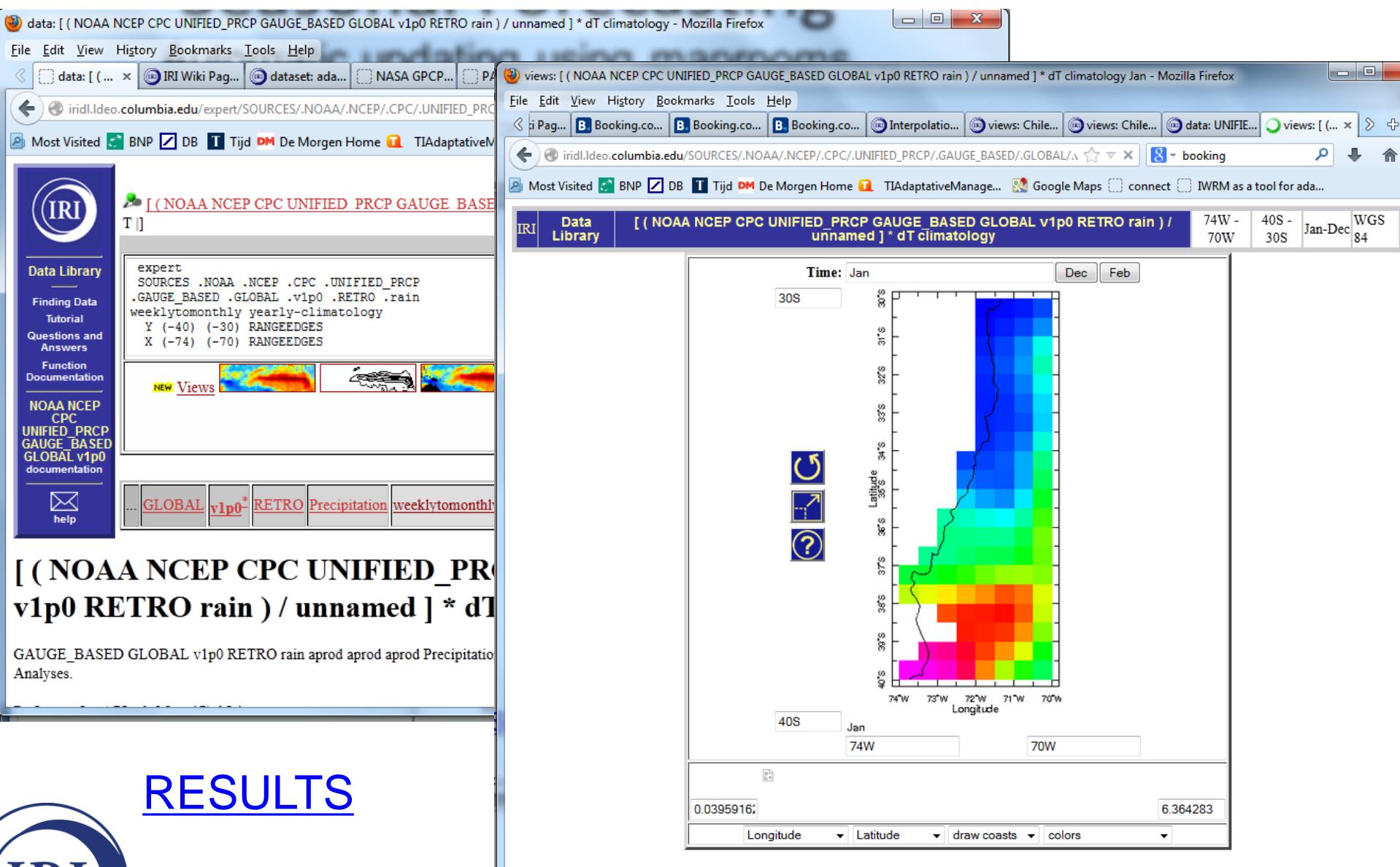
Done

Group Example 6:

Make an animated map of monthly climatological temperature in Chile, including provincial boundaries and major rivers

- Locate the UNIFIED_PRCP dataset (NOAA/CPC)
- Select the daily RETRO precipitation variable
 - Convert to monthly with: weeklytomonthly
 - Select a climatology base period (1980-2000)
 - Select Monthly Climatology link from Filters page
 - View Ingrid in Expert Mode
 - View data in data viewer
 - Select region around Chile
 - Select a color scale for precipitation and add state and river overlays
 - Animate map by entering “Jan to Dec” in time text box

Group Example 6: Result



Analysis Options...

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- A. Introduction

<http://iridl.ldeo.columbia.edu/dochelp/StatTutorial/>

An Introduction to the Data Library

More questions?

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