Data Management Processes and Plans for HIPPO

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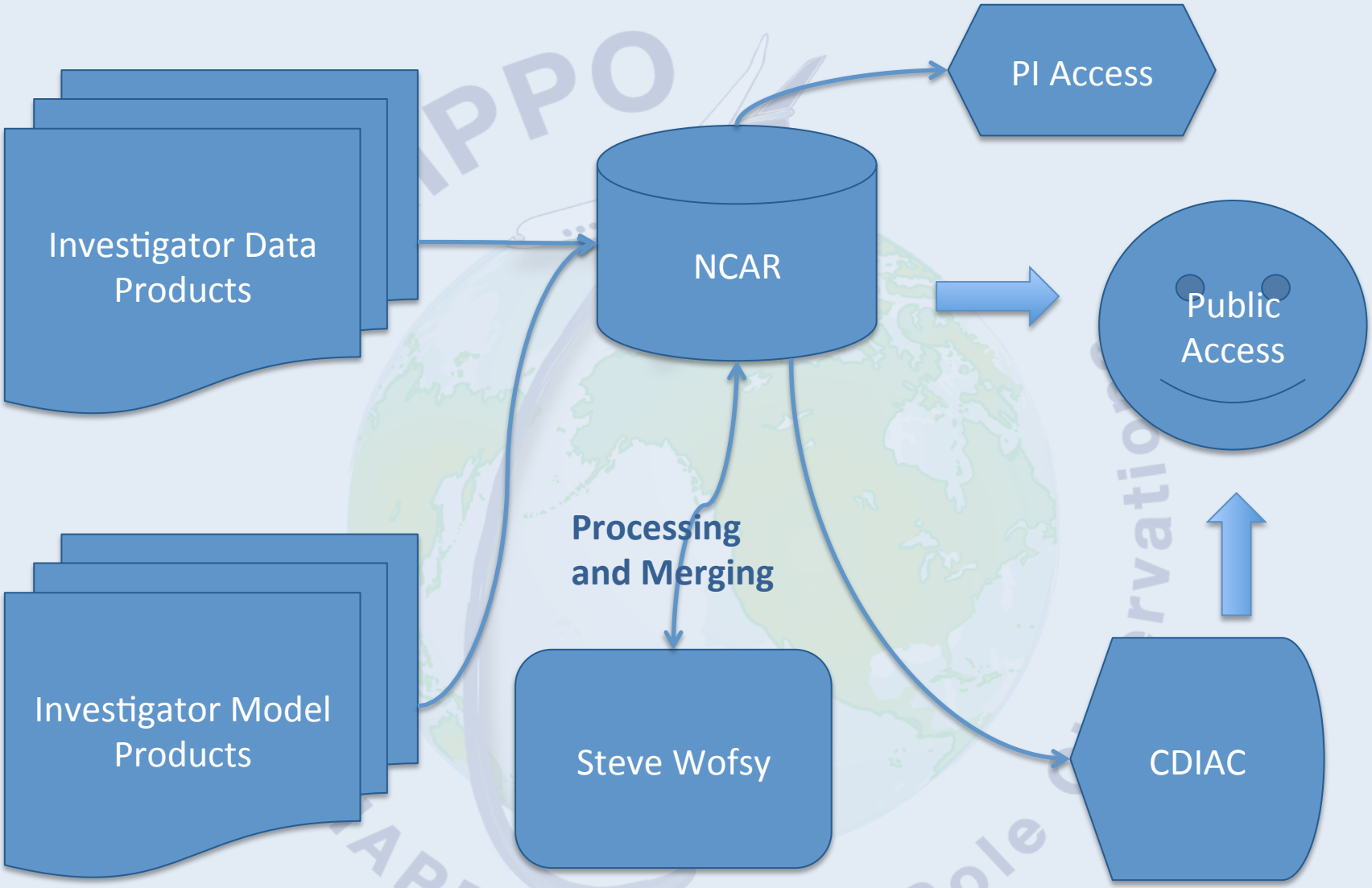
Boulder, CO

HIPPO Science Team Meeting
March 12-13, 2012
NOAA David Skaggs Research Center
Boulder, CO

HIPPO Data Flow



HIPPO Project Data Flow: Greater NCAR Involvement

- Overview of Data Flow
- Tag-team Presentation on Parts
- How You Can Help

Steve Has Something to Say...

- Charge to the PIs
- What needs to be provided, when?
- Importance of versioning, explaining differences
- Other points?

HIPPO Data Flow: Functional Overview

Data Providers

Investigator Raw Data (level 0)

Investigator Data (level 1)

NCAR Aircraft Data (level 1)

Model Products and Code Synthetic output/graphs (level 3)

Processing and Archiving

SECURE FTP SERVER

NCAR

Data Product Generation

R codes and Linux scripts Merged/QAQC Files (level 2)

S. Wofsy and NCAR

Movie Generation

Movie scripts Movies (level 3)

NCAR

ARCHIVE

All Data Products at All Processing and Quality Levels

Version Control

NCAR

Project and Public Access

PI Access

NCAR Web Access

Public Access

CDIAC Web Access

HIPPO HIAPER Pole-to-Pole Observations

Development Deployment Data Services Discovery EARTH OBSERVING LABORATORY

CDIAC

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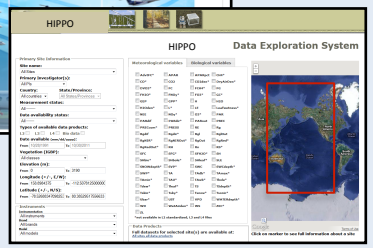

HIPPO HIAPER Pole-to-Pole Observations

Development Deployment EARTH OBSERVING LABORATORY Data Services Discovery

CDIAC

HIPPO Project & Data Management Web Site at NCAR/EOL

HIAPER Pole-to-Pole Observations

What's New?

Quick access to movies

Data Access

The HIPPO data archive is distributed between EOL and CDIAC. Merged aircraft datasets can be found by accessing the HIPPO Aircraft merged data download site at CDIAC [ORNL]. Supporting datasets are archived here at EOL. See links by phase below.

Data Policy
Data Fair Use Policy
Data Set Documentation Guidelines
Data Submission Instructions
NASA Ames format specification

HIPPO-1	HIPPO-2	HIPPO-3	HIPPO-4	HIPPO-5
Field Phase Info	Field Phase Info	Field Phase Info	Field Phase Info	Field Phase Info
Flight Table Field Catalog EOL Data Access CDIAC Data Access	Flight Table Field Catalog EOL Data Access CDIAC Data Access	Flight Table Field Catalog EOL Data Access CDIAC Data Access	Flight Table Field Catalog EOL Data Access CDIAC Data Access	Flight Table Field Catalog EOL Data Access CDIAC Data Access
Documentation	**Documentation**	**Documentation**	**Documentation**	**Documentation**
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Project Description

The "Collaborative Research: HIAPER Pole-to-Pole Observations (HIPPO) of Carbon Cycle and Greenhouse Gases Study" will measure cross sections of atmospheric concentrations approximately pole-to-pole, from the surface to the tropopause, five times during different seasons over a three year period. A comprehensive suite of atmospheric trace

Documentation

Checksum Info V1
Dictionary of Parameters in Merged Data V4
Instrument Descriptions V3

Steve Wofsy's Homepage:

- Project Description
- Logistics
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www.eol.ucar.edu/projects/hippo

“FIELD” DATA ACCESS

Boulder: Wed, Mar 7, 4:29 PM	UTC: Wed, Mar 7, 23:29 Z	Anchorage: Wed, Mar 7, 2:29 PM
Honolulu: Wed, Mar 7, 1:29 PM	Pago Pago: Wed, Mar 7, 12:29 PM	Christchurch: Thur, Mar 8, 12:29 PM
Papeete: Wed, Mar 7, 1:29 PM	Easter Island: Wed, Mar 7, 6:29 PM	San Jose: Wed, Mar 7, 5:29 PM

Quick Links:

G-V Instrument Status

Operations Plan of the Day

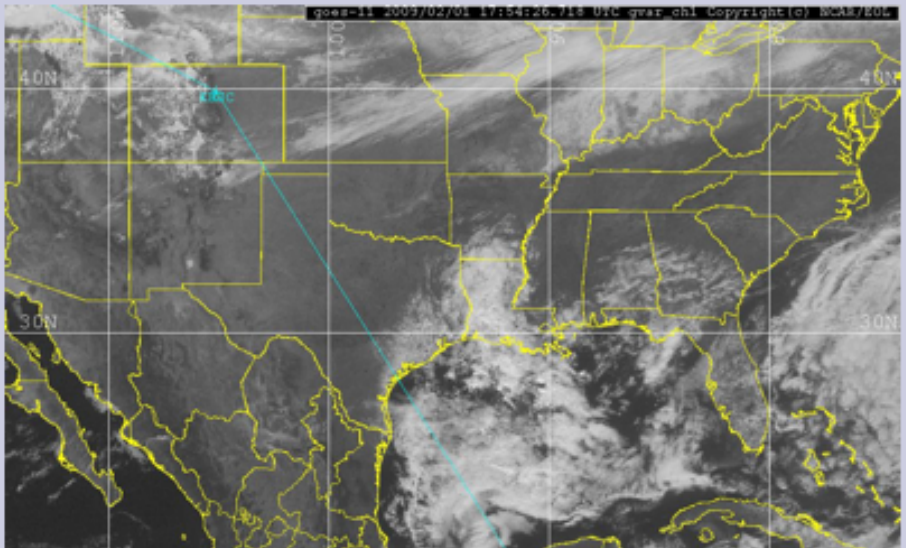
Weather Discussion

Real-Time HIPPO kml

Waypoints kml

**(Download KML first, *right-mouse click*

Current Loop



General Information:

Time Zone Conversion chart

Instrument Alert Info

Teleconference Access Numbers:

1-866-740-1260 (US toll free)
PagoPago: 1-303-248-0285 (toll)
New Zealand: 0800450780 (free)
Tahiti: 00-1-303-248-0285 (toll)
Easter Is: 188800201836 (Free)
Costa Rica: 00-1-303-248-0285 (toll)

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Movies!!!

HIAPER Pole-to-Pole Observations

What's New?

This page contains movies created from images taken by the forward-looking digital camera aboard the G-V during HIPPO. Movies for HIPPO-1 are final and contain selected data parameters along the right. Movies for HIPPO-2 thru 5 are preliminary and do not contain data. They will be regenerated as final data become available.

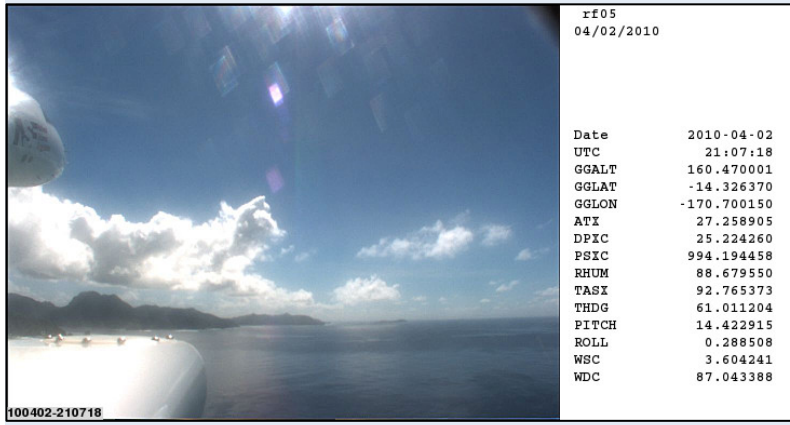
Movie Access

- Click the image to watch the research-quality movie.
- **Click the YouTube icon to watch the educational version of the video**

Note: Not all flights have educational videos available.

HIPPO-1	HIPPO-2	HIPPO-3	HIPPO-4	HIPPO-5
No movie for RF01	RF01 2009/10/31 16:29:40-22:35:44	RF01 2010/03/24 18:44:53-00:46:59	RF01 2011/06/14 16:03:55-21:53:13	RF01 2011/08/09 15:04:37-20:07:55
RF02 2009/01/09 20:24:19-04:04:59	RF02 2009/11/03 18:37:48-01:58:44	RF02 2010/03/26 17:59:00-02:10:59	RF02 2011/06/16 18:09:33-03:04:02	RF02 2011/08/11 14:58:08-21:46:38
RF03	RF03	RF03	RF03	RF03

Movies at 15fps with navigation and state data streaming along the right edge. Click on the YouTube icon to watch the educational versions of the video (not available for all videos).



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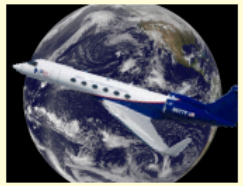

DATA BY CATEGORY

- Aircraft

to HIPPO-1

comments & questions to
c@ucar.edu

What supplemental data do you need?

- **Satellite**: *geosynchronous, polar orbiting, etc…*
- **Model**: *weather, chemistry, etc…*
- **Soundings**: *COSMIC, GTS, etc…*
- **Ocean data**: *SST, ships*

janine@ucar.edu

HIPPO-1 Data Sets

Data Set Name (Responsible Group/PIs shown in parentheses)	Date Posted	Info
Aircraft		
HIPPO Aircraft merged data download site at CDIAC [ORNL]	2011-02-25	README
HIPPO Data Policy [ORNL]	2011-11-10	
HIPPO Fair Use Policy [ORNL]	2011-11-10	
HIPPO profile designations (Phase 1, 2, and 3) [Wofsy/Harvard]	2011-04-20	
HIPPO-1 Merged 1-second Meteorology, Atmospheric Chemistry, and Aerosol Data [Wofsy/Harvard]	**Updated 2011-11-18**	README
HIPPO-1 Merged 10-second Meteorology, Atmospheric Chemistry, and Aerosol Data [Wofsy/Harvard]	**Updated 2011-11-18**	README
Aircraft: NSF/NCAR GV		
Airborne Oxygen Instrument (AO2) [Stephens, NCAR/EOL]	2011-03-11	README
Chemistry CO [Campos, NCAR/EOL]	**Updated 2011-10-06**	README
ERA-Interim Meteorological Fields Interpolated to HIPPO-1 Flight Tracks - NASA AMES format [Ray, E. NOAA/ESRL]	2011-10-03	
Forward-Looking Digital Camera Imagery [NCAR/EOL/RAF]	2010-02-04	README
Forward-Looking Digital Camera Movies - Preliminary [NCAR/EOL/RAF]	2010-07-20	README
Forward-Looking Digital Camera Movies with data - Final [NCAR/EOL/RAF]	2011-03-21	README
HAIS Advanced Whole Air Sampler (AWAS) [Atlas, U. Miami]	2011-03-11	README

http://data.eol.ucar.edu/master_list/?project=HIPPO-1

HIPPO Data Flow: CDIAC Expanded Functions

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Project and Public Access

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Composite - Merged Products

10-second ALLMERGE

Flask-averaged:

- AWAS
- NWAS-MAGIC
- MEDUSA

MTP

Profile-processed Products

Model Products, Codes and Inputs

Additional Value Added and Integrated Products, Graphs…

Data Subsetting Tool

HIPPO Data Exploration System

EARTH OBSERVING LABORATORY

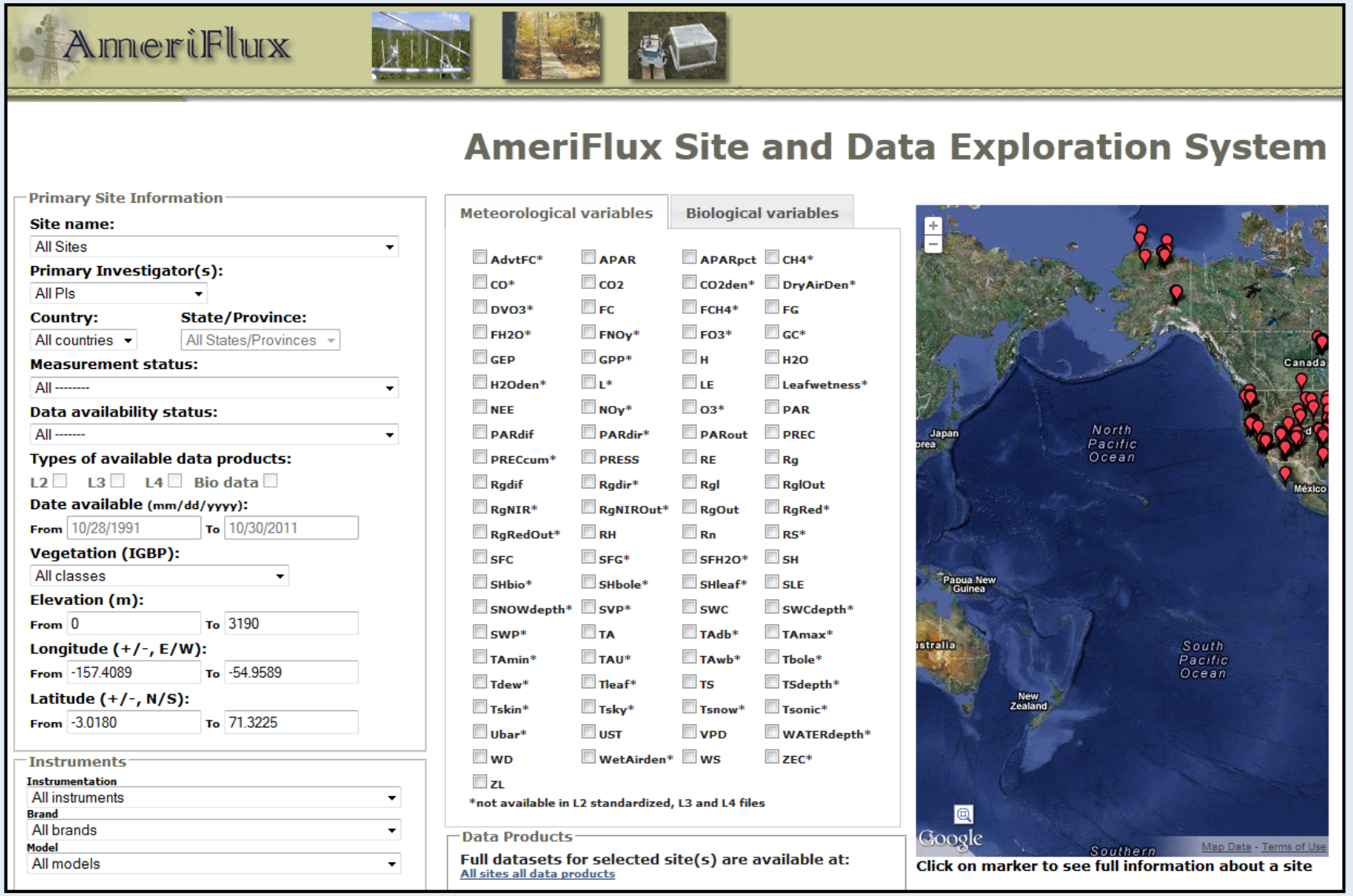
Development Deployment Data Services Discovery

CDIAC

CDIAC Serves the Main Products to the Public

- This is CDIAC's traditional role
- Most Level 2 (10-s and flask merges) and Level 3 products
  - Mirrored from NCAR, using NCAR versions
- CDIAC develops
  - Supplemental documentation
  - Includes a Revision History
  - Permanent data set citation with DOI
  - Searchable/shared metadata record reaches wider audience
- Anonymous access to data
  - Metrics can be developed
- Registration option could offer notification about updates
  - Could also allow more detailed use metrics to be developed
- Data subsetting capability is planned

HIPPO Data Subsetting Tool: Spatial, Temporal, Parameter, Mission and Flight Subsetting. Flight graphics. More?



Level 3 Products Evolving

- Profiles?
- MTP product(s)?
- Link to NCAR's final research movies with data
- Model products and code/inputs
  - Careful versioning will be critical
  - Content management system(s) could help
  - We'll provide packages, not execution
- Other value-added and integrated products
  - Graphs
  - What else?

How You Can Help?

- Give NCAR good information about what has changed
- Be available to CDIAC for questions about variables, methods, etc.
- Use data set citations in papers
  - And, add data set citations to your resume
- Modelers consider content management/ revision control systems to keep code, input, and output aligned

Summary of Data Management for HIPPO

- PIs send data, information to NCAR
  - NCAR archives
- Steve Wofsy/NCAR generate merges
- NCAR provides all data to investigators via logins until finalized
- NCAR provides all data to public via the EOL data archive
- CDIAC provides main products to public
  - Develops documentation
- Listserve will let you know about changes