



PECAN DATA MANAGEMENT



Steve Williams and Scot Loehrer
NCAR Earth Observing Laboratory (EOL)
Computing, Data, and Software Facility (CDS)

PECAN Project Planning Meeting

Boulder, CO

12-14 May 2014



EOL PECAN support sponsored by



NCAR

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PECAN

Plains Elevated Convection at Night

June 1, 2015 to July 15, 2015 **Project Location:** United States Southern Great Plains

What's New?:

PECAN Planning Meeting, May 12-14, 2014 -- Agenda

To join the meeting remotely: [ReadyTalk Instructions](#)

Project Description:

The PECAN (Plains Elevated Convection at Night) campaign is envisioned as a multi-agency project (NSF, NOAA, NASA, DOE) designed to advance the understanding of continental, nocturnal, warm-season precipitation. PECAN will focus on nocturnal convection in conditions over the Southern Great Plains with a stable boundary layer (SBL), a nocturnal low-level jet (NLLJ) and the largest CAPE (Convectively Available Potential Energy) located above the SBL. Thunderstorms are most common after sunset across this region in summer and much of the resulting precipitation falls from mesoscale convective systems (MCSs). Nocturnal MCSs may produce heavy rainfall; their intensity is correlated with the NLLJ. To date, an accurate prediction and an in-depth understanding of elevated convection in this environment remains an elusive goal.

PARTICIPATING FACILITIES:

King Air w/ WCL, CIRPAS A-10, NCAR SPOLKa, 3 DOWs, 3 NCAR ISS, 449 Profiler, Field Catalog and Data Management, Ops Center, potentially Mission Coordinator Display for participating aircraft. Other facilities include NASA DC8, NOAA P3, SMART-Rs, RAXPOL, NOXP, FM-CW radar, MAX, Mobile mesonets, MIPS, Tethersondes, AERI, Water Vapor lidars, wind lidars, etc.

DATA DOCUMENTATION

- PECAN 2014 Dry Run Field Catalog
- PECAN Data Set
- Documentation ("Readme") Guidelines
- Pecan Draft Data Policy
- PECAN Data Submissions Instructions

PECAN DOCUMENTS

- PECAN EDO
- PECAN SPO
- PECAN OFAP Presentation

DATA ACCESS

- Data Access
- Field Catalog

- Project Description
- Data Access & Field Catalog
- Publications
- Documentation
- Meetings and Presentations
- Mailing Lists
- Education and Outreach
- Related Web Pages
- PI and Contact Information

https://www.eol.ucar.edu/field_projects/pecan



EOL Data Policy, Revised 5/5/2014

<https://www.eol.ucar.edu/content/eol-data-policy>

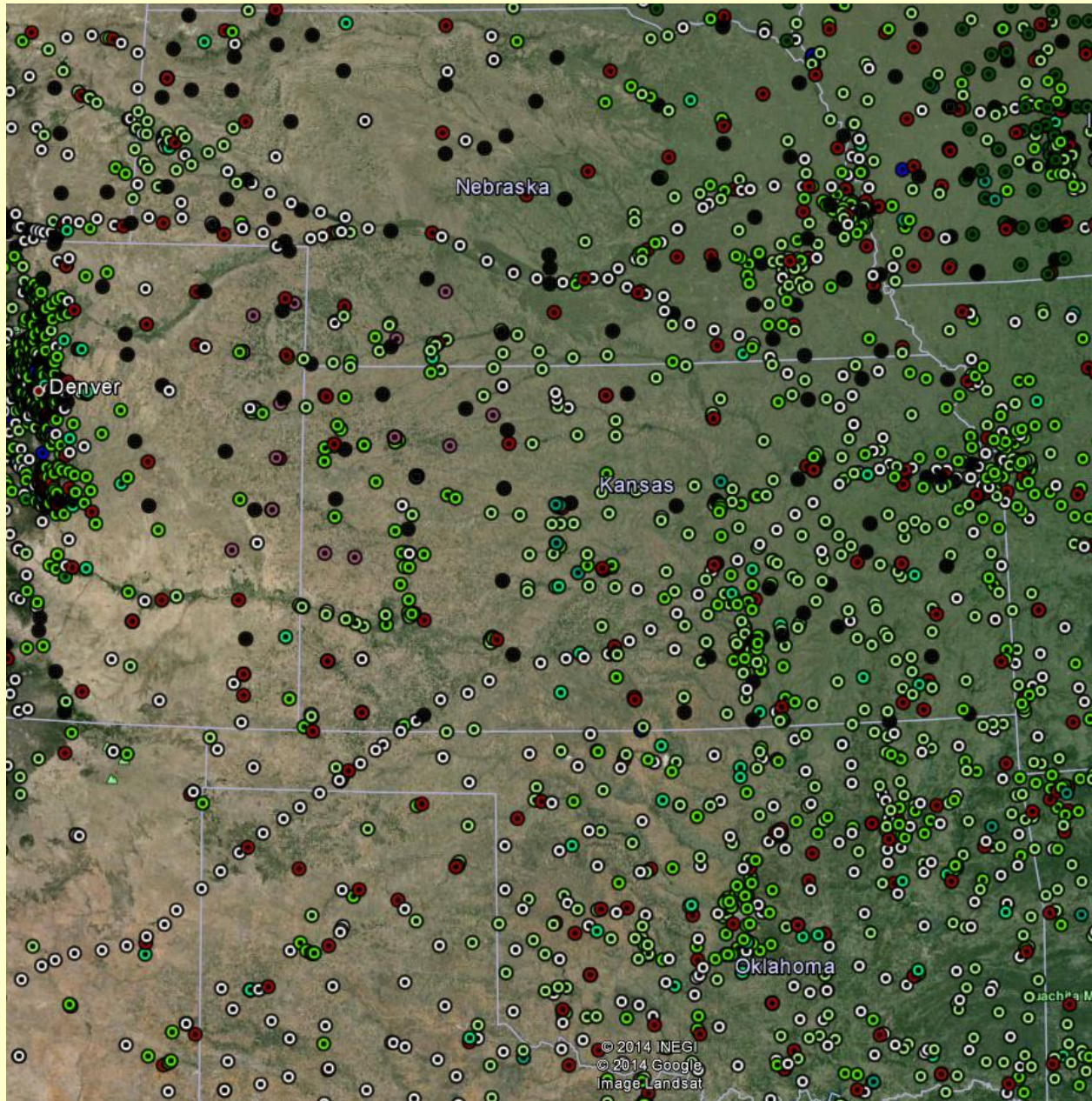
- Objectives:
 - Collection of high-quality data
 - Timely release of QA'd data
 - Full and open sharing
- Preliminary data available to PIs following field phase
- QA'd data available within 3-6 months
- If requested, exclusive rights for PIs (≤ 12 mos)*
- EOL scientist involvement desired (QA, technique, evaluation, science)
- ~10-year archive, modern data formats
- Specific form of Acknowledgement, and use of DOI for citation

** Letter to EOL Director and other specific requirements*

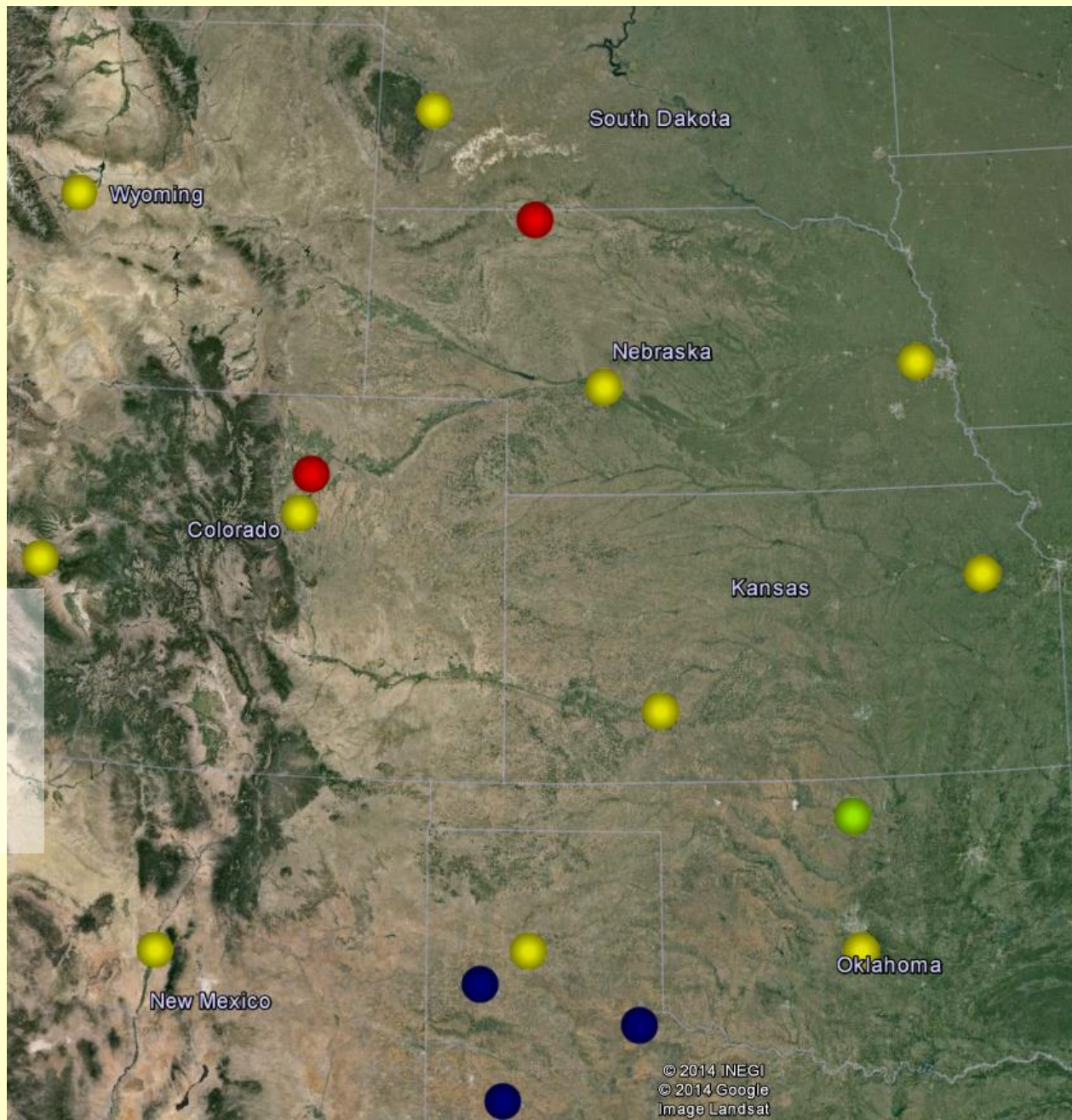
PECAN DATA POLICY SUMMARY (*Proposed*)

- **All investigators must agree to promptly submit their processed “preliminary” data to the PECAN archive no later than 16 December 2015**
- **All “preliminary” data shall be provided to other PECAN Investigators upon request (restricted as appropriate)**
- **During the initial 1-year data analysis period, data may be provided to a third party only with the permission of the investigator(s) who collected the data**
- **All data will be considered public domain not more than one year following the end of the PECAN field campaign (16 July 2016)**
- **Any use of the data will, at a minimum, include acknowledgment. Co-authorship TBD with the investigator(s) who collected the data**

SURFACE NETWORKS IN THE PECAN DOMAIN

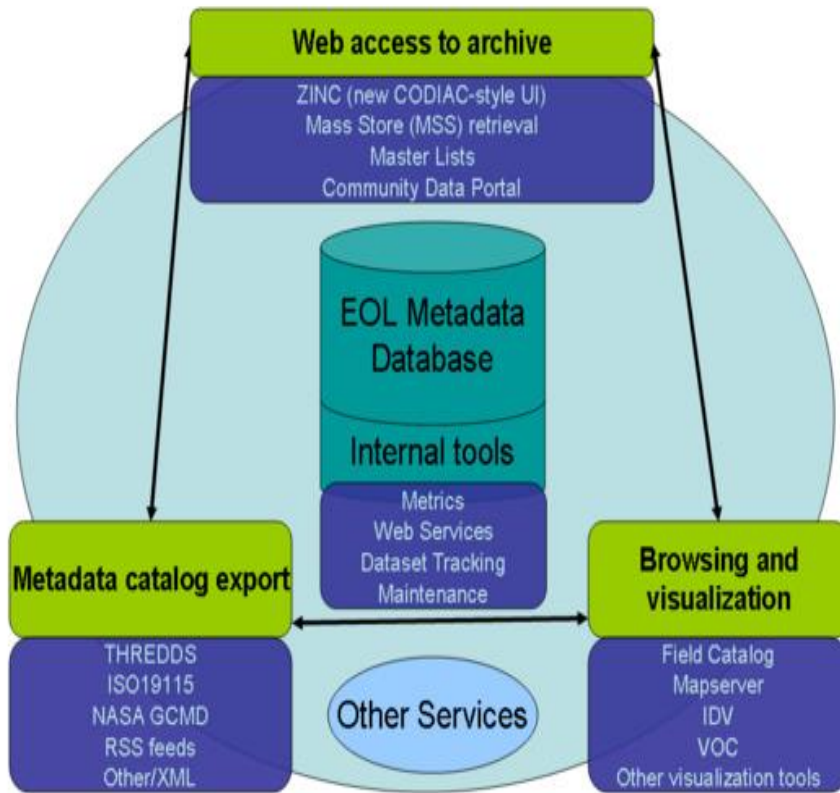


UPPER AIR NETWORKS IN THE PECAN DOMAIN



Red	NPN
Yellow	NWS Radiosonde
Green	ARM CF
Blue	W TX Meso
SODAR	

EOL Metadata Database and Cyberinfrastructure (EMDAC)



EOL Data System (EMDAC)

Primary means for all project scientists and researchers to browse and retrieve data from any EOL-supported projects





Features:

- Long-term field project data archival and distribution
- Interactive data browsing, subsetting, and format translation
- Web-based access
- Value-added datasets
- Data documentation

DC3 Data Archive (Master List)



DC3 Data Sets

Data Set Name (Responsible Group/PIs shown in parentheses)	Date Posted	Info
Accompanying Archives		
NASA Langley DC3 Merged Aircraft Dataset Archive [Chen, Gao (NASA-LaRC)]	2012-08-02	
Aircraft		
Aircraft Meteorological Data Reports (AMDAR) and Aircraft Communications Addressing and Reporting System (ACARS) Data [(ESRL-GSD)]	2012-07-24	
Aviation Weather Center Convective, Icing, and Turbulence SIGMET Imagery [(NCAR-EOL)]	New 2013-01-07	
Aviation Weather Center Pilot Reports of Icing and Turbulence (PIREPs) Imagery [(NCAR-EOL)]	New 2013-01-07	
DC3 Field Catalog Earth Tool (Replay) [(NCAR-EOL)]	New 2013-01-07	
Aircraft: DLR Falcon		
NASA Langley DC3 Merged Aircraft Dataset Archive [Chen, Gao (NASA-LaRC)]	2012-08-02	
NOAA NWS Aviation Weather Center Aviation Digital Data Service (ADDS) [(NOAA-NWS-ADDS)]	New 2013-01-17	
DC3 Mission Summaries [(NCAR-EOL)]	2012-10-23	

DATA BY CATEGORY

- Accompanying Archives
- Aircraft
- Ancillary
- Hydrology
- Land Based
- Lightning
- Model
- Photography
- Radar
- Satellite
- Upper Air

DATA BY SITE

- Alabama Region
- Colorado Region
- Oklahoma Region

[Back to DC3](#)

[Email comments & questions](#)

http://data.eol.ucar.edu/master_list/?project=DC3

DC3 ARCHIVE DATA DOCUMENTATION

Data Set Documentation ("Readme") Guidelines

The documentation (i.e., the "Readme" file) that accompanies each project data set is as important as the data itself. This information permits collaborators and other analysts to understand any limitations or special characteristics of the data that may impact its use. Data set documentation should accompany all data set submissions, including both preliminary and final. The following outline and content is recommended and should be adhered to as closely as possible to make the documentation consistent across all data sets.

Data set Documentation/Readme Outline:

Title: This should match the data set name

Author(s):

Name(s) of PI and all co-PIs
Complete mailing address, telephone/facsimile numbers,
E-mail address of PIs, and web address (if applicable)
Similar contact information for data questions (if different than above)

1.0 Data Set Overview:

Introduction or abstract
Time period covered by the data
Physical location (including lat/lon/elev) of the measurement or platform
Data source if applicable (e.g., for operational data include agency)
Any web address references (i.e., additional documentation such as Project web site)

2.0 Instrument Description:

Brief text (i.e., 1-2 paragraphs) describing the instrument with references
Figures (or links), if applicable
Table of specifications (i.e., accuracy, precision, frequency, resolution, etc.)

3.0 Data Collection and Processing:

Description of data collection
Description of derived parameters and processing techniques used
Description of quality assurance and control procedures
Data intercomparisons, if applicable

4.0 Data Format:

Data file structure and file naming conventions (e.g., column delimited ASCII, NetCDF, GIF, JPEG, etc.)
Data format and layout (i.e., description of header/data records, sample records)
List of parameters with units, sampling intervals, frequency, range
Data version number and date
Description of flags, codes used in the data, and definitions (i.e., good, questionable, missing, estimated, etc.)

5.0 Data Remarks:

PI's assessment of the data (i.e., disclaimers, instrument problems, quality issues, etc.)
Missing data periods
Software compatibility (i.e., list of existing software to view/manipulate the data)

6.0 References:

List of documents cited in this data set description. Please provide links for on-line publications, if available.

DC3 DATA SUBMISSION

DC3 Data Submission Instructions

The DC3 Data Archive contains a master list of all DC3 international data sets (with links) and has been compiled to provide easy access to all DC3 data sets (both operational and research). Data sets are grouped by platform and sorted by data type (*i.e.*, aerosol, cloud properties, radar, satellite, *etc.*). This list will be updated frequently and is linked in the Data Access section of the [DC3 Project Page](#). It is available directly at [DC3 Data Archive](#). Please e-mail all corrections, additions, or deletions to the DC3 Data Archive list directly to [Steve Williams](#).

If you already have your data sets available on-line, please provide the web link or FTP access information to NCAR Earth Observing Laboratory (EOL). Once your data set (with metadata) is available, a link will be provided from the DC3 Data Archive along with a submission date to track future data set upgrades or revisions (if needed).

Please submit both your data set(s) and accompanying metadata or documentation files to the DC3 Data Archive. Data set documentation guidelines are available by direct link [here](#). NCAR EOL has established an anonymous FTP to accept your DC3 data set(s). **To FTP data to the NCAR EOL DC3 anonymous FTP, please use the following instructions:**

FTP: ftp.eol.ucar.edu
Login: anonymous (*No password required.*)
cd /pub/data/incoming/dc3

Once you have FTPed your data set to NCAR EOL, **it is very important to send an e-mail to [sfw at ucar.edu](mailto:sfw@ucar.edu)** indicating that the data file(s) have been FTPed, along with the file(s) names, data contact information, any data restrictions, and appropriate file documentation (*i.e.*, data formats, descriptions, acknowledgments, and metadata). Documentation files may be e-mailed to [sfw at ucar.edu](mailto:sfw@ucar.edu) directly if preferred. **If password protection is required for these data, please indicate this at the time of submission.** You will receive a unique "user ID" and "password" that can be changed at any time upon request. For users without direct Internet access, or if your data set(s) are too large to FTP, you may send digital file(s) on magnetic or optical media (with documentation) by conventional mail to the EOL shipping address below.

Thank you very much for your assistance in providing final data to the DC3 archive. Feel free to contact us should you encounter any problems or have any questions.

Steve Williams
DC3 Data Manager

DC3 PROJECT PUBLICATIONS LIBRARY

DC3 Publications

[How to Submit Publication References to this List](#)

[Publications](#)

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[Reports](#)

[Theses](#)

[Other Citation Links](#)

Publications

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Conference Proceedings

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- [Arkinson, Heather, T. Hanisco, M. Cazorla, A. Fried, J. Walega, 2012: In Situ Airborne Measurement of Formaldehyde with a New Laser Induced Fluorescence Instrument. Poster. AGU 2012 Meeting, San Francisco, California, U.S.A., A21H-0154.](#)
- [Barth, Mary C., M. Bela, K. Cummings, K. Pickering, T. Lyons, M. Weisman, K. Manning, G. Romine, W. Wang, F. Flocke, A. Weinheimer, T. Campos, T. Ryerson, G. Diskin, G. Sachse, 2012: Tracer and Chemistry Modeling of Thunderstorms for the DC3 Field Experiment. Poster. AGU 2012 Meeting, San Francisco, California, U.S.A., A21H-0152.](#)
- [Brock, Charles A., B. Anderson, L. Ziemba, K. Thornhill, R. Moore, A. Beyersdorf, E. Winstead, S. Crumeyrolle, N. Wagner, J. Langridge, M. Richardson, D. Lack, D. Law, T. Shingler, A. Sorooshian, 2012: Continuous Measurement of Particle Hygroscopicity as a Function of Diameter. Poster. AGU 2012 Meeting, San Francisco, California, U.S.A., A11A-0016.](#)
- [Bruning, Eric, R. Thomas \(2012\), Fractal-based lightning channel length estimation from convex hulls of VHF sources, Abstract AE12A-03 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.](#)
- [Campuzano Jost, Pedro, D. Day, B. Palm, A. Ortega, P. Hayes, J. Jimenez, 2012: Submicron Aerosol Transport and Aging by Convective Storms During the DC3 Campaign. Poster. AGU 2012 Meeting, San Francisco, California, U.S.A., A21H-0155.](#)
- [DiGangi, Joshua, A. O'Brien, M. Diao, C. Hamm, Q. Zhang, S. Beaton, M. Zondlo, 2012: Calibration and Field Deployment of the NSF G-V VCSEL Hygrometer. Poster. AGU 2012 Meeting, San Francisco, California, U.S.A., A31E-0078.](#)
- [Hall, Samuel, K. Ullmann, S. Schmidt, B. Kindel, J. Hair, 2012: Actinic flux measurements and photolysis frequencies enhancements near clouds during DC3 and TORERO. Poster. AGU 2012 Meeting, San Francisco, California, U.S.A., A51E-0116.](#)

USE OF DIGITAL OBJECT IDENTIFIERS (DOIs) FOR PECAN

- DOIs becoming functional for proper citation of datasets (similar to publications)
- Provide users with a simple, standard way to reference datasets
- Allows for the unique tracking of metrics for individual datasets
- Allows for linking of related datasets and publications
- NCAR has established a process for creating DOIs (DataCite Registration)
- DOIs are considered “perpetual” and provides proper attribution

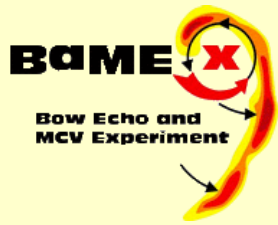
Composite Data Sets at NCAR/EOL

A **composite dataset** is a collection (over some time period and region) of similar data (e.g. surface meteorological) from a variety of sources, put into a common format, and passed through a uniform quality control.

Why does NCAR/EOL develop composites?

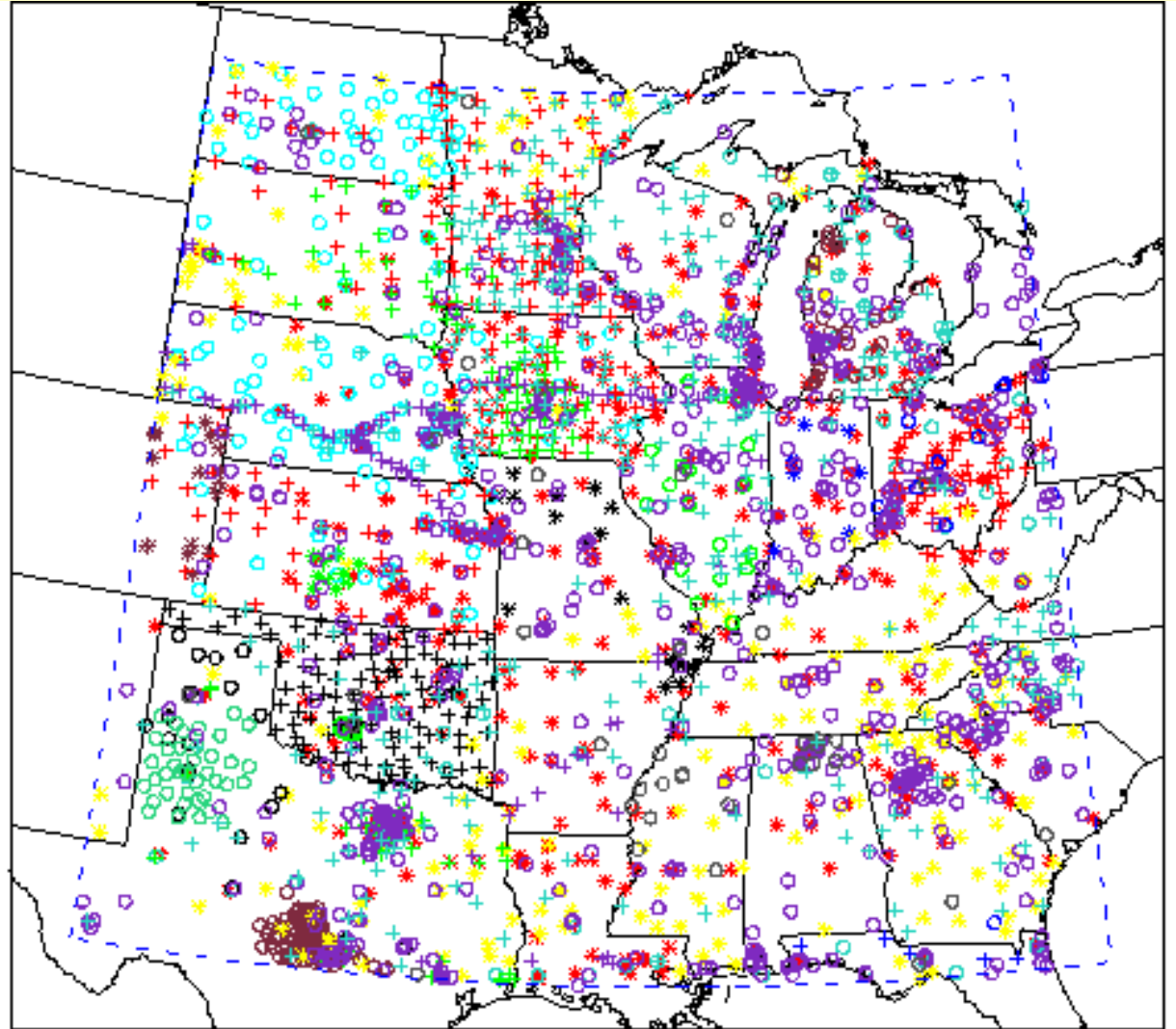
- Provides data in a uniform format with QC.
- Allows determination of network/site problems.
- Useful for model applications.
- Prevents duplication of effort.





Hourly Surface Meteorological Data Composite (2991 stations)

- 1-min sites (* 385)
- AWOS (+ 335)
- RAWS (* 220)
- MesoWest (+ 94)
- HPCN (o 138)
- RWIS (+ 279)
- GPSMET (o 153)
- CO CoAgMet (* 17)
- FL FAWN (+ 5)
- IA IEM (+ 88)
- IL ICN (o 19)
- IN PAAWS (* 7)
- KS GWMD5 (* 10)
- MI MAWN (o 33)
- MO CAWS (* 21)
- OH OARDC (o 11)
- OK ARS Micro (o 42)
- OK Mesonet (+ 119)
- TX LCRA (o 102)
- TX TNRCC (+ 47)
- West TX Meso (o 39)
- Texas ET (o 23)
- 15 Other Networks (o 804)



PECAN Archive Data

FTP site for “preliminary” or “field data”

- Active during the field campaign
- Password-protected to limit access to participants only
- Self-organized (planning required)
- Data removed after campaign ends – selected data moved to archive
- Site deactivated after the campaign

Final archive at EOL

- Field Catalog content becomes part of the Archive
- After the campaign, this link is redirected to the archive pages for PECAN
- Datasets to be uploaded after the campaign ends do not use field FTP site
- See instructions for Dataset submission at http://www.eol.ucar.edu/field_projects/pecan

DATA MANAGEMENT ISSUES TO BE CONSIDERED

- Discussion on Draft Data Policy
- Common Format for Radar Data (DORADE Format)
- Common Format for Aircraft Data (NetCDF)
- Need for standard processing for all Soundings
- Need for Surface Mesonets “Composite” Dataset
- Formation of Working Groups (Soundings, Radar, Aircraft, Model, etc.) – EOL can create and maintain Mailing Lists
- Need Logo!

DEEPWAVE



A study of deeply propagating gravity waves from
the Earth's surface to the mesosphere

International Science and Operations Planning Meeting: Jan 21-22

DEEPWAVE INTERNATIONAL SCIENCE AND OPERATIONS PLANNING MEETING

21-22 January 2014

University of Canterbury

Christchurch, New Zealand

[DEEPWAVE Meeting Summary Report](#)

Meeting Presentations

NOTE: Password Required to View Presentations

For a PDF of one of the following presentations, click on the corresponding title. In some cases a PowerPoint Slideshow is also available, for those click on the PPSX after the title. A PowerPoint viewer can be downloaded from [Microsoft](#).

TUESDAY, 21 JANUARY 2014

08:15 - 08:50	Light Breakfast
08:50 - 09:00	Introductions and Local Logistics (Andy Sturman, Ron Smith)
	<i>DEEPWAVE PI presentations</i>
09:00 - 09:30	DEEPWAVE Science Overview (Dave Fritts, GATS) [PPSX]
09:30 - 10:00	Satellite observations of waves in the middle atmosphere (Steve Eckermann, NRL)
10:00 - 10:20	Modeling and predictability of mountain waves (Jim Doyle, NRL)
10:20 - 10:30	Break
10:30 - 11:00	Mountain wave launching and energy diagnostics (Ron Smith, Yale)
11:00 - 11:30	Modeling gravity wave breakdown in the middle atmosphere (Dave Fritts, GATS) [PPSX]
11:30 - 12:00	Results from the 2013 DEEPWAVE Dry Run (Smith, Doyle, Fritts and Eckermann)
12:00 - 13:30	Lunch

.... Finally, please provide a final copy of your PPT presentation for this Planning Meeting Documentation.

A PDF and/or PPSX copy of your presentation (not the PPT file) will be posted on the PECAN web site (password protected)

