



DC3

Education & Outreach

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DC3 Science Team Meeting | 21-22 February 2012

Goals & Objectives

Goal 1: To increase the understanding of and public appreciation for observational research in the atmospheric sciences and its relevance to society

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Goal 5: To train & entrain new users of LAOF facilities

Program Overview

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I. Online Resources



Program Overview

1. Online Resources
2. UCAR Collaboration



Program Overview

1. Online Resources
2. UCAR Collaboration
3. Outreach Events



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1. Online Resources
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3. Outreach Events
4. Printed Material



Program Overview

1. Online Resources
2. UCAR Collaboration
3. Outreach Events
4. Printed Material
5. PI & University Activities



Online Resources

Online Resources



/ncareol

Online Resources



Online Resources



- DYNAMO 2011-2012
- PREDICT 2010
- HIPPO 2009-2011
- ISPA 2010
- VOCALS 2008
- BuFEx 2005 & 2007
- DC3 2012
 - 6 Quick Questions
 - Platforms & Instruments
 - Science Team
 - Outreach Calendar
 - Educational Resources
 - In the News

Deep Convective Clouds & Chemistry :: DC3

Investigating Chemical Transformation & Transportation in the Atmosphere

The Deep Convective Clouds and Chemistry (DC3) field campaign is investigating the impact of large, convective clouds on upper tropospheric composition and chemical make-up. The DC3 field campaign will make use of extensively instrumented aircraft platforms and ground-based observations.

Salina, Kansas will serve as the base location for the three research aircraft, while a network of ground-based radar and instrumentation in Colorado, Oklahoma and Alabama will be used to support DC3 during the project from 15 May - 30 June 2012.

Gaining a better understanding of how chemical compounds such as NO (nitric oxide) and NO₂ (nitrogen dioxide) are transported to different altitudes in the atmosphere is necessary to identify sources and sinks of upper tropospheric ozone


The [DC3 Science Team](#) is comprised of a group of researchers from universities and National Labs and Centers, interested in studying different aspects of this common topic. Deploying 3 aircraft, several ground facilities in many locations across the United States, and orchestrating consistent data collection over many platforms is truly a collaborative effort. The DC3 Project Office is facilitated and organized by the Earth Observing Laboratory (EOL).


Range of Instrumentation

DC3 makes use of three instrumented aircraft platforms and a range of equipment from radars to balloon-borne instruments at three ground-based observation locations -- in order to gather data on different types of storms with



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Attention Problem Solving Speed Stress Visual Perception

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ENVIRONMENT

Ancient Massive Volcanic Eruption Still Mystifies

A cosmic impact has been ruled out for the volcanic blasts lasting 7 million years. [Read More >>](#)

TOP STORIES

- Dangerous S Explained
- New Dolphin Protect Rare
- January Broo Extremes to
- Ancient Yello from Superv

ENVIRONMENT IMAGE GALLERIES [see more >](#)

NCAR UCAR | AtmosNews

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FEATURES NEWS RELEASES PEOPLE RESEARCH BRIEFS OPINION BROWSE TOPICS

BETWEEN WEATHER AND CLIMATE

Seeking long-range forecast clues from the Indian Ocean

□ □ □ □

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HOT TOPICS: Shocker Post-Game Highlights/Reaction | Bombs Near Capitol | Heart Attack at the Heart Attack Grill

Top Stories

Storm Team 12: Blue skies, mild temps

Sunshine, light winds and comfortable temperatures are forecast this afternoon as highs climb to near near... [more...](#)

- Link: School Closings
- Interactive Radar

Federal charges unlikely after explosives found near Statehouse

Several Beams Fall 40 Stories From WTC Construction Site

Storm Team 12: Blue skies, mild temps

Labor grievance filed against Spirit AeroSystems

Rice products may be source of high arsenic levels

Santorum's provocative language could be obstacle

Wichita police searching for three suspects after two late-night robberies

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What message are your kids getting about sex online?
THE MODERN DAY SEX TALK
TONIGHT @ 10:00

Today's Forecast

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6 minutes ago
Sunshine, light winds and comfortable temperatures are forecast this afternoon... [Read More >>](#)

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NEWS AND INTERVIEWS

American Shakespeare Center or Tour Stops at UAH

The American Shakespeare Center on Tour is making its annual stop at UAH this week. They're presenting A Midsummer Night's Dream February 14th and 15th and A Winter's Tale on the 16th. Members of the troupe offer some encouragement for young people considering a life in the theatre. Posted Tuesday, February 14, 2012

WHAT'S HAPPENING

Save-A-Story preserve your oral history

Save-A-Story seeks stories about Werner von Braun

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WLRH 89.3FM share "Oh No You Didn't!" photo.

Col. Matthew Bogdanos to speak at the Huntsville Museum of Art

NEWS RELEASES

Can lasers accurately measure snow?

Scientists are working to solve a critical wintertime weather mystery: how to accurately measure the amount of snow on the ground.

New insights into Little Ice Age

WATER ENERGY HEALTH FOOD BIODIVERSITY EARTH SPACE HUMAN WORLD

biomimicry NATURE OF INNOVATION

Cyclone Giovanna kills at least 15 people

Researchers discover world's tiniest chameleons in Madagascar

When is the next Blue Moon?

Extreme US summer temperatures occurring more frequently

by EarthSky | BLOGS = EARTH | 1 hour ago

Extreme summer temperatures are already occurring more frequently in the United States, and could become normal by mid-century. That's according to a February 15 news release from researchers at the Lawrence Livermore National Laboratory.

A recent analysis of observations and results

FEATURED SCIENTIST

Sukanya Chakrabarti

Sukanya Chakrabarti works on understanding galaxy evolution by performing hydrodynamic and magnetohydrodynamic simulations of galaxies combined with radiative transfer calculations. Dr. Chakrabarti has co-authored over 30... [READ MORE >](#)

Sukanya Chakrabarti maps dark matter ripples of passing satellites

BREAKING NEWS

Europe Needs a "RESCUE" Revolution

Malaria parasite goes bananas before sex

UCAR Collaboration

UCAR Collaboration



Outreach Events

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Printed Material



DC3 Deep Convective Clouds & Chemistry

"It's a study of transportation and transformation of greenhouse gases in the atmosphere that affect our climate."

- Joe PI, DC3 Principal Investigator

ABOUT DC3

The Deep Convective Clouds and Chemistry (DC3) field campaign is investigating the impact of large, convective clouds on upper tropospheric composition and chemical make-up. The DC3 field campaign will make use of extensively instrumented aircraft platforms and ground-based observations.

SCIENCE TEAM

- NCAR | National Center for Atmospheric Research
- NASA | National Aeronautics and Space Administration
- NOAA | National Oceanic and Atmospheric Administration
- DLR | German Aerospace Center
- Colorado State University
- Georgia Institute of Technology
- New Mexico Institute of Mining and Technology
- Pennsylvania State University
- Princeton University
- US Naval Academy
- University of Alabama - Huntsville
- University of Colorado
- University of Maryland
- University of Miami
- University of North Dakota
- University of Oklahoma
- University of Rhode Island



DECODING A PIECE OF THE CLIMATE PUZZLE

The upper troposphere and lower stratosphere (UTLS) is an important region for Earth's climate because water vapor, ozone, cirrus clouds and particles in this region strongly contribute to the amount of radiation that is allowed into and out of the Earth's atmosphere and have direct impact on the climate system.

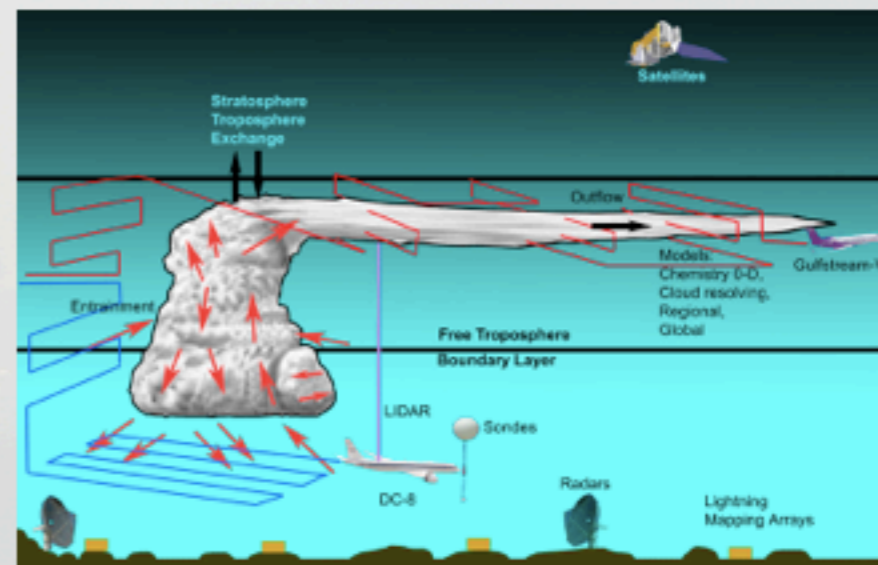
Upward movement of atmospheric chemicals, water and gases by means of convection is one of their main methods of traveling from near the Earth's surface to the upper troposphere, and in some cases to the lower stratosphere. Yet the impact of convective transport on the structure and chemistry of the UTLS region has not been fully studied on either the global or continental scale.

Knowing how much ozone is in the UTLS region is important for understanding climate change, as ozone plays a role in how much ultraviolet (UV) radiation reaches the Earth's surface. Ozone is produced from NO_x (mono-nitrogen oxides) and HO_x (hydrogen oxides) radicals. For that reason, quantifying the sources of NO_x and HO_x in the upper troposphere is key to understanding the impacts of upper tropospheric O₃ (ozone) on our climate system.

AIRCRAFT OPERATIONS

The three aircraft will be based in Salina, Kansas while conducting coordinated and complimentary research flights.

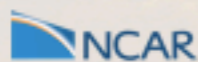
- NSF/NCAR Gulfstream-V
- NASA DC-8
- DLR Falcon-20



LAND-BASED OPERATIONS

An array of ground-based facilities from radars to mobile profiling systems to balloon-borne instrumentation will be based in three locations across the central United States in order to collect data over the largest range possible.

- Northeastern Colorado
- Central Oklahoma
- Northern Alabama



Printed Material



PI & University Activities

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