

First ISCCP Regional Experiment (FIRE) Cirrus 2 National Weather Service (NWS) Langley DAAC Data Set Document



Summary:

The First ISCCP Regional Experiments have been designed to improve data products and cloud/radiation parameterizations used in general circulation models (GCMs). Specifically, the goals of FIRE are (1) to improve basic understanding of the interaction of physical processes in determining life cycles of cirrus and marine stratocumulus systems and the radiative properties of these clouds during their life cycles and (2) to investigate the interrelationships between the ISCCP data, GCM parameterizations, and higher space and time resolution cloud data.

To-date, four intensive field-observation periods were planned and executed: a cirrus IFO (October 13-November 2, 1986); a marine stratocumulus IFO off the southwestern coast of California (June 29-July 20, 1987) a second cirrus IFO in southeastern Kansas (November 13-December 7, 1991); and a second marine stratocumulus IFO in the eastern North Atlantic Ocean (June 1-June 28, 1992). Each mission combined coordinated satellite, airborne, and surface observations with modeling studies to investigate the cloud properties and physical processes of the cloud system.

The data sets discussed in this document were produced by the National Weather Service (NWS). These data sets are:

- FIRE_C12_NWS_IN_SND
- FIRE_C12_NWS_OUT_SND

Table of Contents:

1. [Data Set Overview](#)
2. [Investigator\(s\)](#)
3. [Theory of Measurements](#)
4. [Equipment](#)
5. [Data Acquisition Methods](#)
6. [Observations](#)
7. [Data Description](#)
8. [Data Organization](#)
9. [Data Manipulations](#)
10. [Errors](#)
11. [Notes](#)
12. [Application of the Data Set](#)
13. [Future Modifications and Plans](#)
14. [Software](#)
15. [Data Access](#)
16. [Output Products and Availability](#)
17. [References](#)
18. [Glossary of Terms](#)
19. [List of Acronyms](#)
20. [Document Information](#)

1. Data Set Overview:

Data Set Identification:

FIRE_C12_NWS_IN_SND:

First ISCCP Regional Experiment (FIRE) Cirrus 2 National Weather Service (NWS) Inner-Network Rawinsonde Data (FIRE_C12_NWS_IN_SND)



FIRE_CI2_NWS_OUT_SND:

First ISCCP Regional Experiment (FIRE) Cirrus 2 National Weather Service (NWS) Outer-Network Rawinsonde Data (FIRE_CI2_NWS_OUT_SND)

Data Set Introduction:

FIRE_CI2_NWS_IN_SND

The FIRE_CI2_NWS_IN_SND data set was collected for the period Nov. 13, 1991 to Dec. 7, 1991. Each granule has multiple ASCII data files. Data were collected from 17 different National Weather Service (NWS) sites. These sites are: (ABQ) Albuquerque, NM; (AMA) Amarillo, TX; (DDC) Dodge City, KS; (DEN) Denver, CO; (DRT) Del Rio, TX; (ELP) El Paso, TX; (GGG) Longview, TX; (LBF) North Platte, NE; (LIT) North Little Rock, AR; (MAF) Midland, TX; (OMA) Omaha, NE; (OUN) Norman, OK; (PAH) Paducah, KY; (PIA) Peoria, IL; (SEP) Stephenville, TX; (TOP) Topeka, KS; and (UMN) Monett, MO.

FIRE_CI2_NWS_OUT_SND

The FIRE_CI2_NWS_OUT_SND data set was collected for the period Nov. 20, 1991 to Dec. 7, 1991. Each granule has multiple ASCII data files. Data were collected from 31 different National Weather Service (NWS) sites. These stations are: (BIS) Bismarck, ND; (BNA) Nashville, TN; (BOI) Boise, ID; (CKL) Centreville, AL; (CRP) Corpus Christi, TX; (DAY) Dayton, OH; (DRA) Desert Rock, NV; (ELY) Ely, NV; (FNT) Flint, MI; (GEG) Spokane, WA; (GGW) Glasgow, MT; (GJT) Grand Junction, CO; (GRB) Green Bay, WI; (GTF) Great Falls, MT; (HON) Huron, SD; (HTS) Huntington, WV; (INL) International Falls, MN; (INW) Winslow, AZ; (JAN) Jackson, MS; (LCH) Lake Charles, LA; (LND) Lander, WY; (MFR) Medford, OR; (NKX) San Diego, CA; (OAK) Oakland, CA; (RAP) Rapid City, SD; (SIL) Slidell, LA; (SLC) Salt Lake City, UT; (SLE) Salem, OR; (STC) St. Cloud, MN; (TUS) Tucson, AZ; and (WMC) Winnemucca, NV.

Objective/Purpose:

...

Summary of Parameters:

Geopotential Height
Humidity
Pressure
Temperature
Wind Direction
Wind Speed

Discussion:

...

Related Data Sets:

...

2. Investigator(s):

Investigator(s) Name and Title:

...

Title of Investigation:

First ISCCP Regional Experiment (FIRE)

Contact Information:

David O'C Starr
NASA Goddard Space Flight Center
Code 913.0
Greenbelt, MD 20771
USA
Phone: (301) 286-9129
FAX: ...



3. Theory of Measurements:

...

4. Equipment:

Sensor/Instrument Description:

Collection Environment:

...

Source/Platform:

GROUND STATION

Source/Platform Mission Objectives:

...

Key Variables:

FIRE_CI2_NWS_IN_SND

Geopotential Height
Humidity
Pressure
Temperature
Wind Direction
Wind Speed

FIRE_CI2_NWS_OUT_SND

Geopotential Height
Humidity
Pressure
Temperature
Wind Direction
Wind Speed

Principles of Operation:

...

Sensor/Instrument Measurement Geometry:

...

Manufacturer of Sensor/Instrument:

...

Sensor/Instrument:

RAWINSONDE

Calibration:

Specifications:

...

Tolerance:

...



Frequency of Calibration:

...

Other Calibration Information:

...

5. Data Acquisition Methods:

...

6. Observations:

Data Notes:

...

Field Notes:

...

7. Data Description:

Spatial Characteristics:

Spatial Coverage:

<u>Data Set Name</u>	<u>Min Lat</u>	<u>Max Lat</u>	<u>Min Lon</u>	<u>Max Lon</u>
FIRE_CI2_NWS_29.40 IN_SND	29.40	41.40	-106.60	-88.80
FIRE_CI2_NWS_27.80 OUT_SND	27.80	48.60	-123.00	-82.60

Spatial Coverage Map:

...

Spatial Resolution:

...

Projection:

...

Grid Description:

...

Temporal Characteristics:

Temporal Coverage:

<u>Data Set Name</u>	<u>Begin Date</u>	<u>End Date</u>
FIRE_CI2_NWS_IN_SN D	11-13-1991	12-07-1991
FIRE_CI2_NWS_OUT_S ND	11-20-1991	12-07-1991



Temporal Coverage Map:

...

Temporal Resolution:

...

Data Characteristics:

Parameter/Variable:

Each record starts with the number of level, followed by 21 variables, and ends with the same number of level. Variables are separated by white space(s). These variables with their units are listed in order below.

Variable Name:

- time into launch (minutes)
- height (km)
- pressure (mb)
- temperature (C)
- theta - potential temperature (K)
- rh - relative humidity with respect to water (percent)
- rh - relative humidity with respect to ice (percent)
- sphum - specific humidity (g/kg)
- dewpt - dewpoint temperature (C)
- frstpt - frost point temperature (C)
- speed - wind speed (m/s)
- direc - wind direction (degrees)
- u - zonal component of wind (m/s)
- v - meridians component of wind (m/s)
- ascent - ascent rate (m/min)
- lapse - lapse rate (C/km)
- dtheta - potential temperature lapse rate (K/km)
- x - longitudinal distance of sonde with respect to point of origin (km)
- y - latitudinal distance of sonde with respect to point of origin (km)
- lat - latitudinal position of sonde (degrees N)
- long - longitudinal position of sonde (degrees W)

Variable Description/Definition:

See above.

Unit of Measurement:

See above.

Data Source:

...

Data Range:

...

Sample Data Record:

...

8. Data Organization:

Data Granularity:

A general description of data granularity as it applies to the IMS appears in the [EOSDIS Glossary](#).



The nws_in_sonde data set consists of 17 granules. The nws_out_sonde data set consists of 31 granules. Each granule is named ci2_XXX_ym1d1_m2d2, where XXX is the 3-letter station name, m1d1 the beginning month and date, and m2d2 the end month and date of the data.

Each granule has multiple ASCII data files. Each file is named XXX.nnnn, where XXX is the same 3-letter station name as the granule, and "nnnn" the ascent number. The first ten lines in a data file contain header information, followed by two-line variables heading, followed by the NWS sondes records. The Fortran format for the variables is: (3x, f7.2, f8.3, f6.1, 2(f7.2), 2(f6.1), f9.4, 2(f7.2), 4(f6.1), f8.0, 2(f7.2), 2(f8.3), 2(f9.4)).

Data Format:

The data are in ASCII format.

9. Data Manipulations:

Formulae:

Derivation Techniques and Algorithms:

...

Data Processing Sequence:

Processing Steps:

...

Processing Changes:

...

Calculations:

Special Corrections/Adjustments:

...

Calculated Variables:

...

Graphs and Plots:

Images are not available for these data sets.

10. Errors:

Sources of Error:

...

Quality Assessment:

Data Validation by Source:

...

Confidence Level/Accuracy Judgement:

...

Measurement Error for Parameters:

...

Additional Quality Assessments:



...

Data Verification by Data Center:

...

11. Notes:

Limitations of the Data:

...

Known Problems with the Data:

...

Usage Guidance:

...

Any Other Relevant Information about the Study:

...

12. Application of the Data Set:

...

13. Future Modifications and Plans:

There are no plans for future modifications of these data sets.

14. Software:

Software Description:

Sample software are available for these data sets.

Software Access:

The software can be obtained through the Langley DAAC. Please refer to the contact information below. The software can also be obtained at the same time the user is ordering these data sets.

15. Data Access:

Contact Information:

Langley DAAC User and Data Services Office
NASA Langley Research Center
Mail Stop 157D
Hampton, Virginia 23681-2199
USA
Telephone: (757) 864-8656
FAX: (757) 864-8807
E-mail: support-asdc@earthdata.nasa.gov
URL: <http://eosweb.larc.nasa.gov>

Data Center Identification:

Langley DAAC User and Data Services Office
NASA Langley Research Center
Mail Stop 157D
Hampton, Virginia 23681-2199
USA
Telephone: (757) 864-8656
FAX: (757) 864-8807



E-mail: support-asdc@earthdata.nasa.gov

URL: <http://eosweb.larc.nasa.gov>

Procedures for Obtaining Data:

The Langley DAAC Information Management System (IMS) is an on-line system that features a graphical user interface (GUI) that allows to query the Langley DAAC data set holdings, to view pre-generated browse products, and to order specific data products. Users may also request data by letter, telephone, electronic mail (INTERNET), or personal visit.

The Langley DAAC User and Data Services (UDS) staff provides technical and operational support for users ordering data. The Langley DAAC Handbook is available in a postscript file through the IMS for users who want detailed information about the Langley DAAC holdings. Users may also obtain a copy by contacting:

Langley DAAC User and Data Services Office

NASA Langley Research Center

Mail Stop 157D

Hampton, Virginia 23681-2199

USA

Telephone: (757) 864-8656

FAX: (757) 864-8807

E-mail: support-asdc@earthdata.nasa.gov

URL: <http://eosweb.larc.nasa.gov>

Data Center Status/Plans:

The Langley DAAC will continue to archive this data. There are no plans to reprocess.

16. Output Products and Availability:

There are no output products available at this time.

17. References:

...

18. Glossary of Terms:

[EOSDIS Glossary.](#)

19. List of Acronyms:

NASA - National Aeronautics Space Administration

URL - Uniform Resource Locator

[EOSDIS Acronyms.](#)

20. Document Information:

Document Revision Date:

October 07, 1996; May 28, 1997; November 24, 1997

Document Review Date:

...

Document ID:

...

Citation:

...

Document Curator:

Langley DAAC User and Data Services Office

Telephone: (757) 864-8656

FAX: (757) 864-8807

E-mail: support-asdc@earthdata.nasa.gov



