Global Hydrology Resource Center

Data User Guide

CAMEX-4 DC-8 Forward and Nadir Video

Introduction

The CAMEX-4 DC-8 Forward and Nadir Video dataset was collected by the NASA DC-8 aircraft, which is equipped with several video cameras used to provide outside views to scientists and crew members who otherwise might not have the opportunity to view a particular scene. Cameras are mounted in the cockpit viewing directly forward along the flight path, out to the port side of the aircraft, and directly downward (nadir). Additionally, there are cameras that focus on the radar scope and (for CAMEX-4) viewing the C-STAR instrument. In addition the video cameras, there are digital feeds from the navigator station showing currently position, flight track and winds, and an entire 'page' devoted to ICATS data.

Notice:
This dataset was originally created on tapes and has been converted to DVD media.

Citation

2002. CAMEX-4 DC-8 Forward and Nadir Video [indicate subset used]. Dataset available online from the NASA EOSDIS Global Hydrology Resource Center Distributed Active Archive Center, Huntsville, Alabama, U.S.A. doi: http://dx.doi.org/10.5067/CAMEX-4/CAMERA/DATA101

Keywords:

NASA, GHRC, CAMEX-3, Atlantic Ocean, visible wavelengths

Campaign

The Convection And Moisture EXperiment (CAMEX) was a series of field research investigations sponsored by the Earth Science Enterprise of the National Aeronautics and Space Administration (NASA). The fourth field campaign in the CAMEX series (CAMEX-4) was held in 16 August - 24 September, 2001 and was based out of Jacksonville Naval Air Station, Florida.

CAMEX-4 was focused on the study of tropical cyclone (hurricane) development, tracking, intensification, and landfalling impacts using NASA-funded aircraft and surface remote

sensing instrumentation. The primary aircraft used during CAMEX-4 were the NASA DC-8 and ER-2 research airborne platforms. These instrumented aircraft flew over, through, and around selected hurricanes as they approached landfall in the Caribbean, Gulf of Mexico, and along the east coast of the United States. The NASA aircraft investigated upper altitude regions of the hurricane not normally sampled. Where possible, measurements were compared and validated with coincident observations from the QuikSCAT, Terra, and Tropical Rainfall Measuring Mission satellites. This study yielded high spatial and temporal information of hurricane structure, dynamics, and motion. These data, when analyzed within the context of more traditional aircraft, satellite, and ground-based radar observations, provided additional insight to hurricane modelers and forecasters who continually strive to improve hurricane predictions. More accurate hurricane predictions at landfall resulted in decreasing the size of necessary coastal evacuations and increasing the warning time for those areas.

While remote sensing of the hurricane environment was the primary objective of CAMEX-4, there were also separate flights to study thunderstorm structure, precipitation systems, and atmospheric water vapor profiles. This portion of CAMEX-4 is known as KAMP, Keys Area Microphysics Project. The objective of the KAMP flights was to improve quantitative precipitation estimates from passive and active microwave instruments.

More information is available at https://ghrc.nsstc.nasa.gov/home/field-campaigns/camex4.

Data Characteristics

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Table 1: Data Characteristics

Characteristic	Description
Platform	NASA DC-8 aircraft
Instrument	Video camera
Projection	n/a
Spatial Coverage	N: 50.0 , S: 10.0, E: -60.0, W: -100.0 (Atlantic Ocean)
Spatial Resolution	n/a
Temporal Coverage	Start date: August 3, 2001 Stop date: September 26, 2001
Temporal Resolution	I file per flight
Sampling Frequency	n/a
Parameter	Visible wavelengths
Version	1
Processing Level	1A

File Naming Convention

The CAMEX-4 DC-8 Forward and Nadir Video dataset are in the following naming convention. Table 3 shows a list of flights, dates, and tapes for each mission.

Data files: c4dvid_2001.ddd_yy####_vvvvv_N

Table 2: File naming convention variables

Variable	Description
ddd	Julian date
yy####	Mission number
vvvvv	"Forward" or "nadir"
N	Sequential tape number of tape in the total set

Table 3: CAMEX-4 DC-8 Video Camera Data

			Camera		
Day	Date	Flight	Forward	Nadir	Tape #
2001.215	3-Aug-01	010403	X		1
2001.215	3-Aug-01	010403		X	2
2001.220	8-Aug-01	010404	X		3
2001.220	8-Aug-01	010404		X	4
2001.227	15-Aug-01	010405	X		5
2001.227	15-Aug-01	010405		X	6
2001.230	18-Aug-01	010406	X		7
2001.230	18-Aug-01	010406		X	8
2001.232	20-Aug-01	010407	X		9
2001.232	20-Aug-01	010407	X		10
2001.232	20-Aug-01	010407		X	11
2001.232	20-Aug-01	010407		X	12
2001.237	25-Aug-01	010408	X		13
2001.237	25-Aug-01	010408		X	14
2001.246	3-Sep-01	010409	X		15
2001.246	3-Sep-01	010409		X	16
2001.249	6-Sep-01	010410	X		17
2001.249	6-Sep-01	010410		X	18
2001.250	7-Sep-01	010411	X		19
2001.250	7-Sep-01	010411		X	20
2001.252	9-Sep-01	010412	X		21
2001.252	9-Sep-01	010412	X		22
2001.252	9-Sep-01	010412		X	23
2001.253	10-Sep-01	010413	X		24
2001.253	10-Sep-01	010413	X		25
2001.253	10-Sep-01	010413		X	26
2001.253	10-Sep-01	010413		X	27
2001.258	15-Sep-01	010414	X		28

2001.258	15-Sep-01	010414	X		29
2001.258	15-Sep-01	010414		X	30
2001.258	15-Sep-01	010414		X	31
2001.262	19-Sep-01	010415	X		32
2001.262	19-Sep-01	010415		X	33
2001.265	22-Sep-01	010416	X		34
2001.265	22-Sep-01	010416	X		35
2001.265	22-Sep-01	010416		X	36
2001.265	22-Sep-01	010416		X	37
2001.266	23-Sep-01	010417	X		38
2001.266	23-Sep-01	010417	X		39
2001.266	23-Sep-01	010417		X	40
2001.266	23-Sep-01	010417		X	41
2001.267	24-Sep-01	010418	X		42
2001.267	24-Sep-01	010418	X		43
2001.267	24-Sep-01	010418		X	44
2001.267	24-Sep-01	010418		X	45
2001.269	26-Sep-01	010419	X		46
2001.269	26-Sep-01	010419		X	47

Contact Information

To order these data or for further information, please contact:

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