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-130 Herc	ules 09/1	10/14 - 09/1	1/14						
Flight Number: Payload Config Jav Data Collect Total Flight Tim Submitted by: ( Flight Segment	MIZ Lawnmo uration: ARI :ted: No ie: 8.8 hours Cate Easmun s:	ower - Flight #6 SE nt on 09/10/14							
From:		PAEI To:		То:			PAEI		
Start:		09/10/14 17:10	) Z	Finish:		09/11/14 01:55 Z		5 Z	
Flight Time:		8.8 hours	8.8 hours						
Log Number:		<u>141002</u>	<u>141002</u> PI:			Christy		ty Hansen	
Funding Sour	ce:	Bruce Tagg - N	Bruce Tagg - NASA - SMD - ESD Airborne Science Program						
Purpose of Fli	ght:	Science							
light Hour Sur	nmary:								
				141002		151004			
Flight Hours Approved in SOFRS					229				
Flight Hours Previously Approved							88.7		
Total Used				140.3			18.2		
Total Remaining							70.5		
151004 Flight F	Reports								
Date	Flt #	Purpose of Flight	Duration	Runn	ing Total	Hours Ren	naining	Miles Flown	
10/02/14 - 10/03/14	Cal Flight	Science	8.6	8.6		80.1			
	<b>—</b> ··	Tropoit	0.6	19.2		70.5			

Page Last Updated: April 22, 2017

Page Editor: Brad Bulger

NASA Official: Marilyn Vasques

**Related Science Report:** 

## ARISE - C-130 Hercules 09/10/14 Science Report

#### Mission: ARISE Mission Summary:

#### MIZ Lawnmower - Flt 6

The C-130 flight scientist today was Jens Redemann (NASA ARC). The objectives for this flight were to (1) characterize the sea-ice with LVIS from the edge to an area with high concentrations (as indicated from AMSR) near 76.5N 126W, and (2) make observations of the radiative and microphysical properties of clouds across the ice edge during Terra (21:21) and Aqua (21:42) overpasses in a square grid box with a 5-leg lawnmower pattern. Both objectives were successfully achieved. A survey across the planned gridbox prior to the beginning of the LVIS run revealed scattered mid- and high-level clouds in the area with low clouds below. The optically thicker low clouds appeared to be in the southern part of the gridbox. Just to the east, the C-130 encountered mostly clear conditions along the NE and SW LVIS zigzag, which provided an excellent sea-ice characterization. Dissipating scattered and broken multi-layer cloud conditions including areas of fog confounded the planned lawnmower



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### pattern:

"Complex cloud situation, with generally more Ci towards the S edge of lawnmower box and low clouds thickening towards SW corner of pattern. Decided to skip some of the E-W legs in lawnmower pattern to get away from Ci to the S. Flew 3 E-W legs and found low level clouds to be highly variable at Aqua OP time, but target area is generally clear at NE corner of pattern. At NW corner of lawnmower pattern, we decided to head due S to find thicker low clouds again. Found homogeneous low-cloud deck under relatively thin Ci. Flew above cloud deck for radiometry (~5 mins), reversed course and dropped into same cloud deck for in situ measurements. Then decided to head W to explore gradients in cloud and sea-ice surface properties. Found lowclouds and sea-ice to be highly variable, sometimes apparently correlated with each other. Many data sets need to be post-processed to assess quality and utility to address science objectives. "

The flight scientist and pilots did an excellent job of altering the flight track to find good low-level cloud targets while trying to avoid upper-level clouds as much as possible. All of the C-130 instrumentation worked well but ground communication via the MTS system did not work the entire flight.

Images:

# September 10, 2014 Figure 1



Read more

## September 10, 2014 Figure 2



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## September 10, 2014 Figure 3



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# September 10, 2014 Figure 4



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September 10, 2014 Figure 5





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### Read more

# September 10, 2014 Figure 6



### Read more

Submitted by: William L. Smith Jr. on 09/13/14

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

141002 Flight Reports							
Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown		
Engineering Check Flight	Check	2.8	2.8	226.2			
Boom Calibration Flight	Check	0.5	3.3	225.7			
Project Check Flight	Check	5.2	8.5	220.5			
Transit (1 of 2)	Transit	8.7	17.2	211.8			
Transit (2 of 2)	Transit	6.6	23.8	205.2			
Arctic Ocean - Flight #1	Science	6.6	30.4	198.6			
140W Sea Ice - Flight #2	Science	7.1	37.5	191.5			
Ice ZigZag-Terra - Flight #3	Science	7.1	44.6	184.4			
CERES Gridbox - Flight #4	Science	8.4	53	176			
CERES Gridbox - Flight #5	Science	7.7	60.7	168.3			
MIZ Lawnmower - Flight #6	Science	8.8	69.5	159.5			
CERES Gridbox - Flight #7	Science	7.5	77	152			
CERES Gridbox - Flight #8	Science	8.3	85.3	143.7			
CERES Gridbox - Flight #9	Science	8.1	93.4	135.6			
Radiation Wall Pattern - Flight #10	Science	8.3	101.7	127.3			
CERES Gridbox - Flight #11	Science	7.2	108.9	120.1			
Sea Ice Albedo/CryoSat - Flight #12	Science	8.6	117.5	111.5			
Radiation Wall Pattern - Flight #13	Science	8.3	125.8	103.2			
Sea Ice & Radiation - Flight #14	Science	8.2	134	95			
	ReportsFlt #Engineering Check FlightBoom Calibration FlightProject Check FlightTransit (1 of 2)Transit (2 of 2)Arctic Ocean - Flight #1140W Sea Ice - Flight #2Ice ZigZag-Terra - Flight#3CERES Gridbox - Flight#4CERES Gridbox - Flight#5MIZ Lawnmower - Flight#6CERES Gridbox - Flight#7CERES Gridbox - Flight#8CERES Gridbox - Flight#9Radiation Wall Pattern -Flight #10CERES Gridbox - Flight#1Sea Ice Albedo/CryoSat- Flight #12Radiation Wall Pattern -Flight #13Sea Ice & Radiation -Flight #14	ReportsFlt #Purpose of FlightEngineering Check FlightCheckBoom Calibration FlightCheckProject Check FlightCheckTransit (1 of 2)TransitTransit (2 of 2)TransitArctic Ocean - Flight #1Science140W Sea Ice - Flight #2ScienceIce ZigZag-Terra - Flight #3ScienceCERES Gridbox - Flight #4ScienceMIZ Lawnmower - Flight #7ScienceCERES Gridbox - Flight #6ScienceCERES Gridbox - Flight #7ScienceGERES Gridbox - Flight #7ScienceGERES Gridbox - Flight #10ScienceCERES Gridbox - Flight #10ScienceCERES Gridbox - Flight #10ScienceScienceScienceFlight #10ScienceSea Ice Albedo/CryoSat Flight #13ScienceSea Ice & Radiation Yall Pattern - Flight #13ScienceSea Ice & Radiation - Flight #14ScienceSea Ice & Radiation - Flight #14Science	ReportsFlt #Purpose of FlightDurationEngineering Check FlightCheck2.8Boom Calibration FlightCheck0.5Project Check FlightCheck5.2Transit (1 of 2)Transit8.7Transit (2 of 2)Transit6.6Arctic Ocean - Flight #1Science7.1Ice ZigZag-Terra - FlightScience7.1CERES Gridbox - FlightScience8.4CERES Gridbox - FlightScience8.8CERES Gridbox - FlightScience8.8CERES Gridbox - FlightScience8.3CERES Gridbox - FlightScience8.1#3Science8.3CERES Gridbox - FlightScience8.3CERES Gridbox - FlightScience8.3Flight #10Science8.3CERES Gridbox - FlightScience8.3CERES Gridbox - FlightScience8.3Flight #11Science8.6Science Albedo/CryoSatScience8.3Flight #13Science8.3Sea Ice & Radiation - Flight #13Science8.3Sea Ice & Radiation - Flight #14Science8.2	ReportsFlt #Purpose of FlightDurationRunning TotalEngineering Check FlightCheck2.82.8Boom Calibration FlightCheck5.28.5Transit (1 of 2)Transit8.717.2Transit (2 of 2)Transit6.623.8Arctic Ocean - Flight #1Science6.630.4140W Sea Ice - Flight #2Science7.137.5Ice ZigZag-Terra - FlightScience7.144.6CERES Gridbox - FlightScience7.760.7MIZ Lawnmower - FlightScience8.869.5CERES Gridbox - FlightScience8.385.3CERES Gridbox - FlightScience8.385.3CERES Gridbox - FlightScience8.3101.7CERES Gridbox - FlightScience8.6117.5Science8.6117.5Science8.6Science8.6117.5Science8.6Science8.3125.8Science8.3Science8.6117.5Science8.3Science8.6117.5Science8.3Science8.6125.8Science8.3Science8.6125.8Science<	Reports   Fit # Purpose of Plight Puration Running Total Remaining   Engineering Check Flight Check 2.8 2.8 226.2   Boom Calibration Flight Check 5.2 8.5 220.5   Transit (1 of 2) Transit 8.7 17.2 211.8   Transit (2 of 2) Transit 6.6 23.8 205.2   Arctic Ocean - Flight #1 Science 7.1 37.5 191.5   Idez ZigZag-Terra - Flight #3 Science 7.1 44.6 84.4   CERES Gridbox - Flight #4 Science 7.7 60.7 168.3   CERES Gridbox - Flight #6 Science 8.8 69.5 159.5   CERES Gridbox - Flight #6 Science 8.3 69.5 159.5   CERES Gridbox - Flight #6 Science 8.3 143.7 152   CERES Gridbox - Flight #7 Science 8.3 101.7 127.3   CERES Gridbox - Flight #8 Science 8.3 101.7 127.3   CERES		



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09/24/14 - Gridbox TO   09/25/14 Flight #15	A+Surface - Science	6.3	140.3	88.7		
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