

C-130 Hercules 09/19/14 - 09/20/14

Flight Number: Radiation Wall Pattern - Flight #13

Payload Configuration: ARISE

Nav Data Collected: Yes

Total Flight Time: 8.3 hours

Submitted by: Luci Crittenden on 09/20/14

Flight Segments:

From:	PAEI	To:	PAEI
Start:	09/19/14 16:53 Z	Finish:	09/20/14 01:11 Z
Flight Time:	8.3 hours		
Log Number:	141002	PI:	Christy Hansen
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	Successful science flight for ARISE on Alaskan deployment		

Flight Hour Summary:

	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 Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
10/02/14 - 10/03/14	Cal Flight	Science	8.6	8.6	80.1	
10/04/14	Transit	Transit	9.6	18.2	70.5	

Source URL: https://espo.nasa.gov/arise/flight_reports/C-130_Hercules_09_19_14_-_09_20_14#comment-0

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NASA Official: Marilyn Vasques

Related Science Report:

ARISE - C-130 Hercules 09/19/14 Science Report

Mission: ARISE

Mission Summary:

Radiation Wall Pattern - Flight #13

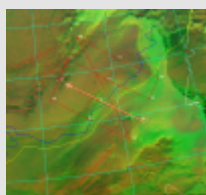
The objectives for today's flight were to conduct a cloud-radiation wall pattern in a low cloud deck extending from the open ocean and across the sea-ice near 73N 130W. The weather cooperated and provided an extensive low cloud deck for the primary pattern, as well as an opportunity to characterize the sea-ice from high altitude with LVIS on the W-E transect to the target area. The LVIS sea-ice characterization was about 70% successful along the 1st half of the line due to some scattered low clouds, and unsuccessful due to overcast conditions on the 2nd half of the line. A high altitude radiation survey was made over the target area that had been chosen for the low cloud study. This was followed by a flat descent through the region to obtain a profile of atmospheric state. The wall pattern was set



up on a single 200 km line from open ocean to concentrated sea-ice. The cloud that was sampled was mostly single layered with base altitudes that were found to be close to the surface near the edge of the ice sheet, but higher over the open ocean (~1200 ft) and the more concentrated ice areas (500-700 ft). The cloud geometric thickness varied from about 5000 ft over the open ocean to about 700 ft at the opposite end over the sea ice. A series of legs were flown above cloud top, below cloud base (or 1000 ft, if the bases extended below 500 ft), and in a level stair step pattern to sample the cloud microphysics and radiative flux profiles. A haze layer was reported above the cloud top that was well characterized with 4STAR. There were numerous coincident satellite overpasses and all of the instruments were reported to work well. This appears to be another "golden day". The flight scientist was Anthony Bucholtz (NRL).

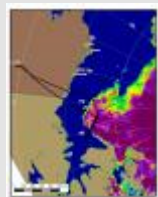
Images:

September 19, 2014 Figure 1



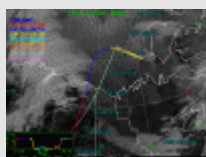
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September 19, 2014 Figure 5



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September 19, 2014 Figure 6



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Submitted by: William L. Smith Jr. on 09/22/14

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

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
08/24/14	Engineering Check Flight	Check	2.8	2.8	226.2	
08/29/14	Boom Calibration Flight	Check	0.5	3.3	225.7	
08/30/14	Project Check Flight	Check	5.2	8.5	220.5	
09/01/14	Transit (1 of 2)	Transit	8.7	17.2	211.8	
09/02/14	Transit (2 of 2)	Transit	6.6	23.8	205.2	
09/04/14 - 09/05/14	Arctic Ocean - Flight #1	Science	6.6	30.4	198.6	
09/05/14 - 09/06/14	140W Sea Ice - Flight #2	Science	7.1	37.5	191.5	
09/06/14 - 09/07/14	Ice ZigZag-Terra - Flight #3	Science	7.1	44.6	184.4	
09/07/14 - 09/08/14	CERES Gridbox - Flight #4	Science	8.4	53	176	
09/09/14 - 09/10/14	CERES Gridbox - Flight #5	Science	7.7	60.7	168.3	
09/10/14 - 09/11/14	MIZ Lawnmower - Flight #6	Science	8.8	69.5	159.5	
09/11/14 - 09/12/14	CERES Gridbox - Flight #7	Science	7.5	77	152	
09/13/14 - 09/14/14	CERES Gridbox - Flight #8	Science	8.3	85.3	143.7	
09/15/14 - 09/16/14	CERES Gridbox - Flight #9	Science	8.1	93.4	135.6	
09/16/14 - 09/17/14	Radiation Wall Pattern - Flight #10	Science	8.3	101.7	127.3	
09/17/14 - 09/18/14	CERES Gridbox - Flight #11	Science	7.2	108.9	120.1	
09/18/14 - 09/19/14	Sea Ice Albedo/CryoSat - Flight #12	Science	8.6	117.5	111.5	
09/19/14 - 09/20/14	Radiation Wall Pattern - Flight #13	Science	8.3	125.8	103.2	



09/21/14 - 09/22/14	Sea Ice & Radiation - Flight #14	Science	8.2	134	95
09/24/14 - 09/25/14	Gridbox TOA+Surface - Flight #15	Science	6.3	140.3	88.7

