

## ARISE - C-130 Hercules 10/02/14 Science Report

**Date:** Thursday, October 2, 2014

**Mission:** ARISE

**Mission Location:** Southern Alaska and Bristol Bay

**Mission Summary:**

Cal Flight - Flt #16

The primary purpose of this flight was instrument calibration. The flight scientists were Connor Flynn (NASA AMES) and Michele Hofton (NASA GSFC). The flight commenced with an LVIS characterization of a series of glaciers in southern Alaska. This included overflights of at least portions of the Tazlina, Columbia, Portage, Spencer, Trail and Wolverine glaciers. After that, a series of pitch and roll maneuvers were performed over calm inland waters to help calibrate LVIS. The next set of maneuvers were designed to calibrate the upward looking radiometers. The first of these was designed to characterize the potential impact of obstructions from the aircraft and from other upward looking instruments, as a function of the solar azimuth relative to the aircraft, so that appropriate corrections can be developed where needed. This maneuver consisted of a circular pattern with 5-degree incremental heading changes and data acquisition while flat and level at a constant heading. The solar zenith angle during these maneuvers was about 70 degrees, which is consistent with the solar conditions during a vast majority of the radiative flux measurements made during ARISE. The second maneuver was a series of level flight legs flown perpendicular to the solar plane to conduct a Langley calibration for the 4STAR instrument. This was conducted over a period of time as the sun was setting, with uniform cirrus free conditions aloft, to acquire the wide range of air masses needed to get an accurate calibration. Finally, a series of yaw maneuvers were performed to calibrate the AIMMS-20 wind measurement system. All of the instruments worked well, the weather cooperated, and the calibration maneuvers appear to have been conducted successfully.

**Images:**

### October 2, 2014 Figure 1



[Read more](#)

**Submitted by:** William L. Smith Jr. on 10/03/14

**Related Flight Report:**

### C-130 Hercules 10/02/14

**Flight Number:** FCF for #1 Prop

**Payload Configuration:** ARISE

**Nav Data Collected:** No

**Total Flight Time:** 0.5 hours

**Submitted by:** Luci Crittenden on 10/02/14

**Flight Segments:**

<b>From:</b>	PAEI	<b>To:</b>	PAEI
<b>Start:</b>	10/02/14 19:10 Z	<b>Finish:</b>	10/02/14 19:41 Z
<b>Flight Time:</b>	0.5 hours		
<b>Purpose of Flight:</b>	Maintenance		
<b>Comments:</b>	FCF successfully conducted in Fairbanks. Checkout of repair on #1 Prop. Airplane is good.		

**Flight Hour Summary:**

There have been no log numbers entered for this flight report. If this is incorrect please edit the Flight Segment section.

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NASA Official: Bruce A. Tagg

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