

NAAMES Mission C-130 Flight Report

From: CYYT

To: CYYT

Start: 11/18/15 11:00Z

Finish: 11/18/15 20:47Z

Flight Time: 9.8 hours

Log Number: 161006

PI: Mike Behrenfeld

Funding Source: Paula Bontempi - NASA - SMD - ESD Ocean Biology and Biogeochemistry

Official Report Logged At:

[https://airbornescience.nasa.gov/science_reports/NAAMES - C-130H Hercules 439 11 18 15 Science Report](https://airbornescience.nasa.gov/science_reports/NAAMES_-_C-130H_Hercules_439_11_18_15_Science_Report)

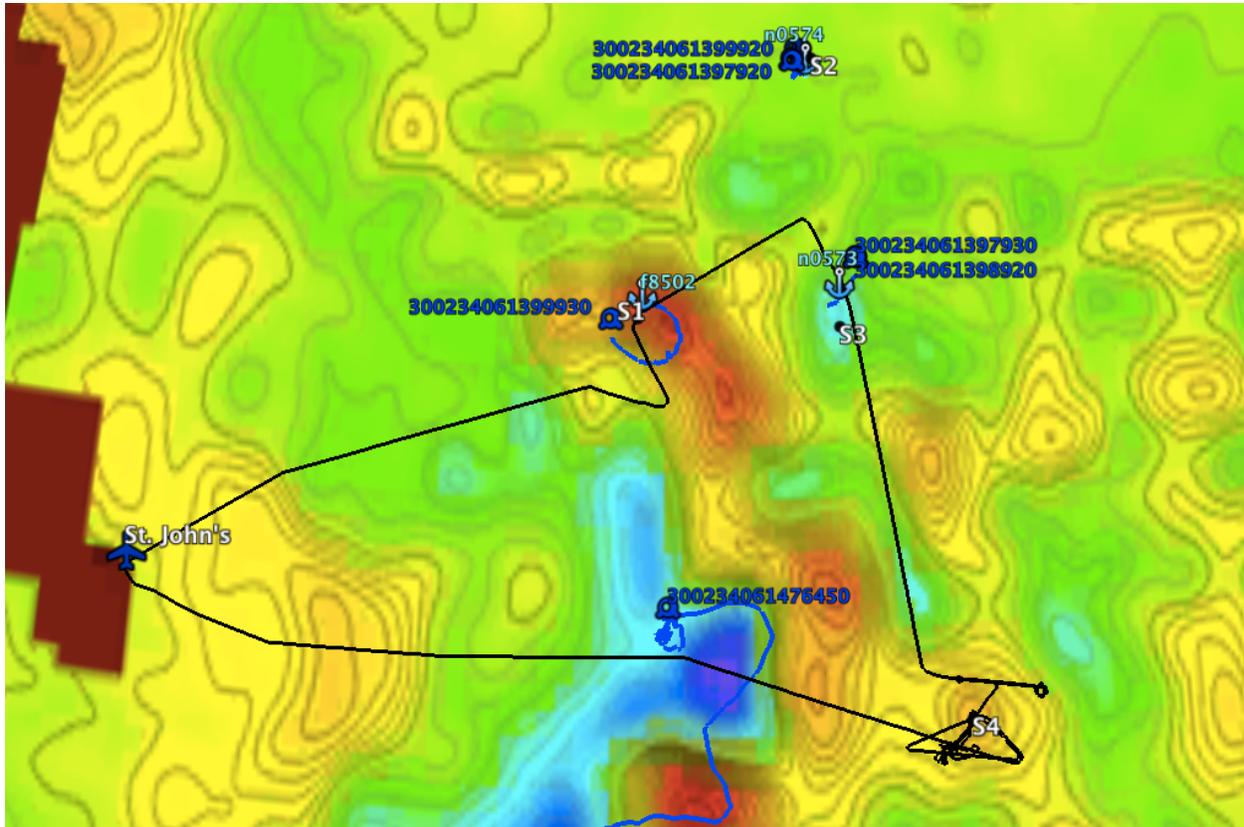
[https://airbornescience.nasa.gov/flight_reports/C-130H Hercules 439 11 18 15](https://airbornescience.nasa.gov/flight_reports/C-130H_Hercules_439_11_18_15)

Flight Hour Summary:

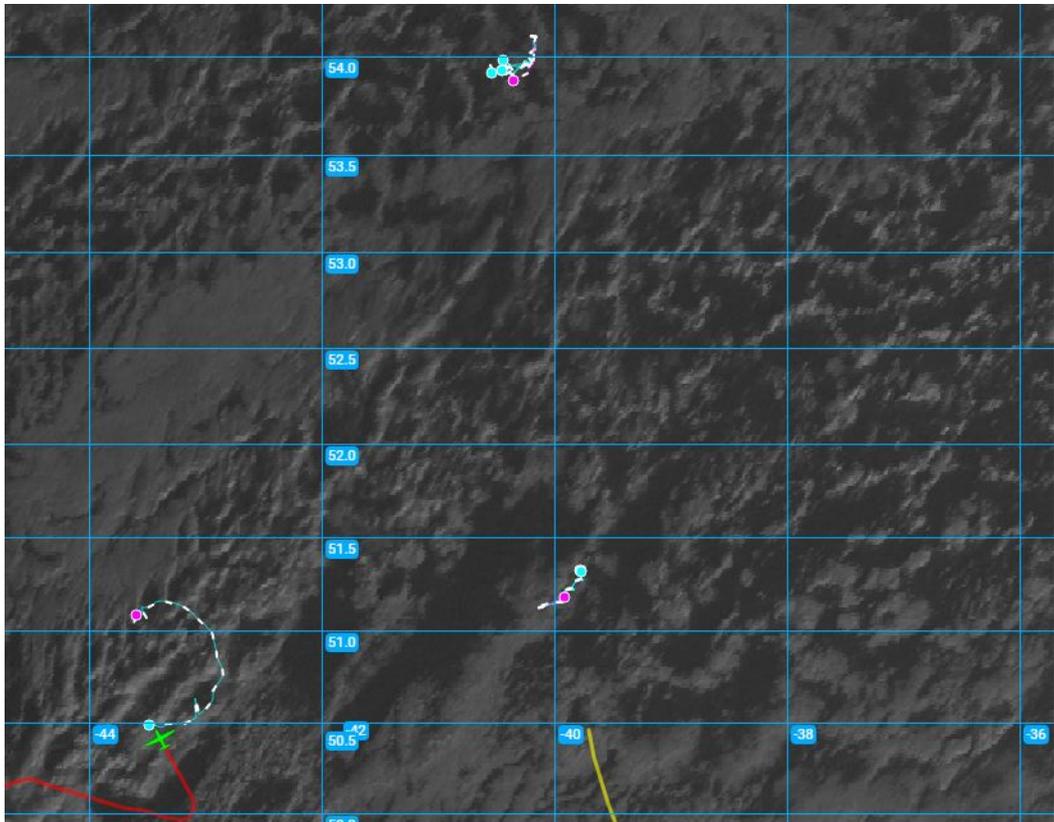
161006 Flight Reports					
Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
10/31/15	Airworthiness Test Flight	Check	1	1	99
11/04/15	Project Test Flight	Check	5.5	6.5	93.5
11/09/15 - 11/10/15	NAAMES Nov-2015 Transit	Transit	4.6	11.1	88.9
11/12/15	NAAMES Nov-2015 Data Flight #1	Science	9.9	21	79
11/14/15	NAAMES Nov-2015 Data Flight #2	Science	9.7	30.7	69.3
11/17/15	NAAMES Nov-2015 Data Flight #3	Science	8.8	39.5	60.5
11/18/15	NAAMES Nov-2015 Data Flight #4	Science	9.8	49.3	50.7

Comments: The fourth NAAMES science flight complements yesterday's southern survey by heading north to finally capture ocean remote sensing around Points S1 and S3 before heading south again to execute bowtie and cloud module maneuvers in the vicinity of the ship at Point S4. The ECMWF cloud forecast suggested that the entire northern end of the track would have relatively low cloud fraction today, which actually ended up being scattered-to-broken clouds throughout much of the region. Because of large overcast cloud features stretching from Points S1 to S2 the decision was made to deviate south from the flight plan by skipping Point S2 and working the more open cloud field just north of S1 and S3 at high-altitude with the ocean remote sensors. Although, the overcast skies over Point S2 eventually opened up later in the flight, the new flight leg nicely extended the coverage of the ocean remote sensing tracks in the vicinity of Points S1, S2, and S3. The C-130 carried out the northern leg of the bowtie near the current ship station in the eddy at Point S4, where it encountered open skies to the

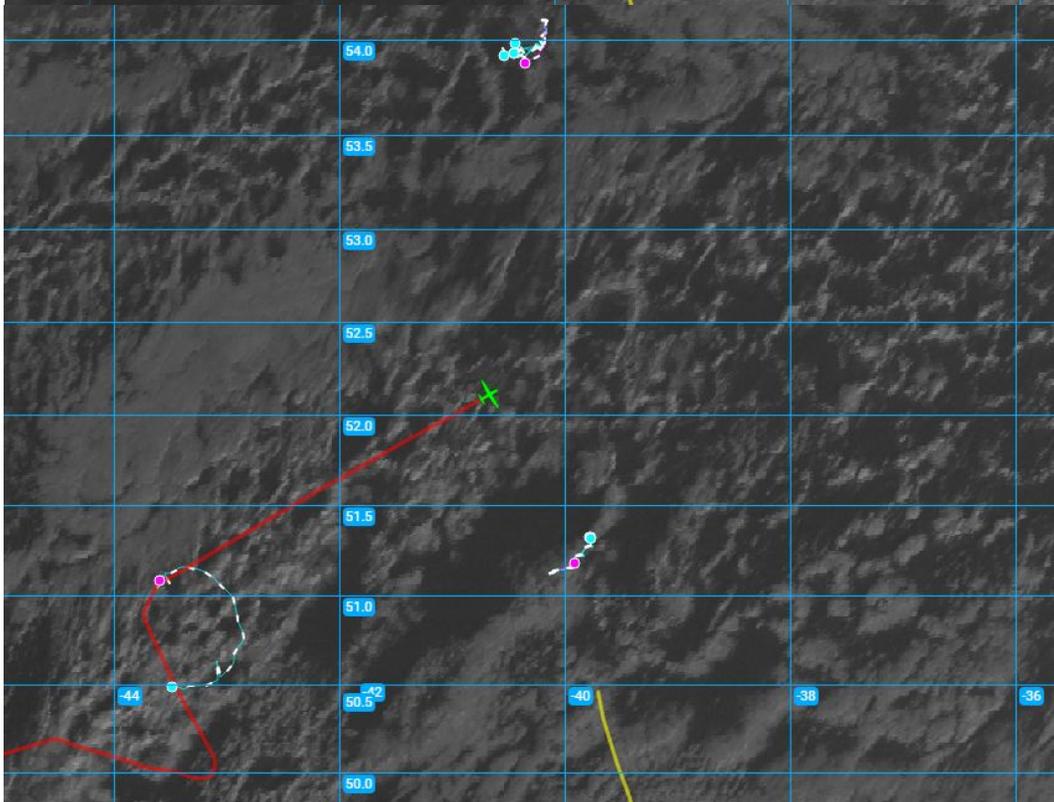
west and east of the leg and broken stratocumulus clouds in the middle of the bowtie leg. The aircraft then proceeded to carry out extensive low-level sampling in and around the ship as well as for a southern bowtie leg, before starting a cloud module to the southwest of the ship. The clouds in the area around Point S4 were observed to be layered and evolving rapidly with heavy drizzle, which complicated the cloud module legs. The pilots and science crew did an outstanding job of carrying out level cloud module legs while avoiding clear air aerosols impacted by drizzle. These efforts are evident in the meandering nature of the flight track as shown in the maps below. After completing the cloud module, the C-130 finished the high-altitude leg of the southern bowtie module before returning to base.



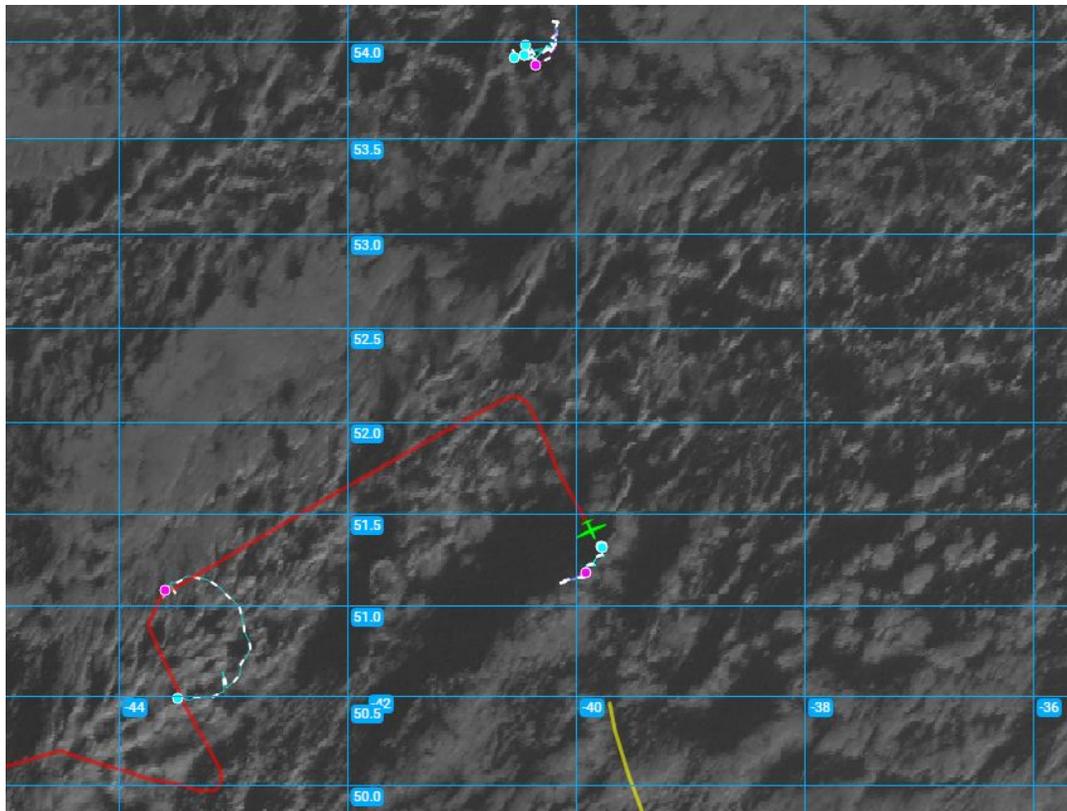
C-130 flight track (black) overlaid on the sea level anomaly (SLA) eddy map. Float (light blue anchors) and drifter (dark blue circles) positions and IDs are also shown. The ship carried out a dawn casting at Point S4. Eddy map courtesy of Peter Gaube.



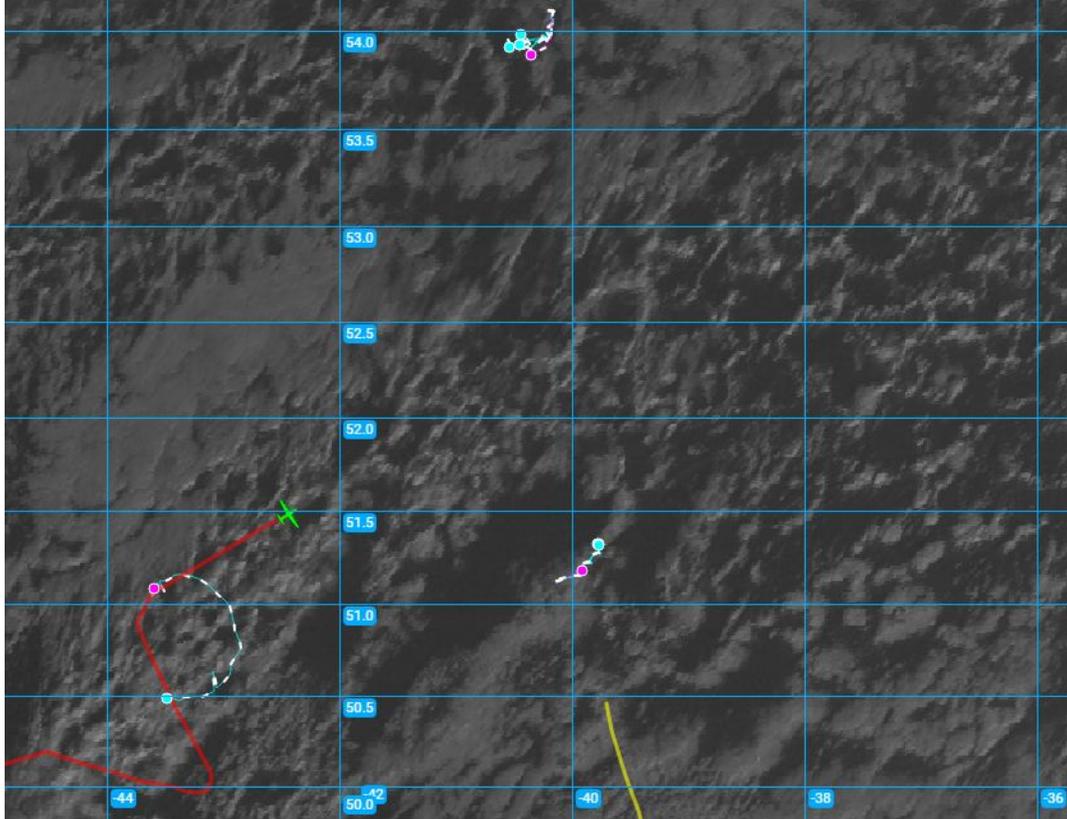
GOES Visible :: 2015-11-18T12:40:00Z/2015-11-18T12:30:00Z WEST/EAST



GOES Visible :: 2015-11-18T13:10:00Z/2015-11-18T13:00:00Z WEST/EAST



GOES Visible :: 2015-11-18T13:15:00Z/2015-11-18T13:15:00Z WEST/EAST



GOES Visible :: 2015-11-18T12:45:00Z/2015-11-18T12:45:00Z WEST/EAST

