ORCAS Field Catalog Introduction

Greg Stossmeister, John Allison and Erik Johnson

gstoss@ucar.edu

catalog.eol.ucar.edu/orcas

The NCAR/EOL Field Catalog

The field catalog is a web-based collaborative service whose mission is to provide facilities for:

- Project Documentation
- Collect supporting prods for context
- Post mission, campaign review
- Mission Planning
- Real-time communications
- Situational Awareness
- Real-time decision-making
- In-field data sharing

79 campaigns supported in 19 years

The NCAR/EOL Field Catalog

The field catalog is a web-based collaborative service . . .

Features:

Flight Plan Discussion

Edit report

Editing feature is intended for small fixes only. You may change the date/time of the report, but only if another report does not already exist at the new date/time.
You must enter a password before adding a link or image in a text box.

Password*

Author* Lyatt Jaegle

Date/Time* 2015-03-02 06:00 UTC
(Form loaded at 2015-03-10 22:38 UTC)

Discussion*

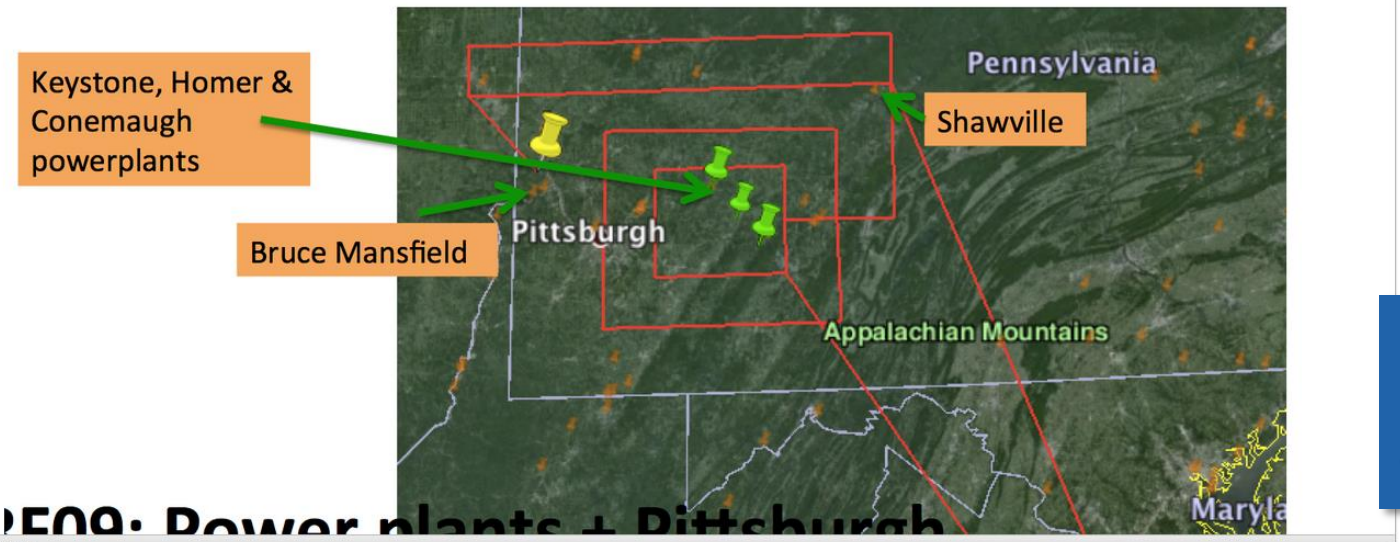
You must enter a password above before adding a link or image in this text box.

The editor below allows WYSIWYG and Source-HTML editing with file uploads for both inline images and links to attachments. See the Users Guide for editing help. We suggest you restrict your HTML and styling to be clean and simple. To include images, use the Image or Link button and then the Upload tab. Finally, for security and styling reasons, some advanced HTML and larger headings may be removed or modified.

Source | Styles | Format | Size

The next nighttime flight, RF09, is planned to take off at midnight on Tuesday night (Wed 03032015, 5 UTC, 00 EST). The objectives are to sample plumes from some very large power plants in western Pennsylvania and fly in the Pittsburgh outflow. We will fly to the SE corner of the inner box below, do a missed approach and then fly around the inner box counterclockwise twice at two different altitudes. There are 3 large power plants in that inner box: Keystone, Homer City, and Conemaugh. Currently, Keystone is the 2nd largest NOx emitter in the US and Homer City the top SO2 emitter. We would then fly around the outer box clockwise with a missed approach in the SE corner. Finally, we would go up North, downwind of Pittsburgh for another missed approach and then do two legs downwind of Pittsburgh and the power plants. This is expected to be an ~8 hour flight.

We expect a high pressure system over the flight region, leading to light northwesterly flow at the beginning of the flight (1am), switching over to South-Southeasterly flow later in the flight (7am).



body p

Clear editor

Cancel Submit

For documentation: Interactive web forms

Ops Plan of the Day
Weather Discussion
Mission Scientist Summary
IOP Proposal
NSF NCAR GV
Staffing Schedule

For documentation:
Operations Reports

Mission Scientist Report, RICO, King Air Flight January 21st, 2005 UW King Air Flight Scientist: Stevens

Figure 1: Images showing cloud field during flight.

General cloud characteristics: The cloud field was rather suppressed with patches of humulus and patches of clear, with tops rarely developing above 4000'. During the day a magnificent tail developed west of Barbuda. This tail had a tremendous radar projection, but faded by the time we worked it, only to redevelop somewhat after we left. Drop concentrations were generally light, near 50 or 75 cm^{-3}.

General Comments: The King Air was the only aircraft in the area as the BAE flew well to the north on this day in search of deeper clouds. The intial plan was to fly along and cross wind segments near the ship for estimating momentum fluxes by fields of shallow cumulus, following a line suggested by Peggy LeMone. Winds proved rather light, as did the shear and cloud field. Indeed echoes were so little in evidence we often turned off the radar, and did not fly legs over the top of the cloud field for which the dual Doppler was desired. Later in the flight we flew a tail pattern which sampled a dissipating tail west of Barbuda, and the period before its subsequent redevelopment.

Overview of Flight Pattern: The momentum patterns were to consist of stacks of four to five legs, along and across the shear. We attempted to coordinate these with the ships heading, and after some initial adjustment settled on a direction. The patterns generally included two levels in the subcloud layer, one or more in the subcloud layer, and one above the cloud. The latter were cut short for lack of echoes. The cloud legs were not flow straight and level, but rather adjusted slightly, trying to maintain an average heading that followed the subcloud legs, to increase the time in cloud for cloud statistics. The tail pattern consisted of: (1) two subcloud legs starting well north and ending well south of Barbuda, and flown approximately 10km downwind of Barbuda, upwind of the region of significant tail development; (2) along tail cloud and subcloud legs for measuring clouds and precipitation; (3) a repeat of one of the subcloud legs.

Flight Notes:

For documentation: Instrument Status

Status reports summary

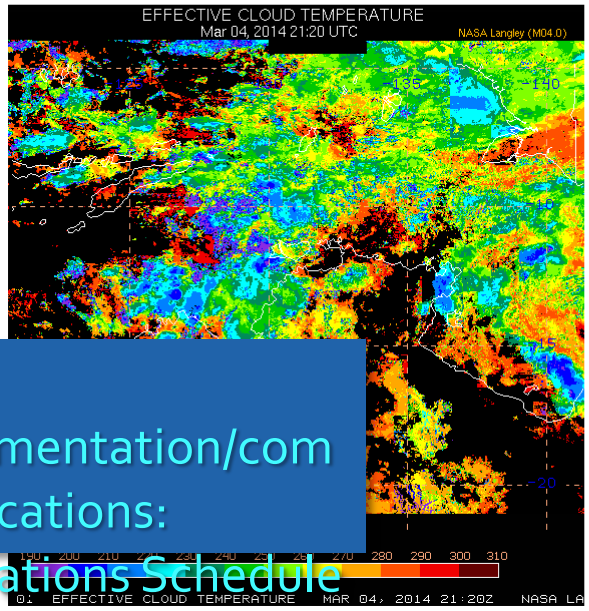
Instrument	2013-12-17	2014-01-11	2014-01-14	2014-01-17	2014-01-19	2014-01-22	2014-01-25	2014-01-29	2014-02-01	2014-02-05	2014-02-08	2014-02-14	2014-02-17	2014-02-21	2014-02-25	Instrument
Aircraft and state parameters																
Aircraft, NSF/NCAR GV HIAPER																**Aircraft, NSF/NCAR GV HIAPER**
Overall	down	up	up	up	up	up	up	up	up	up	up	up	up	up	up	**Overall**
ADS - Airborne Data System	down	up	up	up	up	up	up	up	up	up	up	up	up	up	up	**ADS - Airborne Data System**
Digital cameras	down	up	up	up	up	up	up	up	up	up	up	up	up	up	up	**Digital cameras**
Mission Coordinator System	down	up	up	up	up	up	up	up	up	up	up	up	up	up	up	**Mission Coordinator System**
Radome gust probe	down	up	up	up	up	up	up	up	up	up	up	up	up	up	up	**Radome gust probe**
Chemistry																
AMAX-DOAS	down	up	up	up	up	up	up	up	down	up	provisional	up	down	up	up	**AMAX-DOAS**
AWAS - Advanced Whole Air Sampler	down	provisional	up	provisional	provisional	up	up	up	up	up	up	up	up	up	up	**AWAS - Advanced Whole Air Sampler**
Bromine	down	up	up	up	provisional	up	up	up	up	up	up	up	up	up	provisional	**Bromine**
CO - Aerolaser	down	down	up	down	provisional	up	up	up	up	up	up	up	up	up	up	**CO - Aerolaser**
CO2 - Picarro	down	down	provisional	down	provisional	provisional	down	up	up	up	up	up	up	up	up	**CO2 - Picarro**
Fast O3	down	up	up	up	up	up	up	up	up	up	up	up	up	up	up	**Fast O3**
Formaldehyde	down	provisional	down	provisional	up	provisional	up	up	up	up	down	up	up	up	up	**Formaldehyde**
GT-CIMS	down	up	up	up	up	up	up	up	down	up	up	up	up	up	up	**GT-CIMS**
NO-NO2	down	up	up	up	up	up	up	up	up	up	up	up	up	up	up	**NO-NO2**
TOGA - Trace Organic Gas Analyzer	down	up	up	up	up	up	up	up	up	up	up	up	up	up	up	**TOGA - Trace Organic Gas Analyzer**

NSF NCAR GV
AWAS
TOGA
AO2
QCLS
RICE
VCSEL
CN
PRISM
GNI
Picarro
CLH-2
2DC
Medusa Flask Sampler
CDP

HAIC-HIWC Field Catalog

High Altitude Ice Crystals - High Ice Water Content Project

Latest Cloud Temperature



For documentation/communications: Operations Schedule

Project Time

UTC	Tues, Mar 4, 22:18 Z	Boulder	Tues, Mar 4, 3:18 PM
Darwin	Wed, Mar 5, 7:48 AM	Melbourne	Wed, Mar 5, 9:18 AM
Paris	Tues, Mar 4, 11:18 PM	Tokyo	Wed, Mar 5, 7:18 AM

Current Reports

Operations Plan of the Day
Weather Discussion

Tools

Catalog Maps (GIS Tool)

Announcements/Schedule

Communications Coordinator: Tom Ratvasky Phone: 0469 329 163

Updated at 01:30 UTC 02-Mar-2014

Announcement:

- **No flights 02-March or 04-March** - the fuel control valve is expected to be in Darwin on Monday. However, a PC board for the fuel control is also required. This board has been ordered, but the delivery date is unknown at the moment. Current best guess is the test flight on 05-March.
- The forecast for the top end has dry air persisting through Wednesday. A tropical cyclone is anticipated to develop in the Coral Sea and move west toward Cairns. Planning is being initiated to deploy the Falcon 20 towards the east coast later this week after functional flight checks are completed.
- Decision on extension will be made on 05-March after gathering terms and conditions of extending lease at Pearl hangar and understanding the status of the aircraft

Plan for 02-Mar-2014

- no more meetings - enjoy the good weather!

Plan for 03-Mar-2014

- 09:00 Wx brief
- 09:30 FOG meeting
- 14:00 McBride presentation, "Australian Monsoon and the MJO (Madden-Julian Oscillation)", NTRO 2nd Floor conference room

Plan for 04-Mar-2014

- 09:00 Wx brief
- 09:30 FOG meeting
- Replace fuel valve after receipt

Times posted are local Darwin time, unless otherwise noted.

AMPS Model

ASCAT

Ship

GOES-E

GFS Model

Soundings

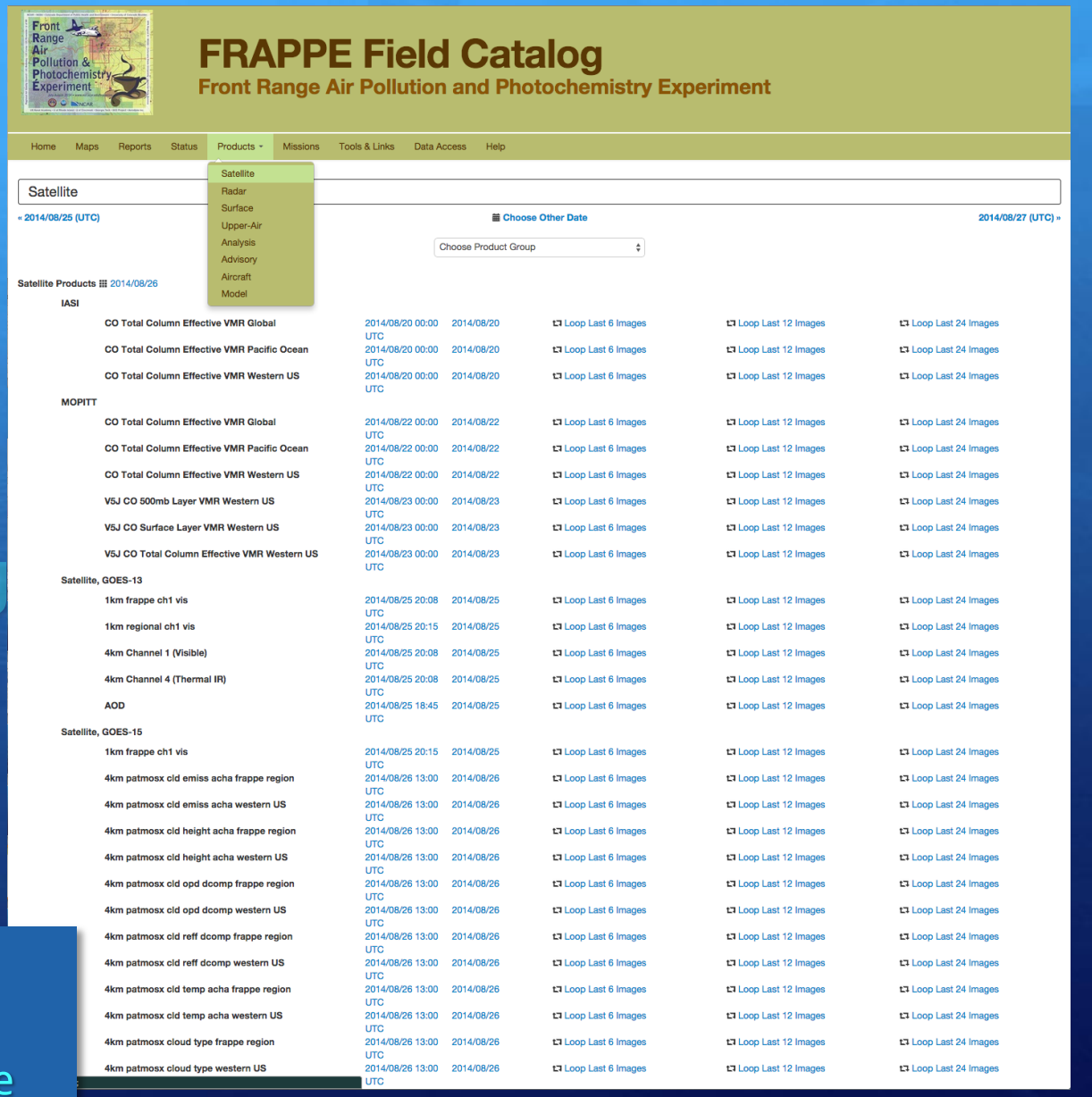
MODIS

COSMIC Sounding

METARs

Aircraft products

NOAA-18



Supporting Products: Example - Satellite

OWLeS Field Catalog

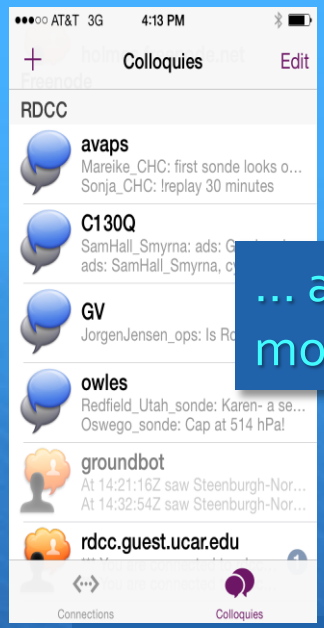
Ontario Winter Lake-effect Systems

Home | Reports | Status | Ops Products | Model Products | Research Products | Missions | Tools & Links | Data Access | Help

Mission Summary Table

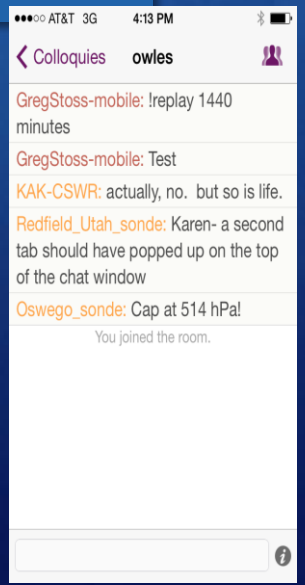
		End Date/Time	Event	Catalog Products	Flight Track Plot	Summaries	Notes
01	2013-12-07 16:00	2013-12-07 23:00	LLAP band	Ops: Satellite Ops: Radar Ops: Surface Ops: Upper-Air Research: Radar Research: Surface Research: Upper-Air	UWKA Flight Track Plot	Summary Reports	A band-like structure, exhibiting small cellular features, formed early in the day near Oswego and persisted through the afternoon and early evening. The band was oriented approximately 280-290 degrees to the shoreline. Surface assets and soundings targeted this band. More substantial snow occurred with an E-W oriented band near Pulaksi, NY. The WY King Air flew parallel to the long axis of the lake. Upwind soundings were obtained in Ontario, Canada.
02a	2013-12-10 16:39	2013-12-10 20:18	Downwind band	Ops: Satellite Ops: Radar Ops: Surface Ops: Upper-Air Research: Radar Research: Surface Research: Upper-Air	UWKA Flight Track Plot	King Air Mission Summary Report Millersville Tethersonde Summary Report	Weak mesoscale band oriented E-W off Lake Erie. Two surprising observations were that the Erie band extending east completely across the OWLeS operations area throughout the day (it died at sunset as expected from climatology) and that the cloud tops south of the band were just as high and turreted as those in the band. Indeed, the high reflectivity band seemed to follow a sharp change in depth of the moist convection rather than being assoicated with an isolated band of deeper convection.
02b	2013-12-10 23:00	2013-12-12 02:00	LLAP band	Ops: Satellite Ops: Radar Ops: Surface Ops: Upper-Air Research: Radar Research: Surface Research: Upper-Air	UWKA Flight Track Plot	Summary Reports	An intense LLAP band was sampled on the east shores of Lake Ontario by ground assets. OWLeS operated through the night with all ground facilities commencing operations at 1800 EST and ending operations at 1900 EST on 11 December.
03	2013-12-12 21:00	2013-12-13 07:00	LLAP band	Ops: Satellite Ops: Radar			An intense LLAP band was sampled on the east shores of Lake Ontario by ground assets. OWLeS operated through the night with all ground facilities commencing operations at 1600 EST and ending operations at 0200 EST on 13 December, although some teams continued data collection until 0900 EST.
04	2013-12-15 20:40	2013-12-16 07:00	LLAP band	Ops: Satellite Ops: Radar Ops: Surface Ops: Upper-Air Research: Radar Research: Surface Research: Upper-Air	UWKA Flight Track Plot	Summary Reports	A surprise LLAP band was sampled on the east shores of Lake Ontario. The expectation from model guidance was that it would make landfall between Fairhaven and Oswego but instead the band moved Northward. In summary, this is a good case study for LLAP and orographic interests, but the coordination between aircraft and DOW measurements was rather poor, MIPS was nor under the band, and we did not have an east shore radiosonde north of the band.

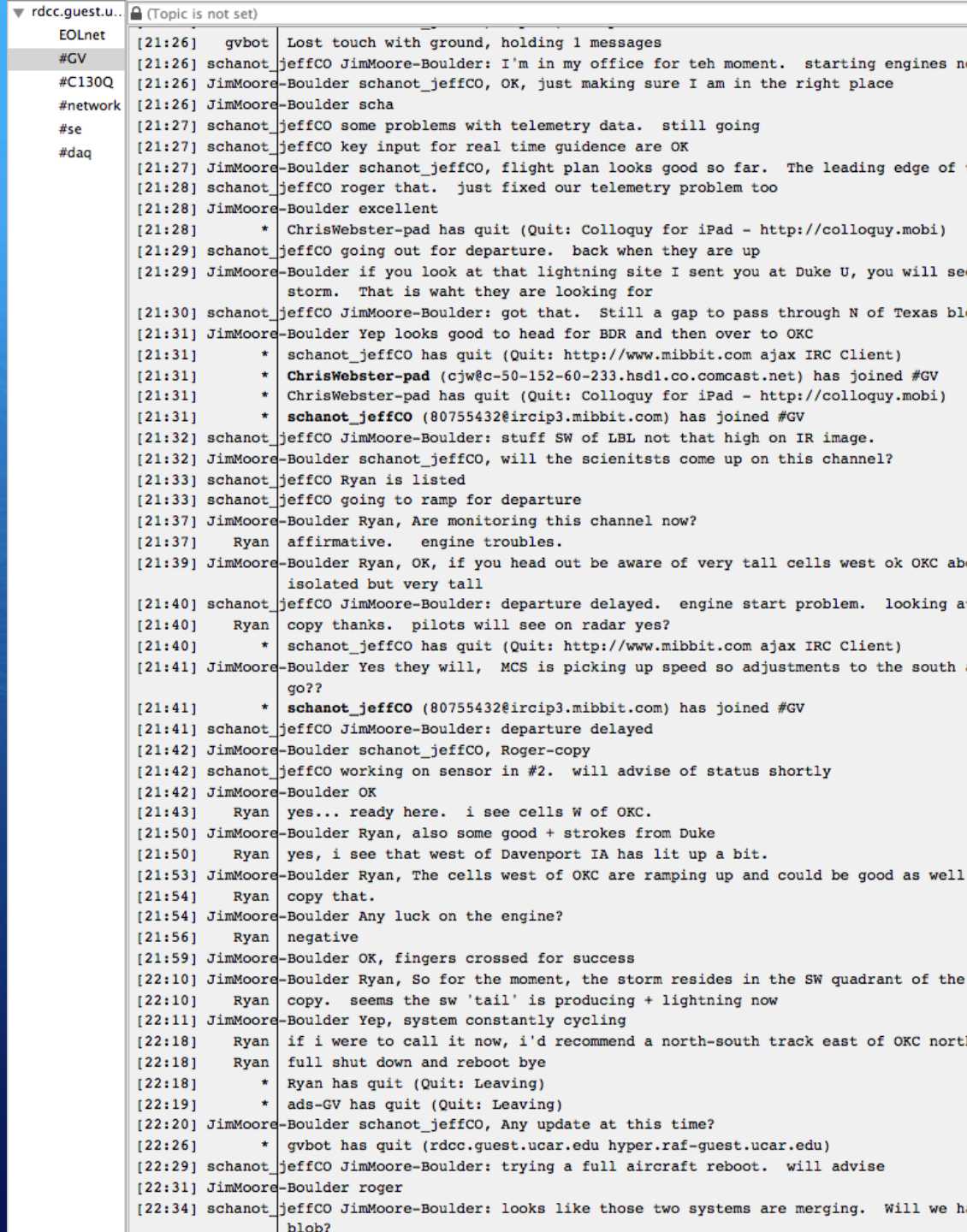
For Post Mission/Post Campaign Review:



... and mobile!

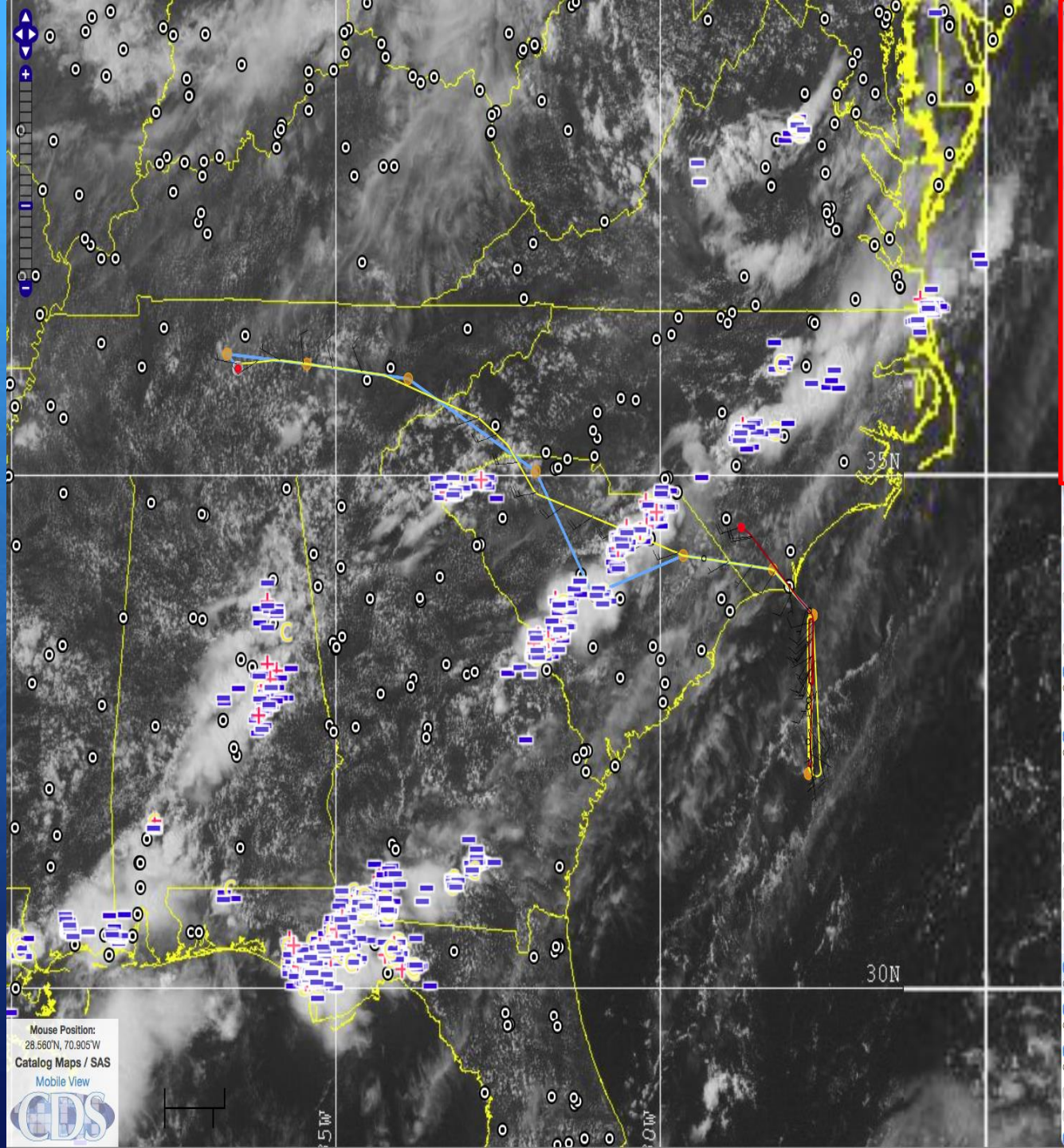
For Real-time Communications: IRC Chat





Catalog Maps Tool:

- Situational Awareness
- Mission Planning
- Flight Tracking
- Mission Review



Next Steps:

- With input from project participants, develop a prioritized list of operational and model products needed in the field.

1. What is needed for real-time decision making/situational awareness?

2. What are the important products/data that need to be captured to document the conditions in which you sampled?

Potential Product List:

- GOES Imagery
- NOAA Polar Orbiter Mosaics
- MODIS Chlorophyll a, SST, PIC, POC
- ASCAT, WindSat
- AVISO Sea Surface Height?
- COSMIC Soundings
- Surface Met Obs
- Atmospheric Soundings
- AMPS Model
- NCEP GFS Model
- STILT Model
- GEOS-5 Model
- NCAR GV Flight Track
- NCAR GV Camera Images
- NCAR GV quick Look products
- Chat Logs
- LM Gould quick look products?
- Autonomous float quick looks?
- ADCP, Buoy, drifter products?
- PRISM quick looks
- OOI products?

category.platform.YYYYMMDDHHmm.product_name.ext

Anonymous ftp upload

Next Steps:

- The Field Catalog will be on-line by mid-December to give you time to become familiar with it before the campaign.

- I'll do a tutorial on how to use the Field Catalog before the campaign starts via a web conference.

- I'll be on-site in Punta Arenas for the first three weeks of the campaign.