

Field Catalog Support for HAIC-HIWC - Cayenne

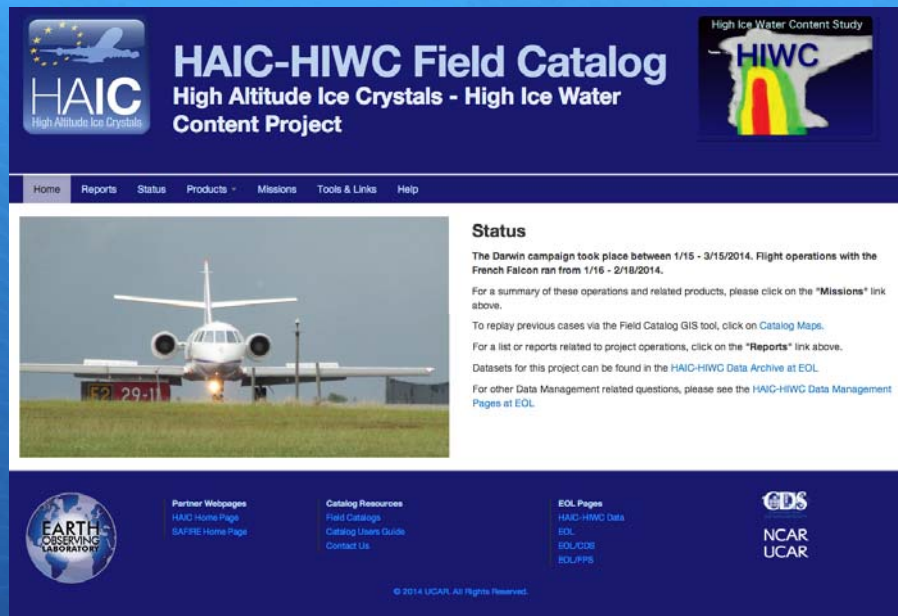
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NCAR Earth Observing Laboratory
Boulder, CO

For the:
HAIC-HIWC Science Team Meeting
March 9-12
New York City



Field Catalog: Purpose



HAIC-HIWC Field Catalog
High Altitude Ice Crystals - High Ice Water Content Project

Home Reports Status Products Missions Tools & Links Help

Status
The Darwin campaign took place between 1/15 - 3/15/2014. Flight operations with the French Falcon ran from 1/16 - 2/18/2014.
For a summary of these operations and related products, please click on the "Missions" link above.
To replay previous cases via the Field Catalog GIS tool, click on Catalog Maps.
For a list of reports related to project operations, click on the "Reports" link above.
Datasets for this project can be found in the [HAIC-HIWC Data Archive at EOL](#).
For other Data Management related questions, please see the [HAIC-HIWC Data Management Pages at EOL](#).

Partner Webpages
HAIC Home Page
SAFIRE Home Page

Catalog Resources
Field Catalogs
Catalog Users Guide
Contact Us

EOL Pages
HAIC-HIWC Data
EOL
EOL/IDS
EOL/PPS

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79 campaigns supported in 19 years
- all still available on-line.

The field catalog is a service NCAR/EOL provides using web-based collaborative tools whose mission is:

- Project Documentation
- Collect supporting products for context
- Post mission, campaign review
- Mission Planning
- Real-time communications
- Situational Awareness
- Real-time decision-making
- Safe site for sharing of restricted data/products

<http://catalog.eol.ucar.edu/haic-hiwc>

Field Catalog Contents: Reports

- Daily Weather Discussion (Forecasters)
- Ops Plan of the Day (Operations Director)
- Flight Notes (Flight Scientist) + Convair 580 + Honeywell
- Operations Summaries (Mission Coordination Team)
- Debrief Notes (SAFIRE) + Convair 580 + Honeywell
- SAFIRE Operations Summaries (SAFIRE) + C 580 + Honeywell
- Daily Instrument Status reports (Aircraft Coordinator) + C580 + H
- ALPHA Assessment (RAL)

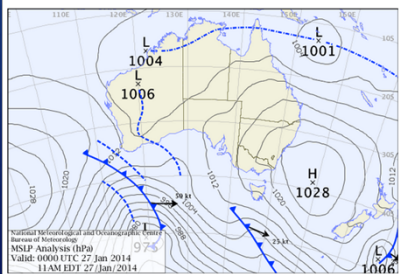
HAIC-HIWC: High Altitude Ice Crystals - High Ice Water Content Project

HIWC Weather Discussion

Author
Lori Chappel
Date/Time
2014-01-27 07:00:00 UTC
Weather Discussion

Situation today Monday 27 January

Weak monsoon trough across the Top End on the surface, leaning to the north with height, to lie across the north coast at 700hPa. Afternoon convection over land today, though some slow moving showers over water west of Darwin remained intense most of the day and are just moving across Darwin by 3pm. This convection over the water against the diurnal trend combined with evidence of increased westerly monsoon flow at Darwin in the mid-levels on the 00Z sounding re-inforce the model prognosis of the monsoon trough aligning and sharpening over Darwin during Tuesday and Wednesday.



| HAIC-HIWC Field Catalog | | High Altitude Ice Crystals - High Ice Water Content Project | | | | | | | | | | | | | | High by HIWC Content Study | |
|---|-------|---|----|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------------------------|---------------------------------------|
| HAIC | | | | | | | | | | | | | | | | HIWC | |
| Home Maps Reports Status Products Missions Tools & Links Help | | | | | | | | | | | | | | | | | |
| Status reports summary | | | | | | | | | | | | | | | | | |
| Instrument | | | | | | | | | | | | | | | | | |
| Bulk Microphysics | | | | | | | | | | | | | | | | | |
| French Falcon | | | | | | | | | | | | | | | | | |
| Goodrich Ice Detector | obsrv | 10 | 10 | provisional | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | French Falcon |
| SEA ICD | obsrv | 10 | 10 | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | SEA ICD |
| SEA RFP2 | obsrv | 10 | 10 | provisional | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | SEA RFP2 |
| SEA LWC | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | SEA LWC |
| SEA Robust TWC | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | SEA Robust TWC |
| Cloud Particle Microphysics | | | | | | | | | | | | | | | | | |
| Arcturus HS8 | | | | | | | | | | | | | | | | | |
| CPD2 | obsrv | 10 | 10 | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | Arcturus HS8 |
| DMT GDP | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | DMT GDP |
| DMT FIP | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | DMT FIP |
| SPC ID-5 | obsrv | 10 | 10 | provisional | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | SPC ID-5 |
| SPC CP | obsrv | 10 | 10 | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | inactive | SPC CP |
| Electro-Static Field | | | | | | | | | | | | | | | | | |
| AMPERA | | | | | | | | | | | | | | | | | |
| General | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | AMPERA |
| Overall | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | Overall |
| Armped | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | Armped |
| DGPS - Aircraft Position and Velocity | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | DGPS - Aircraft Position and Velocity |
| Inertial Data | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | Inertial Data |
| PLANT System | | | | | | | | | | | | | | | | | |
| Pressure Altitude | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | Pressure Altitude |
| Temperature (Static, Total) | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | Temperature (Static, Total) |
| Winds | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | Winds |
| Imaging | | | | | | | | | | | | | | | | | |
| Flight Deck Video Camera | | | | | | | | | | | | | | | | | |
| Remote Sensing | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | Remote Sensing |
| Honeywell Primus 800 | | | | | | | | | | | | | | | | | |
| FASTA Radar | obsrv | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | FASTA Radar |
| Block Peripherals | | | | | | | | | | | | | | | | | |
| Bulk Research CR-2 | | | | | | | | | | | | | | | | | |
| Spectrometer WVSS II | obsrv | 10 | 10 | provisional | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | Bulk Research CR-2 |
| Instrument | obsrv | 10 | 10 | provisional | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | Spectrometer WVSS II |
| Actions | | | | | | | | | | | | | | | | | |
| • View reports | | | | | | | | | | | | | | | | | |
| • Submit new report | | | | | | | | | | | | | | | | | |

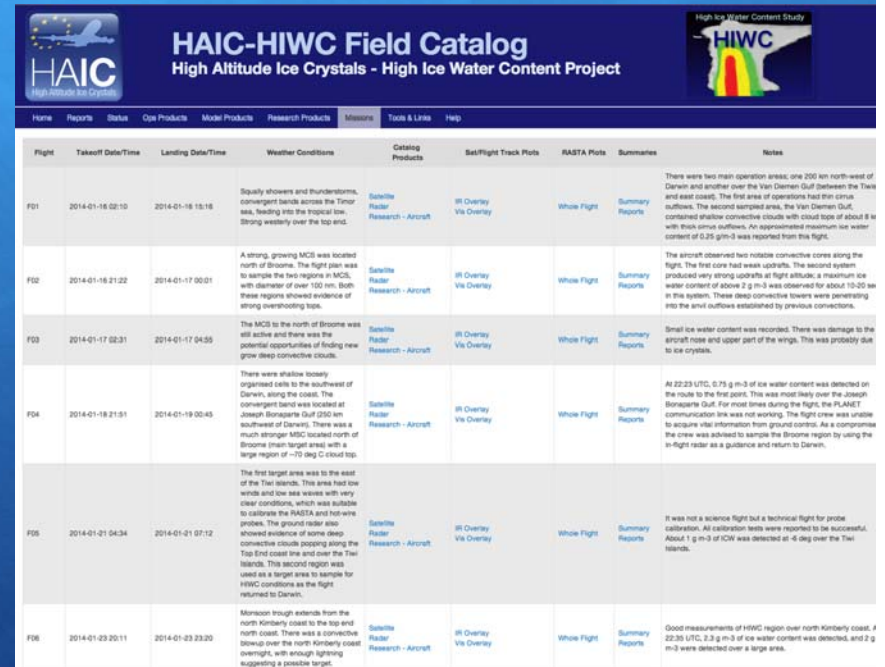
Field Catalog Contents: Catalog Maps¹

- GOES-13 Channel 1-6 imagery
- GOES-13 NASA Langley products
- Falcon-20 flight track
- COSMIC Soundings
- Vaisala GLD 360 Lightning Strike locations (possible if needed)
- ALPHA graphics
- Convair 580 flight track (if provided)
- Honeywell 757 flight track (if provided)
- CNES Radar (if provided)
- Lightning strikes – STARNET (if provided)

¹ GIS Tool for situational awareness and mission replay

Field Catalog Contents: Products

- Mission Summary Table
- WRF Forecast Products
- NCEP GFS Forecast Products
- ALPHA Diagnostic Products
- Falcon-20 Instrument Products
 - 2DS
 - CDP
 - PIP
 - RASTA
 - TWC, IWC, IKP
 - Flight Tracks
- Convair 580 Instrument Products?
- Honeywell 757 Instrument Products?



The screenshot shows the HAIC-HIWC Field Catalog website. The header includes the HAIC logo, the title "HAIC-HIWC Field Catalog", and the subtitle "High Altitude Ice Crystals - High Ice Water Content Project". There is also a small graphic of a rainbow with the text "High Ice Water Content Study" and "HIWC". Below the header is a navigation menu with links for Home, Reports, Status, Core Products, Model Products, Research Products, Missions, Tools & Links, and Help.

| Flight | Takeoff Date/Time | Landing Date/Time | Weather Conditions | Catalog Products | Set/Flight Track Plots | RASTA Plots | Summaries | Notes |
|--------|-------------------|-------------------|---|-------------------------------------|------------------------|--------------|-----------------|---|
| F01 | 2014-01-16 02:10 | 2014-01-16 15:16 | Squally showers and thunderstorms, convergent bands across the Timor sea, leading into the tropical low. Strong westerly over the top end. | Satellite Radar Research - Aircraft | IR Overlay Via Overlay | Whole Flight | Summary Reports | There were two main operation areas, one 200 km north-west of Darwin and another over the Van Diemen Gulf between the Tiwi and east coast. The first area of operations had thin cirrus outflows. The second sampled area, the Van Diemen Gulf, contained shallow convective clouds with cloud tops of about 8 km with thick cirrus outflows. An approximated maximum ice water content of 0.25 g/m ³ was reported from this flight. |
| F02 | 2014-01-16 21:22 | 2014-01-17 00:01 | A strong, growing MCS was located north of Broome. The flight plan was to sample the two regions in MCS, with diameter of over 100 km. Both these regions showed evidence of strong overshooting tops. | Satellite Radar Research - Aircraft | IR Overlay Via Overlay | Whole Flight | Summary Reports | The aircraft observed two distinct convective cores along the flight. The first core had weak updrafts. The second system produced very strong updrafts at flight altitude, a maximum ice water content of above 2 g/m ³ was observed for about 10-20 km in this system. These deep convective towers were penetrating into the anvil outflows established by previous convectors. |
| F03 | 2014-01-17 00:31 | 2014-01-17 04:05 | The MCS to the north of Broome was still active and there was the potential opportunities of finding new deep convective clouds. | Satellite Radar Research - Aircraft | IR Overlay Via Overlay | Whole Flight | Summary Reports | Small ice water content was recorded. There was damage to the aircraft nose and upper part of the wings. This was probably due to ice crystals. |
| F04 | 2014-01-18 21:51 | 2014-01-19 00:45 | There were shallow loosely organized cells to the southwest of Darwin, along the coast. The convergent band was located at Joseph Bonaparte Gulf (250 km southwest of Darwin). There was a much stronger MCS located north of Broome (main target area) with a larger region of ~70 deg C cloud top. | Satellite Radar Research - Aircraft | IR Overlay Via Overlay | Whole Flight | Summary Reports | At 22:23 UTC, 0.75 g/m ³ of ice water content was detected on the nose to the first agent. This was reportedly over the Joseph Bonaparte Gulf. For most times during the flight, the PLANET communication link was not working. The flight crew was unable to acquire raw information from ground control. As a compromise the crew was advised to sample the Broome region by using the in-flight radar as a guidance and return to Darwin. |
| F05 | 2014-01-21 04:34 | 2014-01-21 07:12 | The first target area was to the east of the Tiwi islands. This area had low winds and low sea waves with very clear conditions, which was suitable to calibrate the RASTA and hot-wire probes. The ground radar also showed evidence of some deep convective clouds popping along the Top End coast line and over the Tiwi Islands. This second region was used as a target area to sample for HIWC conditions as the flight returned to Darwin. | Satellite Radar Research - Aircraft | IR Overlay Via Overlay | Whole Flight | Summary Reports | It was not a science flight but a technical flight for probe calibration. All calibration tests were reported to be successful. About 1 g/m ³ of ICH was detected at 4 deg over the Tiwi Islands. |
| F06 | 2014-01-23 20:11 | 2014-01-23 23:20 | Masonrough trough extends from the north Kimberly coast to the top end north coast. There was a convective blowup over the north Kimberly coast overnight, with enough lightning suggesting a possible target. | Satellite Radar Research - Aircraft | IR Overlay Via Overlay | Whole Flight | Summary Reports | Good measurements of HIWC region over north Kimberly coast. At 22:35 UTC, 2.3 g/m ³ of ice water content was detected, and 2 g/m ³ were detected over a large area. |

Field Catalog: Questions

- Is on-site bandwidth in Cayenne sufficient to support remote access to the field catalog in Boulder for participants?
- What products are the other aircraft teams able/willing to provide to the Field Catalog?
- What other products might be needed in the Field Catalog for on-site support or for project documentation?

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