EOL/RAF Project Management and Operations Support

Cory Wolff

Project Manager

EARTH OBSERVING LABORATORY

NCAR

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Introduction

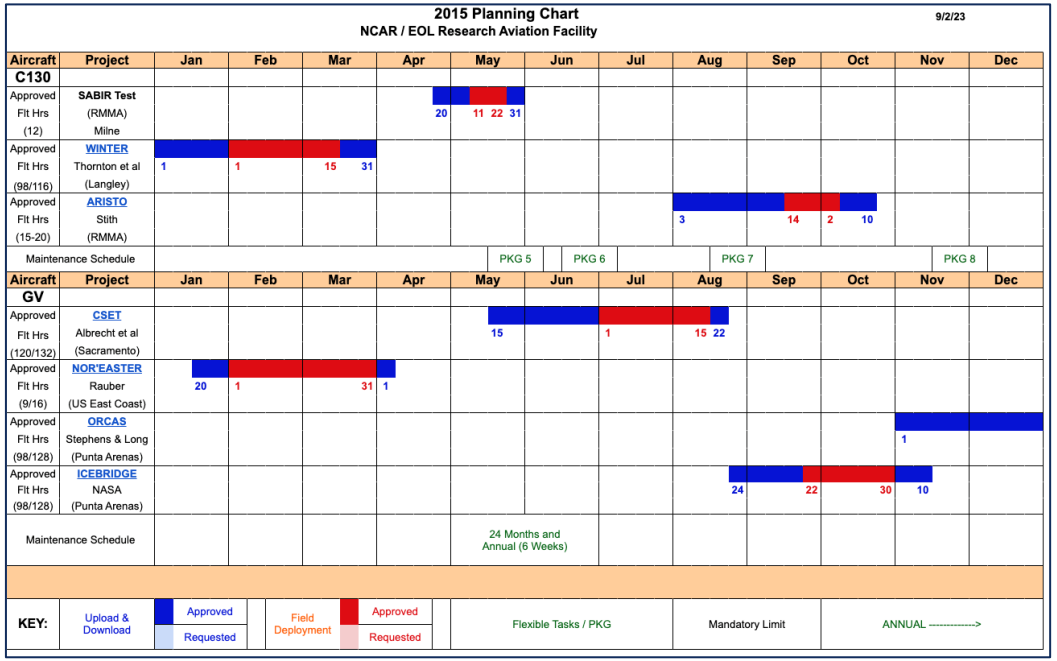
EOL has a variety of support services available during the planning and operations phase of field campaigns, both ground based and airborne.

- Pre-Request Phase
- Planning Phase
- Operations
- Post Project

Pre-Request Phase

Support to help you propose a project that is feasible

- Schedules
- Platform/Instrument Availability
- Payload Optimization
- Instrument Suggestions
- Locations
- Flight Plans



2015 Planning Chart
NCAR / EOL Research Aviation Facility
9/2/23

Aircraft	Project	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
C130													
Approved Flt Hrs (12)	SABIR Test (RMMA) Milne					20	11 22 31						
Approved Flt Hrs (98/116)	WINTER Thornton et al (Langley)	1	1	15 31									
Approved Flt Hrs (15-20)	ARISTO Stith (RMMA)								3	14	2 10		
Maintenance Schedule						PKG 5	PKG 6		PKG 7			PKG 8	
Aircraft	Project	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
GV													
Approved Flt Hrs (120/132)	CSET Albrecht et al (Sacramento)					15		1	15 22				
Approved Flt Hrs (9/16)	NOR'EASTER Rauber (US East Coast)	20	1	31	1								
Approved Flt Hrs (98/128)	ORCAS Stephens & Long (Punta Arenas)											1	
Approved Flt Hrs (98/128)	ICEBRIDGE NASA (Punta Arenas)								24	22	30	10	
Maintenance Schedule						24 Months and Annual (6 Weeks)							

KEY: Upload & Download — Approved / Requested; Field Deployment — Approved / Requested; Flexible Tasks / PKG; Mandatory Limit; ANNUAL ---------->

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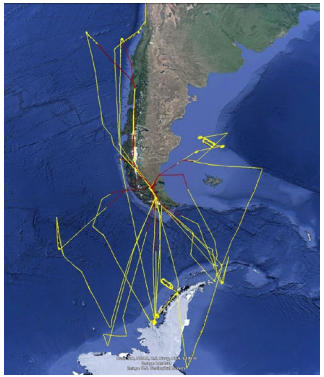
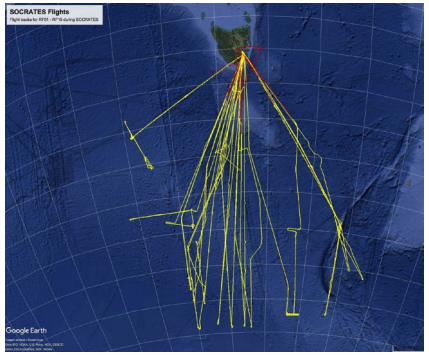
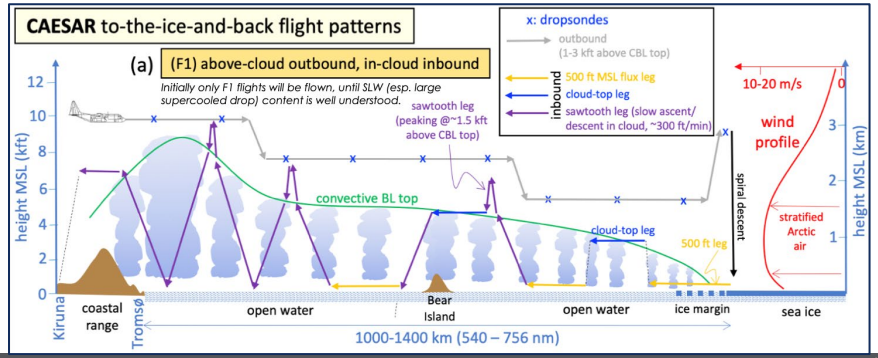
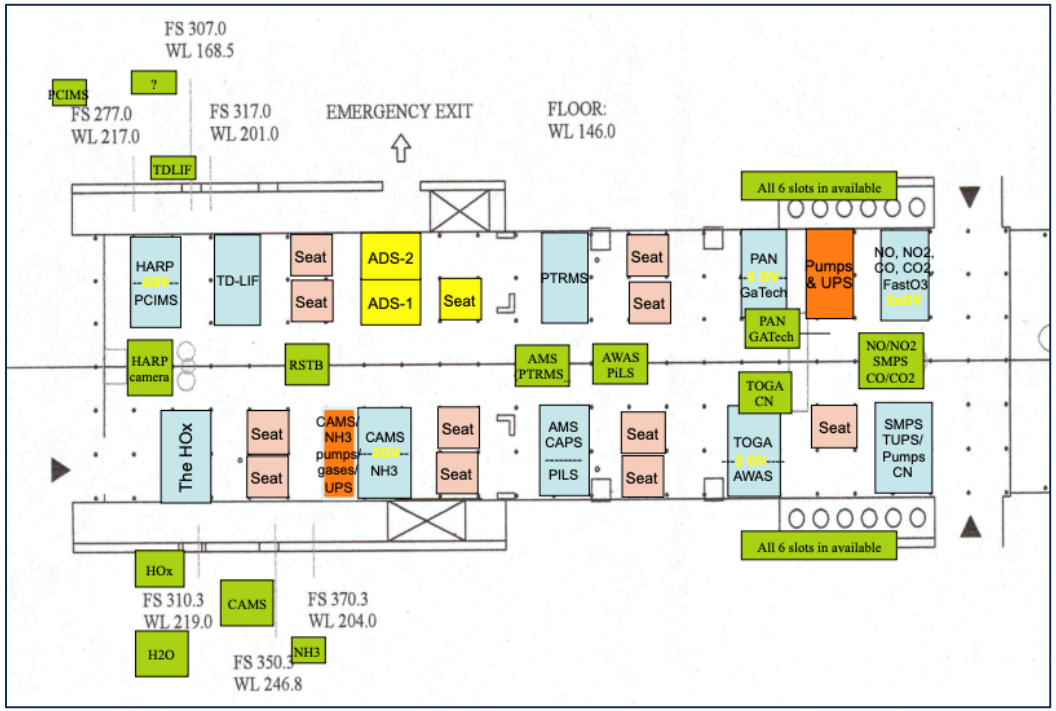






Support to take the project from paper to the field

- Payload/Instrument Finalization
- Site Survey
- Lodging
- Shipping
- Airport Logistics
- Country Clearances
- Planning Meetings
- Operations Plan



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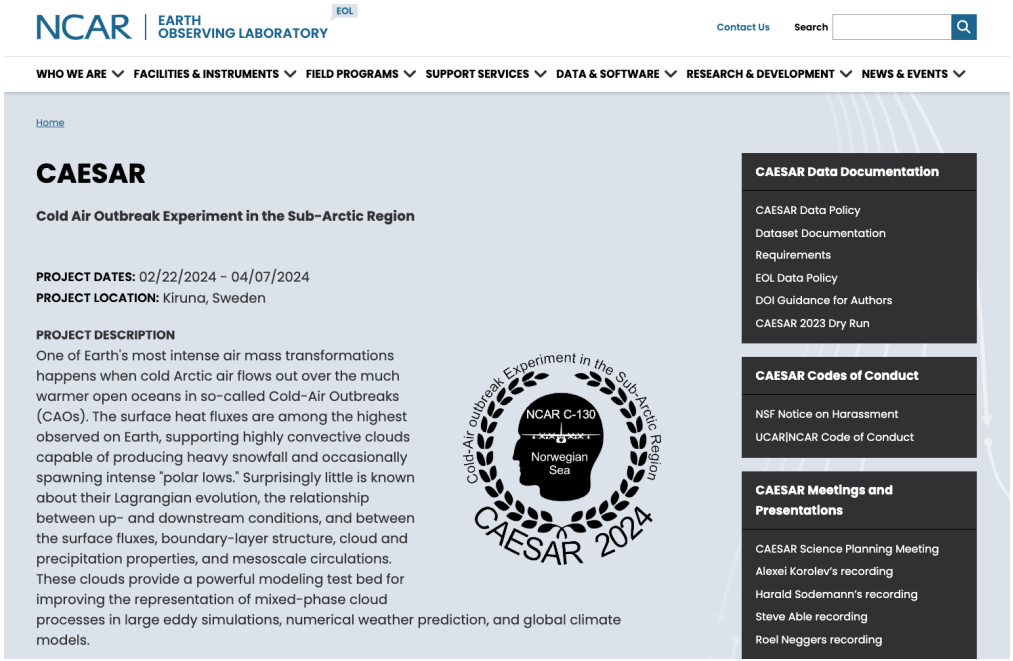

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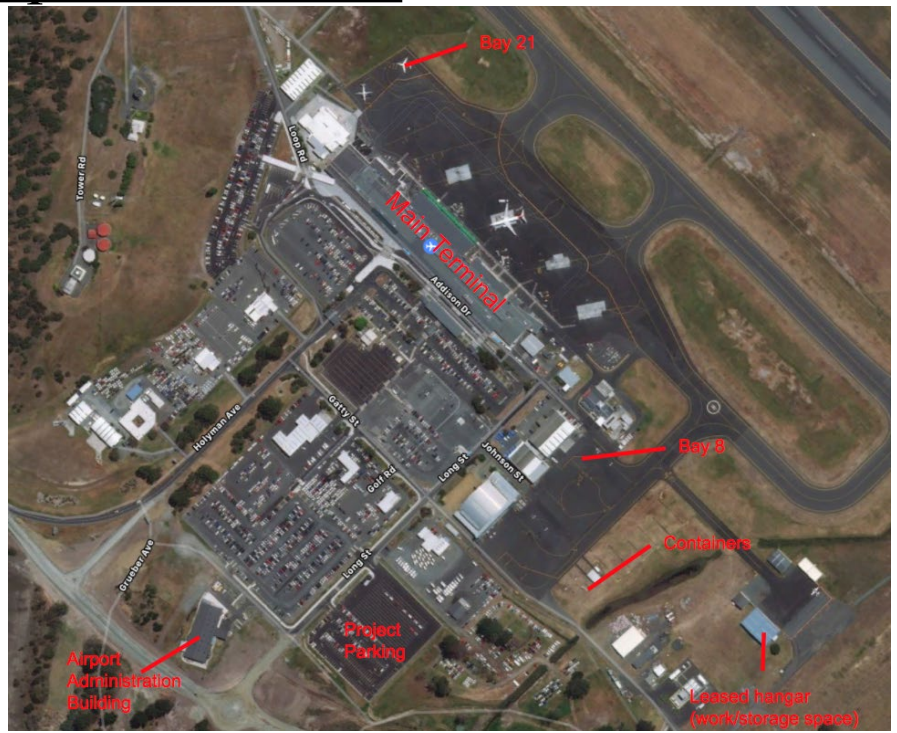

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PECAN OPS PLAN

1. Project Overview (Geerts/Ziegler/Weckwerth)

1.1 Scientific Objectives

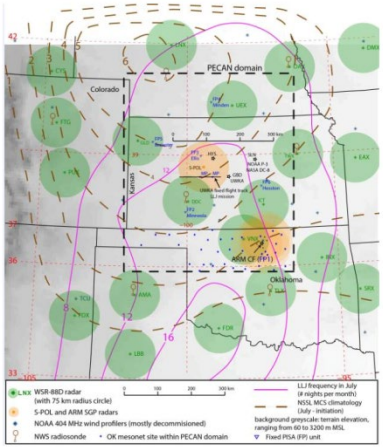


Fig. 1.4.2 Location of the PECAN domain (bold dashed line) in the Great Plains. Also shown are the operational networks (WSR-88D and ARM SGP), the fixed PECAN radar and PISA facilities, and climatological information (frequencies of NLLJ and of early-stage large MCSs, from Fig. 1.3.3). The radar range circles highlight the typical clear-air coverage. Clearly deep precipitation systems can be seen by operational radars anywhere in the PECAN domain.

Scan Strategies: The mobile radars will have 3 different scan strategies, contingent upon the range of the precipitation from the individual radars. When the precipitation is out of range, that radar will operate in "Clear Air" Mode (CAM); when the precipitation is within unambiguous range but convection is greater than 50 km range, the radar will operate in a "Precipitation" Far Mode (PFM). When the convection is within 50 km range, that radar will operate in a Precipitation Near Mode (PNM). CAM is optimized for boundary layer coverage and greater sensitivity within 50 km of the radar, whereas PM is optimized for capturing tropospherically deep storm-scale processes.

At 30 km in range, the C-band radars, with a 1.5-deg beam, have an ~800 m beamwidth (Δ), which allows for the resolution of features ~4Δ = 3.2 km. The X-band systems, with a 0.9-degree beam, have a beam width of ~500 m, resolving features of ~4Δ = 2.0 km.

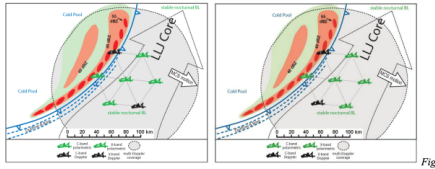


Figure X. *Figure XX.*

9.3.3.1.1 MCS Missions: MCS-PFM (nearest precip > 50 km range)

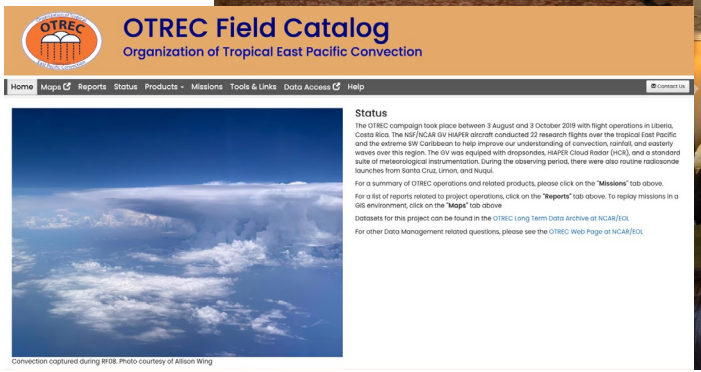
At a distance of 50 km, from a given radar, the vertical domain extends from ~0.6 km ARL to ~15 km ARL.

Radar	SR1	SR2	DOWs 6,7	DOW8	NOXP	MAX
Polarization	Single	Single	STSR	Single	STaR	STaR
PRF (Hz)	900/600 (Stagger)	900/600 (Stagger)	1000/1250 (Stagger)	1000/1250 (Stagger)	1250/937 (Stagger)	
Nyquist	±24	±24	±40	±40	±30	

Operations Phase

Field support so you can concentrate on the science

- Operations Center
- Mission Planning
- Communications
- Forecasting Support
- Data Processing/Transfer
- Education & Outreach (up next)



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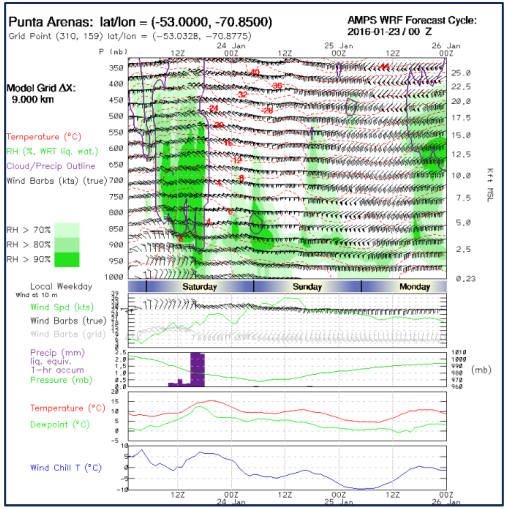
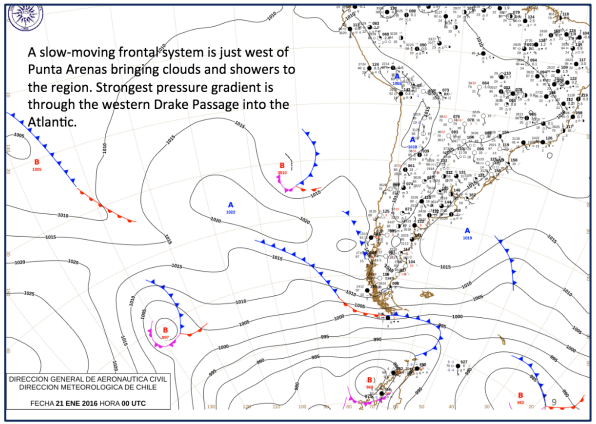
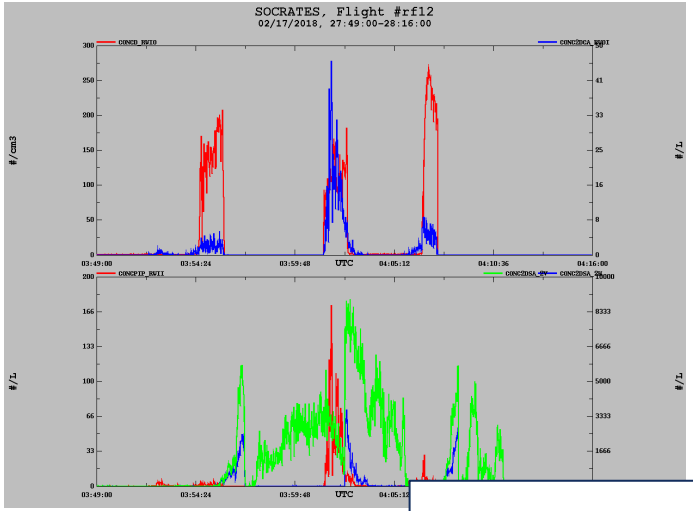




Post-Project Phase

Support for getting data and findings to publication

- Instrument/Data QC and Help
- Science Meetings
- Data Archival



May 18, 2019 Rev.1.1

WECAN Project Manager Report

Version 1.1 Updates:

CVI: Updates to missing value handling and filtered data with spikes resulting from dividing by small flow rates.

Height above terrain post-processing: Added height above terrain (ALTG_SRTM) and terrain elevation (SFC_SRTM) variables.

KT19 Temperatures: Processed data with blank-out periods for variables: RSTT, RSTB, RSTB1.

General Data notes

Ambient temperatures: three measurements were available during WECAN, a fast response unheated ATF1 and two anti-iced heated, ATH1 and ATH2. The latter two agree to within 0.2 degrees throughout the entire project. The fast response ATF1 is generally in very good agreement with the heated sensor but diverges slightly more at the beginning of flight, usually in the first hour. The differences between ATF and ATH during the first 45-60 minutes of the flight are on the order of 0.2-0.4 degrees whereas for the rest of the flights are usually less than 0.1 degree. Users of the data are advised to be aware that ATF and ATH may differ during ascent and descents and when crossing rapid temperature gradients. This is due to the faster response of ATF1, which can detect rapid temperature change earlier than the ATHx.

The ATF sensor experienced a step change during RF04, likely in response to a small object or ice impact on the Pt wire of the sensor. This caused ~0.4 degree change that persisted through RF04 and RF05. The sensor was replaced with a spare for RF06. Subsequent calibration of the original ATF1 will allow removing the offset in RD4 and RF05 more precisely. The relative response of ATF1 after the event on RF04 during RF04 and RF05 appears consistent.

ATH1 was accidentally only logged at 10 Hz, instead of the usual 100 Hz. This will have minimal impact on the 1 Hz data, but the high rate data should only use ATH2 or ATF1, which were both sampled correctly at 100 Hz. RTX is set to RTH2 and ATX is set to ATH2 for the entire project.

As of March 2019, calibrations of ATF1 are preliminary for RF05 through RF19 due to the ata will be updated once the sensors are d.

Southern Ocean Science Meeting
November 27-29, 2018
Center Green Facility, National Center for Atmospheric Research, Boulder, CO
Information to Remotely Connect to Meeting

Tuesday November 27:

Session 1: Overview of Southern Ocean Projects

8:00 to 8:30	Coffee and breakfast, informal introductions	All
8:30 to 8:40	Welcome and logistics	McFarquhar/Wolff
8:40 to 9:00	CAPRICORN Overview and Status of Data	Protat
9:00 to 9:20	MARCUS Overview and Status of Data	McFarquhar
9:20 to 9:40	MICRE Overview and Status of Data	Marchand
9:40 to 10:00	SOCRATES Overview	McFarquhar
10:00 to 10:30	Coffee Break	

Session 2: Overview of SOCRATES Instrument Performance and Data

You are not alone!

https://www.eol.ucar.edu/support-services/eol-field-program-support-services

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