ORCAS Forecasting

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- Forecasting resources
- Daily schedule
- Sample products
- Punta Arenas climatology
- Study region climatology

Weather Forecasting Resources

- 0.25 degree GFS, 3-hourly output, 27 pressure levels, (initialized at 00, 06, 12, and 18 UTC).
- 27/9-km AMPS, 3-hourly output to 72-h, 60 model levels, (initialized at 00 and 12 UTC).
- MODIS images (Terra and Aqua). Need these ASAP.
- ASCAT and WindSAT ocean surface winds
- 3-hourly GOES images from EOL. (Backup from NASA (MSFC), ERAU, SMN Argentina).
- AMRC composite images. Hourly, but delayed more than 4 hours.
- Brazilian Navy surface analysis.

Daily Forecast Cycle

UTC	Local Time	Boulder Time	Activity
1200	0900	0500	Nominal takeoff time
1525 - 1600	1225 - 1300	0825 - 0900	GFS becomes available
1545 - 1945	1245 - 1645	0845 - 1245	AMPS plots become available
1700	1400	1000	Afternoon weather briefing
2000	1700	1300	Nominal landing time
0000	2100	1700	00z cycle begins
0325 - 0400	0025 - 0100	2025 - 2100	GFS becomes available
0345 - 0745	0045 - 0445	2045 - 0045	AMPS plots become available
0600	0300	2300	06z cycle begins
0930 - 1000	0630 - 0700	0230 - 0300	GFS becomes available
0900	0600	0200	Pre-takeoff update

Sample surface chart. Covers most of the domain of interest. Mainly useful for locating fronts.



WV composite from AMRC.



Sample Aqua composite image from 28 January 2015. Afternoon overpass (aqua).

Images on the NASA Worldview site are available within 12 hours.













[SCCI] PUNTA ARENAS/PRE :: Hi/Lo Temps for Feb 2015 Daily climatology unavailable for site

ORCAS region climatology

http://acd.ucar.edu/~shawnh/ORCAS/Climatology/ORCAS_Climatology.html

- GFS climatologies
- CloudSat
- COSMIC





(1998)

FIG. 8.4. Composite warm-event 500-hPa height anomalies for (a) June-August, (b) September-November, (c) December-February, and (d) March-May. Contour interval is 0.5 dam. Negative contours are dashed.

During ENSO warm events an anomalous trough develops over the Pacific with ridging over the Bellingshausen Sea. This leads to a 'blocky' pattern moreso than during normal or cold event years.









GFS Total Cloud Cover and Pressure Reduced to MSL (Jan-Feb, 2010-2015)



GFS Boundary Layer Height and Pressure Reduced to MSL (Jan-Feb, 2010-2015)



GFS Precipitation Rate & Pressure Reduced to MSL (Jan-Feb, 2010-2015)

0.0 1e-6 1e-5 2e-5 3e-5 4e-5 5e-57.5e-51e-4 5e-4 1e-3 2e-3 3e-3 4e-3 Precipitation [kg/m^2/s]





2015044192112_46801_CS_2B-GEOPROF_GRANULE_P_R04_E06_Sect_7.png - Night

Sample CloudSat pass available on the web site

NASA's Worldview site: earthdata.nasa/gov/labs/worldview has archived has archived MODIS images, for example:



Examination of the 2015 austral summer shows that clouds form, deform, dissipate, and advect rapidly. In general, February was cloudier than January. Flights that require specific meteorological conditions in a flyable location (e.g. clear skies of a particular dimension) may only occur once during the six-week campaign.