

ORCAS Weather Briefing

21-22 JAN, 2015

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ORCAS Forecast Team

Forecast Issues:

- Recent and Current Conditions
- Takeoff and Landing Conditions
- Clouds
- Cyclones
- Trajectories

Current Conditions – Punta Arenas

21 Jan conditions for Punta Arenas:

High: 75F (24C) – 2000 UTC (1700 local)

Low: 43F (6C) – 0900 UTC (0600 local)

Clouds: mostly clear

Precipitation: 0.0 in.

Wind: out of the west/northwest, 15-20 kts

Sunrise: 0854 UTC (0554 Local)

Sunset: 0055 UTC (2155 Local)

SIGMETS/AIRMETS: n/a

Regional Summary:

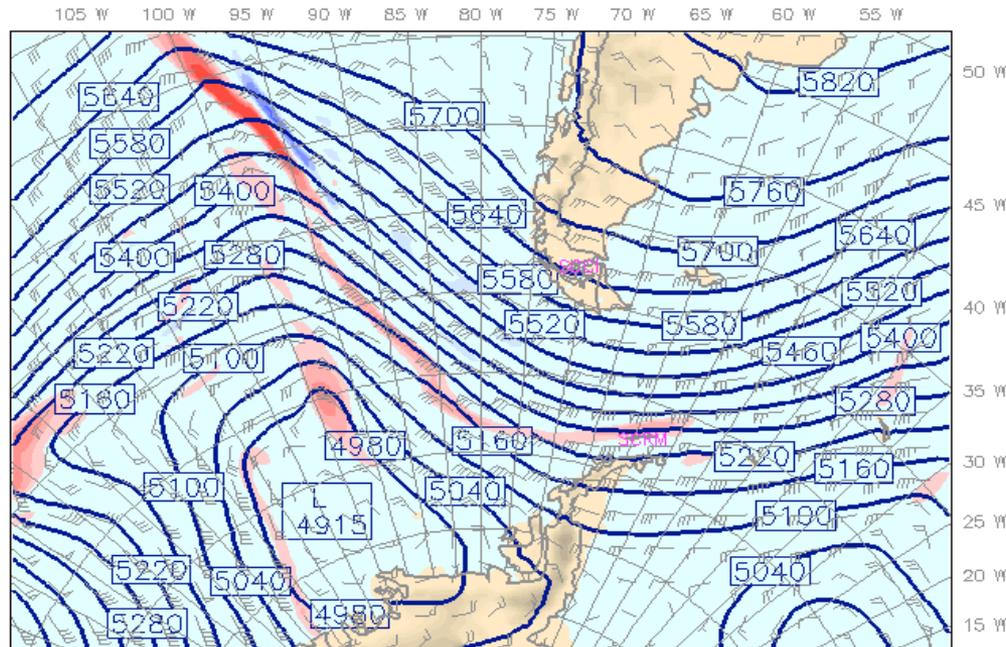
Ridge overhead, Trough approaching from the west. Drake Passage overcast, inner Argentine Sea mostly clear.

Current Conditions – Upper Air

NCEP GFS 0.25 degree
Fcst: 12 h
Relative vorticity
Geopotential height
Horizontal wind vectors

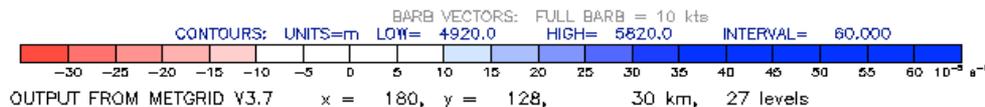
NCAR/MMM

Init: 06 UTC Wed 21 Jan 15
Valid: 18 UTC Wed 21 Jan 15 (15 LST Wed 21 Jan 15)
at pressure = 500 hPa
at pressure = 500 hPa
at pressure = 500 hPa
sm= 1

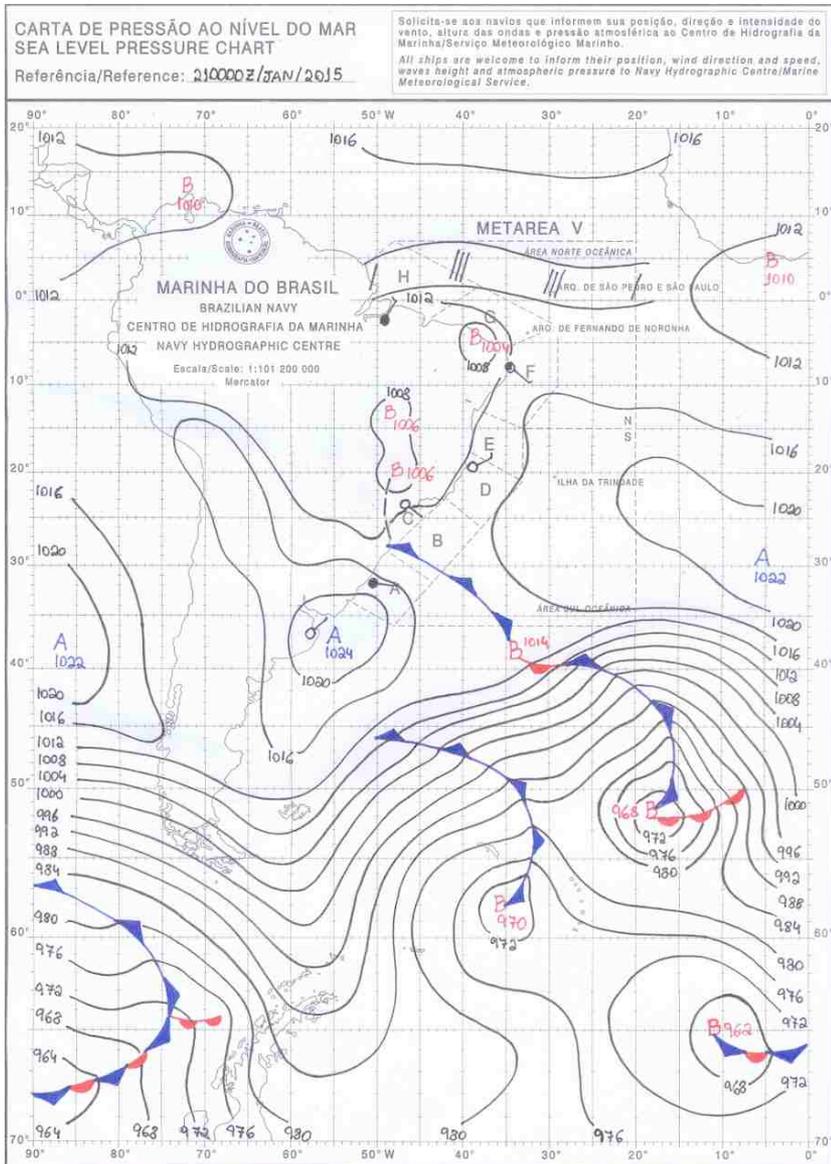


Drake Passage and Argentine Sea dominated by ridge pressure aloft.

There is an incoming trough that should begin affecting the area tomorrow.



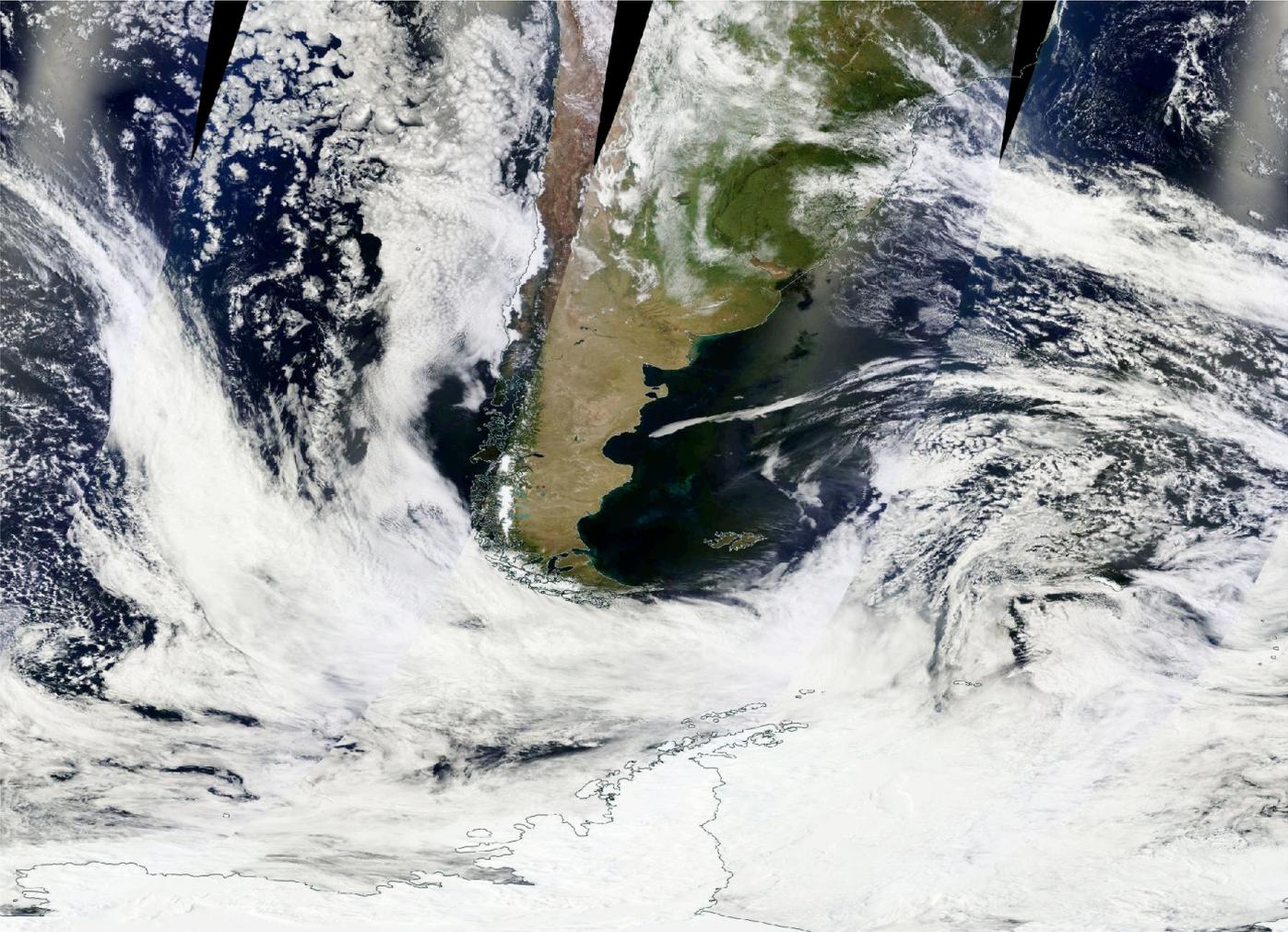
Current Conditions - Surface



Surface analysis shows high pressure
Centered off of the coast of Buenos Aires

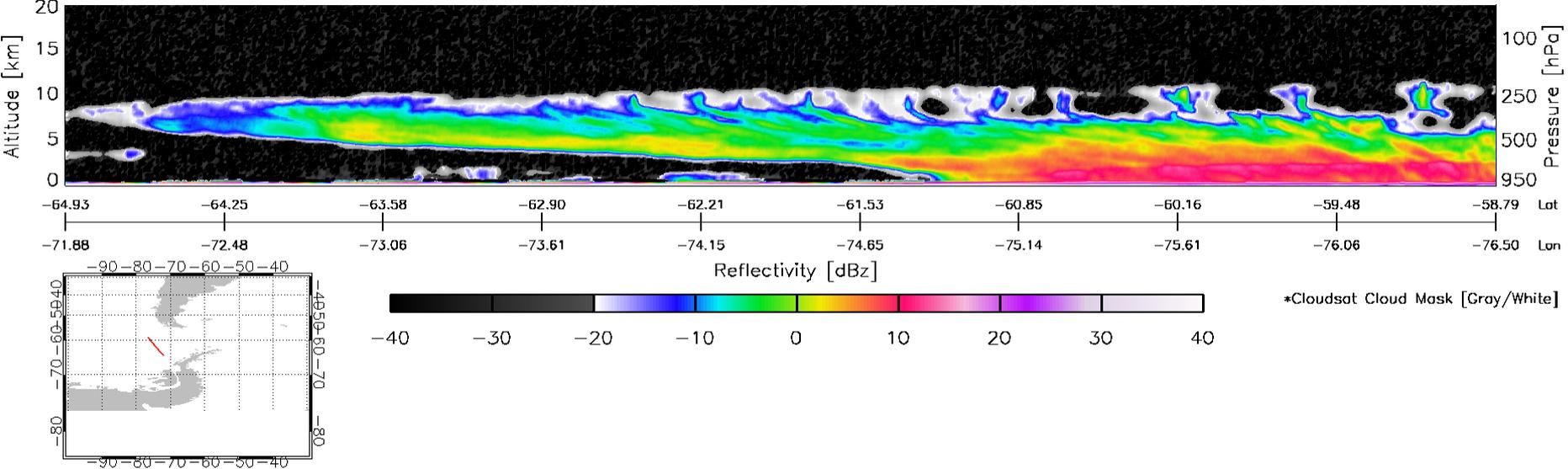
Low pressure near Sandwich Islands.

Current Conditions – VIS Sat



Current Conditions - CloudSat

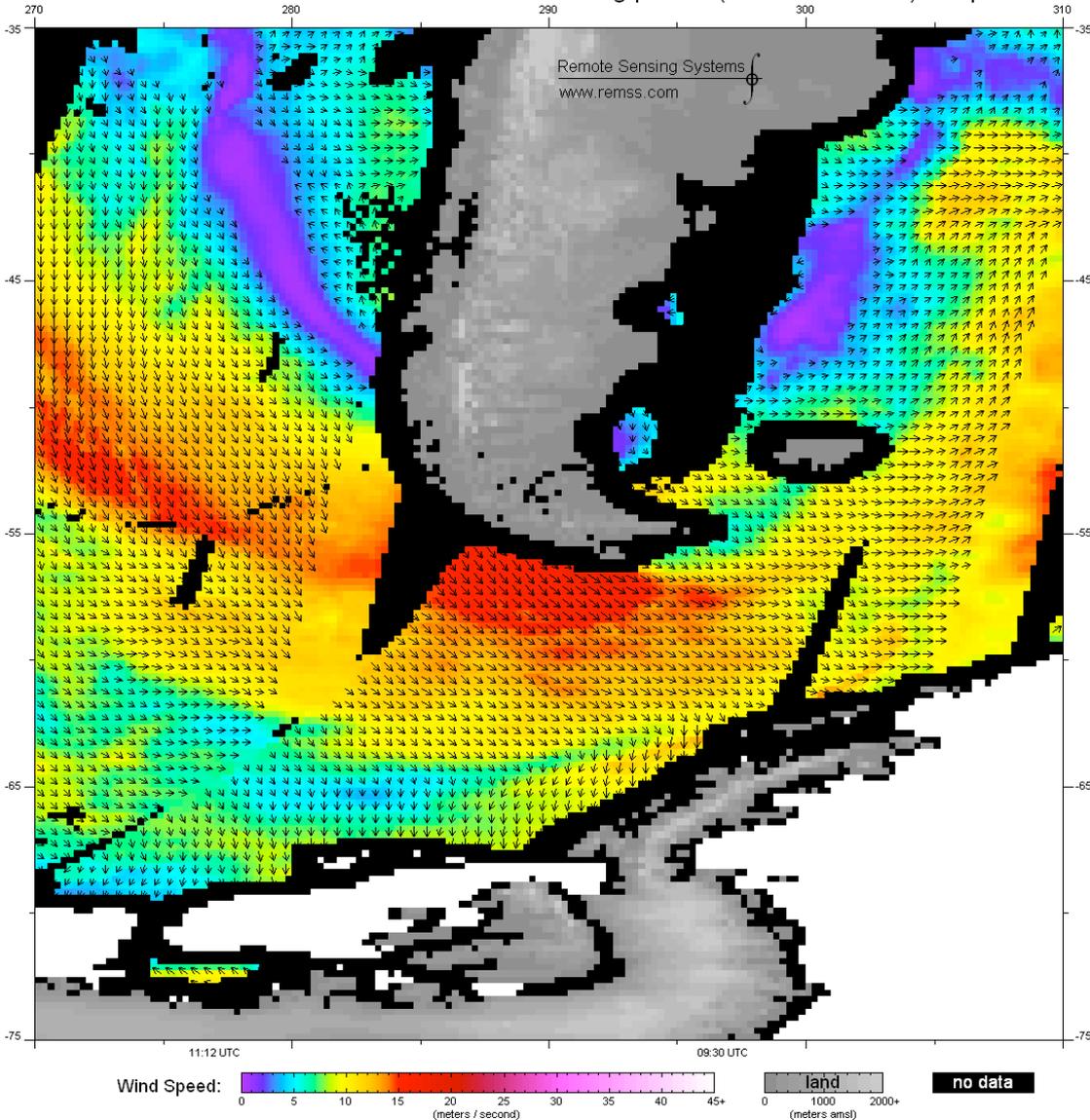
2015021191435_46466_CS_2B-GEOPROF_GRANULE_P_R04_E06_Sect.7.png - Night



For the system west of the Drake, cloud ceiling 10 km, bases to the surface with 5-10 anvil structure on south edge of cloud cover (Real time will be 'quicklook' version)

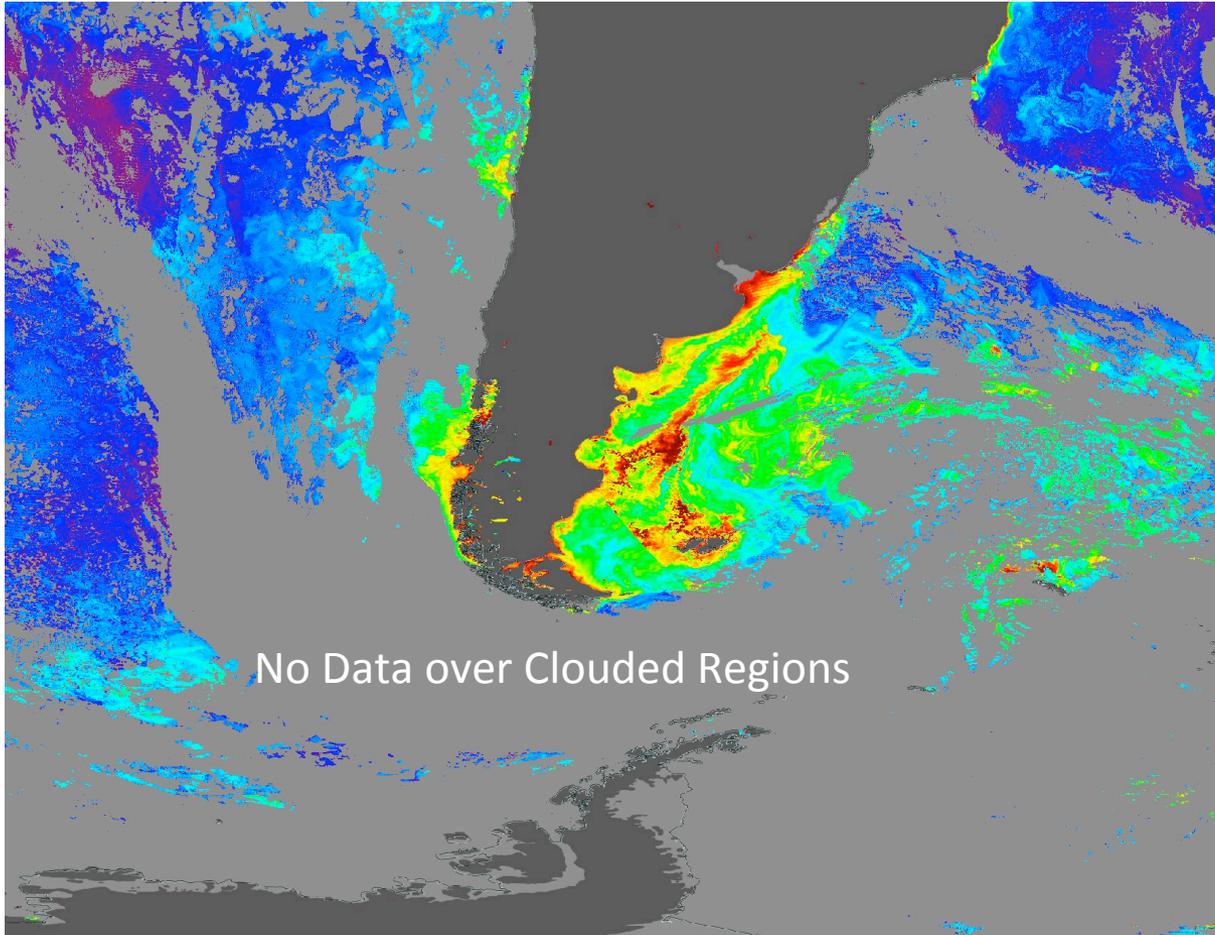
Current Conditions - WindSat

WindSat v7.0.1 wind vectors: 2015/01/21 - descending passes (~06:00 local time) - Cape Horn



Winds relatively calm in the Argentine Sea. Drake Passage showing winds in excess of 15-20 m/s (~30-40 kts) around the horn.

Current Conditions - ChlA



Satellite shows area
Of higher chlorophyll A
In the Argentine Sea.

Cloud cover prevents
seeing what is happening
through most of the
Drake Passage and
Antarctica.

Forecast - Punta Arenas

22 Jan conditions for Punta Arenas:

High: 73F (23C) – 1500 UTC (1200 local)

Low: 46F (8C) – 0900 UTC (0600 local)

Clouds: mostly clear to partly cloudy at takeoff, increasing to mostly cloudy by mid afternoon and into landing time.

Precipitation: Chance (albeit small) of precipitation after noon and at landing time as a weak cold front passes through. New accumulations less than 1 cm.

Wind: out of the west/northwest, 10-15 kts, gust 25

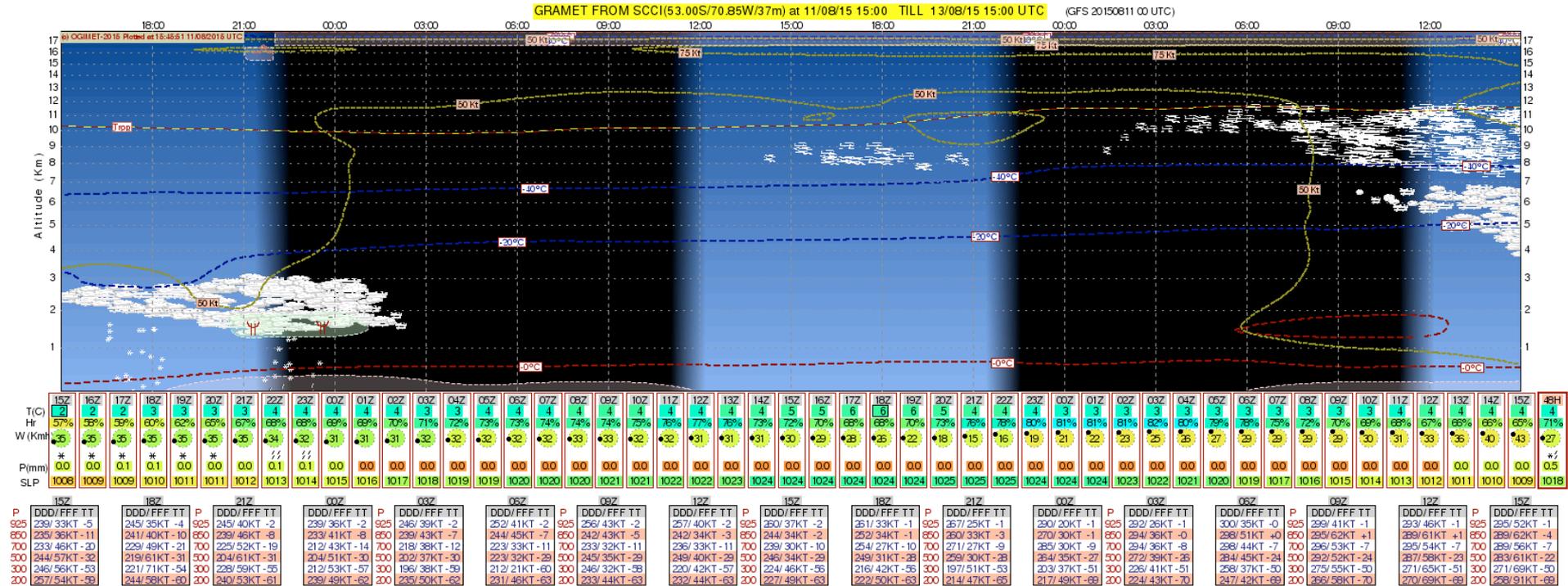
Sunrise: 0854 UTC (0554 Local)

Sunset: 0055 UTC (2155 Local)

Regional Summary:

Cyclone in the Bellingshausen Sea with accompanying trough generating cloud cover across much of the western domain. Argentine Sea remains relatively clear, and some scattered clouds between Falkland and Sandwich Islands for Day 1 and 2.

Forecast-GRAMET



These are in semi-realtime only but are handy for showing the conditions over a locations and across specified cross sections...

Forecast –Upper Air

NCEP GFS 0.25 degree
Fcst: 30 h
Horizontal wind speed
Potential vorticity
Horizontal wind vectors

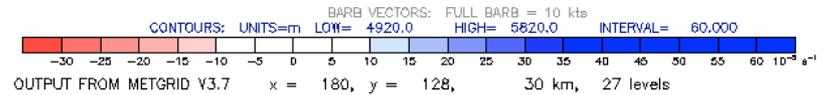
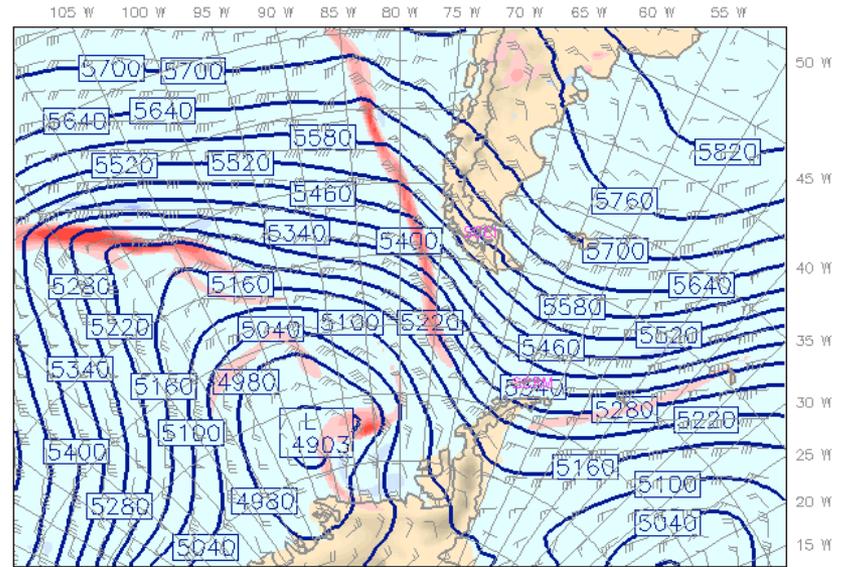
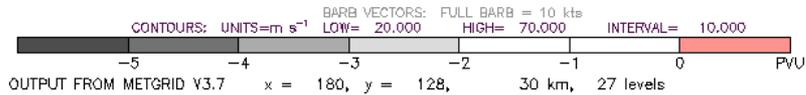
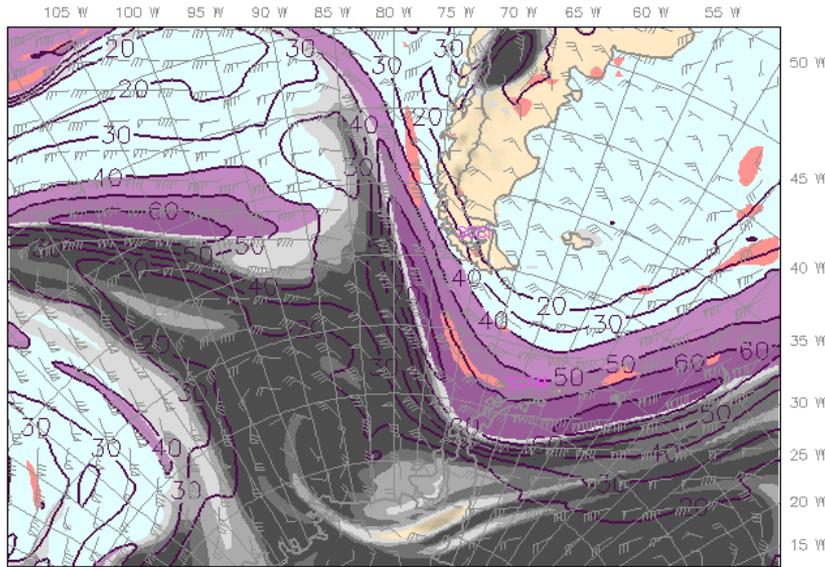
NCAR/MMM
Valid: 12 UTC Thu 22 Jan 15 (09 LST Thu 22 Jan 15)
at pressure = 300 hPa
at pressure = 300 hPa
at pressure = 300 hPa

Init: 06 UTC Wed 21 Jan 15
Valid: 12 UTC Thu 22 Jan 15 (09 LST Thu 22 Jan 15)

NCEP GFS 0.25 degree
Fcst: 30 h
Relative vorticity
Geopotential height
Horizontal wind vectors

NCAR/MMM
Valid: 12 UTC Thu 22 Jan 15 (09 LST Thu 22 Jan 15)
at pressure = 500 hPa
at pressure = 500 hPa
at pressure = 500 hPa

Init: 06 UTC Wed 21 Jan 15
Valid: 12 UTC Thu 22 Jan 15 (09 LST Thu 22 Jan 15)
sm= 1



Forecast –Upper Air

NCEP GFS 0.25 degree
Fcst: 36 h
Horizontal wind speed
Potential vorticity
Horizontal wind vectors

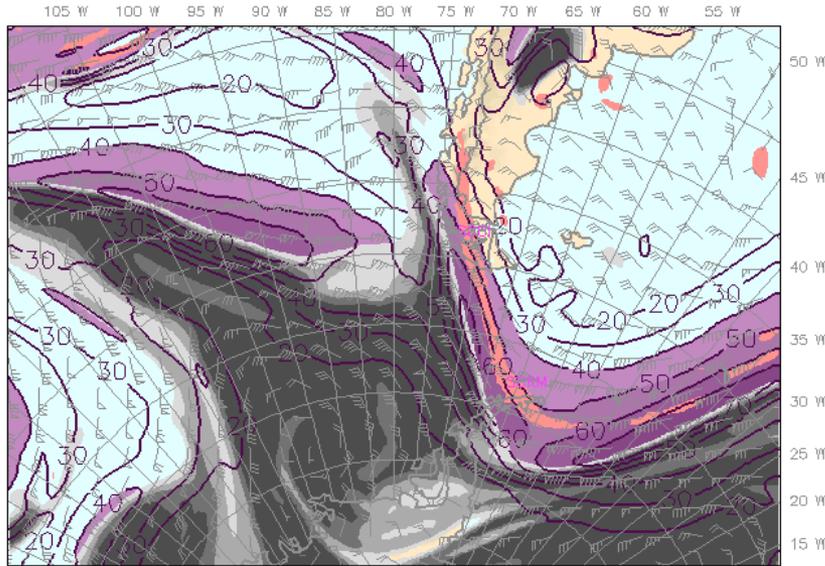
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at pressure = 300 hPa
at pressure = 300 hPa

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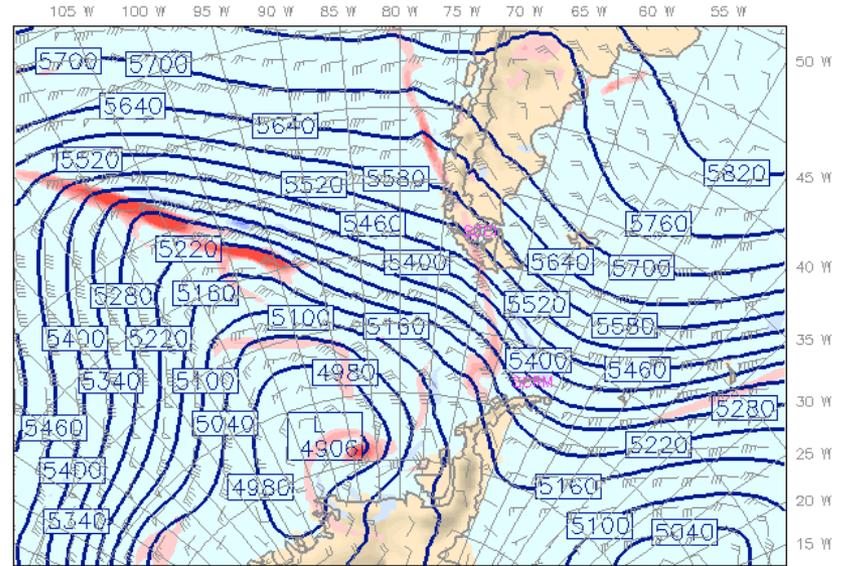
NCEP GFS 0.25 degree
Fcst: 36 h
Relative vorticity
Geopotential height
Horizontal wind vectors

NCAR/MMM
Valid: 18 UTC Thu 22 Jan 15 (15 LST Thu 22 Jan 15)
at pressure = 500 hPa
at pressure = 500 hPa
at pressure = 500 hPa

Init: 06 UTC Wed 21 Jan 15
Valid: 18 UTC Thu 22 Jan 15 (15 LST Thu 22 Jan 15)
sm= 1



CONTOURS: UNITS= $m\ s^{-1}$
BARB VECTORS: FULL BARB = 10 kts
LOW= 20.000 HIGH= 70.000 INTERVAL= 10.000
OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels



CONTOURS: UNITS=m
BARB VECTORS: FULL BARB = 10 kts
LOW= 4920.0 HIGH= 5820.0 INTERVAL= 60.000
OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels

Forecast –Upper Air

NCEP GFS 0.25 degree
Fcst: 54 h
Horizontal wind speed
Potential vorticity
Horizontal wind vectors

NCAR/MMM

Valid: 12 UTC Fri 23 Jan 15 (09 LST Fri 23 Jan 15)
at pressure = 300 hPa
at pressure = 300 hPa

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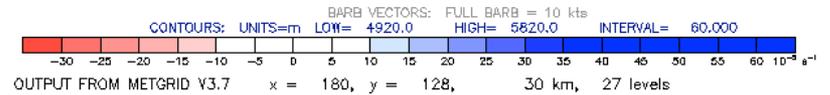
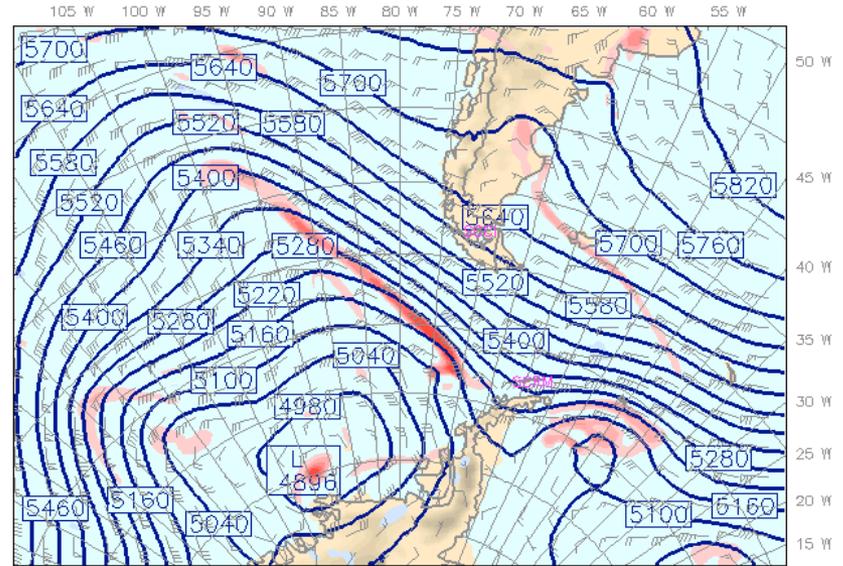
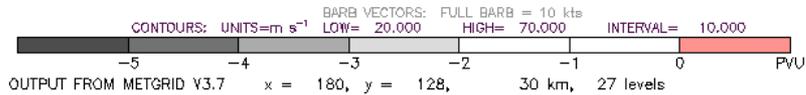
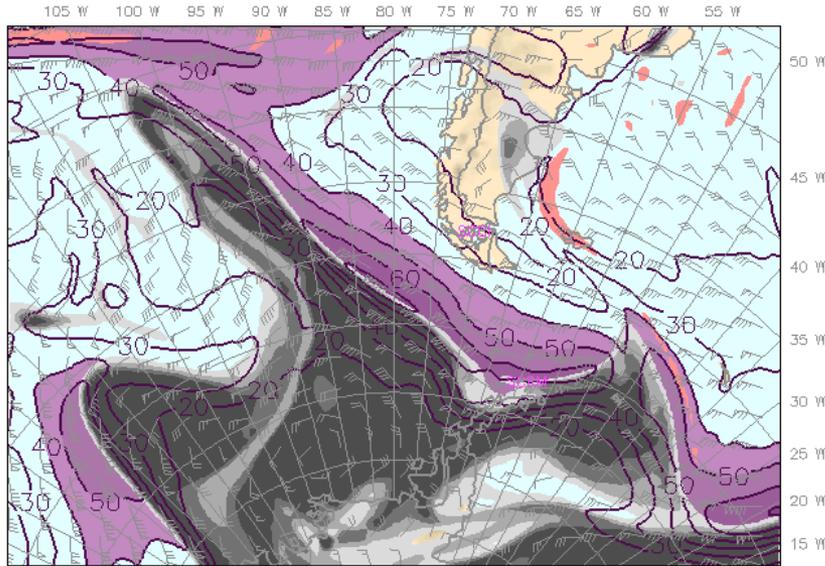
NCEP GFS 0.25 degree
Fcst: 54 h
Relative vorticity
Geopotential height
Horizontal wind vectors

NCAR/MMM

Valid: 12 UTC Fri 23 Jan 15 (09 LST Fri 23 Jan 15)
at pressure = 500 hPa
at pressure = 500 hPa
at pressure = 500 hPa

Init: 06 UTC Wed 21 Jan 15
Valid: 12 UTC Fri 23 Jan 15 (09 LST Fri 23 Jan 15)

sm= 1



Forecast –Upper Air

NCEP GFS 0.25 degree
Fcst: 60 h
Horizontal wind speed
Potential vorticity
Horizontal wind vectors

NCAR/MMM
Valid: 18 UTC Fri 23 Jan 15 (15 LST Fri 23 Jan 15)
at pressure = 300 hPa
at pressure = 300 hPa
at pressure = 300 hPa

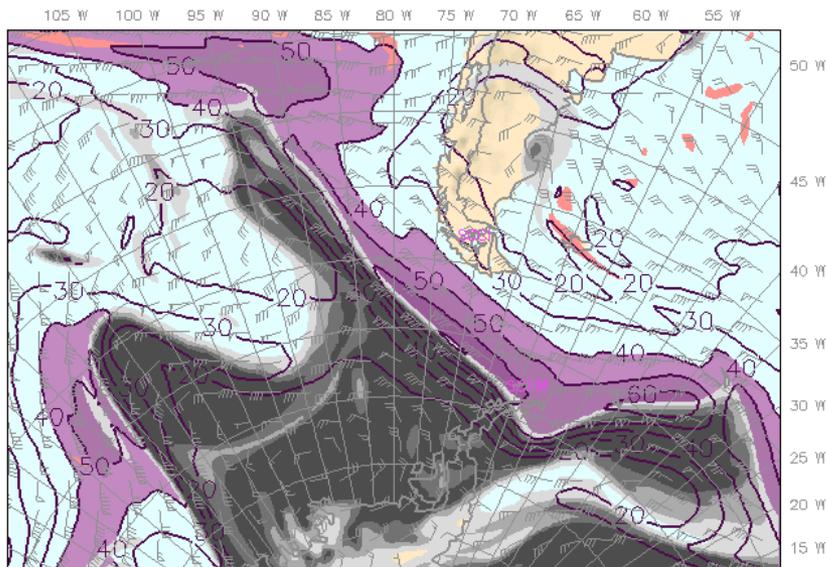
Init: 06 UTC Wed 21 Jan 15

NCEP GFS 0.25 degree
Fcst: 60 h
Relative vorticity
Geopotential height
Horizontal wind vectors

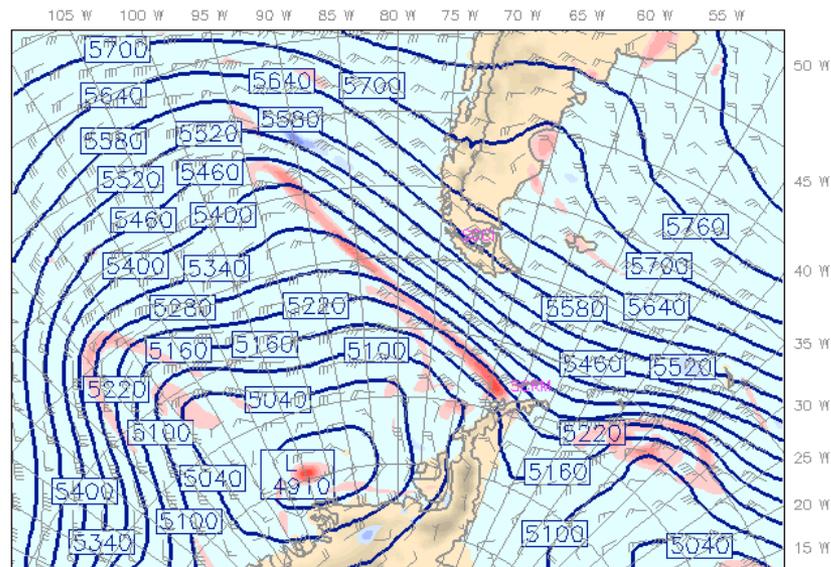
NCAR/MMM
Valid: 18 UTC Fri 23 Jan 15 (15 LST Fri 23 Jan 15)
at pressure = 500 hPa
at pressure = 500 hPa
at pressure = 500 hPa

Init: 06 UTC Wed 21 Jan 15

sm= 1



CONTOURS: UNITS= $m\ s^{-1}$
BARB VECTORS: FULL BARB = 10 kts
LOW= 20.000 HIGH= 70.000 INTERVAL= 10.000
-5 -4 -3 -2 -1 0 PVU
OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels



CONTOURS: UNITS=m
BARB VECTORS: FULL BARB = 10 kts
LOW= 4920.0 HIGH= 5820.0 INTERVAL= 60.000
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35 40 45 50 55 60 10⁻⁵ s⁻¹
OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels

Forecast - Surface

NCEP GFS 0.25 degree
 Fcst: 36 h
 Horizontal wind speed
 Horizontal wind vectors

NCAR/MMM

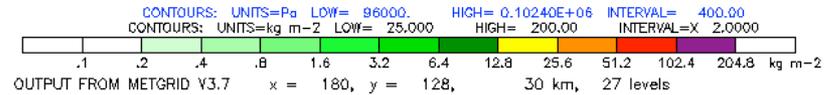
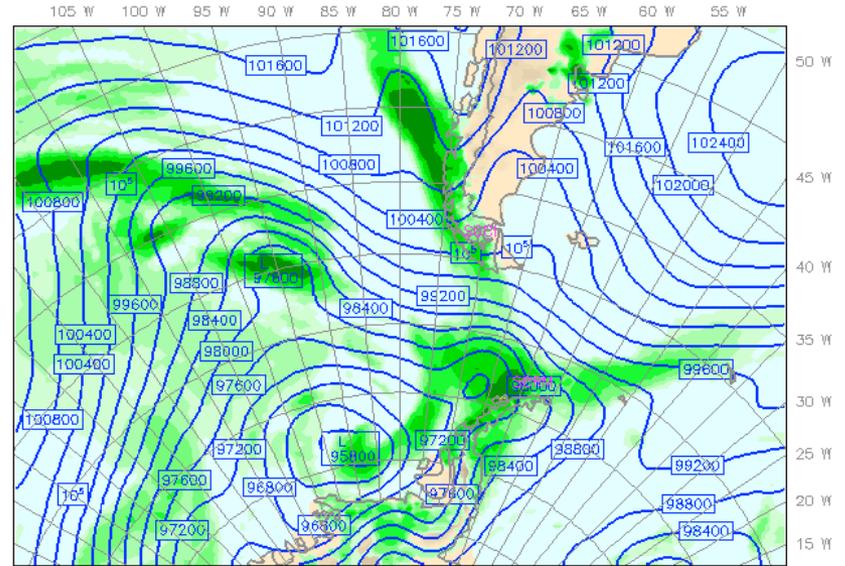
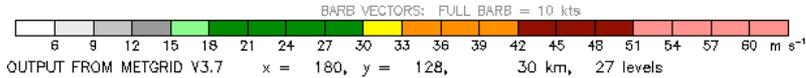
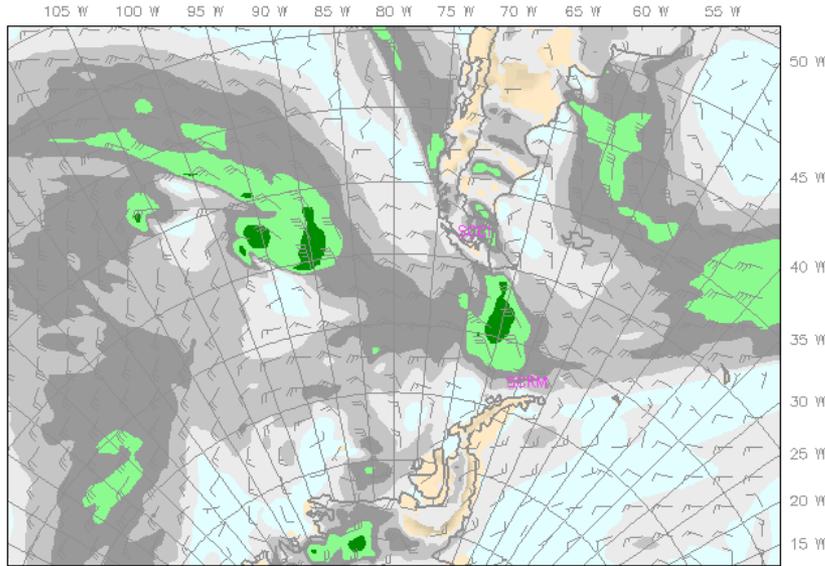
Init: 06 UTC Wed 21 Jan 15
 Valid: 18 UTC Thu 22 Jan 15 (15 LST Thu 22 Jan 15)
 at k-index = 26
 at k-index = 26

sm= 1

NCEP GFS 0.25 degree
 Fcst: 36 h
 Total Precipitation
 Total Precipitation
 Sea-level Pressure

NCAR/MMM

Init: 06 UTC Wed 21 Jan 15
 Valid: 18 UTC Thu 22 Jan 15 (15 LST Thu 22 Jan 15)



Forecast - Surface

NCEP GFS 0.25 degree
 Fcst: 54 h
 Horizontal wind speed
 Horizontal wind vectors

NCAR/MMM

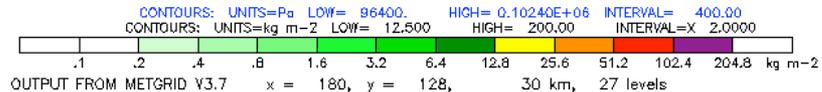
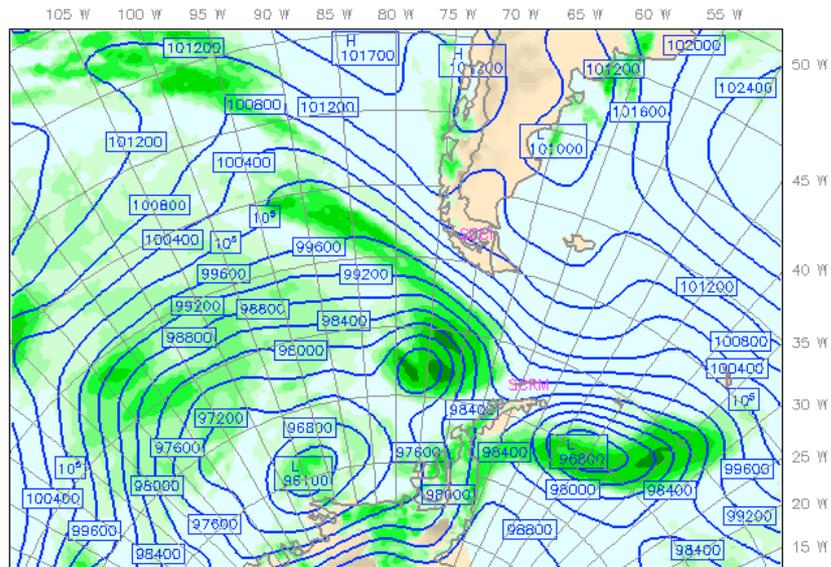
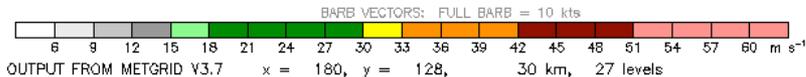
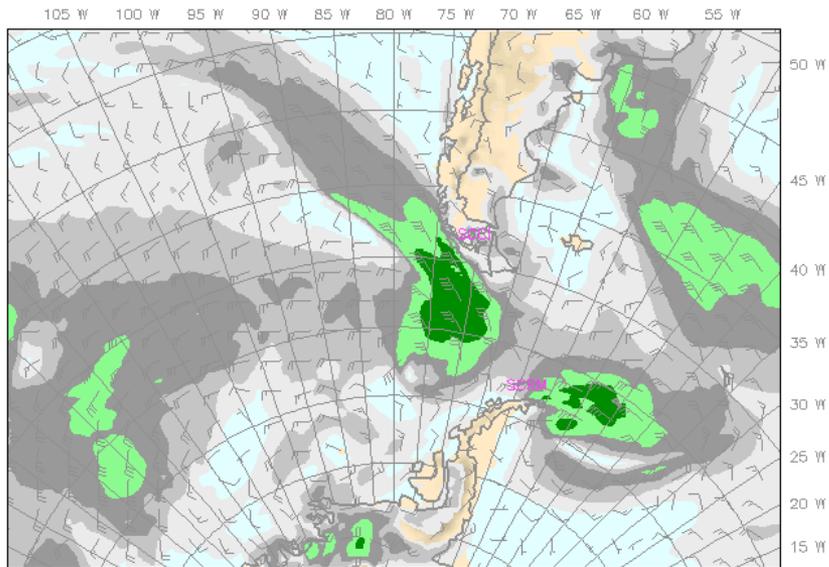
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 Valid: 12 UTC Fri 23 Jan 15 (09 LST Fri 23 Jan 15)
 at k-index = 26
 at k-index = 26

sm= 1

NCEP GFS 0.25 degree
 Fcst: 54 h
 Total Precipitation
 Total Precipitation
 Sea-level Pressure

NCAR/MMM

Init: 06 UTC Wed 21 Jan 15
 Valid: 12 UTC Fri 23 Jan 15 (09 LST Fri 23 Jan 15)



Forecast - Surface

NCEP GFS 0.25 degree
 Fcst: 60 h
 Horizontal wind speed
 Horizontal wind vectors

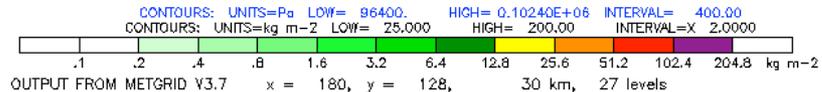
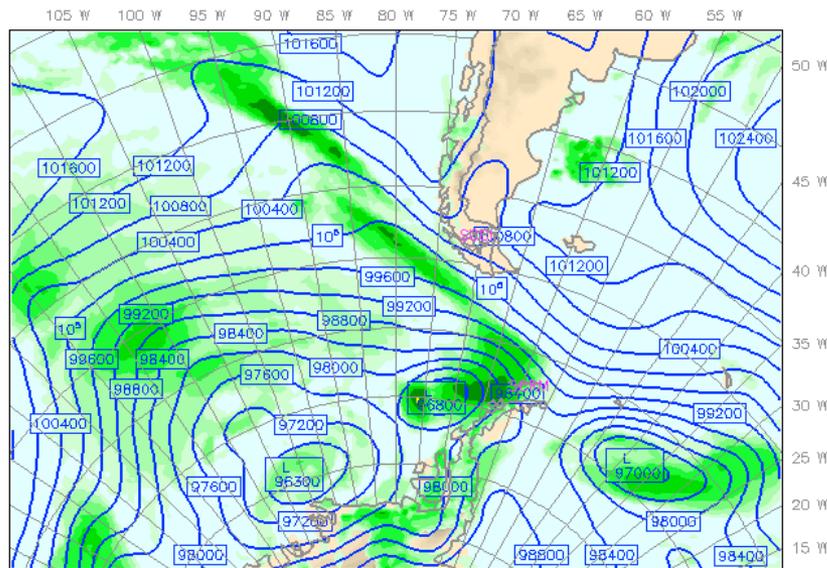
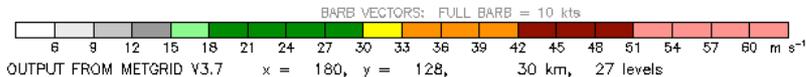
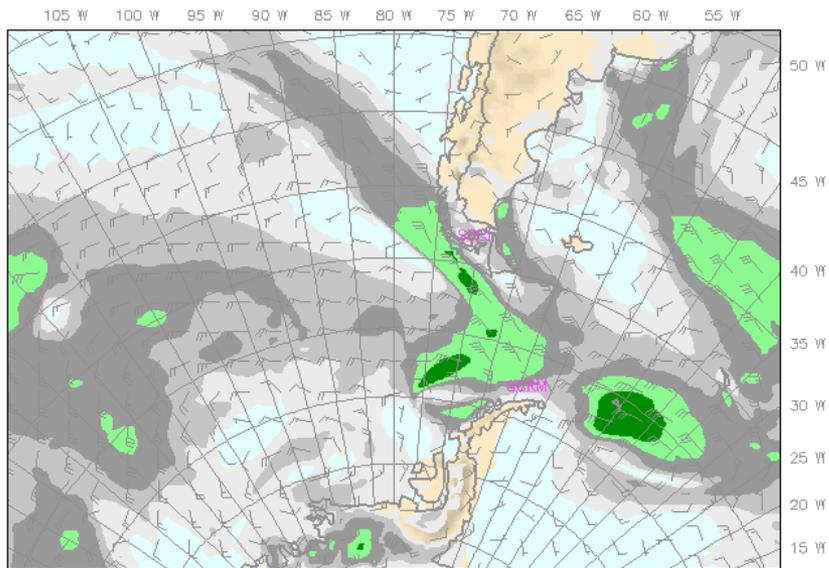
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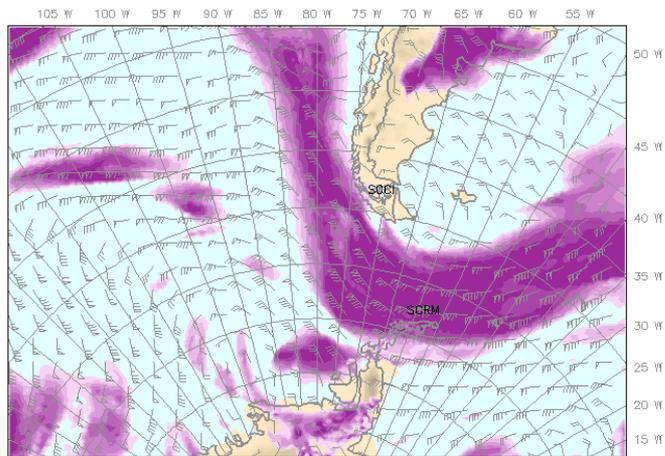
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 Total Precipitation
 Total Precipitation
 Sea-level Pressure

NCAR/MMM

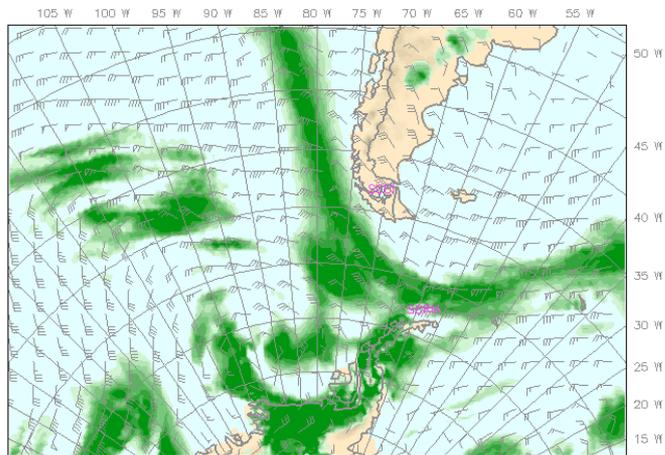
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Forecast – Wind/Traj

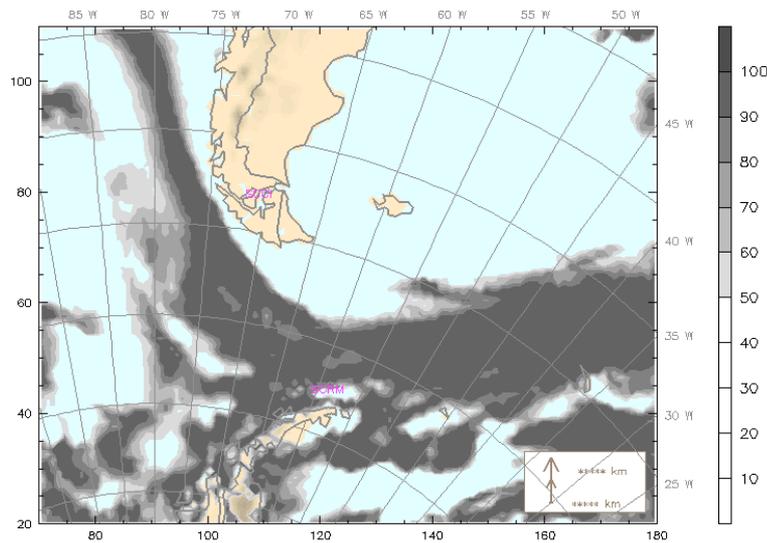


BARB VECTORS: FULL BARB = 10 kts
 OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels



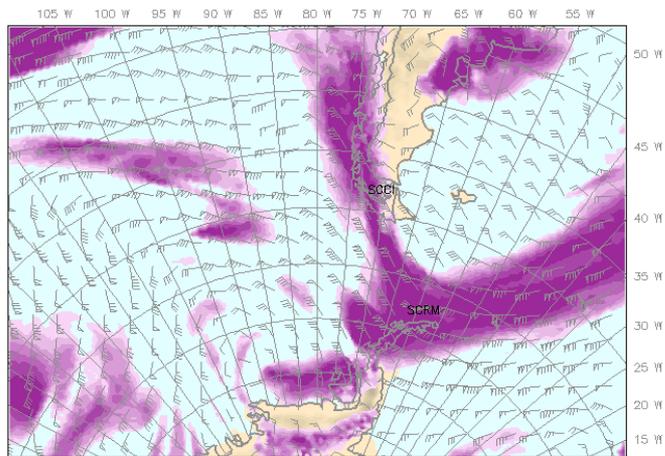
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NCEP GFS 0.25 degree NCAR/MMM Init: 06 UTC Wed 21 Jan 15
 Fcst: 30 h Valid: 12 UTC Thu 22 Jan 15 (09 LST Thu 22 Jan 15)
 Low Cloud Fraction 500 ft Forward trajectories
 Trajectories from hour 33,000 to 30,000

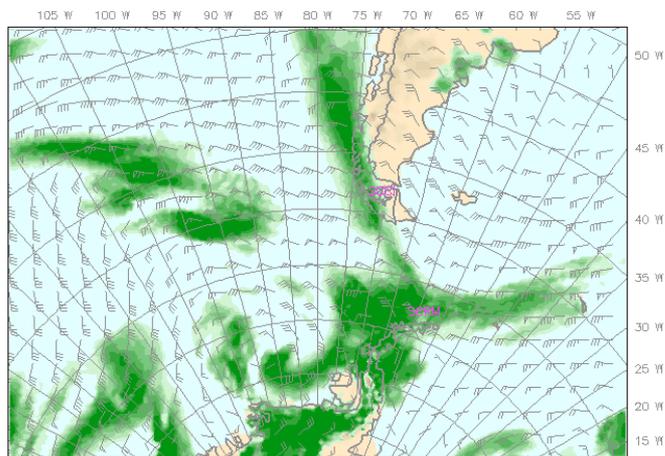


OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels

Forecast – Wind/Traj

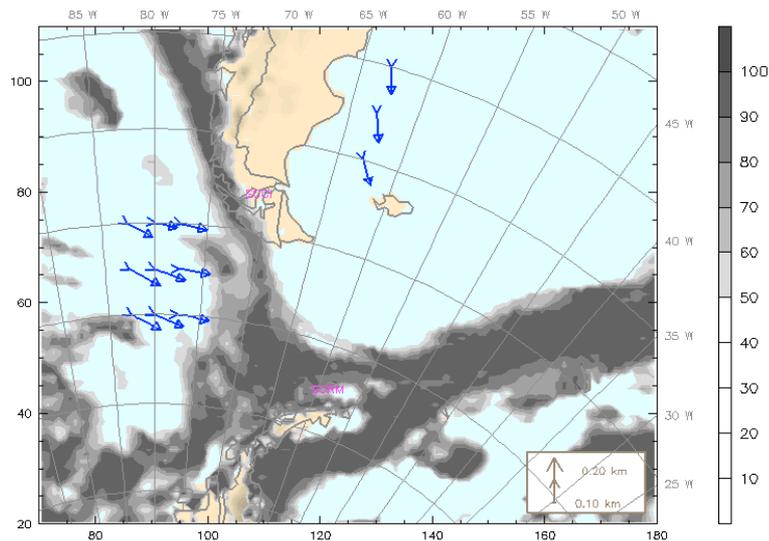


BARB VECTORS: FULL BARB = 10 kts
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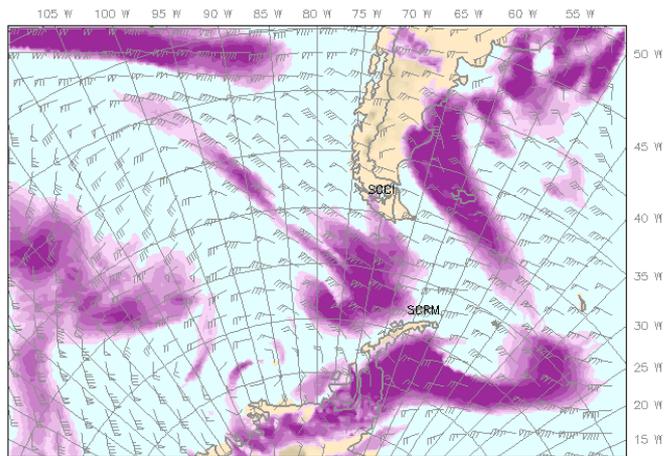
BARB VECTORS: FULL BARB = 10 kts
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NCEP GFS 0.25 degree NCAR/MMM Init: 06 UTC Wed 21 Jan 15
 Fcst: 36 h Valid: 18 UTC Thu 22 Jan 15 (15 LST Thu 22 Jan 15)
 Low Cloud Fraction 500 ft Forward trajectories
 Trajectories from hour 33,000 to 36,000

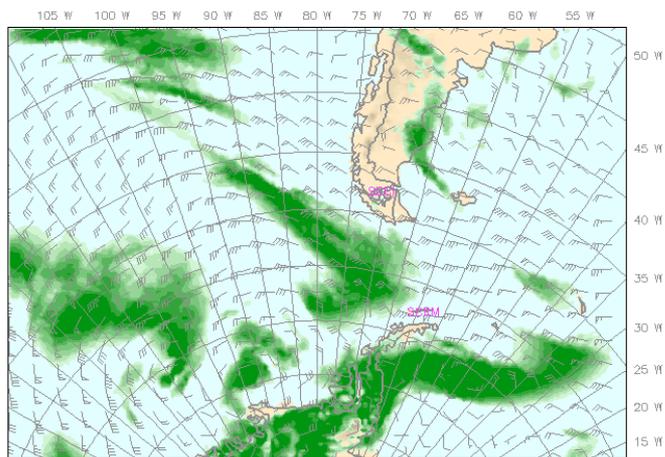


OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels

Forecast – Wind/Traj

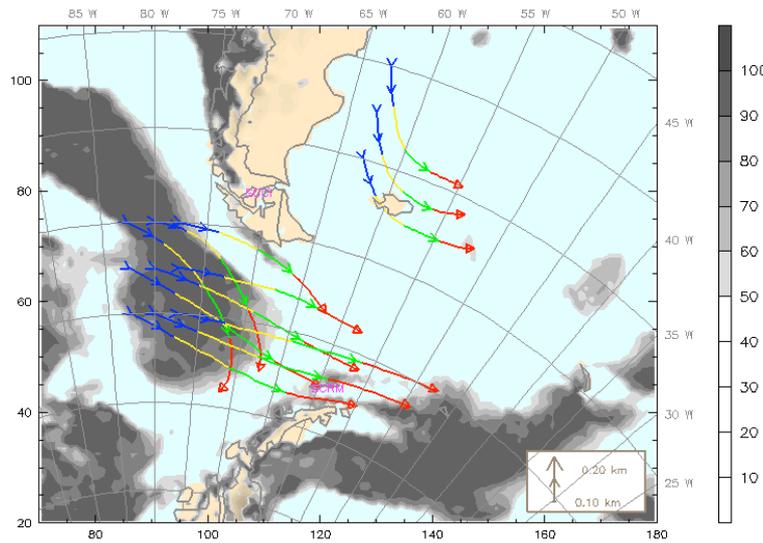


BARB VECTORS: FULL BARB = 10 kts
 OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels



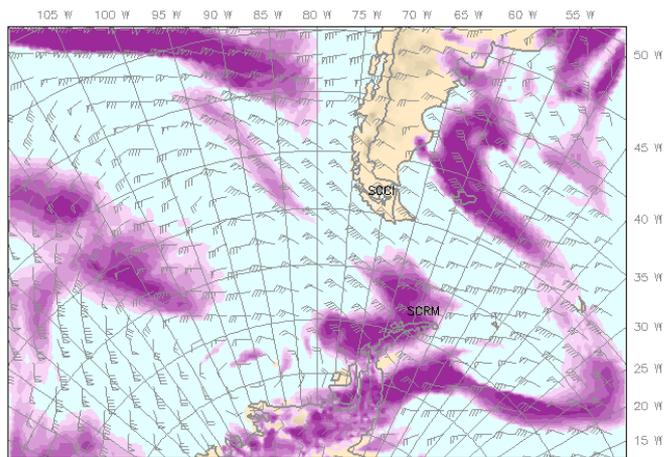
BARB VECTORS: FULL BARB = 10 kts
 OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels

NCEP GFS 0.25 degree NCAR/MMM Init: 06 UTC Wed 21 Jan 15
 Fcst: 54 h Valid: 12 UTC Fri 23 Jan 15 (09 LST Fri 23 Jan 15)
 Low Cloud Fraction 500 ft Forward trajectories
 Trajectories from hour 33,000 to 54,000

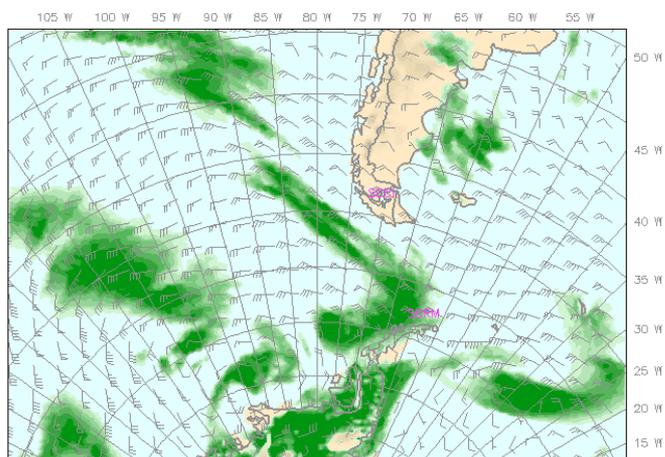


OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels

Forecast – Wind/Traj

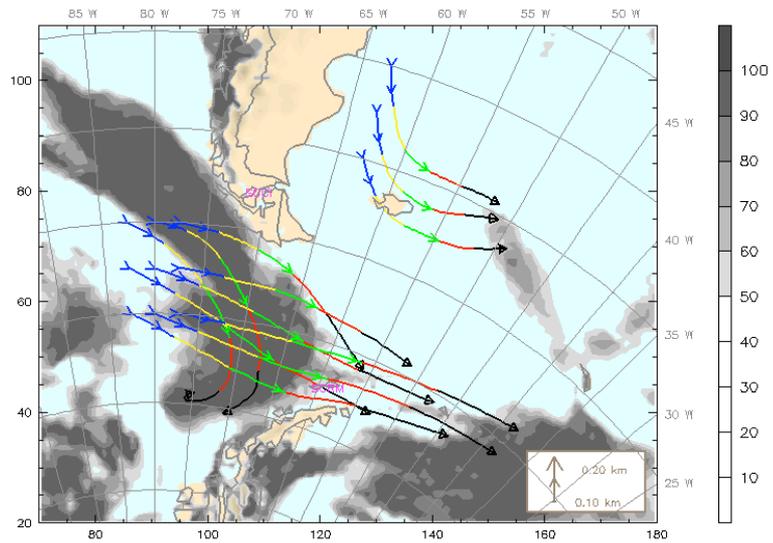


BARB VECTORS: FULL BARB = 10 kts
 OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels



BARB VECTORS: FULL BARB = 10 kts
 OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels

NCEP GFS 0.25 degree NCAR/MMM Init: 06 UTC Wed 21 Jan 15
 Fcst: 60 h Valid: 18 UTC Fri 23 Jan 15 (15 LST Fri 23 Jan 15)
 Low Cloud Fraction 500 ft Forward trajectories
 Trajectories from hour 33,000 to 60,000



OUTPUT FROM METGRID V3.7 x = 180, y = 128, 30 km, 27 levels

Forecast – Tropopause

NCEP GFS 0.25 degree
 Fcst: 30 h
 Pressure of tropopause
 Maximum wind speed
 Horizontal wind vectors

NCAR/MMM

Valid: 12 UTC Thu 22 Jan 15 (09 LST Thu 22 Jan 15)

Init: 06 UTC Wed 21 Jan 15

sm = 2

at pressure = 200 hPa

NCEP GFS 0.25 degree
 Fcst: 54 h
 Pressure of tropopause
 Maximum wind speed
 Horizontal wind vectors

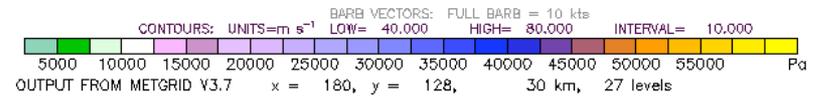
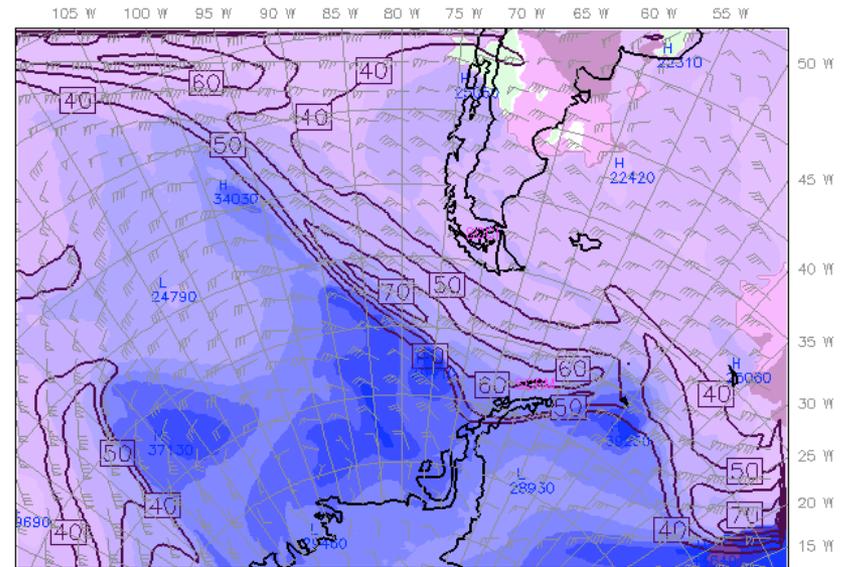
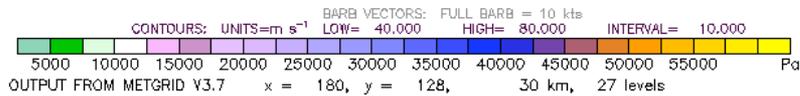
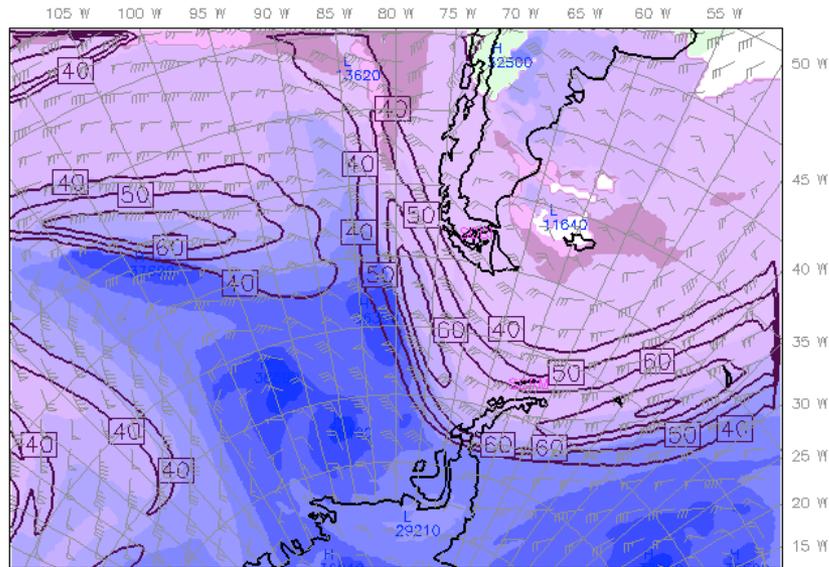
NCAR/MMM

Valid: 12 UTC Fri 23 Jan 15 (09 LST Fri 23 Jan 15)

Init: 06 UTC Wed 21 Jan 15

sm = 2

at pressure = 200 hPa



Forecast – Wind

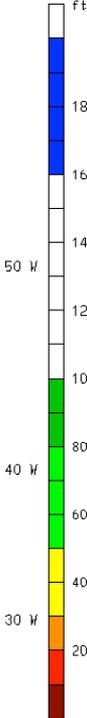
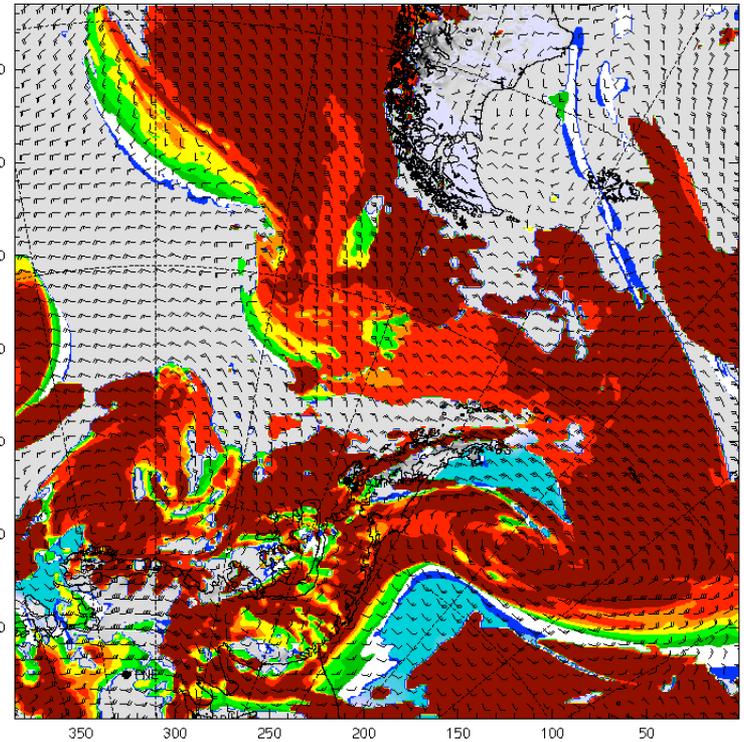
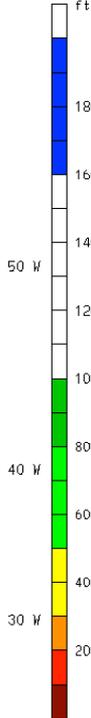
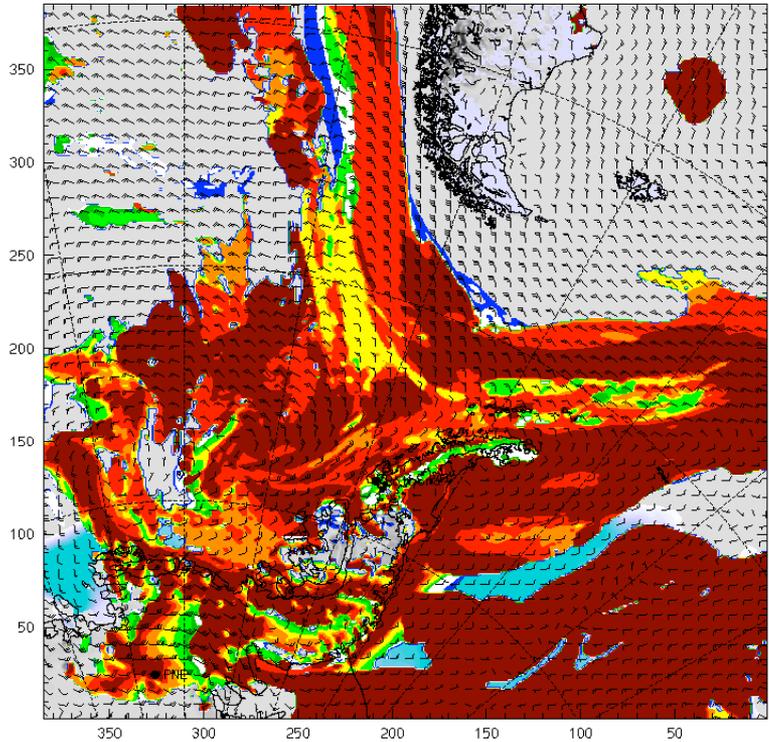
AMPS -- Palmer 9-km nest
 Fcst. 33 h
 Cloud ceiling
 Horizontal wind vectors
 Relative humidity (w.r.t. ice)

Init. 00 UTC Wed 21 Jan 15 AMPS -- Palmer 9-km nest
 Valid. 09 UTC Thu 22 Jan 15 Fcst. 57 h
 Cloud ceiling
 Horizontal wind vectors
 Relative humidity (w.r.t. ice)

Init. 00 UTC Wed 21 Jan 15
 Valid. 09 UTC Fri 23 Jan 15

at k-index = 60
 at k-index = 21

at k-index = 60
 at k-index = 21



CONTOURS: UNITS=% LOW= 0.0000 HIGH= 0.0000 INTERVAL= 90.000
 Model Info: V3.3.1 KF MYJ PBL WSM 5class Noah LSM 9.0 km, 60 levels,
 LW: RRTM SN: Goddard DIFF: simple KM: 2D Smagor

CONTOURS: UNITS=% LOW= 90.0000 HIGH= 90.0000 INTERVAL= 90.000
 Model Info: V3.3.1 KF MYJ PBL WSM 5class Noah LSM 9.0 km, 60 levels,
 LW: RRTM SN: Goddard DIFF: simple KM: 2D Smagor

Forecast – BL

NCEP GFS 0.25 degree
Fcst: 30 h
Height of PBL
Horizontal wind vectors

NCAR/MMM

Valid: 12 UTC Thu 22 Jan 15 (09 LST Thu 22 Jan 15)
at pressure = 900 hPa

Init: 06 UTC Wed 21 Jan 15

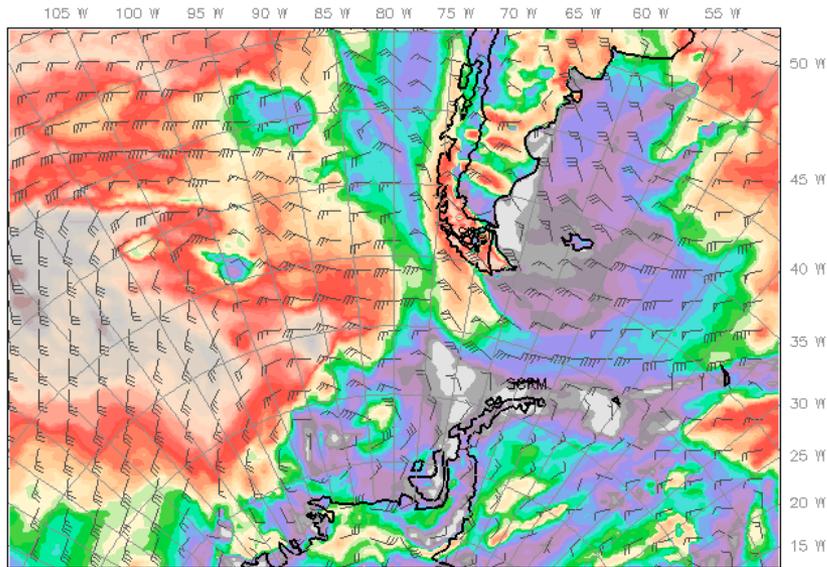
sm= 1

NCEP GFS 0.25 degree
Fcst: 54 h
Height of PBL
Horizontal wind vectors

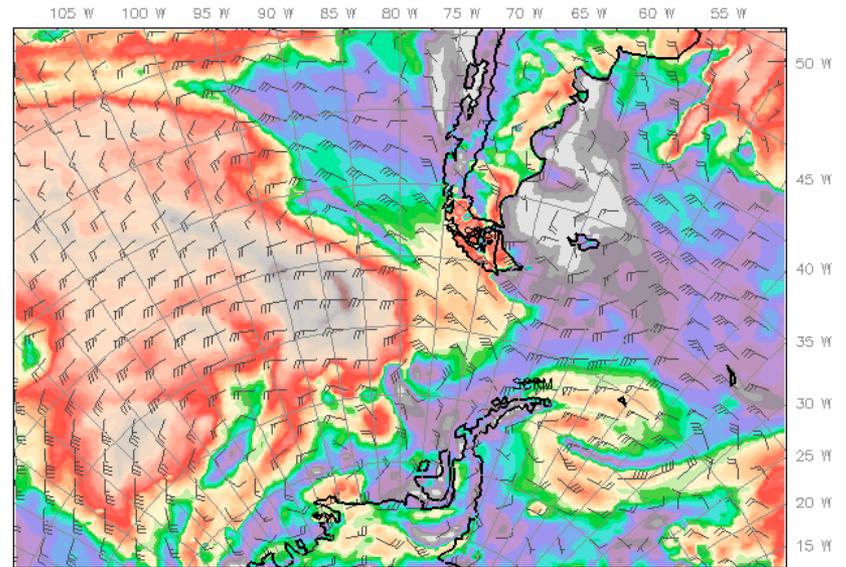
NCAR/MMM

Valid: 12 UTC Fri 23 Jan 15 (09 LST Fri 23 Jan 15)
at pressure = 900 hPa

sm= 1



BARB VECTORS: FULL BARB = 10 kts
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 m
OUTPUT FROM METGRID Y3.7 x = 180, y = 128, 30 km, 27 levels



BARB VECTORS: FULL BARB = 10 kts
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 m
OUTPUT FROM METGRID Y3.7 x = 180, y = 128, 30 km, 27 levels

Summary

- Relatively clear skies east region of domain 21-23 Jan.
- Favorable flying conditions in Argentine and Scotia Seas and/or the South Atlantic North of 60S.
- West/Southwest/South parts of region less favorable due to increasing regional cloud cover and the associated with cyclone in the Bellingshausen Sea (west of Palmer Peninsula) and cyclogenesis in the south Drake Passage and Weddell Sea.
- Takeoff weather should be clear, breezy 15-20 kts. west/northwest winds (Day 1/2).
- Landing weather expect mostly cloudy, small chance of light precip., winds 15-20 kts west/northwest with occasional gusts to 25 (no precip. Day2).