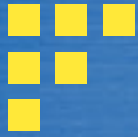




# Use of **AMPS** in Queen Maud Land Area



- DROMLAN weather forecast service
- Case study: blizzard at Novolazarevskaya runway on the 1st of February 2006



## **Dronning Maud Land Air Network (DROMLAN)**

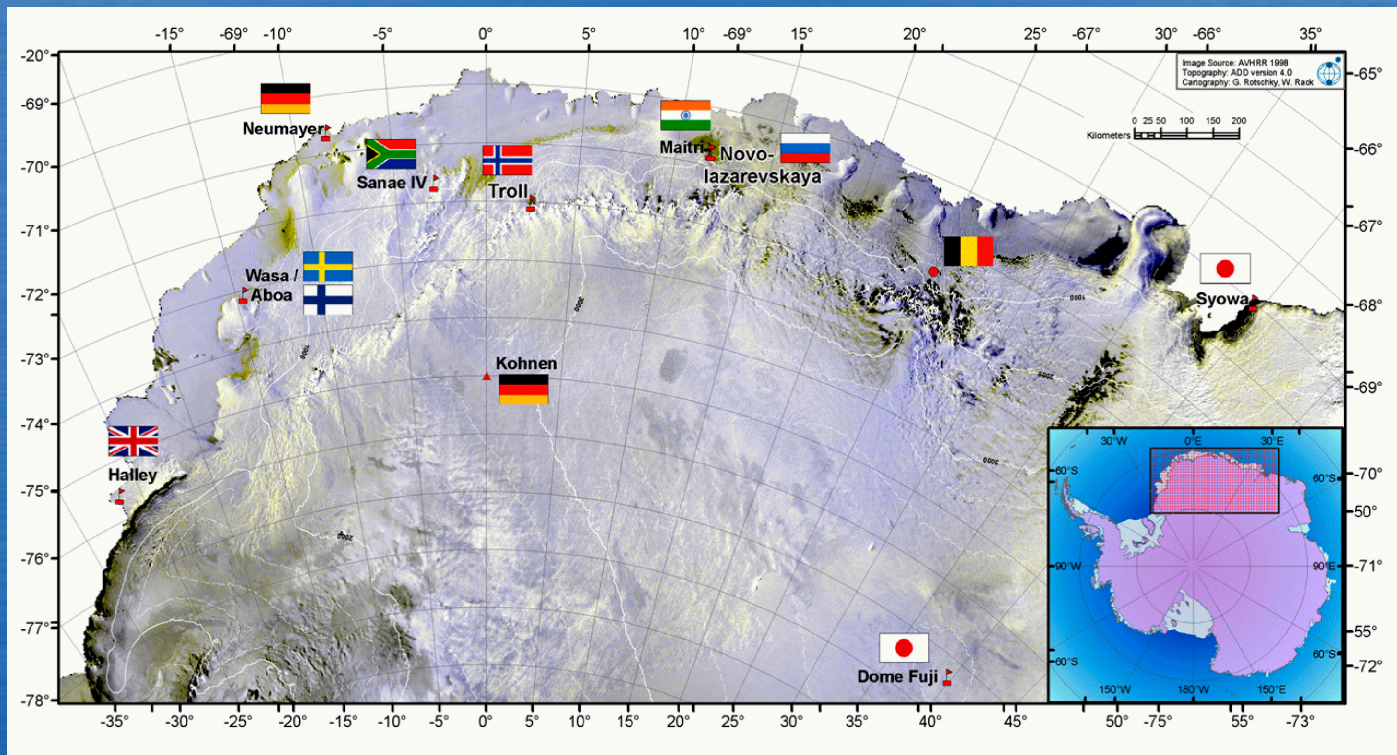
The aim of the project is to provide air transport to/from and within Dronning Maud Land to any member country of the Managers of National Antarctic Programs (COMNAP) in science related activities, including logistics.

- to organize intercontinental air transport between Cape Town and DML.**
- to maintain airfield at the Novolasarevskaya station (Russia)**
- to establish and maintain an airfield at the Troll station (Norway).**
- to organise feeder flights inside DROMLAN area.**
- to organise any other service necessary for the flights.**

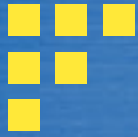
### **DROMLAN parties:**

**Belgium, Finland, Germany, India, Japan, Netherlands, Norway, Russia, South Africa, Sweden, United Kingdom.**

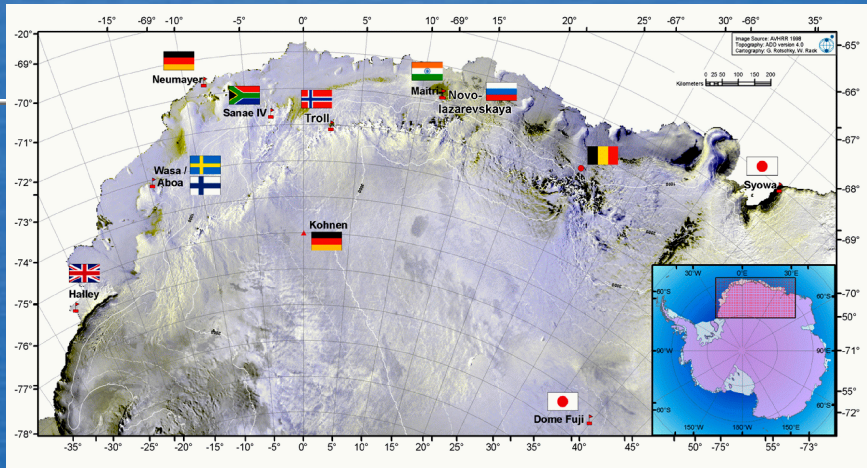








# User in the DROMLAN community



ships

Do 228



Basler DC-3

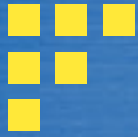
traverses



Iljushin76



C-130



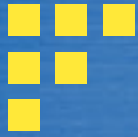
# User in the DROMLAN community

Special Thanks from all the forecasters on RV POLARSTERN .....

.....for the AMPS products via Email!



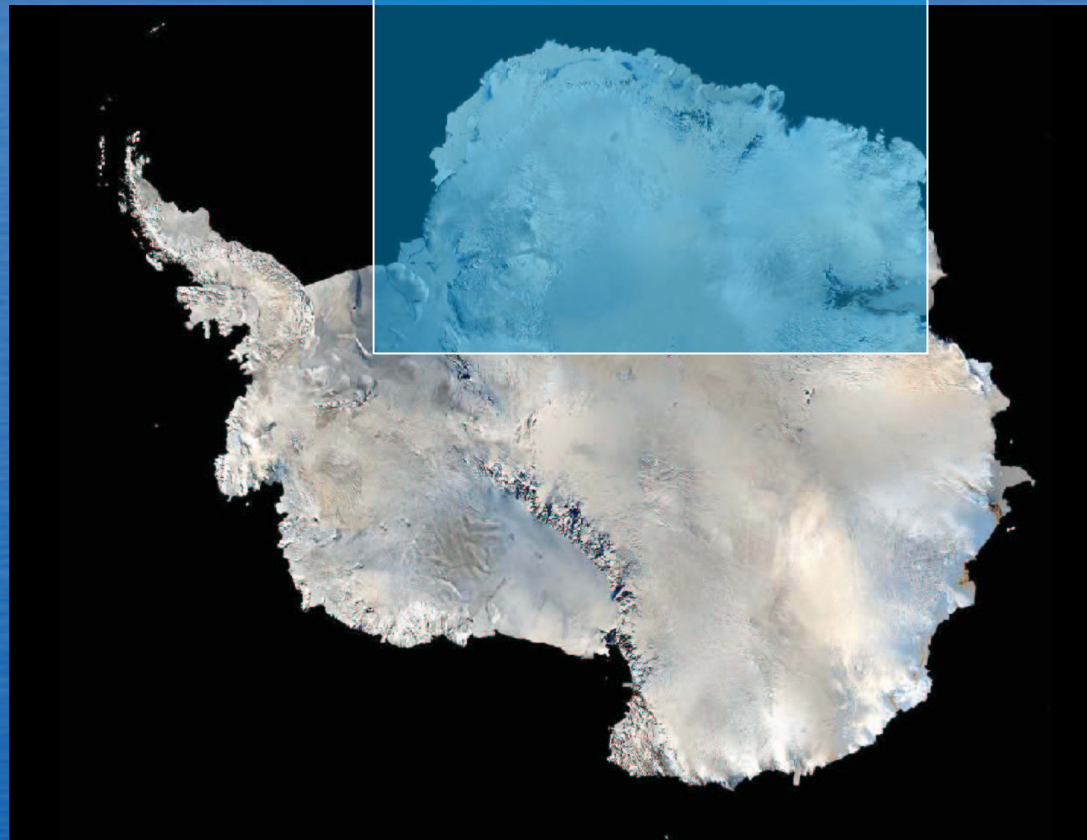




# forecast area

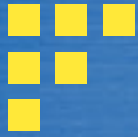
## Westbound:

contact with BAS/  
forecaster at  
Rothera



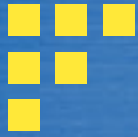
## Eastbound:

contact with  
USAP/forecaster  
at McMurdo or  
Casey/Davis



- DROMLAN weather forecast service was established in season 2002/2003 to provide forecasts for intercontinental/feeder flights and other weather dependent activities
- forecast centre is Neumayer Station





# products and service

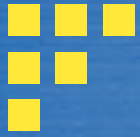
⊗ Every season more than 2500 forecasts have been worked and transmitted to DROMLAN partners

- Twice daily forecasts for all stations, field parties, traverses, ships
- Individual forecasts for aircrafts
- Service is available 24 hours (office hours are 05:00 to 22:00, „one man show“)
- communication and distribution via email, HF, VHF, Iridium, telephone, fax



# Forecast Base Neumayer Station





# ....on top!!





## Case study: blizzard at Novo runway on the 1st of Feb 2006

- Flight with Iljushin 76 from Cape Town to Novo runway
  - ETD Cape Town 31st of January at 23:00 UTC
  - ETA Novo runway 1st of February at 05:00 UTC
- ⇒ due to AMPS and ECMWF forecasts flight was delayed for 2nd of February in the afternoon or night!!  
This was done 2 days ahead!!





## Case study: blizzard at Novo runway on the 1st of Feb 2006

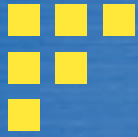
### WEATHER INFORMATION FROM NOVO RUNWAY

18:00 UTC January, 31

AIR TEMPERATURE	-5.4 C
WIND SPEED (m/s)	11.3
WIND DIRECTION	100
AIR PRESSURE	918.8 hPa
CLOUD AMOUNT (octas)	2/0/0
CLOUD CELLING (m)	-/-/-
VISIBILITY	>20 km
SIGNIFICANT WEATHER	-
REMARKS	-
CONTRAST & HORIZON	good

08:00 UTC February, 01

AIR TEMPERATURE	-6.7 C
WIND SPEED (m/s)	18.4
WIND DIRECTION	115
AIR PRESSURE	918.3 hPa
CLOUD AMOUNT (octas)	?/?/8
CLOUD CELLING (m)	-/-/1850
VISIBILITY	350 m
SIGNIFICANT WEATHER	snowdrift
REMARKS	-
CONTRAST & HORIZON	nil

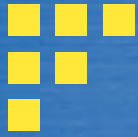


## Case study: blizzard at Novo runway on the 1st of Feb 2006

### WEATHER INFORMATION FROM NOVO RUNWAY

18:30 UTC	February, 01	07:00 UTC	February, 02
AIR TEMPERATURE	-5.4 C	AIR TEMPERATURE	-5.5 C
WIND SPEED (m/s)	20.4	WIND SPEED (m/s)	13,5
WIND DIRECTION	115	WIND DIRECTION	110
AIR PRESSURE	919.6 hPa	AIR PRESSURE	922,3 hPa
CLOUD AMOUNT (octas)	?/?/?	CLOUD AMOUNT (octas)	?/?/?
CLOUD CELLING (m)	-/-/?	CLOUD CELLING (m)	-/-/?
VISIBILITY	50 m	VISIBILITY	500 m
SIGNIFICANT WEATHER	blizzard	SIGNIFICANT WEATHER	snowdrift
REMARKS	-	REMARKS	-
CONTRAST & HORIZON	nil	CONTRAST & HORIZON	nil





## Case study: blizzard at Novo runway on the 1st of Feb 2006

### WEATHER INFORMATION FROM NOVO RUNWAY

12:00 UTC February, 02

AIR TEMPERATURE	-3.6 C
WIND SPEED (m/s)	7,2
WIND DIRECTION	100
AIR PRESSURE	922,1 hPa
CLOUD AMOUNT (octas)	?/8/0
CLOUD CELLING (m)	-/1430/-
VISIBILITY	10 km
SIGNIFICANT WEATHER	-
REMARKS	-
CONTRAST & HORIZON	mod

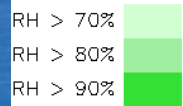
.....no landing conditions on the 1st and  
2nd February in the morning! !



Novolazarevskaya: lat/lon = (-70.76, 11.83) AMPS MM5 Forecast Cycle: 2006-01-27 / 00 Z

Model Grid ΔX:  
20.000 km

Temperature (°C)  
RH (% WRT liq. wat.)  
Cloud/Precip Outline  
Wind Barbs (kts) (true)

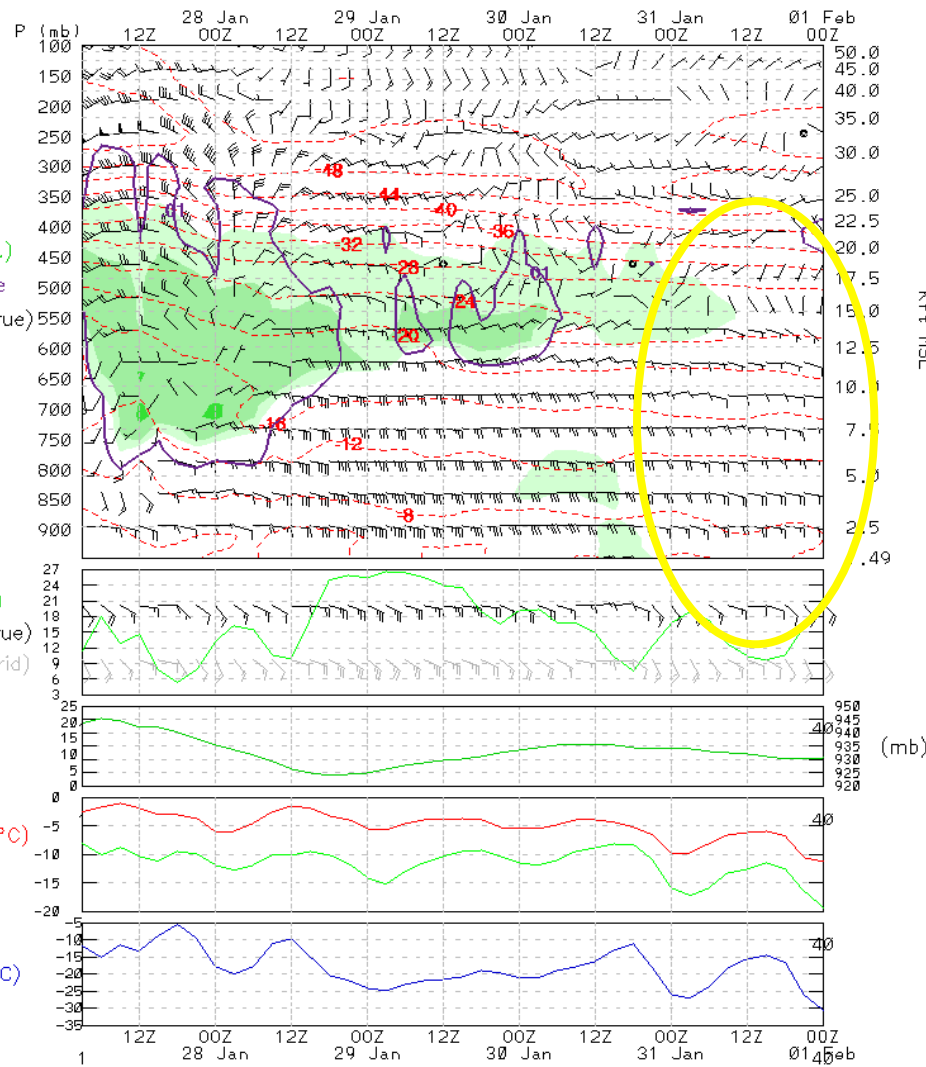


Wind Spd (kts)  
Wind Barbs (true)  
Wind Barbs (grid)

Precip (mm) liq. equiv.  
3-hr accum  
Pressure (mb)

Temperature (°C)  
Dewpoint (°C)

Wind Chill T (°C)



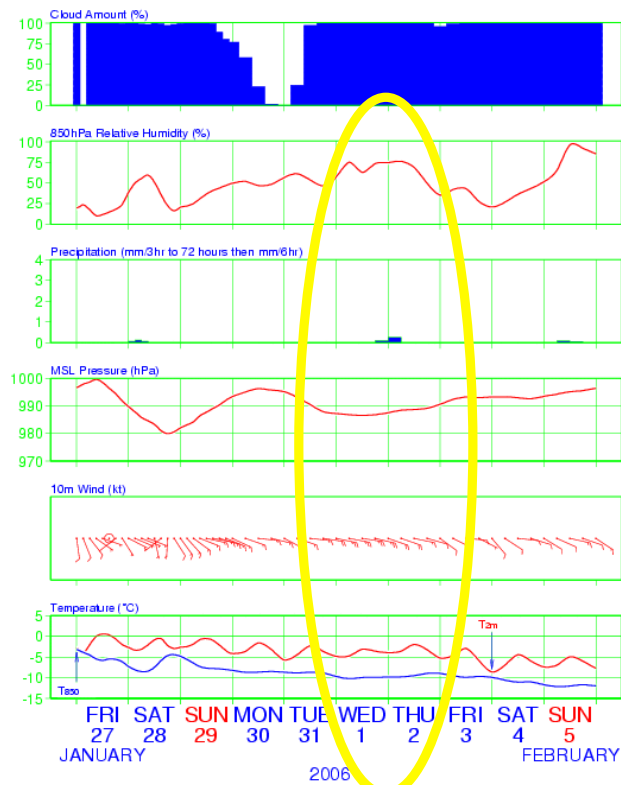
AMPS

27th - 00 UTC

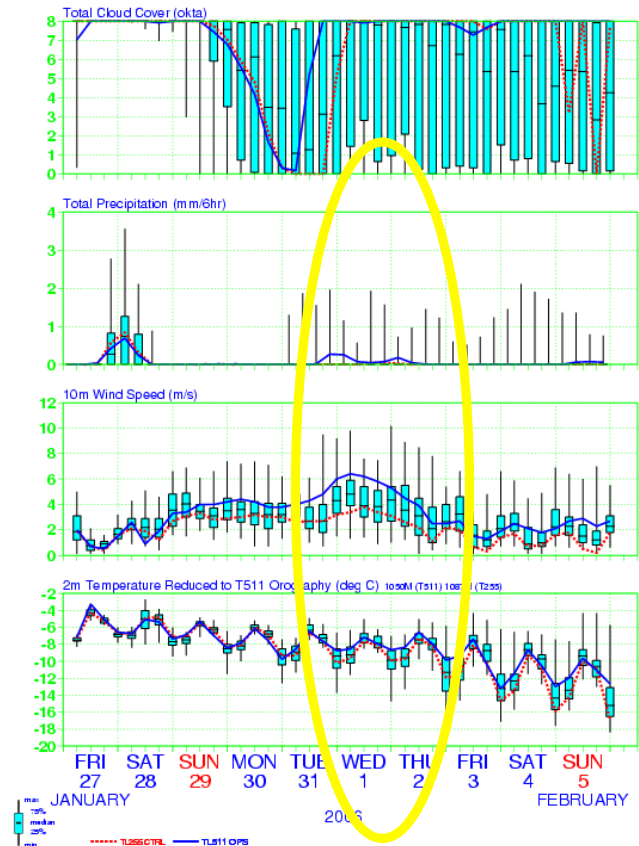




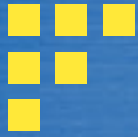
Novolazarevskaja 70.8° S 12.0° E<sub>309M</sub>  
ECMWF Forecast from 27 January 2006 00 UTC  
Nearest land grid point (T511)



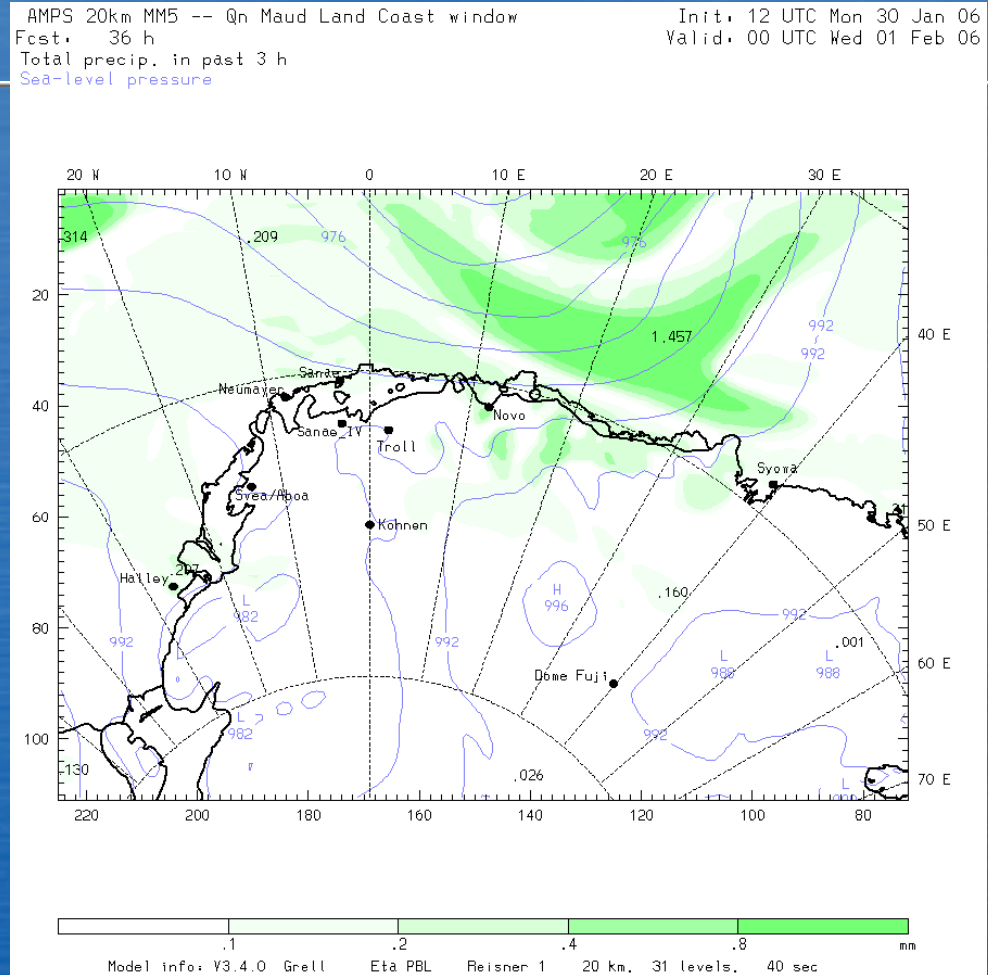
EPS Meteogram  
Novolazarevskaja 71.2° S 12.0° E  
Deterministic Forecasts and EPS Distribution 27 January 2006 00 UTC



ECMWF  
27th -00 UTC

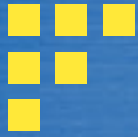


# Forecast AMPS 30th - 12 UTC









Final decision:

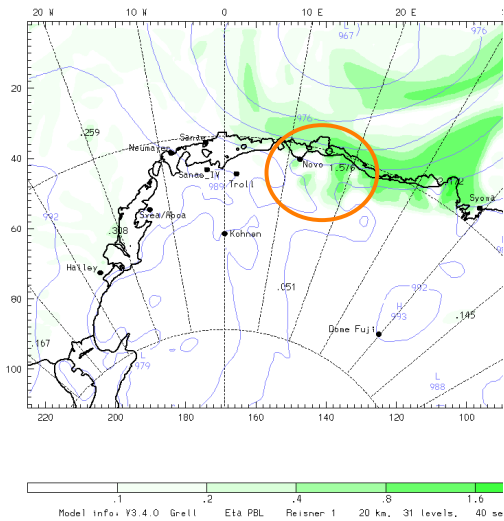
Canceling flight with Iljushin 76 arriving on  
the 1st in the morning!!



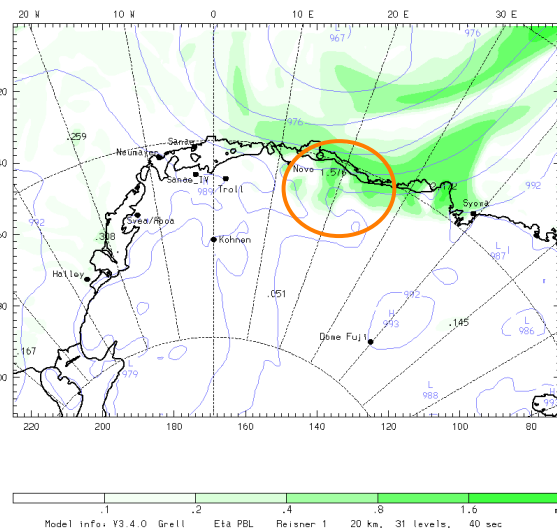


# Forecast AMPS 31st - 00 UTC

AMPS 20km MMS -- Qn Maud Land Coast window Inrt. 00 UTC Tue 31 Jan 06  
 Fcst. 36 h Valid. 12 UTC Wed 01 Feb 06  
 Total precip. in past 3 h  
 Sea-level pressure



AMPS 20km MMS -- Qn Maud Land Coast window Inrt. 00 UTC Tue 31 J  
 Fcst. 36 h Valid. 12 UTC Wed 01 F  
 Total precip. in past 3 h  
 Sea-level pressure



Novolazarevskaya: lat/lon = (-70.76, 11.83) AMPS MM5 Forecast Cycle: 2006-01-30 / 12 Z

Model Grid AX: 20.000 km

Temperature (°C)  
 RH (% WRT liq. wat.)  
 Cloud/Precip Outline  
 Wind Barbs (kts) (true)

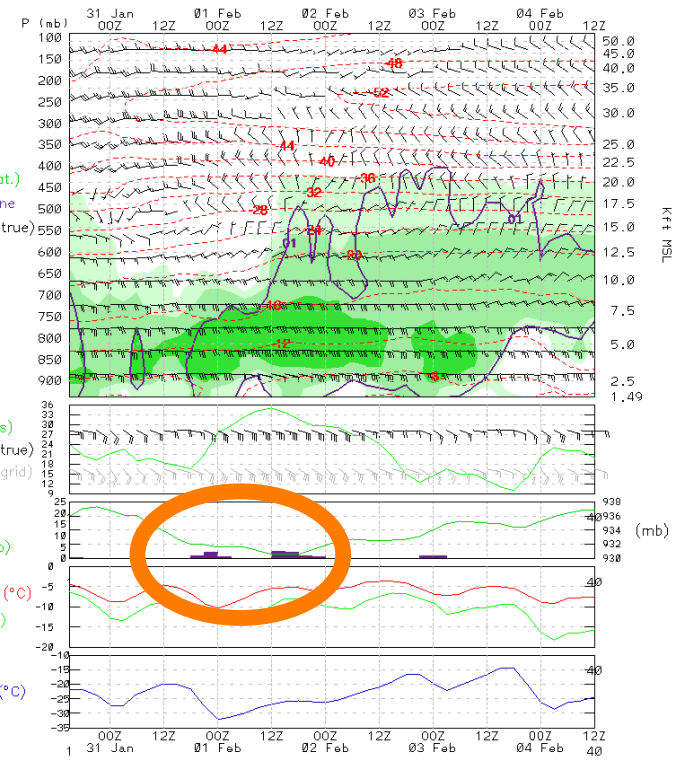
RH > 70%  
 RH > 80%  
 RH > 90%

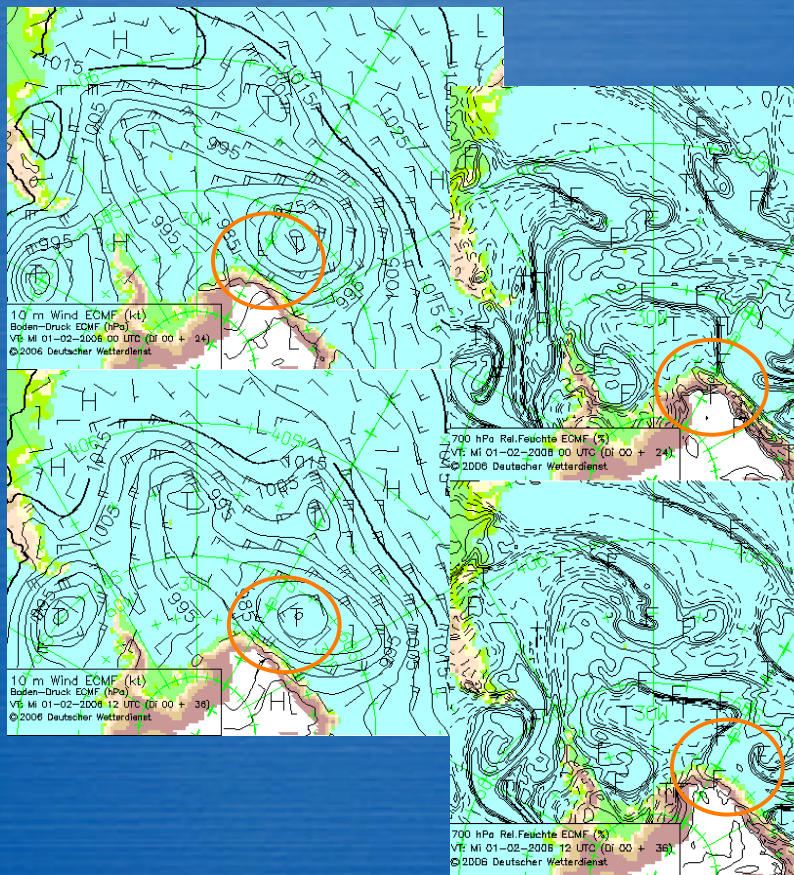
Wind Spd (kts)  
 Wind Barbs (true)  
 Wind Barbs (grid)

Precip (mm) liq. equiv.  
 3-hr accum  
 Pressure (mb)

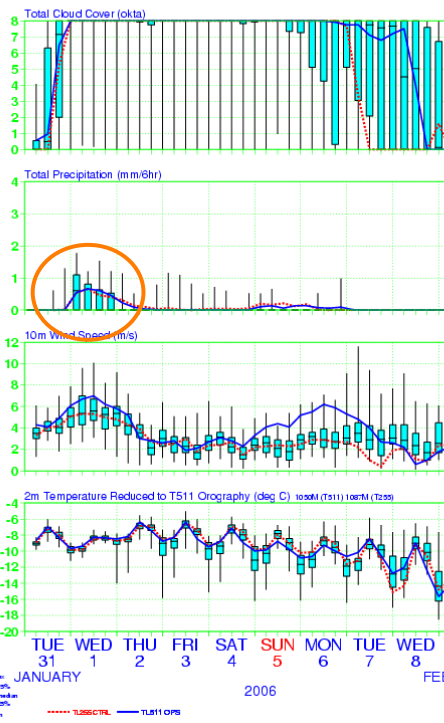
Temperature (°C)  
 Dewpoint (°C)

Wind Chill T (°C)

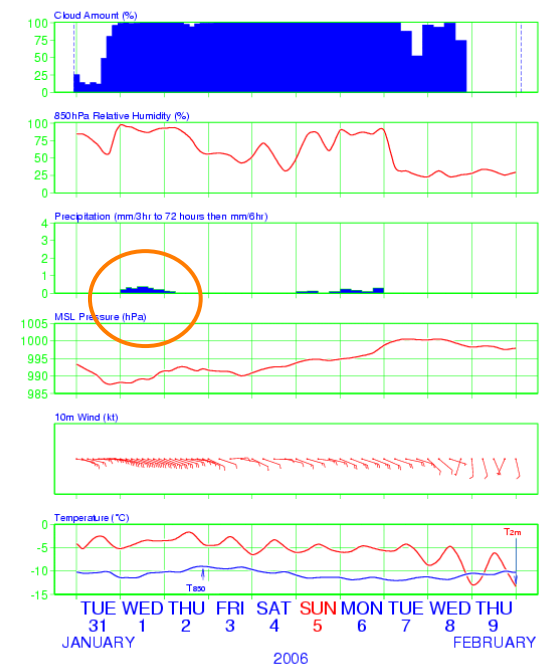




EPS Meteogram  
 Novolazarevskaja 71.2° S 12.0° E  
 Deterministic Forecasts and EPS Distribution 31 January 2006 00 UTC



Novolazarevskaja 70.8° S 12.0° E<sub>309M</sub>  
 ECMWF Forecast from 31 January 2006 00 UTC  
 Nearest land grid point (T511)



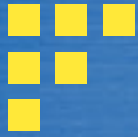
©Copyright ECMWF Tue Jan 31 05:40:13 2006





.....good job done by AMPS and ECMWF!!!!

- safety
- costs



# AMPS and ECMWF

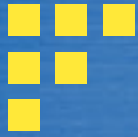
## AMPS

- + surface winds
- + meteograms show  
cloud layers
- + cross sections
- + and a lot more individual  
forecast products

## EMWF

- + EPS-meteogram





Thank you!