

Operational Use of ASCAT-A, ASCAT-B, and OSCAT in NOAA Ocean Prediction Center Operations

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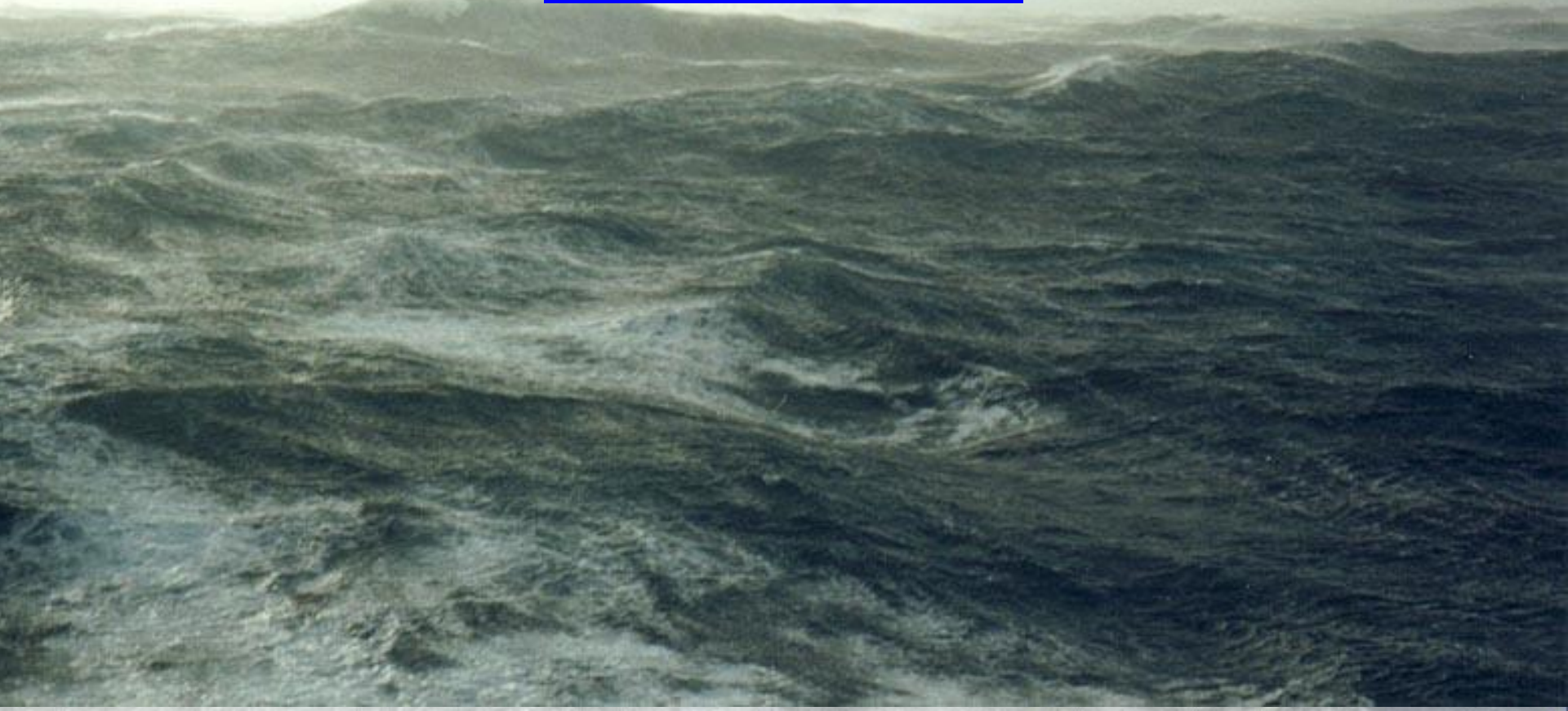
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Zorana Jelenak, UCAR/NOAA NESDIS

Paul Chang, NOAA NESDIS

With David Schultz, University of Manchester, UK

www.opc.ncep.noaa.gov

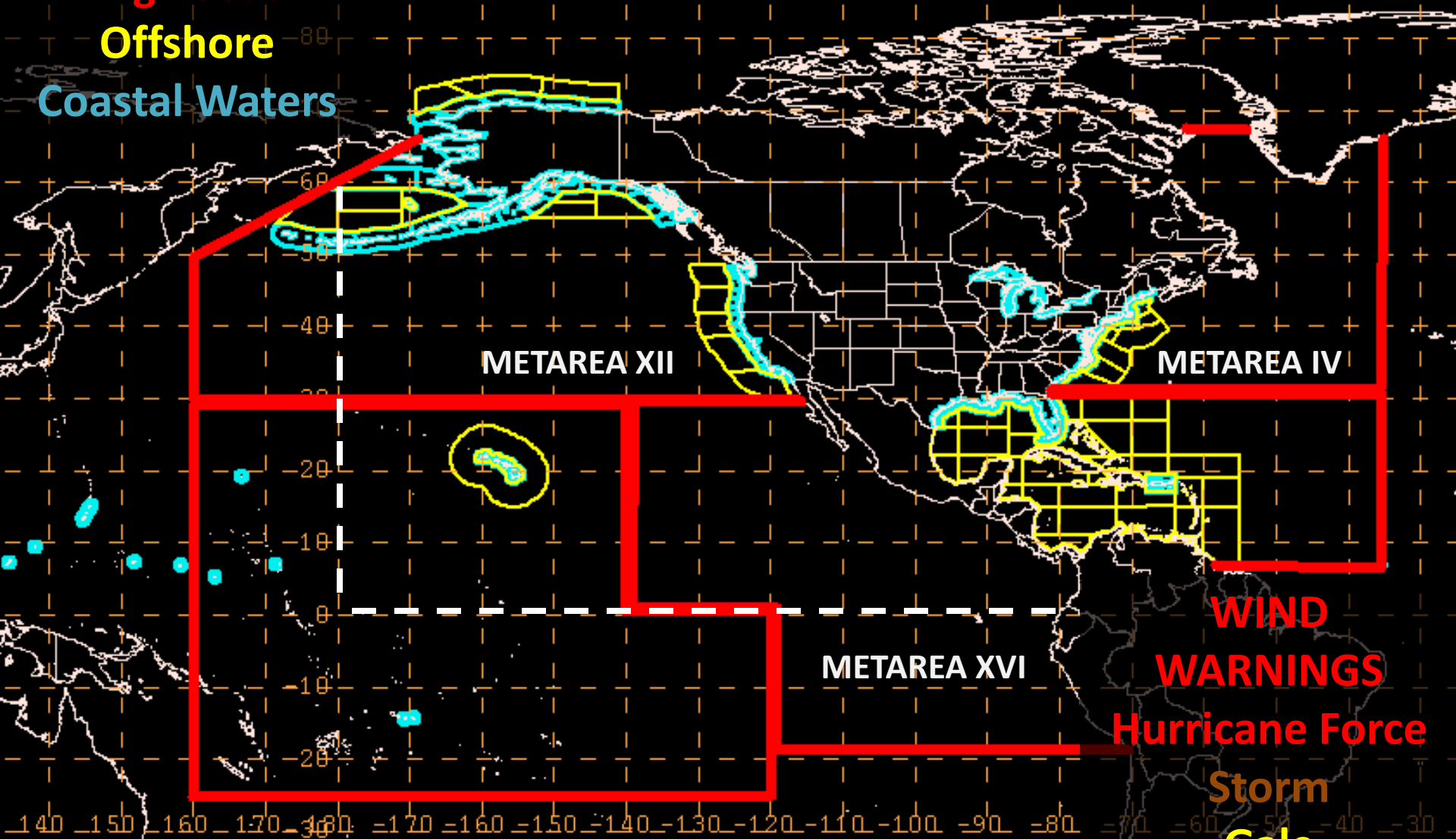


NOAA/NWS Marine Responsibility

High Seas

Offshore

Coastal Waters

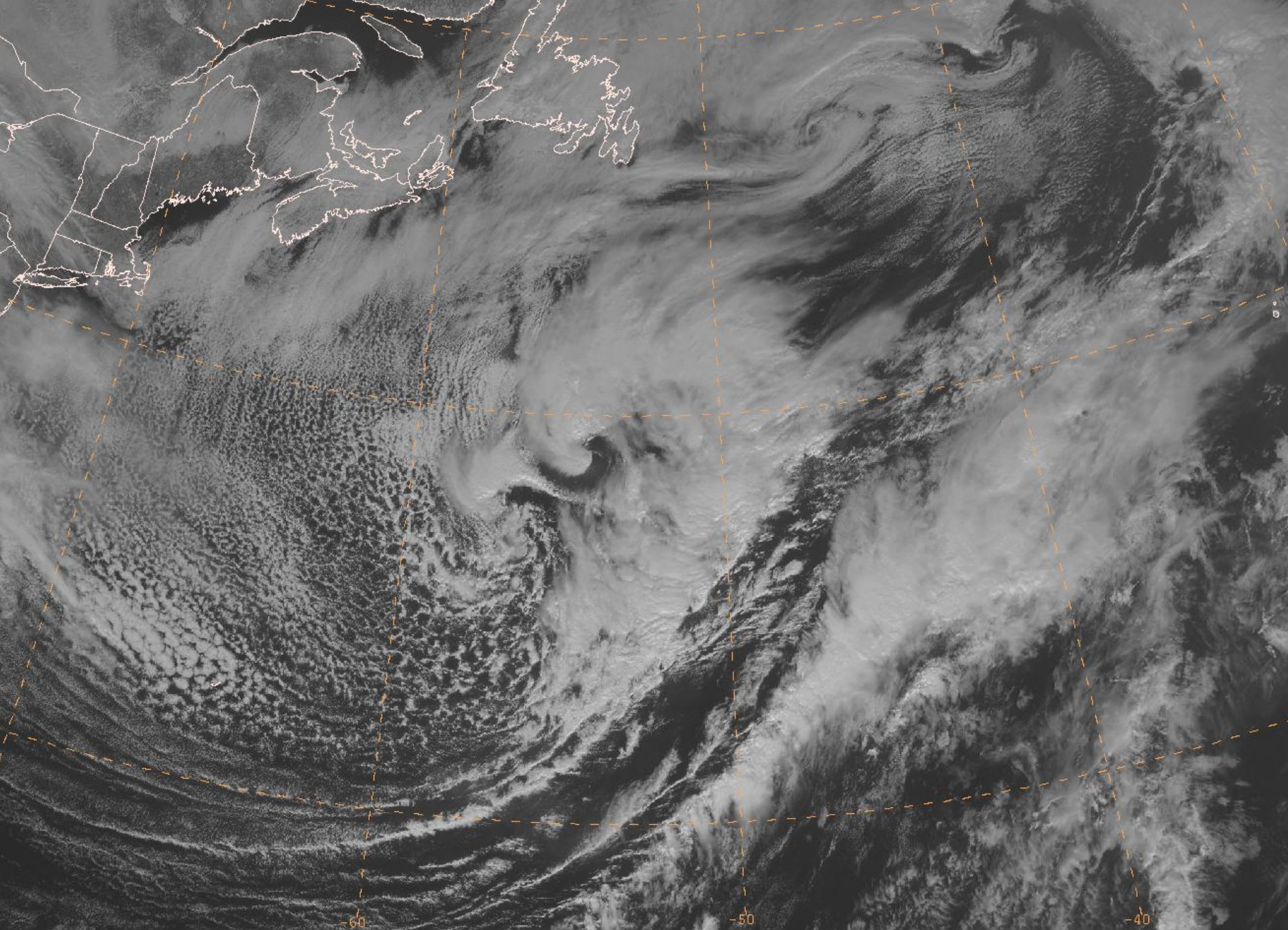


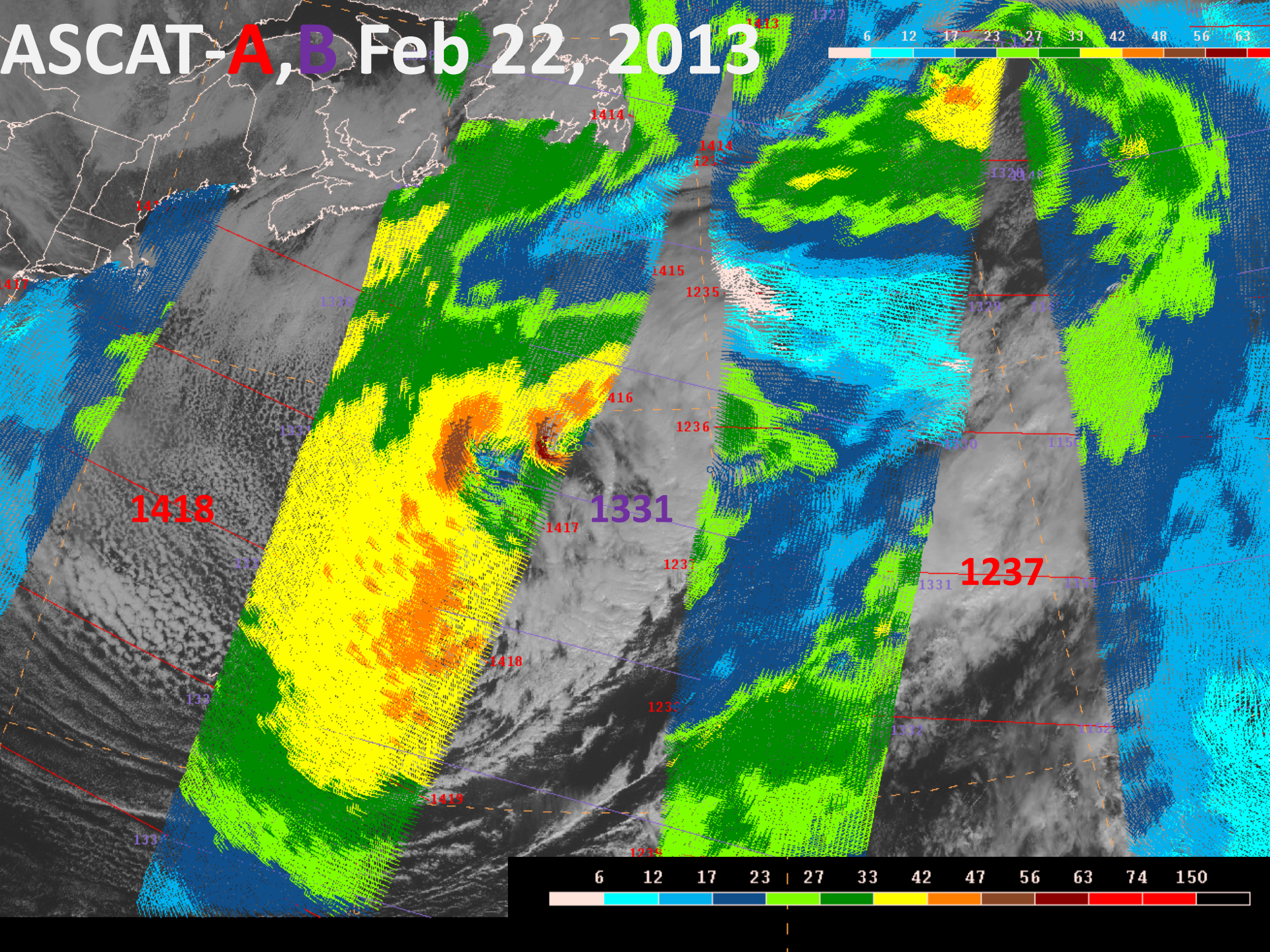
VGF High_Seas_boundaries.vgf

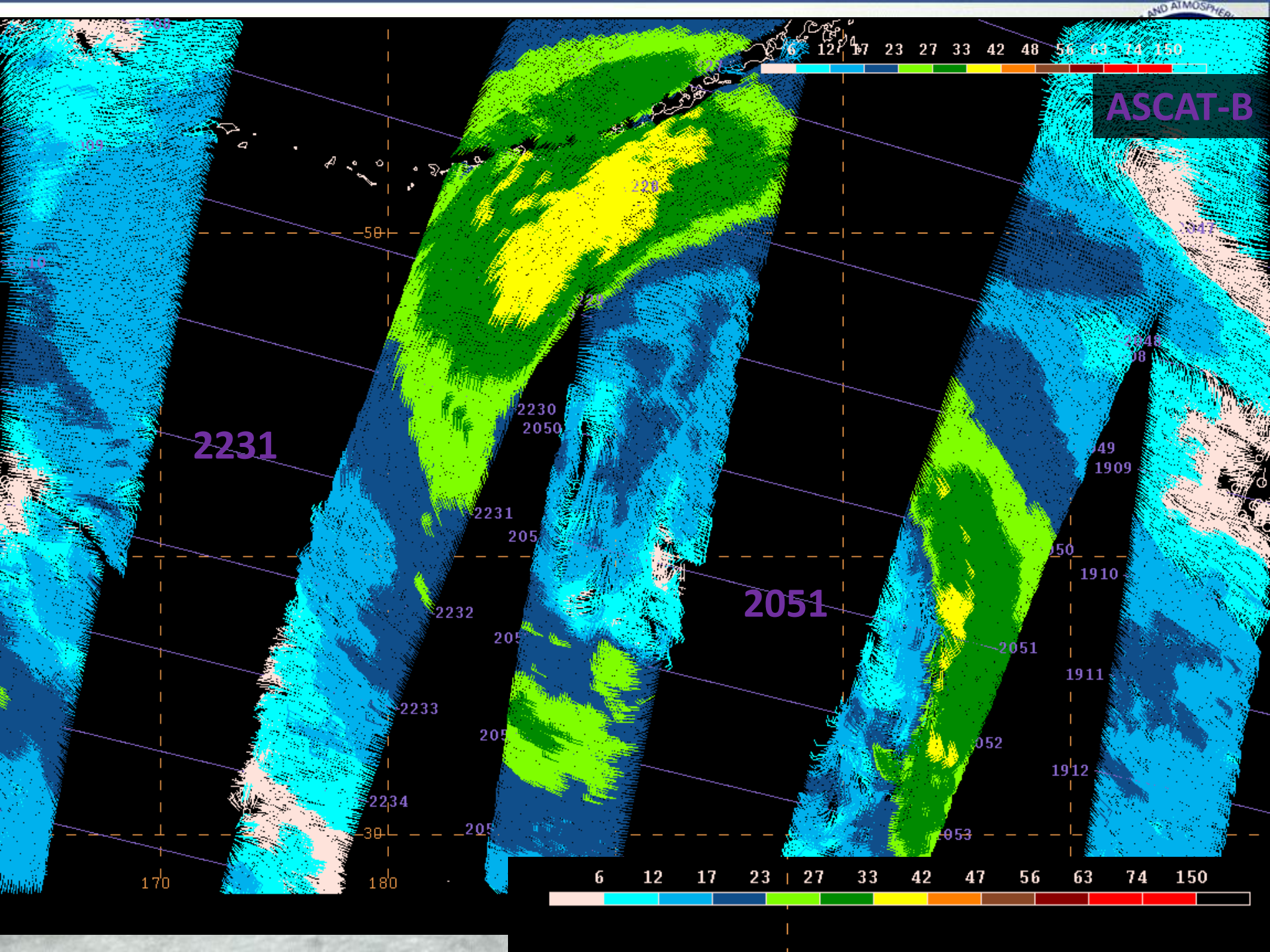
OSVW integrated into work flows

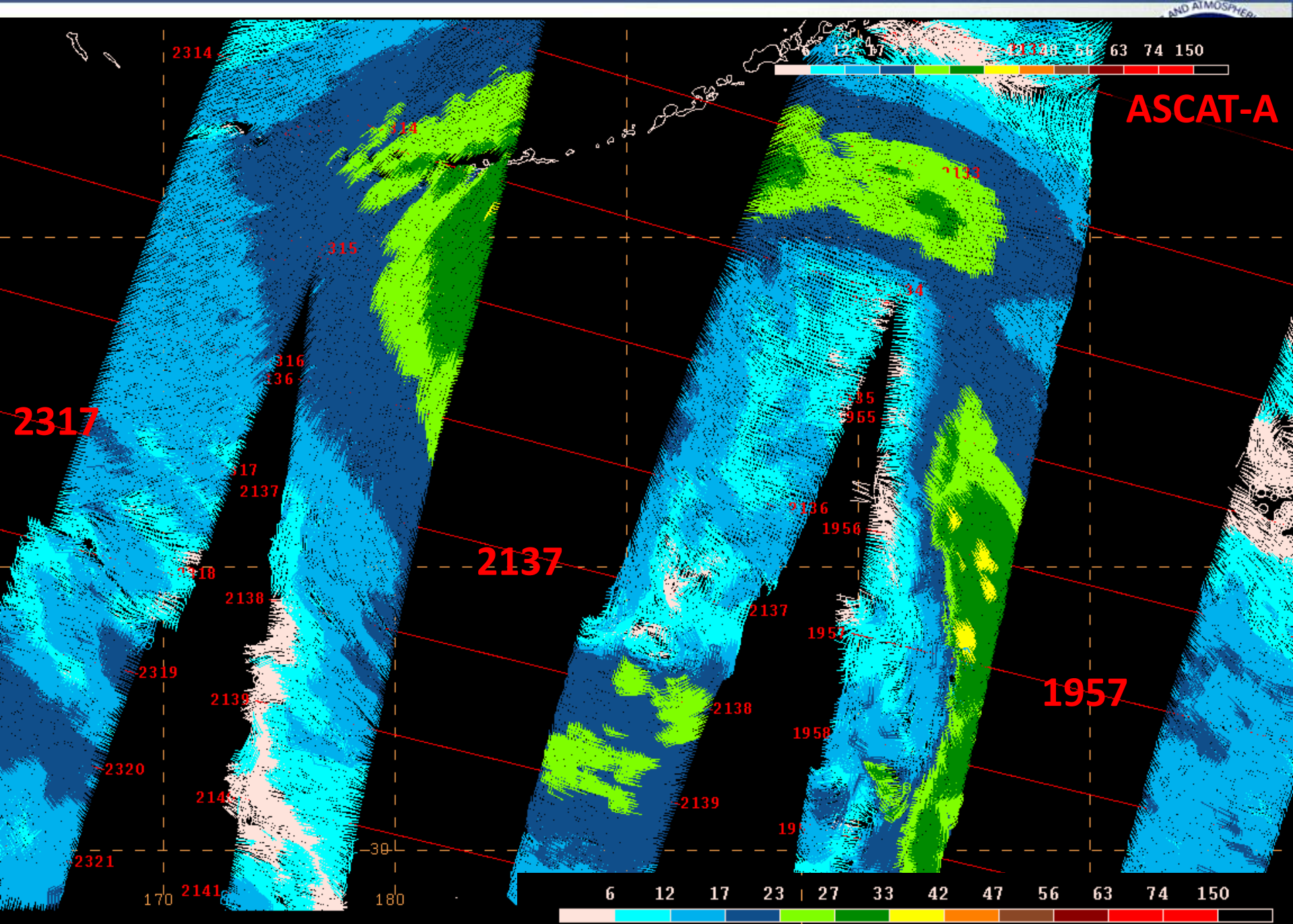


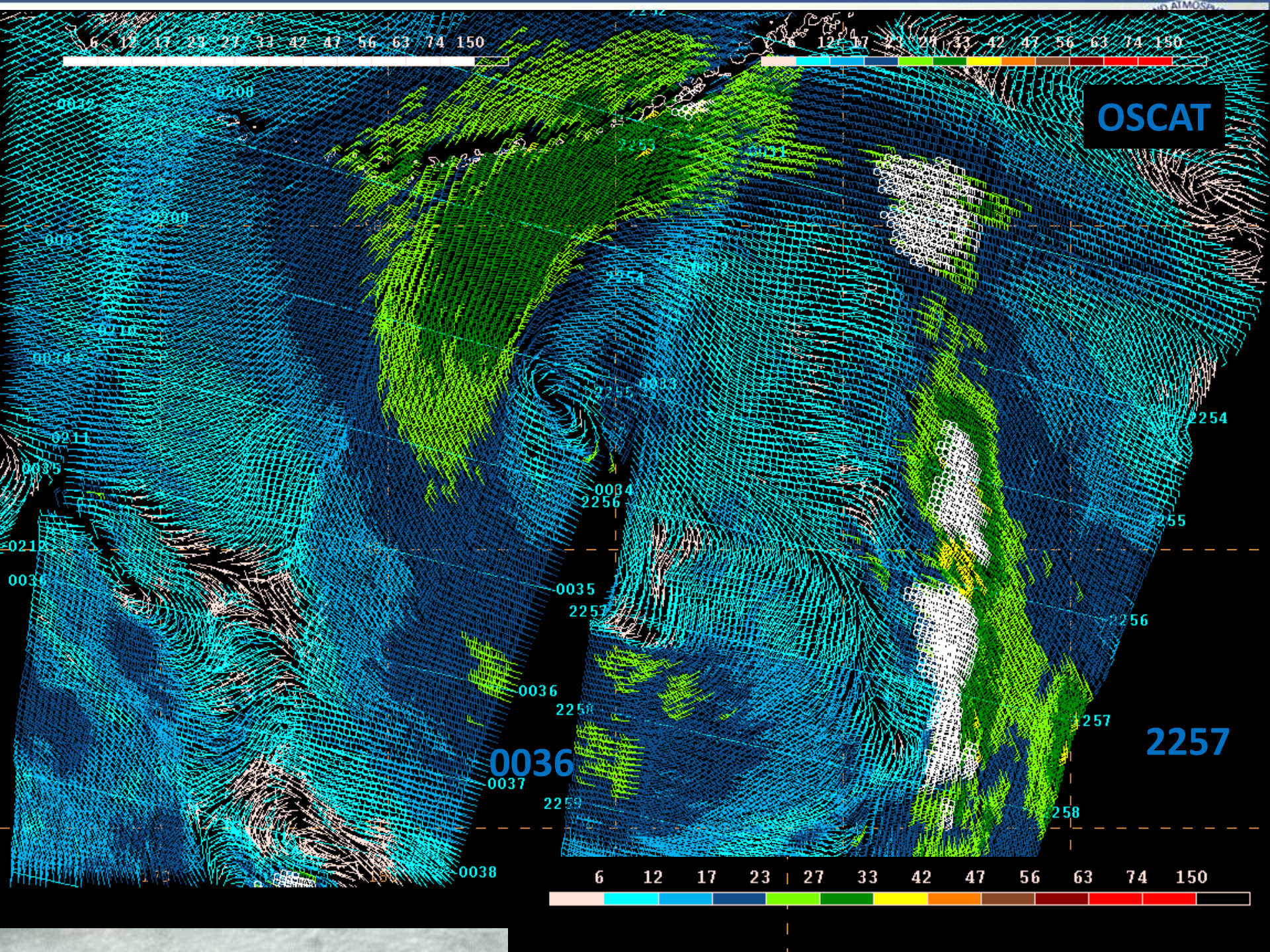
- **ASCAT-A**
 - 12.5 km
- **ASCAT-B**
 - Dec 09, 2012
 - 12.5 km
- **OSCAT**
 - 25 km

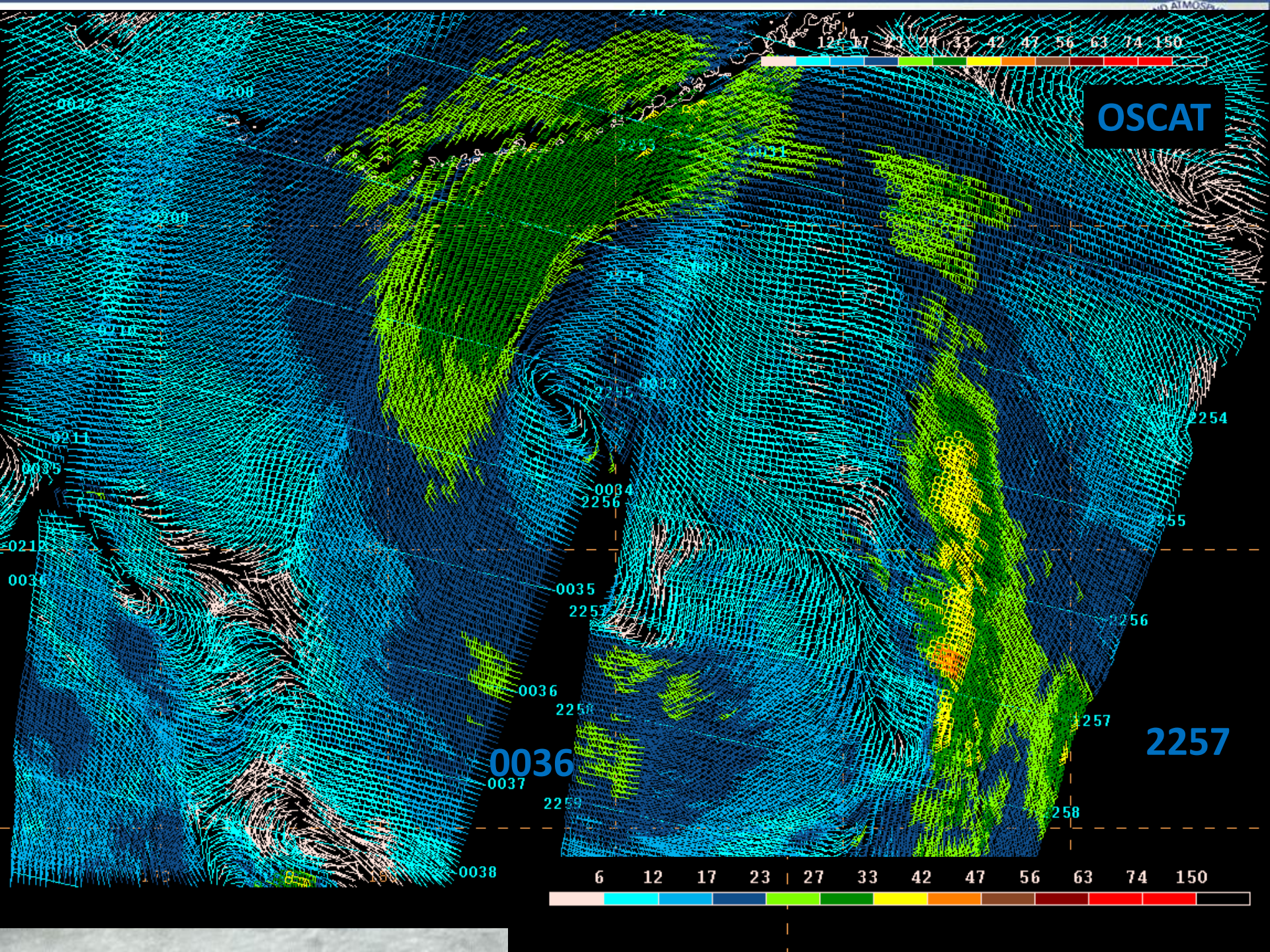


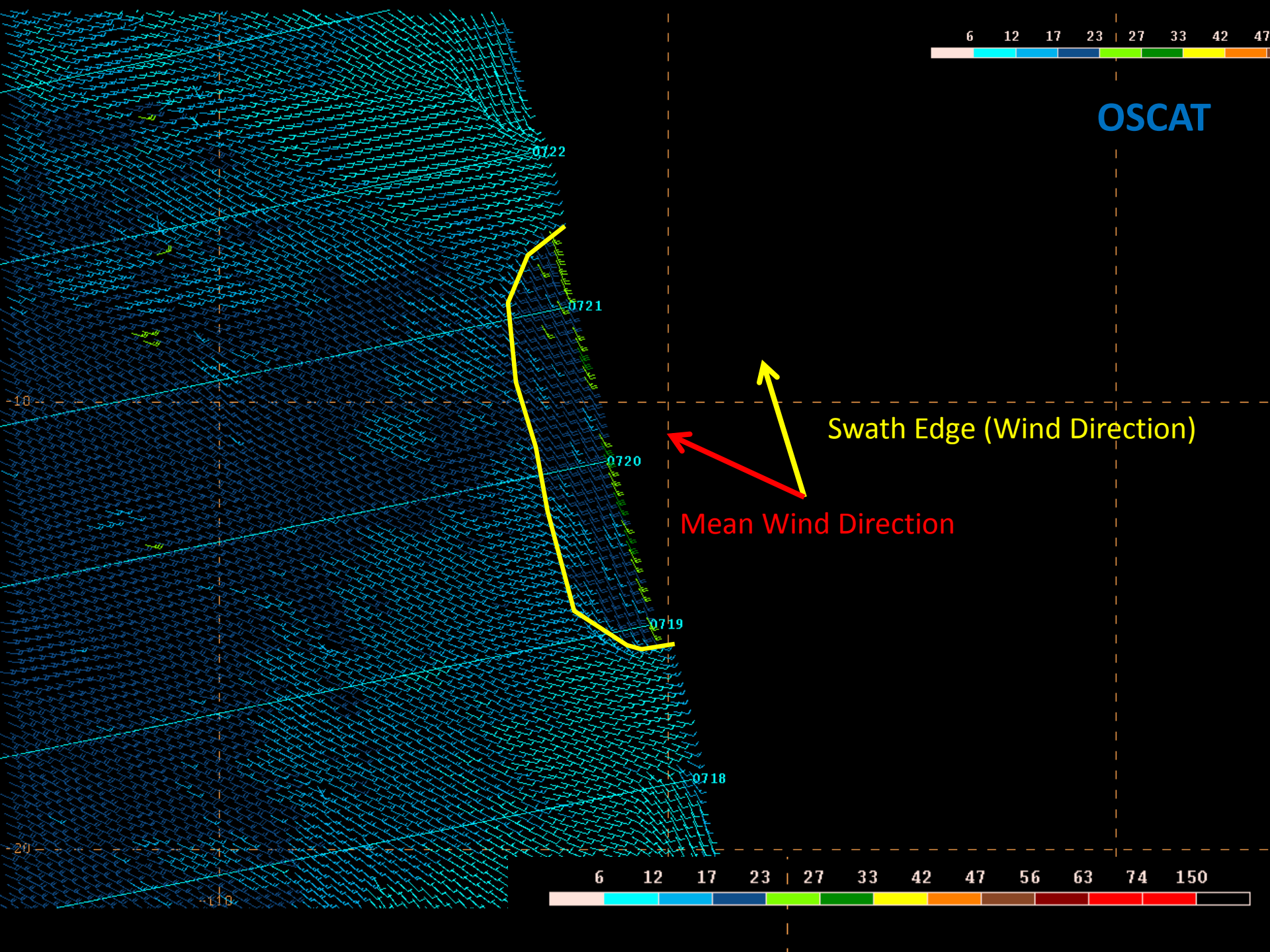








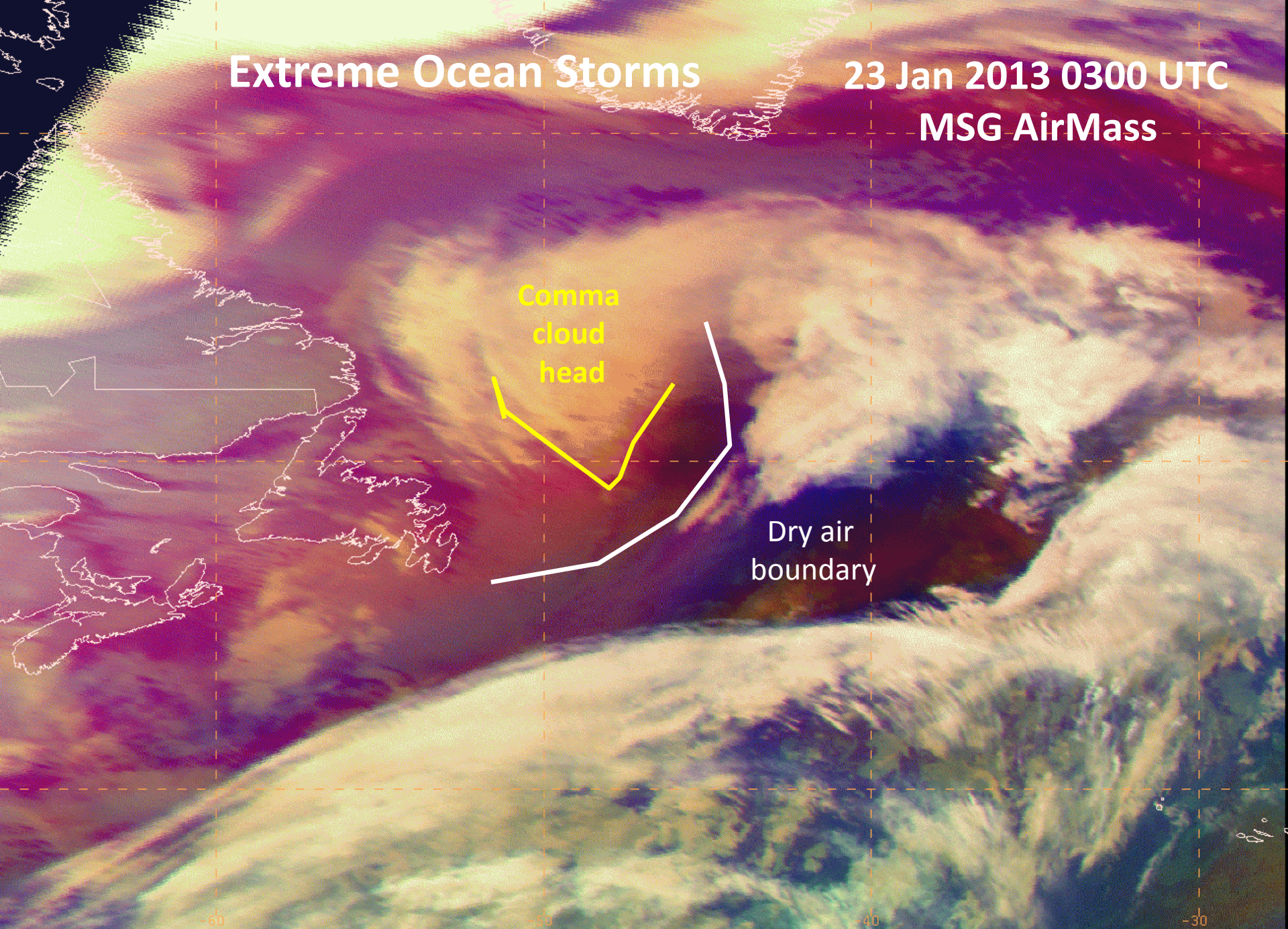




Extreme Ocean Storms

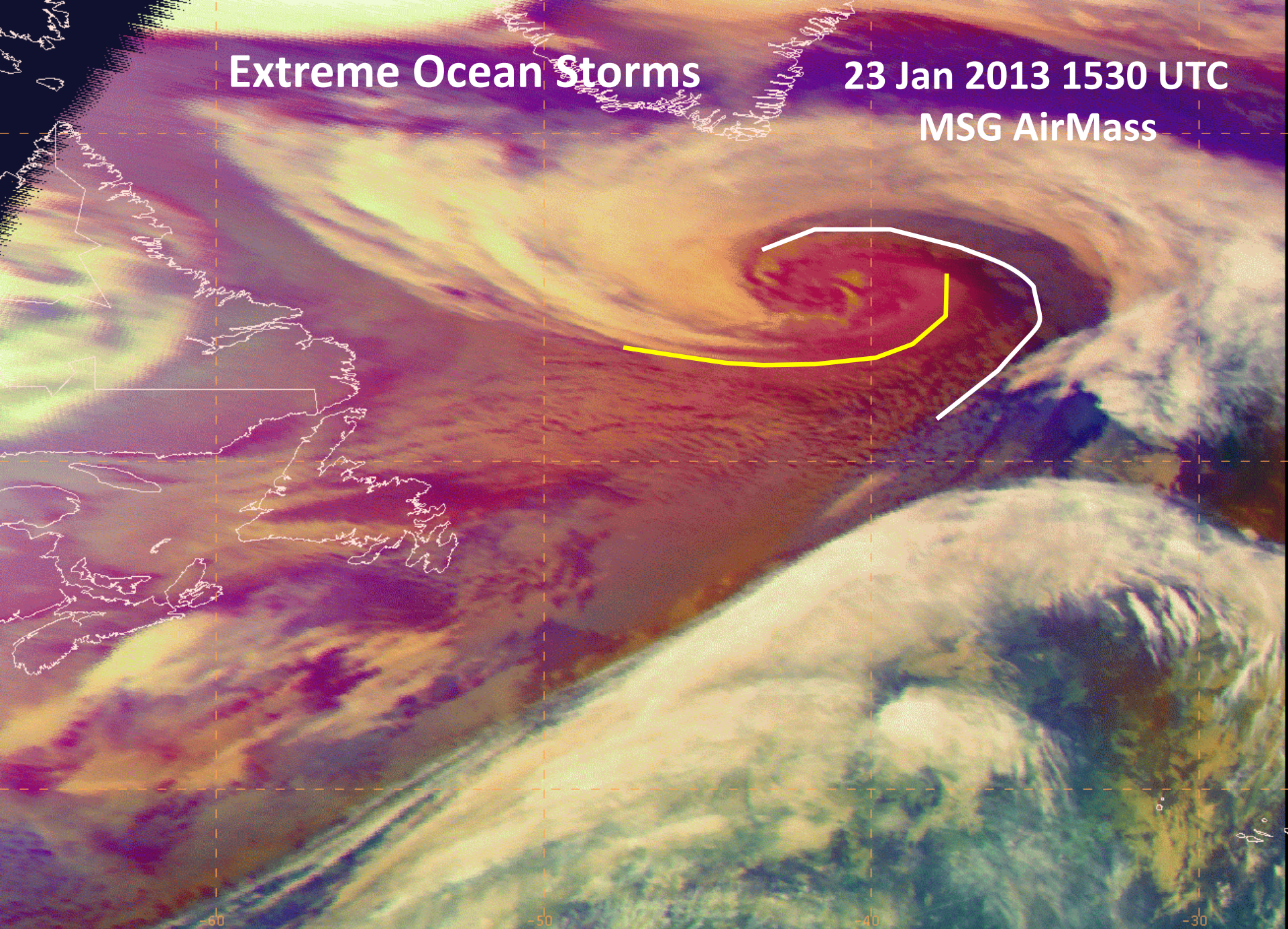
23 Jan 2013 0300 UTC

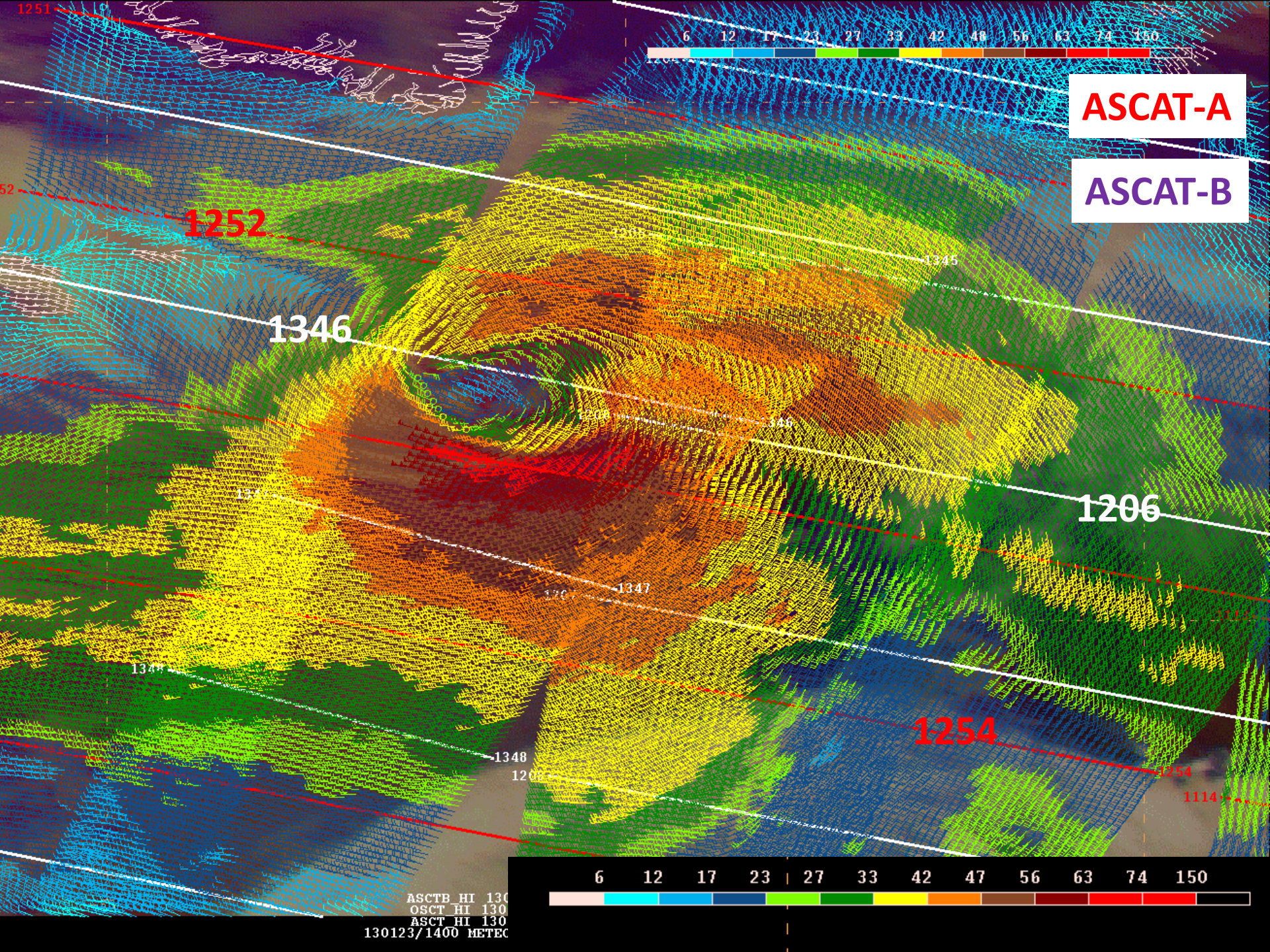
MSG AirMass



Extreme Ocean Storms

23 Jan 2013 1530 UTC
MSG AirMass





NOAA WP-3D

Flight Track

1546-1659

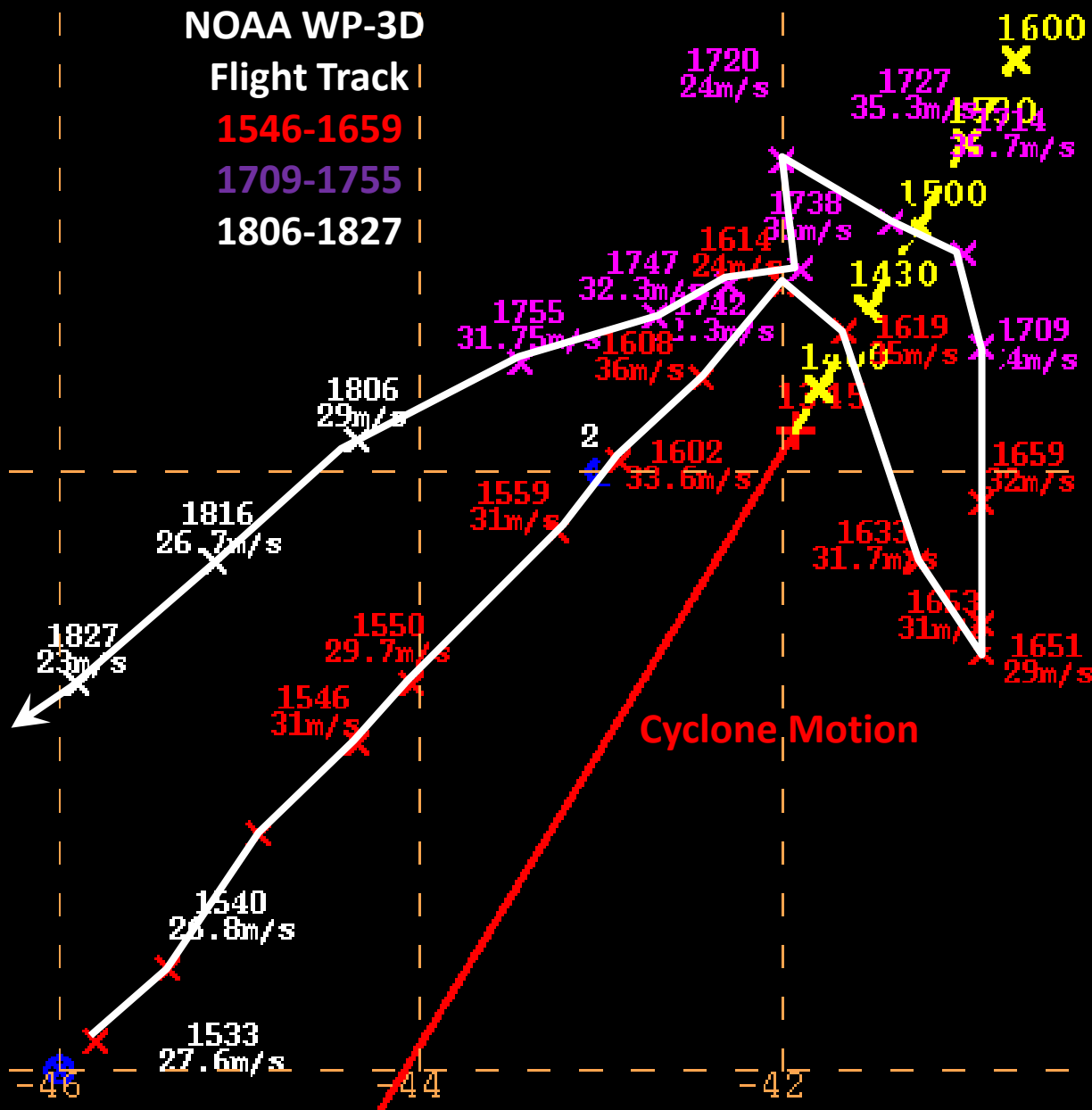
1709-1755

1806-1827

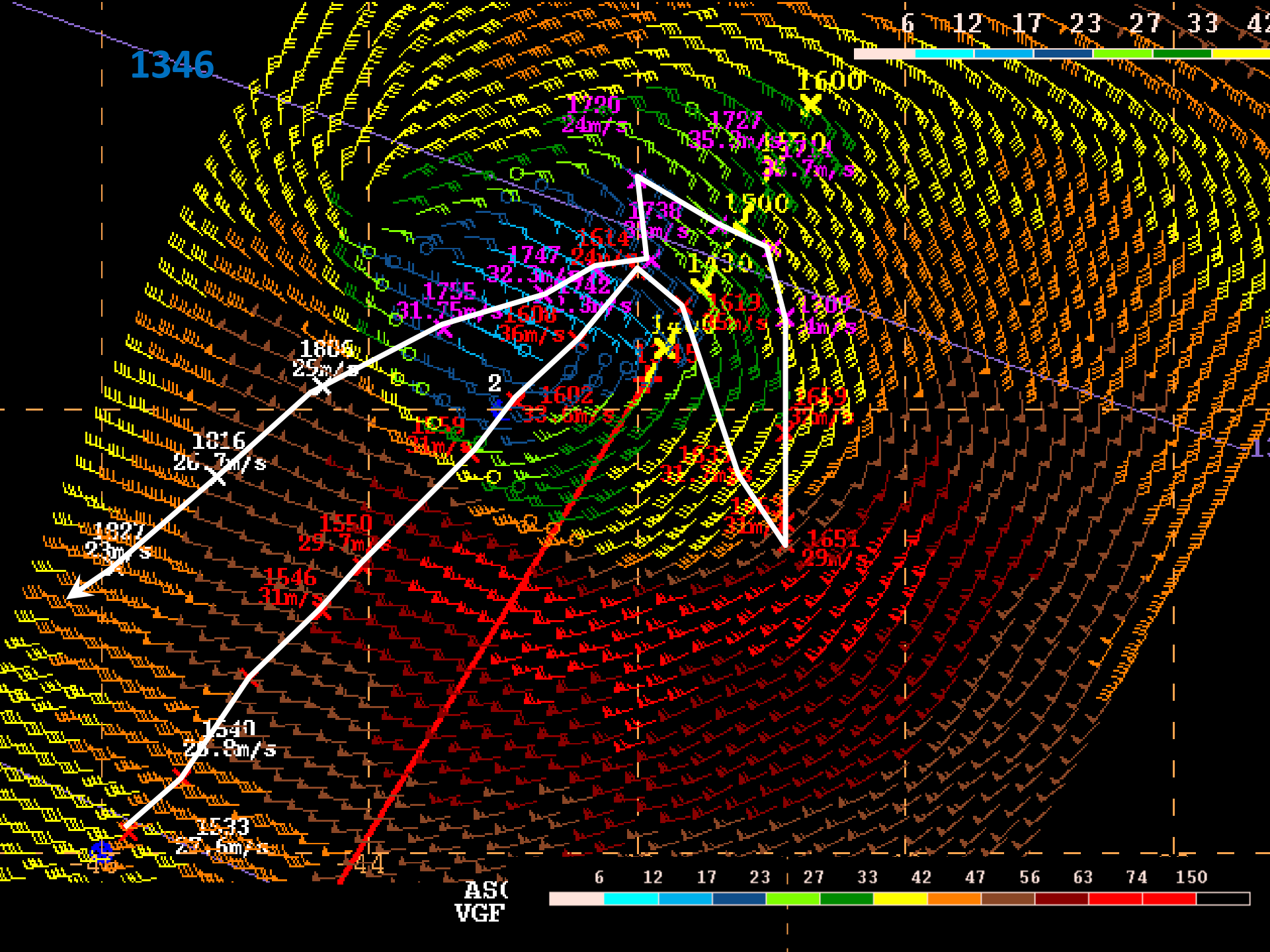
Key

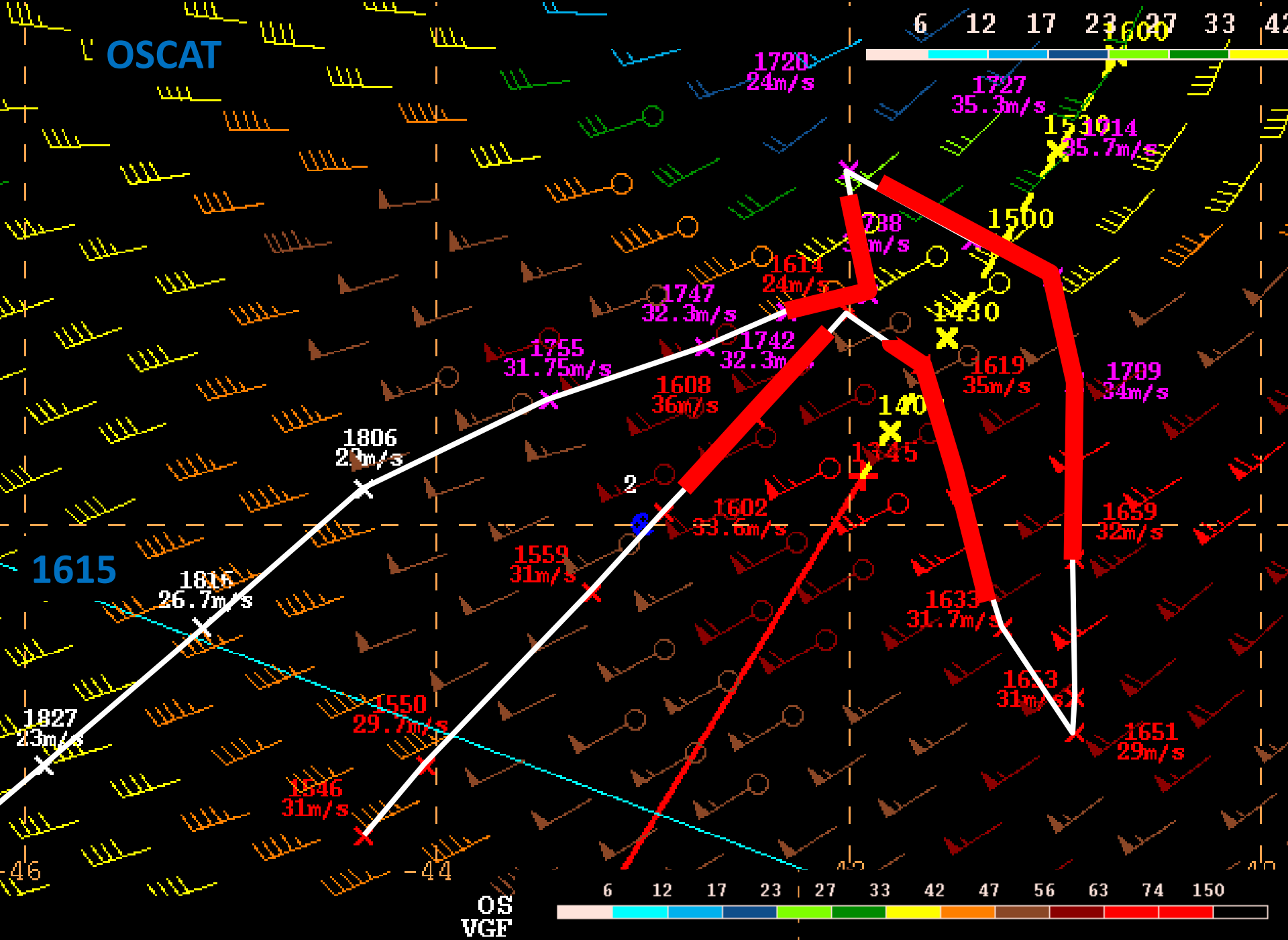
Time (UTC)

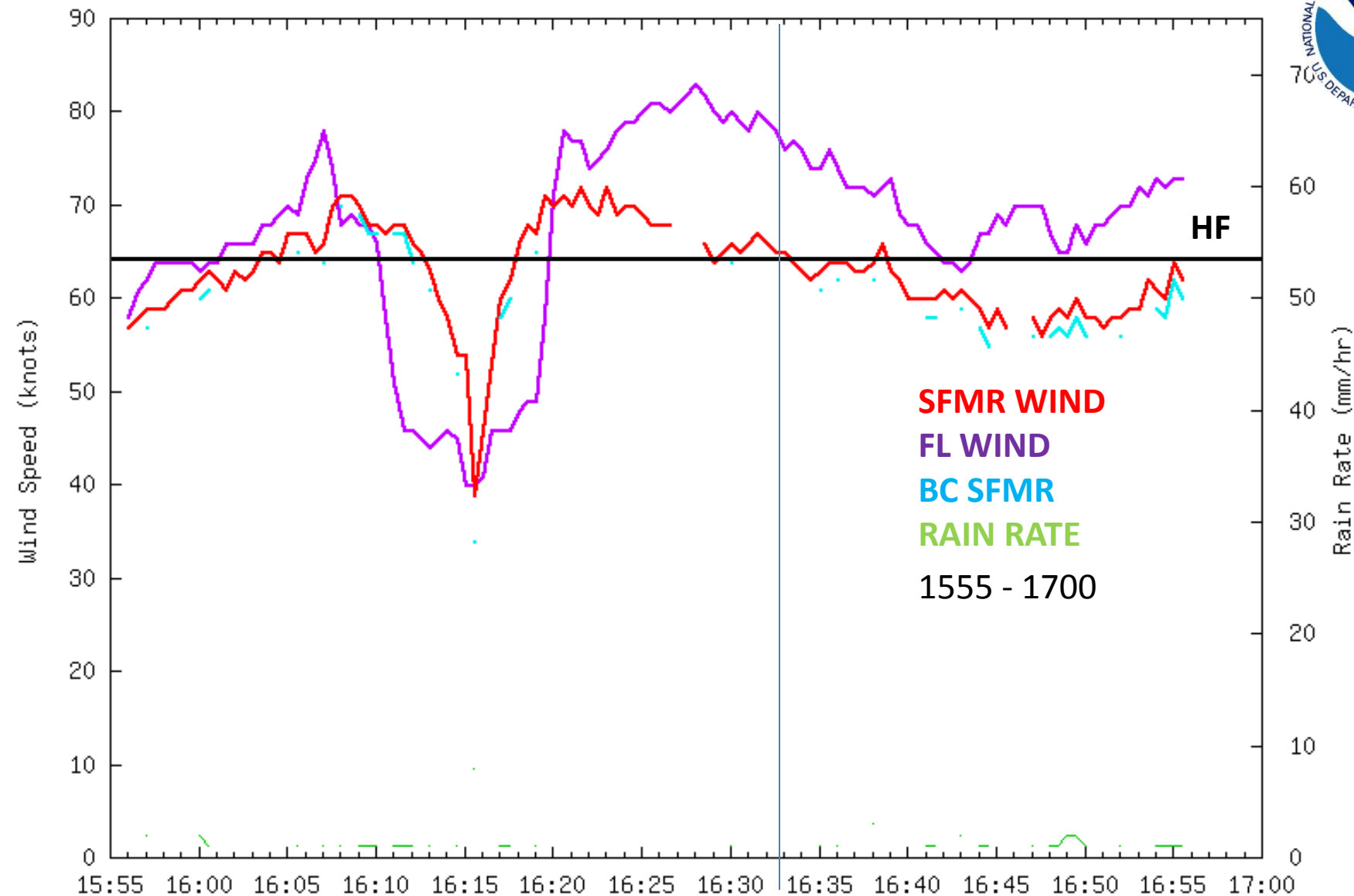
SFMR W/S



VGF 130123_flight.vgf





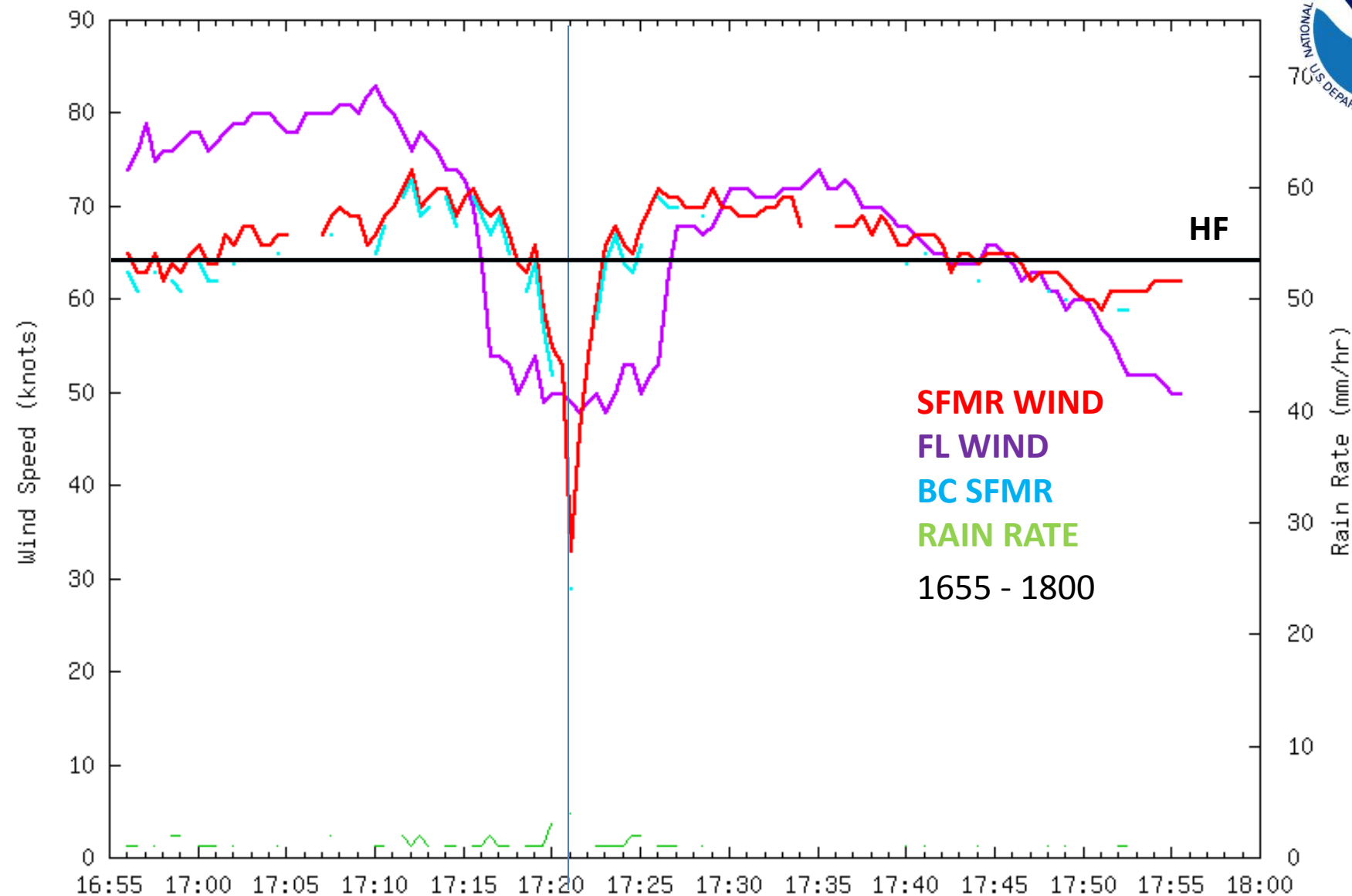


FL WIND

SFMR WIND

SFMR BC WIND

SFMR RAIN RATE



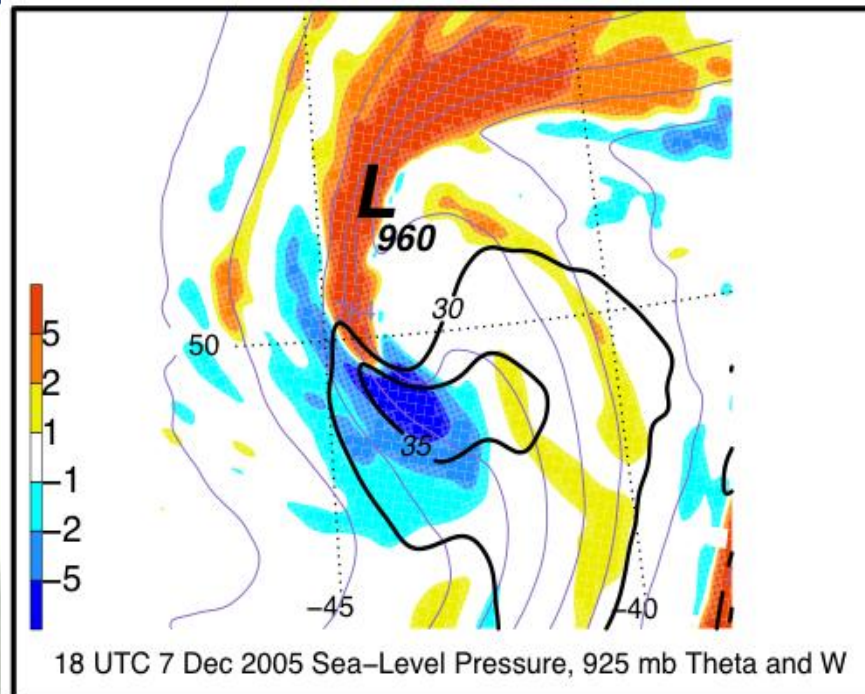
FL WIND

SFMR WIND

SFMR BC WIND

SFMR RAIN RATE

“Sting Jet” case



Filled – Petterssen

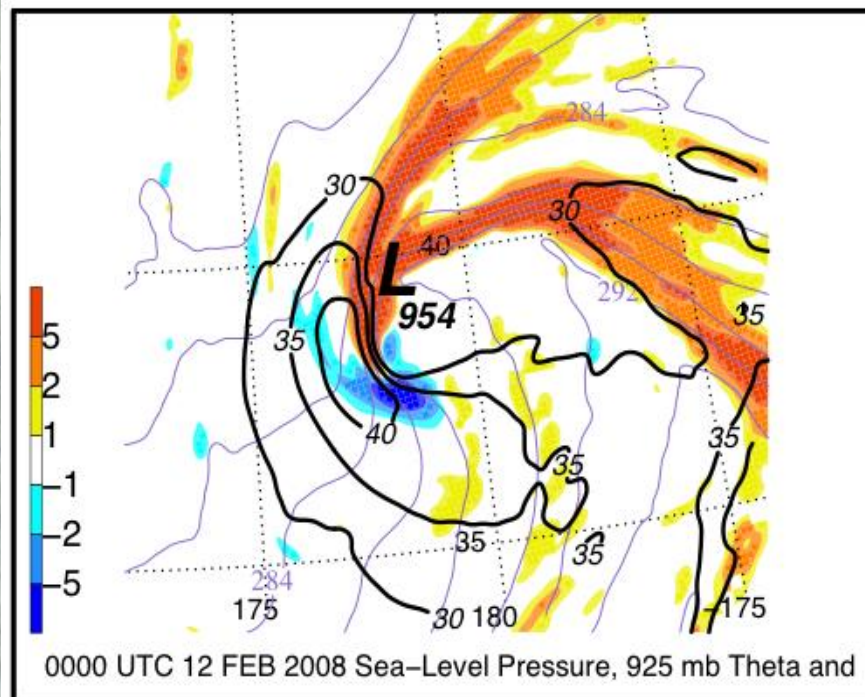
frontogenesis

frontolysis

Light lines – 925 hPa theta

Dark lines - Isotachs

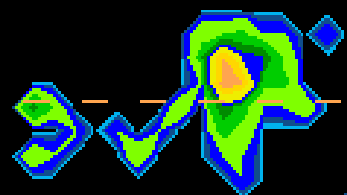
Cold Conveyor Jet case



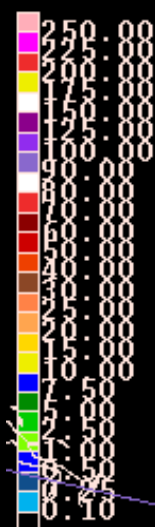
Thoughts



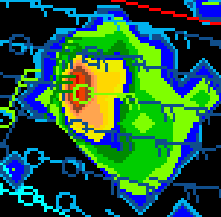
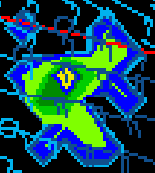
- Using 3 scatterometers in warning / forecast process
- ASCATs at high latitude offer multiple looks
 - NESDIS high wind (12.5 km)
 - KNMI coastal
- Have not fully taken advantage of temporal sampling
- OSCAT
 - Rain flag has continued to be improved
 - Swath edge with single beam / limited azimuthal diversity
 - Highest winds too low in strength
- Continue to improve understanding of extreme storm evolution
 - Forcing mechanism(s)
 - Precursors (satellite imagery , NWP fields, flow)



LTNG Strike Density
Count /km²/min * 10³



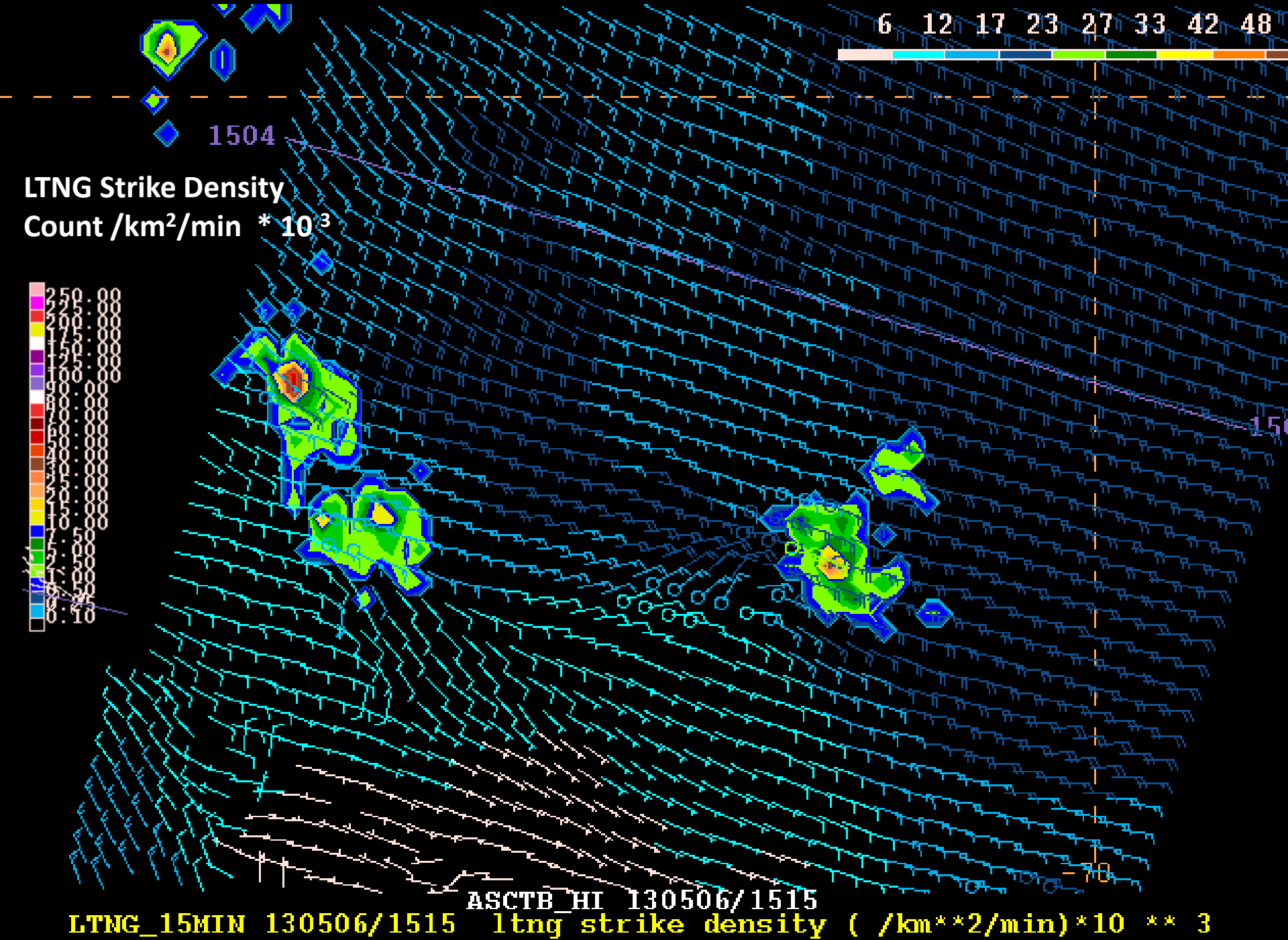
1410

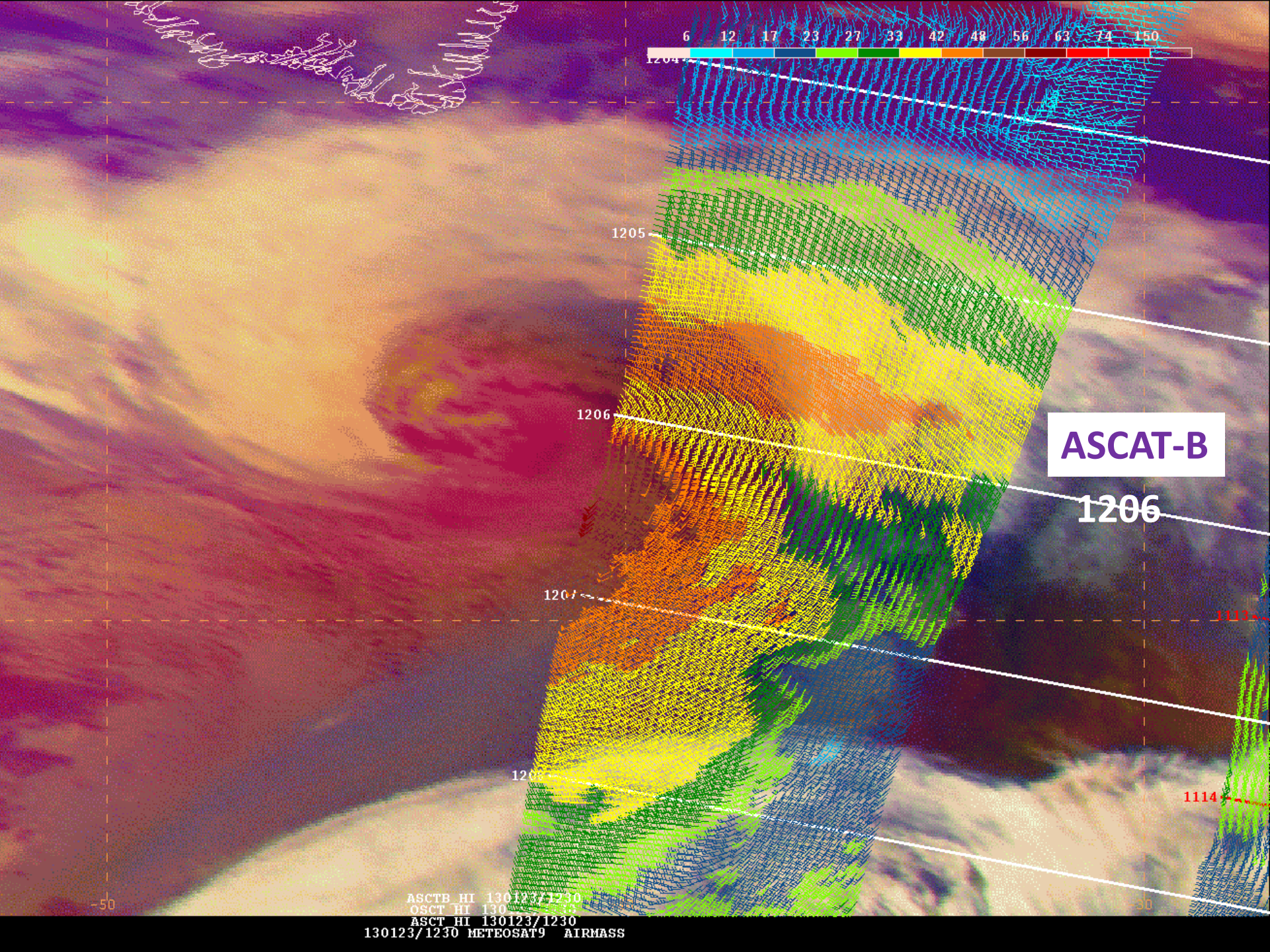


6 12 17 23 27 33 42 48

ASCT_HI T30506/1415

LTNG_15MIN 130506/1415 ltng strike density (/km**2/min)*10 ** 3

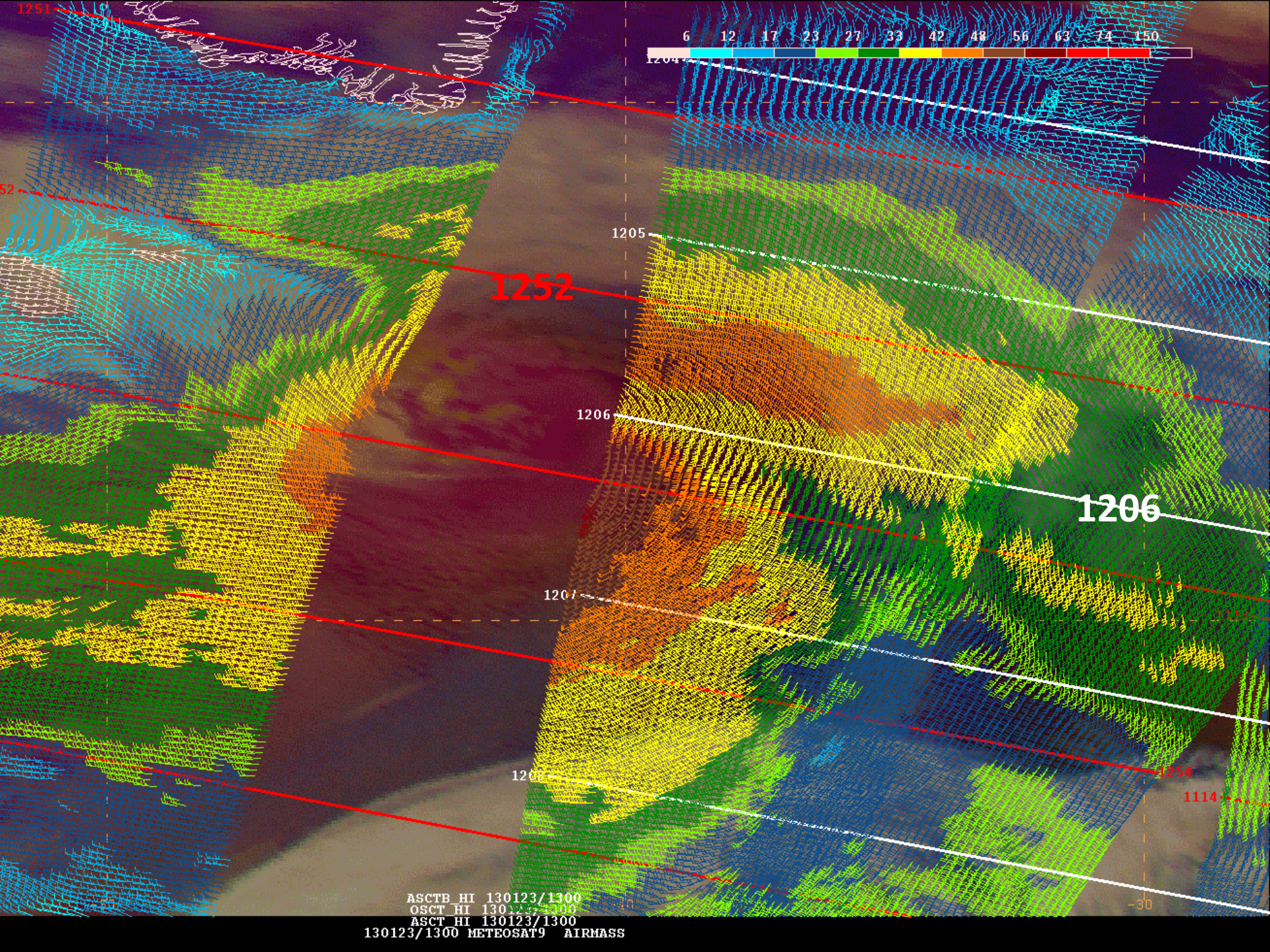




ASCAT-B

1206

ASCTB HI 130123/1230
OCT HI 130123/1230
ASCT HI 130123/1230
130123/1230 METEOSAT9 AIRMASS



1252

1206

ASCTB HI 130123/1300
OSCT HI 130123/1300
ASCT HI 130123/1300
130123/1300 METEOSAT9 AIRMASS

