

# **Desert Dust Acting As Deposition Ice Nuclei at Mild Temperatures Over Alaska**

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# Desert Dust as Effective Ice Nuclei

Isono et al. 1959

50 IN cm<sup>-3</sup> at -20°C

Pitter and Pruppacher 1973

Contact nucleation at -8° to -12°C

Schaller and Fukuta 1979

Condensation-freezing threshold at -10°C

Deposition-freezing at -19°C and 20% SS

DeMott et al. 2003

>1 IN cm<sup>-3</sup> at ~-30°C

# Polarization Lidar Studies at AFARS



TABLE 1. Specifications of the Cloud Polarization Lidar at FARS.

## Operational

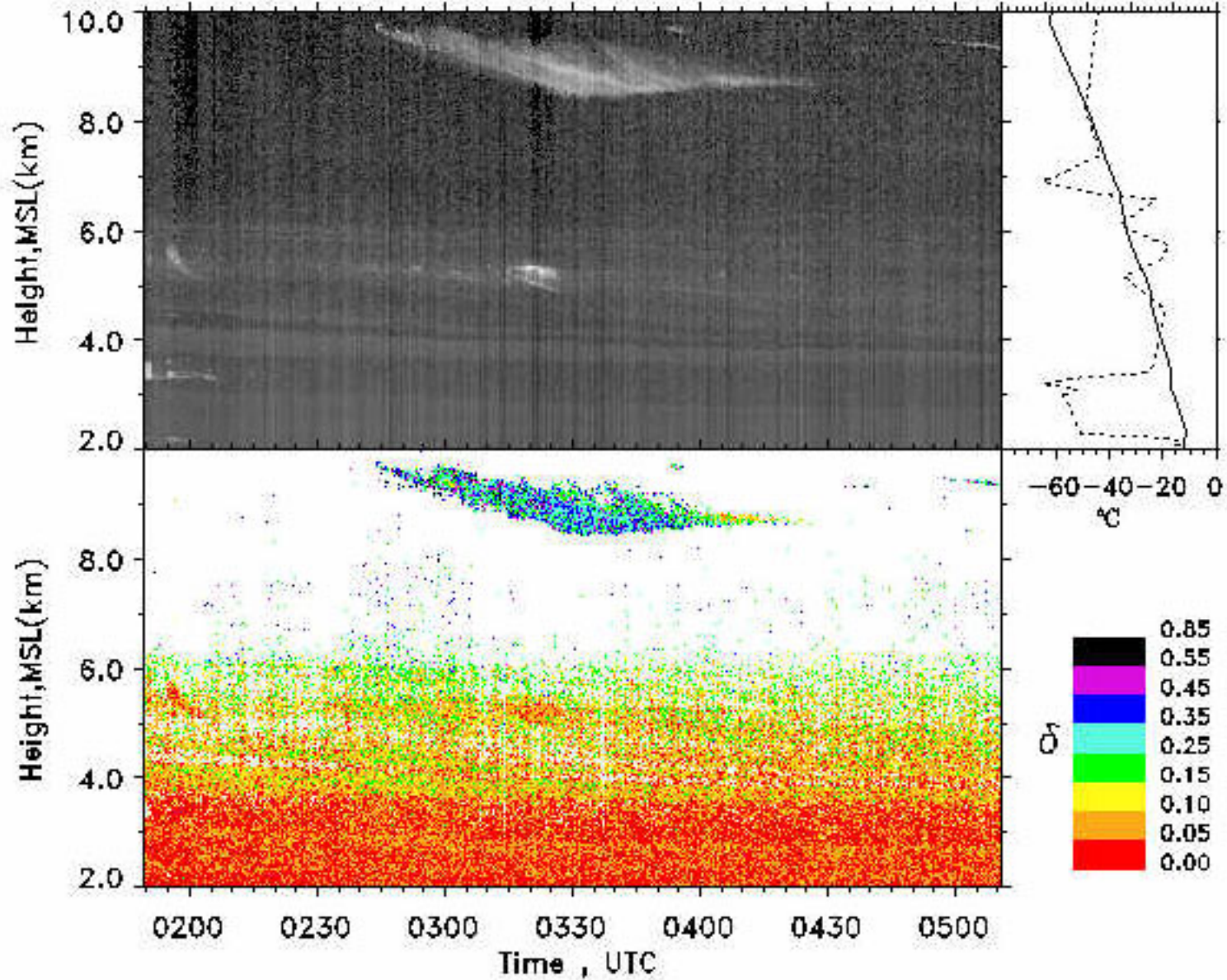
Wavelength (ruby)	0.694 $\mu\text{m}$
Peak energy	1.5 J
Maximum PRF	0.1 Hz
Pulse width	25 ns
Polarization	Vertical
Beamwidths: transmitter	0.5 mrad
receiver	1–3 mrad
Receiver diameter	28-cm telescope
Detectors	2, PMTs
Positioning	Manual

## Data handling

Channels	Vertical + horizontal
Sample width (resolution)	7.5 m
Range gates	2048
Digitizer resolution	8 bits
Storage	8-mm tape

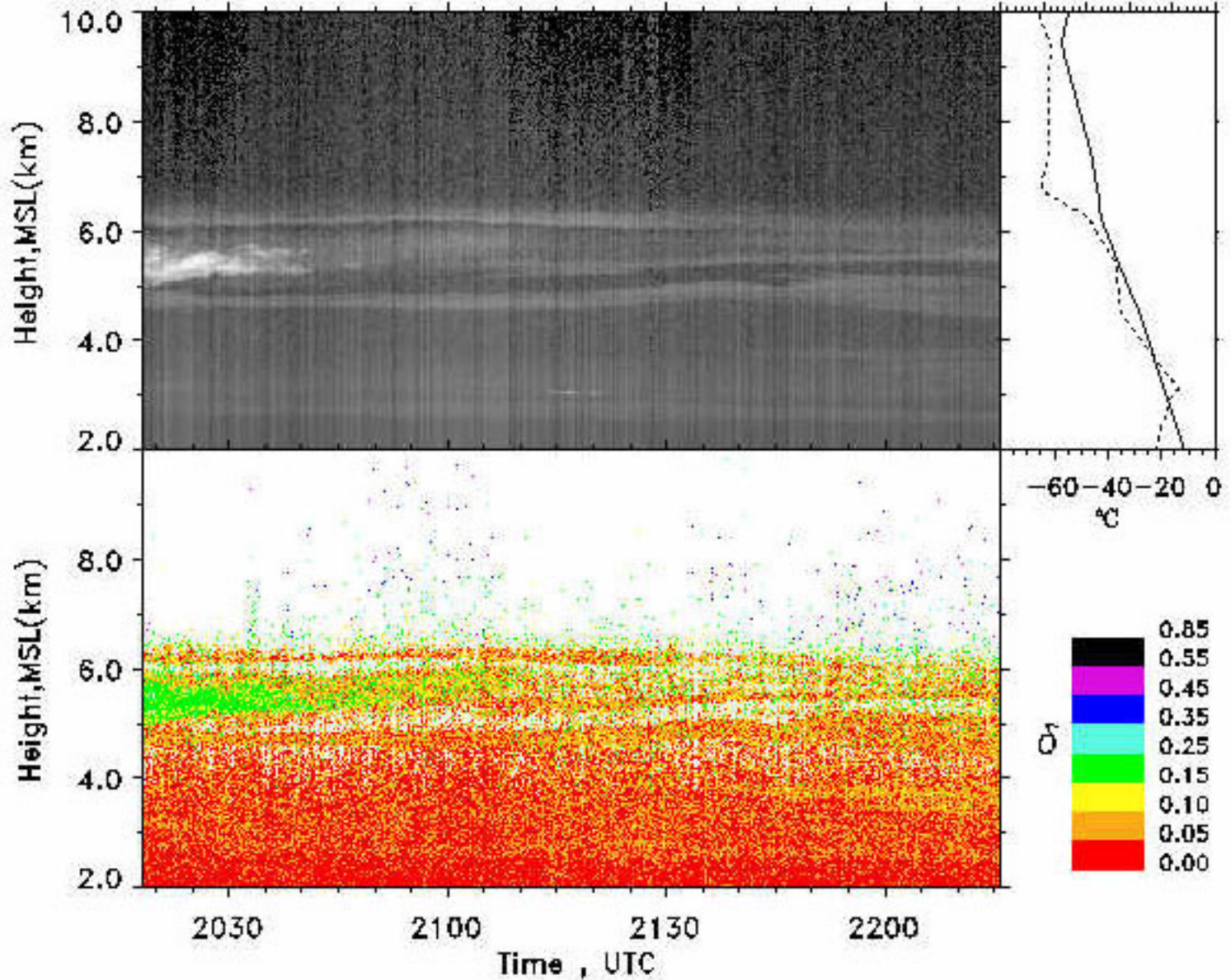
3/ 2/2004

0 20 40 60 80 100

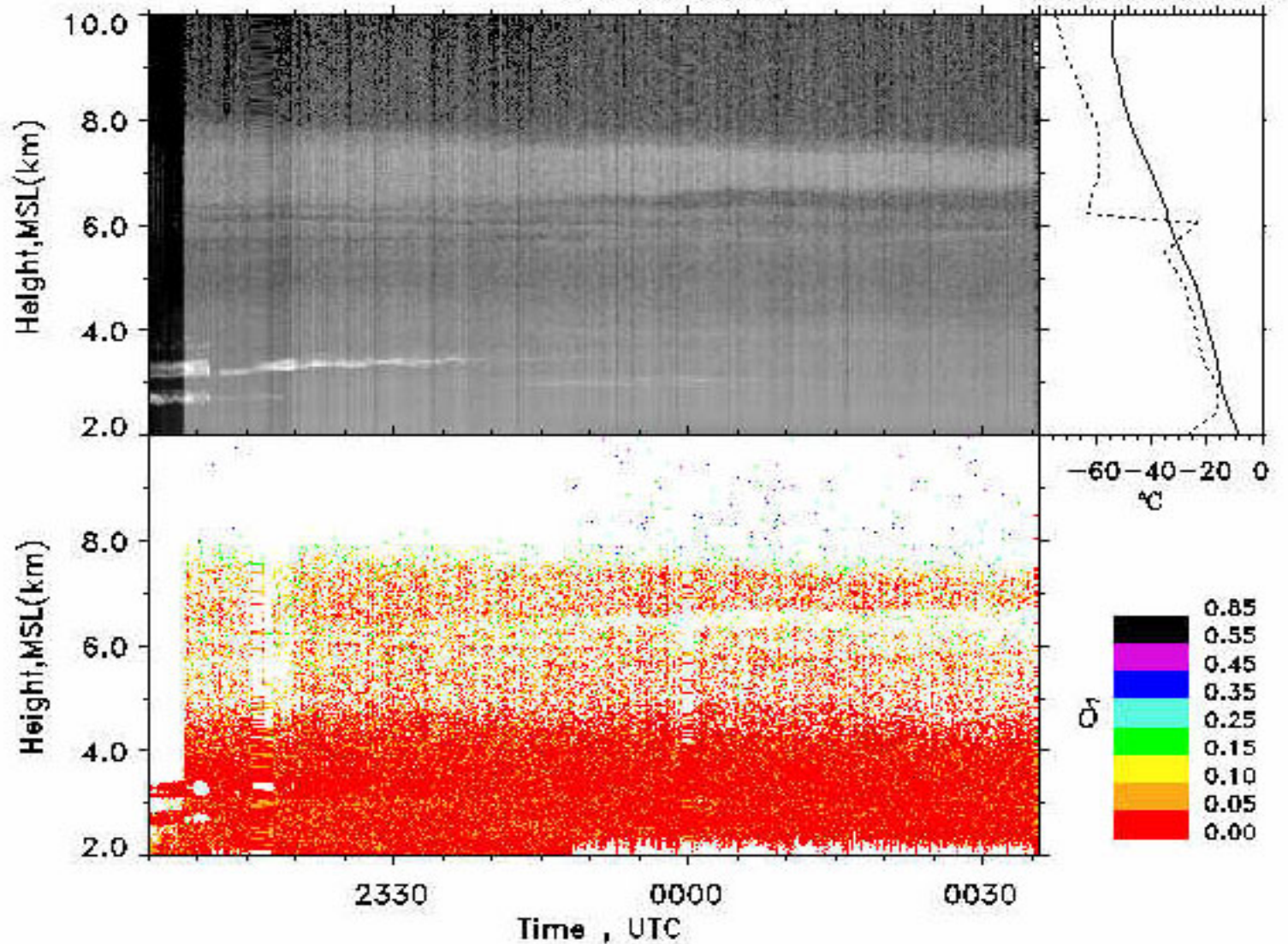


2/29/2004

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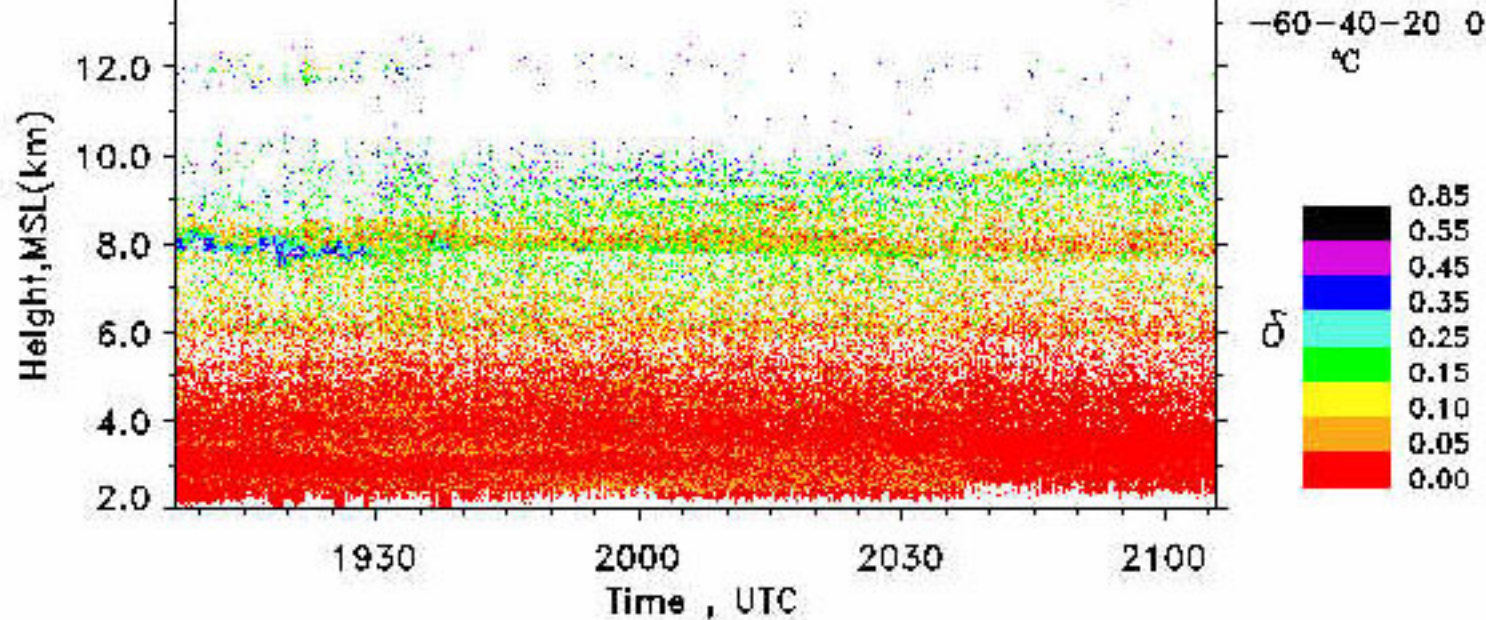
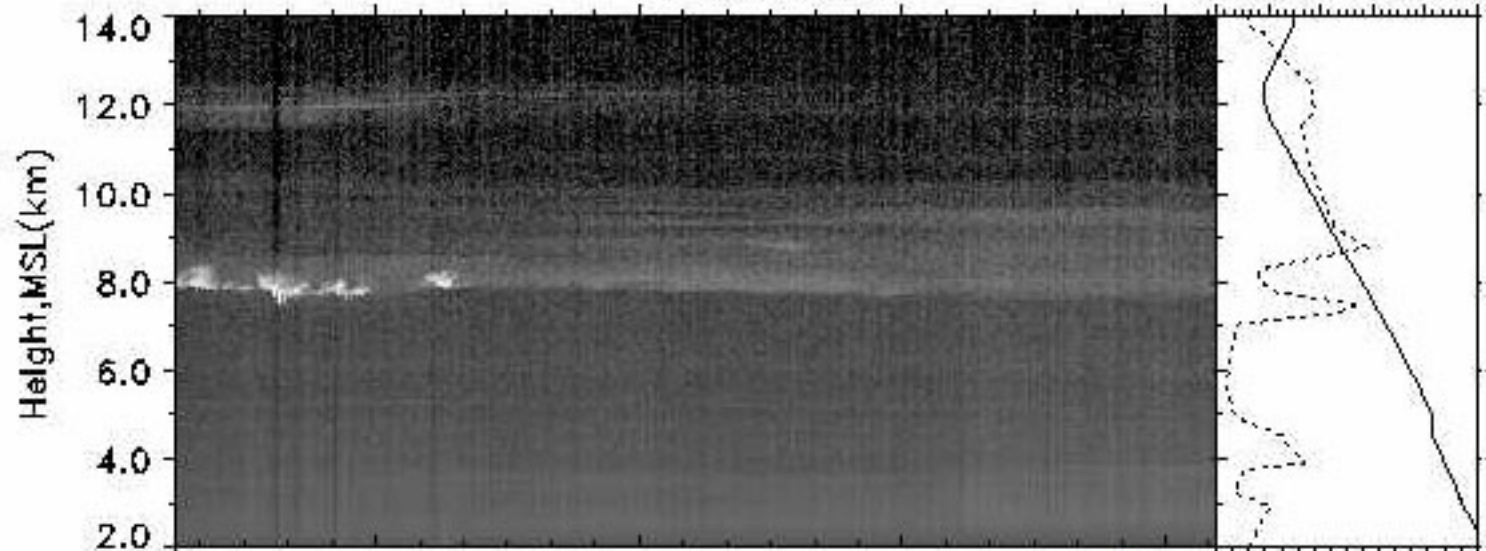


4/14/2004



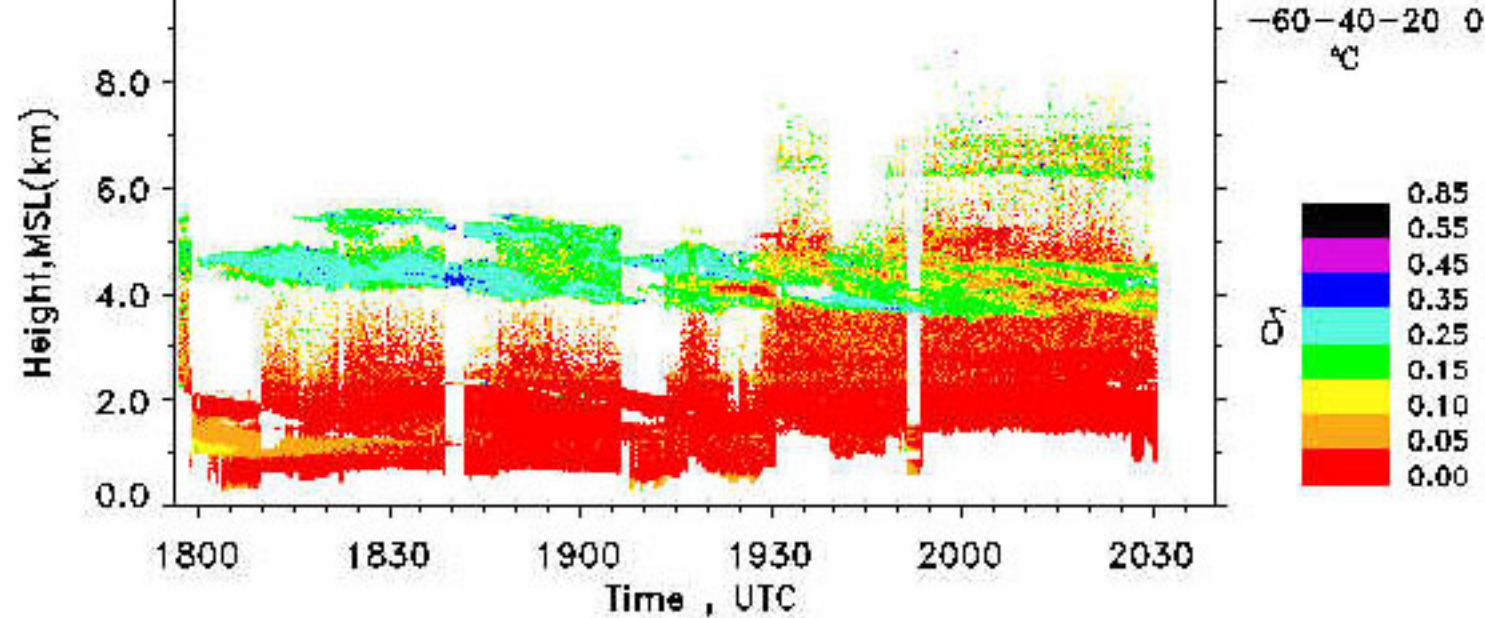
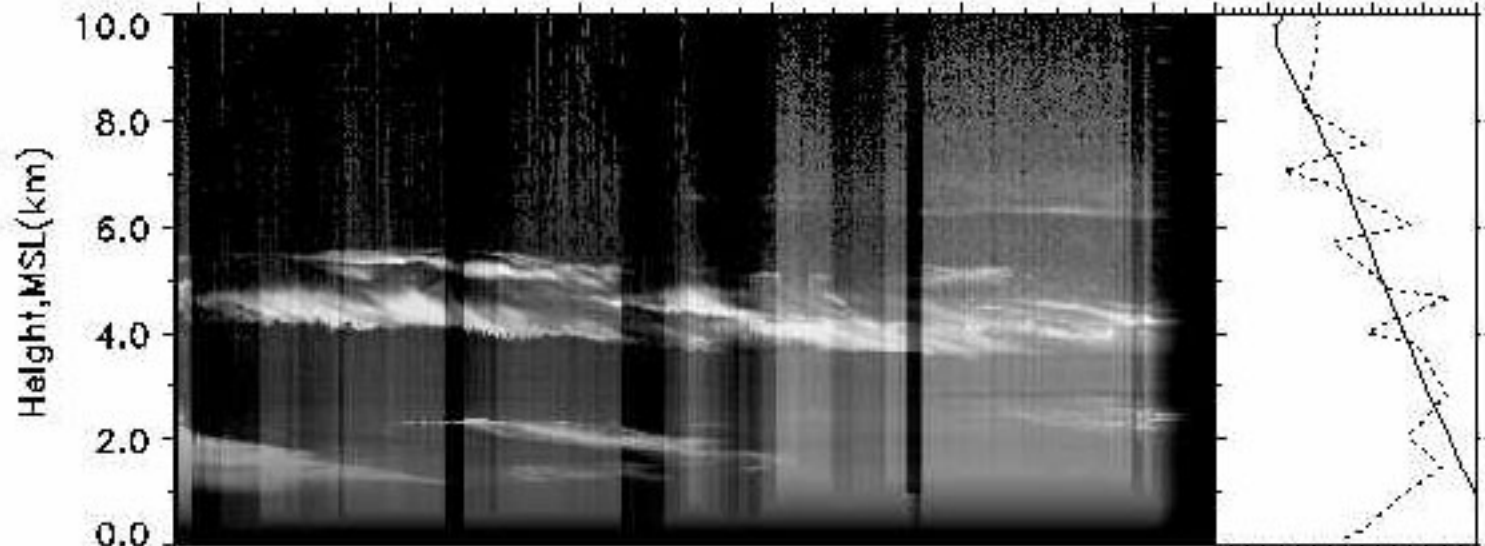
5/ 3/2004

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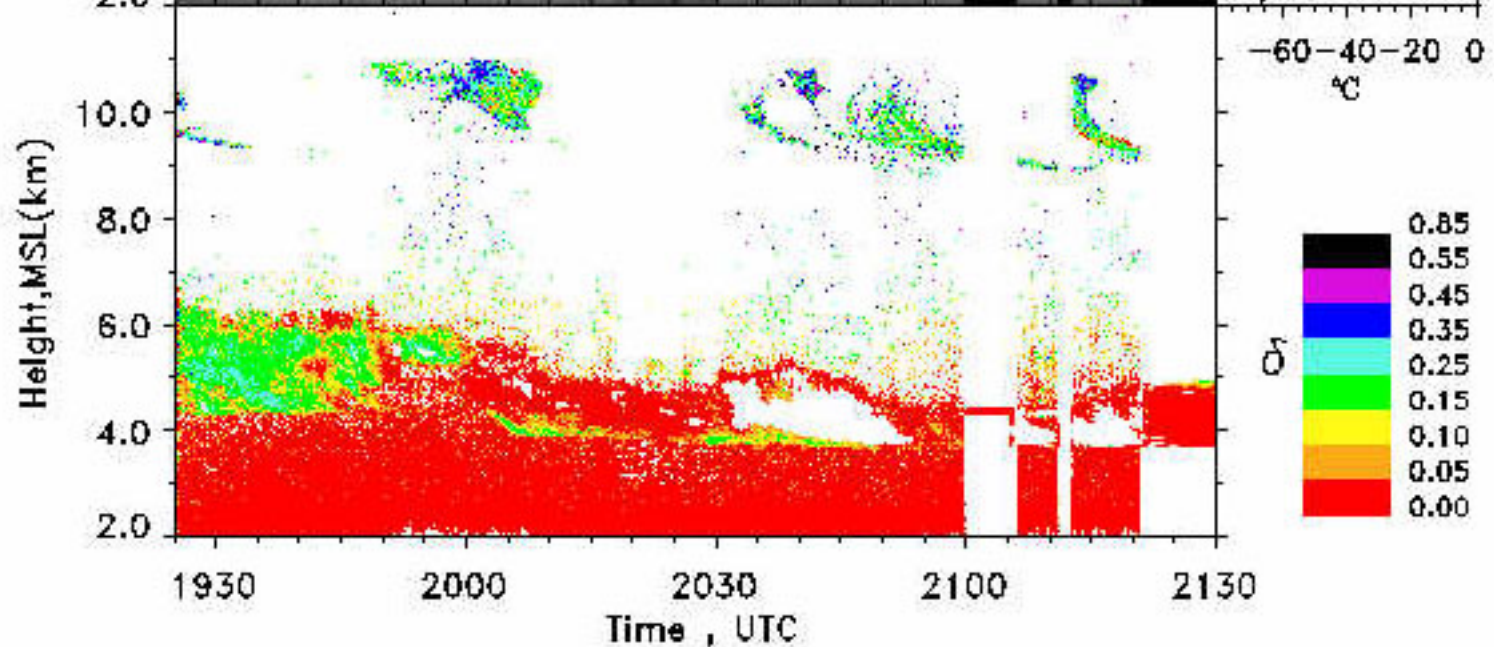
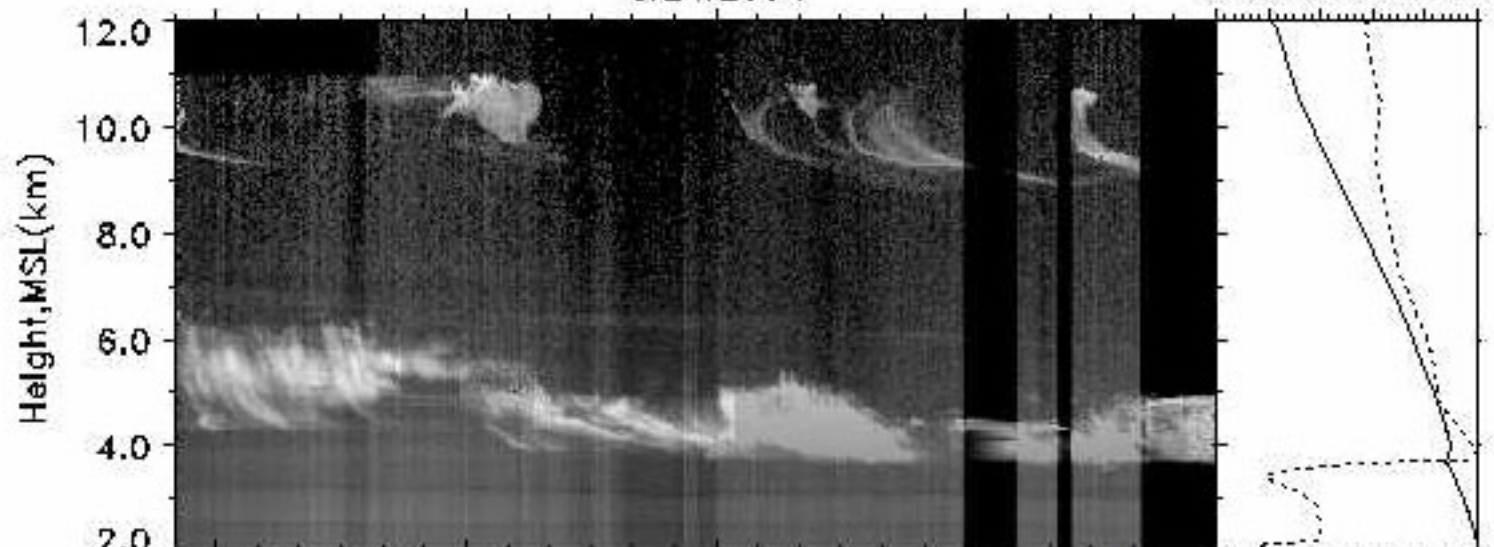
4/23/2004

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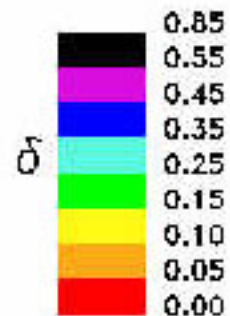


5/21/2004

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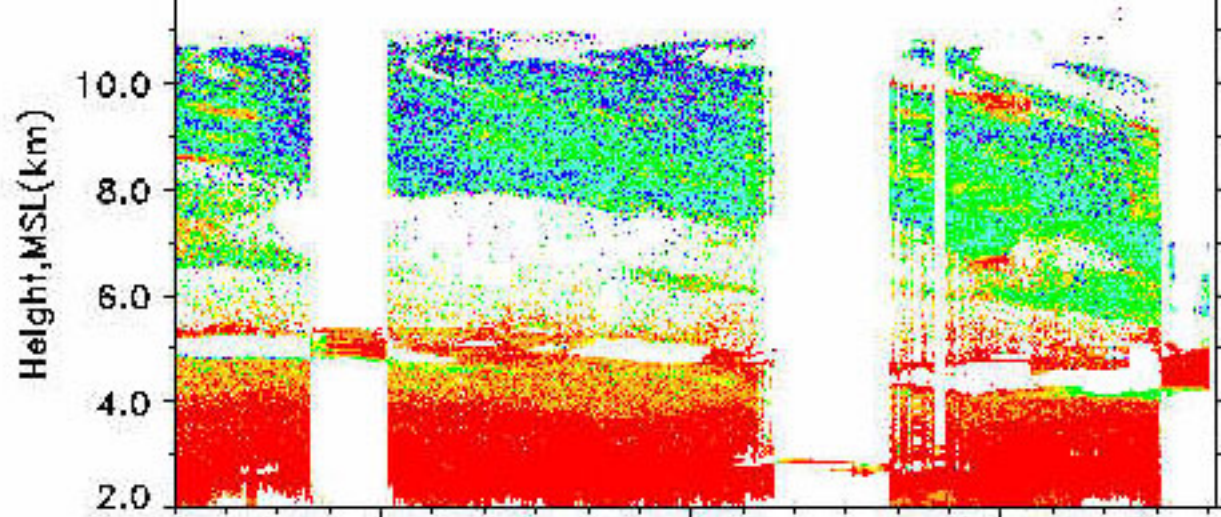
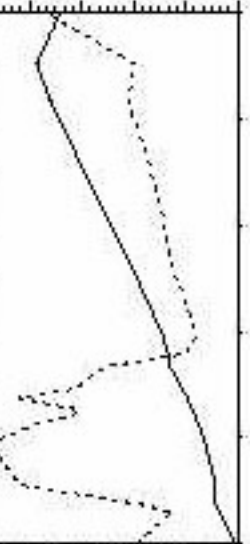
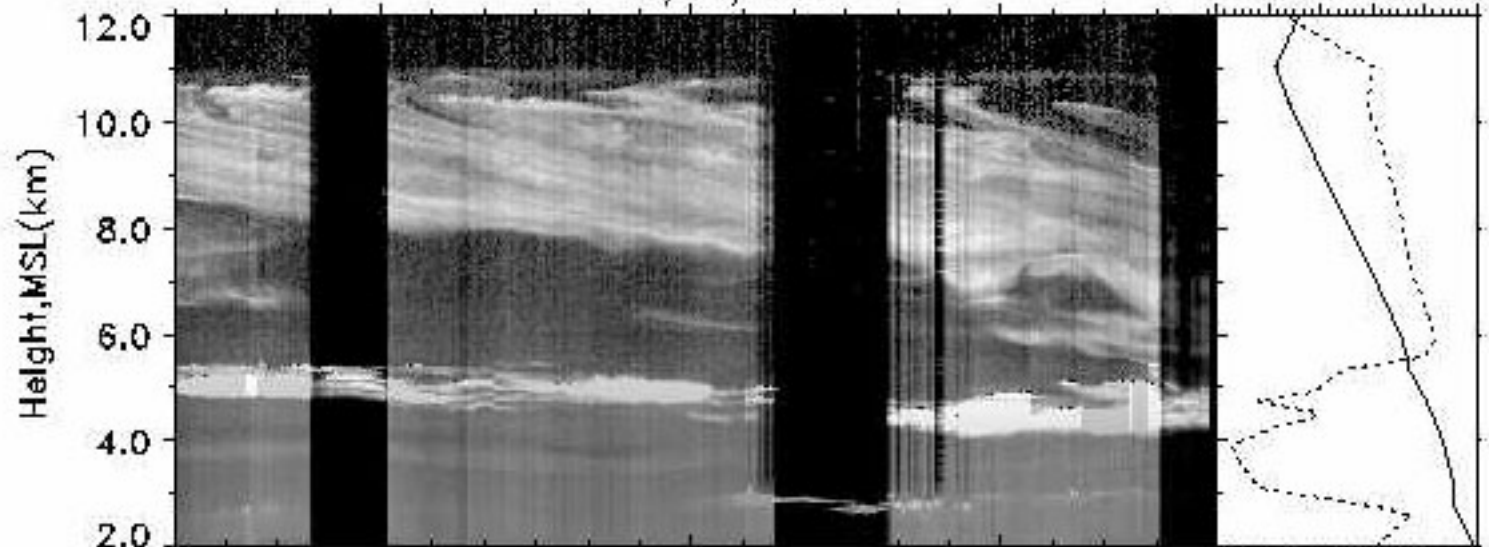


-60 -40 -20 0  
°C

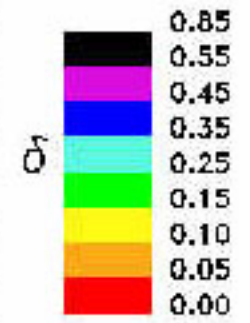


5/14/2004

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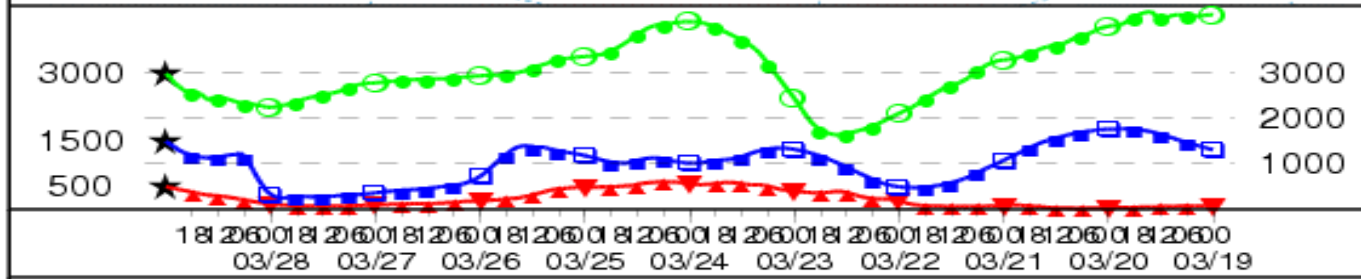
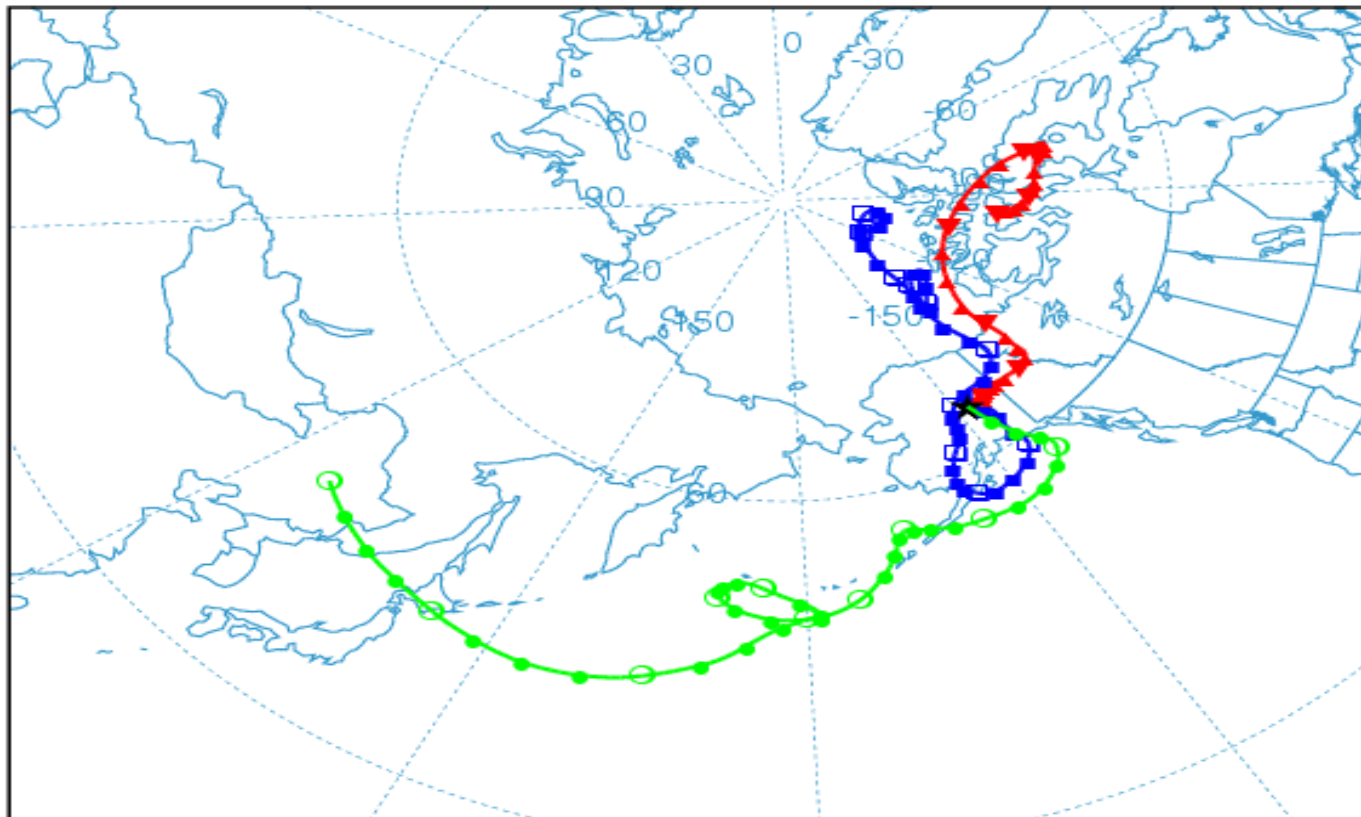
-60 -40 -20 0  
°C



NOAA HYSPLIT MODEL  
 Backward trajectories ending at 00 UTC 29 Mar 04  
 FNL Meteorological Data

Source ★ at 64.82 N 147.87 W

Meters AGL



Job ID: 313464 Job Start: Thu Apr 1 01:53:41 GMT 2004  
 lat: 64.82 lon.: -147.87 hgts: 500, 1500, 3000 m AGL

Trajectory Direction: Backward Duration: 240 hrs  
 Vertical Motion Calculation Method: Model Vertical Velocity  
 Produced with HYSPLIT from the NOAA ARL Website (<http://www.arl.noaa.gov/ready/>)

# Conclusions

- Blah blah blah blah blah
- For More Images, hit
- <http://corona.gi.alaska.edu/>