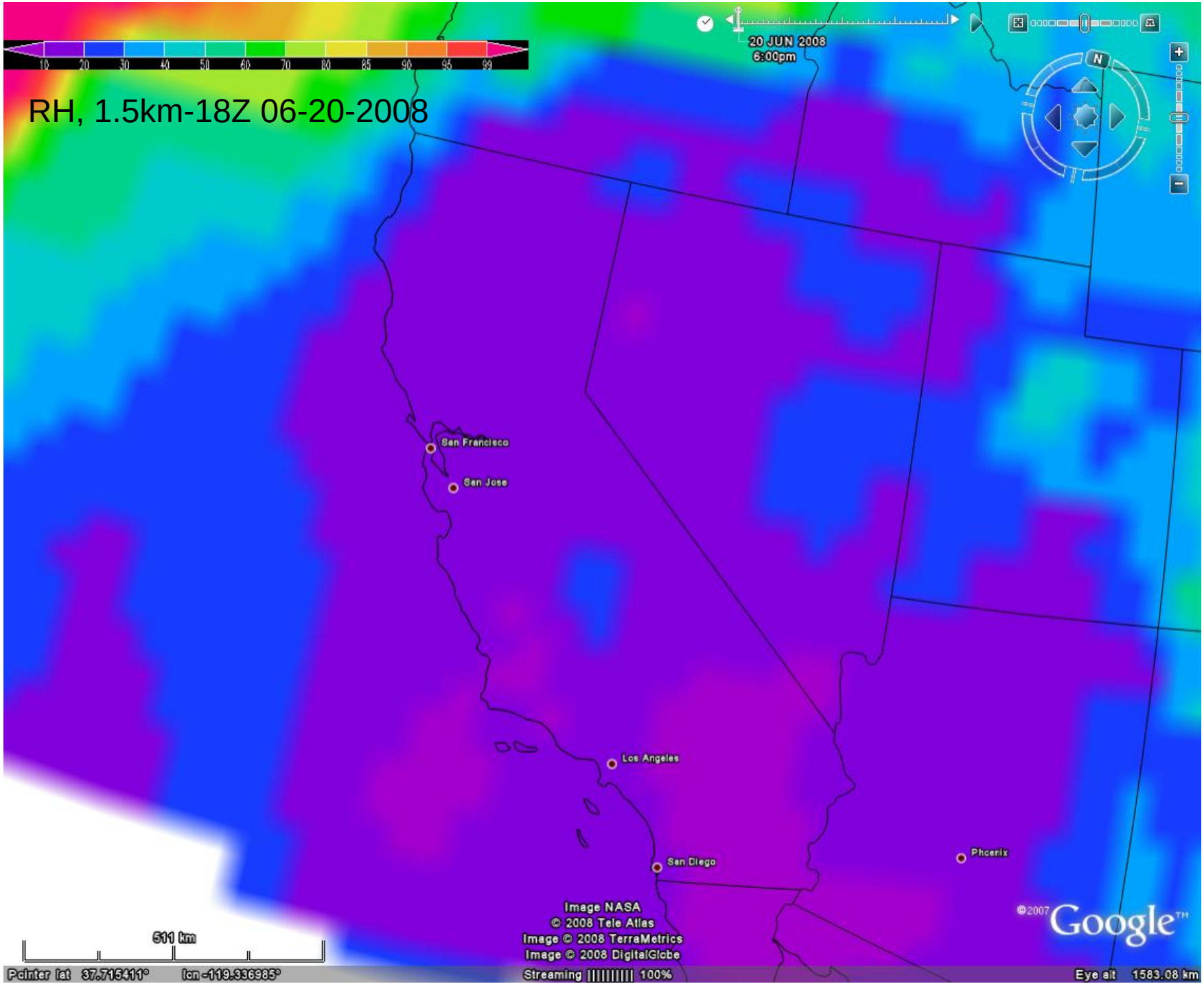
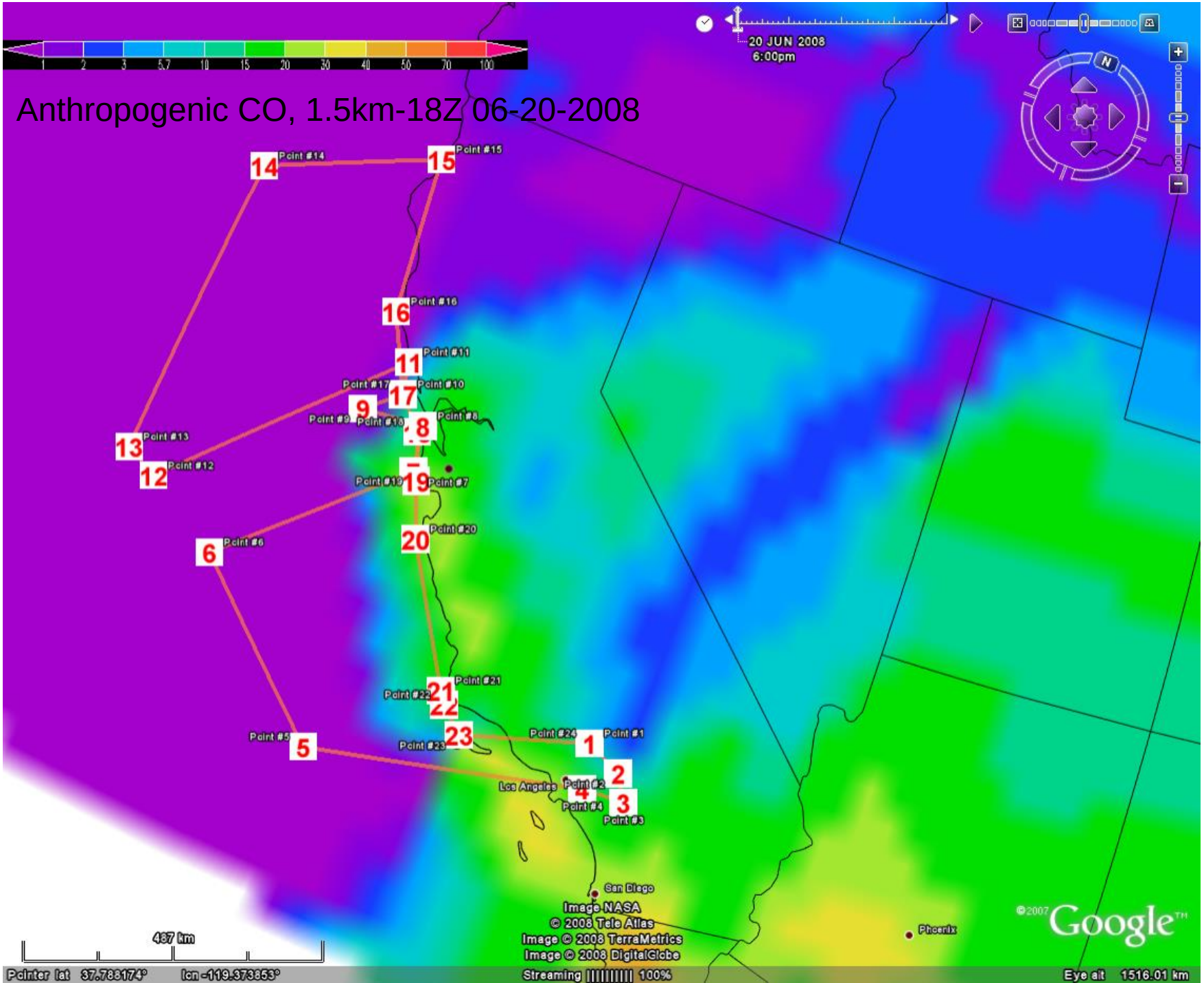
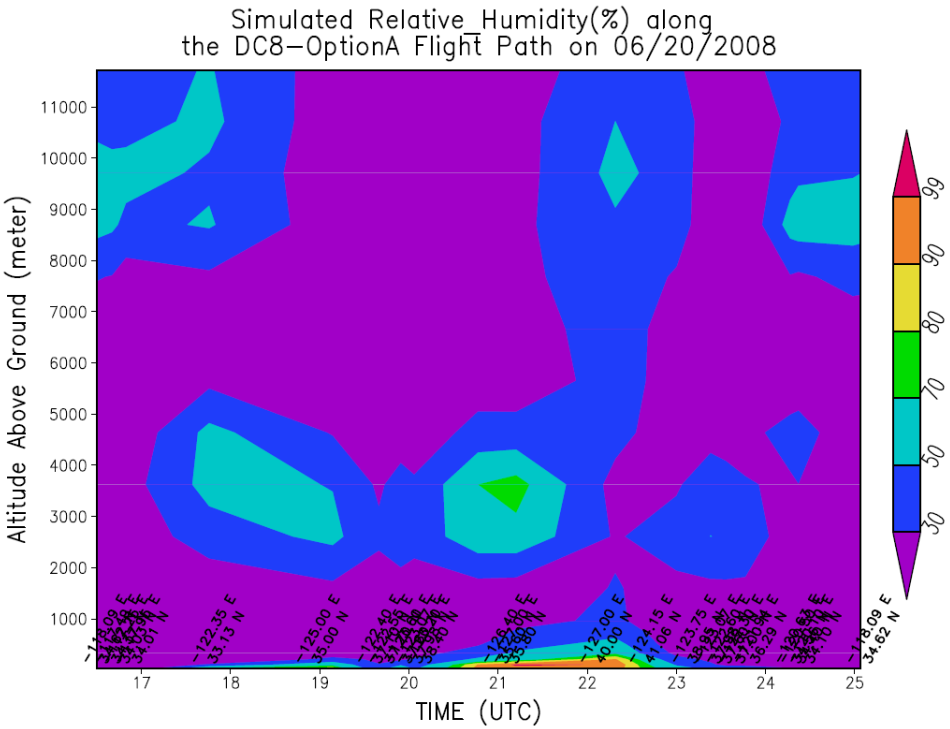
STEM Model

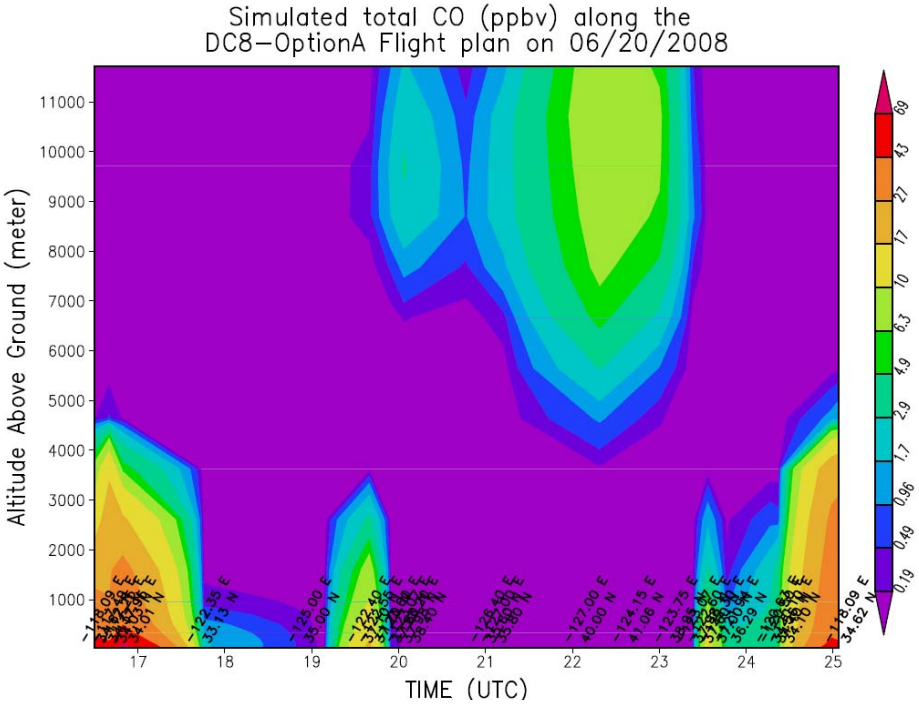
06-18-meeting

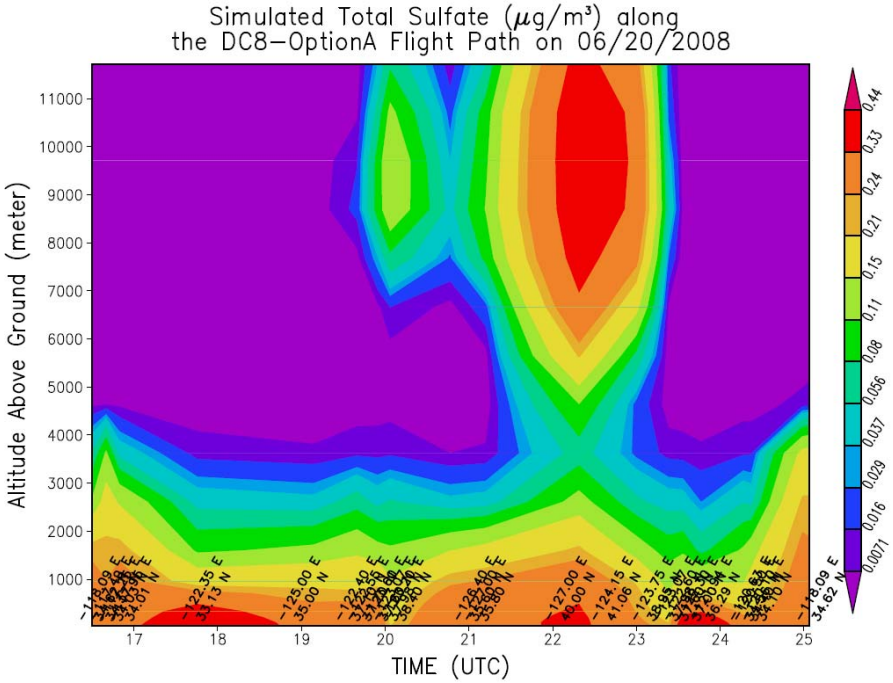

RH, 1.5km-18Z 06-20-2008
10
20
30
40
50
60
70
80
85
90
95
99
20 JUN 2008
6:00pm
N
San Francisco
San Jose
Los Angeles
San Diego
Phoenix
Image NASA
© 2008 Tele Atlas
Image © 2008 TerraMetrics
Image © 2008 DigitalGlobe
©2007 Google™
511 km
Pointer lat 37.715411° lon -119.936985°
Streaming |||||||||| 100%
Eye alt 1583.08 km


Anthropogenic CO, 1.5km-18Z 06-20-2008
1 2 3 5.7 10 15 20 30 40 50 70 100
20 JUN 2008
6:00pm
Point #1
Point #2
Point #3
Point #4
Point #5
Point #6
Point #7
Point #8
Point #9
Point #10
Point #11
Point #12
Point #13
Point #14
Point #15
Point #16
Point #17
Point #18
Point #19
Point #20
Point #21
Point #22
Point #23
Point #24
Los Angeles
San Diego
Phoenix
487 km
Image NASA
© 2008 Tele Atlas
Image © 2008 TerraMetrics
Image © 2008 DigitalGlobe
Streaming 100%
©2007 Google
Pointer lat 37.788174° lon -119.373853°
Eye alt 1516.01 km

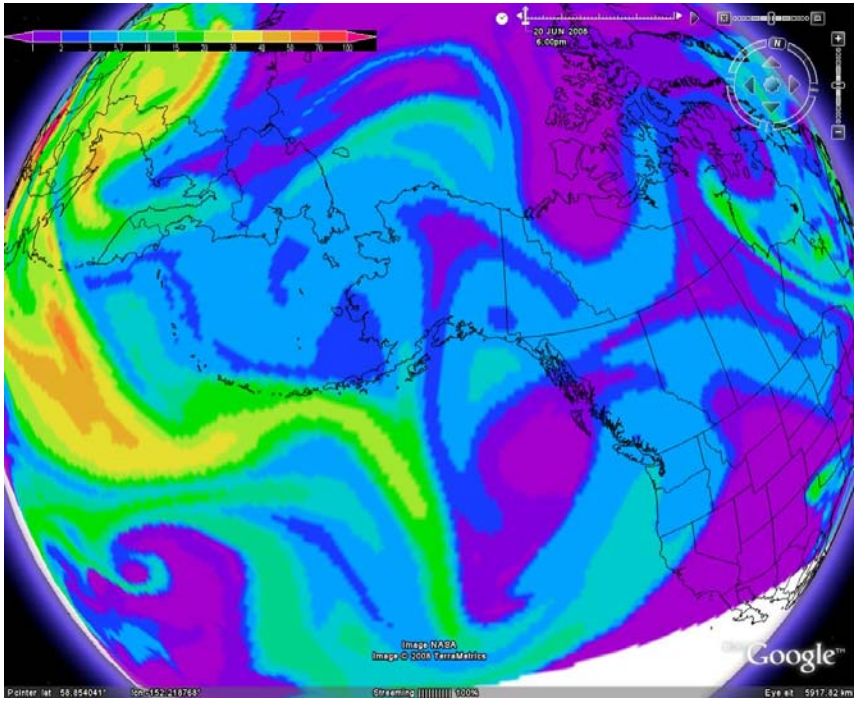
Curtains 06-20-2008

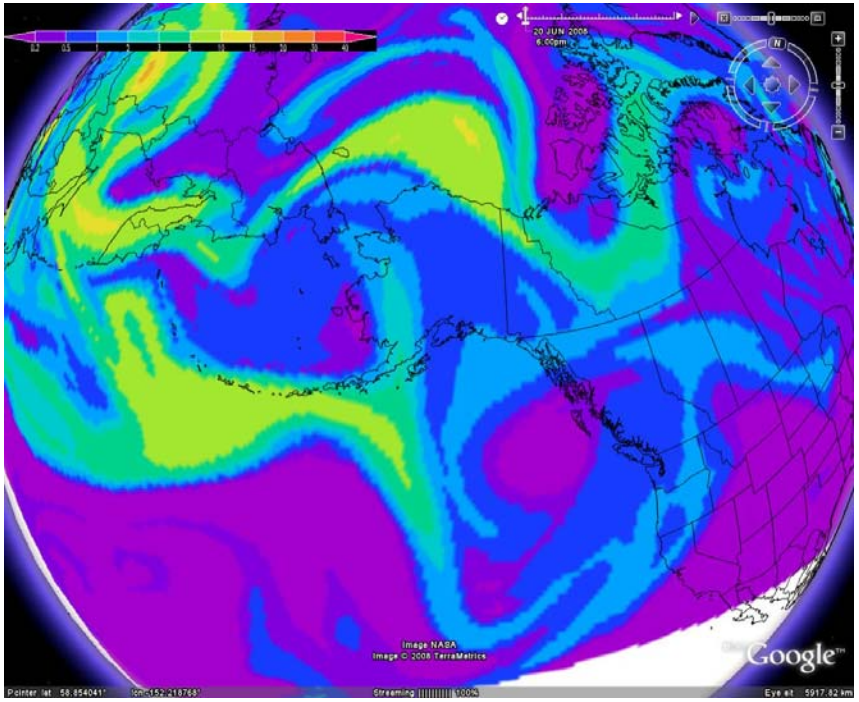






Asian Outflow

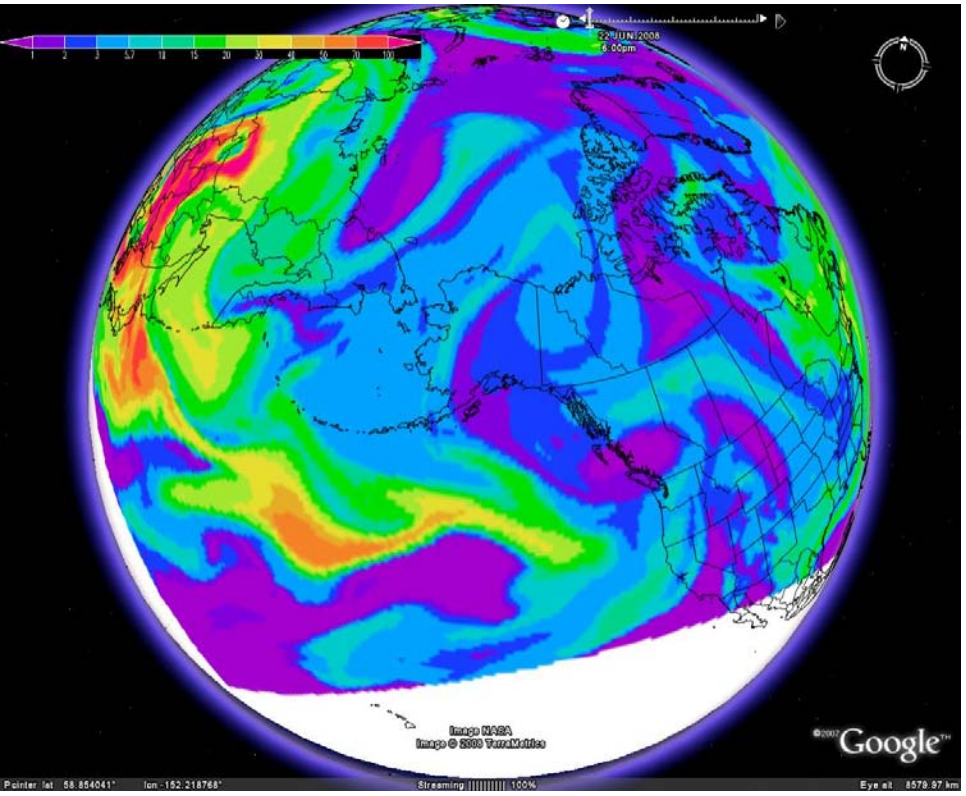




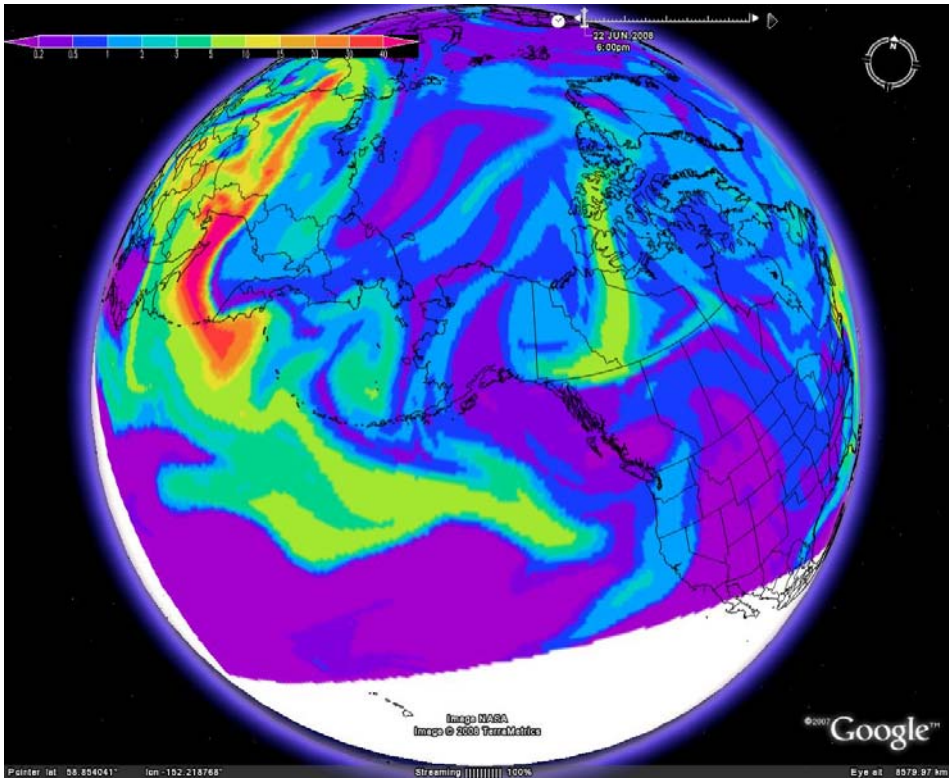
Anthropogenic CO, 8.5km-18Z 06-20-2008

BioCO, 8.5km-18Z 06-20-2008

Asian Outflow
(114 hours-18Z 06-22)

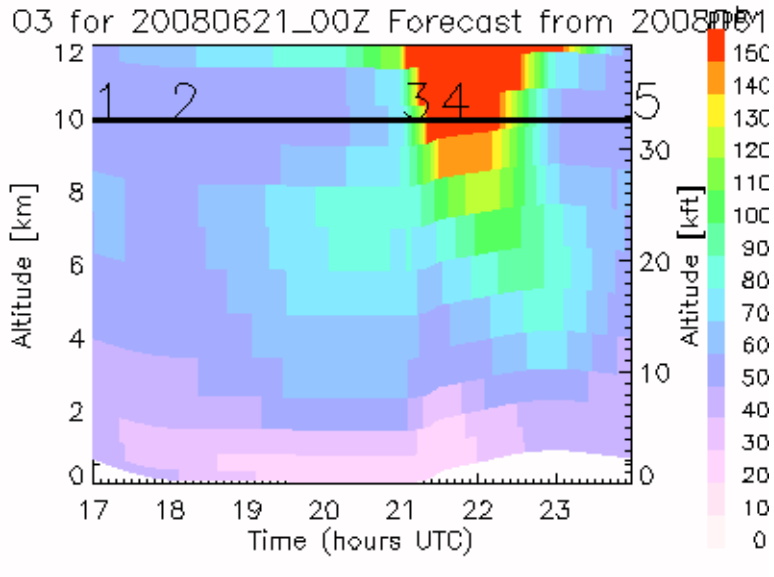


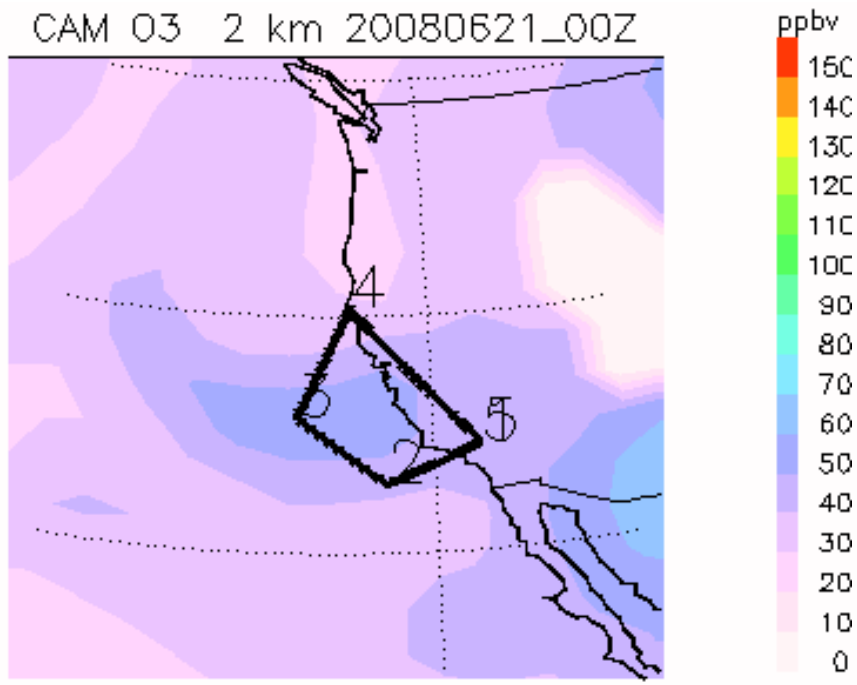
Anthropogenic CO, 5.5km-18Z 06-22-2008

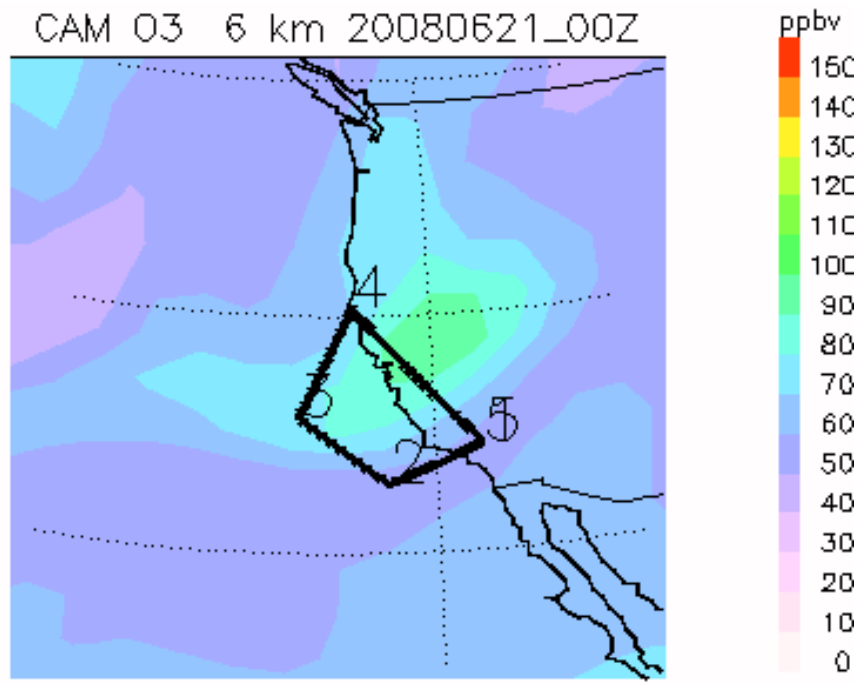


BioCO, 5.5km-18Z 06-22-2008

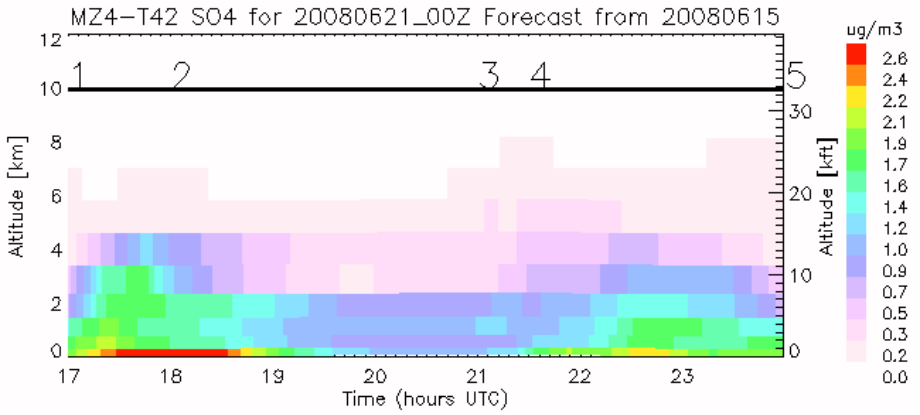
2008-06-20 21Z (fx from 06-15)

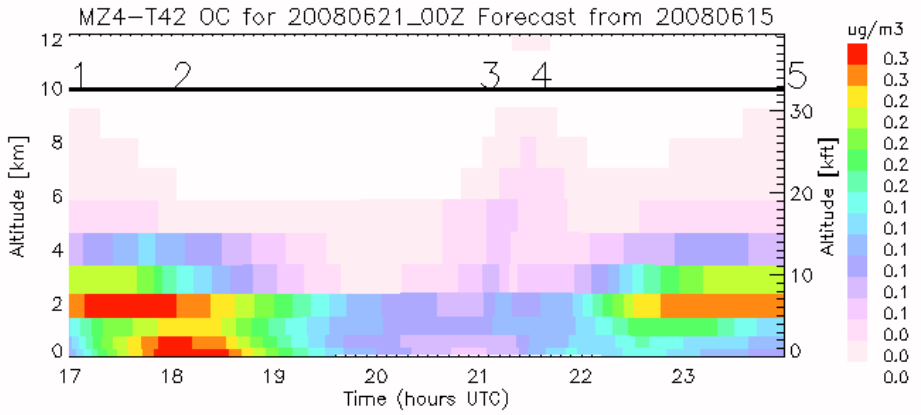


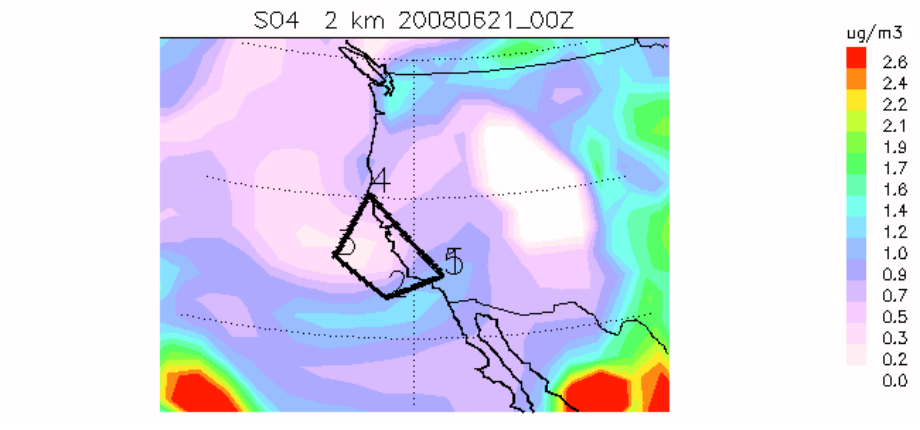


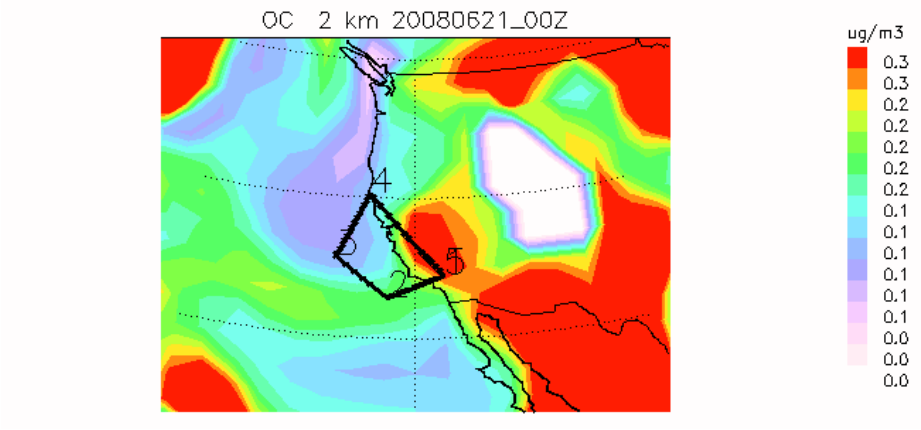


CAM 2008-06-20 21Z



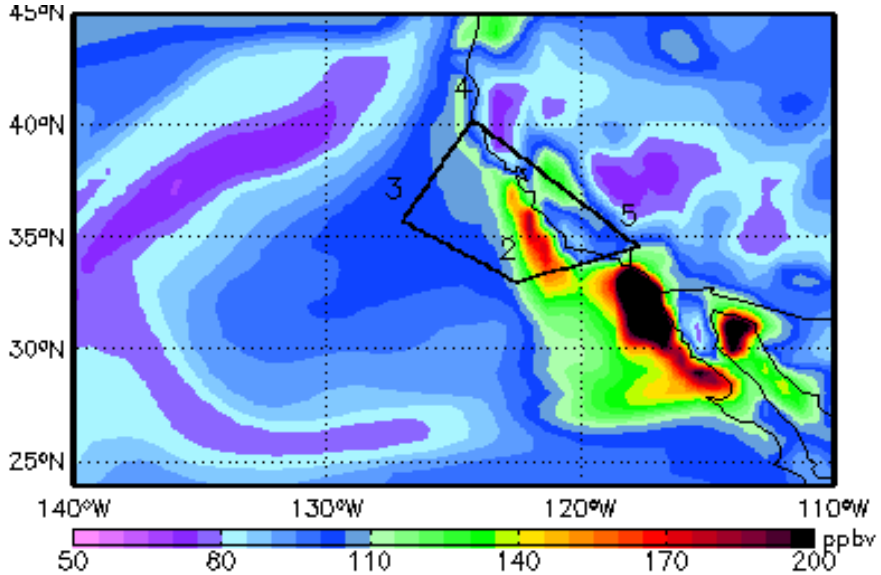




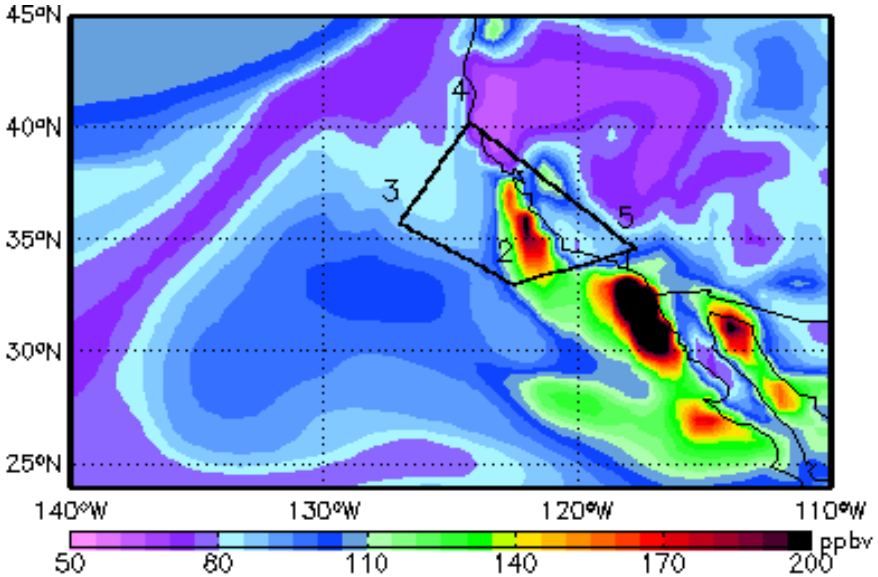


GEOS-5 Outlook: Surface CO at 19:30Z

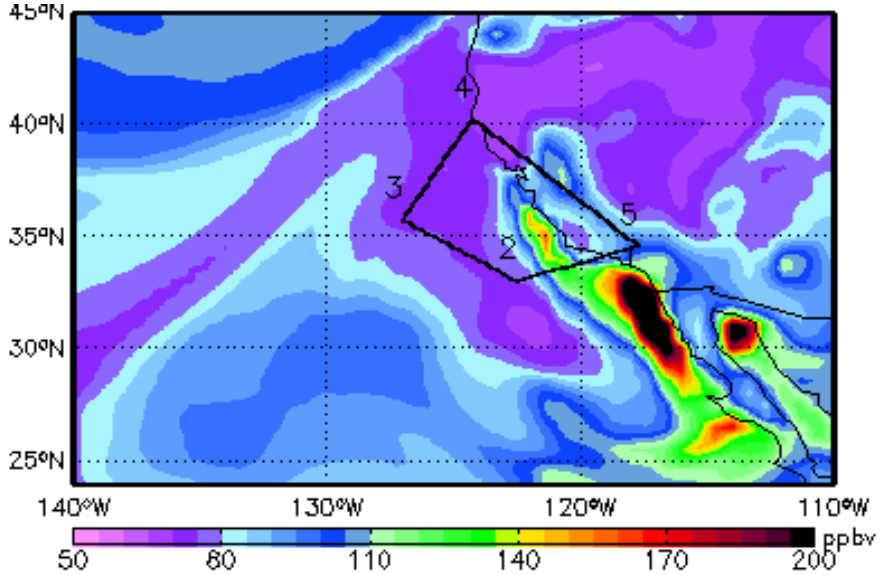
June 19



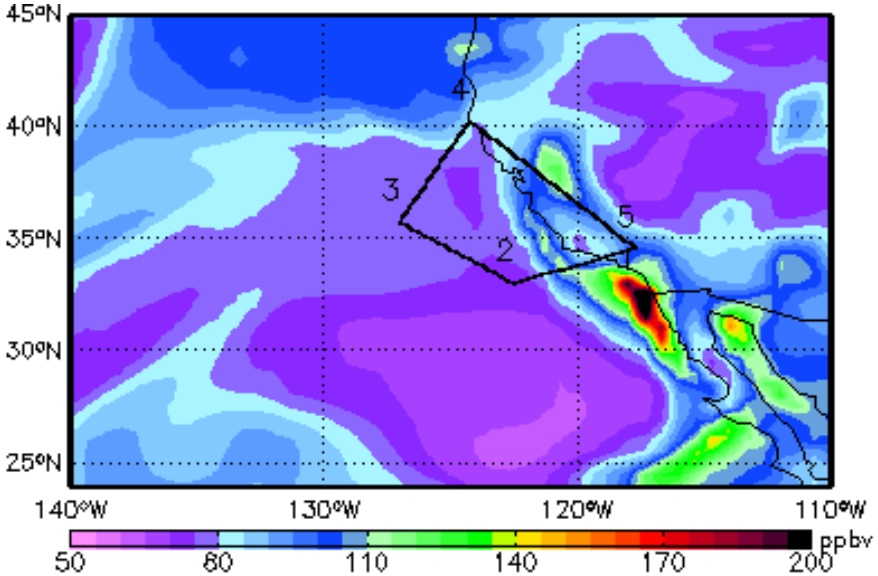
June 20



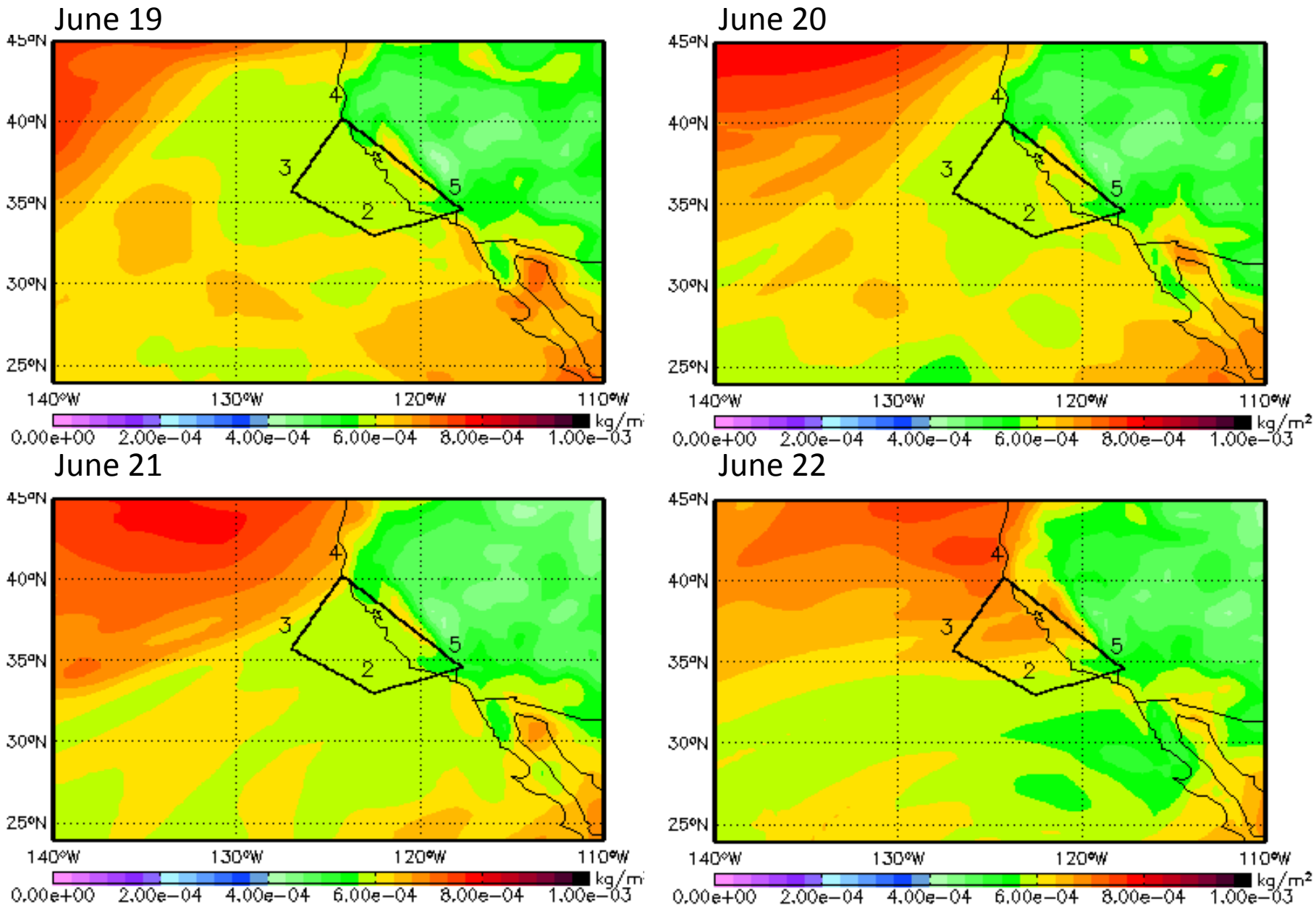
June 21



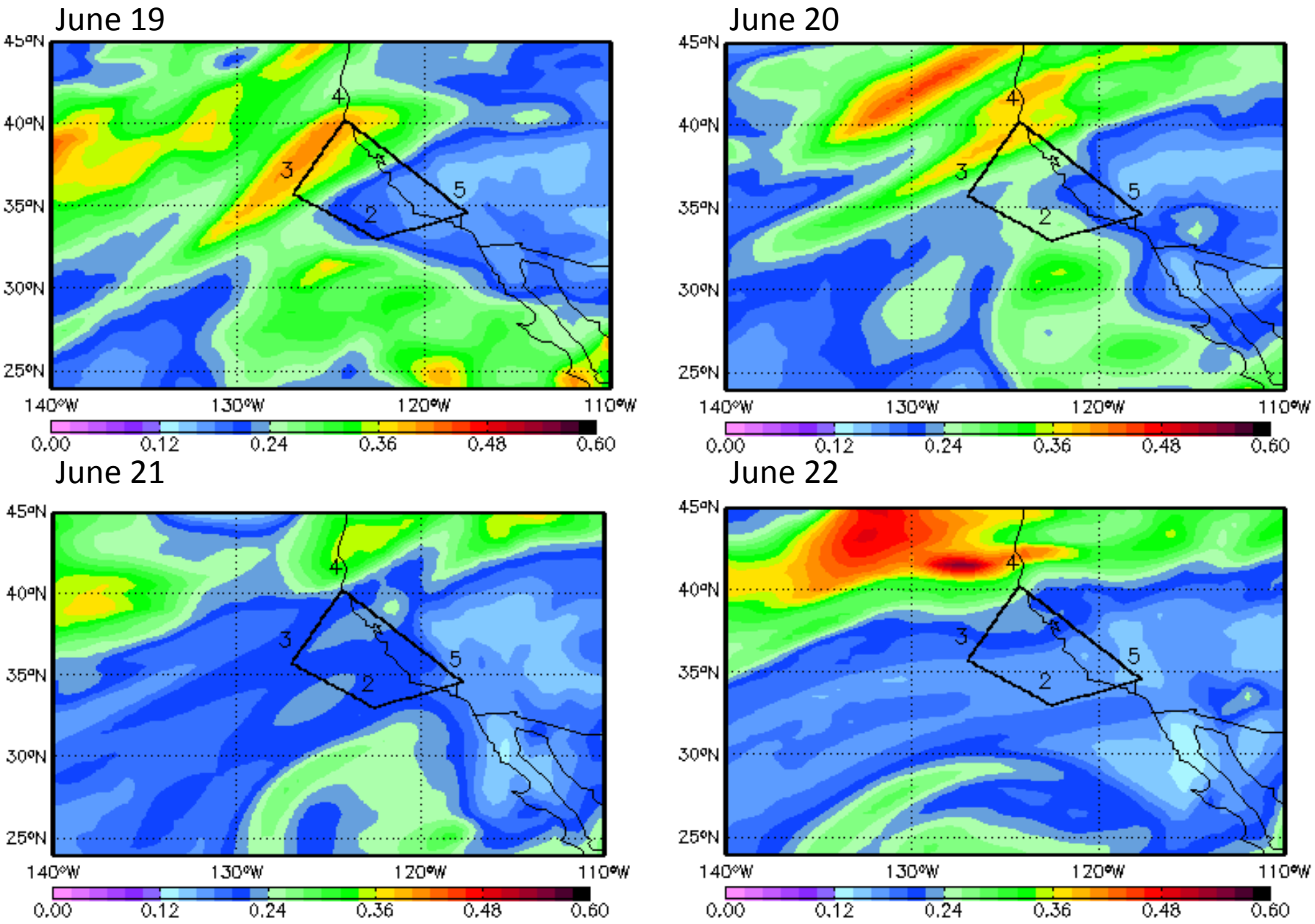
June 22



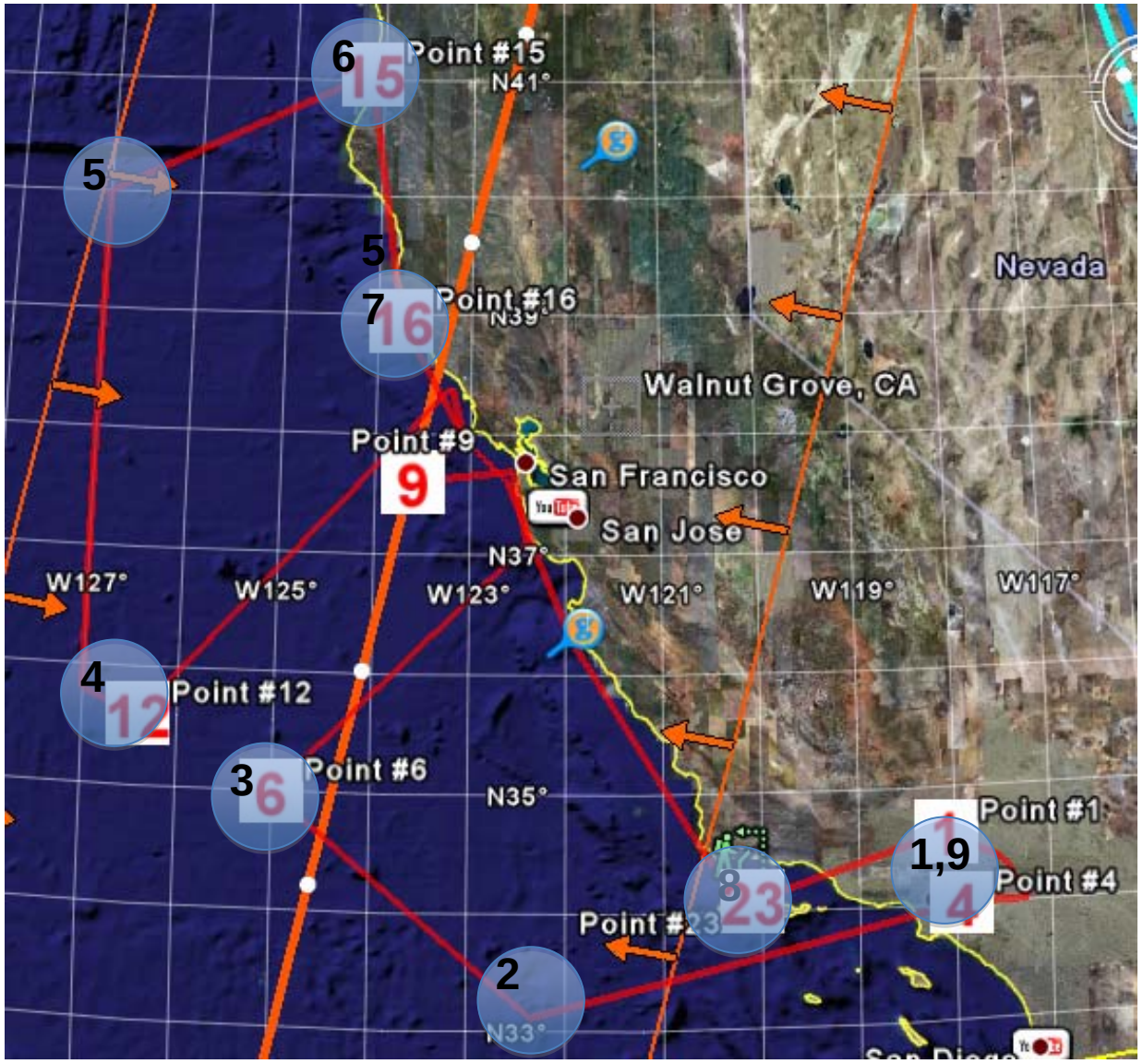
GEOS-5 Outlook: Total Column CO at 19:30Z



GEOS-5 Outlook: Total AOT at 19:30Z



Proposed Flight Plan: Boundary Condition Survey Version A
06/20/2008

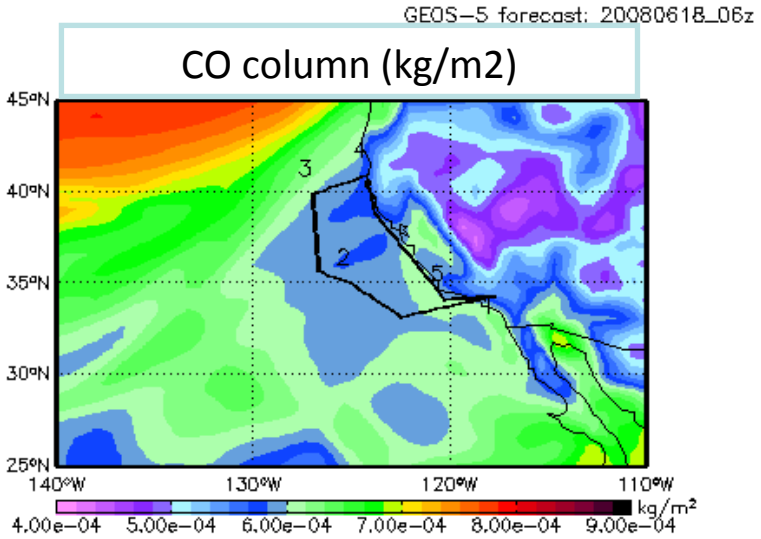


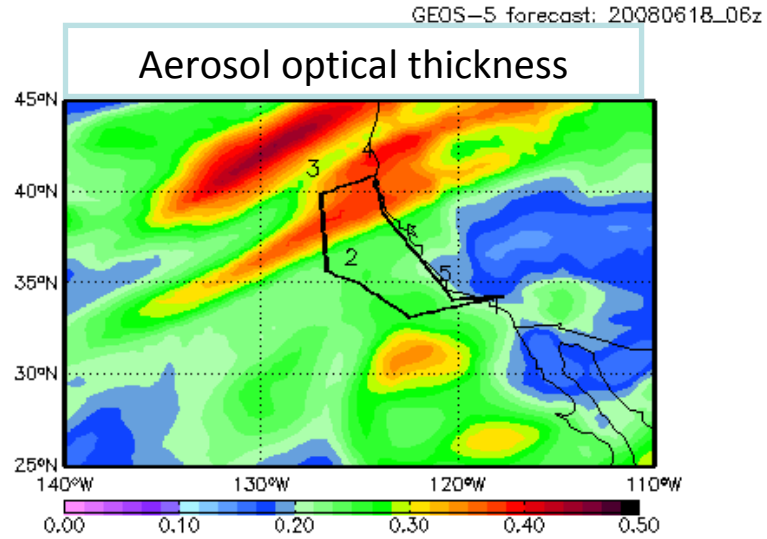
Point 6:
Spiral 33 kft.

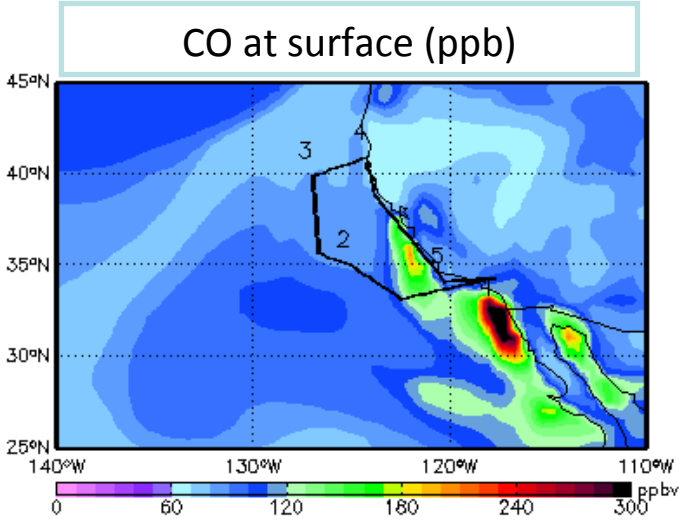
Point 15:
Spiral 18 kft.

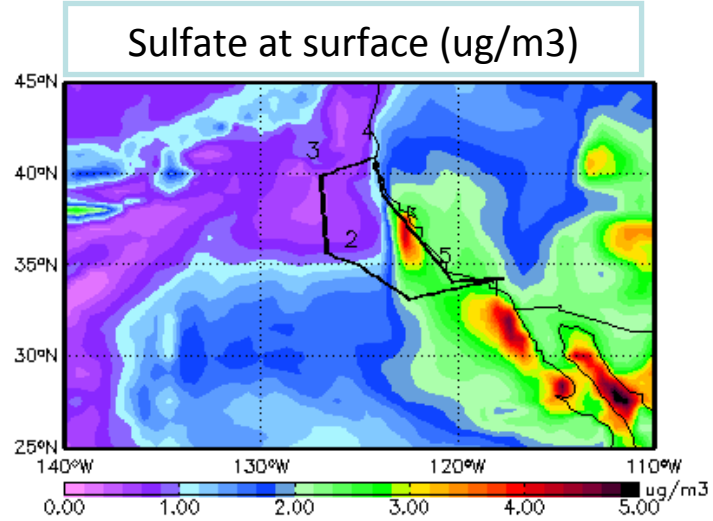
Point 24:
Palmdale Spiral
18 kft.

CO and Aerosol maps (12:30 PDT)

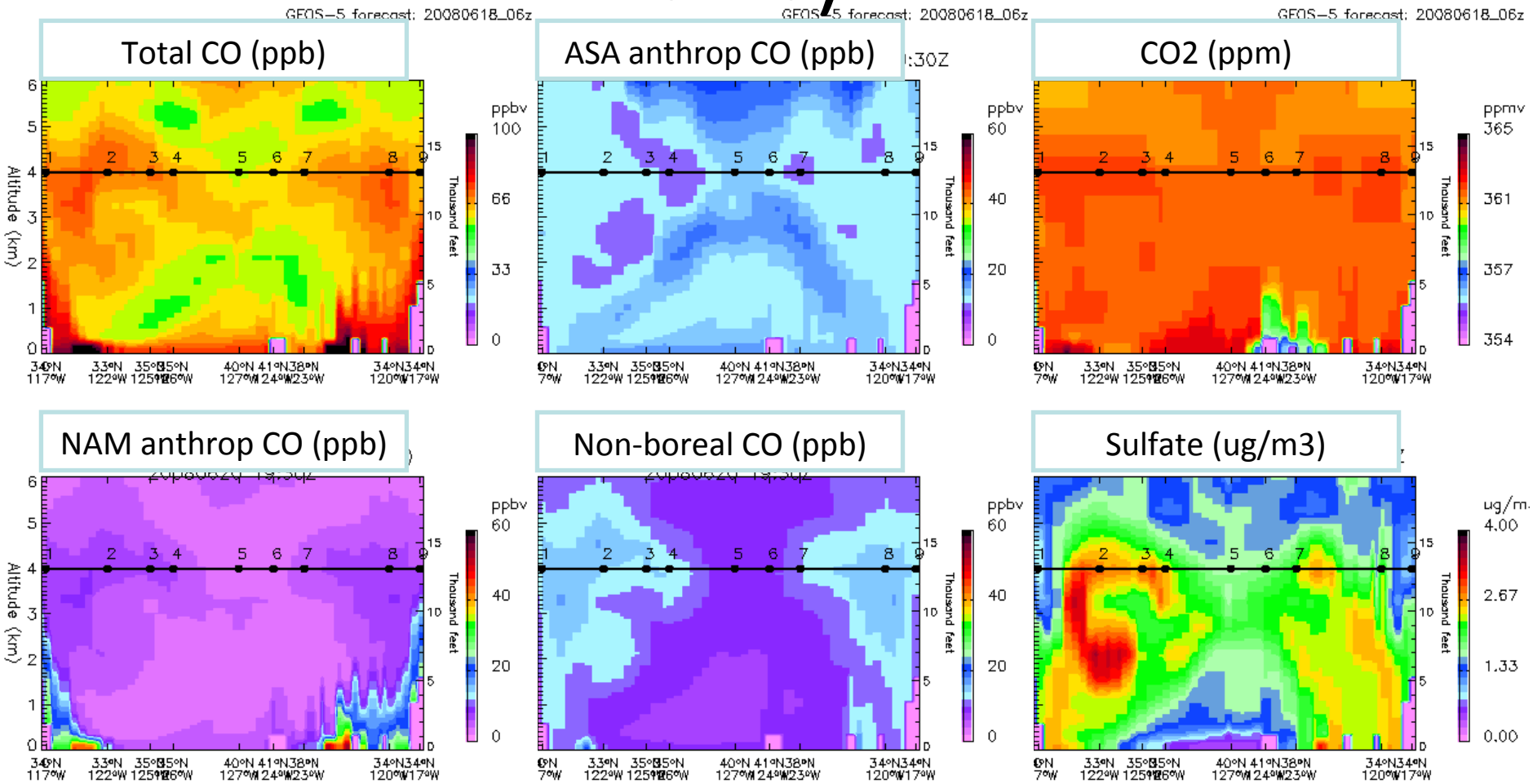






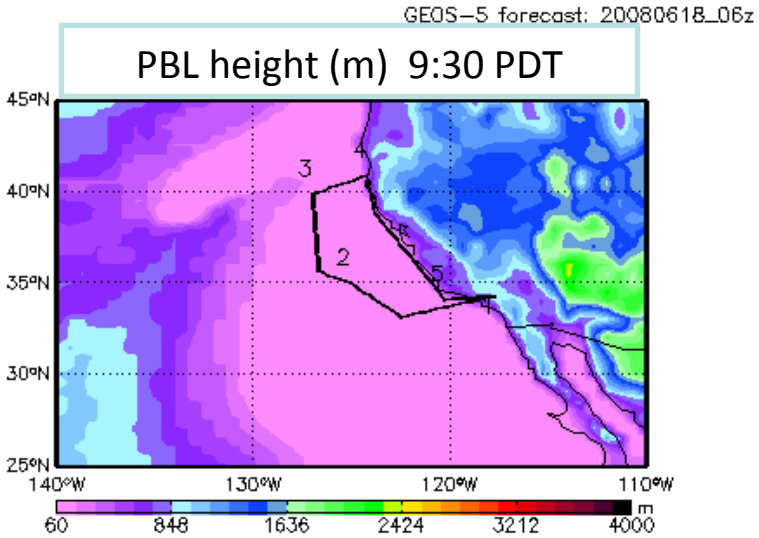


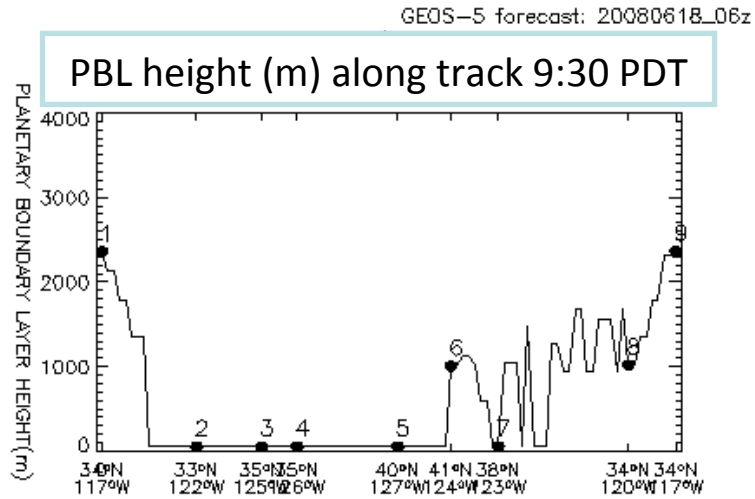
CO, CO2, Aerosol curtains (12:30 PDT)

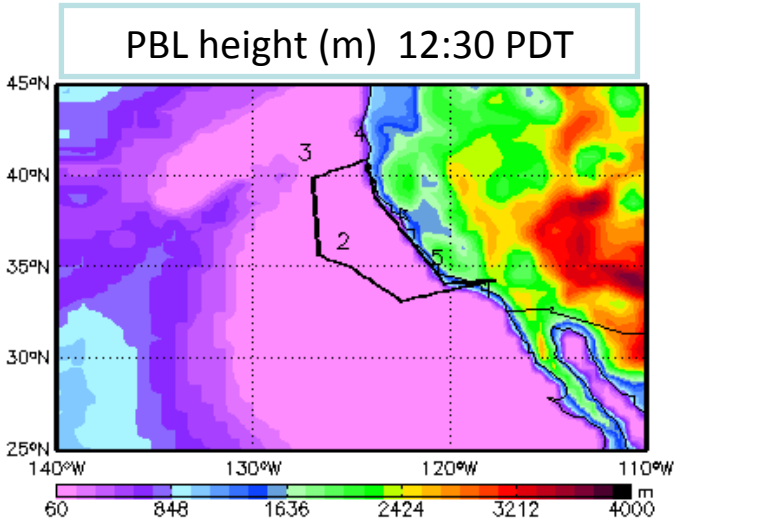


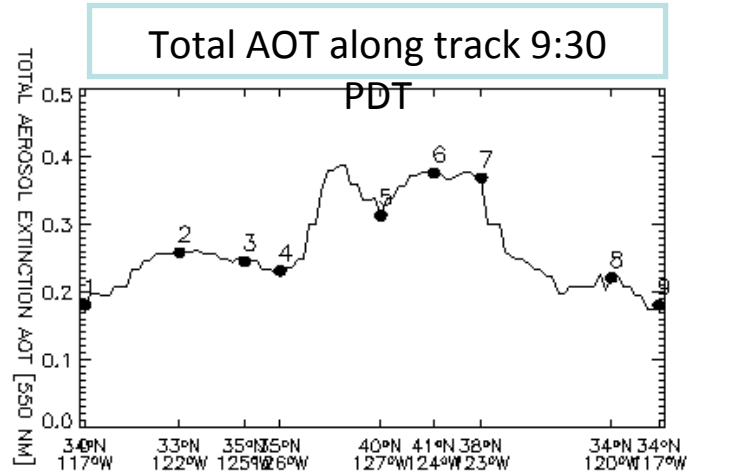
1 and 9: way point #1 &#4 2: wp #5 3: way point #6 4: wp#12&13 5: wp#14 6: wp #15 7: wp #16 8: wp #23 9: wp #1 & #4

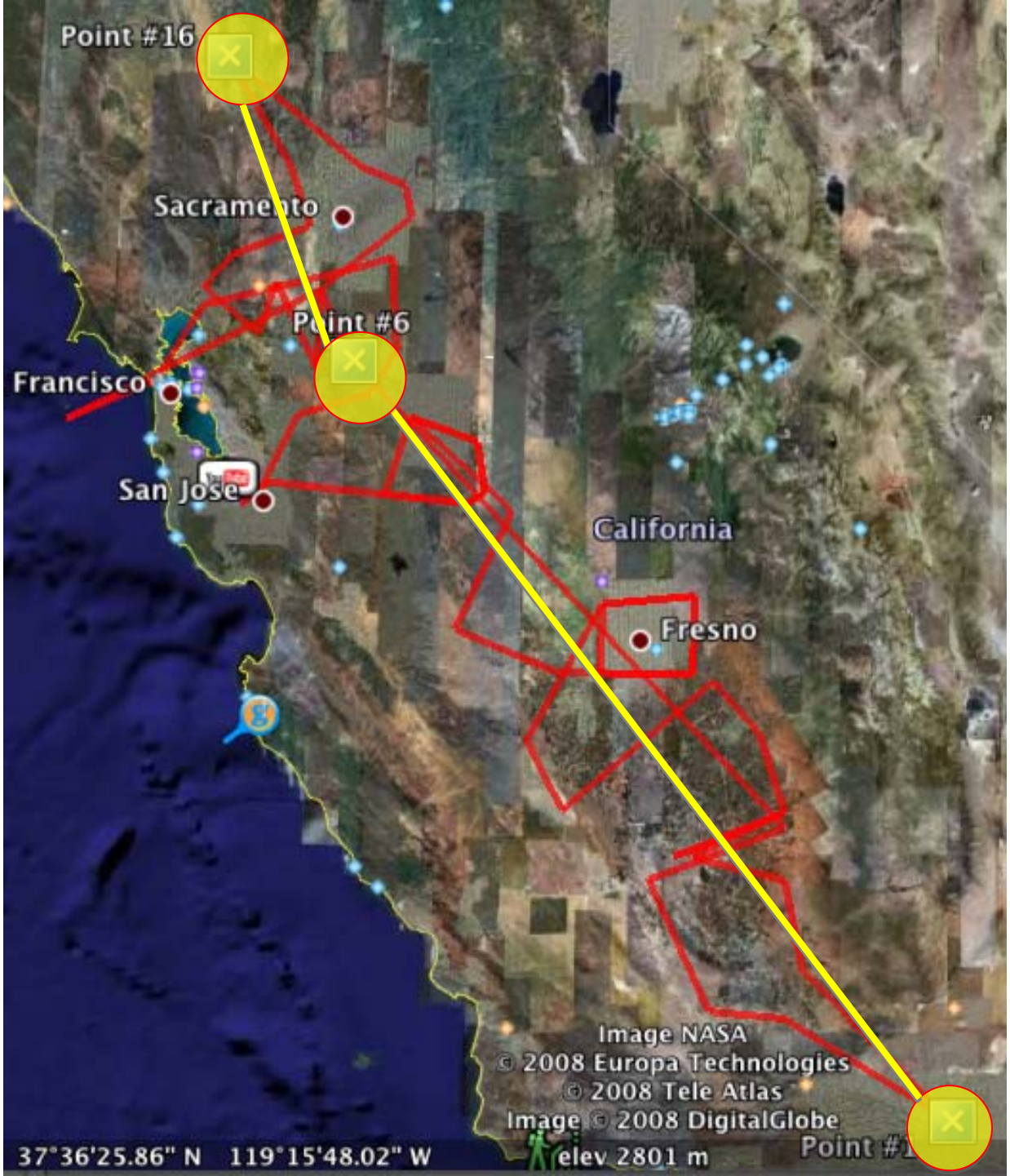
PBL height and total AOT





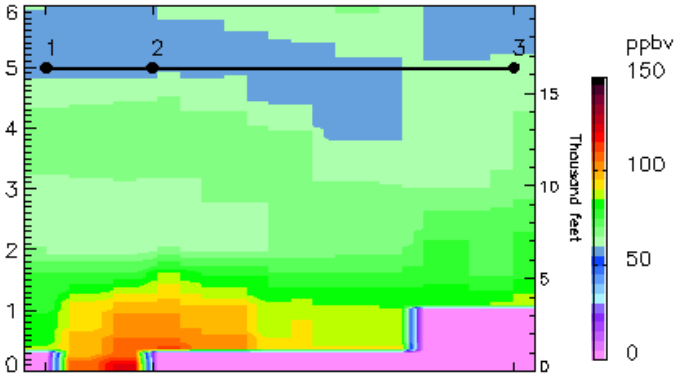




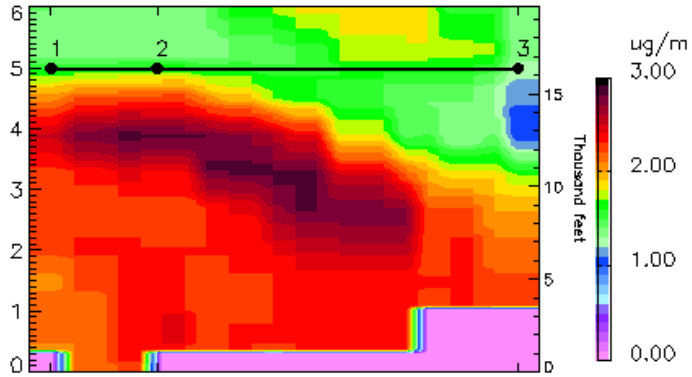

Point #16
Sacramento
Point #6
Francisco
San Jose
California
Fresno
Image NASA
© 2008 Europa Technologies
© 2008 Tele Atlas
Image © 2008 DigitalGlobe
37°36'25.86" N 119°15'48.02" W
elev 2801 m

June 20th: Option C – Return over San Joaquin Valley

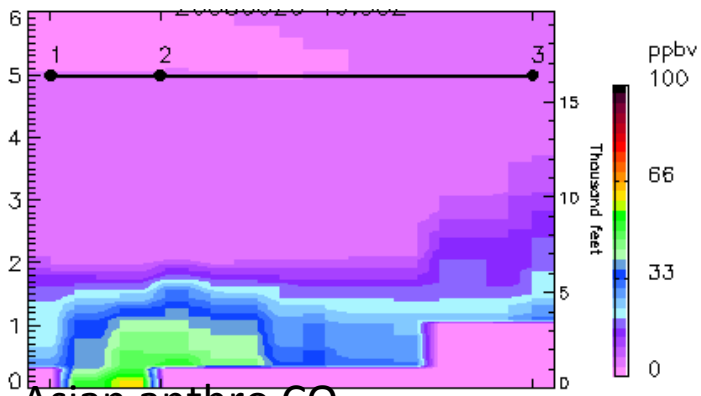
Total CO



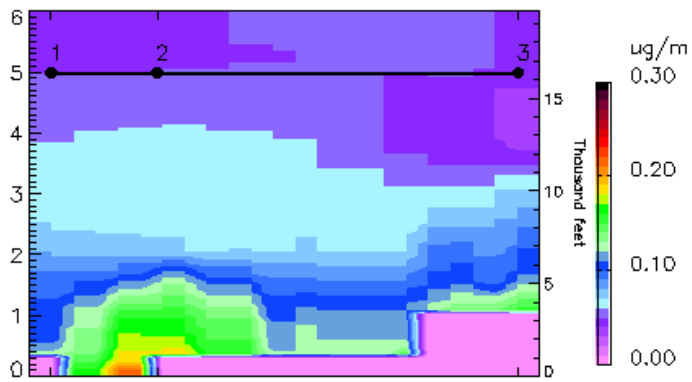
Sulfate aerosol



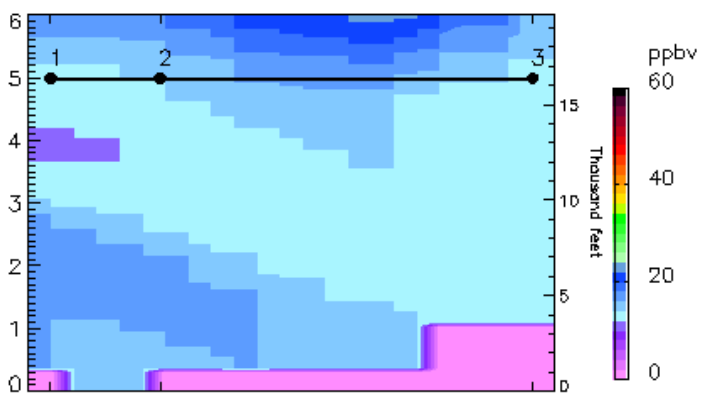
N.Am. anthro CO



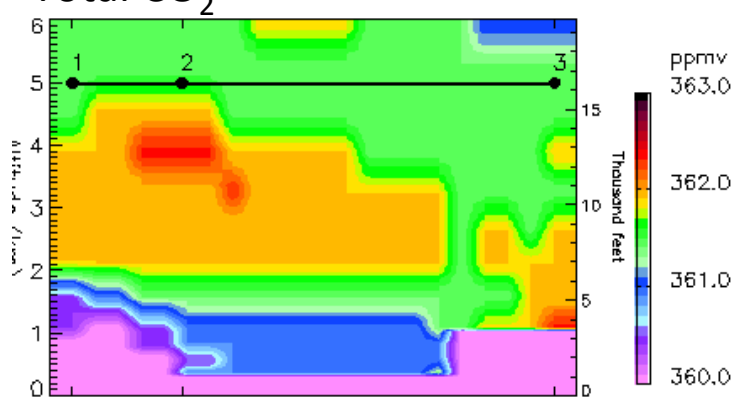
Black Carbon



Asian anthro CO

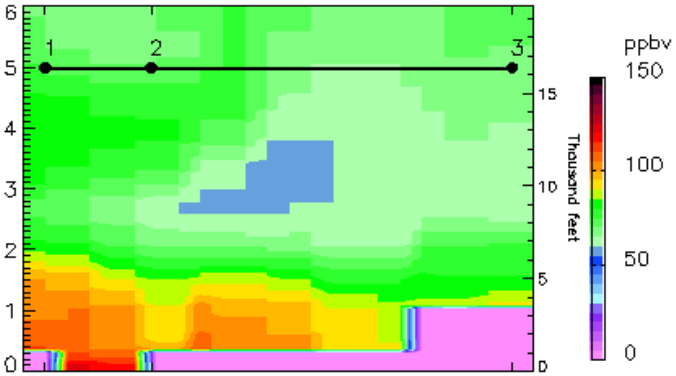


Total CO_2

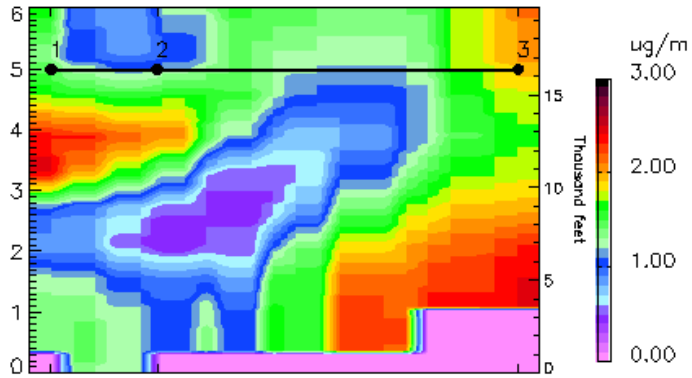


June 22nd: Potential San Joaquin Valley Flight

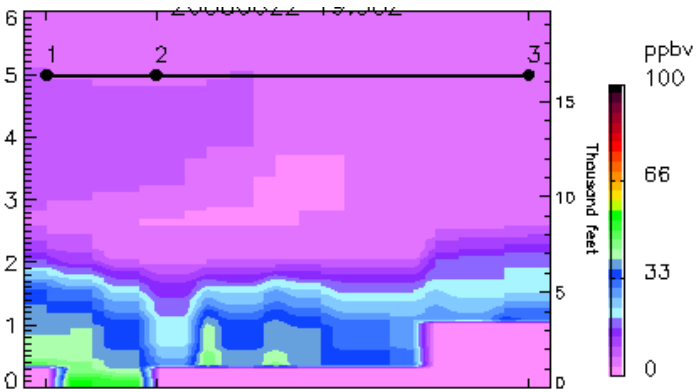
Total CO



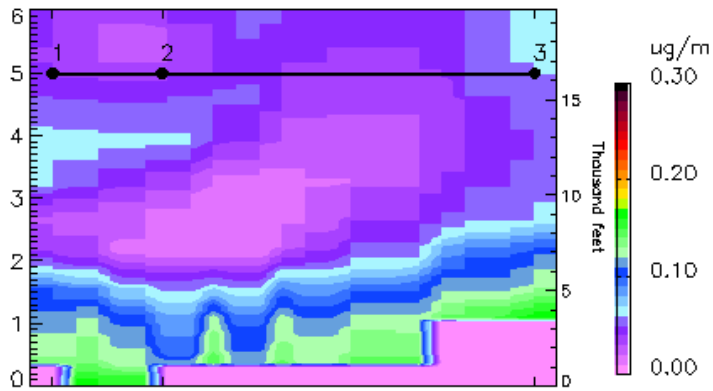
Sulfate aerosol



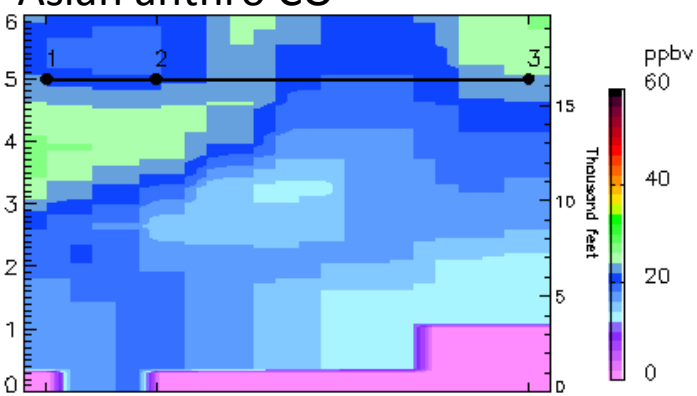
N.Am. anthro CO



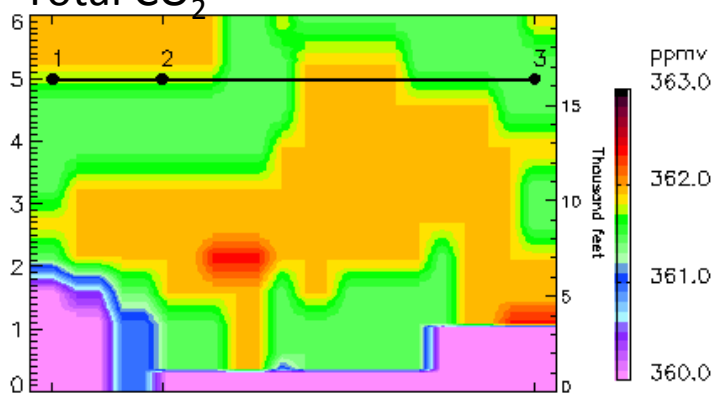
Black Carbon



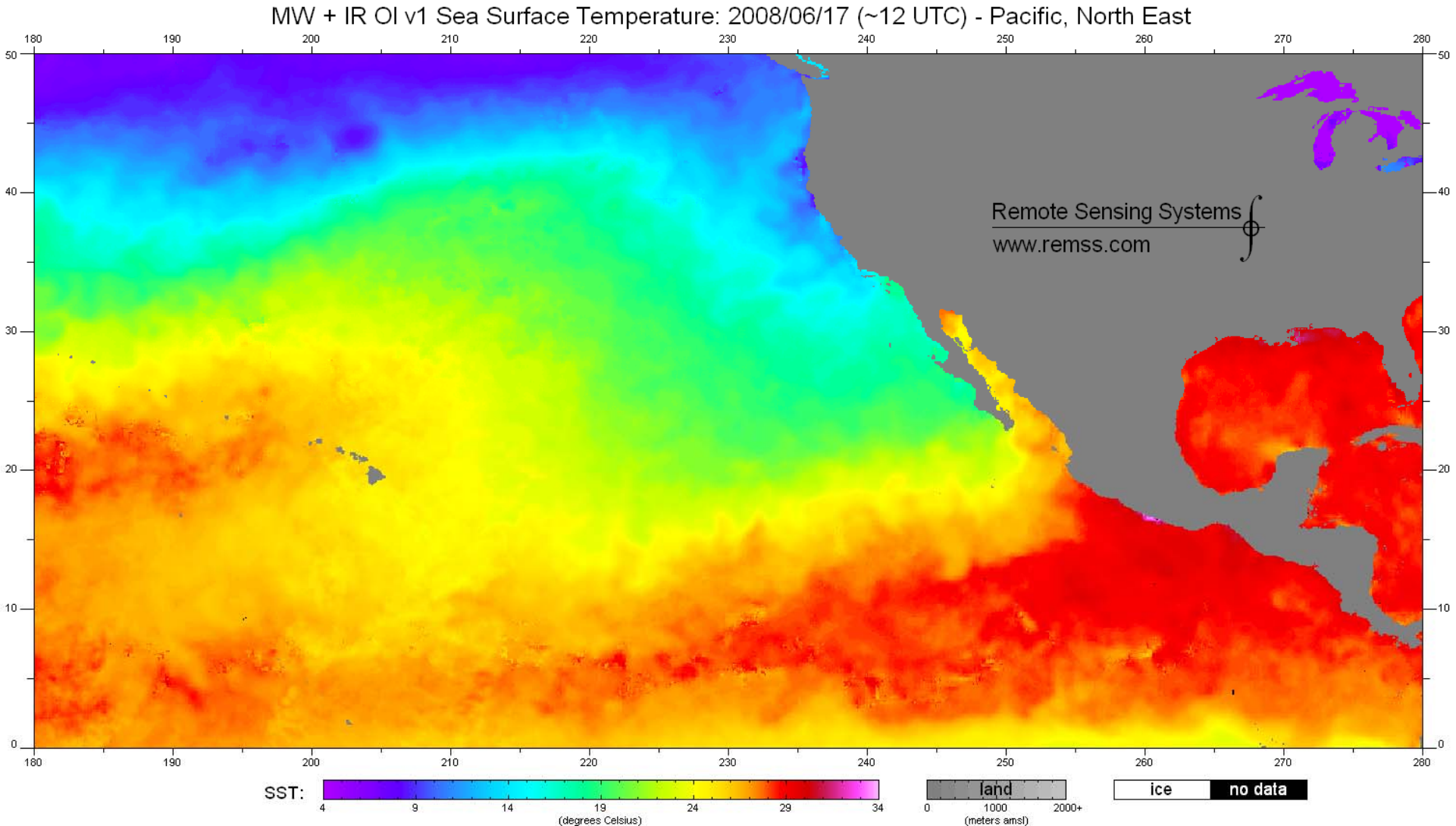
Asian anthro CO

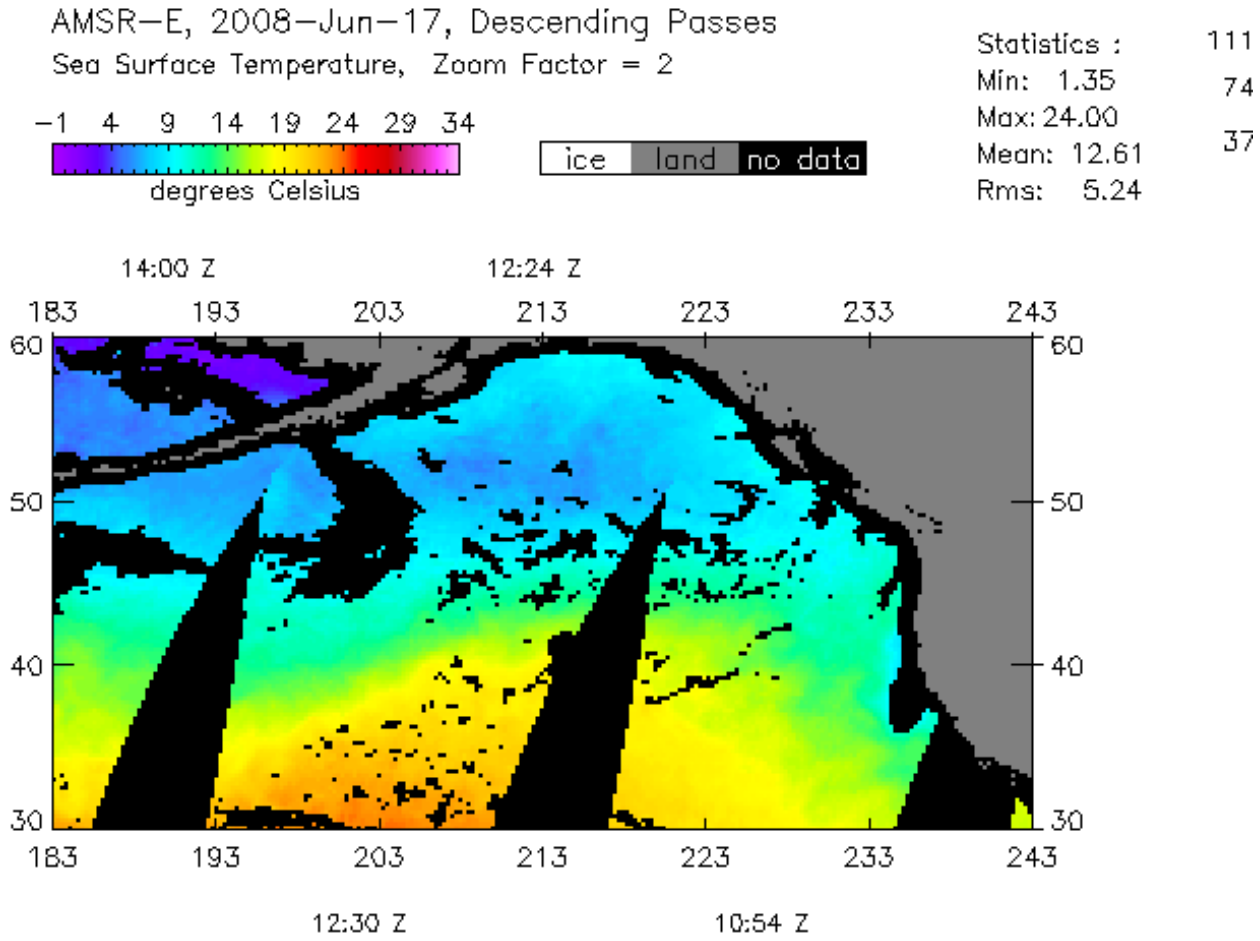


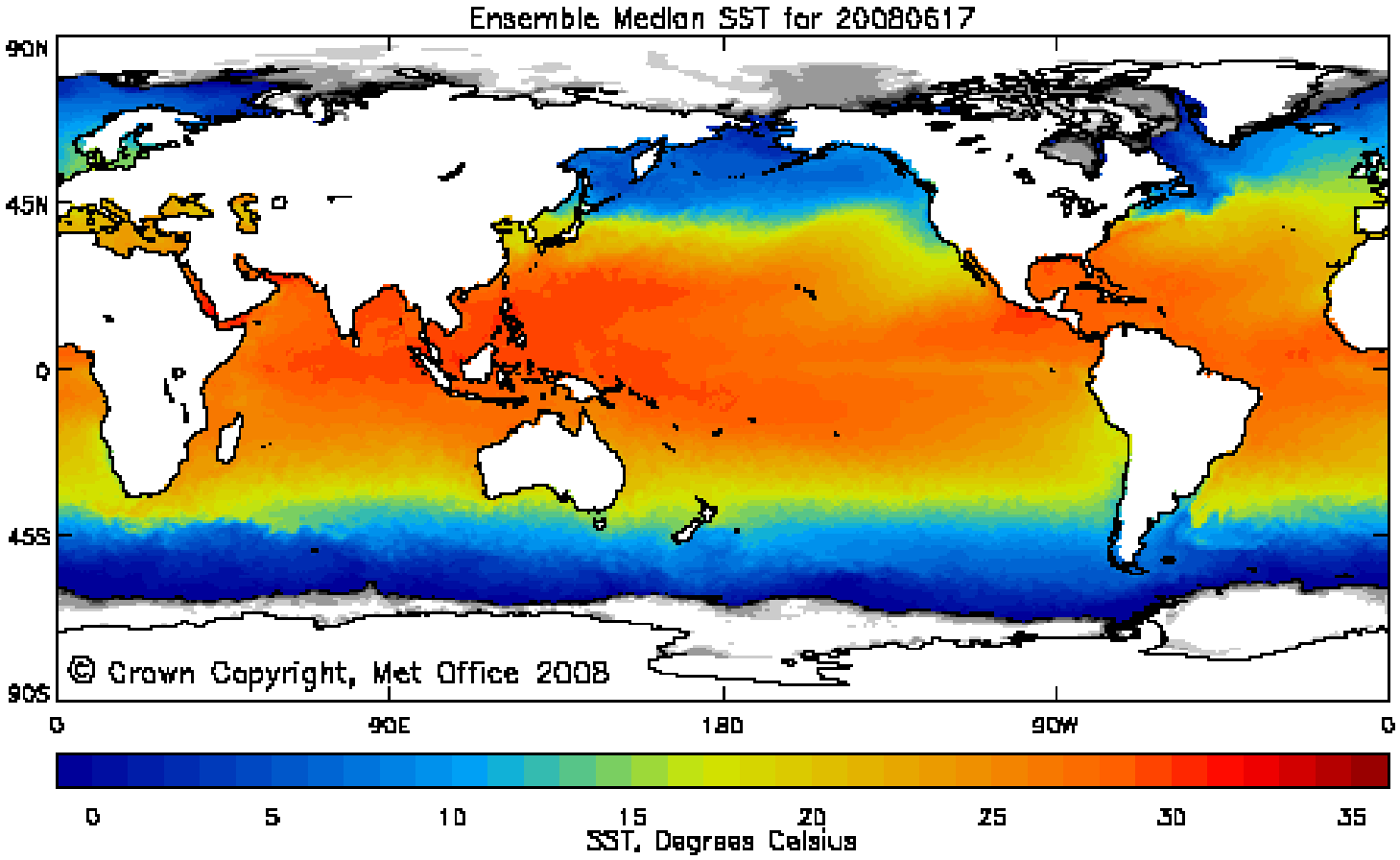
Total CO_2



SSTs from AMSR-E (microwave, not influenced by cloud, poor - ~50km- spatial resolution, not available within 50-100km of the coast)
merged with
SSTs from MODIS (1-4km spatial resolution, obscured by clouds)
http://www.remss.com/sst/sst_data_daily.html?sat=mw_ir




AMSR-E, 2008-Jun-17, Descending Passes
Sea Surface Temperature, Zoom Factor = 2
-1 4 9 14 19 24 29 34
degrees Celsius
ice
land
no data
Statistics :
Min: 1.35
Max: 24.00
Mean: 12.61
Rms: 5.24
111
74
37
14:00 Z
12:24 Z
183 193 203 213 223 233 243
60
50
40
30
12:30 Z
10:54 Z


Ensemble Median SST for 20080617
90N
45N
0
45S
90S
0
90E
180
90W
0
© Crown Copyright, Met Office 2008
0
5
10
15
20
25
30
35
SST, Degrees Celsius

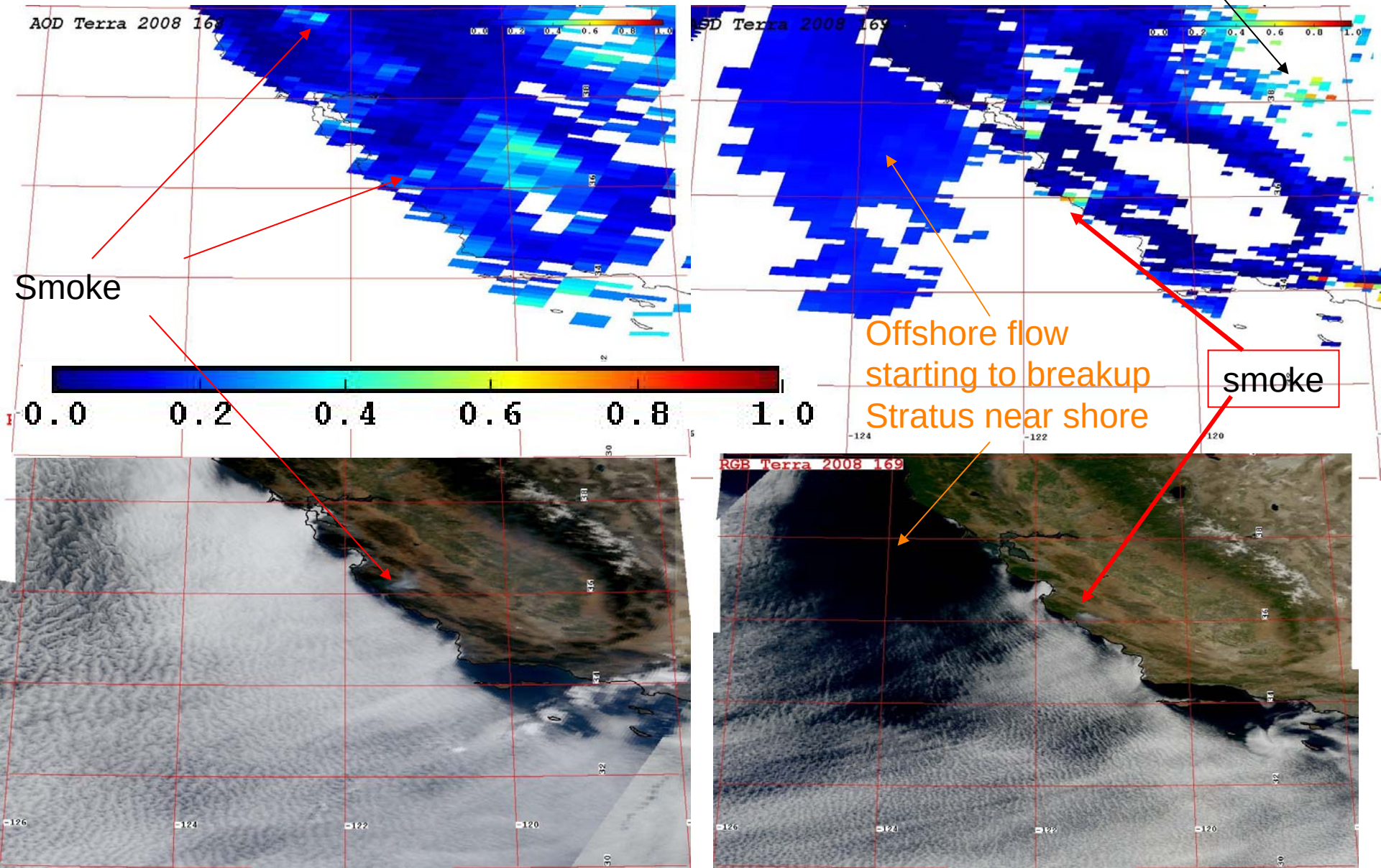
10 daily satellite-derived SST maps with various characteristics are available at http://www.ghrsst-pp.org/Todays-global-SST.html
A modeled SST at 1/12degree resolution is available from http://polar.ncep.noaa.gov/sst/ophi/Welcome.html

Orbital AMSR-E SSTs (generally within a few hours of the overpass) are available at http://www.ssmi.com/amsr/amsr_browse.html.
This page has a dynamical imaging capability - ie you can create images of a user-defined area with optimized color table.
Orbital MODIS SSTs (generally within a day) are available from http://oceancolor.gsfc.nasa.gov/PRODUCTS/sst.html.
This group at Goddard also offers a cruise or campaign support service through which they will try to get you the latest information about your experimental area for planning operations.

Day 168 & 169 (June 16 & 17) Mon. (Left) and Tue. (Right)

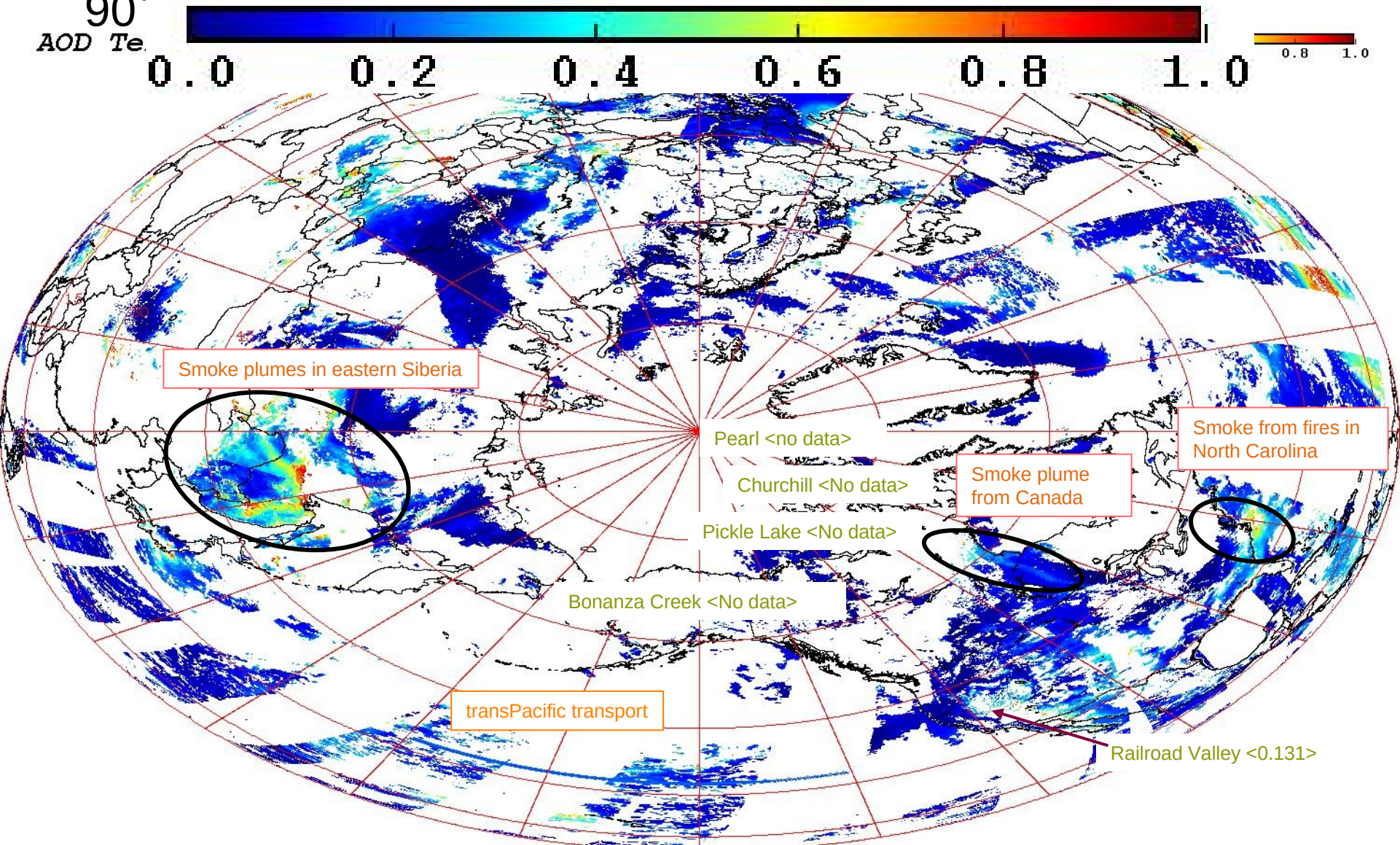
MODIS AOD Hot Spots in California

Caution: MODIS sometimes overpredicts AOD in the high desert



Day 169 (June 17) Tuesday

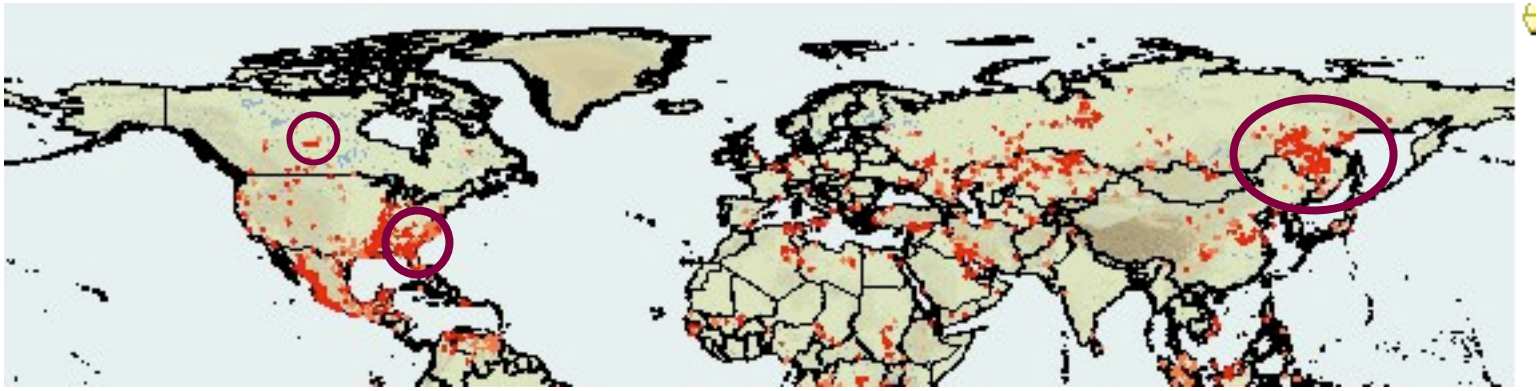
MODIS AOD Hot Spots in Northern Hemisphere (0° - 90° N)



MODIS AOD at 550 nm and AERNOET daily mean <AOD> at 500 nm

MODIS Global Active Fire Count Map In Last 24 hours (Red) & 72 hours (Yellow)

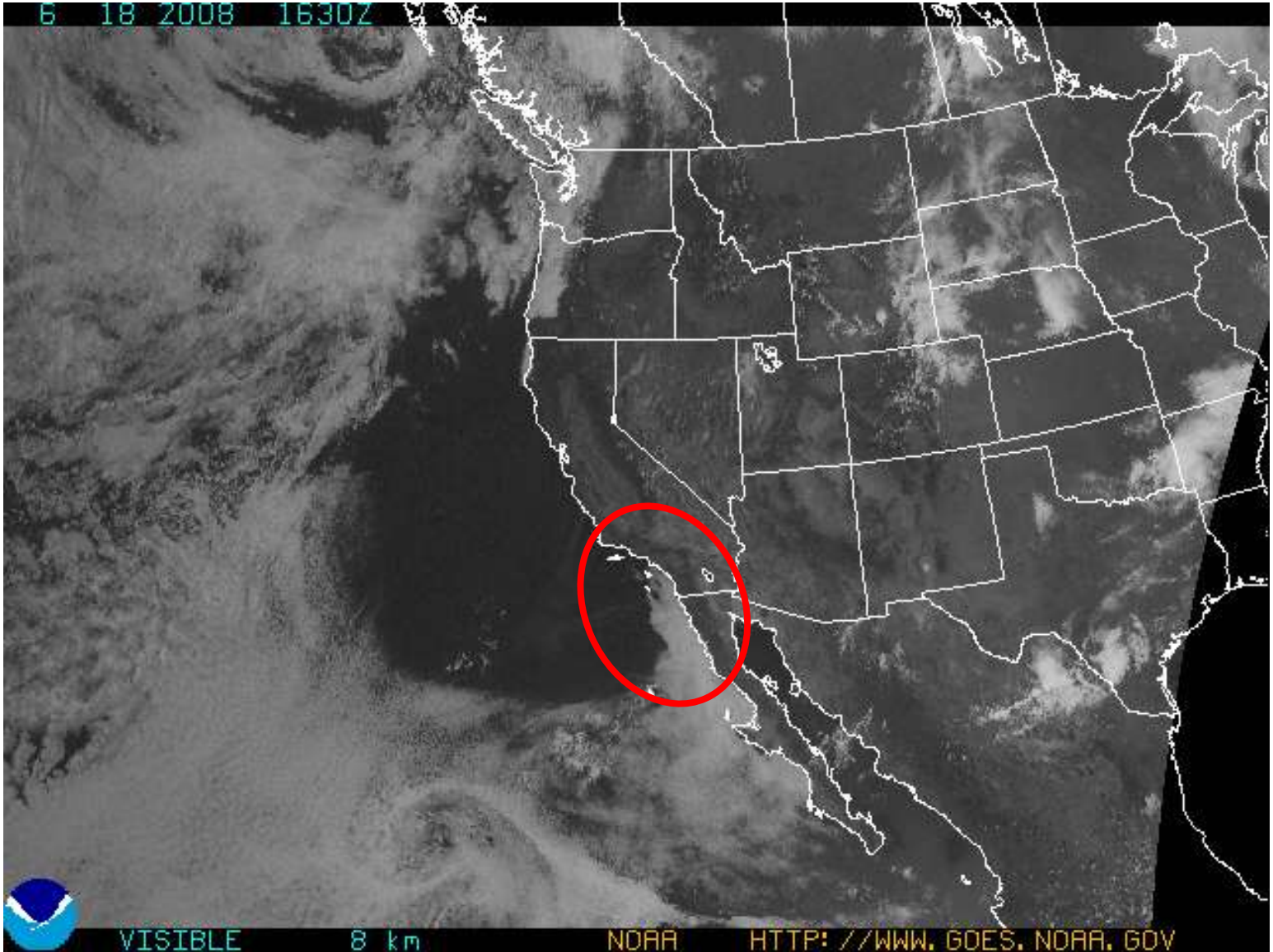
(20080616 - 20080617)



Circles indicate fires that produced elevated AOD noted on previous slides. Also note small fires in the California coastal range.

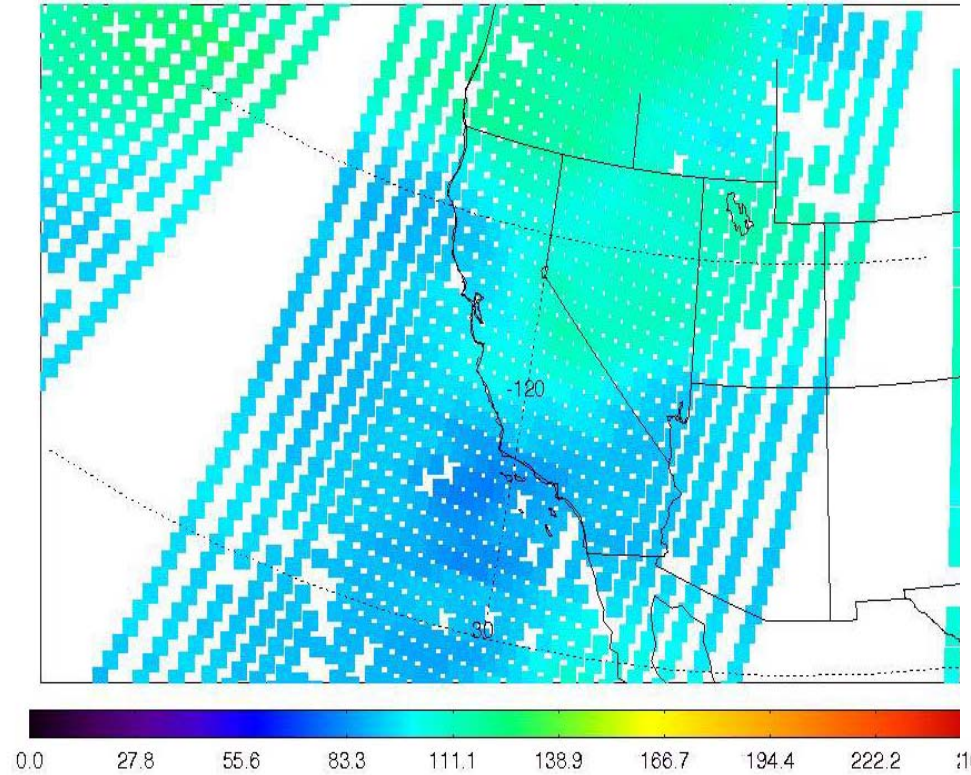
http://maps.geog.umd.edu/activefire_html

GOES image 6/18 9:30 PDT



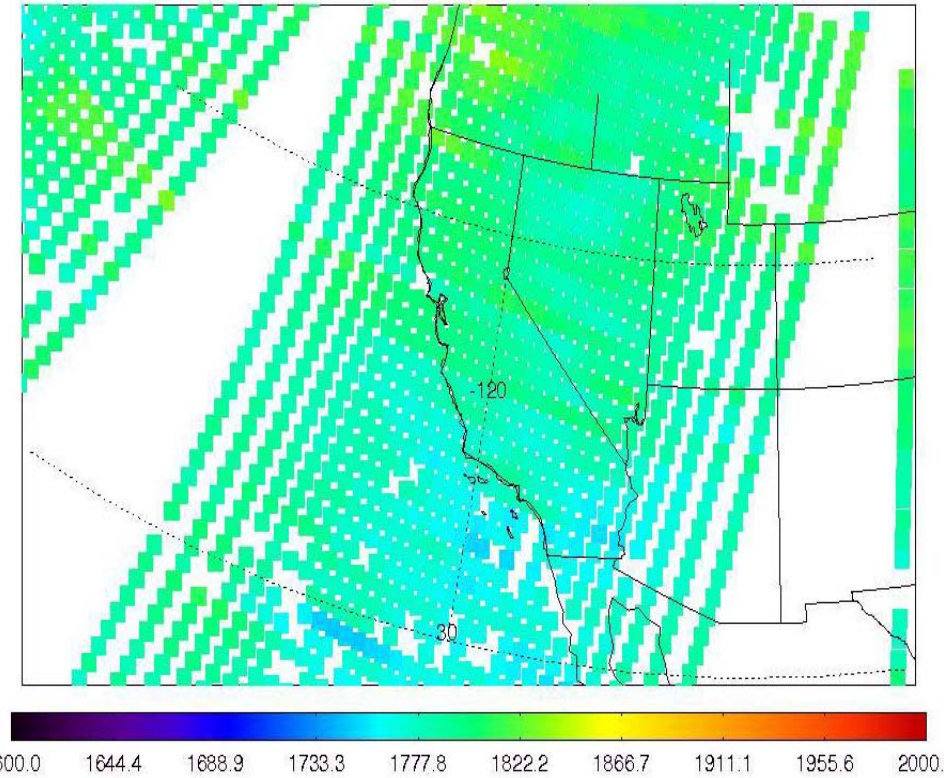
AIRS Support for CARB

NRT AIRS CO mr 500mb June 18



ACKNOWLEDGEMENT: AIRS NRT products by NASA DAAC

NRT AIRS CH4 mr 300mb June 18

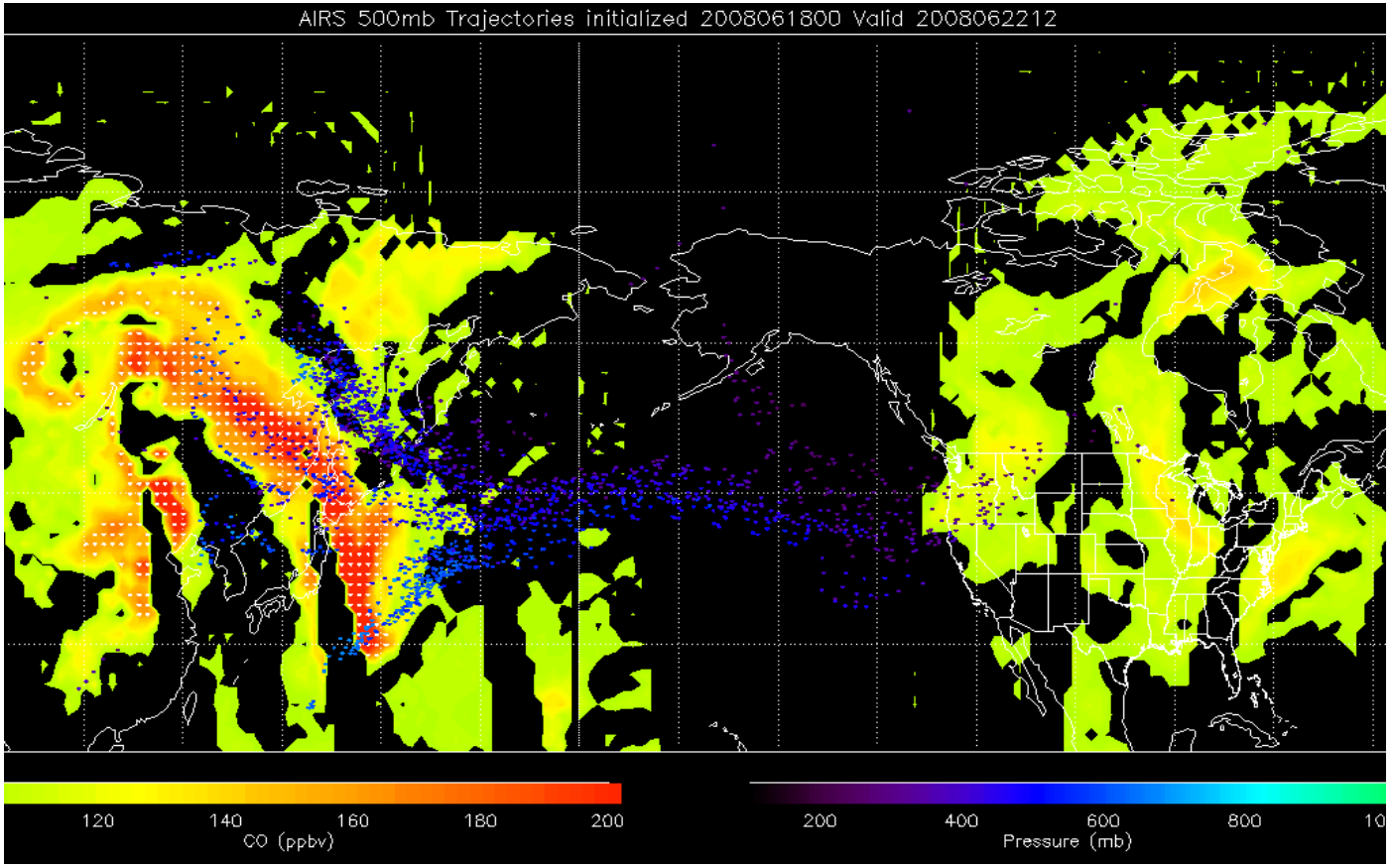


ACKNOWLEDGEMENT: AIRS NRT products by NASA DAAC

- Relatively low CO values (< ~100ppbv) over CA based on nighttime measurements since there is no daytime coverage for CA yet today.
- CH4 show north-south gradients at 1800ppbv in average.

AIRS Support for CARB

Trajectory forecast for 20080622 12z



- Continuous Asian transports possible to affect CA.
- Trajectory shows ascending air masses.