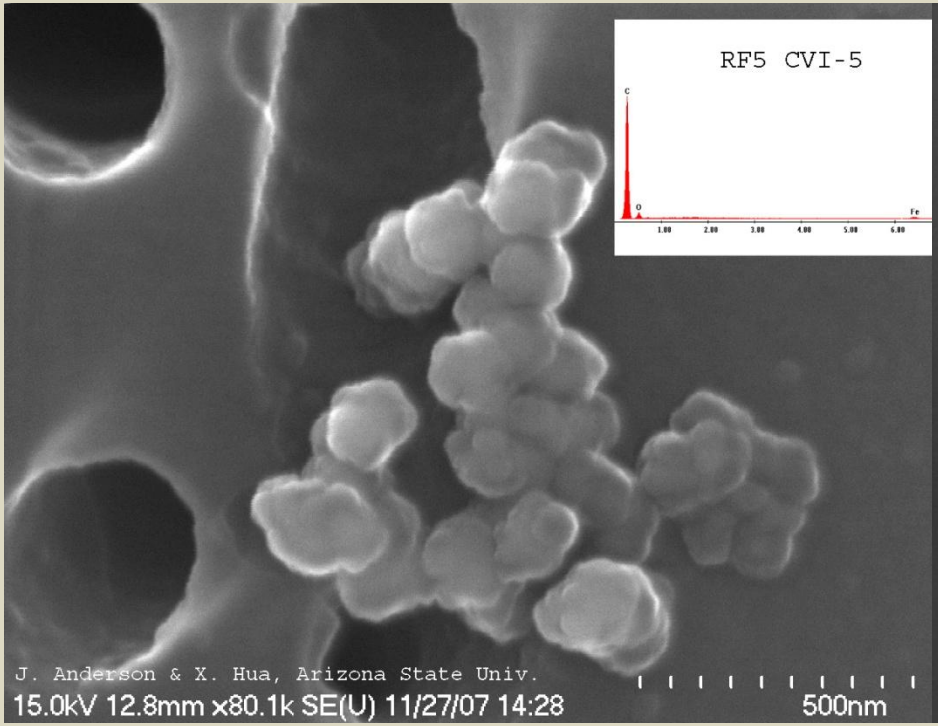
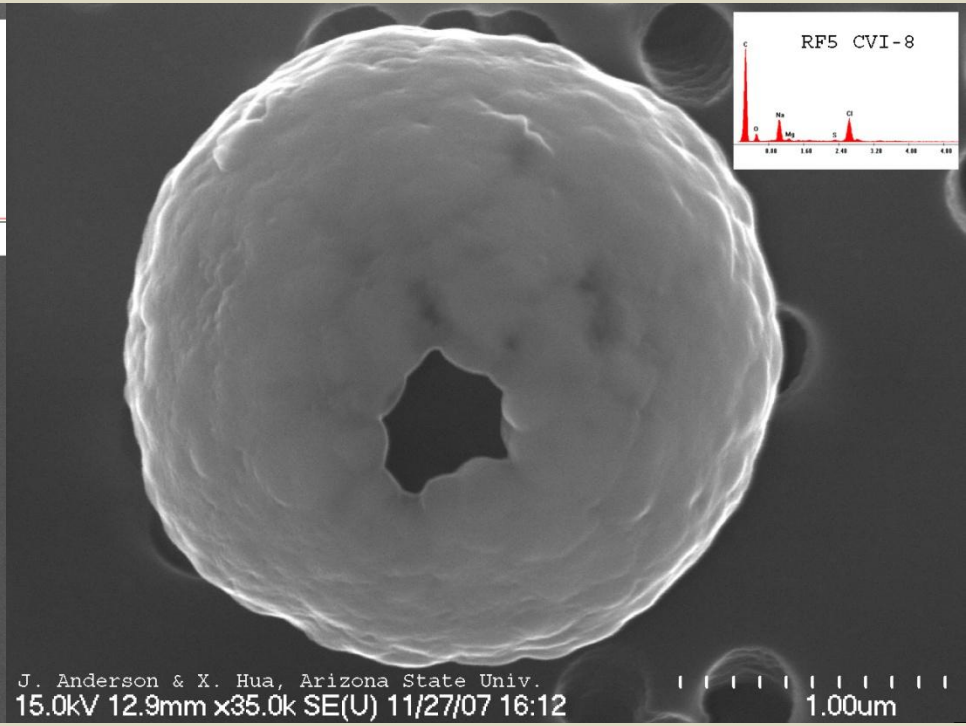
Jim Anderson, Arizona State University

Instruments for ICE-T on C-130 and post-field campaign measurements





Ira A. Fulton Schools of Engineering
ARIZONA STATE UNIVERSITY

Behind CVI –

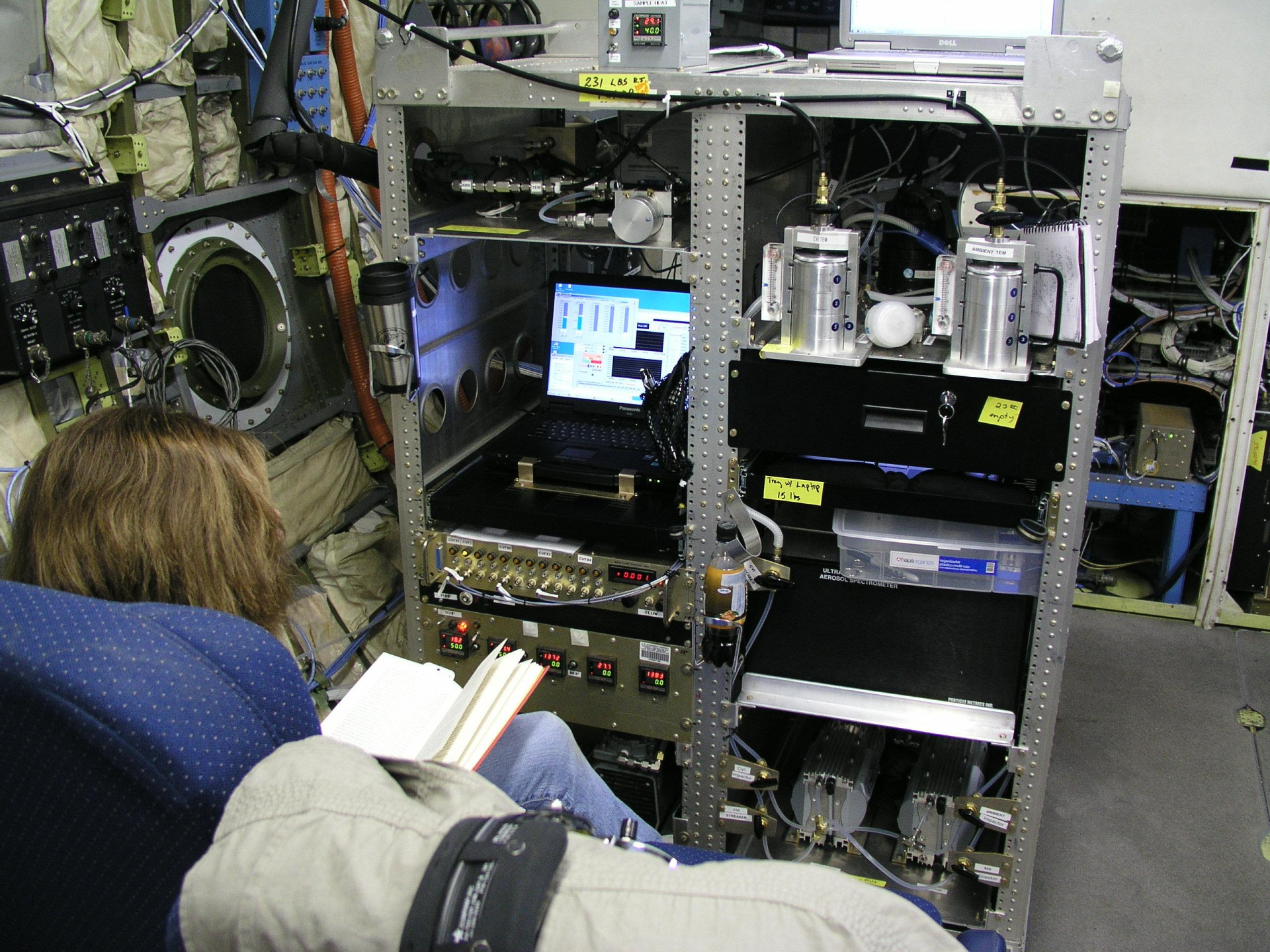
“Streaker” sampler – 2x8 mm samples on polycarbonate membrane filter for SEM analysis of size, morphology and composition of cloud particle residues. Quantitative number concentrations and size distribution down to 100 nm dry diameter of inorganic particles.

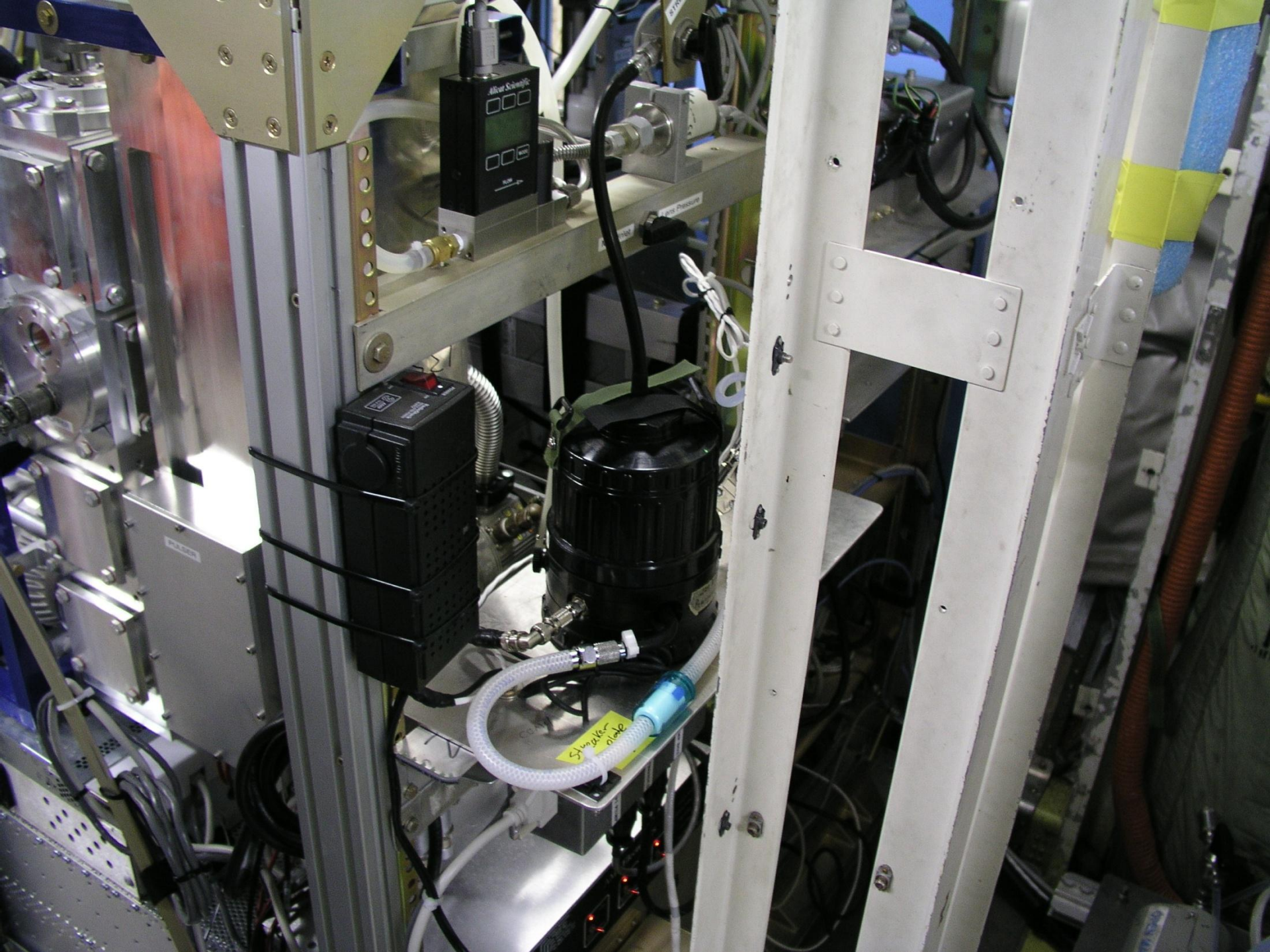
3-stage micro-impactor samples on 3 mm TEM grids with carbon support films for TEM analysis of composition and structure of cloud particle residues.

On ambient inlet(s) –

“Streaker” sampler – 2x8 mm samples on polycarbonate membrane filter for SEM analysis of size, morphology and composition of ambient particles. Quantitative number concentrations and size distribution down to 100 nm dry diameter of inorganic particles.

3-stage micro-impactor samples on 3 mm TEM grids with carbon support films for TEM analysis of composition and structure of ambient particles.

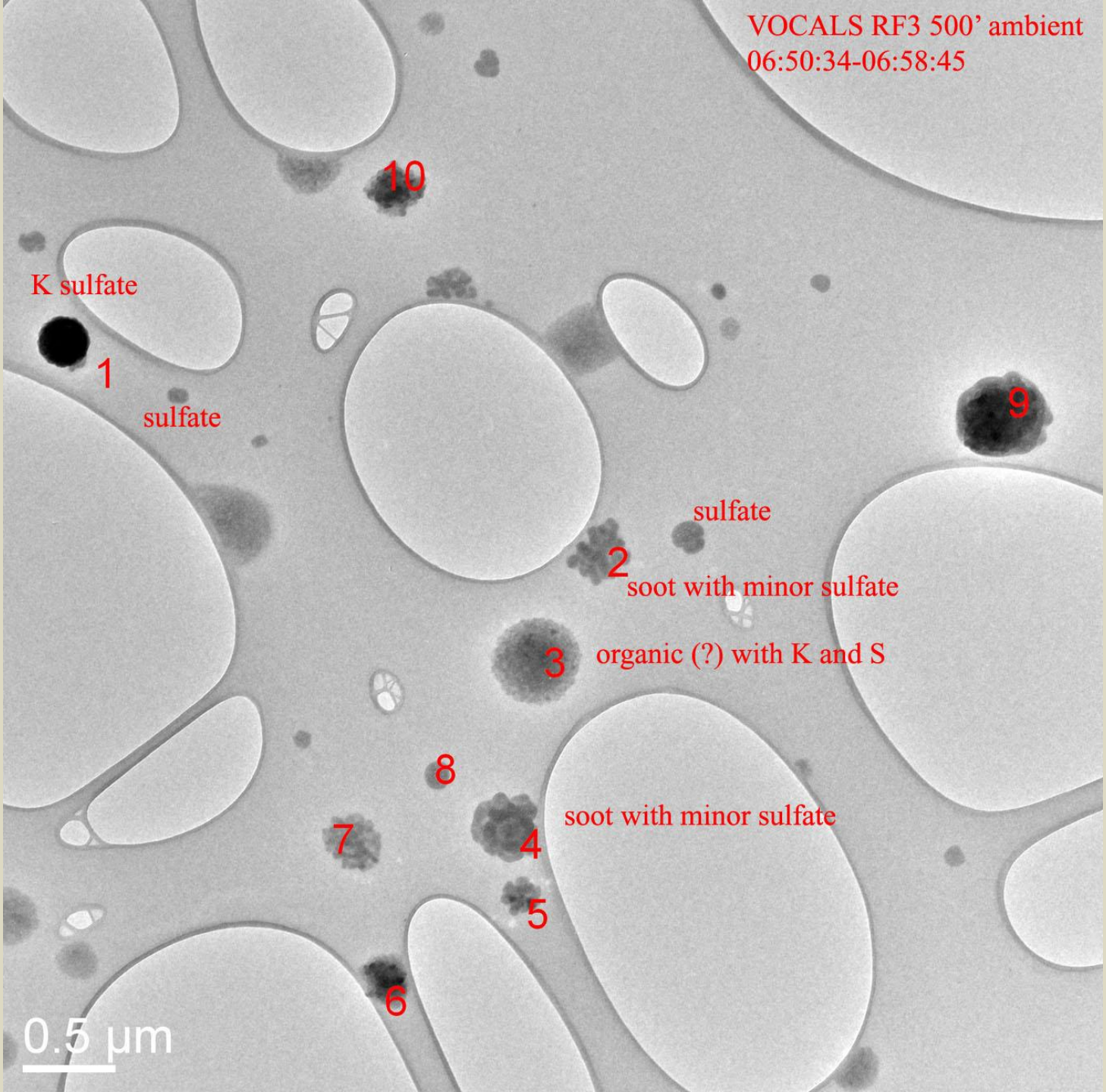

231 LBS
empty
Tray w/ Laptop
15 lbs
AEROSOL SPECTROMETER

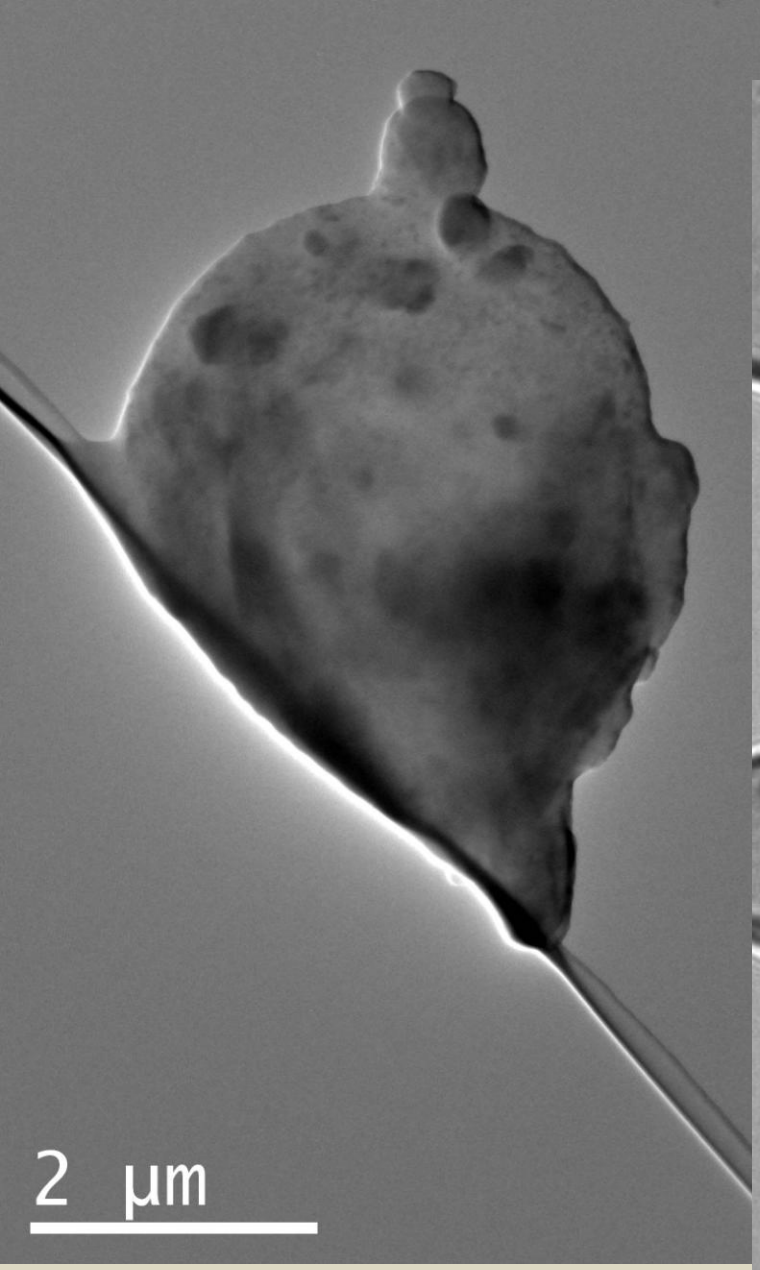

Alicat Scientific

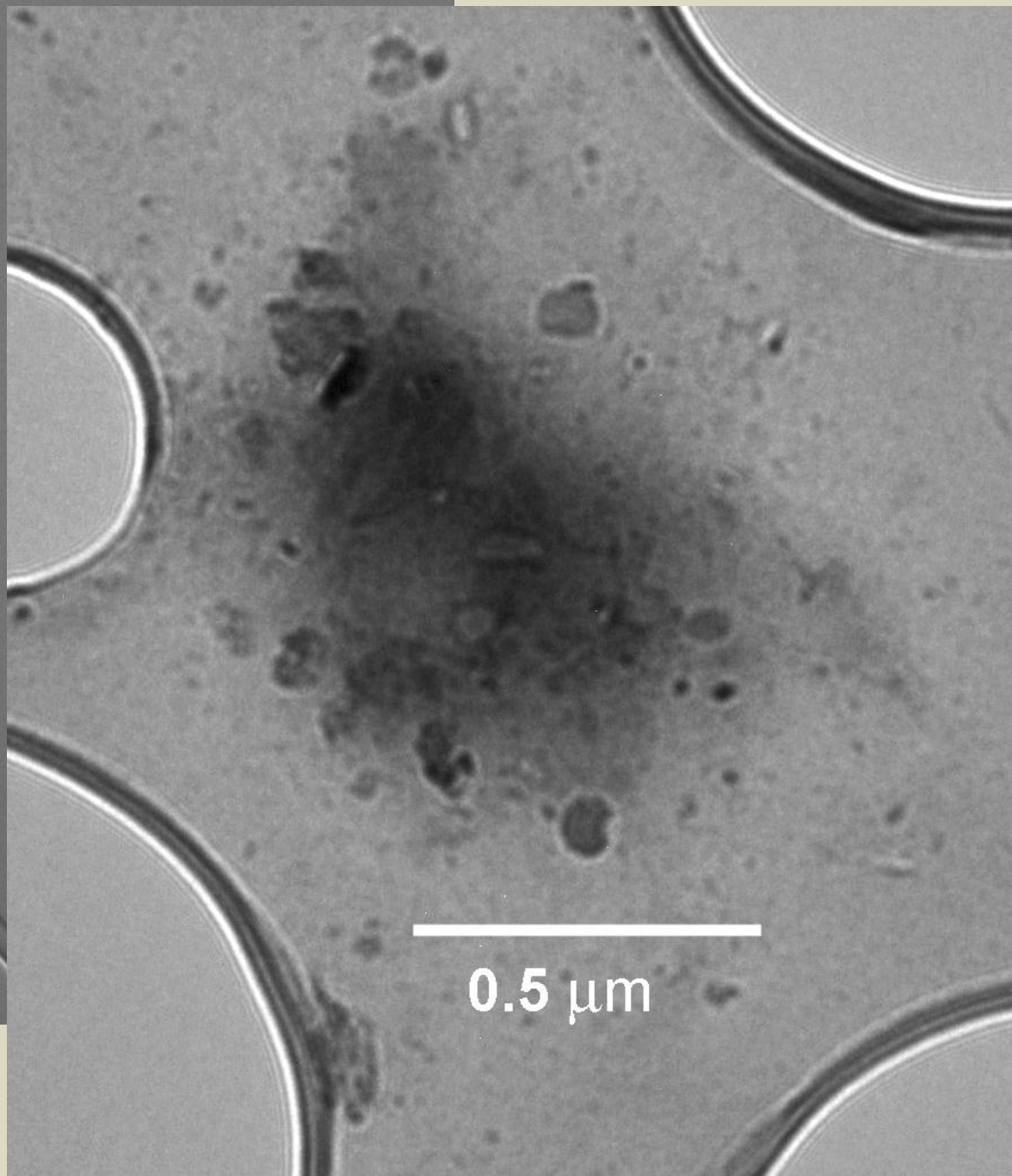
Still to discuss with Paul and Jorgen –

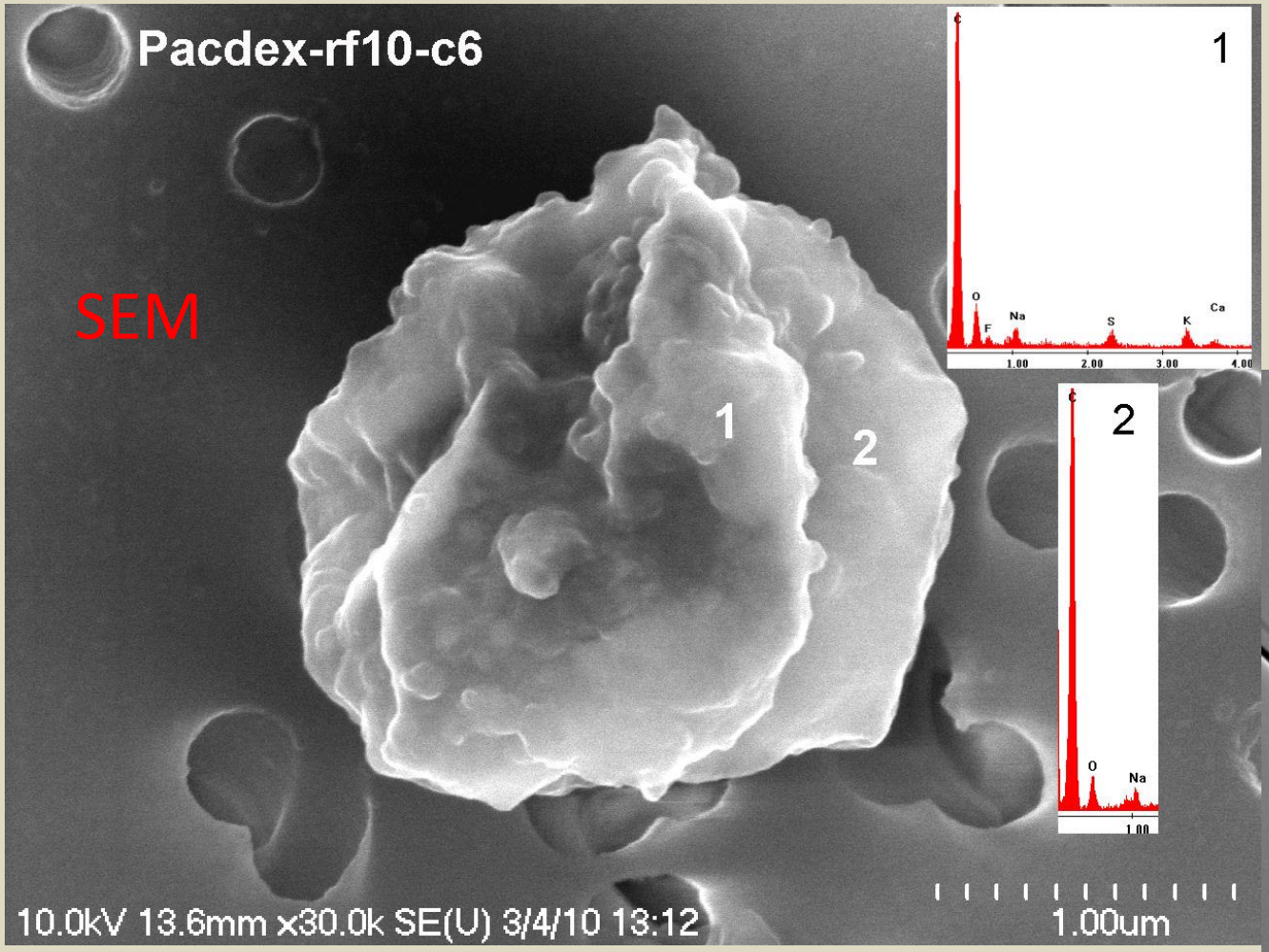
CFDC grids for TEM analysis

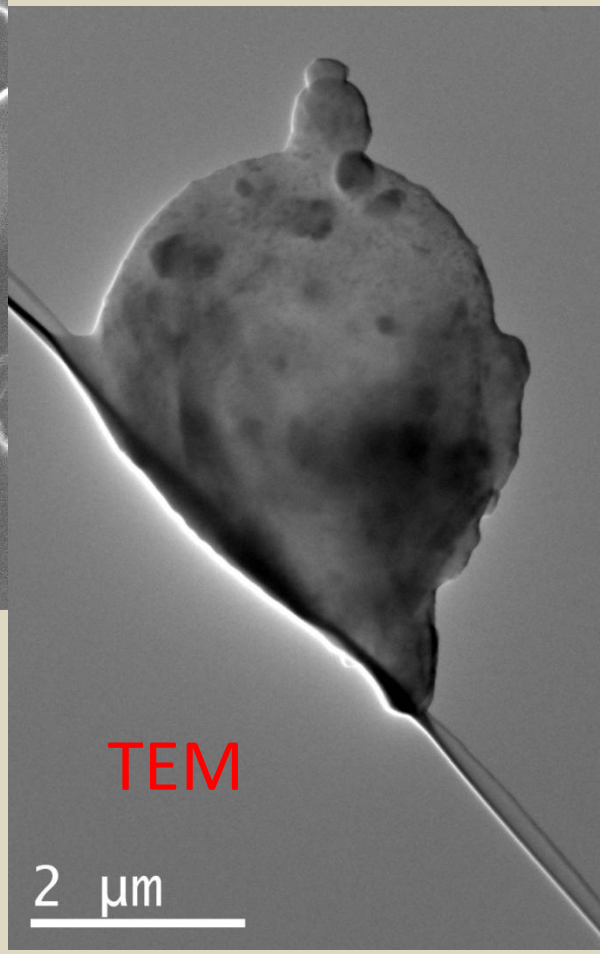
Giant nuclei impactor samples for SEM analysis


VOCALS RF3 500' ambient
06:50:34-06:58:45
10
K sulfate
1
sulfate
9
sulfate
2
soot with minor sulfate
3
organic (?) with K and S
8
soot with minor sulfate
7
4
5
6
0.5 µm


2 µm


0.5 µm


Pacdex-rf10-c6
SEM
1
2
1
O
F
Na
S
K
Ca
1.00
2.00
3.00
4.00
2
O
Na
1.00
10.0kV 13.6mm x30.0k SE(U) 3/4/10 13:12
1.00um


TEM
2 µm

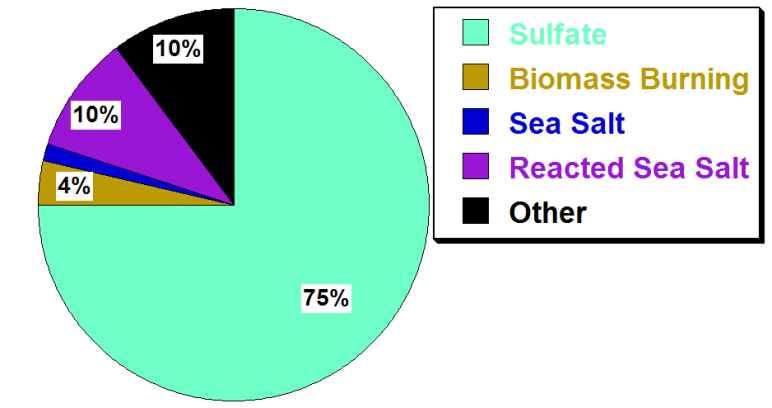
Electron Microscopy on Polluted Samples

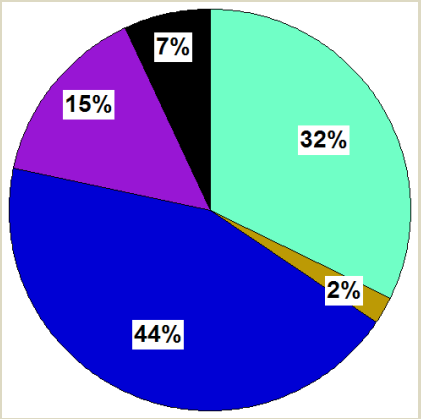
% by Number

0.1-0.2 µm

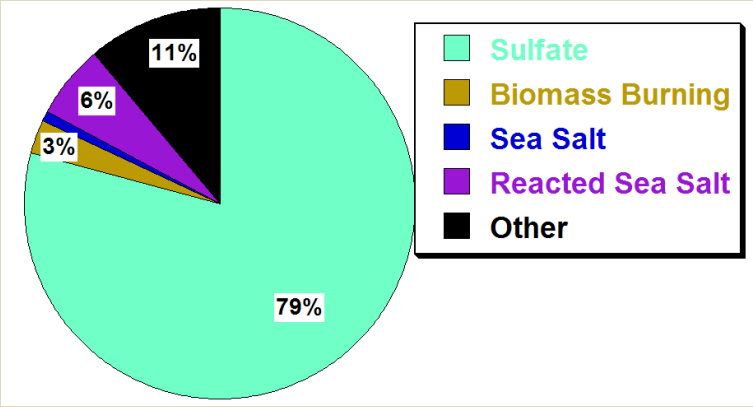
>0.2 µm

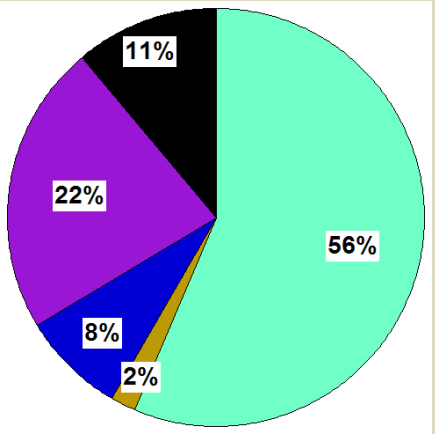
Flight 3





Flight 4





Small particles dominated by sulfate; larger ones by sulfate and sea-salt