

Lidar and Sun Photometer Measurements at Chebogue Point during ICARTT

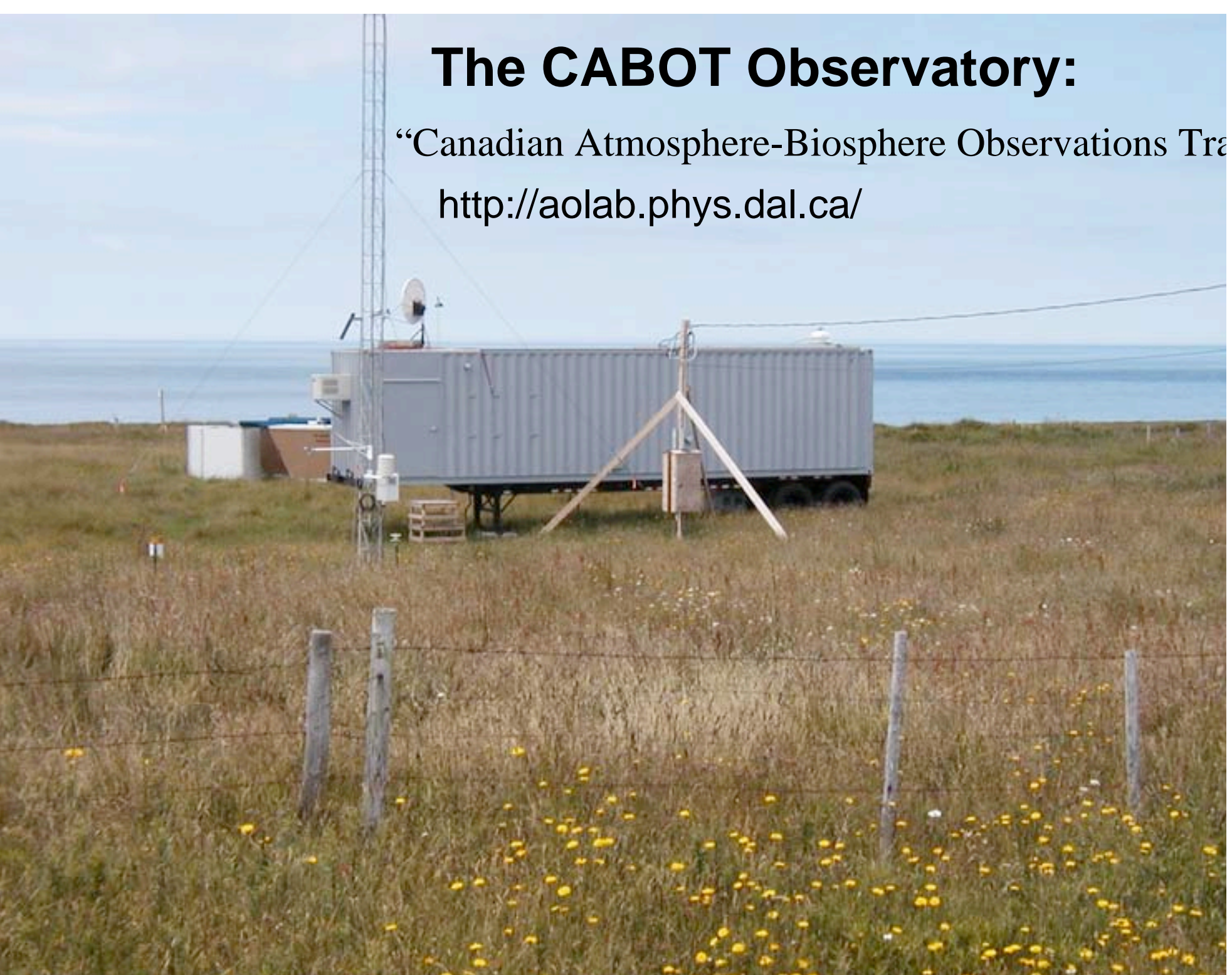
Thomas J. Duck and Bernard Firanski
Dalhousie University



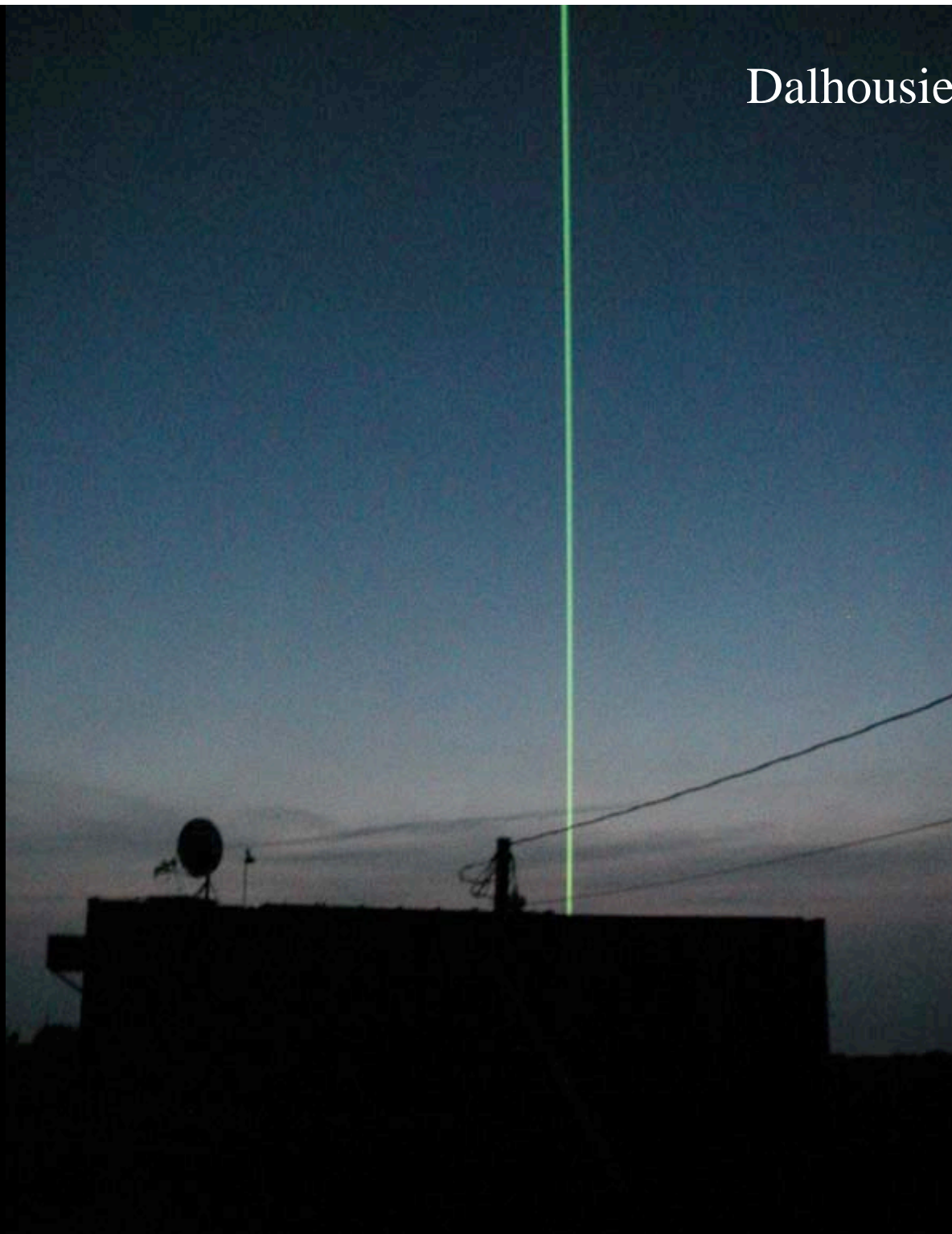
The CABOT Observatory:

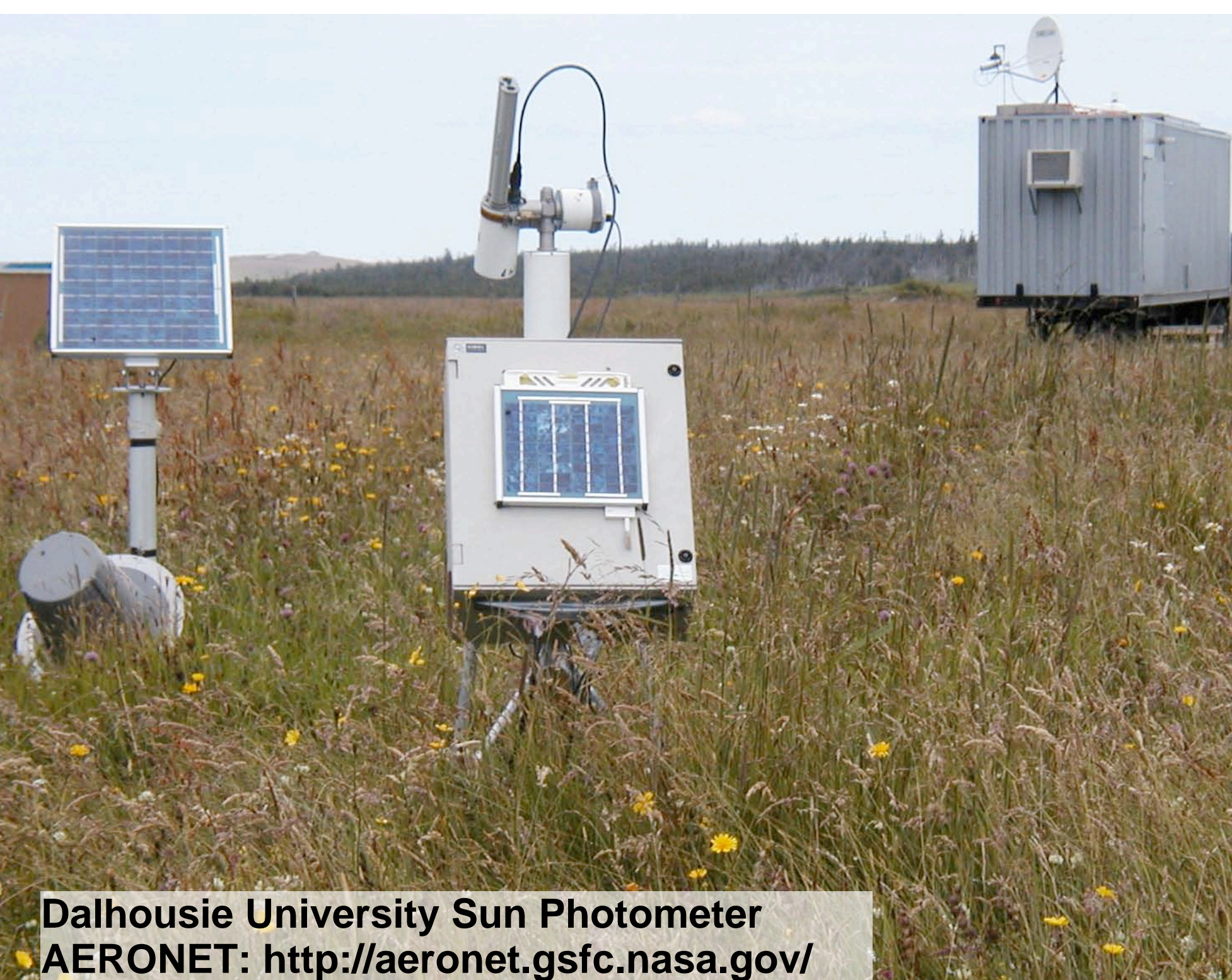
“Canadian Atmosphere-Biosphere Observations Tra

<http://aolab.phys.dal.ca/>



Dalhousie Raman Lid
System



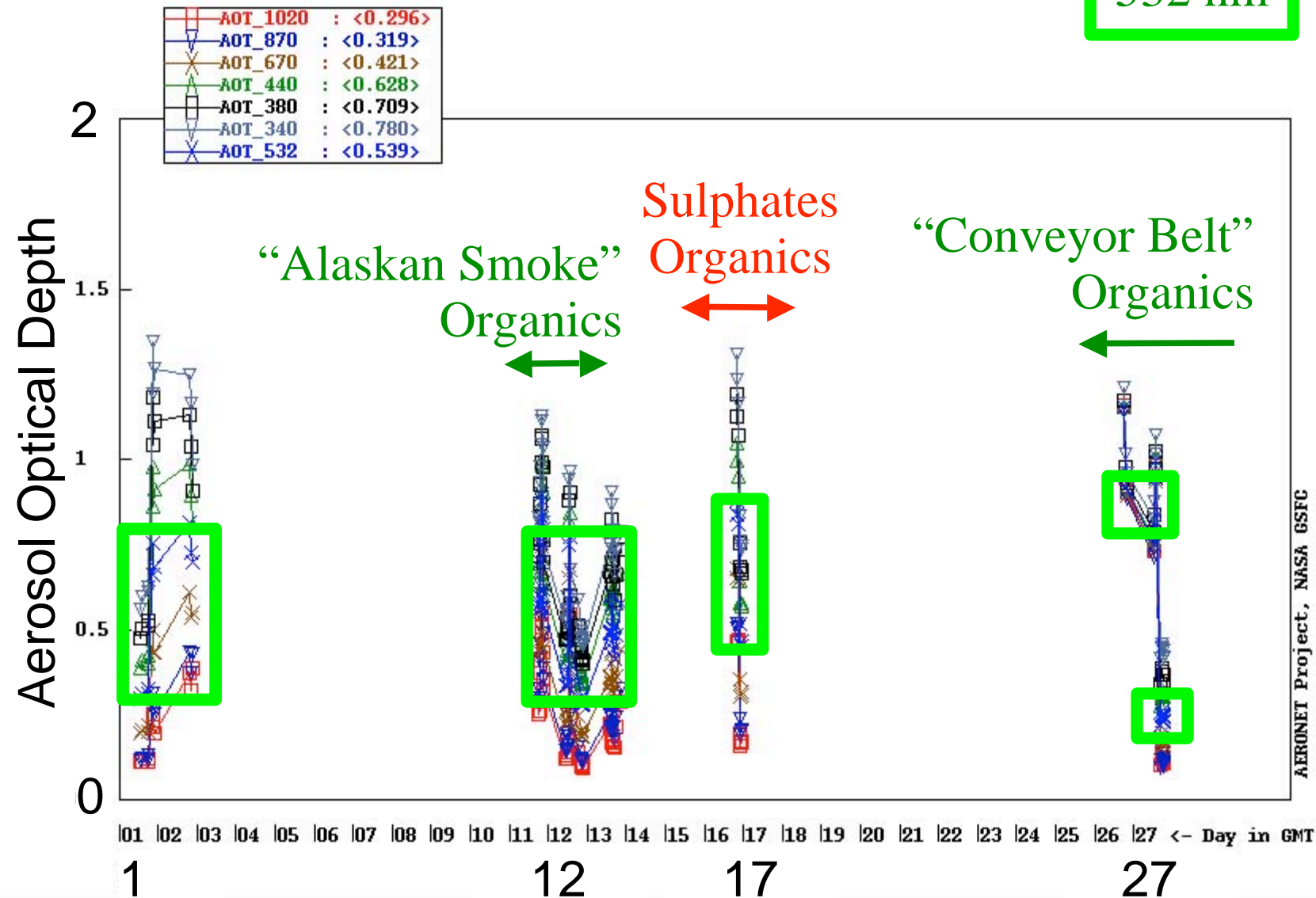


Dalhousie University Sun Photometer
AERONET: <http://aeronet.gsfc.nasa.gov/>

July: Sun Photometer OD

Cheboque Point , N 43 44' 49" , W 66 07' 22" , Alt 0 m,
PI : Glen Lesins, lesins@fizz.phys.dal.ca
Level 1.5 AOT; Data from JUL 2004

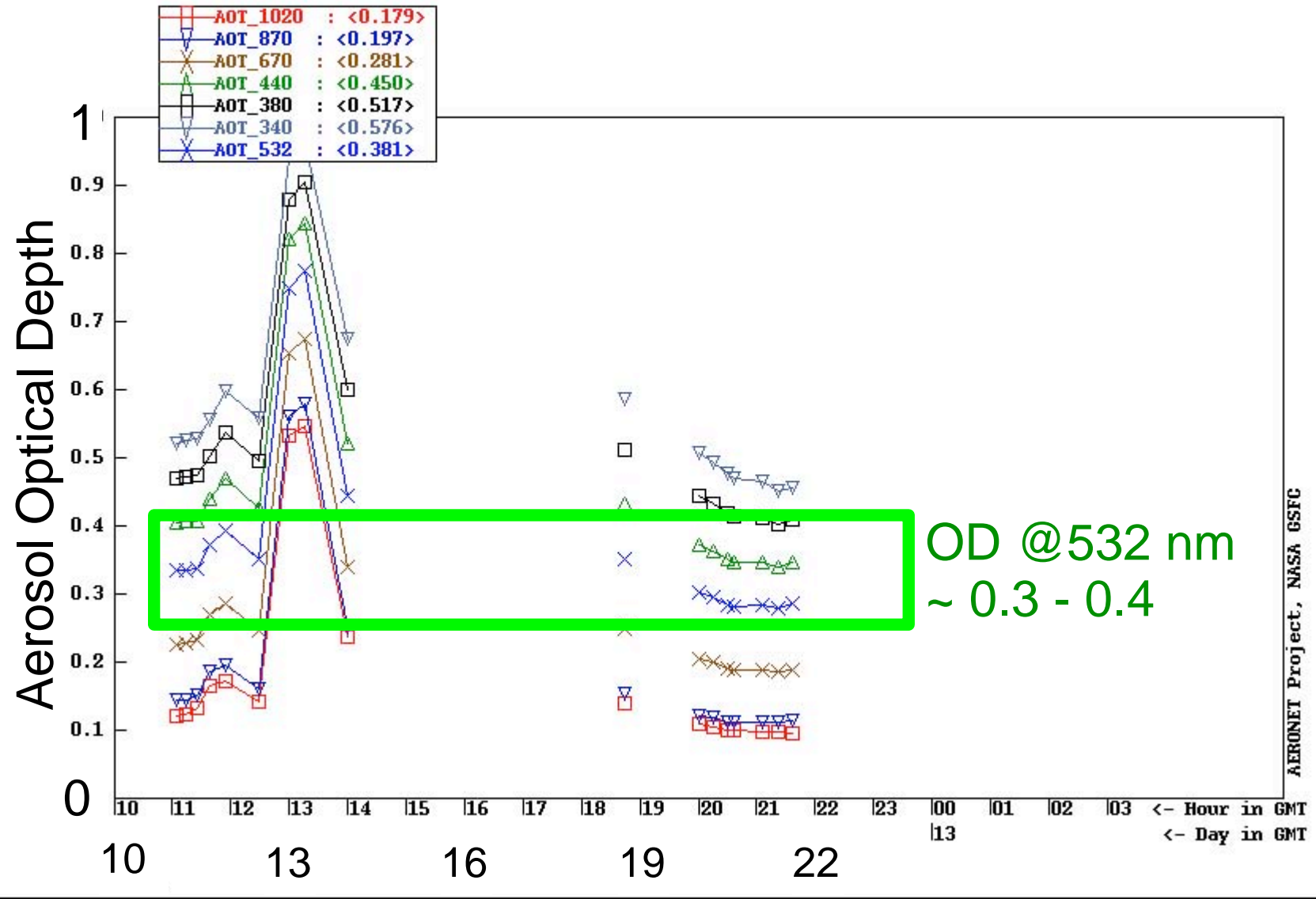
532 nm



Day in GMT

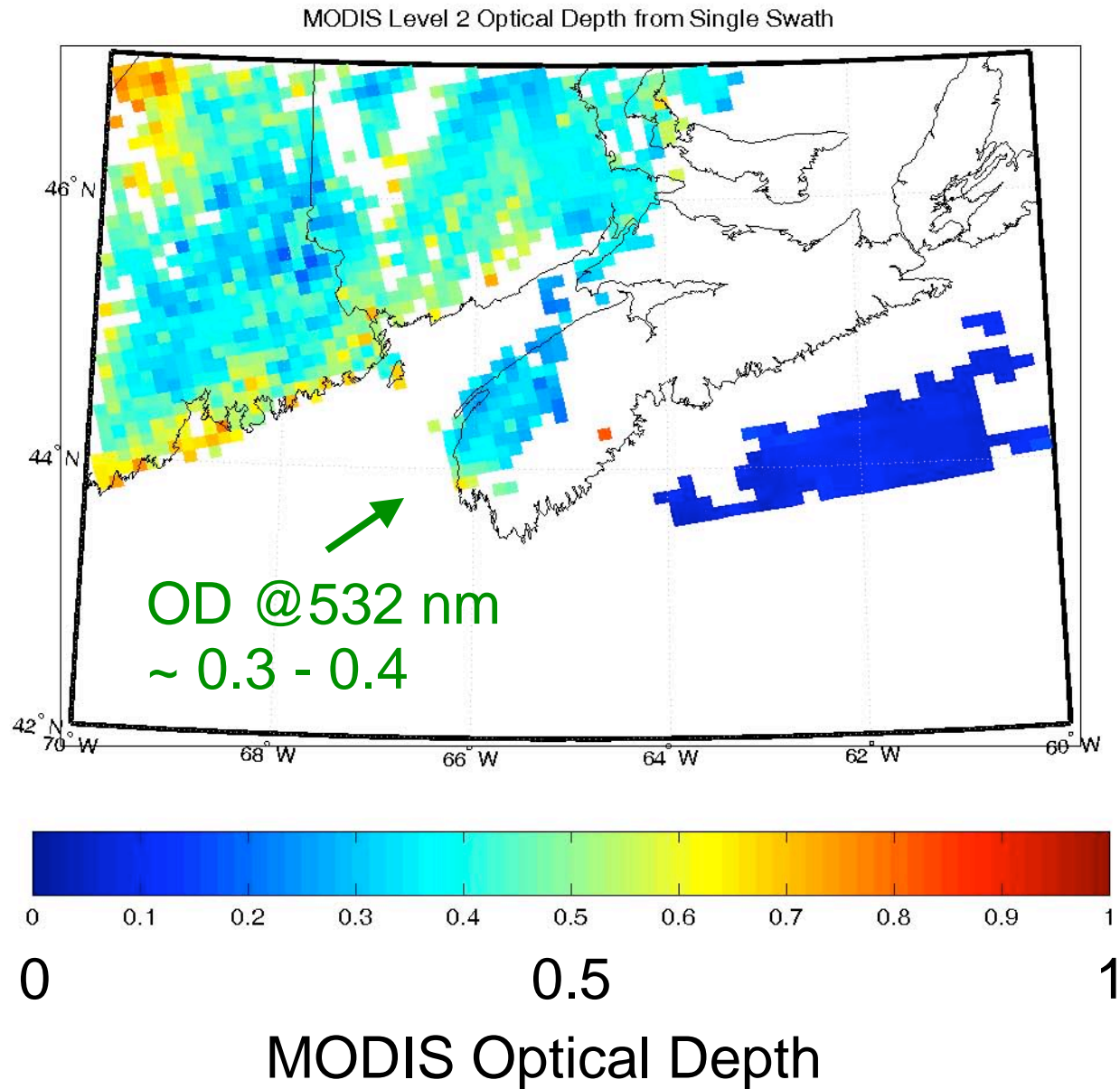
July 12 "Alaskan Smoke" Organics

Chebogue_Point , N 43 44' 49", W 66 07' 22", Alt 0 m,
PI : Glen_Lesins, lesins@fizz.phys.dal.ca
Level 1.5 AOT; Data from 12 JUL 2004

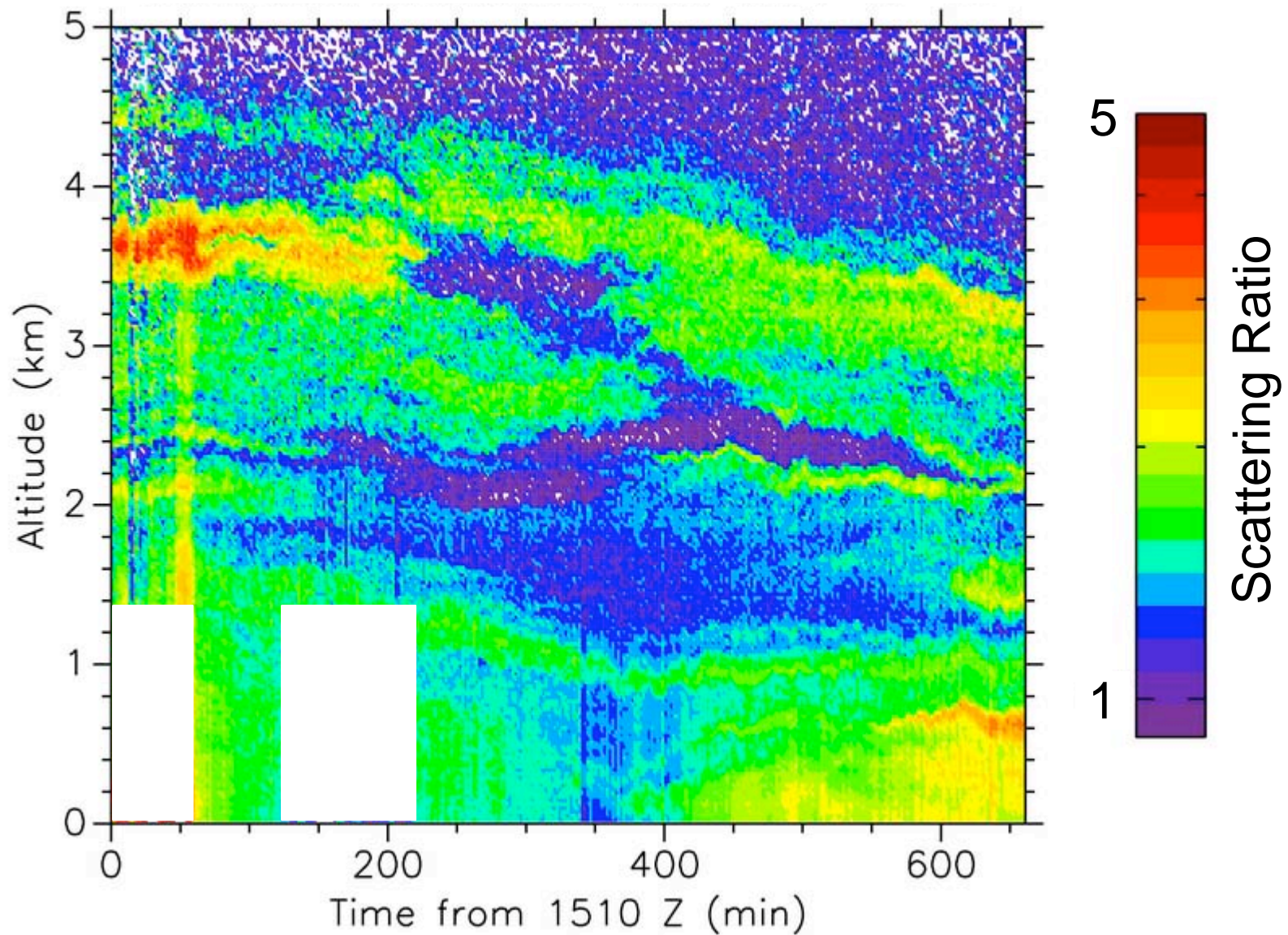


Time (GMT)

July 12 “Alaskan Smoke” Organics



July 12 “Alaskan Smoke” Organics



July 12 "Alaskan Smoke" Organics

11:56:03 GMT on 12 JUL 2004

Data from Chebogue_Point

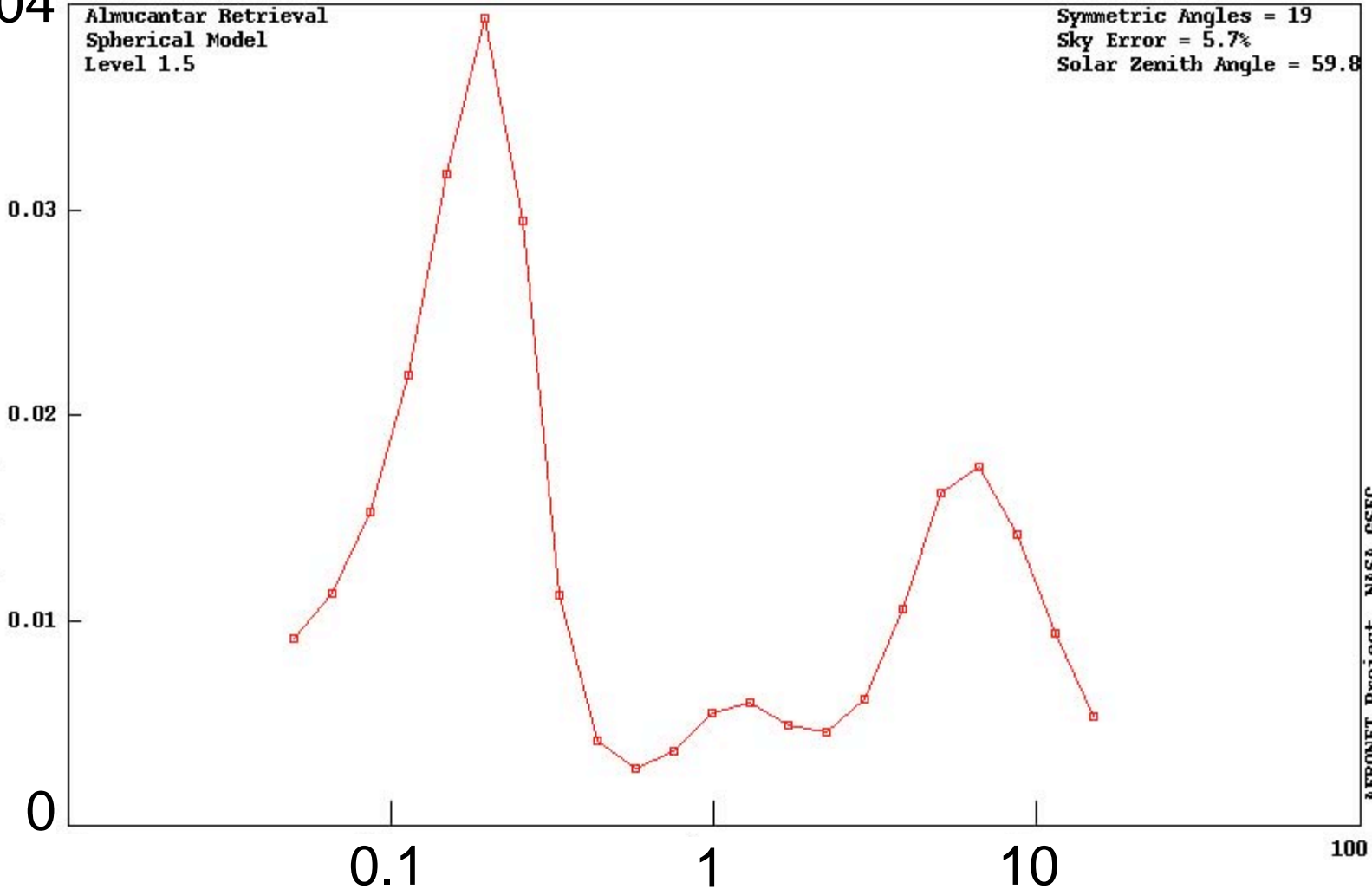
	REFR	REFI	SSA	ASYM
440nm	1.560	0.112	0.6410	0.6925
670nm	1.546	0.127	0.5685	0.6174
870nm	1.539	0.135	0.5020	0.5557
1020nm	1.567	0.159	0.4490	0.5138

0.04

Size Distribution ($\mu\text{m}^3/\mu\text{m}^2$)

Almucantar Retrieval
Spherical Model
Level 1.5

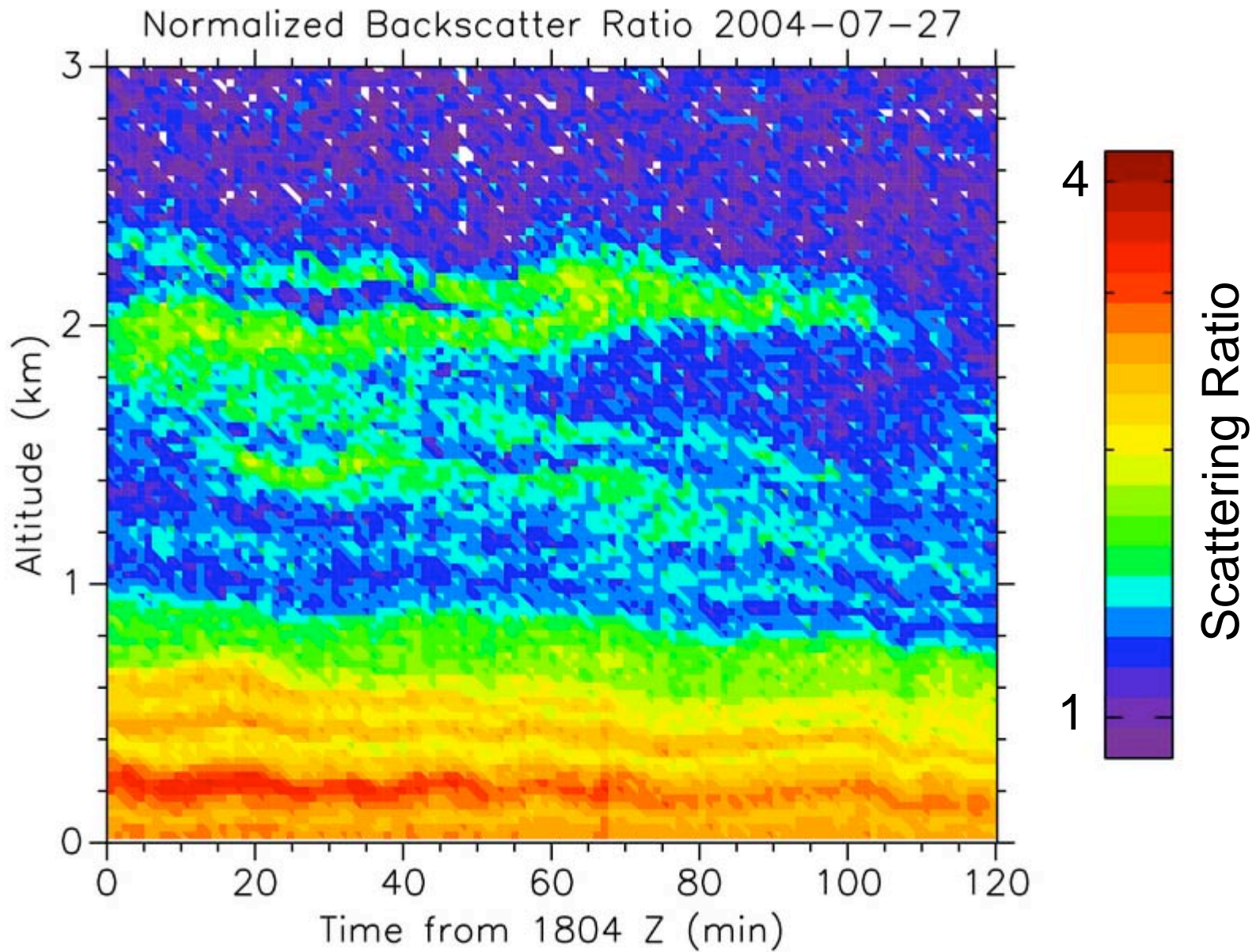
Symmetric Angles = 19
Sky Error = 5.7%
Solar Zenith Angle = 59.8



AERONET Project, NASA GSFC

Particle Radius (μm)

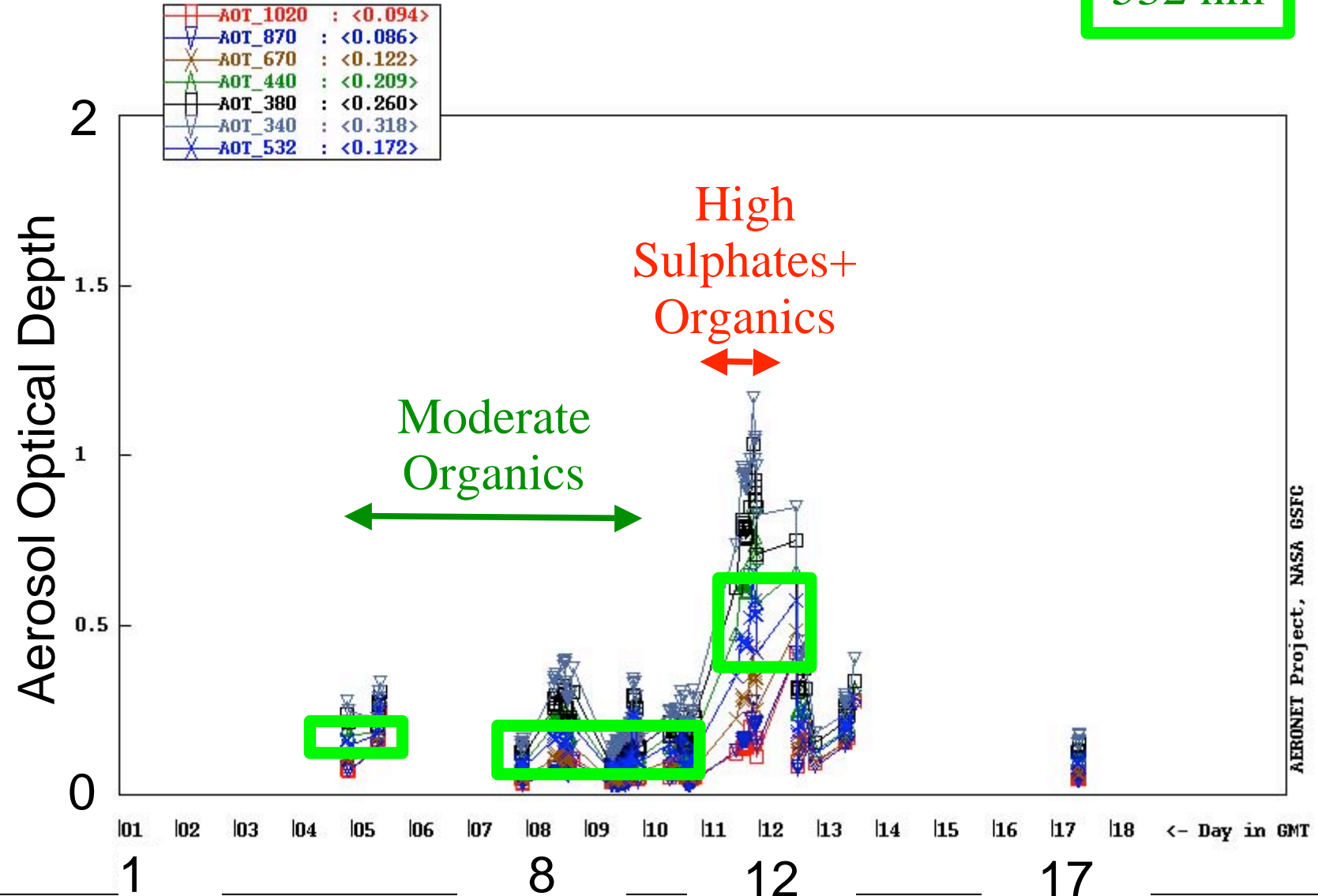
27 July “Warm Conveyor Belt”



August: Sun Photometer OD

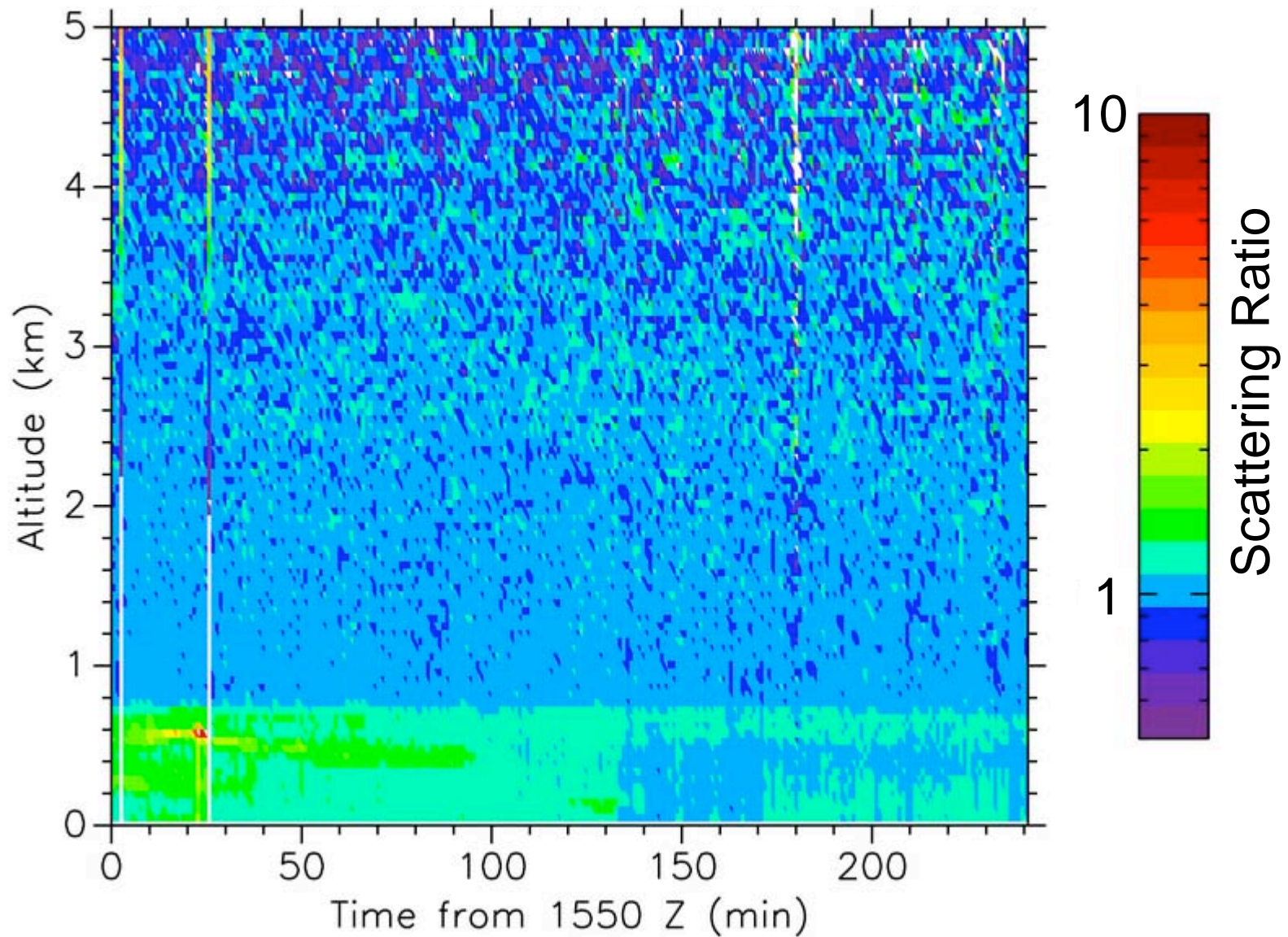
Chebogue Point , N 43 44' 49" , W 66 07' 22" , Alt 0 m,
PI : Glen Lesins, lesins@fizz.phys.dal.ca
Level 1.5 AOT; Data from AUG 2004

532 nm

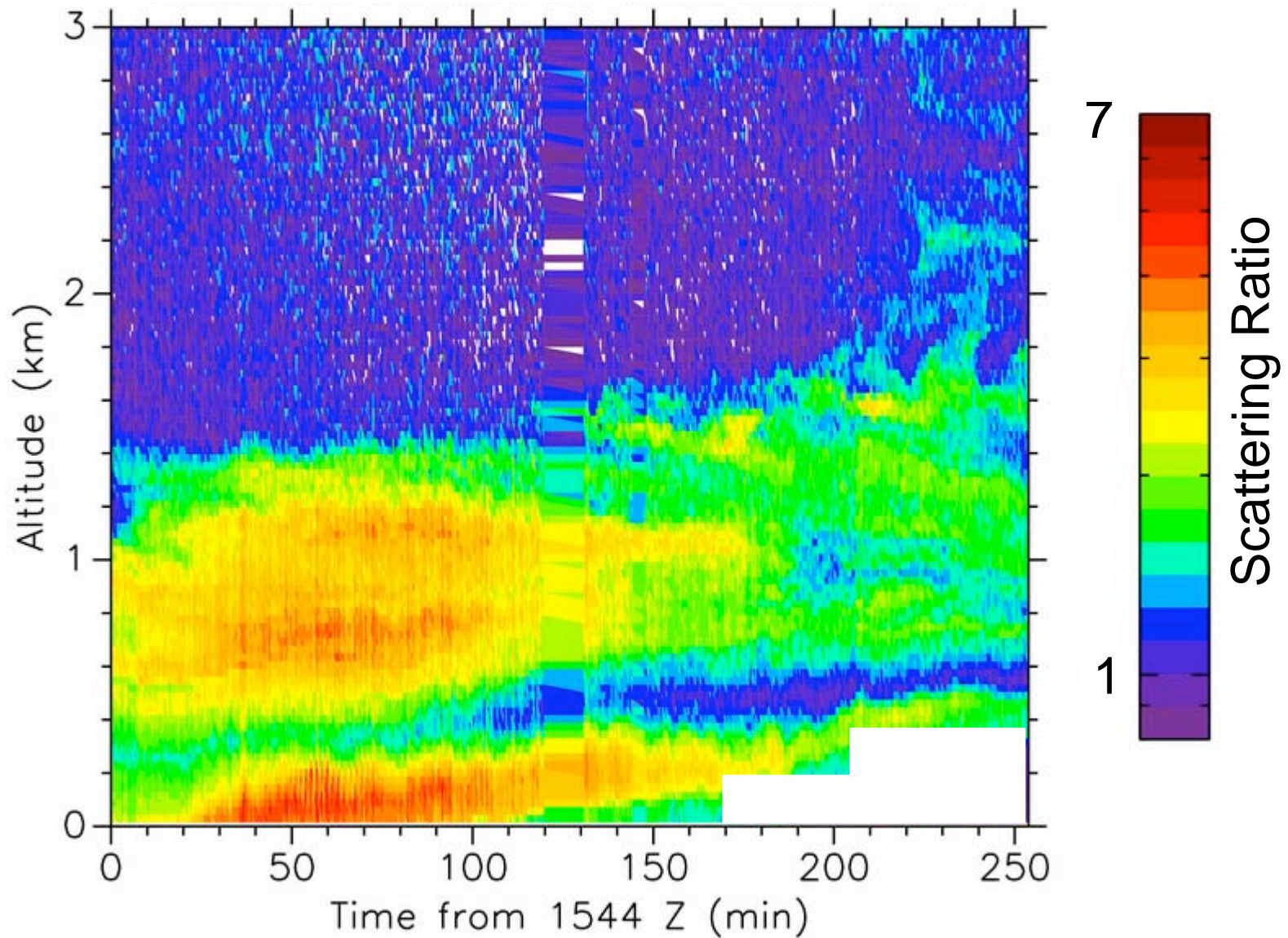


Day in GMT

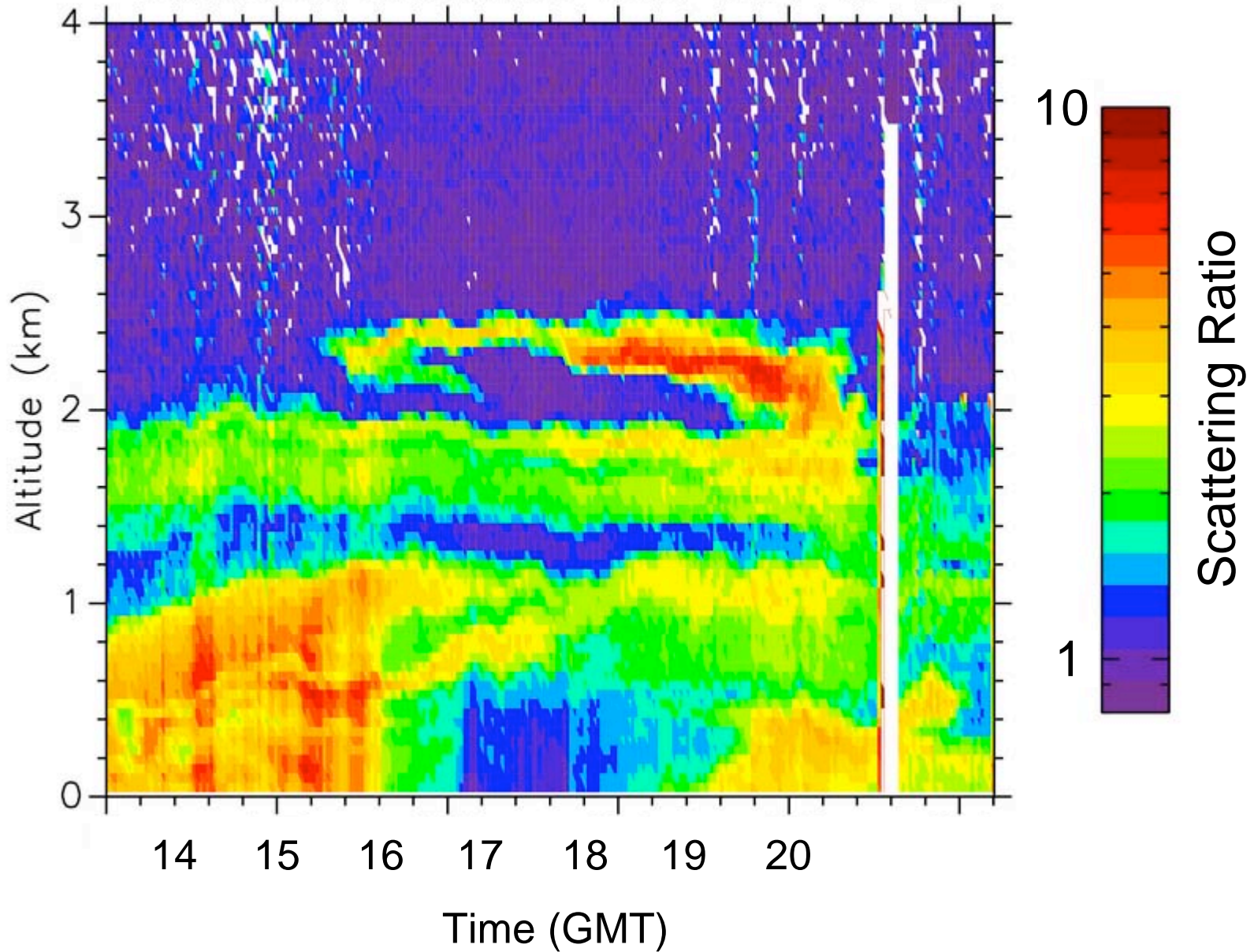
8 August "Moderate Organics", OD 0.2



11 August “High Sulphates+Organics”, OD 0.5

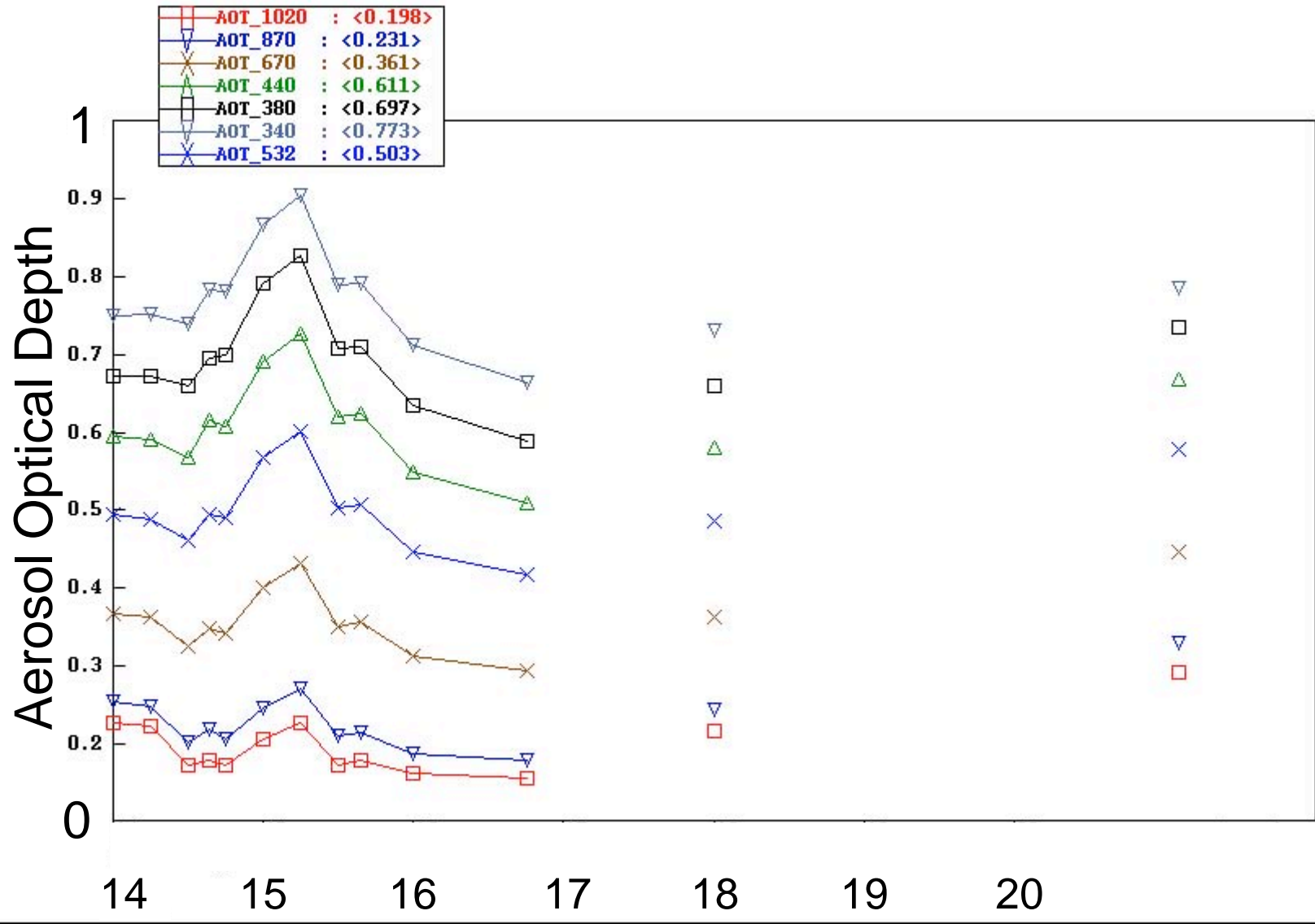


13 July Case Study



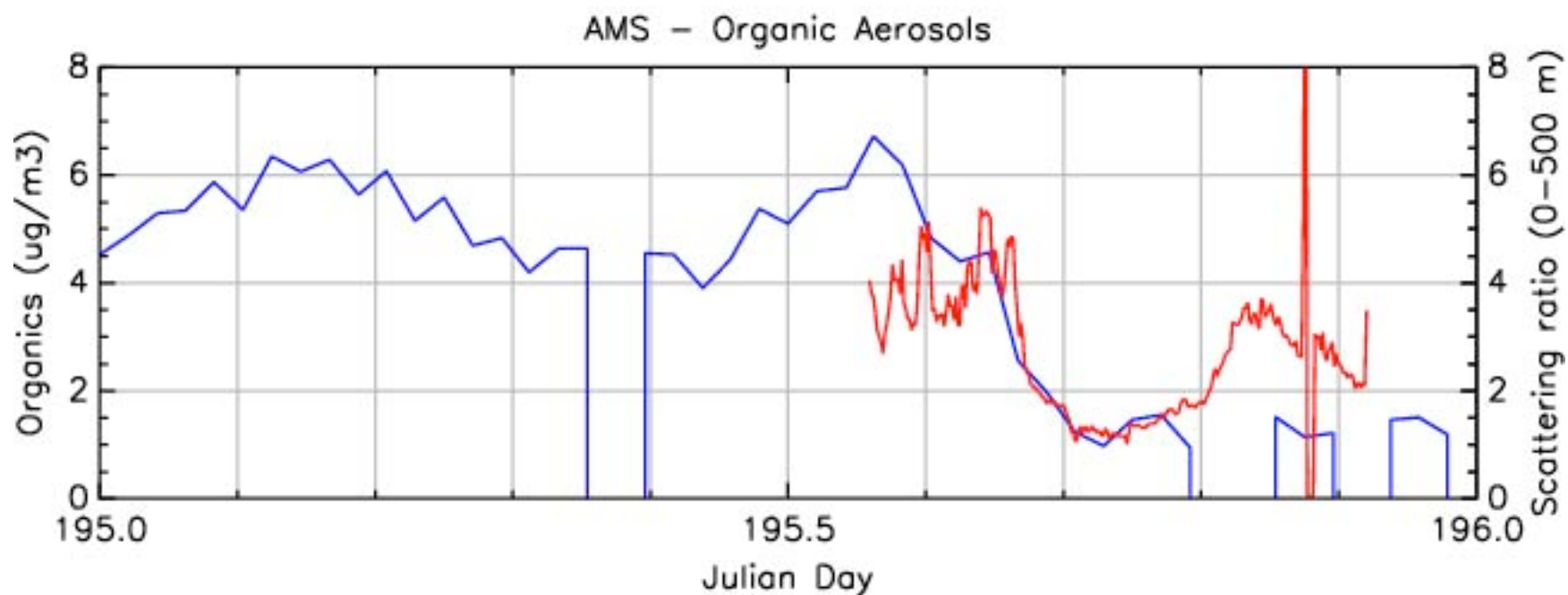
13 July Case Study

Cheboque Point , N 43 44' 49" , W 66 07' 22" , Alt 0 m,
PI : Glen Lesins, lesins@fizz.phys.dal.ca
Level 1.5 AOT; Data from 13 JUL 2004



AERONET Project, NASA GSFC

Lidar (red) - AMS (blue) Comparison



Chebogue Point Lidar Days, 2004

“Alaskan smoke”

1. 11 July
2. 12 July
3. 13 July

“Warm conveyor belt”

4. 27 July
5. 7 August
6. 8 August
7. 9 August
8. 10 August
9. 11 August --- “Large sulphates/organics event”
10. 12 August
11. 13 August

The End



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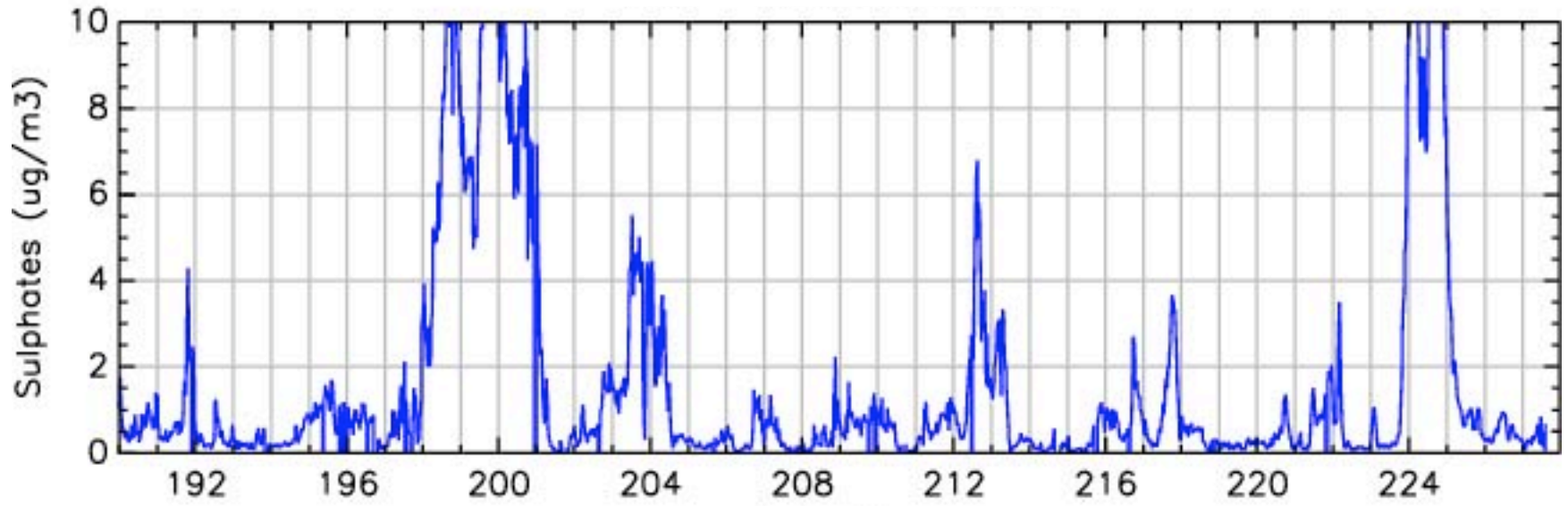


Atmospheric-Optics Laboratory

Lidar: <http://aolab.phys.dal.ca/>

AERONET: <http://aeronet.gsfc.nasa.gov/>

Aerosol Mass Spectrometer



“Alaskan Smoke” Organics Sulphates+ Organics “Conveyor belt” Organics Sulphates+ Organics

