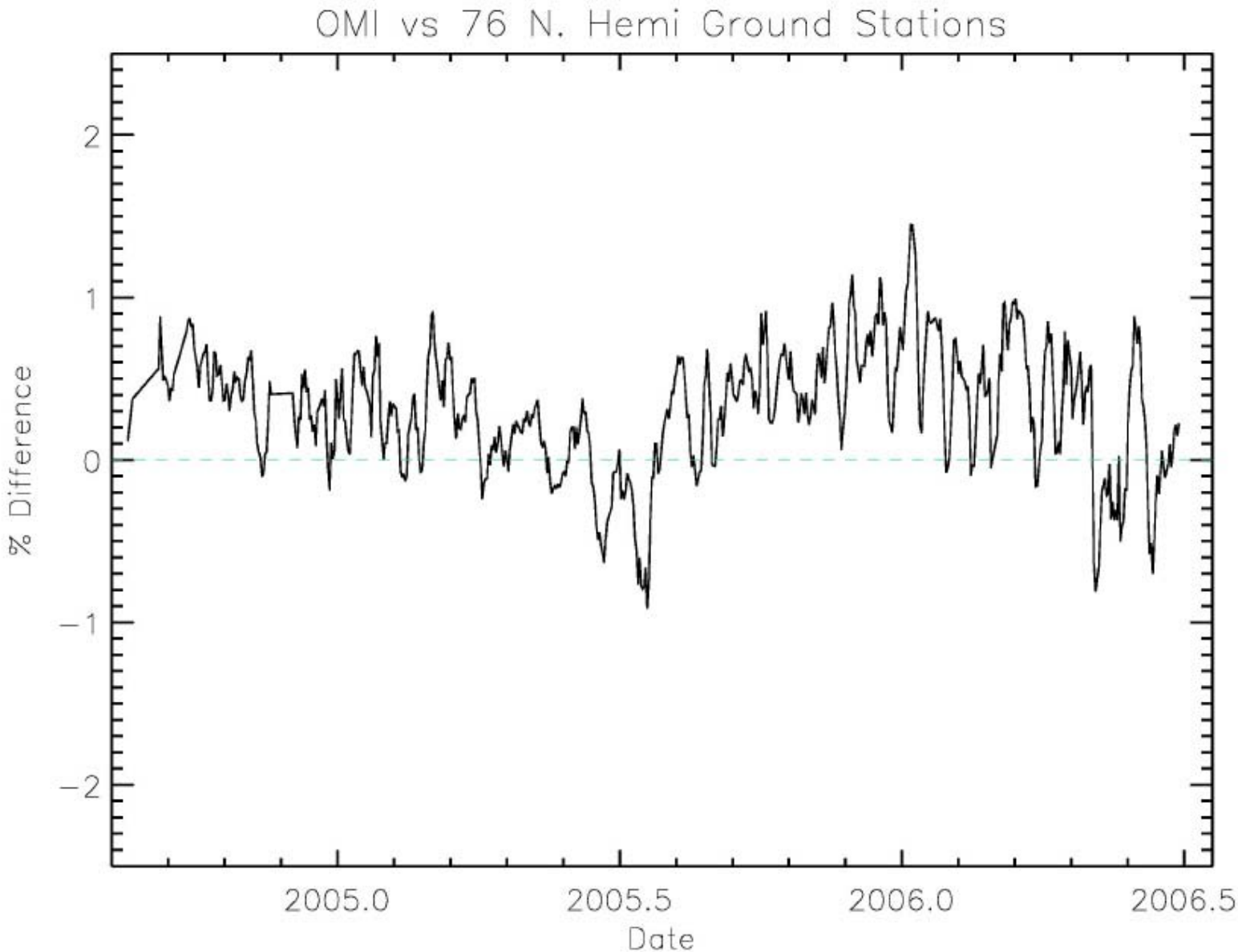
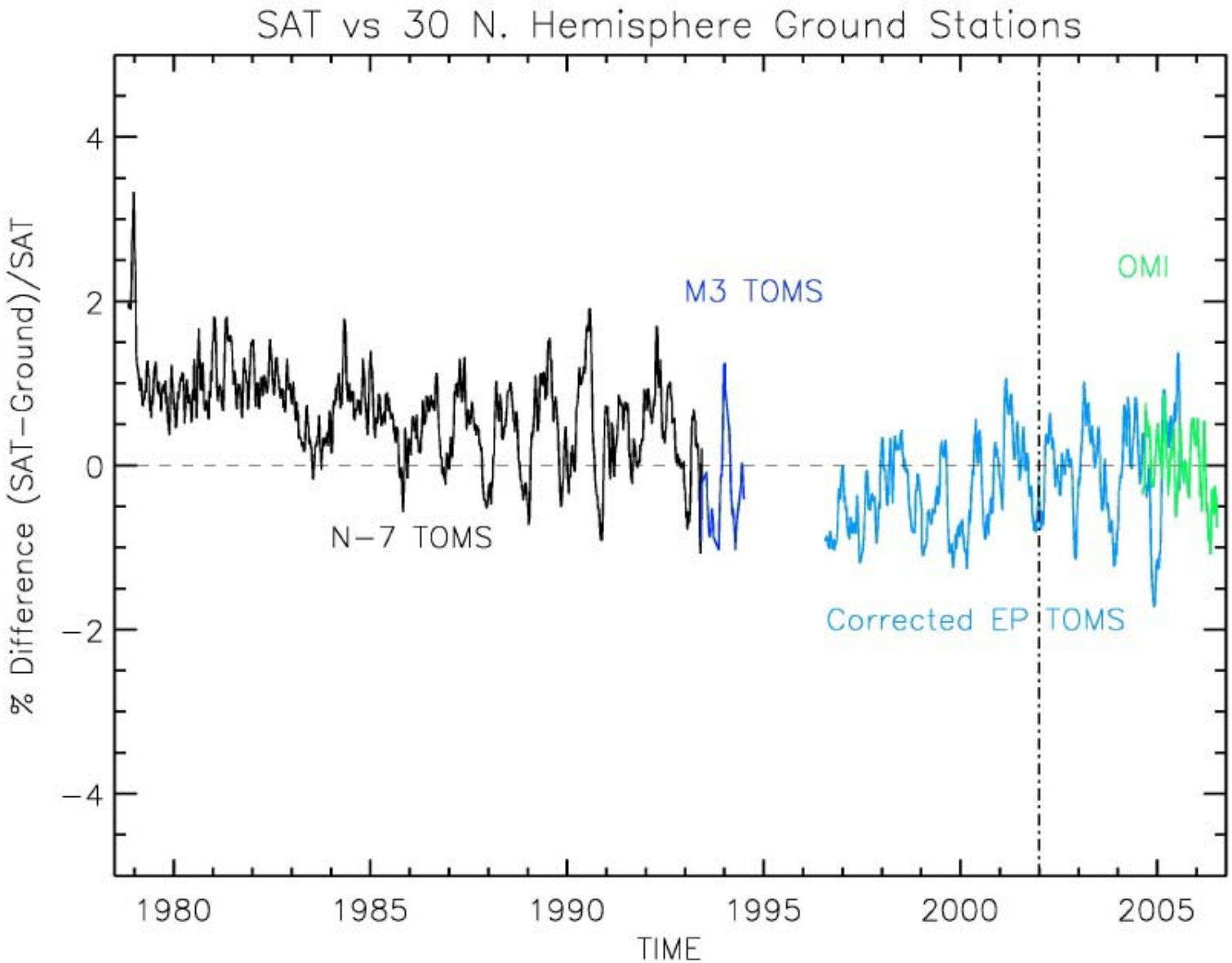
OMI-TOMS Total Column Ozone

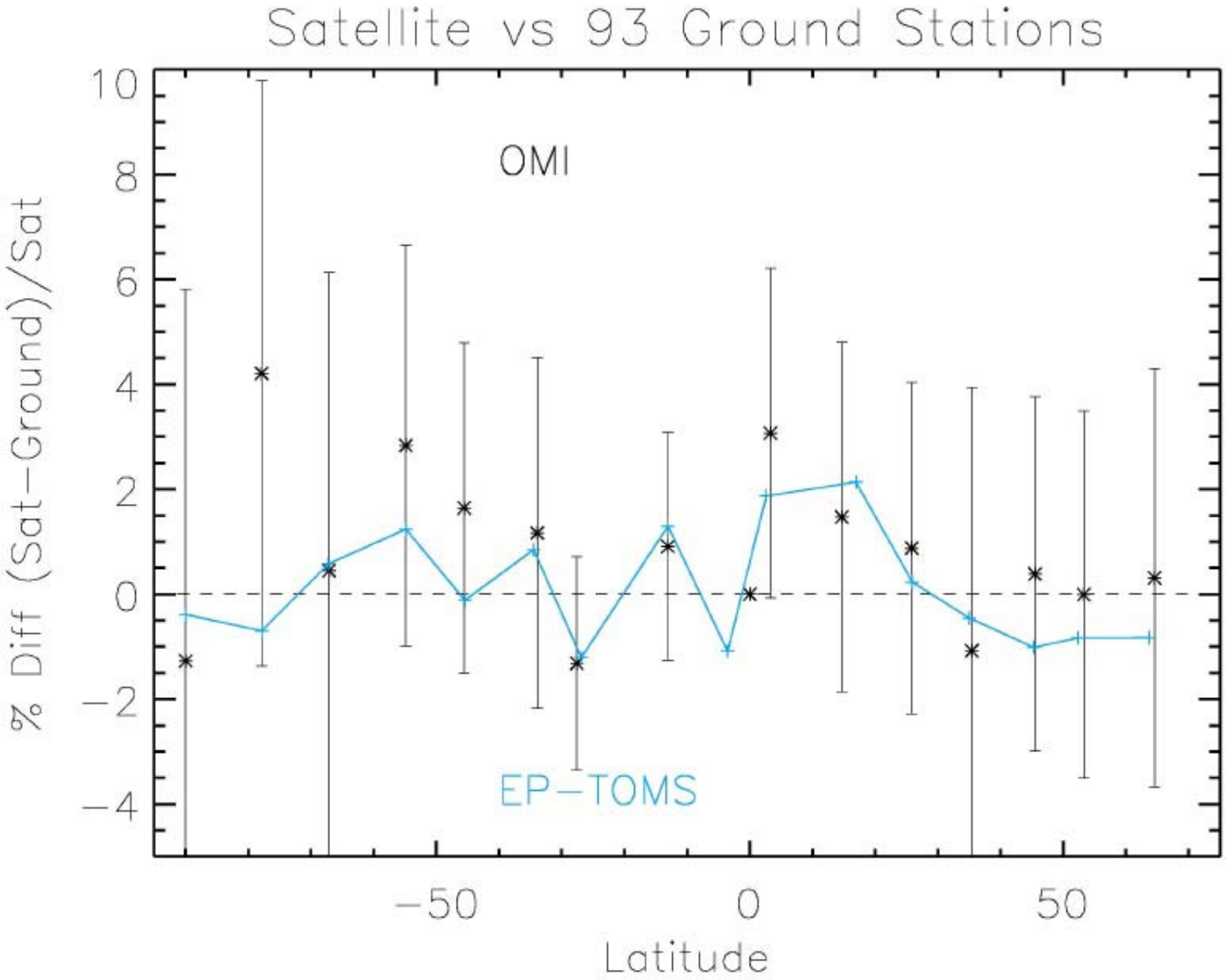
A Comparison to Ground-based Ozone Values & SBUV/2

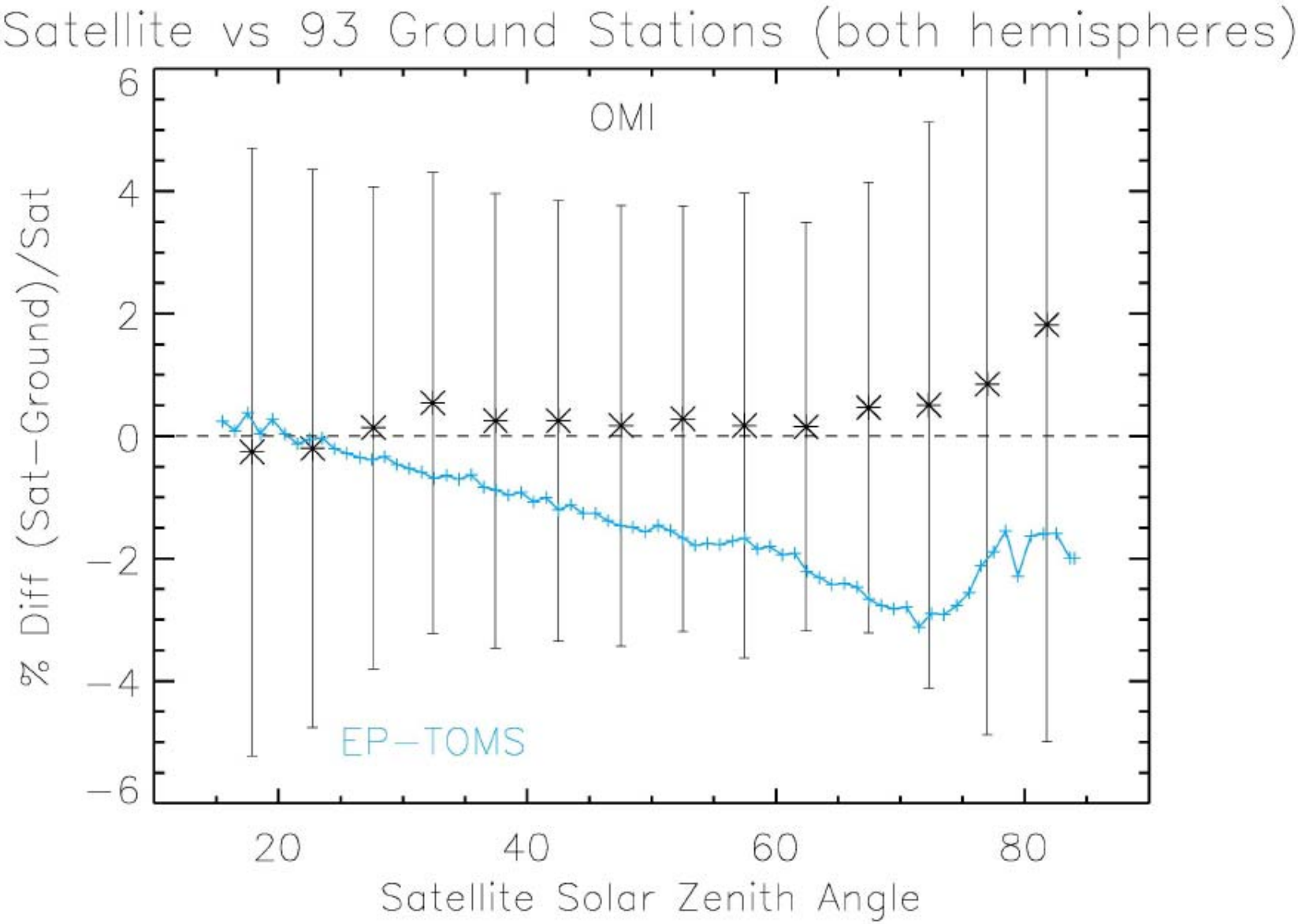
Gordon Labow, D Kahn, B Bojkov
SSAI/Adnet
NASA-Goddard Space Flight Center

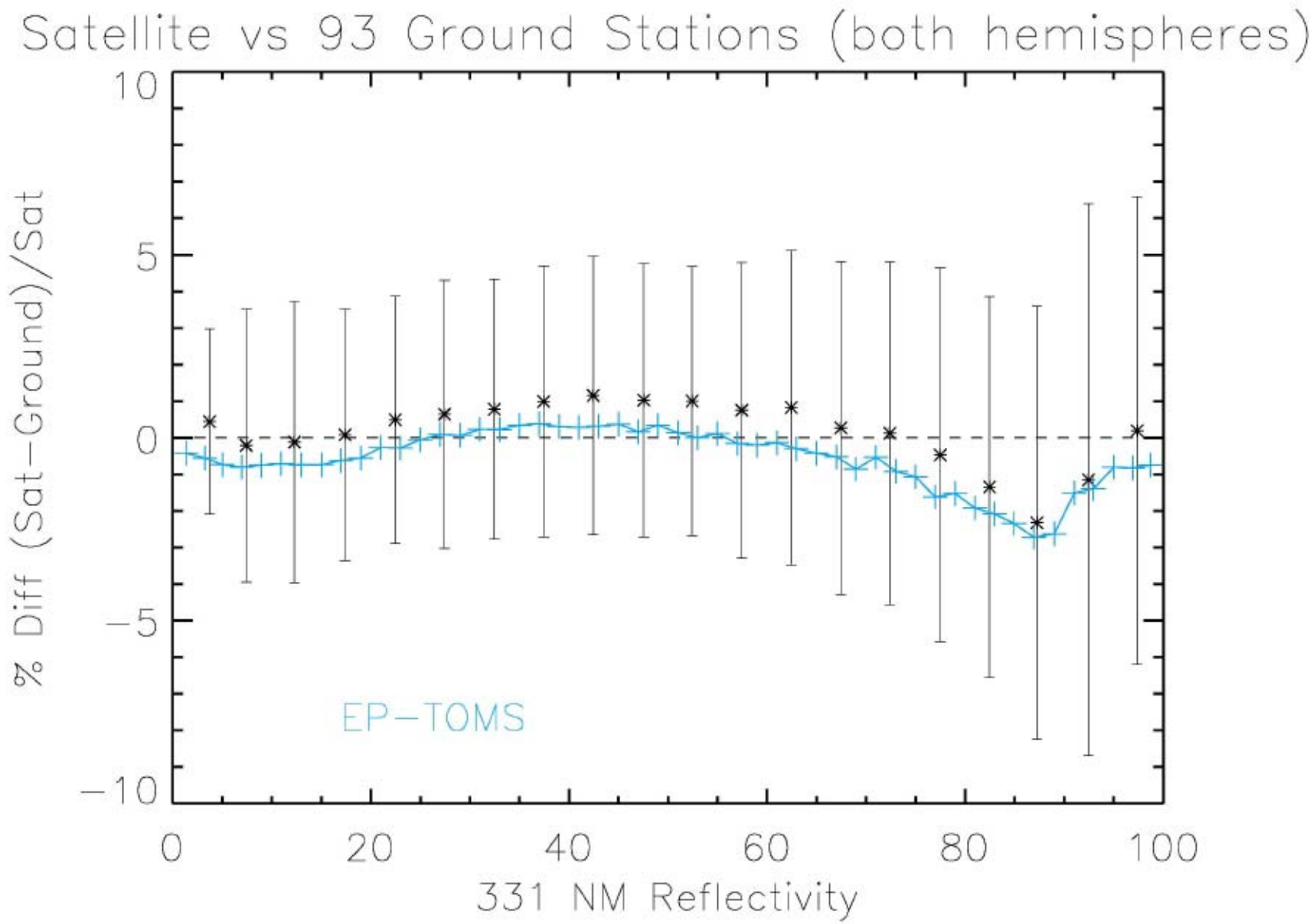
AURA Science Team Meeting, 12 September, 2006

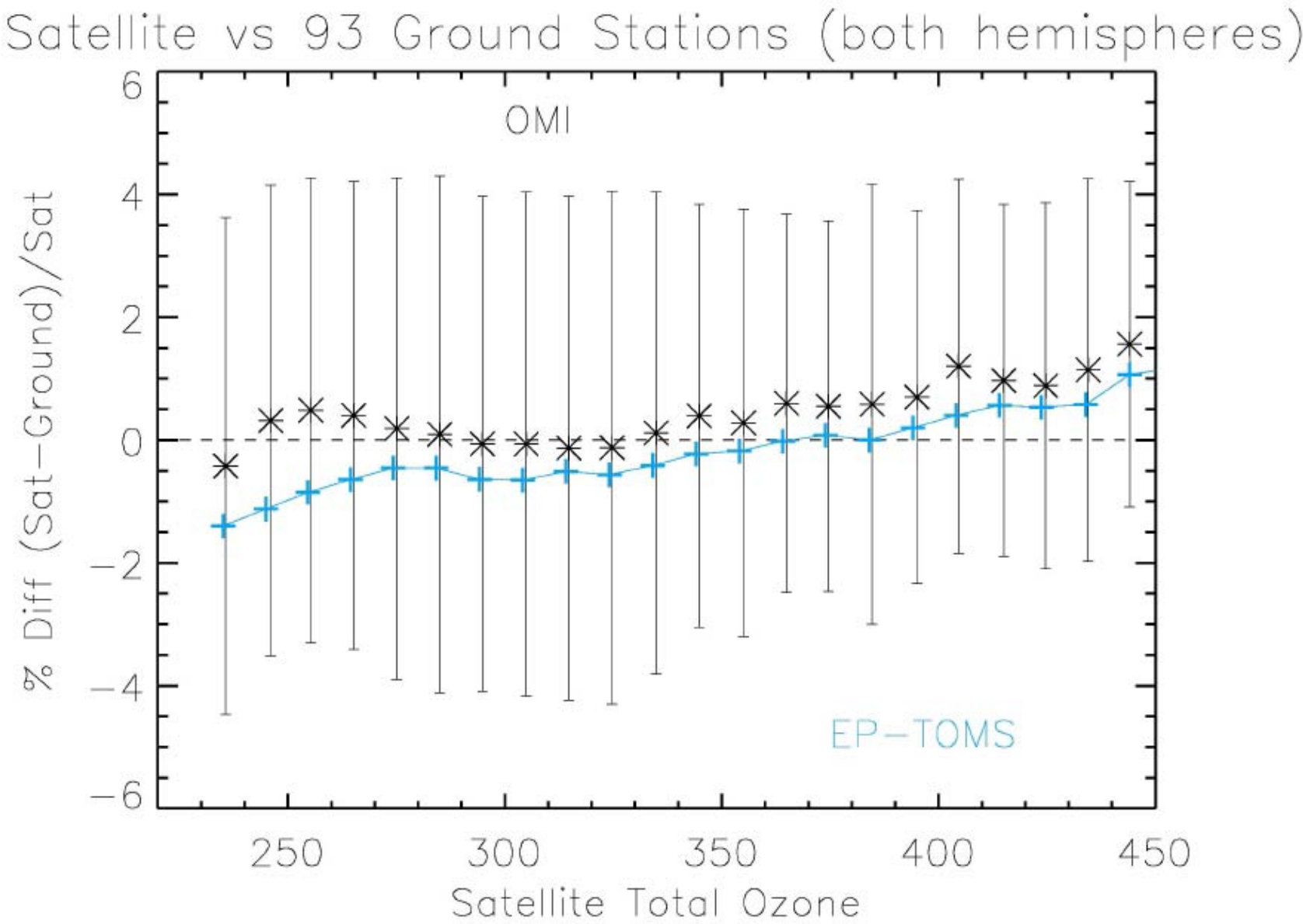

OMI vs 76 N. Hemi Ground Stations
% Difference
2
1
0
−1
−2
2005.0
2005.5
2006.0
2006.5
Date


SAT vs 30 N. Hemisphere Ground Stations
% Difference (SAT−Ground)/SAT
4
2
0
−2
−4
1980
1985
1990
1995
2000
2005
TIME
N−7 TOMS
M3 TOMS
Corrected EP TOMS
OMI


Satellite vs 93 Ground Stations
OMI
EP−TOMS
% Diff (Sat−Ground)/Sat
Latitude
10
8
6
4
2
0
−2
−4
−50
0
50

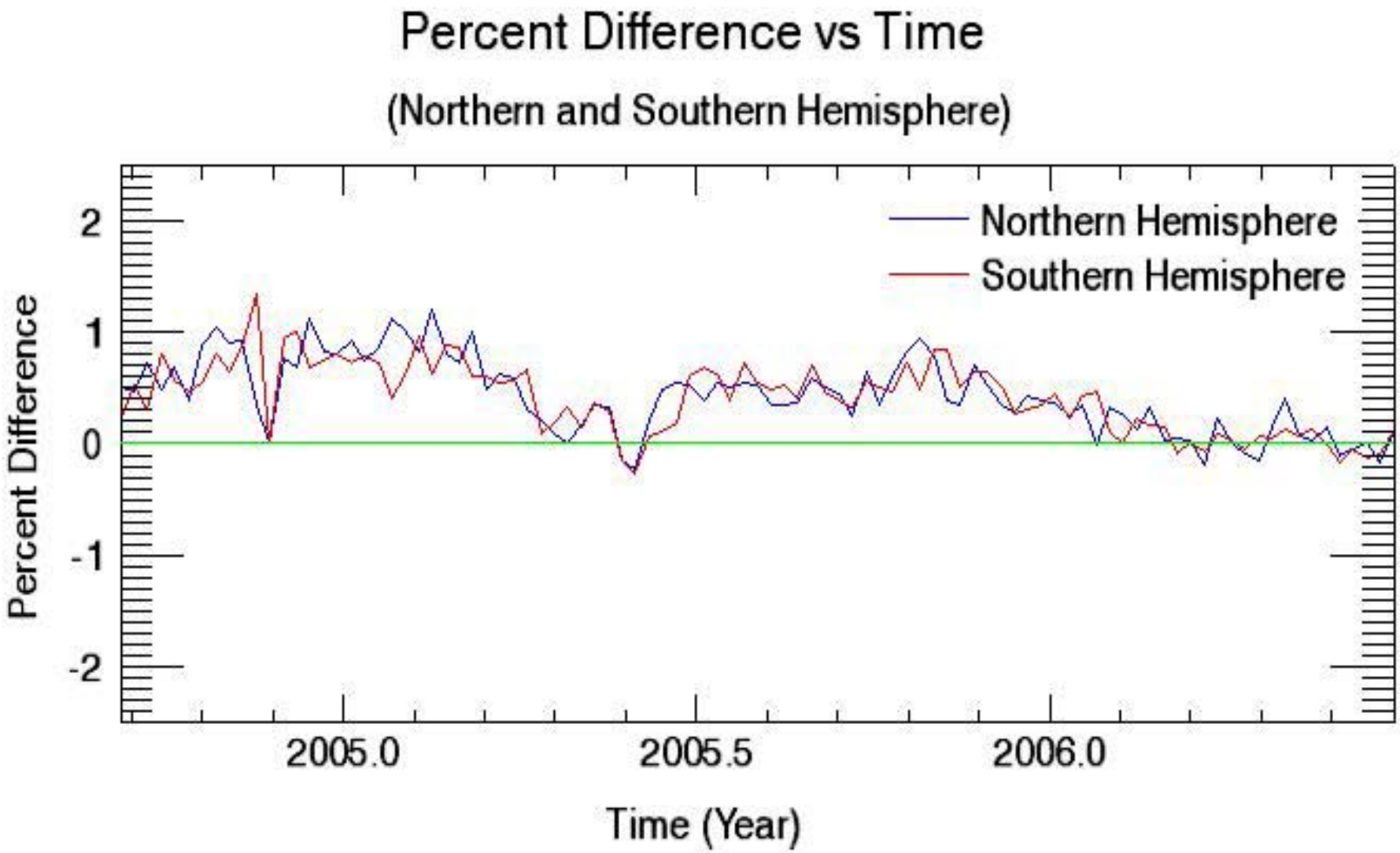

Satellite vs 93 Ground Stations (both hemispheres)
OMI
EP−TOMS
% Diff (Sat−Ground)/Sat
Satellite Solar Zenith Angle
6
4
2
0
−2
−4
−6
20
40
60
80

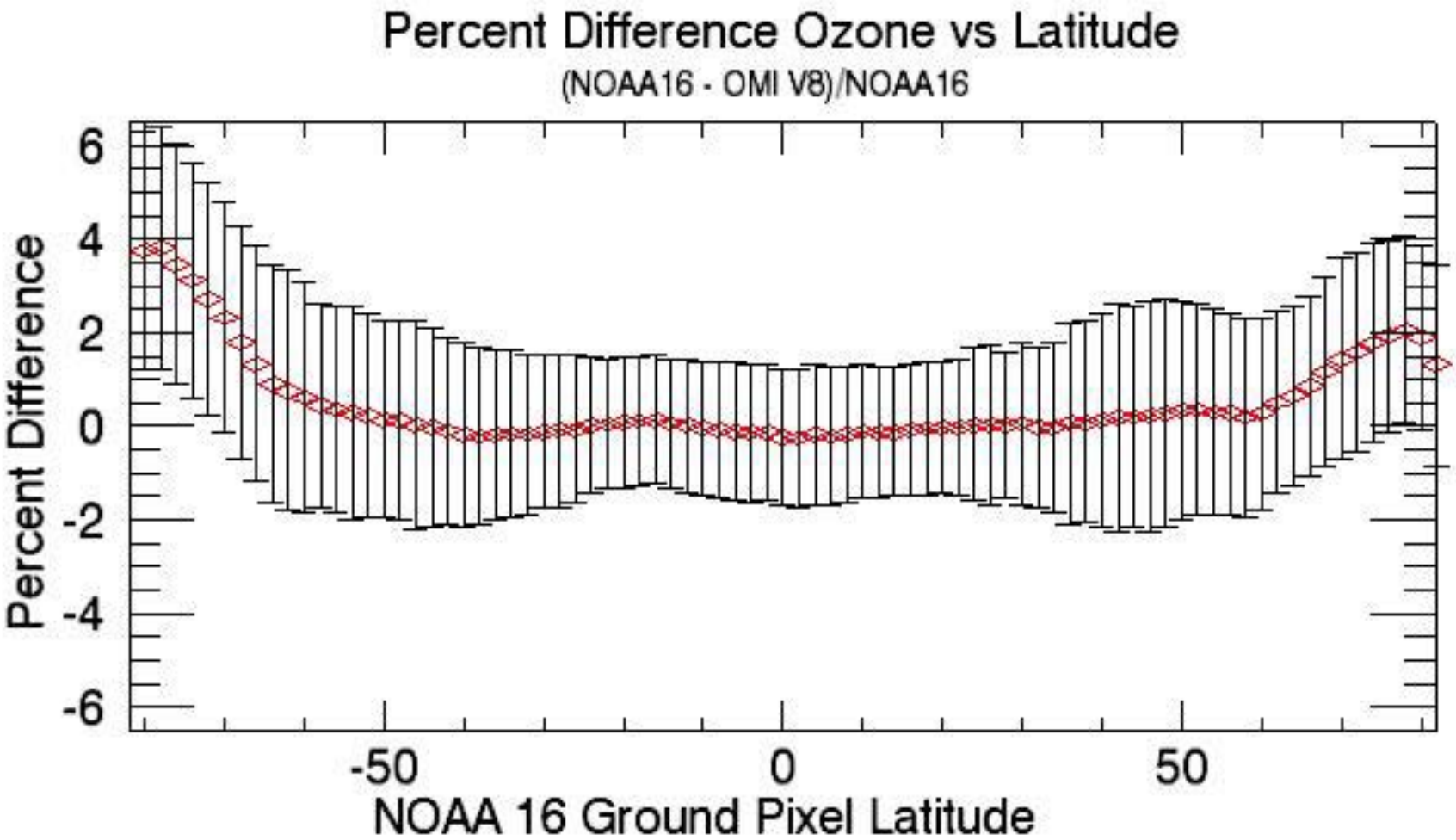

Satellite vs 93 Ground Stations (both hemispheres)
% Diff (Sat−Ground)/Sat
10
5
0
−5
−10
EP−TOMS
0
20
40
60
80
100
331 NM Reflectivity


Satellite vs 93 Ground Stations (both hemispheres)
OMI
EP−TOMS
% Diff (Sat−Ground)/Sat
Satellite Total Ozone
6
4
2
0
−2
−4
−6
250
300
350
400
450

OMI vs NOAA 16 SBUV/2

- Coincident matchups
- Within 1 hour (similar orbits)
- ~82 North to 82 South
- All OMI pixels averaged under SBUV FOV
- Over 700,000 matchups as of 9/1/06


Percent Difference vs Time
(Northern and Southern Hemisphere)
Northern Hemisphere
Southern Hemisphere
Percent Difference
2
1
0
-1
-2
2005.0
2005.5
2006.0
Time (Year)


Percent Difference Ozone vs Latitude
(NOAA16 - OMI V8)/NOAA16
Percent Difference
6
4
2
0
-2
-4
-6
-50
0
50
NOAA 16 Ground Pixel Latitude