OMPS EDR Version 8 Ozone

OMPS-TC-EDR and OMPS-NP-EDR

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Outline

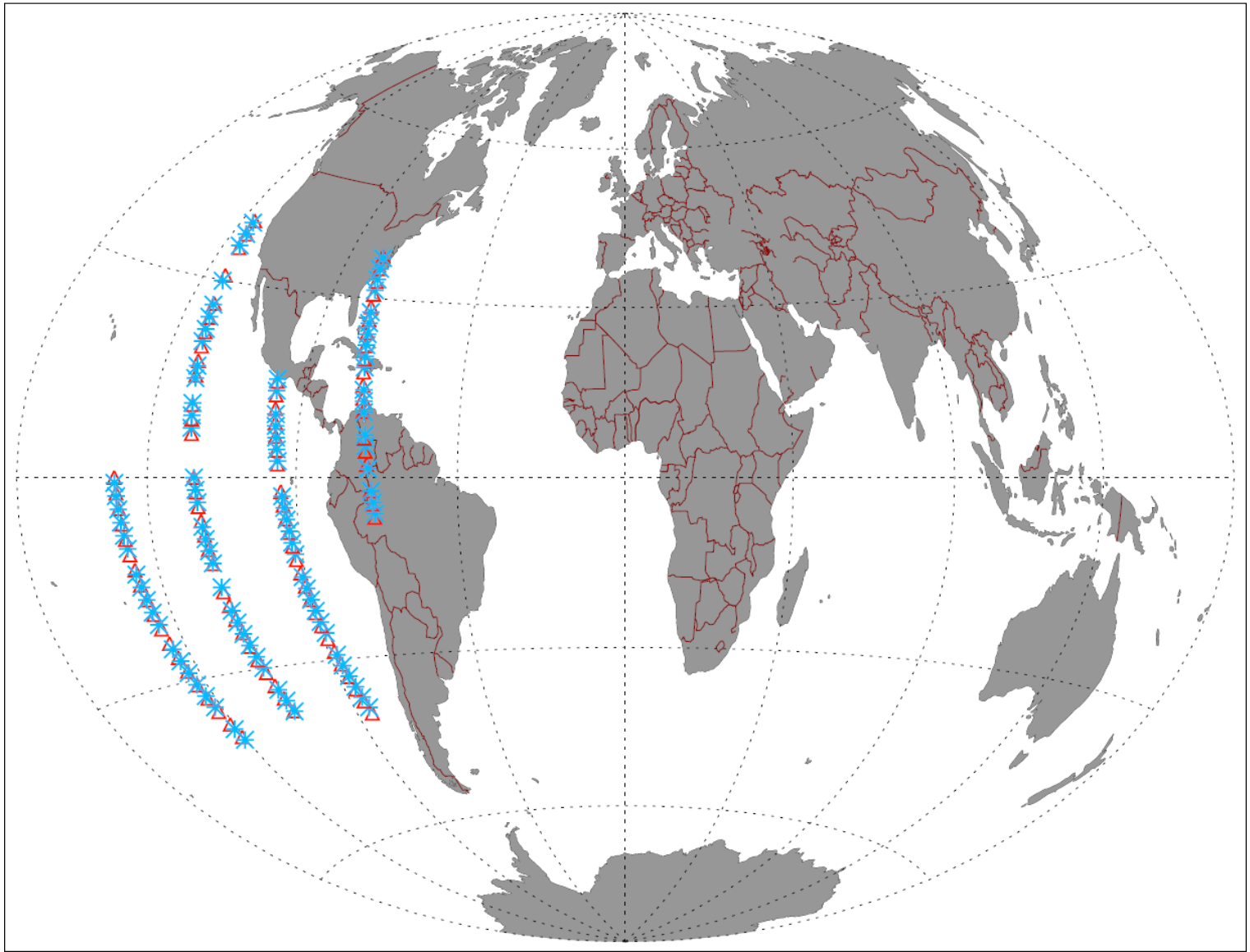
- NOAA STAR implemented the SBUV/2 Ozone profile algorithm in ADL/IDPS, unofficially named o3prov8.
- MX8.11 will be the first official build with o3prov8
- Results in this presentation use SDR with recently updated tables
- On August 20 new tables were approved by AERB for both TC and NP
- SDR updated tables(provided by NASA PEATE):
  1) TC-OSOL Observed Solar
  2) TC-Wavelength
  3) TC-CALCONST Calibration Constants
  4) NP-OSOL Observed Solar
  5) NP-Wavelength
  6) NP-CALCONST Calibration Constants
- Reprocessed several days and updated nvalue adjustments

Implementation Details

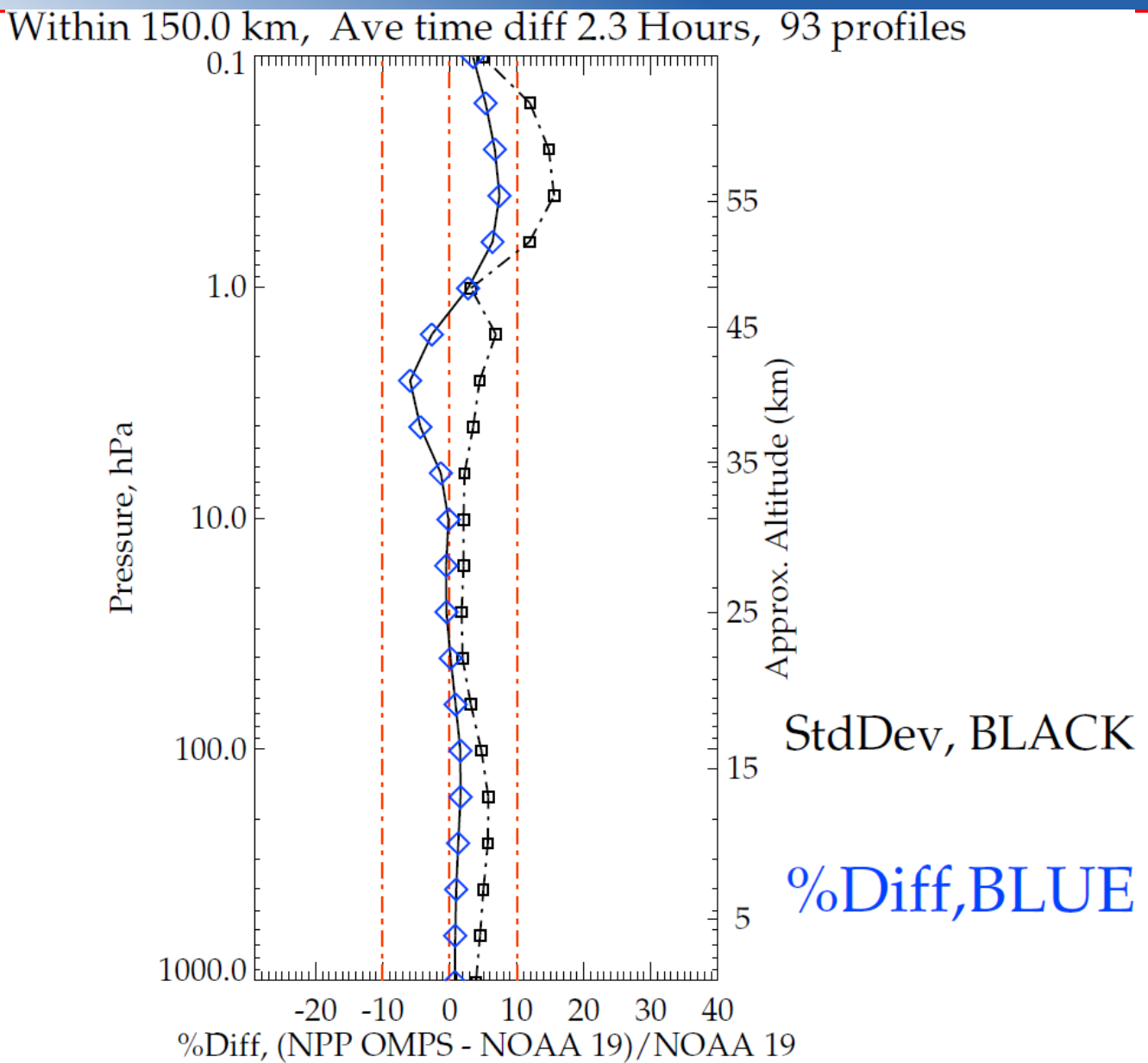
- OMPS-NP-EDR in IDPS Ozone profile came the version 6
- Added / Appended V8 code on top of V6, uses same measurement wavelengths as version6.
- Generated instrument tables using OMPS bandpass functions
- New version 8 outputs appended to existing HDF5 output
- Software validation with off-line version
- Comparisons to NOAA-19 SBUV/2 datasets
  - Matchups
  - Chasing orbits
- Comparisons to EOS-AURA MLS
  - Matchups

Matchups within 150km

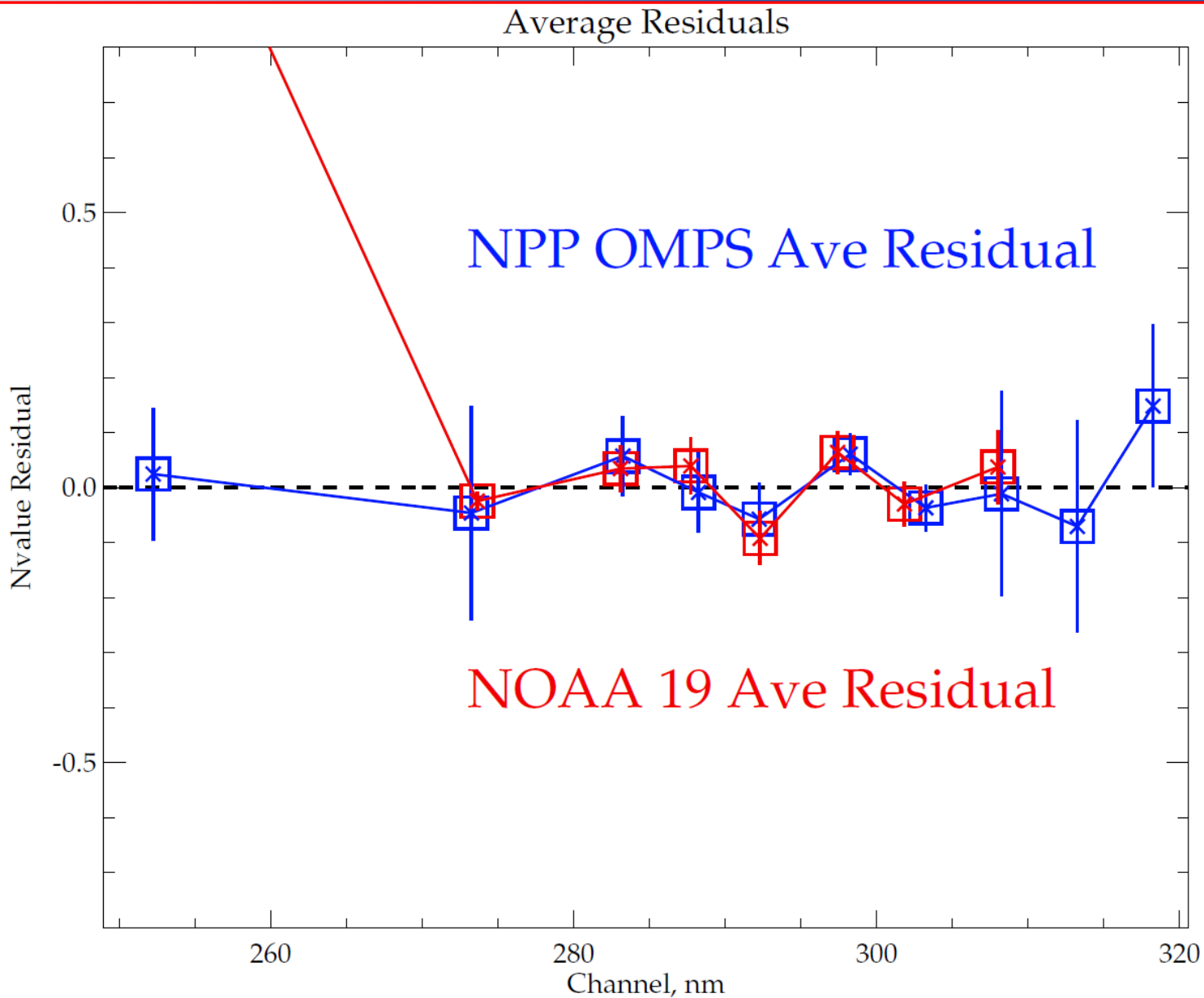
NPP OMPS and NOAA 19 for 1 Days, Beginning on 2013/03/20



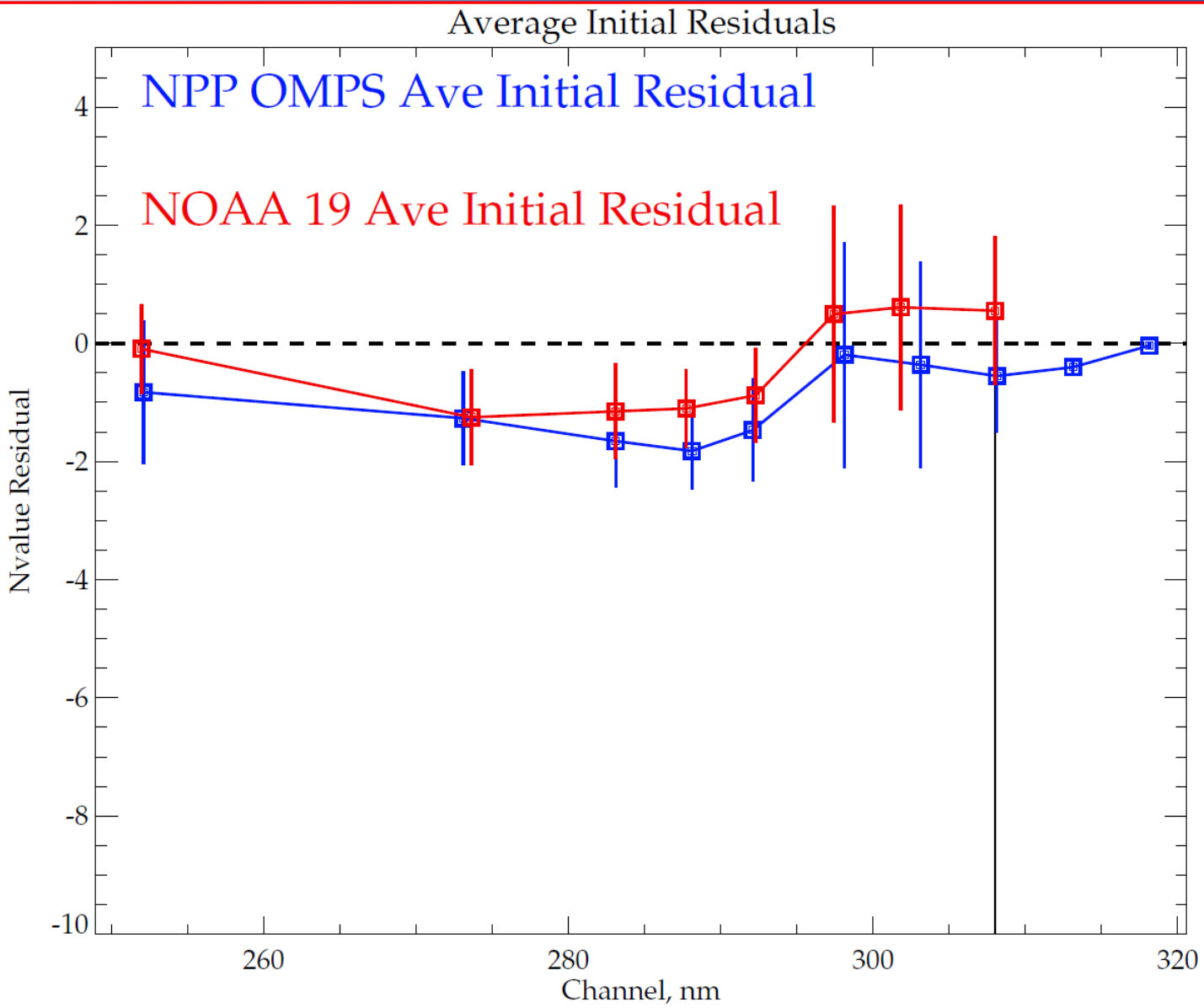
Profile Average Difference



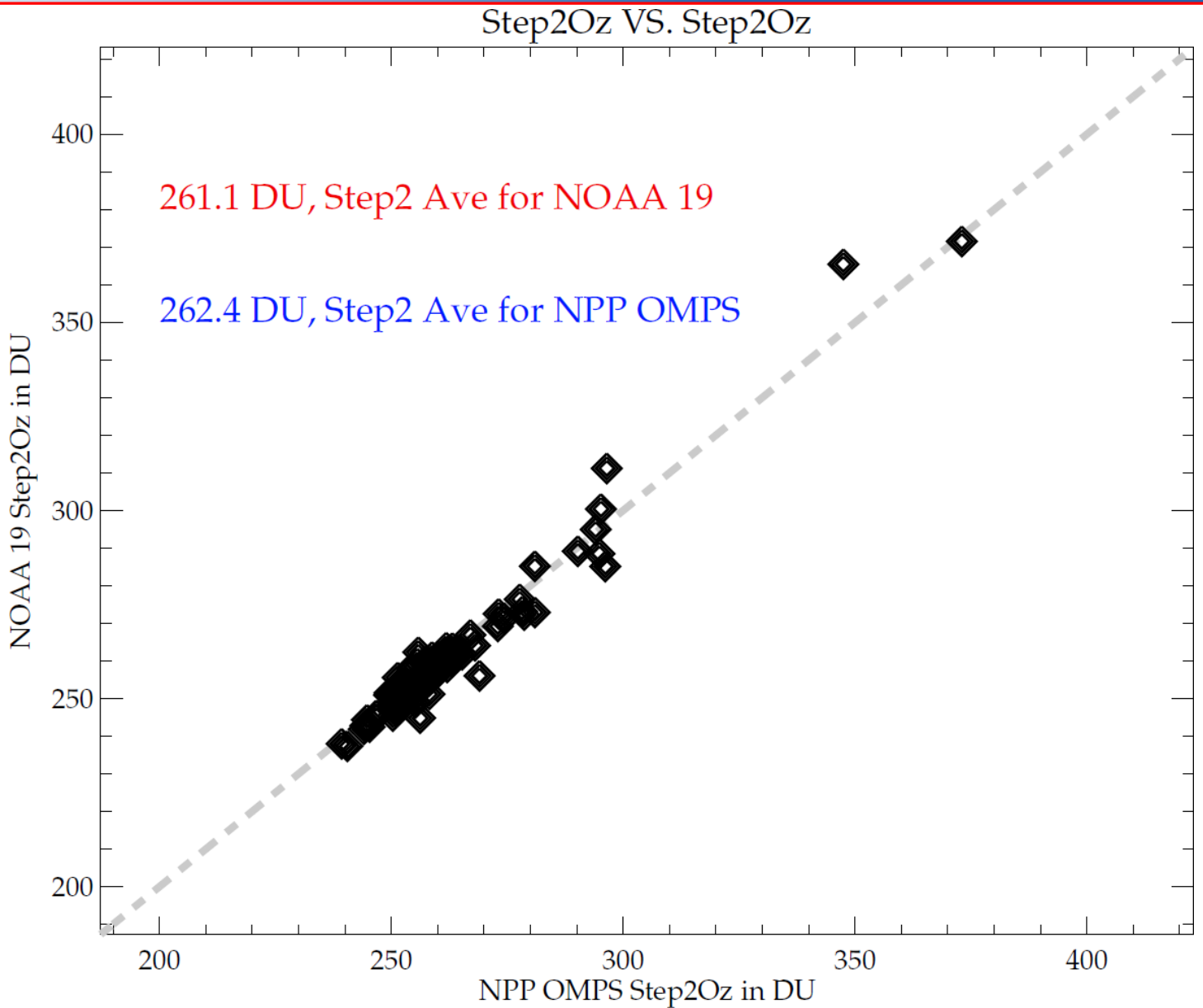
Final Residual



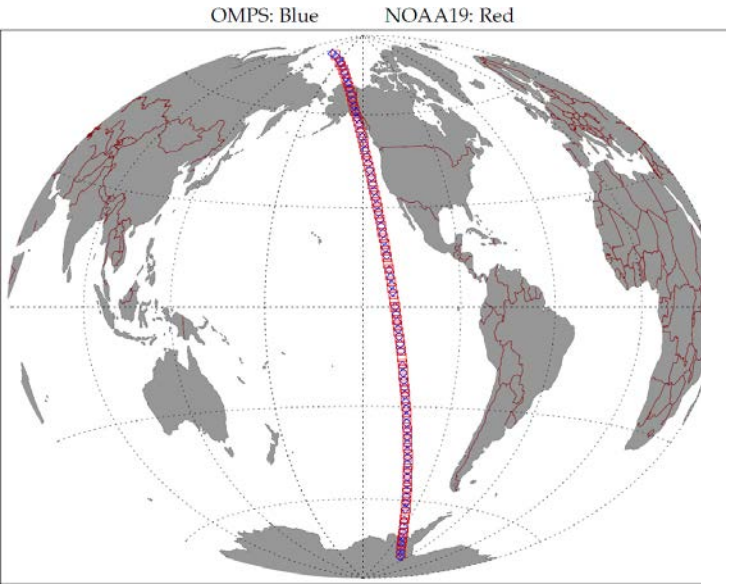
Initial Residual

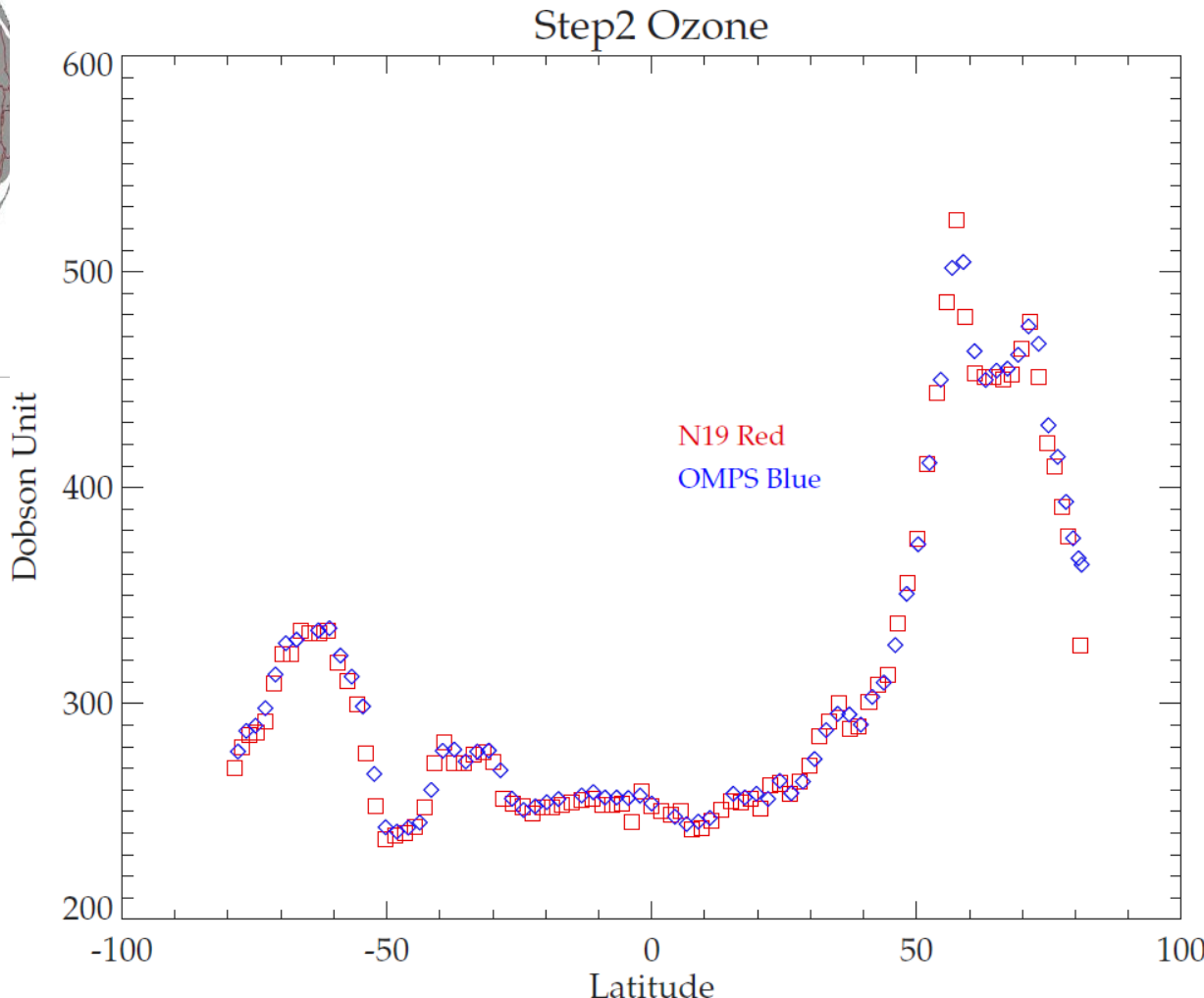


Step 2 Ozone

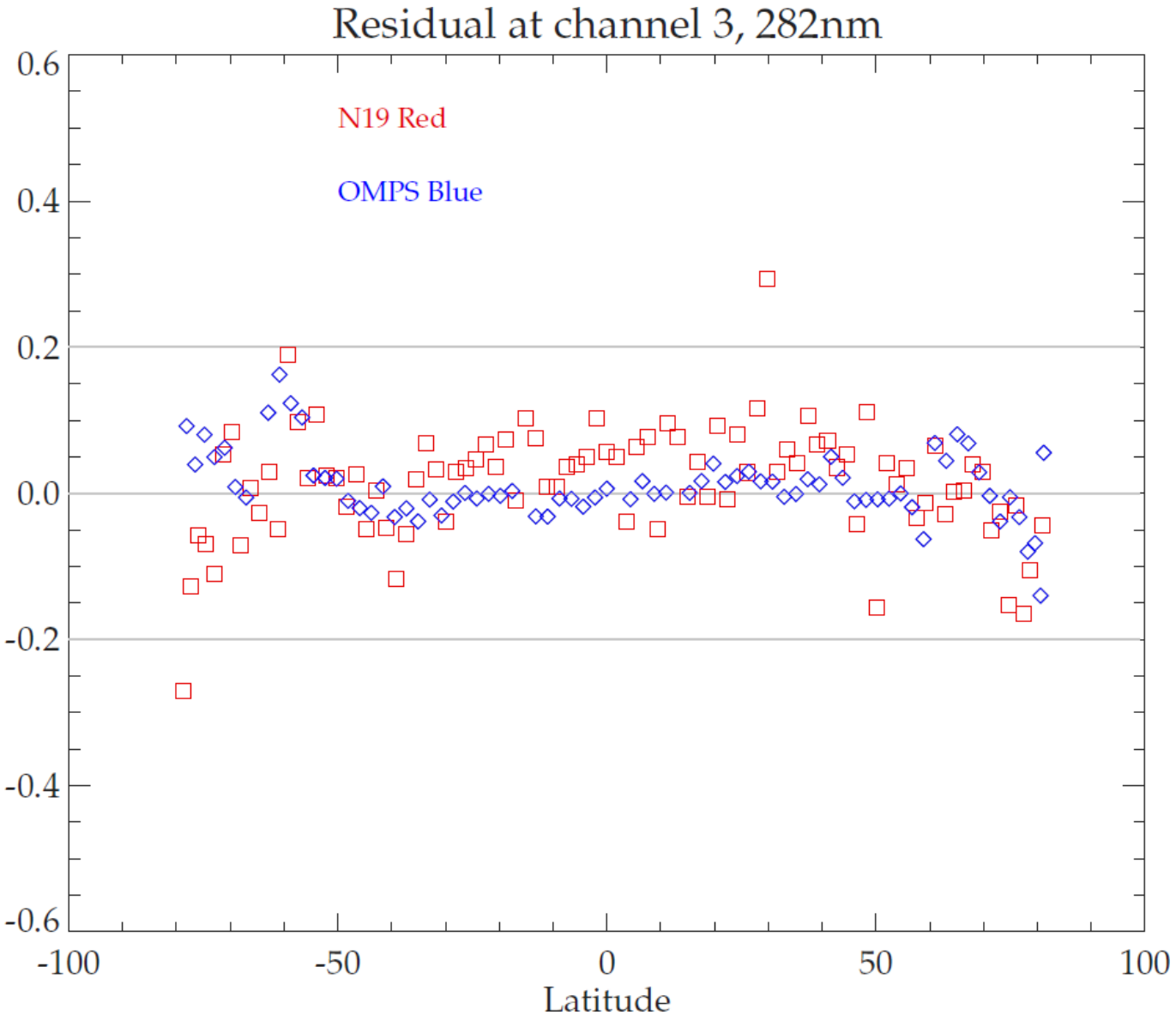

Step2Oz VS. Step2Oz
261.1 DU, Step2 Ave for NOAA 19
262.4 DU, Step2 Ave for NPP OMPS
NOAA 19 Step2Oz in DU
NPP OMPS Step2Oz in DU
200
250
300
350
400

OMPS & NOAA-19 Chasing Orbit

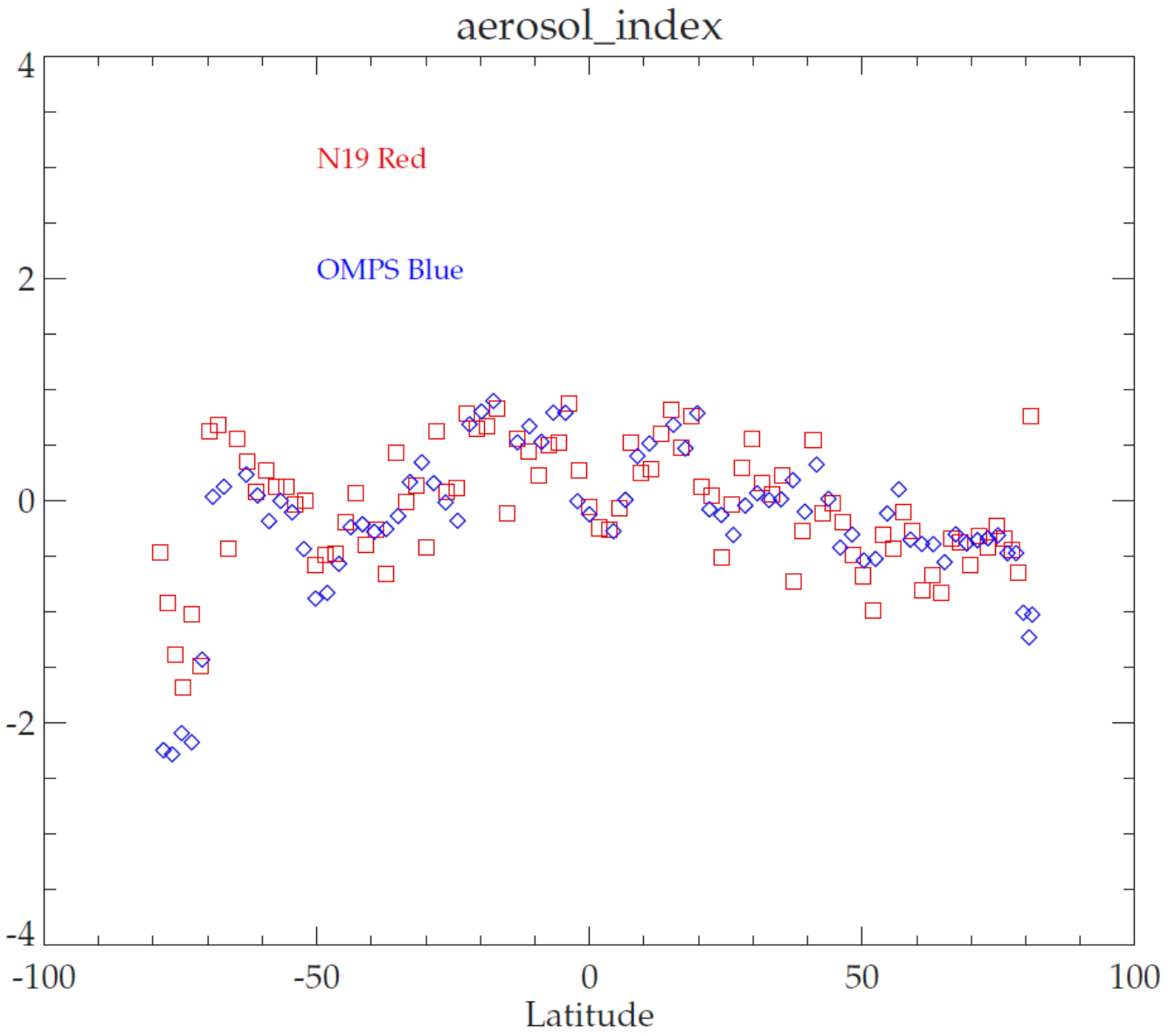




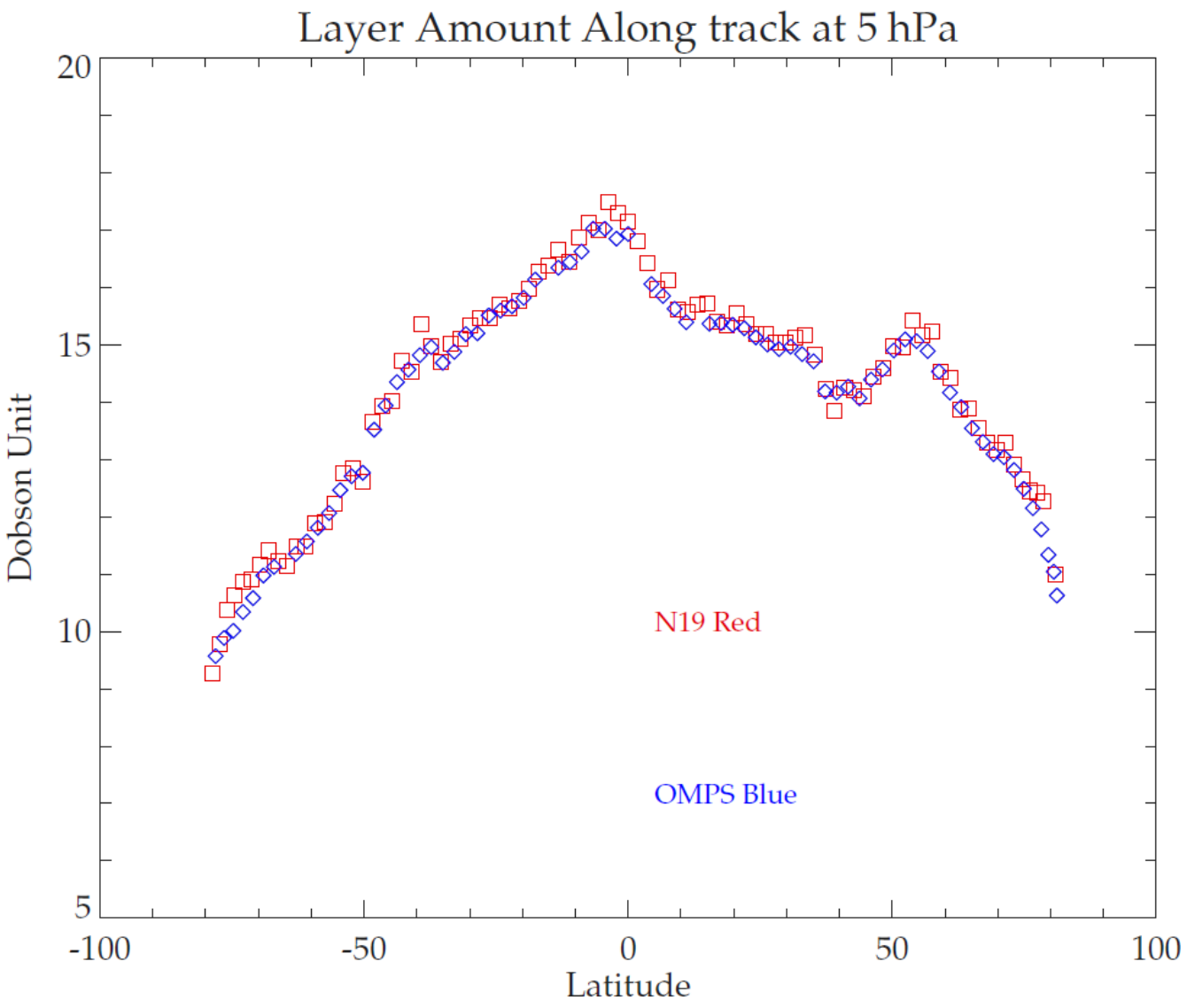
Residual at 282nm Measurement



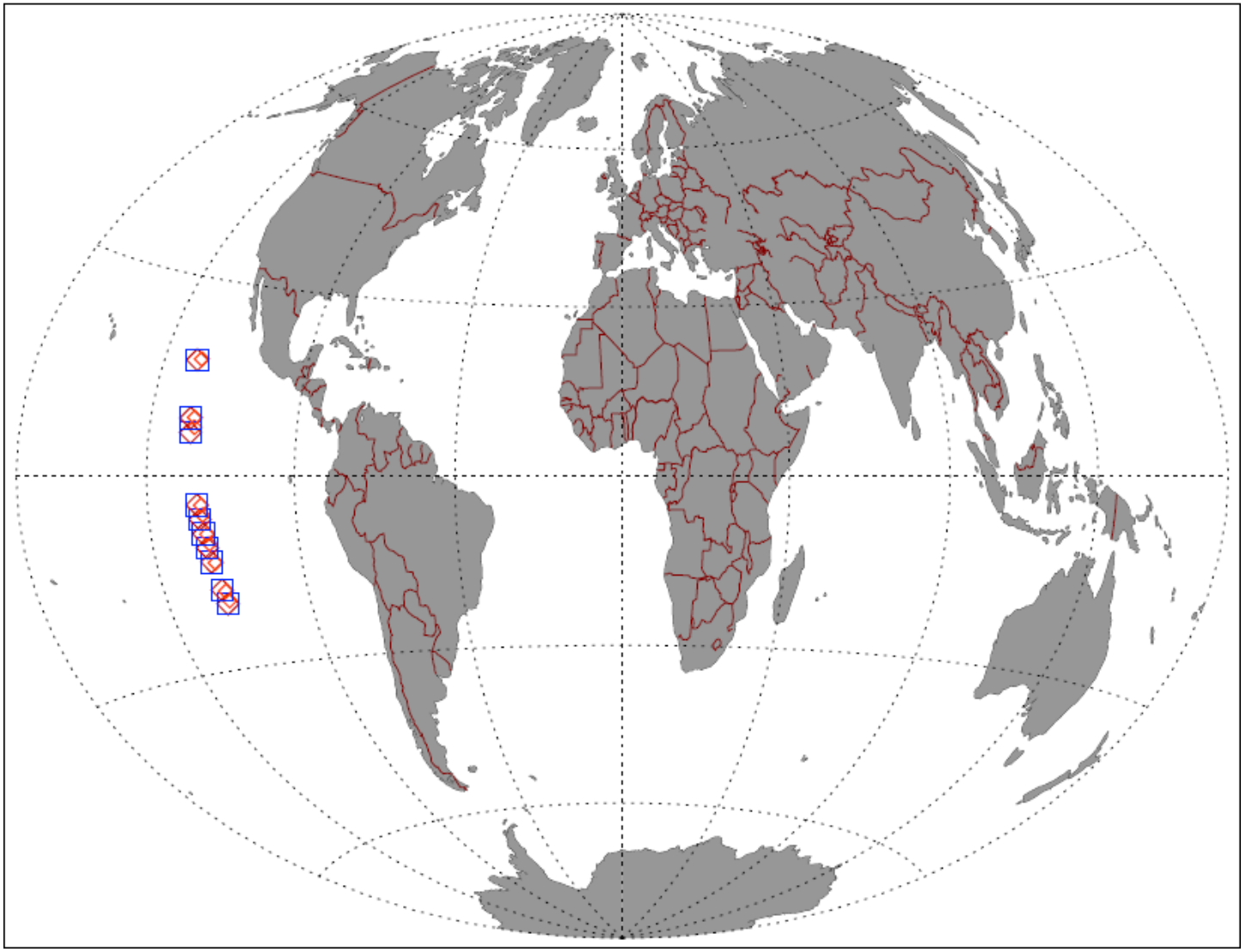
Aerosol Index



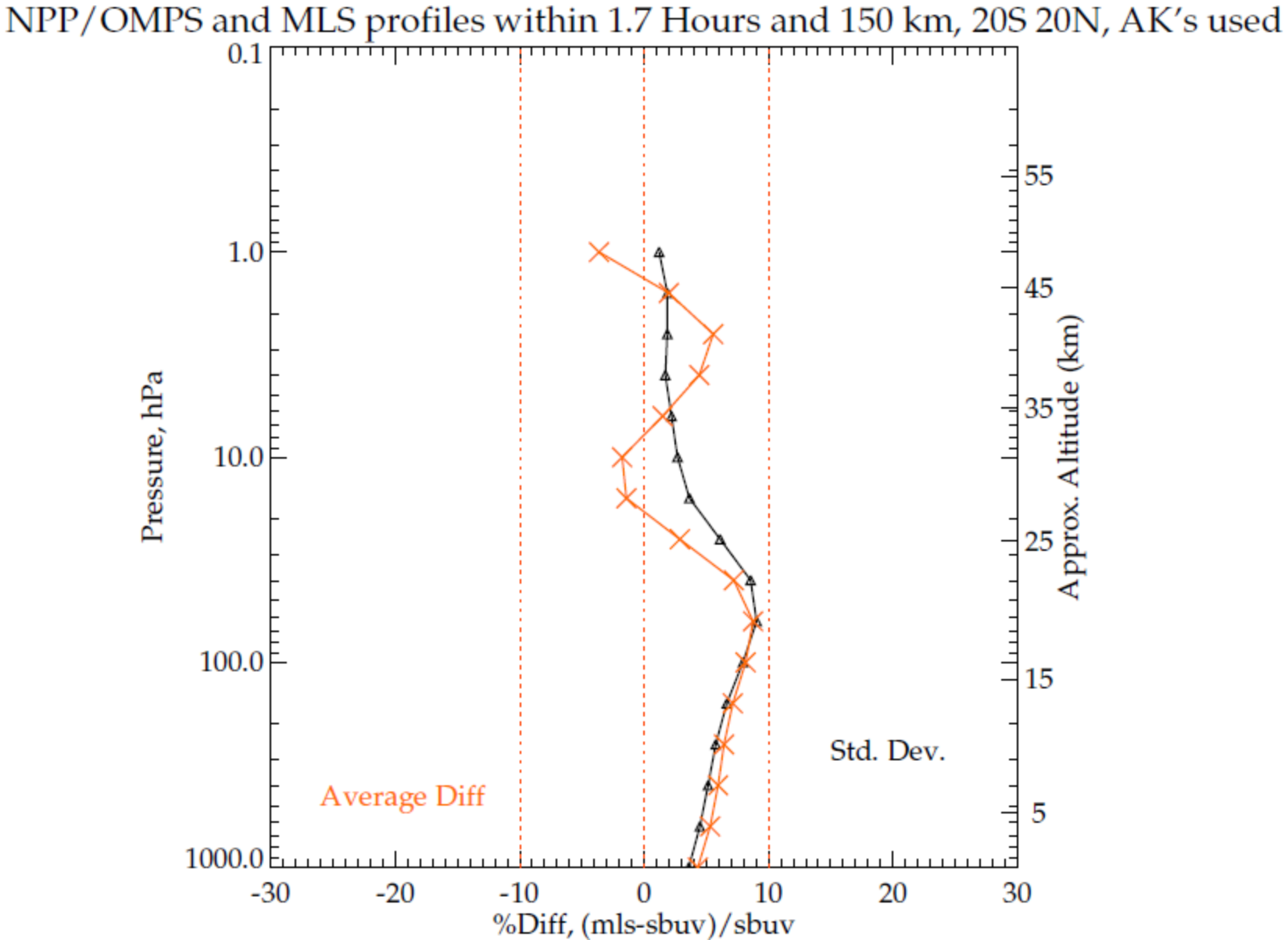
Layer 12 ozone



OMPS and MLS Matchups

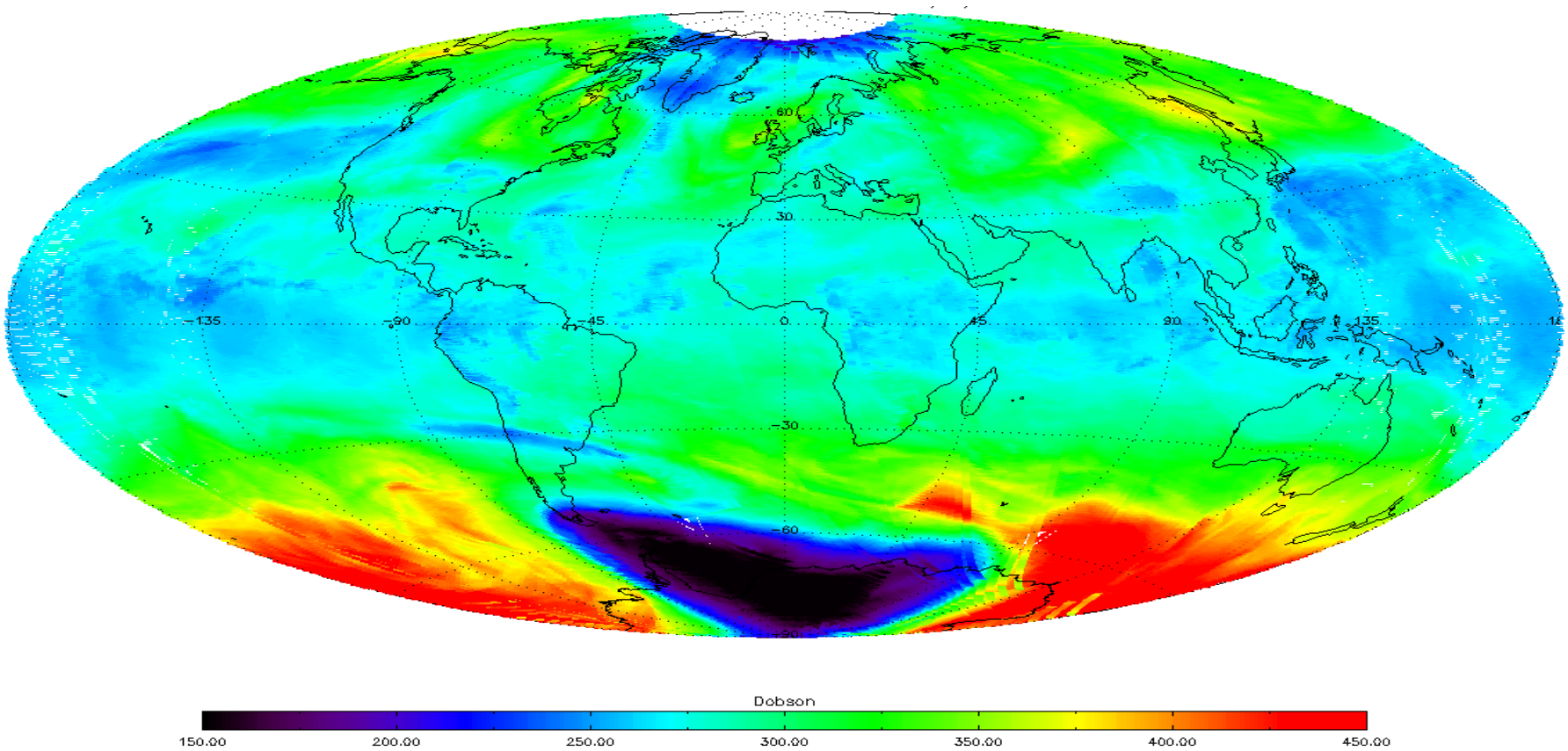


MLS and OMPS


NPP/OMPS and MLS profiles within 1.7 Hours and 150 km, 20S 20N, AK's used
Pressure, hPa
0.1
1.0
10.0
100.0
1000.0
Approx. Altitude (km)
55
45
35
25
15
5
-30
-20
-10
0
10
20
30
%Diff, (mls-sbuv)/sbuv
Average Diff
Std. Dev.

V8 Total Ozone

- STAR delivered a V8 Total Ozone to update/replace existing V7 triplet total ozone algorithm
- Possibility it will make it into MX 8.12 build deadline



Summary

- V8Pro Ozone algorithm in MX8.11 build
- V8Total Ozone algorithm hopefully in MX8.12 build
- New NPP OMPS TC and NP SDR tables produce reasonable NP-EDR ozone profiles
- EDR Will be ready for J01, waiting for Block2 SDR Integration
- J01 NP SDR will operate at medium resolution 5 scans per granule
- Evaluate J01 NP SDR and decide if we will do J01 NP-EDR with 5 scans per granule or 1 scan per granule.