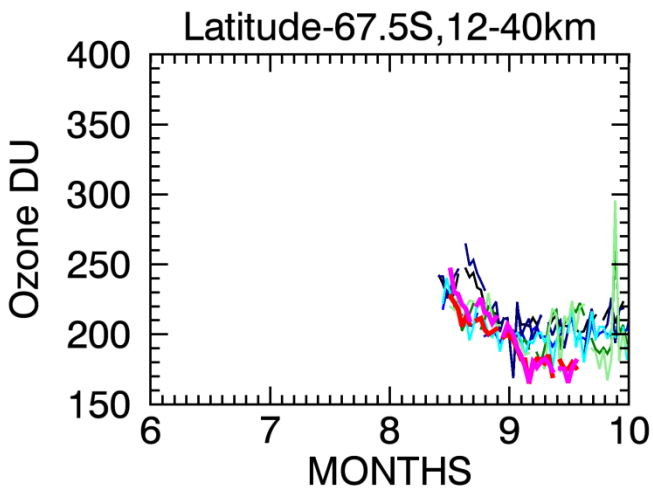
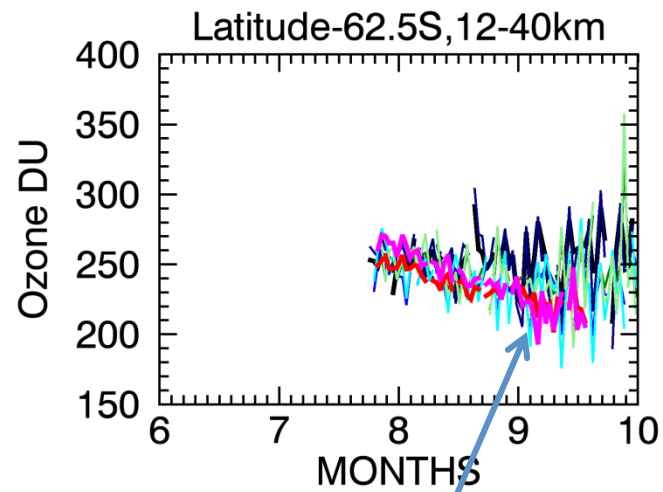
Measuring 2015 Antarctic ozone with OMPS sensors

Natalya Kramarova
Paul Newman, Eric Nash, Susan Strahan

MLS and LP dzm, ozone partial column 12-40km

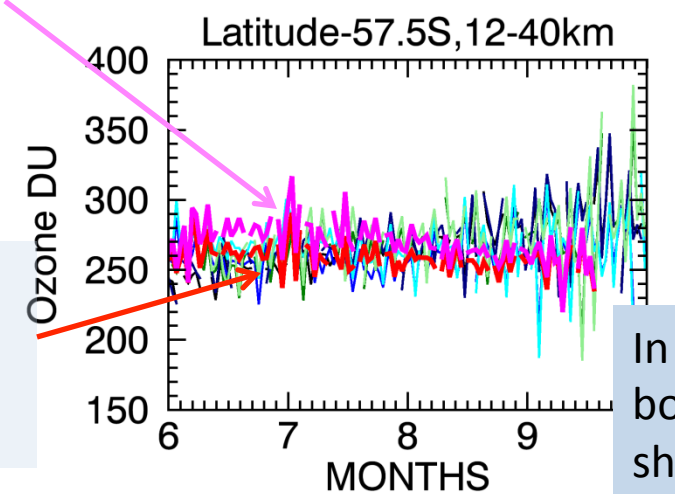


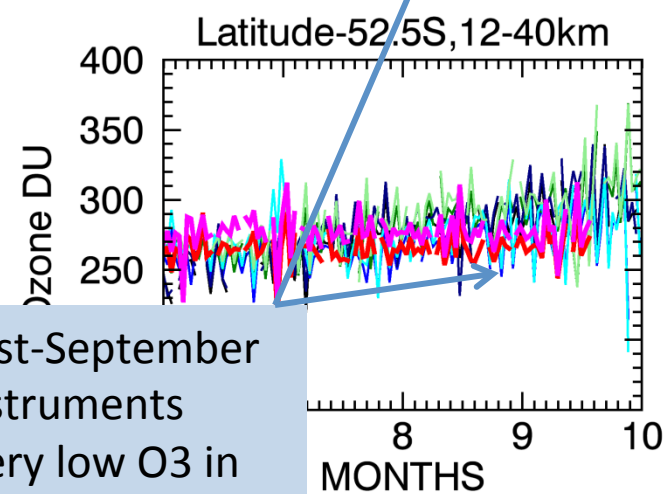


LP2012 LP2013 LP2014 LP2015

MLS2012 MLS2013 MLS2014 MLS2015

MLS shows larger

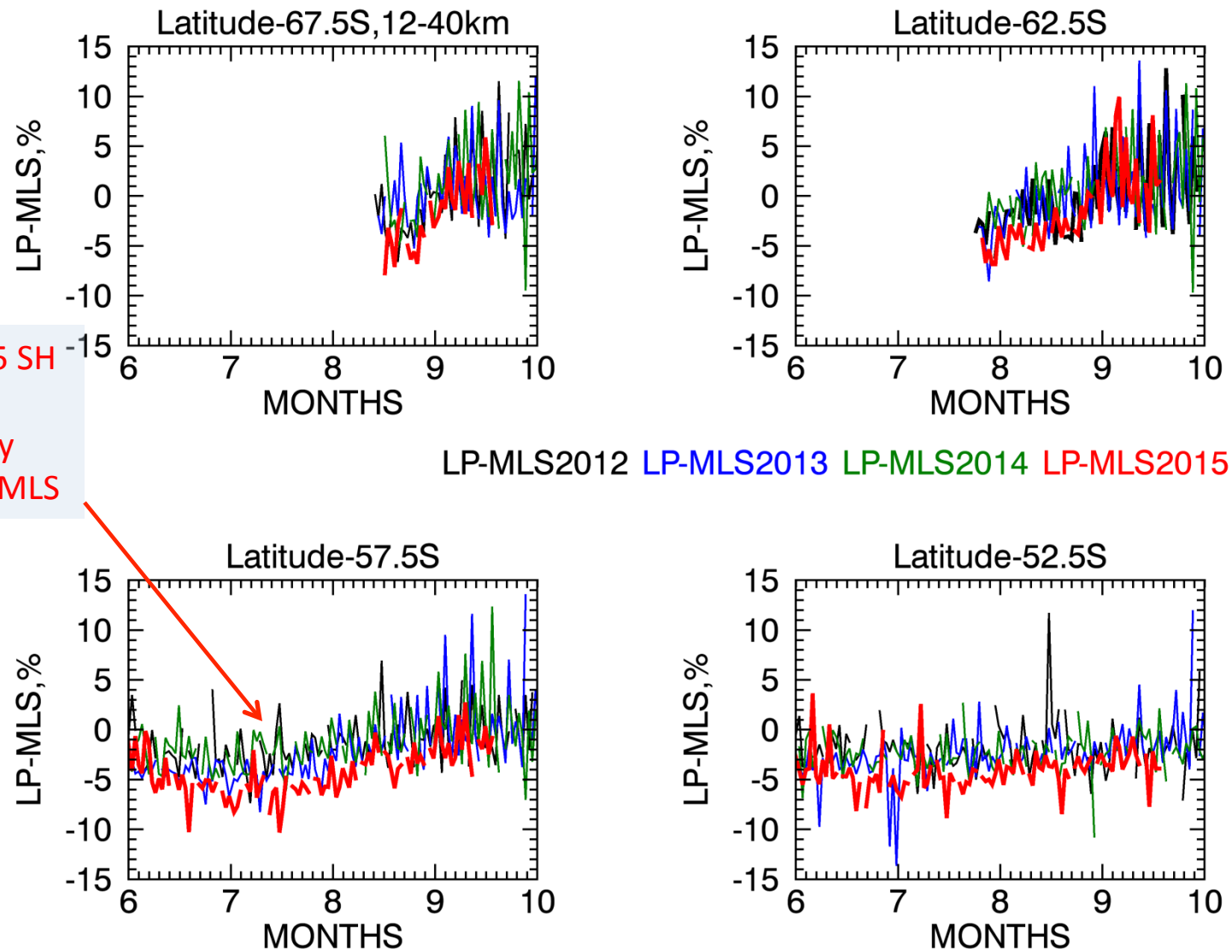




OMPS LP measures smaller O3 in 2015

In August-September both instruments show very low O3 in SH mid-latitudes

LP minus MLS (%), ozone partial column 12-40km

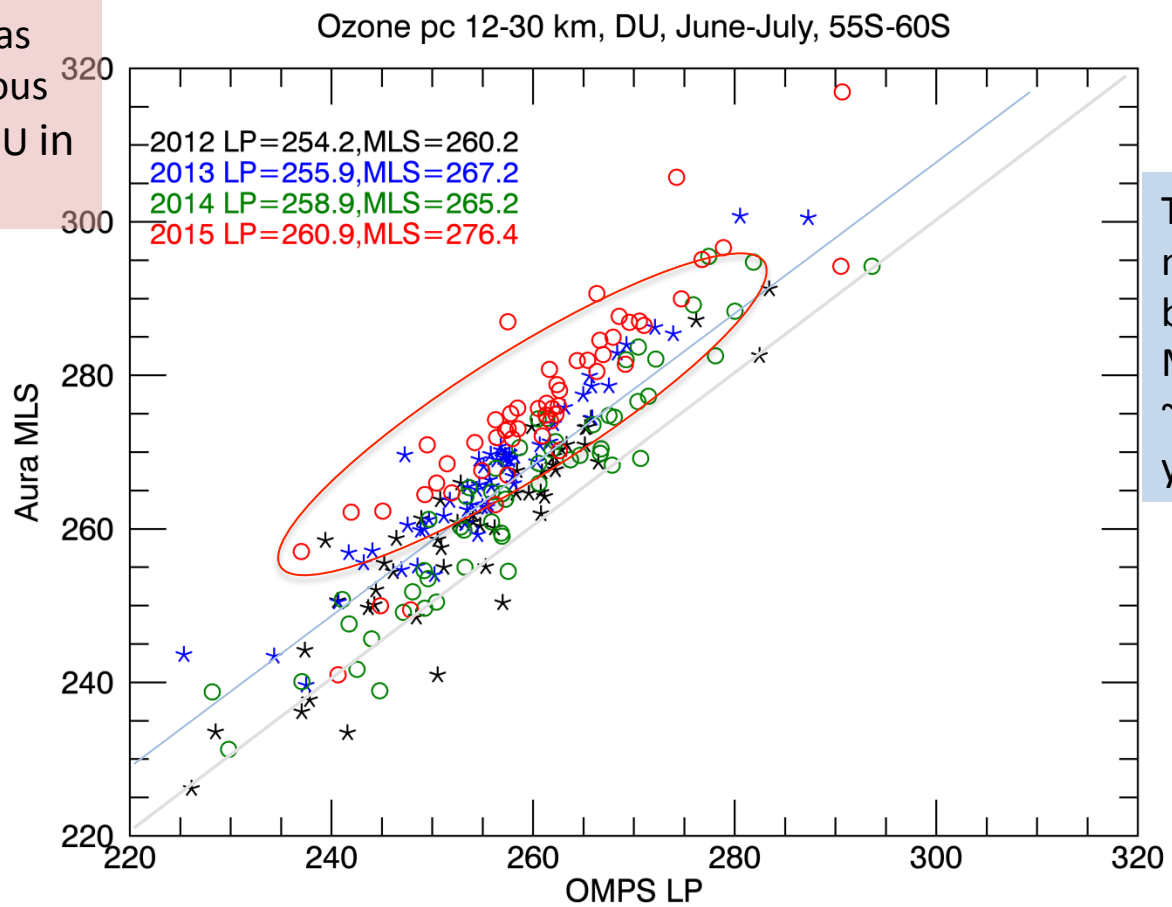


During 2015 SH winter LP is substantially lower than MLS

Ozone partial columns 12-40 km (DU), LP vs MLS, 55S-60S

June-July

In June-July 2015 was larger than in previous years by about 10 DU in average.

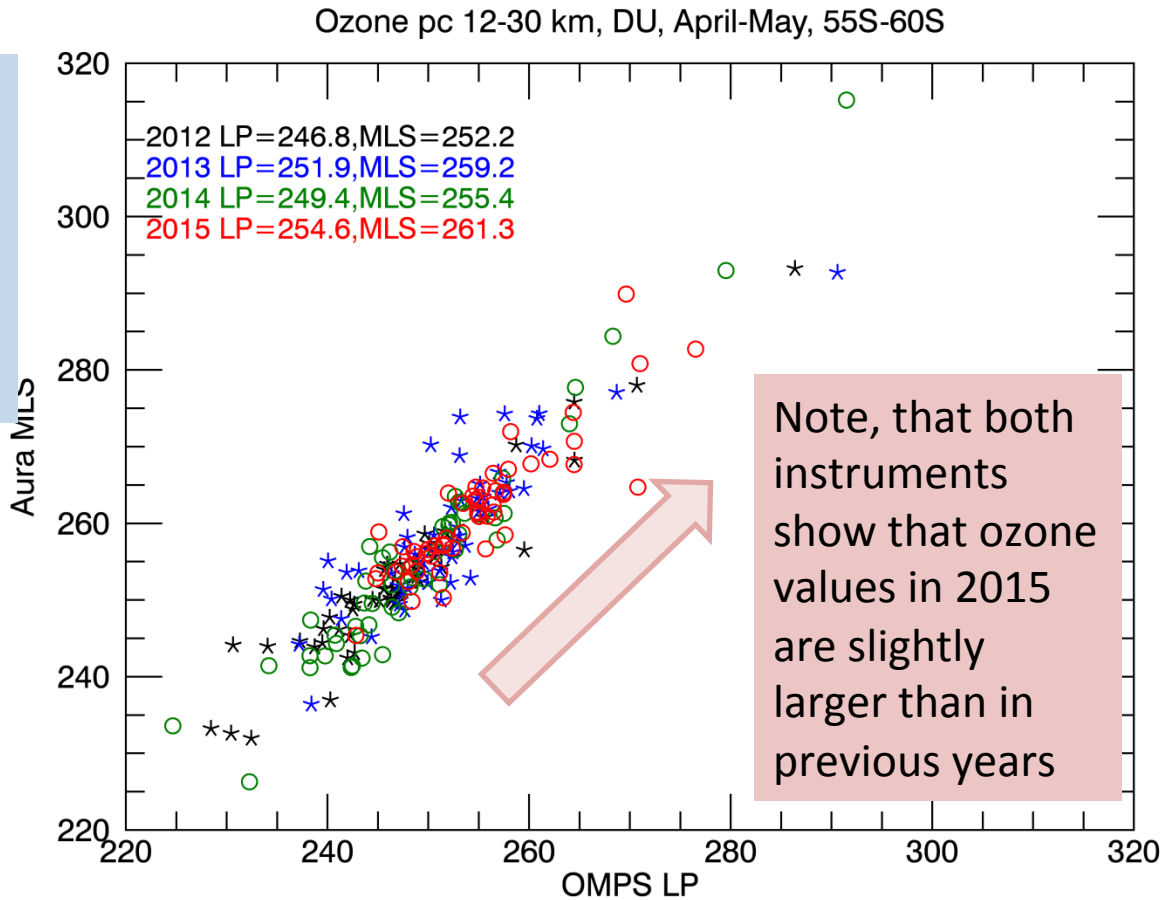


There is a seasonal negative bias between LP and MLS (MLS>LP by ~5-7 DU) in all years.

Ozone partial columns, 12-40 km, LP vs MLS, 55S-60S

April-May

In April-May 2015, LP-MLS differences agree with those from previous years

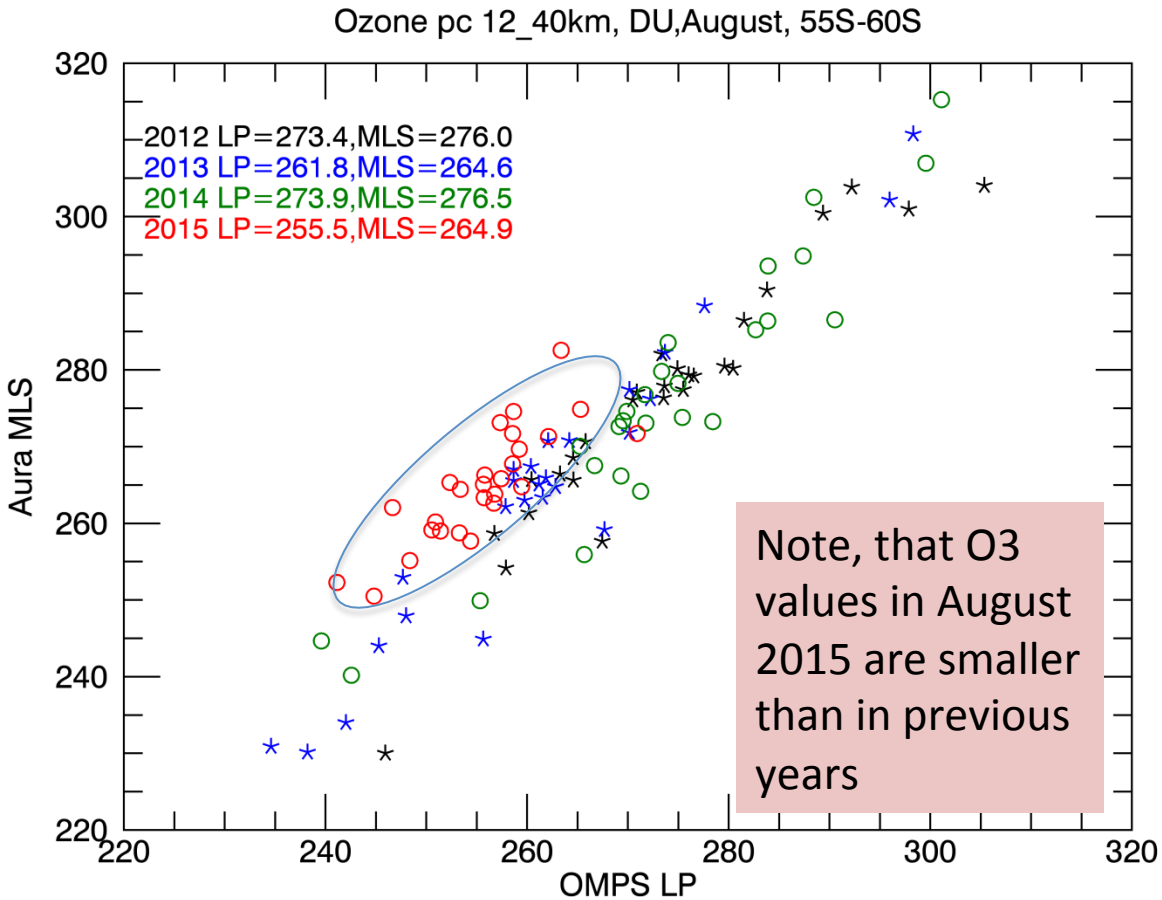


Note, that both instruments show that ozone values in 2015 are slightly larger than in previous years

Ozone partial columns, 12-40 km, LP vs MLS, 55S-60S

August

Larger negative bias between LP and MLS remains in August 2015

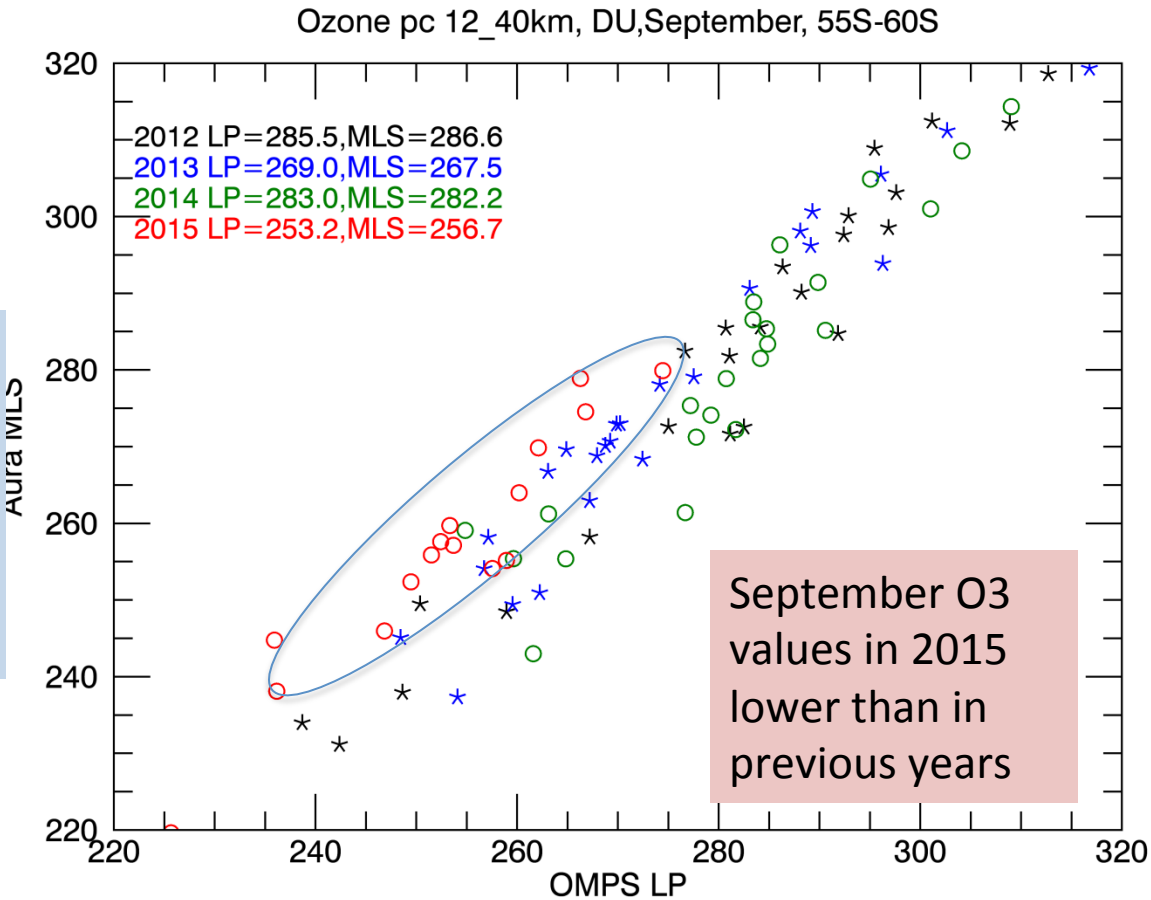


Note, that O3 values in August 2015 are smaller than in previous years

Ozone partial columns, 12-40 km, LP vs MLS, 55S-60S

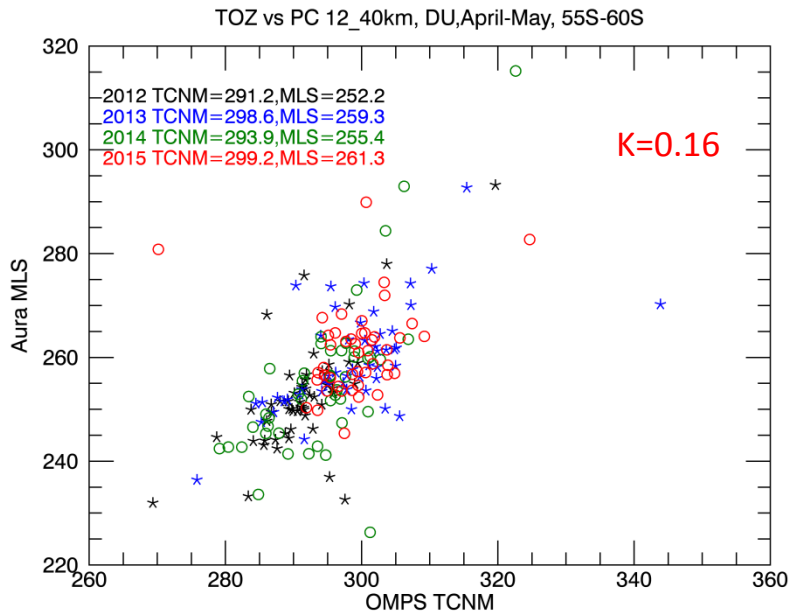
September

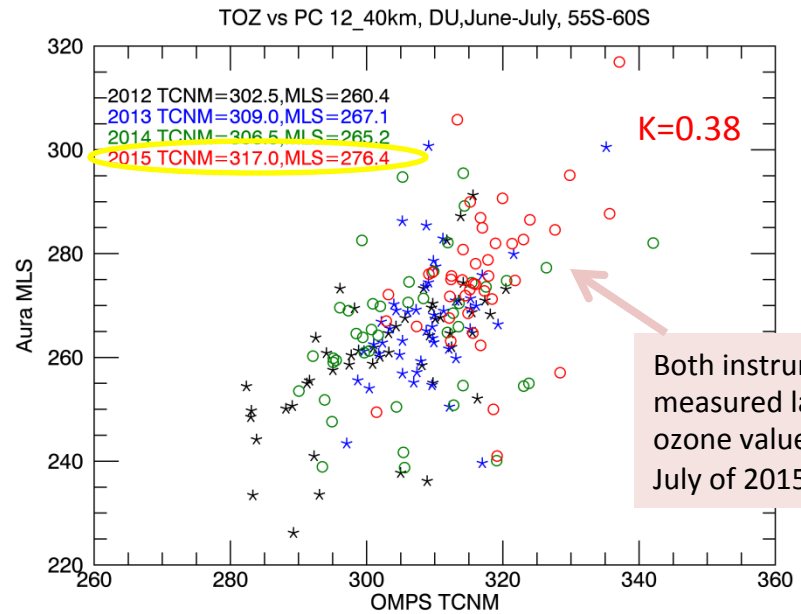
Larger negative biases between LP and MLS persist in September 2015



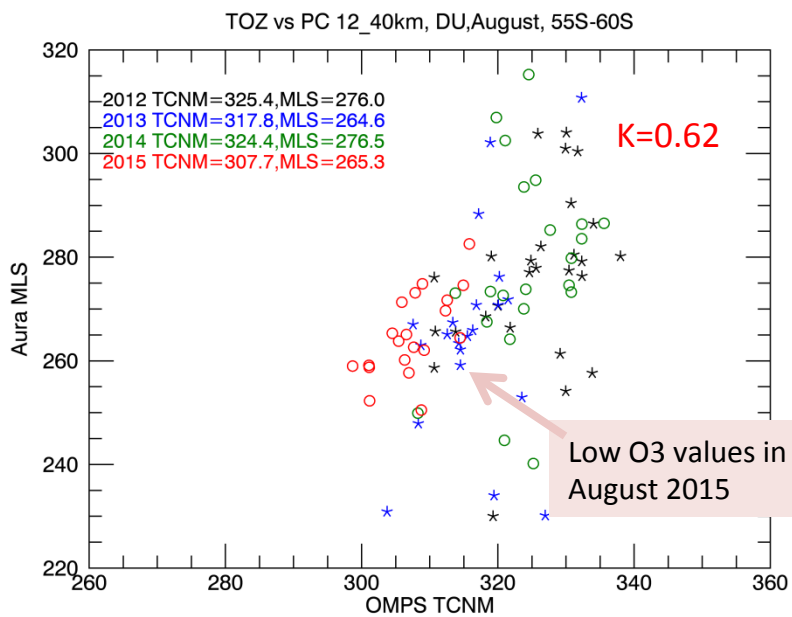
September O3 values in 2015 lower than in previous years

Total ozone from OMPS TC-NM vs MLS Ozone partial columns [12-40 km], 55S-60S





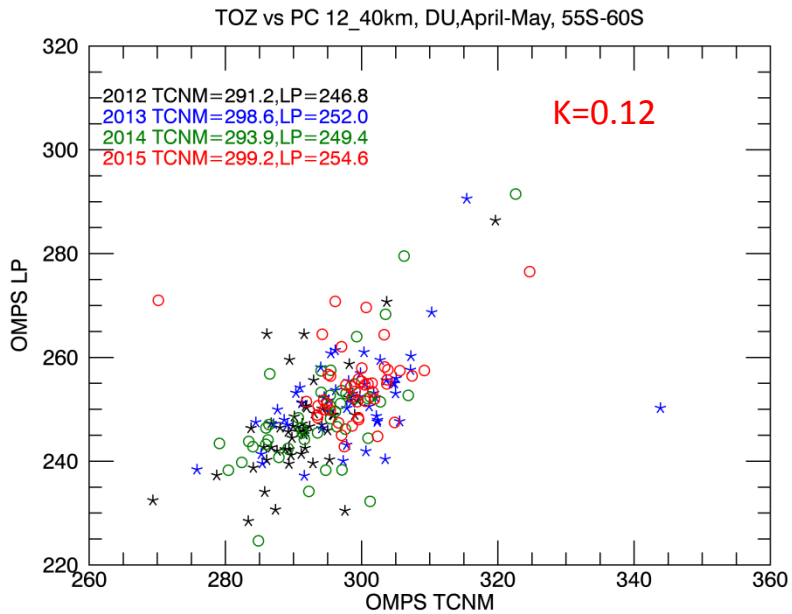
Both instruments measured larger ozone values in June-July of 2015

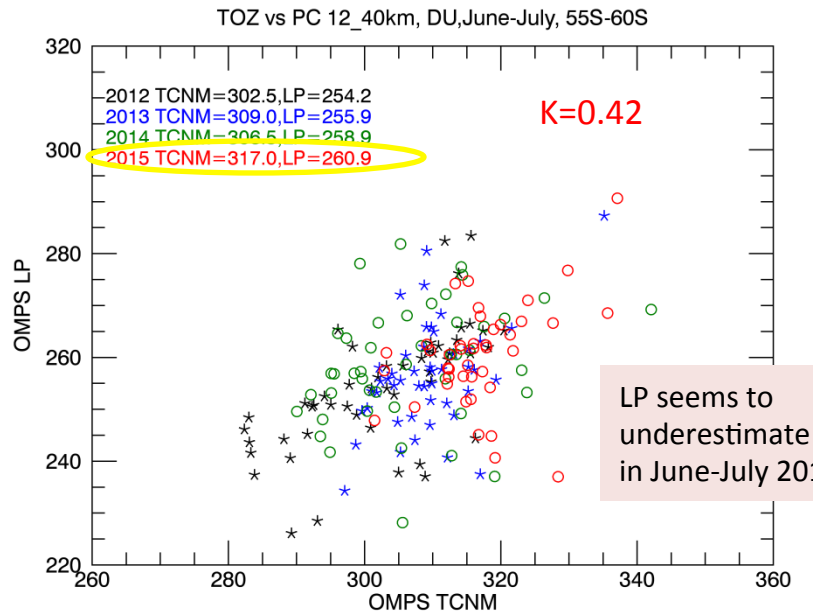


Low O3 values in August 2015

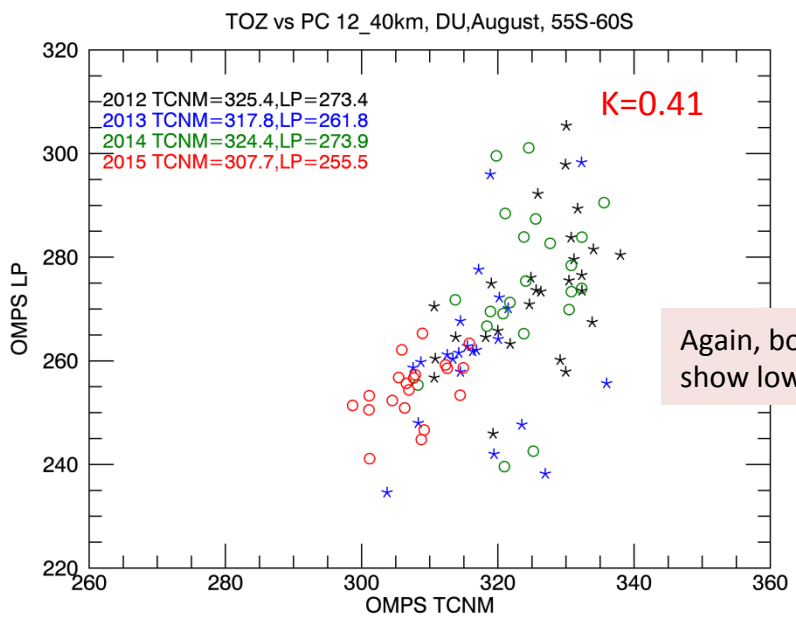
From April to August K=0.68

Total ozone from OMPS TC-NM vs LP Ozone partial columns [12-40 km], 55S-60S





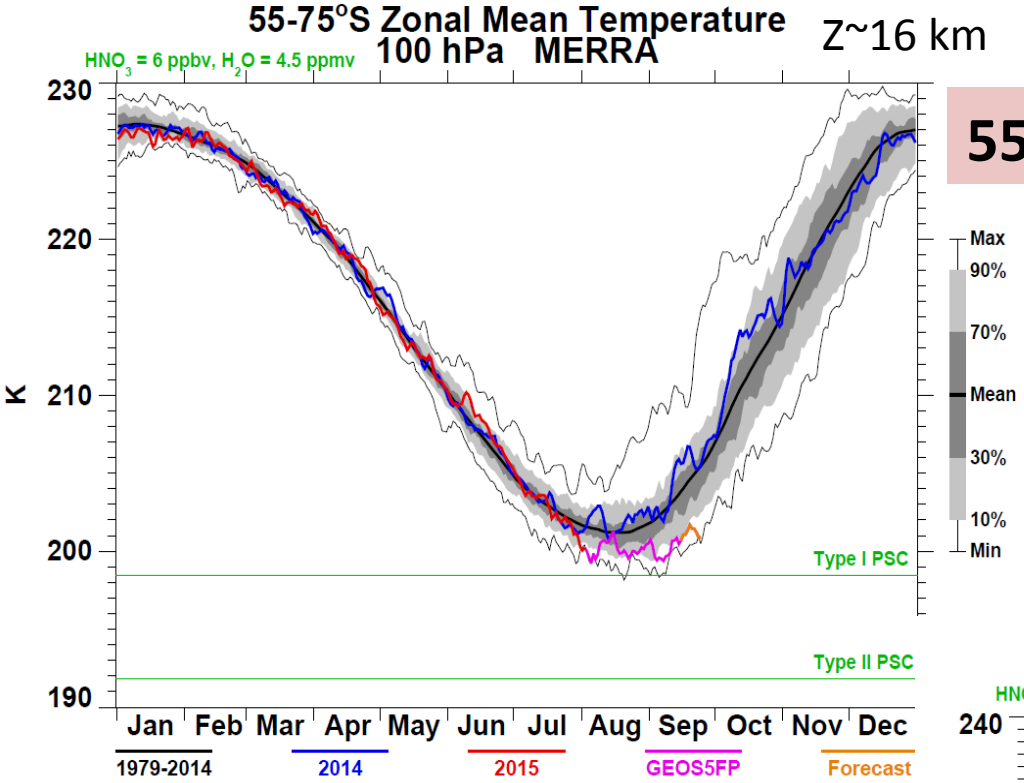
LP seems to underestimate O3 values in June-July 2015

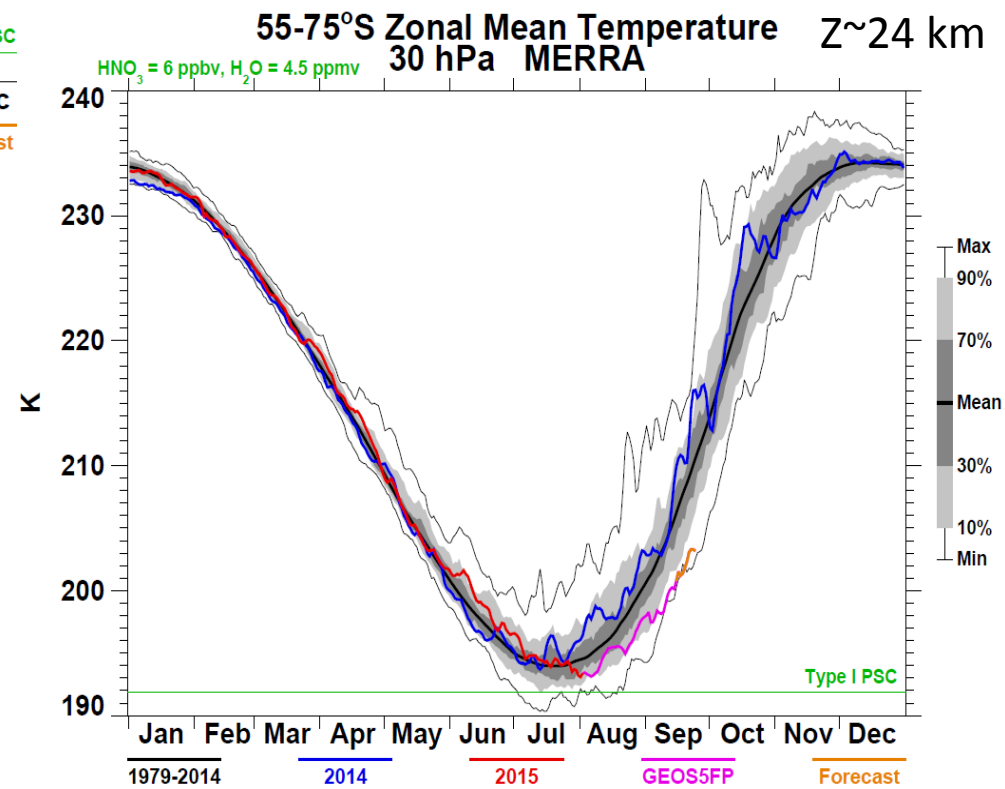


Again, both instruments show low O3 in August 2015

From April to August K=0.54

55S-75S Zonal Mean Temperature





http://ozonewatch.gsfc.nasa.gov