Etalon 1 & 2 Campaign Project Summary

Erricos C. Pavlis, Carey Noll and Magda Kuzmizc-Cieslak

July 31, 2019

Summary

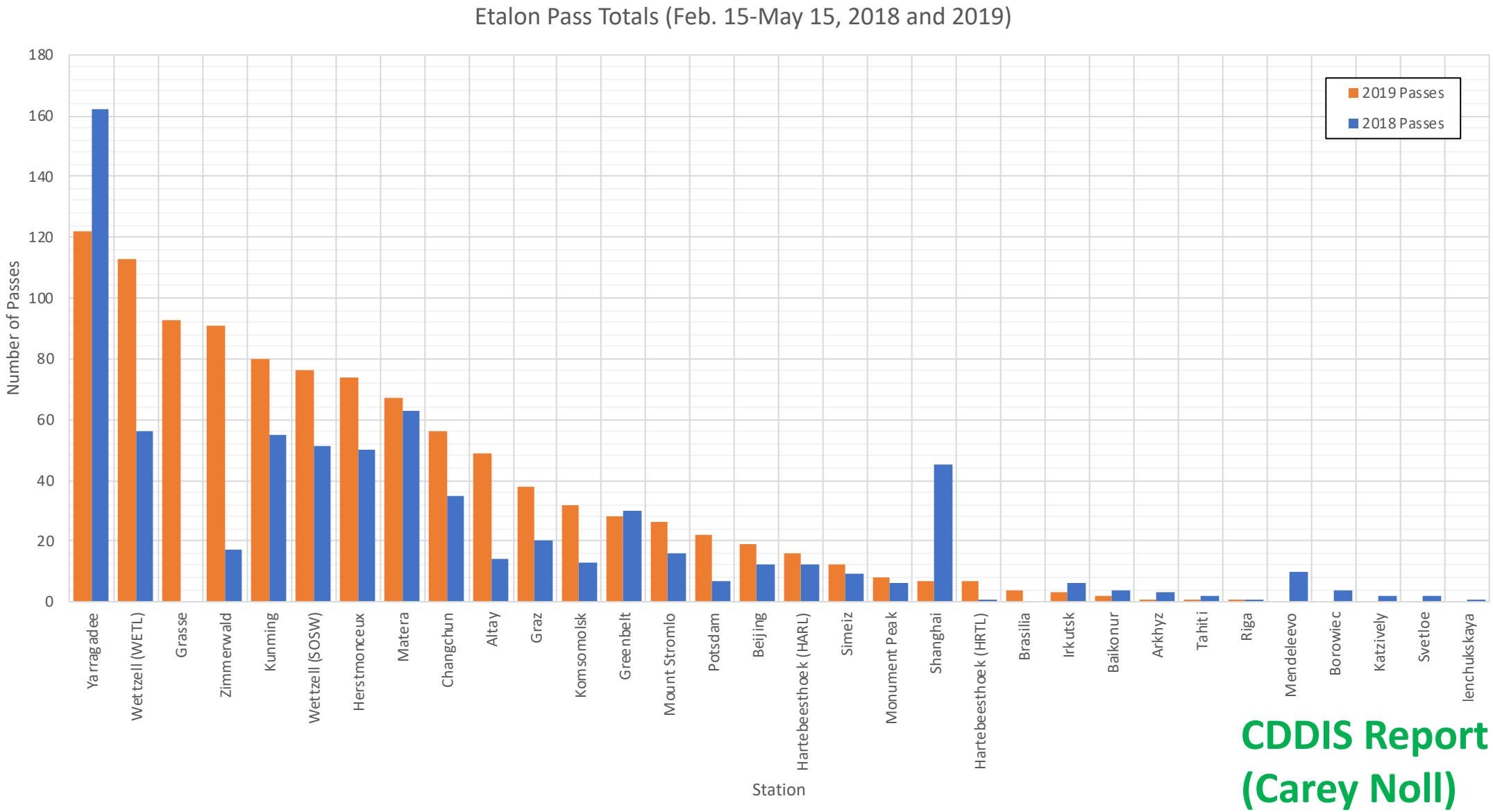
- We collected more data overall
- The network can be split in two tiers of stations based on NP data collected:
  - The top 12 and
  - The rest
- Of the top producers, Yarragadee, WLRS, MLRO, ZimLAS and MeO showed a consistent increased yield every week, although the weather did play a role in the observed variations.
- Of the remaining top producers, most averaged low NP weekly yields (~15 NPs), although a few (e.g. Hx, SOSW, Graz) did demonstrate on one occasion that they are capable of delivering similar amounts of data as the top sites in their tier:
  - This points to weather conditions as the possible culprit for their overall low yield.
- For the bottom tier sites with the single-digit weekly yield we will have to wait for the in-depth analysis to see if these few points make any contribution to the products (e.g. due to the geographical location of these sites). Otherwise it will probably be better for these sites to focus on other targets.
- Based on the 3-month tracking in 2018 and 2019, we deduced the equivalent annual yield for the network for these two years. It is clear that whether we use the mean or the median as a criterion, the 2019 results could be double (or more) the amount of the 2018 data set (see last slide). From this point of view the campaign is clearly a success.

Improvement over 2018 (same time period)

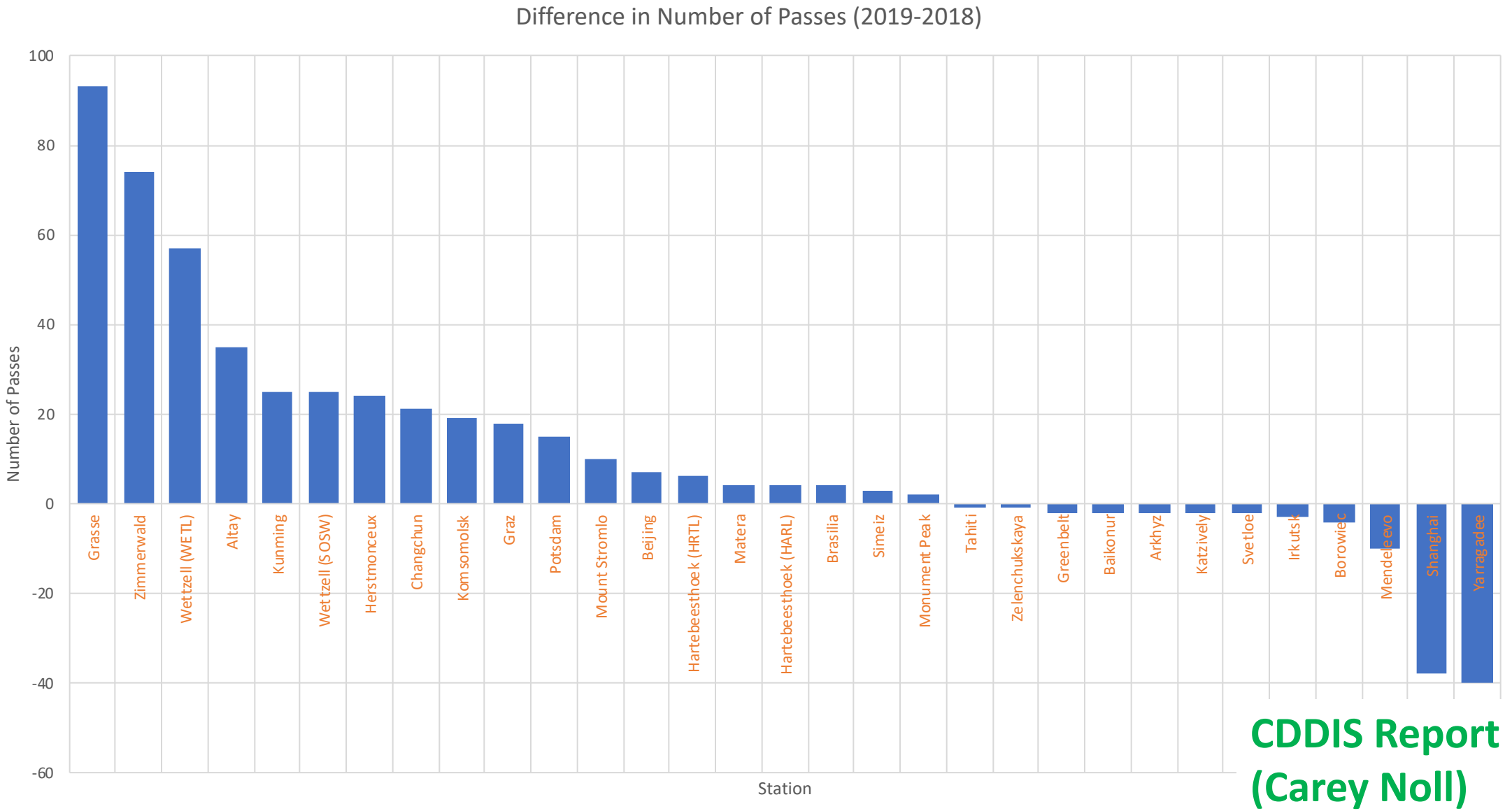
- The comparison to the IERS C04 definitive series for the period of the campaign in 2019 and the same period in 2018 shows a significant reduction of the differences

- The RMS scatter about the mean difference is reduced by:

  - X-component: -37 %
  - Y-component: -18 %
  - LOD: -15 %

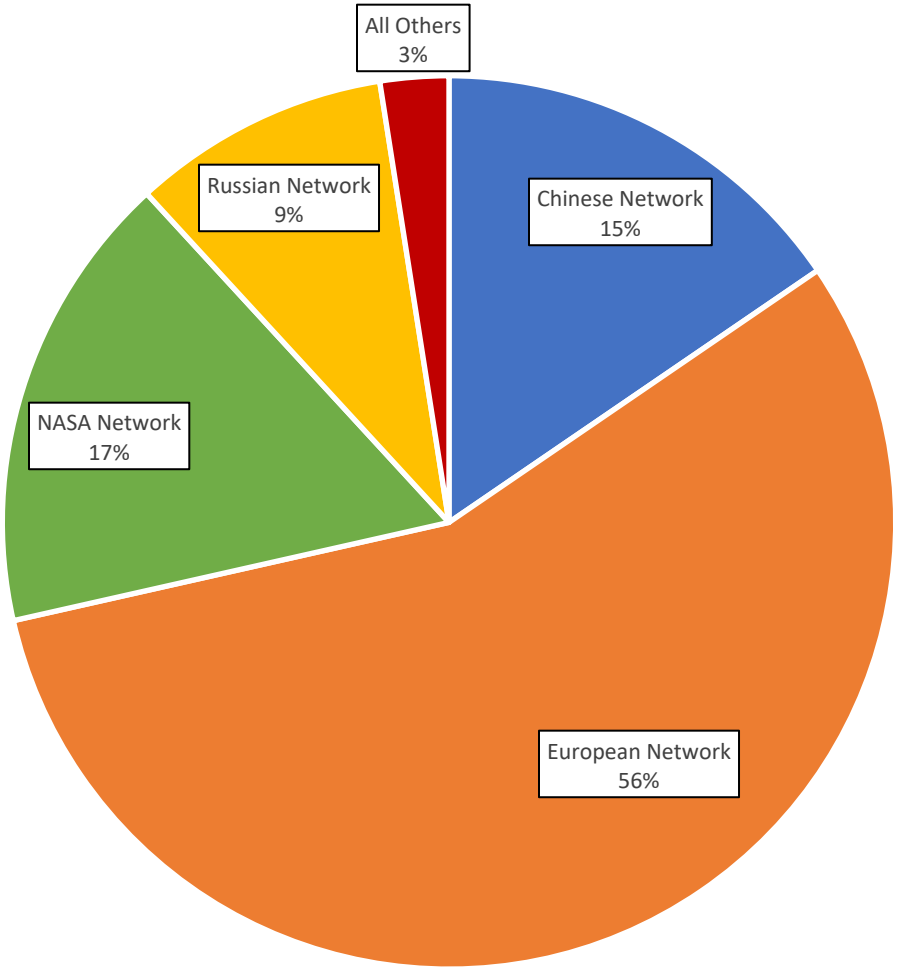


CDDIS Report (Carey Noll)

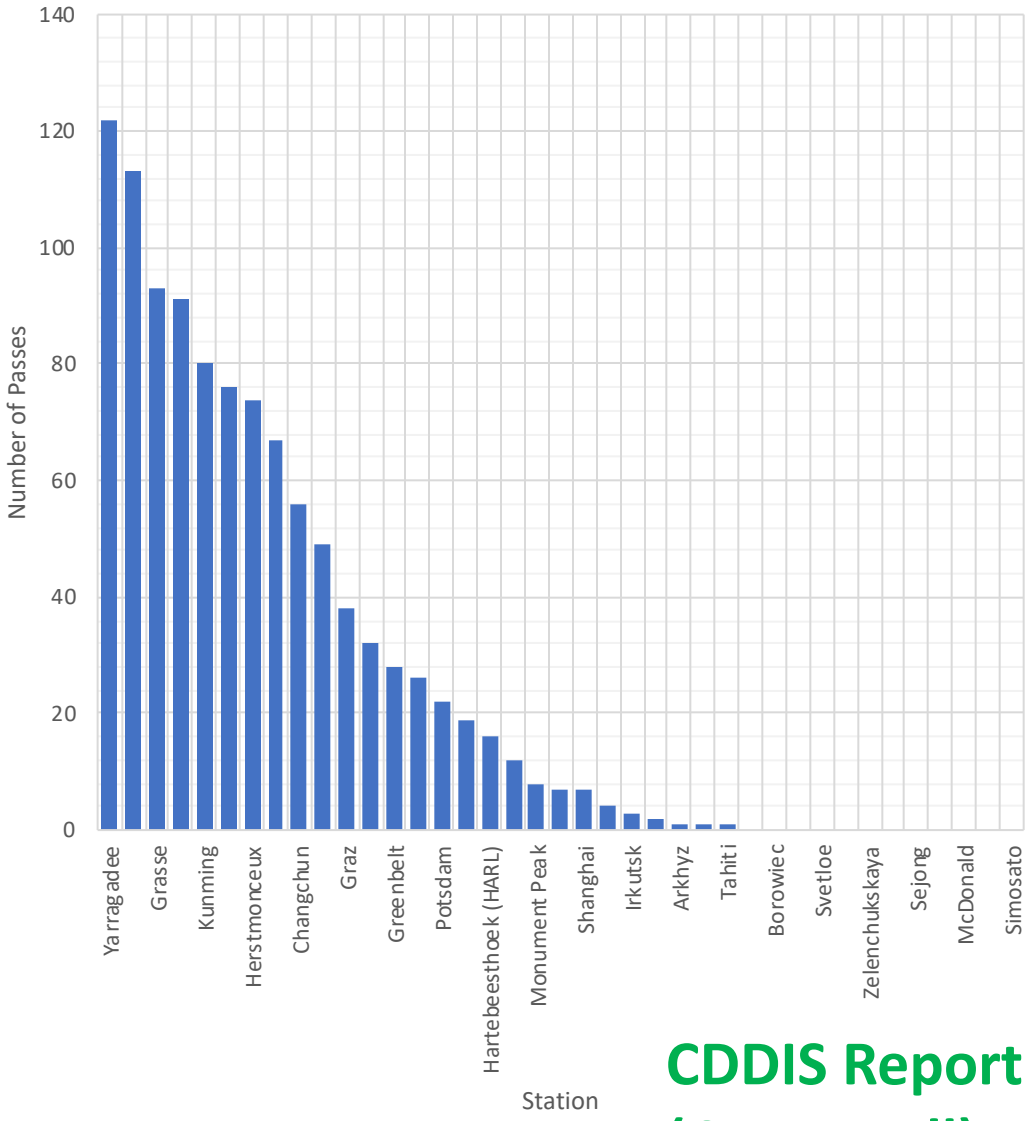


CDDIS Report (Carey Noll)

Campaign Tracking Totals by Network (Passes)



Campaign Totals by Station

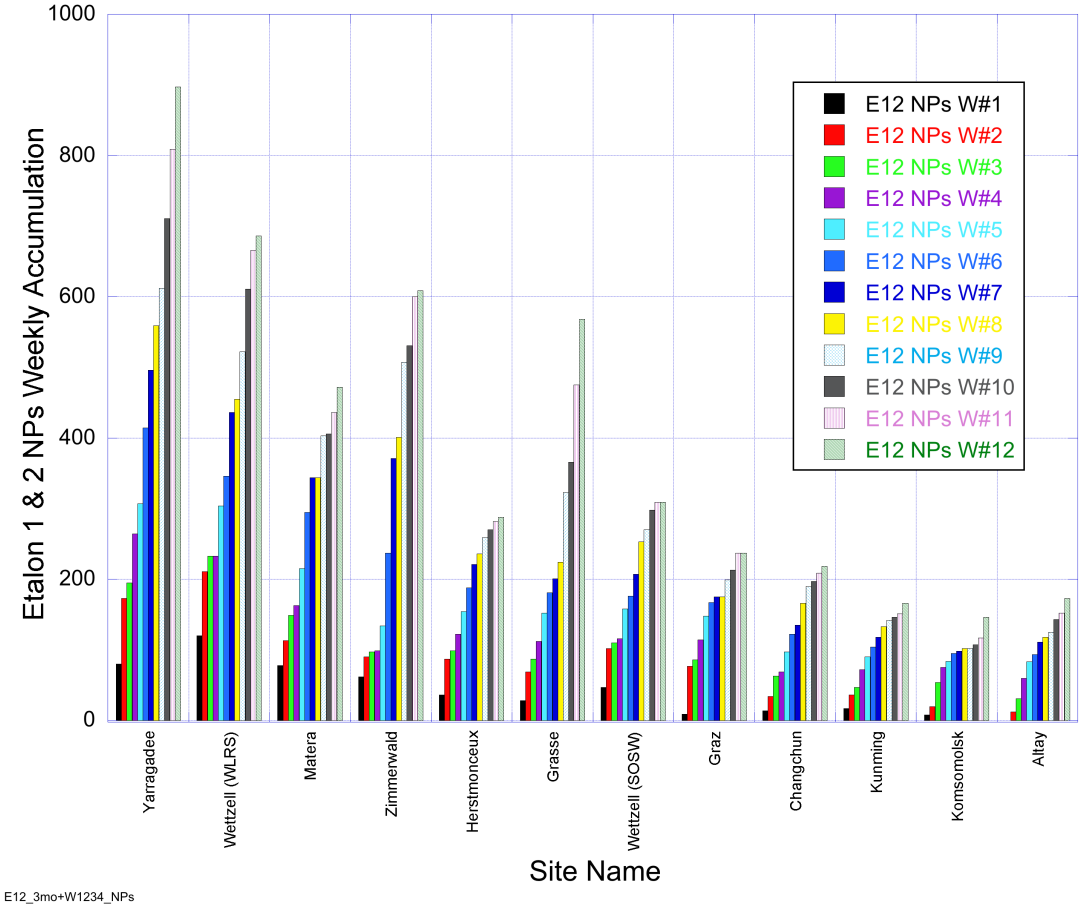


CDDIS Report (Carey Noll)

Etalon 1 & 2 Campaign 2019 Data Yield (02/15-05/15)

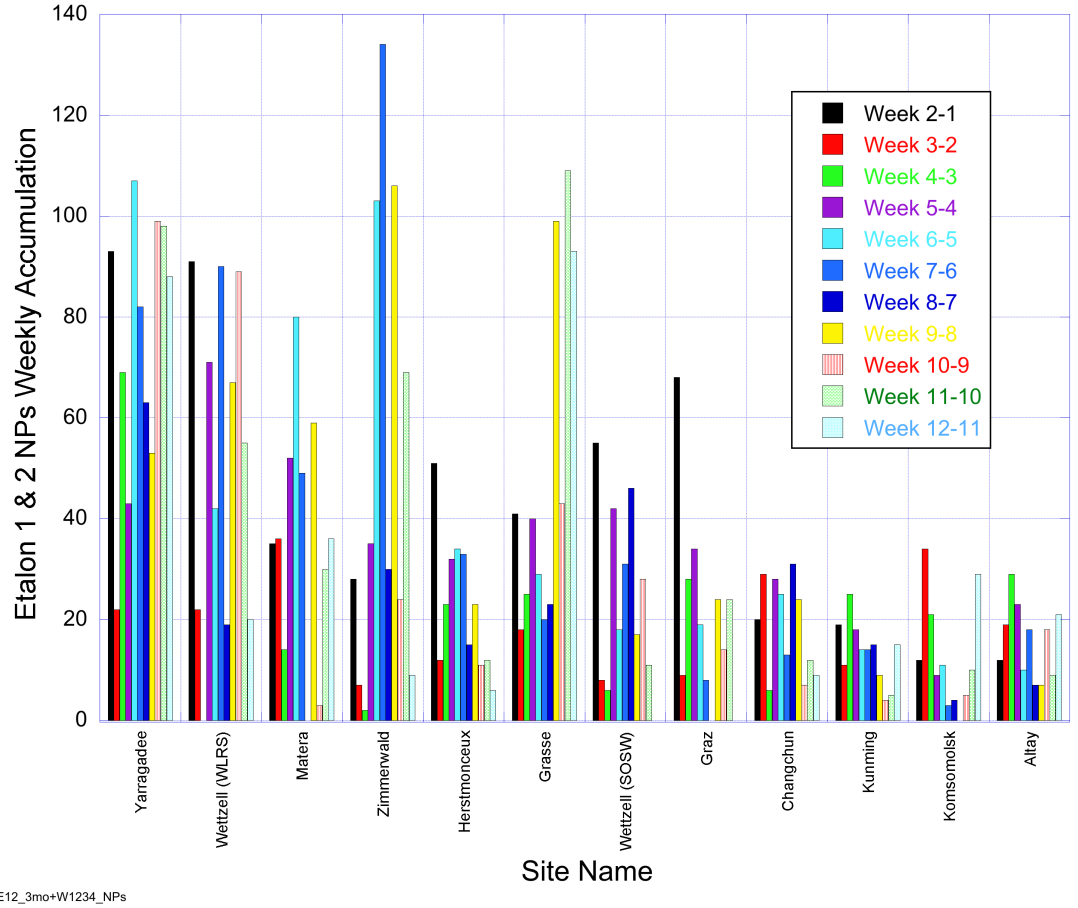
Top 12 Data Producer Stations

Weekly Accumulation



E12_3mo+W1234_NPs

Weekly Increments

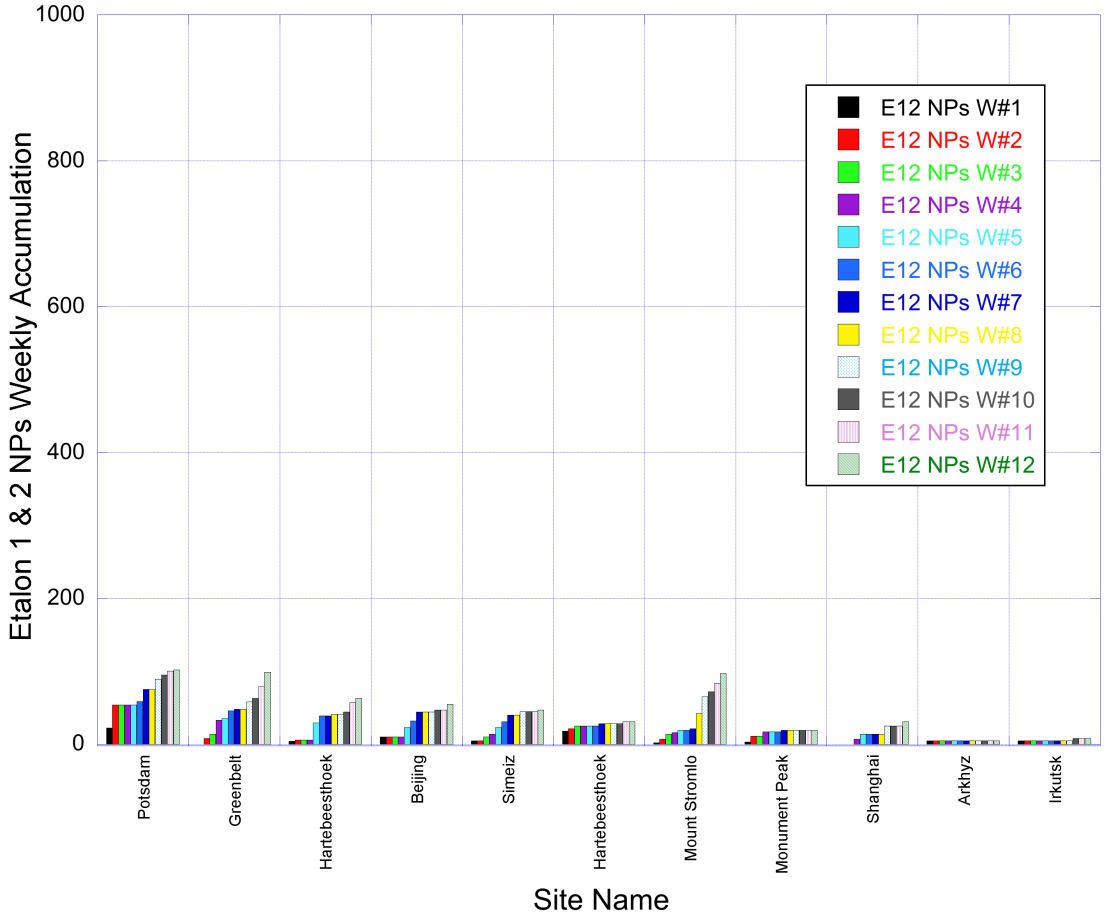


E12_3mo+W1234_NPs

Etalon 1 & 2 Campaign 2019 Data Yield (02/15-05/15)

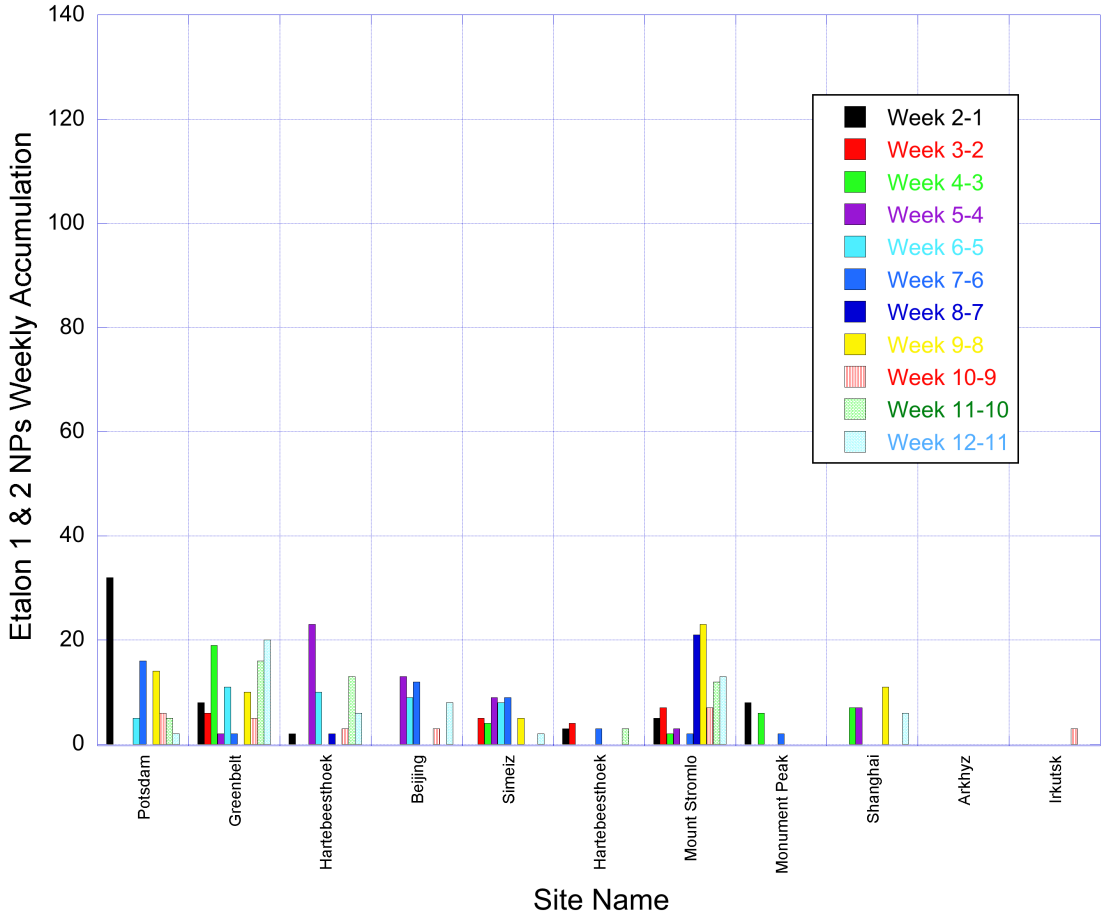
Low Data Yield Stations

Weekly Accumulation



E12_3mo+W1234_NPs

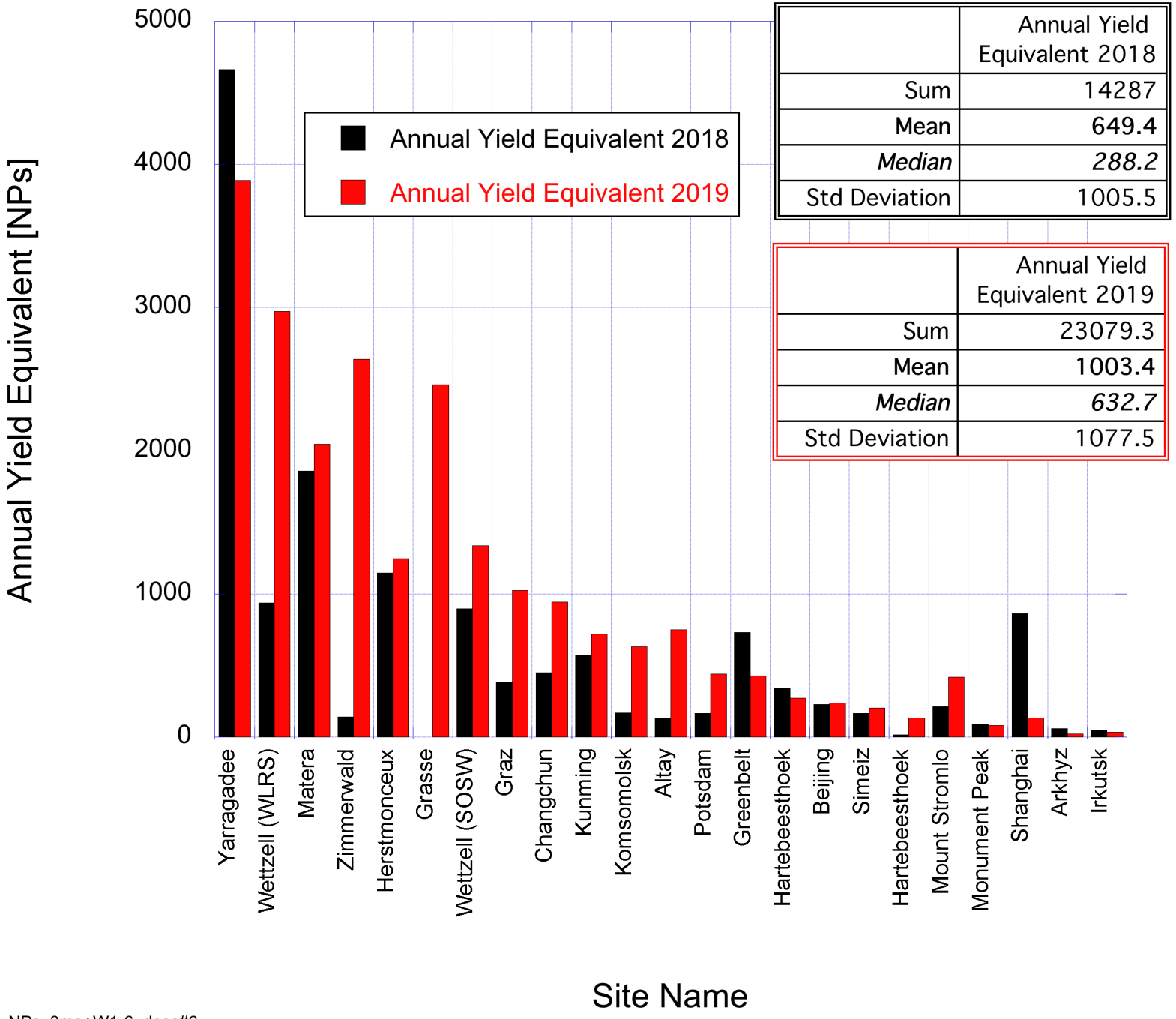
Weekly Increments



E12_3mo+W1234_NPs

Etalon 1 & 2 Campaign 2019 Data Yield (02/15-05/15)

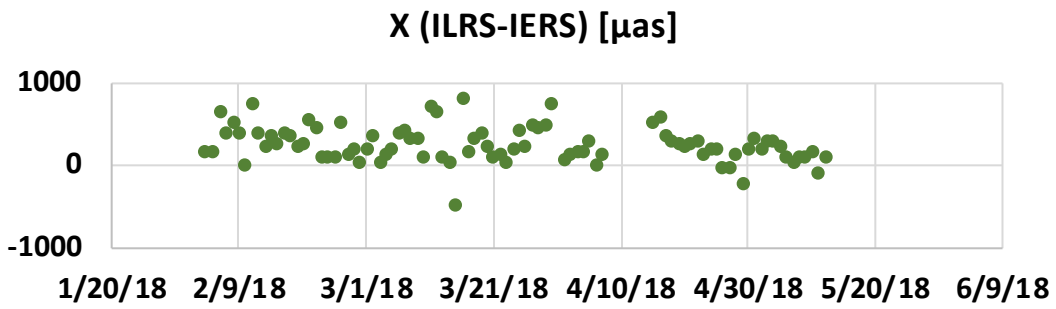
Annual data yield equivalent for 2018 and 2019, assuming the same weekly data yield as for the first three months of 2018 and over the 3-month campaign period of 2019.

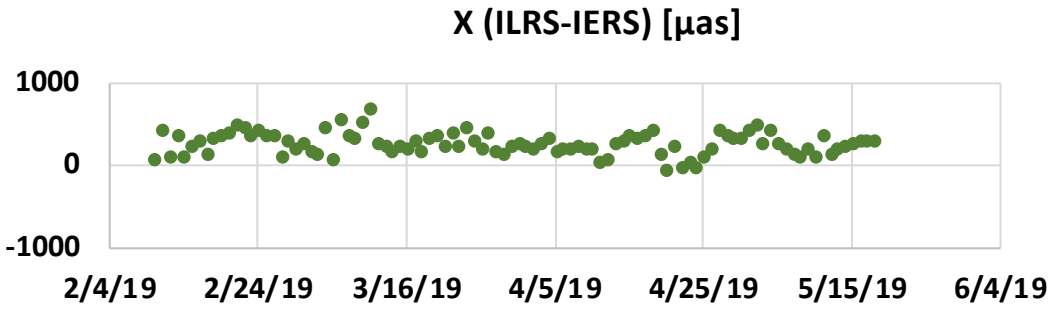


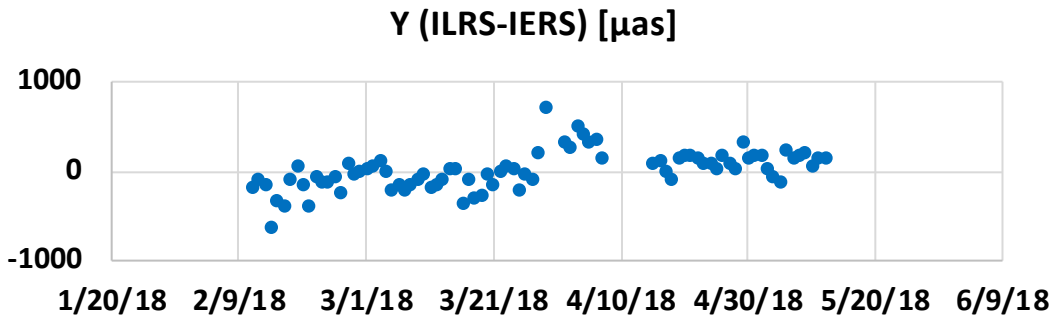
	Annual Yield Equivalent 2018
Sum	14287
Mean	649.4
Median	*288.2*
Std Deviation	1005.5

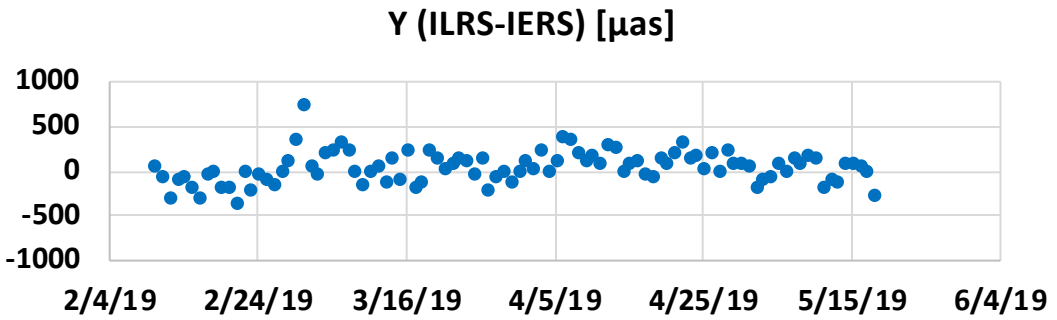
	Annual Yield Equivalent 2019
Sum	23079.3
Mean	1003.4
Median	*632.7*
Std Deviation	1077.5

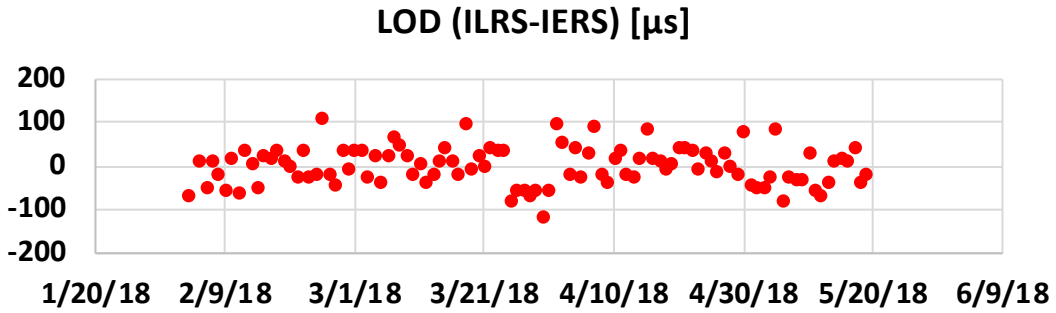
EOP Comparison for 2018 and 2019 Results

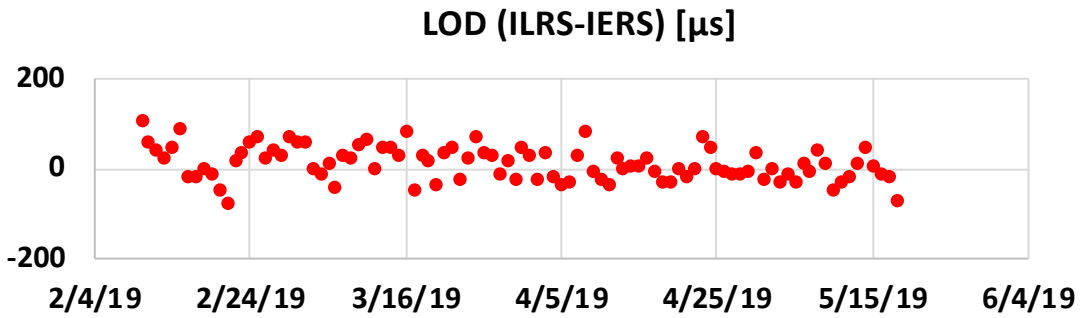












EOP Comparison Statistics for 2018 and 2019

2018 Non-Campaign Period

CASE	MEAN	STD	RMS
X (ILRS-IERS) [µas]	237.106	213.361	318.177
Y (ILRS-IERS) [µas]	-14.677	211.007	210.230
LOD (ILRS-IERS) [µs]	-3.409	43.595	43.521

2019 Campaign Period

CASE	MEAN	STD	RMS
X (ILRS-IERS) [µas]	246.291	134.835	280.453
Y (ILRS-IERS) [µas]	19.722	172.845	173.088
LOD (ILRS-IERS) [µs]	6.590	36.875	37.274

-37%

-18%

-15%