

EUROLAS Data Center (EDC) – Status Report 2016-2018

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Introduction

The EUROLAS Data Center (EDC) is one of two global data and operation centers of the International Laser Ranging Service (ILRS). Since 1991, the EDC has been archiving SLR data and products. They are available on FTP for the ILRS community. In this poster, a status report of the EDC over the period between 2016 and 2018 is given. In detail, statistics of the EDC data holding (full-rate, normal point, predictions, products) are shown.

Full-Rate Data (CRD)

Full-rate data are the basis for the estimation of Normal Points which are used by the analysis centers for the computation of products. In the period between Jan. 2016 and Aug. 2018, 37 stations delivered full-rate data for 134 satellites. Figure 1 shows the number of observations for each satellite, station and year.

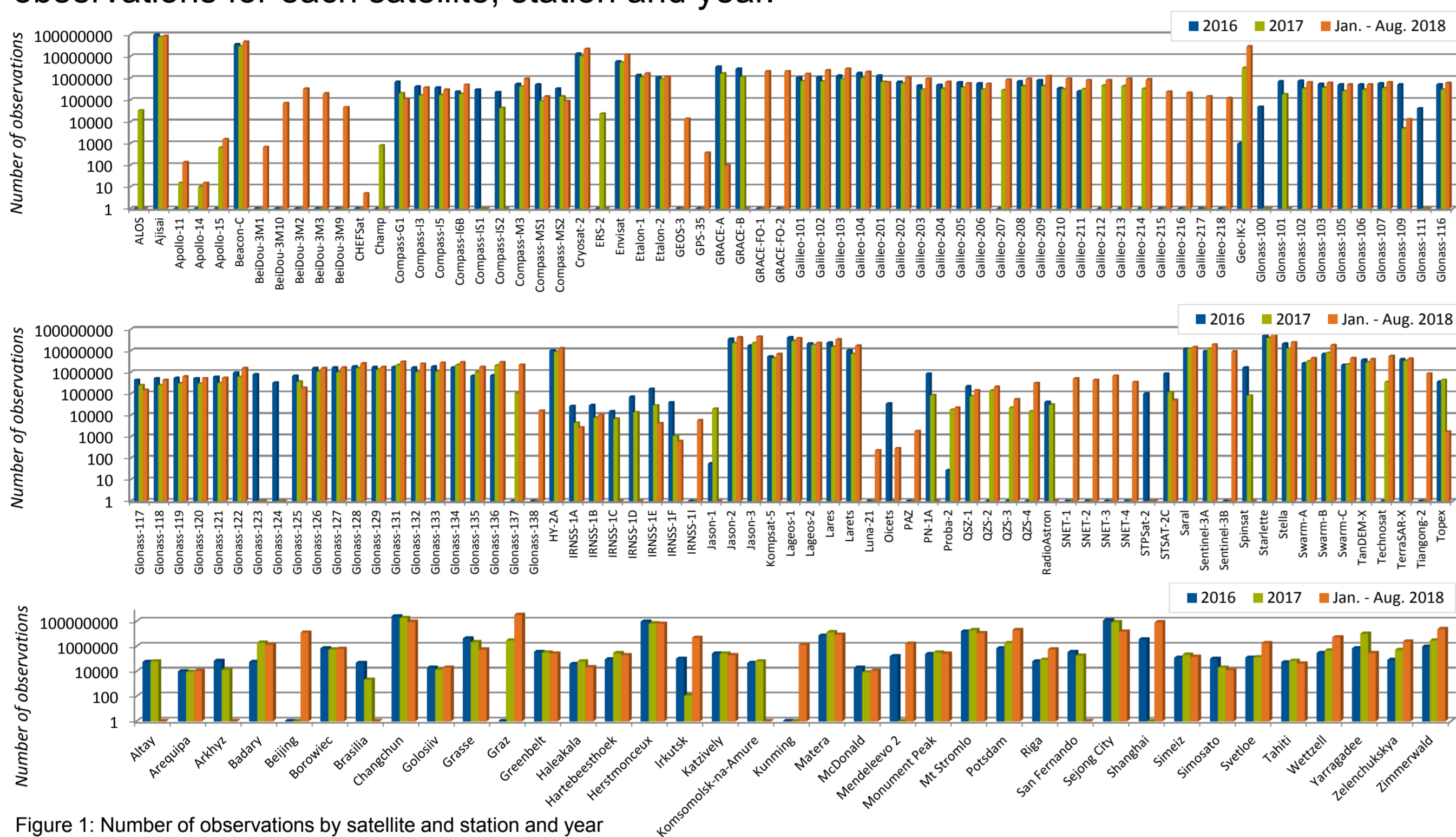


Figure 1: Number of observations by satellite and station and year

Compared to previous years, the number of monthly observations from full-rate data has risen strongly in 2018. The average of monthly observations varies between 40,926,673 (2016), 31,990,220 (2017) and 81,931,235 (2018). Figure 2 shows the development of the monthly observations.

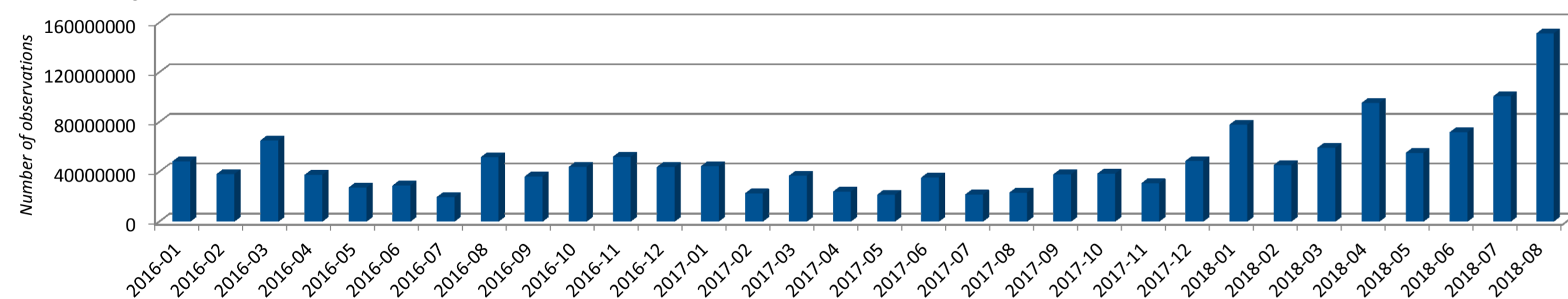


Figure 2: Statistics of the number of monthly observations

Normal Point Data (CRD)

Normal Point data are used by the analysis centers for the computation of products. In the period between Jan. 2016 and Aug. 2018, 40 stations delivered normal points for 138 satellites. Figure 3 shows the number of normal points for each satellite, station and year.

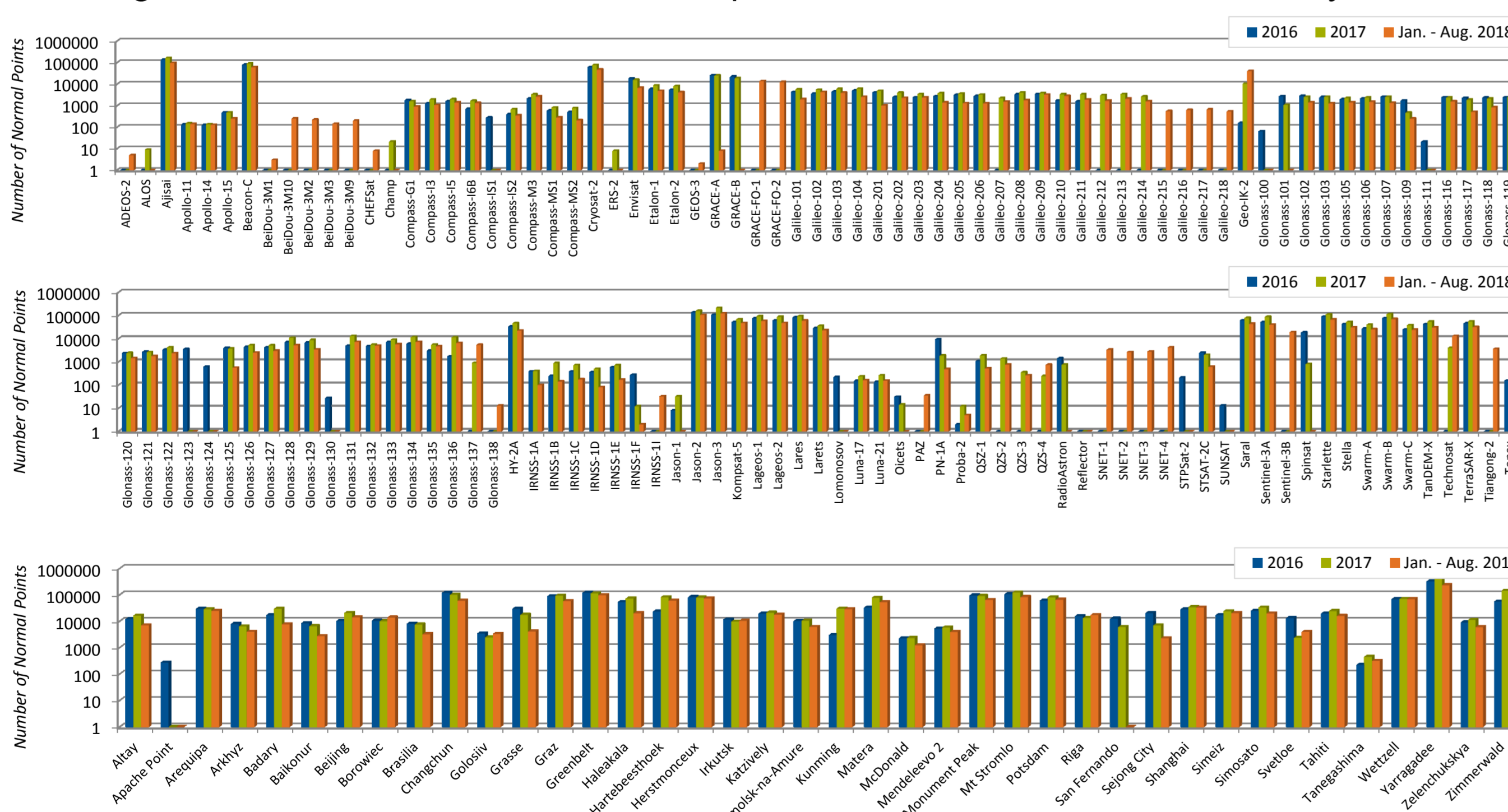


Figure 3: Number of normal points for each satellite and station and year

Since January 2016, the number of monthly normal points has varied strongly between 105,030 (Jan. 2016) and 223,938 (May 2017).

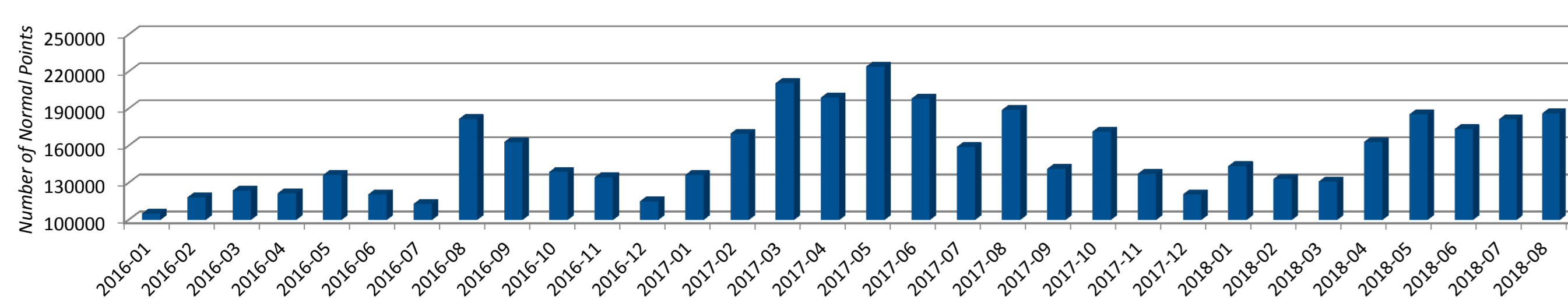


Figure 4: Statistics of the number of monthly normal points

Predictions (CPF)

Satellite predictions are essential for the SLR tracking by the SLR stations. In the period between January 2016 and August 2018, predictions (CPF) of 121 satellites were computed by 26 providers. Figure 5 shows the number of available predictions for each satellite and year.

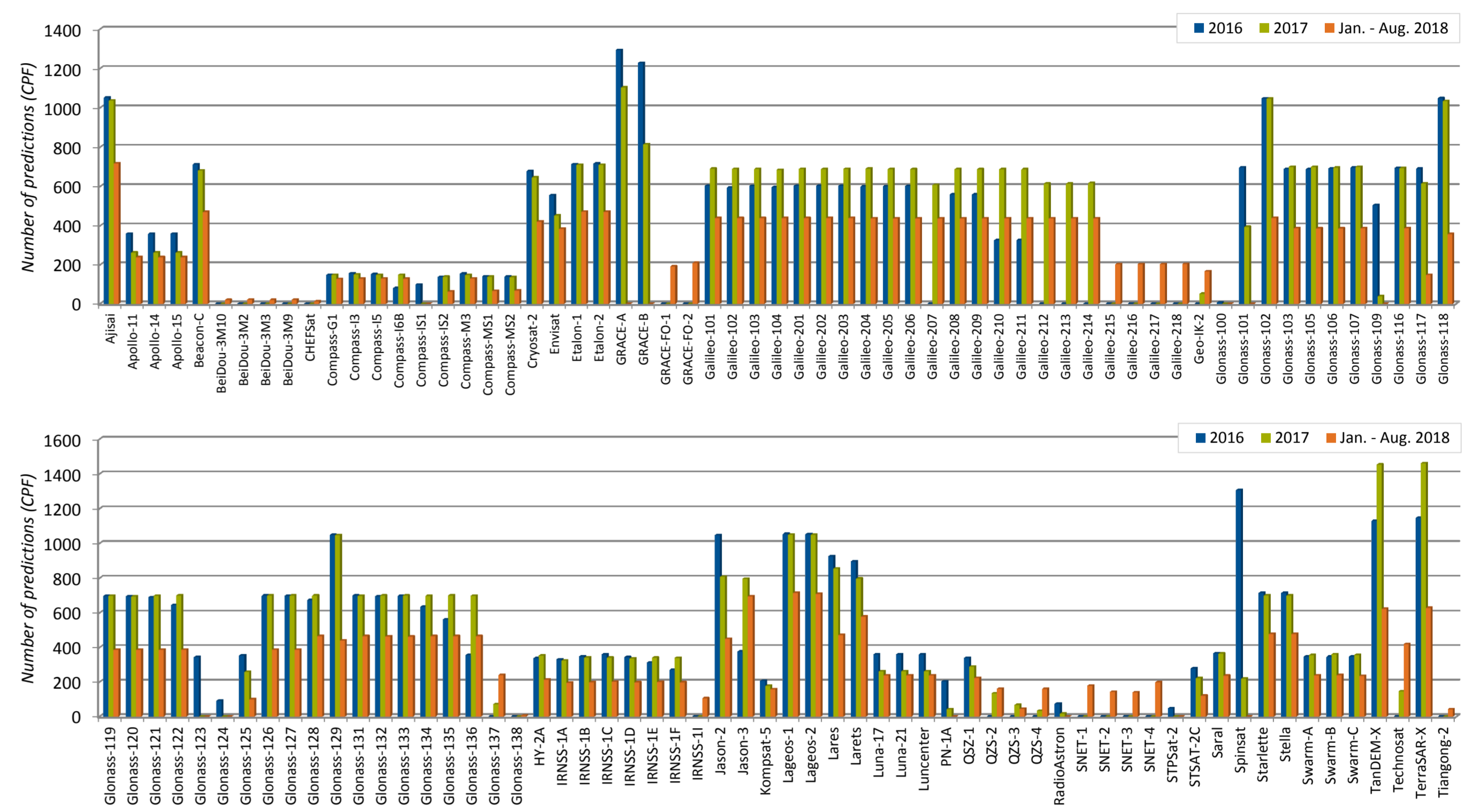


Figure 5: Statistics of the number of predictions by satellite and year

Since Jan. 2016, satellite predictions have been delivered by 26 providers. The most active providers are NSGF (666 CPF per month), ESA (626) and COD (622).

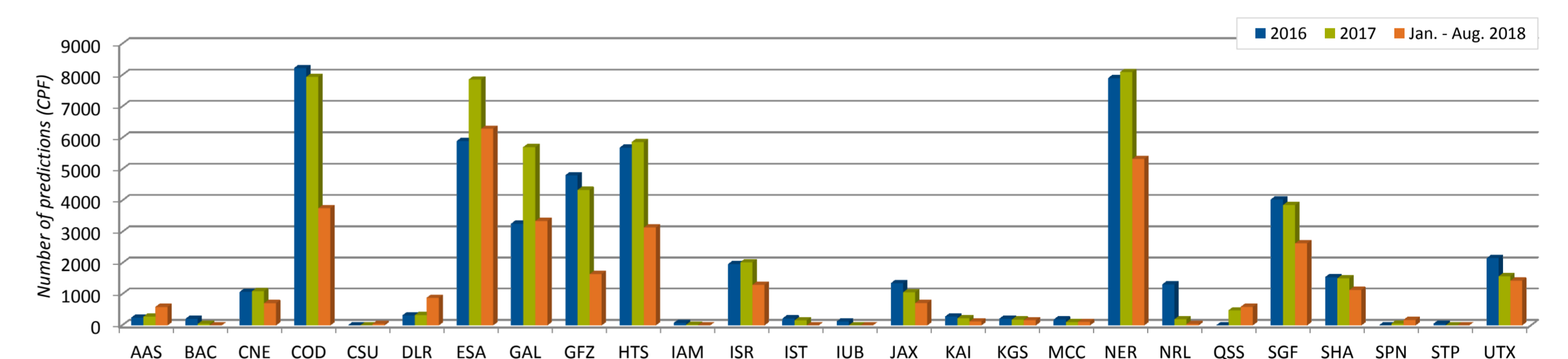


Figure 6: Statistics of the number of predictions by provider and year

Over the last three years, the number of daily predictions is stable (2016: 139 per day, 2017: 145, 2018: 140). Figure 7 shows the development of the monthly number of predictions between January 2016 and August 2018.

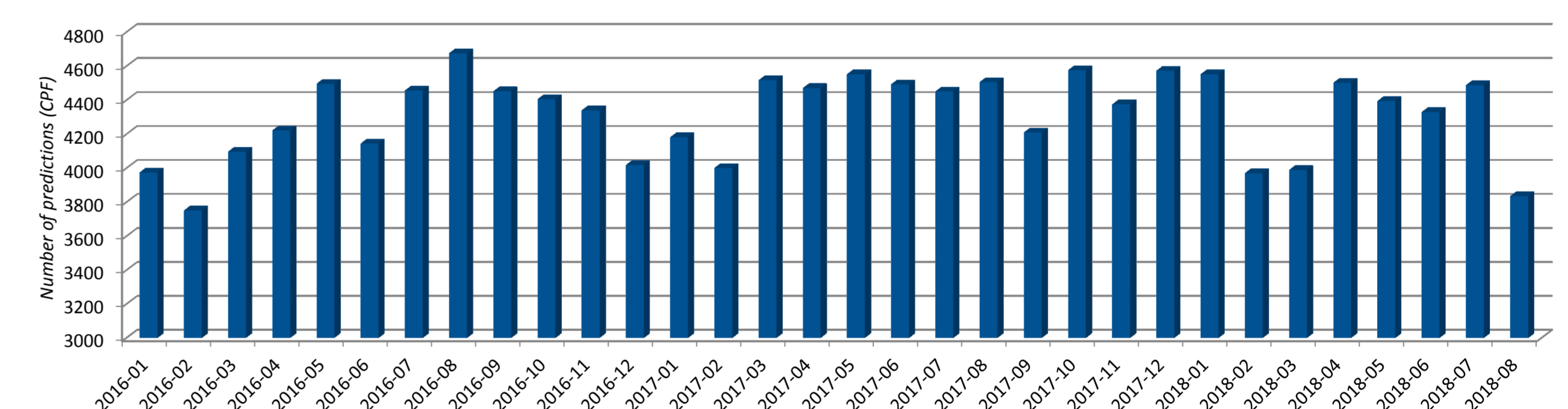


Figure 7: Statistics of monthly number of predictions

ILRS Products

The ILRS analysis centers deliver station position, Earth orientation parameter and orbits (Lageos-1/-2, Etalon-1/-2) to the EDC.

All products are provided via FTP to the ILRS community.

ILRS Mailing-Lists

The EDC maintains the SLR-Mail, SLR-Reports, SLR-Urgent and Rapid Service Mail mailing lists for the information exchange within the ILRS community.

Figure 9 shows the number of mails sent to the mailing lists by year.

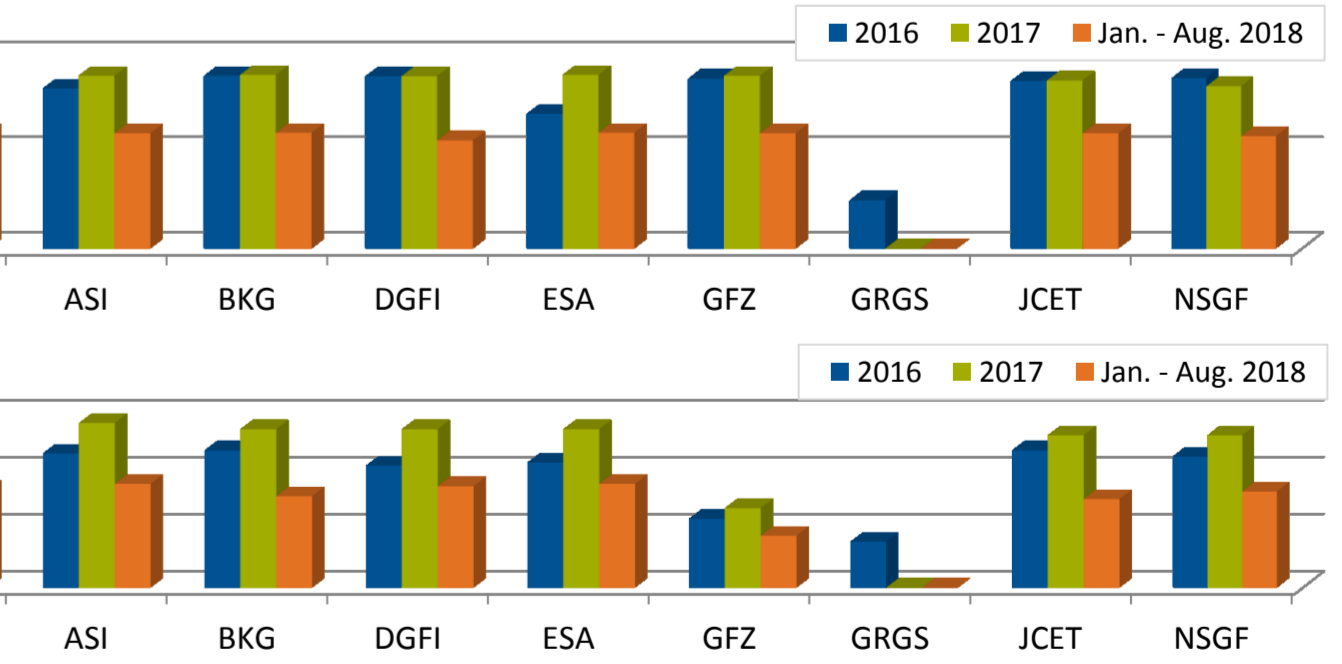


Figure 8: Statistics of daily delivered pos+eop products (top) and weekly orbits for Lageos-1/-2 and Etalon-1/-2 (bottom) by the different analysis centers

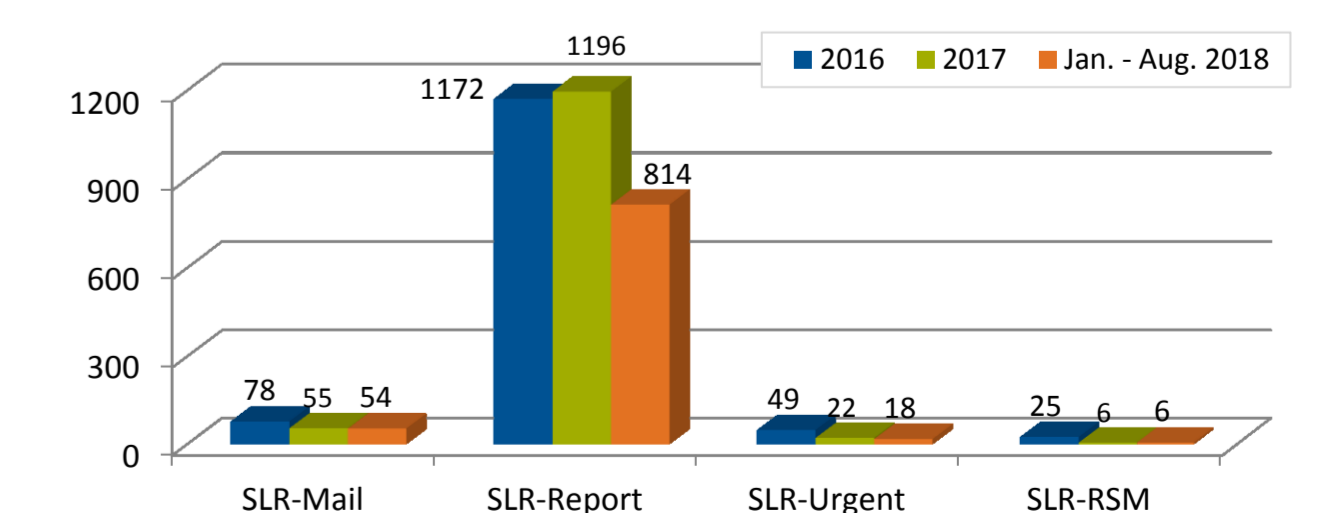


Figure 9: Statistics of the number of mails by mailing list and year

References

- Pearlman M.R., Degnan J.J., Bosworth J.M.: "The International Laser Ranging Service", Advances in Space Research, Vol.30, No. 2, 135-143, 2002