

EUROLAS Data Center (EDC) – Status Report 2014-2016

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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 2014 and 2016 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 data which are used by the analysis centers for the computation of products. In the period between Jan. 2014 and Aug. 2016, 32 stations delivered full-rate data for 102 satellites. Figure 1 shows the number of observations for each satellite, station and year.

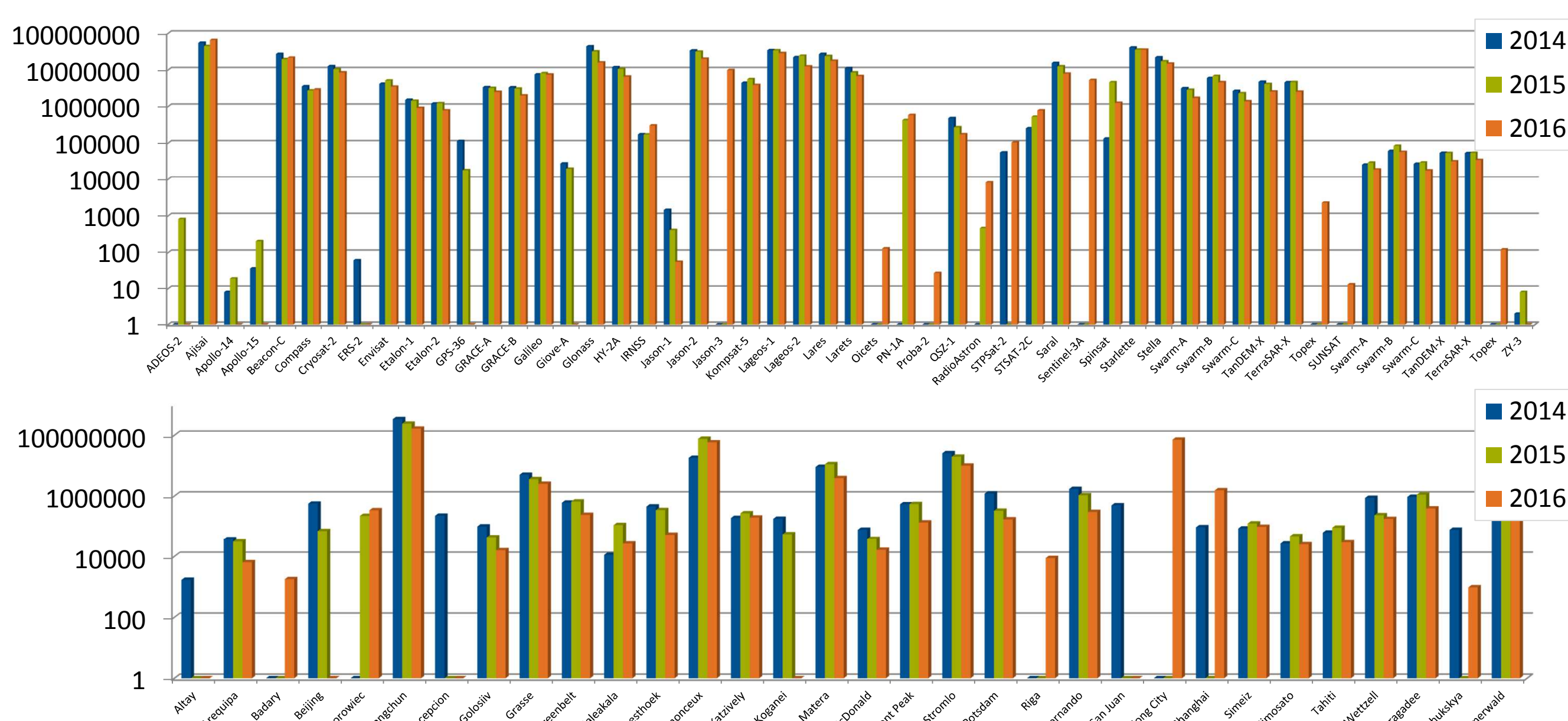


Figure 1: Number of observations for each satellite and station and year

Since Jan. 2014, the number of monthly observations from full-rate data varies strongly between 12,874,422 (May 2014) and 65,885,937 (Nov. 2014). Figure 2 shows the development of the monthly observations.

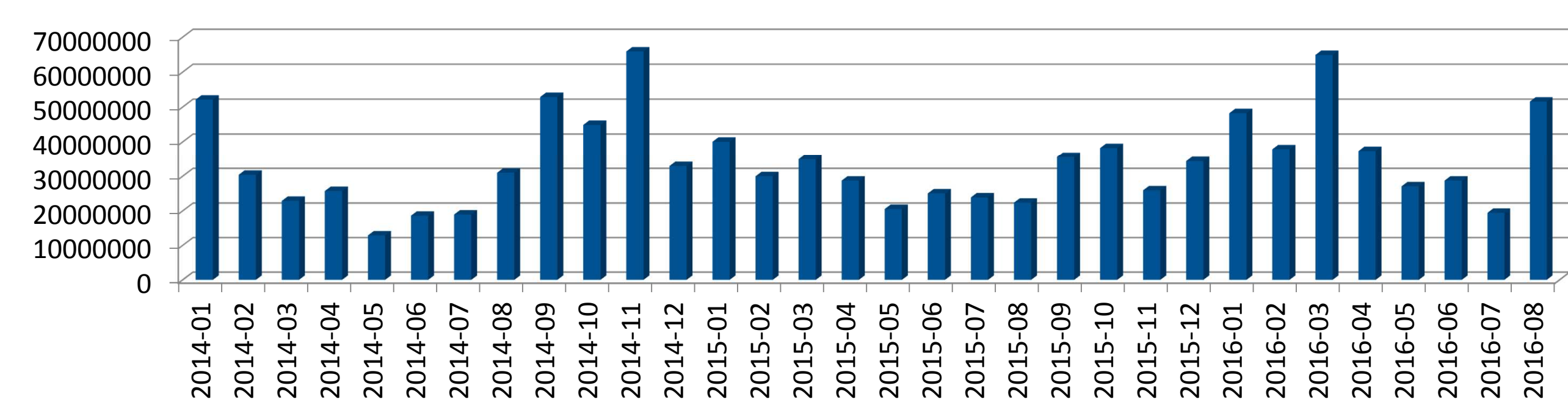


Figure 2: Statistics of monthly number of observations

Normal Point Data (CRD)

Normal Points data are used by the analysis centers for the computation of products. In the period between Jan. 2014 and Aug. 2016, 44 stations delivered full-rate data for 110 satellites. Figure 3 shows the number of normal points for each satellite, station and year.

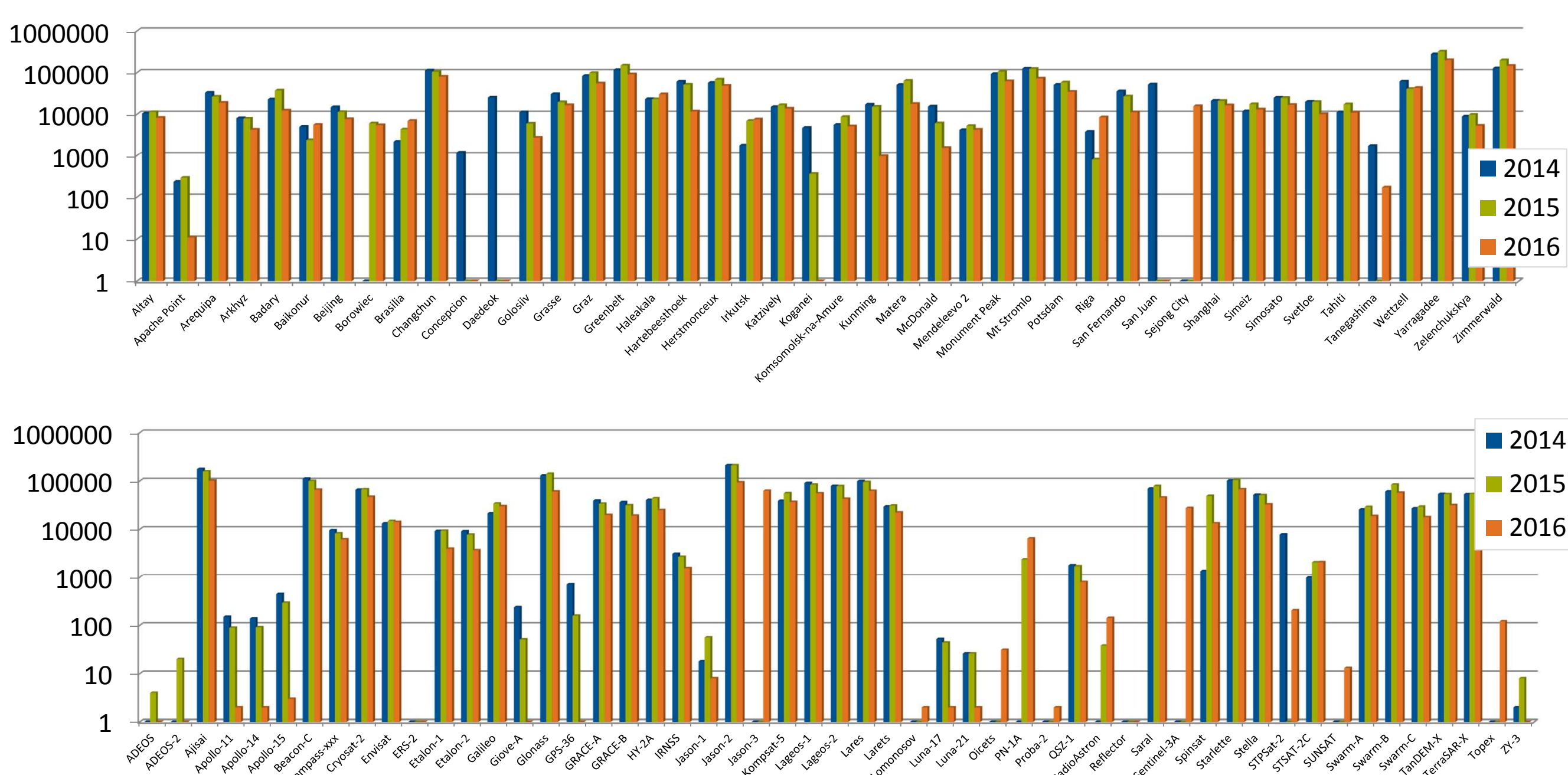


Figure 3: Number of normal points for each satellite and station and year

Since Jan. 2014, the number of monthly normal points has varied strongly between 104,860 (Jan. 2016) and 177,917 (Mar. 2014).

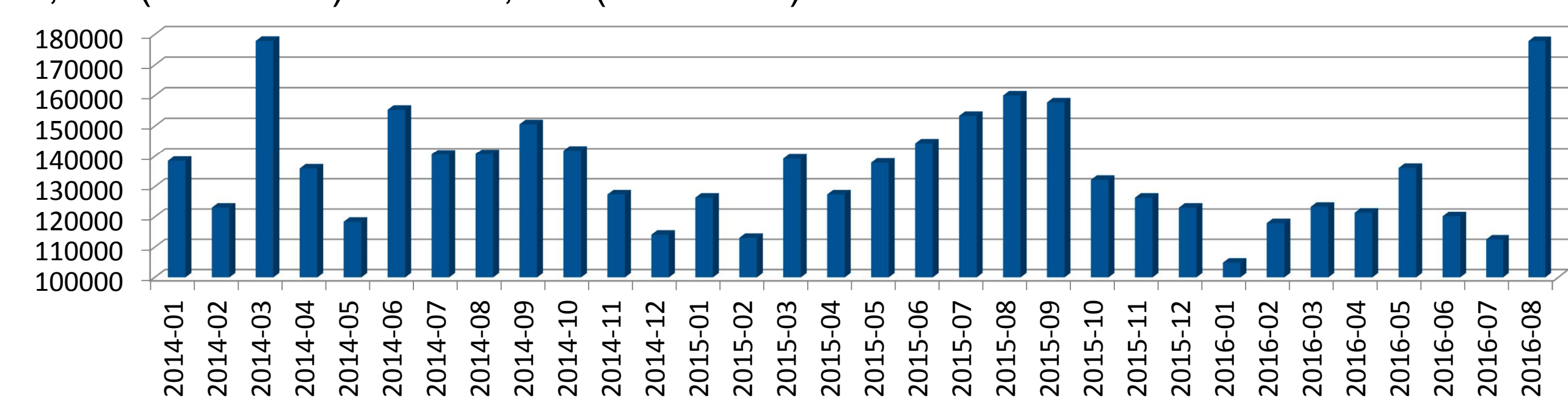


Figure 4: Statistics of monthly number of normal points

Predictions (CPF)

Satellite predictions are essential for the SLR tracking by the SLR stations. In the period between January 2014 and September 2016, predictions (CPF) of 99 satellites were computed by 26 providers. Figure 5 shows the number of available predictions for each satellite and year.

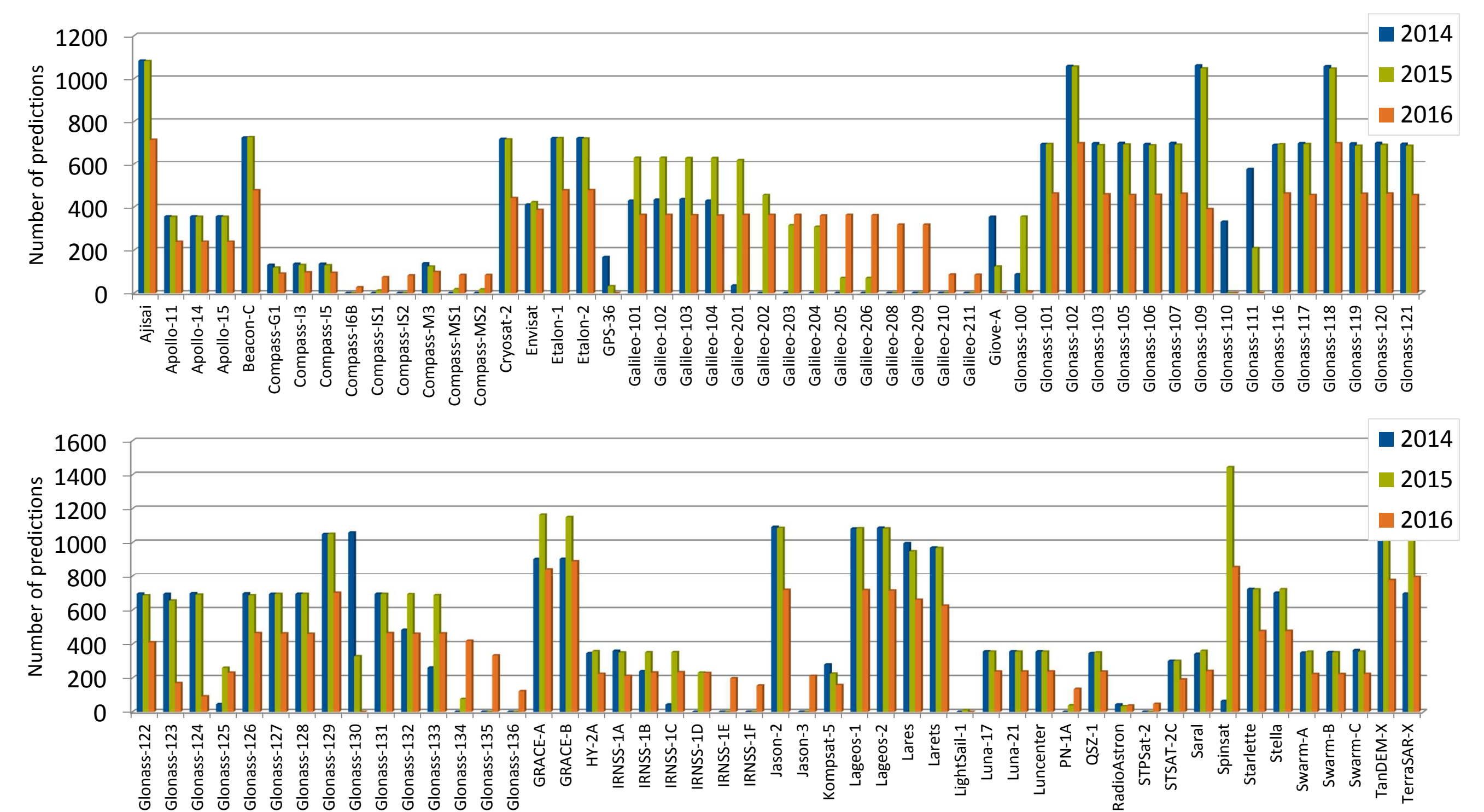


Figure 5: Statistics of number of predictions by satellite and year

Since 2014, satellite predictions have been delivered by 26 providers. The most active providers are the “Center for Orbit Determination in Europe” (CODE) and the “NERC Space Geodesy Facility” (NSGF) with 678, respectively 649, predictions per month.

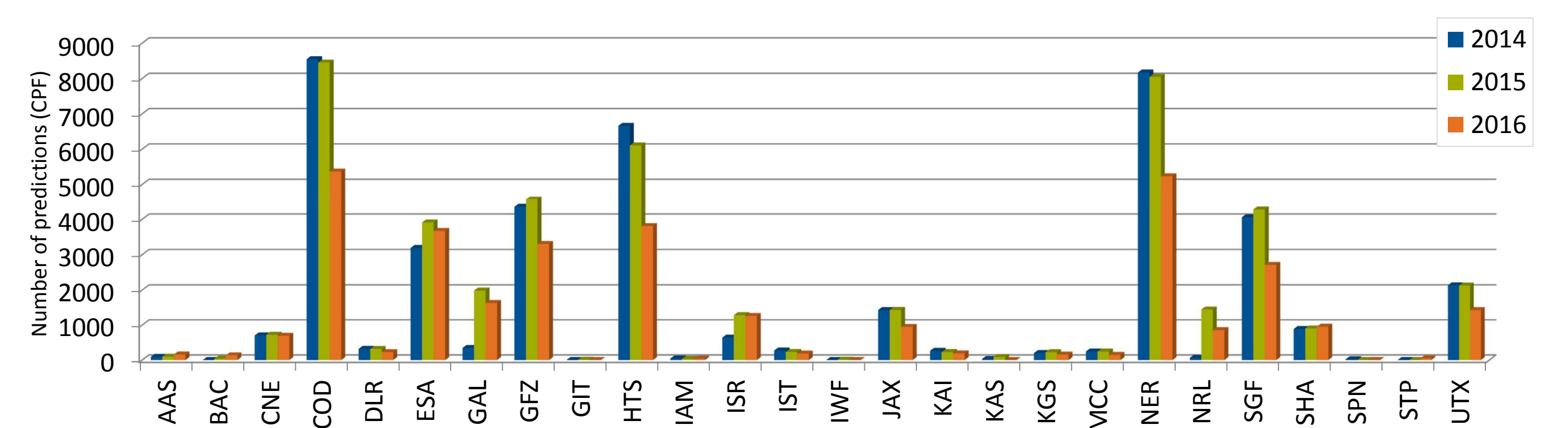


Figure 6: Statistics of number of predictions by provider and year

Over the last three years, the number of predictions has increased daily 117 per day in 2014 up to 136 in 2016. Figure 7 shows the development of the monthly number of predictions between January 2014 until September 2016.

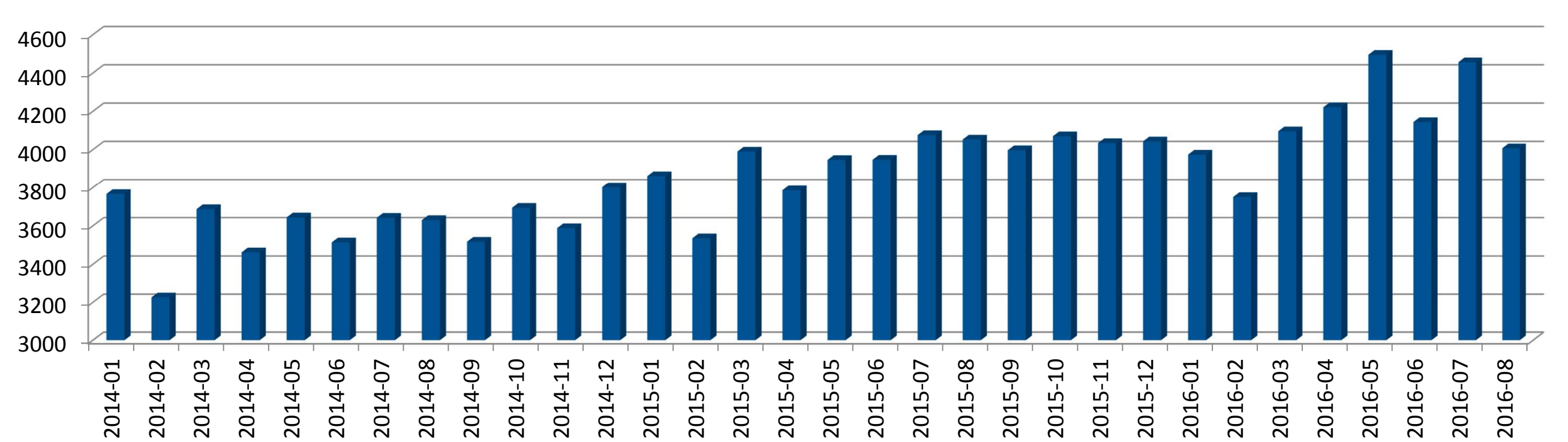


Figure 7: Statistics of monthly number of predictions

ILRS Products

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

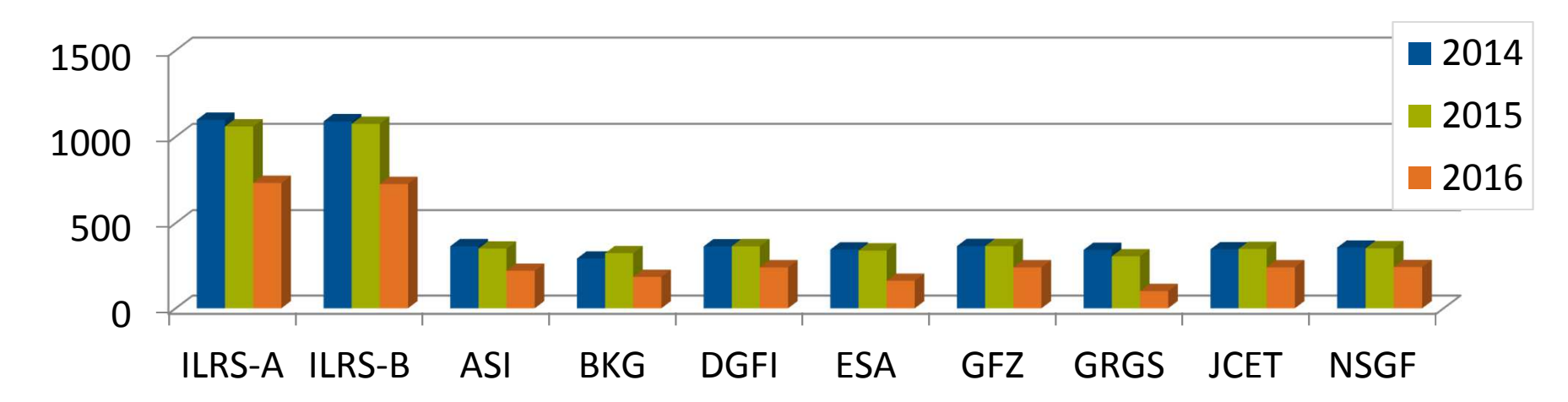


Figure 8: Statistics of daily delivered products of station positions and Earth orientation parameters by the different analysis centers

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.

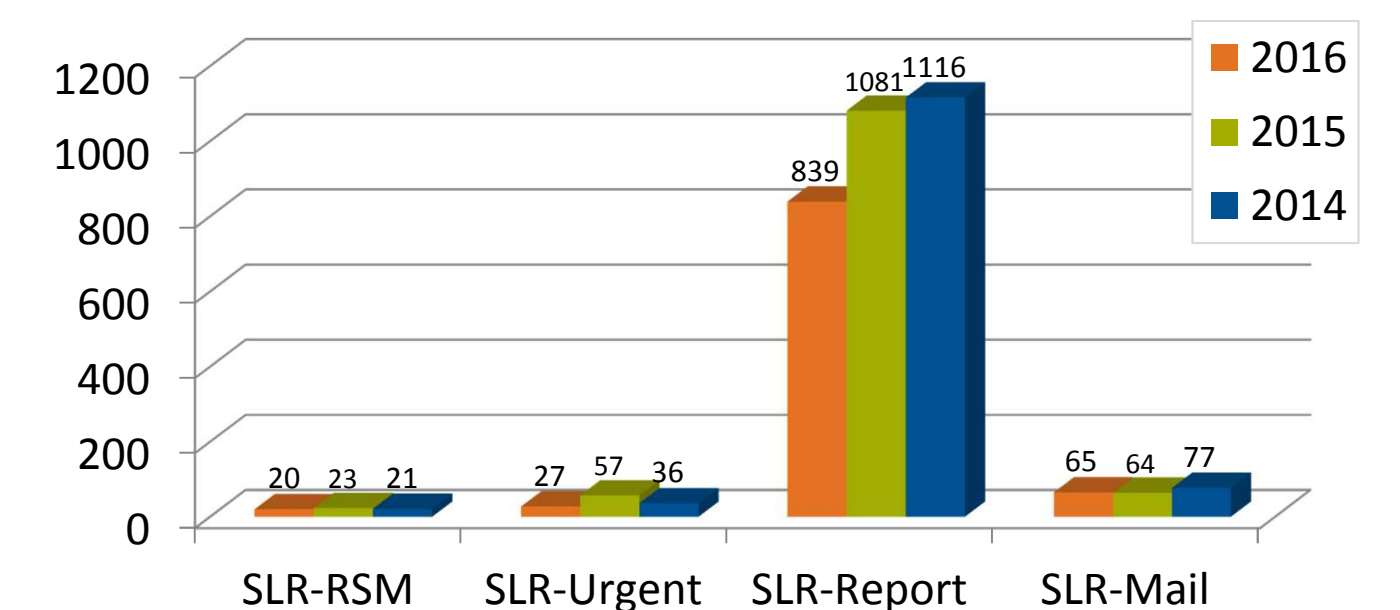


Figure 9: Statistics of number of mails by list and year

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