

GNSS tracking at Herstmonceux

Herstmonceux tracks all ILRS GNSS and Etalon missions and in addition now tracks **all** GLONASS.

As there are 24 operational GLONASS this results in **3 times** as many GNSS-altitude satellites being tracked.

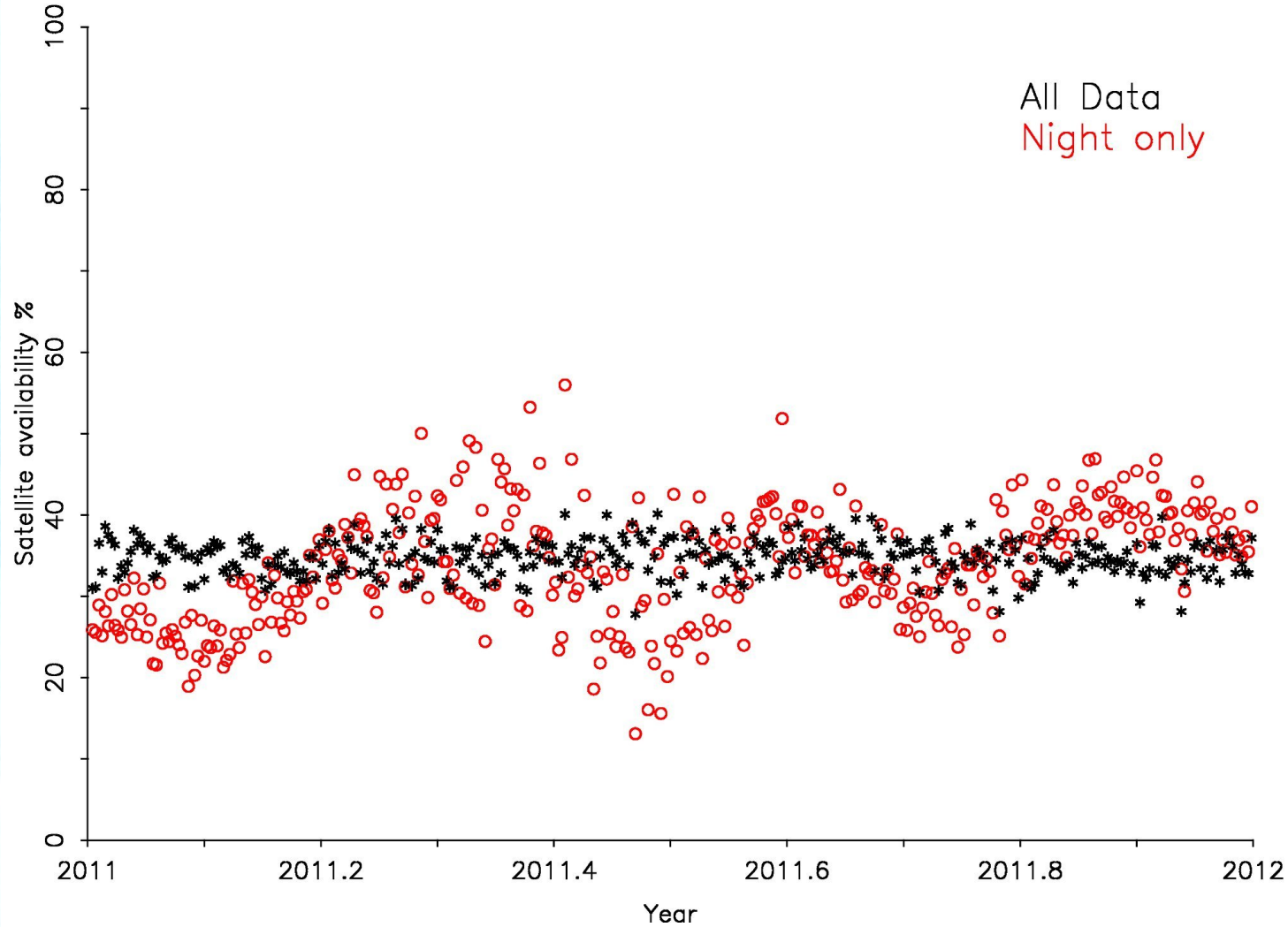
This scenario is similar to what could be requested from GNSS missions in the future.

Is there spare capacity to do this?

Demands on a SLR Station. e.g. Hx

All LEO Satellites

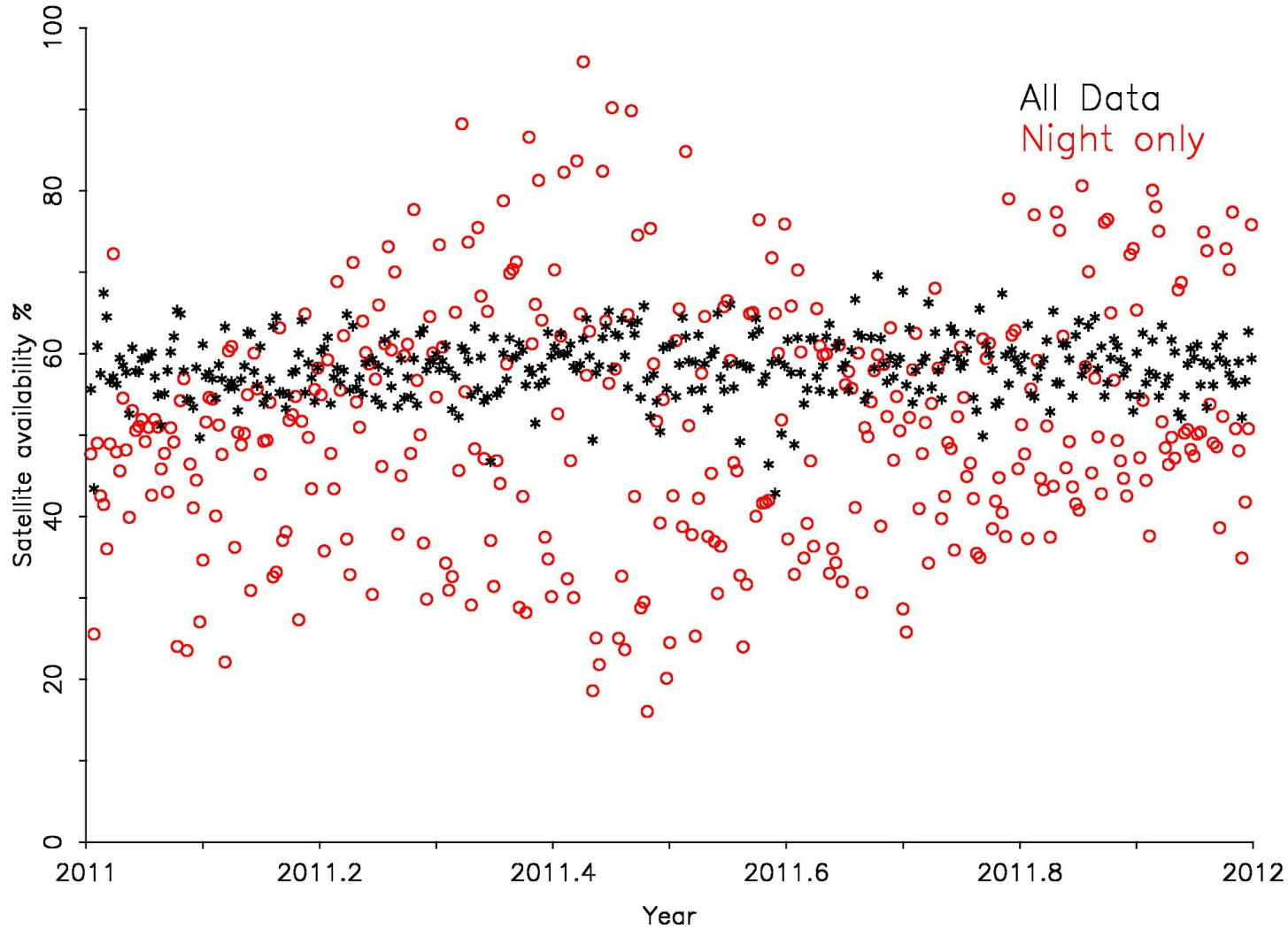
Demand for Satellite Laser Ranging at Hx for each day of 2011 as a percentage



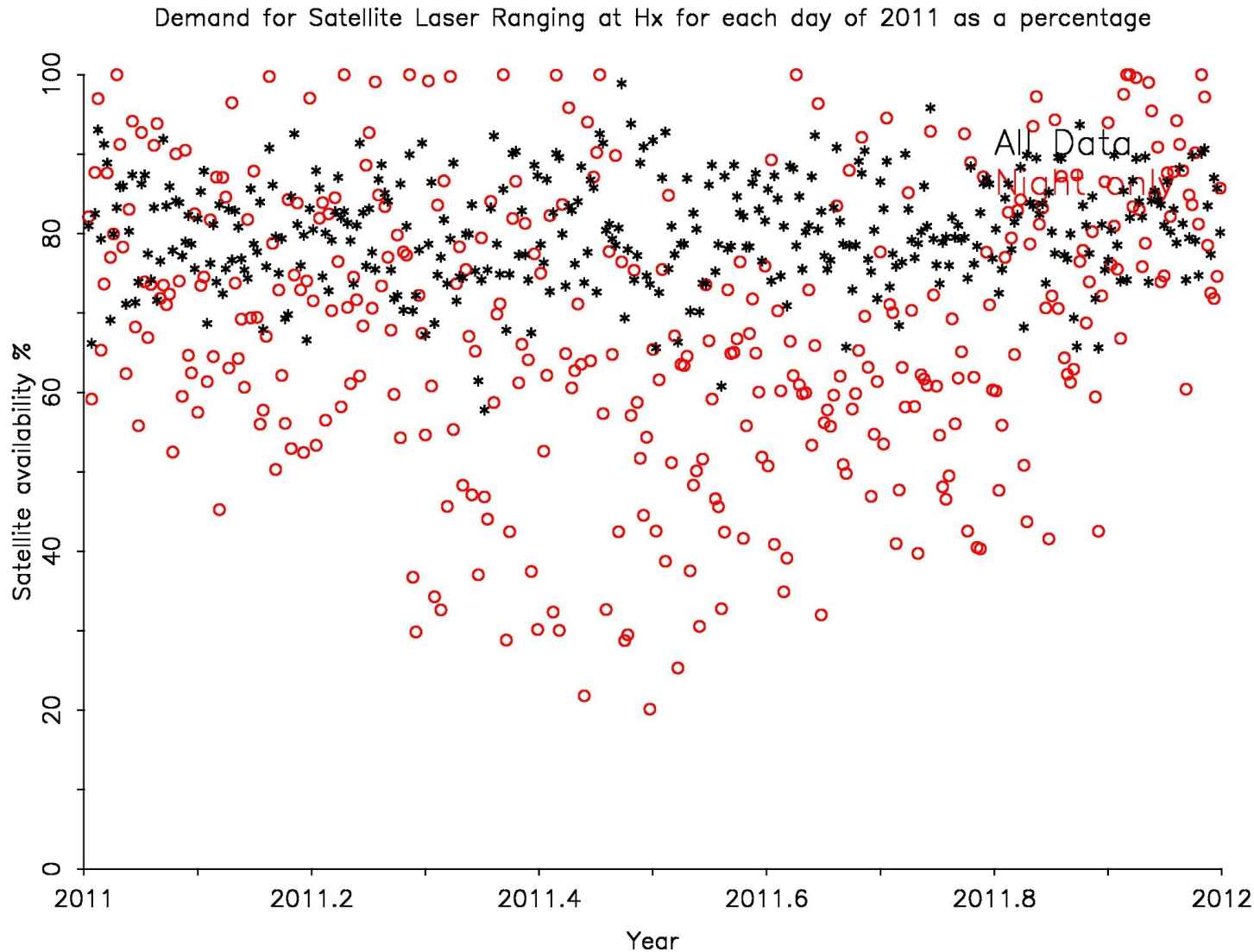
Demands on a SLR Station. e.g. Hx

All LEO
Satellites
+
Lageos 1&2

Demand for Satellite Laser Ranging at Hx for each day of 2011 as a percentage



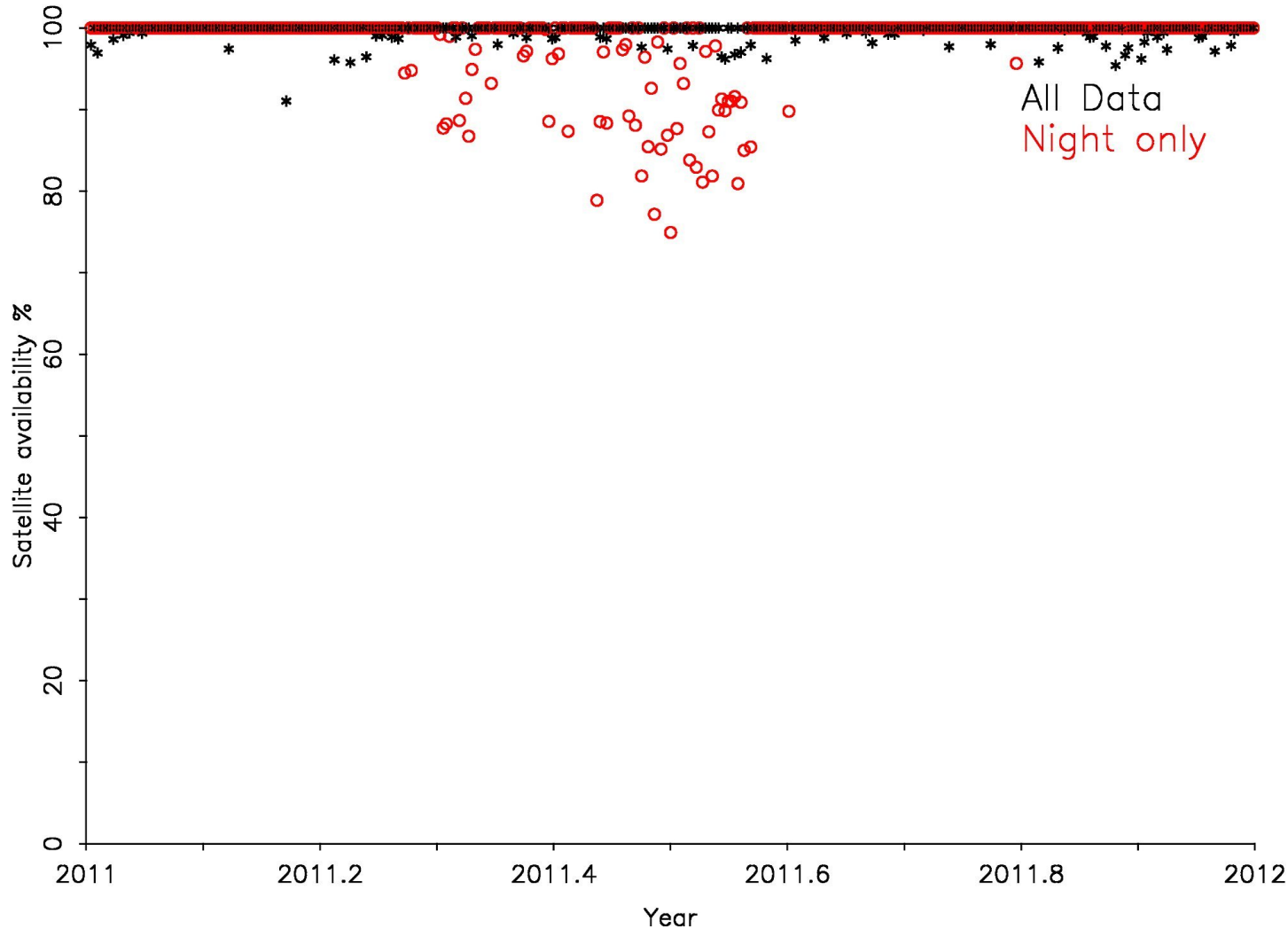
Demands on a SLR Station. e.g. Hx



All LEO
Satellites
+
Lageos 1&2
+
Etalon 1&2
+
GIOVE A&B
CompassM-1
GPS 36

Demands on a SLR Station. e.g. Hx

Demand for Satellite Laser Ranging at Hx for each day of 2011 as a percentage



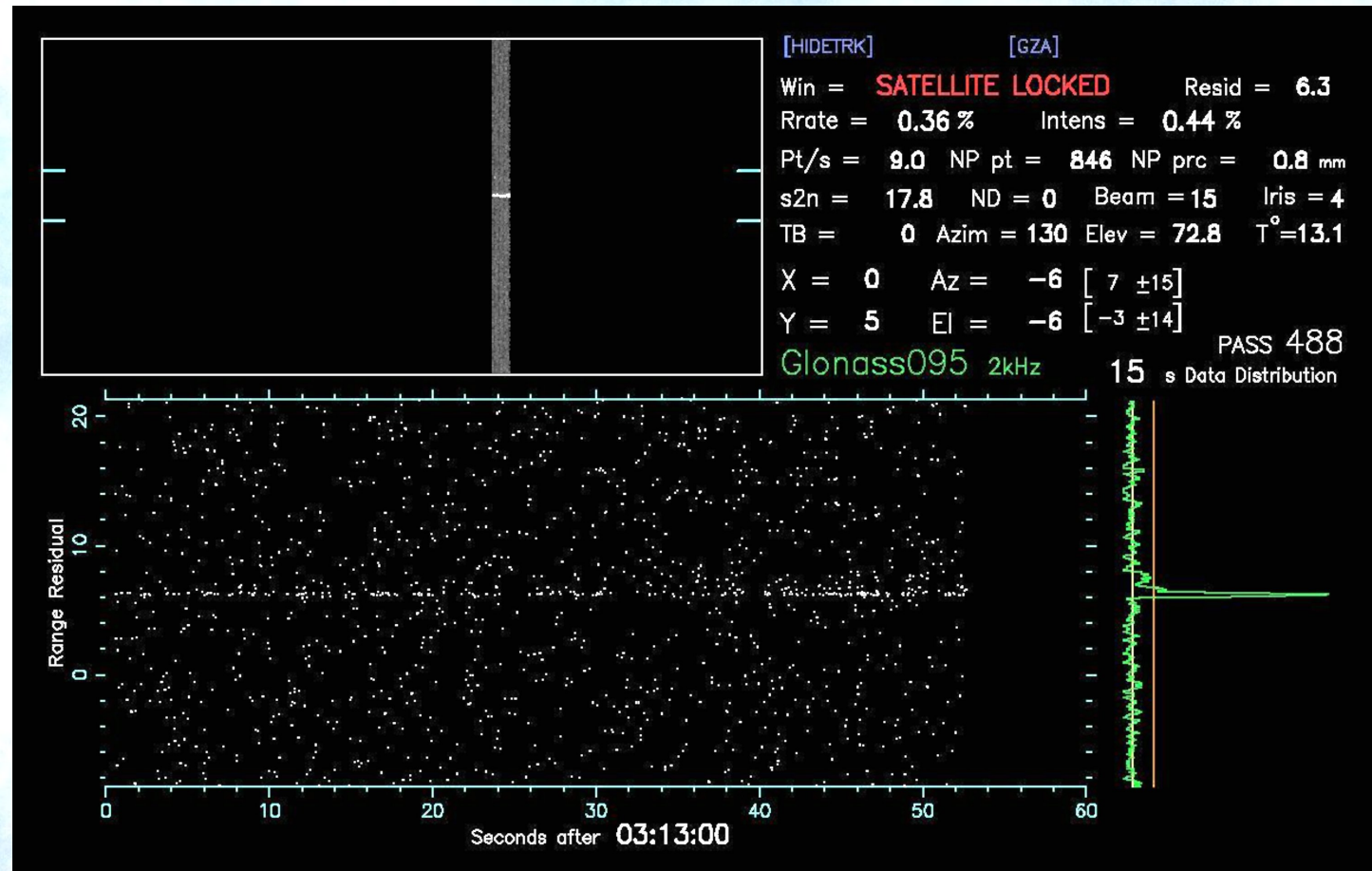
All LEO
Satellites
+
Lageos 1&2
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Etalon 1&2
+
GIOVE A&B
CompassM-1
GPS 36
+
All Glonass

Real time precision

Maximising SLR tracking efficiency of many GNSS satellites can be achieved using real-time precision calculations.

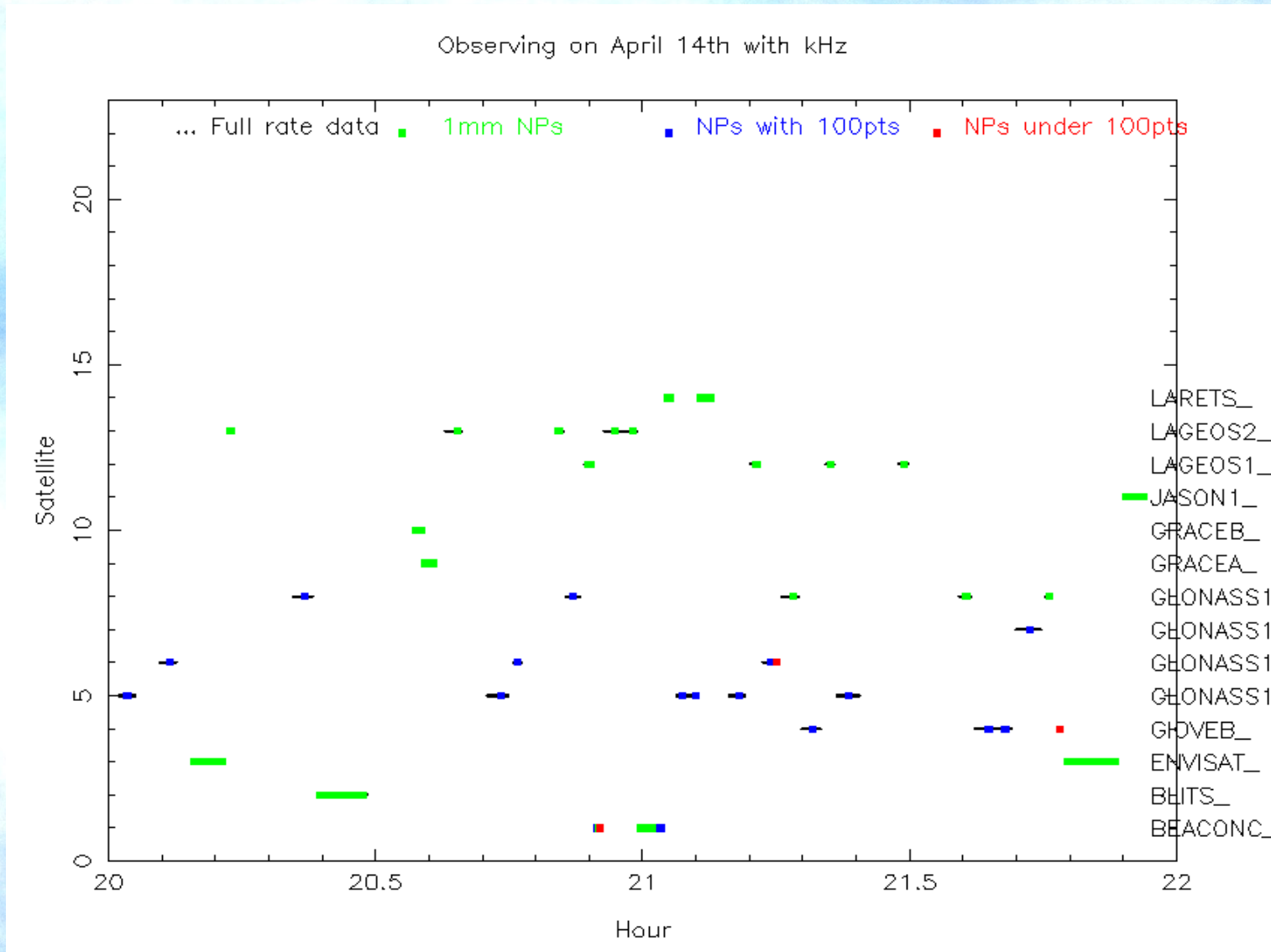
This is best suited to the high-rate laser systems which can reach better than 1mm normal point precision quickly.

Need reliable track detection



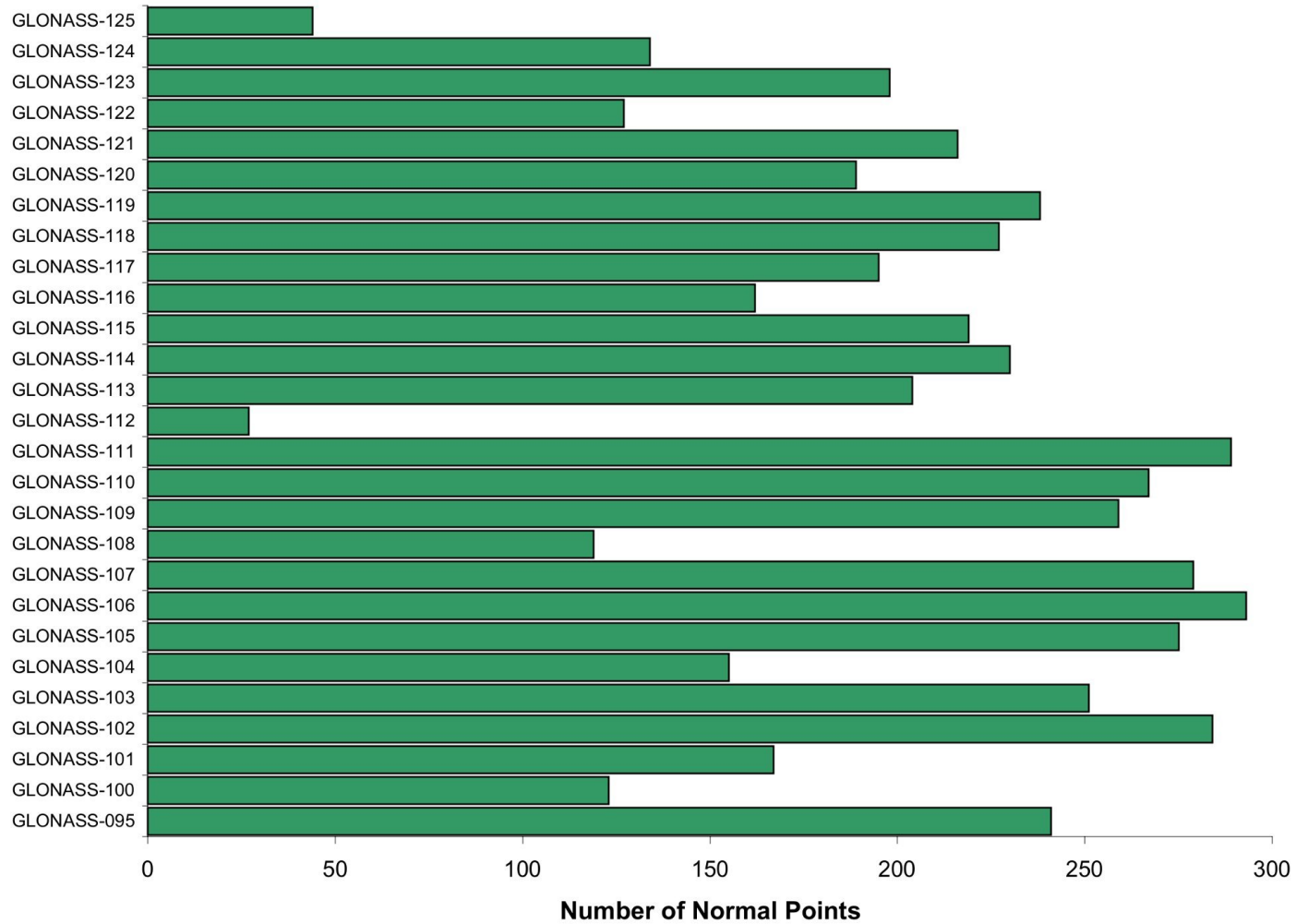
Efficient satellite switching

Many satellites can be tracked over a short period - but the observer has to work hard!



Successful GNSS SLR

GLONASS tracking at the SGF, Herstmonceux during 2010-2011



Conclusion

There is spare capacity in the SLR station schedule to observe many GNSS without impacting on the LAGEOS and LEO tracking.

Herstmonceux routinely tracks all GNSS satellites and makes attempts during the day in good conditions.

Support for all GNSS satellites in the coming years as their numbers continue to increase could be more demanding.

Continued full support should depend on the future requirements from GNSS and the abilities of the ILRS network, which is likely to be dominated by funding issues at individual stations.