

## **ILRS Pass Performance Standard Revision 2015**

In 1996, at the International Workshop on Laser Ranging in Shanghai, the SLR community established a Satellite Pass Performance Standard of 1500 passes which was adopted by the ILRS at the 1998 Workshop in Deggendorf, Germany. The standard was broken down into LEO (1000 passes), LAGEOS (400 passes) and the newly introduced HEO satellites (100 passes). At the time, the ILRS had far fewer satellites on its tracking roster.

We recognized that stations had different cloud cover conditions, different levels of technology and operational readiness, and different staffing levels. The standard was set conservatively to give stations a target for improved performance on one hand and to recognize high achieving stations on the other.

Since that time our technologies have evolved, our procedures have improved, and we have considerably more ranging experience. We are more successful with daylight tracking and our retroreflector designs are more efficient. Above all, however, the number of targets has increased dramatically. As a result, it is now time to set a greater expectation.

As of late 2015, the network is tracking 23 LEO satellites, 3 LAGEOS-class satellites (including LARES), and 30–50 HEO (including GNSS and GEO) satellites.

In redefining the ILRS Pass Performance Standard we considered the following performance target levels as a basis:

- 2 passes per week on each LEO satellite (2300 LEO passes per year)
- 4 passes per week on each LAGEOS satellite (600 LAGEOS passes per year)
- 2 passes per week on each HEO satellite (>3000 HEO passes per year)

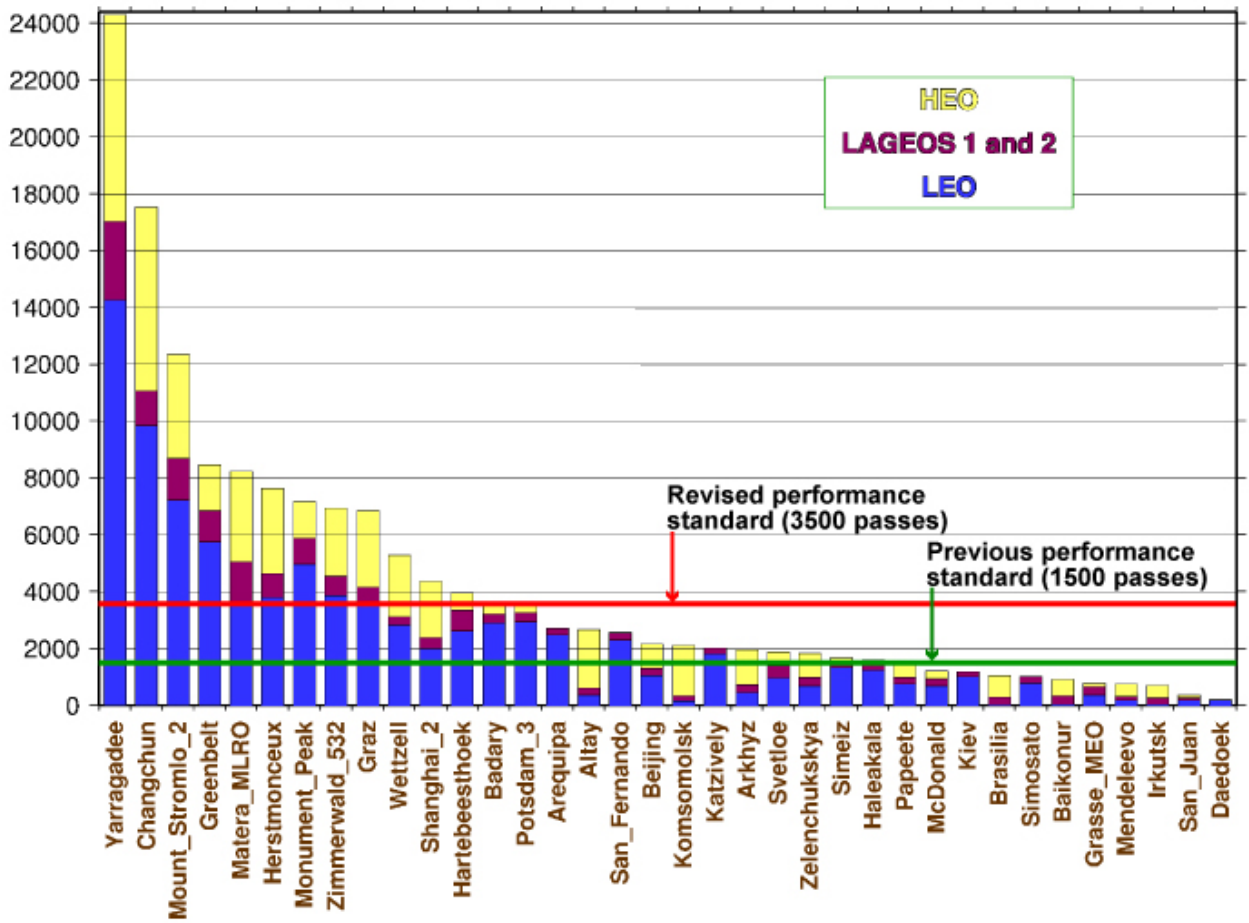
**The Governing Board has set the new ILRS Pass Performance Standard at 3500 passes per year.**

Stations exceeding this level will be deemed High Performance Stations.

We realize that some stations have disadvantages and may have a difficult time meeting this standard; your data remain very important and we urge you to expand your station's capability in any way possible. We also urge stations to recognize that the current trend is toward kilohertz lasers and event timers so that normal points can be taken much more quickly, providing much more efficient pass interleaving. This capability will be critical to meet our future needs. New stations not achieving a full year of data at the time of the report card will be flagged as such on the chart.

ILRS stations should be able to track GNSS satellites. Our tracking load in GNSS will increase and we will need as much coverage as possible to meet our users' requirements. Station upgrades and procedures should include a GNSS ranging capability (including daylight tracking).

**total passes**  
**from October 1, 2014 through September 30, 2015**



20151003

Total passes for current report card period (October 01, 2014 through September 30, 2015) showing original ILRS Pass Performance Standard (green line, 1500 passes) and revised ILRS Pass Performance Standard (red line, 3500 passes).