



# SLR Station Riga Status Report

Poster 1837

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## Infrastructure Upgrades

The SLR telescope building has been renovated:

- Repaired external walls and rolling roof support pillars.
- New electrical lines and connectors.
- New air-conditioning and heating at the laser room and a door dust curtain.
- Replaced UPS.
- Red and IR light illumination at the telescope for security and telescope motion control.



SLR building before and after the renovation



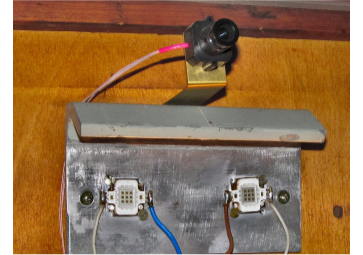
Primary mirror replacement



Old PMT & SLR visual channel



New PMT & SLR video channel



IR-Webcam and IR light diodes

## Hardware Upgrades

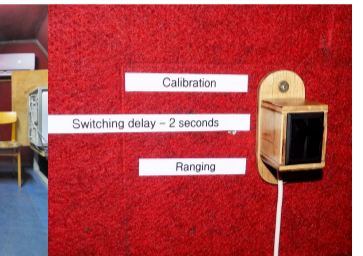
- The SLR telescope mirrors were replaced.
- The SLR telescope was refocused and aligned.
- Hamamatsu H11901-20 PMT + Hamamatsu C5594 Amplifier for the stop channel.
- Hamamatsu APD module C5658 for the start channel.
- Optimized parameters for the start and stop channels, see poster **1987**.
- A new calibration system and procedures, see poster **1839**.
- TV cameras for monitoring the SLR operation:
  - All-Sky,
  - Wide field,
  - Narrow field,
  - modified IR webcam for monitoring the SLR telescope movement.
- Calibration/tracking selecting switch, also for emergency laser beam blocking.



Old & new electrical installation



Laser Room: old & new thermal control



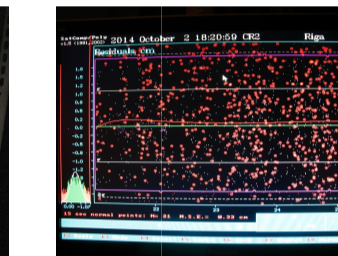
Laser paths control switches

## Software Upgrades

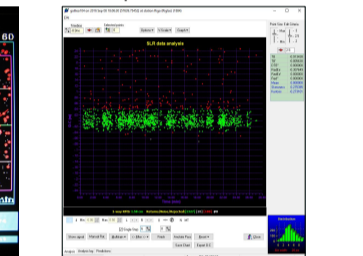
- Amplitude compensation procedure improvements.
- Post-processing software upgraded to STC2008.
- Automatic calibration data filtering and tracking data generation.
- Calibration drift is applied using 1-hour time window for pre-and post-pass calibrations.
- Changed the file naming conventions for better data management.
- All the generated data is archived automatically for further analysis.
- Fine tuning of the mount model for the open loop control.
- Increased measurement sets for the mount model generation.
- Several software applications for QC and to monitor system stability.



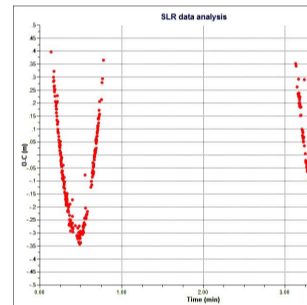
SLR operator workplace



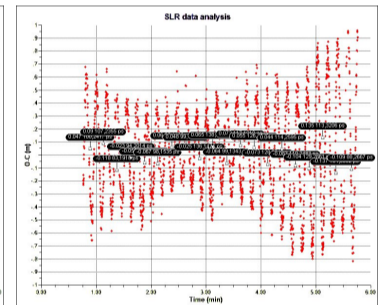
Old DOS filtering program



STC2008 filtering program



OICETS



Topex-Poseidon

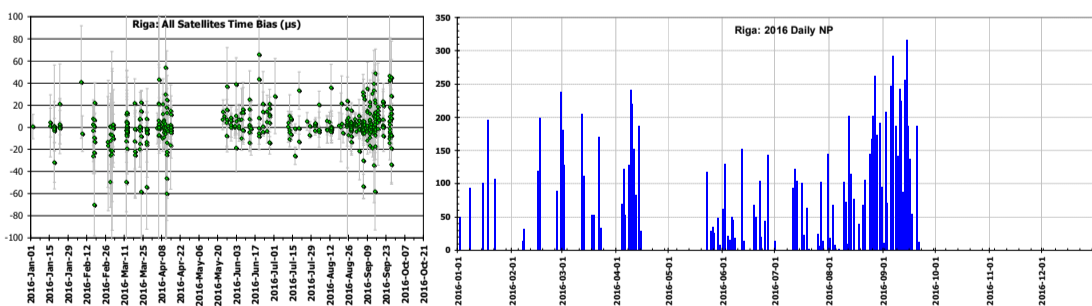
Regular observation of non-cooperative satellites

## Next Steps

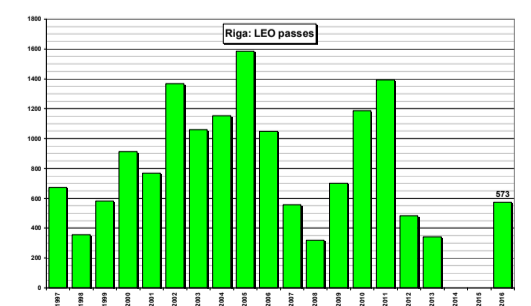
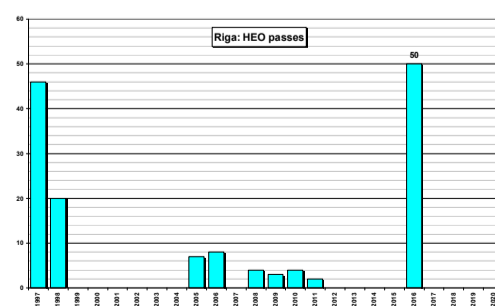
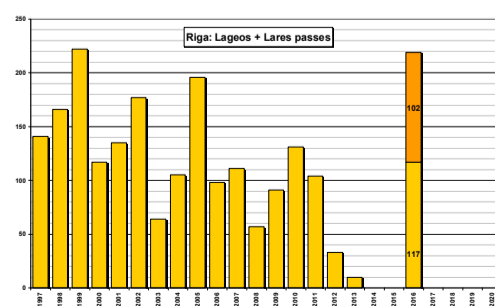
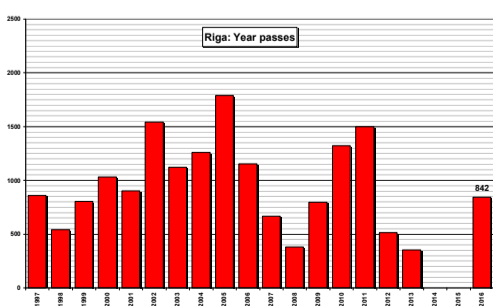
- New geodetic reference points for local ties
- Closed loop telescope control system.
- New data post processing software.
- Implementing the real time pass information transfer to Eurostat.
- Implementing pre-and post-pass meteorological data set.
- Station infrastructure modernization.



Surveying new places for geodetic reference points



Proposed SLR building upgrade, sketch by Dipl. Arch. L. Ozola



Observations 1997-2016 (2016/09/30)

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