

SLR Observations of COMPASS-G2

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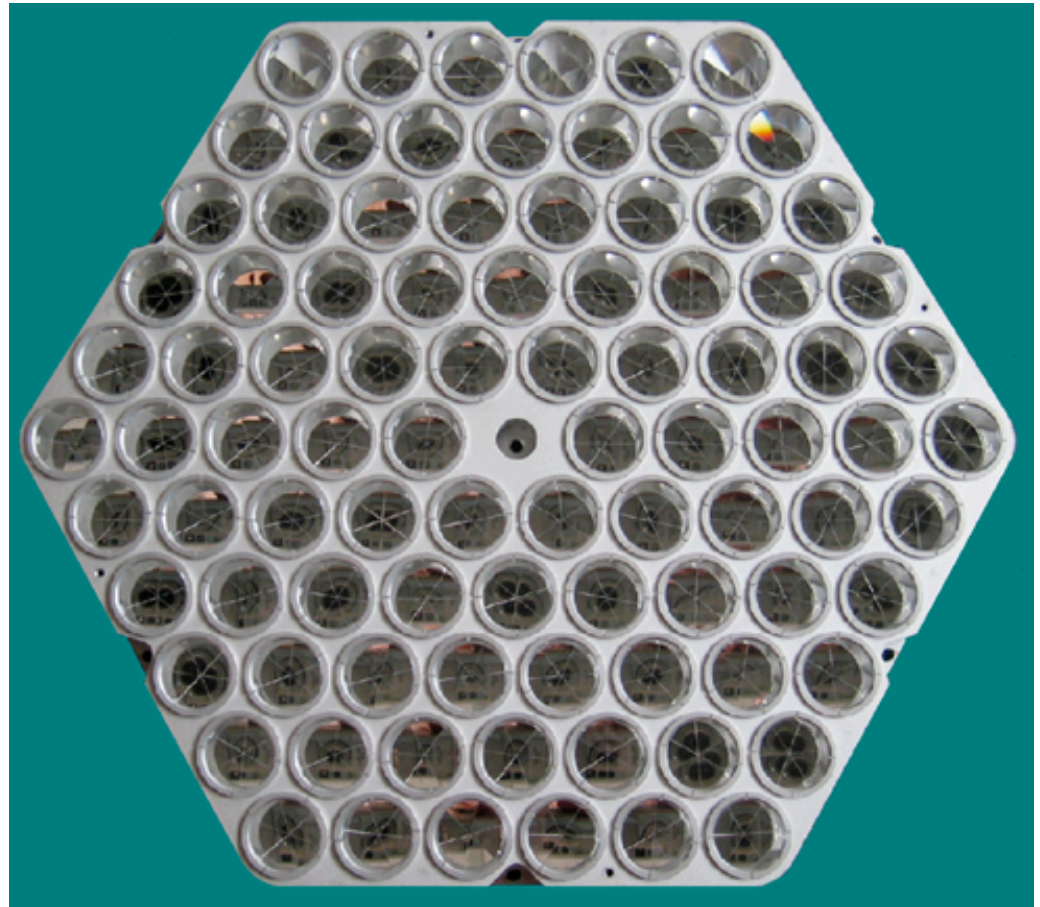
COMPASS-G2

- **An experimental GEO satellite with altitude of 36000km at the longitude of 80 degree E.**
- **Launched on April 15, 2009**
- **The LRA onboard is 90 sets of corner cubes with diameter of 33 mm. The total effective area is 770 cm² . The weight is 5.0kg.**

The LRA on Compass-G2

Size	49×43 cm
Diameter of corner cube	33mm
Number	90
Reflective area	770cm²
Material	fused silica
Weight	5.0 kg

The corner cubes are uncoated both front and back surfaces



New COMPASS Dedicated SLR Station in Beijing

- **Located in the north suburbs of Beijing City.**
- **The SLR system designed and built by the Shanghai Astronomical Observatory (SHAO).**
- **Operational in night since March 2009, and in daylight since August 2009.**

System Parameters of New COMPASS SLR Station

- 1 meter aperture receiving telescope with dielectric coating optics (built by SHAO) .
- 210mm aperture transmitting telescope with Coude optics.
- 3 arcsecond pointing accuracy both azimuth and elevation axis after star calibration.
- Nd:YAG active-active mode-locked laser (built by NCRIEO in Beijing) 150mJ(532nm), 250ps, 20Hz

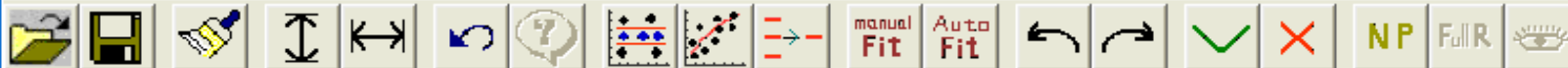
- **C-SPAD detector**
- **Event Timer from Riga with timing precision of 10ps**
- **Hydrogen frequency standard from SHAO**
- **Daylight tracking package**
 - **Daylight laser beam detection and remote control**
 - **Receiving FOV adjustable remotely**

1 Meter Aperture SLR Telescope in the Assembly Workshop (built by SHAO)



Some Observation Results from the New Station

- The elevation of COMPASS-G2 at the COMPASS SLR Station is 33° only.
- Quite strong returns from G2 at the station (stronger than GPS-36)
- Some samples of passes from COMPASS-G2, COMPASS-M1 and Glonass (daylight pass)
- The performance of the LRA is excellent.
- The performance of the COMPASS SLR system is also excellent, the dedicated station will routinely track all of the COMPASS satellites. But it will not join the ILRS in near future.



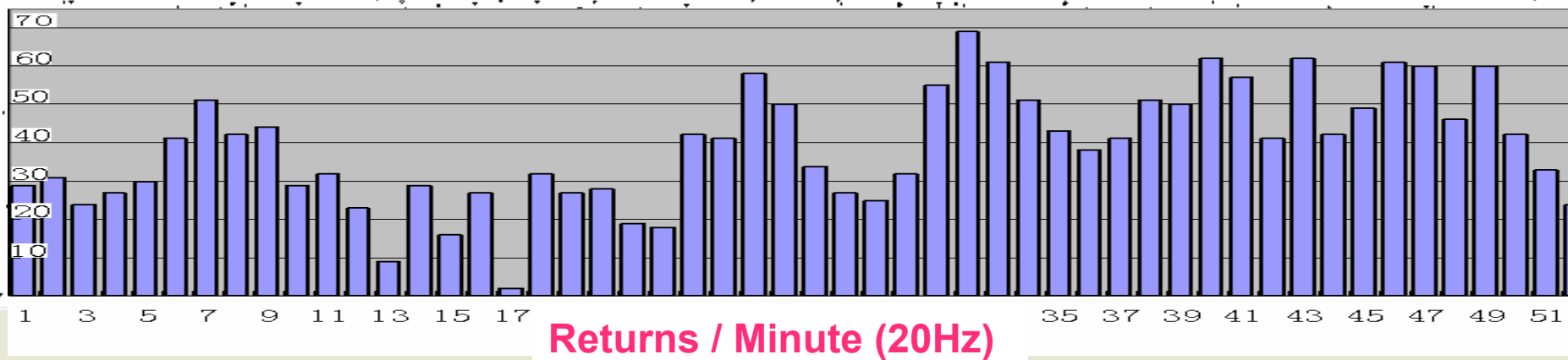
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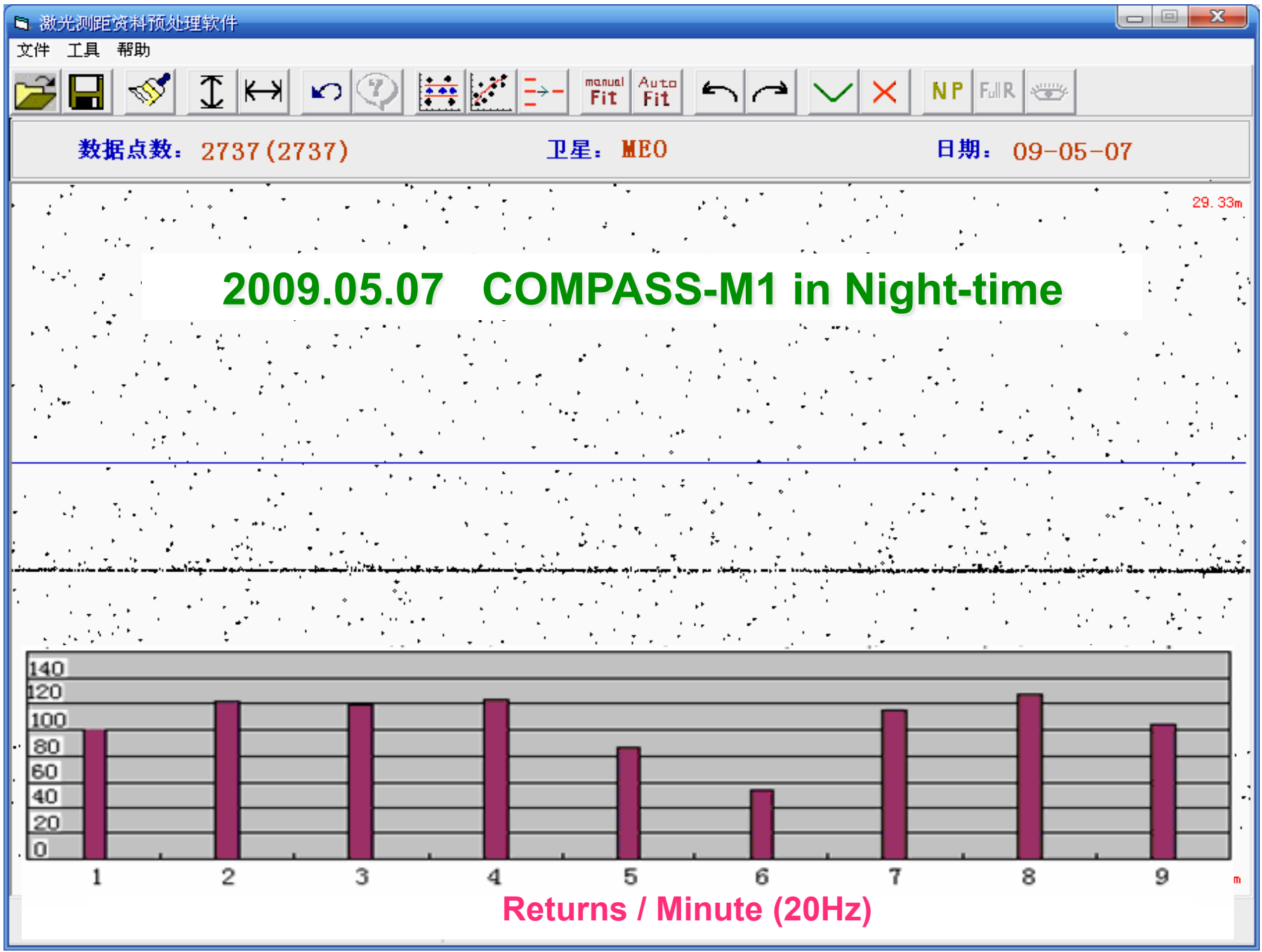
卫星: GE02

日期: 09-04-24

75.88m

2009.04.24 COMPASS-G2 in Night-time





激光测距资料预处理软件

文件 工具 帮助



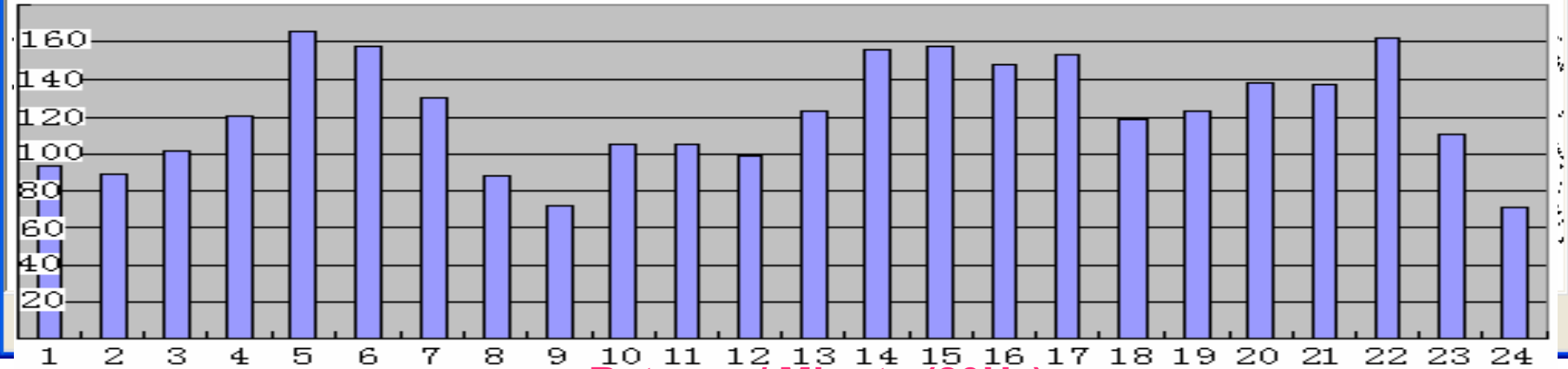
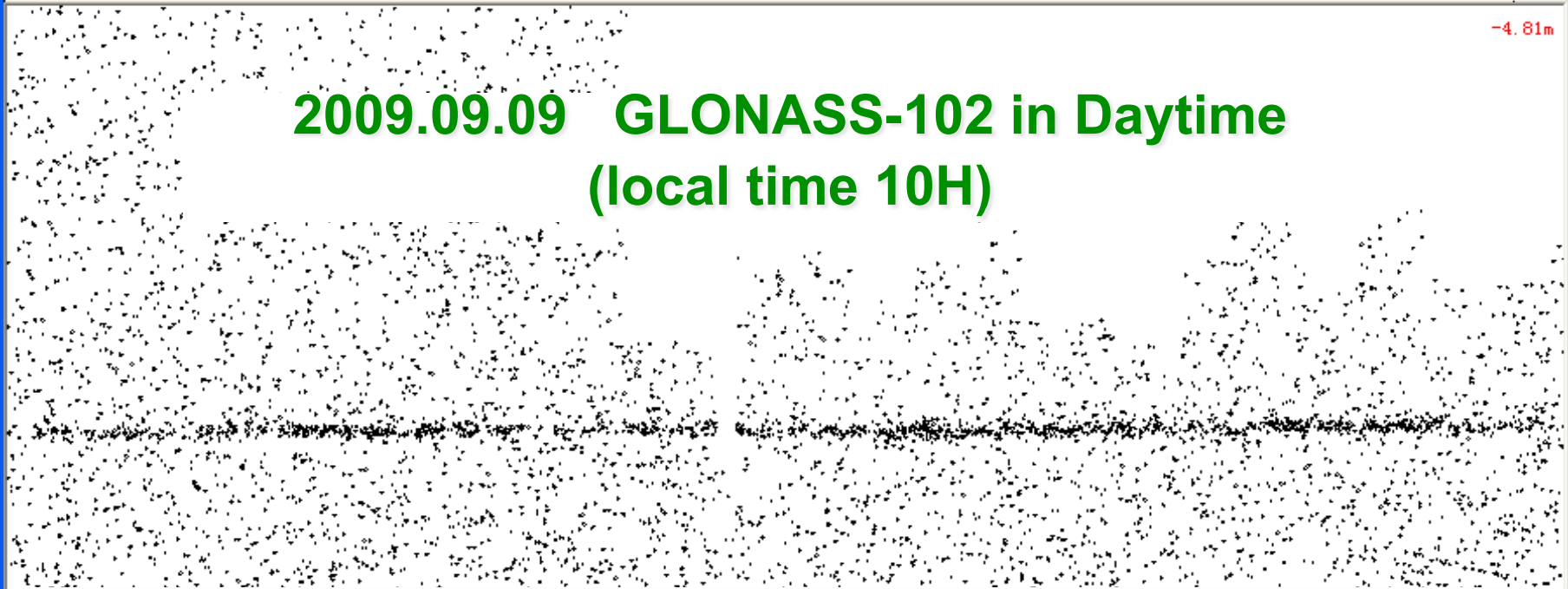
数据点数: 7911 (15821)

卫星: GLONASS102

日期: 09-09-09

-4.81m

2009.09.09 GLONASS-102 in Daytime (local time 10H)



Returns / Minute (20Hz)

Thank you!