NEW SLR STATION RUNNING IN SAN JUAN OF ARGENTINA

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The background-1/4

Ministry of Science and Technology of China

Ministry of Science and Technology of Argentina

Felix Aguilar Astronomical Observatory of San Juan National University of Argentina (OAFA)

National Astronomical Observatories (NAO), Chinese Academy of Sciences

Chinese Academy of Surveying and Mapping (CASM)

Laser room and dome

SLR system
About San Juan city

- The capital city of San Juan province
- 1300 km Northwest from Buenos Aires
- Population 20,000 in downtown
- No.12 of biggest city in Argentina
- Climate- desert, up to 50 °C in summer, very dry, lowest 5 °C in winter
- Plenty of fruits and melons, wine is very cheap, roast beef …..
The background-3/4

Observatorio Astronomico Felix Aguilar

2 parts:

----Headquarter near San Juan city, same pace with SLR station

----leonato, 200km from San Juan, near Andies mountain, 5 astronomical instruments from Germany, America, Spain in use for cooperations
San Juan SLR station

- 15 km from city center of San Juan
- 300 days clear per year
- $31^\circ 30' 31''.050S$, $68^\circ 37' 23''.377W$ and 727.22m.
- 2 Chinese instruments, SLR and photoelectric astrolabe MARK II (PA II )
- Groundwork- scree and sand, no base stone in 100m deep
SLR system Installing-1/2

Time table

2005/08/06 device reach to San Juan
2005/09/24 open the container checking
2005/09/24-2005/11/ waiting, doing……
2005/11/28 installing started
2006/02/22 installing ended, first return got
2006/02/23 send data to ILRS, station running
Difficulty in installing

- Basement pillar is not fit the telescope in height and orientation
- Basement for laser is too high
- The facility for living ----very good; for work---nothing
- Decoration for whole laser room not ended
- No power line, no grounding cable, no light, no tables ,no chairs even ......empty in the laser building
- installing and decorating at same time have to....
SLR system installing-2/2

Persons

T. Wang—CASM (responsible, optic,)
T. Guo—ISC, CEA (electronics design)
W. Liu—NAOC (electronics and laser maintain)
D. Huang—NAOC (daily observation)
Q. Xiang—CASM (daily observation)
G. tito—FELIX (electronics maintain)
The daily observation and maintain

- To Argentina: Monday through Wednesday 4 persons shift but every day a Chinese people must be present
- To China: Thursday to Sunday 3 persons shift on duty
- Every day the free person (china) in charge of cleaning, cooking and shopping

So the work is heavy for every one!!!
Hope

• 6000 passes for all satellite per year
• 1200 passes for Lageos-1 and 2 each year
• Good quality for all data
Problems and questions

- Day time ranging not available
- Laser not stable, spare parts damaged badly
- Some times different persons produce different quality for the data due to laser instability
- Dome moves difficulty, not safe
- At beginning the data have big RB due to the damaged chip in timing circuit board
- Laser room improvement needed
- Running is more difficult compare to in China
The instrumentation

- 60cm caliber telescope, send and receive separated
- Passive mode-locked dye laser, 30ps, 1-10Hz, semi train
- C-SPAD
- SR-620
- PDM pulse distributor from Graz station
- Timing Hp58503A
- 2 short distance ground targets
Future plan

• Day time ranging
• Upgrading to KHz
• NAOC, FELIX and CASM will continue cooperate to the updating of SLR system in San Juan
• Not soon
  – time is needed for money
  – performance need more time also from China to Argentina
Thanks!