NASA Satellite Laser Ranging Network: Current Status & Future Plans

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NASA SLR Reductions (Feb. 2004)

- Reduced SLR Network Infrastructure
- Removed NASA provided operator/trainer in Tahiti
- Reduced MOBLAS-7 (Greenbelt), MLRS (Texas), HOLLAS (Hawaii) sites to single shift operations
- Reduced MOBLAS-4 (Monument Peak) site to 3 shift operations (5 days per week)
- Closed TLRS-3 (Arequipa) site in February 2004
- Closure of HOLLAS (Hawaii) site in June 2004
TLRS-3 (Arequipa, Peru)

- Collaboration with Universidad Nacional de San Agustin (UNSA)
- Re-opened TLRS-3 site in December 2005
- Upgrade optics, star calibration camera, MCP, recalibrated CFD
- Repairs to the laser, controller computer, HP5370, gimbal, dome controller, telescope
- First light September 23, 2006
  - 90 pass segments as of 10/16/06
  - < 10mm RMS data on Lageos
  - ~5.4mm Calibration RMS Values
- Two shift operations (day & night, 5 days)
TLRS-3 (Arequipa)
TLRS-4 (Maui, Hawaii)

- Collaboration with University of Hawaii, Institute for Astronomy (IfA)
- Completed TLRS-4 Operational Readiness Review in September 2005
  - TLRS-4 system had been 10 years of non-operations
  - Shipped to Maui in April 2006
- Re-opened Hawaii site using TLRS-4 in July 2006
- First light October 2006
- Two shift Operations (day & night, 7 days)
Mount Haleakala, Maui Summit

Former HOLLAS Station

TLRS-4 Pad
TLRS-4 in front of Mees Observatory
TLRS-4 (Hawaii) Summit View

2006/09/07
MOBLAS-4 (Monument Peak, CA)

- Collaboration with Honeywell Technology Solutions Incorporated (HTSI)
- Newly installed Geosciences equipment
  - DORIS
    - Newly installed DORIS antenna
  - EarthScope
    - Newly installed seismometer
    - Newly High Performance Wireless Research and Education Network (HPWREN) for high speed internet access
- Three shift operations (5 days, 24 hours per day)
MOBLAS-4 (Monument Peak, CA)
MOBLAS-5 (Australia)

- Collaboration with Geoscience Australia (GA)
- Continues to be a major data contributor of the ILRS
- Seven day per week operations (24 hours per day)
MOBLAS-5
MOBLAS-6 (South Africa)

- Collaboration with South African National Research Foundation & Hartebeesthoek Radio Astronomical Observatory (HRAO)
- Collocated with VLBI, GPS, DORIS
- Three shift operations (5 Days per week)
MOBLAS-6 (HRAO site)
MOBLAS-6 (South Africa)
Moblas-8 (Tahiti)

- Collaboration with CNES & the University of French Polynesia (UFP)
- Dr. Jean Pierre Barriot, new Director of the Tahiti Geodetic Observatory
- Two shift operations (5 Days per week)
MOBLAS-8 (Tahiti)
MLRS (Fort Davis, Texas)

- Collaboration with University of Texas & the Center for Space Research (CSR)
- Continued Lunar and Satellite Laser Ranging operations
- Seven day operations (12 hours per day)
MLRS (Fort Davis, Texas)
NASA SLR Near-Term Actions

- Increase SLR Network infrastructure
- Increase operations at MOBLAS-7 (Greenbelt)
- TLRS-3 (Arequipa) site fully operational in December 2006
- TLRS-4 (Hawaii) site fully operational in December 2006
- Complete SLR2000 Prototype Development