

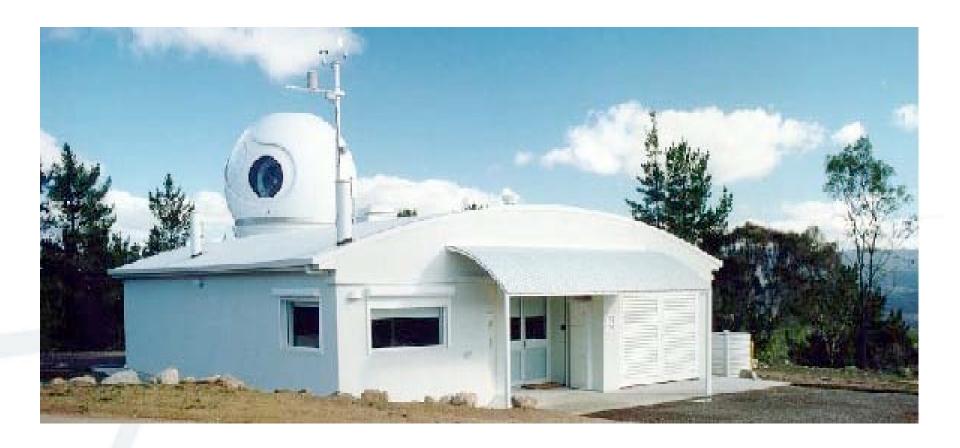
The New Mount Stromlo SLR System

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Mount Stromlo SLR: 1998-2003





This SLR site achieved outstanding productivity, safety, and data quality.

Stromlo SLR: January 2003





Stromlo Recovery Schedule



19 Jan 03: First planning meeting for new site.

03 Jul 03: Environmental and planning approvals

04 Jul 03: EOS awared contract to rebuild Stromlo

By 4 July 2003 all specification, building permit, environmental approval, and contracutal issues were resolved, and the reconstruction commenced.

Target date for operations: 4 April 2004 [9 months]

Top-Level Design Parameters



Performance and productivity improvements

Safety: Intrinsically eyesafe operations

Missions: Lower [200 km] and higher [LLR]

Productivity: More and better data

Software: Expert System platform for future

Enhanced SLR Safety Design



There are 3 potential safety modes for SLR:

Intrinsically Eyesafe: [Class 1A] operations

Microjoule operations: Not Class 1A but "safe"

"Protected" mode: Aircraft detection and avoidance

Stromlo has all 3 modes available. Normal operations use intrinsically safe Class 1A operations, except LLR where "Protected Mode" will be used. Microjoule operations at 1064 and 532 nm are for research tasks.

Mission Profile Changes



In addition to previous missions, Stromlo has been equipped for:

LLR operations

NEO missions [very low LEO and near-space]

Productivity Objectives



Data quantity and quality to be enhanced by:
50 Hz data rate with kHz options [20 Hz old system]
100 cm telescope [75 cm old system]

Automation: Expert system cf "old" full automation

Laser Improvements



30-50 Hz nominal rate, with kHz capability to NEO 1064 nm fundamental with 532/1570 nm outputs also 10 ps pulse width, with 300 fs capability

Zero maintenenance. All-diode pumped with 24 months between services of any kind.

Control and engineering interfaces fully operational over LAN/WAN and internet.

Telescope Improvements



100 cm clear aperture

5 urad [1 arcsec] absolute pointing

Upgraded optical wavefront specification

Coatings compatible with fs laser pulses

Auxilliary tracking and guiding systems for LLR

Program Status



- 4 Jul 2003: Project commencement.
- 4 Dec 2003: EOS designed, built and installed the SLR system [buildings, telescope, dome, laser, etc].
- 4 Mar 2004: First Lageos, GPS, LEO tracking
- 1 Apr 2004: Offical opening. Initial operational testing.
- 4 Jul 2004 [Target date]: System operational in ILRS.

Stromlo SLR: 2004





Wide view of the new SLR system along with other parts of the EOS Space Research Centre.

