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SOAR Aluminizing Shutdown - Final Update

Submitted by jalias on Tue, 2018-11-20 21:51

Updated, Nov. 28, 2018

This is a brief summary of the SOAR aluminizing shutdown. The purpose of the shutdown was to re-coat the secondary (M2) and tertiary (M3) mirrors, which together account for approximately 2/3 of the reflectivity loss since the last aluminization in late 2009. We did not get satisfactory results on our tests in preparation for doing the primary mirror, so we are not re-coating that mirror at this time.

This reduced the length of the planned shutdown, so we were able to return approximately 3 weeks of scheduled shutdown for science use.

Plan Summary

The work plan comprised the following steps:

- Removal of the secondary mirror assembly, followed by removal of the mirror from the assembly
- Coating of the secondary mirror
- In parallel, removal of the tertiary mirror assembly, followed by measurement of benchmarks for the mirror control system, followed by removal of the mirror
- Coating of the tertiary mirror
- Re-assembly of the secondary and tertiary mirror systems
- Check-out of the telescope and instruments, including the SAM laser system.

Both mirrors were coated in the 1.5-m coating plant on Cerro Tololo.

As of this final update, we have completed aluminizing both mirrors, and have reinstalled both mirror assemblies and their baffles on the telescope and verified operation of the mirror-control electronics. Basic check-out of the telescope optical alignment and pointing were performed last night (November 27). The telescope has been returned to service for full check-out, including instruments being returned to service. We intend to post a new article describing current performance after the engineering nights are completed.

Further details (including photos) of the shutdown procedures [can be found here](#) [1].

The participants in the shutdown, and their group affiliations, are give below:

Eduardo Aguirre - TelOps - SOAR
Tamar Aguirre - NOAO-S - Safety
Victor Aguirre - ETS
Juan Andrade - TelOps - CTIO
Mauricio Araya - TelOps - SOAR
Cesar Briceno - Sci Staff
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Andrei Tokovinin - Sci Staff
Manuel Torres - TelOps - SOAR
Patricio Ugarte - TelOps - SOAR
Marcela Urquieta - SOAR
Michael Warner - ETS

Not all of us played an equally critical role - I want to emphasize the care and skill required from the technicians and engineers whose handling of the optics ensured the safety of both themselves and the mirrors!

- Jay Elias, Director

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Links

[1] <http://www.ctio.noirlab.edu/soar/content/soar-2018-shutdown-details>