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History of the SOAR Telescope project

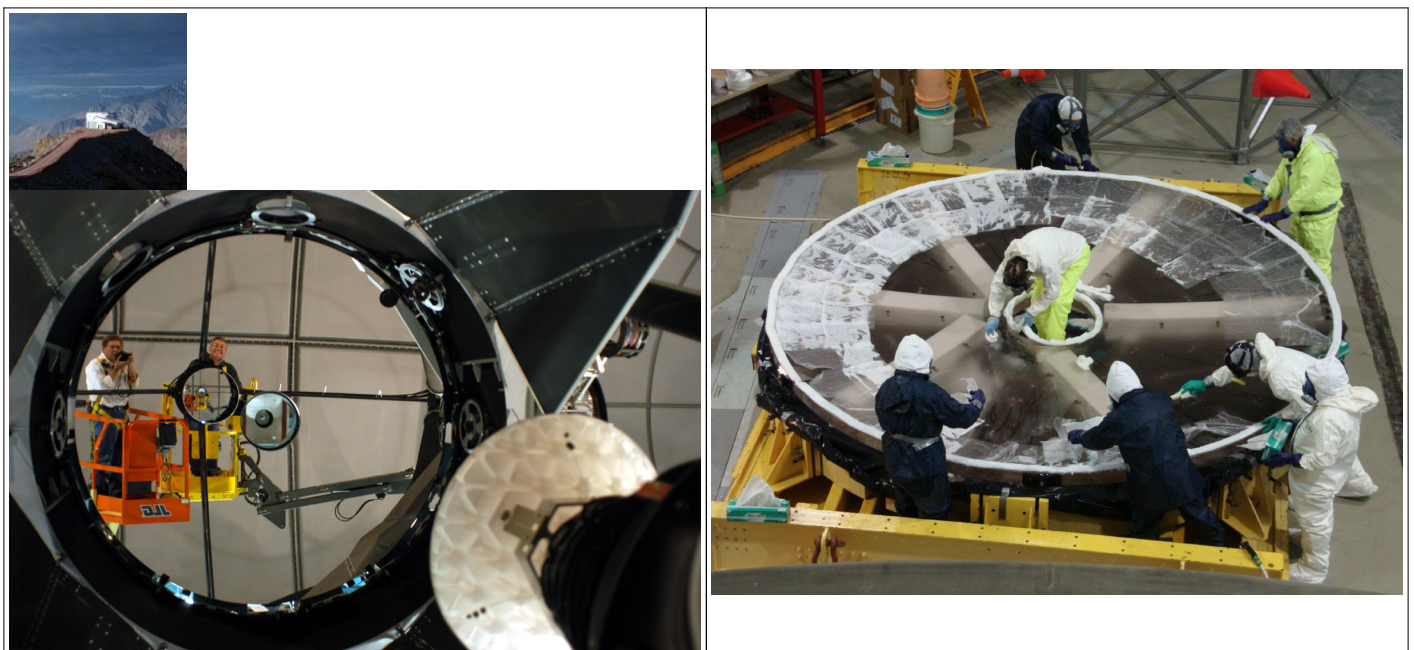


The SOAR Project was initiated by the [University of North Carolina at Chapel Hill](#) ^[1] in 1987. Early progress included the

purchase of the ULE™ glass ceramic needed for the mirrors. The final project development team was formed at the beginning of 1997. The conceptual design for SOAR was approved in June 1998. The blasting for leveling of the site (shown in the picture at right) took place early that year, and the groundbreaking ceremony was held on Apr 17, 1998 (images below).



Construction started in Jan 2000, and the support facility completed in 2001. In Oct 2002 the telescope mount was installed and completed, and the dome finished. The telescope structure was installed in only three months, becoming operational for a "first glimmer" using a 10-inch telescope bolted to the side of the elevation ring on 23 Oct 2002. The optical system was completed in 2003 and delivered to Cerro Pachón on 9 Jan 2004. The primary mirror was installed during February 2004, after being aluminized in the [Gemini South](#) [2] coating plant nearby.



The development team was a small, multi-disciplinary group of engineers and scientists tasked with creating the telescope and facility from concept to a functional, state-of-the-art scientific machine. To

develop the hardware, several fixed price contracts were awarded for the detailed design, development and testing of the particular subsystems. Innovation without research was the emphasis of the development work, encouraging contractors to adapt existing technologies to the SOAR objectives. Subsystems were preassembled at the contractor facilities and tested to the extent possible before shipment to the SOAR site, a strategy that allowed rapid integration of the parts on the remote mountain top site. Thomas A. Sebring assembled and led the project team for the first five years. Dr. Gerald Cecil was the first project scientist, supporting the critical early stages of design and development. Victor L. Krabbendam managed the final year of development and integration, in close interaction with the first SOAR Director Dr. Stephen R. Heathcote, who managed the commissioning budget. This capable team achieved SOAR's ambitious performance goals within a comparatively modest budget of US\$32 million (excluding instruments).

Unfortunately, once completed and tested on-sky, a serious problem with the lateral primary mirror supports was readily identified, an issue limiting the scientific capabilities of the telescope. Despite this, first science observations with the telescope "as it was", were carried out in Feb 2005 with the SOAR Optical Imager (SOI) and the OSIRIS near-infrared spectrograph. A new lateral support system which solved the problem was installed in Jun 2006, and regular science observations started Aug 2006. In 2008 the Goodman High-Throughput Spectrograph (HTS) was delivered to the telescope and commissioned. Spectroscopic single slit and imaging mode observations with this instrument started later that year. In Oct/Nov 2009 a major shutdown took place for the recoating of all the optics.

In early 2010 the SPARTAN near-IR camera, built at [Michigan State University](#) [3] was commissioned and started seeing regular scientific use.

In 2013 the SOAR Adaptive Optics Module (SAM), built at [CTIO](#) [4], was commissioned and released for regular scientific use at the beginning of 2014.

As of late 2014 we are expecting several new instruments to be deployed at SOAR: an Integral Field Unit spectrograph (BTfI) and an Echelle spectrograph (STELES), both being built by Brazilian institutions.

During the period Mar-Jul 2014 [Dr. Horacio Dottori](#) [5] ([Universidade Federal do Rio Grande do Sul](#) [6], Brazil) acted as interim Director. Since Aug 2014

Dr. Jay Elias ([NSF's NOIRLab](#) [7]) is the new SOAR Director.

Source URL: <http://www.ctio.noirlab.edu/soar/content/history-soar-telescope-project>

Links

[1] <http://physics.unc.edu/>

[2] <http://www.gemini.edu/>

[3] <http://www.pa.msu.edu/soarmsu/index.html>

[4] <http://www.ctio.noao.edu>

[5] <http://www.if.ufrgs.br/pos/espanhol/dottori.html>

[6] <http://www.ufrgs.br/ufrgs/inicial>

[7] <http://nationalastro.org>