PRESS RELEASE I PARIS I 15 APRIL 2015

Construction of the LSST telescope begins in Chile

The first stone of the future LSST telescope was laid on 14 April 2015 by the Chilean President Michelle Bachelet, at the Cerro Pachón site in the Chilean Andes. The LSST is the result of a public-private partnership involving several research institutions worldwide, and will be equipped with the most powerful digital camera ever built, partly developed in CNRS laboratories. The 8.4-meter-diameter telescope will shed light on the nature of dark energy, which accelerates the expansion of the Universe.

The LSST will achieve first light in 2019 and will be fully operational in 2022. The 8.4-meter-diameter telescope will image the sky systematically for ten years, providing a three-dimensional film of the entire visible Universe. It will also make it possible to measure, with unprecedented accuracy, the physical quantities associated with dark matter and dark energy, with a view to deciphering the very structure of the Universe: scientists will thus be able to determine the precise position of more than 10 billion galaxies, i.e. ten thousand times more than today.

The world's most powerful digital camera

Thanks to its 3.2 billion pixel digital camera, the most powerful in the world, and its novel three-mirror design, the LSST will enable scientists to survey a vast area of the sky that was previously inaccessible. Its design will allow it to observe moving and changing celestial objects, thus providing access to fleeting phenomena such as exploding stars and passing asteroids.

The telescope will be able to detect and catalog billions of objects throughout the Universe, observe them over time, and provide this information—more than 30 terabytes every night—to astrophysicists the world over. In addition, the digital camera will shed new light on dark energy, which researchers have determined is accelerating the expansion of the Universe. The LSST will probe the depths of the Universe, thus creating a unique database comprising billions of galaxies.

The LSST is a public-private partnership involving three countries for its construction: Chile, where the telescope will be located, the US, in particular through the National Science Foundation (NSF) and the Department of Energy (DoE), and France, represented by the CNRS. The French teams are taking part in building the camera and are actively preparing to process the data provided by the telescope.

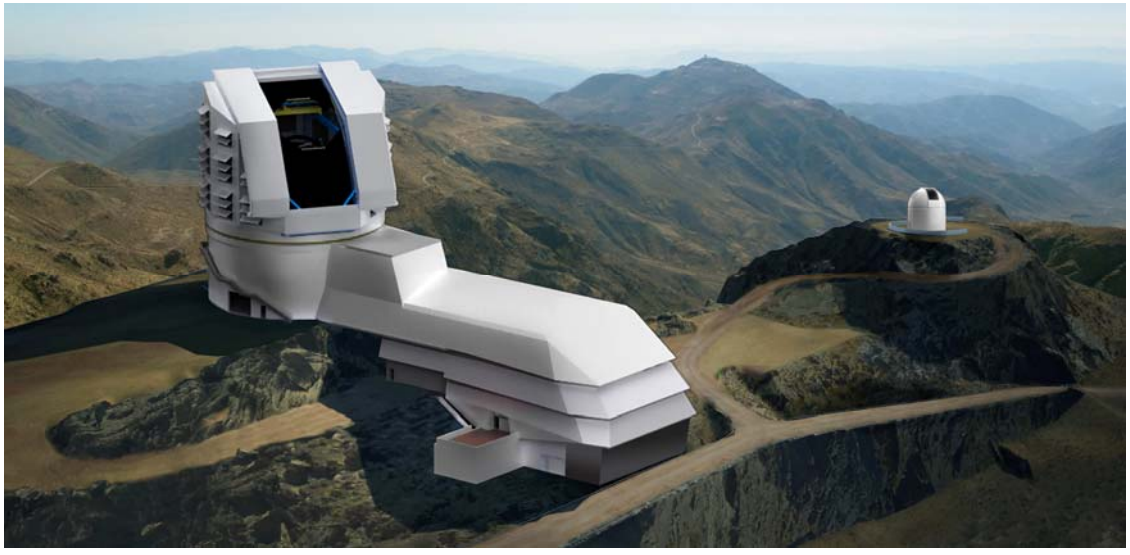
Located at an altitude of 2,700 m, the Cerro Pachón site was chosen in 2006 not only for its cloudless skies, its low level of light pollution and its dry climate but also for the presence of infrastructures related to the other two already installed large telescopes, the Gemini Sud and the Southern Astrophysical Research Telescope (SOAR).

French laboratories involved in the LSST:

- Astroparticule et Cosmologie (CNRS/Université Paris Diderot/CEA/Observatoire de Paris)
- CNRS's National Institute of Nuclear and Particle Physics Computing Center
- Centre de Physique des Particules de Marseille (CNRS/Aix-Marseille Université)
- Laboratoire de l'Accélérateur Linéaire, Orsay (CNRS/Université Paris-Sud)
- Laboratoire des Matériaux Avancés (CNRS/Université Claude Bernard Lyon 1)
- Laboratoire de Physique Corpusculaire de Clermont-Ferrand (CNRS/Université Blaise Pascal – Clermont-Ferrand)
- Laboratoire de Physique Nucléaire et de Hautes Energies, Paris (CNRS/UPMC/Université Paris Diderot)
- Laboratoire de Physique Subatomique et de Cosmologie, Grenoble (CNRS/Université Joseph Fourier/Grenoble INP)
- Laboratoire Univers et Particules de Montpellier (CNRS/Université Montpellier 2)

To find out more:

- watch LSST construction progress at: www.lsst.org/lsst/gallery/construction-webcam



Contact information

CNRS researcher
Pierre Antilogus, lead scientist for the LSST-France collaboration
+33 (0)1 44 27 41 54 l pierre.antilogus@lpnhe.in2p3.fr

CNRS Press Office
Julien Guillaume l T +33 01 44 96 46 35 / +33 (0)6 75 74 02 22 l presse@cnrs.fr