

7 November 2008

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LAMOST is the largest and most powerful spectrometer in the world
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[China Builds World's Biggest Fixed Spectrometer Telescope](#)

It is twice better than its predecessor, the Sloan Digital Sky Survey

Chinese researchers' long dream of building a facility better but still relying on the technology used on a national scale for astronomical search purposes has finally come true. Housed in a building that looks like a nuclear missile silo and a messed up PI symbol lies their latest achievement, the Large sky Area Multi-Object fiber Spectroscopic Telescope (LAMOST). It was developed on a 235 million yuan (\$34.4 million) budget. The best Chinese telescope constructors have joined their efforts to design the facility.

Inspired by the former champion of space survey, Sloan Digital Sky Survey (SDSS), LAMOST is built on a technology that tops SDSS' possibilities by more than twice; unlike its predecessor, it is not designed to provide images, but only to perform spectroscopic operations. It comprises 4,000 optical fibers that monitor space at the same time, decoding the incoming light into massive amounts of data. During observation, the dome is removed, while the starlight is captured by a segmented mirror larger than four meters, transmitted through the 20-m long tunnel towards another mirror six meters across. There, the optical fibers intercept the data and accurately decode it for spectrographs in the room beneath. By comparison with regular telescopes, LAMOST is fixed and only helped by external mirrors in its quest to track most of the sky or specific parts of it, the same as in the case of [liquid mirrors](#). "LAMOST has 4,000 fibers at a shot, 5.5 times that of SDSS and a bigger advantage over anything else," shared professor Donald York from the University of Chicago, founding director of SDSS, in an email interview with the Chinese [Xinhua](#) news agency. If the New Mexico-based SDSS had an angular view field of 3° (about the size of 28 full moons), LAMOST has a field of view of 5° (which could cover 80 full moons). The building that contains the powerful telescope is located 170 kilometers north-east of Beijing, the Chinese capital. The device which will provide further information on the universe was built on a research base belonging to the National Astronomical Observatories of the Chinese Academy of Sciences. The first tests that will prove how far into space it is capable to look are yet to be performed.