

Cerro Tololo Observatory Is Dedicated in Chile

Atop a mountain in north central Chile five domes stand, ready to open their telescopic eyes on the little known southern heavens. The five telescopes, which will later be joined by a 150-inch (381-cm) telescope, are part of the Cerro Tololo Inter-American Observatory, formally dedicated last month.

The new observatory is owned and operated by Association of Universities for Research in Astronomy (AURA), the same group that operates Kitt Peak National Observatory, (both under contract with the National Science Foundation). Kitt Peak is building its own 150-inch telescope, scheduled for 1972 completion.

The Cerro Tololo 150-inch telescope will be a fraternal twin to the Kitt Peak instrument. In fact bids will soon be requested for twin mounts. Since Kitt Peak is about 30 deg N. latitude and Cerro Tololo is about 30 deg S. latitude both telescopes will be almost identical mechanically, with one major difference: the motors will turn in opposite directions.

Costs for the Chilean telescope will be shared by the Ford Foundation and NSF. Construction is scheduled to start in a few months and completion is expected in 1973.

Five instruments are already in place on the site, 80 km southeast of La Serena and 500 km north of Santiago: a 60-inch (152-cm) telescope, a 36-inch (91-cm) telescope, two 16-inch (41-cm) and a 24-inch (71-cm) Schmidt telescope (on loan from the University of Michigan).

The Cerro Tololo site, 2200 meters high, was chosen after a three-year search, begun in 1959. It has remarkably clear skies and stable atmosphere. Atmospheric turbulence atop Cerro Tololo is so much less than that at Mount Palomar, for example, that the Chilean 150-inch telescope should have an average image diameter half that at Palomar.

Victor M. Blanco is director of the observatory.

The new observatory will not be

lonely in Chile. The European Southern Observatory (which will have a 3.5-meter telescope) is at La Silla, 100 km due north. The Carnegie Southern Observatory, which is considering construction of a 200-inch telescope like the one at Palomar, is testing a site at Cerro Morado, only 7 km south from Cerro Tololo. And the Soviet Union is setting up a 100-cm Maksutov telescope atop Cerro Robles, 160 km north of Santiago.

Serpukhov Accelerator Yields 76-GeV Beam

The new Russian proton synchrotron at Serpukhov, 100 km south of Moscow, has produced an accelerated beam that exceeds the design energy of 70 GeV. Trials were started in mid September and within four weeks a reported proton beam of 76 GeV was achieved.

The design parameters of this machine (PHYSICS TODAY, June 1966, page 81) include a 470-meter-diameter magnet ring and a 100-MeV pro-

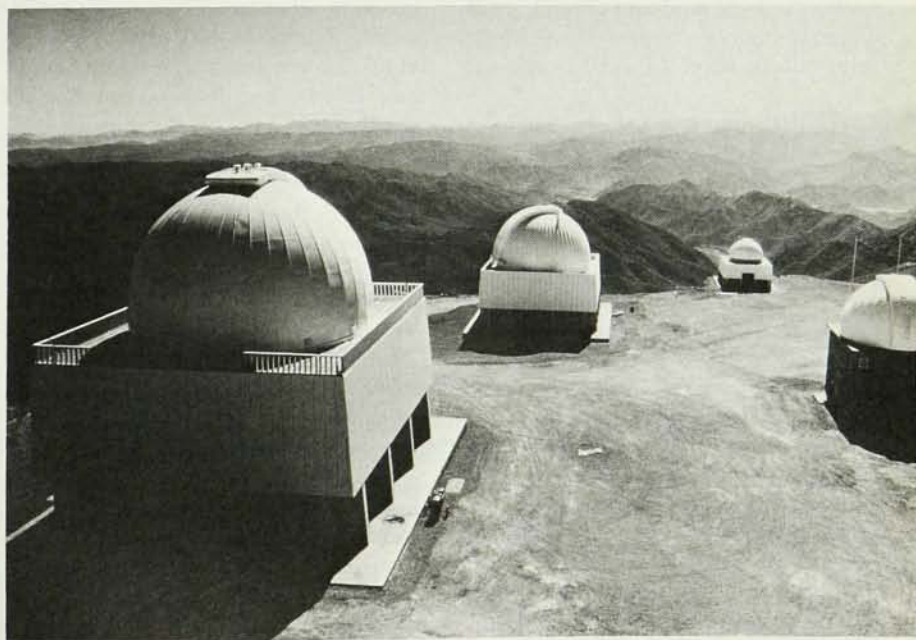
ton linear accelerator for injection. The pulse rate is between 5 and 10 pulses/min.

A Brookhaven physicist told PHYSICS TODAY of a recent visit to the Serpukhov accelerator by CERN staff members to discuss the prospects of collaboration between the two groups in some of the experimental work planned for the new machine. He says that the 76-GeV beam was produced without the use of pole-face windings or other magnet corrections, but the intensity has been kept down to a few times 10^8 protons per pulse to minimize the buildup of radioactivity during this development period.

Considerable work remains to be done on the machine before it is ready for full experimental use; it is expected that the beam energy will eventually reach 80-90 GeV, and the intensity should be similar to that of the Brookhaven AGS, 2×10^{12} protons/pulse.

Impressive features of the first runs include successful beam control with low circulating beam intensity, and low beam loss during acceleration.

Indications are that the accelerated



TELESCOPES. Five domes at Inter-American Observatory in Chile hide (from left) 152-cm, 91-cm, 41-cm, 71-cm Schmidt and 41-cm instruments.