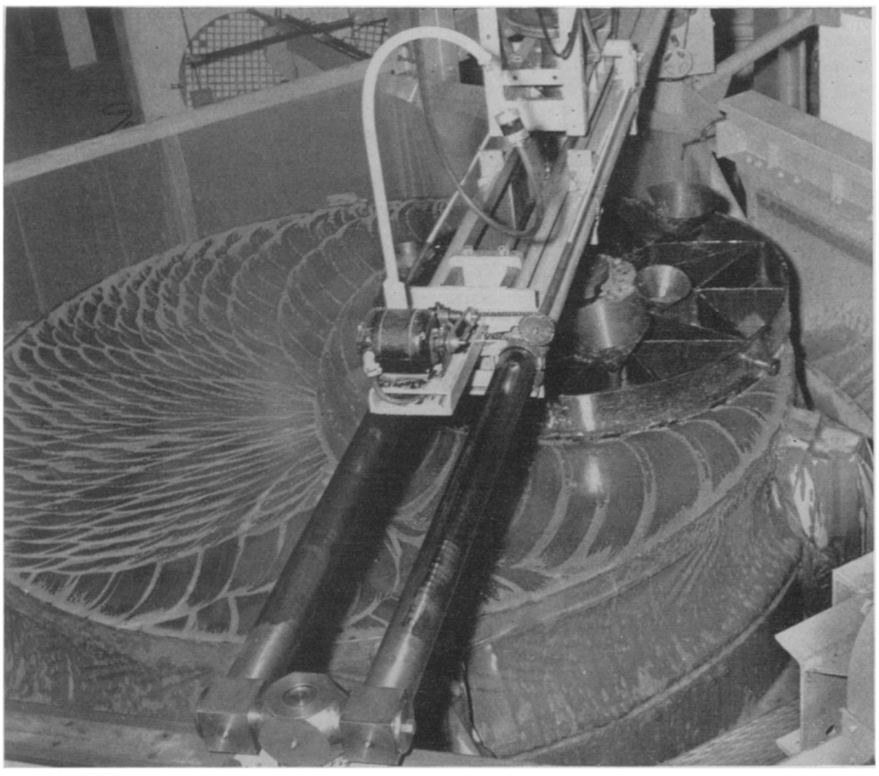

TELESCOPE MIRROR—Some 800 pounds of glass are now being removed from the mirror for the world's second largest telescope at Lick Observatory. Part of the grinding operations is shown here.

ASTRONOMY

Mirror Is Grinding Job

Grinding the parabolic curve required for the mirror of the world's second largest telescope is expected to be finished in about two years.

➤ GRINDING OPERATIONS are in full swing on the mirror for the world's second largest telescope, the 120-inch instrument now under construction at the University of California's Lick Observatory, Mt. Hamilton.

The telescope, which will capture the light of stars 900,000,000 light years distant, is scheduled for completion in about three years.

A part of the rough grinding of the mirror has already been completed. When the job is completed some two years hence, some 800 pounds of glass will have been removed from the four-ton pyrex disk, and the glass will have the perfect parabolic curve required for its mission.

At the present time, the disk is being placed in the cell which will support it in the telescope. In a few weeks, the cell containing the mirror will be returned to the grinding machine for the remainder of the polishing job.

The huge, versatile telescope will be used in a research program that will complement that of the 200-inch giant at Mount Palomar. There are more problems in the far distant heavens than one telescope alone can cope with, says Dr. C. D. Shane, director of Lick Observatory.

A cooperative research program is being worked out between Lick, Palomar and Mount Wilson, in order that science will get the greatest benefit from the world's three largest telescopes, Dr. Shane said.

At the same time the 120-inch mirror is being ground, an impressive list of secondary mirrors is receiving the same treatment. These mirrors alone would duplicate or surpass the facilities of many smaller observatories, and three are larger than any of the telescopes now operating at Lick.

Now undergoing grinding are two 50-inch telescopes, one 44-inch and one 35-inch. The total list of 10 secondary mirrors includes one 33-inch, one 30.5-inch, one 31-inch, one 28.5-inch and two 10-inch.

All of the mirrors are needed for focusing the light gathered in the 120-inch mirror. For example, three of the large mirrors, including one 50-inch disk, will bring light from the giant mirror to the spectrograph. The spectrograph itself will have six mirrors.

The conservative design of the telescope will make it one of the most versatile in the world. It will have prime and Coude focuses, with the possibility that a Cassegrain focus will be added later.

The steel mounting for the giant telescope is now under construction, and is scheduled for completion next year. It will include a huge 70-ton steel fork, the first mount of its kind for a large telescope, and a 53-foot tube. A motor will drive the tube, while another will rotate the fork.

Dr. Shane said that the lessons learned in construction of the 200-inch telescope have been applied to the new instrument through the constant cooperation of California Institute of Technology, which operates Palomar and Mount Wilson.

The mirror blank itself was made for tests for the 200-inch telescope. The mirror was never used, however, and was bought by the University of California from Caltech.

Design of the 120-inch telescope was executed by W. W. Baustian, senior engineer, formerly at Caltech. The polishing of the mirror is being directed by Donald Hendrix, who did the final correction of the 200-inch telescope.

Science News Letter, September 5, 1953

ASTRONOMY

Link Two Meteor Streams With "Parent" Comets

➤ TWO MORE meteor streams have now been linked with periodic comets, Dr. Fred L. Whipple of Harvard College Observatory reported to the American Astronomical Society meeting in Boulder, Colo.

All of the recognized visual and radar meteor streams "fall in the class of cometary origin," Dr. Whipple reported. Some astronomers have suggested that perhaps the asteroids, or minor planets, might be responsible for some meteor streams.

When the billions of tiny particles that are part of meteor streams crash into our atmosphere, many of them cause the brief streaks of light known as "shooting stars." About half of the meteors caught photographically are associated with a comet, Dr. Whipple said, and about half are random, or sporadic.

The two periodic comets that have now been linked up with meteor streams are Comet Tuttle 1926-IV and Comet Mellish 1917-I. Comet Lowe 1913-I probably also has an associated meteor stream, Dr. Whipple believes.

The meteors were photographed by cameras equipped with rotating shutters and located at two separated stations. The shutters make periodic breaks in the meteor's trail to reveal how much it is slowed down by the atmosphere. From this its speed before hitting our atmosphere can be calculated.

Science News Letter, September 5, 1953