



TOWER TELESCOPE

*In these buildings of the McMath-Hulbert Observatory, will be housed the new tower telescope which, it is hoped will add greatly to scientific knowledge of the sun.*

## ASTRONOMY

## Netherlands Invasion May Halt Completion of New Telescope

**German-Made Glass Disks for Some of Optical Parts Held by British Contraband Control; Fate Not Known**

**T**HE NAZI invasion of the Netherlands may delay indefinitely completion of the new tower telescope of the McMath-Hulbert Observatory, to be dedicated on May 25, as part of the University of Michigan. German-made glass disks for some of the optical parts, though ordered before the outbreak of war, have been delayed in Amsterdam, awaiting release by the British Contraband Control. Their present fate is not known, though it is hoped that they may have been released before Amsterdam fell.

The new telescope, and a laboratory building from which it rises in a 70-foot tower, are the gift of the McGregor fund to the University of Michigan. Their dedication will bring new recognition to Dr. Robert R. McMath, who takes time from his business of making automobile equipment to take movies of the sun.

Dr. McMath founded the Observatory in 1929, with the aid of his father, the late Francis C. McMath, and Henry S. Hulbert, former Detroit probate judge, who

is now president of the McGregor fund. In 1931 the founders deeded the Observatory to the University of Michigan, but Dr. McMath has continued in charge.

Important new facts about the sun have been discovered by the McMath-Hulbert Observatory researchers. Most of these studies are with motion pictures taken through a special type of telescope. Those in the past have been made with a tower 50 feet high, at the top of which are two mirrors to reflect the sun's light down into the telescope itself. Under the tower is a pit containing a spectroscope, analyzing the sunlight into the colors of which it is composed. The movies are made in the light of a single element of the sun's atmosphere. Ordinarily we see the sun by the light of all the elements combined.

Rising high above the new building is the new 70-foot tower, which will supplement, but not replace, the work of the older tower.

Many thousands of feet of film have

been exposed on the sun during the last few years, during which it has been in great activity. These show, very spectacularly, great flame-like masses of hydrogen and calcium shooting out from the sun to vast heights, a million miles or more. But the careful study of these films, picture by picture, has revealed that the stuff shot out makes sudden and inexplicable changes in velocity. It will travel for a hundred thousand miles or so at one speed, then immediately start moving at a much faster rate.

Another puzzling phenomenon is the way these glowing gases sometimes appear high above the sun's surface, seemingly materializing out of nowhere. For hours there will be a continual supply, as if from some invisible hose. In other cases gases are shot up, and then fall down again. From the researches now being made, it is hoped these effects will be explained.

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## PHYSIOLOGY—PSYCHOLOGY

## Lights Flashing in the Eye Produce Waves in the Brain

**W**HEN your eye sees the flash of a bright headlight streaking past you, a burst of electric waves is set off in a part of your brain. This electrical display in the brain was described by Dr. Samuel A. Talbot, of the Wilmer Institute Laboratory of Physiological Optics, before the Washington-Baltimore Branch of the American Psychological Association.

The waves are not those known as "brain waves" which are generated in the brain cells themselves. The brain waves—"alpha rhythms" as they are called by scientists—were completely damped out in Dr. Talbot's experiment by use of an anesthetic. The anesthetic also stopped all the electrical activity of the "association" or thinking area of the brain.

But when Dr. Talbot flashed exploring lights into the eyes of his experimental cats and monkeys from different parts of the animal's field of vision, he was able to tap the electric signals as they appeared in the brain. So sharply localized were the "message centers" that received the signals, that Dr. Talbot was able to map the part of the brain that governs vision just by electroplating with a minute spot of iron the exact position where the electrode picked up the electric impulses as the lights were flashed from a corresponding point in the visual field.

Psychologists have observed that when you have looked at a bright flash of light