ASTRONOMY

Plane Eclipse Pictures Show Million-Mile-Thick Corona

Photographs Taken By Amateur Astronomer But Veteran Stratospherist Result in Discovery

THE SUN'S corona consists not merely of the spectacular array of pearly-hued streamers seen during a total eclipse, but of a uniform, globular, million-mile-thick blanket.

Such is the revelation of photographs snapped from a sub-stratosphere airplane during the June 8 eclipse by Major Albert W. Stevens, noted for his stratosphere balloon explorations, who was a member of the Hayden Planetarium—Grace Eclipse Expedition. The implications of this discovery were discussed at a conference held at the Harvard College Observatory.

Leading astronomers attending the conference say that all of Major Stevens' plates "clearly show the corona as a globular shell surrounding the sun with a depth considerably greater than a solar diameter."

Streamers Less Important

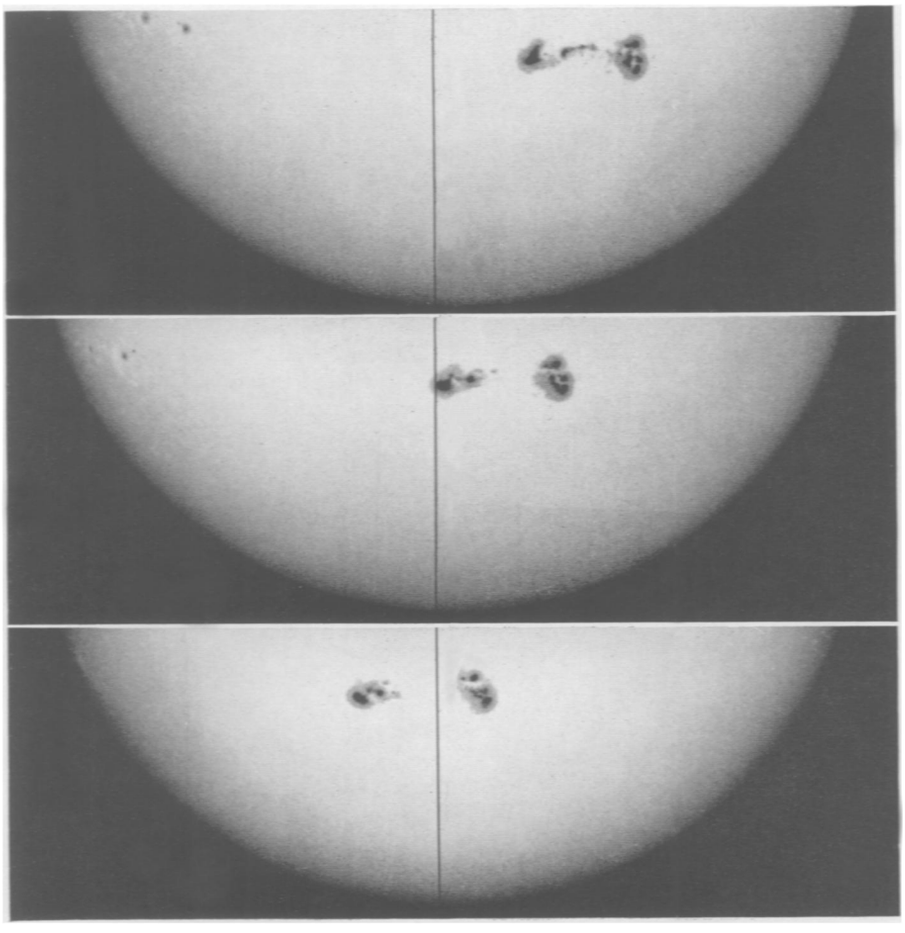
Heretofore astronomers studying the corona have devoted most of their attention to the radiant streamers which completely dominate the usual eclipse photographs taken from the ground. On Major Stevens' plates, however, the bright tracery has been proved to be of secondary importance in the immense globular envelope.

According to Dr. Harlow Shapley, director of the Harvard observatory, the great difficulties encountered by Major Stevens in making his observations at a 25,000-foot altitude were well worth while, for it was this great height that made his remarkable pictures possible. In the sub-stratosphere Major Stevens was above approximately two-thirds of the earth's atmosphere, and thus avoided most of the dust particles and air molecules which tend to obscure ground pictures of such difficult subjects as the corona.

An interesting feature of the discovery is that Major Stevens' highly important findings were unexpected and largely accidental. One of numerous field observers in the Hayden Planetarium-Grace expedition, Major Stevens aimed principally at reaching a sufficient altitude to photograph the spectacular course of the moon's shadow racing across the earth.

May Revise Methods

His discovery, it was predicted, will probably affect traditional methods of observing eclipses, leading to increased use of sub-stratosphere observations. Further analysis of the corona must await the South American-South African eclipse three years hence, when scientists plan to study the (*Turn to next page*)



PHOTOGRAPHY

Over Twenty Earths Could Be Put In Giant Sunspots

YOU could drop over twenty earths into the giant sunspots which recently obscured the surface of the sun.

When observed on July 26 the spots were joined into a single greater unit that occupied some 20 square degrees of the sun's surface. This area amounts to well over a billion square miles and more than equals the area of twenty great circles formed by cutting an imaginary section through the earth at the equator.

Astronomers are interested in the spots not alone because of their size but also because the "parent" spot reversed the usual procedure of a sunspot and broke up as it approached the sun's meridian line.

Science News Letter, August 21, 1937

SPLITTING

Almost as groups of cells divide, this huge group of sunspots is splitting in the middle as it nears the meridian of the sun. The photographs were taken at the U. S. Naval Observatory on July 27, 28, and 29.