ASTRONOMY

Rare Clouds on Sun

Two interacting luminous solar prominences in eruption have been photographed at Mt. Wilson. Show that both positive and negative charges are there.

➤ TWO INTERACTING solar prominences in eruption, a rare sight on the sun, were photographed on Oct. 3, by Dr. Edison Pettit of the Mt. Wilson Observatory, it was announced in a report published by the Astronomical Society of the Pacific.

Solar prominences are the luminous clouds seen projecting above the edge of the sun during a total eclipse. Interactive prominences are those in which two or more are pulling material away from each other in the form of streamers. They are of great theoretical interest since such interaction indicates that both positive and negative electrical charges may exist within the same prominence.

The photographs were taken with a motion picture camera through a special device called an interference polarizing monochromator, an instrument only recently perfected for astrophysical use. Through the monochromator the sun appears as a cherry red disk of moderate brightness upon which markings can be seen which are totally invisible when viewed by a telescope in the ordinary way. The camera and monochromator were attached to a six-inch refracting telescope mounted in Dr. Pettit's backyard observatory.

Dr. Pettit, who was among the first to discover Nova Puppis on the morning of Nov. 10, made the first accurate photometric measurements of the nova's brightness in his backyard observatory.

When first seen upon the edge of the sun at 9:39 a.m., Pacific War Time, the object consisted of two small prominences, of which one 22,000 miles high was pouring streamers into another 9,000 miles high about 37,000 miles away. Although Dr. Pettit suspected that an eruption might be in progress, he hesitated to use the motion picture camera owing to a thickening sky and a limited supply of film. By 2:26 p.m., however, the character of the activity was no longer in doubt, the prominence then having risen to an elevation of 62,000 miles. Photography was commenced with the monochromator and continued until 4:24 p.m., when forced to halt by clouds.

The early exposures show the prominences blended into a single triangular shaped mass. This developed into a column which, as it rose, bent over like a whip and tended to return to a center of attraction in the nearby solar surface. Exposures made through rifts in the clouds reveal the column reaching down nearly to the sun's limb.

Measurements of the film showed the prominence first rising with a speed of 23,400 miles per hour which changed abruptly to 46,800; and then from 46,800 to 93,600. Between changes the motion was uniform, the sudden increases occurring within less than a minute.

These jumps in speed are a characteristic of the motion of eruptive prominences. Why the motion should change suddenly rather than by a gradual increase as is generally the case in nature is merely one of the many unexplained features connected with these mysterious solar appendages.

Science News Letter, December 26, 1942

NUTRITION

Vitamins Don't Stop Colds When Diet Is Adequate

➤ TAKING VITAMIN pills will not reduce the number of colds nor the severity nor duration of colds in persons on a reasonably adequate diet, it appears from experiments reported by Dr. Donald W. Cowan, Dr. Harold S. Diehl and Dr. A. B. Baker, of the University of Minnesota Students' Health Service (*Journal, American Medical Association,* Dec. 19).

Their experiments were made in two successive winters under carefully controlled conditions with several hundred University of Minnesota students who were especially susceptible to colds. The effects of large doses of vitamin C alone (the citrus fruit vitamin that prevents scurvy) and of large doses of vitamins A, B_1, B_2, C and D were tested.

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RARE—These photographs show the two rare blended prominences on the sun in eruption at intervals of 23 minutes. The luminous clouds towered at heights above the sun's limb of 66,000 miles for the one at the left and 161,000 miles for the last picture on the right. The photographs were made with a motion picture camera through an interference polarizing monochromator attached to a six-inch refracting telescope.