

ASTRONOMY

Still Another New Comet Discovered in Japan

DESPITE the German occupation of Denmark, the International Bureau of Astronomical Telegrams, at the Copenhagen Observatory, which is the world's clearing house for news of discoveries, seems still to be functioning. This is indicated by a radiogram recently received in the United States by the Harvard College Observatory, announcing the discovery in Japan of a new comet. It is signed with the name of Dr. E. Stroemgren, who has directed the Bureau for a number of years.

News of the discovery was transmitted to Denmark by Dr. Hidewo Hirose, director of the Tokyo Observatory. The comet was discovered by a member of his staff, S. Okabayasi, who discovered a new star in Sagittarius in 1936.

Okabayasi's comet is the fifth of the year, and the fourth to be found since Sept. 1. Of eleventh magnitude, it is too faint to be visible except with a telescope of at least moderate size. It was described as being diffuse, but with a central nucleus and was found on Oct. 4. However, it has already made its closest approach to the sun, and is now getting fainter as it recedes from the center of the solar system. Thus there is no hope of its being visible to the naked eye, since at the time of discovery it was of magnitude 11, too faint to be seen without a telescope.

Calculation of its path has been made by Elizabeth L. Scott, at the University of California in Berkeley, it was announced by Dr. Harlow Shapley, director

of the Harvard College Observatory. This shows that on Aug. 11 the comet was nearest the sun, at a distance of about 90 million miles, slightly less than the average distance of the earth.

A prediction based on this calculation shows that it will move into the constellation of the Great Bear early in November, passing alongside the pointers in the Great Dipper. It is heading almost directly north from its discovery position in Leo, the lion.

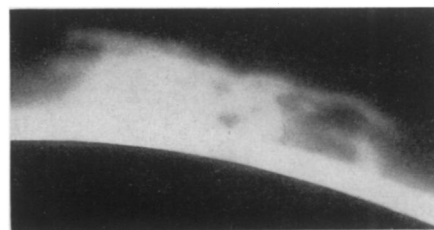
Science News Letter, October 26, 1940

Double Claim for Harvard

HARVARD University has a double claim to the new comet which Dr. Fred L. Whipple, of its observatory at Oak Ridge, discovered recently. (See *SNL*, Oct. 12) According to Dr. Harlow Shapley, director of the Observatory, it was found independently by Dr. John S. Paraskevopoulos, Greek-born astronomer who has charge of Harvard's southern observatory at Harvard Kopje, South Africa. If astronomical usage is followed, the comet (which is really a rather insignificant one) will carry the complicated name of "Whipple-Paraskevopoulos Comet."

Word has also been received from the Argentine National Observatory at Cordoba that it was observed there on Oct. 4 in the constellation of the Chameleon, a small group near the south pole of the sky. It appeared as a diffuse object of the eleventh magnitude.

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PROMINENCES

This flame-like mass of hydrogen shooting out from the surface of the sun, was photographed with the Evans monochromator at Harvard College Observatory.

The reason prominences cannot be seen ordinarily is because of the great glare of the atmosphere around the sun. The glare consists of white light, made up of all colors, while the light of the prominence is mainly one color, that of glowing hydrogen. Thus, to the eye, sensitive to all colors, the illumination from the sky drowns out the prominence.

However, if some way can be found to pick up just the wavelength of hydrogen light, the prominence can be seen, for, with other wavelengths excluded, it is much more brilliant than the sky.

This has been done with the spectro-scope, but Mr. Evans used what is called a "quartz monochromator." This consists of a series of six crystals of quartz, each half the thickness of the preceding one. Between them are sandwiched layers of film which polarizes light, making it vibrate in one plane instead of many.

The spectrum of colors, which would be obtained by analyzing through a prism the light from the first quartz plate, would show a series of broad alternate bands of light and dark. Each successive plate widens the dark bands and squeezes the bright ones, until, after enough have been used, one of the bright bands is just wide enough to pass the hydrogen light. Colored filters cut out the others.

First suggested by a French astronomer, Dr. Bernard Lyot, the device was tried in Sweden by Dr. Yngve Ohman. However, he was not able to use as many quartz plates since he did not have the polarizing film available. Instead, he employed another method for obtaining polarized light, the Nicol prism. With one of these between each pair of quartz plates, the instrument was quite long.

Mr. Evans has also used the monochromator for photography, by the simple expedient of holding a camera at the eyepiece. For other than such experimental photographs, a more stable support would be used.

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Flames on Sun Made Visible With Telescope Attachment

GREAT flame-like masses of gas, which sometimes shoot out from the surface of the sun to a height of a million miles, have been under scrutiny of astronomers at the Harvard College Observatory with a new instrument.

Until now the most useful device for showing these prominences, which may be visible to the naked eye when the sun is totally eclipsed, is the spectro-helio-

scope, a fairly complicated device with a number of optical parts and a set of prisms rotated by a motor.

The new device, less than two feet in length, has been used as an attachment to one of the observatory's smaller telescopes. It was constructed by John W. Evans, of the Chabot Observatory, Oakland, Calif., who loaned it to the Harvard College Observatory.