

ASTRONOMY

Famous Variable Star Now Brighter Than Ever Before

Large Observatories Study 10,000-Year-Old Burst Into Brilliance First Observed by Amateur Astronomer

A FAMOUS star in the constellation of Ophiuchus, now visible in the southwestern evening sky, is now brighter than ever before recorded, according to Dr. Harlow Shapley, director of the Harvard College Observatory. Dr. Shapley received word a few days ago from Leslie C. Peltier, of Delphos, Ohio, an assiduous amateur observer of variable stars, that this object had attained the magnitude of 6.4, nearly bright enough to be seen with the naked eye in a dark sky.

The star is known as Nova Ophiuchi No. 3, and is classed with the stars that, from a previous career of inconspicuousness, suddenly flash out with a brilliance rivalling that of the brightest stars known. Many years ago it was first observed, but, contrary to the habits of most "new stars," as they are commonly called, which after a few years return to their original brightness and stay there, this one has continued to attract the attention of astronomers.

According to Dr. Shapley, the greatest brilliance hitherto recorded for Nova Ophiuchi was in 1898, when it was of magnitude 7.7. In the last twenty-five years, it has varied between 10.8 and 11.8. Under best conditions, the naked eye can perceive stars to about the sixth magnitude, while a small field glass will reveal them a magnitude or two fainter. A moderate sized telescope is required to show them as faint as the tenth magnitude.

On the night of August 16 Dr. Dean B. McLaughlin, of the University of Michigan Observatory, analyzed its light. He has reported that the spectrum shows broad, diffuse bands due to hydrogen and ionized iron in the star and that just to one side of these bands are the familiar dark lines, displaced to the violet end of the spectrum.

The behavior of the spectrum, and the amount of the shifts of the bands and the lines seems to indicate that the star is following the usual procedure for such an outburst, which is really some sort of explosion. The star expels an

ever widening shell of glowing gas, which causes the bands in the spectrum. The measurements made by Dr. McLaughlin indicate that this shell is leaving the star at a speed of 1000 kilometers, about 620 miles, per second.

The displacement of the dark lines, due not to the light from the luminous gaseous shell itself but to the absorption by this shell of the light from the more brilliant star, indicate that part of the shell is approaching us with a speed of 30 kilometers (19 miles) per second, and another part with a speed of 160 kilometers (99 miles) per second. Perhaps the difference between this and the speed of the expanding shell is due to the fact that the star and the shell are moving away from us at a speed equal to the difference.

Mr. Peltier's discovery was also con-

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Discoverer Tells How He Found Stellar Flareup

By LESLIE C. PELTIER

THE INCREASE in brightness of the "new star," Nova Ophiuchi Number Three was first noted at Delphos, Ohio, on Tuesday night, Aug. 15, at 10 p. m., E.S.T. At this time its magnitude was estimated at 6.4 or just faintly visible to the naked eye.

After carefully checking everything so that there was no chance of misidentification, the news was immediately wired to both Yerkes and Harvard College Observatories.

I have had this star under observation since early in 1921 and I have always found it about the eleventh magnitude or just visible in a three inch telescope.

A nightly search for new stars as well as frequent telescopic observations of former novae has for many years been a regular part of my work.

This is the first naked eye nova to be seen in this latitude since August, 1920.

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firmed by photographs taken by the Harvard College Observatory Oak Ridge Station during its routine photographic patrol of the sky. The star was invisible on photographs taken on the night of Aug. 9-10 that showed stars as bright as magnitude 8, and it was photographed with a magnitude of 6 on the night of Aug. 14-15. On the night of Aug. 16-17 it had dimmed to a photographic magnitude of 6.5.

Although the increase of radiance of this star is only now being seen on earth, the brightening of the star occurred some 10,000 years ago. The star is so far distant from the earth that it takes that time for the light to reach the earth.

The cause of a nova is not fully understood, but it is believed to be due to a sudden release of energy in the atoms of the star. This might be started by the impact of a tiny body far smaller than the star itself, which would act as the trigger to start the explosion. They were at one time thought due to the collision of two stars, but novae occur much too often to be accounted for in this manner.

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BOTANY-ENTOMOLOGY

Plant and Ants Cooperate To Destroy Grasshoppers

WHILE looking for ways of utilizing natural plant and other enemies to combat the locust plague, Guillermo Gandara, formerly of the Mexican Ministry of Agriculture, discovered a weed which is really an automatic trap for these destructive insects. In the Republic of San Salvador, Sr. Gandara found in a gully near La Ceiba Agricultural Experiment Station a plant whose stems were thickly covered with young locusts in the hopper stage. The insects would not scatter even when he shook the plant, and he found that the reason was that they were trapped.

The weed has three-sided stalks whose edges bristle with hooklike hairs. In the daytime the plant catches locusts and other insects which wander into its way, and at night armies of carnivorous ants arrive to eat the prisoners up, climbing up the smooth sides of the stems. In the morning the plant is clean once more, ready to work again, and so it is an automatic trap. Sr. Gandara believes the weed might well be planted in fences about fields in areas subject to locust plagues.

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