ASTRONOMY

New Supernova Spotted

Exploding star, believed past its maximum, spotted in the faint spiral galaxy, NGC 5668. Of magnitude 14, it can be seen only with the largest telescopes.

➤ AN EXPLODING star, or supernova—which can blaze about 100,000,000 times brighter than our sun—has been discovered with the 18-inch Schmidt telescope at Palomar Observatory, Pasadena, Calif.

Supernovae are stars that occasionally, with startling rapidity, flare brilliantly, then gradually fade out again. In our own Milky Way pinwheel of stars, three such gigantic explosions have been recorded.

The universe is peppered with hundreds of thousands of galaxies besides the Milky Way. Most extra-galactic objects are so far away they appear only as blurred areas of light on photographs, even those having long exposures. The individual stars of the pinwheel systems cannot be separated.

The new supernova appeared in such a faint spiral galaxy, NGC 5668, which previously had been so inconspicuous it is known only by the number that locates it in the sky. NGC 5668 is in the constellation of Virgo, the virgin, visible in the southern sky about half-way between the horizon and directly overhead.

The supernova itself, however, is not visible. Its magnitude, or relative visual brightness, is 14, so it can be seen only with the largest telescopes.

Astronomers estimate that, in any one galaxy, supernovae appear only once every 500 years or so. Although there are hundreds of thousands of galaxies, the quick flare-up and disappearance of a supernova, as well as galactic distances, result in only a few being seen.

The blazing star was discovered by Dr. Paul Wild, an astrophysicist at the California Institute of Technology. In an 18-inch Schmidt exposure made three years ago, no separate stars were visible in NGC 5668. The new supernova was spotted May 4 on a film taken early the previous morning. It appeared as a bright spot in the nebula.

Dr. Wild believes that the object was already beyond its maximum brightness at that time, because it has seemed to be slightly dimmer on succeeding observations. Its absolute magnitude at greatest brightness cannot be definitely known before its distance is found, and before astronomers learn how fast the supernova is fading out.

Their preliminary estimate is that it was about as bright as previous supernovae, which have been about 100,000,000 times brighter than our sun. If the sun were at a distance of 200 million million miles from us, where it would be barely visible to the unaided eye, and then exploded like a supernova, it would appear four times as bright as the full moon.

Spectroscopic studies made with the 200-inch Hale telescope by Dr. Milton L. Humason of the Mt. Wilson Observatory show that the new supernova is of type I.

Palomar Observatory is jointly operated with the Mt. Wilson Observatory by the Carnegie Institution of Washington and California Institute of Technology.

Science News Letter, May 22, 1954

PSYCHIATRY

Glutamic Acid Gives Zest to Elderly

➤ AGED MENTAL patients get more zest for life and are more active when given glutamic acid, Dr. H. E. Himwich of Galesburg, Ill., State Research Hospital reported at the meeting of the American Psychiatric Association in St. Louis.

Glutamic acid is an amino acid, one of the so-called building blocks of protein. Its value for raising the intelligence level of mental defectives, improving patients with a certain type of epilepsy and aiding in other ailments has been argued by medical men, psychiatrists and psychologists for some time.

However, they have pretty well agreed that it increases activity in both animals and man.

"Because old people are slowed down, about 30 patients, aged from 50 to 76, with 17 of them older than 65, were chosen for investigation of the effect of glutamic acid," Dr. Himwich reported.

"They had all been in state hospitals for some time, the average stay being 15 years. These elderly psychotic patients were fed a supplement of tomato juice in addition to their regular meals. The tomato juice contained either 15 grams of glutamic acid or a similarly tasting mixture but devoid of glutamic acid.

"The patients received either the glutamic acid or the mixture for alternate 12-week periods. But the physicians examining these patients did not know whether they were receiving glutamic acid or the mixture free from glutamic acid and, therefore, were unbiased in their diagnostic assays of the patients.

"Of the 27 patients who completed this study, 17 improved. Among these 17, the most consistent effect, observed in 16 out of 17, was an increase in activity. Not only did they do better on their jobs, but they showed more interest in the work.

"The next biggest improvement was in their emotions and outlook on life. Twelve of the 17 patients became more optimistic and cheerful and appeared to enjoy life more. Thus in this small number of patients there appeared to be increased activity and zest in life associated with the feeding of glutamic acid. Whether or not the same conclusions would be revealed by the examination of a larger number of patients can be decided only by further work."

Associated with Dr. Himwich in the study were Dr. K. Wolff of the Menninger Foundation, Topeka, Kans., and Drs. A. L. Hunsicker, S. C. Allen and William A. Himwich of the Galesburg institution.

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Double duty *limestone,* which costs the farmer less because it is first used in steelmaking, is just as good as agricultural limestone on certain soils.

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