

ASTRONOMY

Super-Nova is 500,000,000 Times Brighter Than Sun

Giant Exploding Star Is in Small Stellar System About Three Million Light Years From Our Galaxy

A GIGANTIC stellar explosion, producing 500,000,000 times as much light as the sun, and announced as the sixteenth super-nova of all history, was discovered at the Palomar Mountain observatory of the California Institute of Technology.

This new star, so distant that it has taken its light about three million years to reach the earth, has burst from an obscurity that could barely be pierced by the most powerful telescopes to take its place among the brighter stars. It is situated roughly midway between the Big Dipper and bright star Arcturus in the northern sky. It is not quite bright enough to be seen with the unaided eye.

Spectrographically Checked

The discovery was made by Dr. Fritz Zwicky. It was confirmed by observations of the super-nova's spectrum made at the Mt. Wilson Observatory of the Carnegie Institution of Washington by Milton Humason and was further studied by Dr. Walter Baade.

If such a stellar explosion happened in the vicinity of the earth and sun and its planets, it would undoubtedly wipe them out.

"The appearance of a super-nova in any given system of stars, such as our own, for example, is a very rare occurrence which happens perhaps only once in several hundred years," Dr. F. H. Seares of the Mt. Wilson Observatory pointed out. "Of the numerous novae that have appeared in our own system, only one, Tycho's star of 1572, was perhaps bright enough to be classed as a super-nova. For that reason search has turned to the extragalactic systems of stars, of which many thousand are bright enough to serve as a means of increasing the chance of discovering one of these catastrophic outbursts."

Dr. Zwicky's discovery results from a systematic plan for the detection of the outburst of these amazing objects which at their maximum brightness far surpass the luminosity of any other type of star.

There is no trace of the nova on a Mt. Wilson photograph taken March 8,

1937, from which it is certain that before the outburst the star was fainter than the twentieth magnitude, which is not far from the limit than can be reached with the 100-inch telescope. Now it is of magnitude 8.5, an increase in brightness of at least 40,000 times. The system within which the super-nova has appeared is small, a dwarf stellar system, in fact, situated at about three million light years and so faint as to be observable only with the most powerful telescopes. Dr. Baade estimates the intrinsic brightness of the super-nova to be of absolute magnitude minus 16.3, which is some ten times brighter than average super-nova and about 100 times more luminous than the nebula to which it belongs, or 500,000,000 times the luminosity of the sun. It is the most luminous of all the 15 super-novae thus far observed with the possible exception of Z Centauri of 1895.

Theory of Cosmic Rays

Researches now in progress may soon prove, or disprove, the controversial theory that the source of the mysterious cosmic rays is the gigantic explosion of stars in space. Cosmic ray instruments aimed at the new super-nova just discovered by Prof. Zwicky at Palomar Observatory in California may be showing right now that the intensity of cosmic rays has increased during the recent flareup of the super-nova which is said to rival 500,000,000 suns in brilliance.

If the cosmic ray intensity does increase in the direction of the new super-nova, it would be good support for Prof. Zwicky's own theory on the origin of cosmic rays, which assigned tremendous star explosions as the source of the piercing radiation. Prof. Zwicky first postulated with Dr. Walter Baade this hypothesis in 1934.

Since then at least one super-nova has been discovered, in the constellation of Virgo, but it was so small and far away (6,000,000 light years) that conclusive results in testing the cosmic ray theory of Prof. Zwicky were not anticipated.

The present super-nova, however, is only half as far away and is among the

brightest star explosions yet seen among the 16 known to astronomy. While its position, roughly between the Big Dipper and the star Arcturus, is not too favorable for cosmic ray directional observations because of the bending effect of the earth's magnetic field on incoming electrical particles, the chances of checking the Zwicky theory are much better than during the similar 1936 super-nova.

The next few days of cosmic ray observations may tell the story.

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ANTHROPOLOGY

Eskimo-Zulu Marriage Produces Unique Offspring

KUPLOO is a lad about sixteen Arctic summers old. He lives near Churchill, far up the coast of Hudson Bay. And he has probably the most incredible parental assortment that any of old earth's racial melting-pots can boast. His father is an Eskimo, his mother a Zulu.

It happened in this wise: The Hudson Bay Company's agents at Churchill, on Hudson Bay, found a big deposit of blue clay, that looked like the stuff they take diamonds out of, down in South Africa. They asked the South African diamond people if they could send up a good diamond prospector. A skilled Zulu



ZULIMO OR ESKILU?