

ASTRONOMY

Find Near Star-Neighbor

What may be our second nearest star-neighbor in space has been newly discovered. It is also the closest star that can be seen from most of the U. S.

► **DISCOVERY** of a star—believed to be our second nearest star-neighbor in space and the closest one which can be seen from most of the United States—has been announced.

Dr. Willem Luyten of the University of Minnesota reported that the star was spotted by comparing photographic plates which he made at the Harvard College Observatory's South African Station in 1930 with plates taken by the Harvard Observatory in 1944. Discovery was reported to the American astronomical clearing house at the Harvard Observatory.

Observations made with the 36-inch reflector at Tucson, Ariz., indicate that light from the star takes perhaps less than six years to reach the earth. Only Alpha Centauri, four and a half light years away, is nearer, but it is visible chiefly from the southern hemisphere. If the Tucson observations are confirmed, the new discovery will be second only to Alpha Centauri in nearness to the earth.

You will not be able to see the new find without the aid of a powerful telescope: it is 100 times too faint to be seen with the naked eye.

The newly-found star will be called L-726-8. It was found in the constellation Cetus, the whale.

Studied through observatory telescopes, it has been found to be a double star. It is actually two stars revolving around each other, at a distance about three times greater than that from the earth to the sun. Both

of the stars are extremely red in color. They are much cooler than our sun, actually giving 40,000 and 60,000 times less light than the sun. They are surrounded by huge clouds of incandescent hydrogen and calcium gas.

Already one of the stars has made astronomical history—through an atomic explosion. Last Dec. 8, the fainter of the two stars was seen to flare up suddenly to 12 times its normal brilliance, and subside again in less than 20 minutes. This phenomenon is thus far unique among stars.

It is fortunate that this is unprecedented, because if it ever happened to our sun, we on earth would have a very uncomfortable, hot quarter of an hour, a "hell on earth."

In the very faint, cold star, the atomic explosion, for such it must have been, amounted to the equivalent of a billion atomic bombs of the Hiroshima type.

Dr. Luyten pointed out that his discovery shows the international and cooperative character of astronomy. The Minnesota astronomer obtained plates and observations on which his conclusions are based from the Harvard Observatory Station at Bloemfontein, South Africa; the University of Arizona's observatory at Tucson; the McDonald Observatory in Texas; Mount Wilson Observatory in California; and the Union Observatory, Johannesburg, South Africa. His research was made possible by grants made by the University of Minnesota graduate school and the Gould Fund of the National Academy of Sciences.

Science News Letter, April 30, 1949

Spurred on by this development, Bureau statisticians are now making a further study of Dr. Abbot's figures.

A Washington area forecaster explained that a peak temperature for a few-day period is frequently followed within a day or two by the low, because of the rush of cold air. This quick cooling and more gradually warming is quite generally found in middle and northern latitudes, he added.

The Smithsonian researcher's forecasts are based on his previous finding of a periodicity in the sun's heat radiation of 6.6456 days. Effects on the earth of this radiation period may be speeded or delayed by one or two days due to the complexity of the earth and its atmosphere, Dr. Abbot explains.

The long-range predictions give a general pattern, and details can be filled in by local weather observations, he points out.

A Weather Bureau spokesman said that the Smithsonian scientist's "primarily statistical" approach to weather forecasting is not accepted generally by weather scientists.

"Three days is about our limit," he conceded.

Dr. Abbot has repeated his prediction for this year, with a new list of 55 "cold days" in Washington for the current year. They show a relatively cool Fourth of July this year and a relatively warm Christmas for the District of Columbia.

Science News Letter, April 30, 1949



TRANSFORMER FOR POWER—Detroit's power supply will be boosted by this powerful transformer which is capable of handling 195,000 horsepower of electrical power. The unit is rated at 145,000 kilovolt-amperes and weighs 121 tons. It is shown here at the Westinghouse company's transformer test pit.

METEOROLOGY

Predict Weather for Year

► **WEATHER** forecasts made a year ahead have been "fulfilled with an exceptionally high degree of accuracy," the Smithsonian Institution announced.

The long-range forecasts, for the nation's capital, were made by the retired secretary of the Smithsonian, Dr. Charles G. Abbot, now a research associate.

In January, 1948, the Institution disclosed, Dr. Abbot forecast 55 dates when the temperature in Washington would drop to a low and start rising. The dates were locked in a safe and opened this year. Checked against U. S. Weather Bureau records, the forecasts seemed to stand up well, with 48 of the 55 dates having lower temperatures.

Meanwhile Weather Bureau scientists, using Dr. Abbot's dates, have discovered

that the Smithsonian scientist's conclusions seem to apply both as stated and also more or less in reverse.

Dr. Abbot predicted that between his "cold days" there would be warmer days averaging 7.1 degrees Fahrenheit warmer. The actual average of the highest mean daily temperatures for the days between "cold days" proved to be 6.96 degrees warmer.

Weather Bureau scientists checked to see how many times there was a lower mean daily temperature than the "cold days" between the dates. They found cooler temperatures, averaging 6.6 degrees below the "cold days" for 45 of the 55 dates. Thus, it appears that the "cold days" also may be "hot days."