

TOOK DIMENSIONS OF GIANT STAR

Successful Measuring of Betel Geuze Described—Marks Great Step.

Dr. George Ellery Hale, director of the Mount Wilson Observatory, near Pasadena, Cal., gave to the Associated Press an article he had written describing the successful measuring at the observatory December 18, of the star Betel Geuze, in the constellation of Orion, showing its diameter to be 800,000,000 miles.

"On Dec. 13, 1920, the diameter of the bright red star Betel Geuze (Ara-bis for 'The Giant's Shoulder') in the constellation of Orion, was successfully measured on Mount Wilson," Dr. Hale writes.

"The stars are so remote that hitherto it has not been possible to measure their diameters, in spite of the fact that many stars must be much larger than the sun.

"In his presidential address last August before the British Association for the Advancement of Science, Professor A. S. Eddington, of Cambridge, remarked: 'Probably the greatest need of stellar astronomy at the present day, in order

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to make sure that our theoretical deduction are starting on the right lines is some knowledge of measuring the apparent angular diameter of stars.

"He then went on to predict that the star with the greatest apparent diameter is almost certainly Betel Geuze, diameter 0.031 seconds of arc. This result was just obtained, and is a remarkable verification of the prediction.

"The measurement was made with the one-hundred inch Hooker telescope by Messrs. Pease and Anderson, of the observatory staff.

"No telescope is powerful enough to measure accurately the extremely small angle subtended by a star.

"This very difficult and delicate task is rendered possible by a method de-

vised by Professor Michelson, director of the Ryerson Physical Laboratory of the University of Chicago, and Research Associate of the Mount Wilson Observatory.

A note explains how a device based on the phenomenon of interference of light, called an "interferometer" was used in the 100-inch telescope at Mount Wilson and tested.

"After further improvements," the article continues, "the Michelson device was applied to the measurement of Betel Geuze.

"The measured angular diameter is 0.046 seconds of arc, in surprisingly close agreement with Professor Eddington's calculations. While this is a preliminary value which will be improved

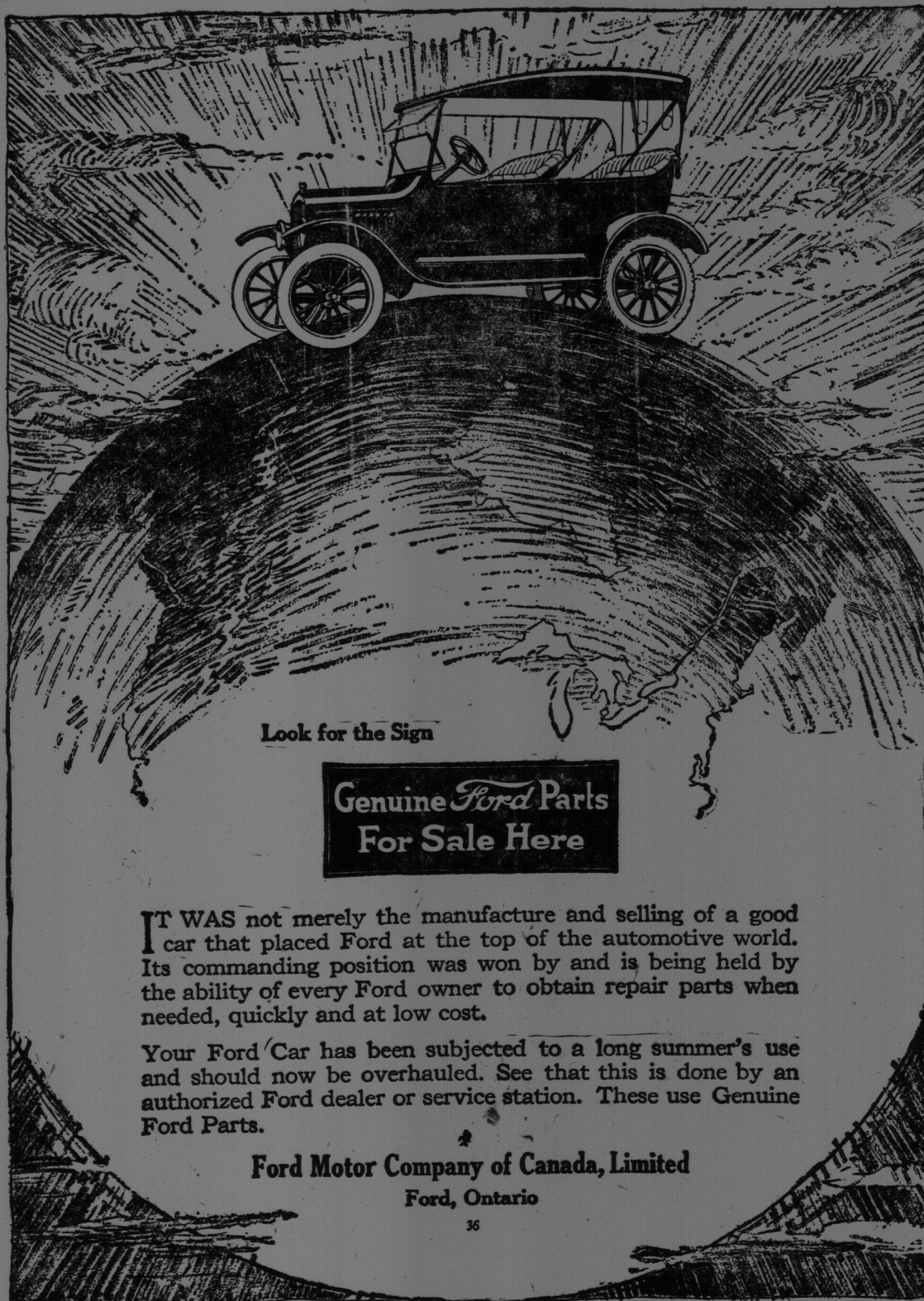
by subsequent measure, it is probably correct within ten per cent.

"To learn the linear diameter of the star we must know its distance from the earth. The three available measures of the distance of Betel Geuze are not in very close agreement, but the average is probably fairly reliable. Using this value, the diameter of the star comes out three hundred million miles. In other words, it would fill the orbit of Mars.

"The colossal size of Betel Geuze will be recognized when it is compared with the sun, which is less than a million miles in diameter. The sun, if it were a hollow sphere, would contain a million bodies as large as the earth, or if the earth were fixed as its centre, the moon 240,000 miles away, could move in its orbit and have much room to spare. Yet, when we remember that the sun, in a state of very attenuated gas, many millions of years ago, must have filled the entire solar system, we recognize the possibility that stars even larger than Betel Geuze may exist.

"The new result beautifully confirms the recent calculations of Russell, Hertzsprung and other students of stellar evolution. A few years ago Russell showed that there must be two great classes of stars; the 'Giant's' large gaseous body in an early stage of development, and the 'dwarfs' which have condensed to the stage represented by our sun.

"The successful measurement of the actual diameter of the stellar 'giant' now furnishes the last link in the chain and prepares the way for a promising extension of our investigations on the formation and development of the stars."



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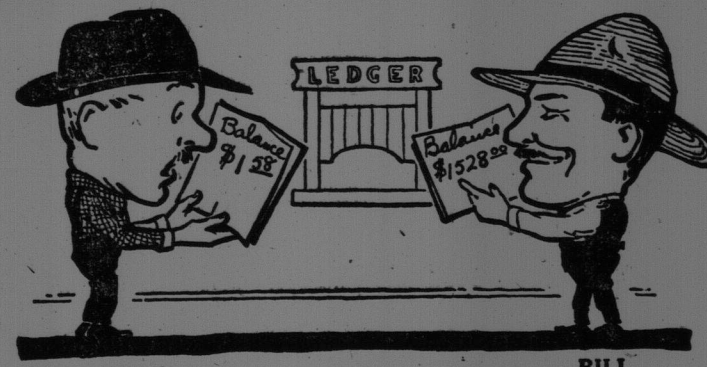
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EXECUTIONS BY THE MILITARY NOT UNFREQUENT

Conditions in Halifax More
Than a Century Ago—
Slaves Were Offered for
Sale—Much War Loot.

(Occasional in Halifax Recorder.)
During the war of the French Revolution (1793) British cruisers and privateers often arrived at this port with prizes. On one occasion thirteen of these were brought in by two cruisers. Cargoes of flour, wine, fruit, etc., were often captured, and the market here was abundantly supplied with good things, and there was no luxury tax. Halifax was destined to hear, but only to hear, of "the battle's distant din." The militia manned the forts, and the Nova Scotia regiment manned some of the men-of-war who went in pursuit of French ships of war, in southern latitudes.

At the close of the legislative session, 1799, Mr. Speaker Uniacke referred to the fact that fifty years had elapsed since the foundation of the town. "There are members both of the council and the assembly who recollected when the first tree was felled on the spot where you now preside over a flourishing colony."

This year (1799) the Duke of Orleans, with his two brothers, exiles from France, visited Halifax in November. Another distinguished visitor was Wm. Cobbett, returning from New York to Great Britain. While here, he dined with the Duke of Kent. Tradition says while in Halifax Cobbett resided in the little old house, still standing, at the top of Blowers street. He first landed in Halifax as a corporal of the 54th regiment. The regiment had come to Halifax at the close of the Revolutionary War, from New York, and Cobbett was sent out from England with a detachment of recruits to reinforce that regiment.

Military executions were not unfrequent at this date and later. Four were

hanged for mutiny and desertion, and eight relieved under the gallows. Persons guilty of piracy and murder were executed and then hanged in chains at exposed points about the water front.

Among the deaths of the year 1779 was that of the Halifax printer and publisher—Anthony Henry. He was King's Printer for forty years. He had been a German after in one of the regiments that assisted in the capture of Louisbourg.

Here is a noteworthy advertisement: "For sale—a likely, stout negro girl, aged 18 years; good natured, fond of children, and accustomed to both town and country work. For particulars apply at the old parsonage, Dutch Town." The slave in Nova Scotia did not come across the Atlantic with the first settlers, but bondmen were held early in the settlement of the town, but they came with their masters from the colonies to the south of us. At this time the town was very prosperous. It was the headquarters of a large fleet, and a lucrative illicit trade with the United States. Prizes were swept into the harbor—French and Spanish American. The youth of Halifax were eager to share the fortunes of war. Five Halifax boys who entered the navy about this time rose to be admirals. Trade flourished; prices and rents were high—as in the last great war. From 1799 to 1815 many fortunes were made and some lost, and during the time, for a small place, mercantile business places were numerous. The general stores were well supplied with every description of goods—both wet and dry. Spanish pieces of eight were plentiful, and prosperously jingled all along the water front. Prize money was spent lavishly, and the morals of the town were none of the best.

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