

**New Wonders in Mira—Giant Star**

Recent Measurements of Its Tremendous Proportions and Vast Distance from Us Stagger Our Imaginations.

(ARTHUR A. STUART.)  
More than 300 years ago the German astronomer, Fabricius, peering at the heavens through his rude telescope, espied an amazing phenomenon. A great red star that he had discovered some time before in the constellation Cetus (the whale) was fading quite like this, and on succeeding nights he trained his telescope on the star, only to observe it grow fainter and fainter and at last disappear altogether.

For months Fabricius set his telescope nightly to search for the vanished star, and at last his efforts were rewarded. The star, which he had named Omicron (the Greek letter O), faded into view again, faintly, and because he realized that the star was fading he watched it more closely. He viewed it for several months it had come back with all its former ruddy brilliancy. Then it began to vanish again. Fabricius told other astronomers about his discovery, and as no other star in the heavens was known to behave in such a strange way, Omicron was renamed Mira (the wonderful).

Ever since then Mira has proved a source of interest and wonder to astronomers. With improved telescopes, scientists learned that the great star did not actually disappear, but merely became so faint that it was imperceptible except with powerful astronomical instruments. Moreover, alternate fading and brightening were found to take place in regular cycles of approximately 11 months.

The astronomers never rested in their efforts to learn the secrets of the great star—its size, its distance from earth, the cause of its odd variations. And it was only within the last few years that science was able to add appreciably to the knowledge of Mira. Then, using the great Hooker 100-inch reflecting telescope of the Wilson observatory in California, and a 20-foot Michelson interferometer, F. G. Pease, astronomer of the Carnegie Institution, succeeded in measuring the diameter of Mira.

And these new facts about this great star supply new reasons for naming it call it "the Wonderstar." Mira was found to be the second largest star in all the heavens, extended in size only by the mighty stars. Beside it Betelgeuse, long regarded as the second mightiest star, appears now as a celestial dwarf.

Mira is 250,000,000 miles across—almost three times the distance between the sun and the earth. Its diameter is 500 times larger than the sun's, and 800 times larger than the earth's. The Los Angeles, travelling 60 miles an hour, would take a flight equal to the diameter of this star, the trip would consume about 600 years. If it were to be represented by the great circle that could be drawn on this page, the earth would be a dot so small that it could not be seen; the sun would be about the size of a period. If the earth, revolving once a year, were to spin about Mira, it would be back to the starting point for 100 years. The round-the-world flyer, proceeding at the same rate at which they encircled the globe, would require 15,000 years to fly around this great star.

Great though this size is, it is insignificant, nevertheless, compared with the tremendous depths of space stretching between us and the star. Mira is estimated to be 169 light years distant from the earth. That means that the light from the star, travelling 186,000 miles a second, takes 169 years to reach us. To state such a distance in miles would be futile for light travels six million miles in a single year. It may seem to convey a notion of how far Mira is when we consider that the light that carried the image of the star to the Mt. Wilson telescope left it about the year 1756, when America was still a British colony.

Other secrets besides its size have been wrung recently from Mira. Its temperature, for example, is known to be something under 4000° Centigrade. The spectroscopic shows titanium to be present in Mira, a compound that cannot exist in higher temperatures. Because of the red color of the star, astronomers knew long ago that Mira was a star of comparatively low temperature. All red stars are relatively cool. Yellow stars, are such as the sun, are warmer, about 6000°. White stars vary in temperature between 10,000° and 15,000°.

Mira is a huge red ball of glowing gases, of comparatively low density. Its volume is 27,000,000 times that of the sun, but its mass is less than 100 times that of the sun. Science has a tenable theory to explain its odd habit of changing its light. It is this: As the great star sends forth light and heat, it contracts, then cools and forms clouds, which prevent the radiation of heat and heat from escaping. This causes the lessening of illumination. Meanwhile the imprisoned energy accumulates until at last it bursts through the screen of clouds.

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**Tom Mix Hissed at Paris**

CROWDS PREVENT STATION DISPLAY.

Tom Mix, the cowboy film actor, had a mixed reception when he arrived at Paris from London, cheers being mingled with hoots, cat calls and whistling—the French equivalent of hissing.

People in the crowd jostled each other and blows were exchanged. Women fainted.

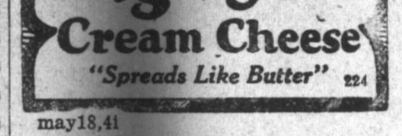
Tom Mix's horse "Tony" had come by aeroplane, and was put in a van and taken to the Gare St. Lazare to await the arrival of its master from London.

It had been arranged that Tom Mix should ride the horse from the courtyard of the station through the streets of Paris. Sandwichmen had paraded the streets all day with boards announcing the time of the arrival.

It is estimated that there were 50,000 people gathered near the station, but not all of them had come to meet Tom Mix. Many thousands merely wanted to catch suburban home-going trains and were prevented by the other thousands met them to cheer the film actor.

Tom Mix, apparently unaware that all these people had not come to do him honour, forced his way through to the horse van, but the stationmaster forbade him to remove the horse and to ride it out of the station.

Finally Mix put his family in the van and himself climbed on the roof and so proceeded to his hotel.



**U.S. Want France to Pay War Debt**

PARIS, May 11.—(A.P.)—The first flutter at the Foreign Office and the United States Embassy over the reported prospect of the United States Government sending a note to France about her debts to the United States, has been quieted by a report from Washington that the State Department officials had denied that such a note has been sent. However, the conviction exists here that Finance Minister Caillaux intends himself to raise the question later in the year and it is believed that he has already discussed the matter with Gerrard B. Winston, Assistant Secretary of the United States Treasury, during the latter's recent visit here.

M. Caillaux is described as having reached the determination to take up the question with the United States Government for two reasons: first, to tranquillize the French state of mind, and second, because of the necessity to advance French credits in New York and London by arriving at an arrangement of both the United States and British debts. The question of French debts to the United States is interlinked with that of her debts to Great Britain and the British debt cannot be considered apart from the negotiations for a general agreement regarding continental conditions.

It is believed that M. Caillaux will probably give general expression of his views on the debt question in the financial proposals which he will make to parliament when it reassembles at the end of the month and possibly that he may allude to the subject before the finance commission of the Chamber of Deputies to-morrow.

Those who have some acquaintance with M. Caillaux's views indicate that he must in any event, make the debt question wholly subordinate to the balancing of the budget and that once this is done, he must find a surplus out of which something may be paid on the debts.

**Radical Change to be Made IN FUNCTIONS OF COLONIAL OFFICE.**

LONDON, May 12.—The Government has decided that the present constitution of the Colonial Office if not modified the name also must be changed. The Enabling Bill is being introduced in the House of Lords shortly and it will provide for an additional Under-Secretary of State, who will deal exclusively with Dominion affairs and take over the chairmanship of the Overseas Settlement Committee.

When this is done Hon. W. G. Ormsby-Gore, the present Under-Secretary, will concern himself solely with the Colonies, dependencies, protectorates and mandated territories. Col. Amery has been working hard to get this change for some months past and at last seems to have convinced his colleagues in the Cabinet that Dominion affairs must be handled in a different manner from that which may have done half a century ago.

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