

A possible agreement between the rival theories may be brought about by invoking Einstein's idea that matter may be converted into energy and radiated off into space. Professor Eddington says: "It is possible that a star may gradually diminish in mass during its evolution. This would happen if it obtains its energy of radiation by annihilating electrons and protons, thus burning itself away."

According to Professor Eddington's theory, stars continue to get hotter as they shrink until the central temperature is over ten million degrees Centigrade. At this heat the atom of the heavier elements would be stripped of its outer electrons and the atom of the lighter elements, like carbon and oxygen, would be reduced to the bare nucleus. The atoms in the stars would then have only about one hundred thousandth of the bulk of ordinary atoms, and such a gas could be compressed a hundred thousand times further than the gases we deal with on earth before the atoms begin to get crowded. In such a state all the stellar gases must have about the same molecular weight, 2.1, whatever may be the elements that compose them.

When I was young astronomers used to try to scare us by telling us that the sun and stars were slowly cooling down and at length the universe would be left all dark and cold. That did not worry us enough, so now they have changed their tactics and prophesy a time when the elements shall melt with a fervent heat and the sun shall be no more. This sounds more alarming, for it would be worse for the human race to be roasted alive than frozen to death, and the idea that the solid ground may ultimately be dissipated into radiant energy and go rambling around a four-dimensional continuum forever gives one a new kind of shiver.

DISCOVER UNIVERSE'S LARGEST STARS 10,000 TIMES BRIGHTER THAN SUN

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The most conspicuous stars in the Magellanic Clouds are greater in size and in brightness than any of the giant stars heretofore known to astronomers, according to investigations just announced by Dr. Harlow Shapley, director of the Harvard College Observatory. Many of these stars are believed to excel the famed red giants Betelgeux and Antares, and in diameter probably approach the diameter of the orbit of Jupiter, some 966,600,000 miles.

Extensive photometric work has led finally to the determination of the distance of the Small Magellanic Cloud. Similar investigations are under way for the Large Cloud. These stellar systems, which are visible only in southern latitudes, derived their name from descriptions given four hundred years ago by the navigator Magellan. They look like large patches of the Milky Way, but are quite detached from the Galaxy.

Through a prolonged study of the variable stars discovered in the Magellanic Cloud by Miss Leavitt at the Harvard Observatory twenty years ago, a method has been developed for the determination of the distances of star clouds and clusters. Only this year, however, has it been possible to give a decisive value for the magnitudes of the stars in the Small Magellanic Cloud, and consequently to measure the distance and dimensions of the system. It is now found that the diameter of this Cloud is sixty-five hundred light years. The distance from the earth is thirty-two kiloparsecs, which is equivalent to a little over a hundred thousand light years. A star of the luminosity of our sun would at this distance be of the twenty-third magnitude.

Stars as faint as our sun in this cloud, however, are far beyond the range of modern telescopes. The studies of brightness on the Harvard photographs, which were made at the Arequipa station in Peru, go down only to the stars of the eighteenth magnitude.

More than half a million stars that are at least a hundred times as luminous as our sun are contained in the Small Magellanic Cloud. A few hundred of them have each more than ten thousand times the solar brightness. The very brightness of the super-giants are shown by photographs of their spectra to be of the redder classes of color. Hence the intensity of light emission must be low, and, to account for such high total brightness, the dimensions must be exceedingly great. It is calculated that the diameters of the largest super-giants are nearly a thousand million miles. This is at least three or four times the diameter of Betelgeux, and is probably very near the maximum diameter possible for a luminous star.

The Small Magellanic Cloud is known to be receding from the Galaxy with the enormous velocity of a hundred miles a second. Dr. Shapley points out that almost certainly both the clouds of Magellan were in the Milky Way at a time more recent than the paleozoic era, and were than indistinguishable from the other star clouds of the Milky Way.

DANISH EXPLORER DESCRIBES ANCIENT CULTURE OF ESKIMO

Knud Rasmussen, the noted Danish Arctic explorer, has just emerged from a nine-months' trans-continental trip through Eskimo country hitherto totally unexplored, according to information wired from Kotzebue, Alaska. Scientific information of unprecedented importance concerning the history, customs, religion and language of these northern peoples will be made available as soon as Mr. Rasmussen has had time to edit the twenty volumes of Eskimo folklore he brings with him, and to arrange the great collection of photographs and motion pictures which members of his party have taken.

One of the most significant discoveries made during the exploration was in regard to the Eskimo language. The Greenlandic dialect, which Mr. Rasmussen speaks fluently, was readily understood by Eskimos all the way from the Magnetic North Pole, on the Boothia Peninsula, to the shores of the Bering Sea. This is the more remarkable in that many of these Eskimos not only had never seen a white man but did not even have any dealings with their nearest Eskimo neighbors. This is taken, of course, as conclusive evidence of a close kinship among all Eskimo peoples.

Other evidences of a common origin and common culture were found in the similarity of implements and weapons used by all the tribes, and in archeological investigations made in a number of places. In the territory of one hitherto unvisited tribe in King William Land the party unearthed a collection of seventy houses built of whale bones, stones and sod.

Over five million fish eggs and 160,000 fry were planted in the streams of Yellowstone National Park during July of this year.
