

ASTRONOMY

Low-Density Globe of Stars Surrounds the Milky Way

Stellar Cluster Has 80,000 Light Year Diameter, Says Harvard Observatory Head at International Meeting

EARLIER indications that a tremendous, low-density globe of scattered stars surrounds our own disk-shaped galaxy, the Milky Way, are being confirmed at Harvard Observatory, Dr. Harlow Shapley, its director, reported to the International Astronomical Union.

According to preliminary calculations, this great globe has a diameter of the order of 80,000 light years, stretching out 40,000 light years both above and below the Milky Way disk. The diameter of this disk, which contains nearly all the stars of the system, is of the order of 100,000 light years.

The astronomical yardstick used for these investigations, Dr. Shapley explained, was the magnitude, or brightness, of more than 2000 cluster-type Cepheid variable stars which have been ferreted out and studied in all parts of the Milky Way. Since all stars of this type have the same candlepower—about 200 times that of the sun—their brightness as seen from the earth is an excellent measure of their distance.

Remote Variables

Harvard astronomers have found measurable numbers of these flickering stars as far out as 40,000 light years from the earth, Dr. Shapley said. These are apparently close to the outer edge of the Milky Way globe. The spatial distribution of the stars, he added, is such that there is no doubt that these distant stars are members of the Milky Way system.

Most of the 2000 stars studied in the research were discovered for the first time on Harvard plates during the course of the investigation.

Announcement of this new cosmic information was made by Dr. Shapley during a report before the Astronomical Union on Harvard's work in investigating the distribution of galaxies and the absorption of light in the Milky Way.

He also outlined one of the observatory's current projects to the Union—an attempt to determine the dimensions of the Milky Way system by comparative studies of variable stars and external galaxies seen through the "window" in

the southern Milky Way. Already 400 new variable stars have been found in this area and a concurrent study has been made of the distribution and brightness of some 700 external galaxies in the same field.

New Type System

A few days later, speaking before the British Association for the Advancement of Science, Dr. Shapley reported the discovery of the second example of a new kind of immense but extremely faint star system. Only a few months ago Harvard astronomers found the first of these systems, called the Sculptor cluster, on a photograph made with the most powerful telescope in the Southern Hemisphere, the sixty-inch reflector at Bloemfontein, S. A.

The new star cluster is in the constellation of Fornax, only about twenty degrees from the Sculptor cluster. It is an immense aggregation of stars, probably about 300,000 light years distant from us. Dr. Shapley said that at least 5,000 individual stars in the Fornax system have been spotted.

Astronomers are rather excited about these discoveries because they have found a new kind of star grouping that "may have high significance in the general study of the nature of stellar systems. It is remarkable in that it is neither a globular cluster, nor a spheroidal galaxy, nor a Magellanic cloud, but has certain properties of all three of these well known kinds of stellar systems.

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● Earth Trembles

Information collected by Science Service from seismological observatories and relayed to the U. S. Coast and Geodetic Survey resulted in the location of the following preliminary epicenter:

Thursday, Aug. 4, 3:54.9 a. m., E.S.T.

In Salta Province, northern Argentina. Latitude 24 degrees south, longitude 66 degrees west.

For stations cooperating with Science Service in reporting earthquakes recorded on their seismographs, see SNL Aug. 13.



WINGED KING

Seventeen inches tall, this gold image of the first Chimu king is a rare relic of Peruvian prehistory. The knife below the ruler's feet is believed by Dr. Valcarcel, discoverer of the image, to signify that the king required sacrifices after he flew off from his people and became a god.

ARCHAEOLOGY

Winged-King Idols Found In Indian Treasure Tomb

GREATEST discovery of Indian treasure since the days of Pizarro! This is how Peruvian archaeologists regard their latest lucky find.

There are gold vases encrusted with turquoise. There are necklaces, spoons, knives and pins of gold and silver, and platelets of gold that were sewed on gala clothing. Most impressive of all are three gold idols.

The objects repose safely in the National Museum at Lima, where they were taken from the discovery place, in a funeral mound on Peru's northern coast.

They were found in a district called Illimo. The hoard of beautiful gifts to the dead were provided long ago by Chimu Indians, the inhabitants of the



WORK-ANIMAL FOR THE TROPICS?

Elands are quiet and well-behaved in zoological gardens, but how they might respond when first efforts were made to train them to harness is another question.

sandy north coast. Chimus were among the people swept into the great Indian Empire forged by ambitious Incan Indians a few centuries before America was discovered. When Spaniards invaded Peru, they collected four million dollars from one Chimu city alone. Spaniards thought the Indians pitiful savages, because they admired fine metal for its beauty and did not measure their wealth in gold.

Dr. Luis E. Valcarcel, director of the National Museum of Peru, is most impressed by the three gold idols. He concludes that all three represent the same Chimu character, and that is the first Chimu king, who was so great and good that when he died rumor said he flew off to heaven.

By tradition, this king, named Naymlap, came to Peru riding with his attendants in a fleet of rafts. They settled the north coast, and near the landing place they built a temple, with a statue of the king done in green stone.

That the idols represent the Chimu national hero is shown by: the large and very green turquoises decorating the statues; human features, replacing the animal fantasies popular in Peruvian idols; and two stiff little wings sprouting from the upper arms.

Science News Letter, August 20, 1938

In air conditioning, drying the air is often as important as cooling it.

ZOOLOGY

Montezuma Had no Zoo— Writer Had Imagination

MONTEZUMA, lord of the Aztecs in Mexico, didn't have any fine zoo for his entertainment. That was just a yellow journalism story perpetrated back in 1684.

So the Bureau of American Ethnology declares, on bringing to light a seventeenth century yellow journalist named Antonio de Solis, who wrote a book on the Mexican conquest without bothering much about facts.

Solis got his zoo story by combining and embroidering records, say the Bureau ethnologists.

Diaz, soldier of Cortez, had described a collection of birds, rattlesnakes, and animals kept at the Aztec capital, presumably for sacrifice. Haklyut, the historian, described discovery of American bison. Solis scrambled these facts and made Montezuma a glamorous figure in zoo history, the collector of a wonderful exhibit of rare beasts.

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ZOOLOGY

Suggests Domestication Of Big African Antelope

FARMERS in Africa may some day be able to harness big antelopes to their plows, and have their meat to eat and their hides to make into harness and boots. Domestication of the eland, an antelope bigger than most oxen, is suggested by Prof. Caesar R. Boettger of the University of Berlin, as a possible solution to Africa's cattle-pest problem.

The tsetse fly, Africa's most dreaded insect, is making parts of the continent uninhabitable because it carries the germs of a disease deadly to domestic cattle and other livestock of non-African origin. It deprives the natives of their chief form of wealth, and makes farming impossible to white settlers.

The native fauna of Africa are not totally immune to the tsetse-borne disease, ngana, but they are highly resistant to it. They survive when ngana wipes out whole herds of domestic cattle.

Chief obstacle to be overcome in using the eland or some other member of Africa's rich population of large hoofed animals is their alleged untamability.

None of them has ever been domesticated in modern times.

However, Prof. Boettger believes that the difficulty lies not so much in the psychology of the animals as in that of the natives. They have just never taken the trouble to try, he thinks, and he points out the success of the Belgian efforts in the Congo, in making good work-animals out of the supposedly untamable African species of elephant.

Once in the remote history of Africa antelopes were kept in man-tended herds, Prof. Boettger states. Monuments of the oldest dynasties in Egypt show herds of three antelope species kept within enclosures. Antelope-keeping became a lost art, however, long before the end of antiquity in Egypt; perhaps because imported cattle were easier to manage and more profitable.

Immediate success could not be looked for, perhaps. But, probably, our Neolithic ancestors had to work on cattle, horses, and other animals for many generations before they became tractable and really worth their keep.

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