

ASTRONOMY

Harvard Astronomers Locate Largest Metagalactic Cloud

Vast Galaxy of Galaxies Could Hold 50,000 Milky Ways; Is 50 Million Light Years Long, 20 Million in Diameter

WHAT is probably the most extensive "metagalactic cloud" ever discovered, so tremendous that it may easily encompass 50,000 galaxies comparable with our own Milky Way, has been located and photographically studied by Harvard astronomers.

Shaped roughly like a narrow stream, it is estimated to be about 50,000,000 light years in length and 20,000,000 light years across. It is more than 100,000,000 light years distant from the earth, however, and despite its great size, its members are visible only through the most powerful telescopes. It is situated near the south pole of the heavens.

According to Dr. Harlow Shapley, director of the Harvard Observatory, who announced the find, the cloud is of particular interest to astronomers not only because of its tremendous size but because it is expected to be of much importance in studying the complex space-time-matter relationship in our "immediate" neighborhood, astronomically speaking—that is, out to about 100,000,000 light years. It emphasizes the lack of uniformity in the space distribution of galaxies.

Astronomers have for some years been

aware of the existence of so-called supergalaxies—clusters big enough to contain several hundred Milky Way systems. Until this most recent find, however, there has been no evidence of galaxies much larger than these—certainly not for any as large as the one just found.

The new cloud was discovered on photographic plates taken at Harvard's southern station during a more or less routine survey of all galaxies brighter than the 18th magnitude. At first it was classified as merely a "major irregularity" in the distribution of faint galaxies in the southern skies.

The photographic plates, actually show only about 15,000 galaxies, all of them between the magnitudes of 16.5 and 18.5, but judging from other supergalaxies Harvard astronomers have assumed that many members are too faint to show on the plates and have placed the probable complete census at more than 50,000 galaxies.

Astronomically speaking the cloud extends over a region about 40 degrees in length and 15 degrees in width, from near the sky's south pole toward the south galactic pole in Sculptor.

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These fluctuations have been one of the greatest sources of interest in the planet since it was discovered in 1898. Astronomers have been unusually attracted by its capricious brightness, sometimes constant for months on end and then without warning changing as much as an entire magnitude within the short space of two hours.

Eros is also of interest because it is one of the earth's nearest neighbors. It is a cold mass of rock, hardly 22 miles long by seven miles thick. It travels around the sun in 643 days, passing out beyond Mars on its outer trip yet occasionally coming as close as 14,000,000 miles to earth.

It is now moving toward earth and will be at its closest next January. According to Mr. Watson's predictions, it will show small changes of brightness this summer and fall. They will become larger in January and reach a maximum Feb. 2, 1938. They will then decrease very speedily, and by the end of March the light will become practically constant for a lengthy period.

Harvard Observatory will make a series of photometric observations testing these predictions and with them Mr. Watson's theory during the next year.

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MEDICINE

Wars Won With Quinine Instead of Artillery

MEDICAL men can point with pride to their achievements in the field of military medicine. If in the future men are determined to kill each other in wars they can be sure they will meet their death in or because of battle. They will not be killed or kept out of the fray by the diseases which used to take more lives of fighting men than guns or swords.

How preventive medicine has triumphed in this field appears in a report of Sir Aldo Castellani, newly-created Count of Kisymaio, who was Inspector General of the Italian Army and Navy medical services during the Italo-Ethiopian War.

More than 20,000 men in the Italian Army should have died of disease, according to experience of previous colonial wars in tropical countries in which white troops were chiefly employed, Sir Aldo points out. The actual number of deaths from disease was 599, and this included deaths from motor accidents and drowning.

Malaria, expected to be the chief

ASTRONOMY

Eros Shaped Like Huge Brick Tumbling End Over End in Sky

THE ERRATIC fluctuations in brightness of the tiny planet Eros which have puzzled astronomers for four decades and made the body one of the most mysterious in the heavens, have been explained by Fletcher Watson, young research fellow of the Harvard Observatory.

The solution, he says, lies in the fact that instead of having the usual round form that characterizes the earth and other planets, Eros is shaped like a huge brick.

Revolving end over end, showing first a small end and then a large side, Mr. Watson believes, the planet appears to have rapid changes in brilliance. At other times, he says, the body whirls about with a large flat side toward the earth and this accounts for its occasional periods of constant brightness.

Add to this Mr. Watson's discovery that Eros is revolving "backwards" and it is even more understandable why its erratic fluctuations in light have baffled astronomers.