INSIDE THE STRATOSPHERE GONDOLA

Capt. Albert Stevens, left, and Capt. Orvil Anderson testing the compactly-arranged apparatus in the gondola of the National Geographic Society-Army Air Corps balloon Explorer II. Identifying numbers have been placed on the various instruments. They are: 1. Altimeter for measuring altitude. 2. Lead-shielded electroscope for detecting cosmic rays. 3. Electrical firing device for releasing ballast from bags hung outside gondola. 4. Cylinders of compressed gas for operating balloon valves. 5 Cosmic ray instrument. 6. Container for stratosphere air. 7. Part of air-conditioning unit. 8. Battery of factograph cameras for recording readings of 19 instrument dials. 9. Aerial camera for photographing horizon.

ASTRONOMY

Huge Island Universe Found In Cloud of Star Dust

FORTY years after it was first sighted Harvard astronomers have pierced through the intervening "star dust" and taken observations which prove that the obscure stellar object known only by its number—I.C. 342—is really the third largest spiral nebula now known.

I.C. 342 turns out to be a great island universe which covers an area of the sky about as large as the full moon. Because it is almost a million light years away, however, its actual diameter is nearly 10,000 light years.

A light year, remember, is the distance a ray of light would travel in a year at its enormous velocity of 186,000 miles a second. Multiply 186,000 miles by the number of seconds in a year and then by 10,000 years and you have the linear diameter of I.C. 342—roughly 60,000,000,000,000,000 miles.

Reports the Harvard College Observatory in its announcement:

"The belated discovery of the great size of I.C. 342 arises from the fact that it is situated not far from the plane of the Milky Way. Dark obscuring materials, possibly meteoric dust, in the interstellar spaces along the Milky Way have cut down the visibility of the arms. They are seen only faintly, as though partially concealed by smoke clouds. The nucleus, as measured on Harvard plates, is of the twelfth magnitude, visually, and therefore it can be observed in a moderate sized telescope."

These interstellar "smoke clouds" or star dust are the bane of the astronomer's existence. Particularly in the field of measuring the rate of the expansion of the universe is the obscuring interstellar haze bothersome.

Science News Letter, July 6, 1935

CHEMISTRY

Intense Sound Makes Milk More Easily Digestible

MAKE a loud enough noise at milk and the baby will digest it more easily.

That, in effect, is the discovery reported by Dr. Leslie A. Chambers of the University of Pennsylvania. Dr. Chambers spoke before the American Dairy Science Association, meeting jointly with the American Association for the Advancement of Science.

The apparatus used in the experiments consisted of a heavy steel diaphragm, driven by an oscillating electric current. Similar devices are used for submarine signalling. Over the diaphragm Dr. Chambers flowed a thin stream of milk, while he caused it to vibrate very strongly at various rates. The lowest vibration rate he used was 360 cycles a second, which is the pitch of F-sharp in the middle of the piano keyboard. The highest rate was 3,000 cycles a second, about three octaves higher than middle F-sharp.

The effect was to alter the curd-forming character of the milk. Whereas the milk used normally formed a hard curd, difficult to digest, when acted upon by the pepsin of the stomach, after treatment it formed a soft, easily digested curd. Soft-curded milk is especially desirable for feeding babies, as well as older persons with "weak stomachs." Some cows naturally produce soft-curded milk, but many do not. Dr. Chambers' experiments have demonstrated a simple mechanical method to make soft-curded milk at will, out of any kind of milk.

Science News Letter, July 6, 1935

A cemetery where warriors were buried about the third or fourth century A.D. has come to light in Hungary.