

The revision of the geometry of the universe by Profs. Einstein and de Sitter does not appreciably alter the geometry of the galaxy of stars in which we live. Consequently it leaves unaltered the theoretical predications originally made by Einstein which so triumphantly vindicated his theory. These are: The wriggling of the orbit of the planet Mercury, the red-shift of the

spectral lines in the sun and companion of Sirius, and the bending of light rays about the sun which is merely the Euclidean interpretation of a Riemann straight line. A straight line in Riemann curved space is curved when interpreted in Euclidean space. The geometry of an Einstein universe is based on the assumption that light travels in straight lines.

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COSMOLOGY

Cannot Know Universe's Shape Without More Observations

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THE ARTICLE of Einstein and de Sitter in the Proceedings of the National Academy shows, if we assume a uniform distribution of material in the universe and assume the cosmological constant to be zero, that our present knowledge as to the density and velocity of recession of matter can be accounted for, if we ascribe the value zero to the spatial curvature of the universe. Our present observational data are thus shown to be insufficient to distinguish

between the three theoretically possible cases of positive, negative or zero curvature, and hence we cannot now say whether the universe is closed, hyperbolic or flat. It is possible that sufficient data to throw more light on such questions will be available in the not too distant future.

The article deals, of course, with the spatial curvature of the universe as a whole when looked at from a large scale point of view and does not affect our views as to the curvature of space in the neighborhood of individual gravitating bodies.

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CHEMISTRY

Research Pointing Way to Sugared Mortar in Walls

HOUSES built of candy, the creations of fancy in fairy tales, are making a strong bid to enter the realm of reality. At least, it may not be long before real, liveable houses are built with hundreds of pounds of sugar in their walls, for such houses will have stronger walls than those without sugar, scientists at the meeting of the American Chemical Society have revealed.

The facts about the "structural" strength of sugar were found in investigations to discover more industrial uses for the cane product, which were conducted at the Mellon Institute in Pittsburgh by Dr. Gerald J. Cox and Dr. John Metschl. They have concluded that the use of sugar in lime-sand mortar offers one of the most promising new ways of consuming large quantities of sugar.

The addition of as little sugar as six

per cent. of the weight of quick-lime used will increase the tensile strength of the mortar 60 per cent., their studies show. Further seasoning produces slight increases in strength.

"Lime-sand mortar," the researchers explained, "possesses certain qualities of workability that are superior to cement mixtures or gypsum plasters, but it is lacking in strength. Lime mortar can regain many of its former uses if its strength can be increased.

"We have begun a series of experiments to test the effects of additions of small amounts of sucrose to lime-sand mixtures. Our plan includes tests of tensile strength, compression strength, time of setting, and durability on exposure to a variety of conditions, especially the action of water."

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SAUCY

—the new Venus just discovered by archaeologists of the University of Pennsylvania Museum digging at Minturno, Italy.

ARCHAEOLOGY

Broken Nose Gives Piquant Look to Dignified Venus

A VENUS with a broken nose and still beautiful, is the latest prize American archaeologists have unearthed at Minturno, Italy.

The goddess' classic nose was found slightly damaged at the end, but this accident, which would be fatal to beauty ordinarily, has merely wrought a subtle change in the goddess' personality type. Most statues of the Goddess of Love portray a lady of superior calm and poise. This Venus with her tip-tilted nose has a piquant look, and perhaps a sense of humor.

The new Venus is pronounced a Roman copy of Greek sculpture. It is one of a number of unusual art objects discovered by archaeologists representing the Museum of the University of Pennsylvania who are excavating at the ruins of Minturno. Dr. Jotham Johnson is directing the work.

Another new discovery is the base of a statue which is linked with Roman politics of the third century A. D. An inscription on the statue base says that the monument was erected by the citizens of Minturno in honor of Furia Sabinia Tranquillina, "august and most revered wife of Gordianus Pius."

Gordianus Pius was once Emperor of the tottering Roman Empire.

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