ASTRONOMY

Farewell Photo of Anteros To Help Return Prediction

A FAREWELL photograph of Anteros, the newly discovered baby planet, was taken on April 11 with the giant 100-inch reflector at the Mount Wilson Observatory, according to an announcement issued by the Harvard College Observatory. This last observation, taken when the magnitude of the object was only 20.5, is considered of exceptional value by astronomers because it gives them great "leverage" in calculating the planet's orbit exactly and thus is an important clue as to when the body may return to the neighborhood of the earth.

Anteros, only one-third of a mile across, is at present about one hundred million miles from earth, having crossed the orbit of Mars. On February 7 it was little more than one million miles distant, the nearest of any asteroid or other celestial body except the moon. At that time it was receding at the rapid rate of a million miles a day but it has now slowed down to approximately half that speed.

Within a year, astronomers estimate, its speed of recession will have diminished to zero and it will then turn around and come back toward the sun —and earth—with steadily increasing speed.

The Mount Wilson photographs were measured by Dr. Seth B. Nicholson and the results communicated to Harvard Observatory, announcement station for the western hemisphere, by Dr. Walter S. Adams, director of the California station. He also sent observations taken March 12 and March 27 which indicate that the planet has closely followed preliminary predictions.

Science News Letter, May 2, 1936

ENGINEERING

New Instrument Predicts Mine Roof Cave-ins

A NEW device to detect mine roof cave-ins and the type of disaster which occurred at Moose River, N. S., has been developed at the Pennsylvania State College.

The frantic and spectacular rescue efforts to save the lives of the two men trapped at Moose River emphasize anew the hazard which roof collapse brings to mining operations and recall the fact that 50 per cent of all deaths in well-kept commercial coal mines occur from this source.

Dr. H. Landsberg of the School of Mineral Industries has found that in all roof cave-ins so far studied a definite break occurs in the overhead rock strata several hours before the final cave-in takes place. The shale and dirt, he found, support the roof for some time after the supporting rock has gone beyond its breaking point.

Secret of success of Dr. Landsberg's device is to detect the initial break in time to warn the working miners. His instrument is called a convergence recorder. From its use can be made predictions much like those a weatherman may make after reading the barometer. The apparatus consists of two steel tubes which slide inside one another like the tubes on a trombone. The sliding tubes are kept apart by a spring and are placed in the mine so that one tube touches the roof and the other the floor of the shaft. A movement as small as 1/100 of an inch between roof and ceiling can be detected.

Following the initial break, Dr. Landsberg points out, the rates of convergence of the roof and floor increase rapidly until the entire mine roof collapses. By studying the rates of convergence, the exact time at which the internal rock structure was broken can be detected and the final cave-in predicted.

Further work is being done along this line by both Dr. Landsberg and the U. S. Bureau of Mines in an effort to establish a more definite relationship between the rates of convergence of the roof and floor of a mine, and the collapse of the roof structure.

Science News Letter, May 2, 1936

RADIO

May 5, 2:15 p. m., E.S.T.

TESTING FABRICS WE BUY—Warren E. Emley, of the National Bureau of Standards.

May 12, 2:15 p. m., E.S.T.

OVER-OCEAN AIR SERVICE IN THE MAKING—Edward P. Warner, Aviation Consultant.

In the Science Service series of radio discussions led by Watson Davis, Director, over the Columbia Broadcasting System.

MEDICINE

"Silver Salve" Kills Germs; No Harm to Tissues

A "SILVER SALVE," slowly releasing infinitesimal soluble particles of a silver salt to kill bacteria in infections, was described as a new healing agent by Prof. John H. Müller of the University of Pennsylvania in an address before the meeting of the American Philosophical Society.

Silver bullets were reputed to be able to kill evildoing witches in olden times; more modernly, silver is used in various forms to kill evildoing germs. Silver nitrate and argyrol are among the most familiar of these antiseptic forms of silver in current use.

However, all known forms of silver have certain disadvantages. They are apt to irritate the delicate mucous tissues even while they banish the bacteria; and once in a while one hears a report of a case of "argyrism" resulting from massive doses—a condition in which the skin and eye-white are permanently discolored, and become painfully sensitive to light.

To keep the advantages of silver as a germ-killer and yet avoid these drawbacks, Prof. Müller of the University of Pennsylvania has developed his new method of medical application, for a silver compound hitherto unused. This is anhydrous oxide of silver, which Prof. Müller mixes intimately with an oily substance. Applied to an infected area, this silver salve gradually releases the infinitesimal particles of the germ-killing metal, which dissolve and attack the disease organisms without harming the tissues.

The new method of silver medication has been tried extensively, both on laboratory animals and on human patients, Prof. Müller stated, and always with satisfactory results.

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