ASTRONOMY

Planet Lost 50 Years

Asteroid Athalia recovered after half a century during course of making 2,000 plates in a minor planet observing program. Orbit computed with electronic brain.

➤ A MINOR planet, or asteroid, which has been lost for 50 years has been rediscovered at the Cincinnati Observatory in Cincinnati, Dr. Paul Herget, director of the observatory, revealed to Science Service.

Its recovery after half a century was due to a series of events, every one of which was necessary to find again the lost asteroid.

"It is not often that something spectacular happens in the course of our routine dealings with the large mass of information concerning the minor planets which filters into the Cincinnati Observatory in the course of a year," Dr. Herget said.

The astronomer explained the events leading up to the minor planet's recovery as follows:

The minor planet in question was discovered photographically at the Heidelberg Observatory on Sept. 20, 1903, and was observed again only on Sept. 29, Oct. 13 and Oct. 19.

It was given the number (515) and the name Athalia. The orbit was computed for this planet from these observations in the usual way, but the planet was never found again.

As a matter of fact, it was unusually faint for those early days in astronomical photography, and due to the eccentricity of the ellipse it would be even fainter in other parts of the orbit.

The next event took place in 1948, when the Cincinnati Observatory entered into an arrangement with the astronomy department of Indiana University, whereby the observatory's 10-in Cook Photographic Triplet was sent to Indiana on indefinite loan, with the understanding that they would use it in a minor planet observing program to recover as many of the missing asteroids as possible.

Since then, about 2,000 plates have already been taken on this program and quite a number of the missing objects have been recovered.

Normally, quite a number of new objects are also discovered and, whenever three independent observations are obtained, an orbit is computed, although this may not be very reliable if the observations are spread over a short time, one month or less. Recently there have been about 14 such cases in the course of a few months of observing.

The next link in the chain of events concerns a very generous arrangement accorded Dr. Herget by C. W. LaPierre, general manager of General Electric's jet engine plant in Cincinnati.

Under this arrangement, Dr. Herget uses the giant electronic brain computer, which they have for research and engineering purposes, to solve certain astronomical problems.

One of these operations is the calculation of the orbit of a newly discovered object, in a period of time which takes only one minute on the machine for each new object.

"In other words," Dr. Herget said, "I computed the orbits for all 14 of these new objects in just 14 minutes of machine time. By the former hand method, this would have taken more than one solid week of hard work."

This material was then prepared for publication by Dr. Herget's assistant, Dr. Peter Musen, who noticed that in one particular case, an object which had been observed in 1953, on Oct. 14, 31 and Nov. 5, the elements agreed reasonably closely with those which had been computed for planet (515) a half century before.

Dr. Musen, therefore, set about to establish by further hand calculations that a reasonable adjustment permitted the recent Indiana observations to be brought into full agreement with the old observations of Wolf at Heidelberg in 1903.

"There is no doubt that the recovery has been firmly established," Dr. Herget said.

In addition, there was one independent observation made at a Russian observatory at Simeis which also confirmed the identity.

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BIOCHEMISTRY

Cut Radiation Deaths By Shot of Ground Glass

➤ PRESCRIPTION FOR A- and H-bomb radiation sickness: a shot of ground glass.

That prescription probably never will be written, but the temporary inflammation caused by injections of pulverized particles of limestone, quartz or glass saved one-fifth of animals that would otherwise have died from moderately high doses of radiation all over their bodies.

This discovery was announced by Drs. Falconer Smith, Willie W. Smith and Howard L. Andrews of the radiation branch, National Cancer Institute, Bethesda, Md., at the meeting of the American Physiological Society in Madison, Wis.

Only a few post-irradiation treatments are known that are of benefit to animals with radiation sickness, it was pointed out.

Since the life-saving effect seemed due to inflammation from introduction into the body of small particles of foreign material, the findings may lead to discovery of other substances that can be used to give even better results, and which can be given to humans as well as mice, guinea pigs and hamsters.

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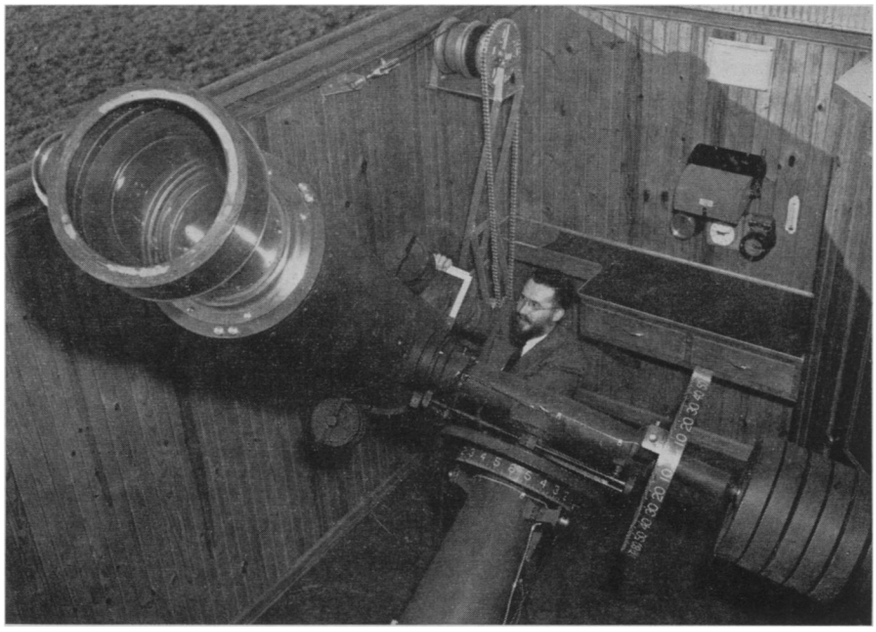

SKY SEARCHER—Prof. Frank Edmondson, Indiana University astronomer, at the controls of the 10-inch refractor telescope with which his staff rediscovered the asteroid Athalia. The rediscovery was made during the course of a program of photographing the asteroids. More than 2,000 plates have been made on which about one half the known asteroids and more than 900 unidentified bodies have been observed.