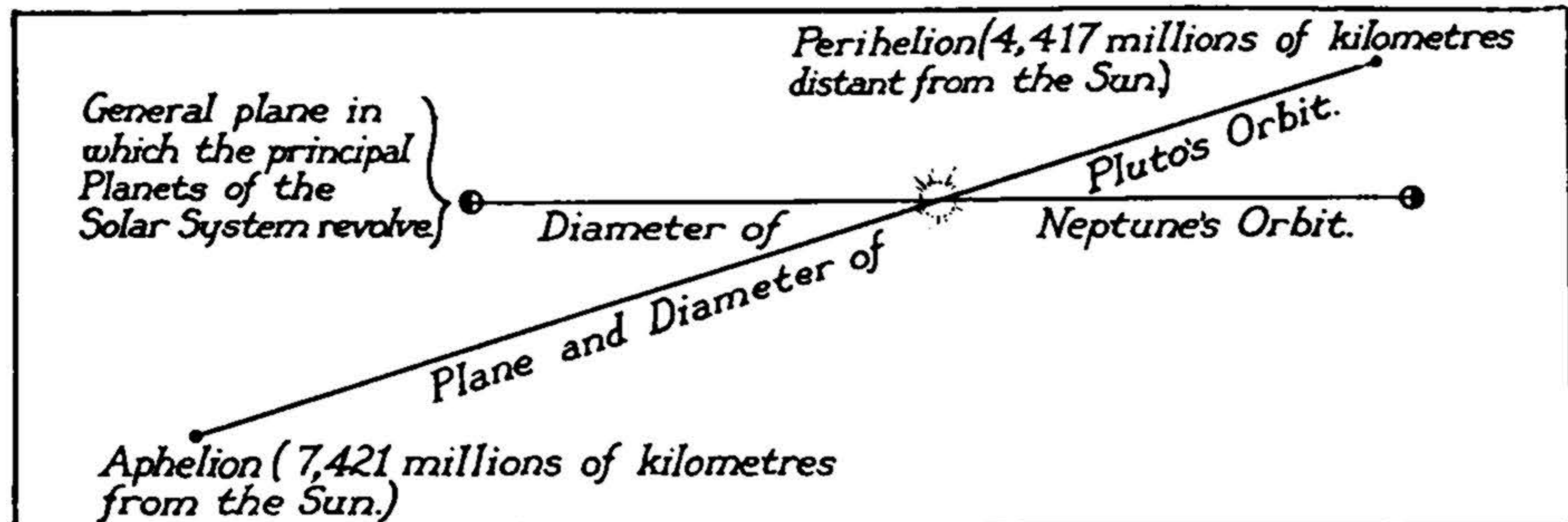


THE ILLUSTRATED LONDON NEWS



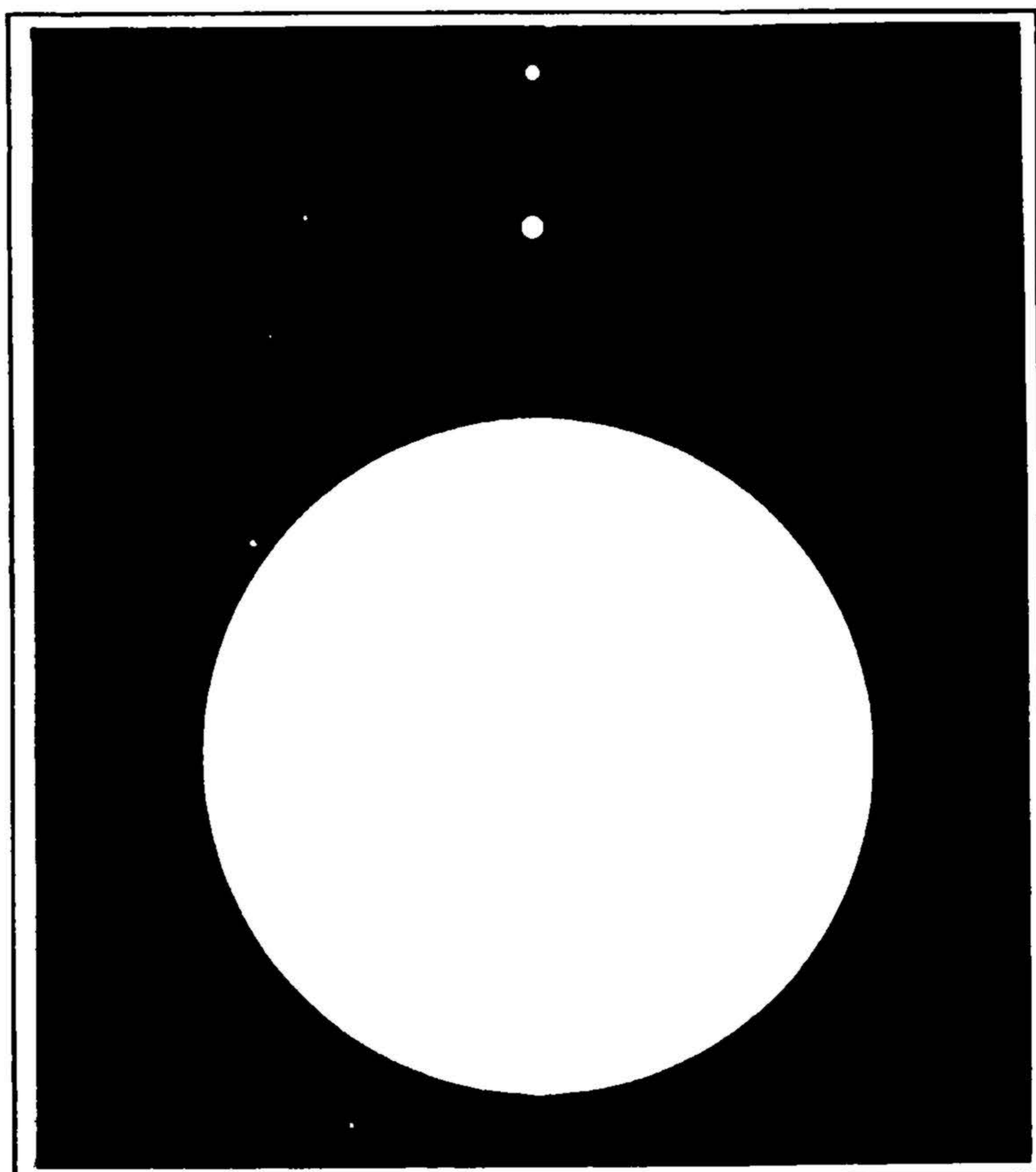
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SATURDAY, APRIL 25, 1931.



THE INCLINATION OF PLUTO'S ORBIT IN RELATION TO THOSE OF OTHER PLANETS, AND THE DIAMETER OF ITS ORBIT COMPARED WITH NEPTUNE'S: A DIAGRAM SHOWING THAT, OWING TO ITS EXCENTRIC ORBIT, PLUTO AT PERIHELION IS NEARER THE SUN THAN NEPTUNE IS, BUT AT APHELION MUCH FURTHER AWAY.

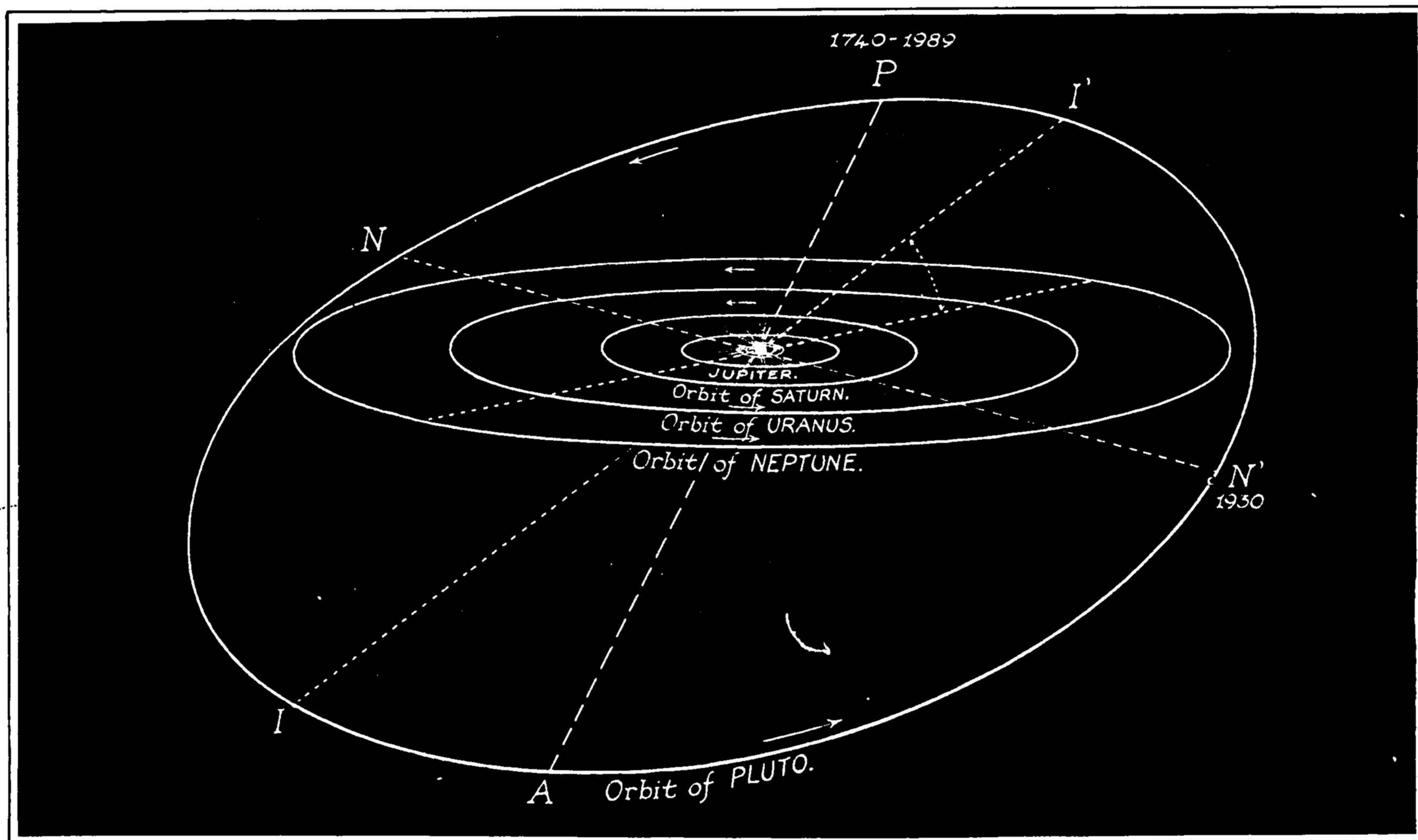
THE VAST TILTED ORBIT OF PLUTO: FACTS ABOUT THE LATELY-DISCOVERED PLANET.



APPARENT COMPARATIVE DIMENSIONS OF THE SUN AS SEEN FROM THE EARTH (BELOW) AND FROM PLUTO AT ITS APHELION (TOP) AND AT ITS PERIHELION (CENTRE): A DIAGRAM INDICATING PLUTO'S ENORMOUS DISTANCE FROM THE SUN.



THE PLANETS JUPITER (THE BIG BRILLIANT STAR NEAR LEFT CENTRE) AND PLUTO (INVISIBLE TO THE NAKED EYE, BUT MARKED BY A BLACK DOT BELOW JUPITER TO LEFT) BOTH IN THE CONSTELLATION GEMINI (THE TWIN STARS, CASTOR AND POLLUX, ON LEFT): A VIEW OF THE NIGHT SKY LAST MONTH.



A PERSPECTIVE VIEW OF PLUTO'S ELLIPTICAL ORBIT, WHOSE INCLINED PLANE CUTS OBLIQUELY AND UNSYMMETRICALLY THE PLANE IN WHICH THE OTHER PLANETS REVOLVE—A DIAGRAM IN WHICH THE EARTH'S ORBIT IS SHOWN QUITE CLOSE TO THE SUN, AND THE ORBITS OF MERCURY, VENUS, AND MARS ARE OMITTED.

The perspective here used, to avoid overlapping of outlines, cannot show the exact form of the orbits, and the great axis of Pluto's orbit is thus seen foreshortened. The letter *A* indicates the aphelion (the furthest point from the Sun). *P* is perihelion (the nearest point). *I* and *I'* show the inclination of Pluto's orbit to the general plane. *EE'* of the system *NN'* is the intersection

of the two planes passing through the Sun. If this diagram were in relief, one would see the part *N* of Pluto's orbit behind the orbit of Neptune, the part *I* below, *I'* above, and *N'* very much in front. Pluto is at present near the position indicated by the date 1930, and, slowly approaching the Sun, will, in 1989, attain its perihelion, which it last reached in 1740.

"All are now familiar," writes M. Lucien Rudaux in a note on these illustrations, "with the important discovery of a new planet belonging to the solar system, beyond Neptune, which was made at Lowell Observatory (U.S.A.) at the beginning of 1930. Owing to the extreme slowness of its movements, the first observations produced insufficient data for an exact estimate of the size and shape of its orbit. Subsequent investigations have shown that Pluto (the name allotted to the new planet) was already recorded on certain photographs taken since 1919, which give positions covering much of its track. According to Messrs. Bower and Whipple, of the Lick Observatory (U.S.A.), Pluto's orbit is decidedly excentric and inclined at an angle of 17° to the mean plane in

which the principal planets of the solar system move. Taking the distance of the Earth from the sun as the unit, Pluto at perihelion is 29.55 units, or 4417 million kilometres (about 2760 million miles) away from the sun, while at aphelion it retreats to 49.64 units—or 7421 million kilometres (about 4638 million miles). At perihelion Pluto comes nearer to the sun than does Neptune, which is distant 30 units. Pluto completes its orbit about once in 249 years. At present it is moving slowly towards its perihelion, which it last reached in 1740, and will pass again in 1989. The discovery of Pluto has enormously widened the known empire of the sun, which luminary, could we place ourselves on the far-distant planet, would appear only as a point of light like a big star."