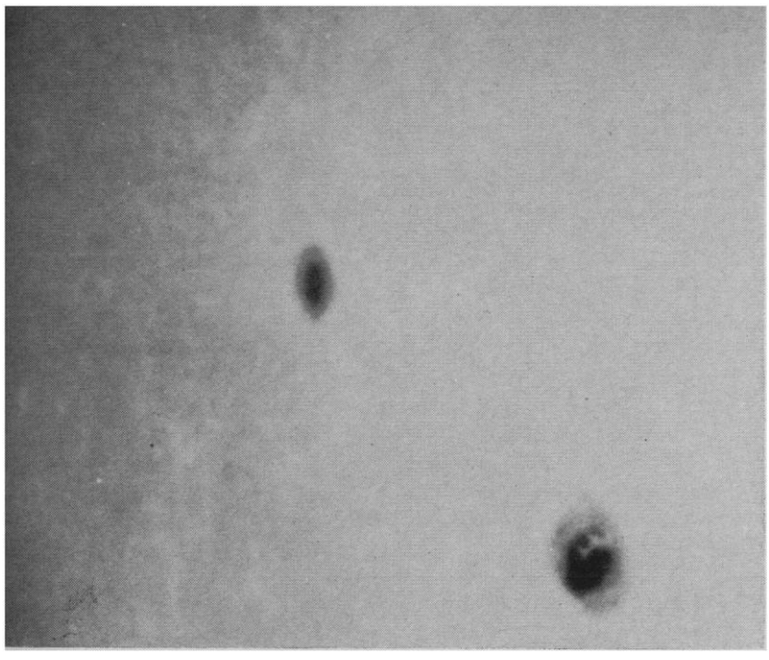

The planet Mercury is difficult to locate because it is superimposed over a double-vorticed sunspot system from which it will shortly emerge. At this point, the small planet has been in transit for approximately 7 hours and is still almost 1 hour from third contact. [Eyepiece magnification, × 126; exposure on high-contrast copy film, 1/15 second]

Mercury is emerging from the double-vorticed sunspot and heading for the third contact with the southwest edge of the sun (about 51 minutes away). The size of the sunspot can be compared to the 3100-mile diameter of the innermost planet, which, during this transit on 9 May, was approximately 42 million miles from the parent body, and about 52 million miles from the earth. [Eyepiece magnification, × 162; exposure, 1/15 second]

Transit of the

All photos were taken by

John S. Korintus,

On 9 May 1970, the eighth transit of the planet Mercury during this century took place. The latest transit of this smallest planet of the solar system occurred on 7 November 1960. The next transit will not occur until 10 November 1973. Only 12 such transits will occur during the 20th century.

Mercury, the smaller of the two planets which revolve in orbits between the earth and the sun, completes its trips around the sun every 88 days, or 0.24 earth year. Thus, it completes four synodic periods during each of our years. But transits of this innermost planet occur much more infrequently because of the eccentricity of Mercury's orbit, which has an inclination of about 7 degrees to that of the earth. Oddly

At an eyepiece magnification of × 250, Mercury still maintains its sharp, black, disk-like shape against the photosphere background of the sun. It continues its movement directly away from the large

Planet Mercury

National Capital Astronomers

enough, transits of Mercury can only take place within 3 days before or after 8 May, or within 5 days of 10 November when the sun passes the nodes of Mercury's orbital path. Usually, this event occurs about 13 times each century.

The importance of these transits is that they can be precisely timed and used as a test of the time system employed by mankind on earth. The transits of Venus are even more important for this same purpose, but these are less frequent. None will occur during the 20th century. The last transit of Venus took place during 1882, and the next will not occur until 8 June 2004.

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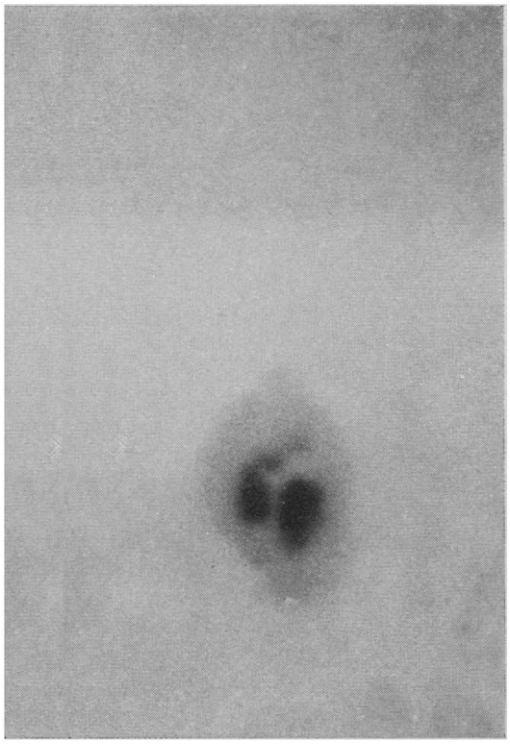
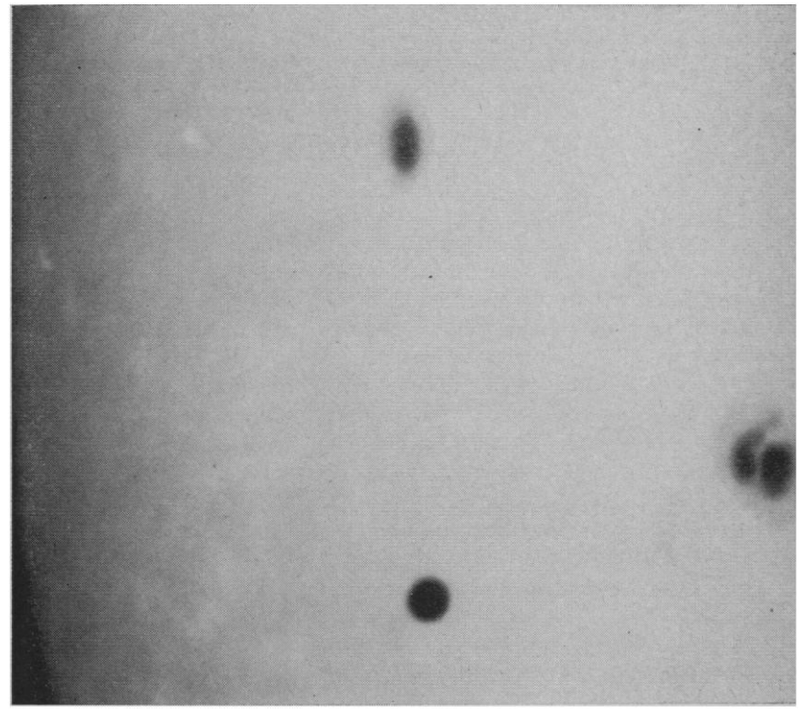


sunspot which it has just crossed. It continues toward the southwest limb of the sun and third and fourth contacts, which will end the transit. The double vortex of the sunspot is still clearly visible.



Mercury about halfway between the sunspot which it has just crossed and completion of transit at the sun's limb.

Mercury reaches third contact on the southwest limb of the sun, at 12 hours, 10 minutes, 14 seconds Universal Time (8 hours, 10 minutes, 14 seconds Eastern Daylight Saving Time, as seen from Comus, Maryland). Fourth contact followed at 12 hours, 13 minutes, 11 seconds Universal Time with the planet disappearing from the edge of the sun. [Eyepiece magnification, × 162; exposure on high-contrast copy film, 1/15 second]