Jan Bouška
Transit of Mercury of May 9, 1970

Acta Universitatis Carolinae. Mathematica et Physica, Vol. 11 (1970), No. 1-2, 49--50

Persistent URL: http://dml.cz/dmlcz/142249

TRANSIT OF MERCURY OF MAY 9, 1970

J. BOUŠKA
Department of Astronomy and Astrophysics, Faculty of Mathematics and Physics, Charles University, Prague

(Received 10 June 1970)

During this century there are only four transits of Mercury, completely observable in Prague (November 14, 1907; November 7, 1914; May 9, 1970 and November 10, 1973). The transit of May 9, 1970, was observed +) by the writer using a 3" Zeiss refractor with Herschel´s solar prism and position micrometer.

At the time of the first and the second contacts the Sun was very low above the horizon in Prague (8°) because the beginning of the phenomenon was observable only one hour after the sunrise. At the time of the third and the fourth contacts the height of the Sun was 54°; the Sun was $1^{h}14^{m}$ after the culmination. The weather conditions were very favourable at the beginning of the phenomenon, at the end almost the whole sky was covered with clouds. The end of the transit was observable only through the holes between the clouds.

The calculated times (U.T.) of the four contacts were for Prague /1/

+) $\lambda = 0^{h}57^{m}34^{s}.88$ E Gr., $\varphi = +50^{\circ}04'36''.0$, $h = 267$ m.
$\varrho \sin \varphi' = +0.76331$, $\varrho \cos \varphi' = 0.64306$.

$$T_1 = 4^h20^m00^s.2$$
$$T_2 = 4\ 23\ 00.9$$
$$T_3 = 12\ 09\ 04.8$$
$$T_4 = 12\ 12\ 04.8$$

if the correction of +1".00 was applied to the tabular true orbital longitude of Mercury and +1".30 to the longitude of the Mercury's ascending node. The difference $\Delta T = +40^s.3$ between the Ephemeris Time and the Universal Time was used.

The observed times of the second and third contacts were determined as follows

$$T_2' = 4^h23^m00^s$$
$$T_3' = 12\ 09\ 01$$

From the differences $T' - T$ the correction of the longitude of Mercury $\Delta\lambda = 0".17$ and the time (U.T.) of the topocentric least angular distance between Mercury and the centre of the solar disc $T_o = 8^h16^m05^s$ may be obtained.

Reference

/1/ Bouška J. et al., Hvězdářská ročenka 1970, p. 82, Academia, Prague 1970.