

Transits of Mercury 2016-2100 AD

Recomputed 09/09/2019

All Dates and times are MST; add one hour if MDT is required, add seven hours if UTC is required.

Global times (when Mercury is below the horizon as seen from Rapid City) and geocentric minimum separation are **shown in red**. Otherwise, data specific to Rapid City are shown in black.

Minimum separation (the angle between the centers of the Sun and Mercury) is shown in arc minutes in black for observers in Rapid City, and in red based on geocentric coordinates.

The computations are done using Terrestrial Time (TT), the conversion to Coordinated Universal Time (UTC) and MST relies on the value of $\Delta T = \text{DUTC} = (\text{TT} - \text{UTC})$. All values for DUTC beyond 2019 are **predictions**. By 2032, the predictions may easily be off by a few seconds, but any errors in DUTC or DUT1 will be uniform for any one transit. Times in black also depend on $\text{DUT1} = \text{TT} - \text{UT1}$.

As seen from HVO:

Date	Min. Sep.	Ingress Start	Ingress Complete	Min. Sep.	HVO Min.	Egress Start	Egress Complete	Predicted DUTC
05/09/2016	5.31	4:10:25.2	4:13:37.0	7:58:09.8	5.40	11:38:38.8	11:41:50.3	68.184
11/11/2019	1.27	5:34:44.7	5:36:26.1	8:20:23.3	1.23	11:02:54.4	11:04:35.6	69.184
11/12/2032	9.53	23:40:09.9	23:42:14.4	25:54:06.0		28:06:01.0	28:08:05.4	76.184
11/07/2039	13.70	0:16:36.9	0:19:48.2	1:46:42.6		3:13:39.0	3:16:50.3	81.184
05/07/2049	8.53	4:01:37.1	4:05:09.1	7:24:31.1	8.44	10:41:39.6	10:45:10.4	89.184
11/08/2052	5.31	16:52:57.4	16:54:44.9	19:29:55.7		22:05:11.7	22:06:59.1	95.184
05/10/2062	8.68	11:16:49.9	11:20:25.7	14:35:56.5	8.70	17:51:45.4	17:55:22.0	114.184
11/11/2065	3.01	10:24:40.9	10:26:23.5	13:06:23.5	2.95	15:46:31.6	15:48:14.3	122.184
05/08/2095	5.16	10:20:28.5	10:23:37.4	14:04:26.2	5.13	17:45:32.9	17:48:42.5	188.184
11/09/2098	3.58	21:34:41.9	21:36:25.9	24:16:36.2		26:56:51.7	26:58:35.7	196.184

As seen from The Journey Museum and Learning Center:

Date	Min. Sep.	Ingress Start	Ingress Complete	Min. Sep.	HVO Min.	Egress Start	Egress Complete	Predicted DUTC
11/11/2019	1.27	5:34:44.7	5:36:26.1	8:20:23.3	1.23	11:02:54.3	11:04:35.5	69.184
11/12/2032	9.53	23:40:09.9	23:42:14.4	25:54:06.0		28:06:01.0	28:08:05.4	76.184
11/07/2039	13.70	0:16:36.9	0:19:48.2	1:46:42.6		3:13:39.0	3:16:50.3	81.184
05/07/2049	8.53	4:01:37.1	4:05:09.1	7:24:31.1	8.44	10:41:39.5	10:45:10.2	89.184
11/08/2052	5.31	16:52:57.4	16:54:44.9	19:29:55.7		22:05:11.7	22:06:59.1	95.184
05/10/2062	8.68	11:16:49.8	11:20:25.6	14:35:56.4	8.70	17:51:45.4	17:55:21.9	114.184
11/11/2065	3.01	10:24:40.8	10:26:23.5	13:06:23.3	2.95	15:46:31.5	15:48:14.2	122.184
05/08/2095	5.16	10:20:28.3	10:23:37.4	14:04:26.2	5.13	17:45:32.9	17:48:42.5	188.184
11/09/2098	3.58	21:34:41.9	21:36:25.9	24:16:36.2		26:56:51.7	26:58:35.7	196.184