

**Table 3 – USA**  
**Local Circumstances for Transit of Mercury of 2019 Nov 11**

|                    | External<br>Ingress<br>h:m:s | Sun<br>Alt<br>° | Internal<br>Ingress<br>h:m:s | Sun<br>Alt<br>° | Greatest<br>Transit<br>h:m:s | Sun<br>Alt<br>° | Internal<br>Egress<br>h:m:s | Sun<br>Alt<br>° | External<br>Egress<br>h:m:s | Sun<br>Alt<br>° |
|--------------------|------------------------------|-----------------|------------------------------|-----------------|------------------------------|-----------------|-----------------------------|-----------------|-----------------------------|-----------------|
| Albany, NY         | 07:36:03                     | 8               | 07:37:44                     | 8               | 10:20:13                     | 27              | 13:02:40                    | 27              | 13:04:21                    | 27              |
| Atlanta, GA        | 07:36:07                     | 5               | 07:37:48                     | 5               | 10:20:18                     | 31              | 13:02:42                    | 38              | 13:04:24                    | 38              |
| Austin, TX         | --                           | -               | --                           | -               | 09:20:23                     | 26              | 12:02:49                    | 42              | 12:04:30                    | 42              |
| Birmingham, AL     | 06:36:07                     | 3               | 06:37:48                     | 4               | 09:20:19                     | 30              | 12:02:44                    | 38              | 12:04:25                    | 38              |
| Boise, ID          | --                           | -               | --                           | -               | 08:20:26                     | 7               | 11:02:59                    | 26              | 11:04:41                    | 26              |
| Boston, MA         | 07:36:03                     | 10              | 07:37:44                     | 10              | 10:20:12                     | 28              | 13:02:38                    | 26              | 13:04:20                    | 26              |
| Chicago, IL        | 06:36:05                     | -1              | 06:37:47                     | -0              | 09:20:19                     | 23              | 12:02:46                    | 30              | 12:04:27                    | 30              |
| Cincinnati, OH     | 07:36:06                     | 3               | 07:37:47                     | 3               | 10:20:17                     | 27              | 13:02:44                    | 33              | 13:04:25                    | 32              |
| Columbia, SC       | 07:36:06                     | 7               | 07:37:48                     | 8               | 10:20:16                     | 32              | 13:02:41                    | 37              | 13:04:22                    | 37              |
| Dallas, TX         | --                           | -               | --                           | -               | 09:20:23                     | 25              | 12:02:49                    | 40              | 12:04:30                    | 40              |
| Denver, CO         | --                           | -               | --                           | -               | 08:20:24                     | 16              | 11:02:54                    | 32              | 11:04:35                    | 32              |
| Des Moines, IA     | --                           | -               | --                           | -               | 09:20:21                     | 21              | 12:02:49                    | 31              | 12:04:30                    | 31              |
| Detroit, MI        | 07:36:05                     | 2               | 07:37:46                     | 3               | 10:20:17                     | 25              | 13:02:44                    | 29              | 13:04:25                    | 29              |
| El Paso, TX        | --                           | -               | --                           | -               | 09:20:26                     | 20              | 12:02:54                    | 39              | 12:04:35                    | 40              |
| Hartford, CT       | 07:36:03                     | 9               | 07:37:44                     | 9               | 10:20:12                     | 28              | 13:02:39                    | 27              | 13:04:20                    | 27              |
| Honolulu, HI       | --                           | -               | --                           | -               | --                           | -               | 08:03:13                    | 17              | 08:04:54                    | 17              |
| Houston, TX        | --                           | -               | --                           | -               | 09:20:22                     | 28              | 12:02:47                    | 43              | 12:04:29                    | 43              |
| Indianapolis, IN   | 07:36:06                     | 1               | 07:37:47                     | 2               | 10:20:18                     | 25              | 13:02:45                    | 32              | 13:04:26                    | 32              |
| Jackson, MS        | 06:36:08                     | 1               | 06:37:49                     | 1               | 09:20:20                     | 29              | 12:02:45                    | 40              | 12:04:26                    | 40              |
| Kansas City, MO    | --                           | -               | --                           | -               | 09:20:21                     | 22              | 12:02:49                    | 33              | 12:04:30                    | 33              |
| Lincoln, NE        | --                           | -               | --                           | -               | 09:20:22                     | 20              | 12:02:50                    | 32              | 12:04:32                    | 32              |
| Little Rock, AR    | 06:36:07                     | -1              | 06:37:49                     | -1              | 09:20:21                     | 26              | 12:02:47                    | 38              | 12:04:28                    | 38              |
| Los Angeles, CA    | --                           | -               | --                           | -               | 07:20:28                     | 10              | 10:03:00                    | 34              | 10:04:41                    | 34              |
| Louisville, KY     | 07:36:06                     | 2               | 07:37:47                     | 2               | 10:20:18                     | 27              | 13:02:44                    | 34              | 13:04:26                    | 34              |
| Madison, WI        | --                           | -               | --                           | -               | 09:20:19                     | 21              | 12:02:47                    | 29              | 12:04:28                    | 29              |
| Memphis, TN        | 07:36:07                     | 0               | 07:37:48                     | 1               | 10:20:20                     | 27              | 13:02:46                    | 37              | 13:04:27                    | 37              |
| Miami, FL          | 07:36:07                     | 12              | 07:37:49                     | 12              | 10:20:15                     | 40              | 13:02:38                    | 45              | 13:04:19                    | 44              |
| Minneapolis, MN    | --                           | -               | --                           | -               | 10:20:20                     | 18              | 13:02:50                    | 28              | 13:04:31                    | 28              |
| Nashville, TN      | 07:36:07                     | 2               | 07:37:48                     | 3               | 10:20:19                     | 28              | 13:02:44                    | 36              | 13:04:26                    | 36              |
| New Orleans, LA    | 06:36:08                     | 2               | 06:37:49                     | 2               | 09:20:20                     | 31              | 12:02:45                    | 42              | 12:04:26                    | 42              |
| New York, NY       | 07:36:04                     | 9               | 07:37:45                     | 9               | 10:20:13                     | 29              | 13:02:39                    | 29              | 13:04:20                    | 29              |
| Norfolk, VA        | 07:36:05                     | 9               | 07:37:46                     | 10              | 10:20:14                     | 32              | 13:02:39                    | 33              | 13:04:20                    | 33              |
| Oklahoma City, OK  | --                           | -               | --                           | -               | 09:20:23                     | 23              | 12:02:50                    | 37              | 12:04:31                    | 37              |
| Omaha, NE          | --                           | -               | --                           | -               | 09:20:22                     | 20              | 12:02:50                    | 31              | 12:04:31                    | 31              |
| Orlando, FL        | 07:36:07                     | 10              | 07:37:48                     | 10              | 10:20:16                     | 37              | 13:02:39                    | 42              | 13:04:20                    | 42              |
| Philadelphia, PA   | 07:36:04                     | 9               | 07:37:45                     | 9               | 10:20:13                     | 29              | 13:02:40                    | 30              | 13:04:21                    | 30              |
| Phoenix, AZ        | --                           | -               | --                           | -               | 08:20:27                     | 15              | 11:02:57                    | 36              | 11:04:38                    | 37              |
| Pittsburgh, PA     | 07:36:05                     | 5               | 07:37:46                     | 5               | 10:20:16                     | 27              | 13:02:42                    | 30              | 13:04:23                    | 30              |
| Portland, OR       | --                           | -               | --                           | -               | 07:20:26                     | 2               | 10:03:02                    | 22              | 10:04:43                    | 22              |
| Providence, RI     | 07:36:03                     | 10              | 07:37:44                     | 10              | 10:20:12                     | 29              | 13:02:38                    | 27              | 13:04:20                    | 27              |
| Raleigh, NC        | 07:36:06                     | 8               | 07:37:47                     | 9               | 10:20:15                     | 32              | 13:02:40                    | 35              | 13:04:21                    | 35              |
| Richmond, VA       | 07:36:05                     | 8               | 07:37:46                     | 9               | 10:20:14                     | 31              | 13:02:40                    | 33              | 13:04:21                    | 33              |
| Rochester, NY      | 07:36:04                     | 5               | 07:37:45                     | 6               | 10:20:14                     | 26              | 13:02:42                    | 27              | 13:04:23                    | 27              |
| Sacramento, CA     | --                           | -               | --                           | -               | 07:20:28                     | 6               | 10:03:02                    | 29              | 10:04:43                    | 29              |
| St. Paul, MN       | --                           | -               | --                           | -               | 10:20:20                     | 18              | 13:02:49                    | 28              | 13:04:31                    | 28              |
| St. Louis, MO      | 06:36:06                     | -1              | 06:37:48                     | -1              | 09:20:20                     | 25              | 12:02:47                    | 34              | 12:04:28                    | 34              |
| Salem, OR          | --                           | -               | --                           | -               | 07:20:27                     | 2               | 10:03:02                    | 22              | 10:04:43                    | 23              |
| Salt Lake City, UT | --                           | -               | --                           | -               | 08:20:26                     | 11              | 11:02:58                    | 30              | 11:04:39                    | 30              |
| San Antonio, TX    | --                           | -               | --                           | -               | 09:20:23                     | 27              | 12:02:49                    | 43              | 12:04:30                    | 43              |
| San Diego, CA      | --                           | -               | --                           | -               | 07:20:28                     | 12              | 10:02:59                    | 35              | 10:04:40                    | 36              |
| San Francisco, CA  | --                           | -               | --                           | -               | 07:20:28                     | 5               | 10:03:02                    | 29              | 10:04:43                    | 29              |
| San Jose, CA       | --                           | -               | --                           | -               | 07:20:28                     | 6               | 10:03:02                    | 30              | 10:04:43                    | 30              |
| Seattle, WA        | --                           | -               | --                           | -               | 07:20:26                     | 1               | 10:03:02                    | 20              | 10:04:43                    | 21              |
| Toledo, OH         | 07:36:05                     | 2               | 07:37:46                     | 3               | 10:20:17                     | 25              | 13:02:44                    | 30              | 13:04:25                    | 30              |
| Topeka, KS         | --                           | -               | --                           | -               | 09:20:22                     | 21              | 12:02:50                    | 33              | 12:04:31                    | 33              |
| Tulsa, OK          | --                           | -               | --                           | -               | 09:20:22                     | 23              | 12:02:49                    | 36              | 12:04:30                    | 36              |
| Washington, DC     | 07:36:05                     | 8               | 07:37:46                     | 8               | 10:20:14                     | 30              | 13:02:40                    | 31              | 13:04:21                    | 31              |