

The Mercury Transit Across the Sun
Monday May 9th, 2016
(So What? BIG DEAL. ☺)

By the time the Sun rises above the horizon on the morning of May 9th, Mercury will already be in front of the disk. It will be halfway on its journey across it by 7:57am. It will finally leave the disk about 11:40am.

This will be the first time Mercury has crossed in front of, or transited, the disk of the Sun since 2006, and it'll be the last one until three years from now in 2019.

But all you'll see is a TINY black disk crossing slowly across the Sun. And it's REALLY tiny; only 12 arc-seconds, a fifth the size of Venus' disk (60 arc-seconds) when it transited the Sun in 2012; I imaged from Griffith Observatory:



You won't be able to see Mercury unless you use a telescope and a lot of magnification. I don't know if you could see it with binoculars, except as a tiny dot, probably no bigger than the period at the end of this sentence. On the other hand, it won't be as fuzzy edged as Venus, since Mercury has no significant atmosphere so its edges should appear quite sharp. The Seeing will determine how sharp the view will be, but it should be fair or better, since the air

should be steadier than it is in the afternoon or evening, assuming no Santa Ana winds or storm systems.

The date and time of the transit makes it problematical for a Griffith public event, since they aren't open to the public on Mondays, and never that early in the morning. Very likely the observatory will be closed to the public and LAAS members. We'll have to wait and see what happens.

Of course **PRECAUTIONS MUST BE MADE** whenever you view the Sun, whether with telescopes, binoculars, or the unaided eye. **ALWAYS** use proper solar filters, as it take sno time at all for permanent eye damage to occur without protection. This applies to any cameras as well. The Sun will permanently damage your camera's sensor no matter how short a time the camera "sees" the Sun. This means you **MUST** use only one of the following filters:

1. Metal on glass
2. Welders glass #13
3. Special metal coated Mylar
4. Hydrogen-alpha filters

Proper and approved solar filters are available from Orion Telescopes, and Woodland Hills Camera, to name a few suppliers. And make **SURE** the filter is strongly affixed to the telescope. One of the worst things to happen is for you to be observing through a telescope, and the filter comes off. Of course, those with hydrogen-alpha filters will have an interesting view of the solar disk as Mercury crosses it.

I don't know if projecting the image onto a flat white surface will work; the large magnifications needed to see anything other than a small dot might make it problematical, but you can try, but have a backup plan if needed. Of course, you can video the event through a telescope, but again, use a proper solar filter.

This transit happens to cross a good portion of the sun's disk. As seen by the map below, it crosses the southern portion of the Sun's disk. My thanks to Mr. Espenak for providing this image on the Internet. The tick marks are labeled in Universal Time, so since California will be in Daylight Savings Time, subtract seven from those numbers to get local PDT.

Mercury is the only planet capable of a transit for another 120 years, when Venus does it again, so if you want to see a transit, it's Mercury or nothing. Of course, there is the next event, three years from now in 2019, if you miss or skip this one.

You can contact me at dinakamoto@hotmail.com.

Figure 1: Transit of Mercury: 2016 May 09

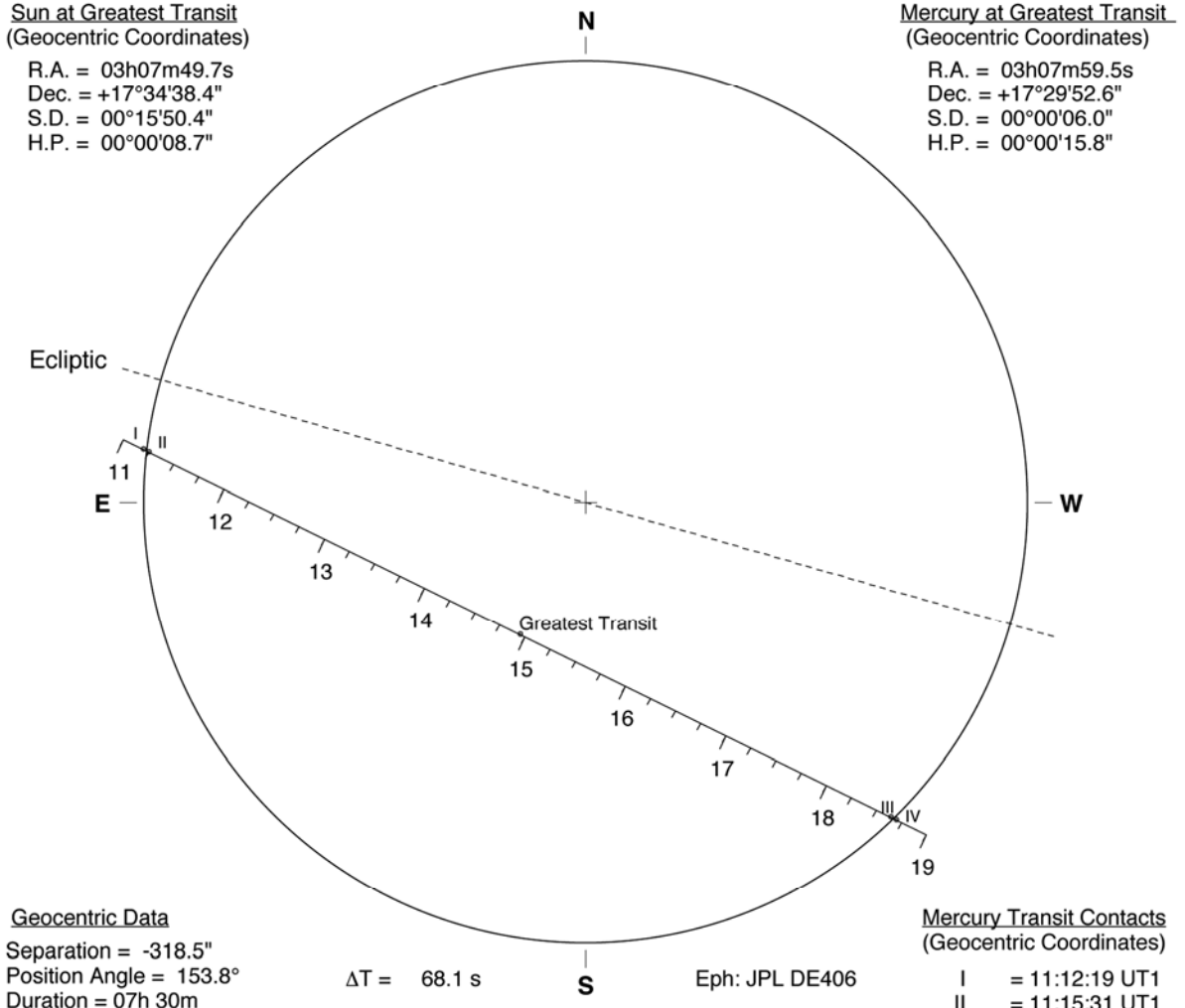
Greatest Transit = 14:57:25.9 UT1

Sun at Greatest Transit
(Geocentric Coordinates)

R.A. = 03h07m49.7s
Dec. = +17°34'38.4"
S.D. = 00°15'50.4"
H.P. = 00°00'08.7"

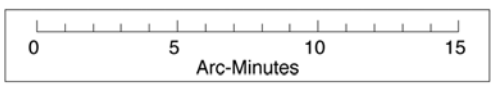
Mercury at Greatest Transit
(Geocentric Coordinates)

R.A. = 03h07m59.5s
Dec. = +17°29'52.6"
S.D. = 00°00'06.0"
H.P. = 00°00'15.8"



Geocentric Data
Separation = -318.5"
Position Angle = 153.8°
Duration = 07h 30m

$\Delta T = 68.1 \text{ s}$ Eph: JPL DE406



Mercury Transit Contacts
(Geocentric Coordinates)
I = 11:12:19 UT1
II = 11:15:31 UT1
Greatest = 14:57:26 UT1
III = 18:39:14 UT1
IV = 18:42:26 UT1

F. Espenak, www.EclipseWise.com