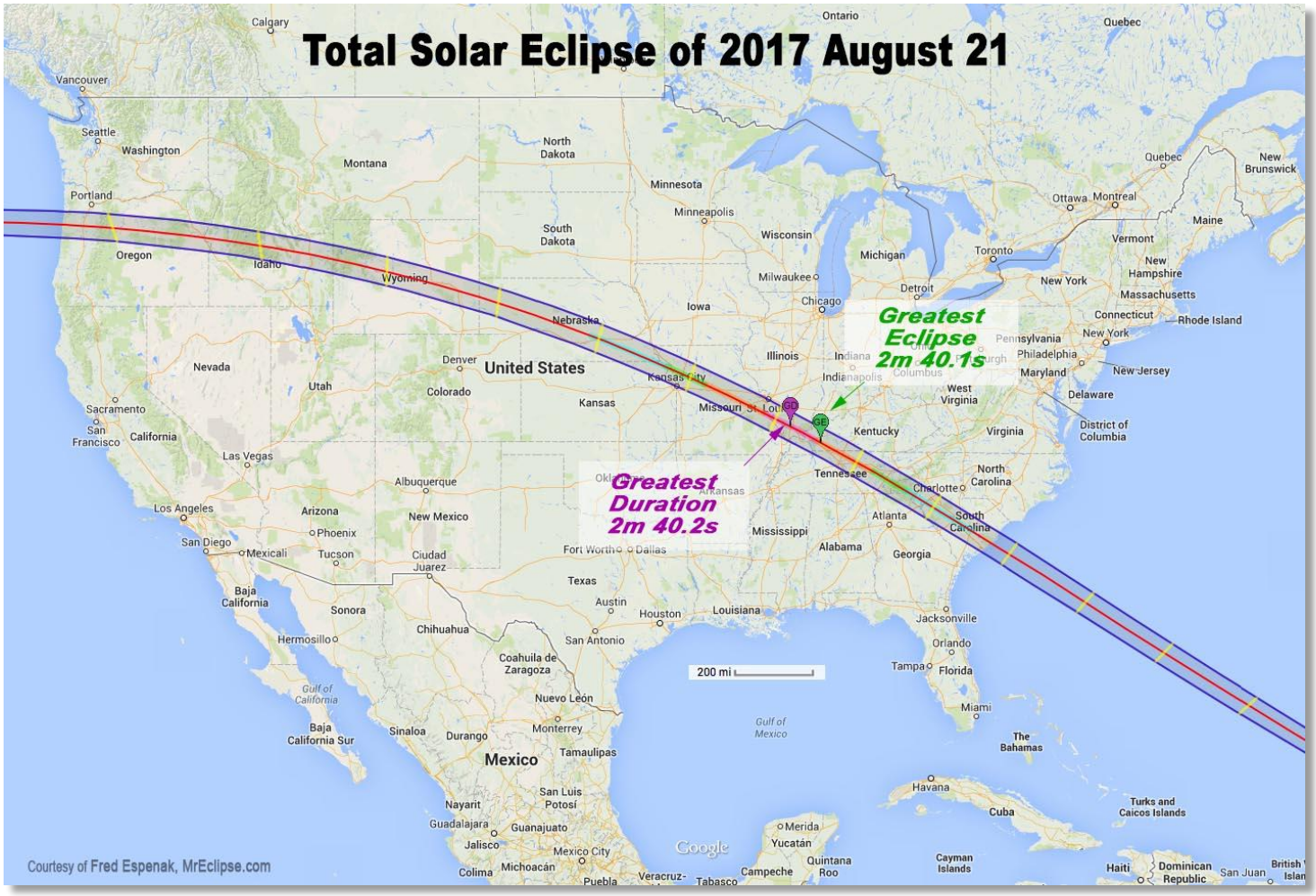
The 21 August 2017 Total Solar Eclipse

The United States will experience its first total solar eclipse since February 26, 1979. All of the Continental United States will experience at least a significant partial solar eclipse. For those fortunate enough to live along the narrow track of totality, or travel to the path of totality, up to 2 minutes and 40 seconds under the shadow awaits viewers. The partial phase of an eclipse <u>never</u> compares to totality; *get to the total line!*

The Moon's shadow first comes ashore in the northern Pacific, moving west to east. Totality first crosses the west coast of the United States at Oregon, then to Idaho, Montana, Wyoming, Nebraska, Kansas, Missouri, Illinois, Kentucky, Tennessee, North Carolina, Georgia, and South Carolina before going out to sea. There are a number of cities near the path of totality, with several smaller communities very close to if not directly on the center line. Interstate highways and state roads should make accessibility to the center line easy.



The path of the 21 August 2017 Total Solar Eclipse across the Continental United States.
Image courtesy of Fred Espenak, MrEclipse.com

This eclipse will attract a great deal of attention, both internationally and within the United States, from amateur and professional astronomers, the general public and media. It is best to make plans for the eclipse early; there are already hotels completely booked. Things to consider in advance include where you are going to go, how you are planning on observing the eclipse, local eclipse circumstances, weather contingency, etc.

Location, Location, Location…

August 2017 eclipse chasers will have a long path along which to observe the eclipse. Many select the closest point to their home. Excellent roads should allow for fairly easy transportation. There are numerous large and small airports the eclipse chaser may choose to fly into, and then drive to the eclipse center line. If flying, just remember to consider what equipment you might want to take to the eclipse versus airline luggage constraints. And know that a lot of people will travel to see the eclipse, including from outside the United States.

You will want to get as close to the center line as possible to enjoy the maximum totality duration unless you want to observe a grazing eclipse by setting up along either the northern or southern limit to see extended Baily's beads and diamond ring. Many uninformed individuals will think you can be close to the northern or southern limit to see totality. This is one thing we can all do within our communities, especially those close to the eclipse path, is to ***inform people they need to be within the totality eclipse path to see totality***. Otherwise they will see a deep partial solar eclipse and truly miss the beauty of totality.

Experienced eclipse chasers – unless on a ship or planning to 'fly' the eclipse path – choose a preferred location based on several variables, such as site access and weather prospects. They also look for weather alternatives and routes that can get them to clear(er) skies. Excellent maps and online resources are available:

- Bill Kramer's Eclipse Chasers' Map: http://www.eclipse-chasers.com/tseCalculator.php?TSE=tse2017d
- Detailed JPG Maps on NASA's Eclipse Page: http://eclipse.gsfc.nasa.gov/SEmono/TSE2017/TSE2017.html
- NASA's Animated Map: http://eclipse.gsfc.nasa.gov/SEanimate/SEanimate2001/SE2017Aug21T.GIF
- NASA Eclipse Path Table: http://eclipse.gsfc.nasa.gov/SEpath/SEpath2001/SE2017Aug21Tpath.html
- NASA Interactive Google Map: http://eclipse.gsfc.nasa.gov/SEgoogle/SEgoogle2001/SE2017Aug21Tgoogle.html
- Xavier Jubier's Interactive Map: http://xjubier.free.fr/en/site_pages/solar_eclipses/TSE_2017_GoogleMapFull.html
- Eclipse Bulletin: Total Solar Eclipse of 2017 August 21: http://astropixels.com/pubs/TSE2017.html

Weather Prospects

Successful eclipse chasers will tell you that one of the most-important aspects of eclipse expedition planning are the weather scenarios. A lot of reliable historical weather pattern data, from rainfall to cloud cover, is available. You want to maximize your chance of observing the eclipse! There are numerous ways to research location-specific meteorological data and weather patterns around the date of the eclipse. Keep your eye on the weather and be prepared to relocate if it looks like it might be cloudy. However you should make such a move a day or two before the eclipse; the roads will be jammed with traffic the day of the eclipse.

Observing the Eclipse

How do you plan on observing the eclipse? Is this your first eclipse? Will you be with a group of people that will want you to detail what is going on? Do you have photography or video plans? Or will you be doing some sort of public outreach for the eclipse; which is an awesome way to bring astronomy to people!

VIEWING SAFETY

You have several options to observe the partial phase of the eclipse, from a telescope with a solar filter to a telescope or binoculars which project the image onto a surface. **Do not forget SAFETY!** Totality itself will not harm your eyes; the Sun, whether partially eclipsed or not, will do the damage. Order both eclipse glasses and camera/telescope filters in advance; prior to the eclipse there will be a big demand.

Dr. Mike Reynolds saw his first total solar eclipse March 7, 1970. He has lead numerous expeditions and observed 18 total solar eclipses – in 18 attempts; observing from land, sea, and air. Reynolds' observations and photographs have been published in numerous places, including the book *Observe Eclipses* and *Astronomy*. He is Professor of Astronomy at Florida State College and the Association of Lunar and Planetary Observers' Eclipse Coordinator.
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