The Northern Eclipse Graze Zone across the St. Louis Area – p. 1 of 5

The Graze Zone is between the 2 dark gray lines plotted. Ignore the blue line & the red circle with “crosshairs”.

West and south of O’Fallon, MO (I-70 crossing), at map center, central eclipse is at 1:17:09 pm CDT (18:17:09 UT)

North

West and south of St. Peters, MO, central eclipse at 1:17:18 pm CDT (18:17:18 UT)

Over Harvester, MO (Route 94 - 364 crossing), at map center, central eclipse at 1:17:28 pm CDT (18:17:28 UT)

Over Missouri River and Flood Plain, Central eclipse at 1:17:38 pm CDT (18:17:38 UT)
The Graze Zone is between the 2 dark gray lines plotted. Ignore the blue line & the red circle with “crosshairs”.

Northwest & north of Creve Coeur, MO (I-270 crossing), at map center, central eclipse at 1:17:48 pm CDT (18:17:48 UT)

North Olivette to Clayton, MO (I-170 crossing), at map center, central eclipse at 1:17:58 pm CDT (18:17:58 UT)

Clayton, MO to south of Forest Park (I-64 crossing), at map center, central eclipse at 1:18:08 pm CDT (18:18:08 UT)

Note that the intensity of the part of the Sun that remains visible at central eclipse will change considerably across the graze zone; that’s what we want to measure! North of the north edge of the graze zone, the remaining piece of the Sun will be very bright, and it is recommended that observers there use eclipse glasses the whole time. Those in the graze zone, and farther south, should look for the splendor of totality, but use the eclipse glasses when the Sun is too bright to comfortably look at without them.
The Graze Zone is between the 2 dark gray lines plotted. Ignore the blue line & the red circle with “crosshairs”.

South of Forest Park to Benton Park (I-44 & I-55 crossings), central eclipse at 1:18:18 pm CDT (18:18:18 UT)

Mississippi River to St. Louis Downtown Airport, IL (Route 3 crossing), central eclipse at 1:18:29 pm CDT (18:18:29 UT)

North of the north edge of the graze zone, the remaining piece of the Sun will be very bright, and it is recommended that observers there use eclipse glasses the whole time. Those in the graze zone, and farther south, should look for the splendor of totality, but use the eclipse glasses when the Sun is too bright to comfortably look at without them.
The Northern Eclipse Graze Zone across the St. Louis Area – p. 4 of 5

The Graze Zone is between the 2 dark gray lines plotted. Ignore the blue line & the red circle with “crosshairs”.

West of Belleville, IL, at map center, central eclipse at 1:18:45 pm CDT (18:18:45 UT)

North and east of Wilderman, IL, at map center, central eclipse at 1:19:06 pm CDT (18:19:06 UT)

Few amateur astronomers will be observing from the graze zone since most of them will travel deeper into the path of totality. If you live in or near the graze zone, and are content to observe there (the Baily’s beads and diamond ring last longer and are more spectacular in the graze zone than in other parts of the path of totality), and if you have a small telescope, and/or a DSLR camera, you can make observations of even more value. Information about these more sophisticated observations are given at https://eclipsemega.movie/megamovie (one of their goals is to obtain images of Baily’s beads and the diamond ring), some at IOTA’s site at http://occultations.org/eclipse2017/, and at general sites such as http://www.eclipse2017.org/2017/photographing.HTM (but note that in the graze zone, the best images will be of Baily’s beads and the diamond ring, NOT of the corona).
The Northern Eclipse Graze Zone across the St. Louis Area — p. 5 of 5

The Graze Zone is between the 2 dark gray lines plotted. Ignore the blue line & the red circle with “crosshairs”.

More detailed maps can be generated, such as this one covering downtown Clayton, MO (with north up), or even more detailed ones that can include aerial imagery, using IOTA’s interactive Google Map at http://www.poyntsource.com/New/Google/Total_Eclipse_of_2017_Aug_21.htm. For the 180-m (590-ft.) average elevation above sea level of the St. Louis region, the values for the offsets (specified in two boxes above the Google Map) to generate the gray-line boundaries of the northern-limit graze zone are -56.347 and -57.347. These will generate the boundaries to under 20m (50 ft.) accuracy across the region, good enough for specifying the graze zone. IOTA seeks those who live in or near the graze zone, to make cell-phone recordings of the eclipse using the techniques described at http://occultations.org/eclipse2017/ . This Web site will be updated periodically with more detailed information about how to make and report the observations. We are especially interested if you might be able to organize two-person teams that can be positioned across the graze zone.

Below left, I am using a smart phone to video record the Sun; also shown is a close-up of a $7 Walmart 8x telephoto lens clipped to the smart phone to record better images. We also recommend a $10 Promark cell phone tripod from Target, to use to optionally mount to a photographic tripod available for $24. In the St. Louis area, the Sun altitude at central eclipse will be 64° (so the angle of the cell phone relative to level ground should be about 26°) and the azimuth will be 188° (or only 8° west from looking south on a north-south road). David Dunham, IOTA, dunham@starpower.net Aug. 16