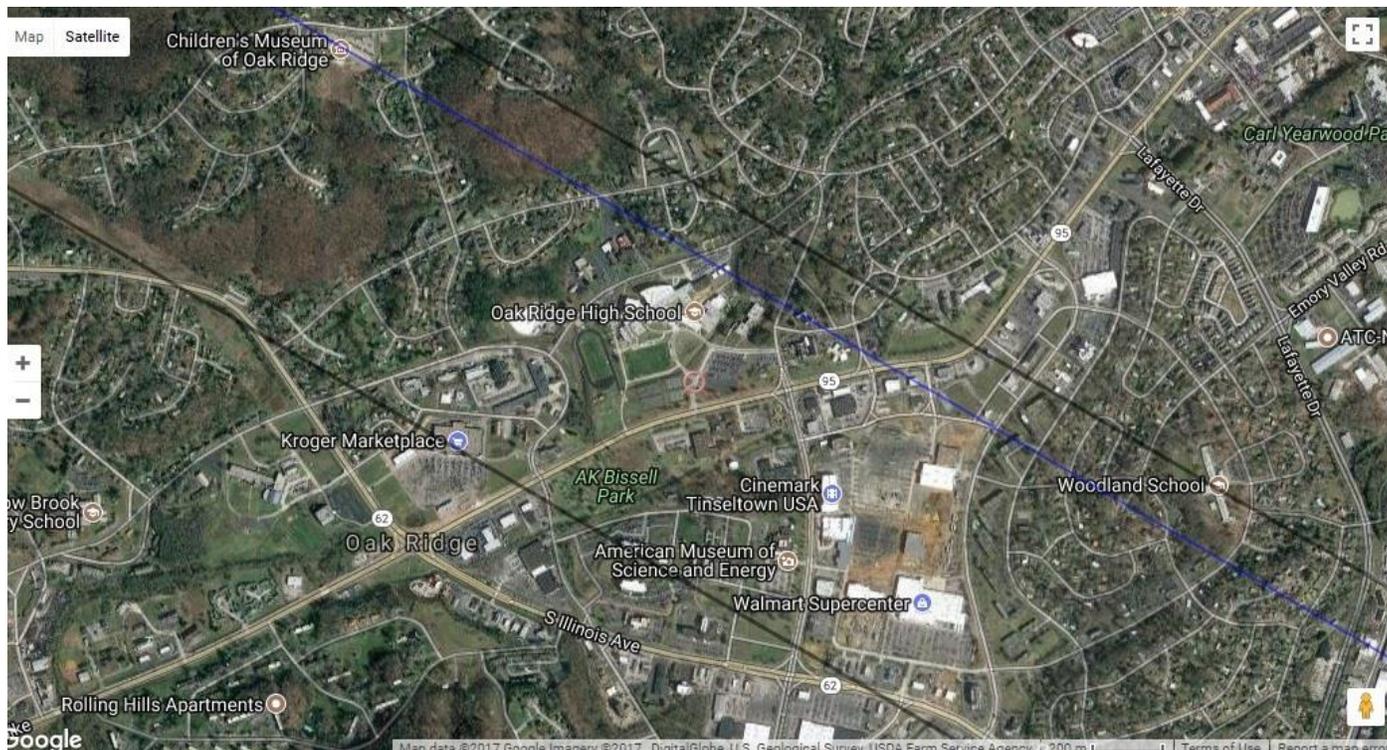


The Northern Eclipse Graze Zone across Oak Ridge, Tennessee

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



central eclipse is at 2:33:43 pm EDT (18:33:43 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! **Caution:** 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 eclipse is too bright to comfortably look at without them. . I may observe the eclipse from the Oak Ridge area myself; if so, I could use help to run a few extra telescopes in the graze zone; see <http://occultations.org/eclipse2017/advanced/> .

Few amateur astronomers will be observing from the graze zone since most of them will travel deeper into the path of totality. With the conspicuous nature of the total eclipse phenomena and their strong dependence on geographical location, scientifically useful observations can be made with modest equipment, even with just a smart phone. The edge of the gaseous Sun is not perfectly sharp, so the edges of the path of totality are also not sharp, but there is a rapid change over a distance of a few hundred yards. 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), you are encouraged to use a smart phone to video record the eclipse. More is at IOTA's Web site at <http://occultations.org/eclipse2017/> More detailed maps can be generated using IOTA's interactive Google Map at [http://www.poyntsource.com/New/Google/Total Eclipse of 2017 Aug 21.htm](http://www.poyntsource.com/New/Google/Total_Eclipse_of_2017_Aug_21.htm) . For the 270-m (890-ft.) average elevation above sea level of the Oak Ridge valley, 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 -56.766 and -57.766. These will generate the boundaries to under 20m (60 ft.) accuracy across the region, good enough for specifying the graze zone. IOTA's Web site will be updated periodically with more information. Good luck with your observations of the eclipse, and let me know if you record video of the eclipse; we'll probably use the Eclipse Megamovie for collecting the observations. But if they don't have a useful system, IOTA will collect them. Eclipse Megamovie wants to generate their "megamovie" quickly, whereas ours will be a long-term analysis that will probably take a few months, so we won't need any video files obtained right away, a week or two after the eclipse will be fine.

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