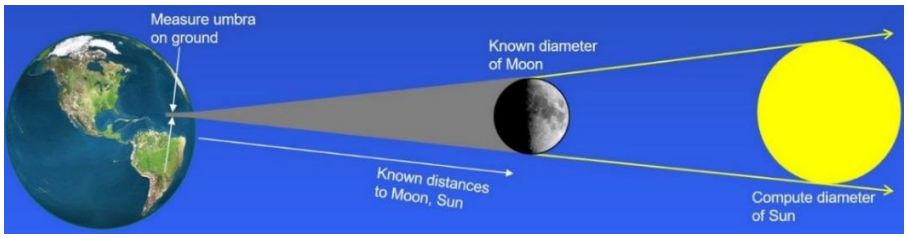
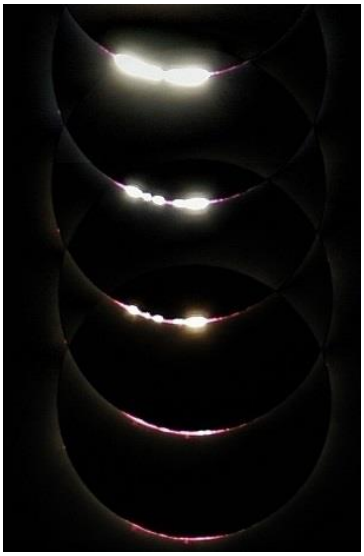


Your City on the Edge of the Total Eclipse Path – a citizen science opportunity to measure the size of the Sun

Your city is in a great position, straddling either the northern or southern edge of the path of totality of the August 21st eclipse. 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. The International Occultation Timing Association (IOTA) encourages **citizen science** observations of the 2017 eclipse from locations near the edges of the path of totality, to see how well it can be defined. Unlike past eclipses, now we can better document the complex phenomena using the video function of ubiquitous smart phone cameras. IOTA's Web page http://occultations.org/eclipse2017/smartphonesimple/ describes how useful smart phone observations can be made. It notes how small cheap clip-on tele-photo lenses (shown to the right with smart phone attached to a photographic tri-pod), available at Walmart and other outlets, can improve your recording. We seek such observations from locations within a half mile-wide "graze zone" along the northern and southern limits of the path of totality. The observations can be made by individual observers working alone (or better, in pairs, as described on the Web page specified above) or in organized groups like the effort being organized in Minden, Nebraska, see http://www.eclipsetours.com/eclipse-edge-2017/.

Important: 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! In the areas outside the graze zone away from the path of totality, 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 during the minute surrounding the central time for your location, using the eclipse glasses when the eclipse is too bright to comfortably look at directly. More on viewing the eclipse safely is at https://eclipse.aas.org/eye-safety/safe-viewing .



Near the path edges, many dozens of Baily's beads (shown in the picture at right, from the eclipsetours Web site) are visible over a period of a couple of min-utes, a much richer display than the brief view of them seen near the path central line. The Baily's beads and chromosphere, are enhanced by a factor of about 10 for locations a short distance inside the path edges while the duration of totality can be half a minute or more. However you try to observe the eclipse, practice on the Sun with the same setup a day or two before. I want to work with others in the graze zone, in the city where I observe, to obtain more detailed observations at a few extra places in the graze zone, using simple small tele-scopes. Nominally, I plan to observe from Moberly, MO, at the n. limit, but I will go to another place, if necessary, for clearer skies. Much more information is on a 3-page flyer, and at IOTA's eclipse site at http://occultations.org/eclipse2017/ .

David Dunham, IOTA, email dunham@starpower.net currently in Columbia, Missouri – 2017 Aug. 15