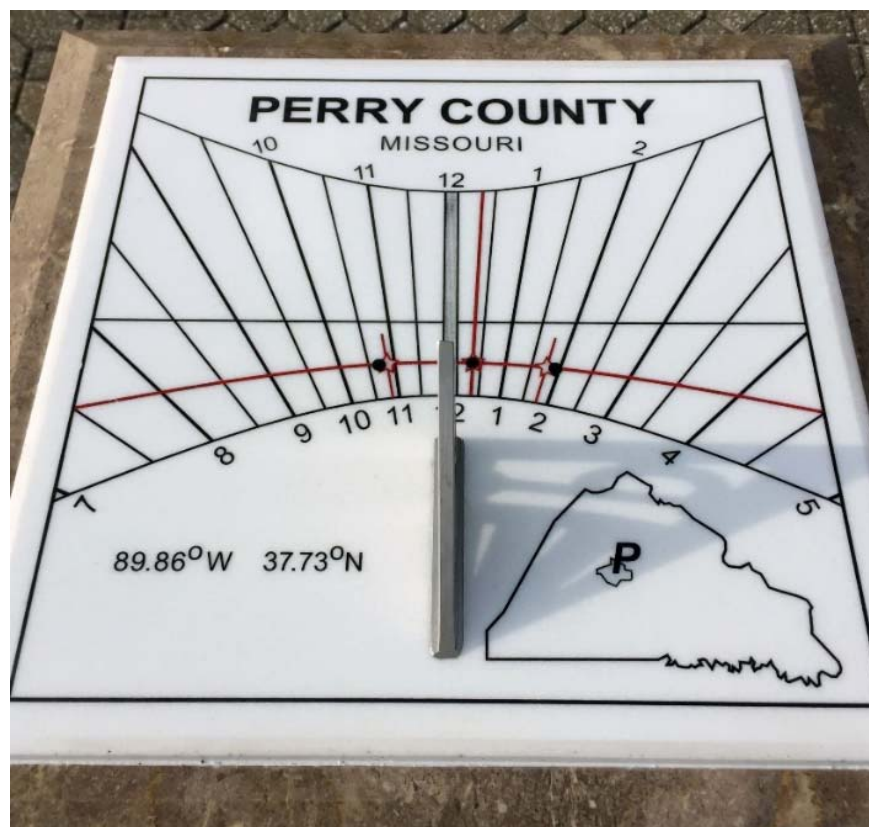
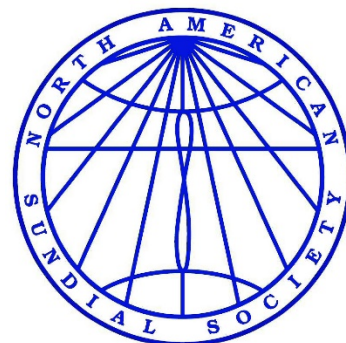


The Compendium*

Journal of the
North American Sundial Society



And to know that the sun is there – that is living.

– Fyodor Dostoevsky (The Brothers Karamazov)

* *Compendium...* "giving the sense and substance of the topic within small compass." In dialing, a compendium is a single instrument incorporating a variety of dial types and ancillary tools.

An Eclipse Sundial for Perry County, Missouri

Donald Snyder (St. Louis MO)

Perry County is located in the southeastern part of Missouri. Its roughly triangular shape is bordered on the east by the Mississippi river. The city of Saint Louis is about 80 miles north. The city of Perryville is the county seat. Perry County was organized nine years after the War of 1812 commenced, and its name derives from the naval hero of that war, Commodore Oliver Hazard Perry, who led a fleet of ships that decisively won the battle of Lake Erie and who afterwards notified then President William Henry Harrison that “*We have met the enemy, and they are ours.*” Perry County is mostly rural, with a population of about 20,000 people of whom nearly half live in the city of Perryville.

The Perry County Courthouse (89.86°W, 37.73°N) stands out as a very prominent architectural feature in Perryville. The first courthouse, a one-story building, was built in 1825 at a cost of \$1,486.25. That was replaced at a cost of \$30,000 in 1903 by a two-story building that still serves the courthouse needs of Perry County and is seen to have an interesting clock tower and other ornamental features. A picture of the



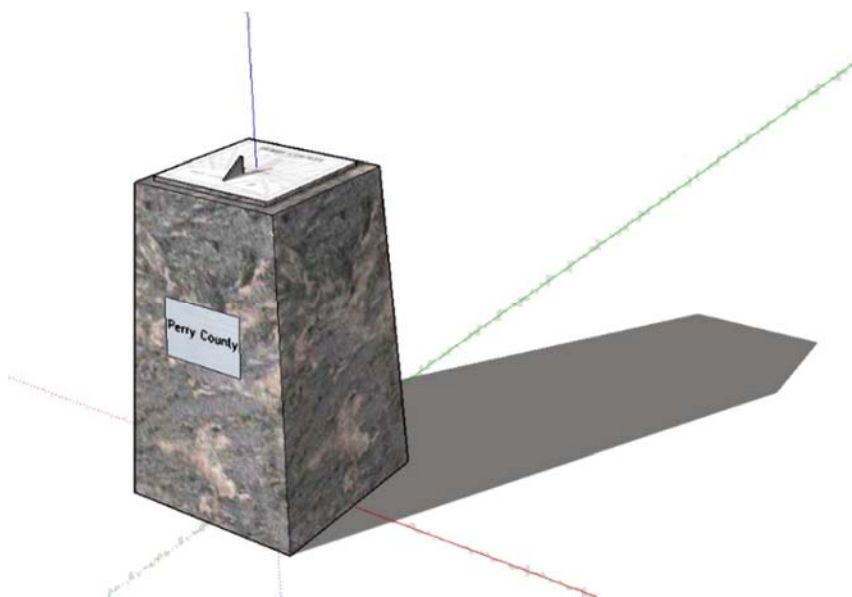
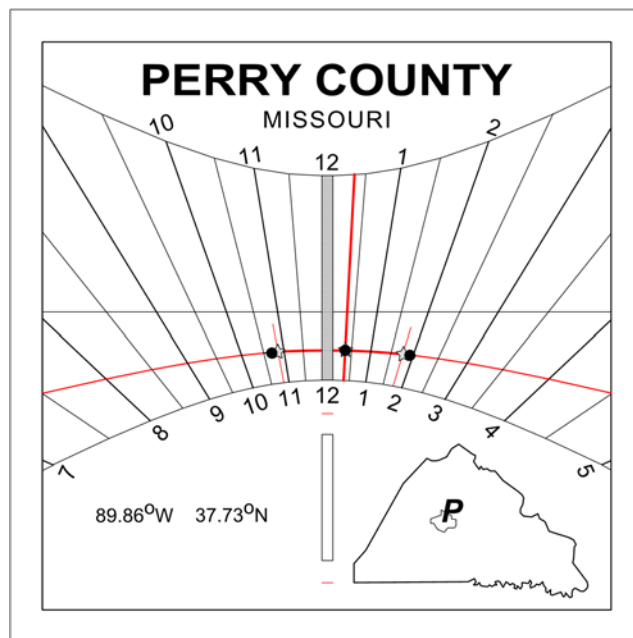
picture of the courthouse (right), taken in July 2016, shows a pedestal of what at one time was a sundial. That sundial was vandalized some unknown years ago and the dial plate stolen. That the benches surrounding the pedestal are empty of people seems appropriate; there is little to view of a sundial stripped of its gnomon and plate.



At the time of this writing, the interior of the Perry County Courthouse is undergoing an extensive renovation, and a new sundial that is to be located adjacent to the courthouse is under construction. These projects will be completed in time so that the courthouse can be rededicated and the sundial unveiled on the weekend of the total solar eclipse that the people of Perry County and its many out-of-town visitors will experience on August 21, 2017. In addition, the eclipse will be celebrated with a parade, live music, food vendors, and discussions of the eclipse including some of the science behind it and of methods for observing it safely.

The gnomon and dial plate of the new Perry County sundial have the straightforward design (using *ShadowsPro*¹) of a horizontal sundial except for two special features, one that celebrates Perry County and the other that commemorates the total solar eclipse. The gnomon is triangular; it is pierced so that a “P” is projected onto the dial plate in the gnomon’s shadow. Its tip serves as a nodus to indicate special dates. These include not just the usual ones of the equinoxes and solstices but, also, the August 21 date of total solar eclipse experienced in Perry County in 2017. The date line for the eclipse has markings along it to indicate the (solar) time of the start of partial eclipse, maximum eclipse, and end of partial eclipse.

¹ *ShadowsPro* is sundial-design software created by Francois Blateyron. See <http://www.shadowspro.com/en/index.html>.

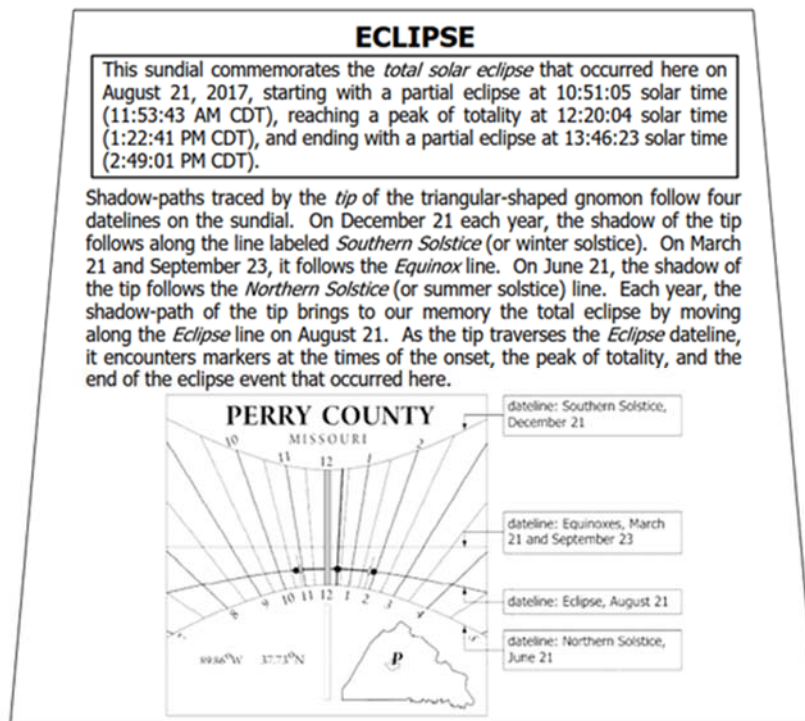


Preliminary design-model of gnomon, dial plate and pedestal (drawn with SketchUp)

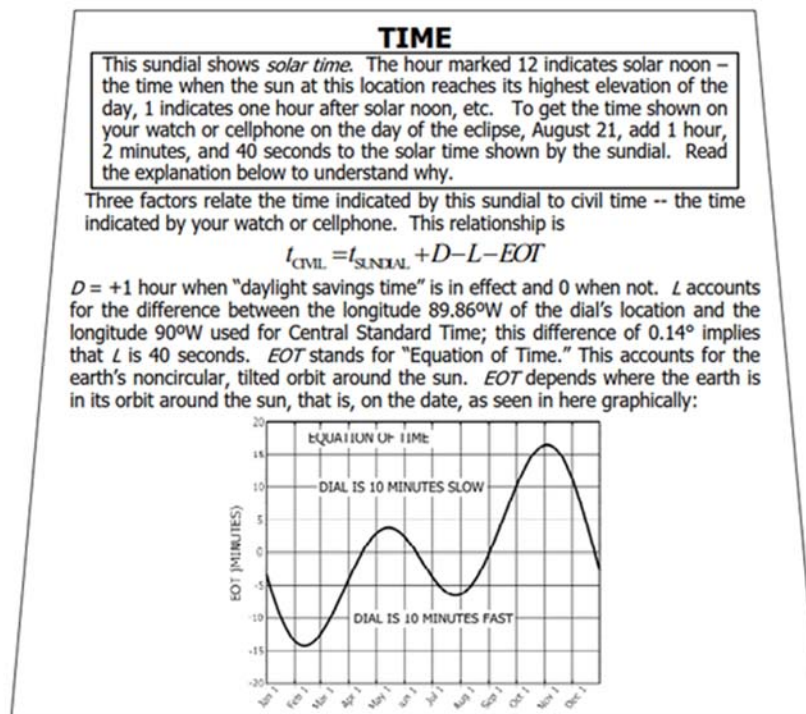
Here are some details of the sundial. The dial plate is made of milk glass that is sized at 14.5×14.5×1.25 inches. St. Louis sculptor Abraham Mohler² coordinated making it using a combination of photoetching and sandblasting to inscribe hour lines, date lines and other markings and then highlighting those with lithochrome paint. The gnomon is made of a stainless steel 303-alloy. William Turner of Turner Associates in St. Louis coordinated making it, first as a rough form using a water-jet cutter and then in its refined, final form using metal-working machinery. The pedestal is made of Missouri Gabouri-limestone quarried in Perry County by Earthworks, Inc., who also shaped and polished the limestone to form a square frustum that is 22×22 inches at the base, tapering to 17.5×17.5 inches at the top. It is 36 inches high. The dial is supported on an underground concrete foundation made by BBL Construction, Inc., of Perryville.

² Abraham Mohler built the Ottoman sundial, designed by NASS member Roger Bailey, that was installed in 2007 in the Botanical Garden of St. Louis, Missouri.

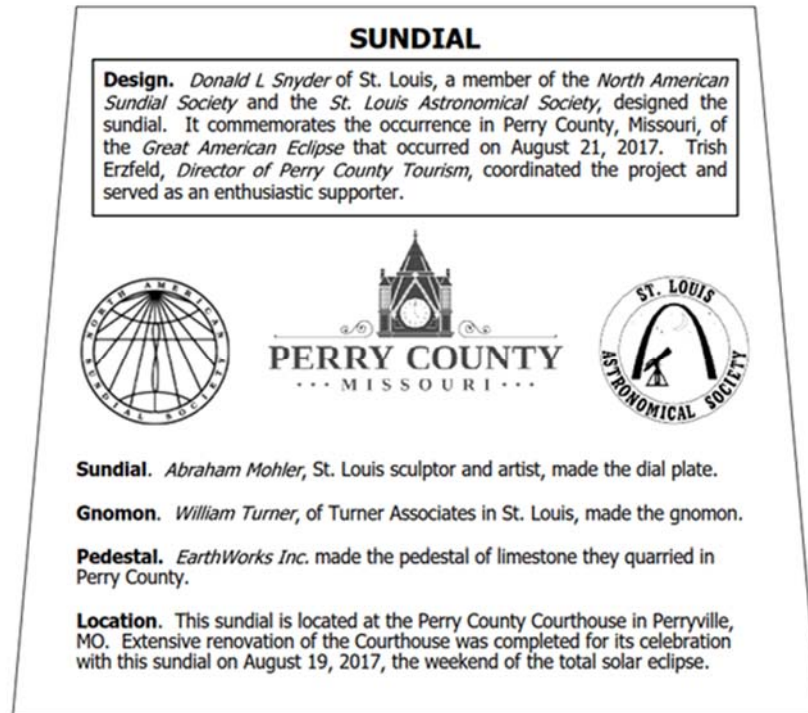
Three plaques are mounted on the pedestal: one explains the eclipse, another explains the relationship between solar time indicated by the sundial and civil time, and the third cites the people, societies, and county involved in making the dial.



ECLIPSE plaque giving explanation of declination lines



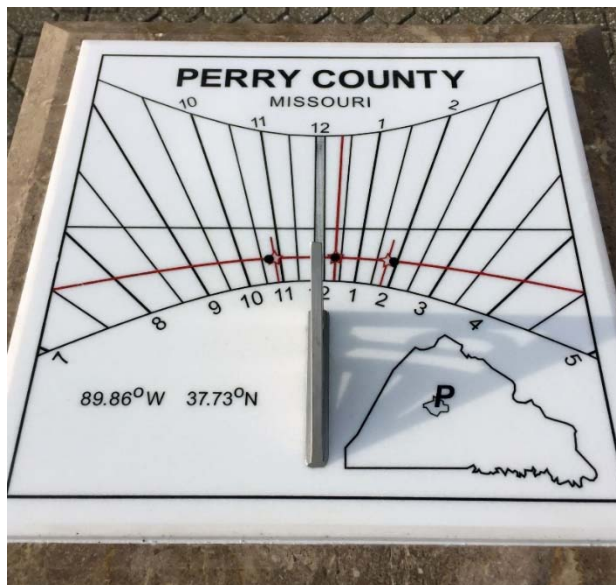
TIME plaque giving relation between solar and civil times



SUNDIAL plaque giving credits to people and organizations

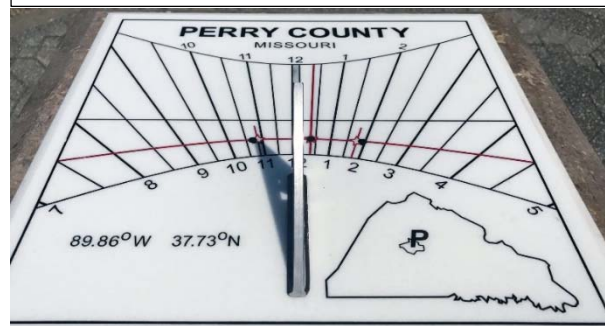
The plaques are laser engraved on black marble. The ECLIPSE plaque has a graphic explaining the dial plate; The TIME plaque explains the relation between solar and civil time and has an equation-of-time graphic; and the SUNDIAL plaque has the logo of Perry County and the logos of the North American Sundial Society and the St. Louis Astronomical Society.

The pedestal was installed on July 25, 2017, and the dial plate and plaques were mounted on it on August 17, 2017, just four days before the solar eclipse. A ceremony unveiling the dial was held on August 19 as part of the eclipse-related festivities in Perryville.



Dial plate on August 17, 2017 at 6:00 PM CDT (EOT ~ -4.4 minutes, Daylight Time in effect). (photo: Abraham Mohler)

August 21, 2017 near the time of partial-eclipse onset. (photo: Daniel Rode)





*Completed Eclipse Sundial for Perry County
(photo: Mike Mohundro, KFVS-TV Photojournalist)*

Acknowledgement. The Perry County sundial commemorating the August 21, 2017 total solar eclipse was the effort of several people besides myself doing the design. Trish Erzfeld, Director of Perry County Tourism, was an enthusiastic supporter and coordinated the effort. Kevin Theiret, President of Earthworks, donated the stone for the pedestal and enthusiastically led the work making the pedestal. Jackie Yamnitz of Earthworks did the detailed drawings for constructing the pedestal. Chris Schemel led the effort by BBL Construction to build the underground foundation supporting the dial. Jared Kutz, Perry County Clerk and Election Authority, represented the County in supporting the dial. Tim Baer, Perry County surveyor, helped with orienting the dial properly. Abraham Mohler, St. Louis sculptor, coordinated the effort to build the dial plate and plaques. And William Turner of Turner Associates in St. Louis, made the gnomon. It was Don Ficken who first introduced me to Trish Erzfeld and took me to Perryville to see the Courthouse and previous sundial site. He is a member of the St. Louis Astronomical Society and chaired the St. Louis Eclipse 2017 Task Force whose outreach aided many communities within a 100 mile radius of St. Louis to prepare for the solar eclipse. Every one of these people contributed their time, effort and enthusiasm towards this project.

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