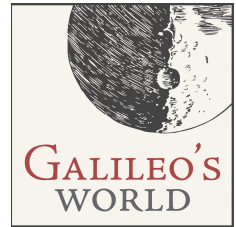


Introduction to the Sundial

EXHIBIT: *Galileo's World*
GALLERY: Galileo, Engineer; Music of the Spheres; Space Science after Galileo
OBJECT: Bernardino Baldi, *Gnomices* (1592); Regiomontanus (1476); or any sundial.

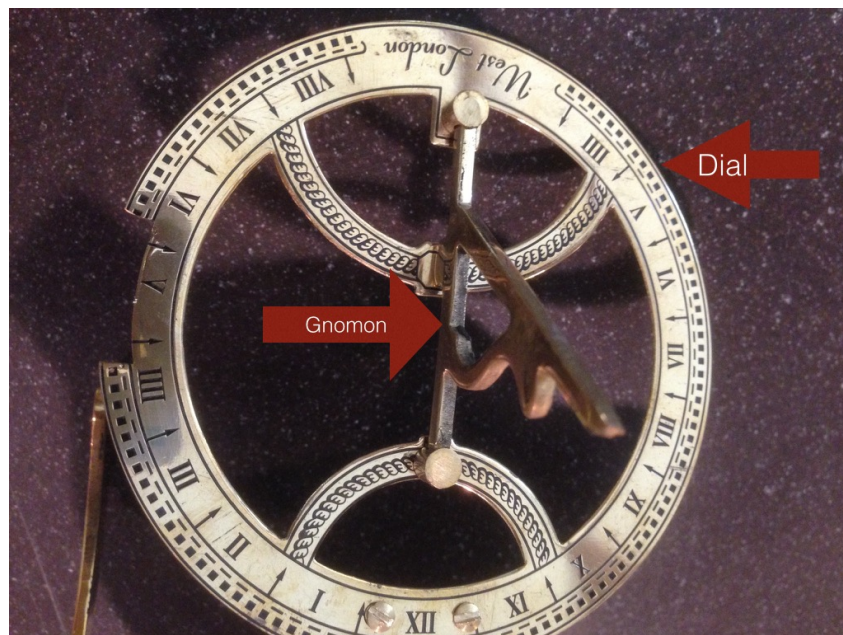


A sundial consists of a **gnomon**, which casts the Sun's shadow, and a **dial** on which the shadow indicates the time. On a **pocket sundial** by David Beringer (c. 1760), the gnomon is a short length of string which casts a shadow on the vertical dial. The horizontal compass enables the pocket dial to be positioned facing due south. **Polyhedral sundials** have a gnomon on every face, with dials aligned to tell the same time on each face.

Sundials range in size from these pocket or table-top dials to monumental architecture. A simple portable sundial features a gnomon that can be adjusted according to one's latitude. Obelisks of ancient Egypt functioned as gnomons. Renaissance cathedrals functioned as scientific instruments in their own right, featuring gnomons in windows or near ceilings. From the streets of any older European university one is likely to see a sundial mounted on the side of a nearby building, oftentimes alongside rather than replaced by, a mechanical clock.

Assemble the model sundial:

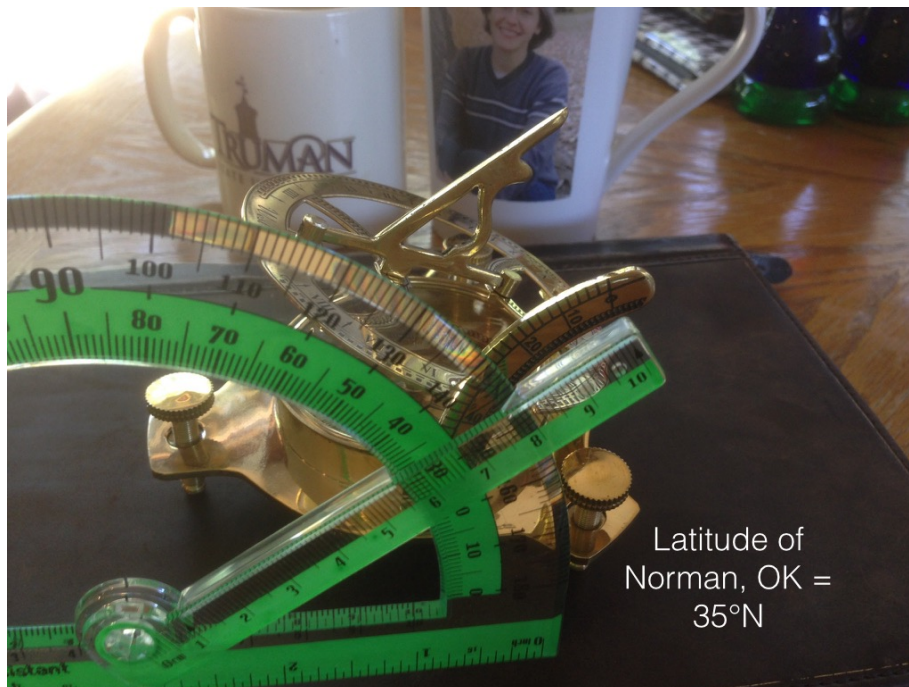
1. Fold up the **gnomon** so that it is perpendicular to the dial.



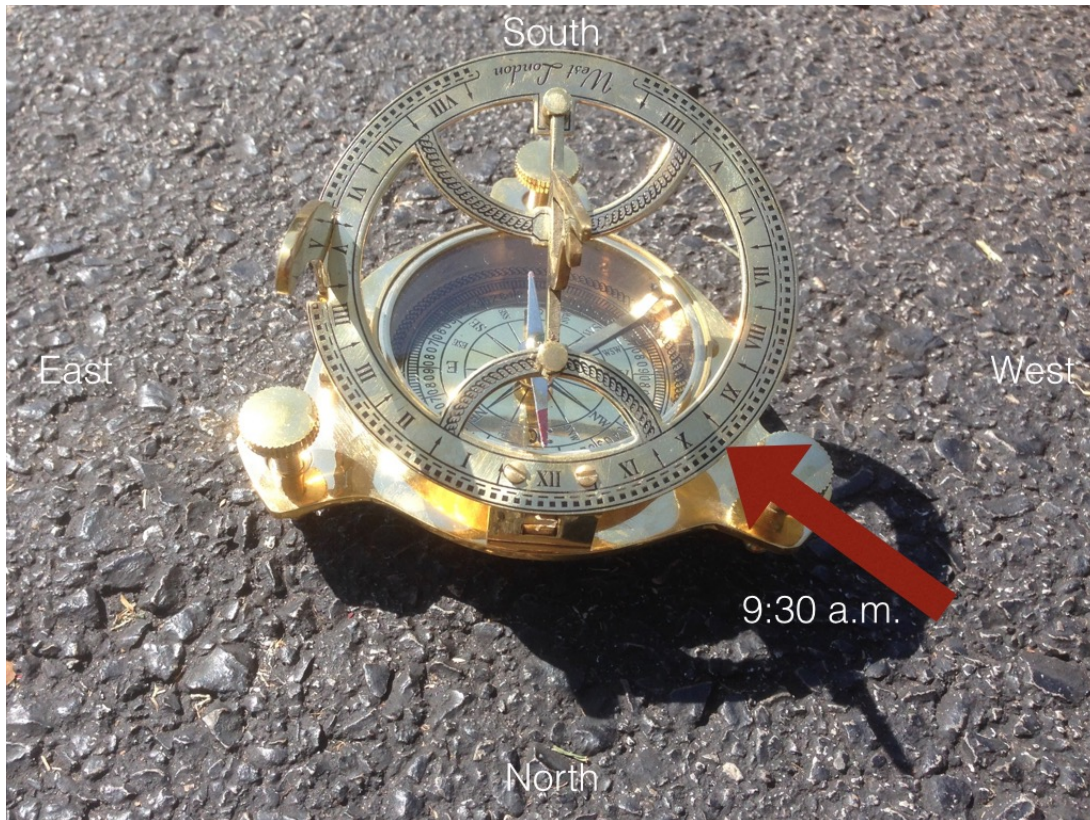
2. Fold up the curved **latitude scale** so that it is perpendicular to the dial.



3. Tilt the dial so that it indicates the **current latitude (35°N)** on the latitude scale. When moved into this position, the angle between the horizontal platform and the gnomon itself should be equal to one's latitude on Earth. The latitude of Norman is 35°N.



4. Slide the mechanism to release the **compass** so that it moves freely.
5. Position the dial so that the gnomon points due south. “West London” will be on the south side; the mark on the dial for “XII” (noon) will be on the north side.
6. Read the **time** on the dial by the shadow of the top edge of the gnomon.



From April to October add 1 hour to obtain Daylight Savings Time (DST) for Oklahoma and other areas that adopt DST. Remember that DST is one hour later than the Standard time the sundial indicates.

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Collaborating in exhibit-based learning, oulynx.org
(Ask about the *Galileo's World* iPad Exhibit Guide)

