Sundial Encyclopedia Article

Sundial

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One of the earliest timekeeping devices is the sundial, which consists of a pillar (called a style) or other object that casts its shadow across a dial with hour markings on it. The style is aligned parallel to the earth's axis.

As early as 3500 B.C., sundials existed as a stick, pillar, or pyramid that cast a shadow but did not have a dial. The Egyptians developed the first complete sundial in the eighth century B.C., and in 300 B.C. Babylonian astronomer Berossus devised a hemispherical sundial. these early sundials divided the day into 6 or 12 segments, which, because the orbit of the earth around the sun is elliptical, varied in duration during the year.

The Greeks, among them astronomer Ptolemy (ca.90-168 A.D.) and mathematician Appolonius of Perga (fl. 250-220 B.C.), developed complex sundials. One of the most famous of these is the Tower of Winds at Athens, which still survives. Built about 100 B.C., the octagonal tower has eight dials that allow for the changing arc of the sun during the year. The Romans used hemispherical sundials and developed portable versions.

Although mechanical clocks were developed in the fourteenth century, sundials, which were often works of art as well as timepieces, were used throughout the Renaissance period. In response to the equal-hour marking system used on clocks, sundials were made to also measure in equal hours. However, after the invention of the weight-and-pendulum clock in 1656 by Christiaan Huygens, sundials were relegated to ornamental status.