

“Marking Time”

By Forrest Lockhart, Docent – Cameron Park Rotary Community Observatory

Of all the species of life on Earth, only *Homo sapiens* has a penchant for marking the passage of time. Since the beginning of recorded history we have had an obsessive need to know what time of the day it was, how much time had elapsed from one event to another, and for seafarers, how fast their boats were traveling.

The earliest tool to mark time was probably invented around 7000 years ago, when some curious human in Babylonia drove a simple stick into the ground and observed the movement of the shadow from sunrise to sunset. By 2100 B.C.E. the Egyptians had divided the day into 24 equal parts, and constructed giant granite columns later called Cleopatra Needles, augmented with 12 daytime hour increments marked on the ground.

Unfortunately, these sundials had a number of significant flaws, the first of which was that they were too massive to carry around in a pocket. Another flaw was the need for an unobstructed sun to create the moving shadow. A major inconvenience was that the Needles could only be used during the day, effectively ruling out set times for evening dinner parties, political speeches, etc. “Hmmm”, said the philosophers, “We can do better than that.”

And so they did, with the eventual creation of the sand-filled hourglass, machines that recorded time by the regulated flow of water into a bowl, incense and candle clocks, and innumerable other clever timekeeping mechanisms. Unfortunately, none of these mechanical timekeepers were very accurate, and they all required constant attention.

By the 14th century, some enterprising fellow with time on his hands discovered that gravity could be used to pull weights, which could move gears, which could move hands on a clock face. Accuracy improved dramatically, but an attendant was still required to periodically wind the weights back up.

The quest for knowing the correct time has progressed steadily since those early, crude timekeepers. Today, it is the rare individual who doesn't have a battery-powered watch or I-phone that provides time to a fraction of a second. If that isn't sufficient, we now have quantum clocks accurate to less than one second in a billion years!

The Cameron Park Community Observatory is also attuned to the regular passage of time, but we have reverted to a modernized version of the original timepiece, the horizontal sundial. While most of our astronomical activities occur at night, we are constructing our own ground-level sundial adjacent to the Observatory's new outdoor Star Theatre. Nearing completion, we hope to have the sundial in operation by mid-summer.

While discussing the partially completed sundial during a recent visit by a group of local 3rd grade students, one imaginative lad suggested the addition of a flashlight so time could be determined at night. And so we continue in our never-ending, occasionally misguided, sometimes humorous, quest to mark time.

For more information about the Cameron Park Community Observatory's public observing hours, special programs, or just to check out our new timepiece, we invite you to visit our website at: www.communityobservatory.com