

problem corner



Problem 217

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For millennia the ancient Egyptian “Scribe Surveyors” were required to annually survey their rich desert lands inundated by the Nile River, whose levels of rise and fall were recorded on a “Nilometre” (a well with gradations in cubits). Typically the inundation period of the Nile started in August, crested in September, and lasted until the end of October.

It is now clear that these ancient Scribe Surveyors had benchmarked their entire land, calculated the variation in latitude due to the flattening of the poles, knew details about a heliocentric Earth, and quantified the precession of the equinoxes. In short, they accurately knew the mathematical geodetics and astronomicals of today.

This next series of problems will explore the mensurations of these and other ancient surveyors.

Around -2800 the Tropic of Cancer was located at 23 degrees 51 minutes North.

1. What significances were attached to an exact location of the Tropic of Cancer in Egypt?

Using a half a degree footprint of the Sun at the Earth,

2. What part of the Sun was used in this measurement?
3. How was the exact location measured?
4. What was the importance of Syene in this measurement?