What's up in Astronomy by Eric Erickson

Offered Title: When did it Start?

Who were the first astronomers? Were they knuckle scraping Neanderthals? Mesolithic? Neolithic? Ancient Greeks, Chinese, Egyptians, or Babylonian? We may never know, but we do have evidence for why they looked at the stars and noted how the sky changes. It was the mundane need to survive. Those were simpler times, forage, catch, harvest, eat. Or not. I wonder who was first, took note of which stars were in the sky, the position of the Sun, and saw a relationship when plants produced or dried up and died. When nature provided, when nature held back. They were the first astronomers. They were the first calendar makers. They became the first farmers too. A good calendar is a powerful tool if you know how to use it.

The oldest known calendar is a monument around 10,000 years old, from 8,000 BC Scotland which puts it in the Mesolithic period. It's thought to be a lunar calendar, with twelve pits lined up that correlate with the Moon's phases. It also has a spot that can be lined up with sunrise at midwinter solstice. Why have a Sun based marker on a lunar calendar? It appears to be a correction device for realigning the season with the lunar calendar. Wow! Wonder why they didn't just make a solar calendar?

After that, calendar monuments tended to use both the Moon and Sun for determining the best time to do stuff, like plant, hunt, forage, harvest, family reunions. Stonehenge, the famous bronze age monument is an example of a more complex calendar, with stones, ditches, and pits in concentric circles.

No matter who did it first, ancient astronomers all used the same two objects to derive a calendar, the Moon and the Sun. They also recognized that a twelve-month lunar calendar was not predictive, because it didn't stay synched with the seasons. Why not? Some ancient astronomers used the place on the celestial sphere where the Moon returns each month. This is a Sidereal month, 27.3 days. Ohers used the time between full or new Moons called a Synodic month, 29.5 days. Both are less than a month, causing eventual season/month mismatches. This has to do with Earth-Sun and Earth-Moon orbital dynamics. The Sun however is well synched to seasons because Earth's orbit is 365.25 days, so it was used to correct the lunar calendar periodically. Solstices and equinoxes to the rescue.

After calendars, astronomy took off and became the first natural science. We now explore the heavens with ground-based, space-based, and robotic equipment.

Astrology evolved from of astronomy as some of the earliest practitioners both studied the celestial sphere and massaged their data in order to influence kings and queens. Kind of like snake oil marketing. A smidgen of science and a lot of claims.

What's in the Sky?

Tye Preston Memorial Library in Canyon Lake resumes Astronomy Night this Saturday, 09/21, at 8:30 PM.

Come join the fun!