Earth At Closest Point To The Sun Jan. 4

Astronomers at the Pisgah Astronomical Research Institute announce that at 8 p.m. on Wednesday, Jan. 4, the Earth, in its annual orbit around the sun will be at it closest point to the sun. Astronomers call this point perihelion.

The average distance of the Earth from the sun is about 92,956,000 miles. However, the Earth's orbital path around our central star is not a perfect circle but rather slightly elliptical in shape. Because of this the Earth, is slightly closer to the sun in January, at perihelion, and a bit farther away in July, aphelion. At 8 p.m. on the 4th of January the Earth will be 91,402,046 miles from the sun or about 1½ million miles closer than average.

Some people find this a bit confusing: The Earth is farther from the sun in the summer and closer in the winter? Shouldn't it be the other way around? No. Realize that the seasons have nothing to do with the distance of the Earth from the sun. The seasons result from the 23½-degree tilt of the Earth's axis of rotation. In the spring and summer we are tilted toward the sun while in the fall and winter we tilt away from it. The difference in our distance from the sun has a very insignificant effect on our seasons and weather.

One affect that does result from our distance from the sun is the speed of the Earth in its orbit. Near perihelion, when the Earth is closest to the sun, it speeds up a bit. Vice versa, the Earth slows down near aphelion. The affect of this is to produce a difference between the actual position of the sun in the sky and where it would be if the Earth's orbit were a perfect circle and it moved at a constant speed around the sun. We call this difference the equation of time, and it manifests itself in the corrections we have to apply to readings of the shadow on a sundial. It also shows up in the analemma, that funny looking distorted figure-8 we see on some Earth globes.

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