

## **I'm Tired of it Being Dark So Early!**

### AGRI-VIEWS

by Chuck Otte, Geary County Extension Agent

I'm sure that there are a lot of local residents that are already thinking to themselves that they are sick and tired of it being dark already when they leave work shortly after 5 p.m. I know I'm in that school of thought! If it helps to cheer you up any I can assure you that the sun is now setting as early as it will all year and very soon it will slowly start to go the other direction. Many folks feel that sunrise and sunset get equally shorter as we approach the winter solstice (December 21) and then instantly both start to go the other direction in an equal fashion.

Well, that's not quite the way it happens. As you may remember from a science class some time in your life, the earth's axis is tilted 23.5 degrees and it slowly rotates around. This is what brings us the changing seasons as we tilt more directly toward the sun or away from the sun. It also explains why seasons south of the equator are opposite ours north of the equator. We are about to pass from autumn into winter and in Australia they are about to pass from spring into summer. This tilt also creates a situation where sunrise and sunset don't react exactly the same.

At our location of latitude and longitude the earliest sunsets occur from December 1 through December 13. This occurs at 5:05 p.m. So as we are driving home this week, shortly after 5 and it seems to be getting dark early it's because the sun has in fact already set. But starting on December 14<sup>th</sup>, sunset starts to occur later, 5:06 p.m. on the 14<sup>th</sup> to be precise. By New Year's Eve sunset will be ten minutes later than it is tonight. Not a big change, but it's a change.

Sunrise however is a different situation. Once again, because of that tilt, sunrise is going to occur later and later until January 9<sup>th</sup> when it finally starts to occur earlier. Sunrise tomorrow morning (the 10<sup>th</sup>) will be at 7:34 a.m. Sunrise is at it's latest from January 2<sup>nd</sup> to the 8<sup>th</sup> when it occurs at 7:47 a.m. But when you figure the total amount of daylight, the shortest day of the year does occur on the winter solstice. This year, the occurrence of the winter solstice, which is when the sun oh so slowly starts working it's way "back north" will occur at 4:11:17 p.m. central standard time on December 21<sup>st</sup>. Total amount of daylight on the 21<sup>st</sup> will be 9 hours 25 minutes and 35 seconds. On the 22<sup>nd</sup> we'll have one more second of daylight!

The same scenario occurs as we approach the summer solstice. Even though the summer solstice is on June 21<sup>st</sup>, the earliest sunrise (6:01 a.m. central daylight time) occurs from June 9<sup>th</sup> through the 20<sup>th</sup> at which time it starts to rise later again. The latest sunset comes a little after that. The sun sets at 8:57 p.m. from June 21<sup>st</sup> through July 4<sup>th</sup> and then starts occurring earlier. But again, the longest period of daylight, perhaps by just a few seconds, occurs on the summer solstice. Coincidentally, the days with exactly 12 hours of daylight, do not occur on the actual equinox days. In the spring it's a few days before the vernal equinox and in the fall it's a few days after the autumnal equinox.

The angle of the sun and the amount of daylight we receive naturally impacts our climate. Interestingly there is a lag between the longest and shortest days of the year and the hottest and coldest days of the year. A lot of this is simply due to the extended period around each solstice when the amount of daylight and the angle of the sun, just don't change all that much. But it also has a lot to do with the buffering affect of the land and how long it takes to start heating or cooling all that soil. Locally, the hottest day of the year (since 1950), based on average daily high temperature, is July 18<sup>th</sup>. The coldest day of the year is January 4<sup>th</sup>.

So, yes, it does get dark early in the evening. But that will start changing soon so take heart, spring is just around the corner!