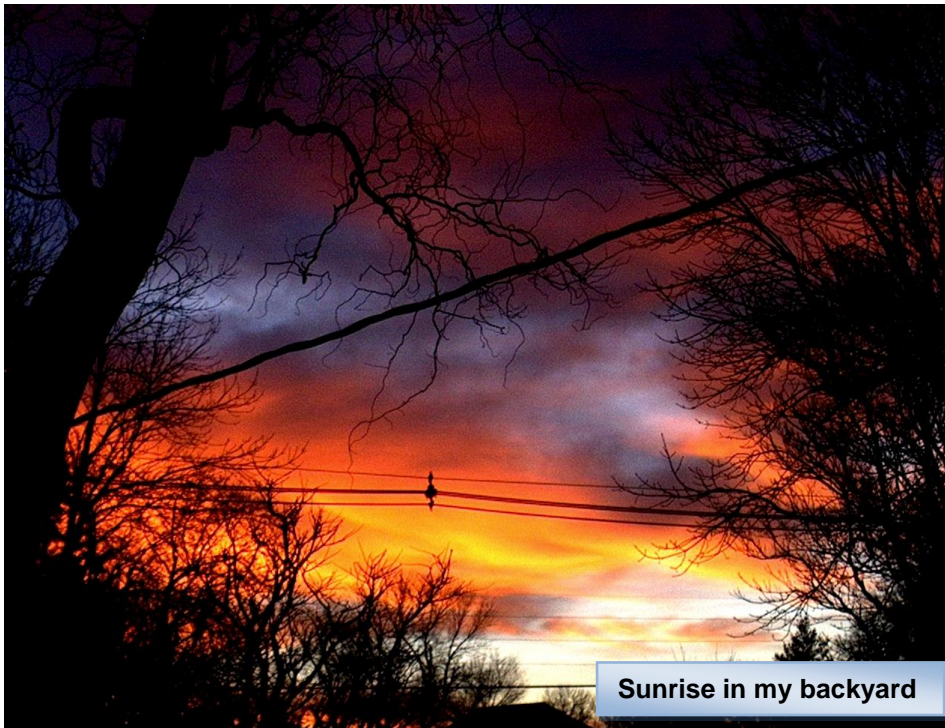


Sunrise, sunset
Sunrise, sunset
Swiftly flow the days.
Seedlings turn overnight to sunflowers
Blossoming even as we gaze.

The above are lyrics taken from the tune *Sunrise, Sunset* —a well-known song from the theatrical production *Fiddler on the Roof*. Of late these lyrics have been bouncing around in my head, not because I've recently attended the theater; but, rather, I have been passionately observing the remarkable production *Mother Nature* has been providing us. I am reasonably sure this keen awareness is due to my dislike for winter and a longing for spring when I can again garden.

As I arise in the dark each morning, I usually walk into my home office and check our outdoor thermometer. Observing how cold the outdoors temperature is, I generally utter a shivering “B-r-r” and head directly to our living room to light a fire in our fireplace. By the time a nice flame is flickering, Rita joins me with a hot cup of coffee and there we sit, enjoying the warmth, chatting and planning our day.

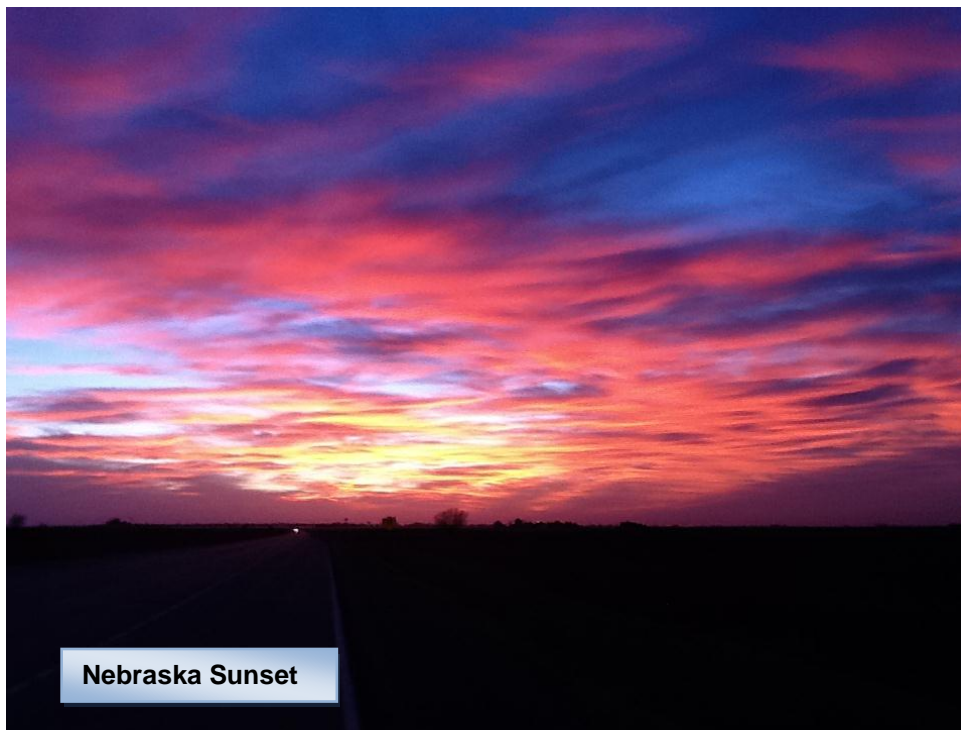


Later, as the morning sun begins to rise above the horizon, I frequently find myself gazing out our windows to the east, marveling at the beautiful red and orange colors that streak across the gray-blue dawning sky. What a breathtaking sight it is,

and how awe-struck I am. Fortunately, this amazing display often repeats itself near the end of the day— a miraculous spectacle we call sunset.

Have you ever wondered why the sky has color, and why during a sunrise or sunset the colors are more red and orange than blue? Also, have you noticed that sunsets often seem to be more intense than sunrises?

We must look to science to answer these questions. First, realize the atmosphere is comprised mostly of nitrogen and oxygen molecules with some other chemicals, dust and debris. Ordinary sunlight is composed of a spectrum of colors that range from blue and violet at one end of the wavelength to orange and red at the other. When light hits the particles of our atmosphere, it is broken up, and different wavelengths are scattered in different directions— a term called scattering. Blue light wavelengths are short and more easily broken than longer red light wavelengths. On clear days, the sky is seen as blue because the shorter wavelengths of blue light are broken and scattered in more directions when they come in contact with dust particles and nitrogen and oxygen molecules.



At dusk and at dawn, the sun is positioned at a different angle to the earth than during the day; thus, the light takes a much longer path through the atmosphere. Because of this angle, the longer wavelengths of red and orange are the ones that more readily reach the eye.

Furthermore, sunsets are generally brighter and contain more vibrant colors than sunrises because during the day, animals and humans kick up more dust and debris into the atmosphere causing reflections that result in the colors of the sunset appearing brighter than those at sunrise.

Perhaps this scientific explanation sounds a bit confusing. If so, don't allow it to prevent you from enjoying the majesty of our sunrises and sunsets. Although it is too cold to be outdoors and start gardening, at dawn or dusk you can certainly press your nose to the window and direct



Nebraska Sunset

your eyes to the horizon. Why not witness Mother Nature's spectacular light show? Who knows, you, too, may soon find yourself humming the tune *Sunrise, Sunset*.