

SUNSETS SUMMER 2021



EastView Sunset May 28, 2021; Time 2015.
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Notice that the colors in these three photographs are red or orange with little to no yellow. All of these images were taken from the front porch at 206 Deer Meadow Drive. The times are in 24-hour time and occur between 1935 to 2015 in the evening on the dates reported.

Because the sun is low or below the immediate horizon, we are seeing these colors. The concentration of color is due to the amount of dust, smoke, and debris molecules larger than air molecules from the fires out West.

Remember learning from High School Science that when we saw a high concentration of dust, smoke, debris particles in the atmosphere larger than air molecules it meant that shorter and intermediate wavelengths of light such as blue, violet were scattered and thus were pushed away from our sight. This sometimes left just yellow, but definitely red and orange wavelengths that were longer than were able to reach our eyes. Therefore, our eyes saw the sky or the sun as orange red.



EastView Sunset July 21, 2021; Time 1942.
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Remember that during this summer the news every day reports the tremendous size, scope, and devastation of the fires out west in California, Oregon, and Washington as well as other places in the West. Here in the East, we are seeing some of this through the very orange-red sunsets due to the tremendous amount of dust, pollution, and ash particles in the atmosphere.

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EastView Sunset Sep 01, 2021; Time 1934.
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The shorter wavelengths of light such as violet and blue are scattered away by air molecules. Therefore, the only light left are the longer wavelengths such as yellow orange and red. This is why we see colorful sunsets.

When the sun is high in the sky it will appear almost white because the wavelengths of visible light reach our eyes at the same intensity. However, as the sun moves toward and below the horizon the sunlight enters the atmosphere at a lower angle. Because this sunlight must pass through more of the atmosphere before we can see the affects, the sunlight will hit these particles and be reflected giving the affects we see during a sunset.

EARLY FALL COLORS



On a drive through the Greens in Fall.
© Dick Harlow

Fall colors are primarily from two pigment types found in leaves. One pigment type, Carotenoids, the orange and yellow color are hidden in leaves dominated by green chlorophyll. As fall approaches, daylight hours shorten, chlorophyll begins to disintegrate, and the carotenoids begin to show.

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Fall Colors: Reds, off red and yellow colors.
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However, the reds and dark pinks, along with the almost purples come from Anthocyanins. Anthocyanins are not found in the leaf during the growing season and are produced when the chemical process of photosynthesis and growth moves out of the leaf and into the stem allowing for Anthocyanins to be produced.

Cold nights and warm days help to bring on the colors of Fall. On the other hand if the weather doesn't cooperate then we will not see the rich, vibrant reds, oranges and yellows for which Vermont is known.



Fall color, of a single Maple!
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OBSERVATIONS

MAMMALS

White-tailed Deer
Meadow Vole

REPTILES

Garter Snake

BUTTERFLIES

Cabbage White
Yellow Sulphur
Orange Sulphur
Monarch

All Measurements taken at solar noon (1230 EST).

PRECIPITATION

Average October Precipitation for Vermont = 3.58 inches.

Total two-week precipitation from October 1-14 was 13.2 mm or 0.52 inches. This is a 3.06 inch deficit for the month so far.

Overcast Days 1-14: We had 10- days, of overcast skies. Of those overcast skies 6 days produced rain. This month definitely added to this year's draught.