

# The Naturality of the World...Or Is It Climate Change?

By Peyton Mathes

In Michigan, we typically have seasons, which change throughout the year, however there have been irregularities with these changes which lead us to believe, is something darker that is going on? Over the past 3-4 weeks, my chemistry class at Melvindale High School has been collecting the following data from 3 trees, the clouds, and the temperatures from the latitude of 42.2747 degrees and longitude of -83.2031 degrees. We have been tasked to determine, with all factors included, were the changes in leaves just the result of natural changes of the seasons? Or was it climate change that sped up this process?

So for our first step on data, my group and I collected leaves from the following trees, Morang locus (Genus Robinia) and Maple tree (Genus Acer), and we found that with the first week on October 4th, the color scheme for the Locus was 5GY:4/8 with the chemical chlorophyll present. With the maple tree, our first data slot was 5GY:5/10, which was also green with the chemical of chlorophyll. During the second time went out, which was October 12, the color scheme for the locus changed to a 5GY:6/10, which was still with that prominent green color. And with

the maple, the set of data was 5GY:7/12. Our last set of data, which was taken on October 27th, we find that the locus is 5GY:7/12, still with the prominent chlorophyll in the leaf. As for our maple, it took a drastic shift, the color being 2.5R:4/12. This shows us the new chemical of anthocyanins, a dramatic shift from green to now red. With our datasets, we see with the locus an almost delayed sequence of changing, it's still green, yes, but it may be getting lower. At the end of October, you're expecting yellows or reds, but not still greens. With the maple tree, it had the natural change from dark green to light, but it had a dramatic shift to red towards the last data input. If the locus is going slow, you should expect the maple to do the same. Is our climate rushing the process for one tree and slowing the other?

Our second form of evidence was the temperature. Starting off with the temperature, they varied in highs to lows. For the first week of our tests, the temperature ranged from 80s-50s, which is pretty high considering that in Michigan, we are approaching our fall season, where the earth is supposed to receive less sunlight due to the tilt on the Earth's axis. During the second week, we see the temperature drop from 50-60s. Then, it remains as low before jumping to 50-70. It's still relatively chilly, but is the increase in heat throughout the weeks a result of climate change?

Our final piece of evidence is the cloud coverage over the weeks. For our first date, we noticed that based on the data we collected from GLOBE Observer, in the east there was a cumulus cloud coverage and it remained that way for the north, west, and south. On our next date, which was October 12, we saw a bit of contrails in the south and east, while in the north and west we saw bits of cirrostratus and regular stratus. On our last date, we had altocumulus in all directions. So we didn't have clear skies for the most part so shouldn't the temperatures have dropped instead of being warmer?

With all the evidence collected, I can confidently say that yes the climate is changing and it is not changing for the good. Temperatures are remaining higher when it should be lower. We are at the beginning of fall and it's still hot, so hot that the leaves are being delayed in their changes. If we continue to allow this we may not be able to call this planet our home.

<https://www.compoundchem.com/2014/09/11/autumnleaves/>

<https://observer.globe.gov/do-globe-observer/clouds/taking-observations>

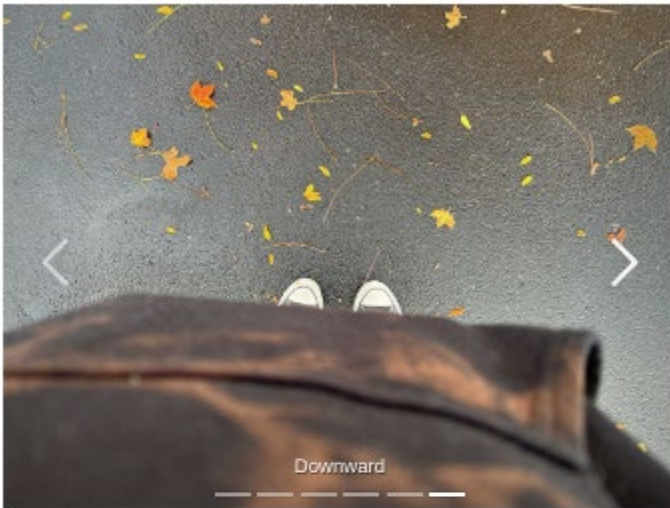
<https://www.wunderground.com/weather/us/mi/melvindale>

[https://cnr.ncsu.edu/news/2021/08/5-climate-change-impacts-](https://cnr.ncsu.edu/news/2021/08/5-climate-change-impacts-forests/#:~:text=In%20response%20to%20climate%20change,can%20survive%2C%E2%80%9D%20Scheller%20said.)

[forests/#:~:text=In%20response%20to%20climate%20change,can%20survive%2C%E2%80%9D%20Scheller%20said.](https://cnr.ncsu.edu/news/2021/08/5-climate-change-impacts-forests/#:~:text=In%20response%20to%20climate%20change,can%20survive%2C%E2%80%9D%20Scheller%20said.)

<https://momscollab.com/types-of-leaves/>

## Clouds



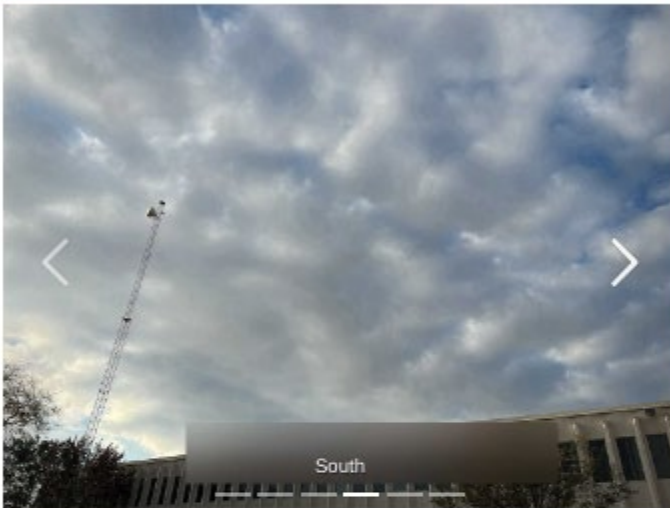
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Site Name:	17TLG183826
Latitude:	42.274453
Longitude:	-83.203419
Elevation:	181.2m
Measured At:	2023-10-27T13:08:00
Solar Measured At:	2023-10-27T07:53:00
Cloud Cover:	hrken

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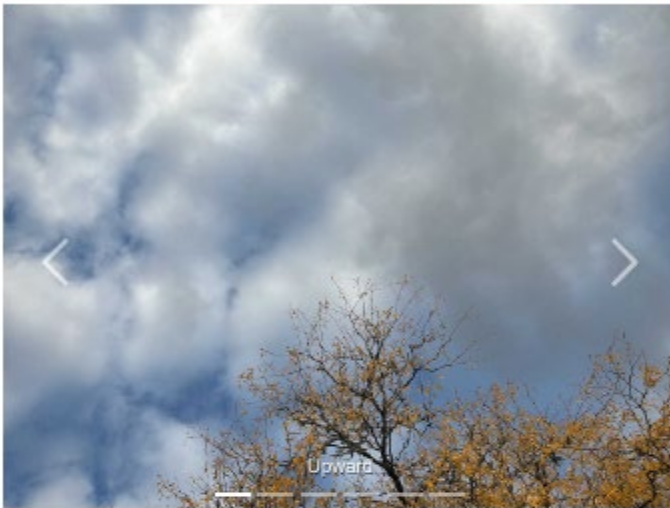
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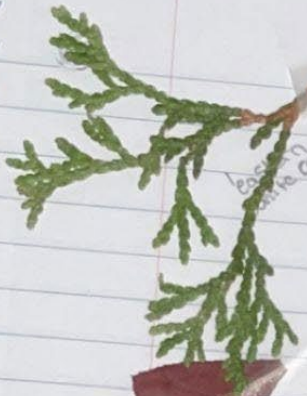


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leaves of  
white cedar



willow



burning  
bush



norway  
maple



collared  
pear

