Spring 2024 GLOBE Workshop: Atmosphere Changes during the Solar Eclipse in Greensburg, LA

Abstract:

Our 2024 Solar Eclipse was a very overcast day with small amounts of mid level translucent clouds, thus images of our 86.29% Solar Eclipse was visible at small intervals. As opacity of clouds increases, the temperature decreased. The solar eclipse also caused a decrease in temperature.

Background Information:

The energy from the Sun warms up our planet. When there are changes in the amount of sunlight we get, there are also changes in the air temperature, clouds, and wind. A total solar eclipse occurs when the Moon blocks the Sun completely, as on April 8, 2024 in North America. This research was conducted at Greensburg, LA which experienced 86.29% eclipse cover at 1:49 PM.

Research Question:

How does air temperature change during a solar eclipse?

Claim/Hypothesis:

As the Sun gets blocked by the Moon, the air temperature drops.

Dataset:

	A	0	0	0				
	Max Eclipse Offset (min)	Time	Air Temperature (°C)	Oloud%	Olouds % Sat	Olouda High	Olouds Mid	Olouds L
32	-120	11.48	25.70	100	100	opaque	translucent	opaque
3	-110	11:59 AM						
-1	-100	12:01	211.20	90	100	opaque	opaque	opaque
15	-90							
0	-80	12.20 PM	24.40	100	100	opaque	opaque	opaque
7	-70	12:39 PM						
.0	-50	12:59 PM	25.60	90	100	Translucent	translucent	opaque
10	-40	1:09 PM						
11	-30	1:19 PM						
7.02	-215	1:24 PM	22.20	100	100	Transparent	opaque	opaque
4.24	-20							
1.4	-15	1:34 PM						
16	-10	1:39 PM						
10	-6	1:44 PM						
97	0	1:49:00 PM	22.20	90	100	Transparent	Translucent	Opaque
10	6							
10								
20	10	2:04 PM	22.20	90	100	transparent	translucent	opaque
21	20	2-09 PM						

Charts & Graph



Jo'el Givens' STEAM Team St. Helena College and Career Academy

Conclusions:

Air Temperatures dropped as cloud cover covered the sun and increased when cloud cover was more transparent in front of the sun. Also the temperature decreased during the solar eclipse. The area had an eerie feeling during the eclipse, because the birds stopped singing and the crickets began chirping.



Future Research:

More data from the GLOBE Cloud Observations, Satellite flyover information and GLOBE Land Cover could be used for analysis.<

Bibliography/Sources:

The GLOBE Program. *GLOBE Educator One-Week Pacing Guide: Experiencing a Solar Eclipse*. https://www.globe.gov/documents/18527/37661214/Solar+Eclipses

Local Tit

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