Spring 2024 GLOBE Workshop: Atmosphere Changes during the Solar Eclipse in Lydon, VT

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Abstract:
This poster examines the effects of a total solar eclipse on temperature and cloud cover. Temperatures were expected to dip during totality and clouds increase. The data gathered in this study confirmed this.

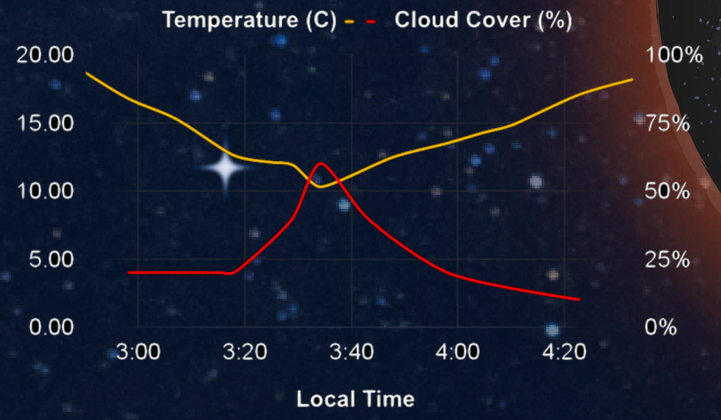
Background: Information
The energy from the Sun warms up our planet. When there are changes in the amount of sunlight we get, there are also changes in the air temperature, clouds, and wind. A total solar eclipse occurs when the Moon blocks the Sun completely, as on April 8, 2024, in North America. This research was conducted at Lydon Outing Club a ski slope in Lyndon, Vermont, which experienced 100% eclipse cover at 3:28 PM also known as the maximum.

Research Question:
How do air temperature and cloud cover change during a solar eclipse?

Claim/Hypothesis:
As the Sun gets blocked by the Moon, the air temperature drops, and cloud cover increases.

Dataset:
Air temperature changes in Lyndon, VT Link

Graph
Temperature (C) & Cloud Cover % vs Local Time.



Evidence/Conclusions:
The graph shows a dip in temperatures during the maximum. This correlated with qualitative observations. In addition, cloud cover increased during the maximum. The findings matched the hypothesis.

Next Steps/Future Research::
During the eclipse, the rate at which cloud cover increased seemed fast. Future research may involve recording a time-lapse video to measure the rate of cloud movement.

Bibliography/Sources::
The GLOBE Program. GLOBE Educator One-Week Pacing Guide: Experiencing a Solar Eclipse. https://www.globe.gov/documents/18527/37661214/Solar+Eclipses
Template: https://www.canva.com/design/DAGCFFHOlfw/VVvWD2lVaTGVvo1EeuHziA/view?utm_content=DAGCFFHOlfw&utm_campaign=designshare&utm_medium=link&utm_source=publishsharelink&mode=preview