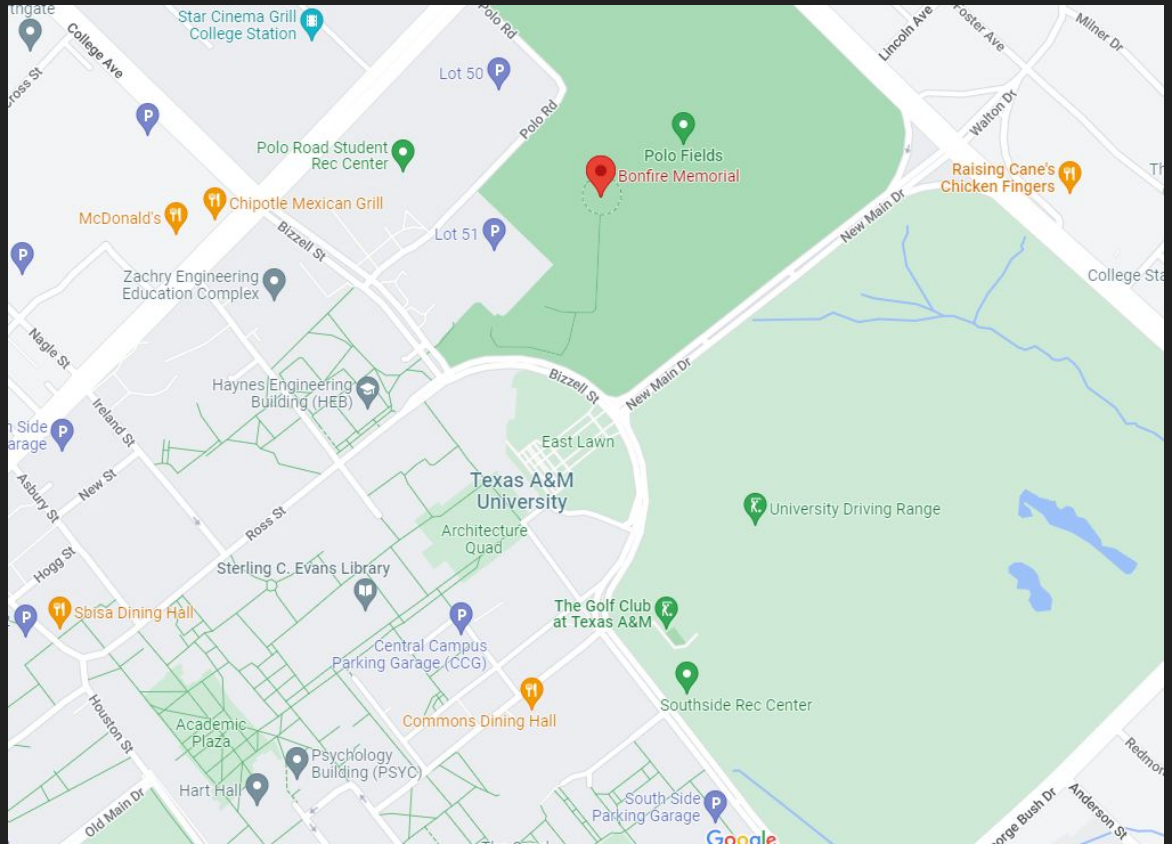
Lab 7 Presentation

Luke Wilson, Everett Chace, Sam Brokaw, Caleb Hammack, Nick Roth

Our location is the Bonfire Memorial where we will be describing the slope effect

Bonfire Memorial on the map



Our Methods

Using a hygrometer, digital thermometer, infrared thermometer, and a anemometer, we collected data on air temperature, object temperature, wind speed and direction, and humidity.

Official Weather Conditions

At the time that we collected the data, about 12:40 in the afternoon, the weather was sunny. We collected the temperature data in order to find the correlation between the slope and solar exposure. The results of our analysis should give us an explanation as to which slope gives the most solar exposure. A real life application of this information is solar panels being angled, or sloped, to get more solar energy.

Influences on the Data Collection

The potential influences on our data include:

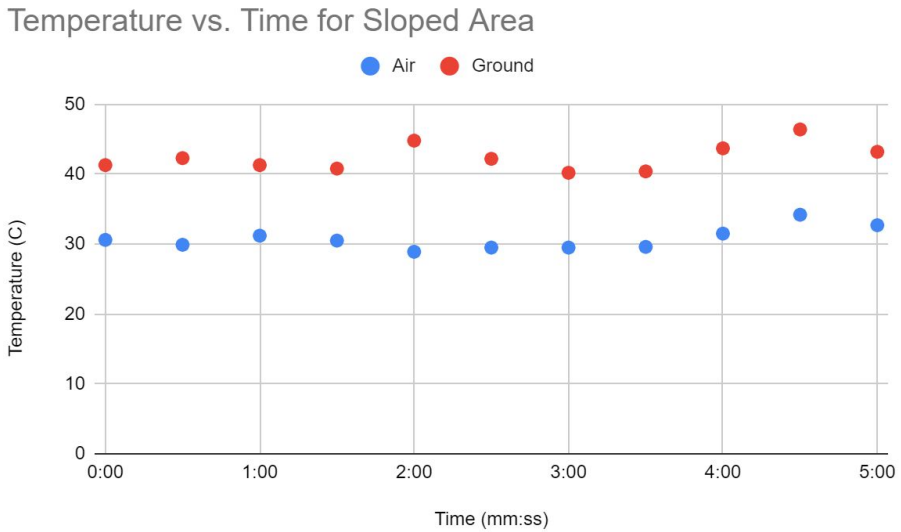
- Actual slope of the hill and how far up/down we were to collect data
- Cloud coverage (but there were none at the time)
- Time of day
- The actual ground we took the temperature from
- Measurement tools
- Human error

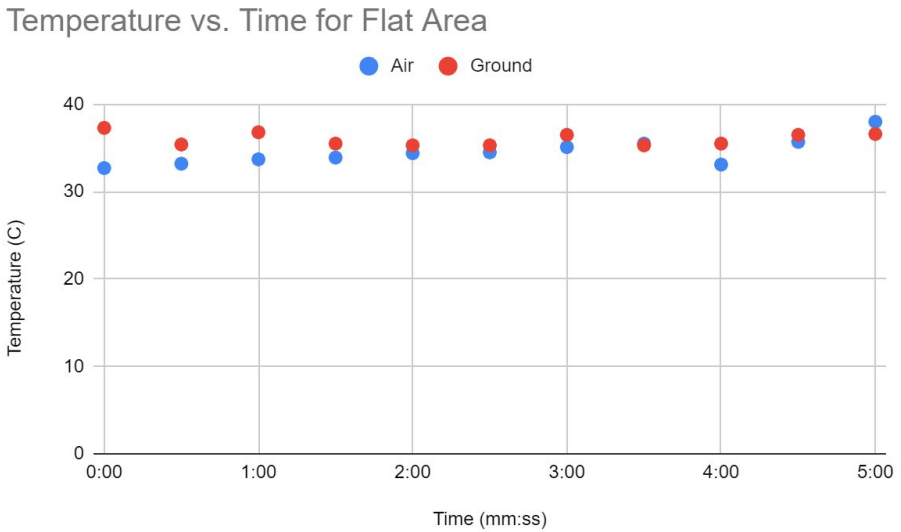
Data

Sloped	0:00	0:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00
Air temp	30.6	29.9	31.2	30.5	28.9	29.5	29.5	29.6	31.5	34.2	32.7
Ground temp	41.3	42.3	41.3	40.8	44.8	42.2	40.2	40.4	43.7	46.4	43.2
		Avg. Air		30.736							
		Avg. Ground		42.418							

Flat	0:00	0:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00
Air temp	32.7	33.2	33.7	33.9	34.4	34.5	35.1	35.5	33.1	35.7	38
Ground temp	37.3	35.4	36.8	35.5	35.3	35.3	36.5	35.3	35.5	36.5	36.6
		Avg. Air		34.527							
		Avg. Ground		36.000							

Graphical Representation of Collected Data





Geographical Reasons Specific to the Data

- Sloped area is facing the south, where more insolation would be received than just the flat part of the Bonfire Memorial.
- Our location is in the northern hemisphere, therefore, due to the earth’s tilt on its axis, more insolation will always be received by a southward facing slope than a north facing slope.
- The ground temperatures are higher than a location further in the north because we are closer to the equator. This means that our location is receiving more insolation than a location on a latitude that is more north than ours.

Conclusion

The effect that slope has on temperature can change based on elevation, angle, and seasonality. Temperature conclusions can also be influenced by the types of measurements and instruments used, as well as the calibration of the instruments and human error.