



Flame Height in Corners of Varying Degrees

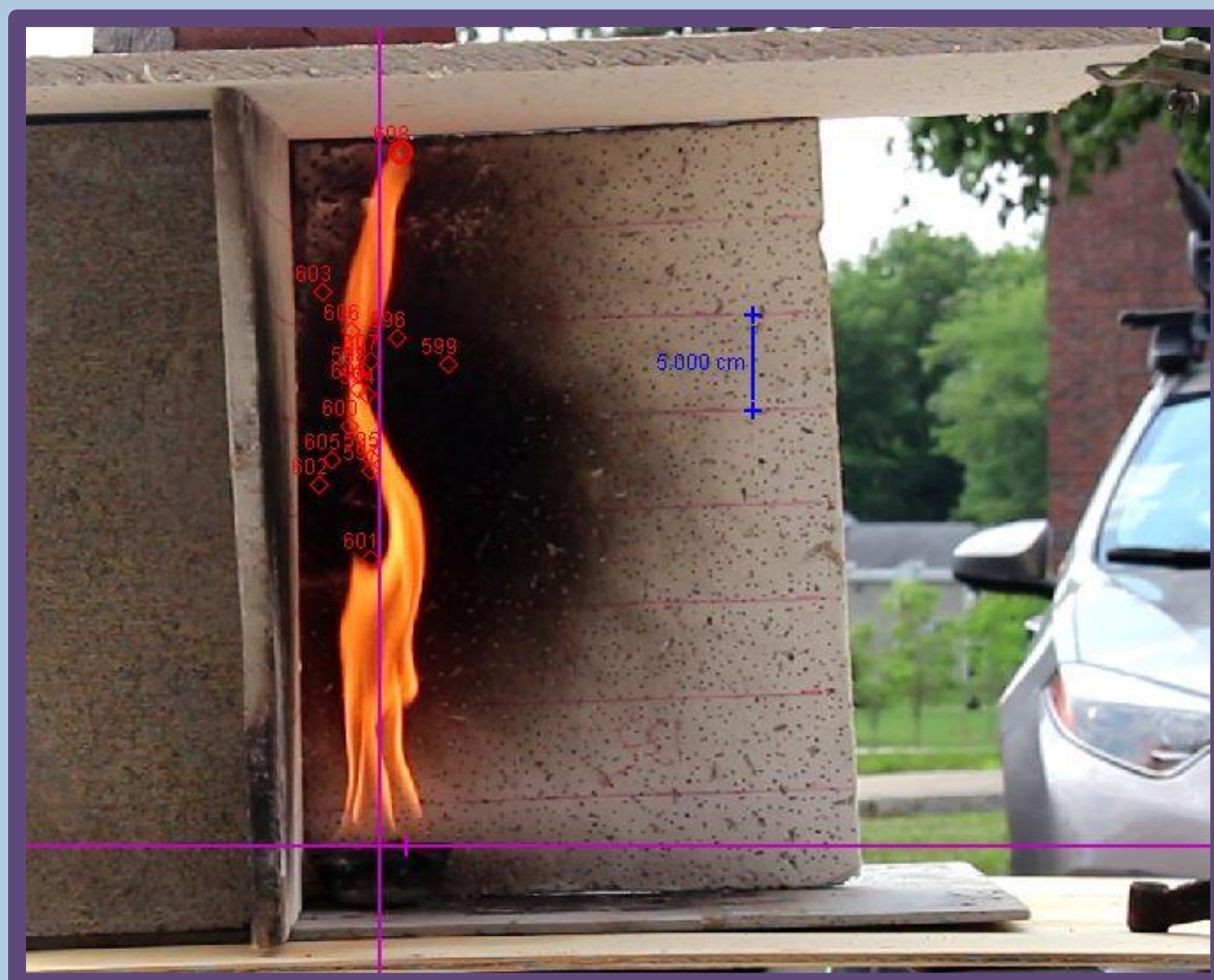
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Introduction

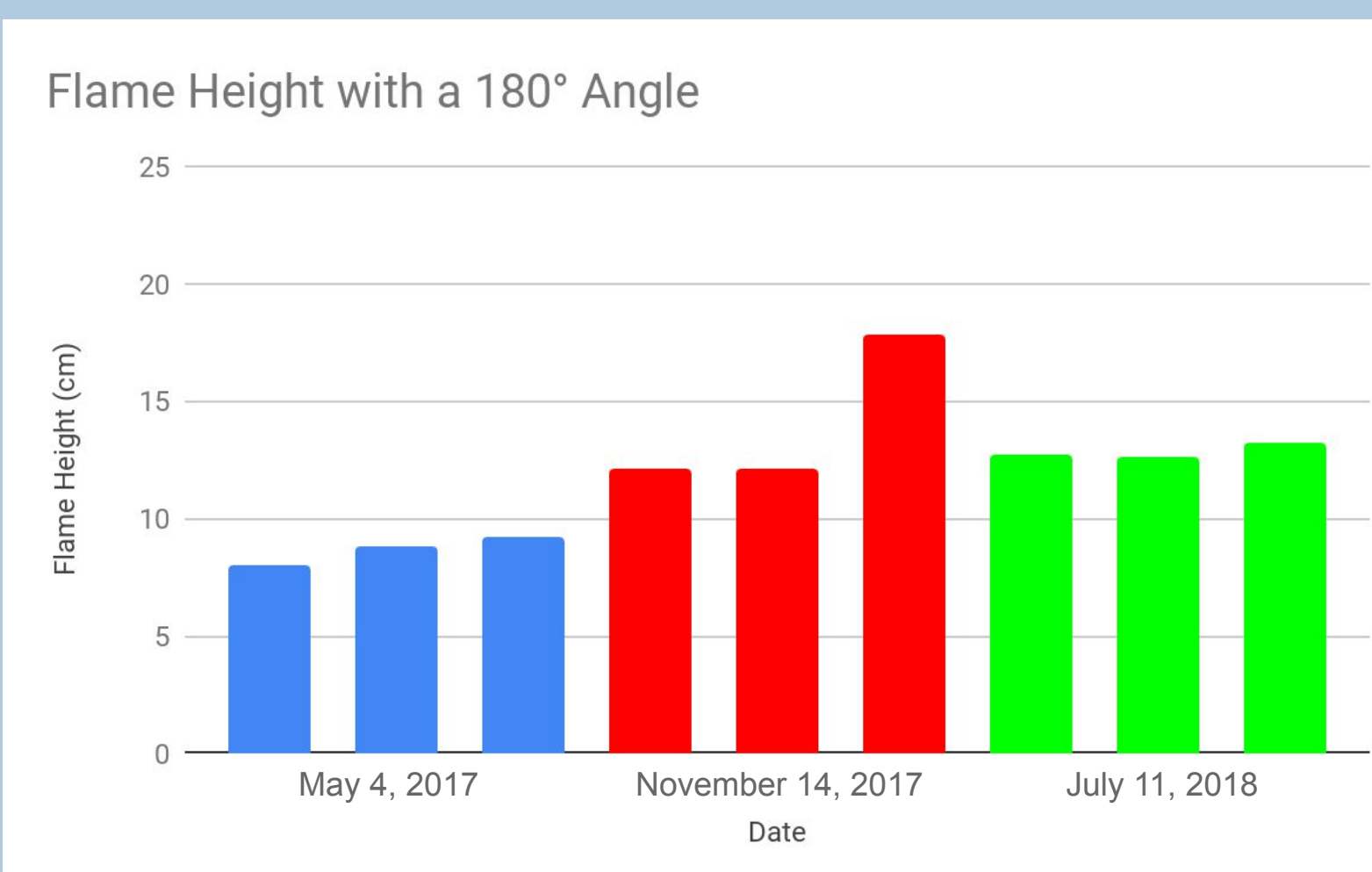
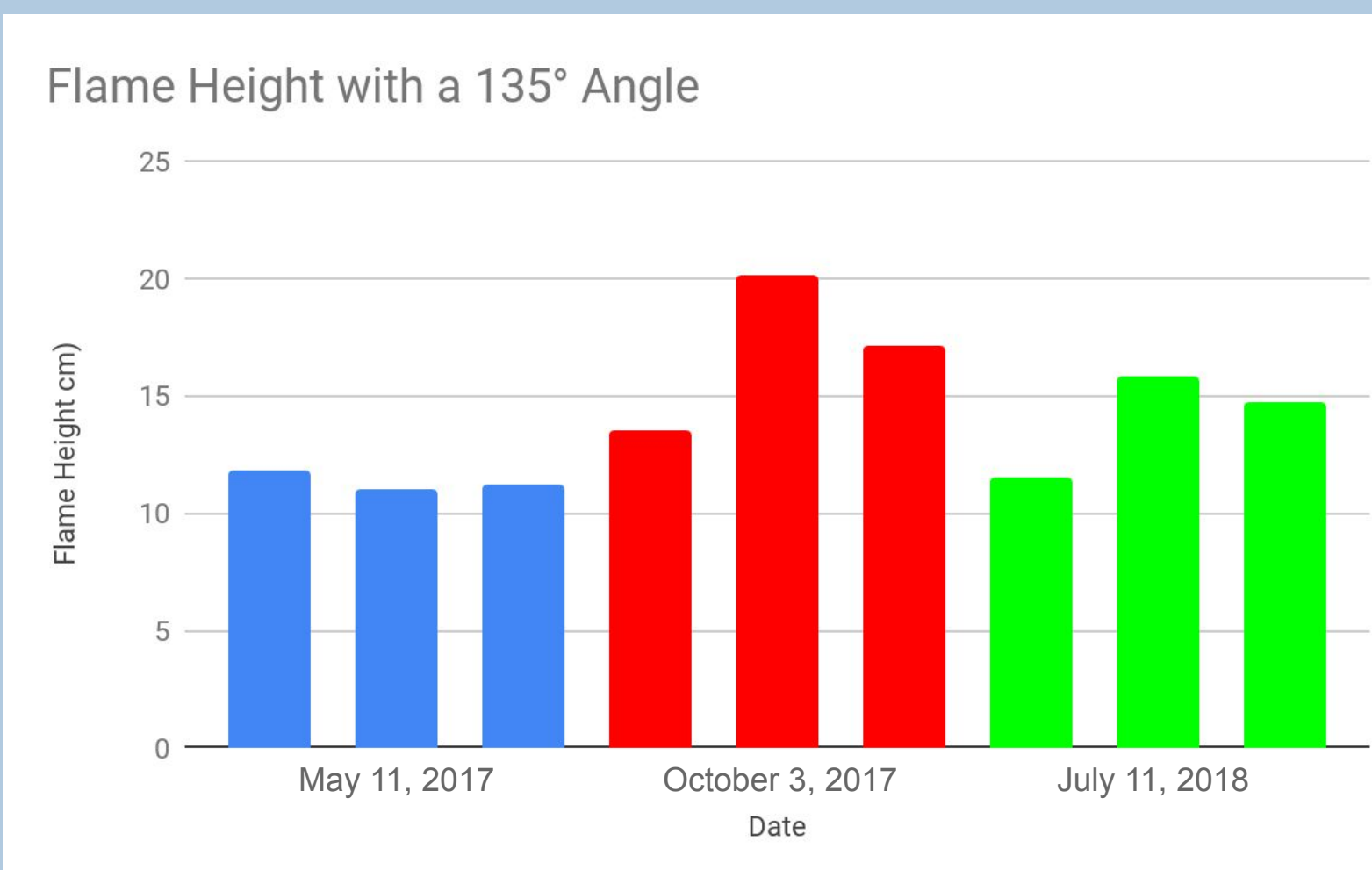
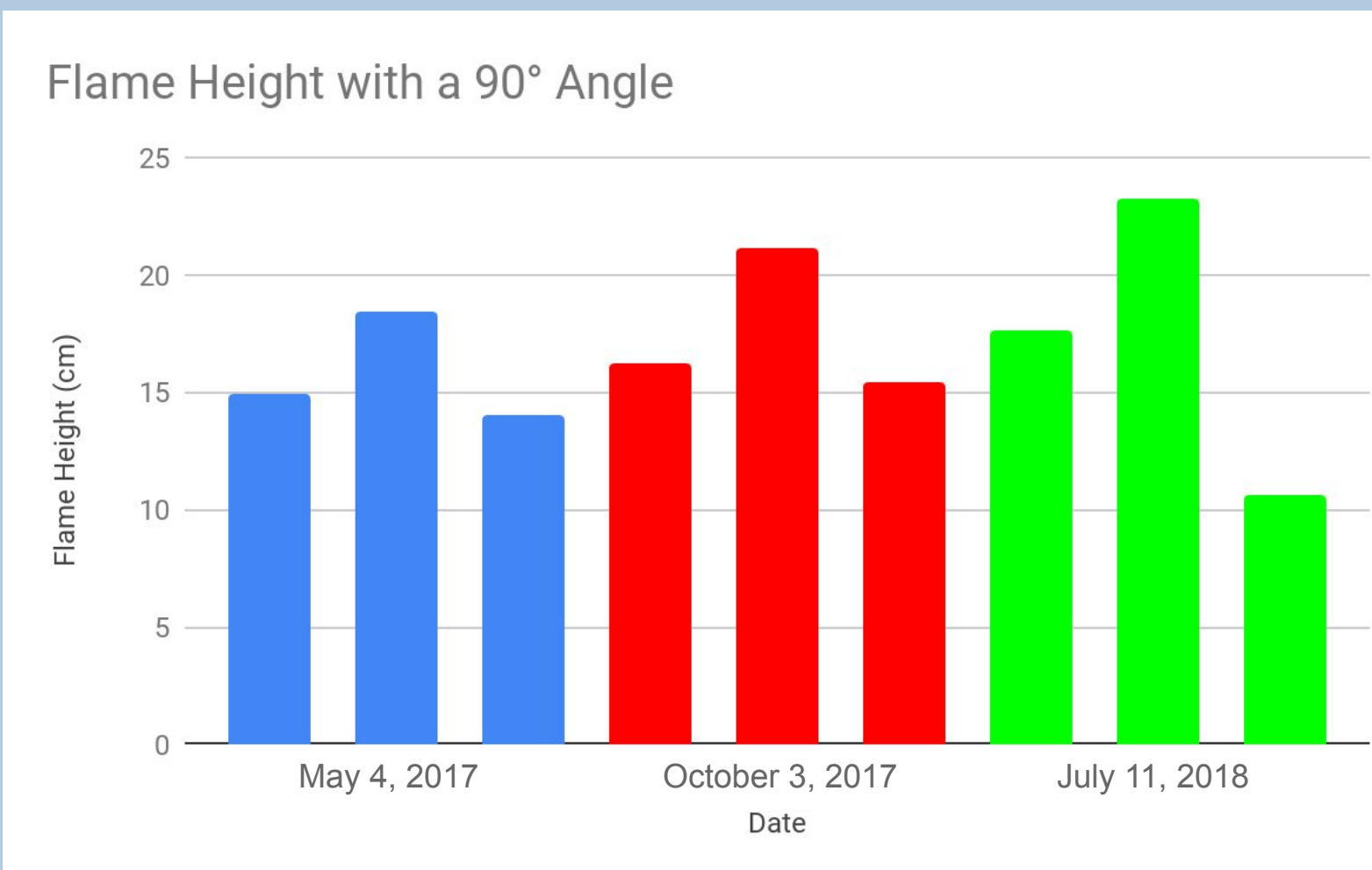
In this experiment, acetone was burned in a crucible against a wall or corner made of ceiling tile at an arc angle of 90° , 135° , or 180° . The average height of the flame should be smaller when it is burned in a wider-angled corner. Flames were measured on different dates with varying weather conditions to determine the reproducibility of the flame height in different-angled corners.

Methods

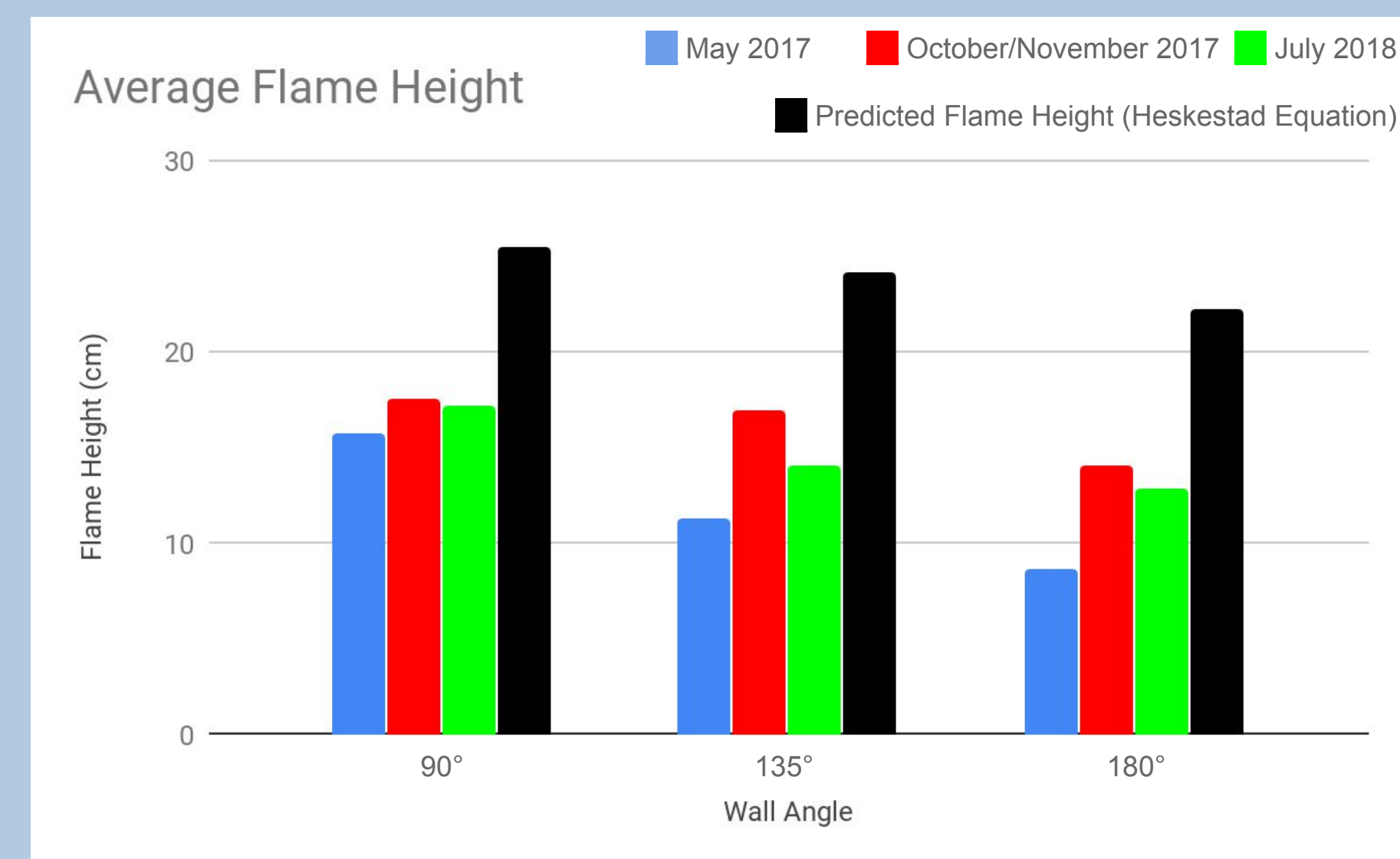
The flames were recorded with a video camera. The average height of each flame was determined by marking the tip of the flame in every frame or every other frame of the video in Tracker. The distance of each mark from the x axis placed at the crucible was averaged to determine the average height of the flame in each video. Each video was analyzed twice and the average of the two averages was used as the average height of the flame for that trial.



Results-Reproducibility



Results-Average Flame Height



Discussion and Conclusion

- The flame heights were generally reproducible in different weather conditions, as the average flame heights were lower at wider angles regardless of the time of year
- All of the average flame heights were lower than the predicted flame heights
- In addition to numerous variables due to the acetone being burned outside, error may have been caused by measuring from the x axis to the flame's tip, not along the length of the flame