S.T.E.M. Moon 101

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# Crater Trail Analysis

# Acknowledgements


- Dr. Paul Hayne
- Andrew Shaner
- Mrs. McCool

# Problem

- What is  the origin of unusual flow-patterns emanating from recently formed lunar craters?

# Hypothesis

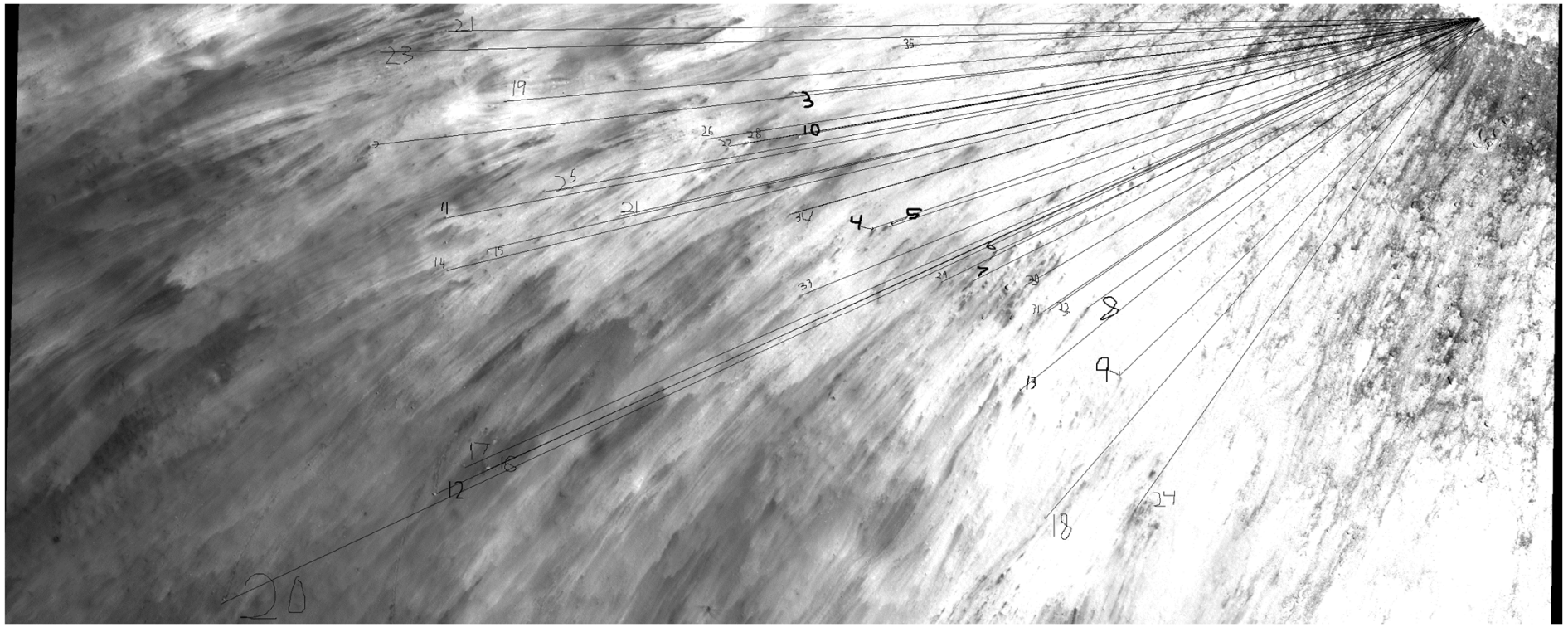
- Boulders are disrupting the flow of dust and vapor, from impacts, causing the unusual patterns to form.

# Objective

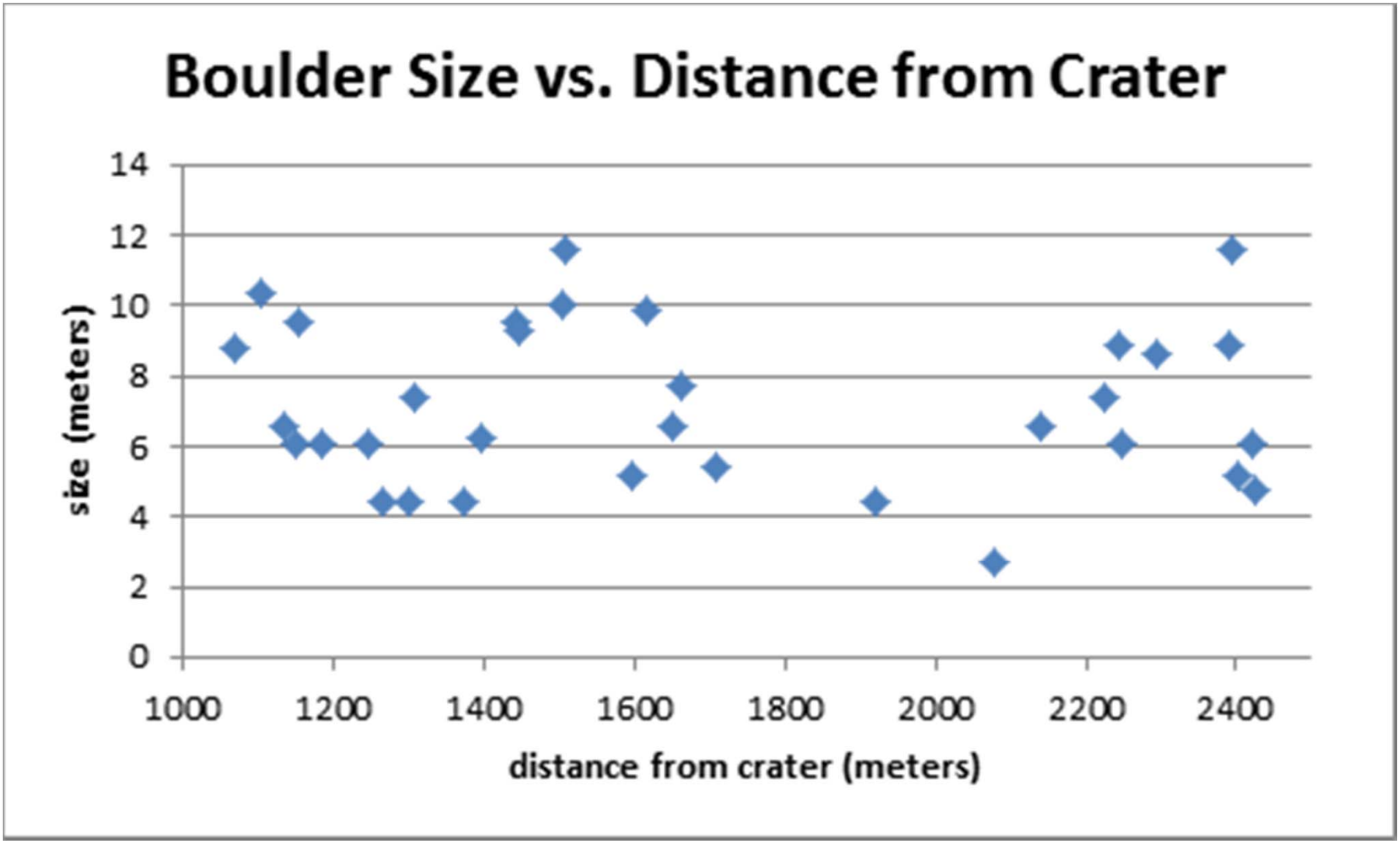
- Characterize properties of the flow patterns and determine any correlations between those and the boulders.

# Approach

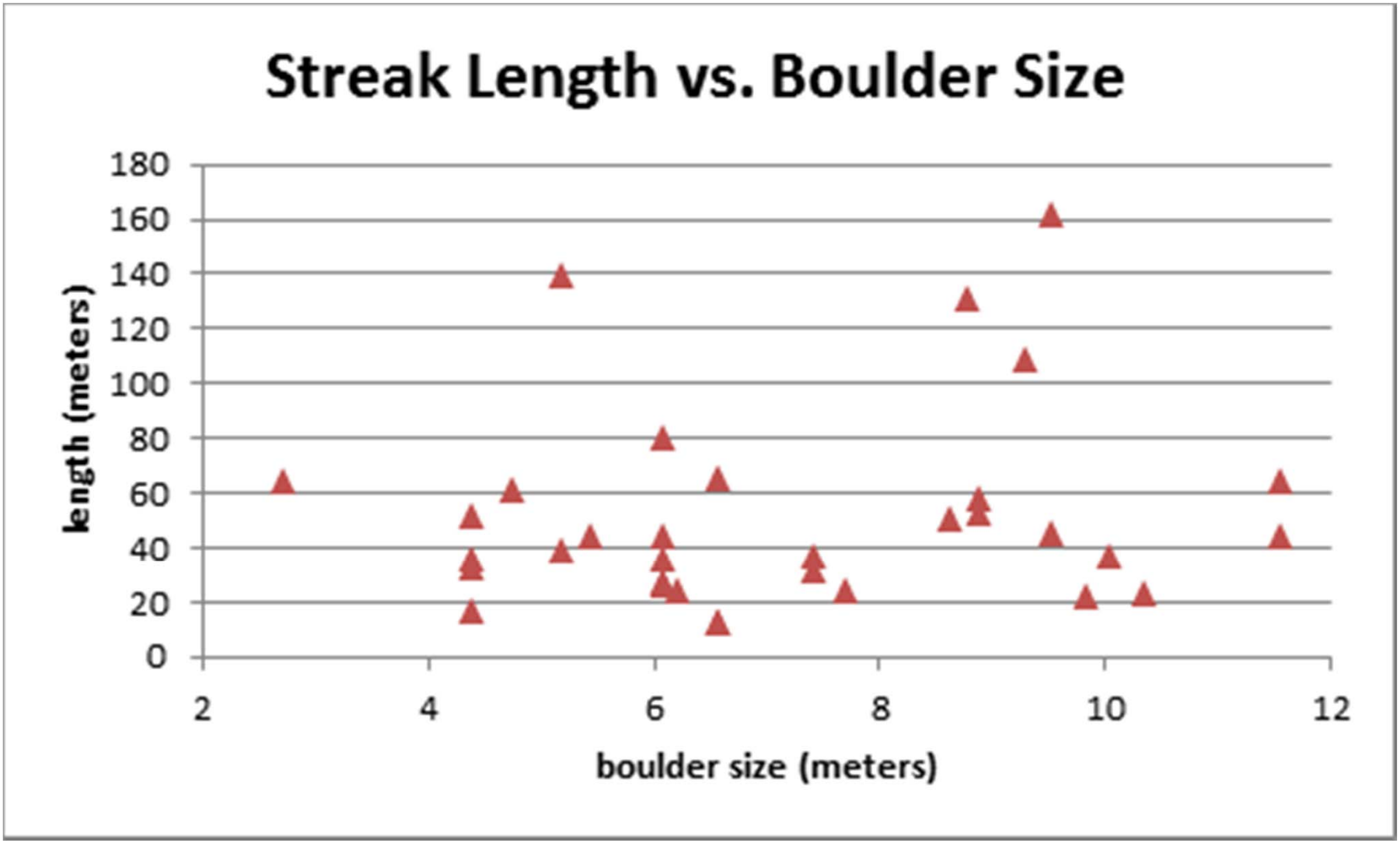
- Measuring the distances of the flow patterns, boulder size, and distance from the crater.



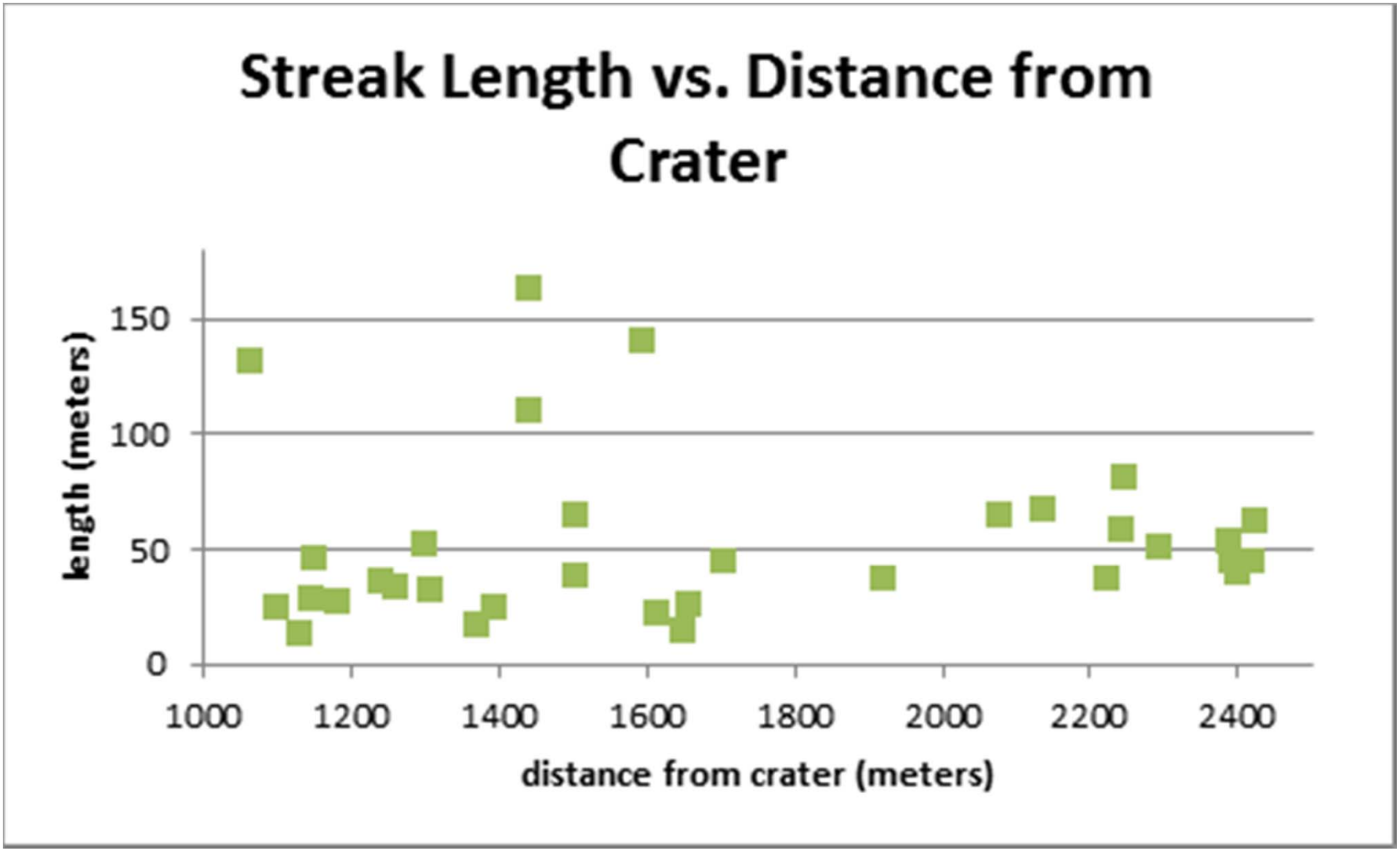
# Data


Boulder Size vs. Distance from Crater
size (meters)
0
2
4
6
8
10
12
14
1000
1200
1400
1600
1800
2000
2200
2400
distance from crater (meters)

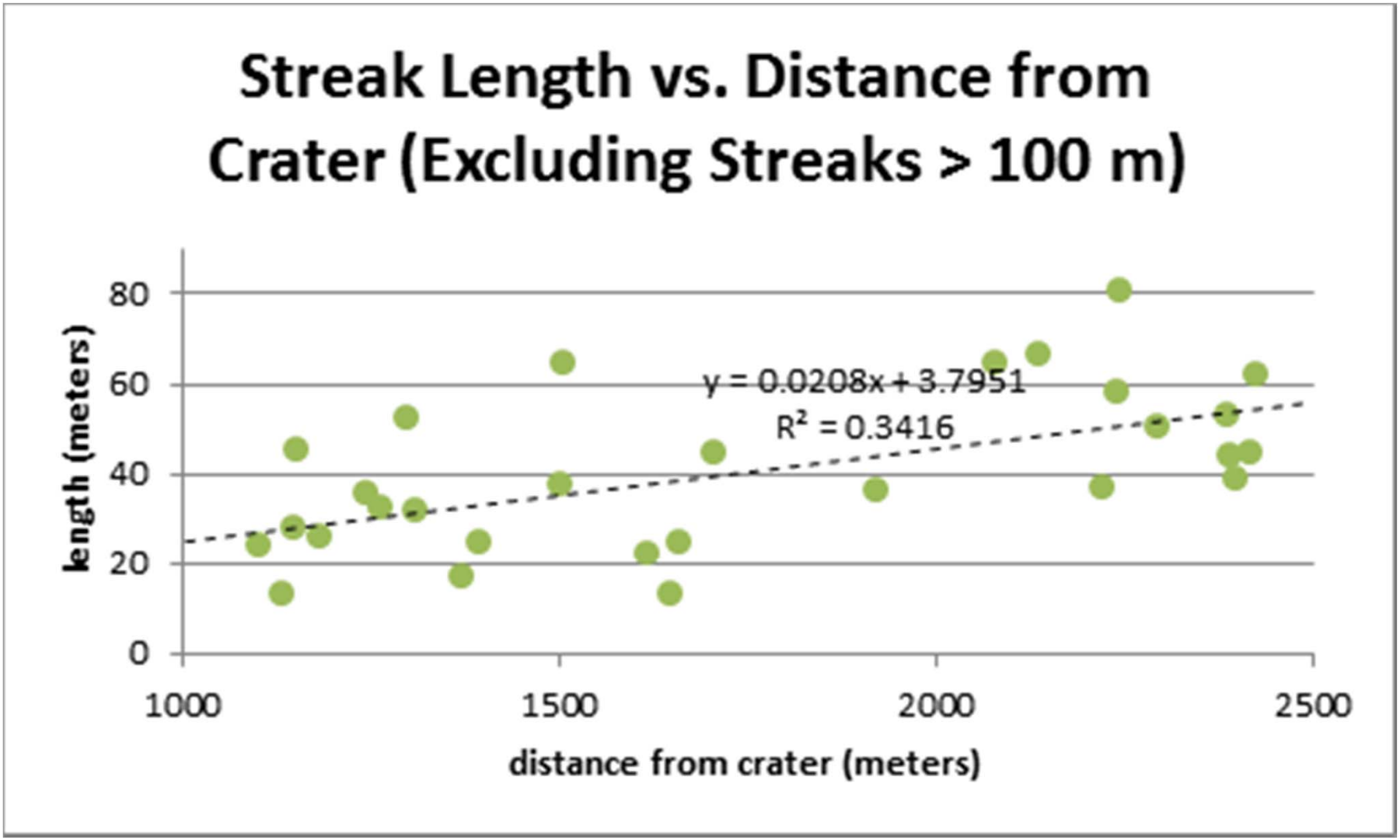
# Data


Streak Length vs. Boulder Size
length (meters)
180
160
140
120
100
80
60
40
20
0
2
4
6
8
10
12
boulder size (meters)

# Data


Streak Length vs. Distance from Crater
length (meters)
150
100
50
0
1000
1200
1400
1600
1800
2000
2200
2400
distance from crater (meters)

# Data


Streak Length vs. Distance from Crater (Excluding Streaks > 100 m)
length (meters)
0
20
40
60
80
1000
1500
2000
2500
distance from crater (meters)
y = 0.0208x + 3.7951
R² = 0.3416

# Conclusion

- Results are inconclusive, due to insufficient amount of data.
- Continuing to collect more data, expecting more correlations to develop.

# Afterwords

- What we have learned thus far…