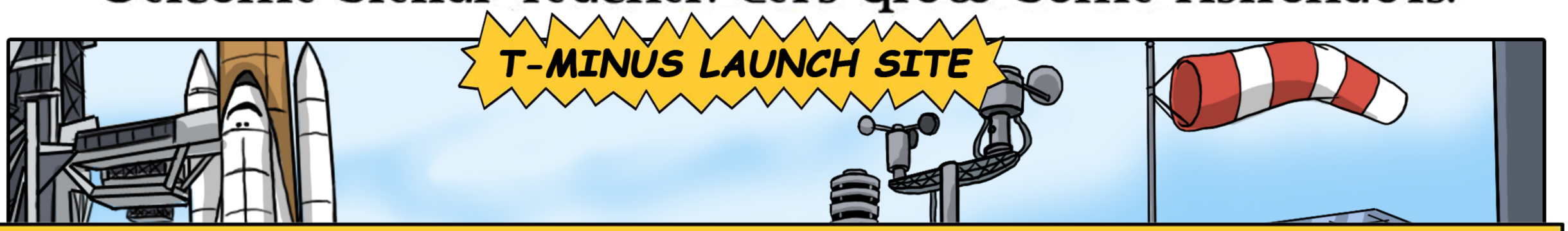
Mission 004: T-Minus Launch Site
Earth and Space Sciences: Weather and Weather Watch
4BC, 4YK, 5AB, 5SK, 5MB, 5NB, 5NS, 5PEI, 5NFLD, 5NWT, 5NU, 6QC

StarAcer™ ACADEMY

Welcome Stellar Teacher! Let's Grow Some Astronauts.



Over the past number of years we have been sending objects and people up into space. This is no small feat and requires the monitoring and analysis of many variables to ensure a successful launch. One very important aspect of launching rockets is something that you experience everyday- the weather! At the StarAcer Academy, we live in a very challenging environment. Some might even say, not the best location for rocket launching. That is why we will need your research and analytical skills to complete the following mission.

MISSION CONTROL COMMENTS (TEACHERS CORNER)

CURRICULUM OUTCOMES

Weather	Students will be able to identify key weather related terms.
	Students will be able to collect data and present information clearly in graphs.
	Students will be able to draw conclusions from data collected.
	Students will recognize that there are trends that typically occur in annual weather.
	Students will be able apply the information they have collected and the conclusions they have drawn from that data to a specific problem.

TIME FLOW

A Find the Data	2 x 45 minutes
B Get it Together	2 x 45 minutes
C The Big Bang - Making Connections	20 minutes

EXTRA RESOURCES

- StarAcers.com has links for your mission!
- A scientific report outline in the Common Documents
- Student and teacher rubrics

SUGGESTED RESOURCES

SUGGESTED GROUP PRESENTATION RESOURCES

Use of the Internet to find weather data is highly recommended. The Environment Canada Climate Data and Information Archive has the information that will be useful for the students. Other websites can also be utilised.
(StarAcers website should be a resource for web links)

- **Depending on the number of students, it may require and be beneficial to pair up students to cover all topic areas.**
- **Invite in other teachers, parents, and guests to be part of the audience for the Roundtable.**

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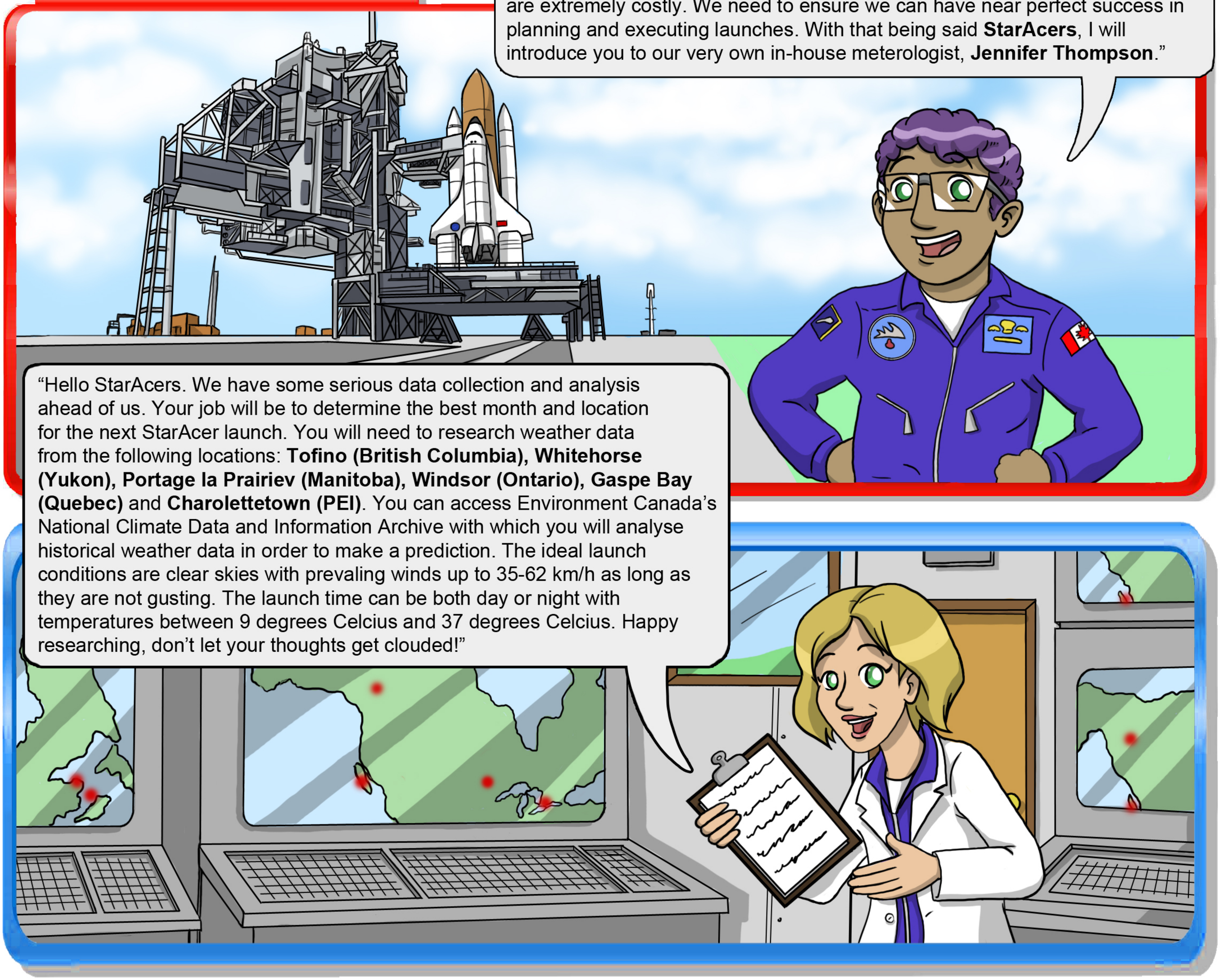
T-MINUS LAUNCH SITE

PART 1 - THE BRIEFING ROOM



PART 2 - THE POCKET GUIDE TO WEATHER CONDITIONS

Vocabulary

- Prevailing Winds
- Degrees Celsius
- Environment Canada
- Mean
- Wind Speed
- Analysis
- Minimum
- Monthly Data Report
- Visibility
- Gust
- Extreme
- Maximum
- Direction of Maximum
- Tofino British Columbia
- Compass Degrees
- Wind
- Prediction
- Data
- Bar / Line Graph

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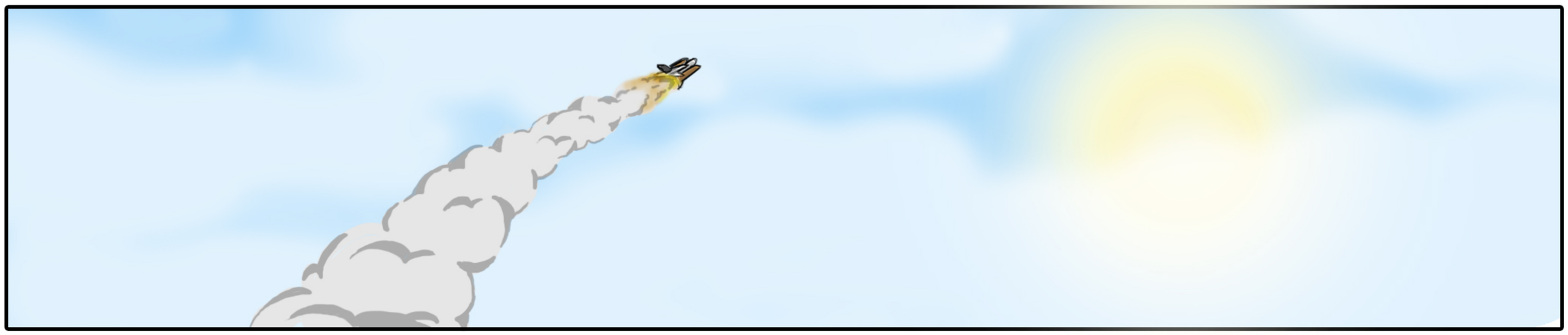


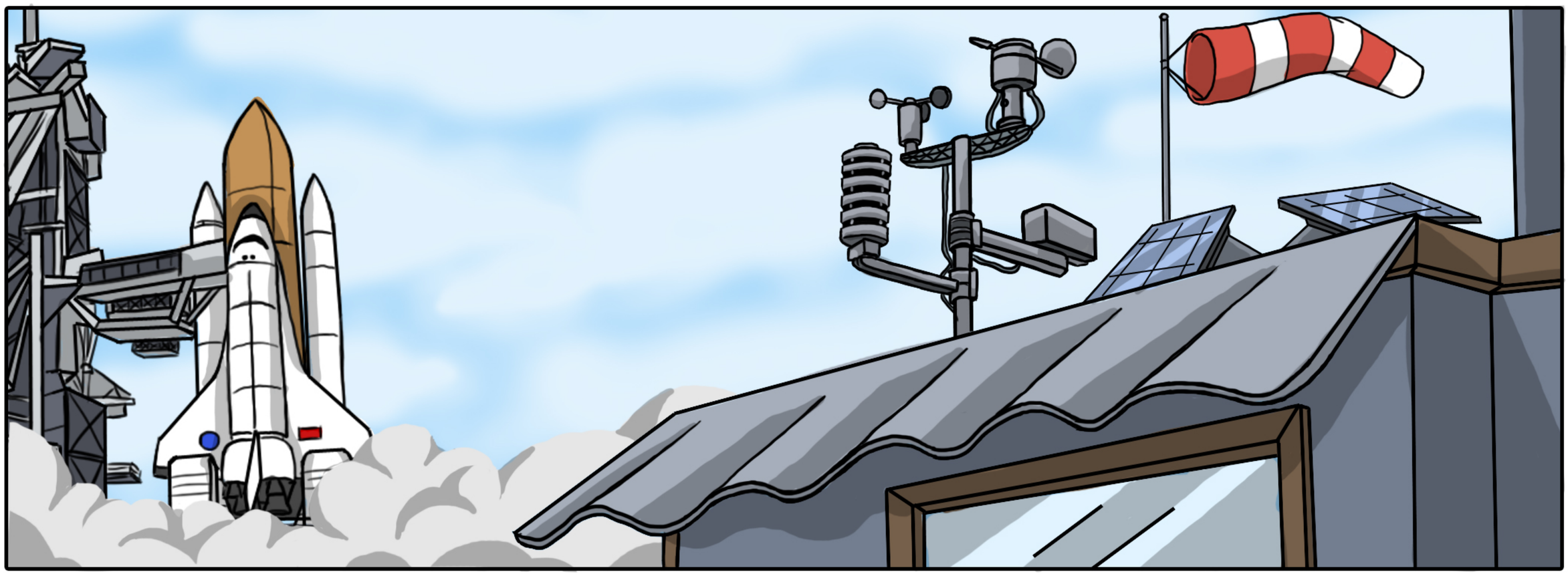
A. PART 3- FIND THE FACTS

Your mission will be to collect weather data. The guidelines for your research are as follows:

- 6 different locations
- Pick 3 years from the last 10 years
- Graphing monthly averages for each year:
    - Daily Max/Min Temp
    - mm precipitation
    - Winds
    - Hours of sunshine
    - Visibility

B. PART 4 - GET IT TOGETHER

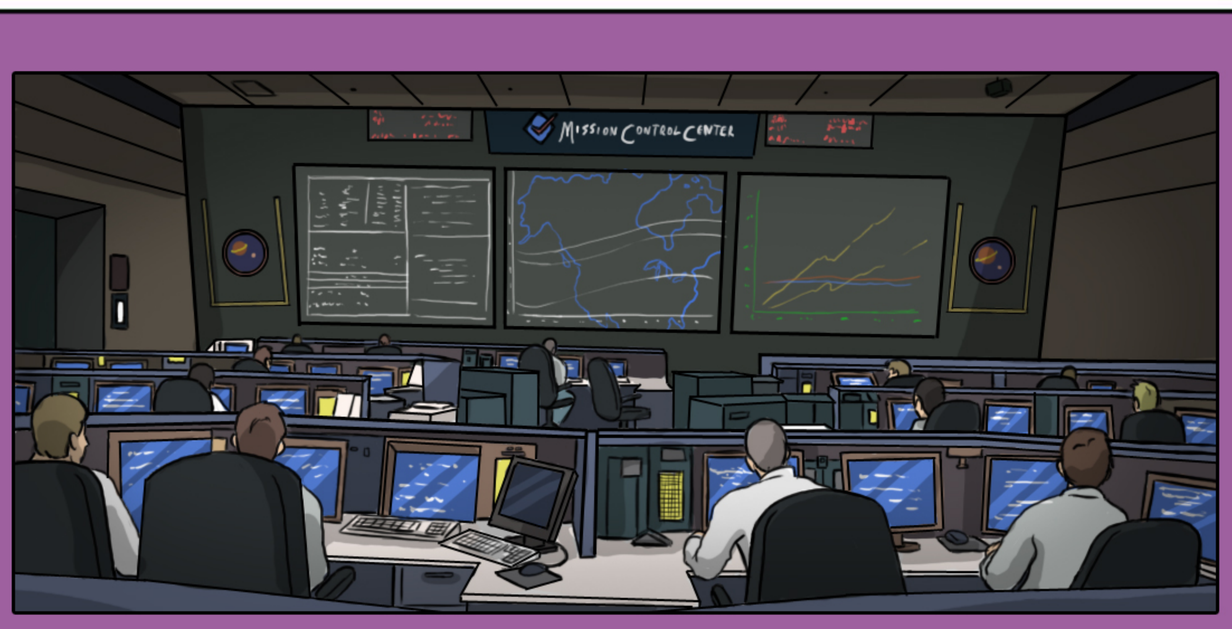
Present the data in the form of graphs that clearly show monthly averages for the 3 years chosen.
Be sure to title and label each graph and have an appropriate scale.



T-MINUS LAUNCH SITE

C. THE BIG BANG - MAKING CONNECTIONS

Having now reviewed your data it's time to make an informed decision as to the best location for the next StarAcer launch site. Be sure to create a convincing arguement based on the data you've collected.



DO YOU MEASURE UP?

Get a rubric from Mission Control. How do you measure up based on the work that you have just completed in Mission 004?

WANT MORE ADVENTURE?

Want a challenge? Try answering these questions:

- Can you now determine a specific day within your chosen month for a launch date?
- What other factors other than weather, can effect the location of a launch site?

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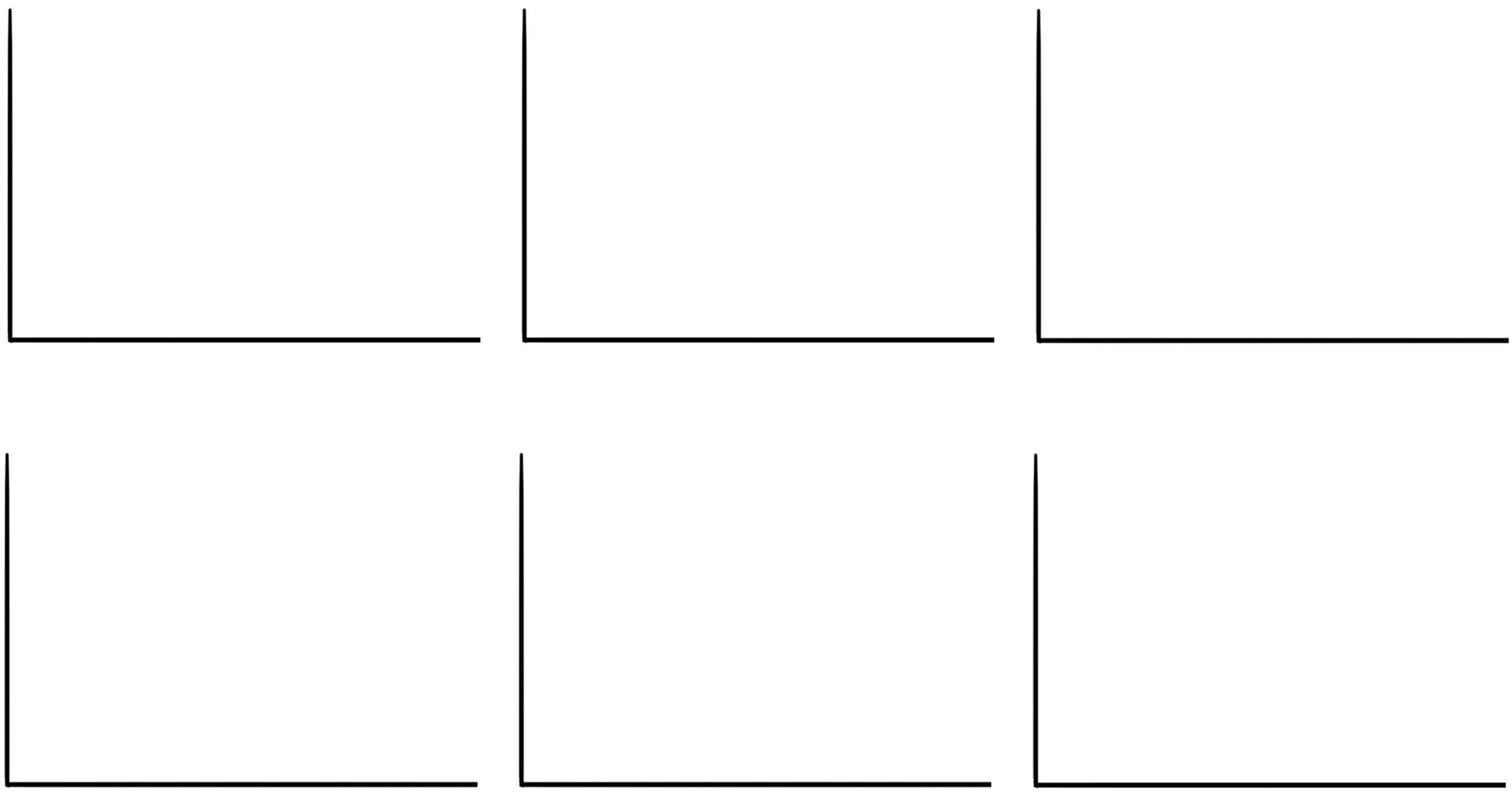

RECORD YOUR OBSERVATIONS:

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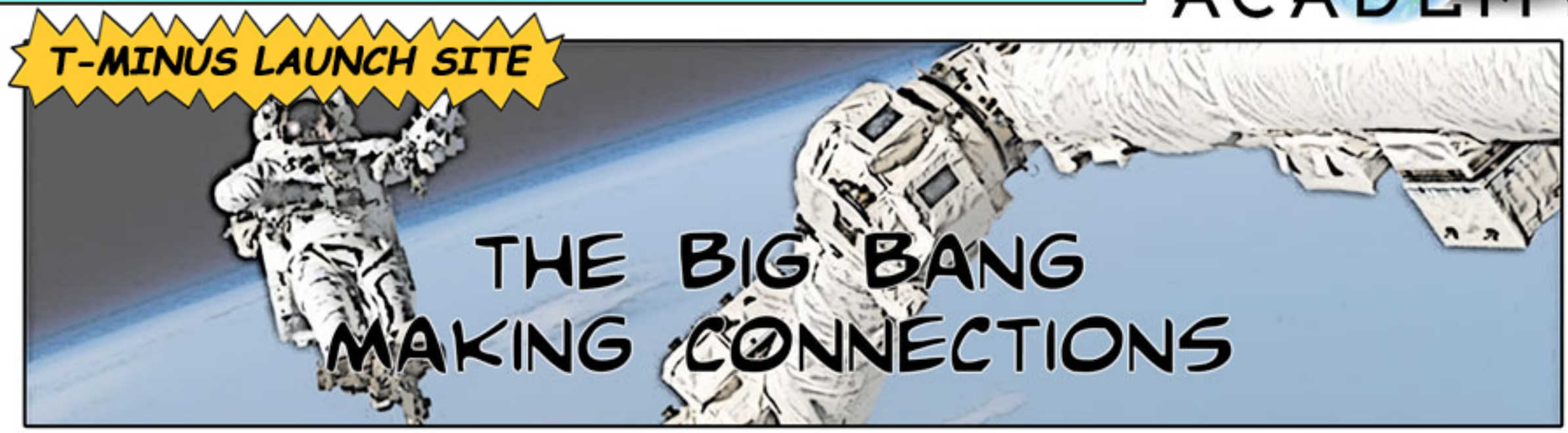

Based on your data, explain what the best location for the StarAcer launch site would be. Be sure to create a convincing argument based on the data you've collected.