Briefing Sheet: Hurricane Team
Instructions

The information and tools you will need:

- Hurricane Tracking Work Sheet
- Hurricane Tracking Map
- Calculator, Ruler, Compass

Steps:

1. Download and Read the Real-Time Data

Every few minutes, the LEO satellite will be relaying real-time data about the storm. This data may be downloaded by using the URL given to you by Mission Control.

An example of Real-Time Data:

Obs	LAT	LON	TIME	WIND km(mi)	PR	STAT
1	16.40	47.2	28/08 0300	72(45)	28.05	Trop Storm

Note: the Storm's Status, or Category, is described in the **Saffir-Simpson Hurricane Intensity Scale**:

Winds	Category	Severity
Less Than 118 kph (74 mph)	Tropical Storm	very weak
119-152 kph (74-95 mph)	1	weak
153-177 kph (96-110 mph)	2	moderate
178-209 kph (111-130 mph)	3	strong
210-248 kph (131-155 mph)	4	very strong
above 248 kph (155 mph)	5	devastating

2. Write down the Observation data

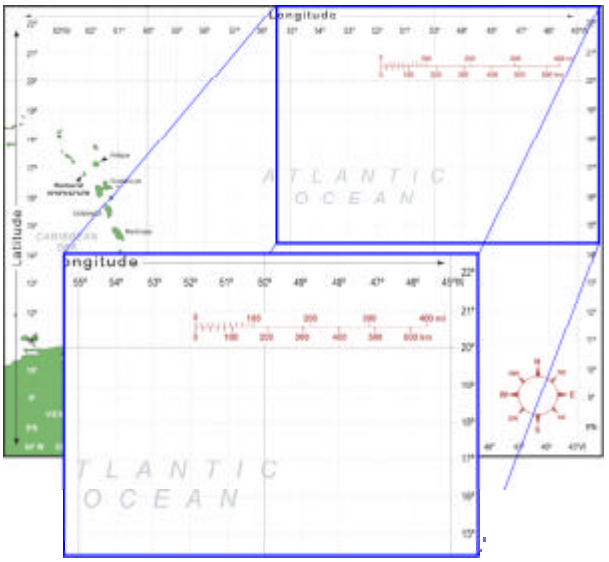
Write down the data in Columns B-F on the Hurricane Tracking Work Sheet.

In the example at the top of the Practice Hurricane Tracking Work Sheet, you can see we've recorded the data in Columns B-F for Observations 1-10.

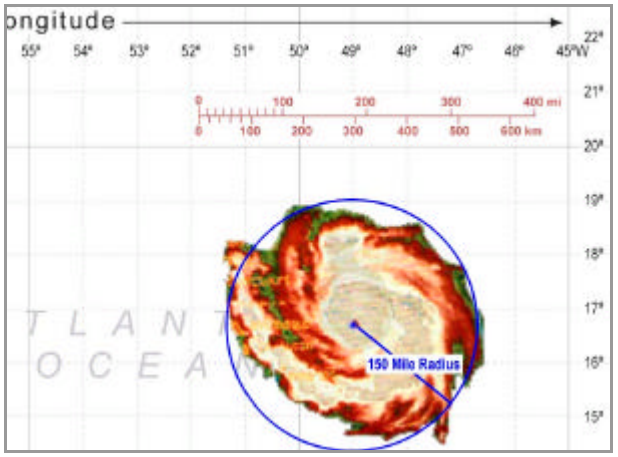
3. Plot the course of the hurricane.

A. On your Hurricane Tracking Work Sheet locate the latitude and longitude of the first observation (OBS). Together, the latitude and longitude give you the storm's first coordinate.

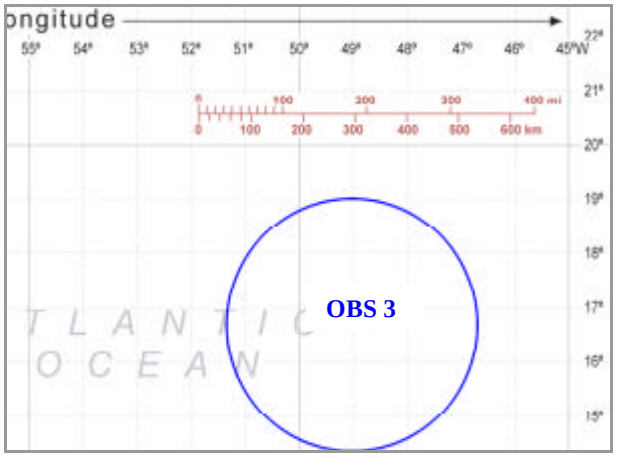
B. Plot the first coordinate on the Hurricane Tracking Map.



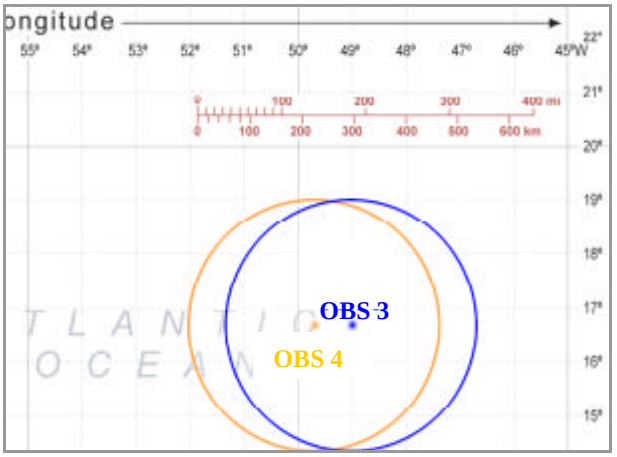
C. The first coordinate marks the position of the eye, or centre, of the storm. The storm's winds form a circle around the eye. The average radius of this storm is 240 km (150 mi).



D. Use your ruler, compass, and the scale on the Hurricane Tracking Map and draw a circle with a radius of 240 km (150 mi) around the point marking the position of the eye. In the example here we have plotted Observation 3.



E. Plot the coordinate of the next Observation on the Hurricane Tracking Map. Draw the circle around the second coordinate, again marking the position of the storm's eye.



F. Draw a line to connect the two coordinates. This line represents the storm's path.

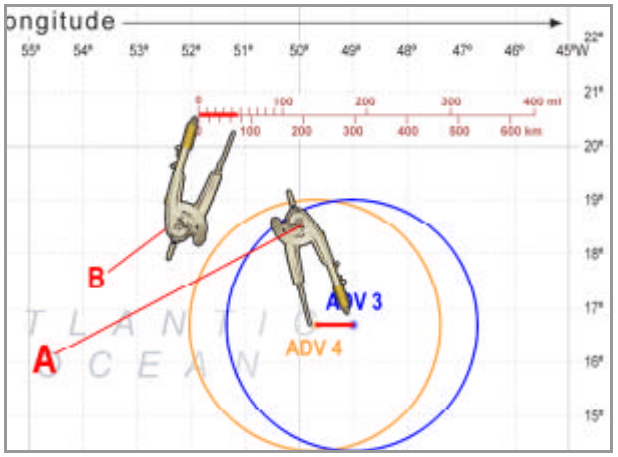
4. Column G: The Hurricane Category.
Use the Saffir-Simpson scale on the previous page. By examining the storm's wind speeds, you can determine the storm category. For example if the wind speed is 200 kph, then the storm is a Hurricane- Category 3.

*Note: Most weather stations and meteorologists measure wind speed in "knots". Popular media converts this to "kilometres per hour" (kph), or "miles per hour" (mph).

5. Column H: Determine the distance the hurricane has travelled.

A. Measure the length of the line using a compass, a ruler or a folded edge of a paper.

B. Compare this measurement to the scale at the top of the map to determine how far the storm has travelled. Write this number in **Column H.**



6. Column I: Calculate how fast the storm is moving toward the island.

A. First examine the times in **Column D** to determine how much time passed between the first and second Observations.

Example:

OBS 1 was at 28/8, 0300 hours (August 28, 3 a.m.)

OBS 2 was at 28/8, 0900 hours (August 28, 9 a.m.)
There were 6 hours between the two Observations.

B. Calculate the speed of the hurricane. Divide the distance travelled between the two coordinates (Column H) by the number of hours between the two Observations. The result is the speed of the hurricane. (Distance in miles divided by number of hours = miles per hour). Record this in **Column I.**

$$\frac{\text{Distance between Observations}}{\text{Time between Observations}} = Speed$$

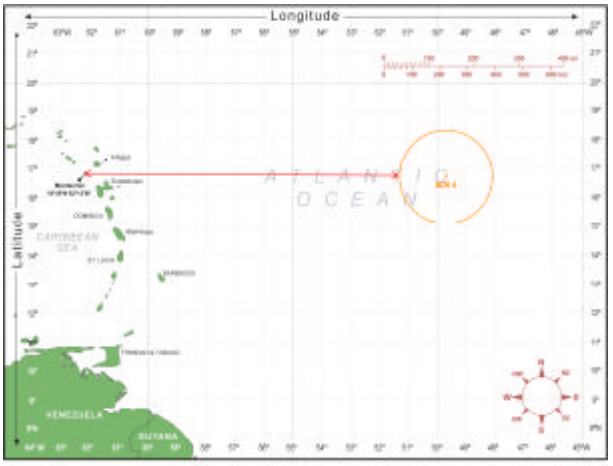
7. Column J: The course of the hurricane.

Will it hit the Island?

A. Use the compass on the map to determine the direction the storm is headed. Is it headed toward Montserrat? Write down the direction in **Column J**.

8. Column K: Find the distance to Montserrat.

A. Measure the distance from the edge of the storm to Montserrat. Compare this measurement to the scale to find how far the storm has to travel until it hits.



9. Column L: Work out the ETA (Estimated Time of Arrival).

Divide the distance to the Island (Column K) by the speed it is travelling (Column I). Write this number in **Column L**

$$\frac{Distance}{Speed} = Time$$

$$\frac{\text{Column K}}{\text{Column I}} = Estimated\ Time\ of\ Arrival (\text{Column L})$$