

Hurricane Shapes: Spatial Patterns on Satellite Images

The accompanying pages show selected images of hurricanes that occurred in the Atlantic Ocean between 1985 and 2006. Satellites as well as space shuttle missions can capture different types of images of hurricanes. As you can see, hurricanes have a wide variety of sizes and shapes. To make it easier to talk about them, it helps to have a kind of standard “language” to describe the overall shape of a hurricane.

1) Listed below are some suggested hurricane shape categories. Read the descriptions of the shape categories, and then review the attached images. Match or classify each of the hurricane images to a description below by writing the hurricane name in the “Hurricane Examples” column in the table. Finally, if there is an image that does not seem to match any of the listed categories, suggest a new category for that hurricane and write a short description to explain the new category.

Shape	Description	Hurricane Examples
A. Classic	spiral shape (like a whirlpool), evenly centered (symmetrical) around a cloudless central “eye”	<i>Rita, Elena, Isabel</i>
B. Spiral	spiral around a clearly defined eye, but the shape of the spiral is NOT symmetrical, some of the cloud “arms” are longer than others	<i>Andrew, Katrina, Kate, Gordon, Mitch</i>
C. Eyeless Spiral	spiral shape but no clear eye in the cloud formation	<i>Francis, Irene</i>
D. Square	squarish shape rather than round, no clear eye	<i>Georges</i>
E. Blob	shapeless mass of clouds, no clear eye	<i>Lenny</i>
F. Half	only half of a spiral with or without a clear eye	<i>Felix, Humberto</i>
Other shapes:	Write a description for the suggested shape:	List examples for the shape:
G. Comma	<i>comma shaped cloud with tail</i>	<i>Humberto, Irene</i>
H.		

2) Do you think there is a shape category that is not useful and should be deleted? Yes
If so, which one(s)? *Half- It might be better to call Felix long and skinny.*

3) Hurricanes can be classified by other criteria than shape. For example, the Saffir-Simpson Hurricane scale is a 1-5 rating based on the hurricane’s present intensity. Wind speed is the determining factor in the scale. It is just one more example of how hurricanes might be classified into categories. Based on the satellite images, look again at the images of the hurricanes, what other criteria might be observed by scientists (in addition to shape or wind speed) to classify and communicate about hurricanes?

size of the storm, location, latitude and longitude

4) A satellite image captures a hurricane at one moment in time. What other information could be observed from an entire series of satellite images covering a longer time span in the life of a hurricane?
direction of the path, how fast it is moving, change in the size of the eye, other changes in the storm over time