

NOAA Live! Webinar Series presents Hurricane Observations: On the ground, In the eye

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Q&A

1. How do hurricanes form?

In a basic sense, hurricanes form as warm water in the ocean evaporates, causing the air above the water to rise. This rising air creates a low pressure area near the ground that causes air to be drawn in from the sides to fill its space. As this air rises, it cools and forms clouds, eventually thunderstorms. As this process continues, the air being drawn in near the surface begins to spin around this central point because of the earth's rotation. This organizes the storms into a spinning complex that we call a tropical storm (because they generally form in the tropics where the warm water is). As the system gets stronger, the winds increase and can start causing damage when they move over land. A great resource on this can be found on NASA's website:
<https://spaceplace.nasa.gov/hurricanes/en/>

2. What does the future look like in Alaska in regards to hurricanes?

Hurricanes can form anywhere there is warm water. It's harder for those conditions to be present that far north, but Alaska has been impacted by the remnants of several systems so it's not impossible.

3. How far ahead can you predict a hurricane before it makes landfall?

This can vary greatly depending on the system. Some storms form well out into the Atlantic for example and we have days or even weeks of time before they make landfall. Other systems can form very close to land to begin with, reducing the lead up time.

NOAA's National Hurricane Center is an excellent resource for these types of forecasts (for the US) and they give discussions and graphics on each system that develops or might develop (<https://www.nhc.noaa.gov/>).

4. How have the strength and number of hurricanes changed since the start of the Industrial Era?

That is an excellent question! I don't study longer term changes in the intensity or frequency of storms, but there are substantial variations from year to year as there is with all weather. My focus is instead on understanding the conditions that are driving the systems today and now.

5. A cyclone that develops is called a hurricane. What is an anticyclone that has gotten stronger called?*

Hurricanes are defined by their wind speed and their rotation (counter-clockwise), but only here in the US. In other areas of the northern hemisphere, these same systems have different names such as typhoons. All of these systems have low pressure centers at the surface, drawing air inwards. Cyclones are a general term that can apply to a variety of rotating systems of air, whether that be at the ground or aloft. Ant-cyclones on the other hand have high-pressure centers near the surface, and the air is being pushed out away from this center (clockwise in the northern hemisphere). But interestingly enough, hurricanes have anticyclones aloft!