
Relative Humidity
0%
100%
Wind Speed
and Direction

1
00:00:00,170 --> 00:00:03,620
In 2014, NASA sent its Global Hawk aircraft

2
00:00:03,640 --> 00:00:07,040
out over the ocean to study Hurricane Edouard.

3
00:00:07,060 --> 00:00:09,240
This remotely piloted vehicle collects data

4
00:00:09,260 --> 00:00:12,510
like temperature, relative humidity, and wind speed,

5
00:00:12,530 --> 00:00:15,850
to better understand how hurricanes intensify.

6
00:00:16,420 --> 00:00:18,300
Sometimes clouds block the measurements

7
00:00:18,320 --> 00:00:20,530
taken directly below the aircraft,

8
00:00:20,550 --> 00:00:23,170
so the scientists drop individual instruments

9
00:00:23,190 --> 00:00:25,710
that parachute down to the surface.

10
00:00:25,730 --> 00:00:30,550
These dropsondes also measure the windspeed and direction as they fall.

11
00:00:31,120 --> 00:00:34,680
Near the surface, especially in the center of the storm,

12
00:00:34,700 --> 00:00:37,800
the deep red to orange color indicates there is plenty of moisture

13
00:00:37,820 --> 00:00:40,810

for the storm to draw on to intensify.

14
00:00:40,830 --> 00:00:43,910
The result is a well-defined circulation of winds,

15
00:00:43,930 --> 00:00:47,710
which are strongest near the storm's center.

16
00:00:48,600 --> 00:00:53,630
During Hurricane Edouard, dry air near the center slowed intensification.

17
00:00:53,650 --> 00:00:56,920
But then, just before a period of rapid intensification,

18
00:00:56,940 --> 00:01:01,690
clouds and precipitation moved into the dry region, bringing moisture.

19
00:01:01,710 --> 00:01:05,040
Did the movement of moisture cause the rapid intensification,

20
00:01:05,060 --> 00:01:07,880
or did the stronger winds at the onset of intensification

21
00:01:07,900 --> 00:01:10,760
cause the clouds and precipitation to move?

22
00:01:11,270 --> 00:01:14,180
Studies like this one will help us learn that answer.