NASA Satellites and Baja California on watch as Hurricane Rick approaches

October 19 2009

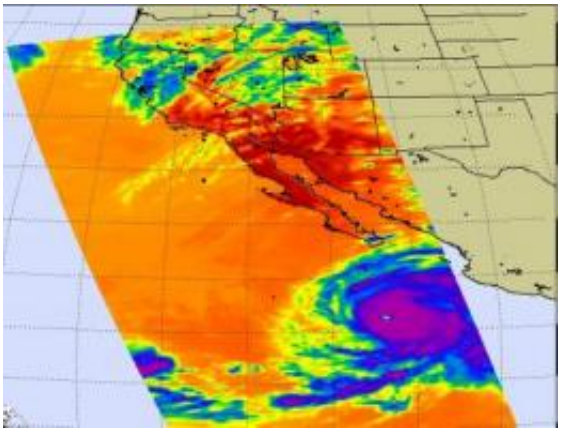
NASA's Moderate Imaging Spectroradiometer instrument on the Terra satellite captured Hurricane Rick on October 18 at 1:55 p.m. EDT (17:55 UTC) south of Baja California. Credit: NASA, MODIS Rapid Response

NASA's Aqua and Terra satellites flew over Hurricane Rick this weekend, and watched the storm strengthen into a major hurricane.

Rick was a tropical storm during the early morning hours on Friday, October 16, and strengthened into a hurricane late in the day. Over the weekend, Rick became a major hurricane. On Saturday, October 17 Rick reached a Category Five hurricane status with maximum sustained winds reaching 180 mph, becoming the second most powerful hurricane in the Eastern Pacific on record, only behind Hurricane Linda of 1997.

A Hurricane Watch is in effect for the southern Baja California from Santa Fe, southward on the west coast from San Evaristo southward on the east coast, including Cabo San Lucas. A Hurricane Watch means that hurricane conditions are possible within the watch area...generally within 36 hours. In addition, residents in western mainland Mexico should monitor the progress of Rick, as it is expected to cross the southern Baja and then make a final landfall in western mainland Mexico.

NASA's Aqua satellite's Atmospheric Infrared Sounder (AIRS) instrument captured Hurricane Rick's thunderstorm cloud-top temperatures and confirmed that they were very high, powerful thunderstorms within the storm. AIRS measured thunderstorm cloud temperatures were colder than minus 63 Fahrenheit indicating a strong hurricane. The AIRS image also clearly showed an eye on October 18 at 4:59 p.m. EDT. When NASA's Terra satellite passed over Rick three hours earlier, the Moderate Imaging Spectroradiometer (MODIS) instrument onboard revealed that the eye was starting to fill in with clouds. Because AIRS didn't show cold clouds, it means that the clouds that were starting to fill in the eye were lower, warmer clouds.



The NASA Aqua satellite's Atmospheric Infrared Sounder instrument captured Hurricane Rick's high thunderstorm cloud temperatures (in purple). The cloud tops were colder than minus 63 Fahrenheit. Rick's eye is clearly visible in this

image from October 18 at 4:59 p.m. EDT. Credit: NASA JPL, Ed Olsen

There's currently a 15-20 knot (17-23 mph) wind shear that's affecting Hurricane Rick, and that's good news. The wind shear (winds blowing at various levels of the atmosphere that can weaken a tropical cyclone) is helping to deteriorate his cold cloud tops in the western part of his eye. In fact, the eye has disappeared in recent satellite imagery now, and NASA's Terra satellite saw the eye beginning to fill in on October 18.

This morning, October, 19 at 5:13 a.m. EDT, NASA's Advanced Microwave Scanning Radiometer, AMSR-E, showed that the southwestern eyewall has eroded, and suggests that Rick's circulation may be becoming vertically tilted. When a storm's circulation tilts, it's an indication that the storm is weakening.

At 5 a.m. PDT (8 a.m. EDT) on October 19, Hurricane Rick had maximum sustained winds near 125 mph, making the storm a Category 3 hurricane. The center of Rick was located about 365 miles south-southwest of the city of Cabo San Lucas. That city is on the southernmost tip of the Baja California. Rick's center was near 17.7 North and 111.1 West. The estimated minimum central pressure is 950 millibars.

Rick was moving northwest at 10 mph, but he's going to change direction a little in the next couple of days. He's forecast to turn toward the north and slow down. Then, he's expected to speed up again and move more north-northeast then northeasterly late Tuesday and Wednesday. Forecasters expect Rick's center will be near the southern Baja California late Tuesday or early Wednesday, however, gusty winds and rains from Rick will be felt there before then.

In fact, Rick is already generating large ocean swells, and they'll affect portions of the southern Baja coast and the west-central coast of Mexico over the next couple of days. These hurricane-generated surf conditions will be dangerous.

The National Hurricane Center in Miami, Fla. is the organization that forecasts hurricanes in the Eastern Pacific Ocean. Forecasters there noted "Although additional weakening is forecast during the next day or so... Rick is still expected to be a dangerous hurricane as it approaches the southern Baja Peninsula."

Source: JPL/NASA (news : web)