

NASA's 3-D animation of Typhoon Conson's heavy rainfall and strong thunderstorms (w/ Video)

July 13 2010

Imagine seeing a typhoon from space, and seeing it in three dimensions. That's what the Tropical Rainfall Measuring Mission (TRMM) satellite can do with any typhoon, and just did with Typhoon Conson. TRMM's 3-D look at tropical cyclones provide scientists with information on the height of towering thunderstorms and the rate of rainfall in them, and Conson has high thunderstorms and heavy rainfall.

The TRMM satellite got a good view of tropical storm Conson (known as "Basyang" in the Philippines) in the west Pacific Ocean as it passed directly overhead on July 12 at 1550 UTC (1:50 p.m. EDT/1:50 a.m. local time on July 13). TRMM Precipitation Radar (PR) and [TRMM Microwave Imager](#) (TMI) data from the orbit were used when creating the rainfall analysis. That rainfall analysis showed intensifying tropical storm Conson was already very well organized. TRMM data clearly showed that an eye was forming with heavy thunderstorms located northeast of the storm's center of circulation. Those thunderstorms were dropping rainfall at a rate of almost 2 inches per hour.

Hal Pierce of NASA's TRMM Team, located at NASA's Goddard Space Flight Center in Greenbelt, Md. created the 3-D animation of [Typhoon Conson](#) using data from July 12. In the animation, Pierce said that "The developing eye is shown reaching to heights above 15 kilometers (~9 miles)."

There were also hot towers around Conson's eye. A hot tower is a tropical cumulonimbus cloud that punches through the tropopause and reaches into the [stratosphere](#). They are called "hot towers" because they rise high due to the large amount of latent heat released as [water vapor](#) condenses into liquid and freezes into ice. Hot towers may appear when the hurricane is about to intensify, which is exactly what Conson did after the hot towers were seen by the TRMM satellite.

The TRMM Precipitation Radar 3-D image showed that Conson was already a typhoon at 1550 UTC (1:50 p.m. EDT/1:50 a.m. local Asia/Manila time), which allowed forecasters to reclassify Conson from a tropical storm to a typhoon. TRMM Precipitation Radar revealed that the eye was already well formed indicating that Conson had reached typhoon status at that time.

Provided by NASA's Goddard Space Flight Center

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