



Friday, 8 November 2013, 11:30 UTC

Update on Super-Typhoon “Haiyan”, respectively “Yolanda”

WHAT:

Typhoon 31W "Haiyan", Philippines: “Yolanda”

WHERE:

Western Philippines / Vietnam

WHEN:

Friday 8 November 2013 (Philippines), 9-11 November 2013 (Vietnam)

INTENSITY:

- Intensity as of 8 November, 06 UTC: average wind speed 145 kt (269 kph), gusts 175 kt (324 kph), Cat 5
- crossing western Philippines still as Cat 5, slight weakening until 18 UTC (high end Cat 4)

**CONSEQUENCES FOR WESTERN and NORTHERN PHILIPPINES until 18 UTC
CONSEQUENCES FOR VIETNAM 09-11 NOVEMBER 2013:**

- Gusts 80-140 kph, higher upon arrival of Haiyan at coastal areas
- Torrential rain
- landslides
- flash floods
- significant storm surge
- damage in crop
- interrupted infrastructure (power lines, streets, water supply....)
- very muddy surface

PROBABILITY:

- most likely track sees landfall of Haiyan in central Vietnam in the Hue / Da Nang area
- Haiyan probably will be Cat 1 or Cat 2 at landfall (intensity may be even higher)
- Massive damage (mainly by torrential rain and flash floods/landslides) in northern half of Vietnam 9-11 November 2013

PRELIMINARY INFORMATION as of 8 November 2013, 12 UTC

- Haiyan is the fourth Cat 5 storm in the Western Pacific so far in 2013
- Haiyan is the fifth Cat 5 storm on Earth so far in 2013
- this is the highest number of Cat 5s since 2009, which had four Cat 5s in the Western Pacific and one in the Eastern Pacific.
- Since 2000, Earth has averaged 4.4 Cat 5 storms
- The record for Cat 5s in a year is twelve, set in 1997, when an astonishing ten Cat 5s occurred in the Western Pacific

- Haiyan became Cat 5 typhoon on Wednesday, 6 November 2013, 12 UTC
- Haiyan became a Cat 5 at an unusually low latitude (7.9°N), but not record
- With warm waters that extend to great depth, low wind shear, and excellent upper-level outflow, Haiyan could stay at Category 5 strength until landfall
- 7 November 2013, 18 UTC: Average wind speed 170 kt (315 kph), gusts 205 kt (380 kph) (JTWC)
- Central pressure of Haiyan was given of 862 hPa (JMA) and 884 hPa (JTWC)
- 4th strongest tropical cyclone in world history
- **strongest tropical cyclone on record to make landfall in world history**
- landfall at 20:40 UTC on Thursday, 7 November 2013, near Guiuan on the central Philippine island of Samar

- Strongest tropical cyclones in world history (wunderground)
 - [Super Typhoon Nancy \(1961\)](#), 346 kph winds, 882 hPa. Made landfall as a Cat 2 in Japan, killing 191 people
 - [Super Typhoon Violet \(1961\)](#), 329 kph winds, 886 hPa pressure. Made landfall in Japan as a tropical storm, killing 2 people.
 - [Super Typhoon Ida \(1958\)](#), 322 kph winds, 877 hPa pressure. Made landfall as a Cat 1 in Japan, killing 1269 people.
 - [Super Typhoon Kit \(1966\)](#), 313 kph winds, 880 hPa. Did not make landfall.
 - [Super Typhoon Sally \(1964\)](#), 313 kph winds, 895 hPa. Made landfall as a Cat 4 in the Philippines.

- **Haiyan the fifth named storm to hit the Philippines in 2013**
- The others were:
 - [Tropical Storm Rumbia](#), which hit the island of Samar on June 29 as a tropical storm, killing six.
 - [Typhoon Nari](#), which hit Luzon on October 11 as a Category 3 typhoon with 115 mph winds, killing five.
 - [Typhoon Utor](#), which hit Luzon on August 12 as a Category 4 typhoon with 140 mph winds, killing fourteen and causing \$25 million in damage.
 - [Typhoon Krosa](#), which hit northern Luzon on October 31 as a Category 2 typhoon with 105 mph winds, killing five and doing \$5 million in damage.

- **Deadliest and costliest weather disasters on the Philippines**
- Super typhoon Bopha: struck as a Category 5 super typhoon with winds of 160 mph (260 km/h), on December 3, 2012. Occurred on the southern Philippine island of Mindanao, Earth's deadliest weather disaster of 2012. Left 1901 people dead, mostly on the island of

Mindanao, making Bopha the [2nd deadliest typhoon in Philippine history](#). With damages estimated at \$1.7 billion, Bopha was the second costliest natural disaster in Philippines history.

- Torrential rains in the wake of Typhoon Trami inundated the capital of Manila and large areas of Luzon, killing 27 people and causing damages estimated at \$2.2 billion (according EM-DAT)
- Deadliest typhoon was Thelma 1991, claimed more than 5000 fatalities

Damage of Haiyan (Yaolanda) on the Philippines

- Severe damage according to devastating wind speeds of ~ 200 kph close to the eyewall, radius ~ 50 km (along track) can be expected
- Damage in places according to storm surge
- Flooding according to rain amounts of > 100-200 mm, can occur widespread even in the metropolitan area of Manila. But propagation speed of Haiyan was about 40 kph while crossing the Philippines, so no extraordinary rain amounts should have been occurred
- Has to be checked

Wettergefahren-Frühwarnung – More Infos on „Haiyan“ in German

<http://www.wettergefahren-fruehwarnung.de/Artikel/20131106.html>

References:

www.ssd.noaa.gov

<http://www.nrlmry.navy.mil>

<http://www.usno.navy.mil/>

digital-typhoon.org

<http://noah.dost.gov.ph/>

<http://www.pagasa.dost.gov.ph/>

<http://trmm.gsfc.nasa.gov/>

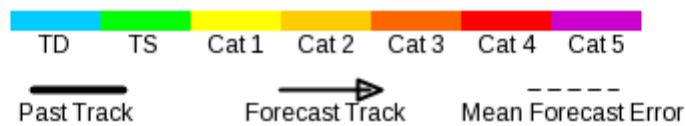
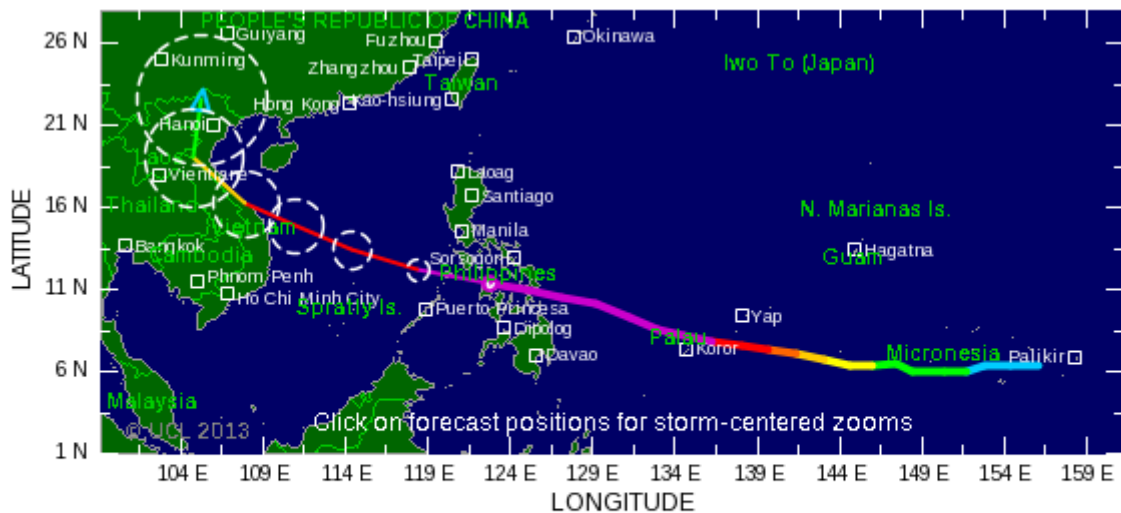
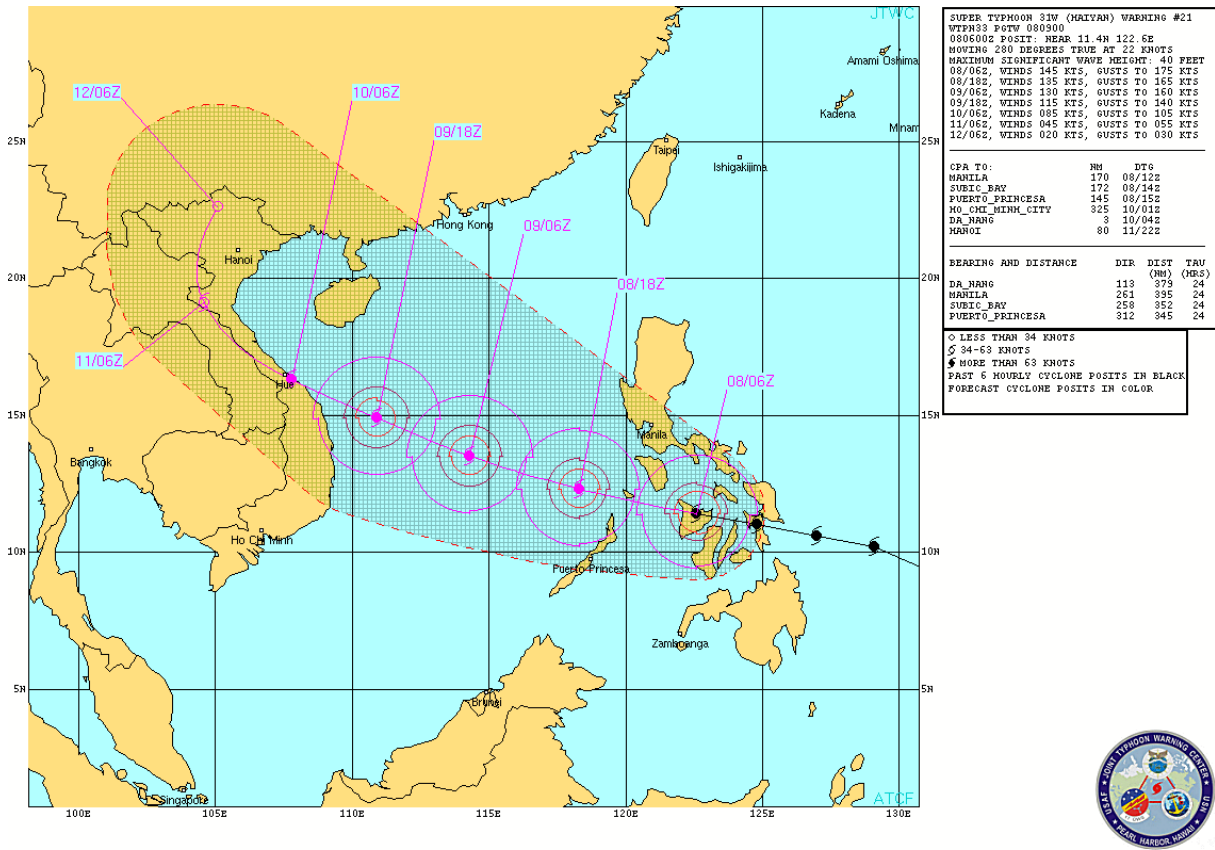
<http://www.wunderground.com>

www.tropicalstormrisk.com

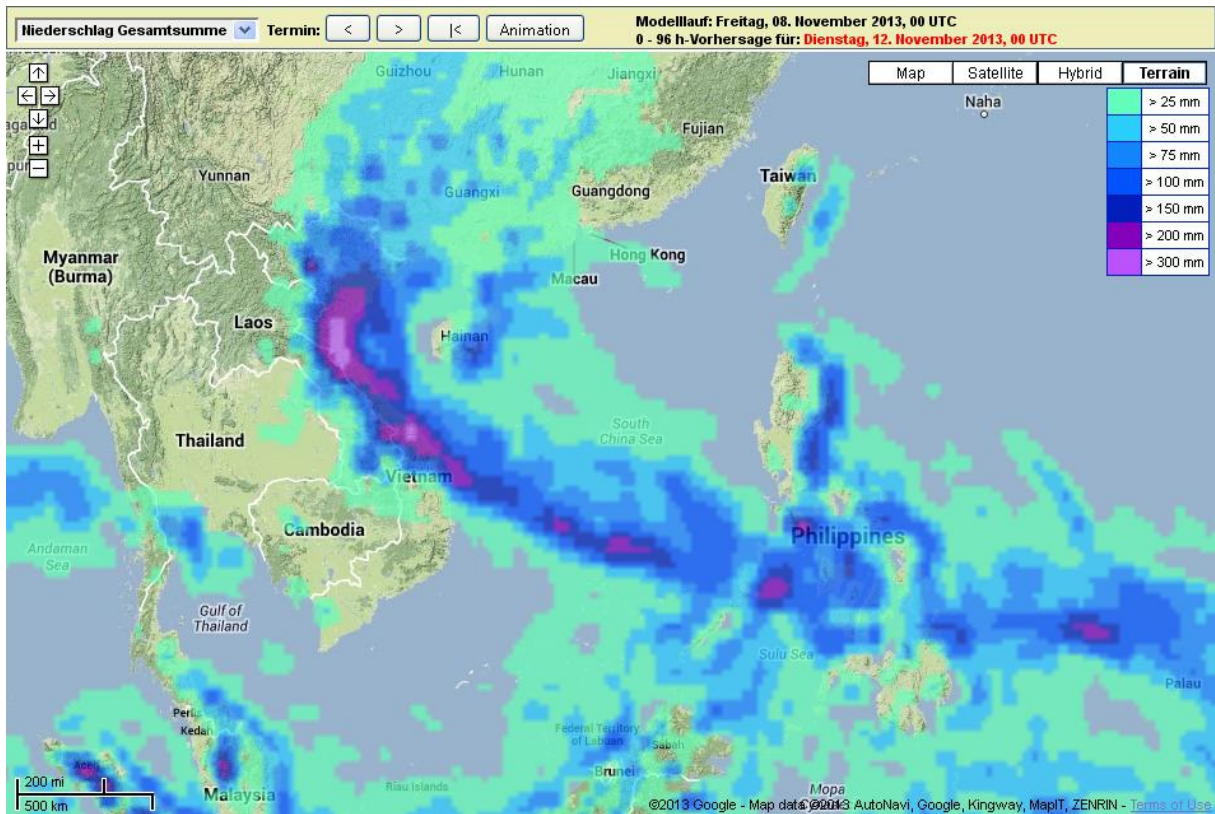
Images:

Latest Forecasted (most likely) track of "Haiyan" (Joint Typhoon Warning Center),

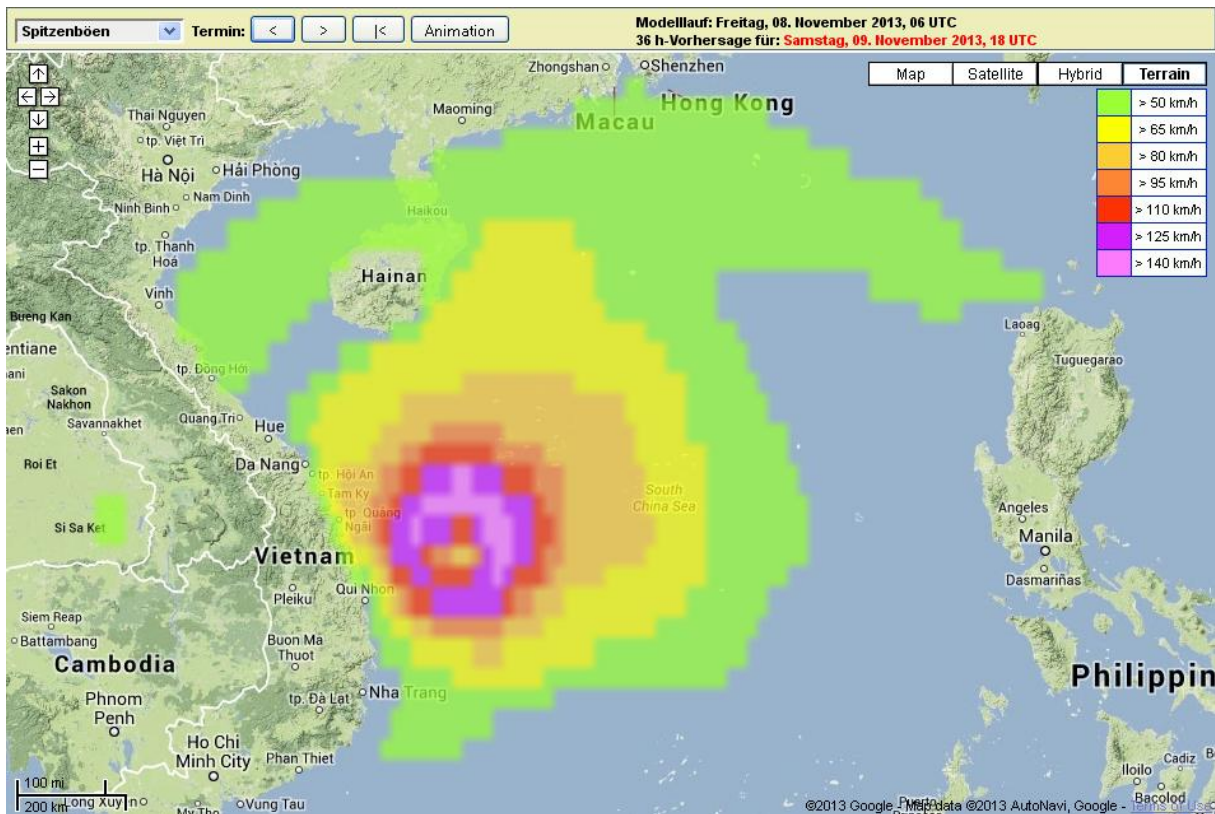
8 November 2013, 06 UTC



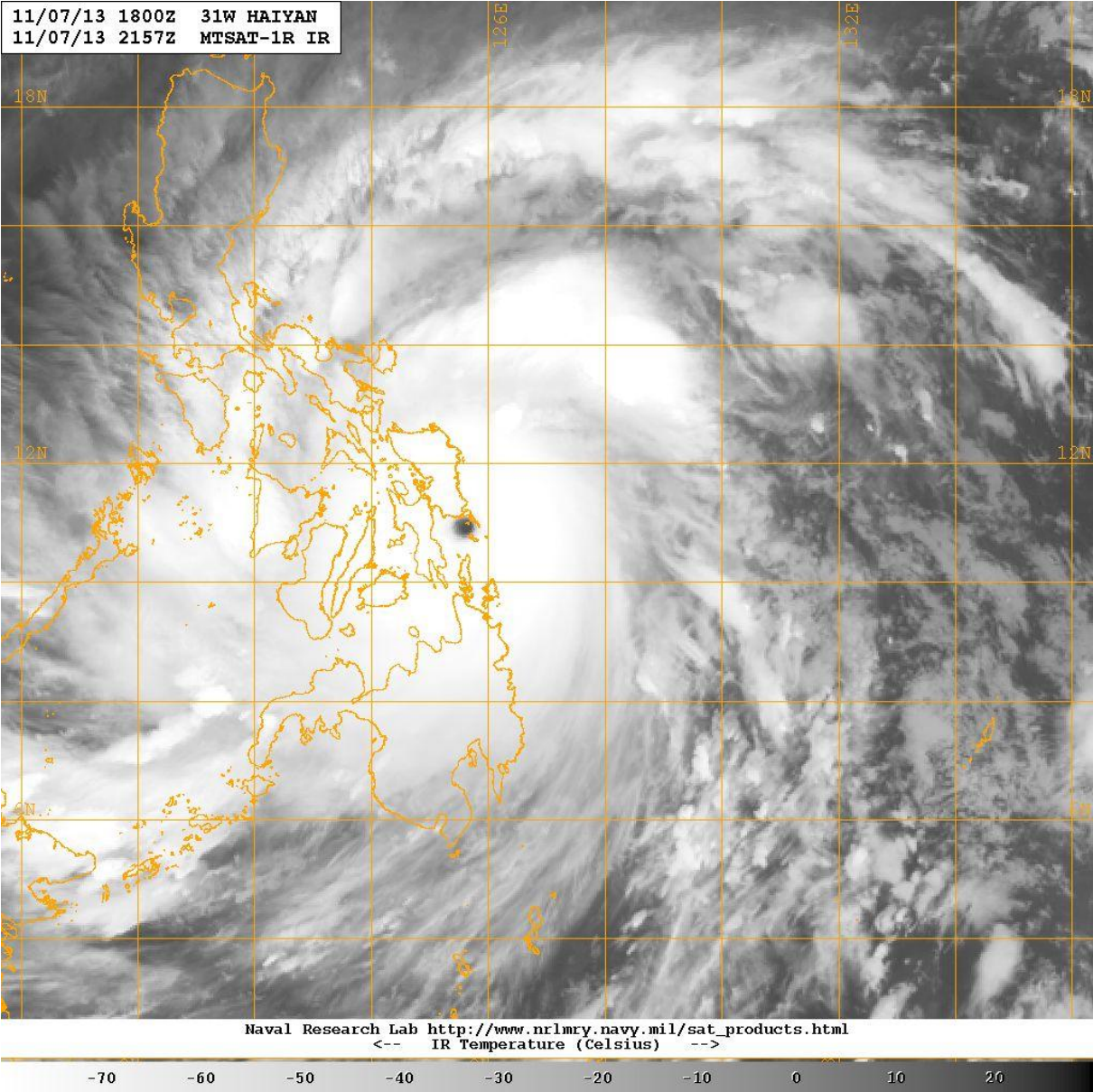
96 h Accumulated Rain Forecast, 8 Nov 2013, 00 UTC – 12 Nov 2013, 00 UTC



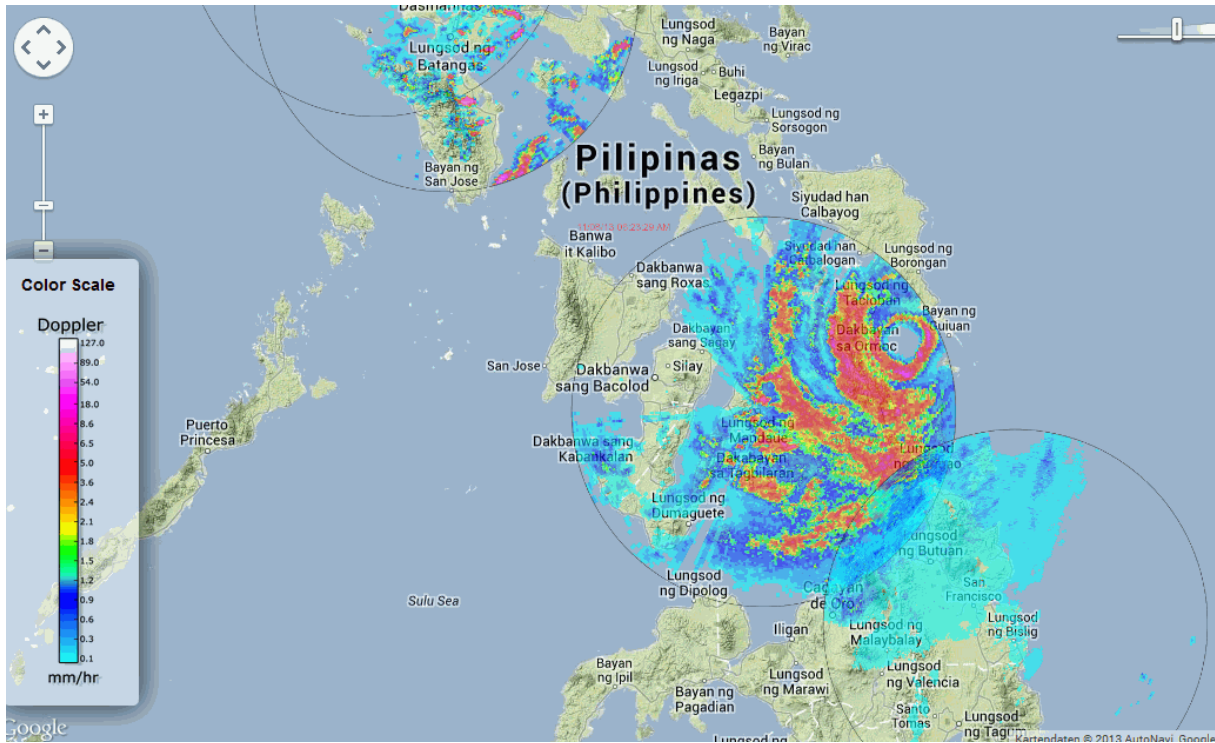
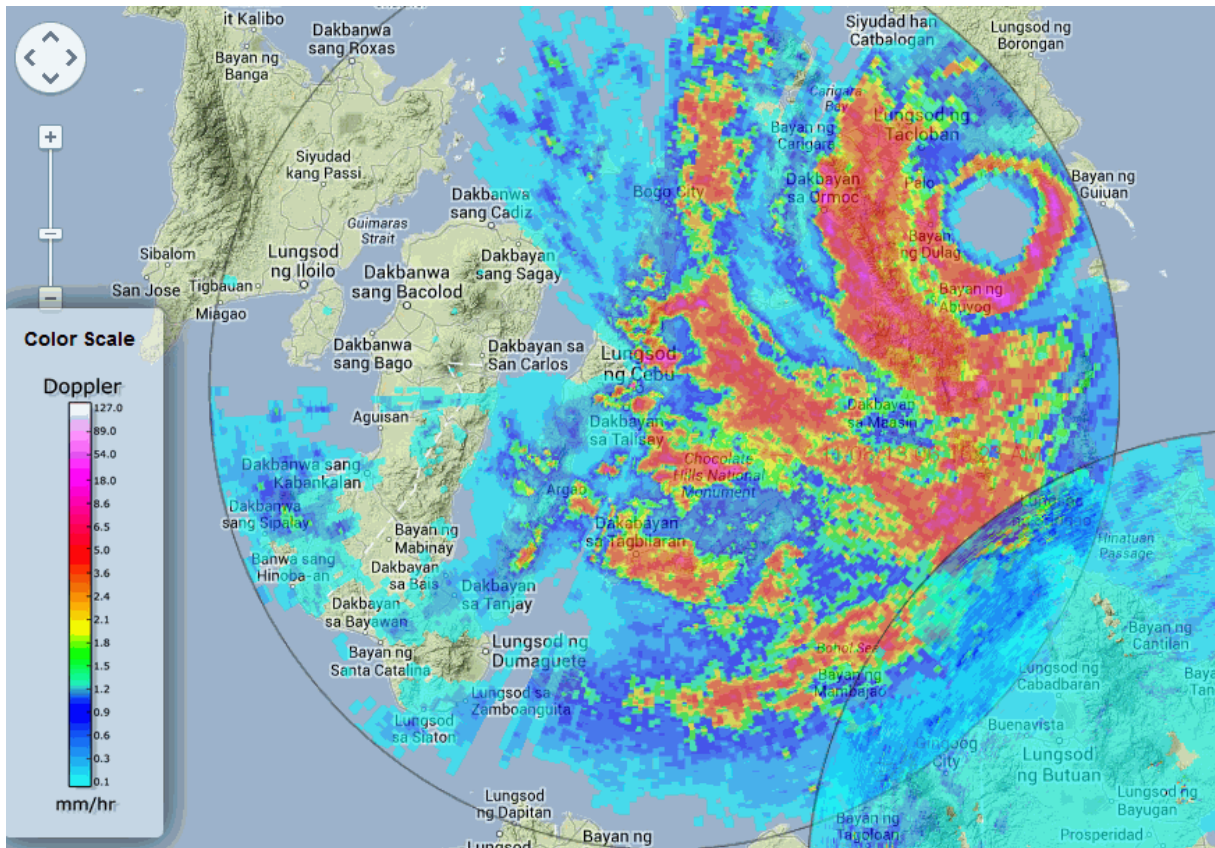
Wind gust forecast for 9 Nov 2013, 18 UTC



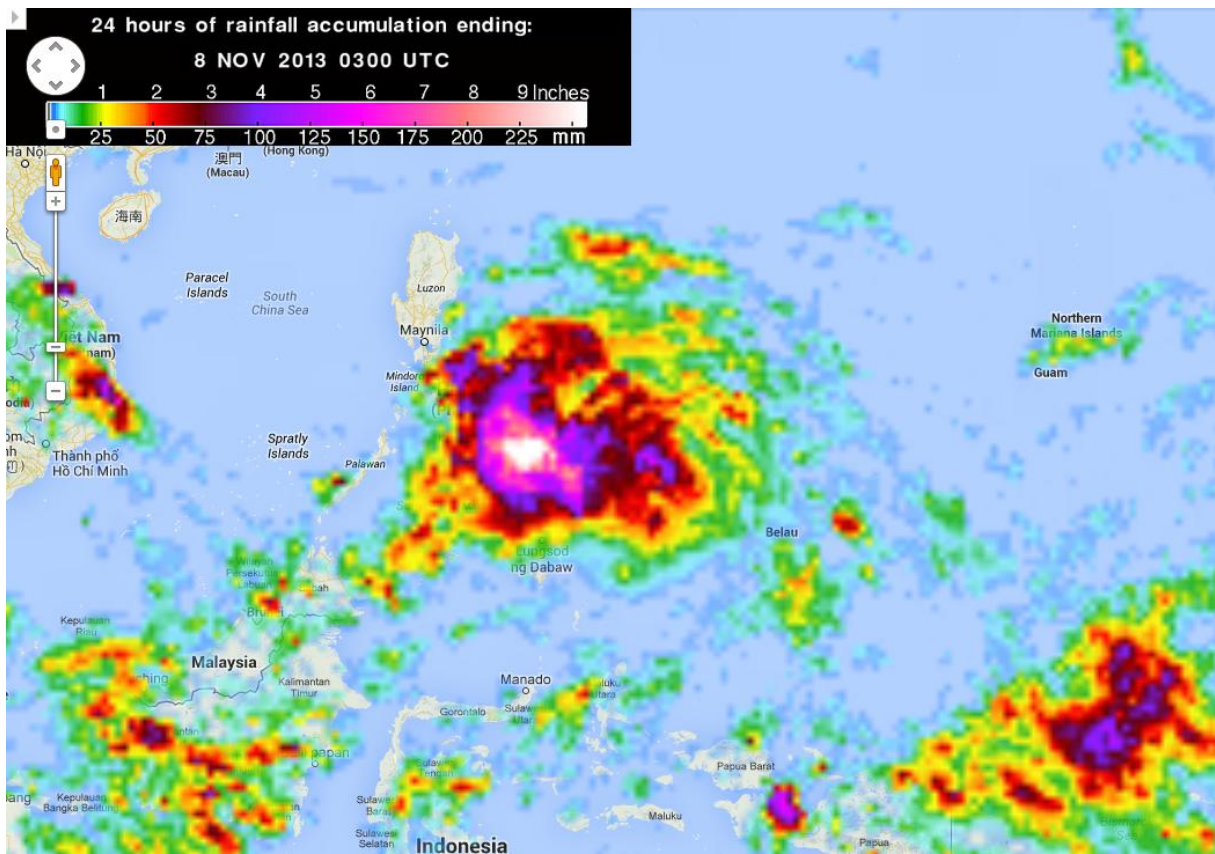
Satellite image during landfall, 7 November 2013, 21:57 UTC



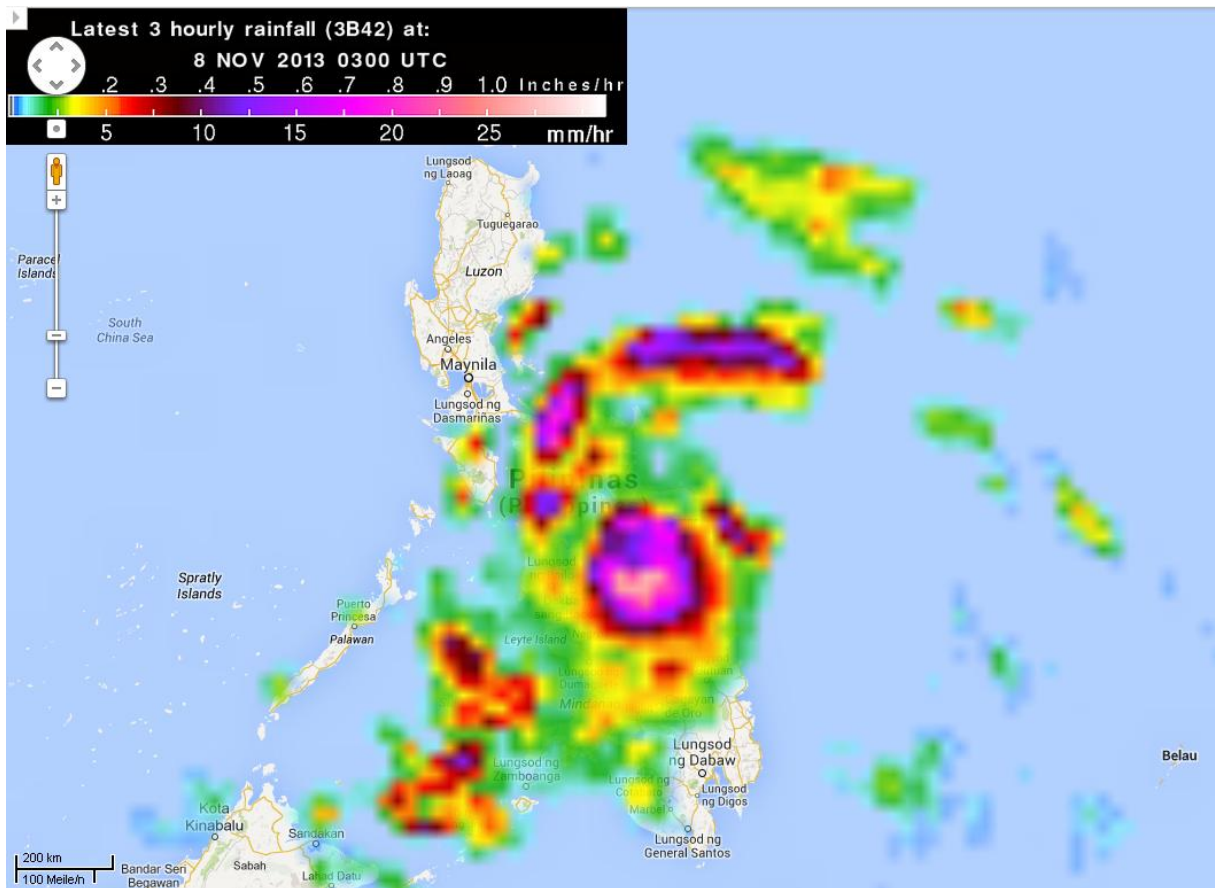
Radar images during landfall, 7 November 2013, ca 21 UTC



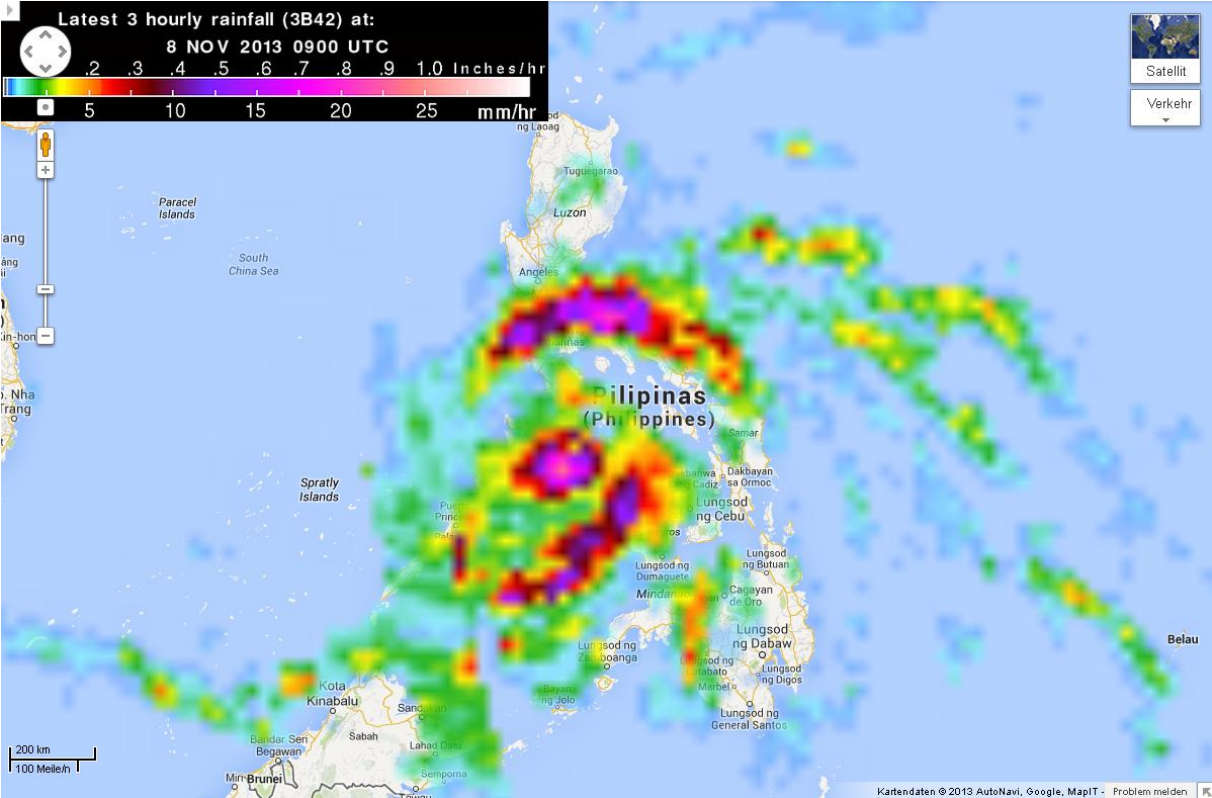
24 hours accumulated rainfall 7 Nov – 8 Nov 2013, 03 UTC



3 hours accumulated rainfall 8 Nov 2013, 00-03 UTC



3 hours accumulated rainfall 8 Nov 2013, 06-09 UTC



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