



Typhoon Sarika (Karen) Report #2

15 October 2016, 9.00AM PHT

Manila Observatory

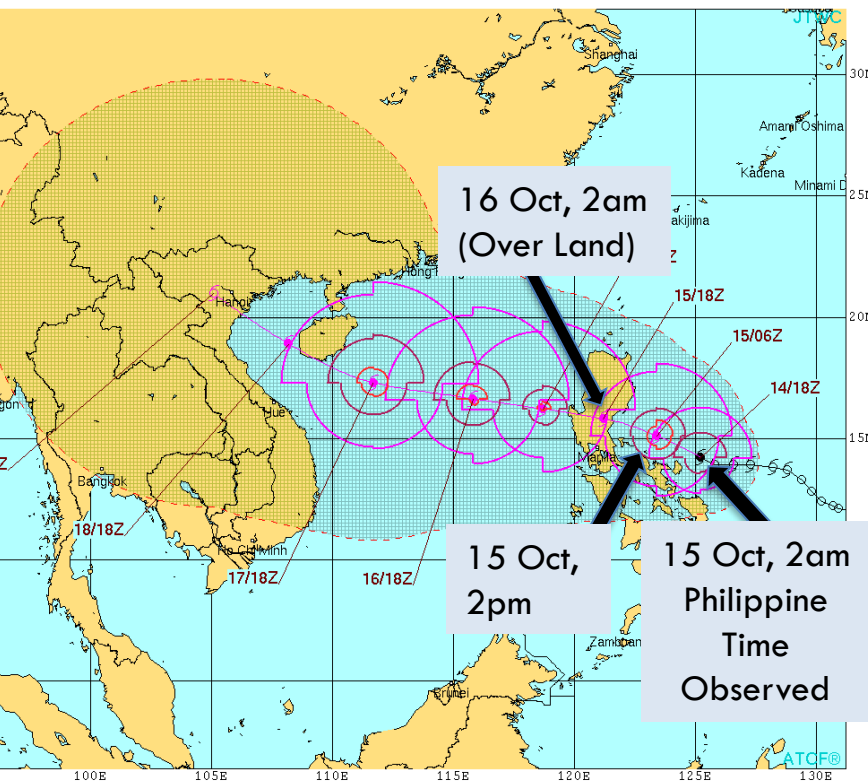


SUMMARY

- Typhoon Sarika (Bagyong Karen), now upgraded to Cat 1, moving west-northwestward and expected to intensify to Cat 2 just before landfall. JTWC forecast the typhoon to make landfall (just before 2am Oct. 16) earlier than previously predicted in Aurora Province.
- Bicol region, Quezon Province, Aurora, Nueva Ecija, and Tarlac to experience heavy rainfall associated with tropical cyclone (TC). Possible critical areas include the low lying areas in Central Luzon and low coastal areas in Pangasinan
- Satellite image as of 7:30am 15 Oct shows areas of bright red (indicating active convection, heavy rainfall) intensify but mostly over sea, Northern Samar, Bicol Region, parts of Southeastern Luzon, and Southwestern Visayas. Regions of convection also present over the Central Visayas and Mindoro.
- Satellite rainfall from 8-9AM 15 Oct shows heavy rainfall of 25-30 mm/hr surrounding the eye of tropical cyclone
- Based on model forecast, potentially high 2- and 3-day accumulated rainfall from Oct 15 to 18 over eastern coasts of Bicol region (especially Catanduanes), Quezon (Polillo Island), Aurora, Nueva Ecija and Tarlac
- Possible moderate to high rainfall on Oct 16 over CAR, Central Luzon, NCR
- Potential 3-day accumulated rainfall in Aurora and Nueva Ecija similar to total rainfall due to TC Koppu (Lando) last year (Oct 16-20, 2015)

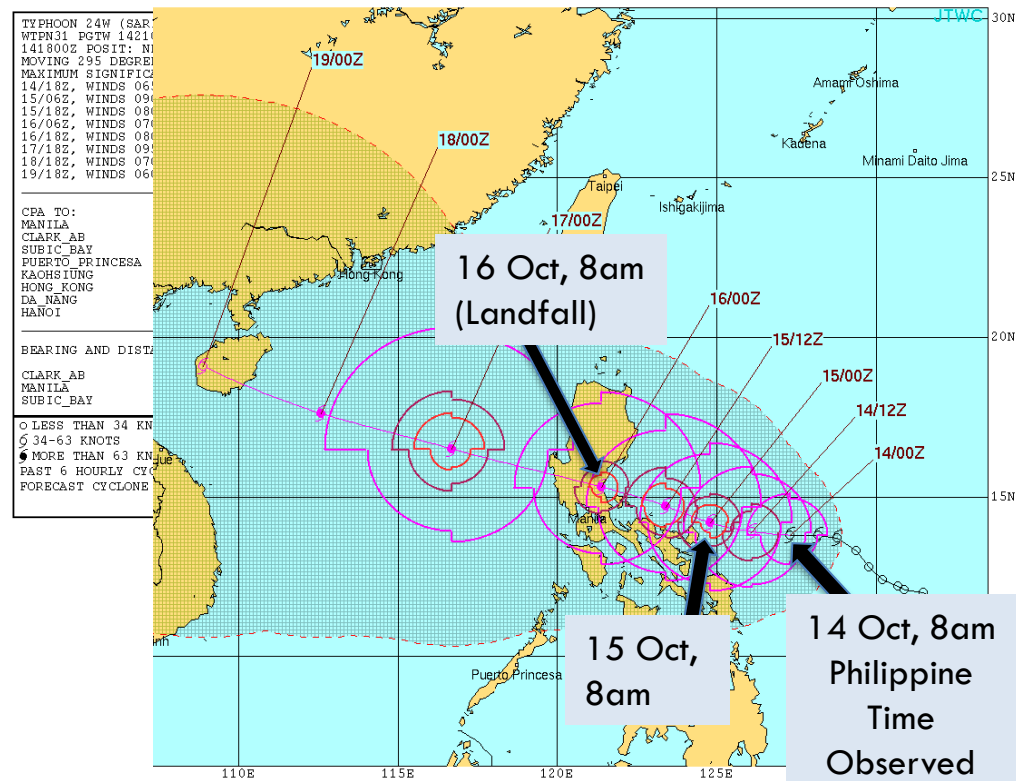
Current status of Typhoon Sarika (Karen)

Observed track (black) and forecast (pink)
issued at **15 Oct, 5AM**



Sarika now a Typhoon (Cat1 as of 2am Oct 15), forecast to intensify to Cat2 by 2pm Oct 15 as it moves towards Aurora Province.

Previous forecast
issued at **14 Oct, 11AM**



Sarika as TS (as of 8am Oct 14), forecast to intensify as it moves west-northwestward and is expected to make landfall in Aurora Province around 8am Oct. 16



Current status of Typhoon Sarika (Karen)

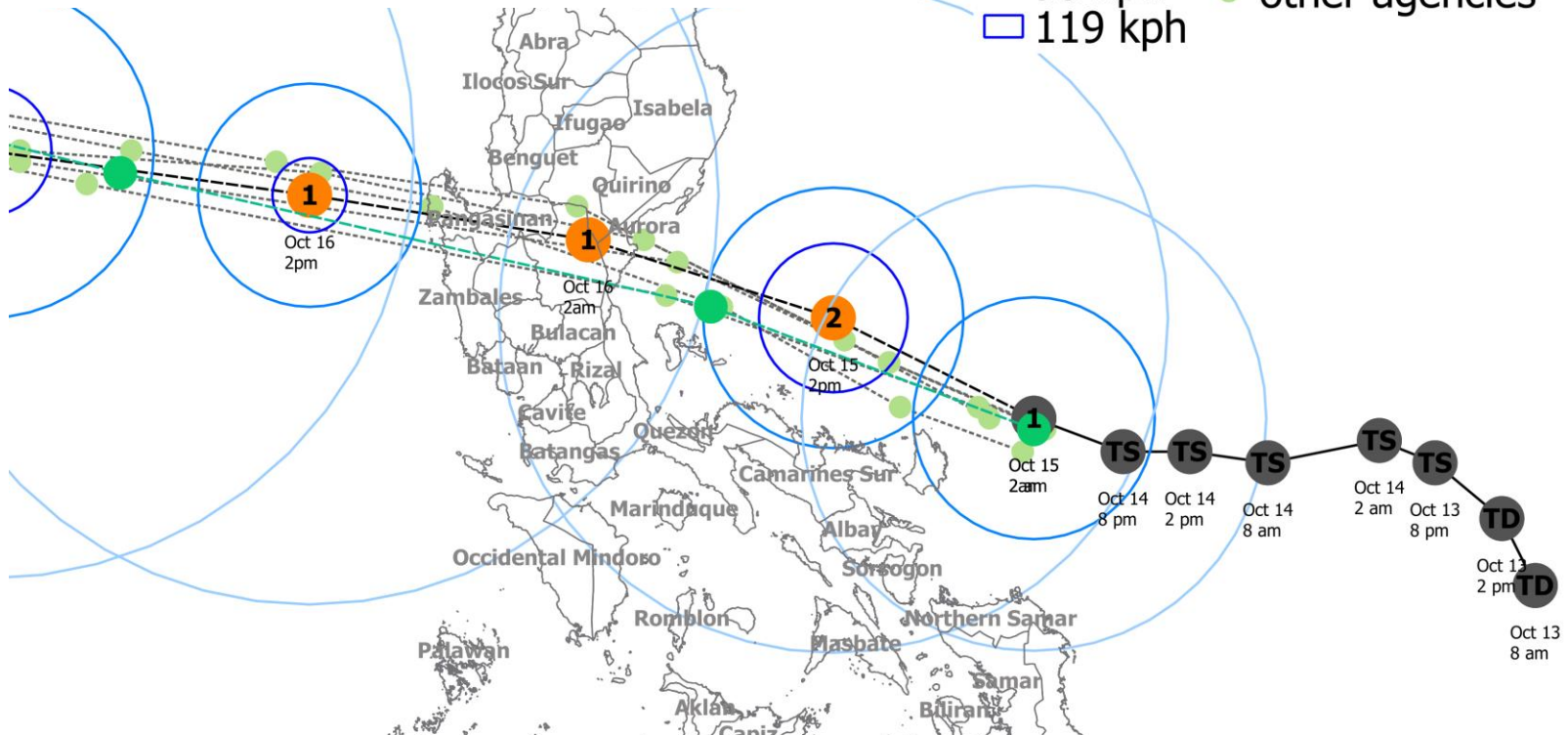
Sarika now a Typhoon (Cat1 as of 2am Oct 15), forecast to intensify to Cat2 by 2pm Oct 15 as it moves towards Aurora Province. It is forecast to weaken after landfall but stays at CAT1 as it exit by 2pm Oct 16.

Radius of Max Wind

- 63 kph
- 93 kph
- 119 kph

Forecast Track

- JTWC
- PAGASA
- other agencies



PAGASA TCWS as of 8am Oct 15

Signal 3: Catanduanes, Camarines Norte, Northern Quezon inc. Polillo Island, and Aurora

Signal 2: Rest of Quezon, Camarines Sur, Albay, Rizal, Bulacan, Nueva Ecija and Quirino

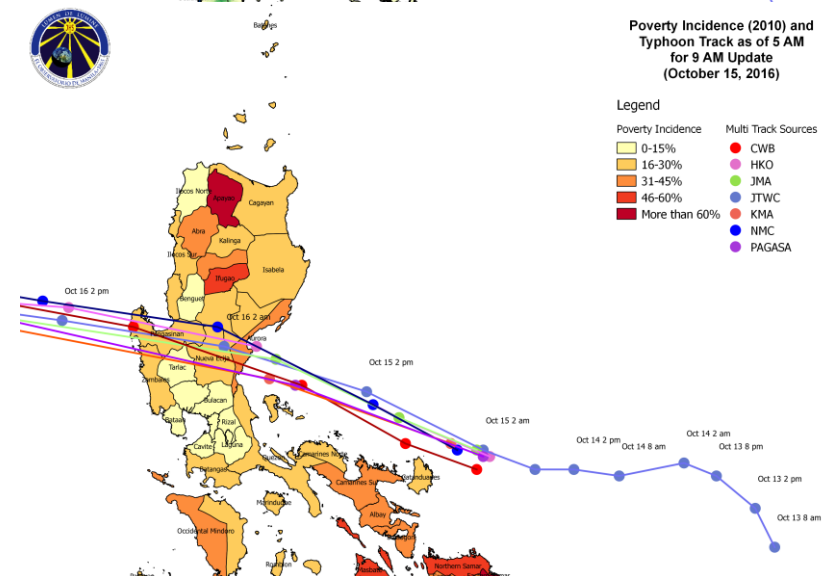
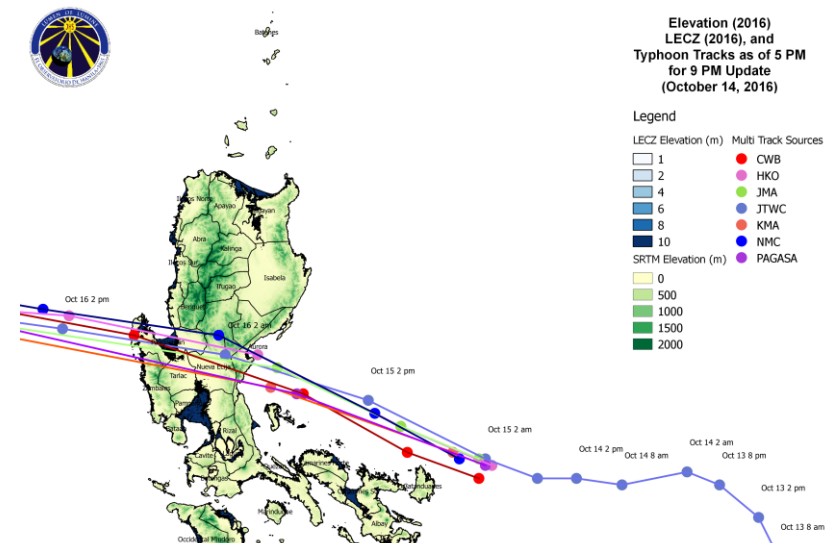
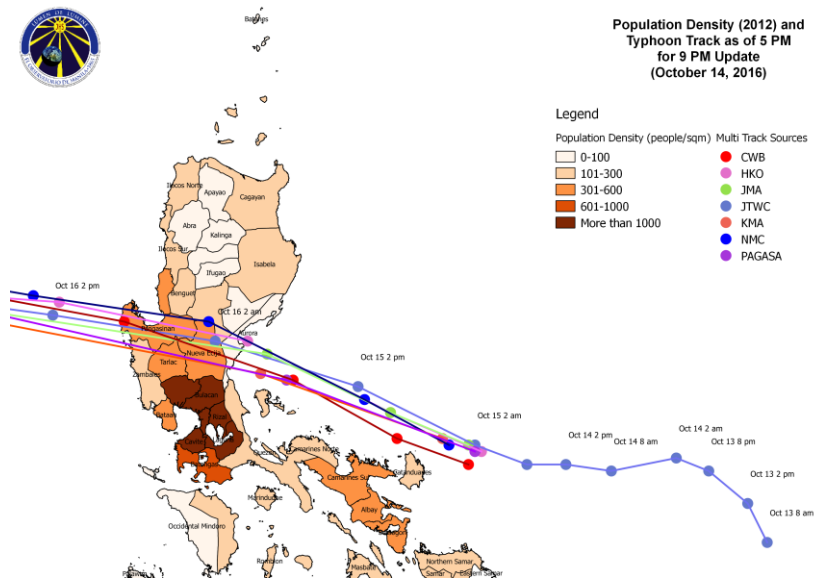
Signal 1: Sorsogon, Masbate, Isabela, Romblon, Marinduque, Oriental

Mindoro, Batangas, Laguna, Cavite, Mmanila, Pampanga, Zambales, Tarlac, Pangasinan, Nueva Viscaya, La Union, Benguet and Ifugao, Northern Samar

Typhoon Sarika (Karen): Exposure, and Vulnerability

TRACK, POTENTIAL EXPOSURE AND VULNERABILITY

Track forecast as issued at 5AM, Oct 15



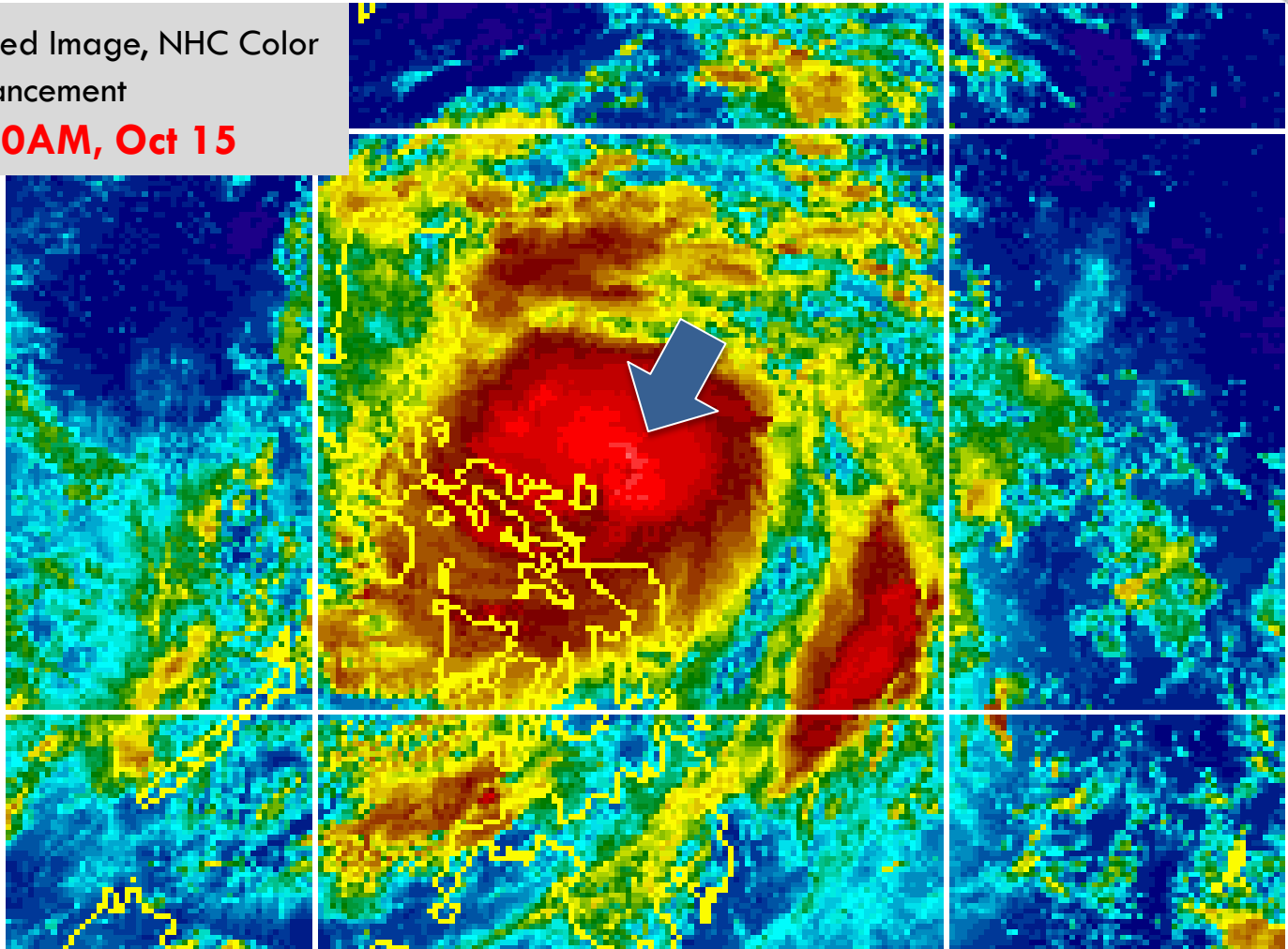
As Typhoon Sarika approaches Aurora, Bicol region, especially Catanduanes, will experience rainfall associated with TC. Other potential critical areas include the low lying areas in Central Luzon and low coastal areas in Pangasinan.

Potential rainfall associated with Typhoon Karen

Longwave Infrared Image, NHC Color Enhancement

As of 7.30AM, Oct 15

Areas of bright red (indicating active convection, heavy rainfall) intensify but mostly over sea, Northern Samar, **Bicol Region**, parts of Southeastern Luzon, and Southwestern Visayas. Regions of convection also present over the Central Visayas, and Mindoro.



"NASA research has indicated that cloud top temperatures that reach or exceed the threshold of -52°C typically have heavy rainfall areas " (<http://www.nasa.gov/content/11-w-north-pacific-ocean/#.UgeFGBZCrbw>)



Potential rainfall associated with Typhoon Sarika (Karen)



JAXA Realtime Rainfall Watch

世界の雨分布リアルタイム

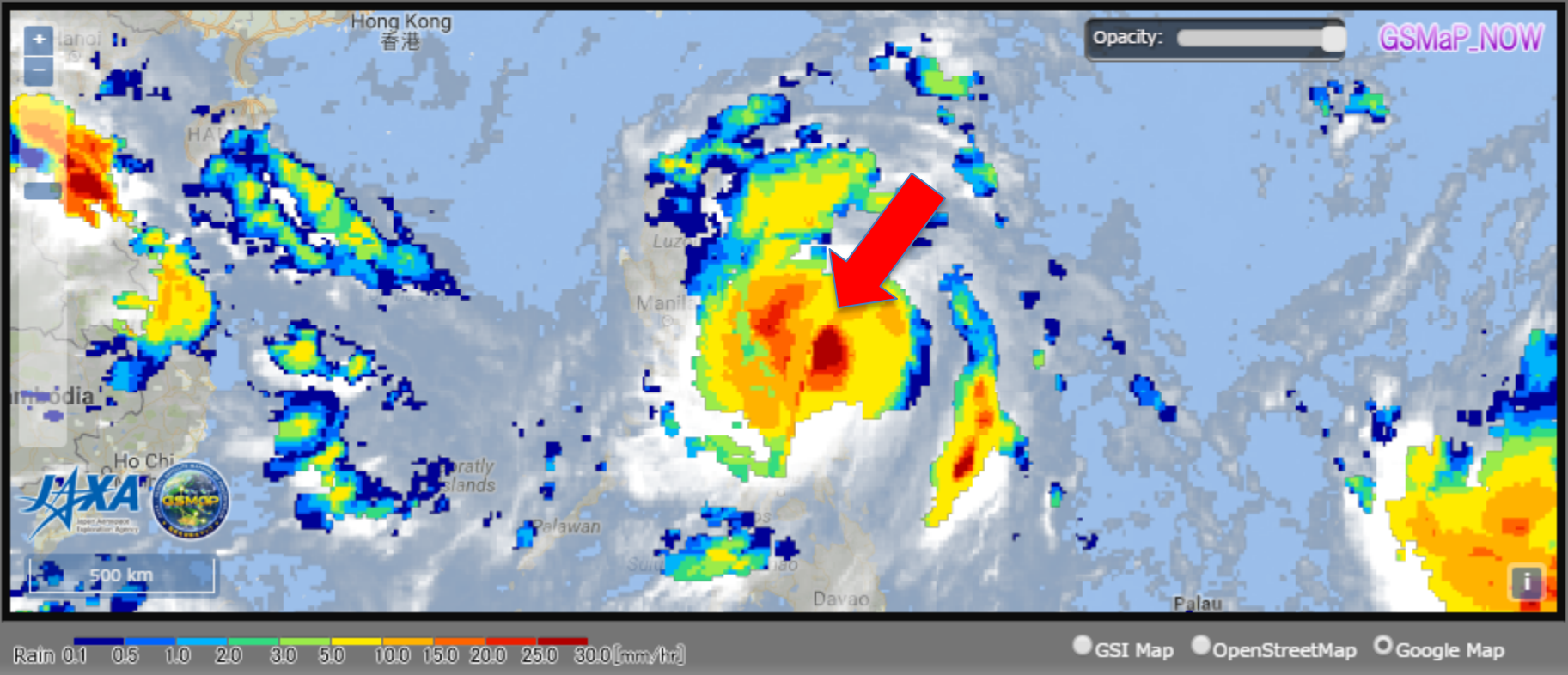


衛星全球降水マ
GSMaP
GLOBAL SATELLITE MAPPING OF PRECIPITATION

▶ 日本語 Last Update: 15 Oct 2016 01:01:50 UTC

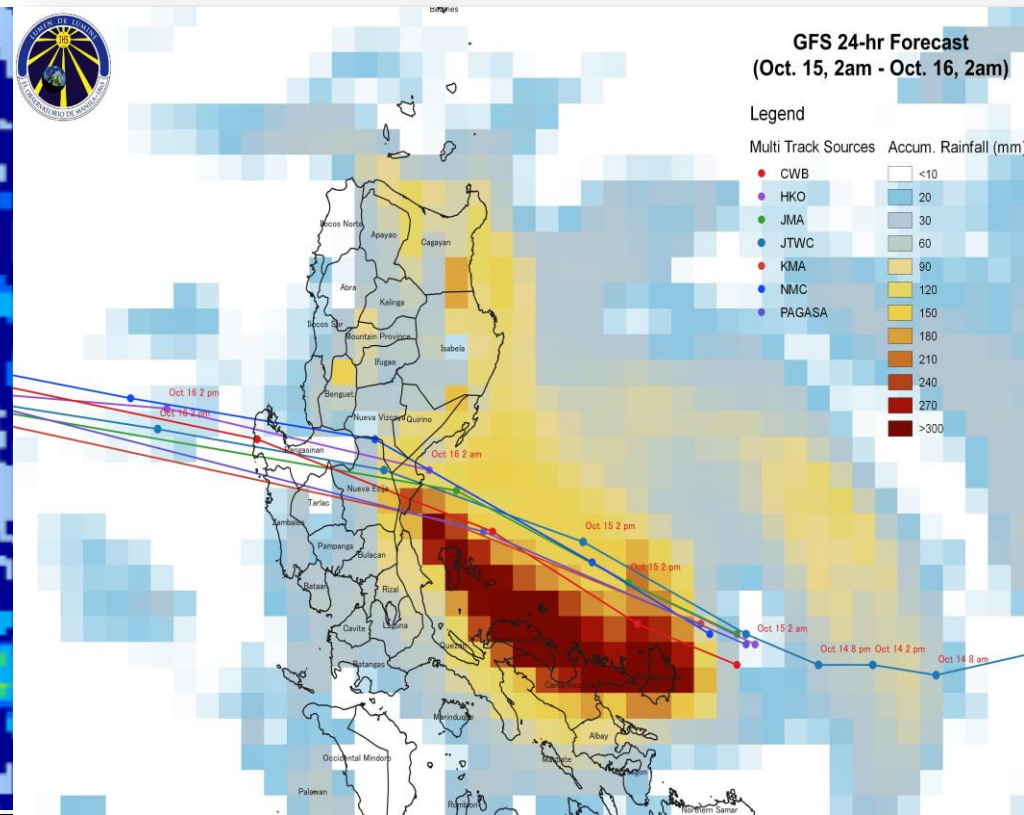
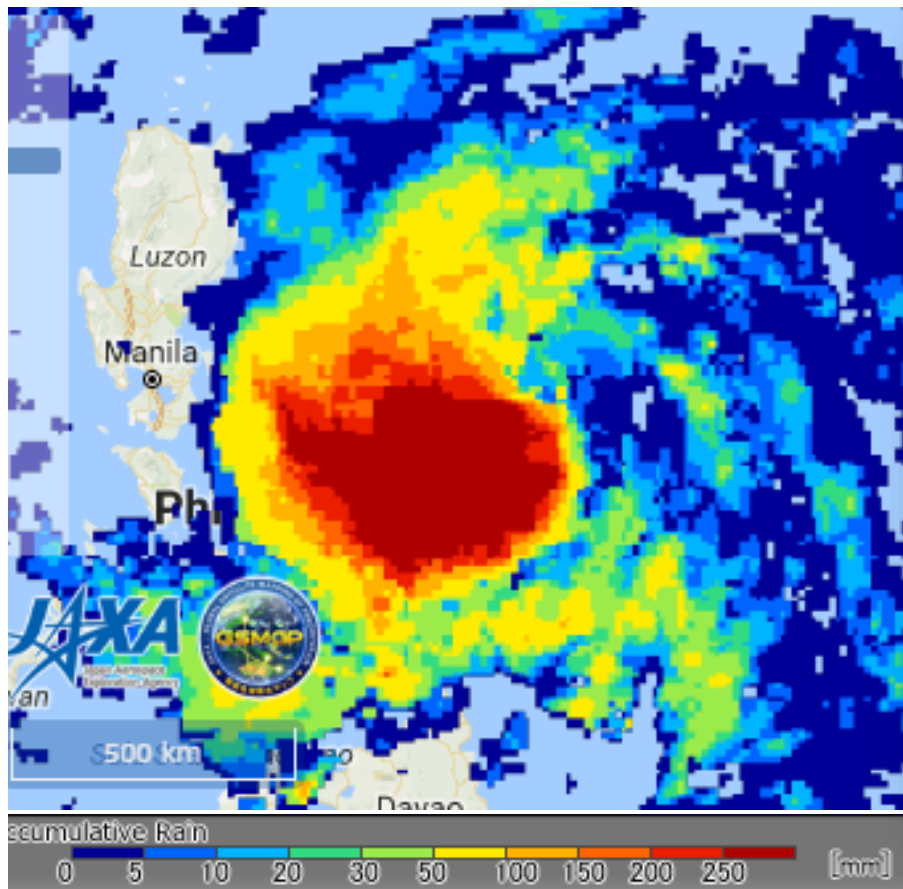
Date: 2016 / 10 / 15 00:00-00:59 UTC Submit
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Satellite rainfall from 8:00AM-8:59AM 15 Oct shows heavy rainfall of 25-30 mm/hr surrounding the eye of tropical cyclone. http://sharaku.eorc.jaxa.jp/GSMaP_NOW/

Potential rainfall associated with Typhoon Sarika (Karen)



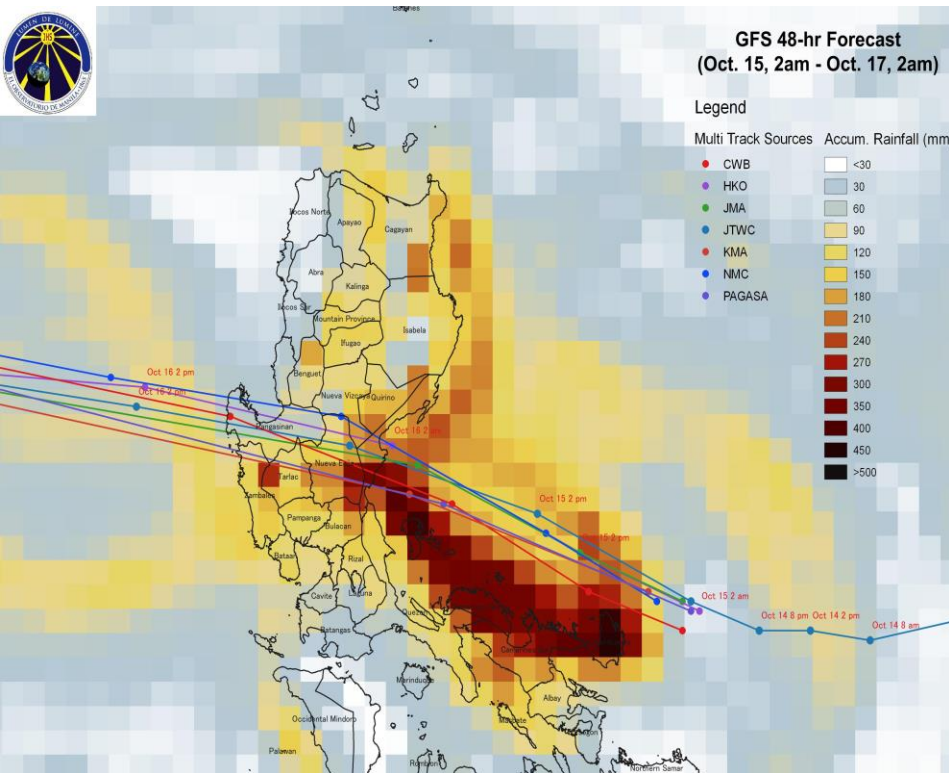
http://sharaku.eorc.jaxa.jp/GSMaP_NOW/

Observed 24-hour satellite-based rainfall,
from Oct 14 2:29am – Oct 15 2:29am

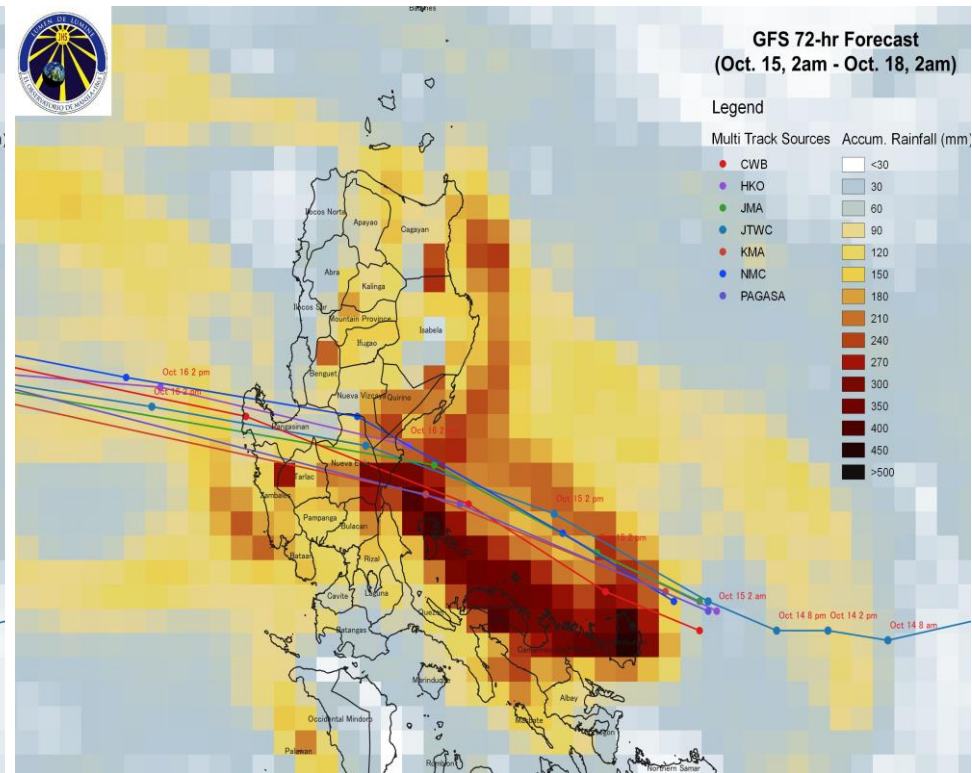
24-hour Model forecast from the NCEP
Global Forecasting System for accumulated
rainfall from Oct 15 2am – Oct 16 2am

Potential rainfall associated with TS Karen

- Potentially high 2- and 3-day accumulated rainfall over eastern coasts of Bicol region (especially Catanduanes), Quezon (Polillo Island), Aurora, Nueva Ecija and Tarlac
- Possible moderate to high rainfall on Oct 16 over CAR, Central Luzon, NCR



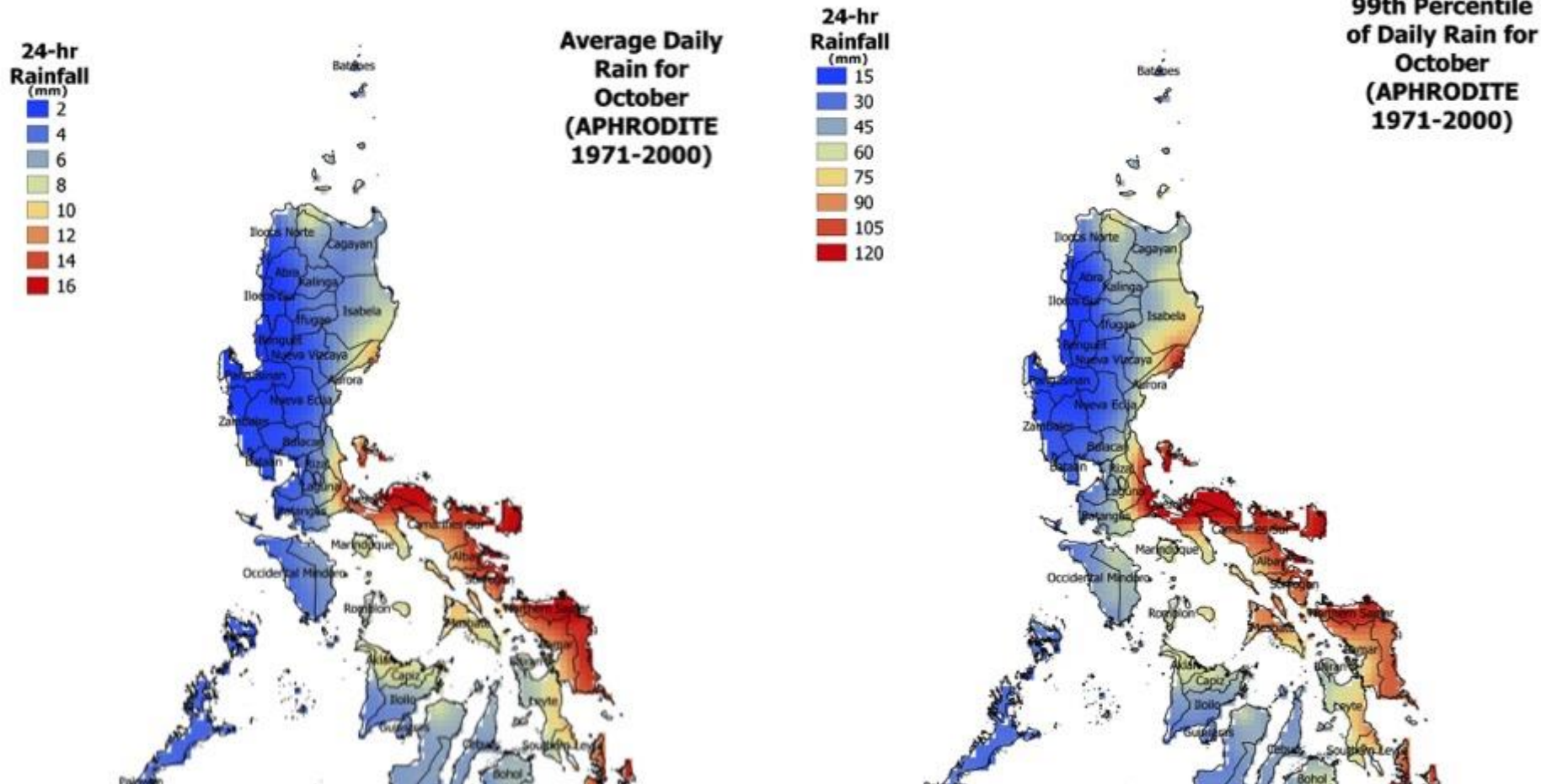
2-day Model forecast from the NCEP Global Forecasting System for accumulated rainfall from Oct 15 2am – Oct 17 2am



3-day Model forecast from the NCEP Global Forecasting System for accumulated rainfall from Oct 15 2am – Oct 18 2am

Historical daily average and extreme rainfall (October)

In October, Parts of Quezon, Bicol region, and Samar can receive more than 10 mm/day rainfall on average, with extreme rainfall days of above 100 mm rainfall.



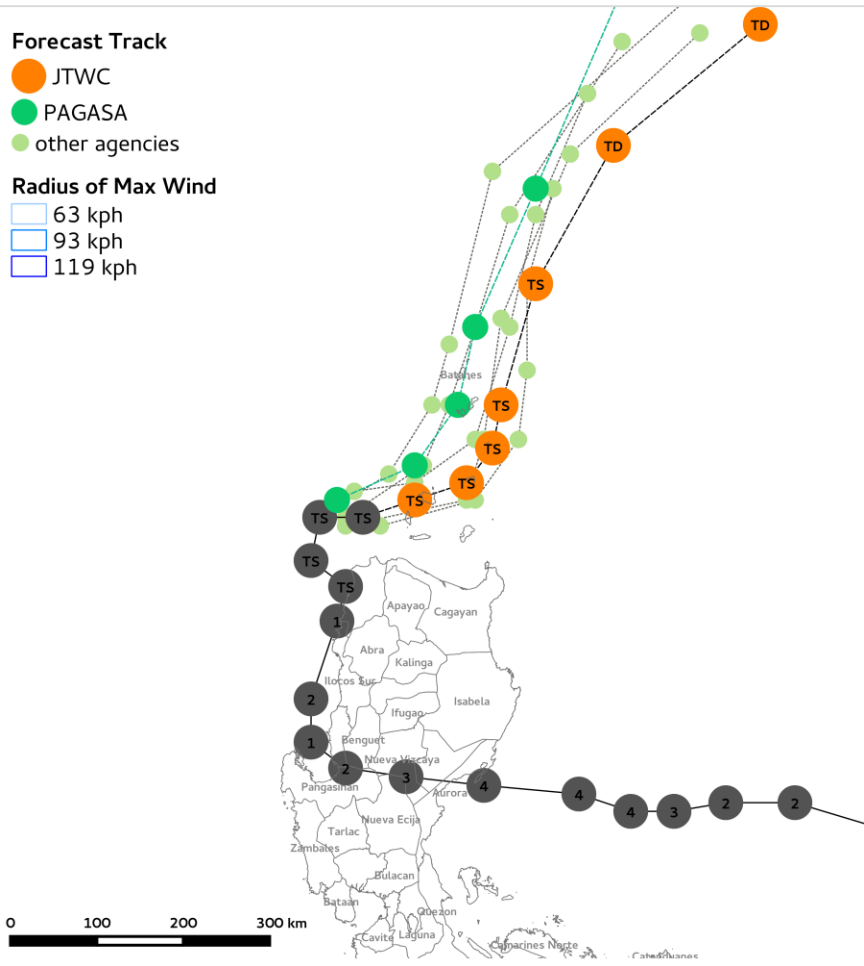
Data accessed from <http://www.chikyu.ac.jp/precip/index.html> (APHRODITE dataset).

Note the difference in the color scales.

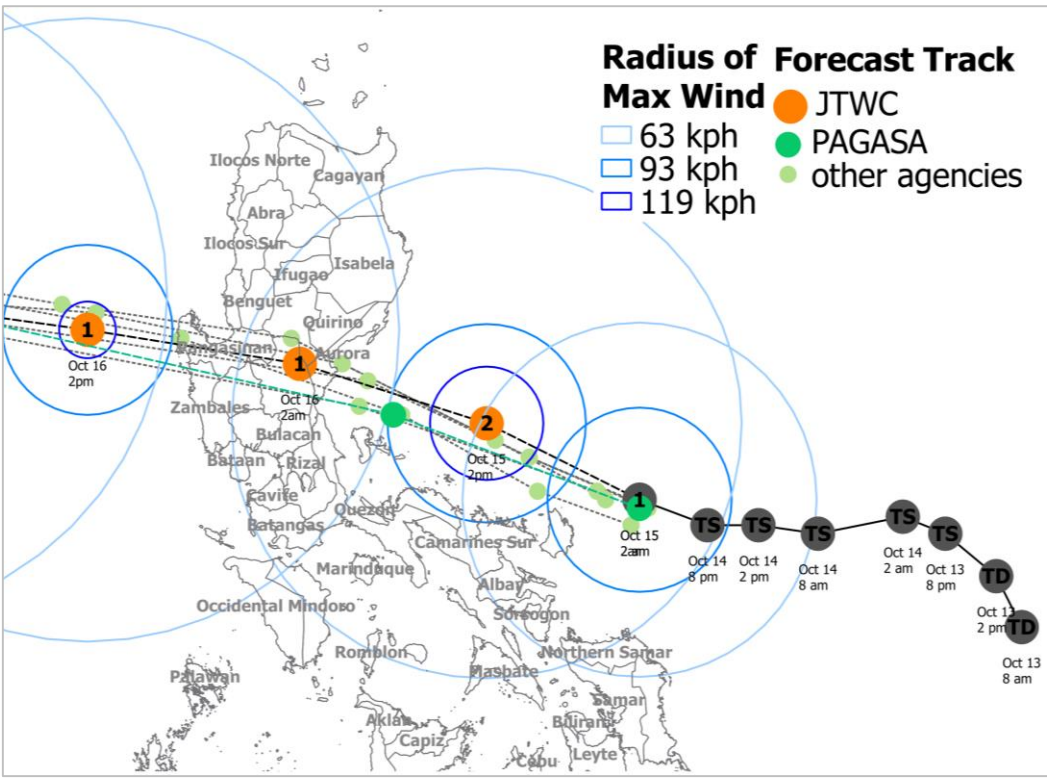
Comparison of Tropical Cyclone Sarika with Koppu (2015)



Koppu(Lando) 2015



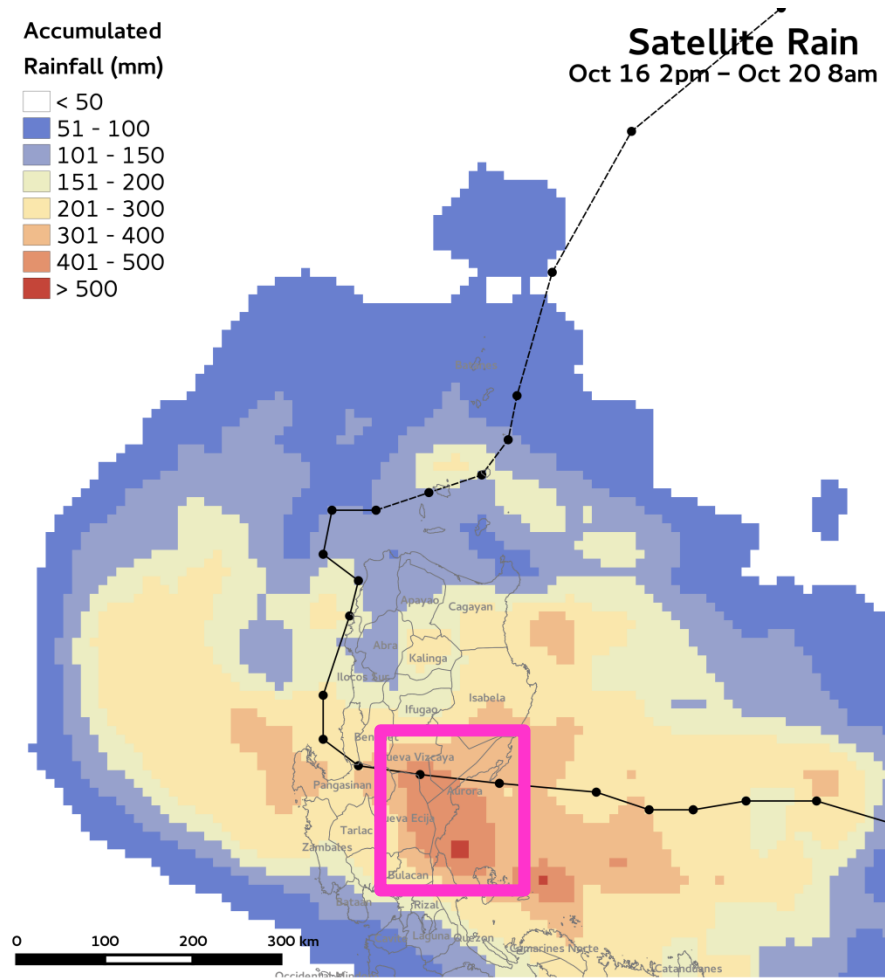
Sarika (Karen) 2016



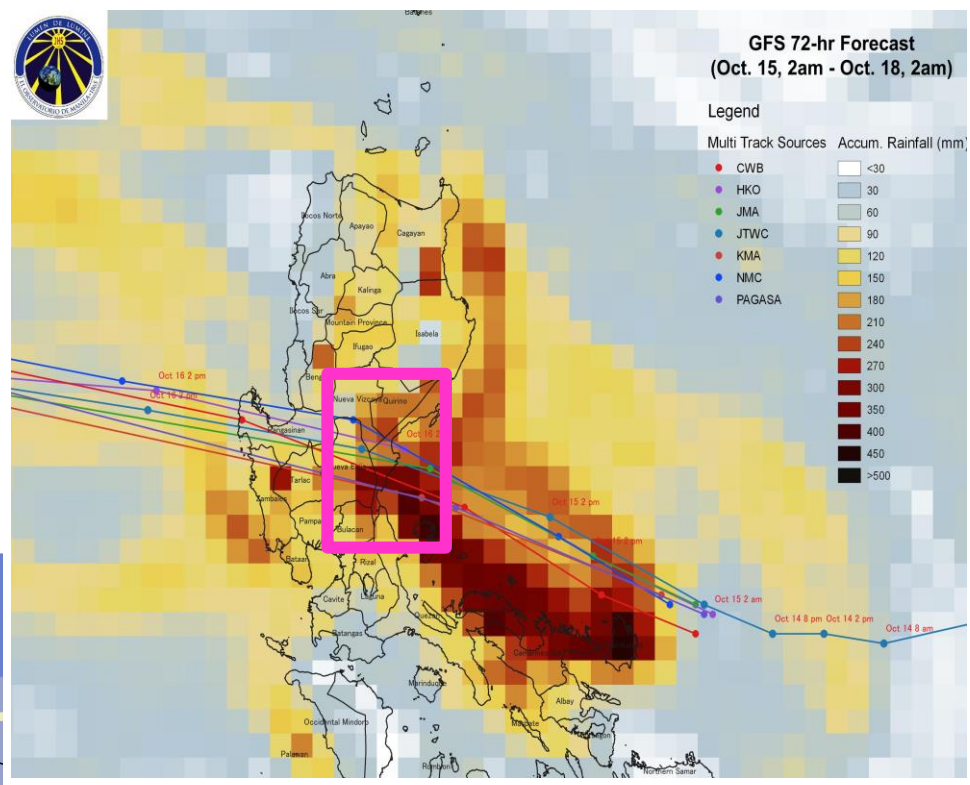
Comparison of Tropical Cyclone Sarika with Koppu (2015)



- **Potential 3-day accumulated rainfall in Aurora and Nueva Ecija similar to total rainfall due to TC Koppu (Lando) last year (Oct 16-20, 2015)**



Koppu(Lando) 2015



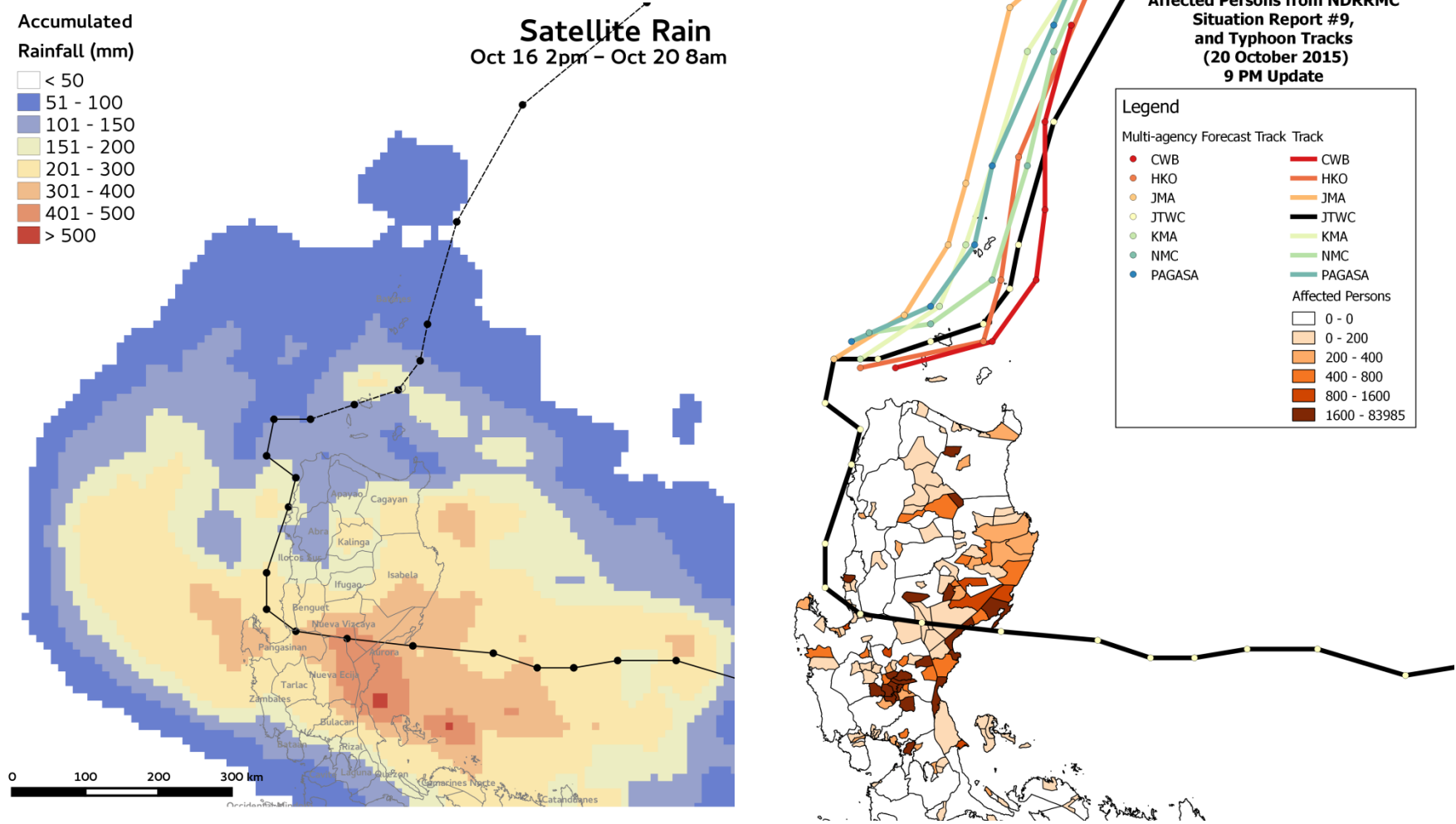
3-day Model forecast from GFS

Sarika (Karen) 2016



Affected Persons TC Koppu (Lando) Oct 2015

- Eastern Luzon, Aurora, Nueva Vizcaya, Nueva Ecija, Pampanga, and coastal areas along Pangasinan were most affected by TC Koppu last year



Koppu(Lando) 2015