



Typhoon Haima (Lawin) Report #1

19 October 2016, 3.00PM PHT

Manila Observatory

SUMMARY



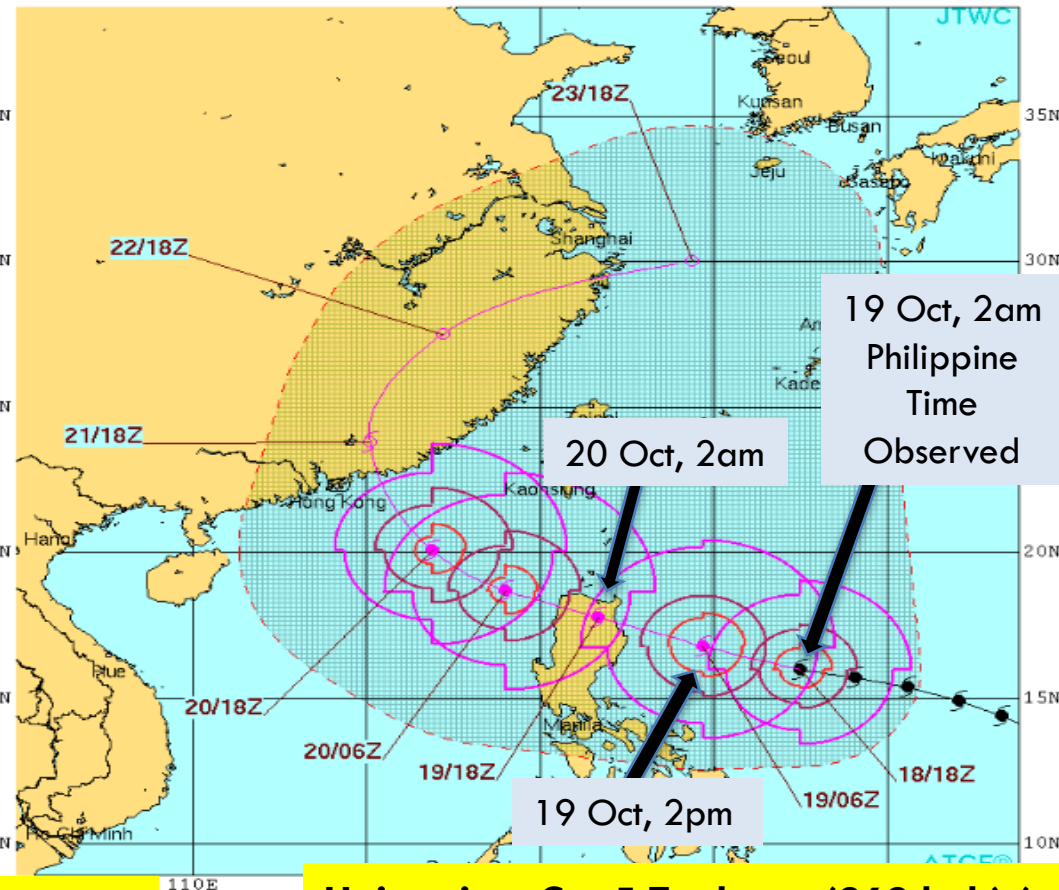
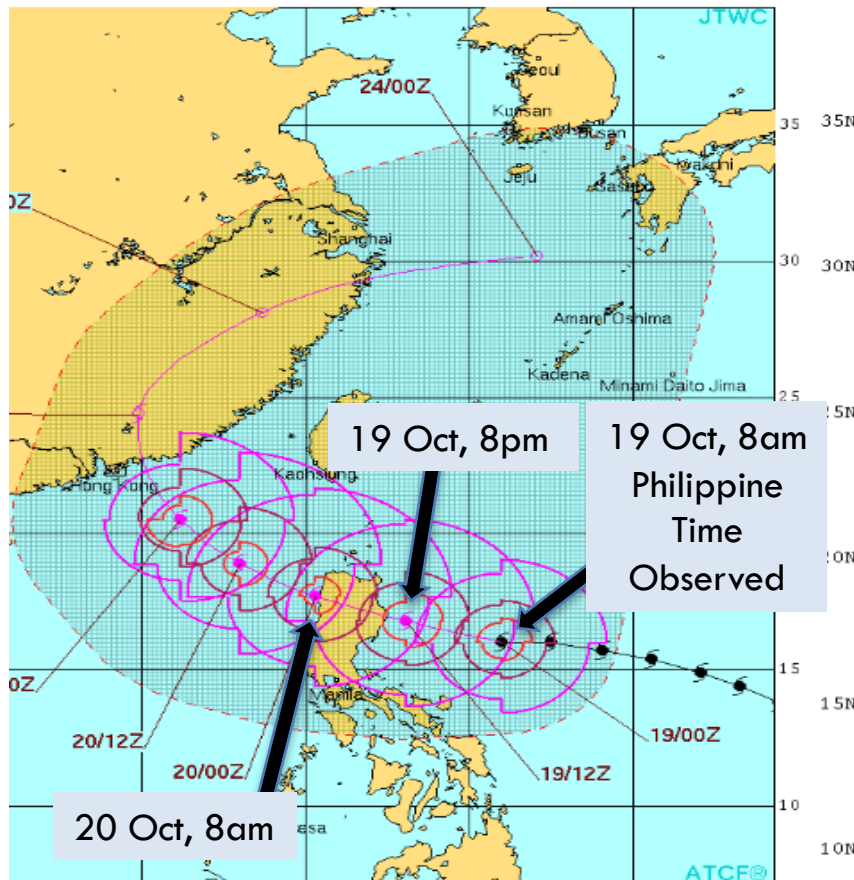
- PAGASA reports eye of Super Typhoon Haima (Bagyong Lawin) located at 16.5°N , 124.9°E (as of 1 PM Oct 19) with max 10-min sustained winds of up to 225 kph near center. Haima expected to make landfall over Cagayan-Isabela area later tonight or early morning tomorrow (Oct 20) before moving to Apayao and Ilocos Norte, with estimated moderate to heavy rainfall within 800 km around TC center.
- Signal #5 is raised over Cagayan and Isabela, Signal #4 over Apayao, Kalinga, Ilocos Norte, Abra, Ilocos Sur, Mt. Province, Ifugao and Calayan Group of Islands
- Multi-tracks show agreement in the track as it moves west-northwest.
- According to JTWC (as of 8am Oct 19), Haima is Cat 5 (max 1-min wind speed: 259 kph) with eye located near 16°N , 126°E . Haima is forecast to make landfall over Cagayan-Isabela area after 8pm Oct 19.
- Cagayan, Isabela to experience intense winds, rainfall associated with TC upon landfall. Areas previously affected by Typhoon Sarika (Karen) including Aurora, Quirino, Nueva Vizcaya may also experience rainfall. Other potential critical areas include vulnerable regions in CAR where TC rainfall may be enhanced by interaction with mountains.
- Satellite rainfall from 2.00PM-2:59PM 19 Oct shows intense rainfall of 25-30 mm/hr near eye (SW section) of tropical cyclone
- Based on model forecast, potentially extreme 1-day total rainfall (may exceed 350 mm) over Isabela, Cagayan, CAR region

Current status of Typhoon Haima (Lawin)



Observed track (black) and forecast (pink)
issued at **19 Oct, 11 AM**

Previous forecast
issued at **19 Oct, 5AM**



SUPER
WTPN3Z
181800
MOVING
MAXINT
18/18Z
19/06Z
19/18Z
20/06Z
20/18Z
21/18Z
22/18Z
23/18Z

CPA TC
MANILA
CLARK
SUBIC
KAOHSI
HONG K
TAIPEI
CHINHA
KADENA
KUNSAN
PUSAN
SASEBO

BEARIN
MANILA

0 LESS
5 34-6
● MORE
PAST 6
FORECA

As of 8am Oct 19, Haima is still Cat 5 (259 kph) with eye located near 16°N, 126°E; track shifted slightly southward and forecast to make landfall over Cagayan-Isabela area after 8pm Oct 19

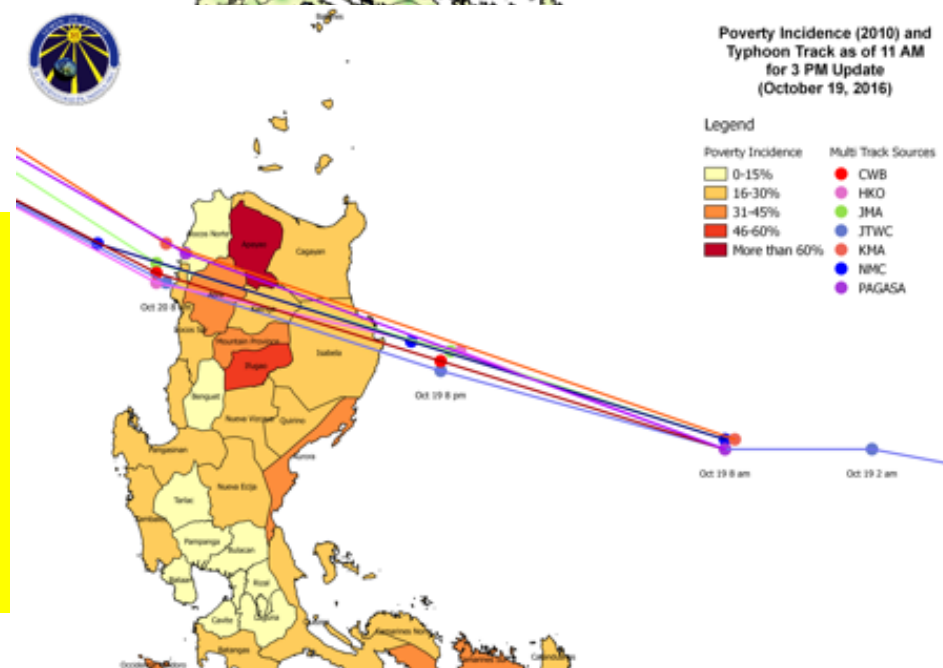
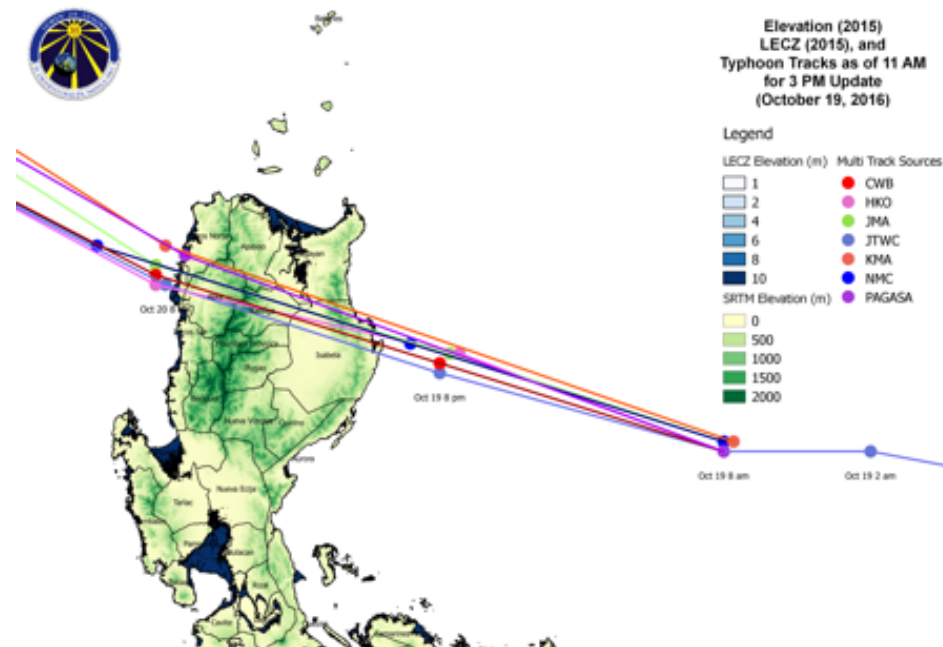
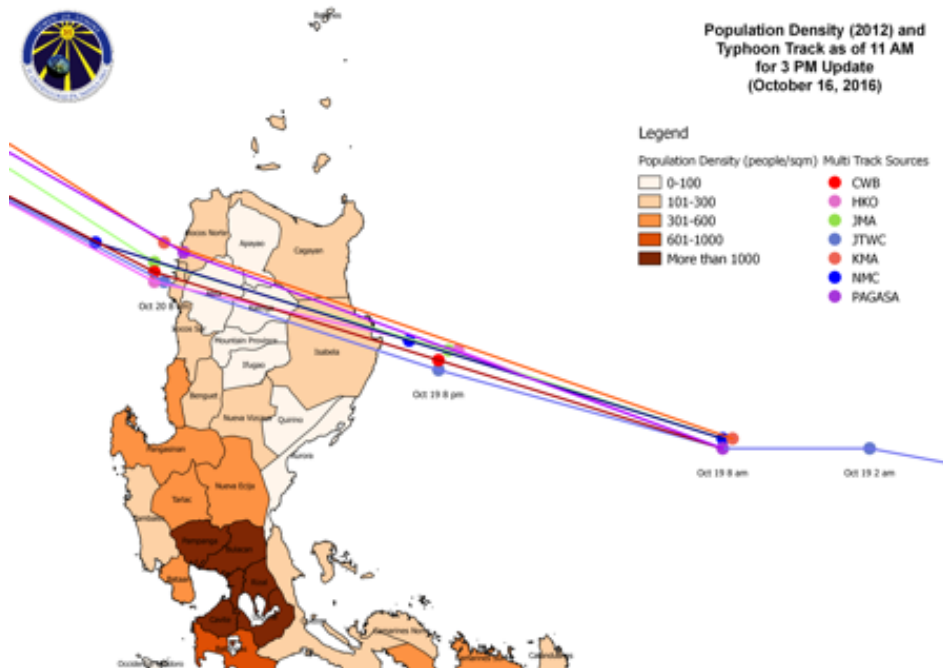
Haima is a Cat 5 Typhoon (269 kph) (as of 2am Oct 19), forecast to hit Cagayan before 2am Oct 20

Typhoon Haima (Lawin): Exposure, and Vulnerability



TRACK, POTENTIAL EXPOSURE AND VULNERABILITY

Track forecast as issued at 11 AM, Oct 19



Cagayan, Isabela to experience intense winds, rainfall associated with TC upon landfall. Areas previously affected by Typhoon Sarika (Karen) including Aurora, Quirino, Nueva Vizcaya may also experience rainfall. Other potential critical areas include vulnerable regions in CAR where TC rainfall may be enhanced by interaction with mountains.

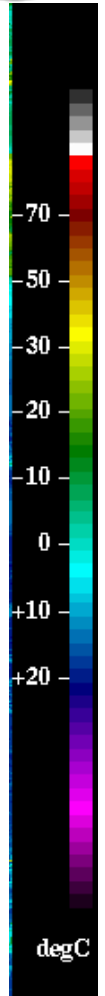
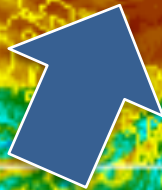
Potential rainfall associated with Typhoon Haima (Lawin)



Longwave Infrared Image, NHC Color Enhancement

As of 11.30AM, Oct 19

Areas of bright red (indicating active convection, heavy rainfall) intensify east of Luzon (over sea).



“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/#.UgeFGBZCrw>)

Satellite data via the University of Wisconsin Space Science and Engineering Center (SSEC) :

<http://tropic.ssec.wisc.edu/real-time/westpac/images/irngms.GIF> (cropped image displayed here)

Potential rainfall associated with Typhoon Haima (Lawin)

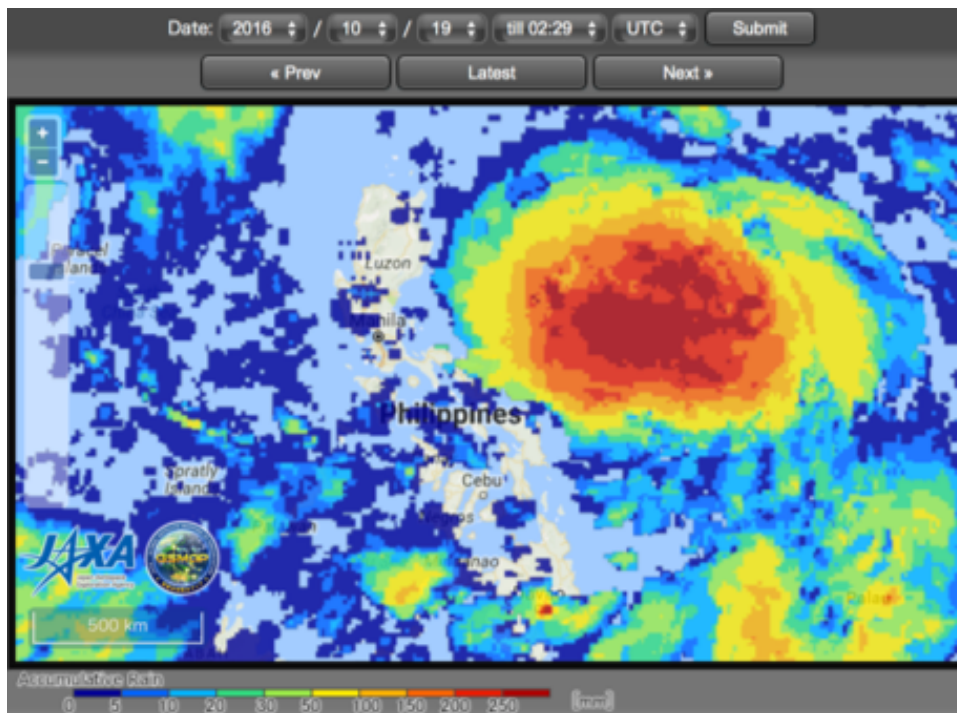


Satellite rainfall from 2:00PM-2:59PM 19 Oct shows intense rainfall of 25-30 mm/hr near eye (SW section) of tropical cyclone. http://sharaku.eorc.jaxa.jp/GSMaP_NOW/

Potential rainfall associated with Typhoon Haima (Lawin)



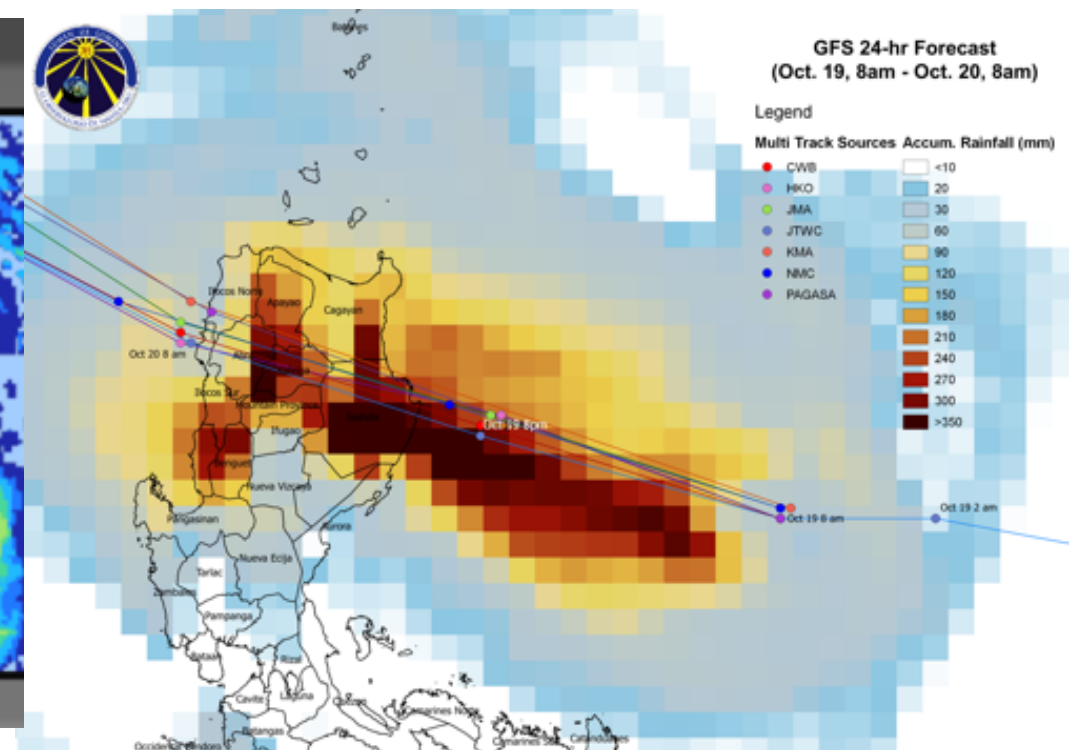
Potentially extreme 1-day total rainfall (may exceed 350 mm) over
Isabela, Cagayan, CAR region



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

* Cropped image is displayed

Observed 24-hour satellite-based rainfall,
from Oct 18 10:29am – Oct 19 10:29am

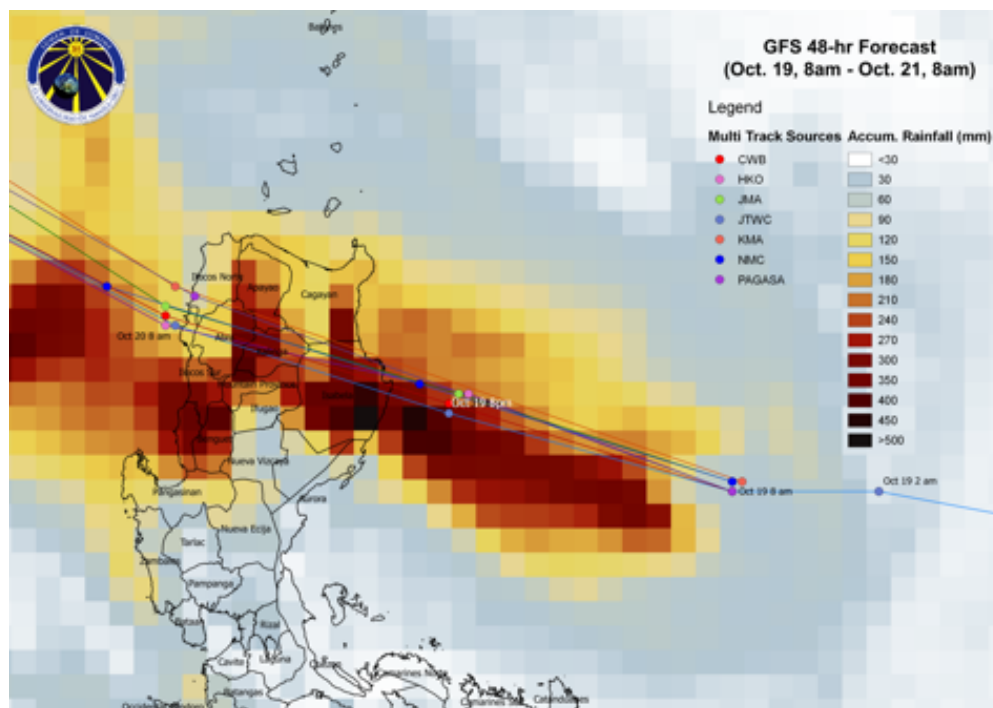


24-hour Model forecast from the NCEP
Global Forecasting System for accumulated
rainfall from Oct 19 8am – Oct 20 8am

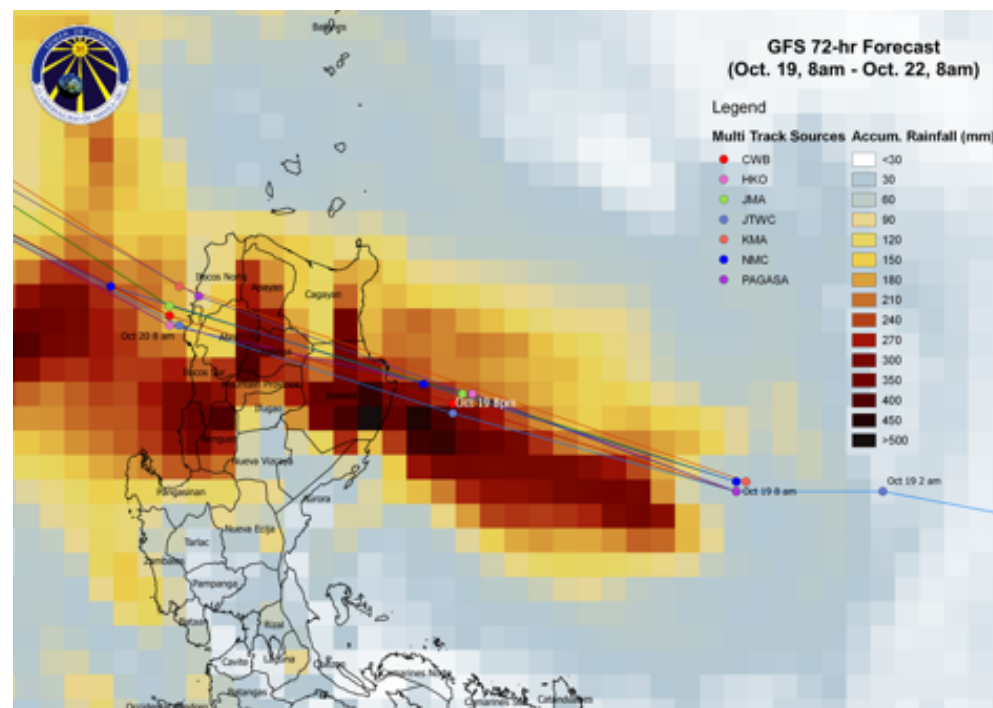
Potential rainfall associated with Typhoon Haima (Lawin)



Potentially extreme 2- and 3-day accumulated rainfall over CAR, Ilocos Norte, Ilocos Sur, La Union as Haima exits via Ilocos



2-day Model forecast from the NCEP Global Forecasting System for accumulated rainfall from Oct 19 8am – Oct 21 8am

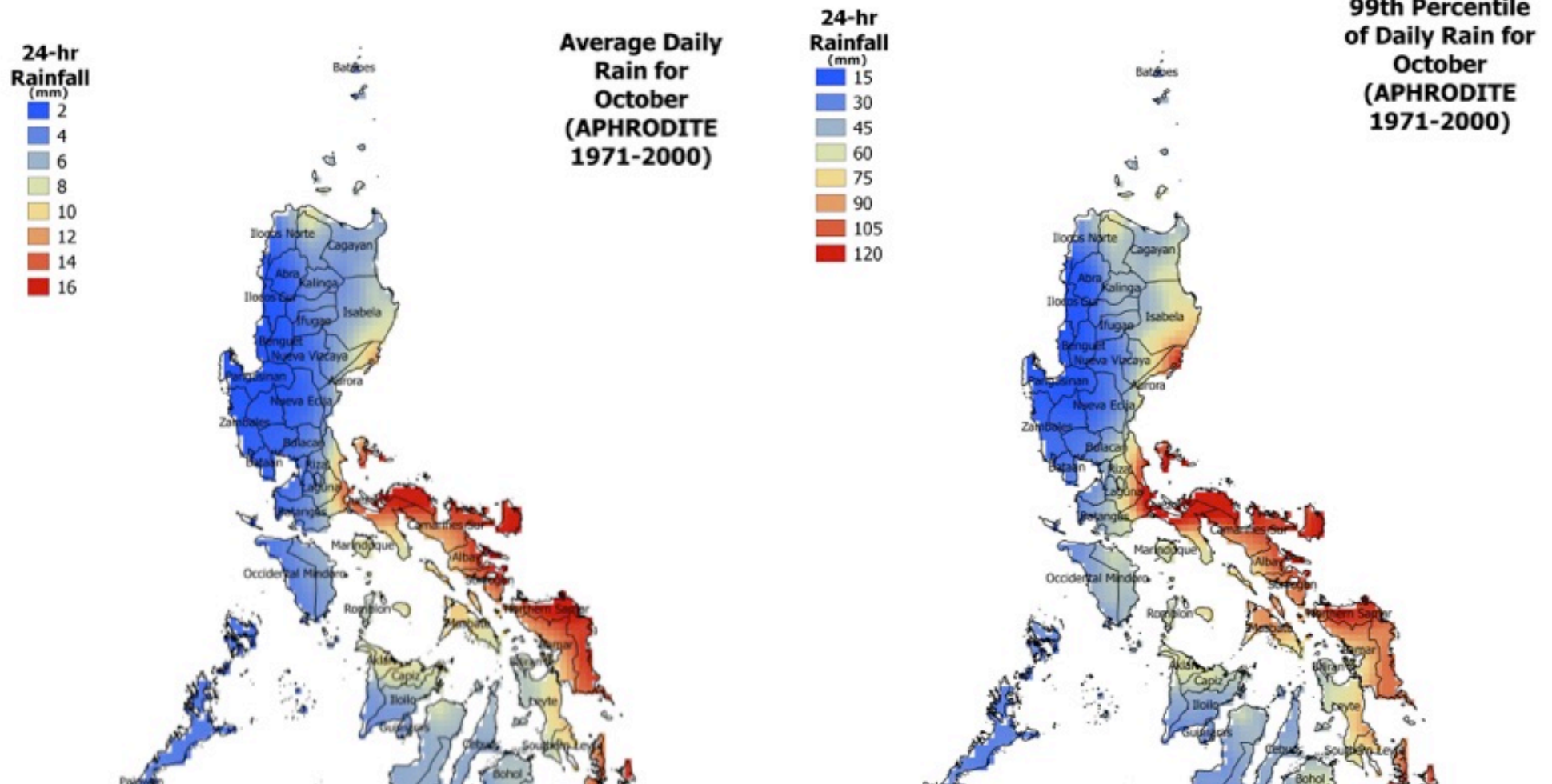


3-day Model forecast from the NCEP Global Forecasting System for accumulated rainfall from Oct 19 8am – Oct 22 8am

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).

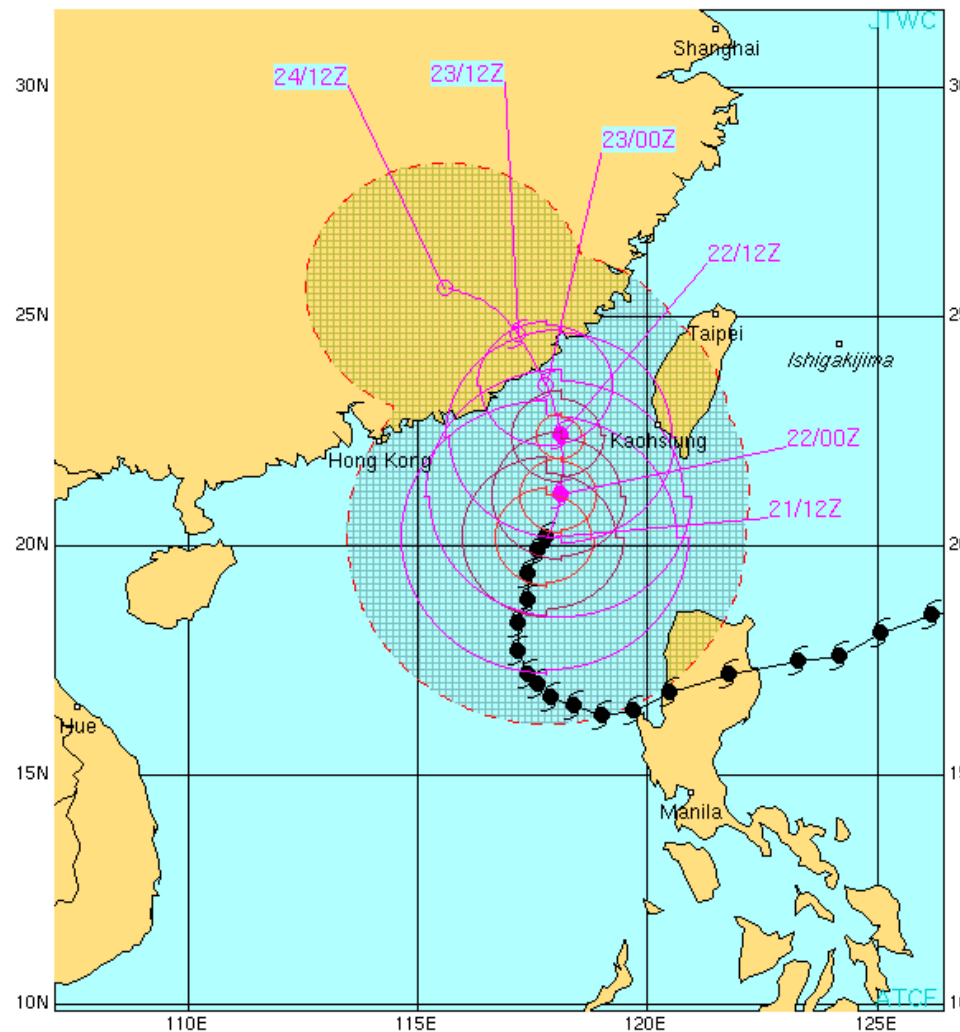
Note the difference in the color scales.

Comparison of Typhoon Haima (2016) with Megi (2010)



In October 18, 2010, Super Typhoon Megi (Juan) made landfall in Isabela with maximum 1-min sustained winds of about 278 kph before landfall.

Megi (Juan) 2010



Haima (Lawin) 2016

