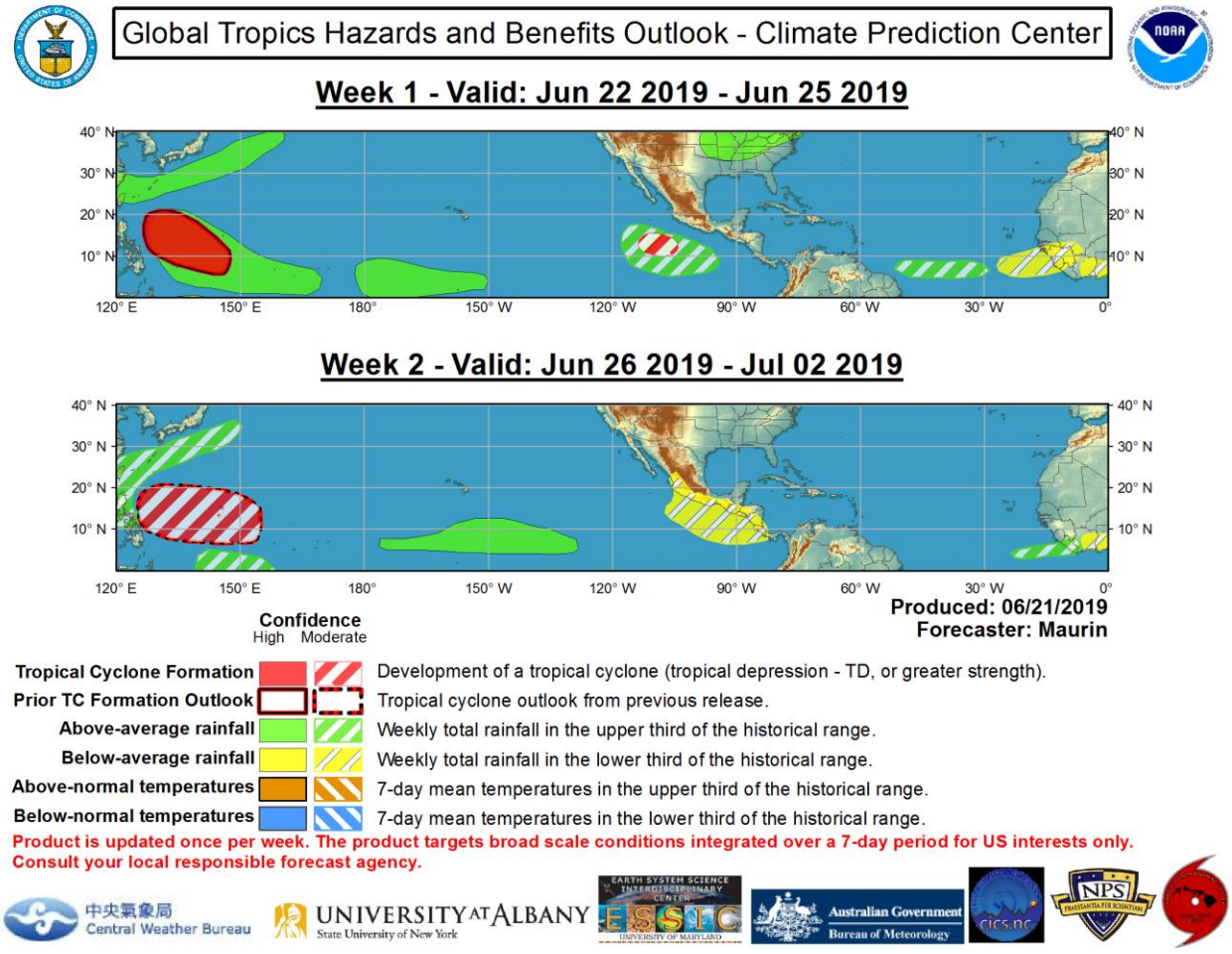

The MJO signal appears to have weakened on the RMM index, diving toward the unit circle over the past few days with some eastward propagation through Phase 5. Interactions with a westward moving Rossby wave centered near the Date Line could be destructively interfering with the MJO signal, thus showing the degradation of the signal on the WH diagram. The imprint of the MJO signal on the OLR field continues to be weak, with a loss of the canonical pattern expected in Phase 5. However, the signal is still showing a strong projection onto the 200hPa velocity potential field, which maintains a coherent Wave-1 pattern with the MJO signal in Phase 6. Due to the noisiness of the lower-level wind field and the OLR field, the MJO signal is likely to show decay on the RMM index moving through the next week, but a weak signal is likely to continue propagation with the majority of the signal maintained in the upper-level wind field.

Over the past few days, model guidance has been in good agreement on the development of a tropical cyclone off of Central America in Week-1. The National Hurricane Center has a 30% chance of development over the next 5 days. With this expected enhanced moisture, the region of below normal rainfall forecast earlier this week coinciding with expected MJO impacts has been removed and replaced with above normal rainfall.

The original discussion from Tuesday follows below.

Moving into the end of June, the MJO, which has remained active since early May, is currently in Phase 5 on the RMM index, with the convective envelope centered over the Maritime Continent. Destructive interference with El Nino is leading to weak anomalies in the OLR spatial field. The westerly wind burst event in the Western Pacific two weeks ago led to a downwelling Kelvin wave over the equatorial Pacific which should deepen the thermocline and help reinforce the ongoing El Nino; however, the wave is weaker than the previous events so the reinforcement might be minimal. Forecasts for the MJO are varied between the models, with the overall consensus for continued eastward propagation but likely some weakening to the signal.

As the convective envelope of the MJO moves toward the central and eastern Pacific (Phase 6/7) during the next two weeks, this should support tropical cyclone development for the western Pacific basin. For Week-1, there is high confidence in possible TC formation over the area east of the Philippines, where models are indicating a closed low tracking northwestward later in the period. Over the Bay of Bengal, there is moderate confidence in another TC formation. The GEFS is showing enhanced rainfall over the region with no closed low, while other models are indicating TC formation. Continuing into Week-2, the set up over the western Pacific is expected remain conducive to TC formation. Earlier this week, some models, mainly the GFS, were indicating a possible TC formation in the western Caribbean; however, it has backed off on this solution and wind shear values over the region are likely to be still too high to support TC formation.

The convective envelope of the MJO is forecast to propagate over the western Pacific in Week-1, leading to regions of high confidence for above average rainfall west of the Date Line near the Equator and further west. The region northeast of the Maritime Continent is likely to see enhanced rainfall due in part to the possible TC formation, as well as the Bay of Bengal. Rossby wave activity over parts of Asia and the northwestern Pacific is forecast to lead to above average rainfall. Drying over the Maritime Continent as the suppressed envelope moves into the region will be reinforced by the low frequency ENSO state. The u850 wind field is showing that the persistent easterlies over the Indian subcontinent that was likely leading to a delay in the onset of the monsoon have been replaced with weak westerly anomalies. Conditions are looking more supportive of monsoon onset for southern Indian in Week-1; however, it is likely to remain delayed for the central and northern regions, leading to another week of widespread above normal temperatures. In the western hemisphere, heavy rainfall over the central and eastern U.S. is expected for Week-1, while below normal rainfall is forecast over the quiet eastern Pacific basin.

Suppressed convection from the MJO is forecast to shift toward the western Pacific in Week-2, leading to a region of below average rainfall expanding further east from Week-1. Above average rainfall in the western Pacific basin is still expected from possible TC activity. The ongoing ENSO state is expected to support the persistent above average rainfall over the central Pacific. For the Indian subcontinent, models indicate some disagreement on how far the advancement of the monsoon will be from Week-1. The CFS shows continued below normal rainfall for the northern half of the country in Week-2, while ECMWF is indicating near normal. With the advancement over the southern part of the country in Week-1, there should be some relief from the high temperatures for Week-2.

Forecasts over Africa are made in consultation with CPC's international desk and can represent local-scale conditions in addition to global-scale variability.