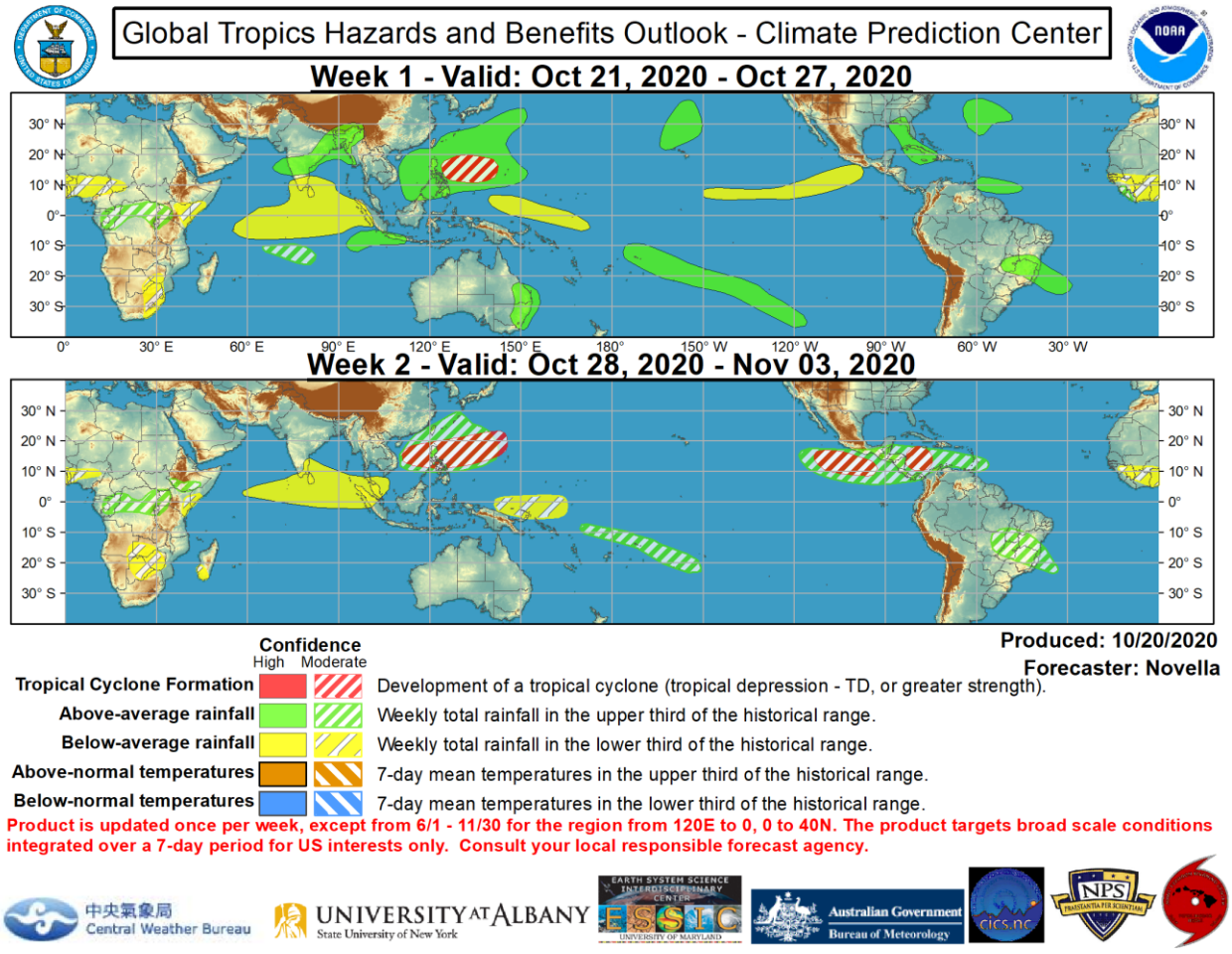

Following a stationary pattern since mid-September, the MJO has shown signs of some strengthening as it has begun to propagate eastward over the Maritime Continent during the past several days. Upper-level velocity potential anomalies continue to depict much of the enhanced convection centered over the Maritime Continent, with suppressed convection extending from the Americas to Africa. Anomalous upper-level divergence has shifted east in recent days suggesting the MJO may soon be destructively interfering with the La Nina base state. There has been a steep decline in the equatorial Pacific sea surface temperature anomalies, particularly in the Nino 4 and 3.4 regions, with an atmospheric response showing stronger easterly (westerly) anomalies near the surface (aloft) over these areas in recent weeks. Dynamical model forecasts in RMM space indicate a continued eastward propagation of the intraseasonal signal with varying degrees of amplitude during the next two weeks. The GEFS and CFS appear to be the most progressive with the signal, with many ensemble members placing the MJO in phases 7 and 8 by early November. The ECMWF and Canadian models are relatively slower, and favor a westward shift of the signal in phase 5 likely tied to equatorial Rossby wave activity during week-1 before entering phase 6 by week-2. In light of this, forecast confidence remains limited given the increased potential for destructive interference with the low frequency footprint and varying phase speeds among the dynamical models. If the MJO does propagate eastward as fast as some ensemble members suggest, increased tropical cyclone (TC) activity over the East Pacific and Caribbean is more

likely during late October. However, if the intraseasonal signal is slow to propagate, continued TC activity is anticipated over the West Pacific.

Three TCs have formed in the last seven days. In the West Pacific, Tropical Storm Saudel formed on 10/19 in the Philippine Sea and is forecast to track westward across Luzon today before moving into the South China Sea. The Joint Typhoon Warning Center (JTWC) anticipates the system to intensify under more favorable conditions, and is predicted to track westward towards Hainan later this week. Please refer to the JTWC for the latest update on this system. To the northeast of Saudel, Tropical Depression 20 (formerly 97W) formed today (10/20) and is located approximately near (140E/25N). Both the GEFS and ECMWF ensembles show this disturbance to be short-lived and is anticipated to become absorbed by a mid-latitude trough traversing Japan, which may help to reinforce a high amplitude mid-level pattern over the higher latitudes of North America later this week. In the Atlantic, Tropical Storm Epsilon formed on 10/19 over the central Atlantic (several hundred miles southeast of Bermuda). Initially a hybrid structured storm, Epsilon is expected to take on more tropical characteristics (i.e. symmetrically warm core) with warm sea surface temperatures and reduced wind shear to aid in its development. The National Hurricane Center (NHC) forecasts Epsilon to intensify into Hurricane in the next few days and track northwestward towards Bermuda. There is an elevated risk of direct impacts for wind, heavy precipitation and storm surge across the island, and interests there should refer to NHC for the latest updates.

Following Saudel, the GEFS continues to favor the development of another area of low pressure in the Philippine Sea late in week-1. The ECWMF ensemble mean, however, is relatively more delayed with this development, increasing TC formation potential by early week-2, while also depicting increasing signals for TC formation farther west in the South China Sea likely tied to Rossby wave activity in the region. To address the uncertainties with timing and location, a moderate confidence area is added over the Philippine Sea during week-1, and a broader moderate confidence area is posted to cover these areas during week-2. In the Western Hemisphere, the potential for TC formation looks to increase towards the end of October and into early November associated with the predicted phase of the MJO by some of the models. Since last week, our previous outlooks have been highlighting a region in the western Caribbean with elevated odds for formation associated with a Kelvin wave traversing the region. However, guidance has become more tenuous with this development, and NHC has trimmed the chances of formation over the next 5 days from 30% to 10% resulting in the TC formation area being removed from the outlook for week-1. The associated trough of low pressure, however, is expected to promote enhanced rainfall for parts of the Caribbean and the Gulf of Mexico during week-1. For week-2, probabilistic tools are depicting increased signals for TC formation in the Caribbean and today's GEFS ensemble shows a stronger area of low pressure in the region compared to prior guidance during the latter portion of week-2. This is consistent with climatology, and a moderate confidence area is added to the outlook for week-2. In the East Pacific, probabilistic tools and model ensembles also support

elevated chances for TC formation during week-2, and a moderate confidence area is also included from approximately 113W to 93W to the south of Mexico.

The precipitation outlook during the next two weeks is based on the consensus among the CFS and ECMWF ensemble means, the low frequency state, MJO composites, and anticipated TC tracks. For hazardous weather concerns over the U.S. during the next two weeks, please refer to your local NWS Forecast Office, the Weather Prediction Center's Medium Range Hazards Forecast, and CPC's Week-2 U.S. Hazards Outlook. Forecasts over Africa are made in consultation with the International Desk at CPC, and can represent local-scale conditions in addition to global-scale variability.