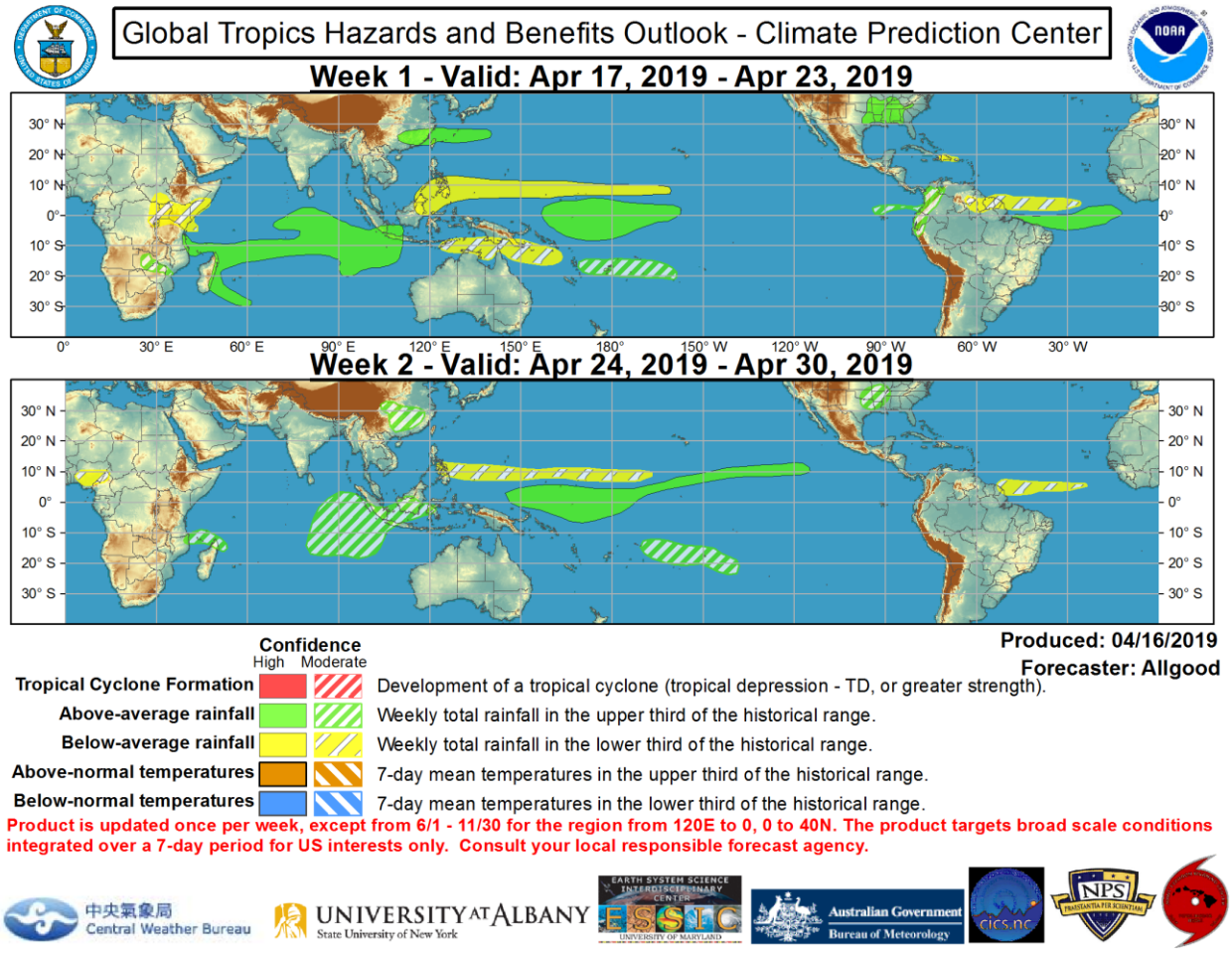

The MJO has not been active since mid-March, with low-frequency features modulated by Kelvin and Rossby wave activity dominating the global tropical convective pattern. The upper-level velocity potential anomaly pattern continues to exhibit a Wave-2 structure, with two centers of broad-scale enhanced (suppressed) features near the Prime Meridian and just west of the Date Line (Indian Ocean and the Americas). The presence of these two persistent and competing signals is the primary factor for the weak projections of both the RMM-based and CPC velocity potential based MJO indices. The ongoing El Nino event is contributing to this low frequency state, but the enhanced convective response over the Pacific is west of the canonical atmospheric response to the warm SST anomalies. Injection of mass into the tropics from a pair of cutoff upper-level midlatitude cyclones north and south of the Equator over the East Pacific may be contributing to this disrupted pattern. Dynamical model MJO index forecasts are mixed, with both the GEFS and ECMWF indicating an uptick in Indian Ocean convection during Week-1, but while many ECMWF ensemble members show a developing MJO signal that propagates to the Maritime Continent by Week-2, the GEFS maintains a more stationary and weakening signal. Statistical guidance favors the development of a canonical Indian Ocean MJO event. Based on these forecasts, the MJO is anticipated to strengthen during the next week, but the duration of the event is highly uncertain, especially as it overspreads the Maritime Continent and encounters destructive interference with the ENSO state.

No tropical cyclones formed during the past week. Tropical cyclogenesis is not anticipated during Week-1. There is a low potential for tropical cyclogenesis over the southeastern Indian Ocean, but fewer GEFS ensemble members are depicting a tropical cyclone in the latest model runs compared to previous days. During late Week-1 or Week-2, enhanced convection northeast of New Guinea may become conducive for tropical cyclone formation, but again the model guidance indicates that the potential is too low to include a hazard on the outlook. April and May are a climatologically quiet time of year for tropical cyclone activity.

Forecasts for above- and below-normal precipitation were made using a consensus of CFS, ECMWF, and GEFS forecasts, and favor the idea of a developing MJO over the Indian Ocean during the period. Widespread enhanced rainfall is forecast over the Indian Ocean, primarily south of the Equator, with low-frequency convection favored to continue near the Date Line. Suppressed convection is forecast away from the Equator over the Maritime Continent, with increased uncertainty along the Equator due to the potential for Kelvin wave activity. Areas of enhanced rainfall are anticipated across southeastern China and the south-central U.S., the latter presenting an enhanced flooding threat due to already high soil moisture and water levels along the main stem Mississippi Valley. The southward displaced ITCZ feature over the tropical Atlantic and northeastern Brazil is favored to persist, and appears tied to a low frequency signal.

During Week-2, enhanced convection is favored to shift to the eastern Indian Ocean and western Maritime Continent, consistent with MJO activity, but with increased uncertainty due to differences between the ECMWF and CFS solutions. This developing subseasonal signal would reduce the low frequency suppressed signal over the rest of the Maritime Continent, but model guidance does not show the competing enhanced convective signal near the Date Line becoming interrupted. Above-normal rainfall is favored to continue both across southeastern China and the south-central U.S.

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