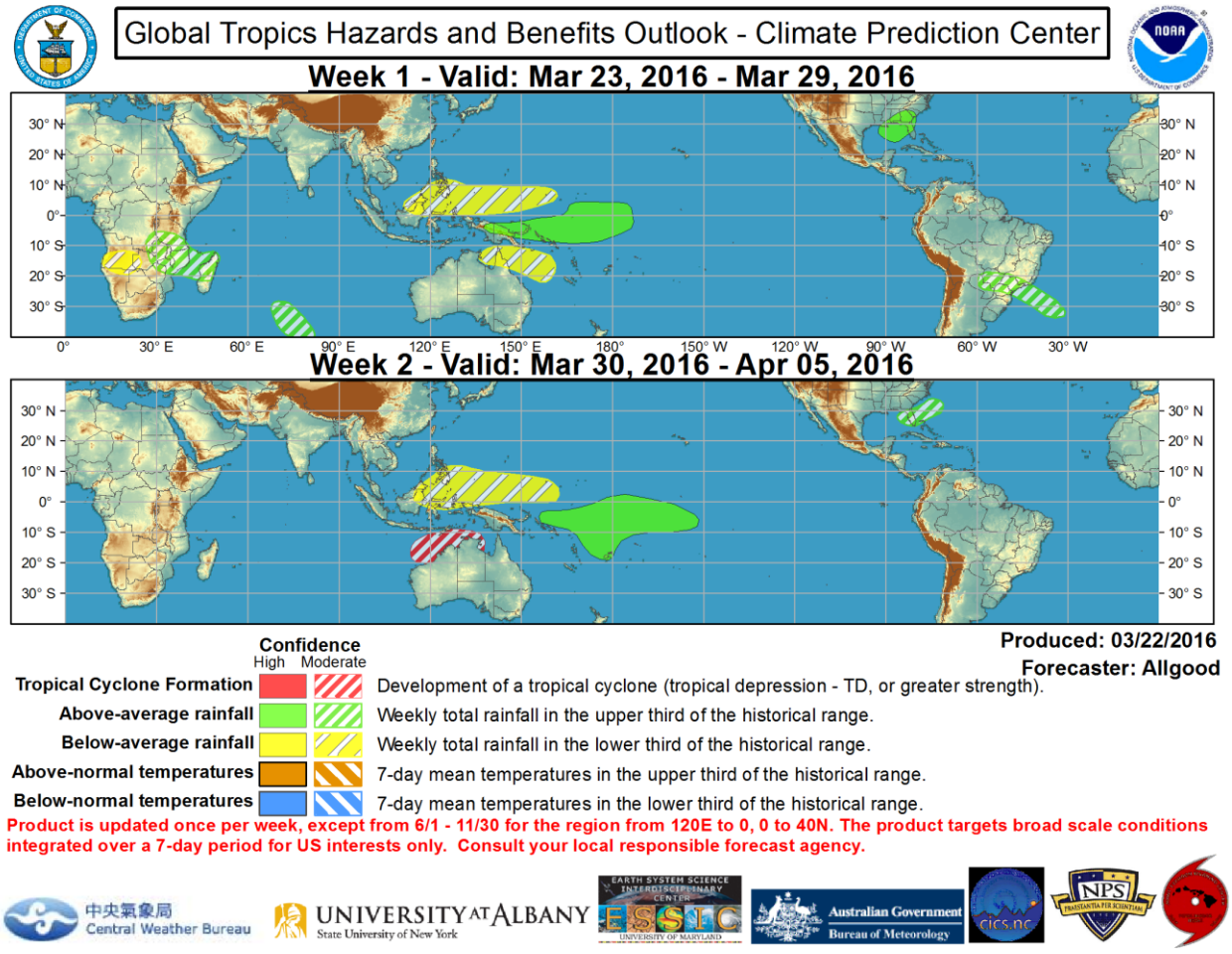

The MJO remained active during the past week, with the RMM based MJO index depicting the enhanced phase propagating over the Maritime Continent. The CPC velocity potential based MJO index depicts modest amplification of the MJO signal following a period of weakening over the Indian Ocean. Destructive interference between the intraseasonal signal and a weakening ENSO base state resulted in an incoherent OLR anomaly pattern, with enhanced convection observed over parts of the Indian Ocean, eastern Maritime Continent, and far western equatorial Pacific; areas not typically favored for enhanced convection during warm ENSO events. Convective anomalies associated with El Nino weakened across the eastern Pacific as well, although the ENSO atmospheric response remained robust through mid March.

Dynamical model MJO index forecasts generally favor weakening of the intraseasonal signal during the next two weeks, with the GFS and UKMET ensembles weakening the signal rapidly over the next several days, and the ECMWF continuing eastward propagation but reducing the amplitude of the index as the MJO reaches the eastern Pacific. SST anomalies remain positive across the central and eastern Pacific, so any remnant intraseasonal signal would likely constructively interfere with the base state as it propagates across the Pacific, so it is unclear what mechanism would weaken the intraseasonal signal.

Therefore, MJO activity is anticipated to continue playing a substantial role in the global tropical convective pattern during Week-1, while uncertainty increases during Week-2.

Two tropical cyclones formed during the past week. Cyclone Emeraude formed over the South Indian Ocean on March 15 near 11.2S and 85.9E and strengthened to Category-4 intensity on the Saffir-Simpson scale. With weak mid-level steering, the storm moved little during the week, and has now dissipated while drifting to the west. The remnants of Emeraude are anticipated to move poleward ahead of an approaching trough in several days, and the frontal interaction may result in renewed convection and a low potential for weak reintensification of the system. A wet shape was included in this outlook over the southern Indian Ocean to reflect this potential. Elsewhere, Tropical Depression Sixteen formed over the Gulf of Carpentaria on March 16 and quickly moved ashore over northern Queensland. During the upcoming week, no additional tropical cyclogenesis is anticipated; however, there is a low potential for the formation of a subtropical low pressure area in association with a frontal boundary over the Mozambique Channel, as well as a low potential for new tropical cyclone formation over the southeastern Indian Ocean south of Sumatra. During Week-2, there is a low to moderate potential for tropical cyclone formation north of Australia.

Precipitation forecasts in this outlook are based on a consensus between CFS and ECMWF dynamical model guidance, MJO composites, and several extratropical features that may yield locally heavy rainfall. During Week-1, interactions between the MJO and ENSO favor enhanced (suppressed) convection over the eastern Maritime Continent and western Pacific (northern Maritime Continent, northwestern Pacific, and the Coral Sea). Enhanced precipitation associated with mid-latitude troughs is forecast across southeastern Africa and Madagascar, the southeastern CONUS, eastern Paraguay and southern Brazil. During Week-2, enhanced convection is favored to propagate eastward across the western and central Pacific, while suppressed convection is forecast to persist over the northwestern Pacific and north-central Maritime Continent. Additional surges of cold air over the central U.S. favor a mean frontal placement over the Southeast, with the greatest potential for heavy rainfall over the Florida Peninsula, northern Bahamas, and adjacent Atlantic waters.

Forecast over Africa are made in consultation with CPCs international desk, and can represent local-scale conditions in addition to global-scale variability.