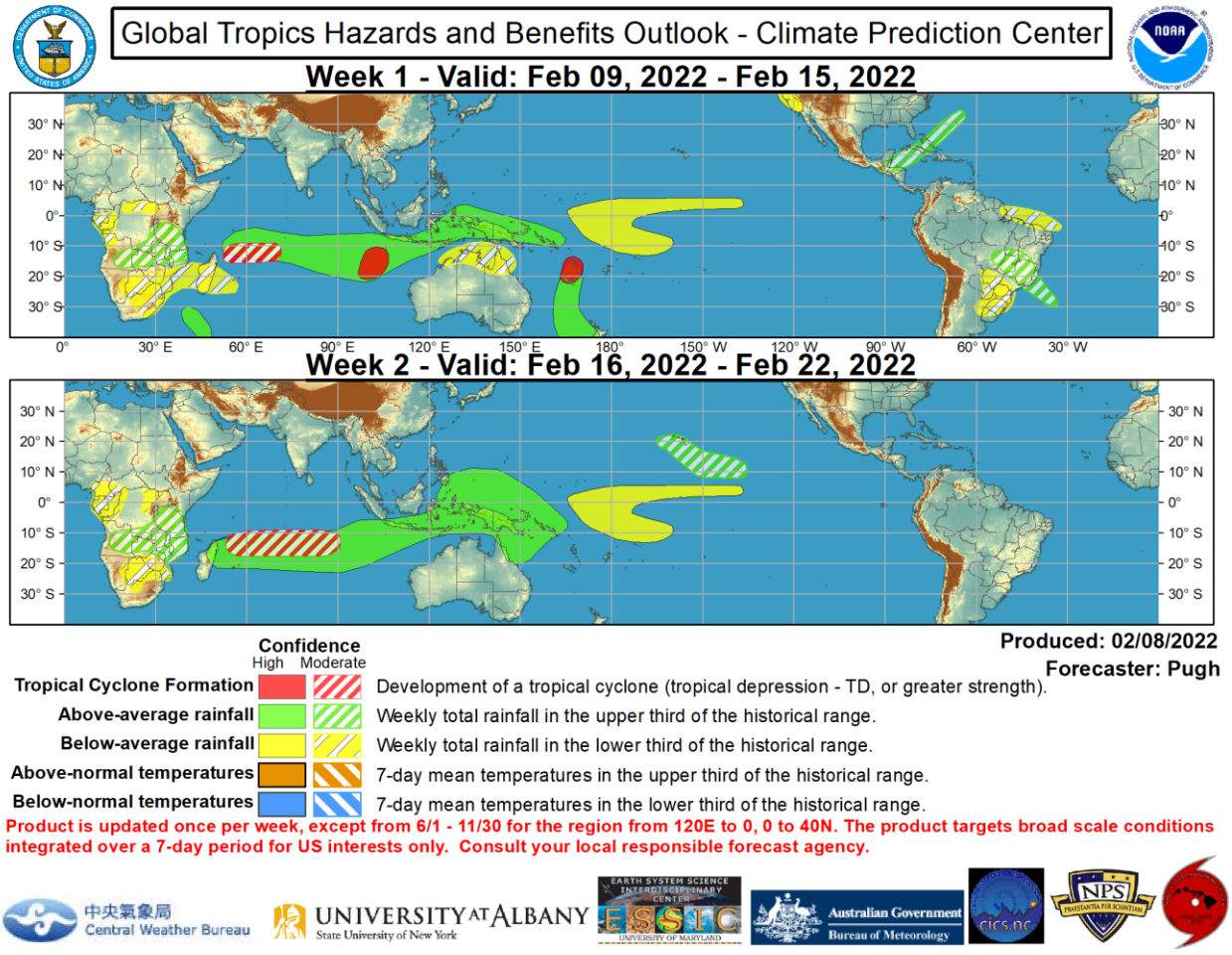

The Madden-Julian Oscillation (MJO) became more coherent during early February, as a wave-1 pattern of anomalous upper-level convergence (divergence) developed over the Western (Eastern) Hemisphere. La Nina remains a major influence on global tropical rainfall with suppressed convection anchored across the central equatorial Pacific. However, the typical enhanced convection throughout the Maritime Continent, associated with La Nina, was weakened at times during the past month due to other modes of tropical variability such as Kelvin waves and a strong equatorial Rossby wave. Since the beginning of February, the amplitude of the MJO RMM index has increased, due in part to the more coherent pattern observed in the upper-level velocity potential field. The GFS and ECMWF ensemble means are in good agreement that the MJO propagates eastward from the Indian Ocean to the Maritime Continent during the next two weeks, but tropical cyclones over the South Indian Ocean may slow this eastward shift. Later in February, the MJO is likely to constructively interfere with the La Nina.

Tropical cyclone (TC) Cliff developed over the South Indian Ocean on February 4 and remained relatively weak with maximum sustained winds of 45 knots. After developing on January 27 in the southwest Indian Ocean, powerful TC Batsirai peaked in strength with maximum sustained winds of 125 knots and a surface pressure of 932-hPa, to the east of Madagascar. Batsirai remained an intense TC with

maximum sustained winds of near 100 knots when it made landfall in eastern Madagascar on February 5. Batsirai was the strongest TC to make landfall in Madagascar since Enawo in 2017 and the second TC to affect the country in less than two weeks. The South Indian Ocean is likely to remain active with multiple TCs forecast to develop during the next two weeks, based on model guidance and consistent with MJO composites. Although there is an elevated chance of TC development continuing in the Coral Sea region through week-2, poor model agreement precludes the designation of an favored area on the map at this time.

The precipitation outlook during the next two weeks is based on a consensus of GEFS, CFS, and ECMWF model solutions, MJO precipitation composites for phases 3, 4, and 5, and consistent with where TCs are most likely to develop and track. A broad area of above-average rainfall is likely from the South Indian Ocean to parts of the Maritime Continent, while below-average rainfall persists across the equatorial central Pacific. The favored areas of above- and below-average rainfall over South America during week-1 are more regional and due in part to influences from the mid-latitudes. This continued dryness in southern Brazil and Paraguay may worsen poor vegetative conditions. Also, early in week-1, a stationary front is likely to remain a focus for above-average rainfall from Bermuda and the Bahamas southwestward to Central America. This is unusual wetness during a La Nina winter, but these areas are forecast to become drier by week-2 with a building subtropical 500-hPa ridge which is more consistent with La Nina. During week-2, northern Australia and Hawaii are expected to become increasingly wet, based on La Nina and MJO precipitation composites.

For hazardous weather concerns during the next two weeks across the U.S., please refer to your local NWS Forecast Office, the Weather Prediction Center's Medium Range Hazards Forecast, and CPC's Week-2 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.