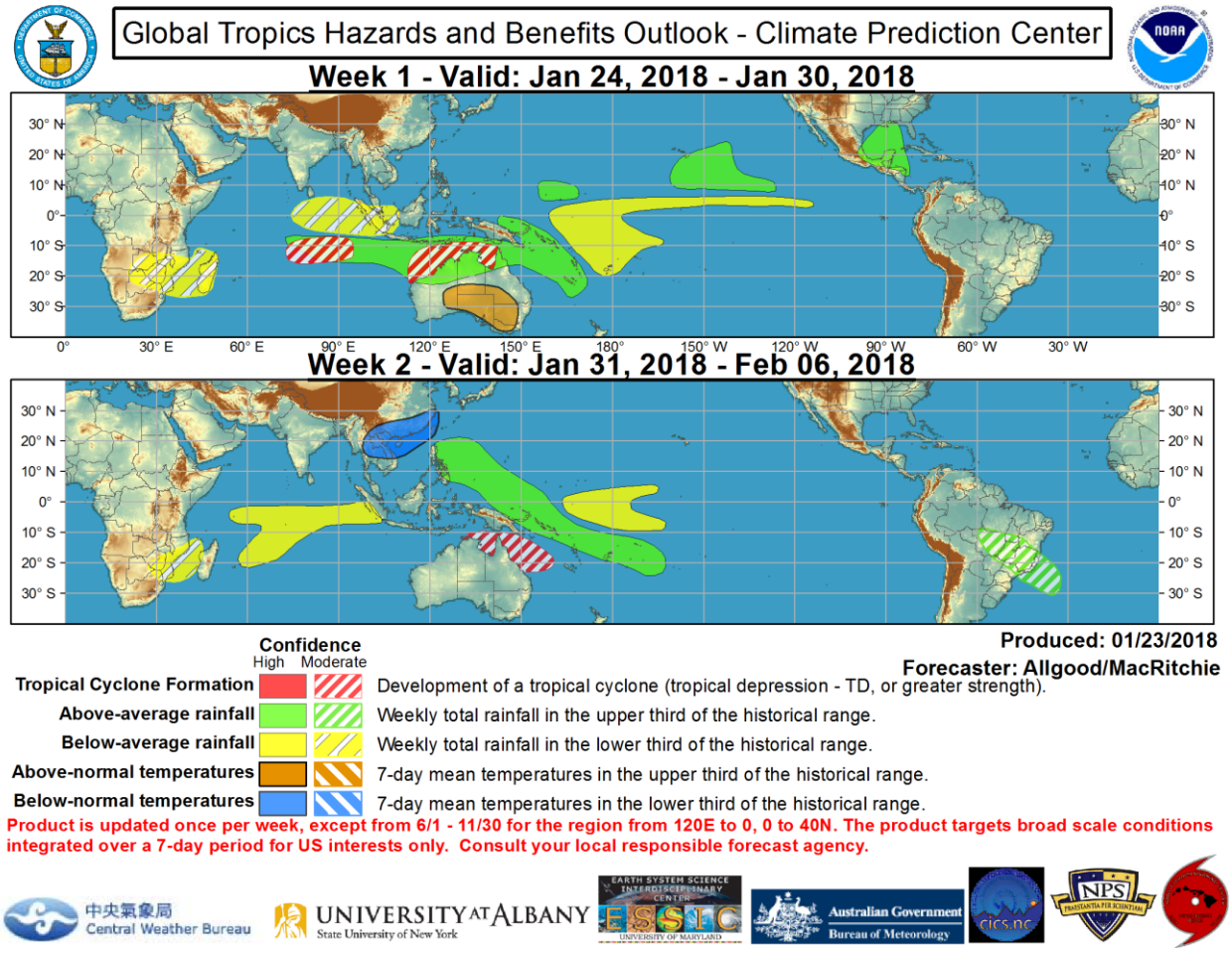

The MJO remains coherent, with both the RMM-based and CPC velocity potential based MJO indices depicting robust amplitude and eastward propagation. The enhanced convective phase of the MJO is over the Maritime Continent, constructively interfering with the La Nina base state. A large envelope of enhanced trade winds persists over the western and central Pacific, with westerly anomalies extending from the Indian Ocean to Borneo. The upper-level velocity potential anomalies continue to reflect a coherent Wave-1 pattern, with the anomalous upper-level divergence in phase with negative OLR anomalies over the Maritime Continent. Dynamical and statistical model RMM-index forecasts consistently depict a continuation of robust MJO activity over the next several weeks, with the enhanced convective phase propagating over the West Pacific by Week-2. The ECMWF depicts a slightly faster propagation of the signal, and the 30-day ECMWF run maintains an amplified signal over the East Pacific and Western Hemisphere through Weeks 3 and 4. Based on these observations and forecasts, the MJO is anticipated to play a large role in the evolution of the global tropical convective pattern, and will likely continue to influence the midlatitude response. This MJO event has teleconnected well with the North American longwave pattern, and has contributed to the warming trend across the central and eastern CONUS. A West Pacific MJO event would potentially support a pattern change during early to mid-Feburary, with increased ridging over western North America, and downstream troughing over eastern Canada and the U.S.

No new tropical cyclones formed during the past week. During Week-1, the primary region of concern for tropical cyclone development is across the south-central Indian Ocean and north of Australia. There is moderate potential for tropical cyclone formation either in the Gulf of Carpentaria or north of Western Australia, with several GFS ensemble members depicting landfall of a powerful tropical cyclone along the Kimberley Coast. The Joint Typhoon Warning Center is currently monitoring a second region over the south-central Indian Ocean for tropical cyclone development. If a tropical cyclone develops in this region, it would likely take a westward to southwestward track over open waters. During Week-2, the favored region for tropical cyclogenesis shifts eastward to the Coral Sea, with development still possible over the Gulf of Carpentaria. Should tropical cyclone development occur, the circulations may act to slow the propagation of the overall MJO envelope as depicted in the RMM index.

Forecasts for above- and below-normal precipitation were made using a consensus of bias-corrected CFS and ECMWF forecasts, as well as MJO precipitation composites for Phases 5, 6 and 7. During Week-1, an envelope of enhanced precipitation is favored from the southeastern Indian Ocean to the southwestern Pacific, including much of northern Australia. This area of enhancement is consistent with MJO activity, with potential contributions from tropical cyclones. Suppressed convection is favored across the equatorial central and eastern Indian ocean, and across the central Pacific, which is consistent with the ongoing La Nina. Dynamical model forecasts indicate areas of enhanced convection across the North Pacific, including southeastern Hawaii. Additionally, enhanced rainfall is likely across eastern Mexico, northern Central America, the Gulf of Mexico, and parts of the U.S. Gulf Coast.

During Week-2, the broad envelope of enhanced convection is favored to propagate eastward, extending from the Philippines southeastward to Fiji and American Samoa. Areas of suppressed convection are forecast surrounding this region, over the southern Indian Ocean and near the Date Line. Additionally, dynamical models favor a region of enhanced precipitation across south-central and southeastern Brazil.

During Week-1, GFS and CFS forecasts depict a persistence of much above-normal temperatures across southeastern Australia, compounding the ongoing heat wave. During Week-2, a highly amplified pattern supports a cold air outbreak across China, with potentially hazardous cold penetrating as far south as northern Vietnam, parts of Thailand, and Taiwan.

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