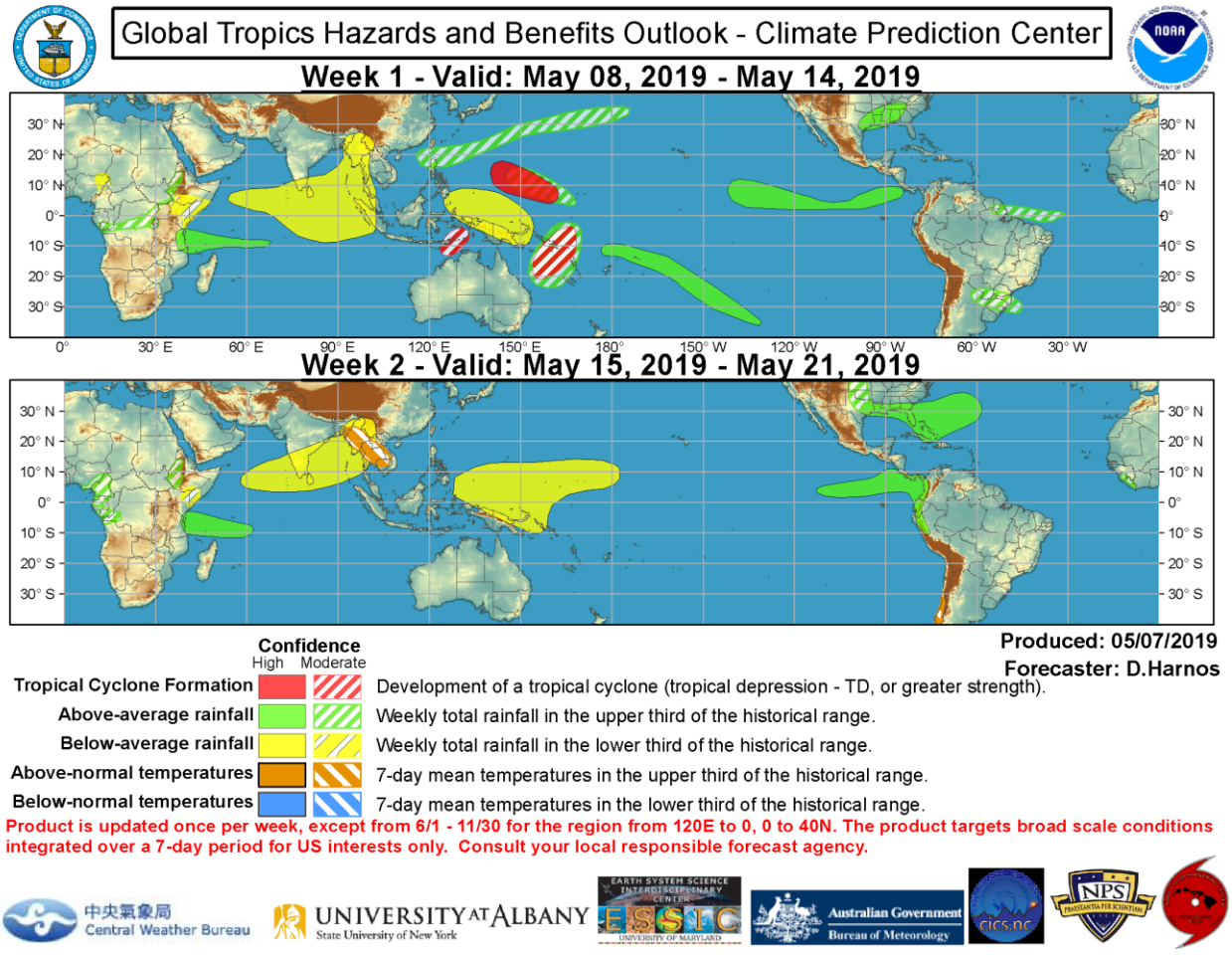

Over the past week the Madden-Julian Oscillation (MJO) rapidly crossed the Maritime Continent and is currently over the West Pacific. Model guidance is consistent in bringing the MJO eastward over the coming days, although with a brief slowdown early tied to possible tropical cyclone (TC) formation over the West Pacific. The MJO is forecast to be over the West Pacific during Week-1 (Phases 6/7), and over the Western Hemisphere during Week-2 (Phases 8/1). The ECMWF model is a bit faster with the MJO progression relative to the GEFS, and also shows some weakening of the intraseasonal signal late in Week-2 that is absent in the GEFS. Also of interest is a Kelvin wave emerging from the enhanced MJO envelope and presently near the Date Line. This atmospheric Kelvin wave and the MJO have both helped to trigger a westerly wind burst along the equator, which has likely implications for driving a downwelling oceanic Kelvin wave that helps reinforce subsurface warm water volume in the Pacific and prolong the current El Nino event.

No TCs formed globally over the past seven days. The most noteworthy occurrence was TC Fani impacting portions of India and Bangladesh. Fani made landfall on the third of May with 150 mph winds over eastern India, and continued tracking into East Asia. Across India and Bangladesh, tens of millions were impacted by the storm, with severe damage to infrastructure on top of dozens of fatalities. At

present the Joint Typhoon Warning Center (JTWC) is monitoring three separate areas for possible development in the near future. The first is a system presently near 5N/162E that is forecast to track slowly west-northwestward over the coming week. JTWC gives this a medium chance of becoming a TC prior to the forecast period, with high confidence given in this outlook since the period extends for a full week. This system is likely to track toward Guam by early next week, with interested parties referred to the Guam Forecast Office or JTWC for further information. JTWC is also monitoring a low in the Timor Sea, currently near 6S/128E. JTWC gives a low chance of the system becoming a TC within 24 hours, but overall favorable conditions exist for several days, leading to moderate confidence of formation while the system slowly drifts southward in the coming week. In addition, JTWC is tracking a low near 8N/136E that is forecast to track westward. Model guidance is not bullish on this system developing, while JTWC gives it a low chance of formation in the next 24 hours, so the system is left entirely off the forecast graphic. Also while not currently currently being tracked by JTWC a system may develop near Vanuatu at some point between the start of the forecast period and end of this week. This system is given a moderate chance of TC formation, and is forecast to track south-southwestward into the Coral Sea over the coming week. No TC formation is currently anticipated during Week-2, but with the East Pacific hurricane season beginning on May 15th and the MJO forecast to reach the Western Hemisphere during Week-2, there is some potential for development in the basin, although confidence is insufficient for formation at this time.

During Week-1 confidence is high for above-median and below-median precipitation tied to the active (inactive) portion of the MJO envelope across the Pacific (Indian Ocean and Maritime Continent). The active MJO over the West Pacific also is linked to an enhanced South Pacific Convergence Zone, where high confidence for above-normal precipitation exists during Week-1. Anomalously warm sea surface temperatures persist in a band near 10S in the southern Indian Ocean, leading to high confidence for above-median rainfall to persist from eastern Tanzania through approximately 60E during each of the next two weeks. Enhanced flow of moisture out of the Gulf of Mexico also leads to high confidence for above-median rainfall across much of the Gulf Coast region through Tennessee Valley during Week-1. Areas of lesser confidence in Week-1 for above-median rainfall include frontal activity in the West Pacific, a Rossby wave tracking across the equatorial Atlantic, a slight MJO footprint across southern Brazil, and the possible TC tracks in the West and South Pacific.

The Week-2 outlook exhibits high confidence for below-median precipitation continuing across parts of the Indian Ocean, Southeast Asia, and West Pacific tied to the suppressed phase of the MJO. Model guidance also indicates a relatively hot period during Week-2 across portions of Southeast Asia also linked to the MJO suppressing convection across the region. The MJO is likely to be active over the Western Hemisphere during this period as well, leading to high confidence for above-median precipitation for parts of the East Pacific through coastal portions of South America. A wet pattern also looks likely to continue near the Gulf of Mexico, with high confidence for above-median precipitation linked to a stalled frontal boundary stretching into the Western Atlantic. There is also moderate

confidence for some moisture beginning to make it northward into the Great Plains later in Week-2. The only other area of focus during Week-2 is the potential for above-normal temperatures across parts of Chile per model guidance.

Forecasts over Africa are made in consultation with the CPC International Desk, and can represent local-scale conditions in addition to global-scale variability.