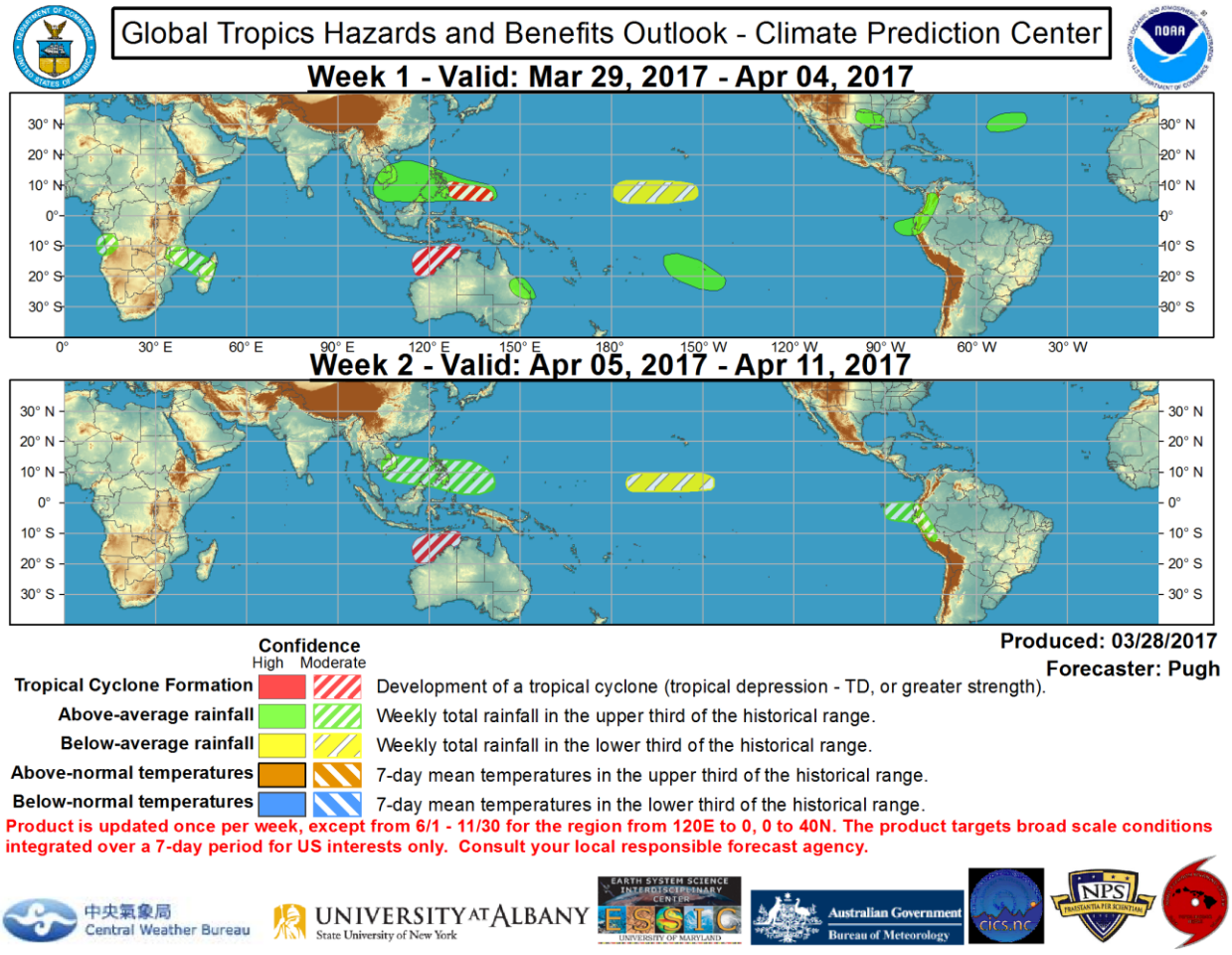

The MJO remained weak during the past week based on diagnostic tools including the CPC velocity potential-based index and the RMM index. The low frequency state, featuring enhanced convection across the Maritime Continent and far eastern Pacific, continues to be the major influence on anomalous convection throughout the global tropics. Dynamical model forecasts of the RMM index maintain a weak MJO signal during the next two weeks. Therefore, its contribution to anomalous convection across the global tropics and effects on the extratropical circulation are expected to be minimal.

On March 24, Tropical Cyclone Debbie developed offshore of Australia at 17.2S/152E and rapidly intensified to a cyclone with maximum sustained winds of near 100 knots as it approached the Queensland coast. According to the Australian Bureau of Meteorology, a peak wind gust of 142 knots was observed on Hamilton Island. As of March 28, rainfall amounts in the Mackay region of Queensland included 470mm at Mount William, 340mm at Clarke Range, and 232mm at Mount Jukes. Heavy rain and flooding are likely to be associated with the remnants of Debbie across inland areas of eastern Queensland. Elsewhere, short-lived Tropical Storm Caleb formed at 12.4S/100.6E in the southern Indian Ocean and dissipated a few days later.

Current satellite imagery indicates a broad cyclonic circulation of enhanced convection to the north of Papua New Guinea. The GFS model indicates that this area of surface low pressure may become better defined as it moves northwest towards Luzon of the Philippines. Therefore, moderate confidence for tropical cyclone development is posted from 5-10N/140-125E during Week-1. Elsewhere, the GEFS indicates that the Timor Sea region to the north of Australia has an elevated risk of tropical cyclone development. Due to uncertainty in the timing of tropical cyclogenesis, the favored area for tropical cyclone development (moderate confidence) from the Timor Sea southwest to the Kimberley Coast of Australia includes Weeks 1 and 2.

The favored areas of anomalous rainfall across the global tropics during the next two weeks are based on consensus among the CFS, GFS, and ECMWF models along with the low frequency state. During Week-1, the highest confidence for above (below)-average rainfall exists across parts of the Maritime Continent, Philippines, Colombia, Ecuador, Peru, and the South Pacific (equatorial central Pacific Ocean). An upper-level shortwave trough and its associated weak surface low are currently near 30N/67W over the central Atlantic. During Week-1, above-average rainfall is favored along the path of the shortwave trough as it passes to the southeast of Bermuda. Above-average rainfall is likely across the south-central United States during the next week due to a series of mid-latitude troughs interacting with abundant moisture from the Gulf of Mexico. During Week-2, above average rainfall is most likely to persist on an area centered upon the Philippines and also across parts of Ecuador and Peru. Below-average rainfall is expected to continue to the north of the equator across the central Pacific Ocean.

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