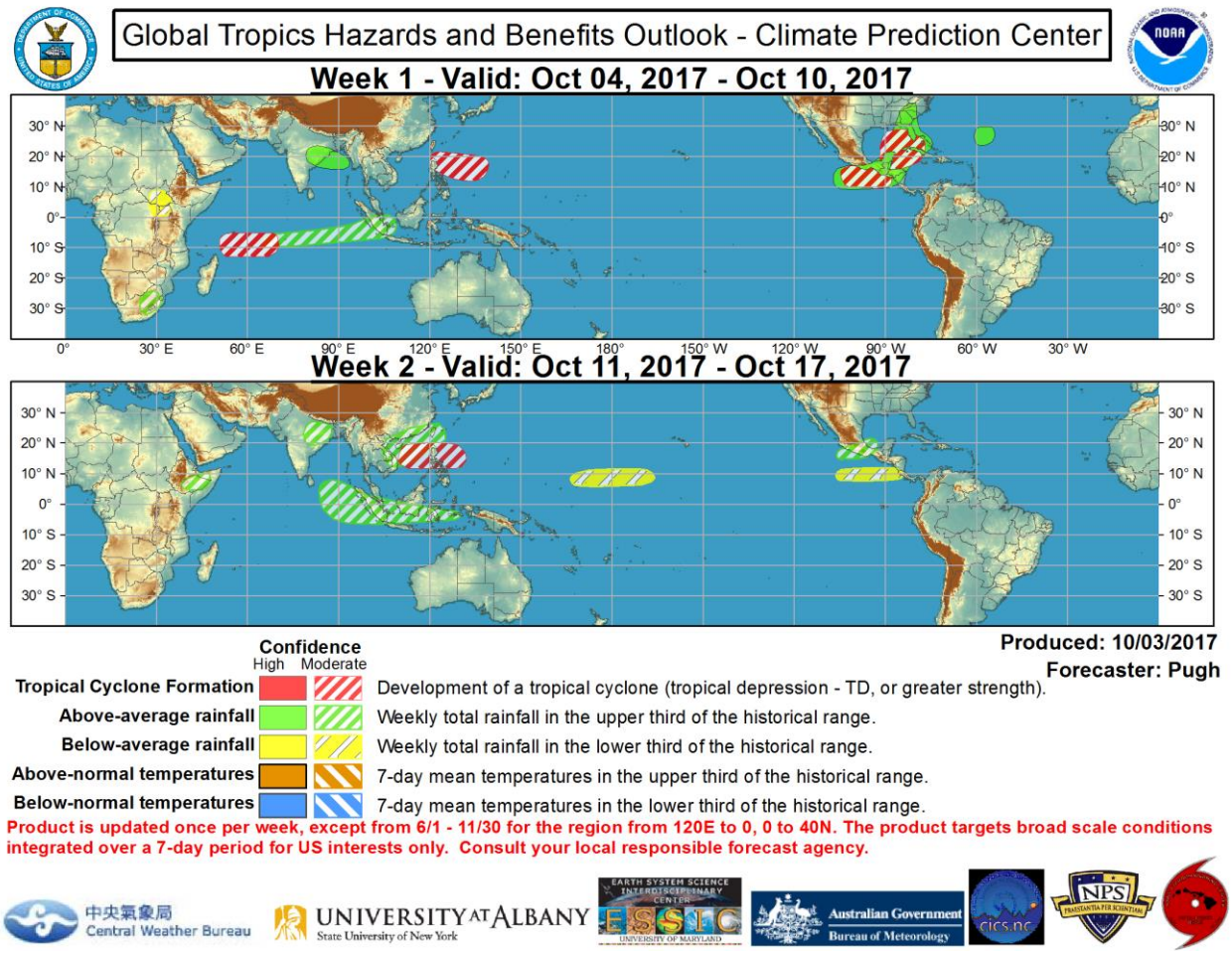

The MJO was weak since early September, according to the RMM index and the CPC index based on the 200-hpa Velocity Potential. Dynamical model solutions vary how the MJO evolves during early October but it is most likely to remain weak. The ECMWF and Canadian models indicate a strengthening MJO signal over the Indian Ocean (Phase 3) during Week-1 with an eastward propagation to the western Maritime Continent (Phase 4) by Week-2, while the GFS model indicates an increase in the amplitude of the RMM index in Phase 8. Large uncertainty exists on the state of the MJO during the next two weeks.

An area of low pressure is expected to form over the northwestern Caribbean Sea during the next few days. Deterministic models and their ensemble members generally indicate slow tropical cyclone development of this low pressure system as it progresses north across the Gulf of Mexico. An elongated area of low pressure is located near the southern coast of Mexico and model solutions have a weak surface low closing off this week over the east Pacific. Since environmental conditions are expected to be marginally conductive for TC development over the Gulf of Mexico and east Pacific, moderate confidence exists for TC development across these areas during Week-1. Please refer to the National Hurricane Center for the latest updates and forecasts. An updated GTH outlook will be posted on October 6 which will provide an updated map.

Satellite imagery, on Oct 3, reveals a trough of low pressure with convection near 15N-150E over the west Pacific. Model guidance supports slow TC development, albeit with moderate confidence, over the west Pacific (10 to 20N/120 to 140E) during Week-1. The moderate confidence for TC development is maintained for the west Pacific during Week-2 and expanded to include the South China Sea, based on the GEFS model guidance and climatology. Another area of convection is currently noted over the south Indian Ocean. Based on the deterministic ECMWF model and many of the GFS ensemble members, moderate confidence exists for TC genesis over the south Indian Ocean (5 to 15S/50 to 70E) during Week-1.

The highest confidence for above-average rainfall is predicted over areas where ongoing convection is enhanced and there is an elevated potential for a tropical cyclone to develop and along its expected track. This includes the east Pacific, much of Central America, the eastern Gulf of Mexico, Cuba, the Bahamas, and much of Florida. Regardless of TC development over the Gulf of Mexico this week, low-level moisture is expected to spread north and interact with a mid-latitude trough. Therefore, above-average rainfall is likely to affect the southern Appalachians later in Week-1. Although TC development is not expected over the northern Bay of Bengal, an area of low pressure is forecast to track west from this region into northeast India, resulting in high confidence for above-average rainfall along its path. The CFS and ECWMF models are in reasonably good agreement on above-average rainfall extending from the southern Indian Ocean to the western Maritime Continent. The low frequency state favors a continuation of below-average rainfall across parts of the equatorial Pacific.

The favored areas of above- and below-average rainfall during Week-2 are primarily based on a consensus between the CFS and ECMWF precipitation forecasts, but minor use of MJO precipitation composites in Phases 3 and 4 were used since the Canadian and ECMWF models, from Oct 2, have a strengthening MJO signal in these phases. Below-average rainfall is expected to continue for parts of the equatorial Pacific given the base state, but confidence is lower than Week-1 as the enhanced phase of a weak MJO signal may reach the west Pacific later in Week-2.

Week-1 forecasts over Africa are made in consultation with CPCs international desk, and can represent local-scale conditions in addition to global-scale variability.