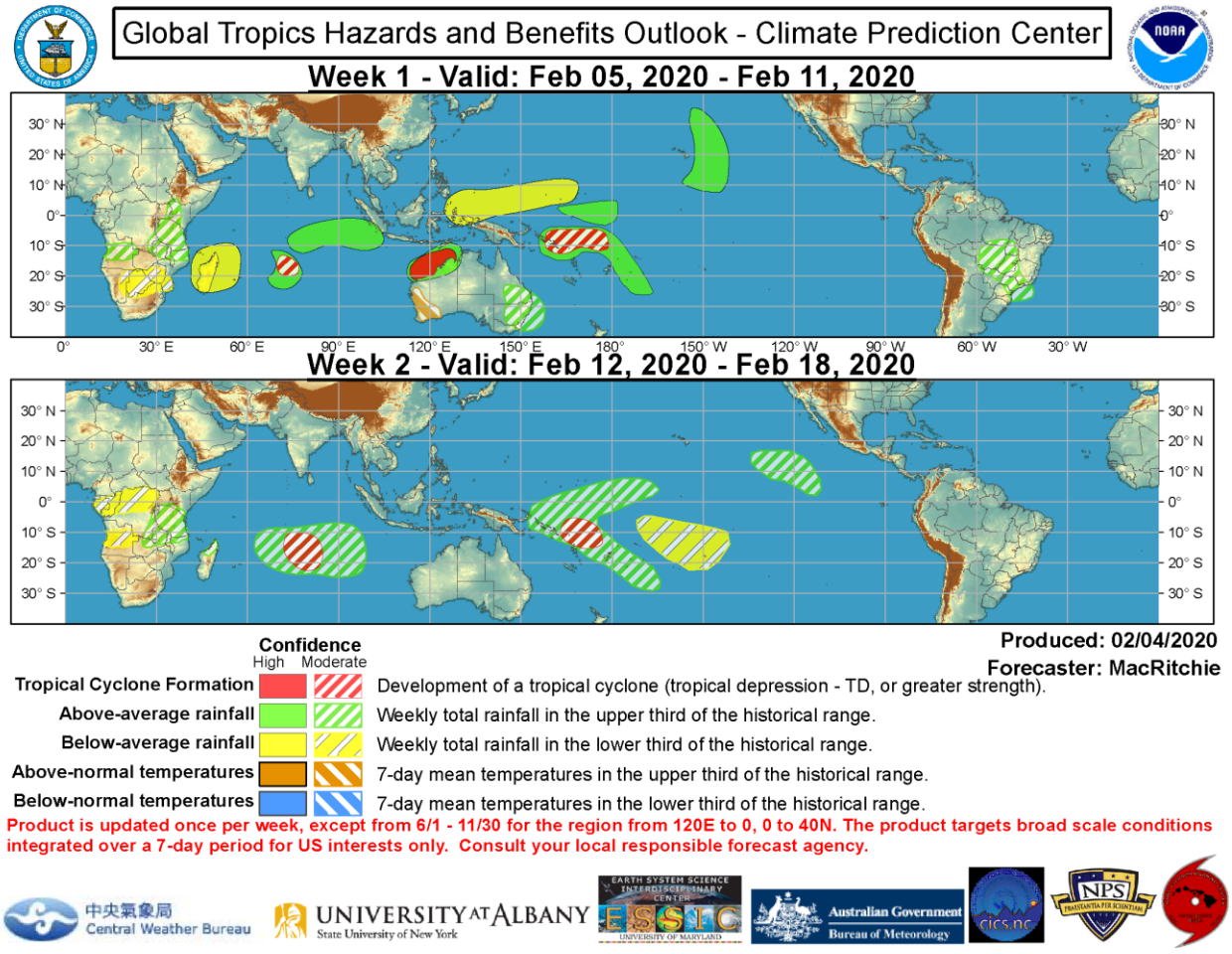

Kelvin and Rossby wave activity has been high throughout the tropical Indian and Pacific Oceans during the past week. A strong convectively coupled Kelvin wave over the Indian Ocean has led to a noticeable upper-level circulation response, seen most easily in the 200-hPa velocity potential field. There is also an equatorial Rossby wave, which began near the Date line and propagated west last week. ENSO neutral conditions continue to persist throughout the equatorial Pacific, although Pacific SSTs average slightly higher than normal in the Nino 3, 3.4, and 4 regions. The MJO is inactive and its future is uncertain. The GEFS forecasts a strong RMM signal to develop during Week-1 and amplify strongly in RMM Phases 5-6 during early Week-2, but there is no support for this in other models, except for the Canadian which agrees with the GEFS in Week-1 but doesn't amplify the MJO nearly as much during Week-2.

Some of the difference in forecast MJO amplitude between the models is probably associated with differences in Rossby wave breaking forecasts over the eastern Pacific. In general, wave breaking can result in destabilization in the tropics that is conducive for convection to develop and can enhance MJO activity throughout the Pacific. This destabilization occurs due to the redistribution of high PV (potential vorticity) air from the mid-latitudes, but is historically difficult for models to accurately forecast.

The main areas of concern in today's GTH forecast are over the southern Indian and Pacific Oceans. There is good agreement amongst the models in tropical cyclone development off Australia's Kimberley Coast during Week-1, where a high risk has been posted. The is also decent agreement in TC formation around the Solomon Sea during Week-1 and early Week-2, so a moderate risk has been posted accordingly. Even if cyclones in these regions don't become strong enough to achieve tropical cyclone status, the forecast regions of above normal rainfall are still likely to occur along the projected tracks. There is also good model agreement in the development of a tropical cyclone about 1500 miles east of Madagascar during Week-1 and early Week-2, although this storm isn't forecast to pose a significant threat to land. A moderate risk of TC formation is posted for this region for Weeks-1 and 2 even though the GEFS confidence in its formation is weaker today than it was yesterday, the ECMWF forecast is similar to yesterday.

There are a number of forecast areas of above and below normal rainfall posted throughout the Indian Ocean and central Pacific during Weeks-1 and 2. The enhanced rainfall in the Indian Ocean is primarily the result of the aforementioned equatorial wave activity and potential TC development. There is a lower-frquency component to the rainfall signal that is likely to result in above normal rainfall over the central Pacific during both weeks.

A moderate risk of above normal temperatures is posted for southwestern Australia in accordance with the latest Bureau of Meteorology forecast. Interested parties are encouraged to monitor local forecasts for the most up-to-date information.

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