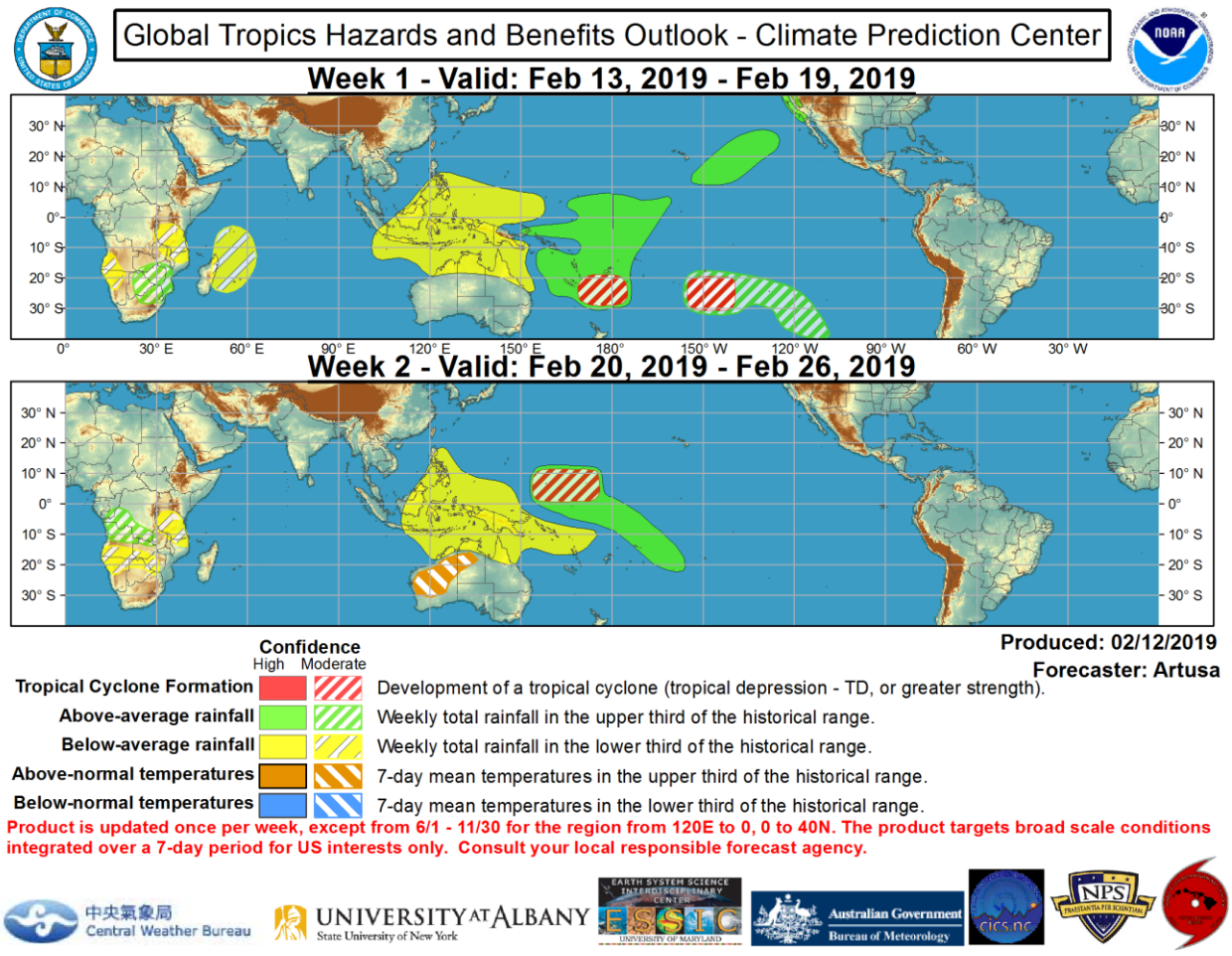

The MJO remains active in early to mid-February, with its enhanced convective phase centered over the Pacific Ocean. According to the RMM index, the eastward propagation stalled in Phase 7, due to the interaction between the MJO and a strong equatorial Rossby wave (ERW). A broad envelope of enhanced convection developed recently near the Date Line as a result of the constructive interference among the MJO, ERW, and ENSO. OLR anomalies (between Jan 31-Feb 9) indicate broad-scale enhanced (suppressed) convection over northeast Australia along with the western and central equatorial Pacific (Indian Ocean). Enhanced convection also extends from the subtropical East Pacific near Hawaii northeastward to southern California and the Baja Peninsula, which defines the mean location of several atmospheric rivers that resulted in very heavy snowfall accumulations across portions of the Sierra-Nevada mountain range.

Dynamical model forecasts are in decent agreement that, after briefly interfering with an ERW in Phases 7/8, eastward propagation of the subseasonal signal resumes with enhanced convection progressing east over the Western Hemisphere (Phases 8/1) during the next two weeks. The GEFS and CFS predict very high signal amplitudes during Week-2 in Phase 8; perhaps too high. The ECMWF and Canadian RMM index forecasts have a few ensemble members that reach the Indian Ocean late in Week-2, with

fairly moderate signal amplitudes. CFS forecasts of both OLR and 200-hPa Velocity Potential anomalies predict the main bulk of the convective envelope near the Date Line will remain in place during the next two weeks, with smaller-scale bursts of eastward propagating energy across the Western Hemisphere. These smaller-scale features are expected to consist of a broader range of subseasonal modes that are consistent with MJO phase speeds or faster.

The South Indian and South Pacific Ocean basins have seen the development of several tropical cyclones (TCs) during the past 7-10 days. TCs Funani (now defunct) and Gelena (ongoing) formed over the Southwest Indian Ocean near Madagascar, with both attaining peak sustained wind speeds of about 200 km/hr. In the Southwest Pacific, storms included 06F, Neil, and Oma/15P (ongoing). As of this writing, each system had peak sustained wind speeds of 65 km/hr. Areas affected include the Samoan Islands, Fiji, Tonga, and Vanuatu. TC Oma is forecast by the Joint Typhoon Warning Center (JTWC) to move near or across the islands of Vanuatu during the next few days, and possibly near the island of New Caledonia two days later. The influence of the active phase of the MJO and an ERW near the Date Line during the next 1-2 weeks leads to high and moderate risks of TC development over the western and central South Pacific in Week-1, respectively, and the western North Pacific (moderate confidence) in Week-2. ERWs sometimes lead to the formation of twin cyclones that straddle the equator.

The rainfall forecasts for Week-1 and Week-2 are based on areas of agreement between ECMWF and CFS precipitation guidance, and anticipated influence from TCs, ENSO, the MJO, an ERW, atmospheric rivers, and the South Pacific Convergence Zone (SPCZ). During Week-1, above-average rainfall is predicted over the west-central Pacific (10N-25S/150E-160W), associated with the interference between the MJO, ENSO, an ERW, and a TC. Above-average rainfall is also forecast east of Hawaii, with much of this precipitation streaming northeast to California. As one or more of these subtropical moisture plumes or "atmospheric rivers" reaches the mountainous terrain of California, it is likely to result in very heavy snowfall accumulations for the Sierra-Nevadas; some areas may receive 3-5 feet of additional snowfall. The central South Pacific is also expected to see above-average rainfall, associated with the SPCZ and potential TC development. A widespread area of below-average rainfall is anticipated over the Maritime Continent region and adjacent portions of northern Australia, associated with the suppressed convective phase of the MJO and upper-level convergence, and the low-frequency footprint (dry signal) of ENSO. A much smaller-scale region of below-average rainfall is expected near Madagascar, based on ECMWF and CFS precipitation guidance. For Week-2, above-average rainfall is forecast for portions of the west-central Pacific, related to various contributions from ENSO (wet signal), the MJO, potential TC development, and possible ERW interference. As with Week-1 (and for the same reasons noted earlier), a broad area of below-average rainfall is forecast over the Maritime Continent region and far northern Australia. Above-normal temperatures (defined as the upper one-third of the historical temperature distribution) are indicated over much of Western Australia, and portions of the Northern Territory.

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