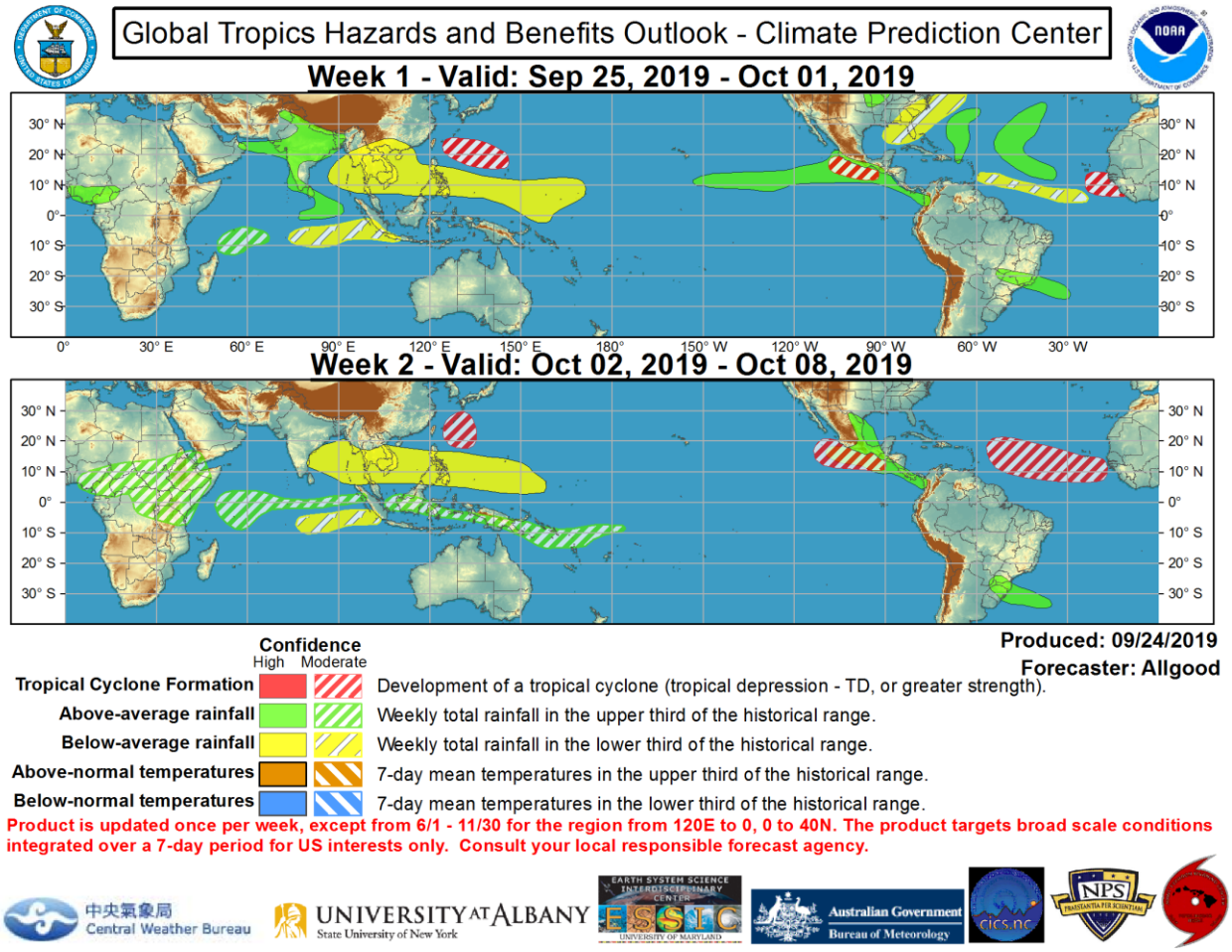

The RMM and CPC velocity potential based MJO indices both reflect an amplifying event, with the enhanced phase currently over the Western Hemisphere. This intraseasonal signal has been evident in the upper-level wind field for the past several weeks, but the recent convective response has been largely incoherent due to interference from other modes. OLR anomalies over the past seven days show a large-scale suppressed signal over the equatorial Maritime Continent and West Pacific, while a strong low-level westerly wind burst over the Central and East Pacific helped generate an enhanced ITCZ over the East Pacific, which is consistent with an MJO event propagating to the Western Hemisphere. Constructive interference with an evolving positive IOD (Indian Ocean Dipole) event, which favors enhanced (suppressed) convection over Africa and the western Indian Ocean (eastern Indian Ocean and the Maritime Continent) may also be contributing to the overall pattern.

Dynamical model MJO index forecasts favor a continuation of the large-scale enhanced convective signal over the Western Hemisphere, with little additional eastward propagation and gradual weakening. This may be due to influences from the stationary IOD signal, which would begin to destructively interfere with the MJO as its enhanced phase propagates to the eastern Indian Ocean and Maritime Continent. Ongoing and potential tropical cyclone activity over the East Pacific and Atlantic basins may also be

contributing to the forecast stalled signal. Based on these observations and forecasts, the MJO is anticipated to play a role in the global tropical convective pattern during the next two weeks, though an evolution towards a Maritime Continent and West Pacific event is uncertain at this time. Western Hemisphere and western Indian Ocean MJO events have historically contributed to enhanced Atlantic tropical cyclone activity by reducing vertical shear.

There are multiple ongoing tropical cyclones. Tropical Storm Kiko is weakening well east of Hawaii, and is not anticipated to impact land. Over the Atlantic basin, Tropical Storm Jerry is currently moving northward over the central Atlantic and is forecast to turn northeastward and bring tropical storm impacts to Bermuda as it passes just to the north over the next several days. Tropical Storm Karen is expected to make landfall over Puerto Rico at the beginning of the outlook period, and will subsequently move northward before likely stalling well south of Bermuda. There is a high degree of uncertainty in the track forecasts following this stall, with some models bringing the tropical cyclone westward towards Florida or the Gulf of Mexico, while others keep the storm offshore or even show dissipation. Further east, Tropical Storm Lorenzo formed south of the Cape Verde islands and is forecast to strengthen to major Hurricane intensity while turning northwestward or northward over the central Atlantic. Over the Arabian Sea, Tropical Cyclone Hikaa has a small circulation and is expected to make landfall over northeastward Oman at Category-1 intensity.

During Week-1, the National Hurricane Center shows a moderate potential for new tropical cyclone development over the East Pacific just south of Mexico, with two other disturbances that have a low potential for formation over the next five days. Over the Atlantic basin, an area of disturbed weather entering the Bay of Campeche also has a low potential for formation. Given the continued favorable environment and enhanced convection over Africa, there is a moderate potential for tropical cyclogenesis over the Atlantic MDR in late Week-1 or Week-2, with the GEFS favoring the eastern portion of the basin, close to the Cape Verde Islands. Also during Week-2, a second formation is possible south of Guatemala or southwestern Mexico. While suppressed convection has overspread much of the tropical West Pacific, a potential tropical cyclone may develop northeast of the Philippines during late Week-1 or early Week-2. Dynamical models bring this potential tropical cyclone east of Taiwan and near Japan during Week-2 on a recurving track. During this time of year, recurving West Pacific tropical cyclones have the potential to generate substantial pattern changes downstream over North America.

Precipitation forecasts were based on a consensus of CFS and ECMWF ensemble forecasts, composites for Western Hemisphere and Indian Ocean MJO events, and the anticipated persistence of the positive IOD event. During Week-1, enhanced rainfall is forecast to extend from northeastern Oman (due to Tropical Cyclone Hikaa) to much of South Asia, while suppressed convection is forecast across Southeast Asia eastward to the West Pacific, including Guam. Over the southern Indian Ocean, a dipole of enhanced (suppressed) rainfall northeast of Madagascar (over the eastern Indian Ocean) is consistent

with the IOD state. An enhanced and northward displaced ITCZ is favored for the East Pacific, while suppressed rainfall over the U.S. Southeast contrasts with enhanced moisture across the Midwest. Precipitation forecasts over the Atlantic primarily reflect ongoing tropical cyclone activity, while enhanced rainfall is favored for southeastern Brazil along a frontal boundary. During Week-2, the IOD state is forecast to persist, while the MJO may bring enhanced convection along the equator across the eastern Indian Ocean and Maritime Continent. The ECMWF and CFS models show enhanced convection over the western Gulf of Mexico, Mexico, and Central America. Precipitation over the Atlantic basin may be influenced by tropical cyclone activity during Week-2; however, uncertainty is too high to include specific regions in the forecast. Enhanced rainfall is anticipated across southern Brazil as the frontal boundary shifts southward.