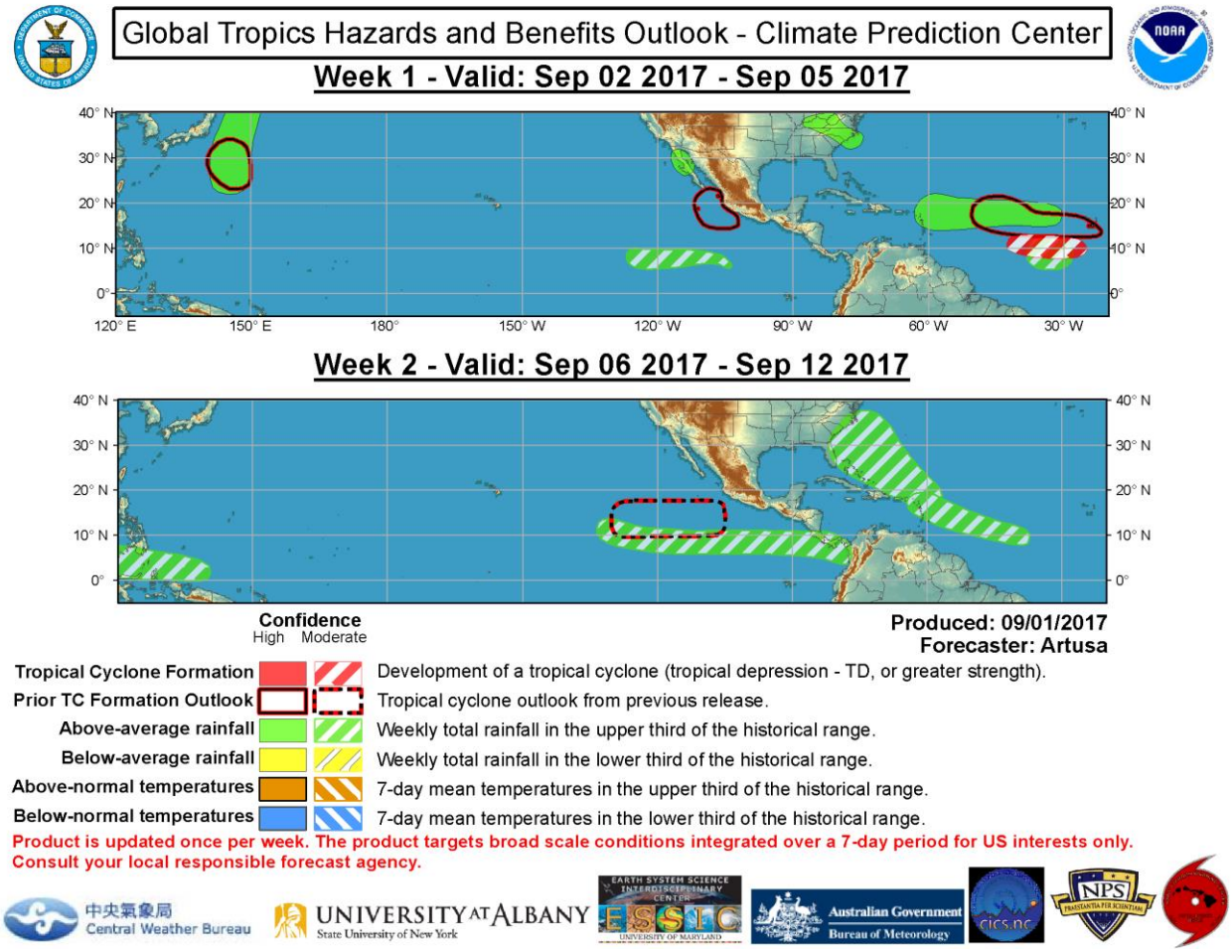

The CPC and RMM-based 200-hPa Velocity Potential maps depict enhanced divergence aloft (associated with increased convection) over Africa, the Indian Ocean, and the Maritime Continent, with enhanced convergence aloft elsewhere. Possible Kelvin wave activity is weakly indicated over the eastern Pacific. According to the RMM plots, the center of enhanced convection is currently located in phase 4 (western Maritime Continent) and the amplitude is within the unit circle of the WH diagram. The CFS RMM forecast depicts a rapidly moving subseasonal signal that transits phases 4 and 5 (Maritime Continent) and weakens towards the end of Week-1. Late in Week-2, the CFS depicts a signal emerging in phase 8 (the Americas and the Atlantic). The bias-corrected NCEP GFS RMM index also shows the possible emergence of a subseasonal signal in phase 8 during Week-2. The Canadian Meteorological Center and the ECMWF plots predict the MJO signal will be weak and incoherent during the next two weeks.

The Northern Hemisphere tropics continue to be active. In the western North Pacific, Typhoon Sanvu is currently (1 Sep, 12z local time) southeast of Japan and forecast to track northward, around the western periphery of a large anticyclone. This projected path would take Sanvu well east of Japan, but brings the typhoon close to the northern Kuril Islands (just south of the Kamchatka peninsula). An area of above-average rainfall is depicted on the map with high confidence in this region. Tropical Storm Mawar

recently formed near the northern tip of the Philippines, and is moving towards the west and northwest over the South China Sea. Mawar is forecast to make landfall well east of the Hong Kong/Macau area during the shortened Week-1 period. Development of new Tropical cyclones (TC) appears less likely today than it did several days ago, warranting the removal of the TC shape depicted on Tuesday's map. Over the eastern Pacific, Tropical Storm Lidia is currently (1 Sep, 11am PDT) moving across the southern Baja Peninsula, and is expected to bring above-average rainfall to much of the Peninsula before curving out to sea. A few showers or thundershowers may reach north of the Mexican border into southern California and southwestern Arizona before Lidia heads out over the Pacific. Above-average rainfall related to the Inter-Tropical Convergence Zone (ITCZ) is expected over the low-latitude eastern Pacific (5N-10N, 105W-125W) with moderate confidence. Over the eastern U.S., the remnants of Harvey and a developing frontal system nearby are predicted to result in above-average rains from the Ohio and upper Tennessee Valleys to the Carolina coast (high confidence). The North Atlantic hurricane season is now rapidly approaching its climatological peak. As of 1 Sep, 11am AST, Hurricane Irma (Category-2) continues to churn over the central low-latitude Atlantic (well within the usual Main Development Region), while maintaining a west-northwest heading. The National Hurricane Center (NHC) predicts the center of Irma may pass close to the northern Leeward Islands by next Tuesday and Wednesday (Sep 5-6). An area of heavy rain is expected (with high confidence) to accompany Irma as the system moves across the central Atlantic. NHC also predicts a moderate chance of new TC development in Week-1 over the deep tropics (about 10N), south of Irma's present track. This new system is also expected to be accompanied by an area of above-average rainfall. Residents of the Leeward Islands will want to stay tuned to the latest forecasts of Hurricane Irma, and take appropriate action if needed.

During Week-2, areas of above-average rainfall are predicted with moderate confidence over portions of the Maritime Continent and the tropical eastern Pacific, likely associated with the movement of the ITCZ, and in the former case, any potential intraseasonal signal. Another area of heavy rainfall is forecast with moderate confidence from the northern Leeward Islands towards the U.S. southern and middle Atlantic coast, associated with the predicted path of Hurricane Irma. The second system, predicted to form south of Irma, is expected to follow a fairly similar track, bringing heavy rain towards the Leeward Islands. The latest GFS and ECMWF dynamical model runs recurve Irma before it reaches the Eastern Seaboard, but this hurricane is still at least a week away, and its track could change by then.

---------- Previous discussion is shown below ----------

The MJO signal was weak and largely incoherent over the global tropics during the past 7-days. According to the RMM index, there is the potential emergence of a weak subseasonal signal over the western Indian Ocean during Week-1. Dynamical model MJO forecasts from the NCEP GEFS and Canadian Meteorological Center (CMC) predict a weak signal to propagate very rapidly across the eastern Indian Ocean and Maritime Continent over the next two weeks. This may be related, in part, to

Kelvin wave activity. Additional Kelvin wave activity is possible across the eastern Pacific. The MJO index forecast from the CFS differs from the other solutions by forecasting a retrograding convective signal, which moves from Phase 2 to Phase 8 during the same period. Westward-moving modes of tropical variability (such as equatorial Rossby waves) appear to be at least partially responsible for the CFS prediction. Despite the weak MJO signal during the past few weeks, tropical cyclone (TC) activity has ramped up over the Northern Hemisphere. In the Atlantic basin, Harvey, at one time a category-4 hurricane, continues to bring extremely heavy, record-breaking rainfall amounts and resultant flooding to eastern Texas and portions of Louisiana. In the eastern Pacific, Hurricane Kenneth developed, eventually topping out at category-4 strength, but was far removed from any landmasses. The western North Pacific basin was even more active during the past 1-2 weeks, with three named storms. The forerunner to what was to become Typhoon Hato formed east of the Luzon Strait, moved westward through the Strait, and intensified over the South China Sea, before making landfall just west of Hong Kong. At maximum intensity, Hato was a category-2 typhoon. Tropical Storm Pakhar developed next, and ended up making landfall very close to where Hato did only four days earlier. Ongoing Tropical Storm Sanvu, currently southeast of Japan, is forecast to intensify to a category-1 typhoon, but remain well east of Japan.

Several potential TC formation areas are indicated over the next two weeks, each with high confidence. TC activity looks to continue southeast of Japan (about 22N-34N, 140E-150E) in the Week-1 period. Taiwan's Central Weather Bureau Typhoon Tracker tool and the Joint Typhoon Warning Center (JTWC) are focused on this area for possible TC development. Over the eastern North Pacific, the National Hurricane Center (NHC) predicts a 90-percent chance of a TC developing near the Pacific coast of Mexico, and, in the Atlantic basin, a 90-percent chance of a TC developing just south of the Cape Verde islands and heading westward across the lower-latitude Atlantic. Harvey (currently a Tropical Storm) continues to churn near the upper Texas coast, bringing record-breaking rainfall to eastern Texas and portions of Louisiana. During Week-2, there is a moderate chance of TC development over the eastern North Pacific (10N-17.5N, 105W-130W). This is attributed to a forecast of diminishing easterly wind shear in Week-2.

In Week-1, precipitation outlooks are predominantly driven by anticipated TC tracks, possible emergence of an intraseasonal signal over the Indian Ocean/Maritime Continent, an expected continuation of observed Kelvin wave activity over the Pacific (especially eastern Pacific), and consensus between the CFS and ECMWF ensemble systems. High confidence of above-normal rains is forecast over the western North Pacific, related to the potential transit of two separate TCs (one behind the other). Above-normal rains are also forecast with high confidence northeast of New Zealand associated with warm, moist northerly flow associated with low pressure areas approaching from the Tasman Sea. This is also consistent with the recent deamplification of the energetic Southern Hemisphere wavetrain, and poleward retraction of the Southern Annular Mode (SAM). Another area of above-normal rainfall with high confidence (associated with Harvey) is expected from far eastern Texas eastward across the Gulf

Coast region to the Florida Panhandle, and northeastward up into the lower Ohio/Tennessee Valleys. The latest (12z) GFS model guidance predicts another tropical system may develop over the western/northwestern Bay of Campeche, and track towards Texas by the end of Week-1. Granted, this is only one model run, but it does bear watching. An update regarding this possibility will be issued on Friday, September 1st. Moderate confidence for above-normal rains are forecast in the vicinity of the Solomon Islands, in association with the emerging intraseasonal signal, and East Pacific where Kelvin wave activity is forecast. Other moderate confidence areas for above-normal rainfall are predicted near the Pacific coast of Mexico and over the lower-latitude Atlantic. Both areas are due to possible TC formation in Week-1.

Shifting to Week-2, precipitation outlooks are driven by several factors. The first is associated with the anticipated continuation of the intraseasonal signal, from about Sri Lanka eastward across parts of the Maritime Continent to just north of Papua New Guinea. Drier-than-normal conditions are forecast just north of this band. Another factor is the expectation of Kelvin waves across the east-central and eastern Pacific basin. These anticipated rainfall anomalies also have some dynamical model support from the CFS and ECMWF precipitation forecasts. All Week-2 precipitation areas are of moderate confidence.

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