NATIONAL HURRICANE CENTER TROPICAL CYCLONE REPORT[1]

TROPICAL DEPRESSION FOURTEEN-E

(EP142024)

5–7 November 2024

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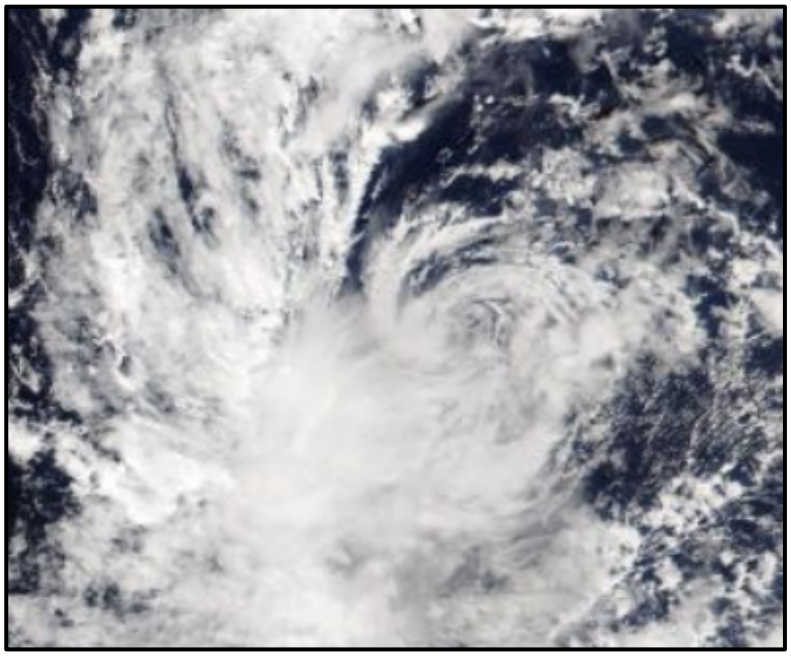

NOAA-20 VISIBLE INFRARED IMAGING RADIOMETER SUITE (VIIRS) IMAGE OF TROPICAL DEPRESSION FOURTEEN-E AT 2102 UTC 5 NOVEMBER 2024. IMAGE COURTESY OF NASA WORLDVIEW.

Fourteen-E was a tropical depression over the central portion of the eastern Pacific basin that did not impact land.

[1] This is an abbreviated Tropical Cyclone Report since there were no coastal watches or warnings issued and no direct fatalities reported in association with Tropical Depression Fourteen-E.

TROPICAL DEPRESSION FOURTEEN-E

5–7 NOVEMBER 2024

BEST TRACK

The "best track[2]" positions and intensities for Tropical Depression Fourteen-E are listed in Table 1. The best track chart of the depression's path is given in Fig. 1, with the wind and pressure histories along with available observations[3] shown in Figs. 2 and 3, respectively.

There were no ship reports of tropical-storm-force winds associated with the depression.

Origin

Tropical Depression Fourteen-E originated from an area of disturbed weather along the eastern Pacific monsoon trough. Satellite data indicate that a small, well-defined area of low pressure formed by 0600 UTC 2 November, about 690 n mi south of the southern tip of the Baja California peninsula. The low produced bursts of deep convection near its center over the next couple of days, but lacked the necessary organization and persistence to be considered a tropical cyclone. Shower and thunderstorm activity eventually became slightly more persistent and better organized, and it is estimated that a tropical depression formed by 0000 UTC 5 November while located about 715 n mi south of the southern tip of the Baja California peninsula.

Peak Intensity and Minimum Pressure

The 30-kt peak intensity of the depression is supported by a couple of scatterometer passes early on 5 November. The depression was never very well organized and exhibited diurnal fluctuations in convection throughout its lifetime.

The estimated minimum central pressure of 1006 mb is based on the Knaff-Zehr-Courtney (KZC) pressure-wind relationship.

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[2] A digital record of the complete best track, including wind radii, can be found on line at ftp://ftp.nhc.noaa.gov/atcf. Data for the current year's storms are located in the *btk* directory, while previous years' data are located in the *archive* directory.

[3] Observations include subjective satellite-based Dvorak technique intensity estimates from the Tropical Analysis and Forecast Branch (TAFB) and the Satellite Analysis Branch (SAB), objective Advanced Dvorak Technique (ADT) estimates and Satellite Consensus (SATCON) estimates from the Cooperative Institute for Meteorological Satellite Studies/University of Wisconsin-Madison. Data and imagery from NOAA polar-orbiting satellites including the Advanced Microwave Sounding Unit (AMSU), the NASA Global Precipitation Mission (GPM), the European Space Agency's Advanced Scatterometer (ASCAT), the Defense Meteorological Satellite Program (DMSP) satellites, and the Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS) satellites, among others, were also useful in constructing the best track of Tropical Depression Fourteen-E.

CASUALTY AND DAMAGE STATISTICS

There were no reports of damage or casualties associated with Tropical Depression Fourteen-E.

FORECAST AND WARNING VERIFICATION

Table 2 provides the number of hours in advance of formation with the first NHC Tropical Weather Outlook (TWO) forecast in each likelihood category. After post-analysis, it appears the associated convection was persistent enough for the system to be classified as a tropical depression by 0000 UTC 5 November, which was 36 h earlier than the NHC operational assessment. The precursor low was close to becoming a tropical depression at times on 3–4 November, but the convection was not quite persistent and organized enough for this declaration to be made. The subjective nature of evaluating the organization of intermittent convection can make determining the time of genesis challenging both in real-time and post-analysis.

The short-range genesis forecasts were difficult because of the marginal environmental conditions that contributed to the lack of sustained, organized convection. In real-time, it was hard for forecasters to assess whether the system would maintain organized convection for long enough to be considered a tropical cyclone. There was also a lack of consistent support for development among the global models, possibly due to the small size and weak nature of the system. Figure 4 shows composites of 7-day Graphical TWO (GTWO) genesis areas for each category prior to the formation of the depression. The genesis location of the depression fell within all of the GTWO formation areas.

There were only two verifying 12-h NHC official forecasts for the depression. The official track forecast errors (38.0 n mi) were greater than the mean official errors for the previous 5-yr period (22.6 n mi). The official intensity forecast errors (5.0 kt) were slightly lower than the mean official errors for the previous 5-yr period (5.5 kt). Due to the small number of NHC forecasts issued, no meaningful comparisons can be made with the track or intensity models.

There were no coastal watches or warnings issued for Tropical Depression Fourteen-E.

Table 1. Best track for Tropical Depression Fourteen-E, 5–7 November 2024.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
02 / 0600	11.3	109.9	1007	30	low
02 / 1200	11.3	110.2	1007	30	"
02 / 1800	11.4	110.5	1008	25	"
03 / 0000	11.5	110.8	1008	25	"
03 / 0600	11.4	110.9	1008	25	"
03 / 1200	11.3	110.8	1007	30	"
03 / 1800	11.3	110.8	1007	30	"
04 / 0000	11.1	110.4	1007	30	"
04 / 0600	11.0	110.0	1007	30	"
04 / 1200	11.0	109.6	1007	30	"
04 / 1800	11.0	109.2	1007	30	"
05 / 0000	11.0	108.7	1006	30	tropical depression
05 / 0600	11.2	108.2	1006	30	"
05 / 1200	11.6	107.6	1006	30	"
05 / 1800	12.1	107.1	1006	30	"
06 / 0000	12.6	106.8	1006	30	"
06 / 0600	12.9	106.5	1006	30	"
06 / 1200	13.3	106.0	1006	30	"
06 / 1800	13.7	105.4	1007	25	"
07 / 0000	13.6	105.1	1007	25	"
07 / 0600	13.3	104.9	1008	25	"
07 / 1200					dissipated
05 / 0000	11.0	108.7	1006	30	minimum pressure and maximum winds

Table 2. Number of hours in advance of formation of the depression associated with the first NHC Tropical Weather Outlook forecast in the indicated likelihood category. Note that the timings for the "Low" category do not include forecasts of a 0% chance of genesis.

	Hours Before Genesis	
	48-Hour Outlook	**168-Hour Outlook**
Low (<40%)	72	102
Medium (40%-60%)	48	60
High (>60%)	24	24

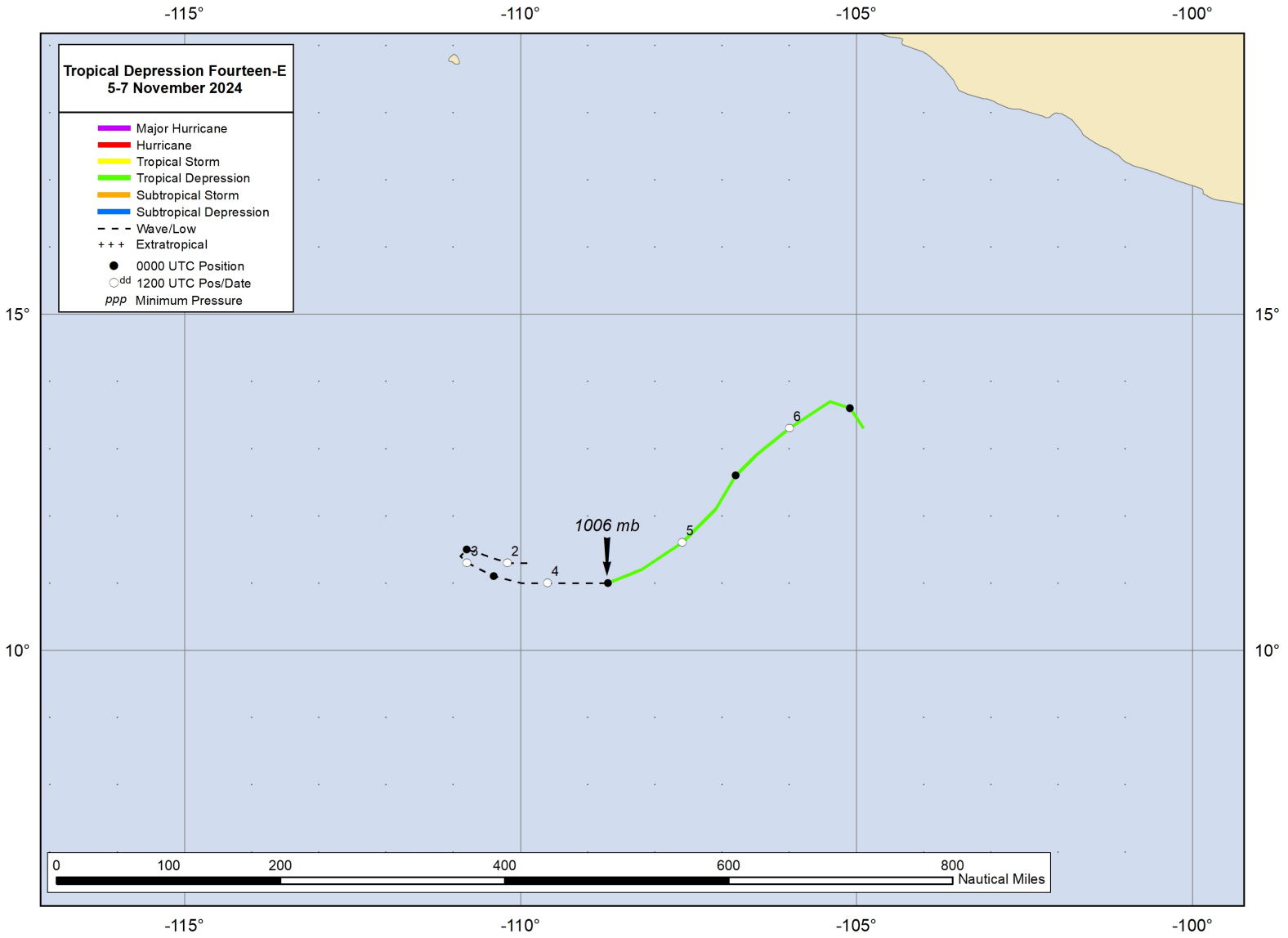

Figure 1. Best track positions for Tropical Depression Fourteen-E, 5–7 November 2024.

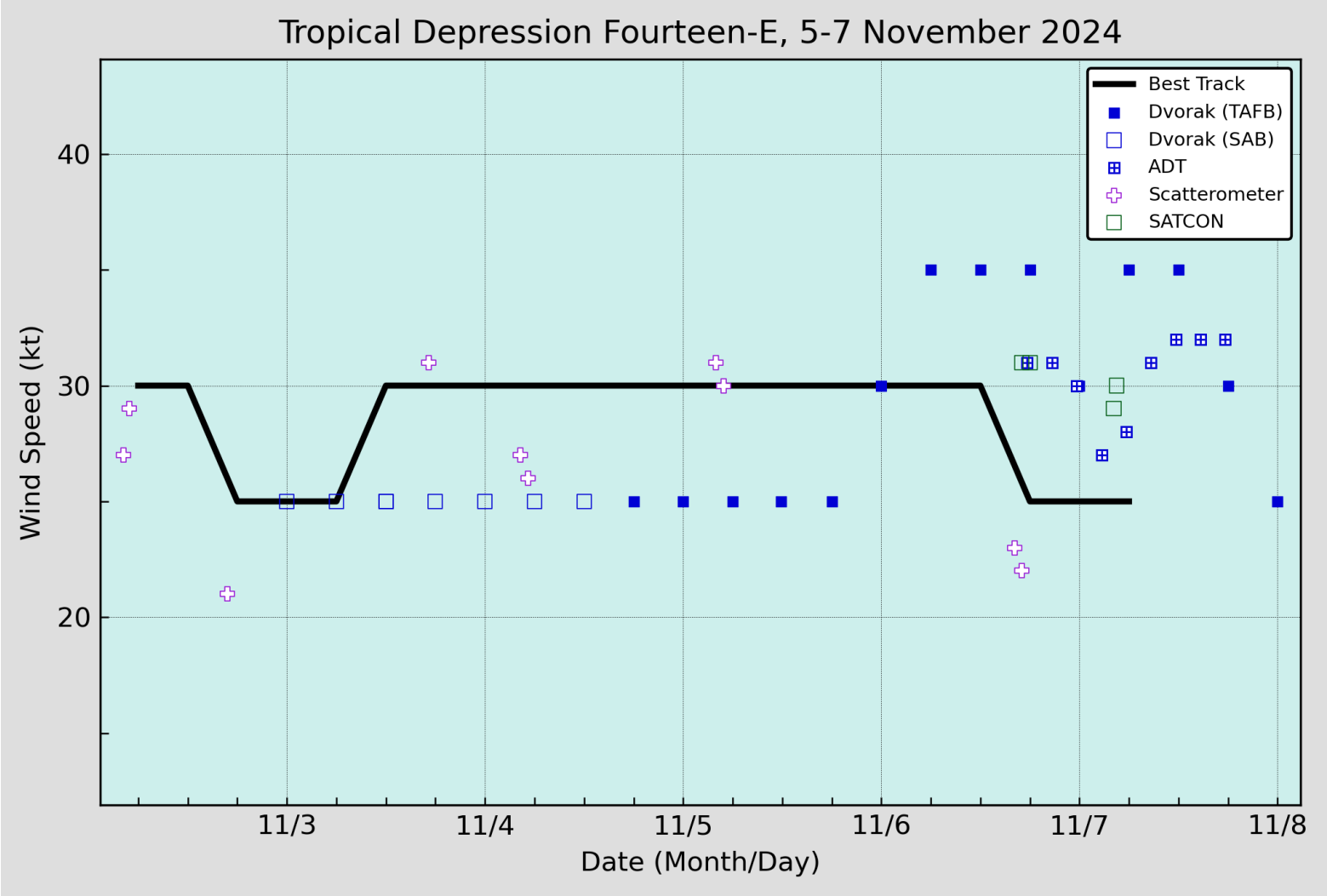

Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Depression Fourteen-E, 5–7 November 2024. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. SATCON intensity estimates are from the Cooperative Institute for Meteorological Satellite Studies. Dashed vertical lines correspond to 0000 UTC.

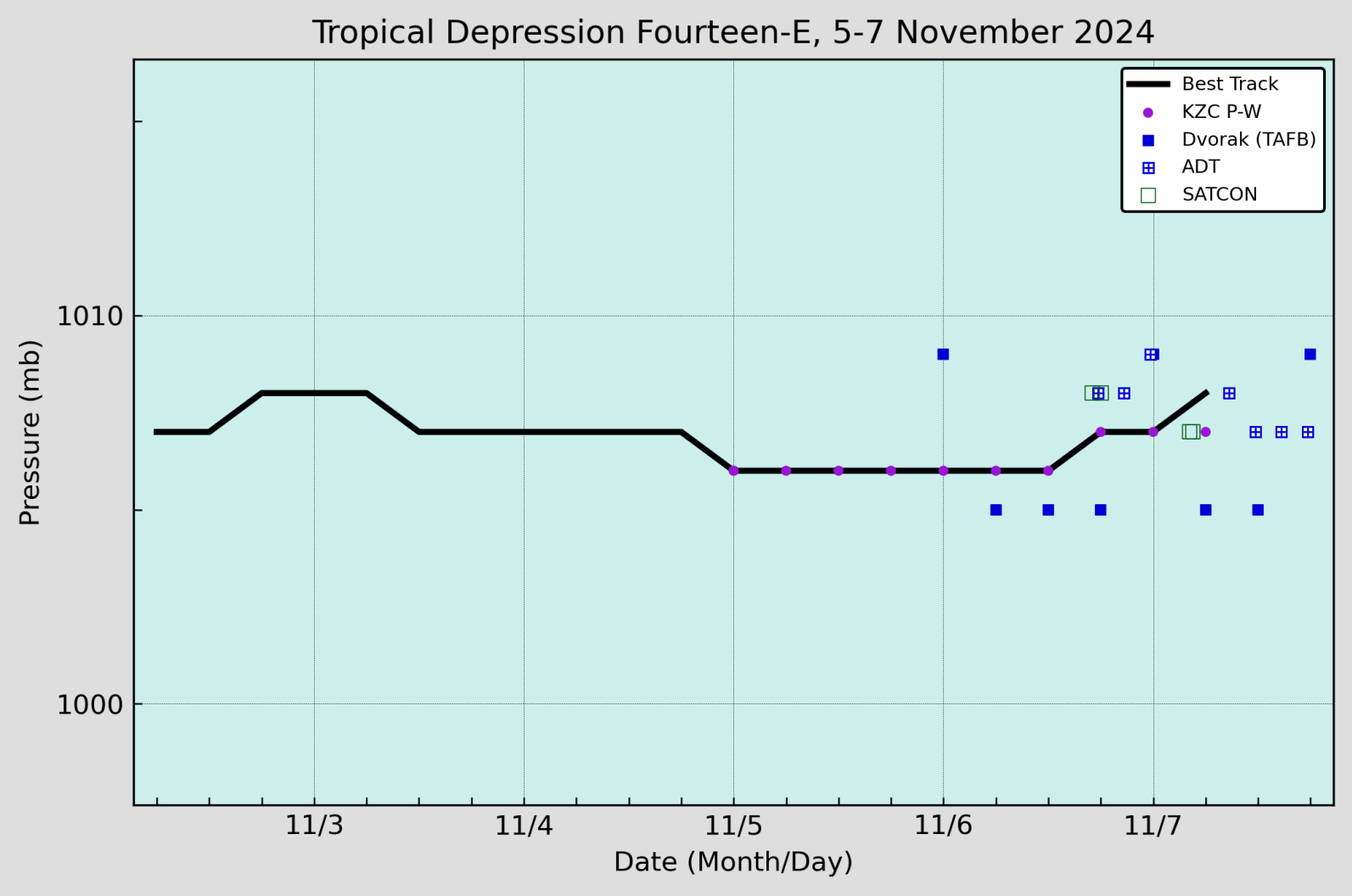

Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Depression Fourteen-E, 5–7 November 2024. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. SATCON intensity estimates are from the Cooperative Institute for Meteorological Satellite Studies. KZC P-W refers to pressure estimates derived using the Knaff-Zehr-Courtney pressure-wind relationship. Dashed vertical lines correspond to 0000 UTC.

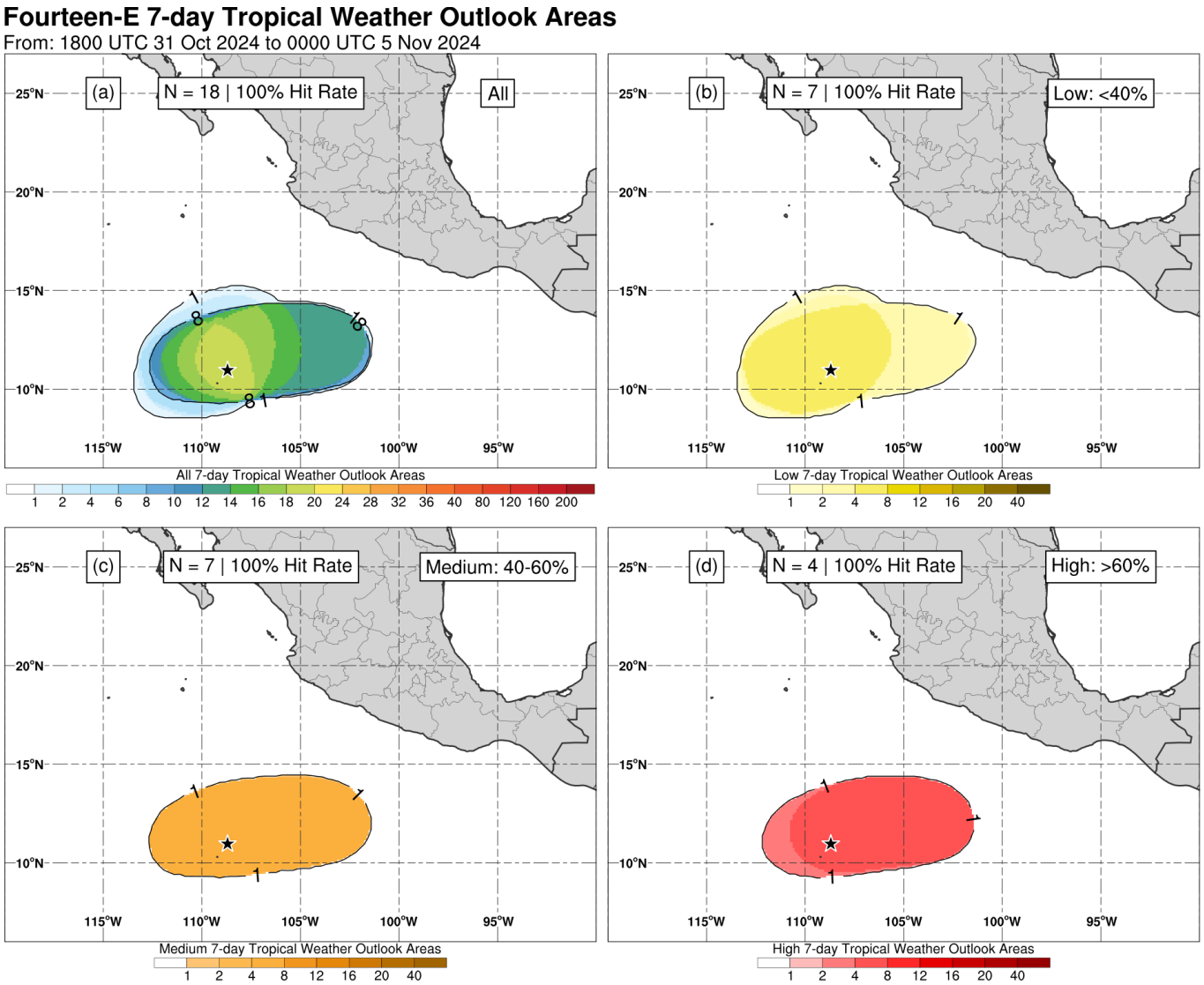

Figure 4. Composites of 7-day tropical cyclone genesis areas depicted in NHC's Tropical Weather Outlooks prior to the formation of Tropical Depression Fourteen-E for (a) all probabilistic genesis categories, (b) the low (<40%) category, (c) medium (40–60%) category, and (d) high (>60%) category. The location of genesis is indicated by the black star.