

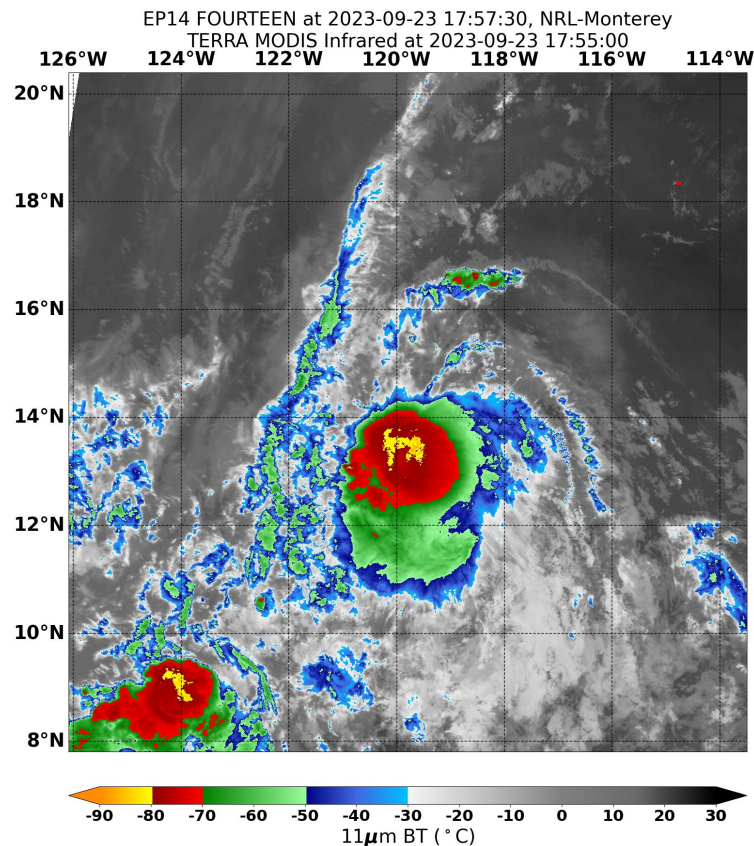


NATIONAL HURRICANE CENTER TROPICAL CYCLONE REPORT¹

TROPICAL DEPRESSION FOURTEEN-E (EP142023)

23–24 September 2023

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National Hurricane Center
31 January 2024



TERRA MODIS INFRARED IMAGE OF TROPICAL DEPRESSION FOURTEEN-E AT 1755 UTC 23 SEPTEMBER 2023. IMAGE COURTESY OF NAVAL RESEARCH LAB.

Short-lived Tropical Depression Fourteen-E remained well out at sea, roughly halfway between mainland Mexico and the Hawaiian Islands.

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 Fourteen-E.

Tropical Depression Fourteen-E

23–24 SEPTEMBER 2023

BEST TRACK

The “best track²” 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 observations³ shown in Figs. 2 and 3, respectively.

Origin

Fourteen-E developed from a tropical wave that appeared to emerge from Central America around 17 September. Although it is very difficult to track this wave across the Atlantic basin, it may have moved off the west coast of Africa a couple of weeks earlier. There was a gradual increase in the organization of associated deep convection as the wave moved westward to the south of Mexico over the ensuing several days. Around 1200 UTC 23 September, the system acquired a sufficiently well-defined center of circulation to designate the formation of a tropical depression located about 750 n mi southwest of the southern tip of the Baja California peninsula. The cyclone moved on a mostly westward track during the next couple of days, before degenerating into a remnant low.

Peak Intensity and Minimum Pressure

Fourteen-E’s peak intensity of 30 kt is based on subjective Dvorak satellite estimates. The system was never very well organized during its lifetime, with the center mainly situated near the northern edge of the main area of deep convection.

The depression’s estimated minimum central pressure of 1006 mb is based on the Knaff-Zehr-Courtney pressure-wind relationship.

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), and Defense Meteorological Satellite Program (DMSP) 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

The depression's genesis was not predicted very well in advance. Table 2 provides the number of hours before formation in the first NHC Tropical Weather Outlook (TWO) forecast for each likelihood category. The system that became Fourteen-E was first mentioned in the TWO 78 hours prior to genesis with a low chance (<40%) of development within 7 days. The 7-day formation probability was raised to the high category (>60%) just 24 hours before genesis. The 2-day formation probability was never raised to high before the system formed. Figure 4 shows composites of 7-day TWO genesis areas for each category prior to the formation of Tropical Depression Fourteen-E. The cyclone's formation location was captured within all of the genesis areas that were issued.

A verification of NHC official track forecasts for Fourteen-E is given in Table 3a, and a homogeneous comparison of the official track errors with selected guidance models is given in Table 3b. The number of cases was extremely small, with only 1 forecast to verify at 24 hours.

A verification of NHC official intensity forecasts for Fourteen-E is given in Table 4a, and a homogeneous comparison of the official intensity errors with selected guidance models is given in Table 4b. Again, there were very few cases to verify.

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

ACKNOWLEDGEMENTS

Philippe Papin of NHC made the track and predicted genesis area maps (Figs. 1 and 4).



Table 1. Best track for Tropical Depression Fourteen-E, 23–24 September 2023.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
23 / 1200	13.6	118.5	1007	25	tropical depression
23 / 1800	14.0	119.7	1006	30	"
24 / 0000	14.4	120.9	1006	30	"
24 / 0600	14.8	122.1	1007	30	"
24 / 1200	15.1	123.4	1007	30	"
24 / 1800	15.1	124.9	1008	30	"
25 / 0000	15.1	125.9	1008	25	low
25 / 0600	15.4	126.8	1008	25	"
25 / 1200	15.8	128.0	1008	25	"
25 / 1800	15.7	129.6	1008	25	"
26 / 0000	15.3	131.1	1008	25	"
26 / 0600	14.9	132.5	1009	25	"
26 / 1200	14.5	134.0	1011	20	"
26 / 1800	13.9	135.8	1011	20	"
27 / 0000	13.3	137.7	1011	20	"
27 / 0600	12.5	139.5	1011	20	"
27 / 1200	12.0	141.2	1011	20	"
27 / 1800					dissipated
23 / 1800	14.0	119.7	1006	30	minimum pressure and maximum winds



Table 2. Number of hours in advance of formation 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%)	48	78
Medium (40%-60%)	24	66
High (>60%)	-	24



Table 3a. NHC official (OFCL) and climatology-persistence skill baseline (OCD5) track forecast errors (n mi) for Tropical Depression Fourteen-E, 23–24 September 2023. Mean errors for the previous 5-yr period are shown for comparison. Official errors that are smaller than the 5-yr means are shown in boldface type.

	Forecast Period (h)							
	12	24	36	48	60	72	96	120
OFCL	44.2	29.6						
OCD5	46.3	34.1						
Forecasts	3	1						
OFCL (2018-22)	22.1	34.0	45.4	56.0	70.9	78.7	100.5	117.8
OCD5 (2018-22)	36.7	73.4	114.0	156.9	193.2	244.5	317.0	376.0



Table 3b. Homogeneous comparison of selected track forecast guidance models (in n mi) for Tropical Depression Fourteen-E, 23–24 September 2023. Errors smaller than the NHC official forecast are shown in boldface type.

Model ID	Forecast Period (h)							
	12	24	36	48	60	72	96	120
OFCL	44.2	29.6						
OCD5	46.3	34.1						
GFSI	38.5	24.7						
NVGI	24.5	55.2						
HWFI	47.2	46.3						
HMNI	54.7	33.4						
HFAI	50.7	57.3						
HFBI	53.5	55.2						
CTCI	38.3	21.4						
HCCA	43.4	18.9						
AEMI	36.3	18.0						
TVCE	44.4	18.4						
TVCX	44.4	18.4						
TVDG	42.9	18.4						
TABD	60.6	88.1						
TABM	50.2	34.7						
TABS	40.6	21.1						
Forecasts	3	1	0	0	0	0	0	0



Table 4a. NHC official (OFCL) and climatology-persistence skill baseline (OCD5) intensity forecast errors (kt) for Tropical Depression Fourteen-E, 23–24 September 2023. Mean errors for the previous 5-yr period are shown for comparison. Official errors that are smaller than the 5-yr means are shown in boldface type.

	Forecast Period (h)							
	12	24	36	48	60	72	96	120
OFCL	5.0	10.0						
OCD5	5.0	10.0						
Forecasts	3	1						
OFCL (2018-22)	5.4	8.9	11.0	12.8	14.3	15.8	17.0	17.6
OCD5 (2018-22)	6.9	12.1	15.9	18.6	18.7	21.0	22.3	22.1



Table 4b. Homogeneous comparison of selected intensity forecast guidance models (kt) for Tropical Depression Fourteen-E, 23–24 September 2023. Errors smaller than the NHC official forecast are shown in boldface type.

Model ID	Forecast Period (h)							
	12	24	36	48	60	72	96	120
OFCL	5.0	10.0						
OCD5	5.0	10.0						
DSHP	3.0	9.0						
LGEM	2.3	6.0						
HWFI	5.3	8.0						
HMNI	3.0	5.0						
HFAI	2.7	3.0						
HFBI	3.3	4.0						
CTCI	4.3	5.0						
GFSI	2.0	4.0						
IVCN	3.3	4.0						
ICON	3.7	7.0						
HCCA	3.7	7.0						
Forecasts	3	1	0	0	0	0	0	0

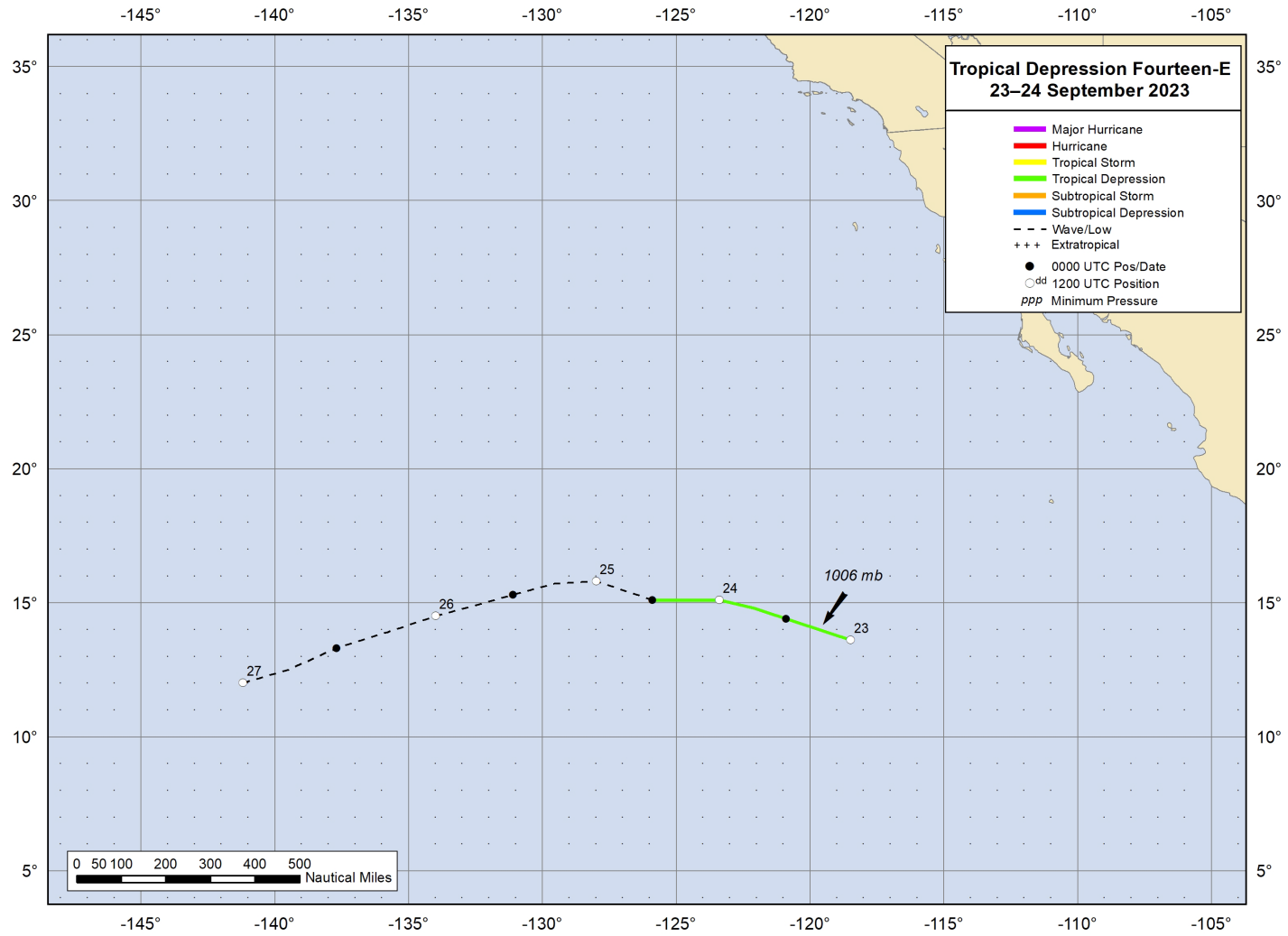


Figure 1. Best track positions for Tropical Depression Fourteen-E, 23–24 September 2023.

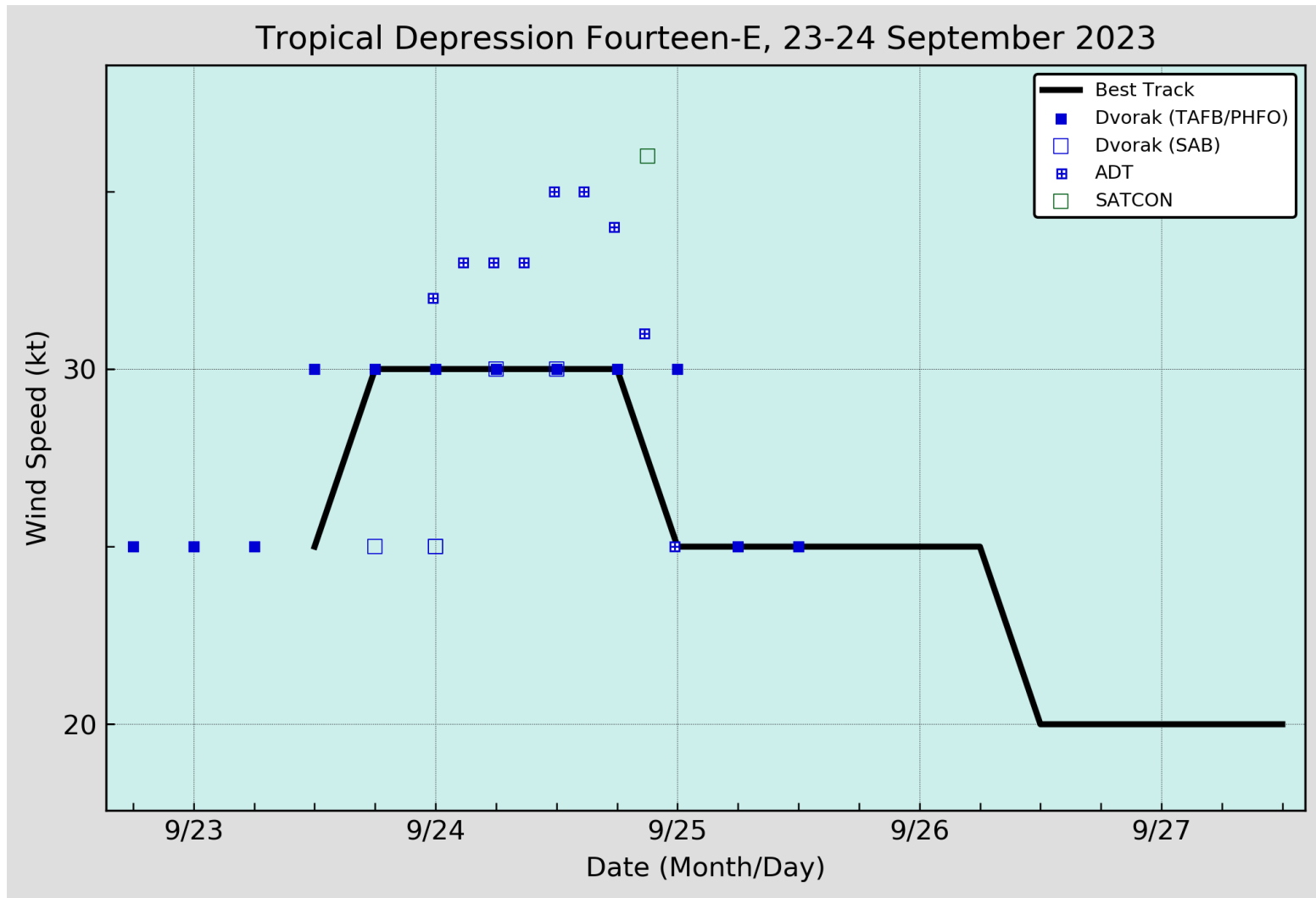


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Depression Fourteen-E, 23–24 September 2023. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. SATCON intensity estimates are from the Cooperative Institute for Meteorological Satellite Studies. Dashed vertical lines correspond to 0000 UTC.

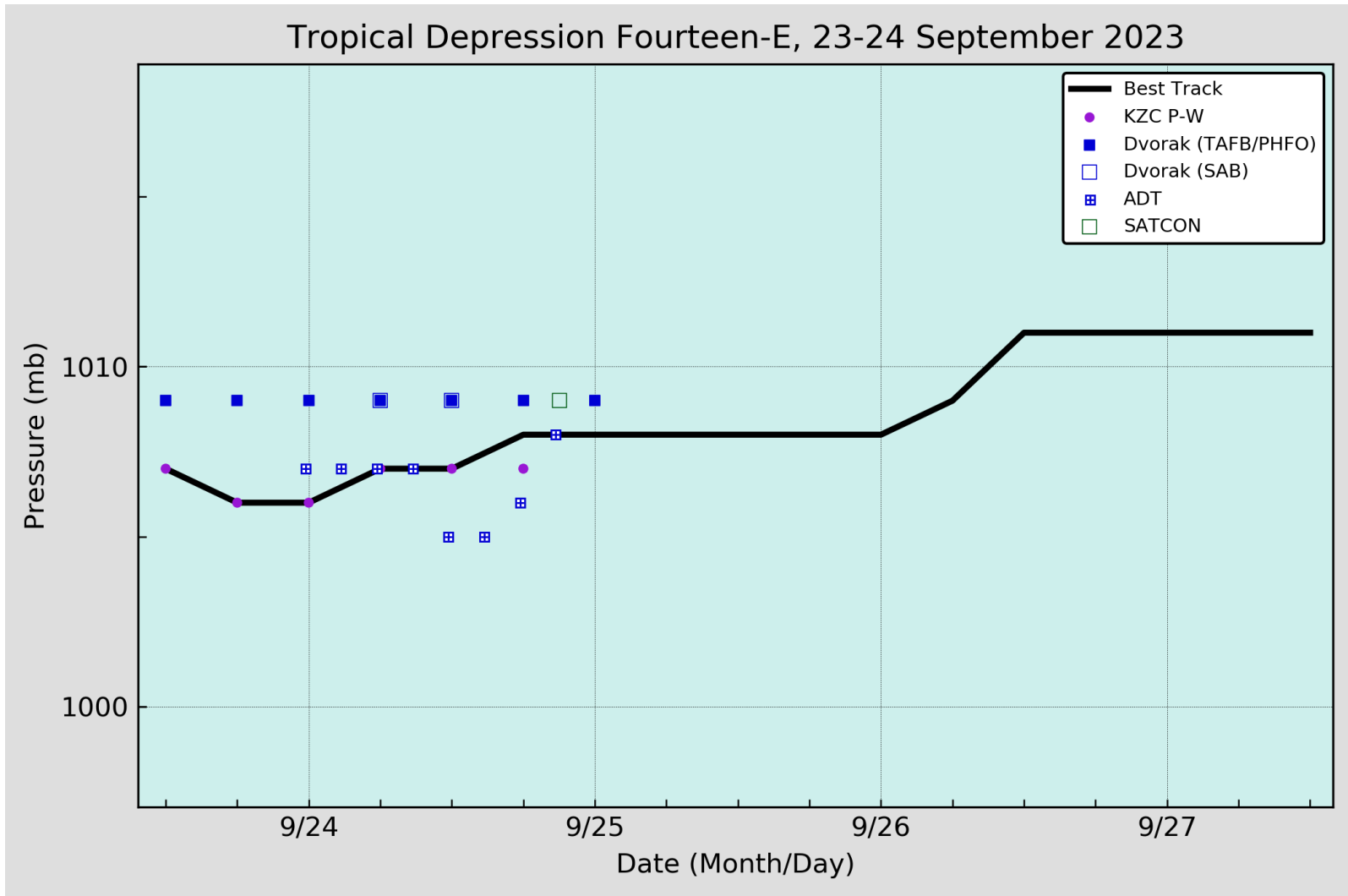


Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Depression Fourteen-E, 23–24 September 2023. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. SATCON intensity estimates are from the Cooperative Institute 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.

Forteen-E 7-day Tropical Weather Outlook Areas

From: 0600 UTC 20 Sep 2023 to 1200 UTC 23 Sep 2023

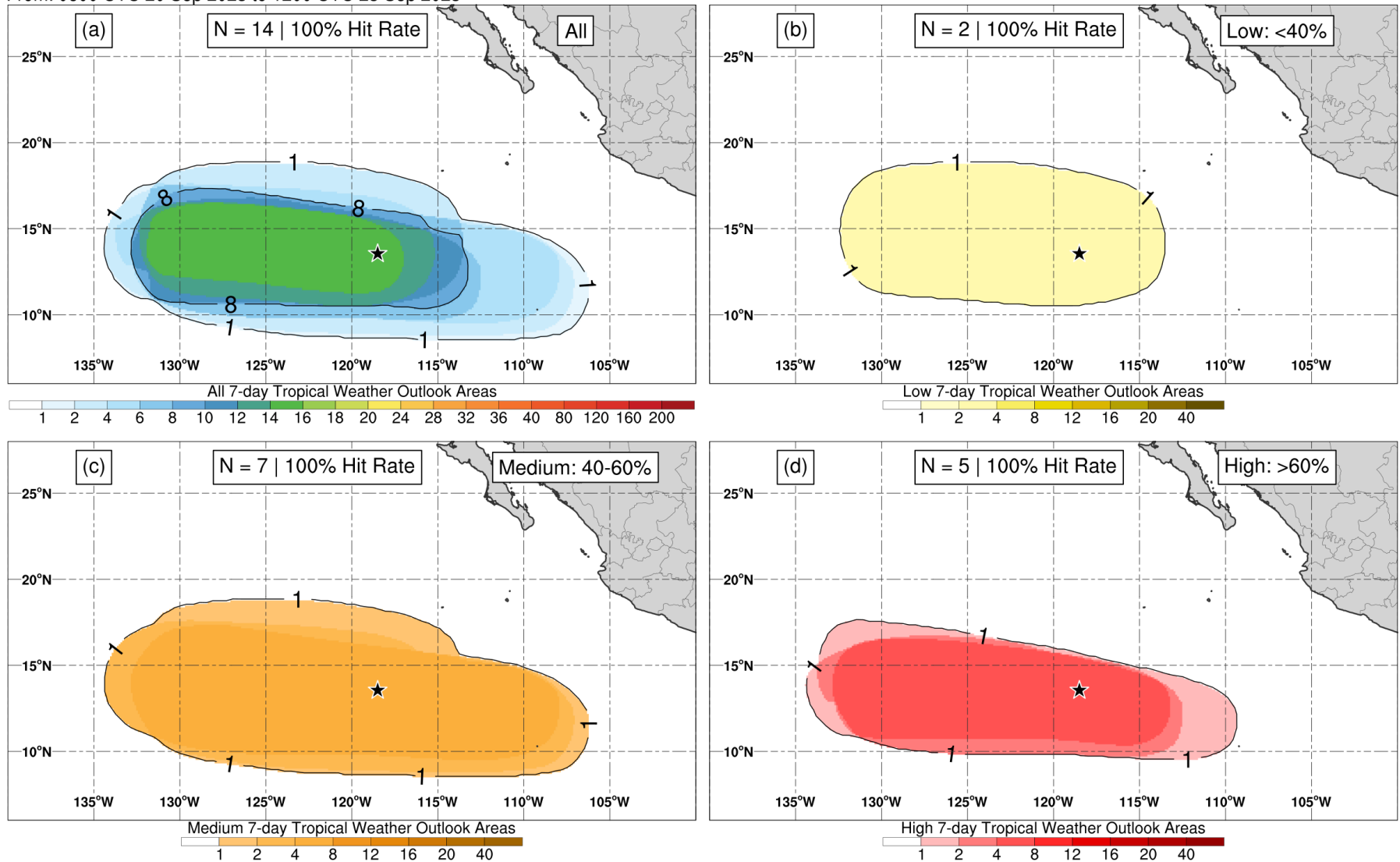


Figure 4. Composites of 7-day tropical cyclone genesis areas depicted in NHC’s Tropical Weather Outlooks prior to the formation of Tropical Depression Fourteen-E for (a) all probabilistic genesis categories, (b) the low (<40%) category, (c) medium (40–60%) category, and (d) high (>60%) category. The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