



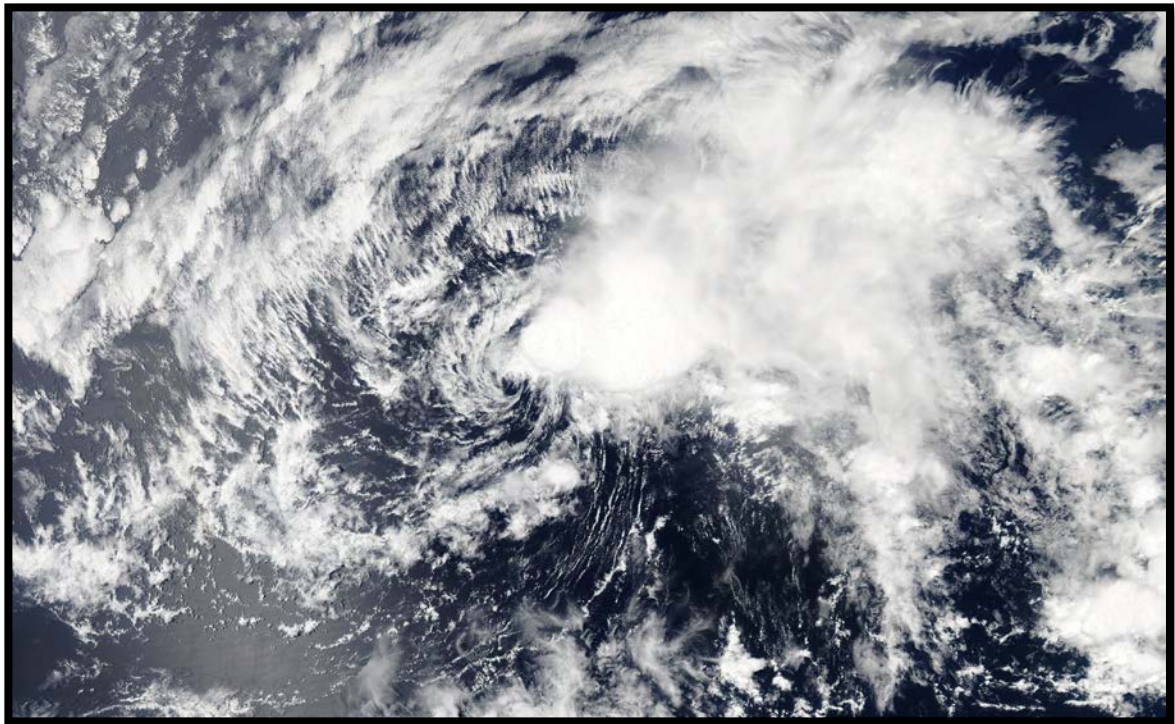
NATIONAL HURRICANE CENTER TROPICAL CYCLONE REPORT

TROPICAL DEPRESSION ONE-E

(EP012018)

10–11 May 2018

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NASA MODIS/AQUA VISIBLE IMAGE OF TROPICAL DEPRESSION ONE-E AT 2200 UTC 10 MAY 2018

Tropical Depression One-E formed before the official start of the eastern North Pacific hurricane season but only lasted for about a day over the western part of the basin.

Tropical Depression One-E

10–11 MAY 2018

SYNOPTIC HISTORY

The origins of Tropical Depression One-E are not entirely clear. The depression appears to have come from a disturbance that developed within the Intertropical Convergence Zone (ITCZ) south of the Gulf of Tehuantepec at the beginning of May during the active phase of the Madden-Julian Oscillation. The area of disturbed weather moved westward for the next several days, with the ITCZ amplifying and a broad area of low pressure forming on 8 May near 120°W, possibly in response to a deep upper-level trough located near 130°W. Deep convection decreased near the broad and elongated low on 9 May but then became more concentrated near a better-defined center early on 10 May. It is estimated that a tropical depression formed by 1200 UTC 10 May while centered about 1100 n mi west-southwest of the southern tip of the Baja California peninsula. The “best track” chart of the tropical depression’s path is given in Fig. 1, with the wind and pressure histories shown in Figs. 2 and 3, respectively. The best track positions and intensities are listed in Table 1¹.

At its inception, the tropical depression was moving westward toward the upper-level trough to its west, which was inducing about 20 kt of deep-layer west-southwesterly shear. That shear only got stronger and reached 30–40 kt by the next day, and prevented the depression from increasing in intensity. In fact, the depression degenerated into a remnant low by 1800 UTC 11 May when the shear had stripped all of the deep convection away from the low-level center. Weak low-level steering currents caused the remnant low to slow down and meander on 12 and 13 May, and the system ultimately dissipated by 1800 UTC 13 May nearly 1300 n mi west-southwest of the southern tip of the Baja California peninsula.

METEOROLOGICAL STATISTICS

Observations in Tropical Depression One-E (Figs. 2 and 3) include subjective satellite-based Dvorak technique intensity estimates from the Tropical Analysis and Forecast Branch (TAFB) and the Satellite Analysis Branch (SAB). 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 One-E.

¹ 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 *bt* directory, while previous years’ data are located in the *archive* directory.

The maximum intensity of the cyclone is estimated to be 30 kt based on a blend of Dvorak intensity estimates from TAFB and SAB and scatterometer data.

CASUALTY AND DAMAGE STATISTICS

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

FORECAST AND WARNING CRITIQUE

The genesis of Tropical Depression One-E was correctly anticipated at first, but the NHC forecasts ultimately downplayed the possibility the day before formation occurred. Table 2 provides the number of hours in advance of formation associated with the first NHC Special Tropical Weather Outlook (TWO) forecast in each likelihood category. A Special TWO was first issued on the afternoon of 7 May 66 h before genesis occurred, giving the system a medium (40–60%) chance of tropical cyclone formation during the next five days. The 48-h chance of formation was eventually raised to high (>60%) 29 h before genesis. However, due to the expected hostile environmental conditions, subsequent Special TWOs lowered the chance of formation to the low category by the evening of 9 May.

Due to the depression's short existence, there were only two verifying 12-h forecasts. Thus, a comprehensive verification of official and guidance track and intensity forecast errors is not provided. The two official 12-h forecasts had a mean track error of 51.6 n mi and a mean intensity error of 0.0 kt. These compare to the mean 12-h official errors for the previous 5-yr period (2013–2017) of 21.8 n mi and 5.8 kt, respectively.



Table 1. Best track for Tropical Depression One-E, 10–11 May 2018.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
10 / 1200	12.1	125.4	1008	25	tropical depression
10 / 1800	12.3	126.2	1007	30	"
11 / 0000	12.4	127.1	1007	30	"
11 / 0600	12.5	128.0	1007	30	"
11 / 1200	12.6	128.7	1007	30	"
11 / 1800	12.7	129.3	1008	25	low
12 / 0000	12.8	129.8	1008	25	"
12 / 0600	13.0	130.1	1008	25	"
12 / 1200	13.2	130.3	1008	25	"
12 / 1800	13.3	130.4	1009	20	"
13 / 0000	13.4	130.3	1009	20	"
13 / 0600	13.5	130.2	1010	20	"
13 / 1200	13.4	130.1	1010	20	"
13 / 1800					dissipated
10 / 1800	12.3	126.2	1007	30	maximum winds and minimum pressure

Table 2. Number of hours in advance of formation associated with the first NHC Special 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	120-Hour Outlook
Low (<40%)	66	-
Medium (40%-60%)	42	66
High (>60%)	29	29

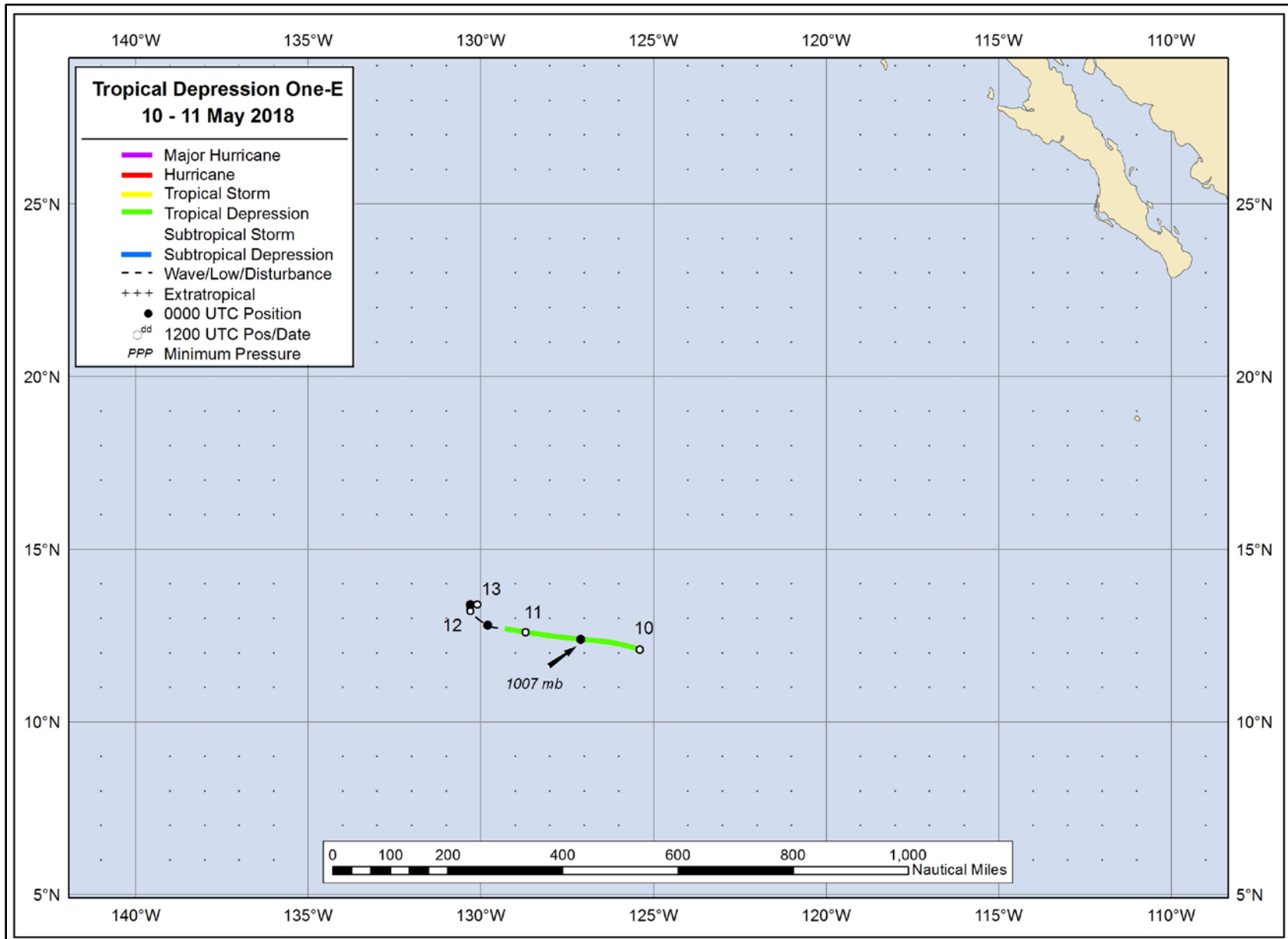


Figure 1. Best track positions for Tropical Depression One-E, 10–11 May 2018.

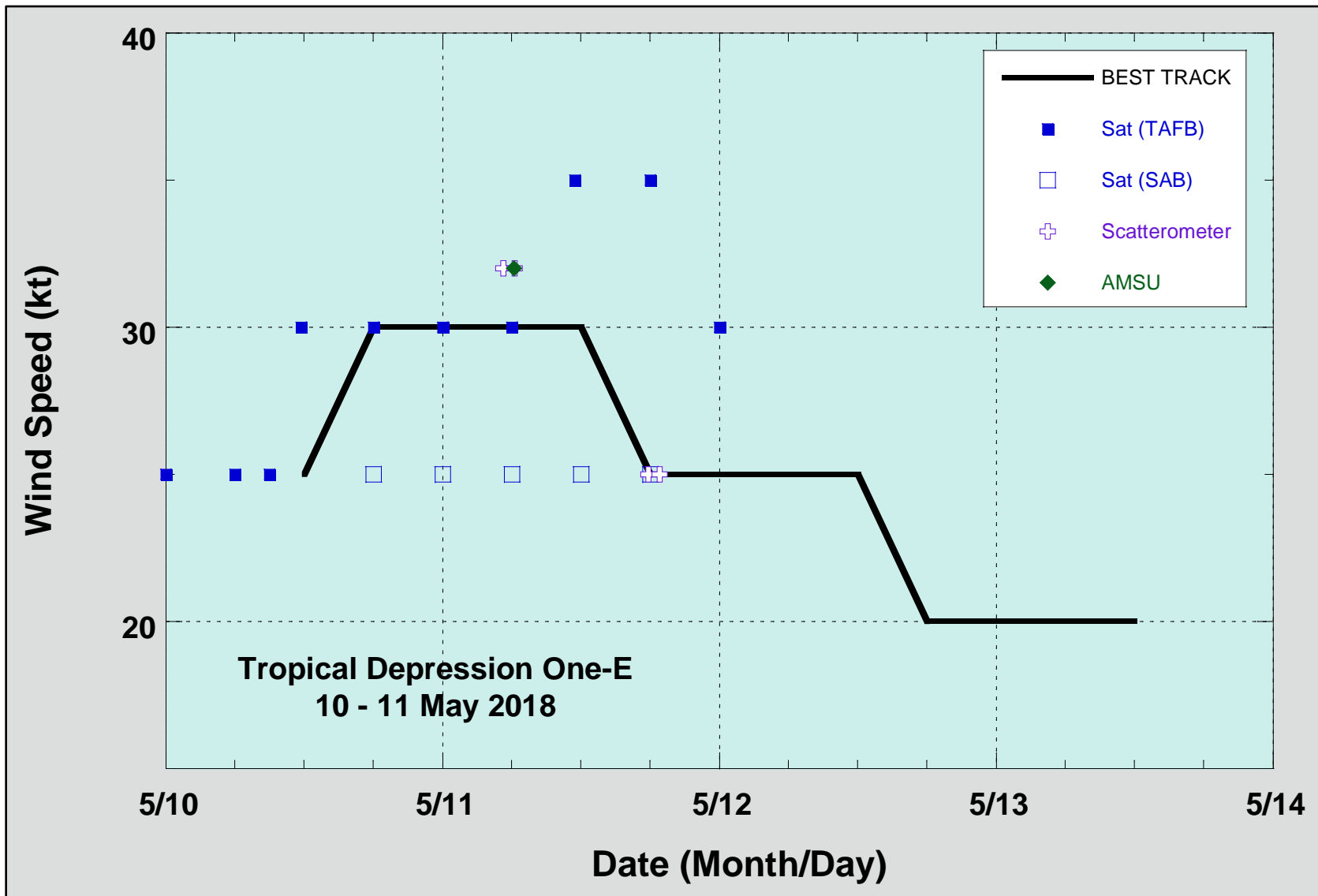


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Depression One-E, 10–11 May 2018. AMSU intensity estimates are from the Cooperative Institute for Meteorological Satellite Studies technique. Dashed vertical lines correspond to 0000 UTC.

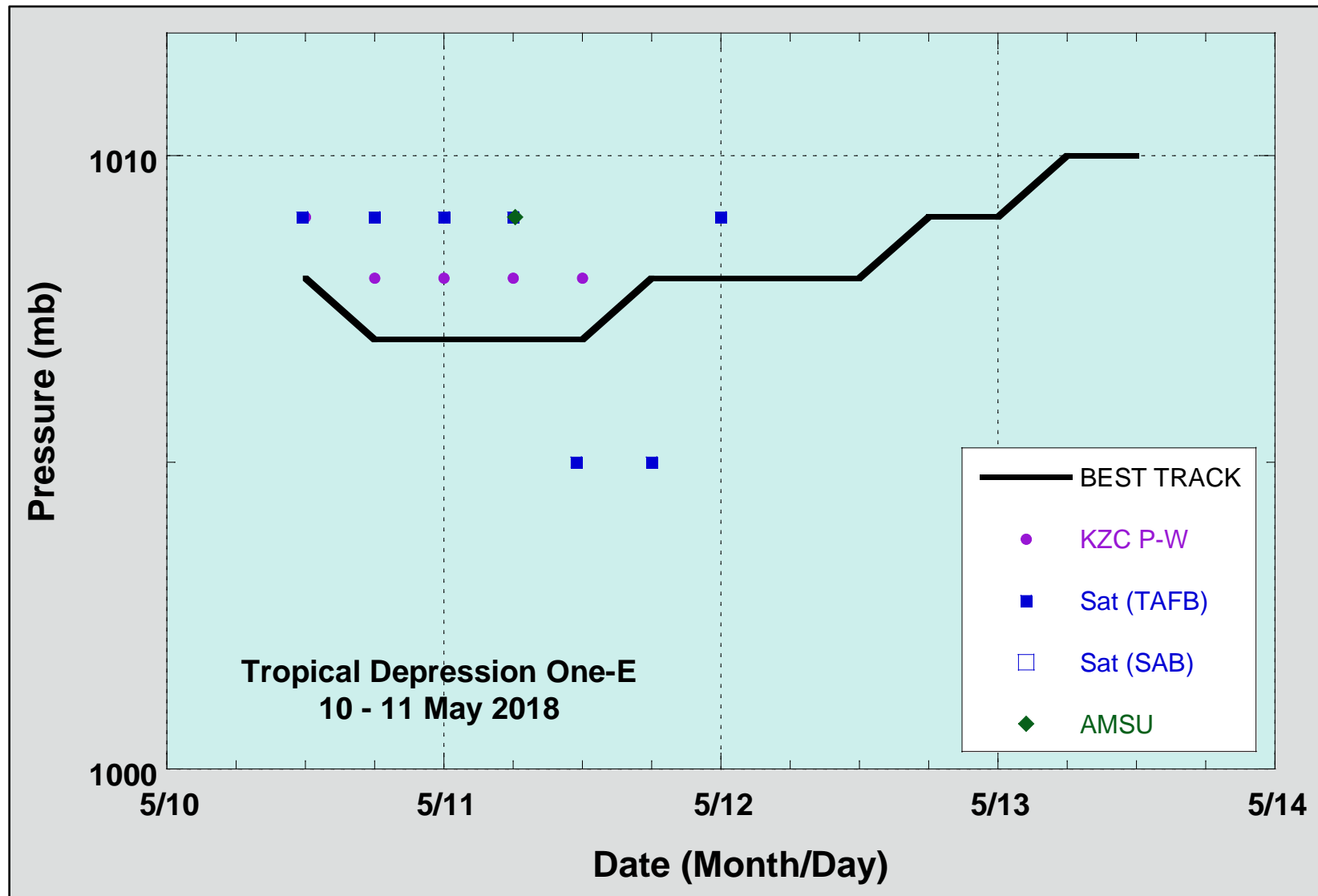


Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Depression One-E, 10–11 May 2018. AMSU intensity estimates are from the Cooperative Institute for Meteorological Satellite Studies technique. KZC P-W refers to pressure estimates derived using the Knaff-Zehr-Courtney pressure-wind relationship. Dashed vertical lines correspond to 0000 UTC.