

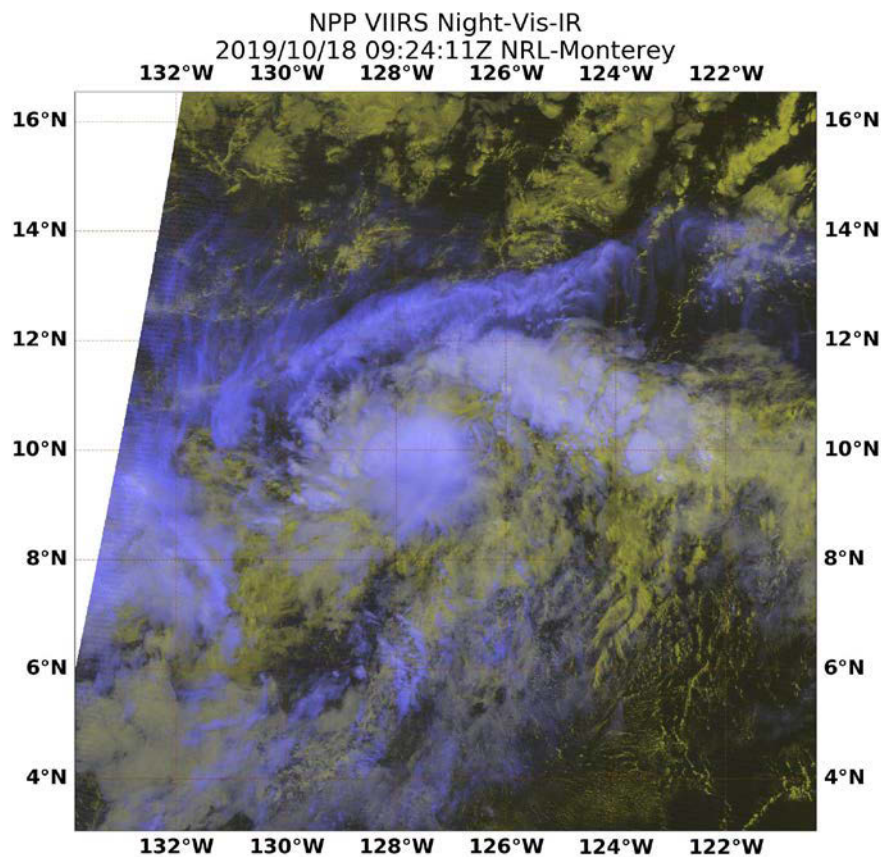


NATIONAL HURRICANE CENTER TROPICAL CYCLONE REPORT

TROPICAL STORM OCTAVE (EP182019)

17–19 October 2019

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National Hurricane Center
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VIIRS NIGHT VISIBLE/IR IMAGERY OF OCTAVE FROM THE NPP SATELLITE AT 0924 UTC 18 OCTOBER. IMAGE COURTESY OF THE NAVAL RESEARCH LABORATORY, MONTEREY, CA.

Octave was a short-lived tropical storm that meandered well to the southwest of the Baja California peninsula.

Tropical Storm Octave

17–19 OCTOBER 2019

SYNOPTIC HISTORY

Octave formed from a low pressure area in eastern Pacific monsoon trough. This system was first apparent near 12°N 124°W on 15 October, and it cannot be reliably traced to any disturbance moving in from the east. While the system drifted west-southwestward during the next day, the associated convection increased and the circulation became better defined. An additional increase of convection and center definition led to the formation of a tropical depression near 1200 UTC 17 October about 1200 n mi southwest of the southern tip of the Baja California peninsula. The “best track” chart of the tropical cyclone’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.

The cyclone was located in an area of weak steering currents at the time of genesis, and this continued for its entire lifetime as the system never fully separated from the monsoon trough. The initial west-southwestward drift continued through early 18 October, and during that time the depression intensified into a tropical storm. Later that day, Octave began a northward drift as it reached an estimated peak intensity of 40 kt (cover photo). Subsequently, dry air entrainment into the small circulation caused the convection to dissipate, and Octave weakened to a depression and later degenerated into a remnant low on 19 October as it turned east-northeastward. After that, the remnants of Octave drifted south-southwestward for the next day or so, dissipating in the monsoon trough on 21 October not far from where genesis had occurred four days earlier.

METEOROLOGICAL STATISTICS

Observations in Octave (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), and 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),

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

and Defense Meteorological Satellite Program (DMSP) satellites, among others, were also useful in constructing the best track of Octave.

There were no surface observations of tropical-storm-force winds from Octave. The estimated peak intensity of 40 kt was based mainly on ASCAT data near 0600 UTC 18 October.

CASUALTY AND DAMAGE STATISTICS

There were no reports of damage or casualties associated with Octave.

FORECAST AND WARNING CRITIQUE

The genesis of Octave was poorly forecast (Table 2). The disturbance from which Octave developed was introduced in the Tropical Weather Outlook 54 h prior to genesis with a low (<40%) chance of development during the 5 day period, and this was increased to a medium (40–60%) chance 12 h before genesis. The system was given a low chance of development in the 2 day period 12 h before genesis and a medium chance at the time of genesis. The system was not given a high (>60%) chance to develop until after genesis was determined to have occurred in post-analysis. The dynamical models correctly forecast that the low pressure area that became Octave would form in the monsoon trough. However, even 24 h before genesis there was poor model agreement on whether the low would become a tropical cyclone.

A verification of NHC official track forecasts for Octave is given in Table 3. Official forecast track errors were comparable to the mean official errors for the previous 5-yr period, although the number of forecasts is very small. The official forecasts correctly anticipated that Octave would move slowly during its lifetime, although it wound up moving even less than predicted. No model comparisons are shown for track or intensity because of the small sample size.

A verification of NHC official intensity forecasts for Octave is given in Table 4. Official forecast intensity errors were lower than the mean official errors for the previous 5-yr period. The intensity forecasts followed the scenario suggested by the dynamical models that dry air would be entrained into the cyclone, and this verified well.

No coastal watches or warnings were issued for Octave.

Table 1. Best track for Tropical Storm Octave, 17–19 October 2019.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
17 / 0000	10.5	125.6	1009	25	low
17 / 0600	10.4	125.9	1009	25	"
17 / 1200	10.3	126.2	1008	25	tropical depression
17 / 1800	10.2	126.4	1008	30	"
18 / 0000	10.1	126.6	1007	35	tropical storm
18 / 0600	10.0	126.8	1006	40	"
18 / 1200	10.4	126.7	1006	40	"
18 / 1800	10.8	126.6	1007	35	"
19 / 0000	11.3	126.6	1008	35	"
19 / 0600	11.4	126.4	1009	30	tropical depression
19 / 1200	11.5	126.0	1009	30	"
19 / 1800	11.5	125.8	1009	30	remnant low
20 / 0000	11.5	125.7	1009	25	"
20 / 0600	11.3	125.7	1010	25	"
20 / 1200	11.0	125.8	1010	25	"
20 / 1800	10.8	126.0	1010	25	"
21 / 0000	10.6	126.1	1010	25	"
21 / 0600	10.5	126.1	1010	20	"
21 / 1200					dissipated
18 / 0600	10.0	126.8	1006	40	maximum winds and minimum pressure



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	120-Hour Outlook
Low (<40%)	12	54
Medium (40%-60%)	0	12
High (>60%)	n/a	n/a

Table 3. NHC official (OFCL) and climatology-persistence skill baseline (OCD5) track forecast errors (n mi) for Tropical Storm Octave, 17–19 October 2019. 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	72	96	120
OFCL	27.7	35.6	34.5				
OCD5	49.9	116.3	216.5				
Forecasts	6	4	2				
OFCL (2014-18)	21.1	32.2	41.8	51.8	75.7	101.1	133.7
OCD5 (2014-18)	34.0	69.7	109.0	148.4	223.5	285.5	356.7

Table 4. NHC official (OFCL) and climatology-persistence skill baseline (OCD5) intensity forecast errors (kt) for Tropical Storm Octave, 17–19 October 2019. 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	72	96	120
OFCL	3.3	3.8	2.5				
OCD5	7.8	18.5	23.5				
Forecasts	6	4	2				
OFCL (2014-18)	6.1	10.0	12.2	13.7	15.5	15.4	15.7
OCD5 (2014-18)	7.9	13.1	16.7	19.2	21.8	22.9	22.1

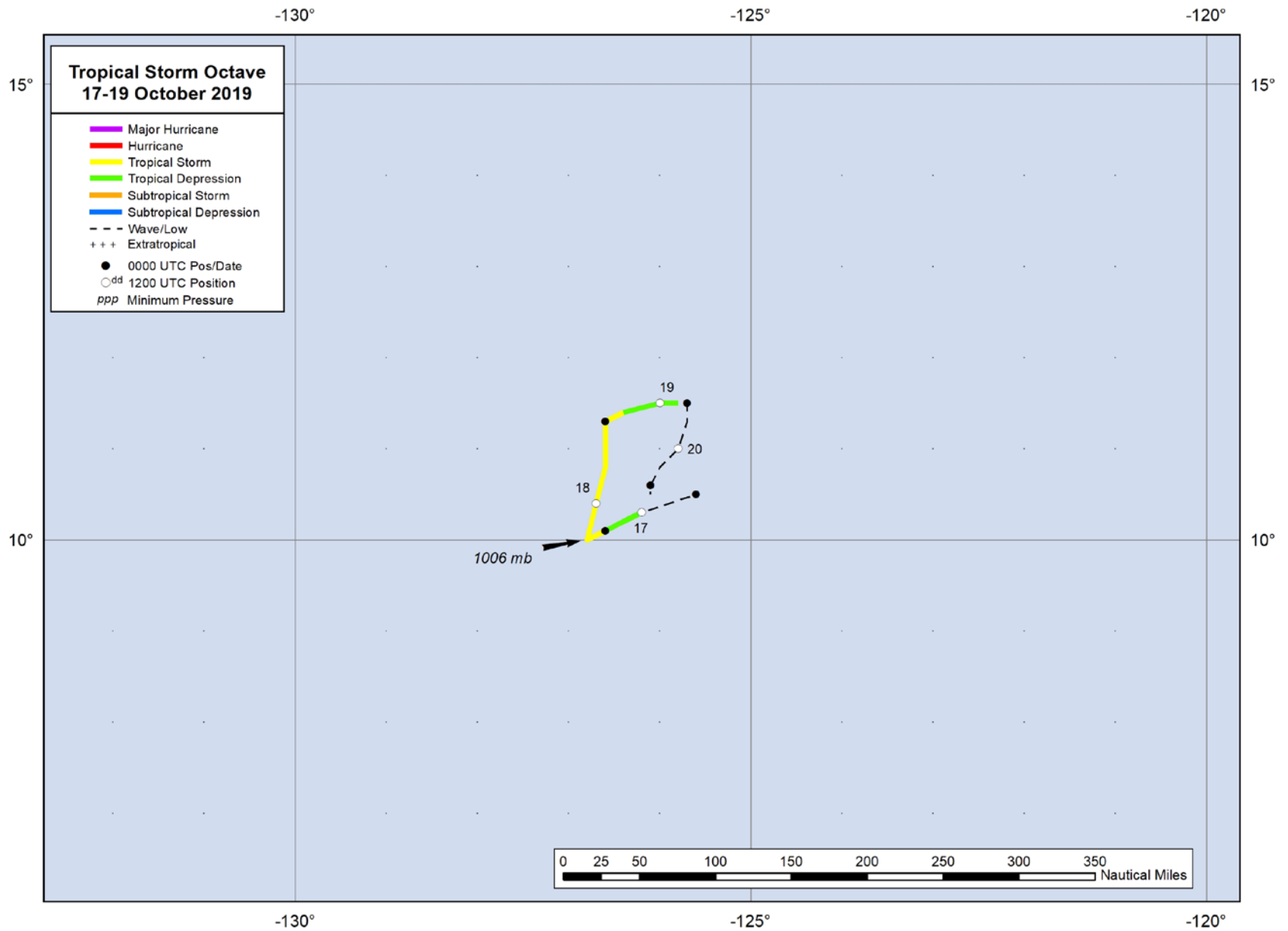


Figure 1. Best track positions for Tropical Storm Octave, 17–19 October 2019.

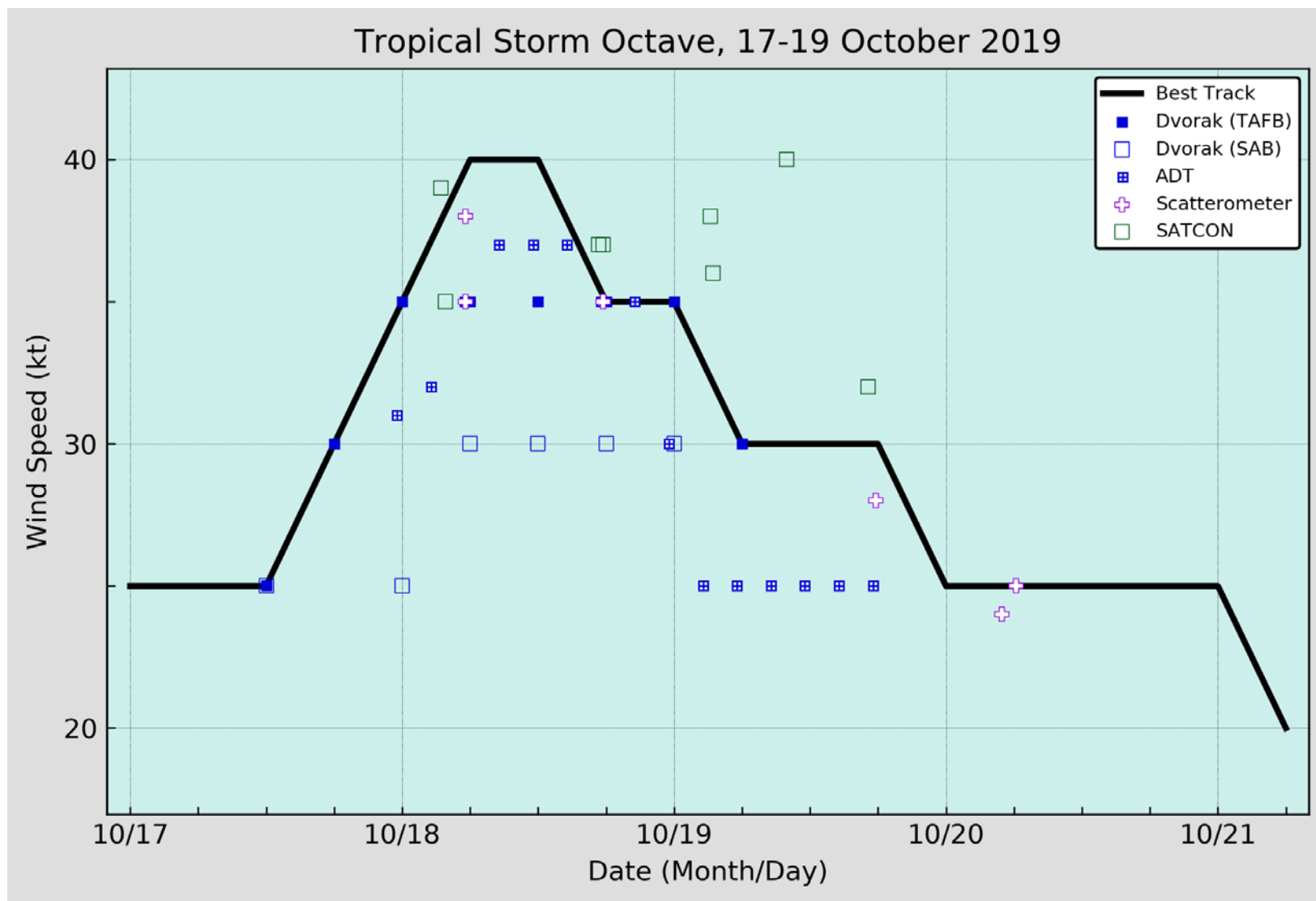


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Storm Octave, 17–19 October 2019. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. SATCON intensity estimates are from the Cooperative Institute for Meteorological Satellite Studies. Dashed vertical lines correspond to 0000 UTC.

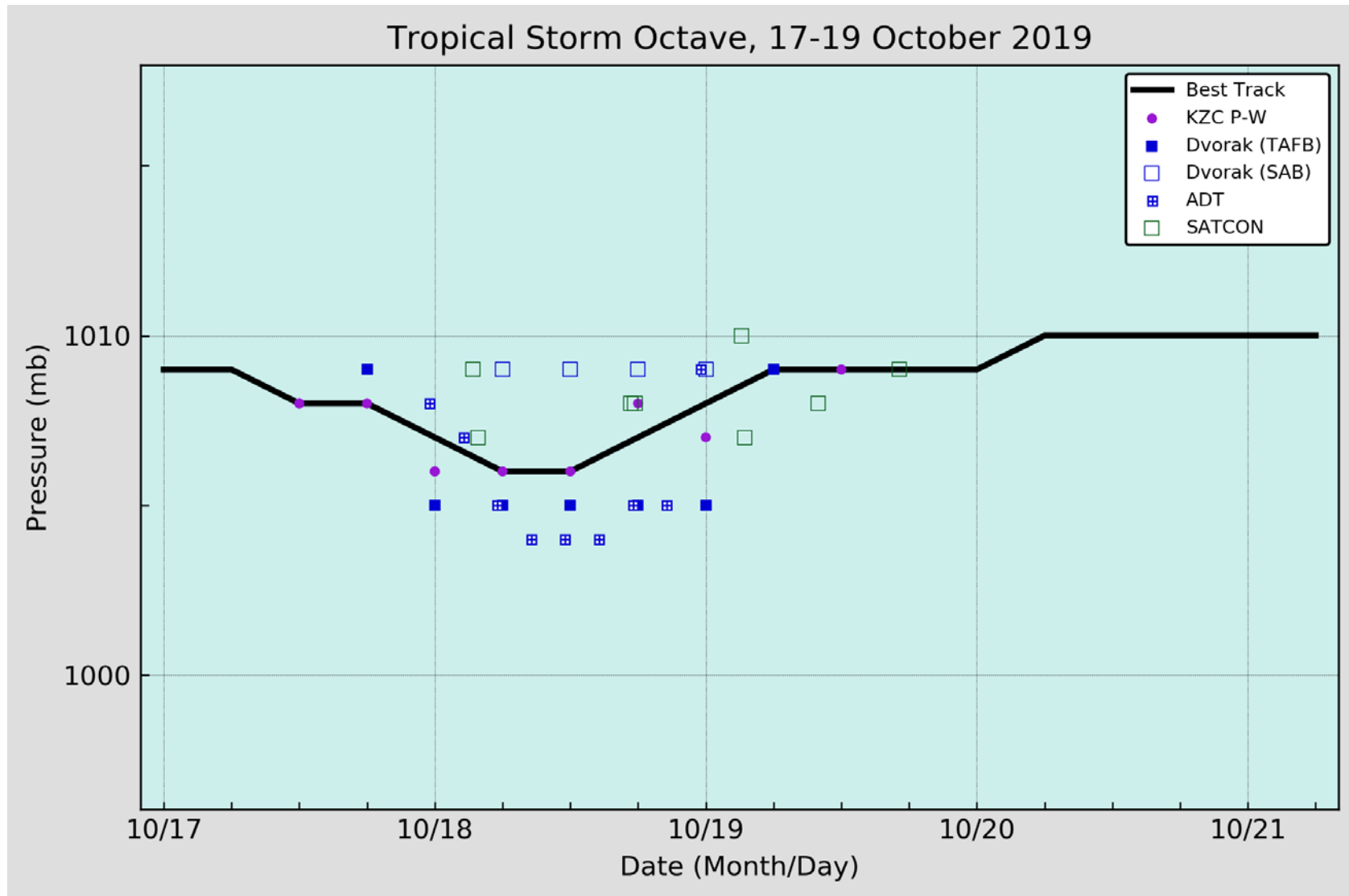


Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Storm Octave, 17–19 October 2019. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. SATCON intensity estimates are from the Cooperative Institute for 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.