

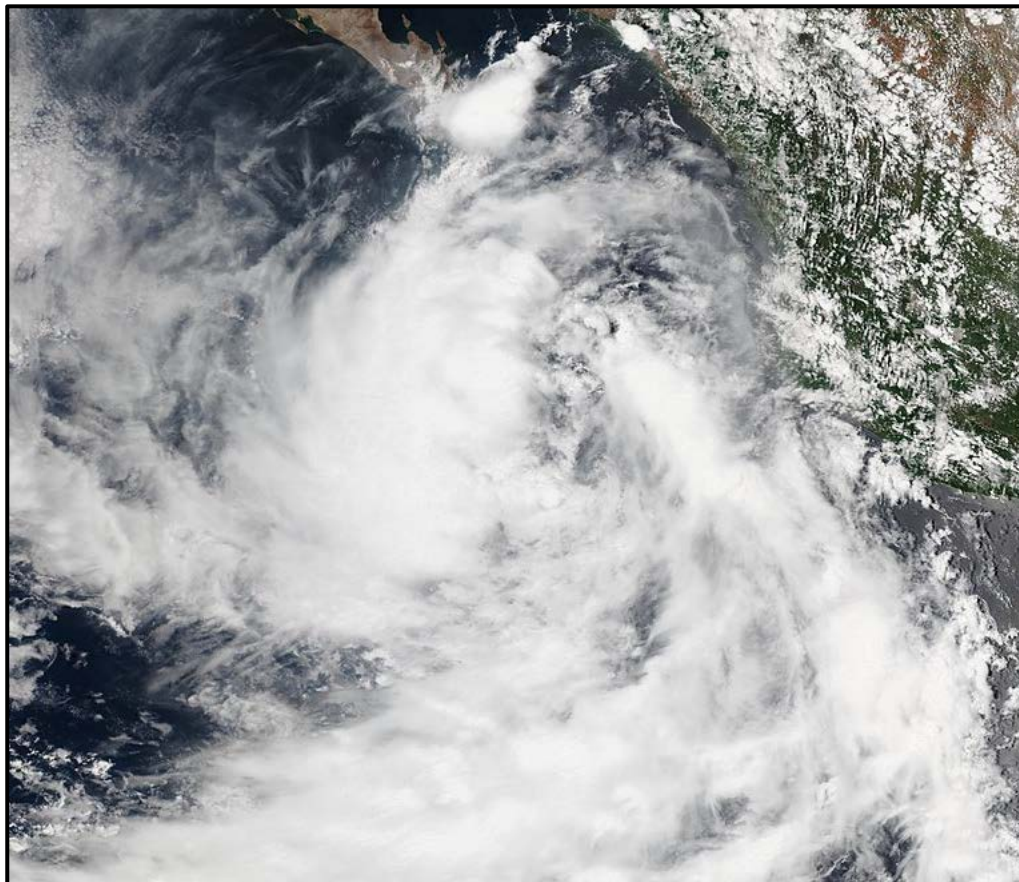


# NATIONAL HURRICANE CENTER TROPICAL CYCLONE REPORT

## TROPICAL STORM JOVA (EP122017)

11 – 13 August 2017

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National Hurricane Center  
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VISIBLE SATELLITE IMAGE OF TROPICAL STORM JOVA AT 0000 UTC 12 AUGUST 2017 FROM THE NASA AQUA SATELLITE.

Jova was a short-lived tropical storm that formed from the remnants of Atlantic Hurricane Franklin.

# Tropical Storm Jova

11 – 13 AUGUST 2017

## SYNOPTIC HISTORY

Jova formed from the remnants of Atlantic Hurricane Franklin, which made landfall as a category 1 hurricane on the Saffir-Simpson Hurricane Wind Scale over eastern Mexico early on 10 August. Although the hurricane rapidly weakened and ultimately dissipated over the Sierra Madre mountain range later that day, the associated mid-level remnants moved westward across Mexico and emerged off the west coast of the country near Manzanillo shortly after 0000 UTC 11 August. By 1200 UTC that day, satellite images indicated that a surface circulation had formed, and deep convection became sufficiently organized to classify the system a tropical depression, when it was located about 130 n mi west-southwest of Manzanillo. Deep convection gradually increased after genesis, and the depression strengthened into a tropical storm 6 h later. The “best track” chart of Jova’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 1<sup>1</sup>.

While strengthening, the system was moving west-northwestward away from the coast of Mexico steered by the flow on the southern portion of a mid-level ridge. Easterly shear increased significantly early on 12 August, which caused the convection to become displaced to the west of the exposed low-level center. The strong shear and intrusions of dry air caused Jova to weaken back to a tropical depression around 1800 UTC 12 August. Jova maintained a small area of thunderstorms over its southwestern quadrant for several more hours, but all of that activity dissipated around 1800 UTC 13 August. As a result, Jova degenerated to a remnant low at that time, when it was located about 470 n mi west-southwest of the southern tip of the Baja California peninsula. The remnant low moved westward to west-southwestward in the low-level trade winds over the next few days until it opened into a trough by 0600 UTC 17 August about midway between the southern portion of the Baja California peninsula and the Hawaiian Islands.

## METEOROLOGICAL STATISTICS

Observations in Jova (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 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

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<sup>1</sup> 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.

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 Jova.

The *Florida Voyager* tanker ship (call sign WDF4764) reported a sustained wind speed of 38 kt at an elevation of 15 m at 1800 UTC 11 August, which reduces to about 35 kt at the standard elevation of 10 m. The ship also reported a minimum pressure of 1003 mb. In addition, the Mexican automated station on Socorro Island reported a peak wind gust of 35 kt at 0600 UTC 12 August.

The 35-kt peak intensity of Jova from 1800 UTC 11 August to 1200 UTC 12 August is based on the above-mentioned ship data and ASCAT passes from 0408 UTC and 0502 UTC 12 August.

## CASUALTY AND DAMAGE STATISTICS

There were no reports of casualties associated with Jova.

## FORECAST AND WARNING CRITIQUE

Forecasting the genesis of Jova was challenging given the uncertainty concerning whether the remnants of Atlantic Hurricane Franklin would dissipate over the mountains of Mexico or emerge over the eastern North Pacific. The potential for tropical cyclone development was first mentioned with a low chance of development (< 40%) in the Tropical Weather Outlook 78 h before the tropical cyclone formed (Table 2). The 5-day probability of formation was increased to the medium category (40-60%) 30 h before development, and only reached the high category (> 60%) 6 h before Jova formed.

Given the short duration of Jova as a tropical cyclone, there are only five verifying forecasts at 12 h, three at 24 h, and one at 36 h. For the small number of forecasts, the average NHC forecast track errors for these time periods were near the mean official errors for the previous 5-yr period at 12 and 24 h, but lower than the mean at 36 h (Table 3a). A homogeneous comparison of the official track errors with selected guidance models is given in Table 3b. The corrected and simple consensus aids HCCA and GFEX, respectively, were the best-performing models and beat the official forecasts at the verifying time periods.

A verification of NHC official intensity forecasts for Jova is given in Table 4a. Official forecast intensity errors were lower than the mean official errors for the previous 5-yr period for the 12 and 36 h periods. A homogeneous comparison of the official intensity errors with selected guidance models is given in Table 4b. The NHC intensity forecasts had a high bias and slightly larger errors than several of the models.

There were no coastal watches or warnings associated with Jova.

**Table 1. Best track for Tropical Storm Jova, 11–13 August 2017.**

<b>Date/Time (UTC)</b>	<b>Latitude (°N)</b>	<b>Longitude (°W)</b>	<b>Pressure (mb)</b>	<b>Wind Speed (kt)</b>	<b>Stage</b>
11 / 1200	18.5	106.7	1004	30	tropical depression
11 / 1800	18.8	108.0	1003	35	tropical storm
12 / 0000	19.1	109.2	1003	35	"
12 / 0600	19.6	110.2	1003	35	"
12 / 1200	20.0	111.3	1003	35	"
12 / 1800	20.2	112.4	1004	30	tropical depression
13 / 0000	20.4	113.7	1005	30	"
13 / 0600	20.4	115.1	1006	25	"
13 / 1200	20.4	116.6	1006	25	"
13 / 1800	20.4	118.0	1006	25	low
14 / 0000	20.4	119.3	1006	25	"
14 / 0600	20.4	120.5	1006	25	"
14 / 1200	20.3	121.6	1007	25	"
14 / 1800	20.3	122.7	1007	25	"
15 / 0000	20.2	123.8	1007	25	"
15 / 0600	20.0	125.0	1007	25	"
15 / 1200	19.8	126.1	1008	20	"
15 / 1800	19.6	127.3	1008	20	"



16 / 0000	19.4	128.4	1008	20	"
16 / 0600	19.2	129.5	1008	20	"
16 / 1200	19.0	130.6	1008	20	"
16 / 1800	18.8	131.7	1008	20	"
17 / 0000	18.6	132.7	1008	20	"
17 / 0600					dissipated
11 / 1800	18.8	108.0	1003	35	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%)	36	78
Medium (40%-60%)	12	30
High (>60%)	6	6



Table 3a. NHC official (OFCL) and climatology-persistence skill baseline (OCD5) track forecast errors (n mi) for Jova. 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	25.6	40.9	<b>28.8</b>				
OCD5	45.2	90.8	43.3				
Forecasts	5	3	1				
OFCL (2012-16)	22.2	33.9	43.8	54.8	80.0	108.9	145.1
OCD5 (2012-16)	35.7	72.0	112.2	150.2	217.0	271.0	340.2



Table 3b. Homogeneous comparison of selected track forecast guidance models (in n mi) for Jova. Errors smaller than the NHC official forecast are shown in boldface type.

Model ID	Forecast Period (h)						
	12	24	36	48	72	96	120
OFCL	25.6	40.9	28.8				
OCD5	45.2	90.8	43.3				
GFSI	27.8	47.8	45.7				
HMNI	30.4	71.9	115.0				
HWFI	<b>20.3</b>	<b>33.7</b>	37.7				
EMXI	<b>21.6</b>	<b>38.8</b>	54.3				
CMCI	37.2	60.2	66.9				
NVGI	32.7	92.0	289.2				
CTCI	30.6	94.3	131.9				
AEMI	30.2	57.1	63.7				
HCCA	<b>21.2</b>	<b>33.1</b>	<b>16.9</b>				
FSSE	<b>21.7</b>	<b>36.8</b>	34.3				
TVCX	<b>21.4</b>	<b>34.7</b>	30.6				
TVCE	<b>23.2</b>	41.9	41.4				
GFEX	<b>20.7</b>	<b>28.7</b>	<b>16.4</b>				
TABS	35.6	<b>35.9</b>	39.4				
TABM	54.2	87.8	90.2				
TABD	55.8	95.0	107.5				
Forecasts	5	3	1				



Table 4a. NHC official (OFCL) and climatology-persistence skill baseline (OCD5) intensity forecast errors (kt) for Jova. 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	<b>5.0</b>	11.7	<b>10.0</b>				
OCD5	4.8	11.7	18.0				
Forecasts	5	3	1				
OFCL (2012-16)	5.8	9.4	11.8	13.2	15.0	15.7	14.9
OCD5 (2012-16)	7.6	12.2	15.7	18.1	20.6	21.8	20.0

Table 4b. Homogeneous comparison of selected intensity forecast guidance models (in kt) for Jova. Errors smaller than the NHC official forecast are shown in boldface type.

Model ID	Forecast Period (h)						
	12	24	36	48	72	96	120
OFCL	5.0	11.7	10.0				
OCD5	<b>4.8</b>	11.7	18.0				
HMNI	<b>2.6</b>	<b>5.3</b>	<b>7.0</b>				
HWFI	<b>3.4</b>	<b>3.0</b>	<b>1.0</b>				
CTCI	<b>3.4</b>	<b>2.7</b>	<b>4.0</b>				
DSHP	<b>4.6</b>	13.0	23.0				
LGEM	<b>3.2</b>	<b>8.3</b>	14.0				
IVCN	<b>2.6</b>	<b>5.0</b>	<b>9.0</b>				
FSSE	<b>4.0</b>	<b>7.7</b>	11.0				
HCCA	<b>3.8</b>	<b>7.3</b>	11.0				
GFSI	<b>2.6</b>	<b>5.0</b>	<b>0.0</b>				
EMXI	<b>2.4</b>	<b>3.3</b>	<b>4.0</b>				
Forecasts	5	3	1				



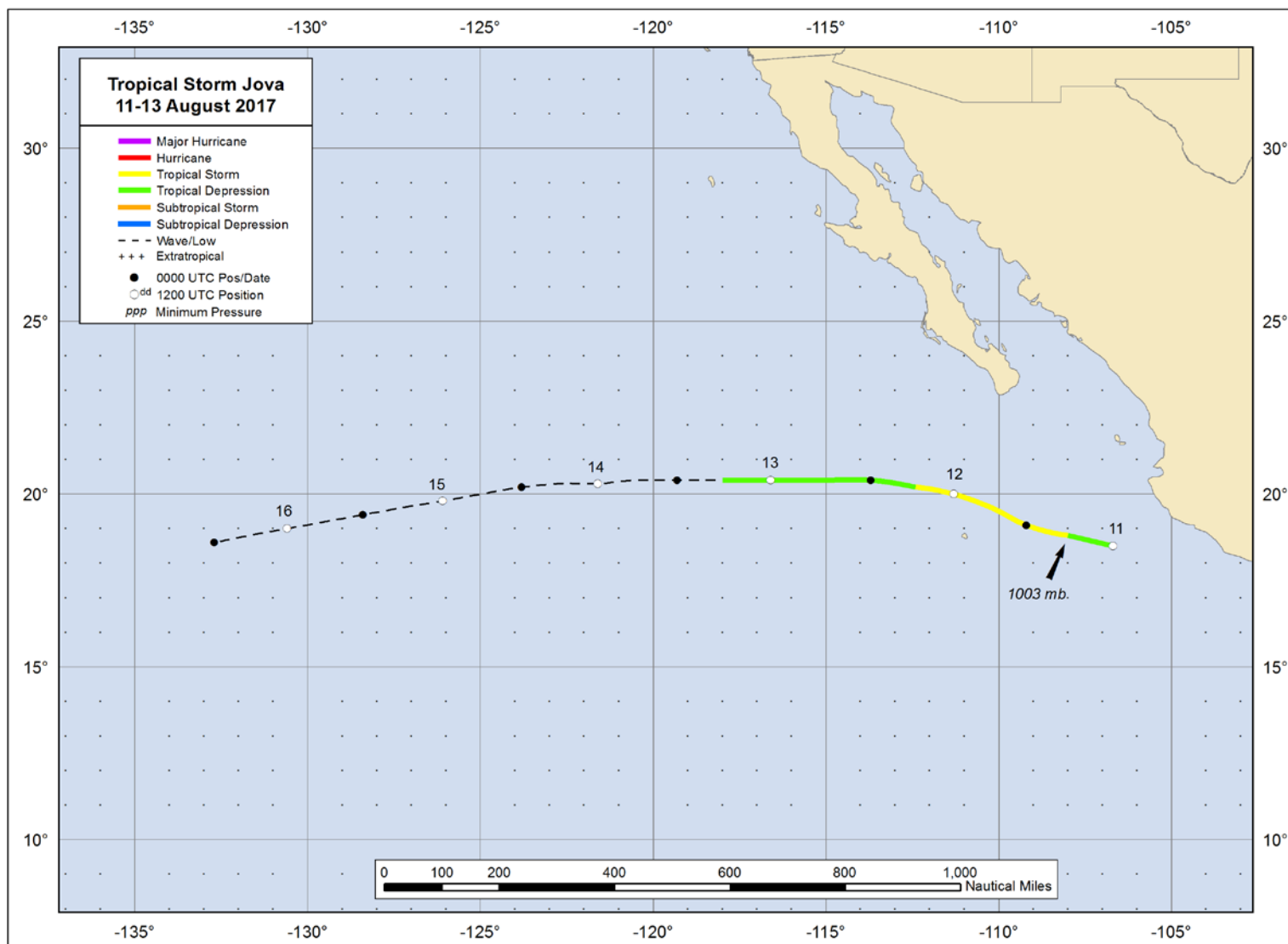


Figure 1. Best track positions for Tropical Storm Jova, 11–13 August 2017.

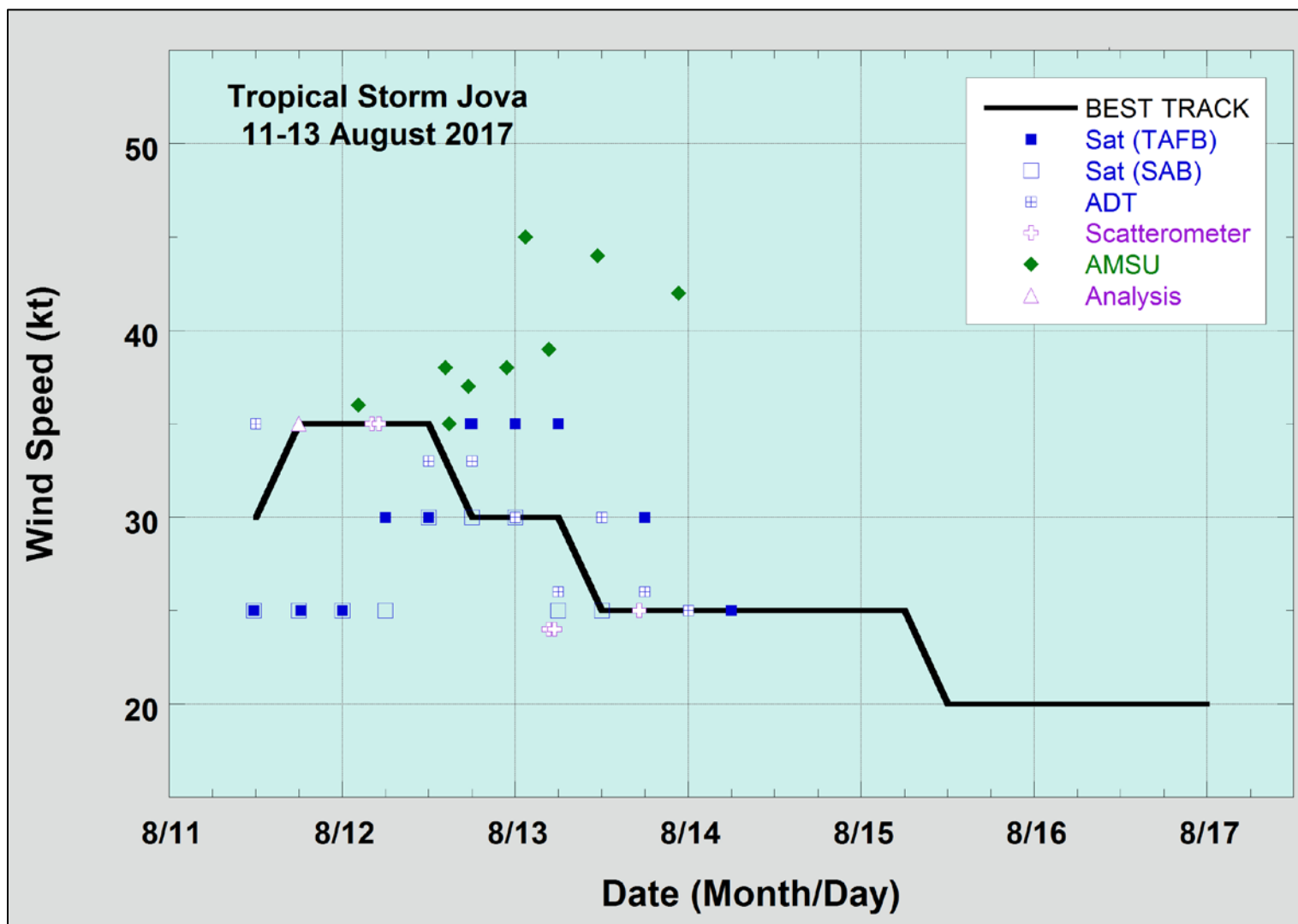


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Storm Jova, 11–13 August 2017. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. AMSU intensity estimates are from the Cooperative Institute for Meteorological Satellite Studies technique. Dashed vertical lines correspond to 0000 UTC.

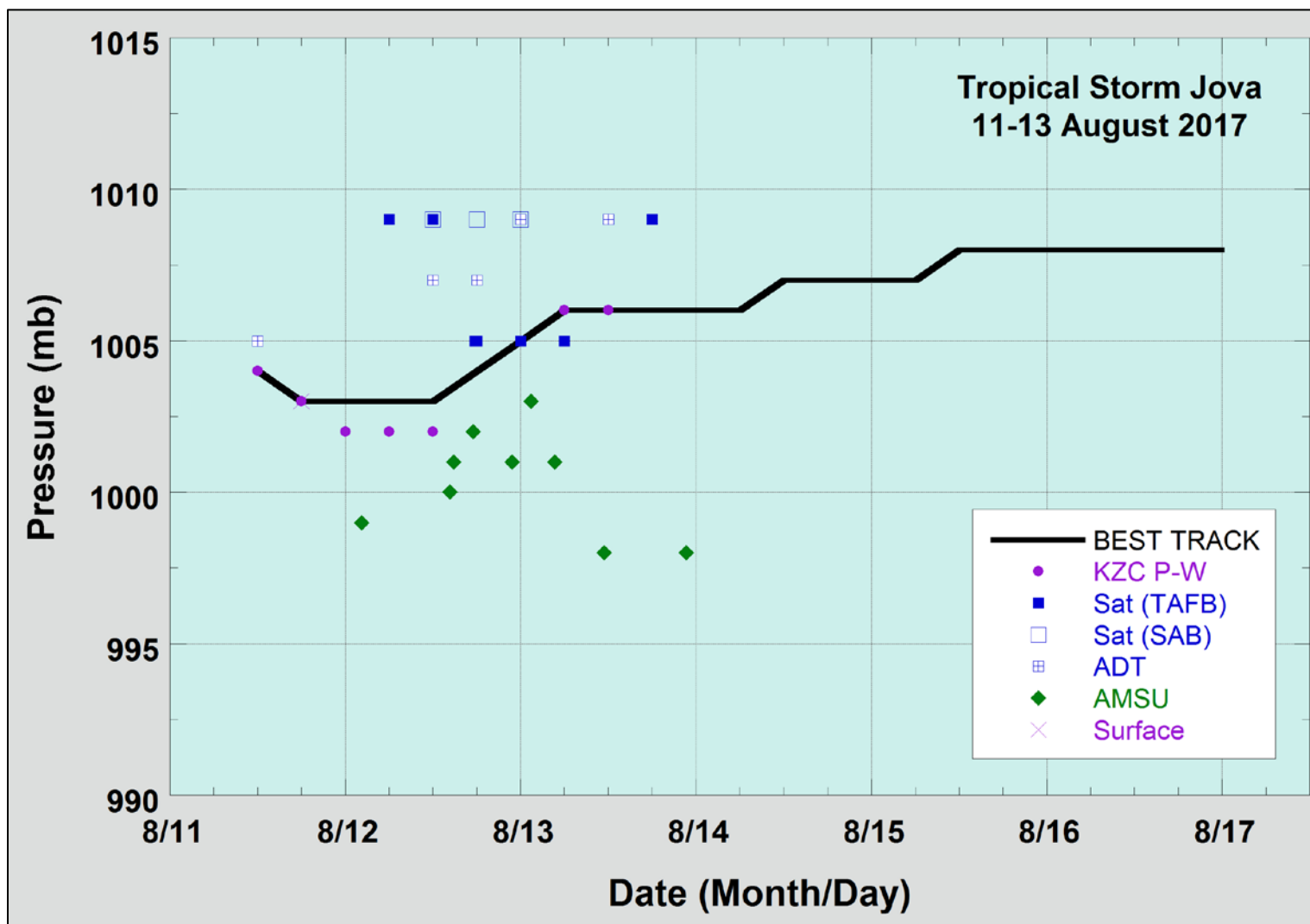


Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Storm Jova, 11–13 August 2017. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. AMSU intensity estimates are from the Cooperative Institute for Meteorological 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.