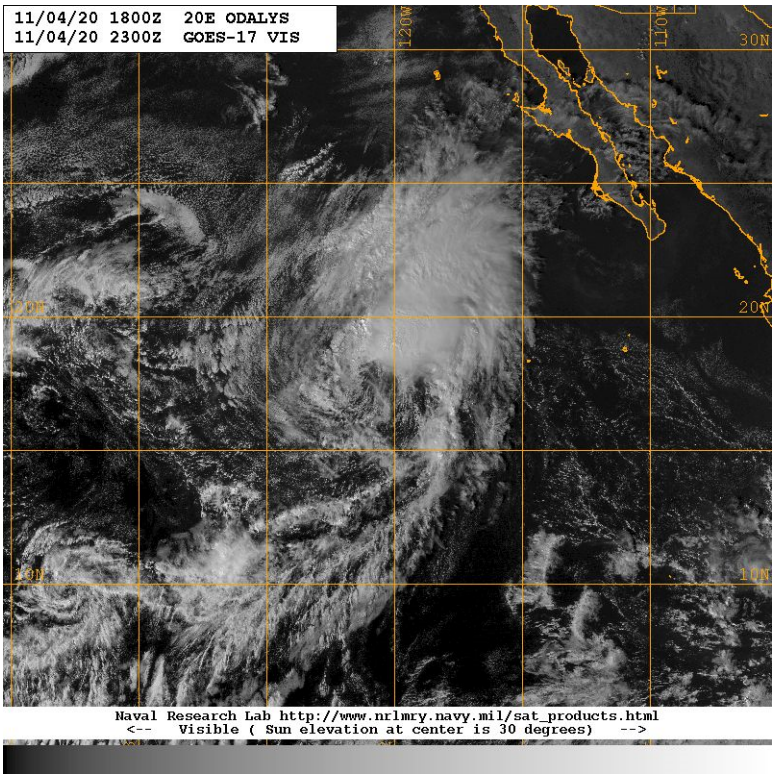
NATIONAL HURRICANE CENTER
TROPICAL CYCLONE REPORT

TROPICAL STORM ODALYS

(EP202020)

3–5 November 2020

Richard J. Pasch
National Hurricane Center
13 April 2021



GOES-17 VISIBLE SATELLITE IMAGE OF TROPICAL STORM ODALYS AT 2300 UTC 4 NOVEMBER, NEAR ITS PEAK INTENSITY OF 45 KT. IMAGE COURTESY OF THE NAVAL RESEARCH LABORATORY.

Odalys was a relatively weak and short-lived tropical storm that remained over the western portion of the eastern North Pacific basin.

Tropical Storm Odalys

3–5 NOVEMBER 2020

SYNOPTIC HISTORY

Odalys appears to have originated from a tropical wave that crossed Central America on 29 October. An area of disturbed weather associated with the wave moved westward for the next couple of days over the extreme eastern Pacific with little change in convective organization. On 31 October, deep convection became slightly more consolidated a couple of hundred n mi to the south of Lazaro Cardenas, Mexico. The disturbance then moved generally westward for a couple of more days with little change in convective organization, but developed into a broad low-pressure trough by 1 November well to the south of the coast of southwestern Mexico. On 2 November, while located several hundred n mi south-southwest of Manzanillo, Mexico, the system became better organized as curved convective banding features became evident. The disturbance continued to become better organized while moving west-northwestward, and on 3 November the system developed winds of 35 kt. Although the circulation was broad and somewhat elongated from northeast to southwest, it was sufficiently well-defined to denote the formation of a tropical storm by 1800 UTC that day, while centered about 635 n mi south-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 1[1].

Odalys moved west-northwestward to northwestward, along the southwestern periphery of a mid-level high pressure area, on 3–4 November. Occasional bursts of deep convection occurred near the center on 4 November, but an upper-level trough to the northwest of Odalys caused southwesterly shear that stripped the convection away to the northeast and north of the center. In spite of the shear and intrusions of dry air, the system was able to strengthen slightly, and the storm reached its peak intensity of 45 kt by 0000 UTC 5 November, although by that time the low-level center was at least partially exposed (cover picture). Even stronger shear and drier air caused a weakening trend to begin after 0600 UTC 5 November. By 1800 UTC that day, the cyclone lost all significant deep convection and became a post-tropical cyclone while turning toward the west following the low-level flow. The system soon weakened into a remnant low that turned southwestward to south-southwestward on 7 November while being steered by the near-surface winds around a strong ridge, and it dissipated around 0000 UTC 8 November roughly 1200 n mi west-southwest of the southern tip of the Baja California peninsula.

[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.

METEOROLOGICAL STATISTICS

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

The estimated maximum intensity of 45 kt is based on ASCAT observations and subjective Dvorak estimates, and the minimum pressure of 1000 mb is based on Dvorak pressure-wind relationship estimates.

There were no ship reports of winds of tropical storm force associated with Odalys.

CASUALTY AND DAMAGE STATISTICS

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

FORECAST AND WARNING CRITIQUE

The genesis of Odalys was skillfully anticipated well in advance. It was first noted in the Tropical Weather Outlook (TWO), 180 h before formation, that an area of low pressure was expected to form to the south of Mexico in several days with further development thereafter. The 5-day genesis probability in that TWO at that time was set to low (<40%) as indicated in Table 2. The system was first assigned a low 2-day chance of development 54 h prior to formation. The 5- and 2-day genesis probabilities were increased to medium (40%–60%) 144 h and 42 h before formation, respectively, and were boosted to high (>60%) 78 h and 30 h before formation, respectively.

A verification of NHC official track forecasts for Odalys is given in Table 3a. Official track forecast errors were mostly lower than the mean official errors for the previous 5-yr period. A homogeneous comparison of the official track errors with selected guidance models is given in Table 3b. The NHC forecasts generally had lower track errors than the model guidance. However, the number of cases is quite limited and there were no verifying official forecasts beyond 36 h.

A verification of NHC official intensity forecasts for Odalys is given in Table 4a. Official intensity forecast errors were, in general, substantially lower than the mean official errors for the

previous 5-yr period. A homogeneous comparison of the official intensity errors with selected guidance models is given in Table 4b. For this small sample of cases, a few of the guidance models had mean intensity errors that were somewhat lower than the official forecasts. It should be noted that the NHC forecasts correctly anticipated that Odalys would not strengthen much during its lifetime.

No watches or warnings for land areas were issued for Odalys.

ACKNOWLEDGMENTS

John P. Cangialosi produced the track map.

Table 1. Best track for Tropical Storm Odalys, 3–5 November 2020.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
03 / 1800	13.7	115.5	1006	35	tropical storm
04 / 0000	14.4	116.7	1006	35	"
04 / 0600	15.2	118.0	1005	35	"
04 / 1200	16.2	119.1	1003	40	"
04 / 1800	17.2	120.3	1002	40	"
05 / 0000	17.7	121.2	1000	45	"
05 / 0600	18.0	121.9	1000	45	"
05 / 1200	18.3	122.5	1001	40	"
05 / 1800	18.6	123.2	1002	35	low
06 / 0000	18.6	124.0	1005	30	"
06 / 0600	18.5	124.7	1005	30	"
06 / 1200	18.1	125.4	1006	30	"
06 / 1800	17.6	126.0	1008	25	"
07 / 0000	17.0	126.3	1008	25	"
07 / 0600	16.4	126.7	1008	25	"
07 / 1200	16.0	127.2	1008	25	"
07 / 1800	15.6	127.7	1009	20	"
08 / 0000					dissipated
05 / 0000	17.7	121.2	1000	45	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%)	54	180
Medium (40%-60%)	42	144
High (>60%)	30	78

Table 3a. NHC official (OFCL) and climatology-persistence skill baseline (OCD5) track forecast errors (n mi) for Tropical Storm Odalys, 3–5 November 2020. 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	24.4	**25.6**	**10.8**					
OCD5	53.0	80.2	110.5					
Forecasts	6	4	2					
OFCL (2015-19)	21.8	34.0	44.9					
OCD5 (2015-19)	34.3	69.9	108.7					

Table 3b. Homogeneous comparison of selected track forecast guidance models (in n mi) for Tropical Storm Odalys, 3–5 November 2020. 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	24.4	25.6	10.8					
OCD5	53.0	80.2	110.5					
GFSI	**23.2**	**24.1**	29.6					
HWFI	30.4	57.8	62.6					
HMNI	33.7	59.4	57.5					
EGRI	33.4	54.8	61.9					
EMXI	30.7	48.7	68.6					
NVGI	50.4	69.4	124.1					
CMCI	49.7	78.7	147.6					
CTCI	26.6	30.8	26.7					
TVCE	**23.6**	25.8	18.1					
HCCA	**21.0**	**21.7**	25.0					
FSSE	**24.3**	28.0	29.5					
AEMI	26.5	**22.4**	14.3					
TABS	40.7	53.2	102.8					
TABM	40.4	61.3	85.1					
TABD	73.4	149.3	227.5					
Forecasts	6	4	2	0	0	0	0	0

Table 4a. NHC official (OFCL) and climatology-persistence skill baseline (OCD5) intensity forecast errors (kt) for Tropical Storm Odalys, 3–5 November 2020. 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**	**5.0**	**7.5**					
OCD5	5.3	7.5	4.0					
Forecasts	6	4	2					
OFCL (2015-19)	6.0	9.9	12.1					
OCD5 (2015-19)	7.8	13.0	16.6					

Table 4b. Homogeneous comparison of selected intensity forecast guidance models (in kt) for Tropical Storm Odalys, 3–5 November 2020. 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	5.0	7.5					
OCD5	5.3	7.5	**4.0**					
HWFI	5.2	6.0	**4.0**					
HMNI	**4.8**	7.0	**6.5**					
DSHP	5.3	6.2	8.5					
LGEM	6.0	9.0	11.5					
ICON	5.2	6.5	7.5					
IVCN	5.0	7.0	7.5					
CTCI	5.2	7.8	7.5					
GFSI	5.2	8.5	9.5					
EMXI	**4.7**	5.5	**6.0**					
HCCA	**4.3**	5.8	**4.5**					
FSSE	**4.3**	6.2	**3.5**					
Forecasts	6	4	2	0	0	0	0	0

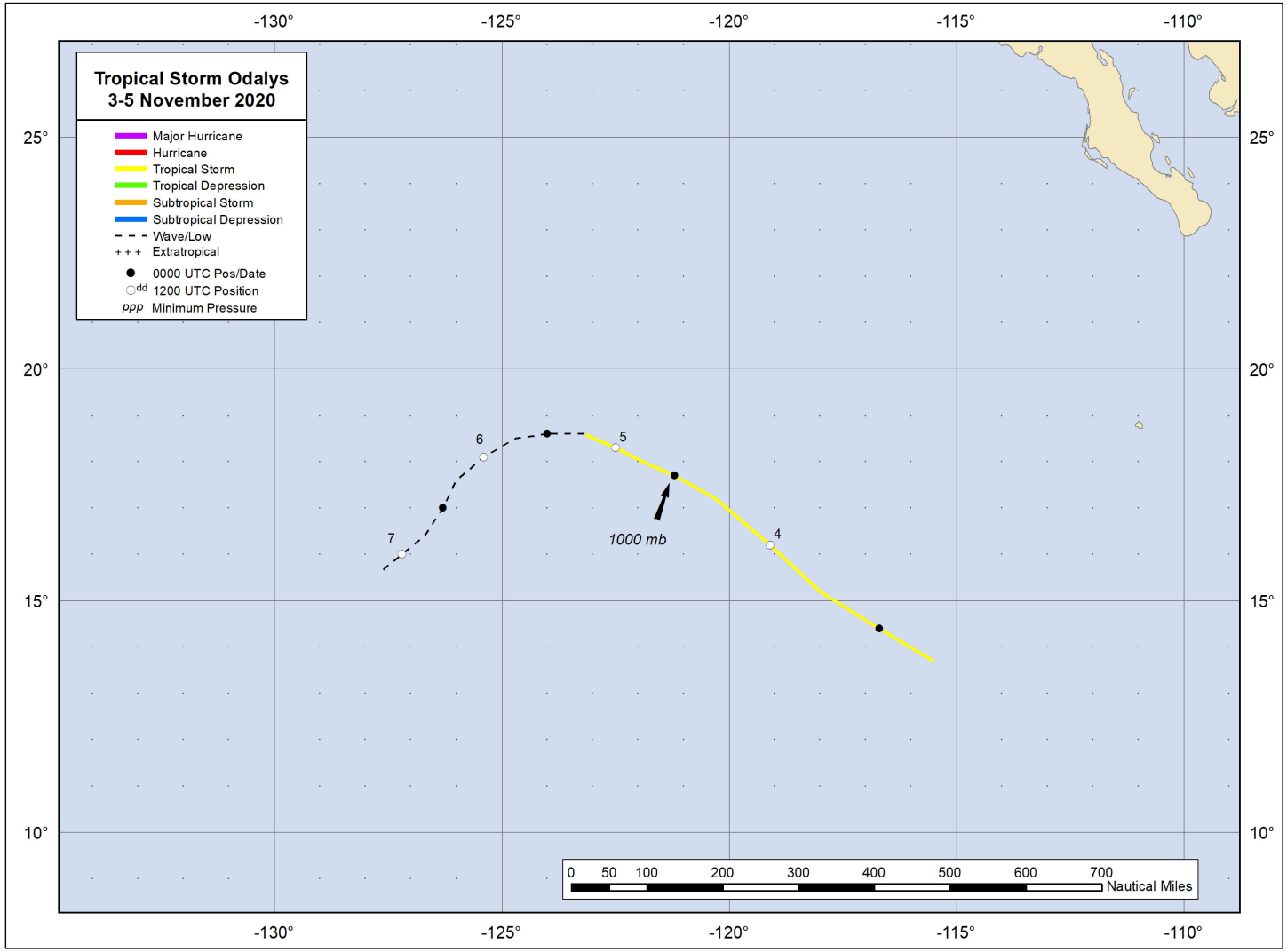


Figure 1. Best track positions for Tropical Storm Odalys, 3–5 November 2020.

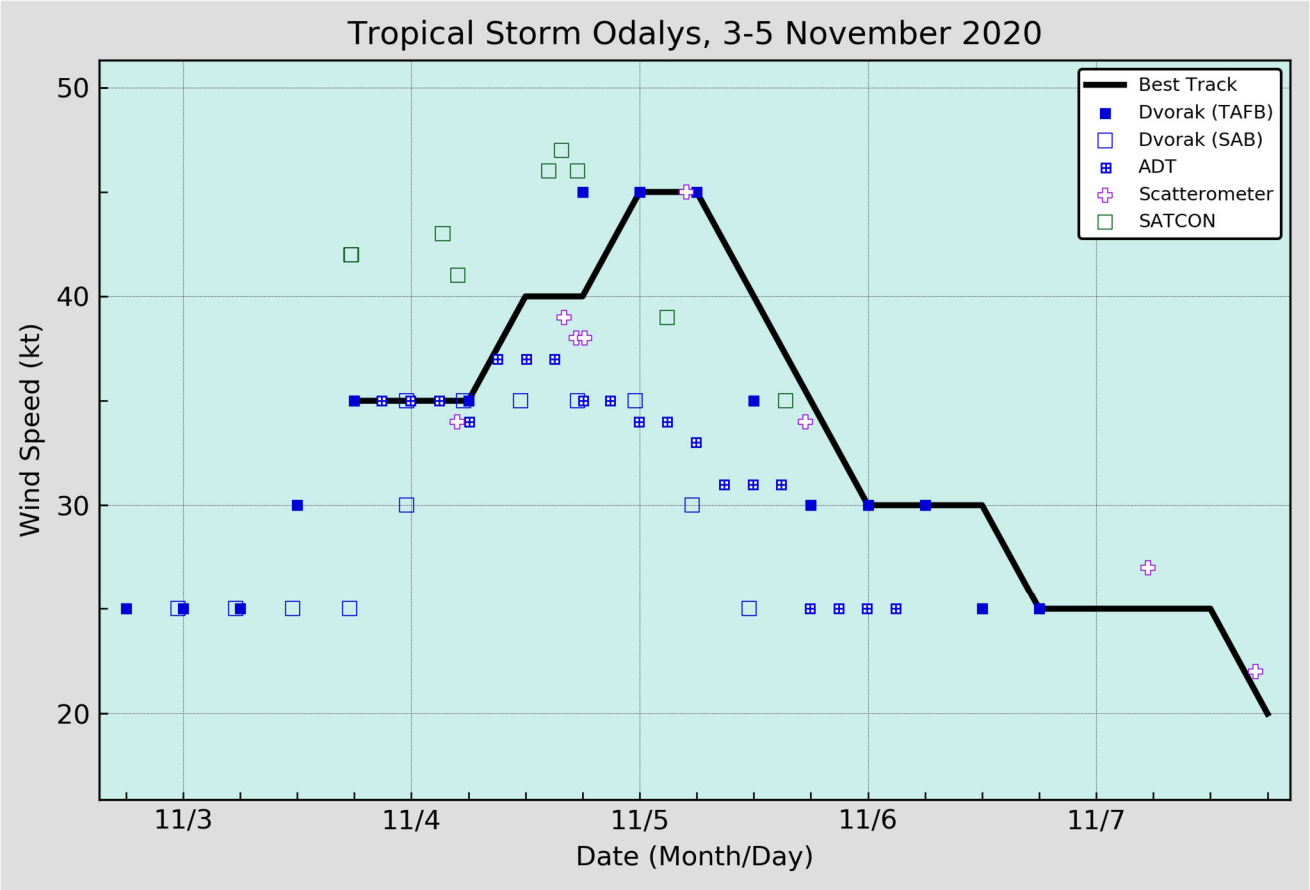


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Storm Odalys, 3–5 November 2020. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. SATCON intensity estimates are from the Cooperative Institute for Meteorological Satellite Studies. Dashed vertical lines correspond to 0000 UTC.

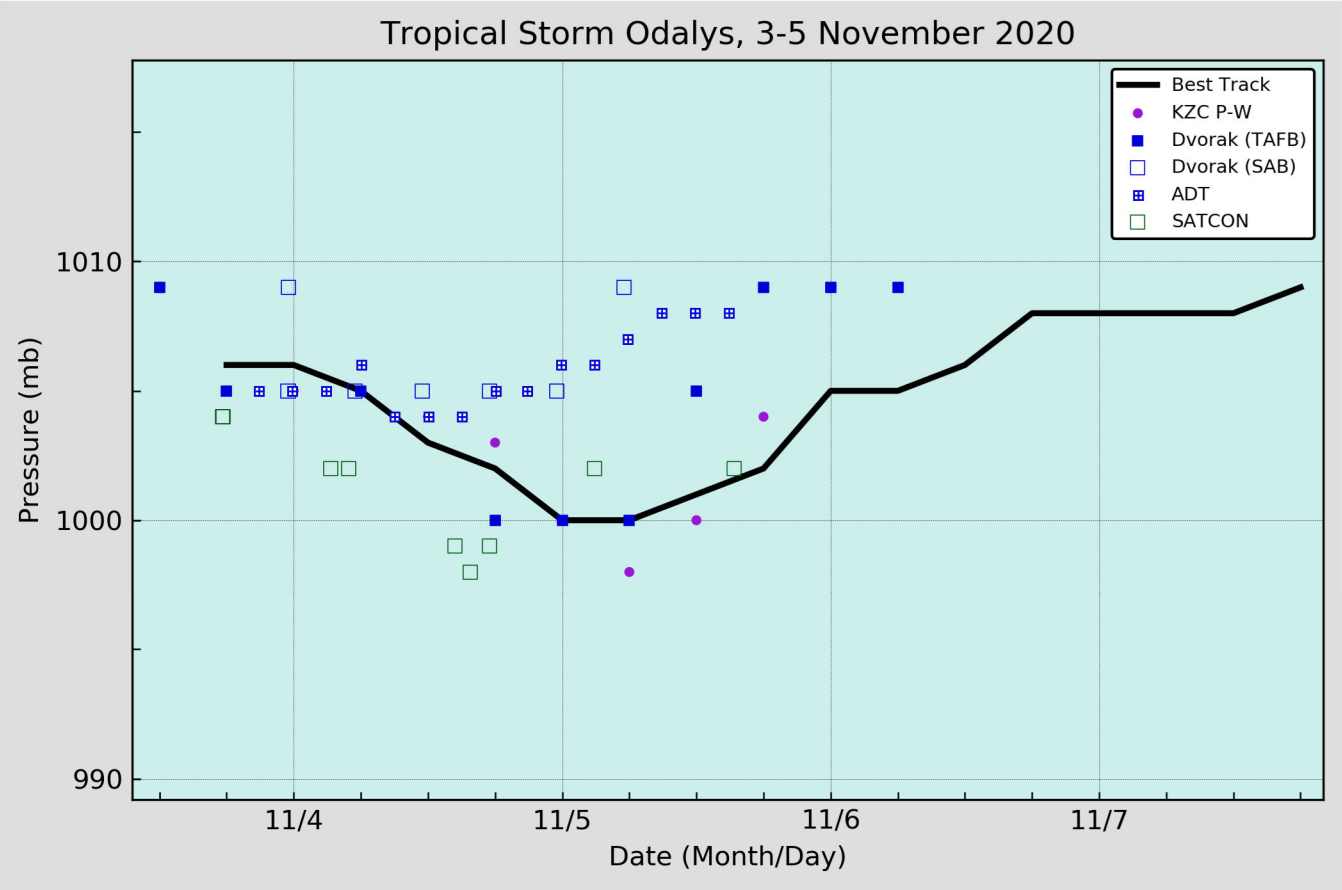


Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Storm Odalys, 3–5 November 2020. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. SATCON intensity estimates are from the Cooperative Institute for Meteorological 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.