NATIONAL HURRICANE CENTER TROPICAL CYCLONE REPORT[1]

TROPICAL STORM GORDON

(AL072024)

11–17 September 2024

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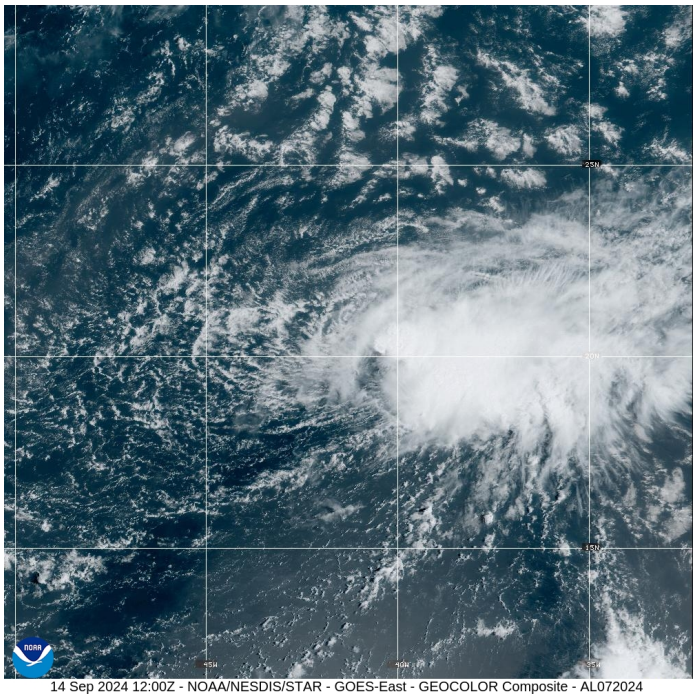

GOES-EAST GEOCOLOR SATELLITE IMAGE OF TROPICAL STORM GORDON AROUND THE TIME OF ITS PEAK INTENSITY AT 1200 UTC 14 SEPTEMBER 2024. IMAGE COURTESY OF NOAA/NESDIS/STAR.

Gordon was a tropical storm that formed over the far eastern Atlantic Ocean and did not affect land.

[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 Gordon.

Tropical Storm Gordon

11–17 SEPTEMBER 2024

BEST TRACK

The "best track[2]" positions and intensities for Tropical Storm Gordon are listed in Table 1. The best track chart of Gordon's path is given in Fig. 1, with the wind and pressure histories along with available observations[3] shown in Figs. 2 and 3, respectively.

There were no ship or land-based reports of winds of tropical storm force associated with Gordon.

Origin

Gordon developed from a tropical wave that moved off the west coast of Africa on 9 September. The wave produced heavy rains and gusty winds over portions of the Cabo Verde Islands on 10 September. Showers and thunderstorms started to become more organized around a well-defined center early on 11 September, and a tropical depression formed by 1200 UTC that day, about 200 n mi west of the Cabo Verde Islands.

Peak Intensity and Minimum Pressure

Gordon's estimated peak intensity of 40 kt from 0000 to 1800 UTC 14 September is based on a scatterometer pass, and a blend of subjective Dvorak intensity estimates of T3.0/45-kt and T2.5/35-kt from TAFB and SAB, respectively.

The estimated minimum central pressure of 1004 mb is based on the Knaff-Zehr-Courtney pressure-wind relationship.

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[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 Gordon.

CASUALTY AND DAMAGE STATISTICS

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

FORECAST AND WARNING VERIFICATION

Table 2 provides the number of hours in advance of formation with the first NHC Tropical Weather Outlook (TWO) forecast in each likelihood category. Figure 4 shows composites of 7-day TWO genesis areas for each category prior to the formation of Gordon. The genesis forecasts were adequate in that all genesis areas captured the location of genesis. However, Gordon formed a little sooner than expected, on the eastern side of the composite of genesis areas and before entering the 48-h high category.

A verification of NHC official track forecasts for Gordon is given in Table 3a. Official track forecast errors were 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. A verification of NHC official intensity forecasts for Gordon is given in Table 4a. Official intensity forecast errors were 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.

There were no coastal watches or warnings issued for Gordon.

Table 1. Best track for Tropical Storm Gordon, 11–17 September 2024.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
11 / 1200	15.7	27.9	1007	30	tropical depression
11 / 1800	16.0	29.6	1007	30	"
12 / 0000	16.4	31.0	1007	30	"
12 / 0600	16.9	32.3	1007	30	"
12 / 1200	17.5	33.9	1007	30	"
12 / 1800	18.1	35.4	1007	30	"
13 / 0000	18.5	36.5	1007	30	"
13 / 0600	19.0	37.6	1007	30	"
13 / 1200	19.3	38.3	1006	35	tropical storm
13 / 1800	19.7	39.1	1006	35	"
14 / 0000	19.9	39.8	1004	40	"
14 / 0600	20.0	40.5	1004	40	"
14 / 1200	20.1	41.3	1004	40	"
14 / 1800	20.3	42.4	1004	40	"
15 / 0000	19.8	43.6	1006	35	"
15 / 0600	19.5	44.4	1006	35	"
15 / 1200	19.3	45.1	1006	35	"
15 / 1800	19.2	45.8	1007	30	tropical depression
16 / 0000	19.1	46.5	1007	30	"
16 / 0600	19.1	47.2	1007	30	"
16 / 1200	19.1	47.8	1007	30	"
16 / 1800	19.0	48.3	1007	30	"

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
17 / 0000	18.9	48.8	1007	30	"
17 / 0600	18.9	49.0	1007	30	"
17 / 1200					dissipated
14 / 0000	19.9	39.8	1004	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	**168-Hour Outlook**
Low (<40%)	72	90
Medium (40%-60%)	18	84
High (>60%)	--	42

Table 3a. NHC official (OFCL) and climatology-persistence skill baseline (OCD5) track forecast errors (n mi) for Gordon. 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	**20.4**	**31.0**	**32.2**	**37.9**	**39.3**	**51.2**	**90.4**	**157.2**
OCD5	33.0	68.7	118.5	178.4	252.2	324.6	462.3	571.6
Forecasts	22	20	18	16	14	12	8	4
OFCL (2019-23)	23.9	36.5	49.3	63.4	79.2	93.4	132.9	190.4
OCD5 (2019-23)	45.7	97.1	153.0	205.4	254.9	297.8	372.7	439.1

Table 3b. Homogeneous comparison of selected track forecast guidance models (in n mi) for Gordon. Errors smaller than the NHC official forecast are shown in boldface type. The number of official forecasts shown here will generally be smaller than that shown in Table 3a due to the homogeneity requirement.

Model ID	Forecast Period (h)							
	12	24	36	48	60	72	96	120
OFCL	20.4	31.0	32.2	38.5	38.3	54.7	97.1	157.2
OCD5	33.0	68.7	118.5	174.2	241.7	309.2	450.3	571.6
GFSI	23.5	36.6	44.2	52.2	45.1	57.6	121.7	241.7
HWFI	25.6	51.0	66.9	84.3	107.7	129.6	196.7	259.6
HMNI	26.6	52.9	71.4	82.9	85.5	122.4	221.0	338.3
HFAI	27.5	55.4	71.9	88.2	105.2	149.9	152.0	218.5
HFBI	26.4	51.6	69.8	76.9	84.0	86.8	142.3	225.4
EMXI	**19.6**	**28.0**	**29.0**	**35.9**	57.6	77.4	113.0	173.4
CMCI	27.6	50.6	71.9	85.9	90.5	96.4	**89.0**	**113.7**
TVCA	21.0	36.7	42.2	48.7	49.4	68.6	105.1	190.1
TVCX	20.8	35.8	41.3	47.5	47.4	67.2	103.0	192.3
GFEX	**19.7**	**29.1**	32.6	**38.2**	40.5	54.9	100.1	188.2
TVDG	21.7	35.0	39.8	46.0	45.8	63.7	101.0	195.2
HCCA	20.4	**30.5**	36.1	47.5	54.8	66.6	**67.2**	184.3
AEMI	24.3	40.6	53.1	63.4	60.3	60.0	**80.6**	**129.8**
TABS	36.1	74.1	115.2	151.6	172.2	167.5	184.4	395.8
TABM	26.1	48.3	76.3	96.7	112.6	138.5	201.1	370.4
TABD	32.4	65.9	99.8	127.9	162.6	231.6	350.6	489.6
Forecasts	22	20	18	15	12	10	7	4

Table 4a. NHC official (OFCL) and climatology-persistence skill baseline (OCD5) intensity forecast errors (kt) for Gordon. 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	**2.3**	**4.0**	**4.4**	**2.8**	**1.4**	**3.3**	**10.0**	**13.8**
OCD5	3.5	6.8	10.3	13.9	18.5	23.0	33.4	33.8
Forecasts	22	20	18	16	14	12	8	4
OFCL (2019-23)	5.0	7.3	8.5	9.7	10.4	10.9	12.9	15.5
OCD5 (2019-23)	6.6	10.2	13.1	15.6	17.2	18.6	21.8	22.6

Table 4b. Homogeneous comparison of selected intensity forecast guidance models (in kt) for Gordon. Errors smaller than the NHC official forecast are shown in boldface type. The number of official forecasts shown here will generally be smaller than that shown in Table 4a due to the homogeneity requirement.

Model ID	Forecast Period (h)							
	12	24	36	48	60	72	96	120
OFCL	2.3	4.0	4.4	2.8	1.4	3.3	10.0	13.8
OCD5	3.5	6.8	10.3	13.9	18.5	23.0	33.4	33.8
HWFI	2.9	5.4	6.9	6.4	6.9	6.4	**7.0**	**3.5**
HMNI	2.4	**3.6**	4.4	5.0	5.7	6.8	10.2	**4.2**
HFAI	3.2	4.8	5.8	5.6	5.3	6.2	11.2	20.8
HFBI	3.5	7.2	9.1	8.6	8.9	9.5	13.5	26.0
DSHP	3.0	5.2	7.1	7.5	10.9	15.3	25.1	38.5
LGEM	3.1	4.7	5.8	6.4	7.0	10.2	19.5	39.5
ICON	2.5	4.1	4.7	4.0	3.6	4.2	**8.6**	18.2
IVCN	**2.2**	4.0	4.4	3.8	2.9	**3.2**	**7.1**	18.0
IVDR	2.4	4.2	4.8	4.5	3.6	4.1	**7.1**	**12.2**
GFSI	3.1	5.8	7.7	9.4	10.3	10.8	10.9	**10.5**
EMXI	3.0	5.1	6.0	7.1	8.2	8.2	**5.2**	**3.0**
HCCA	2.4	4.6	5.8	4.9	4.0	3.3	**5.2**	**9.8**
Forecasts	22	20	18	16	14	12	8	4

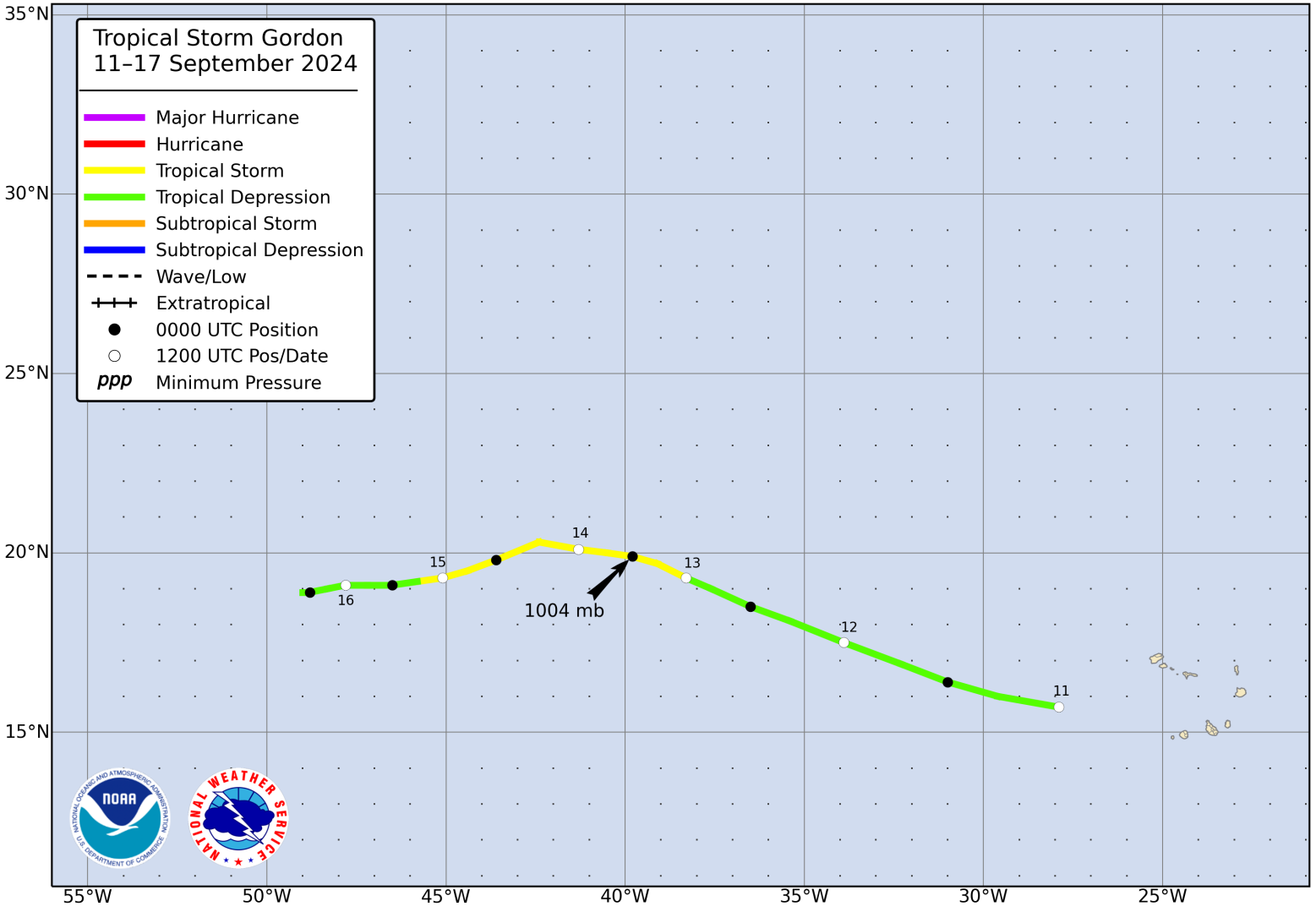

Figure 1. Best track positions for Tropical Storm Gordon, 11–17 September 2024.

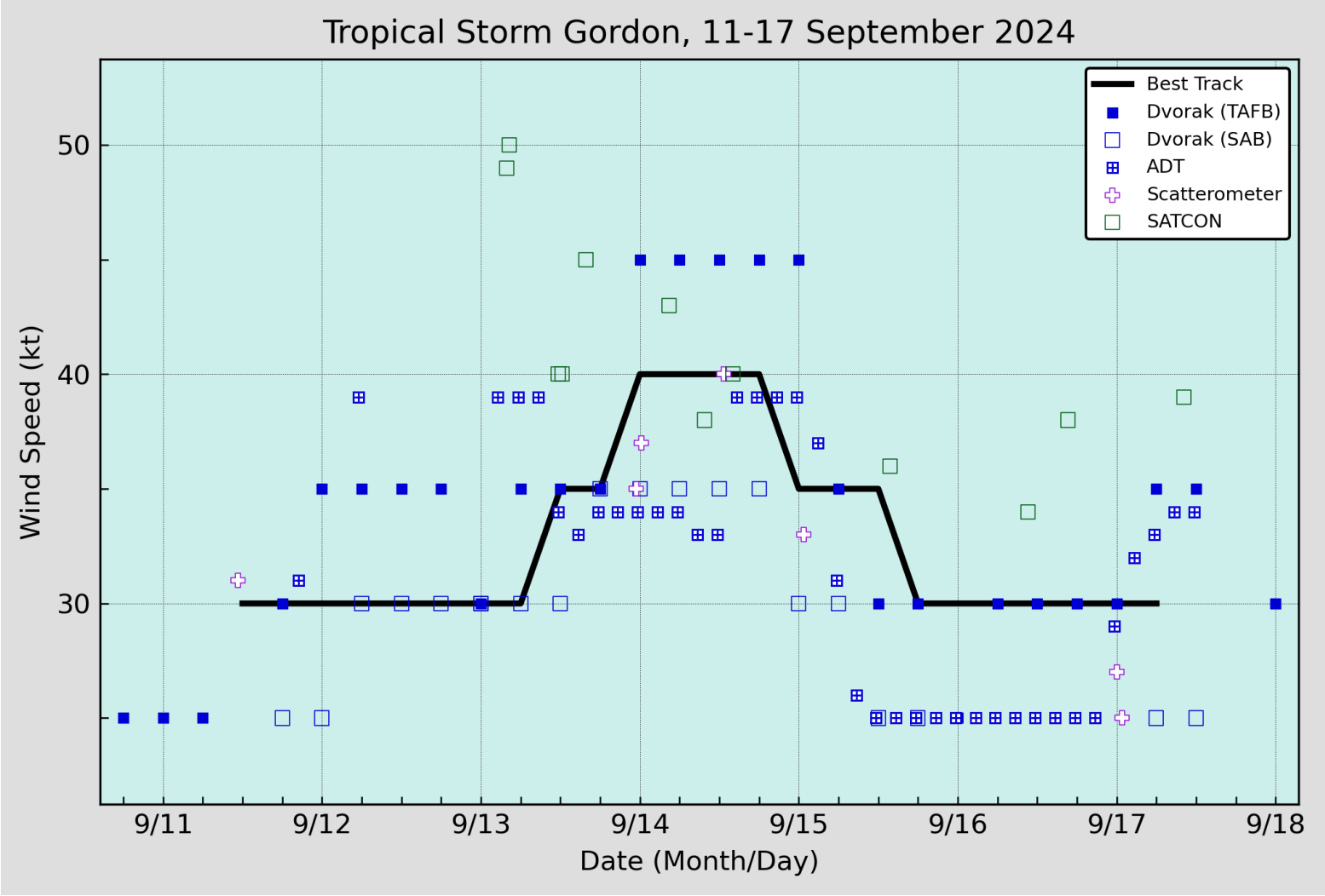

Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Storm Gordon, 11–17 September 2024. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. SATCON intensity estimates are from the Cooperative Institute for Meteorological Satellite Studies. Dashed vertical lines correspond to 0000 UTC.

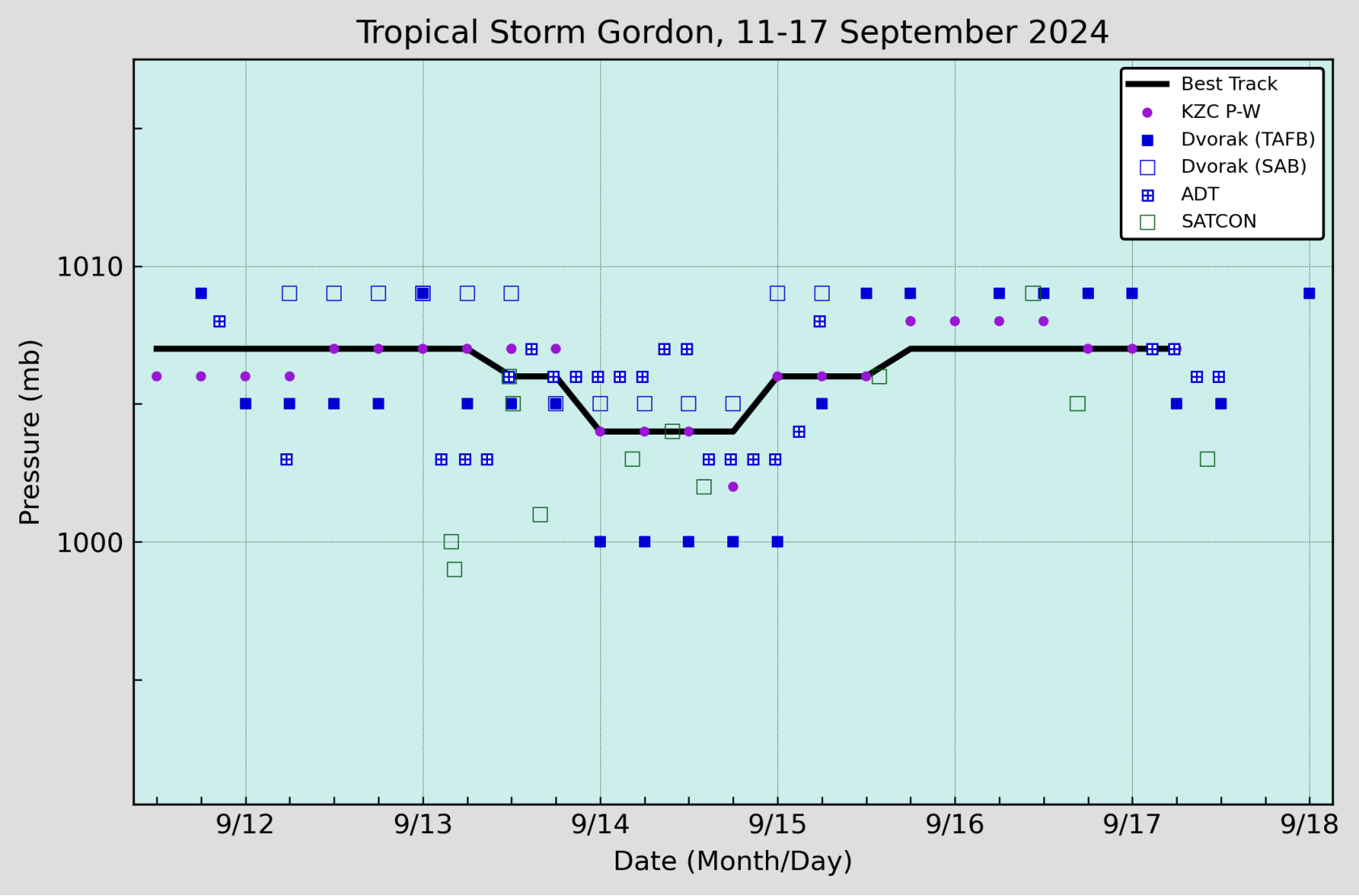

Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Storm Gordon, 11–17 September 2024. Advanced Dvorak Technique estimates represent the Current Intensity at the nominal observation time. SATCON intensity estimates are from the Cooperative Institute for 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.

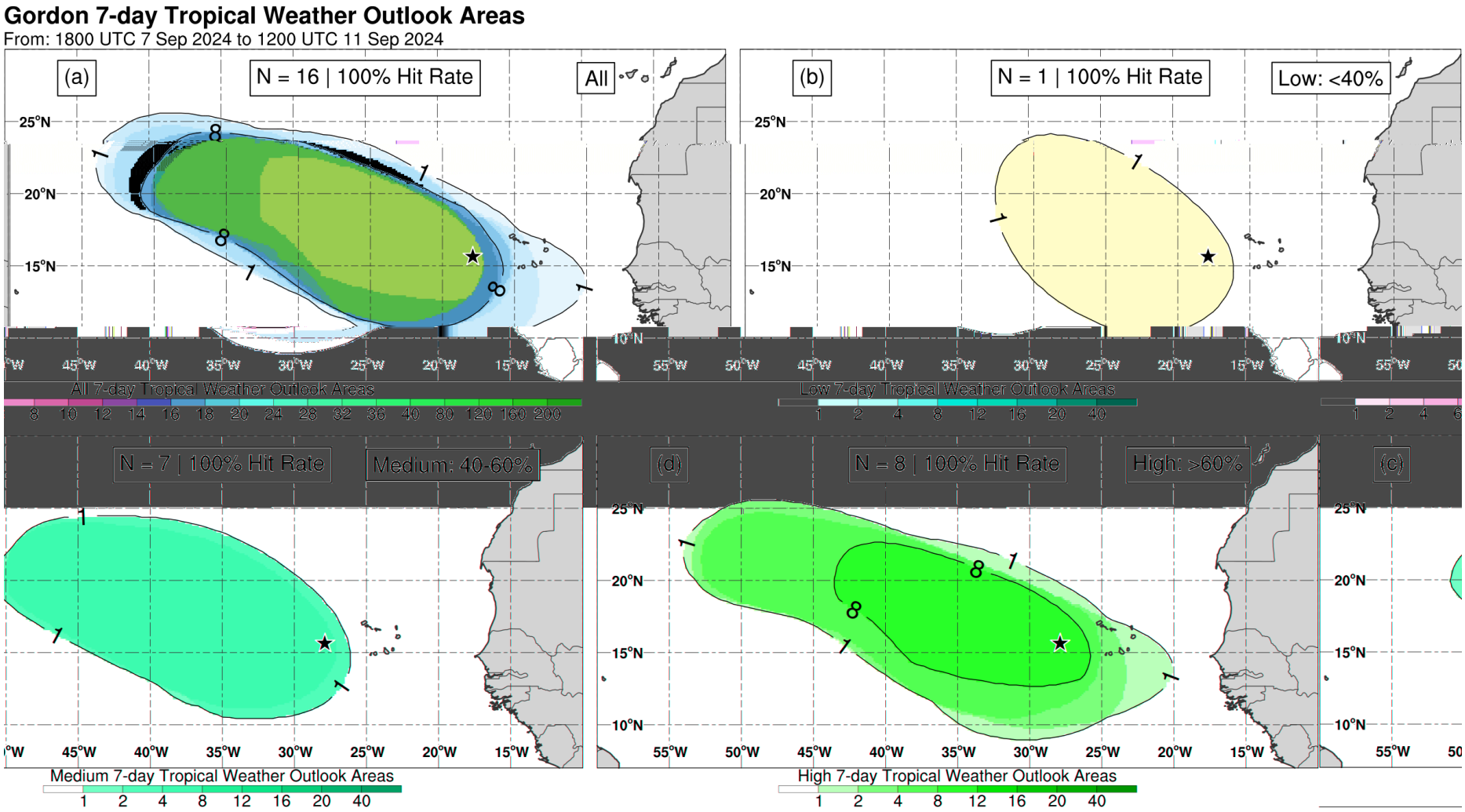

Figure 4. Composites of 7-day tropical cyclone genesis areas depicted in NHC's Tropical Weather Outlooks prior to the formation of Gordon for (a) all probabilistic genesis categories, (b) the low (<40%) category, (c) medium (40–60%) category, and (d) high (>60%) category. The location of genesis is indicated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