Tropical Cyclone Report
Hurricane Omar
(AL152008)
13-18 October 2008

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Omar, which directly impacted the Leeward Islands, underwent rapid intensification (up to a category 4 hurricane on the Saffir-Simpson Hurricane Scale) and an immediately subsequent rapid weakening.

a. Synoptic History

Omar originated from an easterly wave that moved westward off the coast of west Africa on 30 September. The wave had a robust mid-level circulation and widespread deep convection as it reached the eastern Atlantic. However, by 2 October, convection associated with this wave diminished. The wave continued westward during the next several days with little change in structure. The wave reached the Lesser Antilles on 9 October, and deep convection redeveloped two days later in the eastern Caribbean Sea. The convective structure continued to increase over the next 36 h, and it is estimated that the system became a tropical depression around 0600 UTC 13 October in the central Caribbean Sea, about 165 n mi south of the southeastern tip of the Dominican Republic. The westward movement of the depression slowed that day as the deep layer steering currents weakened. The cyclone was slow to intensify after genesis, taking about 18 h to become a tropical storm about 125 n mi north-northeast of Aruba. The "best track" chart of the Omar'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].

Omar moved slowly in a counter-clockwise turn on 14 October, and this motion continued early the next day. Later on 15 October, the cyclone began moving toward the northeast under the influence of a broad, deep tropospheric trough to Omar's northwest and a mid- to low-level ridge to its east. This trough accelerated Omar northeastward for the next few days, with the storm reaching a peak forward speed of about 30 kt on 17 October.

After becoming a tropical storm, a central dense overcast developed over Omar, and the cyclone underwent an extended period of rapid intensification. Omar's intensity increased from 35 kt at 0000 UTC 14 October to 115 kt at 0600 UTC 16 October. The intensity increased 30 kt from 0000 14 October to 0000 UTC 15 October, and increased 35 kt in the 12 h period starting at 1800 UTC 15 October. Omar reached hurricane intensity around 0000 UTC 15 October about 115 n mi north of Bonaire. Figure 4 shows the evolution of the convective structure of Omar on

[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.

14-16 October. The first four microwave images depict how the deep convection quickly developed banding features and a ragged eye on 14 October, with the continued development of symmetric inner core convection and a very distinct eye on 15-16 October. This rapid intensification occurred while Omar was experiencing moderate to low vertical wind shear, a divergent flow aloft, very warm waters with high ocean heat content, and a moist low to mid troposphere. One can speculate that the impact of the vertical shear during the second rapid intensification period was mitigated by Omar's motion being in the same direction as the shear vector. However, the importance of the relative orientations of the shear and storm motion vectors has not been well quantified by the research community.

Rapid intensification abruptly ended near 0600 UTC 16 October, and rapid weakening promptly commenced (a 45-kt decrease in 12 h). The final two panels of Figure 4 show that the eye dissipated and the deep convection became well removed to the north and east of the center. Additionally, visible images on 16 October revealed an exposed low-level center. This weakening appeared to be due to a combination of strong vertical shear and low to mid-level dry air impacting the cyclone's inner core. Omar lost most of its deep convection by early on 17 October, and AMSU imagery indicated that it had also lost its upper-level warm core.

Omar briefly re-intensified later that day as the west-southwesterly vertical shear decreased while the hurricane still remained over warm waters. During this secondary peak in intensity, deep convection re-developed around the center, and an eye was discernable for a few hours in both geostationary and microwave satellite imagery.

Also on 17 October, the strong trough that caused the rapid northeastward motion bypassed the hurricane. Omar began decelerating, but continued moving toward the northeast and then the east-northeast during the next three days under the influence of a mid- to low-level ridge to its south and the mid-latitude westerlies to its north.

Late on 17 October, westerly vertical shear again increased, and the hurricane moved over sea surface temperatures below 26^{o}C, causing a final erosion of Omar's deep convection. The cyclone weakened to a tropical storm around 0000 UTC 18 October about 690 n mi east of Bermuda. Omar then degenerated into a remnant low 12 h later. The low persisted for two days before dissipating around 0600 UTC 21 October about 700 n mi west of the Azores.

b. Meteorological Statistics

Observations in Omar (Figs. 2 and 3) include satellite-based Dvorak technique intensity estimates from the Tropical Analysis and Forecast Branch (TAFB) and the Satellite Analysis Branch (SAB), as well as flight-level, stepped frequency microwave radiometer (SFMR), and dropwindsonde observations from flights of the 53rd Weather Reconnaissance Squadron of the U. S. Air Force Reserve Command. Data and imagery from NOAA polar-orbiting satellites, the NASA Tropical Rainfall Measuring Mission (TRMM), the NASA QuikSCAT, Defense Meteorological Satellite Program (DMSP), and the EUMETSAT ASCAT satellites, among others, as well as the Curacao and San Juan radars were also useful in tracking Omar.

Dvorak classifications by TAFB and SAB began at 2345 UTC 12 October. The system was assessed to be a tropical depression the next day based upon a combination of Dvorak estimates, radar imagery from Curacao, low level cloud drift winds, and surface observations. Dvorak estimates, data from the Advanced Dvorak Technique (ADT), and a CIMSS AMSU analysis first indicated that the depression became a tropical storm on 14 October. An aircraft reconnaissance mission later that day showed that Omar was rapidly intensifying and was near hurricane force. Nearly continuous aircraft reconnaissance was subsequently available while Omar underwent rapid intensification.

Omar's peak intensity is estimated to be 115 kt at 0600 UTC 16 October, based upon an SFMR estimate of 113 kt along with 700-mb flight-level winds of 132 kt flight-level winds. This intensity is higher than the Dvorak-based satellite estimates of about 105 kt at that time. It appears the aircraft sampled during the time of the peak intensity, as the eye was most apparent in satellite imagery around 0600 UTC and a subsequent penetration by the aircraft two hours later showed significant filling.

The minimum central pressure of 958 mb in Omar is analyzed to also have occurred around 0600 UTC based upon a GPS dropwindsonde sea-level pressure measurement of 959 mb with an observed 14-kt surface wind.

The intensity of Omar during rapid weakening is more uncertain than normal. No aircraft data was available, and the system decayed faster than the Dvorak technique can accommodate. Intensities at those times are based primarily upon the ADT and QuikSCAT data. Omar's modest re-intensification on 17 October is based upon the depiction of a redeveloping eye in conventional and microwave imagery and a 75-kt QuikSCAT wind speed observation.

No ships reported winds of tropical storm force directly associated with Omar. Selected surface observations from land stations and data buoys are given in Table 2. The most extreme surface winds observed were from St. Barthelemy, which reported a 1-min wind of 53 kt, and from the National Ocean Service station at Christiansted Harbor, St. Croix, which measured a 6-min mean wind of 52 kt. The peak observed gust was 75 kt from an unofficial site at the Buccaneer Resort at Christiansted, St. Croix. National Data Buoy Center buoy 42059 in the eastern Caribbean measured a peak significant wave height of 17.7 ft.

Omar caused a storm surge in portions of the Virgin Islands and northern Leeward Islands. On Antigua, the surge was estimated at 2-3.5 ft accompanied by wave heights of 4.5-7 ft. Surge heights from other islands are not currently available.

Omar caused storm total rainfalls of 2-6 inches across the Virgin Islands and northern Leeward Islands, with a maximum of 9.13 inches at Antigua.

c. Casualty and Damage Statistics

There are no known casualties from Omar.

Impacts from Omar were first felt in the Netherland Antilles of Aruba, Bonaire, and Curacao. Southwesterly winds on the south side of Omar generated large waves that caused beach erosion and significant damage to coastal facilities. On all three islands, a considerable number of houses experienced roof damage, while several trees were uprooted because of winds near tropical storm intensity. Sections of Aruba experienced significant flooding from heavy rains.

At the time of peak intensity, Omar was about 50 n mi west of Anguilla and St. Martin/St. Maarten in the Leeward Islands, and about 30 n mi southeast of Virgin Gorda in the British Virgin Islands. Fortunately, the eye of Omar moved through the Anegada Passage, and the core of major hurricane force winds did not impact any inhabited islands. Sombrero Island likely experienced the eye of Omar, but this island is uninhabited.

In the U.S. Virgin Islands, it is estimated that St. Thomas received tropical-storm conditions, while St. Croix – especially the eastern end of the island – was affected by low-end Category 1 hurricane conditions. In St. Croix, electrical power was lost due to downed trees, power lines and utility poles. The east end of St. Croix was hardest hit by the winds. There were 47 vessels sunk at St. Croix, with 33 in the Christiansted Harbor, 11 near the St. Croix Yacht Club, one in the vicinity of Cotton Valley, and two near Salt River. St. Croix experienced substantial road damage and landslides. Eighty people sought shelter from the hurricane. Total damage was reported to be about $5 million. There were no major impacts in the remaining U.S. Virgin Islands and Puerto Rico.

Omar also affected the Netherland Antilles of Saba, St. Eustatius, and St. Maarten, which experienced tropical storm conditions that produced damaging coastal flooding. Widespread damage was experienced to coastal facilities, buildings and infrastructure.

In Antigua, the storm surge caused damaging flooding with water reaching near the roofs of some houses in low lying areas.

d. Forecast and Warning Critique

The genesis of Omar was well anticipated. The first mention of Omar's originating disturbance in the Tropical Weather Outlook was at 1200 UTC 9 October. The disturbance was given only a "low" (less than 20% chance of tropical cyclone formation within 48 h) chance of formation through 1800 UTC 11 October, which was 36 h before genesis. A "medium" probability (20-50% chance of tropical cyclone formation within 48 h) of formation was predicted from 0000-1800 UTC 12 October, 12 h before genesis. A "high" probability greater than 50% chance of tropical cyclone formation within 48 h) was operationally assigned from 0000-1200 13 October, with genesis occurring (as determined in post-analysis) at 0600 UTC that day.

A verification of official and guidance model track forecasts is given in Table 3. Average official track errors for Omar were 42, 84, 114, 166, 280, and 472 n mi for the 12, 24, 36, 48, 72, and 96 h forecasts, respectively. The number of forecasts ranged from 18 at 12 h to 4 at 96 h.

These errors are greater than the average 5-yr official track errors (Table 3). Examination of the along- and cross-track official forecast errors (not shown) indicates that the absolute errors were due primarily to a significant slow bias (along-track) in the predictions. A variety of the track guidance models were better than the official forecast across the various forecast periods. The consistently available consensus techniques (TVCN, TVCC) generally provided improvements over the individual models, and the official track errors were quite similar in magnitude to these guidance schemes, including the significant along-track slow bias. The Florida State University Superensemble (FSSE) also lower mean track forecast errors than the official forecasts. The best performer amongst the dynamical models was the BAMD.

A verification of official and guidance model intensity forecasts is given in Table 4. Average official intensity errors were 12, 15, 19, 26, 14, and 10 kt for the 12, 24, 36, 48, 72, and 96 h forecasts, respectively. For comparison, the average 5-yr official intensity errors are: 7, 10, 12, 14, 18, 20, and 22 kt, respectively. These larger-than-average errors were due to the combination of a large low bias in the forecasts issued on 13-14 October when Omar's rapid intensification was not adequately anticipated, and a large high bias in the predictions on 15-16 October when Omar did not weaken as quickly as forecast. The GHMI and HWFI models had mean intensity forecast errors near or smaller than those of the official forecast from 24-48 h, as was the case for the consensus models ICON, IVCN, and FSSE.

Omar experienced two periods of rapid intensification, with the first starting at 1800 UTC 13 October and the second at 1800 UTC 14 October. For the first period, none of the statistical techniques suggested rapid intensification. However, the 0000 UTC GHMI and the 0000/0600 UTC HWFI model runs correctly anticipated this strengthening. For the second period, the dynamical intensity techniques were calling for intensification, but only the 1800 UTC DSHP and LGEM models explicitly predicted at least a 30-kt increase in winds. The SHIPS Rapid Intensification Index correctly suggested a 68% chance of RI at 1800 UTC 14 October (9.3 times the sample mean of 8%) and 58% chance at 0000 UTC 15 October.

Watches and warnings associated with Omar are given in Table 5. A hurricane watch was issued for Puerto Rico and the U.S. Virgin Islands about 30 h before Omar's closest approach (to St. Croix). A Hurricane Warning was issued for the U.S. Virgin Islands about 24 h before Omar's closest approach.

Acknowledgements

The San Juan Weather Forecast Office provided their Post Tropical Cyclone Report with details on key observations and impacts that occurred in Puerto Rico and the U.S. Virgin Islands. Data from Antigua, the French West Indies, and the Netherland Antilles were provided by the meteorological services of those countries.

Table 1. Best track for Hurricane Omar, 13-18 October 2008.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
13 / 0600	15.4	69.0	1005	25	tropical depression
13 / 1200	15.2	69.6	1005	30	"
13 / 1800	14.8	69.8	1004	30	"
14 / 0000	14.5	69.6	1001	35	tropical storm
14 / 0600	14.3	69.3	997	40	"
14 / 1200	14.2	69.1	991	50	"
14 / 1800	13.9	68.8	983	60	"
15 / 0000	14.1	68.3	983	65	hurricane
15 / 0600	14.4	68.0	985	70	"
15 / 1200	14.9	67.4	984	75	"
15 / 1800	15.6	66.5	977	80	"
16 / 0000	16.7	65.2	970	95	"
16 / 0600	18.2	63.9	958	115	"
16 / 1200	19.6	62.1	975	90	"
16 / 1800	21.1	60.4	985	70	"
17 / 0000	22.8	58.8	986	65	"
17 / 0600	25.1	57.1	984	70	"
17 / 1200	27.9	55.7	982	75	"
17 / 1800	30.1	54.4	985	65	"
18 / 0000	31.3	53.2	988	55	tropical storm
18 / 0600	32.4	52.1	991	50	"
18 / 1200	33.0	51.3	996	40	remnant low
18 / 1800	33.5	50.5	1002	35	"
19 / 0000	34.0	49.7	1006	30	"
19 / 0600	34.5	49.0	1008	30	"
19 / 1200	35.1	48.3	1012	25	"
19 / 1800	35.7	47.5	1012	30	"
20 / 0000	36.4	46.8	1013	30	"
20 / 0600	37.0	46.2	1014	25	"
20 / 1200	37.6	45.3	1015	25	"
20 / 1800	37.9	44.3	1016	25	"
21 / 0000	38.3	43.3	1016	25	"
21 / 0600					dissipated
16 / 0600	18.2	63.9	958	115	minimum pressure & maximum wind

Table 2. Selected surface observations for Hurricane Omar, 13-18 October 2008.

Location	Minimum Sea Level Pressure		Maximum Surface Wind Speed			Storm surge (ft)[c]	Storm tide (ft)[d]	Total rain (in)
	Date/ time (UTC)	Press. (mb)	Date/ time (UTC)[a]	Sustained (kt)[b]	Gust (kt)			
Antigua								
TAPA – Antigua (17.12°N 61.78°W)	16/0700	1007.2	16/1000	35	42	1.8-3.6		9.13
French West Indies								
St. Barthelemy Airport	16/0300	1003.1	16/0400	31	64			
St. Barthelemy Gustavia Meteo	16/0400	1003.0	16/0400	53	68			1.97
St. Martin Grand Case Airport	16/0300	1001.8	16/0500	42	70			4.53
Netherland Antilles								
TNCA – Aruba (12.50°N 70.02°W)			14/1014	31	39			4.00
TNCB – Bonaire (12.15°N 68.28°W)			15/0723	34	50			1.60
TNCC – Curacao (12.20°N 68.97°W)			14/1626	31	39			1.70
TNCE - St. Eustatius (17.48°N 61.98°W)			16/0525	36	50			4.02
TNCM - St. Maarten (18.05°N 63.12°W)			16/0710	46	66			5.49
Puerto Rico and the US Virgin Islands								
TIST - St. Thomas Airport, VI (18.33°N 64.98°W)	16/0546	1003.1	16/0428	29	43			2.42
TISX - St. Croix Airport, VI (17.70°N 64.80°W)	16/0326	993.9	16/0410	42	54			5.30
Carolina Airport, PR	15/2337 16/0448	1006.4	16/0628	17	23			
Cotton Valley, VI								3.44
Buoys								
42059 Eastern Caribbean (15.01°N 67.50°W)	15/1150	987.5	15/1300	50	68			

Location	Minimum Sea Level Pressure		Maximum Surface Wind Speed			Storm surge (ft)[c]	Storm tide (ft)[d]	Total rain (in)
	Date/ time (UTC)	Press. (mb)	Date/ time (UTC)[a]	Sustained (kt)[b]	Gust (kt)			
National Ocean Service (NOS) Sites								
CHSV3 - Christiansted Harbor (17.75°N 64.72°W)	16/0342	993.0	16/0342	52	68		2.2	
LTBV3 - Lime Tree Bay (17.68°N 64.75°W)	16/0424	995.4	16/0418	44	65			
Sites from other Government Agencies								
SRBV3 - Integrated Coral Observing Network Salt River Bay (17.78°N 64.76°W)			16/0130	35				
Unofficial US Virgin Islands								
Buccaneer Resort, Christiansted, St. Croix	16/0350	992.8	16/0410		75			9.11

[a] Date/time is for sustained wind when both sustained and gust are listed.
[b] Except as noted, sustained wind averaging periods for C-MAN and land-based ASOS reports are 2 min; buoy averaging periods are 8 min.
[c] Storm surge is water height above normal astronomical tide level.
[d] Storm tide is water height above National Geodetic Vertical Datum (1929 mean sea level).

Table 3. Track forecast evaluation (heterogeneous sample) for Hurricane Omar, 13 – 18 October 2008. Forecast errors (n mi) are followed by the number of forecasts in parentheses. Errors smaller than the NHC official forecast are shown in boldface type.

Forecast Technique	Forecast Period (h)						
	12	24	36	48	72	96	120
CLP5	83 (19)	171 (17)	321 (15)	529 (13)	971 (9)	1322 (5)	
GFNI	**37** (7)	**64** (7)	**111** (7)	181 (7)	348 (5)	715 (1)	
GFDI	50 (19)	103 (17)	150 (15)	195 (13)	**240** (9)	**437** (5)	
HWFI	46 (19)	**74** (17)	**109** (15)	177 (13)	289 (9)	**400** (5)	
NAMI	88 (18)	157 (14)	248 (12)	358 (11)	631 (8)		
COAI	**30** (5)	**58** (5)	**101** (5)	**135** (5)			
GFSI	54 (19)	91 (17)	121 (15)	**151** (13)	**198** (8)	**447** (5)	
AEMI	55 (19)	91 (17)	116 (15)	**158** (11)	386 (7)		
NGPI	55 (16)	89 (14)	134 (12)	191 (10)	280 (7)	574 (3)	
UKMI	46 (17)	**80** (15)	120 (13)	178 (11)	352 (7)	671 (3)	
EGRI	46 (17)	**78** (15)	120 (13)	180 (11)	358 (7)	685 (3)	
EMXI	49 (12)	108 (11)	158 (10)	215 (8)	373 (6)	666 (2)	
JGSI	61 (13)	98 (11)	128 (9)	177 (7)	**236** (3)		
BAMD	51 (19)	**79** (17)	**108** (15)	**148** (13)	**135** (9)	**238** (5)	
BAMM	53 (19)	96 (17)	129 (15)	178 (13)	340 (9)	804 (5)	
BAMS	86 (19)	169 (17)	238 (15)	319 (13)	555 (9)	1116 (5)	
LBAR	60 (19)	97 (17)	139 (15)	185 (13)	**249** (9)	**352** (5)	
TCON	44 (14)	**79** (12)	117 (10)	179 (8)	**270** (4)	515 (1)	
TCCN	43 (14)	**77** (12)	116 (10)	180 (8)	295 (4)	591 (1)	
TVCN	45 (19)	**82** (17)	115 (15)	159 (13)	**250** (9)	**436** (5)	
TVCC	43 (19)	**78** (17)	**109** (15)	**152** (13)	**259** (9)	516 (5)	
GUNA	46 (14)	**83** (12)	122 (10)	180 (8)	**270** (4)	543 (1)	
CGUN	43 (14)	**83** (12)	124 (10)	184 (8)	295 (4)	622 (1)	
FSSE	42 (13)	**63** (11)	**98** (9)	**163** (7)	**242** (3)		
OFCL	42 (18)	84 (16)	114 (14)	166 (12)	280 (8)	472 (4)	
NHC Official (2003-2007 mean)	34.0 (1742)	58.2 (1574)	82.2 (1407)	106.2 (1254)	154.2 (996)	207.5 (787)	272.5 (627)

Table 4. Intensity forecast evaluation (heterogeneous sample) for Hurricane Omar, 13 – 18 October 2008. Forecast errors (kt) are followed by the number of forecasts in parentheses. Errors smaller than the NHC official forecast are shown in boldface type.

Forecast Technique	Forecast Period (h)						
	12	24	36	48	72	96	120
OCD5	17.1 (19)	19.4 (17)	21.9 (15)	28.1 (13)	29.4 (9)	17.6 (5)	
GHMI	13.1 (19)	**14.9** (17)	**14.5** (15)	**18.3** (13)	20.9 (9)	25.6 (5)	
GFNI	16.3 (7)	16.0 (7)	**12.1** (7)	**20.0** (7)	16.6 (5)	20.0 (1)	
HWFI	13.4 (19)	15.1 (17)	**13.9** (15)	**16.0** (13)	17.7 (9)	25.2 (5)	
LGEM	18.4 (19)	20.8 (17)	21.7 (15)	30.5 (13)	30.4 (9)	21.8 (5)	
DSHP	16.1 (19)	18.2 (17)	20.4 (15)	26.7 (13)	23.8 (9)	**8.8** (5)	
FSSE	15.4 (13)	15.7 (11)	**14.4** (9)	**13.9** (7)	**13.7** (3)		
ICON	14.7 (19)	15.2 (17)	**15.7** (15)	**20.6** (13)	17.4 (9)	**7.8** (5)	
IVCN	14.8 (19)	**14.9** (17)	**15.1** (15)	**20.5** (13)	17.3 (9)	**8.2** (5)	
OFCL	12.2 (18)	15.0 (16)	19.3 (14)	26.3 (12)	14.4 (8)	10.0 (4)	
NHC Official (2003-2007 mean)	6.7 (1742)	10.0 (1574)	12.3 (1407)	14.3 (1254)	18.2 (996)	19.7 (787)	21.8 (627)

Table 5. Watch and warning summary for Hurricane Omar, 13-18 October 2008.

Date/Time (UTC)	Action	Location
13 / 2100	Tropical Storm Watch issued	Puerto Rico, US Virgin Islands, Vieques, and Culebra, andBritish Virgin Islands
13 / 2100	Tropical Storm Watch issued	Dominican Republic from Isla Saona to Cabo Engano
14 / 2100	Tropical Storm Watch changed to Tropical Storm Warning/ Hurricane Watch	Puerto Rico, US Virgin Islands, Vieques, and Culebra, and British Virgin Islands
14 / 2100	Tropical Storm Watch discontinued	Dominican Republic from Isla Saona to Cabo Engano
14 / 2100	Tropical Storm Watch issued	Montserrat
14 / 2100	Tropical Storm Warning/ Hurricane Watch issued	Anguilla, St. Kitts, Nevis, Saba, St. Eustatius, St. Maarten, St. Martin, and St. Barthelemy
15 / 0300	Tropical Storm Warning/ Hurricane Watch changed to Hurricane Warning	US Virgin Islands, Vieques, and Culebra
15 / 0300	Tropical Storm Warning/ Hurricane Watch changed to Hurricane Warning	British Virgin Islands, Anguilla, St. Kitts, Nevis, Saba, St. Eustatius, St. Maarten, St. Martin, and St. Barthelemy
15 / 0300	Tropical Storm Warning issued	Antigua and Barbuda
15 / 0300	Tropical Storm Watch changed to Tropical Storm Warning	Montserrat
15 / 1800	Hurricane Warning changed to Tropical Storm Warning/ Hurricane Watch	St. Kitts and Nevis
16 / 0700	All warnings discontinued	Puerto Rico
16 / 0900	All warnings discontinued	US Virgin Islands, Vieques, and Culebra, British Virgin Islands
16 / 1200	All warnings discontinued	St. Kitts, Nevis, Antigua, Barbuda, St. Martin, St. Maarten, St. Eustatius, St. Barthelemy, Saba, Anguilla, and Montserrat

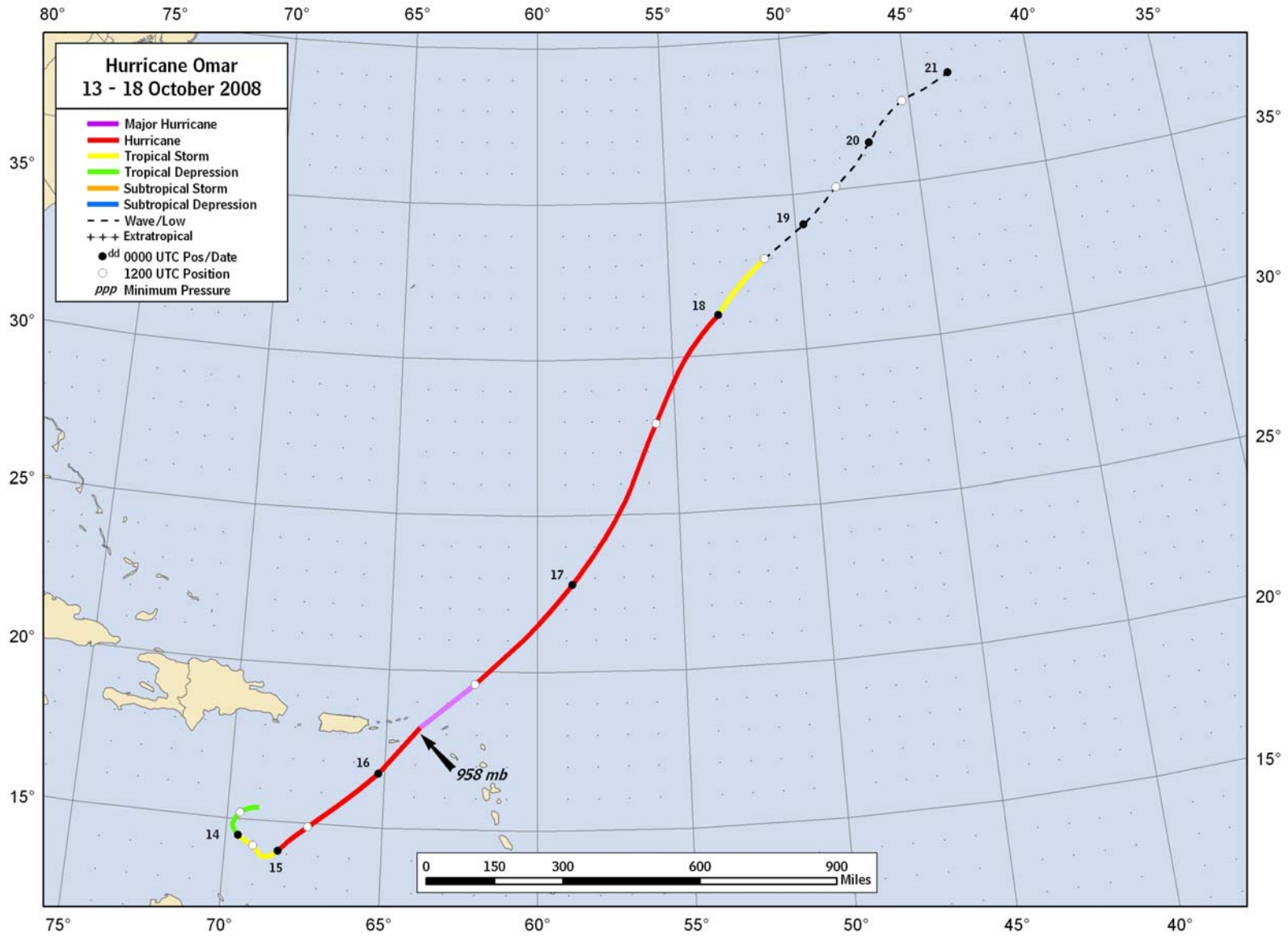

Figure 1. Best track positions for Hurricane Omar, 13-18 October 2008. Track during the remnant low stage is based on analyses from the NOAA Ocean Prediction Center.

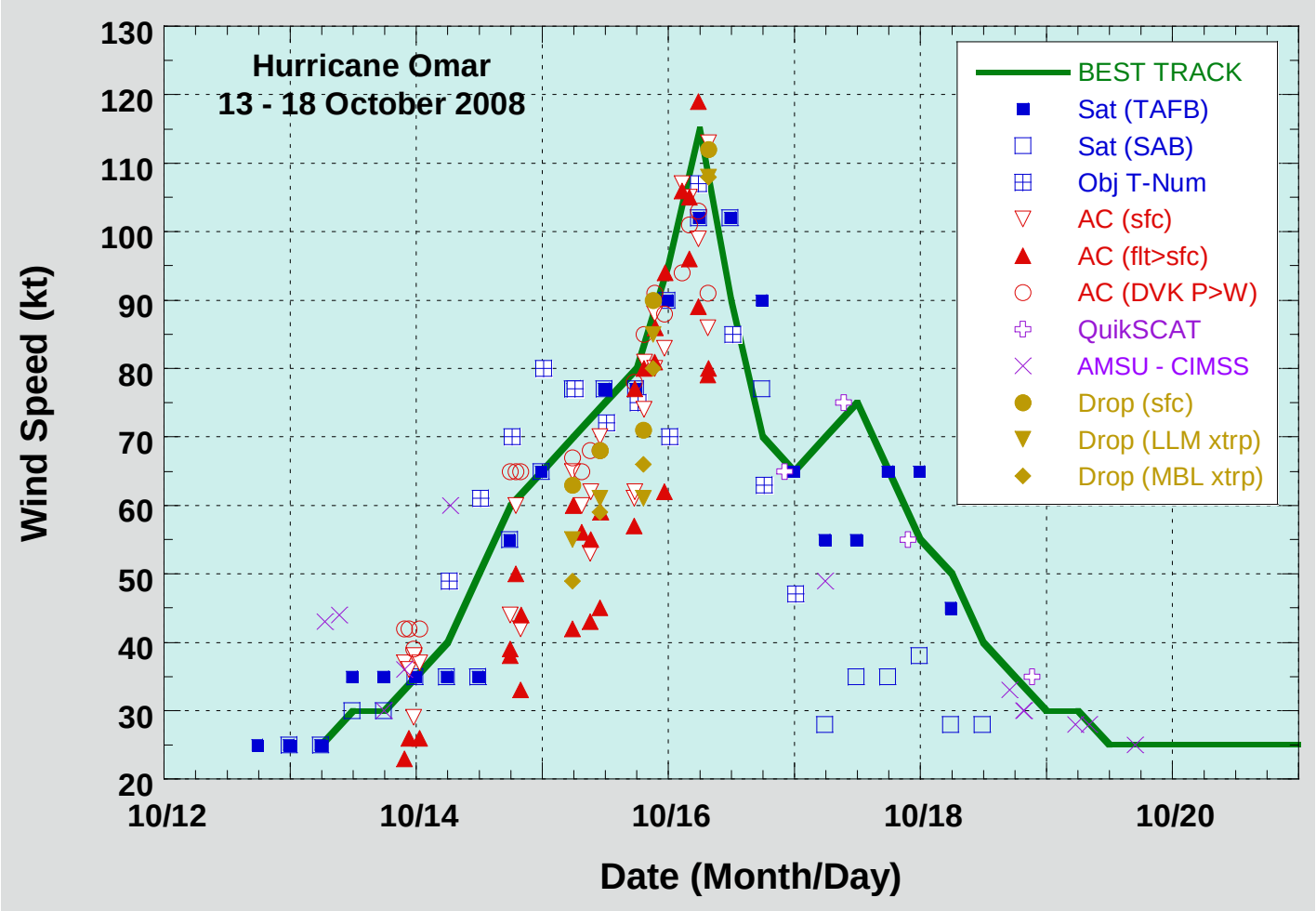

Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Hurricane Omar, 13 – 18 October 2008. Aircraft observations have been adjusted for elevation using 90%, 80%, and 75% adjustment factors for observations from 700 mb, 850 mb, and 925 mb, respectively. Dropwindsonde observations are surface wind estimates derived from the mean wind over the lowest 150 m of the wind sounding (LLM). Objective Dvorak estimates represent linear averages over a three-hour period centered on the nominal observation time. CIMSS AMSU intensity estimates are included when the estimated radius of maximum winds was at least 25 n mi. Dashed vertical lines correspond to 0000 UTC.

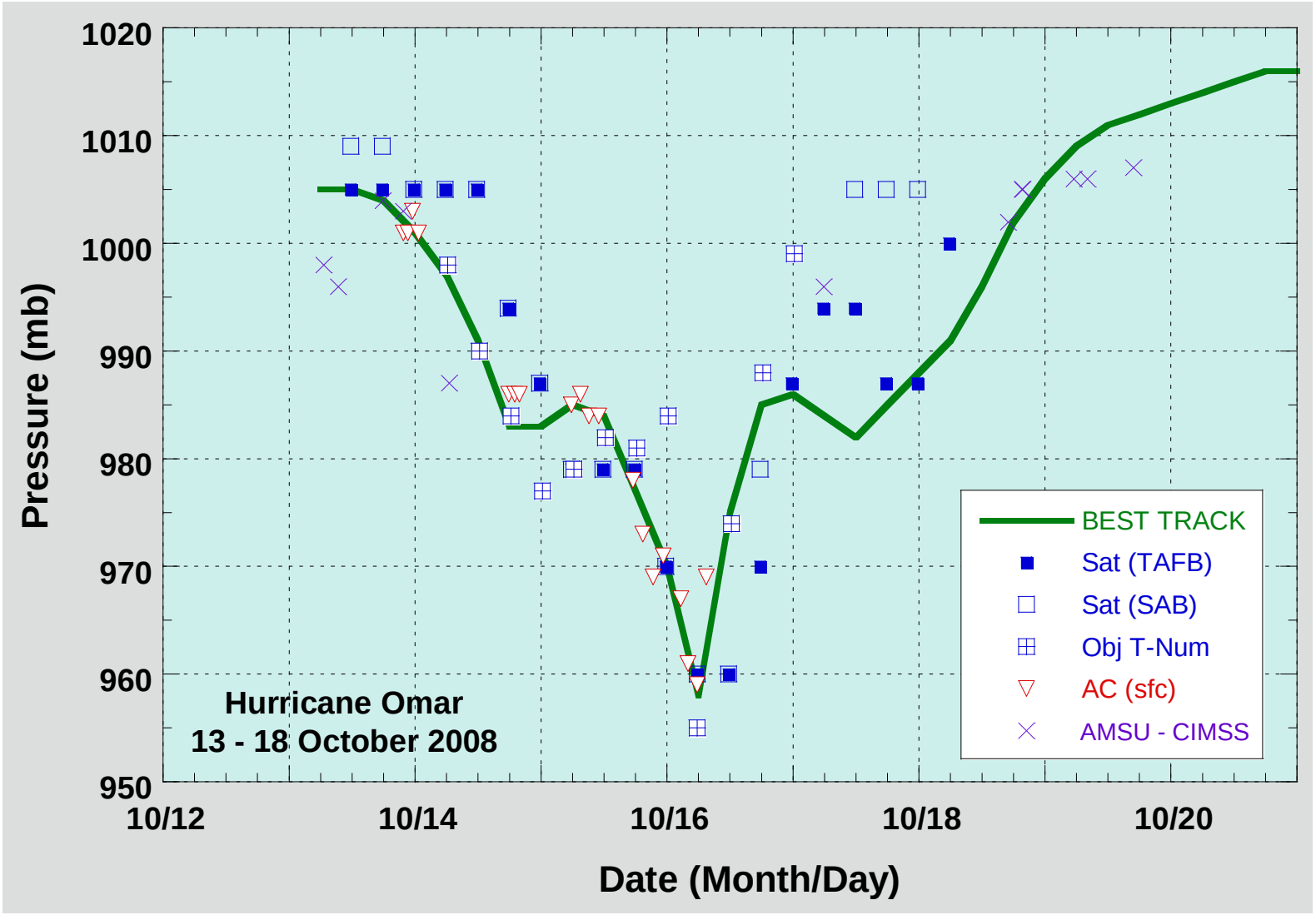

Figure 3. Selected pressure observations and best track minimum central pressure curve for 13 – 18 October 2008. Objective Dvorak estimates represent linear averages over a three-hour period centered on the nominal observation time. CIMSS AMSU intensity estimates are included when the estimated radius of maximum winds was at least 25 n mi. Dashed vertical lines correspond to 0000 UTC.

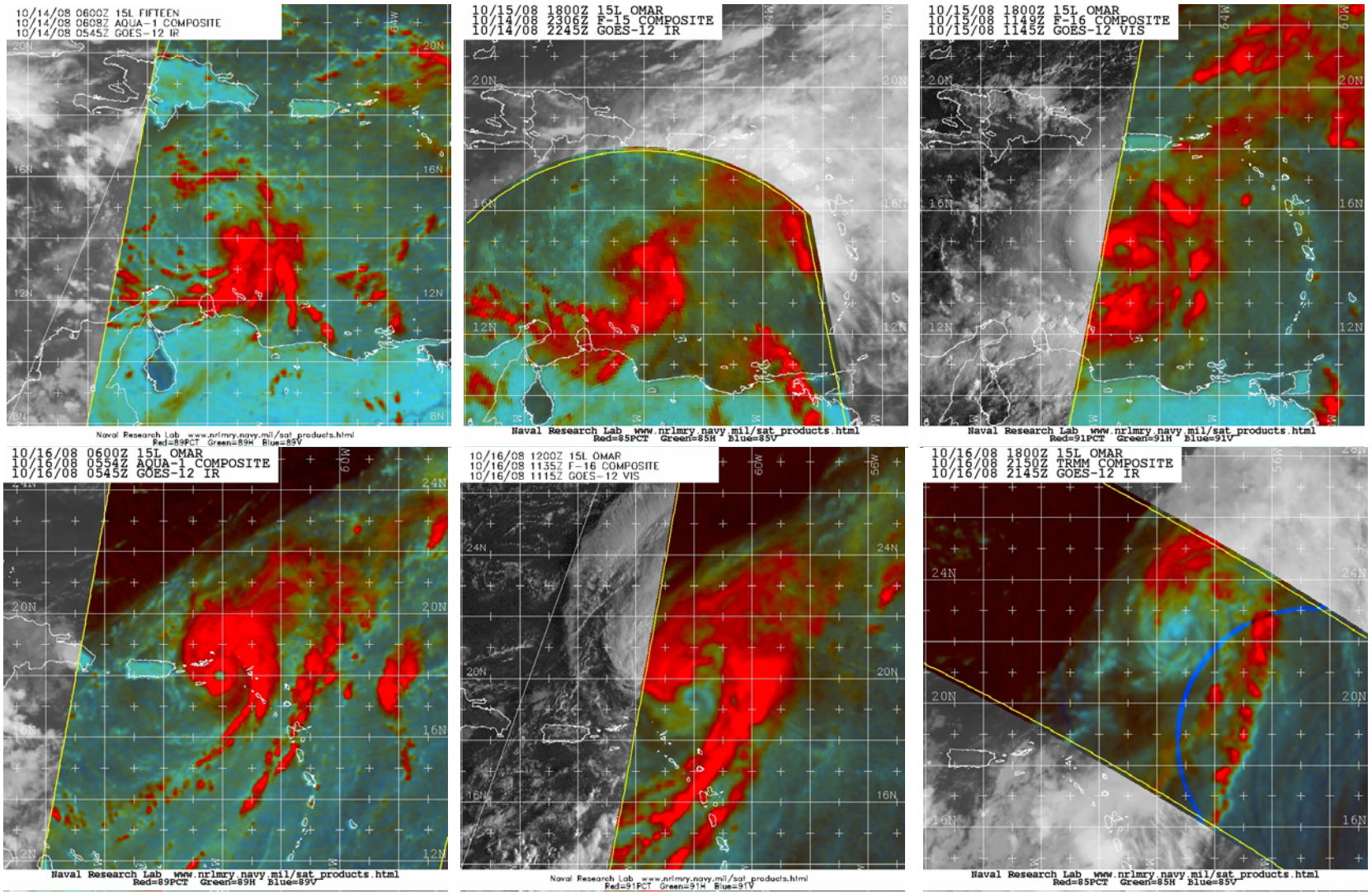

Figure 4. Microwave imagery depicting the rapid evolution of Omar's convective structure during a 40 h period: (from top left to bottom right) 0608 UTC on 14 October (intensity 40 kt), 2306 UTC on 14 October (intensity 65 kt), 1149 UTC on 15 October (intensity 75 kt), 0554 UTC on 16 October (intensity 115 kt), 1135 UTC on 16 October (intensity 90 kt), and 2150 UTC on 16 October (intensity 70 kt). Images courtesy NRL Monterey, CA.