



# HURRICANE BETSY

***AUGUST 27 -  
SEPTEMBER 12, 1965***

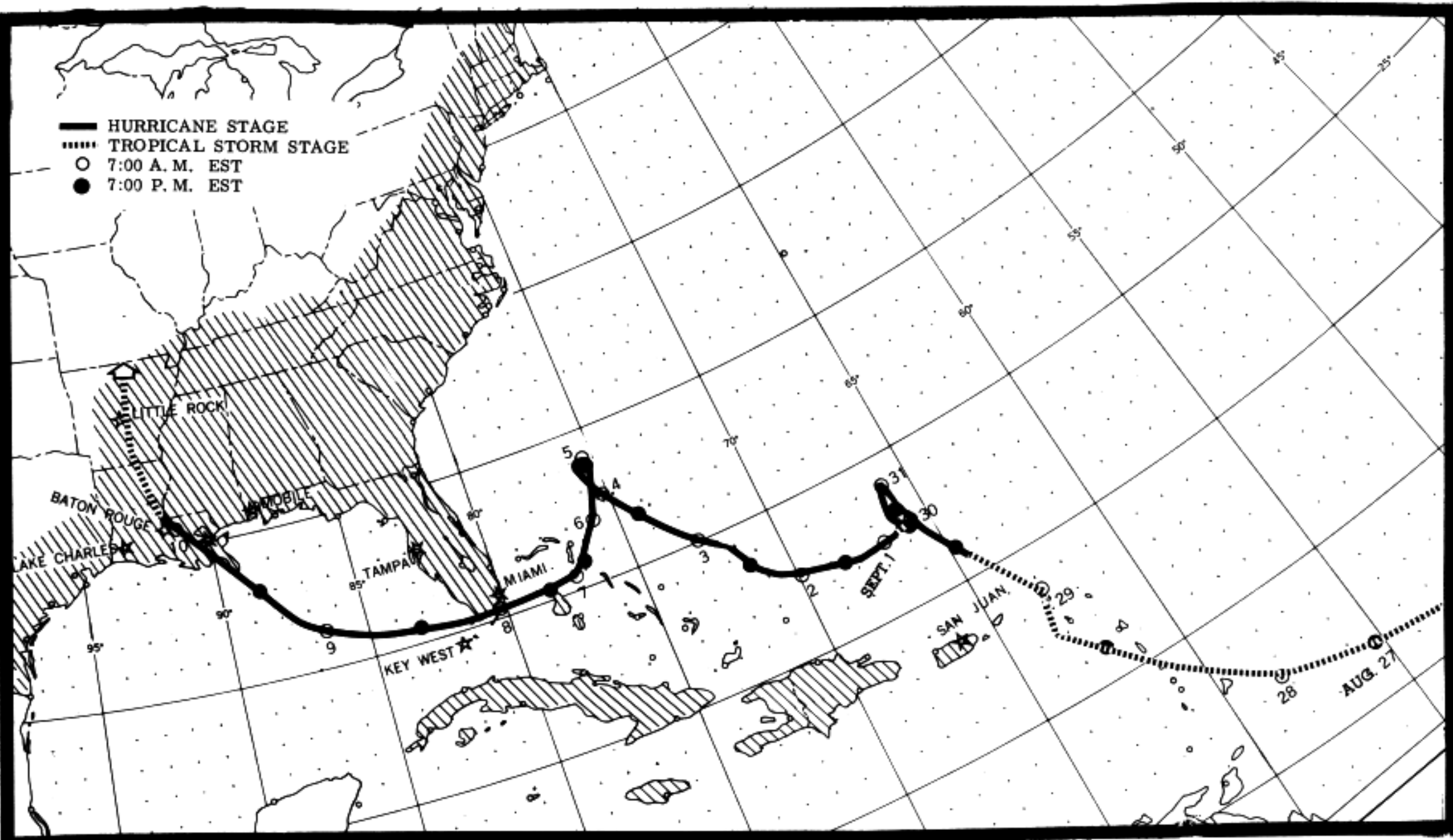
*Preliminary Report with Advisories and Bulletins Issued*



# HURRICANE *Betsy* Track

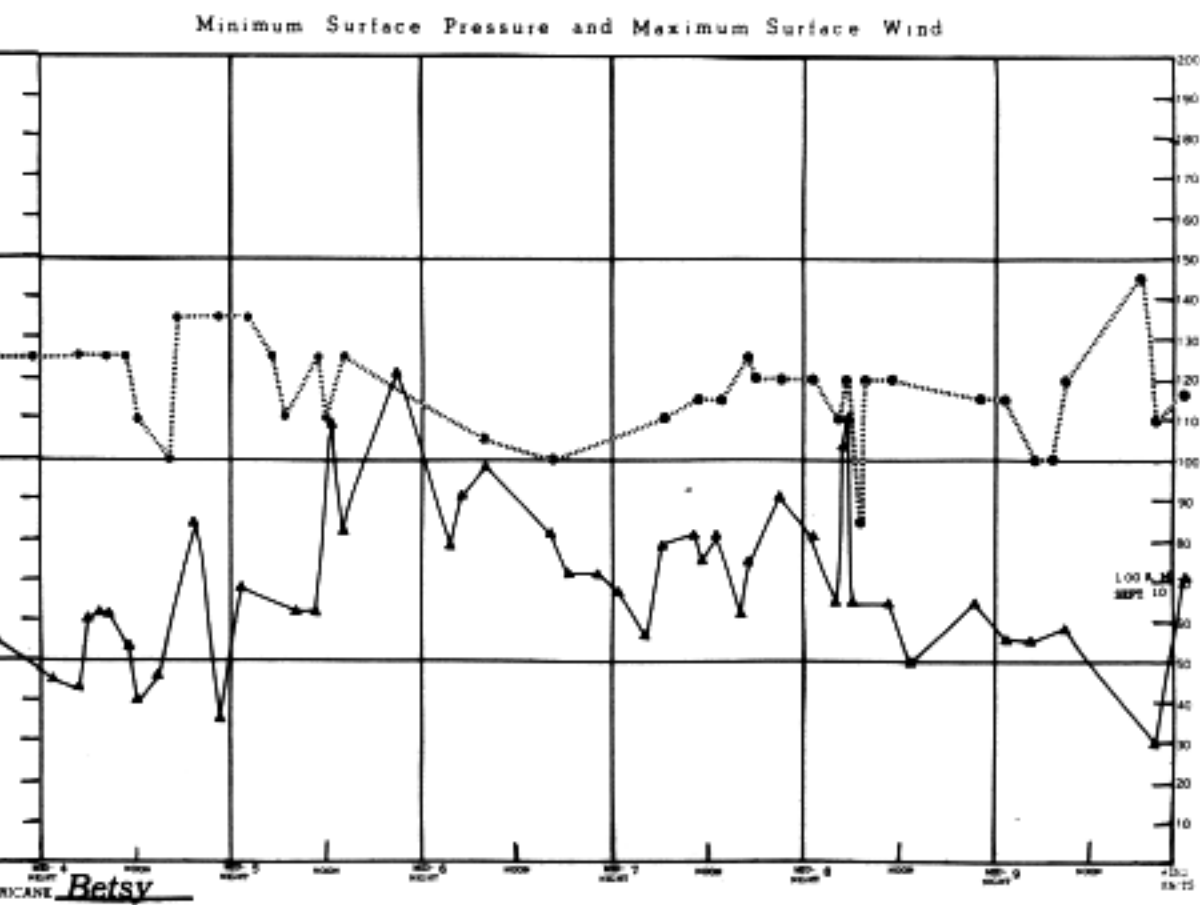
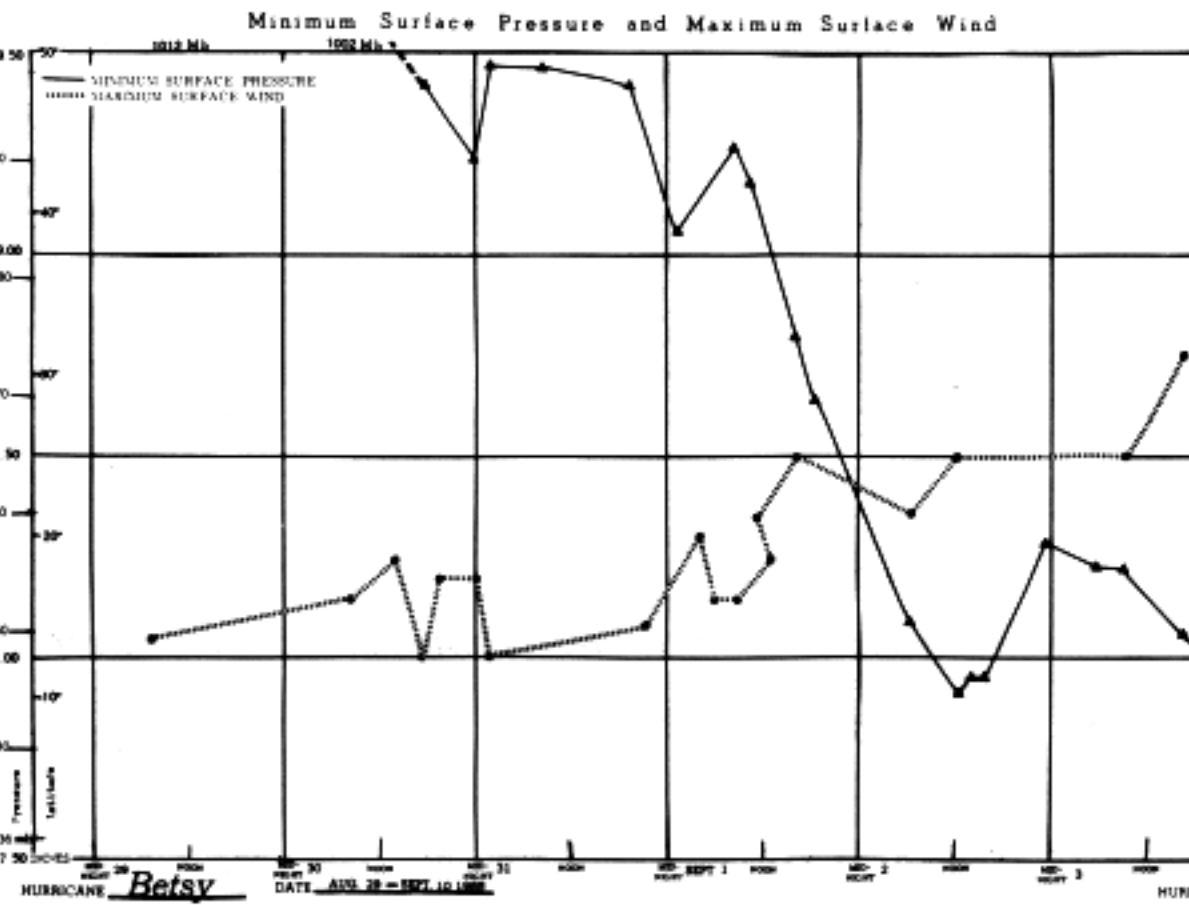
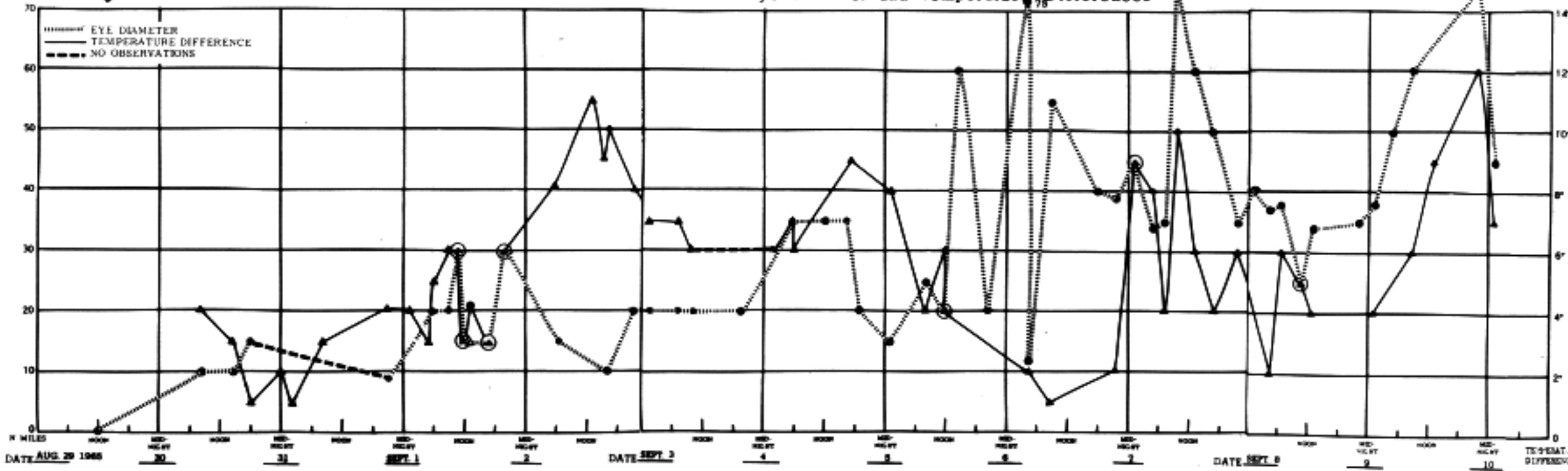
Aug. 27 – Sept. 12, 1965

- HURRICANE STAGE
- ⋯ TROPICAL STORM STAGE
- 7:00 A. M. EST
- 7:00 P. M. EST



**Betsy**

Eye Diameter and Temperature Differences

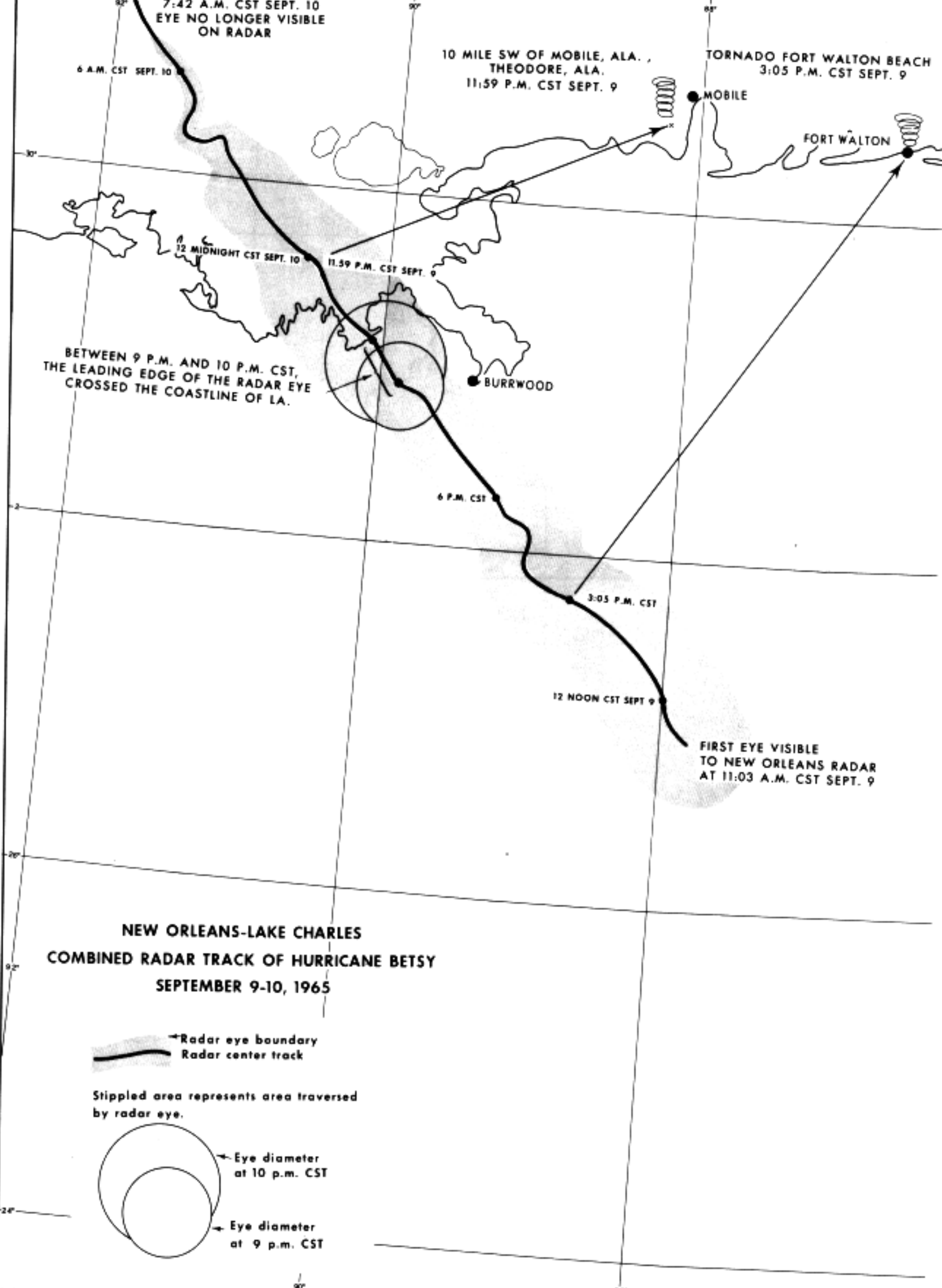


HURRICANE **Betsy**

DATE AUG 29 - SEPT 10 1968

HURRICANE **Betsy**

DATE AUG 29 - SEPT 10 1968



7:42 A.M. CST SEPT. 10  
EYE NO LONGER VISIBLE  
ON RADAR

6 A.M. CST SEPT. 10

10 MILE SW OF MOBILE, ALA.,  
THEODORE, ALA.  
11:59 P.M. CST SEPT. 9

TORNADO FORT WALTON BEACH  
3:05 P.M. CST SEPT. 9

MOBILE

FORT WALTON

12 MIDNIGHT CST SEPT. 10

11:59 P.M. CST SEPT. 9

BETWEEN 9 P.M. AND 10 P.M. CST,  
THE LEADING EDGE OF THE RADAR EYE  
CROSSED THE COASTLINE OF LA.

BURRWOOD

6 P.M. CST 9

3:05 P.M. CST

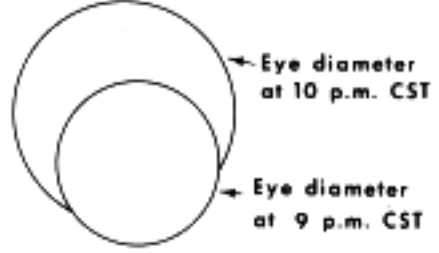
12 NOON CST SEPT 9

FIRST EYE VISIBLE  
TO NEW ORLEANS RADAR  
AT 11:03 A.M. CST SEPT. 9

**NEW ORLEANS-LAKE CHARLES  
COMBINED RADAR TRACK OF HURRICANE BETSY  
SEPTEMBER 9-10, 1965**

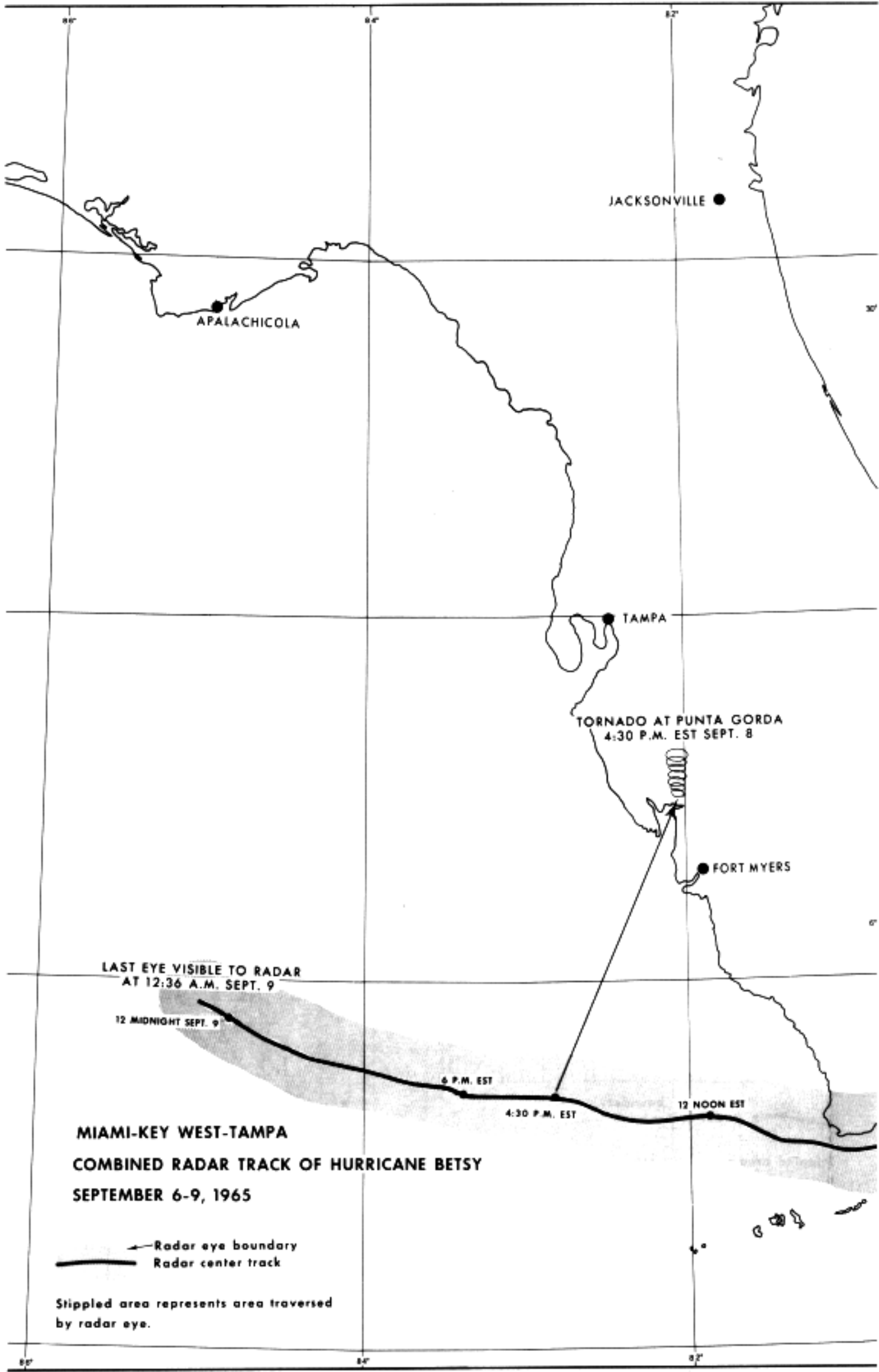
→ Radar eye boundary  
— Radar center track

Stippled area represents area traversed  
by radar eye.



Eye diameter  
at 10 p.m. CST

Eye diameter  
at 9 p.m. CST



JACKSONVILLE ●

APALACHICOLA ●

TAMPA ●

TORNADO AT PUNTA GORDA  
4:30 P.M. EST SEPT. 8

FORT MYERS ●

LAST EYE VISIBLE TO RADAR  
AT 12:36 A.M. SEPT. 9

12 MIDNIGHT SEPT. 9

6 P.M. EST

4:30 P.M. EST

12 NOON EST

**MIAMI-KEY WEST-TAMPA  
 COMBINED RADAR TRACK OF HURRICANE BETSY  
 SEPTEMBER 6-9, 1965**

— Radar eye boundary  
 — Radar center track

Stippled area represents area traversed by radar eye.

MIAMI-KEY WEST-TAMPA  
COMBINED RADAR TRACK OF HURRICANE BETSY  
SEPTEMBER 6-9, 1965

← Radar eye boundary  
— Radar center track

Stippled area represents area traversed by radar eye.



# PRELIMINARY REPORT ON HURRICANE BETSY

August 27 - September 10, 1965

On August 27, 1965 at 10:30 AM EST a Navy hurricane reconnaissance aircraft discovered a tropical depression at 13° North Latitude and 54° West Longitude or about 350 miles east southeast of Barbados in the Windward Islands, West Indies. Maximum surface winds were about 38 knots and minimum sea level pressure was 1010 mb, which soon lowered to 1006.5 mb.

At 11:30 AM EST a National Weather Satellite Center bulletin stated that TIROS X had photographed a circular storm at 9:08 AM EST. It was centered at 13°N and 52°W. There were two distinct coiled cloud bands around the center covering 4° of latitude which is indicative of winds of near 50 knots (about 60 miles an hour).

At 2:00 PM EST the San Juan Weather Bureau Office issued the first bulletin on the moderate tropical depression. By 5:00 PM EST the disturbance intensified to tropical storm stage. Weather Bureau Office, San Juan, issued the first formal advisory and named the storm "Betsy". Maximum winds at the time were about 45 miles an hour in a band of squalls extending about 100 miles in a semicircle to the north of the center. Gale force winds extended about 250 miles in the northern semicircle. Betsy was centered 300 miles east southeast of Barbados and was moving west northwestward at 15 miles an hour. Gale warnings were issued for the Lesser Antilles.

On August 28, weak Tropical Storm Betsy moved through the Lesser Antilles in a northwesterly direction at 21 miles an hour. At 8:00 PM EST gale warnings were extended to include Puerto Rico and the Virgin Islands.

On August 29, reports from Air Force and Weather Bureau aircraft, ships and island stations indicated that Betsy had intensified to hurricane strength while centered 200 miles north northeast of San Juan, Puerto Rico. Highest winds had reached 80 miles an hour near the center. The first hurricane advisory was issued at 5:00 PM EST by Weather Bureau Office, Miami. By coincidence this was the first release by the Miami office after the transfer of forecast responsibility from San Juan to Miami.

On August 30-31, Betsy slowed to a halt, lost intensity, and made a gradual loop about 275 miles north of Puerto Rico. Maximum winds decreased from 85 to 65 miles an hour to change the storm classification from a hurricane back to a tropical storm. Central pressure rose from 991 mbs. (29.25 inches) to 998 mbs. (29.47 inches).

On September 1, Betsy began moving westward and regained hurricane intensity. At 5:00 AM it was centered about 260 miles north northwest of San Juan (22.3° North Latitude and 66.9° West Longitude) and was moving westward about 6 miles an hour. Highest winds were 80 miles an hour near the center with gales extending out 150 miles in the northeast semicircle and 75 miles in the southwest semicircle. Central pressure was 984 mbs. or 29.05 inches. The Bahama Islands were alerted to the possibility of the effects from Betsy in one or two days.

On September 1 and 2, the radar of the Eastern Test Range Station on Grand Turk Island tracked the hurricane. At 5:00 AM EST Betsy was located 125 miles northeast of Grand Turk. Highest winds were 100 miles an hour near the center and gales extended out for 200 miles in all directions except only 75 miles in the southwest quadrant. By 11:00 PM EST the highest winds increased to 125 to 150 miles an hour near the center and the central pressure lowered to 945 mbs. or 27.90 inches.

On September 3, Hurricane Betsy skirted the Bahamas moving northwest at 10 miles an hour. On September 4, it slowed down, came to a standstill, and then gradually performed another loop. Betsy reached its farthest north location in the Atlantic of 430 miles south of Cape Hatteras, N. C. at 8:00 AM EST. A large high pressure area over the Eastern United States effectively blocked any further northward movement of the hurricane, and at 11:00 PM on September 5, Betsy began an unusual southward movement at 8 miles an hour. The center was then located at 27.6° North Latitude and 75.6° West Longitude or 125 miles northeast of Great Abaco Island, Bahamas. Highest winds were 125 miles an hour. Gales extended 300 miles to the north and 150 miles to the south of the center. The Bahamas were warned to expect hurricane force winds and tides of 10 feet or a little higher where the center would move through the Bahamas on Monday.

Early Labor Day morning, September 6, Hurricane Betsy turned toward a more southwesterly course at 8 miles an hour. At 5:00 AM EST it was centered 75 miles northeast of Hope Town, Great Abaco, Bahamas, and 270 miles east northeast of Miami. At this time a Hurricane Watch was issued for the southeast Florida coast. At 9:00 AM EST winds reached 85 miles an hour on Great Abaco Island in the Bahamas when the center was 60 miles east of the Island. Central pressure was 958 mbs. or 28.29 inches. At 11:00 AM EST a Hurricane Warning was issued for extreme southern Florida from Palm Beach to Key West and northward to Everglades City including Florida Bay. Hurricane Watch went into effect from Palm Beach to Cape Kennedy and on the west coast north of Everglades City to Punta Gorda. At 1:00 PM EST winds were 135 miles an hour on Great Abaco Island and reached a high of 140 miles an hour by 3:00 PM EST. The highest wind at Great Abaco of 147 miles an hour was measured some time before 7:00 PM EST and hurricane force winds prevailed there for 20 hours.

The Miami Weather Bureau radar picked up the eye of Hurricane Betsy on September 6 when it was over 220 nautical miles away. Land based radars tracked the hurricane for the remainder of its existence except for about 10 hours early September 9 when Betsy was moving through the eastern Gulf of Mexico. On September 7, severe Hurricane Betsy was under constant surveillance by land-based radars of the Weather Bureau at Miami, the Radar Laboratory of the University of Miami, and the Air Force Missile Test Range station on Grand Bahama as well as Air Force and Navy reconnaissance aircraft.

On Tuesday morning, September 7, the wall cloud swept over Nassau with an open eye of about 40 miles in diameter to the north. The severe hurricane stalled about noon while centered 30 miles north of Nassau and Nassau received a severe pounding from the violent winds and high tides. Lowest pressure reported at the time was 957 mbs. or 28.25 inches. In the early afternoon Hurricane Betsy started moving westward. At 2:00 PM the Hurricane Warnings were extended on the Florida east coast as far north as Ft. Pierce and on the Florida west coast to Venice.

At 5:00 PM EST on September 7 the Weather Bureau warned that storm tides up to 6 to 10 feet above normal in the hurricane area would flood islands, keys, and coastal areas between Fort Lauderdale and Key Largo. Persons subject to flooding by these tides were urged to evacuate at once. Persons in one story dwellings on Miami Beach and similar coastal areas were urged to consider moving either to buildings of two or more stories or move to the mainland.

At 10:30 PM EST winds of 81 miles an hour were recorded on Miami Beach and at 11:25 PM EST winds reached 75 miles an hour at Key Largo. By midnight the winds reached 83 miles an hour at Port Everglades. Hurricane force winds lashed the Miami area up to 12 hours. The peak gust at the National Hurricane Center, Coral Gables, was 105 miles an hour. High winds, tidal flooding and beach erosion caused damage along the lower Florida East Coast estimated to be from \$100,000,000 to \$150,000,000. There were four deaths in Florida.

On the morning of September 8, severe Hurricane Betsy moved westward at about 10 miles an hour across the Upper Keys. Gales extended 300 miles in all quadrants from the center. The large eye, about 40 miles in diameter, moved over Key Largo about 3:45 AM EST. The lowest pressure of 953 mbs. or 28.14 inches was recorded on Plantation Key. Wind speeds reached 100 to 140 mph generally from Homestead southward through the Keys. Rainfall was from 4 to 6 inches in the area of strong winds with rainfall amounts diminishing rapidly with distance from the storm center.

Two tornadoes were reported in Florida in connection with Hurricane Betsy. One tornado occurred at Punta Gorda (23 miles north northwest of Fort Myers), at 4:30 PM EST on September 8. The other tornado, 4 miles north of Fort Walton Beach (30 miles east of Pensacola), at 4:05 PM EST on September 9 destroyed a marina with 12 boats.

Betsy had moved through the Florida Keys and into the Gulf of Mexico by 11 AM EST September 8. Air Force reconnaissance and the Miami and Key West radar reports indicated the storm was moving west and by early afternoon it had increased in speed from 12 to 15 miles an hour. Navy reconnaissance indicated that the storm was also intensifying with a central pressure of 28.00 inches. Dry Tortugas reported westerly winds of 120 miles an hour during the afternoon when the center passed to the north of the station. Hurricane warnings were lowered over the Florida Peninsula at 5:00 PM EST. At that time Betsy was centered at 25.4° North Latitude and 83.1 West Longitude or 105 miles west northwest of Key West.

Air Force and Navy reconnaissance planes followed the storm very closely sending reports on the eye location every 2 to 3 hours as it passed through the Florida Keys and the Gulf of Mexico. Land based coastal radar (New Orleans and the Naval Air Station, Pensacola) picked up the storm center at noon EST September 9 about 225 miles south of Mobile, Alabama. These reports indicated a gradual change in direction from west northwest to northwest and a corresponding increase in forward speed from 17 to 22 miles an hour by 9 PM EST on September 9.

At 8 PM EST September 8, a Hurricane Watch was advised for the area from the mouth of the Mississippi River westward to Matagorda Bay on the central coast of Texas. Evacuation was recommended for off-shore oil rig installations and it was recommended that all industrial equipment be secured. Hurricane Warnings were issued at 7 AM EST September 9 from the mouth of the Mississippi River westward to Galveston, Texas. The advisory requested that low lying coastal areas should be evacuated as soon as possible and more than 250,000 people heeded the request. At 2 PM EST the area of Hurricane Warnings was extended eastward as far as Mobile, Ala. The evacuation of the lake front along Lake Pontchartrain was recommended by 7:30 PM EST.

As the storm approached the coast of Louisiana and Mississippi highest winds were estimated at 150 miles an hour, tides were expected to reach 6 to 12 feet from the mouth of the Mississippi River eastward to Pensacola, and heavy rains with local accumulations of 4 to 8 inches were forecasted for southeast Mississippi and Louisiana. Tornadoes were forecast for the area within 100 miles of the coast from Biloxi, Mississippi to Apalachicola, Florida on the advisory for 5 PM EST September 9. The possibility of a tornado or two in Southern Mississippi and Southwest Alabama was also included in the advisory for 3 AM EST September 10.

By 6 PM EST the Grand Isle Coast Guard station reported winds of 70 to 105 miles an hour with gusts to 160 miles an hour. The eye of the storm passed 30 miles to the west of Burwood, Louisiana, at the mouth of the Mississippi River at 9 PM EST on September 9. At that time, Pilottown, Louisiana reported that winds were gusting to over 100 miles an hour. Landfall took place at 11 PM EST near Grand Isle on the Louisiana coast with the barometer reading 28.00 inches and tides 8.9 feet above mean sea level. By 11:20 PM EST the winds at New Orleans had exceeded 100 miles an hour and by midnight the storm was 35 miles southwest of New Orleans. The winds reached 125 miles an hour at 11:46 PM at which time power failed at the New Orleans Weather Bureau Office and advisory responsibility was transferred back to Miami.

Tides apparently reached 10 to 12 feet above MSL over most of the coastal area east of Grand Isle to the Mississippi coast. Along the Mississippi coast tides were generally in the 7 to 10 foot range and 3 to 6 feet MSL elsewhere along the Eastern Louisiana coast. The tides at Bay St. Louis along the southeast coast of Alabama were reported as 12 feet above sea level between 1 and 2 AM EST September 10. The Mississippi River at New Orleans rose 10 feet during the height of the storm.

The center passed over Houma, Louisiana between 1 and 2 AM EST September 10 and a pressure of 28.00 inches and surface winds gusting to over 130 miles an hour were recorded. The eye soon moved over Thibodaux with a barometric reading of 28.02 inches. Betsy had moved 20 miles to the west of Baton Rouge by 5 AM EST with winds of 100 miles an hour near the center. The 14 day storm moved inland across Louisiana on a northwest to northerly course with the forward speed decreasing to 10 to 15 miles an hour and the winds diminishing to 75 miles an hour in squalls by 8 AM EST September 10. Rapidly losing intensity as it moved inland, it was downgraded to a tropical storm by 11 AM EST September 10 at which time it was located 50 miles northeast of Alexandria, Louisiana. The weakening storm was approaching Memphis, Tennessee by 6 AM EST September 11 and could no longer be followed as a tropical storm.

Heavy rainfall, generally 4 to 7 inches, occurred over most of the lower Mississippi and lower Ohio Valley on Friday or Saturday. The total rainfall for Friday, September 10 ranged from 3 to 5 inches in Louisiana, Mississippi and Arkansas. Saturday, September 11 rainfall totals ranged from 2 to 4 inches in western Mississippi and Tennessee, Eastern Arkansas, Southern Illinois and Indiana and Western Ohio. Sunday, September 12 the total rainfall caused by the remnants of Betsy ranged from 1 to 2 inches in Eastern Tennessee and Kentucky, Ohio, Western Pennsylvania, Northern Virginia, and Maryland.

As Hurricane Betsy moved across Louisiana, two tornadoes occurred. One tornado struck Theodore (10 miles southwest of Mobile), Alabama, about midnight on September 9. The other tornado occurred 6 miles west of Walnut (50 miles north northwest of Tupelo), Mississippi, at 6:30 PM on September 10, destroying one residence.

Hurricane Betsy was the most destructive of record on the Louisiana coast. Although the coastal area was 90% evacuated with 1/4 of a million people having evacuated their homes, the first estimate indicates 53 deaths in Louisiana. Several communities along the Mississippi River below New Orleans were wiped out by wind and water. Approximately 1,000 homes were destroyed and 150,000 homes will require major or minor repairs. There was considerable damage to the sugar cane, cotton, rice and pecan crops in Louisiana, Mississippi, Southern Alabama and Arkansas. Oil and utility company losses will be high in Southern Louisiana. The damages are severe along the coast of Mississippi and in Southeastern Louisiana including the mouth of the Mississippi, the Delta area, New Orleans, Pontchartrain Lake area and Baton Rouge. It is felt that total losses in these areas may range between one half and one billion dollars.