

Tropical Cyclone Report
Tropical Storm Jose
(AL112011)
27 – 28 August 2011

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Jose was a short-lived tropical storm of non-tropical origin that passed a short distance west of Bermuda.

a. Synoptic History

Jose originated from a mesoscale convective system that developed north of an upper-level low on 25 August about 700 n mi east-southeast of Bermuda. Microwave satellite data indicate that a small low/mid-level vortex formed on the western side of the convective complex late that day. The vortex moved westward accompanied by intermittent convection, and Advanced Scatterometer (ASCAT) data showed that an associated surface low formed near 1200 UTC 26 August. Convection became more persistent starting near 0000 UTC 27 August, and it is estimated that the low became a tropical depression 6 h later while located about 305 n mi south-southeast of Bermuda. 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 1¹.

Strong northeasterly vertical wind shear caused by the outflow from Hurricane Irene located to the northwest of the cyclone slowed development. Despite this, the depression strengthened into a tropical storm by 1200 UTC 27 August. Steered by flow on the southwestern side of the subtropical ridge, Jose turned west-northwestward at that time, followed by a turn toward the northwest early on 28 August and toward the north later that day. The storm reached an estimated peak intensity of 40 kt early on 28 August, and it maintained this intensity as it passed about 55 n mi west of Bermuda around 1800 UTC 28 August (Figure 4). After passing Bermuda, Jose accelerated toward the north and north-northeast as it entered strong low-level flow produced by Irene. The associated convection dissipated due to increasing easterly shear, and it is estimated that Jose degenerated to a remnant low near 0000 UTC 29 August about 120 miles north-northwest of Bermuda. The low was absorbed by a cold front later that day a few hundred n mi south of Nova Scotia.

b. Meteorological Statistics

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.

Observations in Jose (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). Data and imagery from NOAA polar-orbiting satellites (including the Advanced Microwave Sounding Unit), the NASA Tropical Rainfall Measuring Mission (TRMM) and Aqua, the European Space Agency's ASCAT, and Defense Meteorological Satellite Program (DMSP) satellites, among others, were also useful in constructing the best track of Jose.

The center of Jose passed near NOAA buoy 41049 on 27 August. The buoy reported a peak 1-minute wind of 32 kt and a peak gust of 37 kt at 1147 UTC that day. These data, and the likelihood that the buoy did not sample the maximum winds, are the basis for making Jose a tropical storm at 1200 UTC that day. The buoy reported a minimum pressure of 1009.8 mb at 0950 UTC 27 August.

The estimated peak intensity of 40 kt is based on multiple scatterometer observations of winds of 35-40 kt on 28-29 August.

Commissioner's Point on Bermuda (elevation 262 ft AMSL) reported 10-min winds of 40 kt at 1710 UTC 28 August, with a peak gust of 53 kt at 1720 UTC. The airport weather station on Bermuda reported 2-min winds of 32 kt at 1750 UTC 28 August and a wind gust of 39 kt at 1755 UTC. A ship north of Bermuda reported winds of 50 kt at 2030 UTC 28 August. However, the reported seas were not consistent with the winds, and the reliability of the report is suspect.

c. Casualty and Damage Statistics

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

d. Forecast and Warning Critique

The genesis of Jose was essentially unforecast. The system was first mentioned in the Tropical Weather Outlook (TWO) at the time of genesis in the best track, at which time it was given a near zero percent chance of development. The genesis probability was not changed until a special TWO at 0900 UTC 28 August, at which time the chance was raised to 30 percent. This TWO was issued 3 h before the first advisory. It appears that the genesis forecasts underestimated the ability of this small cyclone to develop given the intermittent convection and the continuous strong shear. It should be noted, however, that the convective organization of Jose only barely met the standards necessary to consider the storm a tropical cyclone.

There are too few forecasts on Jose to perform a meaningful verification of either the track or the intensity forecast. However, the intensity forecast correctly anticipated that Jose would not develop further due to increasing shear and that it would quickly dissipate.

A tropical storm warning was issued for Bermuda at 1200 UTC 28 August. This warning was discontinued at 0000 UTC 29 August after the center of Jose made its closest approach to the island.

Acknowledgements

The Bermuda Weather Service provided the surface and radar data from Bermuda.

Table 1. Best track for Tropical Storm Jose, 27 – 28 August 2011.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
26 / 1200	27.3	59.0	1016	30	low
26 / 1800	27.4	60.2	1014	30	"
27 / 0000	27.5	61.3	1013	30	"
27 / 0600	27.7	62.4	1011	30	tropical depression
27 / 1200	27.9	63.4	1008	35	tropical storm
27 / 1800	28.3	64.3	1008	35	"
28 / 0000	29.1	64.9	1008	35	"
28 / 0600	29.8	65.5	1007	40	"
28 / 1200	30.9	65.7	1006	40	"
28 / 1800	32.4	65.8	1006	40	"
29 / 0000	34.2	65.6	1007	40	low
29 / 0600	36.2	65.1	1009	35	"
29 / 1200	38.3	63.8	1012	30	"
29 / 1800					absorbed by frontal system
28 / 1200	30.9	65.7	1006	40	minimum pressure

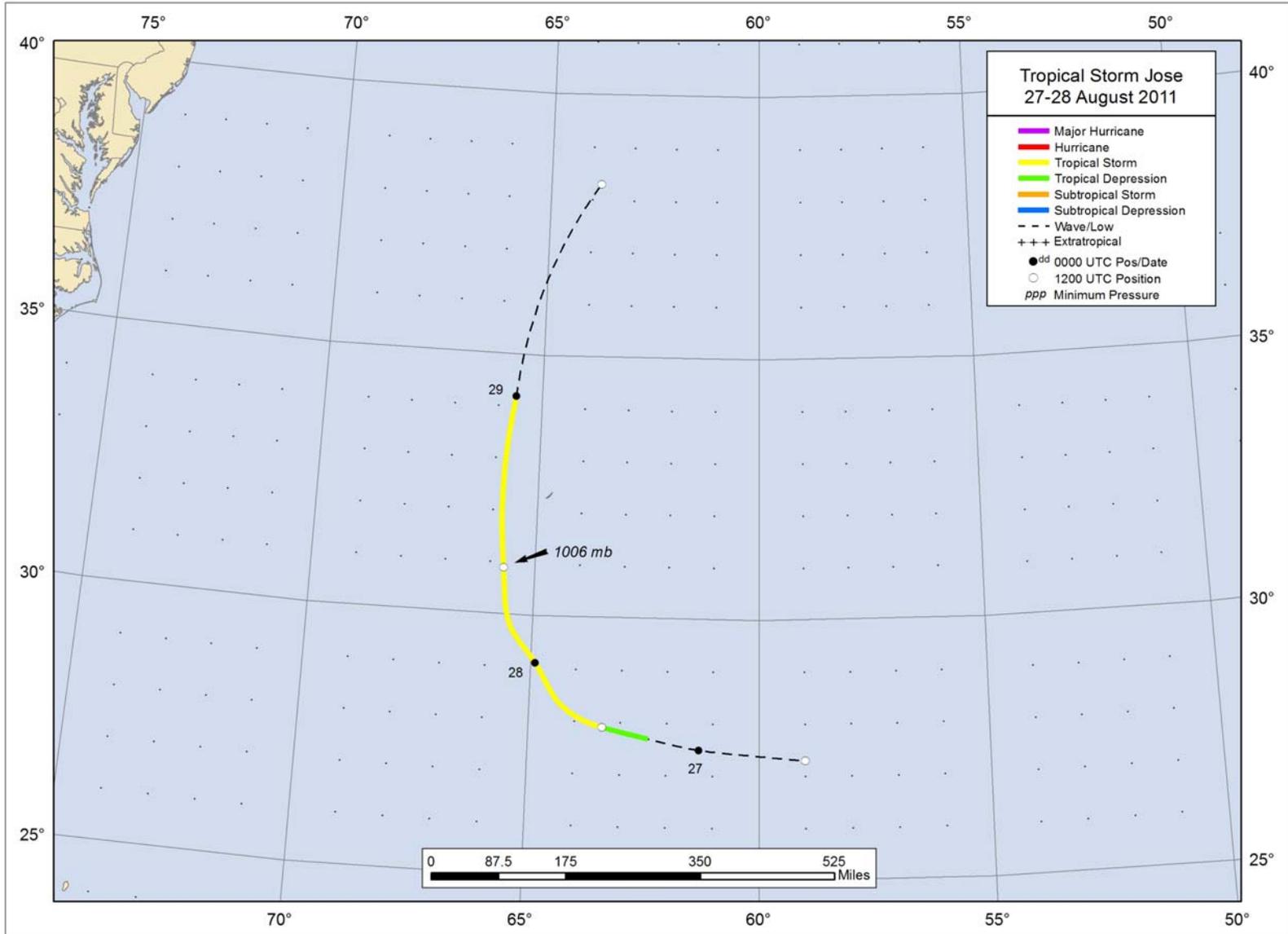


Figure 1. Best track positions for Tropical Storm Jose, 27 – 28 August 2011.

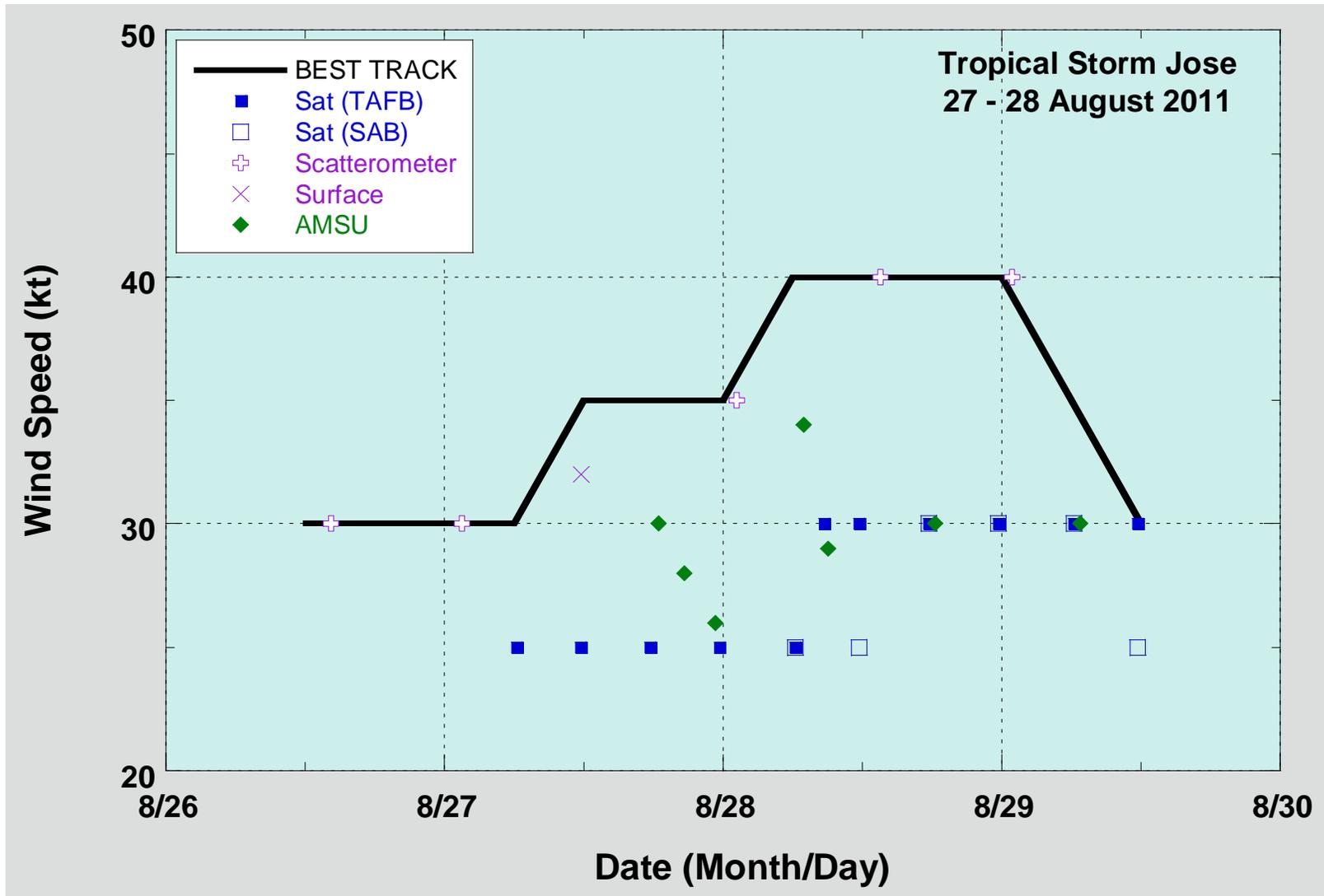


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Storm Jose, 27 – 28 August 2011. AMSU intensity estimates are from the Cooperative Institute for Meteorological Satellite Studies technique. Dashed vertical lines correspond to 0000 UTC.

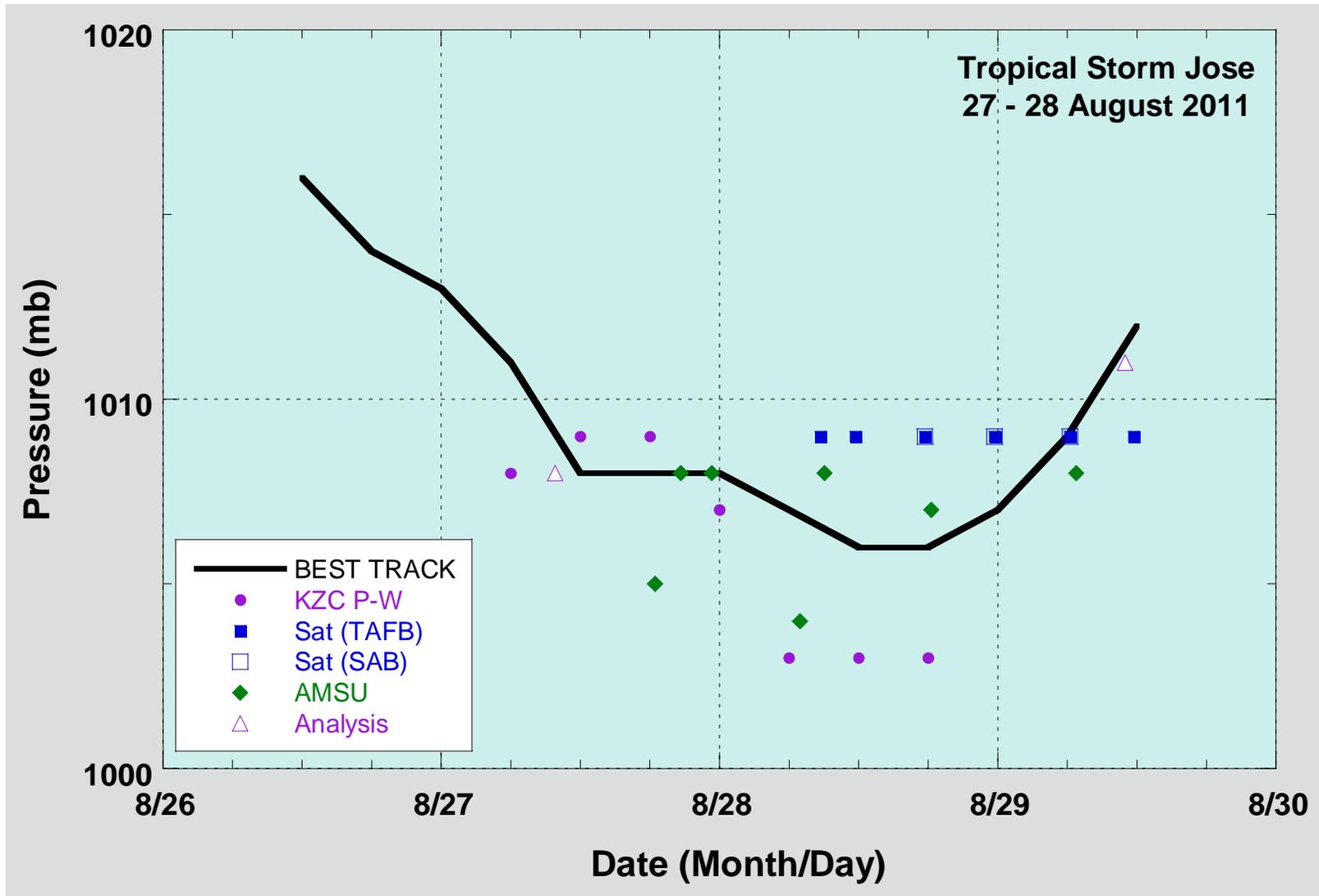


Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Storm Jose, 27 – 28 August 2011. AMSU intensity estimates are from the Cooperative Institute for Meteorological Satellite Studies technique. The KZC P-W values are obtained by applying the Knaff-Zehr-Courtney pressure-wind relationship to the best track wind data. Dashed vertical lines correspond to 0000 UTC.

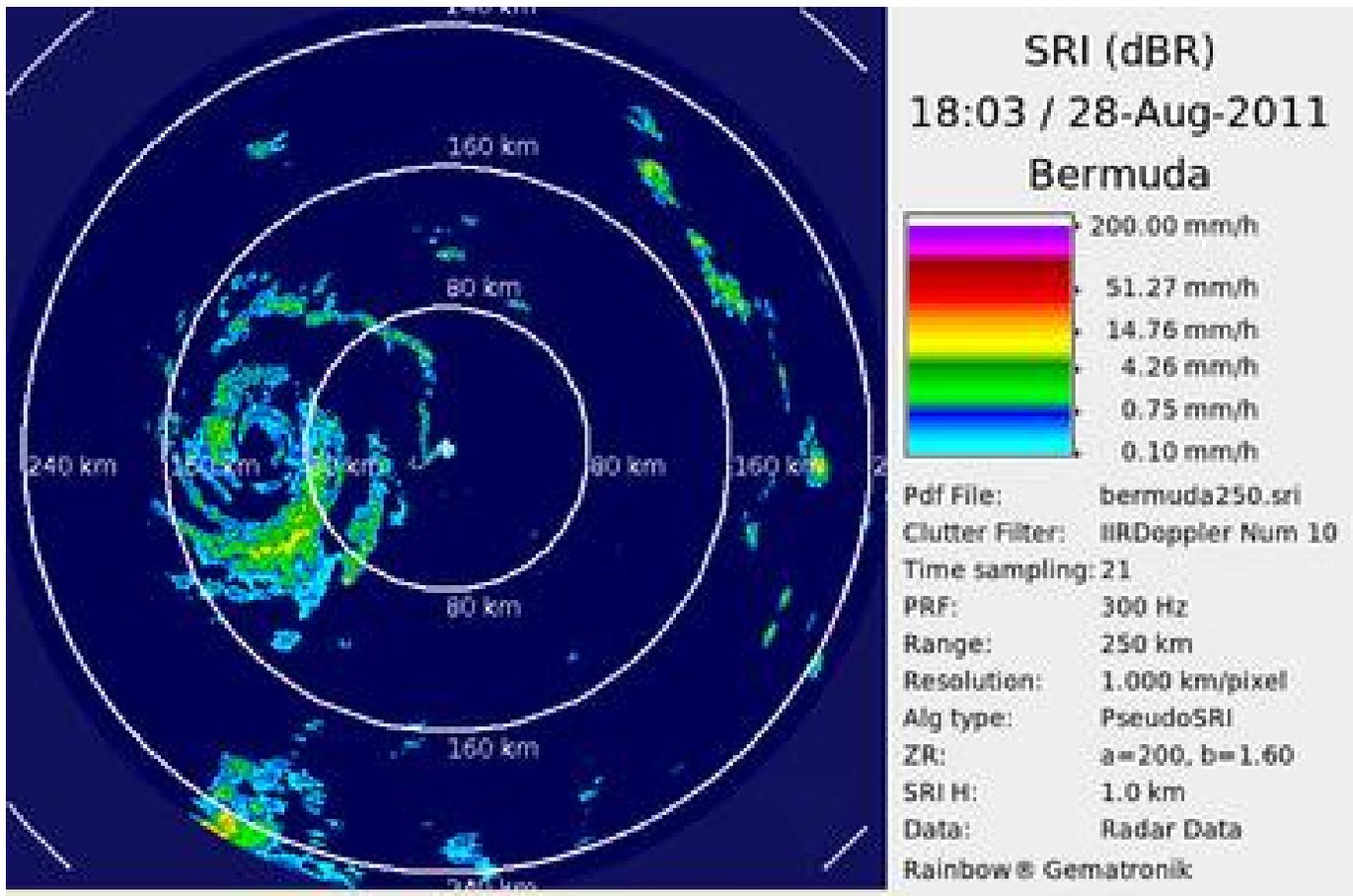


Figure 4. Radar image of Jose passing west of Bermuda at 1803 UTC 28 August. Image courtesy of the Bermuda Weather Service.