

Tropical Cyclone Report  
Hurricane Octave  
31 October - 3 November 2001

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Octave was a hurricane far from land over the eastern Pacific basin with winds reaching 75 knots.

a. Synoptic History

Octave originated in the intertropical convergence zone and its development was likely initiated by a weak tropical wave that had moved westward across Central America on 22 October. By the 27<sup>th</sup>, convection had increased over a large area between 95 - 115 degrees west longitude and between 8 - 15 degrees north latitude. A low-level circulation gradually developed within this area and became a tropical depression on the 31<sup>st</sup> while centered about 1000 n mi southwest of the southern tip of Baja California. The "best track" of the tropical cyclone begins at 0000 UTC on the 31<sup>th</sup>. A map of the best track positions is shown in Fig. 1 and six-hour center positions, wind speeds, and central pressures are listed in Table 1. Time series curves of best track wind speed and pressure are shown in Figs. 2 and 3.

The cyclone started out to the south of a mid-layer ridge, but a weakness soon developed in this ridge from a trough approaching from the west. This resulted in a general northwestward track. More specifically, the cyclone moved toward the west-northwest on the 31<sup>st</sup>, followed by a turn toward the north-northwest on the 1<sup>st</sup>. On the 3<sup>rd</sup>, low-level steering turned it back toward the west-northwest.

Under light vertical shear for 48 hours, the depression gradually strengthened to a 75 knot hurricane by 1 November, with a ragged eye visible for a few hours on satellite images. Vertical shear began increasing on the 1<sup>st</sup> and reached 30-35 knots on the 3<sup>rd</sup>. During this period, Octave weakened from a 75-knot hurricane to a dissipating swirl of low clouds on the 3<sup>rd</sup>, located about 1300 n mi west-southwest of the southern tip of Baja California.

b. Meteorological statistics

Satellite images were the primary data source to estimate the maximum 1-minute surface wind speed and minimum central surface pressure. The satellite intensity estimates are plotted in Figs. 2 and 3.

c. Casualty and damage statistics

No deaths or damages are attributed to Octave.

d. Forecast and warning critique

The official track forecast errors were 11, 25, 40, 46, 64, and 192 n mi, respectively

for the 0-, 12-, 24-, 36-, 48-, and 72-hour forecasts. The number of cases ranged from 13 at 0 hours to only one case at 72 hours. These errors are considerably smaller than the previous official ten-year averages at 12 through 48 hours and about the same as the previous averages at 0 and 72 hours. The official wind speed errors were 1, 7, 9, 12, 15, and 5 knots for the 0-, 12-, 24-, 36-, 48-, and 72-hour forecasts. These errors are all smaller than the previous ten-year average official errors.

Table 1. Best track for Hurricane Octave, 31 October - 3 November 2001.

| Date/Time (UTC) | Latitude (°N)   | Longitude (°W) | Pressure (Millibar) | Wind Speed (kt) | Stage               |
|-----------------|-----------------|----------------|---------------------|-----------------|---------------------|
| 31 /0000        | 12.1            | 122.8          | 1007                | 30              | tropical depression |
| 31 /0600        | 12.5            | 123.9          | 1005                | 35              | tropical storm      |
| 31/1200         | 13.0            | 124.8          | 1004                | 35              | “                   |
| 31/1800         | 13.4            | 125.8          | 1002                | 40              | “                   |
| 01/0000         | 14.1            | 126.8          | 997                 | 50              | “                   |
| 01/0600         | 14.6            | 127.7          | 997                 | 50              | “                   |
| 01/1200         | 15.1            | 128.2          | 994                 | 55              | “                   |
| 01/1800         | 15.8            | 128.4          | 987                 | 65              | hurricane           |
| 02/0000         | 16.5            | 128.6          | 980                 | 75              | “                   |
| 02/0600         | 17.0            | 128.8          | 980                 | 75              | “                   |
| 02/1200         | 17.5            | 129.2          | 985                 | 65              | “                   |
| 02/1800         | 17.9            | 129.5          | 989                 | 60              | tropical storm      |
| 03/0000         | 18.3            | 130.2          | 997                 | 45              | “                   |
| 03/0600         | 18.5            | 131.0          | 1004                | 35              | “                   |
| 03/1200         | 18.7            | 131.8          | 1005                | 30              | tropical depression |
| 03/1800         | 18.8            | 132.5          | 1009                | 30              | “                   |
| 04/0000         | low cloud swirl |                |                     |                 |                     |
| 02/0000         | 16.5            | 128.6          | 980                 | 75              | minimum pressure    |

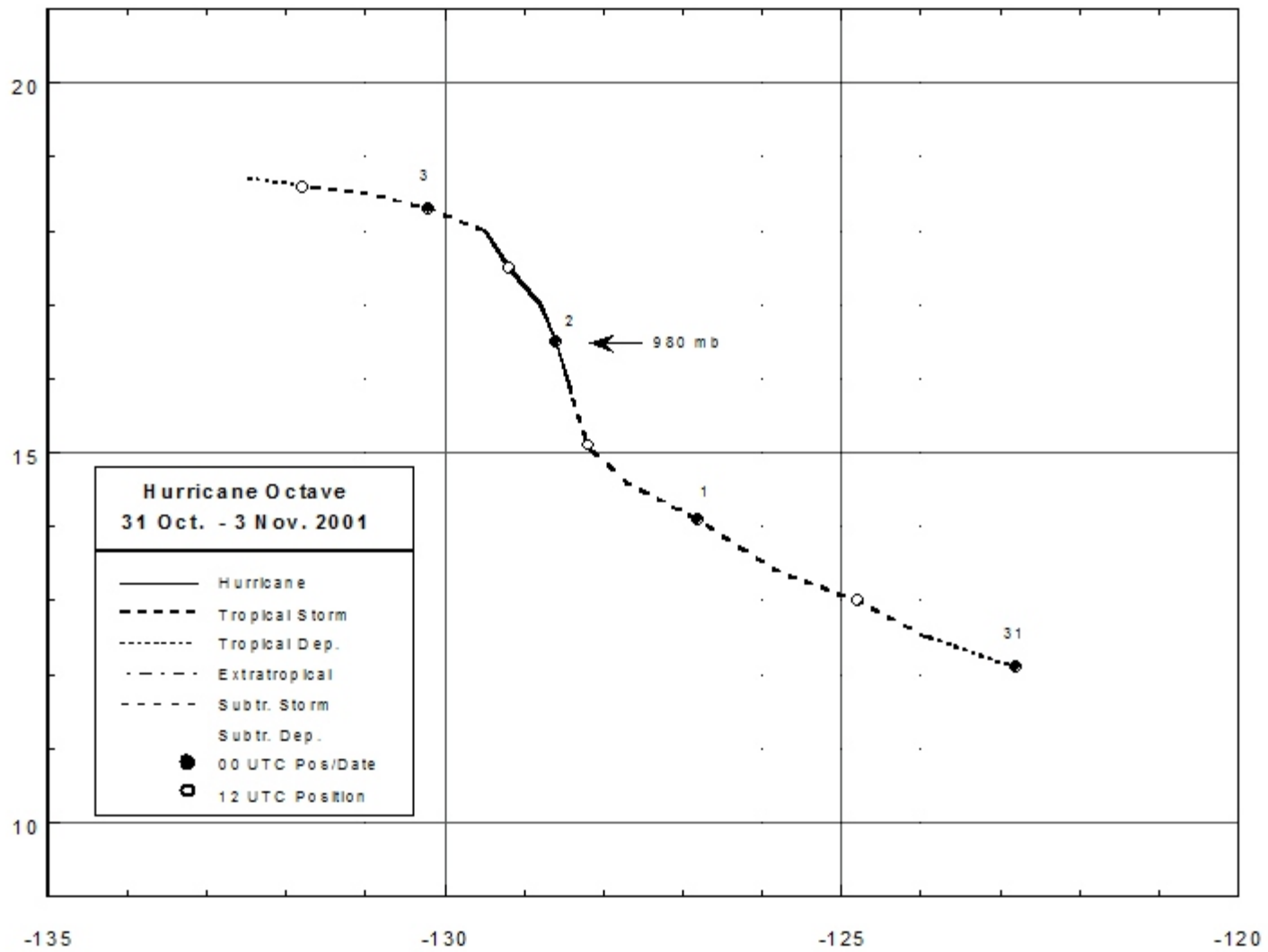


Figure 1. Best track positions for Hurricane Octave, 31 October - 3 November 2001.

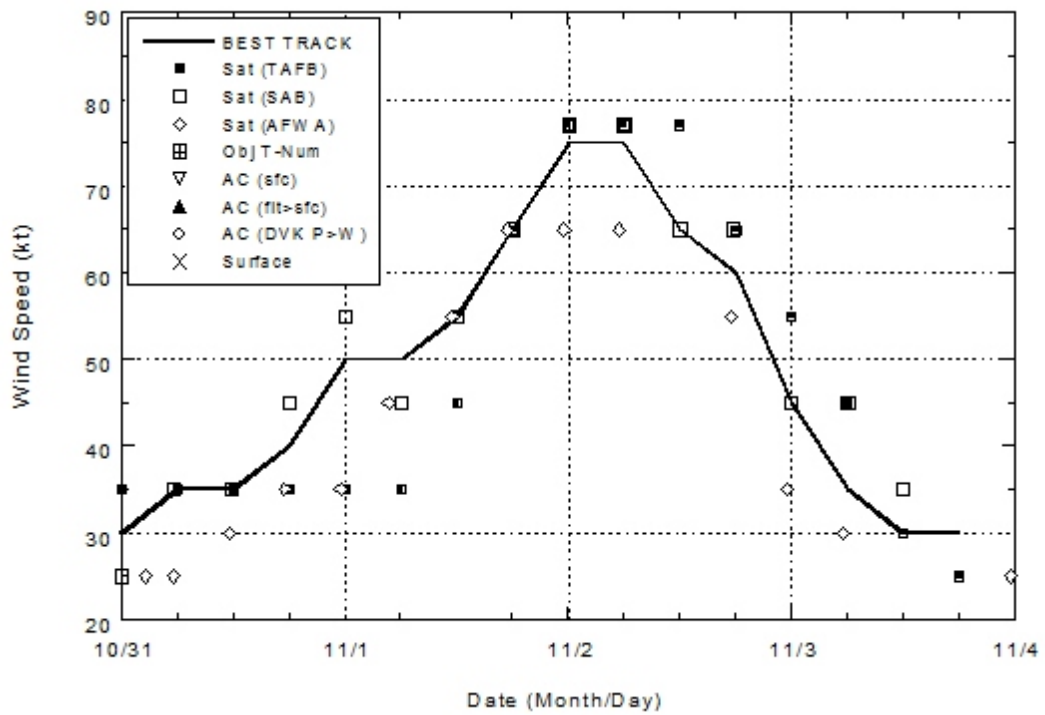


Figure 2. Best track maximum sustained surface wind speed curve for Hurricane Octave, 31 October - 3 November 2001, and the observations on which it is based.

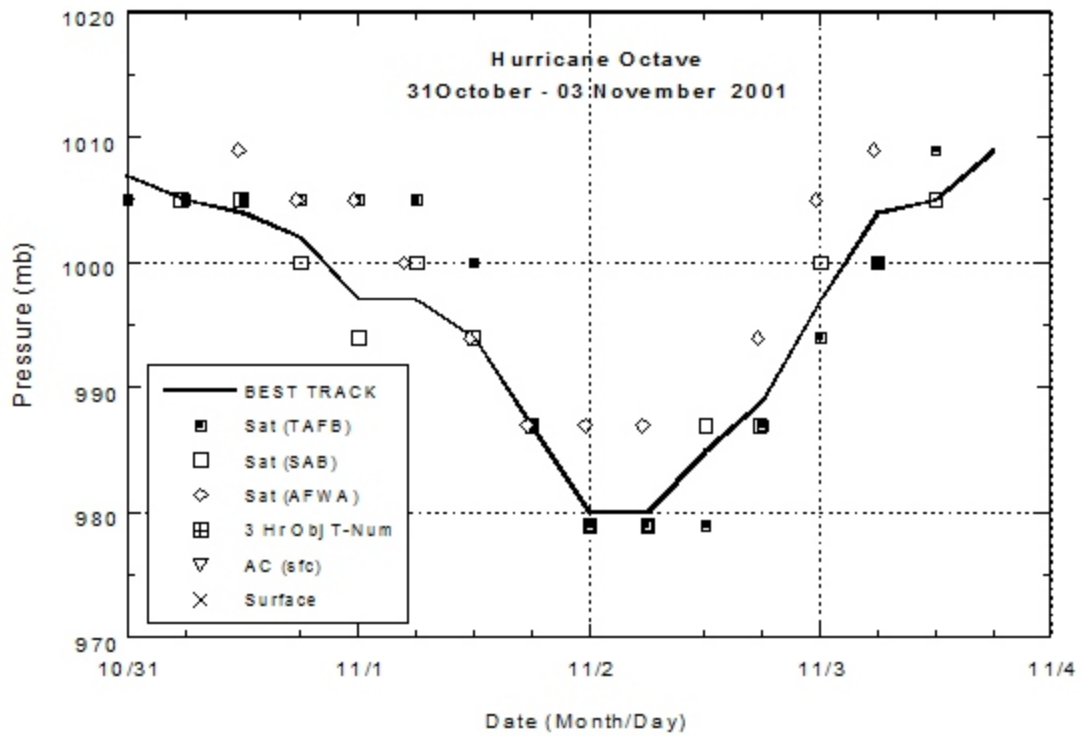


Figure 3. Best track minimum central pressure curve for Hurricane Octave, 31 October - 3 November 2001, and the observations on which it is based.