

PICTURES OF THE MONTH

Hurricanes in the Central-Eastern Pacific

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The presence of a hurricane near the Hawaiian Islands is rare, and two at the same time becomes an extreme. Climatological records indicate that most storms do not pass west of 135W. August 1972 was indeed a record breaker with three storms, Hurricanes Celeste, Diana, and Fernanda, passing near the Islands (Anon., 1972). All three storms had their origin in the Eastern Pacific formation area near Mexico and moved due west. In fact, 1972 was a very active year with several tropical storms occurring west of 140W, as indicated in Fig. 1.

Hurricane Celeste and Tropical Storm Diana both appeared on the 16 August 1972 high resolution Air Force Weather Service DAPP data. The centers of the storms at 2200 GMT were 14.5N, 160.4W and 18.1N, 143.3W, respectively. Hurricane Celeste's winds were estimated to be 90 kt and Tropical Storm Diana's were estimated to be 50 kt. By comparing the visual and infrared data, Figs. 2 and 3, respectively, it was determined that a major portion of the clouds associated with Tropical Storm Diana were low-level. A detailed study

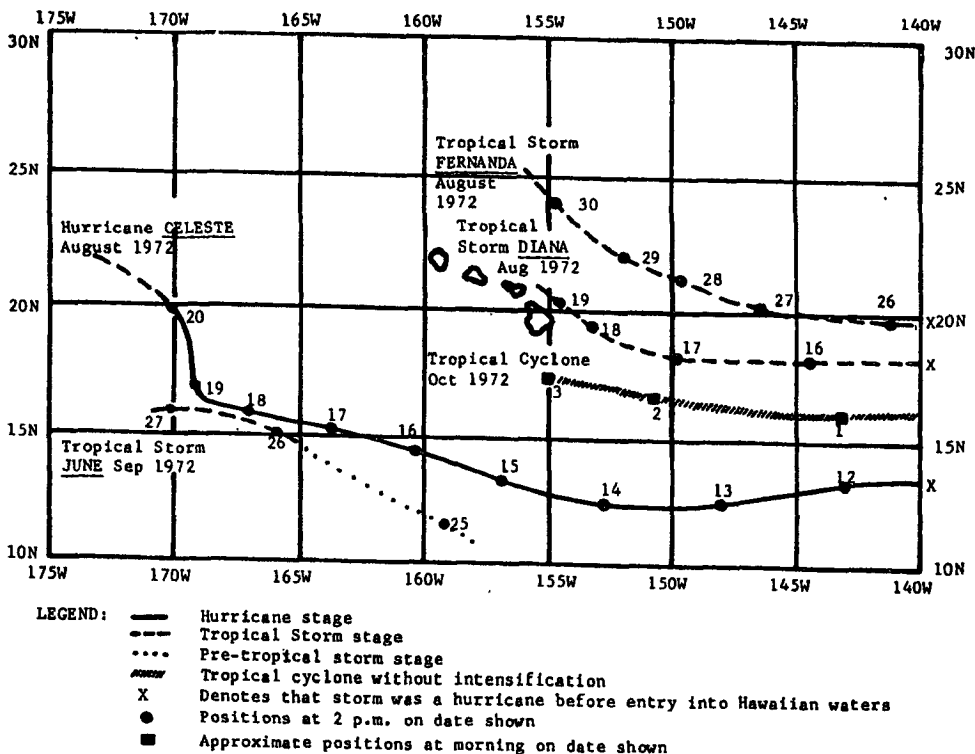


FIG. 1. Tracks of tropical cyclones in the vicinity of the Hawaiian Islands, August-October 1972.

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FIG. 2. Air Force Weather Service visual-range DAPP data, 2200 GMT 16 August 1972.



FIG. 3. Infrared data corresponding to Fig. 2. White represents effective radiating temperatures of 190K or colder, and the darker shades represent progressively warmer temperatures.

indicated that the clouds to the northwest of Diana were below the trade inversion. The tops of the cirrus shields for both storms were determined to be in excess of 13 km.

Hurricane Celeste continued its westward path, passing very near Johnston Atoll and causing heavy, extensive damage to the facilities. The maximum winds were as high as 95 kt. Diana dissipated just to the east of Hawaii with very little effect on the Islands.

The climatology of tropical storms in the central-Eastern Pacific has been limited until the advent of

satellite meteorology. Of the numerous storms that occurred in this area, many did not traverse normal shipping or air lanes and went undetected. The satellite has enabled us not only to detect and locate these storms with a high degree of accuracy, but also to estimate their intensity.

REFERENCES

- Anon., 1972: Summary of 1972 Hurricane Season in the Central Pacific. November 1972, Regional Climatologist, NWS, Honolulu, Hawaii.