



Fig. 1. Satellite cloud picture

NOAA 3 Orbit No. 4541; Angle of equator crossing 75.97 W at 0.7h 39m 01s IST of 8 Nov. 1974

551.576.1 : 551.558 : 551.515.21

STUDY OF UNUSUAL CLOUD FEATURE ASSOCIATED WITH SEA CONVECTION

1. Fujita (1964) observed an interesting cloud feature with a cloudy area of 500 km in diameter surrounded by a cloud-free area over an island in Japan frequently in the afternoon. He found that the convection over the heated island had accentuated the convergence over the land area and the descending motion over the ocean surrounding the island had suppressed the development of clouds which resulted in a clear circular area. In this note the author has studied a cloud pattern over the equatorial trough in the Bay of Bengal which is similar to that observed by Fujita over the island.

2. The satellite cloud picture (NOAA-3) of 0739 IST of 8 November 1974 (Fig. 1) shows a dense cloud patch (cumuli type) over the Bay of Bengal covering an area of about 400 km diameter. This area is surrounded by an annular almost cloud-free area of about 400 km width on all sides with further extension to the south as well as to the north through the surrounding cloud area. This cloud feature shown in Fig. 1 has been transferred to a cloud chart at Fig. 2 to facilitate easy comparison with sea surface temperature chart selected for this study.

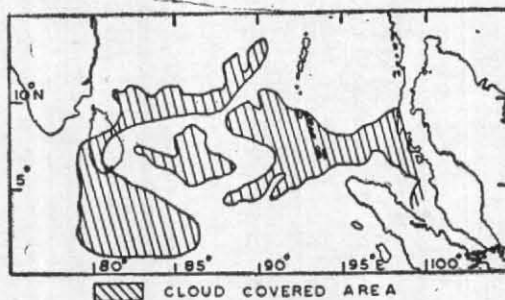


Fig. 2. Cloud chart depicting the cloud covered area in the satellite picture (Fig. 1)

3. An examination of available sea surface air temperature chart at 1200 GMT of 7 November 1974 indicated a warm cell of 30°C over the region to the east of the observed cloud formation which probably had shifted westward to the latest observed position of 8 November 1974. This warm cell over sea might have behaved in a fashion similar to that of land convection as observed by Fujita (1964), and resulted in such an unusual cloud pattern, which is quite different from the various cloud cluster patterns studied by Gray (1968) in association with the equatorial trough over Western Pacific.

4. (a) The present study shows that the patch of convective cloud can occur over the open ocean in association with heat island over the sea.

(b) The sea surface air temperatures may give an indication of the existence of heat islands over the ocean causing local convective clouds, which are of temporary nature and thus enable the syno-

ptician to draw correct conclusion for day to day operational work.

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