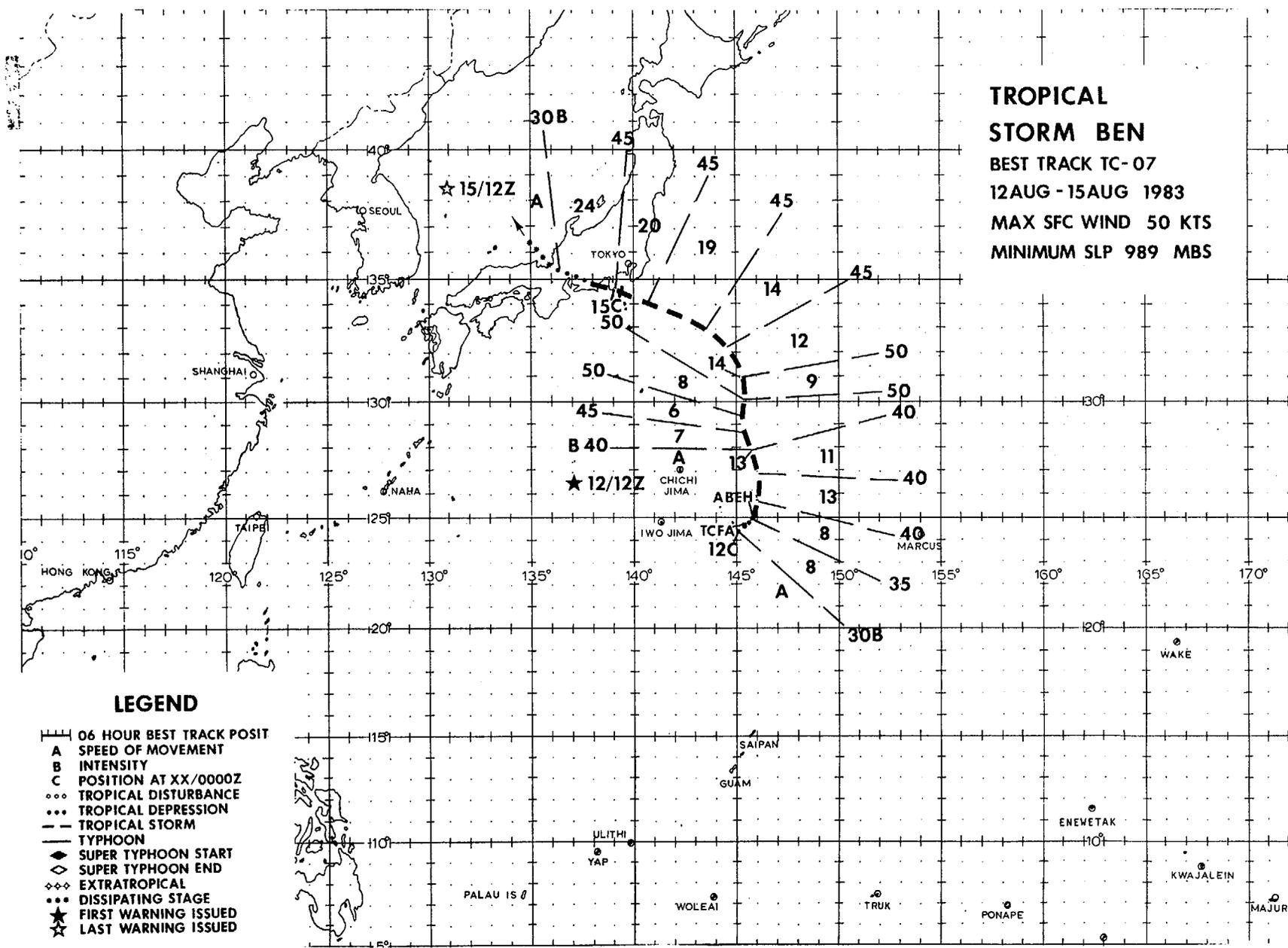


**TROPICAL  
STORM BEN**  
BEST TRACK TC-07  
12AUG - 15AUG 1983  
MAX SFC WIND 50 KTS  
MINIMUM SLP 989 MBS



**LEGEND**

- 06 HOUR BEST TRACK POSIT
- A SPEED OF MOVEMENT
- B INTENSITY
- C POSITION AT XX/0000Z
- ... TROPICAL DISTURBANCE
- ... TROPICAL DEPRESSION
- TROPICAL STORM
- TYPHOON
- ◆ SUPER TYPHOON START
- ◇ SUPER TYPHOON END
- ◆◆ EXTRATROPICAL
- ◆◆ DISSIPATING STAGE
- ★ FIRST WARNING ISSUED
- ★ LAST WARNING ISSUED

TROPICAL STORM BEN (07W)

As Typhoon Abby approached Japan from the southwest, satellite imagery indicated that an area of intense convection was forming on the eastern periphery of its circulation (Figure 3-07-1). Surface and 200 mb analyses at the time (Figure 3-07-2 and 3-07-3) indicated that the convection was not associated with a separate surface circulation but with an area of highly divergent flow at upper-levels. This flow was associated with a TUTT cell located to the northeast of Abby.

This area of active convection persisted with no apparent associated low-level circulation until 12 August, when visual satellite imagery indicated the presence of a low-level circulation on the western edge of the convective activity. The presence of a surface circulation in an area of such strong upper-level divergence prompted the issuance of a TCFA at 120419Z.

Reconnaissance aircraft investigated this area later in the day and located a poorly defined circulation with a highly asymmetric wind field. Winds of 40 kt

(21 m/s) were observed over a broad area in the southeastern semicircle of the circulation but winds to the north and west were in the 10-20 kt (5-10 m/s) range. The first warning for Tropical Storm Ben was issued at 121200Z and forecasted northwestward movement up the eastern coast of Japan at the periphery of the subtropical ridge. This forecast scenario appeared valid for the next 24 hours as Ben moved northward and turned westward as expected. However, westward motion was greater than originally forecast and Ben moved rapidly along the southern coast of Honshu prior to making landfall west of Hamamatsu (WMO 47654). As Ben moved westward, it entered an area of strong upper-level flow associated with outflow from Typhoon Abby. Satellite imagery indicated that the convection associated with Ben was dissipating and appearing at successively greater separation distances to the east of the low-level circulation center.

By 14 August, Ben was a completely exposed low-level circulation and remained so until dissipation in the Sea of Japan at 151200Z.

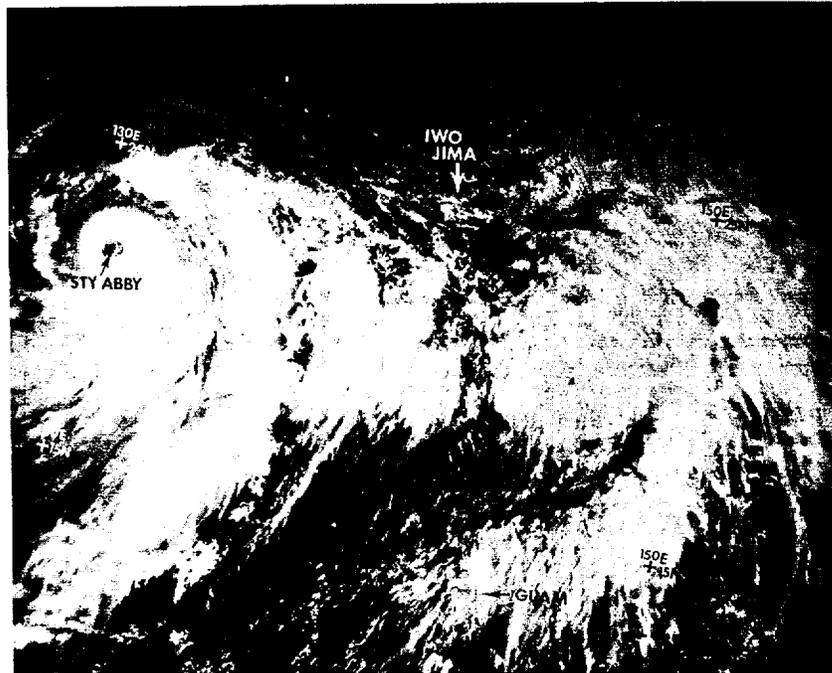


Figure 3-07-1. Typhoon Abby (left) and the area of enhanced convective activity to the east where Tropical Storm Ben formed. (110527Z NOAA 7 visual imagery).

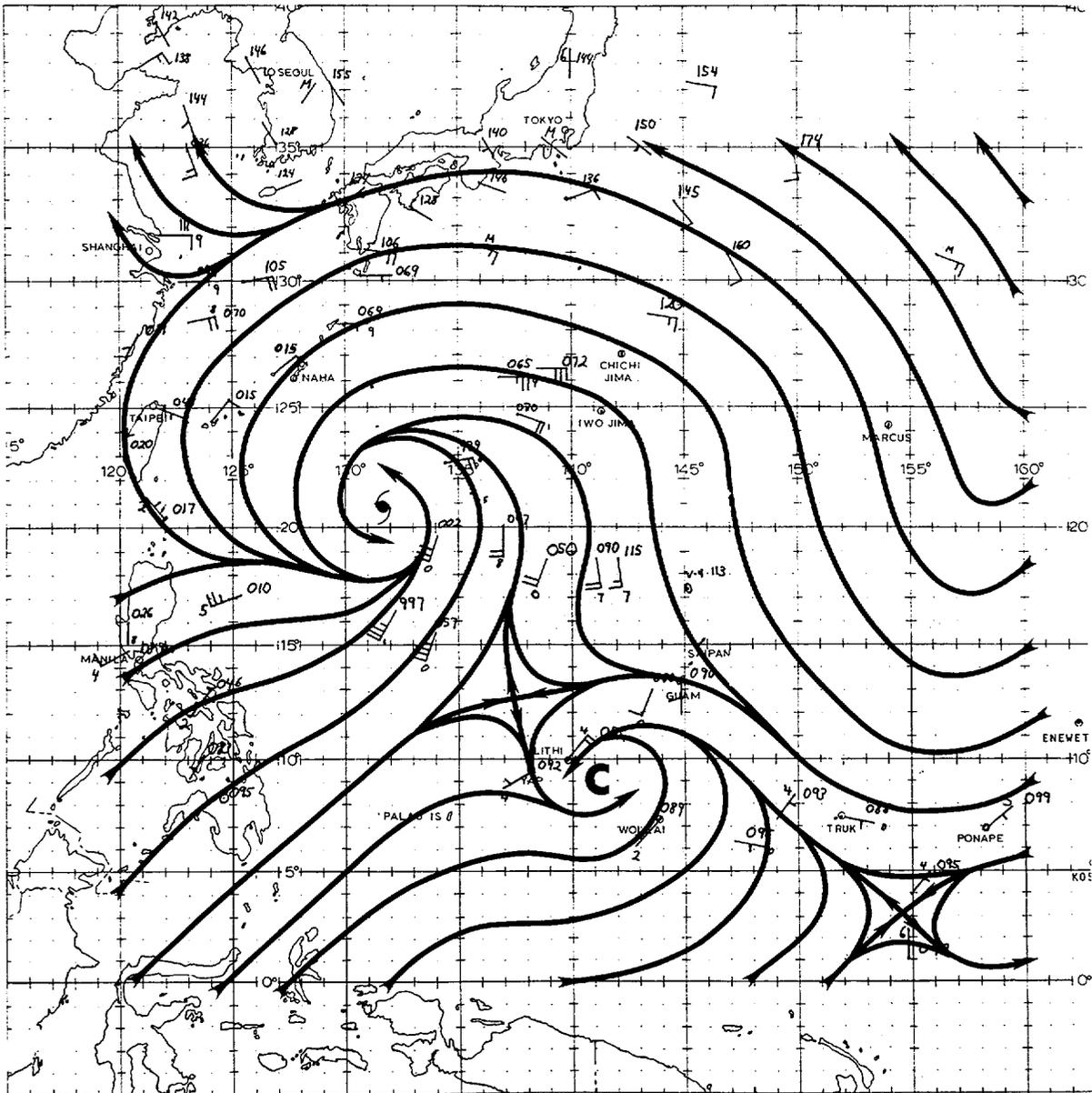


Figure 3-07-2. 110000Z surface analysis. Although analysis time corresponds closely with the time of the satellite picture shown in Figure 3-07-1, there is no indication of a surface circulation in the area where Ben formed 24 hours later.

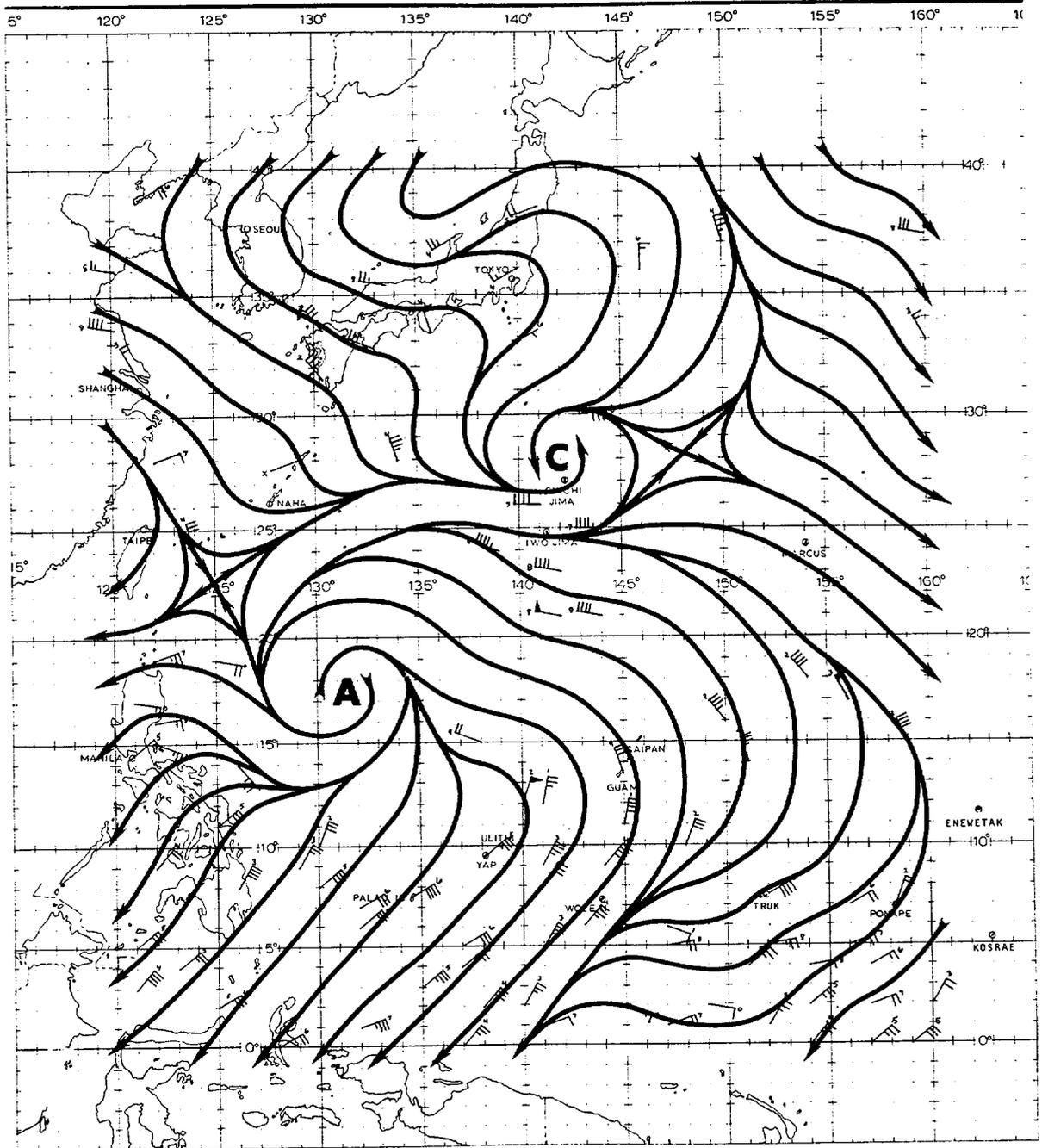


Figure 3-07-3. 110000Z 200 mb analysis. The area of enhanced convective activity to the east of Abby in Figure 3-07-1 corresponds to an area of highly divergent upper-level flow created by the interaction of Abby's outflow with a TUTT cell.