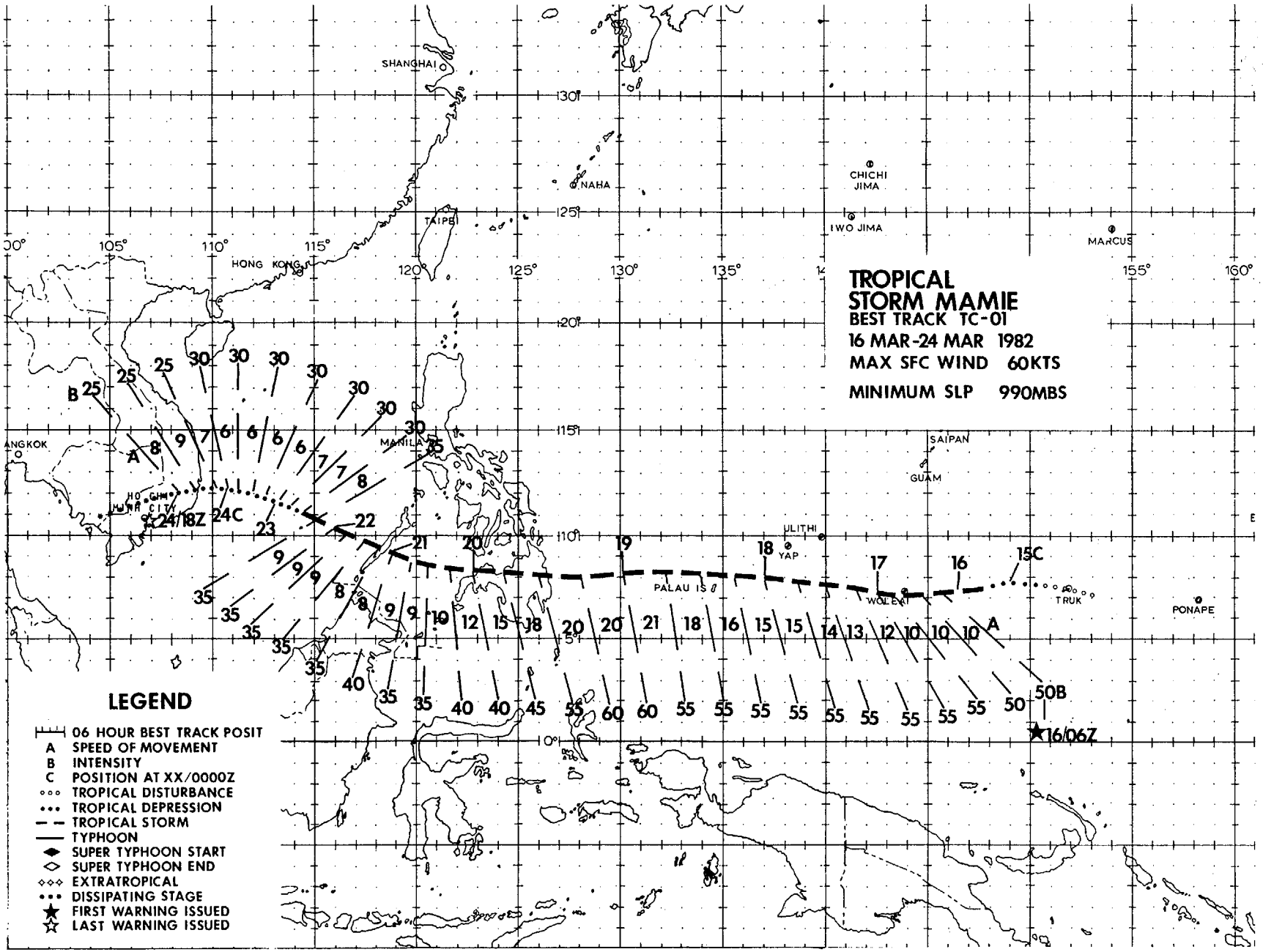
TROPICAL
STORM MAMIE
BEST TRACK TC-01
16 MAR-24 MAR 1982
MAX SFC WIND 60KTS
MINIMUM SLP 990MBS
LEGEND
06 HOUR BEST TRACK POSIT
A SPEED OF MOVEMENT
B INTENSITY
C POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
SHANGHAI
NAHA
TAIPEI
HONG KONG
MANILA
BANGKOK
HO CHI MINH CITY
CHICHI JIMA
IWO JIMA
MARCUS
SAIPAN
GUAM
ULITHI
YAP
PALAU IS
WOLEAI
TRUK
PONAPE
24/18Z
16/06Z

Tropical Storm Mamie, the first tropical cyclone of the season, developed from an area of active convection which was first sighted on 7 March, near 150E and just south of the equator (Figure 3-01-1). During the next five days, this convective area was observed migrating northward as the near-equatorial trough set up south of 05N. By 12 March, the convective organization was sufficient to warrant discussion in the Significant Tropical Weather Advisory (ABEH PGTW). On 14 March, the first satellite fix located the developing disturbance approximately 104 nm (193 km) east-southeast of Truk Atoll (WMO 91344). As the disturbance tracked westward and was followed on satellite imagery, the available synoptic data indicated a relatively weak wind field with surface pressures near normal (1010 mb). However, because satellite imagery showed continued convective organization, a reconnaissance aircraft was sent on an investigative mission which proved to be very enlightening. Upon receipt of observed winds of 50 kt (26 m/sec) and evidence of a closed circulation from the reconnaissance data, the first warning on Tropical Storm Mamie was issued immediately (160600Z). Mamie's intensities up to that point can only be extrapolated backwards; however, further intensification was very slow with the maximum intensity of 60 kt (31 m/sec) reached shortly before making landfall on Mindanao on 19 March.

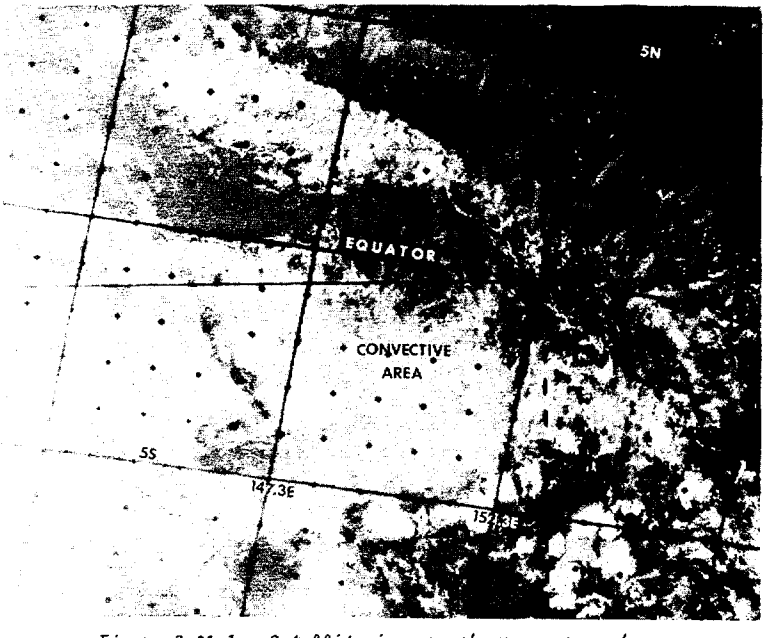

Figure 3-01-1. Satellite imagery shows an area of convection south of the equator which migrated northward and eventually became associated with the development of Tropical Storm Mamie, 070430Z March (NOAA 7 visual imagery).

From the first satellite fix to landfall on Mindanao, Mamie tracked westward along the southern periphery of a strong subtropical ridge (Figure 3-01-2). During this period, had it not been for satellite surveillance, Mamie may well have gone undetected until initial casualty reports were received from Mindanao (approximately 40 persons dead and extensive property and crop damage). Aside from winds received from the reconnaissance aircraft missions, no other surface observations were received which indicated a well-organized circulation. Even upon landfall, Mamie was not detectable from the observations of local reporting stations. Fortunately, given Mamie's track and compact circulation (less than 90 nm (167 km)), both satellite and aircraft reconnaissance platforms were available and Mamie was tracked and monitored despite the paucity of reporting stations and ships in the Philippine Sea.

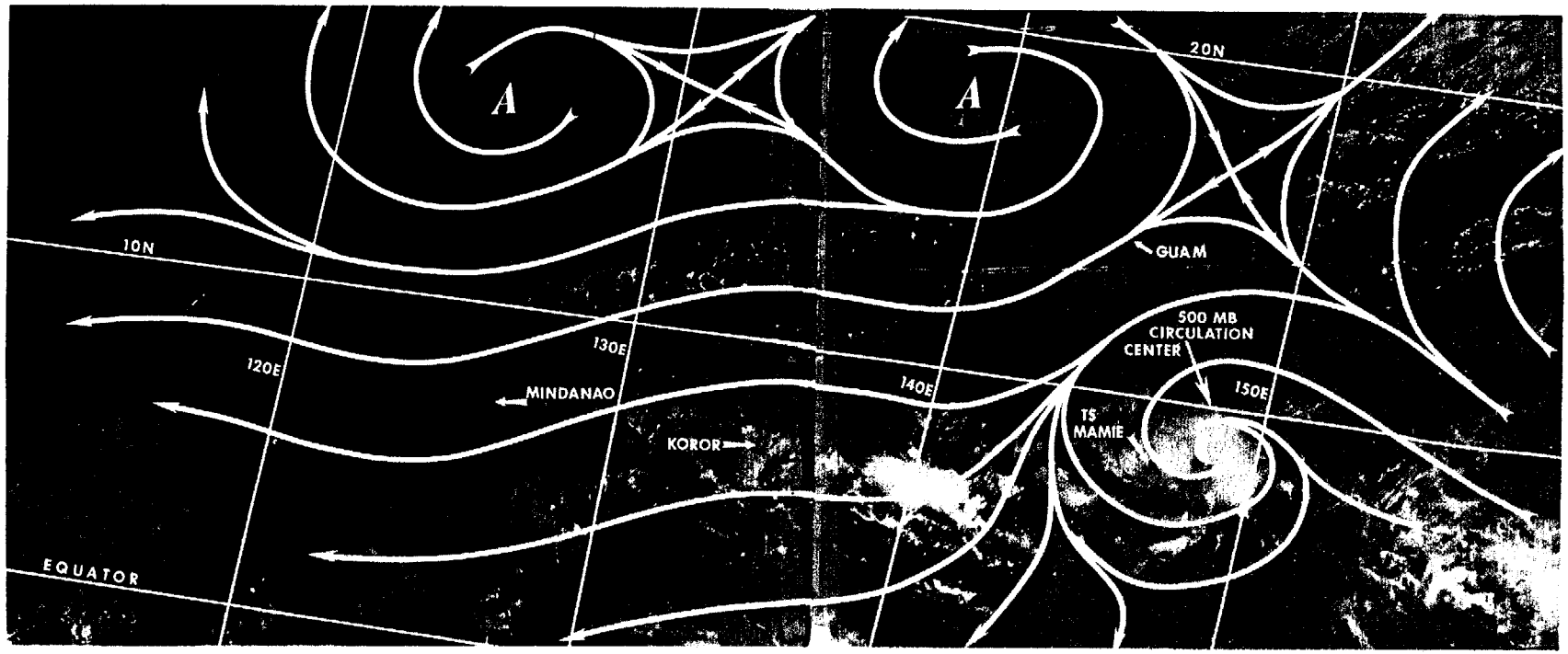

Figure 3-02-1. 500 mb streamline analysis for 150000Z March superimposed on a mosaic from visual satellite imagery. This figure depicts the steering influence of a strong subtropical ridge north of Tropical Storm Mamie. (150436Z and 150618Z March, NOAA 7 visual imagery).

On the second, and on subsequent reconnaissance aircraft missions, the Aerial Reconnaissance Weather Officers (ARWOs) observed an eyewall which was restricted to the lower levels. (Maximum observed height of the eyewall was near 10,000 ft (3048 m)). Due to Mamie's compactness and increasing vertical wind shear in the mid- and upper-tropospheric levels, the eyewall did not fully develop and extend to heights that could be observed on satellite imagery. This failure to develop in the vertical contributed to Mamie not reaching typhoon strength.

After tracking across the northern portion of Mindanao, Mamie entered the Sulu Sea with winds of 40 kt (21 m/sec) and was unable to reintensify despite surface conditions which were generally favorable for reintensification. On 21 March, as Mamie reached the South China Sea, a weakness in the subtropical ridge allowed a more northwestward track which was maintained until approximately 230000Z, when the ridge strengthened and Mamie resumed a westward movement. At 241200Z, Mamie made final landfall near Nha Trang, Vietnam and then dissipated in the mountainous region to the west.