

衛星雲照片在台灣及鄰近地區之天氣分析與預報上之應用

The Use of Satellite Picture in Weather
Analysis and Forecasting for Taiwan and Neighboring Area.

徐 寶 箴

Pao-CHIN Chin

中 央 氣 象 局

Central weather Bureau

一 前 言

氣象衛星照片，在天氣分析與預報上之應用，近年來已有極快速之發展。各地之雲系，因受海陸分佈之不同，地形地勢之各異，及主要環流之有別，常有不同之特性。本文將討論台灣地區衛星雲照片，在天氣分析與預報上之應用。本文所採用衛星照片，主要係購自美國氣候中心雙數 ESSA、ITOS、及 NOAA 系組等衛星之數化縮影軟片，照片年份為 1969、1970、1971、1973、1974、1975 等六年，後兩年有日間與夜間之紅外線照片。

關於台灣地區寒潮及颱風侵台前後之雲系，作者會按 1969—1971 三年之可見光照片，作出初步之研究結果（1976）(1)(2)，不論颱風與寒潮於侵台之前一日或侵入期間，均可於衛星之可見光照片中找出若干徵兆特性，可供天

- (5) R.W. Fett & S. Brand, 1975: Tropical Cyclone Movement Forecasts Based on Observations from Satellites. J. of A.M. Vol.14, No.4.
- (6) F.C. Parmenter & R. Anderson, 1974: Mesoscale Details in Synoptic scale Systems. Fifth Conference on Weather Forecasting & Analysis, A.M.S.
- (7) J.F.W. Purdom & J.J. Gurka, 1974: The Effect of Early Morning Cloud Cover on Afternoon Thunderstorm Development, as above.
- (8) J.J. Gurka, 1974: Using Satellite Data for forecasting Fog & Stratus Dissipation. as above.

Abstract

By using colour Digicol Density Analyzer and comparison of VIS and IR satellite picture the satellite imageries of the years 1973-1975 were used to analyse and test the relations between the cloud patterns and the movement of typhoon, the occurrence of thunderstorm and the distribution of fog for Taiwan and neighboring area.

The patterns of Center Dense Overcast and Arc Cloud as well as the orientation of high cloud lines or bands were found to be as a good indicator for movement of typhoons over Taiwan area.

The morning NOAA pictures were shown as a good tool for predicting local afternoon thunderstorm occurred due to day time

warming and sea breeze ascending.

The use of satellite picture for prediction of fog dissipation was discussed. Because the overall feature of occurrence and distribution of fog can be clearly shown by satellite picture and so it is very useful for navigator and fishermen.