香港天文台
HONG KONG OBSERVATORY

二零零零
熱帶氣旋

TROPICAL CYCLONES IN 2000

香港天文台 HONG KONG OBSERVATORY

二零零零年的熱帶氣旋路徑圖
TRACKS OF TROPICAL CYCLONES IN 2000

每日協調世界時零時位置(香港時間上午八時)
Daily Positions at 00 UTC(08 HKT)

每六小時位置
Intermediate 6-hourly Positions

颱風
Typhoon

強烈熱帶風暴
Severe Tropical Storm

熱帶風暴
Tropical Storm

熱帶低氣壓
Tropical Depression

90°E 95°E 100°E 105°E 110°E 115°E 120°E 125°E 130°E 135°E 140°E 145°E 150°E 155°E 160°E 165°E 170°E 175°E 180°

45°N 40°N 35°N 30°N 25°N 20°N 15°N 10°N 5°N 0°

清松 SONAMU 九月SEP
派比安 PRAPIROON 九月SEP
鴻雁 KIROGI 七月JUL
桑美 SAOMAI 九月SEP
啓德 KAI-TAK 七月JUL
艾雲尼 EWINIAR 八月AUG
天秤 TEMBIN 七月JUL
珊珊 SHANSHAN 九月SEP
布拉萬 BOLAVEN 七月JUL
杰拉華 JELAWAT 八月AUG
象神 XANGSANE 十一月NOV
龍王 LONGWANG 五月MAY
達維 DAMREY 五月MAY
熱帶低氣壓 T.D. 十一月NOV
熱帶低氣壓 T.D. 九月SEP
碧利斯 BILIS 八月AUG
瑪莉亞 MARIA 九月SEP
摩羯 YAGI 十月OCT
熱帶低氣壓 T.D. 六月JUN
熱帶低氣壓 T.D. 十一月NOV
貝碧嘉 BEBINCA 十一月NOV
熱帶低氣壓 T.D. 六月JUN
瑪莉亞(0013) MARIA 八月AUG
熱帶低氣壓 T.D. 七月JUL
熱帶低氣壓 T.D. 五月MAY
龍王(0002) LONGWANG 五月MAY
寶霞(0015) BOPHA 九月SEP
摩羯(0019) YAGI 十月OCT
天秤(0005) TEMBIN 七月JUL
清松(0017) SONAMU 九月SEP
杰拉華(0008) JELAWAT 八月AUG
悟空 WUKONG 九月SEP
熱帶低氣壓 T.D. 十月OCT
熱帶低氣壓 T.D. 七月JUL
悟空(0016) WUKONG 九月SEP
啓德(0004) KAI-TAK 七月JUL
寶霞 BOPHA 九月SEP
布拉萬(0006) BOLAVEN 七月JUL
派比安(0012) PRAPIROON 八月AUG
蘇力 SOULIK 一月JAN (2001)
桑美(0014) SAOMAI 九月SEP
格美 KAEMI 八月AUG
格美(0011) KAEMI 八月AUG
熱帶低氣壓 T.D. 十月OCT
溫比亞 RUMBIA 十二月DEC
熱帶低氣壓 T.D. 十二月DEC
熱帶低氣壓 T.D. 十二月DEC
蘇力(0023) SOULIK 十二月DEC
貝碧嘉(0024) BEBINCA 十月OCT
象神(0020) XANGSANE 十月OCT
溫比亞(0022) RUMBIA 十一月NOV
鴻雁(0003) KIROGI 七月JUL
艾雲尼(0009) EWINIAR 八月AUG
達維(0001) DAMREY 五月MAY
碧利斯(0010) BILIS 八月AUG
熱帶低氣壓 T.D. 九月SEP
珊珊(0018) SHANSHAN 九月SEP
珍珠 CHANCHU 七月JUL
珍珠(0007) CHANCHU 七月JUL

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Prepared by:
Hong Kong Observatory
134A Nathan Road
Kowloon, Hong Kong

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引言

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INTRODUCTION

除了在一九四零至一九四六年有過短暫中斷外，天文台自一八八四年以來便一直進行地面氣象觀測，並將整理好的數據撮列於由天文台出版的《氣象資料》年刊內。天文台在一九四七年開始進行高空氣象觀測後，該年刊便分成兩冊：分別是《氣象資料第一冊（地面觀測）》及《氣象資料第二冊（高空觀測）》。一九八一年，年刊第二冊改稱爲《無線電探空儀觀測摘要》，而第一冊亦於一九八七年改稱爲《香港地面觀測年報》。一九九三年，該兩刊物由一本名爲《香港氣象觀測摘要》的新刊物所取代。這份摘要載列了地面及高空的氣象數據。

一八八四至一九三九年期間，部分對香港造成破壞的颱風的報告，曾以附錄形式載於《氣象資料》年刊內。而在一九四七至一九六七年出版的《天文台年報》，更擴充了有關熱帶氣旋的內容，收納所有導致香港吹烈風的熱帶氣旋的報告。其後，年刊系列加推《氣象資料第三冊（熱帶氣旋摘要）》，以記載每年北太平洋西部及南海區域所有熱帶氣旋的資料。此冊第一期在一九七一年出版，內容包括一九六八年赤道至北緯45度、東經100至160度範圍內所有熱帶氣旋的報告。由於有氣象偵察機提供報告（此項服務已在一九八七年八月停辦）及氣象衛星圖片，在原本資料短缺的海洋上追蹤熱帶氣旋位置的工作比從前順利得多。因此，第三冊的覆蓋範圍東面邊界於一九八五年開始，由東經160度伸展至180度。一九八七年，第三冊改稱爲《熱帶氣旋年報》，但內容則大致上維持不變。由一九九七年起，此年報加增中文版本以雙語刊出。

在一九三九年及以前，每年北太平洋西部及南海區域的熱帶氣旋的路徑圖都收錄於《氣象資料》年刊內。由一九四七至一九六七年，則載列於《氣象資料第一冊》內。在一九六一年以前，熱帶氣旋的路徑只顯示每日位置。在較早期的刊物內，熱帶氣旋的每日定位時間在某程度上還未統一。但到了一九四四年以後，則一直維持以每日協調世界時（UTC）零時作定位。此項改變的資料詳載於天文台出版的《技術記錄第十一號第一冊》內。由一九六一年開始，所有熱帶氣旋的路徑圖都顯示每六小時的位置。

爲了能儘早滿足傳媒、航運界及其他有關人士或團體的需求，天文台自一九六零年開始就影響香港的個別熱帶氣旋編寫報告初稿。這些報告可提供給有需要的人士使用。初時，天文台只就那些曾導致天文台懸掛暴風或烈風信號的熱帶氣旋編寫報告初稿，但到了一九六八年，則須就每個引致天文台懸掛熱帶氣旋警告信號的熱帶氣旋編寫報告初稿。

本年報根據熱帶氣旋中心附近的最高持續地面風速，把熱帶氣旋分爲以下四個級別：

（ i ） 熱帶低氣壓（T.D.）的最高持續風速爲每小時63公里以下。
（ii） 熱帶風暴（T.S.）的最高持續風速爲每小時63至87公里。
（iii） 強烈熱帶風暴（S.T.S.）的最高持續風速爲每小時88至117公里。
（iv） 颱風（T.）的最高持續風速爲每小時118公里或以上。

除特別列明外，在本年報內提及的最高持續風速均爲10分鐘內風速的平均值；每小時平均風速爲該小時前60分鐘內的平均風速；每日雨量爲該日香港時間午夜前24小時內的總雨量。

從一九四七年至一九九九年，北太平洋西部及南海區域的熱帶氣旋非正式地採用美國軍方「聯合颱風警報中心」所編訂的名單上的名字。但由二零零零年開始，日本氣象廳會根據一套新名單爲每個達到熱帶風暴強度的熱帶氣旋命名。表1.1是二零零零年一月一日起生效的熱帶氣旋名單。這套名單經颱風委員會通過，一共有140個名字，分別由14個國家和

地區提供。這些名字除了用於爲國際航空及航海界發放的預測和警報外，亦是向國際傳媒介發放熱帶氣旋消息時採用的規範名稱。另外，日本氣象廳在一九八一年起已獲委託爲每個在北太平洋西部及南海區域出現而達到熱帶風暴強度的熱帶氣旋編配一個四位數字編號。例如編號"0001"代表在二零零零年區內第一個被日本氣象廳分類爲熱帶風暴或更強的熱帶氣旋。在本年報內，此編號會顯示在緊隨著熱帶氣旋名稱的括弧內，例如颱風達維(0001)。

本年報內的地面風資料，是由天文台所操作的測風站網絡而錄得的。表1.2是該網絡內各站的位置及海拔高度。

熱帶氣旋產生的最大風暴潮是由裝置在香港多處的潮汐測量器量度的。圖1.1是本年報內提及的各個風速表及潮汐測量站的分佈地點。

本年報第二節是二零零零年所有影響北太平洋西部及南海區域的熱帶氣旋的概述。

而本年報第三節是二零零零年影響香港的熱帶氣旋的個別詳細報告，內容包括：

(a) 該熱帶氣旋對香港造成的影響；
(b) 懸掛熱帶氣旋警告信號的過程；
(c) 香港各地錄得的最高陣風風速及最高每小時平均風速；
(d) 香港天文台錄得的最低海平面氣壓；
(e) 香港天文台及其他地方錄得的每日總雨量；
(f) 香港各潮汐測量站錄得的最高潮位及最大風暴潮；及
(g) 氣象衛星雲圖及雷達回波圖（如適用）。

有關熱帶氣旋的各種資料及統計表載於本年報第四節內。

二零零零年每個熱帶氣旋的每六小時位置，連同當時的最低中心氣壓及最高持續風速，則表列於本年報的第五節內。

本年報依照內文需要採用了不同的時間系統。正式的時間以協調世界時（即UTC）爲準。至於在熱帶氣旋的敘述中，用作表示每天各時段的詞彙，例如"上午"、"下午"、"早上"、"黃昏" 等則是指香港時間。香港時間爲協調世界時加八小時。

Apart from a short break during 1940-1946, surface observations of meteorological elements since 1884 have been summarized and published in the Observatory's annual publication "Meteorological Results". Upper-air observations began in 1947 and from then onwards the annual publication was divided into two parts, namely "Meteorological Results Part I - Surface Observations" and "Meteorological Results Part II - Upper-air Observations". These two publications were re-titled "Summary of Radiosonde-Radiowind Ascents" and "Surface Observations in Hong Kong" in 1981 and 1987 respectively. In 1993, both of these publications were made obsolete, and since then surface and upper-air data have been included in one revised publication entitled "Summary of Meteorological Observations in Hong Kong".

During the period 1884-1939, reports on some destructive typhoons were printed as Appendices to the "Meteorological Results". This practice was extended and accounts of all tropical cyclones which caused gales in Hong Kong were included in the publication "Director's Annual Departmental Reports" from 1947 to 1967 inclusive. The series "Meteorological Results Part III - Tropical Cyclone Summaries" was subsequently introduced. It contained information on tropical cyclones over the western North Pacific and the South China Sea. The first issue, which contained reports on tropical cyclones occurring in 1968, was published in 1971. Tropical cyclones within the area bounded by the Equator, 45°N, 100°E and 160°E were described. With reconnaissance aircraft reports (terminated from August 1987 onwards) and satellite pictures facilitating the tracking of tropical cyclones over the otherwise data-sparse ocean, the eastern boundary of the area of coverage was extended from 160°E to 180° from 1985 onwards. In 1987, the series was re-titled as "Tropical Cyclones in 19YY" but its contents remained largely the same. "Tropical Cyclones in 1997" is the first bilingual (Chinese and English) edition of the series.

Tracks of tropical cyclones in the western North Pacific and the South China Sea were published in "Meteorological Results" up to 1939 and in "Meteorological Results Part I" from 1947 to 1967. Before 1961, only daily positions were plotted on the tracks. The time of the daily positions varied to some extent in the older publications but remained fixed at 0000 UTC after 1944. Details of the variation are given in the Observatory's publication "Technical Memoir No. 11, Volume 1". From 1961 onwards, six-hourly positions are shown on the tracks of all tropical cyclones.

Provisional reports on individual tropical cyclones affecting Hong Kong have been prepared since 1960 to meet the immediate needs of the press, shipping companies and others. These reports are printed and supplied on request. Initially, reports were only written on those tropical cyclones for which gale or storm signals had been hoisted in Hong Kong. By 1968, it had become necessary to produce a report on every tropical cyclone that necessitated the hoisting of tropical cyclone warning signals.

In this publication, tropical cyclones are classified into the following four categories according to the maximum sustained surface winds near their centres :

(i) A TROPICAL DEPRESSION (T.D.) has maximum sustained winds of less than 63 km/h.
(ii) A TROPICAL STORM (T.S.) has maximum sustained winds in the range 63-87 km/h.
(iii) A SEVERE TROPICAL STORM (S.T.S.) has maximum sustained winds in the range 88-117 km/h.
(iv) A TYPHOON (T.) has maximum sustained winds of 118 km/h or more.

Throughout this publication, maximum sustained surface winds when used without qualification refer to wind speeds averaged over a period of 10 minutes. Mean hourly winds are winds averaged over a 60-minute interval ending on the hour. Daily rainfall amounts are computed over a 24-hour period ending at midnight Hong Kong Time.

Over the western North Pacific and the South China Sea between 1947 and 1999, tropical cyclone names were assigned by the U.S. Armed Forces' Joint Typhoon Warning Center according to a pre-determined but unofficial list. However, with effect from 2000, the Japan Meteorological Agency will assign names from a new list to tropical cyclones attaining tropical storm strength. Table 1.1 shows the name list effective from 1 January 2000. The name list was adopted by the Typhoon Committee. It consists of a total of 140 names contributed by 14 countries and territories. Apart from being used in forecasts and warnings issued to the

international aviation and shipping communities, the names will also be used officially in information on tropical cyclones issued to the international press. Besides, Japan Meteorological Agency has been delegated since 1981 with the responsibility of assigning to each tropical cyclone in the western North Pacific and the South China Sea of tropical storm strength a numerical code of four digits. For example, the first tropical cyclone of tropical storm strength or above as classified by Japan Meteorological Agency which occurred within the region in 2000 was assigned the code "0001". In this publication, the appropriate code immediately follows the name of the tropical cyclone in bracket, e.g. Typhoon Damrey (0001).

Surface wind data presented in this report were obtained from a network of anemometers operated by the Hong Kong Observatory. Details of the stations are listed on Table 1.2.

Maximum storm surges caused by tropical cyclones were measured by tide gauges installed at several locations around Hong Kong. The locations of anemometers and tide gauges mentioned in this report are shown in Figure 1.1.

In Section 2, an overview of all the tropical cyclones over the western North Pacific and the South China Sea in 2000 is presented.

The reports in Section 3 are individual accounts of the life history of tropical cyclones affecting Hong Kong in 2000. They include the following information :-

(a) the effects of the tropical cyclone on Hong Kong;
(b) the sequence of display of tropical cyclone warning signals;
(c) the maximum gust peak speeds and maximum hourly mean winds recorded in Hong Kong;
(d) the lowest sea level pressure recorded at the Hong Kong Observatory;
(e) the daily amounts of rainfall recorded at the Hong Kong Observatory and selected locations;
(f) the times and heights of the maximum sea level and maximum storm surge recorded at various tide stations in Hong Kong;
(g) satellite imageries and radar echoes (if applicable).

Statistics and information relating to tropical cyclones are presented in various tables in Section 4.

Six-hourly positions together with the corresponding estimated minimum central pressures and maximum sustained surface winds for individual tropical cyclones are tabulated in Section 5.

In this publication, different times are used in different contexts. The official reference times are given in Co-ordinated Universal Time and labelled UTC. Times of the day expressed as "a.m.", "p.m.", "morning", "evening" etc. in the tropical cyclone narratives are in Hong Kong Time which is eight hours ahead of UTC.

表 1.1　　二零零零年一月一日生效的新熱帶氣旋名單

TABLE 1.1 NEW TROPICAL CYCLONE NAME LIST EFFECTIVE FROM 1 JANUARY 2000

來源	Contributed by	I	II	III	IV	V
		名字 Name	名字 Name	名字 Name	名字 Name	名字 Name
柬埔寨	Cambodia	達維 Damrey	康妮 Kong-rey	娜基莉 Nakri	科羅旺 Krovanh	莎莉嘉 Sarika
中國	China	龍王 Longwang	玉兔 Yutu	風神 Fengshen	杜鵑 Dujuan	海馬 Haima
北韓	DPR Korea	鴻雁 Kirogi	桃芝 Toraji	海鷗 Kalmaegi	鳴蟬 Maemi	米雷 Meari
中國香港	HK, China	啓德 Kai-tak	萬宜 Man-yi	鳳凰 Fung-wong	彩雲 Choi-wan	馬鞍 Ma-on
日本	Japan	天秤 Tembin	天兔 Usagi	北冕 Kammuri	巨爵 Koppu	蝎虎 Tokage
老撾	Lao PDR	布拉萬 Bolaven	帕布 Pabuk	巴蓬 Phanfone	凱薩娜 Ketsana	洛坦 Nock-ten
中國澳門	Macau, China	珍珠 Chanchu	蝴蝶 Wutip	黃蜂 Vongfong	芭瑪 Parma	梅花 Muifa
馬來西亞	Malaysia	杰拉華 Jelawat	聖帕 Sepat	鹿莎 Rusa	茉莉 Melor	苗柏 Merbok
米克羅尼西亞	Micronesia	艾雲尼 Ewiniar	菲特 Fitow	森垃克 Sinlaku	尼伯特 Nepartak	南瑪都 Nanmadol
菲律賓	Philippines	碧利斯 Bilis	丹娜絲 Danas	黑格比 Hagupit	盧碧 Lupit	塔拉斯 Talas
南韓	RO Korea	格美 Kaemi	百合 Nari	薔薇 Changmi	蘇特 Sudal	奧鹿 Noru
泰國	Thailand	派比安 Prapiroon	韋帕 Vipa	米克拉 Megkhla	妮妲 Nida	玫瑰 Kularb
美國	U.S.A.	瑪莉亞 Maria	范斯高 Francisco	海高斯 Higos	奧麥斯 Omais	洛克 Roke
越南	Viet Nam	桑美 Saomai	利奇馬 Lekima	巴威 Bavi	康森 Conson	桑卡 Sonca
柬埔寨	Cambodia	寶霞 Bopha	羅莎 Krosa	美莎克 Maysak	燦都 Chanthu	納沙 Nesat
中國	China	悟空 Wukong	海燕 Haiyan	海神 Haishen	電母 Dianmu	海棠 Haitang
北韓	DPR Korea	淸松 Sonamu	楊柳 Podul	鳳仙 Pongsona	蒲公英 Mindulle	尼格 Nalgae
中國香港	HK, China	珊珊 Shanshan	玲玲 Lingling	欣欣 Yanyan	婷婷 Tingting	榕樹 Banyan
日本	Japan	摩羯 Yagi	劍魚 Kajiki	鯨魚 Kujira	圓規 Kompasu	天鷹 Washi
老撾	Lao PDR	象神 Xangsane	法茜 Faxai	燦鴻 Chan-hom	南川 Namtheun	麥莎 Matsa

表 1.1 (續)
TABLE 1.1 (cont'd)

來源	Contributed by	I	II	III	IV	V
		名字 Name	名字 Name	名字 Name	名字 Name	名字 Name
中國澳門	Macau, China	貝碧嘉 Bebinca	畫眉 Vamei	蓮花 Linfa	瑪瑙 Malou	珊瑚 Sanvu
馬來西亞	Malaysia	溫比亞 Rumbia	塔巴 Tapah	浪卡 Nangka	莫蘭蒂 Meranti	瑪娃 Mawar
米克羅尼西亞	Micronesia	蘇力 Soulik	米娜 Mitag	蘇廸羅 Soudelor	雲娜 Rananim	古超 Guchol
菲律賓	Philippines	西馬侖 Cimaron	海貝思 Hagibis	伊布都 Imbudo	馬勒卡 Malakas	泰利 Talim
南韓	RO Korea	飛燕 Chebi	浣熊 Noguri	天鵝 Koni	鮎魚 Megi	彩蝶 Nabi
泰國	Thailand	榴槤 Durian	威馬遜 Ramasoon	翰文 Hanuman	暹芭 Chaba	卡努 Khanun
美國	U.S.A.	尤特 Utor	查特安 Chataan	艾濤 Etau	庫都 Kodo	韋森特 Vicente
越南	Viet Nam	潭美 Trami	夏浪 Halong	環高 Vamco	桑達 Songda	蘇拉 Saola

表 1.2　　本年報內各風速表的位置及海拔高度

TABLE 1.2　POSITIONS AND ELAVATIONS OF VARIOUS ANEMOMETERS MENTIONED IN THIS REPORT

站 Station		位置 Position		風速表的海拔高度(米) Elevation of anemometer above M.S.L. (m)
		北緯 Latitude N	東經 Longitude E	
中環（天星碼頭）	Central (Star Ferry Pier)	22°17’	114°10’	17
中環廣場	Central Plaza	22°17’	114°10’	378
赤鱲角（機場）	Chek Lap Kok (Airport)	22°19’	113°55’	13
長洲	Cheung Chau	22°12’	114°02’	99
長沙灣	Cheung Sha Wan	22°20’	114°09’	30
青洲	Green Island	22°17’	114°07’	105
京士柏	King's Park	22°19’	114°10’	90
流浮山	Lau Fau Shan	22°28’	113°59’	50
北角	North Point	22°18’	114°12’	26
平洲	Ping Chau	22°33’	114°26’	39
西貢	Sai Kung	22°23’	114°16’	31
沙螺灣	Sha Lo Wan	22°18’	113°54’	71
沙田	Sha Tin	22°24’	114°12’	16
石崗	Shek Kong	22°26’	114°05’	26
天星碼頭（九龍）	Star Ferry Pier (Kowloon)	22°18’	114°10’	18
打鼓嶺	Ta Kwu Ling	22°32’	114°09’	28
大尾篤	Tai Mei Tuk	22°29’	114°14’	71
大帽山	Tai Mo Shan	22°25’	114°07’	969
塔門	Tap Mun	22°28’	114°21’	37
大老山	Tate's Cairn	22°22’	114°13’	588
鯽魚湖	Tsak Yue Wu	22°24’	114°19’	23
將軍澳	Tseung Kwan O	22°19’	114°15’	52
青衣（青柏樓）	Tsing Yi (Ching Pak House)	22°21’	114°06’	136
屯門	Tuen Mun	22°24’	113°58’	69
橫瀾島	Waglan Island	22°11’	114°18’	82
黃竹坑	Wong Chuk Hang	22°15’	114°10’	30

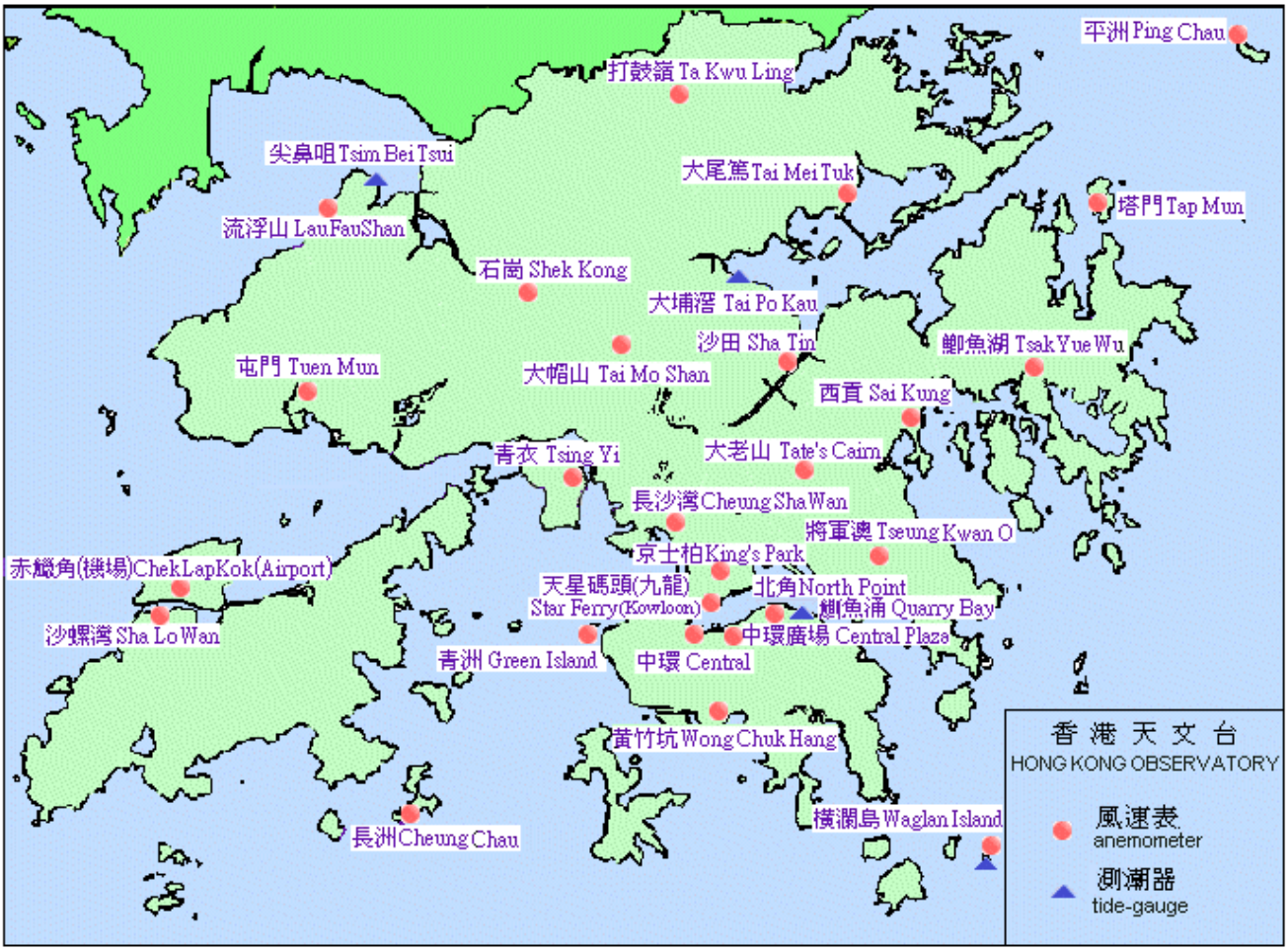


圖 1.1　　本年報內提及的測風站及潮汐測量站之分佈地點。

FIGURE 1.1　LOCATIONS OF ANEMOMETERS AND TIDE GAUGE STATIONS MENTIONED IN THIS REPORT.

第二節

二零零零年熱帶氣旋概述

Section 2

TROPICAL CYCLONE OVERVIEW FOR 2000

2.1 二零零零年的熱帶氣旋回顧

2.1.1 北太平洋西部（包括南海區域）的熱帶氣旋

二零零零年共有30個熱帶氣旋影響北太平洋西部及南海區域（即由赤道至北緯45度、東經100至180度所包括的範圍），這數目接近正常（1961-1990）。當中，13個熱帶氣旋達到颱風強度，較正常少三個。減退的「拉尼娜」現象似乎對二零零零年北太平洋西部的熱帶氣旋活動影響不大。

本年首個熱帶氣旋在五月形成。圖2.1是二零零零年的12個月內所有熱帶氣旋的數目，以及颱風之每月分佈。

全年，共有五個熱帶氣旋登陸菲律賓，四個影響日本（包括琉球群島）。台灣、韓國及越南各受三個熱帶氣旋吹襲。在中國，則有七個熱帶氣旋登陸。另外，颱風派比安（0012）及颱風桑美（0014）的環流分別在八月及九月影響華東沿岸。

八月的颱風碧利斯（0010）是二零零零年風力最強的熱帶氣旋。碧利斯的最高持續風速估計約爲每小時220公里及最低中心氣壓約915百帕斯卡。僅次於碧利斯的是九月颱風桑美（0014），其最高持續風速估計約爲每小時205公里及最低中心氣壓約920百帕斯卡。

二零零零年有多個熱帶氣旋互相影響，它們分別爲七月的鴻雁（0003）和啓德（0004）、八月的派比安（0012）和瑪莉亞（0013）、及九月的桑美（0014）和寶霞（0015）。在相互作用下，啓德、瑪莉亞及寶霞的路徑皆表現得不規則。

六月的小型熱帶低氣壓是全年唯一登陸香港的熱帶氣旋。它過境時，熱帶氣旋警告信號共懸掛了4小時30分，是歷來最短的。另一紀錄則是十一月在貝碧嘉的影響下，熱帶氣旋警告信號共懸掛了89小時，是十一月份最長的。

2.1.2 香港責任範圍內的熱帶氣旋

在二零零零年的30個熱帶氣旋當中，有20個影響香港責任範圍（即北緯10至30度、東經105至125度所包括的地區），較正常高出四個（表2.1）。這20個中，有九個熱帶氣旋在香港責任範圍內形成。香港天文台在二零零零年共發出460個供船舶使用的熱帶氣旋警告（表4.2）。當中共有84小時，天文台在同一時間內爲兩個不同的熱帶氣旋發出警告。

2.1.3 南海區域內的熱帶氣旋

二零零零年共有13個熱帶氣旋影響南海區域。當中有九個在南海形成，較正常多出四個。另外，亦有四個熱帶氣旋從北太平洋西部進入南海。這13個熱帶氣旋中，有四個達到颱風強度。三個颱風吹襲台灣，另一個則威脅中國。

2.1.4 影響香港的熱帶氣旋

全年共有七個熱帶氣旋影響香港（圖2.2），此數目接近正常（表2.2）。除了碧利斯（0010）及貝碧嘉（0021），其餘的均於南海形成。

本年最高懸掛三號強風信號，分別由六月的小型熱帶低氣壓、八月的強烈熱帶風暴瑪莉亞（0013）及九月的颱風悟空（0016）所引致。

其餘四個熱帶氣旋，分別爲：颱風啓德（0004）、熱帶低氣壓、颱風碧利斯（0010）及強烈熱帶風暴貝碧嘉（0021），則引致一號戒備信號懸掛。

2.1.5 熱帶氣旋的雨量

二零零零年各熱帶氣旋爲香港帶來的雨量（即該熱帶氣旋在出現於香港600公里範圍內至其消散或離開香港600公里範圍之後72小時期間，天文台錄得的雨量）總合共爲671.2毫米。比正常的737.9毫米低百分之10。它佔該年總雨量2 752.3毫米的百分之24。

2.2 每月概述

下節是二零零零年每月的熱帶氣旋概述。影響香港的各熱帶氣旋的詳述於第三節。

一至四月

二零零零年一月至四月期間並無熱帶氣旋影響北太平洋西部及南海區域。

五月

五月共有三個熱帶氣旋影響北太平洋西部及南海區域。

達維(0001)是二零零零年的首個熱帶氣旋。它在五月六日於雅蒲島西北偏西約560公里處形成爲一熱帶低氣壓。達維向西北推進，在翌日迅速增強爲一強烈熱帶風暴並且移動緩慢。它隨後轉向東北前進，在五月八日達至颱風強度。次日，達維的風力增強到最強，其中心附近最高持續風速估計約爲每小時175公里。它在五月十日開始減弱，翌日達維掠過硫黃島及小笠原群島並變爲一強烈熱帶風暴。它在五月十二日逐漸減弱，當晚變爲一溫帶氣旋。

龍王(0002)在五月十九日於高雄東南約500公里處形成爲一熱帶低氣壓。它隨即在該日早上增強爲一熱帶風暴。龍王在太平洋上向東北推進，翌日它變爲一溫帶氣旋。

在南海上，一熱帶低氣壓在五月二十一日於東沙島東南約330公里處形成。它採取東北途徑橫越巴林坦及巴斯海峽，並在翌日變爲一溫帶氣旋。

六月

六月只有一熱帶氣旋影響北太平洋西部及南海區域，這爲一熱帶低氣壓。受到該熱帶低氣壓的影響，天文台在六月十八日直接懸掛三號強風信號。

一小型熱帶低氣壓在六月十八日晚上迅速形成，當時它位於香港天文台西南偏南約35公里。該小型熱帶低氣壓向北移動，在大嶼山及香港島之間掠過，越過青衣島後，在荃灣附近登陸。熱帶低氣壓的螺旋雨帶爲香港帶來狂風驟雨，本地亦錄得強風。登陸後，熱帶低氣壓進入深圳，接著於廣東內陸消散。

七月

七月共有六個熱帶氣旋影響北太平洋西部及南海區域。其中，颱風啓德及另一登陸於海南島的熱帶低氣壓，均引致天文台懸掛一號戒備信號。

鴻雁(0003)在七月二日於雅蒲島西北面約820公里處形成爲一熱帶低氣壓。它在翌日採取偏北途徑移動，然後迅速增強，在七月四日成爲一颱風，當時鴻雁位於馬尼拉東北偏東約1 200公里。在鴻雁及另一當時集結於馬尼拉西北面約260公里的熱帶低氣壓〔後爲颱風啓德〕所帶來的暴雨下，菲律賓共有40人死亡及14人失蹤。另外，120萬人受洪水的影響而被迫遷離，總損失約爲450萬美元。

鴻雁在七月五日開始向東北偏北前進。在七月七日，它的中心出現雙眼壁〔圖2.3〕。它快速移動，時速達每小時50公里，在七月八日掠過日本東部沿岸後，便逐漸減弱。次日，鴻雁變爲一溫帶氣旋。在日本，受鴻雁的影響，共有兩人死亡及七人受傷。最少有28宗山泥傾瀉的報告，超過550間房屋被吹毀，約70班內陸航機被迫取消。

啓德(0004)在七月四日於馬尼拉西北約260公里處發展爲一熱帶低氣壓。在南海上，它緩慢移動。啓德在七月五日增強爲一熱帶風暴，翌日變爲一強烈熱帶風暴，並在七月七日成爲一颱風。次日，啓德的中心亦出現雙眼壁。啓德在七月九日減弱爲一強烈熱帶風暴，然後登陸於台灣東部台東附近。橫過台灣後，啓德繼續北進，在七月十日於溫州附近作第二次登陸。啓德掠過上海，然後進入黃海並逐漸減弱爲一熱帶低氣壓。啓德在次日變爲一溫帶氣旋。

南海上，一低壓區在七月十五日下午於西沙島以東約220公里發展爲一熱帶低氣壓。它向西北移動，在七月十六日傍晚於海南島東部登陸並在海口附近消散。

天秤(0005)在七月十八日於硫黃島東南偏南約260公里處形成爲一熱帶低氣壓。它在該晚增強爲一熱帶風暴。天秤在隨後三日於太平洋上向北移動。在七月二十二日，它減弱爲一熱帶低氣壓，然後消散於日本以東的海面上。

布拉萬(0006)在七月二十二日於馬尼拉東北偏東約630公里處發展爲一熱帶低氣壓。它初時向西北偏西前進，隨後在七月二十四日於呂宋附近轉趨向東北偏北移動。布拉萬接著在七月二十六日於沖繩島附近增強爲一強烈熱帶風暴。在隨後兩日，它移動緩慢，與其相聯的西南氣流爲台灣帶來暴雨及水浸，釀成一人死亡及另兩人失蹤，農作物損失約爲九百萬元新台幣。布拉萬在七月二十九日採取偏北途徑移動，次日減弱爲一熱帶風暴。在本月最後一日，它於南韓東面沿岸變爲一溫帶氣旋。

珍珠(0007)在七月二十八日於國際更日線以西形成爲一熱帶低壓區。它偏北移動，次日變爲一熱帶風暴。在七月三十日，珍珠減弱並消散於海上。

八月

八月共有六個熱帶氣旋影響北太平洋西部及南海區域。其中，碧利斯及瑪莉亞均引致天文台懸掛熱帶氣旋警告信號。

杰拉華(0008)在八月一日於硫黃島東南偏東約1 230公里處形成爲一熱帶低氣壓。翌日，它迅速發展成爲一颱風。杰拉華在八月四日早上於硫黃島附近掠過，隨後數日，它以每小時15至20公里的速度於太平洋上向西移動。在八月六日，杰拉華的風力達到最強，其中心附近最高持續風速估計約爲每小時165公里。杰拉華的風眼十分圓和大，直徑約爲100公里。杰拉華在八月八日橫過沖繩島，導致該處約20 000戶的電力供應受到中斷。八月九日，杰拉華進入東海。它在八月十日於浙江省象山市附近登陸，並迅速減弱，之後它繼續向內陸推進，次日變爲一低壓區。在浙江，杰拉華造成輕微交通阻塞及吹毀一些農作物。

艾雲尼(0009)在八月九日於關島以西約520公里處發展爲一熱帶低氣壓。翌日，它增強成爲一熱帶風暴。艾雲尼向北高速前進，在八月十一日變爲一強烈熱帶風暴。次日，它轉向東北偏東移動，在八月十五日增強成爲一颱風。艾雲尼接著向更高緯度推進，並逐漸減弱，在八月十八日變爲一溫帶氣旋。

碧利斯(0010)在八月十八日於雅蒲島西北偏北約130公里處形成爲一熱帶低氣壓，翌日增強爲一熱帶風暴。碧利斯向西北推進，在八月二十日進一步發展成爲一颱風。在八月二十二日，碧利斯的風力達到最強，其中心附近最高持續風速估計約爲每小時220公里。當晚，碧利斯橫掃台灣，在八月二十三日於福建省廈門市附近作第二次登陸。翌日，它變爲一低壓區。碧利斯及其過後的連場暴雨，在台灣及福建造成嚴重損毀。在香港，受碧利斯的影響，一號戒備信號在八月二十三日懸掛。與碧利斯相聯的暴雨在八月二十四日影響香港，黑色暴雨警告信號在該日發出，造成多處水浸及山泥傾瀉。

格美(0011)在八月二十日於南沙島以北約300公里處形成爲一熱帶低氣壓。翌日，它增強爲一熱帶風暴。格美趨向越南沿岸，在八月二十二日於峴港附近登陸，次日減弱爲一低壓區。

派比安(0012)在八月二十六日於沖繩島東南偏南約1 150公里發展爲一熱帶低氣壓。它在八月二十七日增強爲一熱帶風暴後，便開始以較西途徑移動。翌日，派比安變爲一強烈熱帶風暴。派比安的外圍雨帶爲台灣一些地區帶來的暴雨，造成山泥傾瀉及交通阻塞。派比安在八月三十日向北推進，並在東海進一步增強成爲一颱風，其中心附近最高持續風速估計約爲每小時130公里。在天文潮、風暴潮及大雨的共同影響下，江蘇及浙江省損失慘重，沿岸地區受烈風吹襲，幾千間房屋倒塌，數十萬公頃農田受浸，上海兩個機場需暫時關閉。兩省共有數人死亡，百人受傷。在本月最後一日，派比安減弱爲一強烈熱帶風暴，接著由西南向東北橫過北韓。在九月一日，派比安減弱爲一熱帶風暴後，轉向較東途徑移動，並在該晚變爲一溫帶氣旋。在派比安的吹襲下，北韓最少有42人死亡，多處道路及農地被毀。

在八月二十七日，一條低壓槽自北向南越過華南沿岸，槽內的低壓區隨後發展爲瑪莉亞(0013)。該晚，瑪莉亞在香港西南面約250公里處形成爲一熱帶低氣壓。在八月二十九日，瑪莉亞增強爲一熱帶風暴。瑪莉亞在形成後的數天，和派比安產生相互作用，在所引起的藤原效應*下，其移動路徑都較爲不規則〔圖2.4〕。它初時緩慢移動，跟著遠離，但隨後又趨近華南沿岸。瑪莉亞增強爲一強烈熱帶風暴後，在九月一日於汕尾附近登陸。它以偏北途徑向內陸推進，並逐漸減弱，當晚變爲一低壓區。瑪莉亞爲廣東地區帶來暴雨，造成水浸及山泥傾瀉。

九月

除了派比安及瑪莉亞，九月另有六個熱帶氣旋影響北太平洋西部及南海區域。這六個熱帶氣旋當中，悟空引致天文台懸掛三號強風信號。

桑美(0014)在九月三日於關島東北偏東約1 200公里處形成爲一熱帶低氣壓。它向西移動，在九月四日增強爲一強烈熱帶風暴。桑美在該晚加強成爲一颱風，翌日又減弱爲一強烈熱帶風暴。在九月六日，它採取西北途徑移動。桑美在九月九日於太平洋上再次達到颱風強度。次日，衛星雲圖上可見其細小但十分清晰的風眼。另外，桑美的風力在該日亦達到最強，其中心附近最高持續風速估計約爲每小時205公里，強度幾可及上月的颱風碧利斯。

颱風桑美在九月十二日橫掃沖繩島。根據報章所報導，桑美的環流爲日本帶來接近600毫米的24小時雨量，這是近一個世紀多以來的最高紀錄。在日本中部，暴雨造成嚴重水浸及山泥傾瀉，有七人死亡，另40人受傷，40萬人需要疏散，12條橋樑被沖毀，170多處地區的道路受到破壞。此外，東京中部一住宅區當日亦受到龍捲風的吹襲。

桑美在九月十三日進入東海，隨後變得緩慢移動。桑美所帶來的風暴潮及大雨，加上天文大潮的同時出現，導致中國浙江省舟山及寧波等地損失嚴重。在舟山，有20 000公頃農田受淹及2 500間房屋倒塌，另225艘船隻和130座碼頭受損。而寧波一些地區的潮位更接近歷來的最高。

桑美轉了一個急彎後，在九月十五日向東北偏北加速推進。它減弱爲一強烈熱帶風暴，九月十六日於南韓釜山附近登陸。受到桑美的吹襲，共有兩人死亡及數人失蹤。桑美離開南韓後，隨即變爲一溫帶氣旋。桑美維持了13天的生命，是本年壽命最長的熱帶氣旋。

九月六日，寶霞(0015)在沖繩島東南偏東約1 020公里處發展爲一熱帶低氣壓。寶霞在該日增強爲一熱帶風暴，並向北推進。它然後轉向西移動，在九月八日變爲一強烈熱帶風暴，掠過沖繩島。九月九日，寶霞減弱爲一熱帶風暴。同日，寶霞和桑美產生「藤原效應」，寶霞開始環繞颱風桑美作反時針方向轉動，當時桑美在寶霞的東南偏東面約1 300公里〔圖2.5〕。寶霞因此曲向南前進，直趨菲律賓，而桑美則向西北移動。九月十一日，寶霞在呂宋最北端登陸。寶霞隨後減弱爲一熱帶低氣壓，該晚消散於陸上。

「藤原效應」- 兩個熱帶氣旋在一定距離內相互影響而環繞對方旋轉的現象。

南海上，悟空(0016)在九月五日下午於香港東南偏南約670公里處形成爲一熱帶低氣壓。它增強爲一熱帶風暴後，便轉向西移動，並在九月七日下午增強爲一颱風。悟空向西推進，於九月九日在海南島南部登陸並減弱爲一強烈熱帶風暴。受到悟空的影響，海南島的直接經濟損失約爲14億元人民幣。悟空離開海南島後，在九月十日下午於越南河內以南約310公里處登陸並減弱爲一熱帶風暴。悟空在該晚橫過老撾後，便變爲一低壓區。

清松(0017)在九月十四日於硫黃島西南偏南約460公里處形成爲一熱帶低氣壓。它向東北偏北移動，在九月十六日於硫黃島附近增強爲一強烈熱帶風暴。清松然後朝北前進，移向更高緯度，在九月十八日變爲一溫帶氣旋。

珊珊(0018)在九月十八日於威克島東南面約770公里處發展爲一熱帶低氣壓。它迅速增強，在九月二十日發展成一颱風，其風眼在衛星雲圖上亦變得清晰。翌日，它的風力達到最強，其中心附近最高持續風速估計約爲每小時185公里。珊珊在九月二十二日開始轉向東北移動，然後加速前進，在九月二十四日變爲一溫帶氣旋。

一低壓區在九月二十九日清晨於威克島西北偏北約840公里處發展爲一熱帶低氣壓。它於太平洋上向東北緩慢移動，並在九月三十日晚上減弱爲一個低壓區。

十月

十月共有四個熱帶氣旋在北太平洋西部及南海區域形成。當中，貝碧嘉在本月形成後，於十一月引致天文台懸掛一號戒備信號。

在南海上，一低壓區在十月七日於胡志明市以東約500公里處形成爲一熱帶低氣壓。該熱帶低氣壓初時緩慢移動，接著在十月九日朝西北偏西前進。在隨後三日，它向東北移動。此熱帶低氣壓於西沙島附近掠過後，在十月十三日轉向西推進，翌日減弱爲一低壓區。

摩羯(0019)在十月二十二日於硫黃島以南約470公里處形成爲一熱帶低氣壓。它在太平洋上以西北偏西途徑移動，在十月二十五日增強爲一颱風。摩羯隨後於琉球群島附近以順時針方向打圈並同時減弱。它在十月二十七日變爲一低壓區。

象神(0020)在十月二十六日於雅蒲島以西約560公里處形成爲一熱帶低氣壓。次日，它迅速增強爲一強烈熱帶風暴。象神向西北偏西前進，在十月二十八日橫掃菲律賓中部。受象神的吹襲，菲律賓最少有19人死亡及220人受傷。另外，約有60人失蹤。逾130 000人需要逃離家園，超過30班航機在十月二十八日被迫要取消。總損失約爲1 200萬美元。象神在十月二十九日進入南海，並且移動緩慢。一日後，它增強爲一颱風並朝東北偏北移動，趨向台灣。在十一月一日，象神掠過台灣東部沿岸。受到象神的吹襲，台灣有54人死亡，另9人失蹤。一艘貨輪因大浪關係在基隆外海翻沉，23名菲籍貨輪船員失蹤。在象神的影響下，台灣近15萬戶停電及12萬戶停水，農牧業損失達25億元新台幣。象神在台灣肆虐後，減弱爲一強烈熱帶風暴，並在該晚於東海變爲一溫帶氣旋。

貝碧嘉(0021)在十月三十一日於雅蒲島以西約800公里處形成爲一熱帶低氣壓。它向西北移動，在十一月二日增強爲一強烈熱帶風暴，接著登陸菲律賓並改以西北偏西途徑移動，橫掃呂宋。貝碧嘉在十一月三日進入南海，次日它減慢移動並轉向北推進。它在十一月五日以每小時約10公里的速度移近華南沿岸。翌日，貝碧嘉減弱爲一熱帶風暴。在十一月七日，它進一步減弱爲一熱帶低氣壓，並向西移動，時速約爲每小時15公里。貝碧嘉於香港南面海域掠過後，趨向廣東西部沿岸地區，次日早上變爲一低壓區。

十一月

除象神及貝碧嘉外，十一月還有另兩個熱帶氣旋影響北太平洋西部及南海區域。

一熱帶低氣壓在十一月九日於沖繩島西南面約310公里處形成。它向東北移動，當晚在沖繩島附近變爲一溫帶氣旋。

溫比亞(0022)在十一月二十八日於雅蒲島以西約770公里處發展成爲一熱帶低氣壓，並在當晚迅速增強爲一熱帶風暴。它接著向西北偏西移動，在十二月一日橫過菲律賓。次日，它減弱爲一熱帶低氣壓，然後進入南海。溫比亞向西南偏西移動，在十二月四日於南沙島附近變爲一低壓區。

十二月

除了溫比亞外，十二月還有兩個熱帶氣旋影響北太平洋西部及南海區域。

南海上，一低壓區在十二月五日於南沙島西南面約250公里處發展爲一熱帶低氣壓。該熱帶低氣壓向西移動，在十二月七日於越南胡志明市以南約150公里處掠過，然後減弱爲一低壓區。

蘇力(0023)在十二月二十九日於雅蒲島以西約850公里處發展爲一熱帶低氣壓，並向西北移動。翌日，它增強爲一熱帶風暴，接著向北前進。蘇力進一步加強爲一強烈熱帶風暴後，在本年最後的一日轉向東北推進。蘇力於二零零一年一月三日達到颱風強度，向偏東移動並迅速減弱，在一月五日變爲一低壓區。

備註：人命傷亡及財物損毀數據是根據報章報導輯錄而成。

2.1 Review of tropical cyclones in 2000

2.1.1 Tropical cyclones over the western North Pacific (including the South China Sea)

In 2000, 30 tropical cyclones occurred over the western North Pacific and the South China Sea (i.e. the area bounded by the Equator, 45°N, 100°E and 180°). This number was near to the normal (1961-1990). Thirteen of these tropical cyclones attained typhoon strength, three less than the normal. The weak La Niña seemed to have little influence on the 2000 tropical cyclone season over the western North Pacific.

The first tropical cyclone of the year occurred in May. The number of tropical cyclones of all intensities occurring in the twelve months in 2000 is shown in Figure 2.1. The monthly distribution of typhoons is also shown.

During the year, five tropical cyclones landed over the Philippines and four visited Japan (including Ryukyu Islands). Taiwan, Korea and Vietnam were each hit by three tropical cyclones. Seven tropical cyclones made landfall over China. In addition, the east China coast was affected by the outer circulation of Typhoon Prapiroon (0012) and Typhoon Saomai (0014) in August and September respectively.

In 2000, the most intense tropical cyclone was Typhoon Bilis (0010) in August. Bilis had maximum sustained winds near its centre near 220 km/h, and minimum sea-level pressure about 915 hPa. Typhoon Saomai (0014) in September, with maximum sustained winds at about 205 km/h and minimum sea-level pressure about 920 hPa came a close second.

There were also a number of interacting tropical cyclones in 2000. They were Kirogi (0003) and Kai-tak (0004) in July, Prapiroon (0012) and Maria (0013) in August, and Saomai (0014) and Bopha (0015) in September. Kai-tak, Maria and Bopha all behaved erratically under this interaction.

A midget tropical depression in June was the only tropical cyclone to cross Hong Kong in the year. During its passage, tropical cyclone warning signal was in force for 4 hours 30 minutes, the shortest duration on record. On the other hand, tropical cyclone warning signals were hoisted for 89 hours for Bebinca (0021) in November, the longest period for a tropical cyclone in November.

2.1.2 Tropical cyclones in Hong Kong's area of responsibility

Of the 30 tropical cyclones in 2000, 20, or some four more than the normal, occurred within Hong Kong's area of responsibility (i.e. the area bounded by 10°N, 30°N, 105°E and 125°E) (Table 2.1). Nine of these 20 tropical cyclones developed within the area in this year. Altogether, 460 tropical cyclone warnings to ships and vessels were issued by the Hong Kong Observatory in 2000 (Table 4.2). In particular, warnings were issued concurrently for two different tropical cyclones for a total of 84 hours.

2.1.3 Tropical cyclones over the South China Sea

In 2000, 13 tropical cyclones affected the South China Sea. Nine, or four above normal, formed in-situ. Another four crossed from the western North Pacific. Four of the 13 attained typhoon strength. Three of the typhoons struck Taiwan and one posed a threat to China.

2.1.4 Tropical cyclones affecting Hong Kong

Seven tropical cyclones affected Hong Kong in 2000 (Figure 2.2). This was near to the normal (Table 2.2). All except Bilis (0010) and Bebinca (0021) formed in the South China Sea.

The highest signal displayed in this year was the Strong Wind Signal No. 3, hoisted for a midget tropical depression in June, Severe Tropical Storm Maria (0013) and Typhoon Wukong (0016).

For the other four tropical cyclones, viz., Typhoon Kai-tak (0004), a tropical depression over the South China Sea, Typhoon Bilis (0010) and Severe Tropical Storm Bebinca (0021), necessitated only the Standby Signal No. 1 in Hong Kong.

2.1.5 Tropical cyclone rainfall

Tropical cyclone rainfall (defined as the total rainfall recorded at the Hong Kong Observatory from the time when a tropical cyclone was centred within 600 km of Hong Kong to 72 hours after it had dissipated or moved outside 600 km of Hong Kong) in 2000 was 671.2 mm. This is 10 % below the normal of 737.9 mm and accounting for some 24 % of the year's total rainfall of 2 752.3 mm.

2.2 Monthly overview

A monthly overview of tropical cyclones is given in this Section. Detailed reports on tropical cyclones affecting Hong Kong are presented in Section 3.

JANUARY - APRIL

No tropical cyclone occurred over the western North Pacific and the South China Sea during January to April.

MAY

Three tropical cyclones occurred over the western North Pacific and the South China Sea in May.

Damrey (0001) was the first tropical cyclone of 2000. It formed as a tropical depression about 560 km west-northwest of Yap on 6 May. Tracking northwestwards, Damrey intensified rapidly into a severe tropical storm and slowed down the next day. It then recurved northeastwards and attained typhoon strength on 8 May. Damrey reached peak intensity the following day. The maximum sustained winds near its centre were estimated to be 175 km/h. It began to weaken on 10 May. Damrey became a severe tropical storm a day later while skirting past Iwo Jima and Ogasawara Islands. It weakened progressively on 12 May and became an extratropical cyclone that night.

Longwang (0002) developed into a tropical depression about 500 km southeast of Gaoxiong on 19 May. It quickly deepened into a tropical storm that morning. Moving northeastwards over the Pacific, Longwang became an extratropical cyclone the next day.

Over the South China Sea, a tropical depression formed about 330 km southeast of Dongsha Dao on 21 May. Taking on a northeastward course and crossing the Balingtang and Bashi Channel, it became an extratropical cyclone the following day.

JUNE

Only one tropical cyclone, of tropical depression strength, occurred over the western North Pacific and the South China Sea in June. This tropical depression necessitated the direct hoisting of the Strong Wind Signal No. 3 in Hong Kong on 18 June.

A midget tropical depression developed rapidly on the night of 18 June when it was about 35 km south-southwest of the Hong Kong Observatory Headquarters. Tracking northwards, the midget tropical depression passed between Lantau Island and Hong Kong Island, traversed Tsing Yi and made landfall near Tsuen Wan. The spiral rain bands of the tropical depression brought squally showers to Hong Kong and strong winds were also experienced. After making landfall, the tropical depression entered Shenzhen and dissipated over inland Guangdong.

JULY

Six tropical cyclones occurred over the western North Pacific and the South China Sea in July. Amongst them, Typhoon Kai-tak and another tropical depression landfalling over Hainan Island necessitated the hoisting of the Standby Signal No. 1 in Hong Kong.

Kirogi (0003) formed as a tropical depression about 820 km northwest of Yap on 2 July. After taking on a northward course the next day, Kirogi intensified rapidly and attained typhoon strength on 4 July when it was centred about 1 200 km east-northeast of Manila. Torrential rain associated with Kirogi and another tropical

depression (later named Typhoon Kai-tak) which at that time was about 260 km to the northwest of Manila resulted in 40 deaths and 14 reported missing in the Philippines. Around 1.2 million people were displaced by flash floods. The total damage was estimated at US$ 4.5 million.

Kirogi began to track north-northeastwards on 5 July and displayed a double eye-wall on 7 July (Figure 2.3). Moving quickly at about 50 km/h, Kirogi skirted the eastern coast of Japan and weakened gradually on 8 July. It became an extratropical cyclone the next day. In Japan, the passage of Kirogi caused two deaths and seven injuries. At least 28 cases of landslides were reported, more than 550 houses damaged and some 70 local flights cancelled.

Kai-tak (0004) developed into a tropical depression about 260 km northwest of Manila on 4 July. Drifting slowly over the South China Sea, it intensified into a tropical storm on 5 July, became a severe tropical storm the next day and attained typhoon strength on 7 July. Kai-tak also displayed a double eye-wall the following day. It weakened into a severe tropical storm before landfalling near Taidong on eastern Taiwan on 9 July. Upon crossing Taiwan, Kai-tak continued to move northwards and made a second landfall near Wenzhou on 10 July. After passing near Shanghai, Kai-tak entered the Yellow Sea and weakened gradually into a tropical depression. It became an extratropical cyclone the following day.

Over the South China Sea, an area of low pressure intensified into a tropical depression about 220 km east of Xisha on the afternoon of 15 July. It then moved northwestwards to make landfall over the eastern part of Hainan Island on the evening of 16 July before dissipating near Haikou.

Tembin (0005) formed as a tropical depression about 260 km south-southeast of Iwo Jima on 18 July. It intensified into a tropical storm that night. Tembin moved northwards over the Pacific during the next three days. It weakened into a tropical depression and dissipated over the water to the east of Japan on 22 July.

Bolaven (0006) developed into a tropical depression about 630 km east-northeast of Manila on 22 July. It moved west-northwestwards at first before starting to recurve towards the north-northeast in the vicinity of Luzon on 24 July. Bolaven deepened into a severe tropical storm near Okinawa on 26 July. It became slow moving over the next two days during which the southwesterly winds in the wake of Bolaven brought torrential rain and severe flooding to Taiwan. One person was killed there and another two reported missing. Damage to agricultural crops was put at NT$9 million. Bolaven adopted a northward course on 29 July and weakened into a tropical storm the next day. Bolaven became an extratropical cyclone over the eastern coast of South Korea on the last day of the month.

Chanchu (0007) developed into a tropical depression just west of International Date Line on 28 July. Drifting northwards, it became a tropical storm the next day. Chanchu weakened and dissipated over water on 30 July.

AUGUST

Six tropical cyclones occurred over the western North Pacific and the South China Sea in August. Amongst them, Bilis and Maria necessitated the hoisting of the tropical cyclone warning signals in Hong Kong.

Jelawat (0008) developed into a tropical depression about 1 230 km east-southeast of Iwo Jima on 1 August. It intensified rapidly into a typhoon the next day. Jelawat skirted Iwo Jima on the morning of 4 August and headed west at about 15-20 km/h across the western North Pacific during the next few days. It attained peak intensity on 6 August with maximum sustained winds near its centre estimated at 165 km/h. Jelawat had a circular and very large eye whose diameter was about 100 km. It traversed Okinawa on 8 August where electricity supply to some 20 000 families were interrupted. Jelawat entered the East China Sea on 9 August. It weakened quickly while making landfall over Xiangshan in Zhejiang province on 10 August. Moving further inland, Jelawat degenerated into an area of low pressure the following day. In Zhejiang, Jelawat caused minor disruption to traffic and damage to crops.

Ewiniar (0009) formed as a tropical depression about 520 km west of Guam on 9 August. It intensified into a tropical storm the next day. Moving rapidly north, Ewiniar became a severe tropical storm on 11 August. It turned towards the east-northeast the next day and strengthened into a typhoon on 15 August. Moving into higher latitudes, Ewiniar weakened progressively and became an extratropical cyclone on 18 August.

Bilis (0010) originated as a tropical depression about 130 km north-northwest of Yap on 18 August and deepened into a tropical storm the next day. Tracking northwestwards, Bilis intensified further into a typhoon on 20 August. Bilis attained peak intensity on 22 August when the maximum sustained winds near its centre were estimated to be near 220 km/h. Bilis crossed Taiwan during the night and made a second landfall near Xiamen in Fujian on 23 August. It degenerated into an area of low pressure the next day. Bilis and the heavy rain in its wake inflicted severe losses in both Taiwan and Fujian. In Hong Kong, the passage of Bilis caused the Standby Signal No.1 to be hoisted on 23 August. The Black Rainstorm Warning was issued on 24 August when severe rainstorms associated with Bilis affected Hong Kong and caused many incidents of flooding and landslips.

Kaemi (0011) developed into a tropical depression about 300 km north of Nansha Dao on 20 August and became a tropical storm the next day. It tracked towards the coast of Vietnam and made landfall near Da Nang on 22 August. Kaemi became an area of low pressure the following day.

Prapiroon (0012) developed into a tropical depression about 1 150 km south-southeast of Okinawa on 26 August. It intensified into a tropical storm on 27 August and began to turn more to the west. Prapiroon deepened into a severe tropical storm a day later. Under the influence of Prapiroon's outer rainbands, torrential rain affected parts of Taiwan causing landslides and disruption to traffic. On entering the East China Sea, Prapiroon tracked northwards and strengthened further into a typhoon on 30 August with maximum sustained winds near the centre estimated at 130 km/h. Under the combined onslaught of high astronomical tide, storm surge and heavy rain, the provinces of Jiangsu and Zhejiang suffered severe losses. The coastal areas were buffeted by gale force winds. Thousands of houses collapsed and hundred thousands hectares of farmland inundated. The two airports in Shanghai had to be temporarily closed. Several persons were killed and hundred others were injured. Prapiroon weakened into a severe tropical storm on the last day of the month, traversing North Korea from southwest to northeast. After weakening into a tropical storm on 1 September, Prapiroon turned more to the east and evolved into an extratropical cyclone that night. In the fury of Prapiroon, at least 42 people were killed in North Korea. Many roads and farmlands were also destroyed.

Maria (0013) had its origins in an area of low pressure on a trough which crossed the south China coast and tracked south on the morning of 27 August. It formed as a tropical depression about 250 km southwest of Hong Kong that night. Maria became a tropical storm on 29 August. Under the Fujiwhara effect* induced by its interaction with Prapiroon, Maria's movement in the first few days of its life was erratic. It moved slowly at first, then headed away from and finally towards the south China coast (Figure 2.4). Maria made landfall near Shanwei on the early morning of 1 September. Moving further inland on a northward course, it weakened gradually and degenerated into an area of low pressure that night. Heavy rain associated with Maria triggered off landslides and flooding in Guangdong.

SEPTEMBER

Apart from Prapiroon and Maria, six other tropical cyclones occurred over the western North Pacific and the South China Sea in September. Among these six, Wukong necessitated the hoisting of the Strong Wind Signal No. 3 in Hong Kong.

Saomai (0014) formed as a tropical depression about 1 200 km east-northeast of Guam on 3 September. Moving towards the west, Saomai intensified rapidly into a severe tropical storm on 4 September. Saomai briefly attained typhoon strength that night but weakened into a severe tropical storm the next day. On 6 September, it adopted a northwestward course. Saomai re-gained typhoon strength over the Pacific on 9 September. Satellite imageries showed a small but very well-defined eye on the following day. Also, peak intensity was reached that day when maximum sustained winds near its centre were estimated to be about 205 km/h. This made Saomai comparable in strength to Typhoon Bilis which occurred in the previous month.

Maintaining typhoon strength, Saomai traversed Okinawa on 12 September. As reported by the press, the circulation of Saomai brought up to 600 mm of rainfall in 24 hours to Japan, the heaviest in at least a century. The heavy rain triggered off severe flooding and landslides in central Japan. Seven persons were killed and 40 others were injured. About 400 000 people had to be evacuated. Some 37 800 houses were flooded, 12 bridges were washed away and roads were damaged in 170 places. A tornado also swept through a residential area in central Tokyo on the same day.

*Fujiwhara effect – An interaction where two tropical cyclones within a certain distance rotate about each other.

Upon entering the East China Sea on 13 September, Saomai slowed down. Storm surge and heavy rain due to Saomai together with high astronomical tide wreaked havoc over Zhoushan and Ningbo in the province of Zhejiang in China. In Zhoushan, about 20 000 hectares of farmland were inundated and 2 500 houses collapsed. Some 225 boats and 130 piers were damaged. Tides at several places in Ningbo reached near record level.

Saomai made a sharp turn and accelerated towards the north-northeast on 15 September. It weakened into a severe tropical storm before making landfall near Pusan in South Korea the next day. Two people were killed and several others were reported missing during the passage of Saomai. On leaving South Korea, Saomai became an extratropical cyclone on 16 September. It's life-span of 13 days was the longest of all tropical cyclones in 2000.

On 6 September, Bopha (0015) formed as a tropical depression about 1 020 km east-southeast of Okinawa. Bopha strengthened into a tropical storm and pushed north that day. Upon turning towards the west, it became a severe tropical storm and skirted Okinawa on 8 September. Bopha weakened into a tropical storm on 9 September. On the same day, due to the Fujiwhara effect brought on by its interaction with Typhoon Saomai, Bopha began to rotate anti-clockwise around Typhoon Saomai which was about 1 300 km to its east-southeast (Figure 2.5). As a result, Bopha curved south to head towards the Philippines while Saomai tracked northwestwards. Bopha made landfall near the northern tip of Luzon on 11 September. Bopha then weakened into a tropical depression and dissipated over land that night.

Over the South China Sea, Wukong (0016) developed into a tropical depression about 670 km south-southeast of Hong Kong on the afternoon of 5 September. After deepening into a tropical storm, Wukong turned towards the west and attained typhoon strength on the afternoon of 7 September. Heading west, Wukong made landfall and weakened into a severe tropical storm over the southern part of Hainan Island on 9 September. Direct economic loss in Hainan Island was put at 1.4 billion RMB in the fury of Wukong. Upon leaving Hainan Island, Wukong weakened further into a tropical storm and landed over Vietnam about 310 km south of Ha Noi on the afternoon of 10 September. Wukong traversed Laos and degenerated into an area of low pressure that night.

Sonamu (0017) developed into a tropical depression about 460 km south-southwest of Iwo Jima on 14 September. Moving towards the north-northeast, it rapidly intensified into a severe tropical storm near Iwo Jima on 16 September. Sonamu then tracked north and moved into high latitudes. It became an extratropical cyclone on 18 September.

Shanshan (0018) formed as a tropical depression about 770 km southeast of Wake Island on 18 September. It intensified rapidly and attained typhoon strength on 20 September. Satellite imageries began to show a well-defined eye for Shanshan. It attained peaked intensity the next day. The maximum sustained winds near its centre were estimated at 185 km/h the next day. Shanshan started to re-curve towards the northeast on 22 September. Picking up speed, Shanshan became an extratropical cyclone on 24 September.

An area of low pressure developed into a tropical depression about 840 km north-northwest of Wake Island on the early morning of 29 September. It tracked northeastwards slowly over the Pacific and weakened into an area of low pressure on the night of 30 September 2000.

OCTOBER

Four tropical cyclones occurred over the western North Pacific and the South China Sea in October. Amongst them, Bebinca formed on the last day of the month and necessitated the hoisting of the Standby Signal No. 1 in November.

Over the South China Sea, an area of low pressure intensified into a tropical depression about 500 km east of Ho Chi Minh City on 7 October. The tropical depression drifted slowly at first before turning towards the west-northwest on 9 October. It tracked northeastwards during the next three days. After passing near Xisha Dao, the tropical depression turned westwards on 13 October and weakened into an area of low pressure the following day.

Yagi (0019) formed as a tropical depression about 470 km south of Iwo Jima on 22 October. Taking on a west-northwestward course over the Pacific, it intensified into a typhoon on 25 October. Yagi then executed a clockwise looping motion near Ryukyu Islands, weakening at the same time. It became an area of low pressure on 27 October.

Xangsane (0020) developed into a tropical depression about 560 km west of Yap on 26 October. It intensified rapidly into a severe tropical storm the next day. Tracking west-northwestwards, Xangsane rampaged across the central part of the Philippines on 28 October. The passage of Xangsane caused at least 19 deaths and 220 injuries in the Philippines. Also, about 60 people were reported missing. More than 130 000 people had to flee their homes. Over 30 flights were cancelled on 28 October. The total damage was estimated at US$ 12 million. Upon entering the South China Sea on 29 October, Xangsane became slow-moving. It attained typhoon strength before tracking north-northeast the next day. Xangsane skirted the eastern coast of Taiwan on 1 November. During the passage of Xangsane, 54 people were killed in Taiwan. Another 9 people went missing. A freighter capsized in rough seas off Keelung, and 23 Filipino crew members went missing. In the fury of Xangsane, electricity supply to some 150 000 households was cut off and water supply to over 120 000 households was disrupted in Taiwan. Agricultural loss was estimated at around NT $ 2.5 billion. After smashing Taiwan, Xangsane weakened into a severe tropical storm and evolved into an extratropical cyclone over the East China Sea that night.

Bebinca (0021) developed into a tropical depression about 800 km west of Yap on 31 October. Moving northwestwards, Bebinca intensified into a severe tropical storm on 2 November prior to landfall over the Philippines. Bebinca took on a west-northwest track and swept across Luzon. After entering the South China Sea on 3 November, Bebinca slowed down and began to turn northwards the following day. It edged closer the south China coast at a speed of about 10 km/h on 5 November. Bebinca weakened into a tropical storm the next day. Weakening further into a tropical depression, Bebinca tracked westwards at about 15 km/h on 7 November. Skirting past over the waters south of Hong Kong, Bebinca moved towards the coastal areas of western Guangdong and degenerated into an area of low pressure the next morning.

NOVEMBER

Apart from Xangsane and Bebinca, two other tropical cyclones occurred over the western North Pacific and the South China Sea in November.

A tropical depression developed about 310 km southeast of Okinawa on 9 November. Moving northeastwards, the tropical depression became an extratropical cyclone near Okinawa that night.

On 28 November, Rumbia (0022) formed as a tropical depression about 770 km west of Yap. It intensified rapidly into a tropical storm that night. On the last day of November, Rumbia moved west-northwestwards towards the Philippines. Rumbia traversed the Philippines on 1 December. It weakened into a tropical depression before entering the South China Sea the next day. Tracking west-southwestwards, Rumbia became an area of low pressure near Nansha Dao on 4 December.

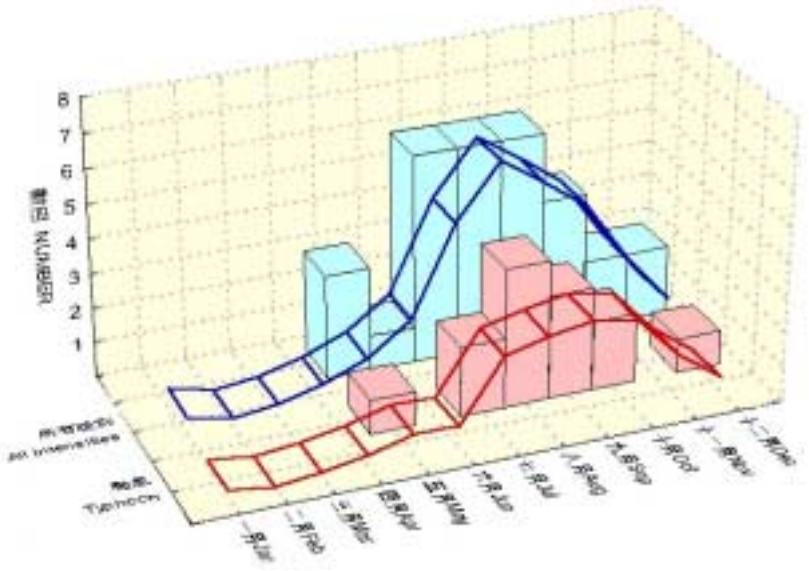
DECEMBER

Apart from Rumbia, two other tropical cyclones occurred over the western North Pacific and the South China Sea in December.

Over the South China Sea, an area of low pressure intensified into a tropical depression about 250 km southwest of Nansha Dao on 5 December. Moving towards the west, the tropical depression passed about 150 km to the south of Ho Chi Minh City in Vietnam on 7 December and then degenerated into an area of low pressure.

Soulik (0023) formed as a tropical depression about 850 km west of Yap on 29 December and tracked northwestwards. It intensified into a tropical storm the next day and turned towards the north. On the last day of the year, Soulik strengthened further into a severe tropical storm and tracked east-northeastwards. Soulik attained typhoon strength on 3 January 2001. It proceeded east and weakened rapidly, becoming an area of low pressure on 5 January.

Note: Casualties and damage figures were compiled from press reports.



強度 Intensity / 年份 Year	2000 總數 Total	(1961-1990) 平均 Mean
所有級別 All intensities	30	31
隨後達到颱風程度的熱帶氣旋 Tropical cyclones subsequently attaining typhoon intensity	13	16

圖 2.1　二零零零年各月在北太平洋西部及南海區域所有熱帶氣旋的數目，以及颱風之每月分佈。

Figure 2.1　The number of tropical cyclones of all intensities occurring in the twelve months in 2000, and the monthly distribution of typhoons.

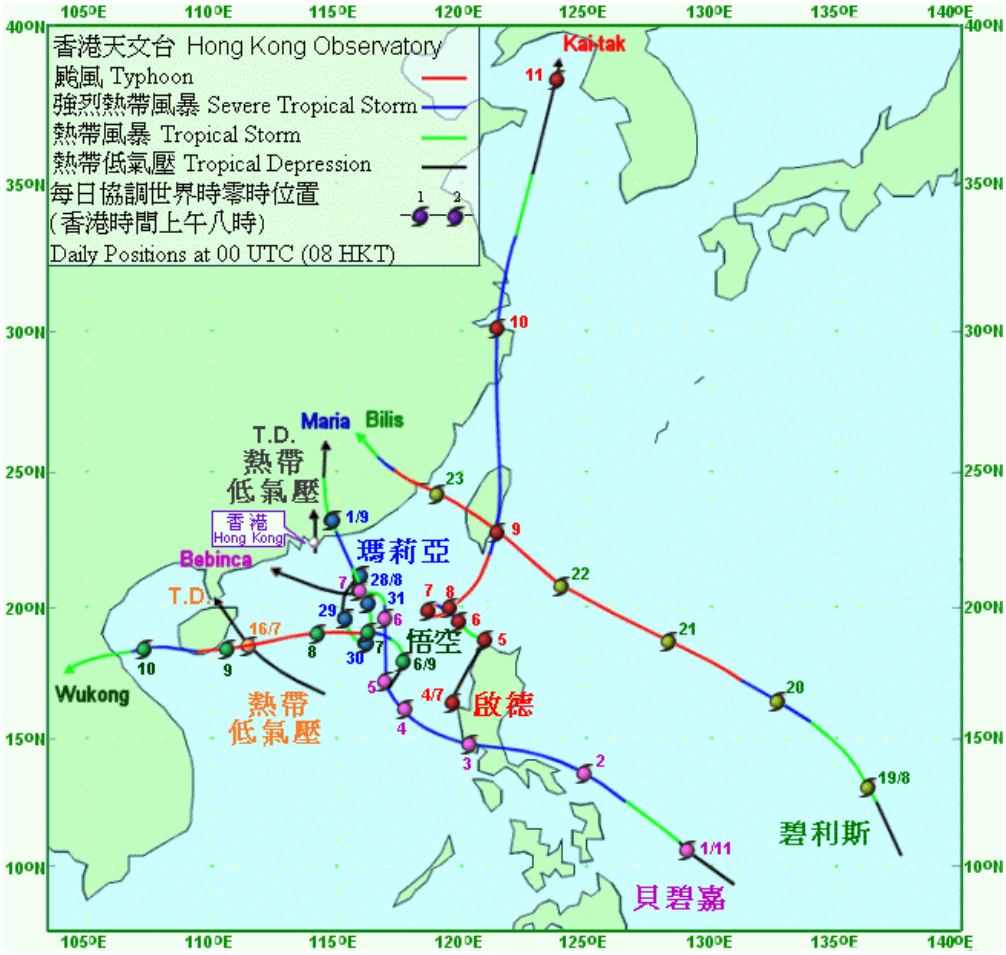


圖 2.2　二零零零年七個影響香港的熱帶氣旋的路徑圖。

Figure 2.2　Tracks of the seven tropical cyclones affecting Hong Kong in 2000.

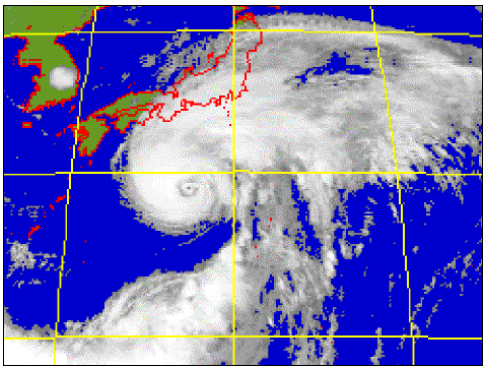
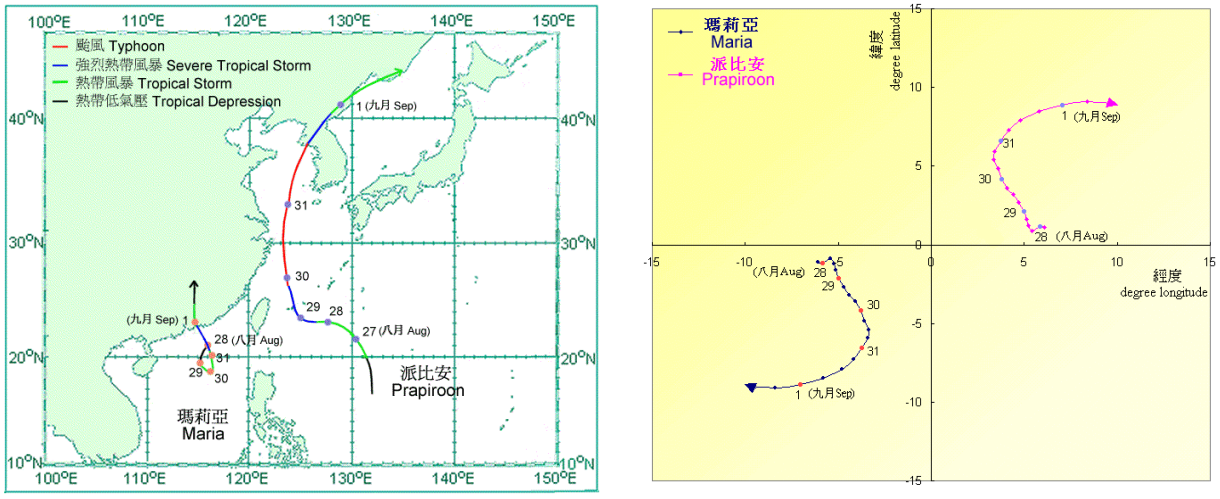


圖 2.3　二零零零年七月七日約上午10時30分的紅外線衛星圖片，顯示颱風鴻雁中心的雙眼壁。〔此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5）〕

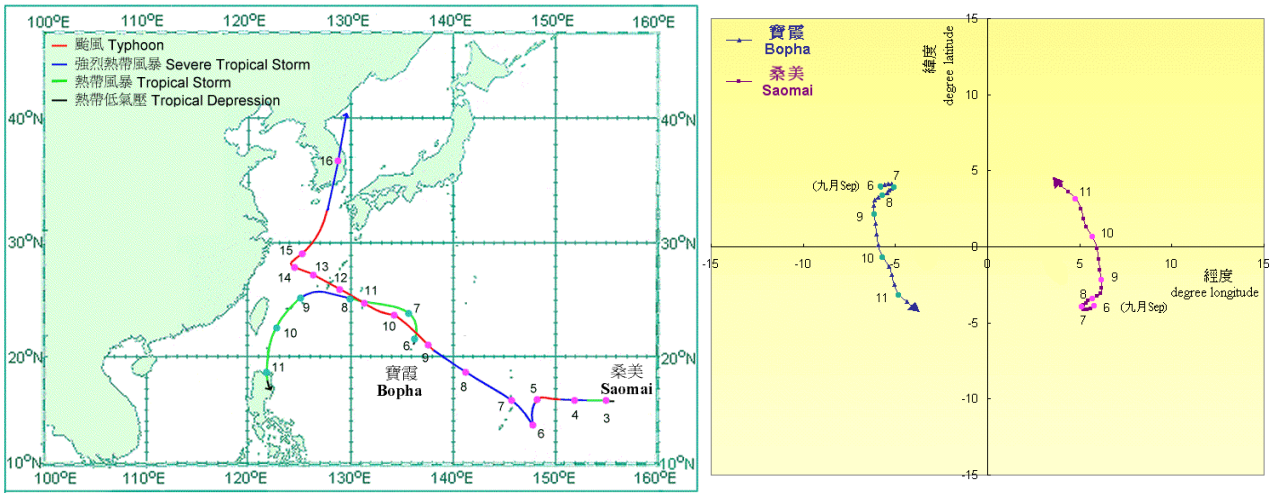
Figure 2.3　Infra-red satellite imagery at around 10.30 a.m. on 7 July 2000 showing the double eye-wall of Typhoon Kirogi (originally captured by GMS-5 of JMA).



(a)　(b)

圖 2.4　在八月二十八日至三十日，瑪莉亞和派比安產生藤原效應，瑪莉亞當時的移動路徑變爲不規則(a)。期間，瑪莉亞與派比安作反時針方向轉動(b)。

Figure 2.4　Under the Fujiwhara effect induced by its interaction with Prapiroon, Maria's movement was erratic on 28-30 August (a). During this time, Maria and Prapiroon rotated anti-clockwise around each other (b).



(a)　(b)

圖 2.5　在九月八日至十一日，寶霞和桑美產生藤原效應，寶霞當時環繞著桑美向南移動(a)。期間，寶霞與桑美作反時針方向轉動(b)。

Figure 2.5　Under the Fujiwhara effect induced by its interaction with Saomai, Bopha tracked southwards to rotate around Saomai on 8-11 September (a). During this time, Bopha and Saomai rotated anti-clockwise around each other (b).

表 2.1　在香港責任範圍內 (10^{o} - 30^{o}N, 105^{o} - 125^{o}E)，熱帶氣旋出現之每月分佈

TABLE 2.1 MONTHLY DISTRIBUTION OF FIRST OCCURRENCE OF TROPICAL CYCLONES IN HONG KONG'S AREA OF RESPONSIBILITY (10^{o} - 30^{o}N, 105^{o} - 125^{o}E)

年份 Year	月份 Month												共 Total
	一月 Jan	二月 Feb	三月 Mar	四月 Apr	五月 May	六月 Jun	七月 Jul	八月 Aug	九月 Sep	十月 Oct	十一月 Nov	十二月 Dec	
1961					3	5	2	5	4	3	1	1	24
1962					3		4	5	4	1	3		20
1963						3	3	3	2			2	13
1964					1	1	5	3	6	3	6	1	26
1965	1				2	3	4	3	2		1		16
1966					2		5	2	3	2	2	1	17
1967			1	1		1	2	6	1	2	3		17
1968							2	4	2	1	3		12
1969							3	3	4	1			11
1970		1				2	2	3	4	5	3		20
1971				1	2	2	5	3	3	4			20
1972	1					3	2	4	2	1	1	1	15
1973							4	4	2	4	3		17
1974						3	2	4	2	4	4	2	21
1975	1					1		3	2	3	1	1	12
1976					1	1	1	4	1		1	1	10
1977						1	4	1	3		1		10
1978	1			1		2	2	4	5	4	1		20
1979				1	2	1	3	5	2	2	1	1	18
1980			1		3	1	5	2	3	1	1		17
1981						3	3	3	1	1	3	1	15
1982			2		1	1	3	3	3	1		2	16
1983						1	3	1	3	5	2		15
1984						2	2	4	2	2	2		14
1985						2	2	2	4	4	1		15
1986					1	1	1	4	1	3	3	2	16
1987						1	3	2	1	1	3	1	12
1988	1				1	3	1	1	2	5	2	1	17
1989					2	1	4	2	4	3	1		17
1990					1	4	2	3	3	3	2		18
1991				1	1	1	3	2	2	1	3		14
1992						2	3	2	2	2			11
1993						1	1	2	3	2	2	3	14
1994				1	1	2	6	5	2	2		1	20
1995						1	1	5	5	3	1	1	17
1996		1		1	2		3	3	2	1	2		15
1997					1		1	4	1	2	1		10
1998							1	3	4	3	3	1	15
1999				1		1	1	2	3	2	1	1	12
2000					2	1	3	5	3	3	2	1	20
正常 Normal	0.2	0.0	0.1	0.1	0.8	1.6	2.8	3.2	2.7	2.3	1.8	0.6	16.4

表 2.2　　影響香港的熱帶氣旋之每月分佈

TABLE 2.2　MONTHLY DISTRIBUTION OF TROPICAL CYCLONES AFFECTING HONG KONG

年份 Year	月份 # Month #												共 Total
	一月 Jan	二月 Feb	三月 Mar	四月 Apr	五月 May	六月 Jun	七月 Jul	八月 Aug	九月 Sep	十月 Oct	十一月 Nov	十二月 Dec	
1961					1		3		2				6
1962							2	1		1			4
1963						1	1	1	1				4
1964					1	1		1	4	3			10
1965						1	2		2		1		6
1966					1		3	1	1				6
1967				1		1	1	3		1	1		8
1968							1	3	2				6
1969							1		2	1			4
1970							1	2	1	2			6
1971					1	2	3	1	1	1			9
1972						2	1	1			1		5
1973							2	3	2	2			9
1974						2	1		2	4	1	1	11
1975						1		1	2	3			7
1976						1	1	2	1				5
1977						1	3	1	3				8
1978				1			1	2	2	2			8
1979							2	2	2				6
1980					1	1	4	1	2	1			10
1981						1	2	1	1				5
1982						1	2		1	1			5
1983							3		2	2			7
1984						1	1	2	1				5
1985						1	1		2	1			5
1986							1	2		1			4
1987						1		2	1	1			5
1988					1	1	1		1	2			6
1989					1	1	2		1	2			7
1990					1	2	1	1	1				6
1991							3	1	2				6
1992						1	3	1					5
1993						1	1	2	3	1	1		9
1994						2		1	1				4
1995							1	4	2	1			8
1996							2	2	2	1			7
1997							1	1					2
1998								2	1	2			5
1999				1		1	1	1	3	1			8
2000						1	2	2	1		1		7
正常 Normal	0.0	0.0	0.0	0.1	0.3	0.8	1.6	1.1	1.4	1.0	0.1	0.0	6.4

熱帶氣旋警告信號首次懸掛的月份。

The month that the tropical cyclone warning signal was firstly hoisted.

表 2.3　　香港各熱帶氣旋警告信號之意義

TABLE 2.3　MEANING OF ALL TROPICAL CYCLONE WARNING SIGNALS IN HONG KONG

信號 Signal		顯示 Display		信號之意義 Meaning of the Signal
		符號 Symbol	燈號 Lights	
戒備 Standby	1		白 White 白 White 白 White	有一熱帶氣旋集結於香港約800公里之範圍內，稍後可能影響香港。 A tropical cyclone is centred within about 800 kilometres (km) of Hong Kong and may later affect Hong Kong.
強風 Strong Wind	3		綠 Green 白 White 綠 Green	維多利亞港內吹強風或將有強風，持續風力每小時41-62公里，陣風可能超過每小時110公里。 Strong wind is expected or blowing in the Victoria harbour, with a sustained speed of 41-62 kilometres per hour (km/h), and gusts which may exceed 110 km/h.
西北 烈風或暴風 NW'LY Gale or Storm	8 西北 NW		白 White 綠 Green 綠 Green	維多利亞港內風力已達或將達每小時63-117公里之烈風或暴風程度，由所指之方向吹襲，而陣風可能超過每小時180公里。 Gale or storm force wind is expected or blowing in the Victoria harbour, with a sustained wind speed of 63-117 km/h from the quarter indicated and gusts which may exceed 180 km/h.
西南 烈風或暴風 SW'LY Gale or Storm	8 西南 SW		綠 Green 白 White 白 White	
東北 烈風或暴風 NE'LY Gale or Storm	8 東北 NE		綠 Green 綠 Green 白 White	
東南 烈風或暴風 SE'LY Gale or Storm	8 東南 SE		白 White 白 White 綠 Green	
烈風或暴風 風力增強 Increasing Gale or Storm	9		綠 Green 綠 Green 綠 Green	烈風或暴風風力現正或將會顯著增強。 Gale or storm force wind is increasing or expected to increase significantly in strength.
颶風 Hurricane	10		紅 Red 綠Green 紅 Red	風力已達或將達颶風程度。即持續風力每小時118公里或以上，而陣風可能超過每小時220公里。 Hurricane force wind is expected or blowing, with sustained speed reaching upwards from 118 km/h and with gusts that may exceed 220 km/h.

第三節

二零零零年影響香港的熱帶氣旋

Section 3

TROPICAL CYCLONES AFFECTING HONG KONG IN 2000

3.1 熱帶低氣壓：六月十八日至十九日

二零零零年六月十八日，華南沿岸受一道活躍低壓槽影響。低壓槽內不斷有大氣旋渦產生及消散。當晚9時左右，有一旋渦在大嶼山以南海面上，即香港天文台西南偏南約35公里，增強成爲一小型熱帶低氣壓。其直徑約爲200公里，中心風力每小時60公里，強風半徑則約爲25公里。

由於這熱帶低氣壓非常接近香港，本地風力亦預料會迅速增強，爲確保公眾安全起見，天文台在當晚9時15分直接懸掛三號強風信號。

這熱帶低氣壓是二零零零年首個需要天文台懸掛熱帶氣旋警告信號的熱帶氣旋，它亦是自一九五九年九月熱帶風暴娜拉以來首個未懸掛一號戒備信號或強烈季候風信號，而直接懸掛三號強風信號的熱帶氣旋。在熱帶低氣壓影響香港期間，熱帶氣旋警告信號共懸掛了4小時30分，這是有記錄以來最短的，打破了一九五八年九月另一熱帶低氣壓所締造9小時35分的紀錄。

一個熱帶低氣壓，在如此接近陸地的海面形成，是較爲罕見的。上一個在近距離生成的熱帶氣旋是一九九六年的熱帶低氣壓麗莎，位置在香港之東南約160公里，當時只需要懸掛一號戒備信號。

熱帶低氣壓在六月十八日晚形成後，以每小時約30公里的速度向北移動。它在大嶼山及香港島之間掠過，越過青衣島後，於晚上10時15分左右在荃灣附近登陸。在經過八鄉和雞公嶺後，該熱帶低氣壓在落馬洲附近進入深圳。它在晚上10時左右最接近香港天文台，當時它位於天文台以西約10公里。

熱帶低氣壓的螺旋雨帶爲香港帶來狂風驟雨，本港亦錄得強風。天文台自動氣象站網絡也捕捉到該熱帶低氣壓的環流。熱帶低氣壓掠過時，天文台在晚上9時30分左右錄得最低瞬時海平面氣壓爲999.5百帕斯卡。

隨著熱帶低氣壓繼續進入廣東內陸，它迅速消散。本地風力亦減弱，所有熱帶氣旋警告信號在六月十九日清晨1時45分除下。

在熱帶低氣壓影響香港期間，小西灣及柴灣分別有棚架倒塌和木板從地盤高處墮下，無人傷亡。

表3.1.1-3.1.3分別是熱帶低氣壓影響香港時各站所錄得的最高風速、日雨量及最高潮汐資料。圖3.1.1是熱帶低氣壓的路徑。圖3.1.2是熱帶低氣壓吹襲香港時，香港天文台總部錄得的氣壓變化。熱帶低氣壓的風力環流顯示在圖3.1.3。圖3.1.4是這小型熱帶低氣壓的概念模式示意圖。圖3.1.5是熱帶低氣壓影響香港期間的雨量分佈。熱帶低氣壓趨近香港時的衛星雲圖及雷達回波圖則顯示於圖3.1.6-3.1.7.

3.1 Tropical Depression : 18 - 19 June 2000

An active trough of low pressure was located over the sea near the south China coast on 18 June 2000. Atmospheric vortices formed and dissipated repeatedly in this trough. At about 9 p.m., one such vortex intensified into a midget tropical depression when it was over the water just to the south of Lantau Island, at a distance of about 35 km south-southwest of the Hong Kong Observatory Headquarters. The diameter of this midget tropical depression was about 200 km. Winds near the centre of the tropical depression were estimated to be about 60 km/h. The radius of strong winds of this tropical depression was estimated to be about 25 km.

The proximity of the tropical depression meant that winds over Hong Kong could be expected to strengthen rapidly. In consideration of public safety, the Strong Wind Signal No. 3, was hoisted directly at 9.15 p.m.

The tropical depression was the first tropical cyclone in 2000 to necessitate the hoisting of signals in Hong Kong, and first time since the passage of Tropical Storm Nora in September 1959 that the Strong Wind Signal No. 3 was hoisted without being preceded by the Standby Signal No. 1 or the Strong Monsoon Signal. During the passage of the tropical depression, signals were in force for a duration of 4 hours 30 minutes. This is the shortest on record. The previous record was 9 hours 35 minutes, set by another tropical depression in September 1958.

Also, it is rare for a tropical depression to form so close to the coast. The last time a tropical cyclone formed close to the coast was 1996, when Tropical Depression Lisa formed 160 km southeast of Hong Kong and the Standby Signal No. 1 was hoisted.

Following its formation on the night of 18 June, the tropical depression travelled northwards at about 30 km/h. It passed between Lantau Island and Hong Kong Island, traversed Tsing Yi and made landfall near Tsuen Wan at about 10.15 p.m. The tropical depression then crossed Pat Heung and Kai Kung Leng before entering Shenzhen near Lok Ma Chau. It was closest to the Observatory at about 10 p.m. when it was about 10 km to the west.

The spiral rain bands of the tropical depression brought squally showers to Hong Kong and strong winds were experienced in various places. The tropical depression's distinct circulation was well captured by the Observatory's network of automatic weather stations. During the tropical depression's passage over Hong Kong, the lowest instantaneous pressure of 999.5 hPa was recorded at around 9.30 p.m. at the Hong Kong Observatory Headquarters.

As the tropical depression moved further into Guangdong, it dissipated rapidly. Local winds also subsided. All signals were lowered at 1.45 a.m. on 19 June.

During the passage of the tropical depression, there were reports of collapsed scaffolding in Siu Sai Wan and fallen wooden debris at a construction site in Chai Wan. No one was injured.

Information on wind, rainfall and tide during the passage of the tropical depression is given in Tables 3.1.1 - 3.1.3. Figure 3.1.1 shows the track of the tropical depression. The time series of pressure at the Hong Kong Observatory Headquarters showing the distinct circulation of the tropical depression is given in Figure 3.1.2, and the wind field of the tropical depression in Figure 3.1.3. A conceptual model of the midget tropical depression is shown in Figure 3.1.4. The rainfall distribution associated with the tropical depression is shown in Figure 3.1.5. Satellite and radar imageries of the tropical depression when it was approaching Hong Kong are given in Figures 3.1.6 - 3.1.7.

表 3.1.1　在熱帶低氣壓影響下，本港各站在熱帶氣旋警告信號懸掛時所錄得的最高陣風、最高每小時平均風速及風向

Table 3.1.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations during the hoisting of tropical cyclone warning signal for the tropical depression

站 Station	(參閱圖 1.1) (see Fig. 1.1)	最高陣風 Maximum Gust		日/月 Date/Month	時間 Time	最高每小時平均風速 Maximum Hourly Wind		日/月 Date/Month	時間 Time
		風向 Direction	風速(公里/時) Speed (km/h)			風向 Direction	風速(公里/時) Speed (km/h)		
中環	Central	東 E	65	18/6	2117	東 E	27	18/6	2200
中環廣場	Central Plaza	東 E	103	18/6	2120	東 E	51	18/6	2200
赤鱲角 (機場)	Chek Lap Kok (Airport)	西北 NW	51	18/6	2129	西北 NW	27	18/6	2300
長洲	Cheung Chau	西南偏西 WSW	52	18/6	2222	西南偏西 WSW	34	18/6	2300
長沙灣	Cheung Sha Wan	東 E	45	18/6	2132	東北偏東 ENE	20	18/6	2200
青洲	Green Island	東北偏東 ENE	75	18/6	2119	西南偏南 SSW	45	18/6	2400
京士柏	King's Park	東 E	65	18/6	2126	東 E	30	18/6	2200
流浮山	Lau Fau Shan	西北 NW	45	18/6	2229	西北 NW	36	18/6	2300
北角	North Point	東北偏東 ENE	65	18/6	2126	東北偏東 ENE	30	18/6	2200
平洲	Ping Chau	東南 SE	62	18/6	2227	東南 SE	20	18/6	2300
西貢	Sai Kung	東南偏南 SSE	96	18/6	2229	南 S	59	18/6	2300
沙螺灣	Sha Lo Wan	西北 NW 西北 NW	36 36	18/6 18/6	2215 2217	西北 NW	19	18/6	2300
沙田	Sha Tin	東南偏東 ESE	59	18/6	2157	西南偏南 SSW	23	18/6	2300
石崗	Shek Kong	東北偏北 NNE	56	18/6	2153	東北 NE	23	18/6	2200
天星碼頭 (九龍)	Star Ferry (Kowloon)	東 E	63	18/6	2128	東 E	34	18/6	2200
打鼓嶺	Ta Kwu Ling	東北偏東 ENE	51	18/6	2218	東北偏東 ENE	20	18/6	2300
大尾篤	Tai Mei Tuk	東南偏南 SSE	81	18/6	2210	東 E	45	18/6	2200
大帽山	Tai Mo Shan	東 E	92	18/6	2115	東 E	54	18/6	2200
塔門	Tap Mun	東南 SE	79	18/6	2207	東南 SE	40	18/6	2300
大老山	Tate's Cairn	東南偏南 SSE	96	18/6	2159	東南偏南 SSE	45	18/6	2200
鯽魚湖	Tsak Yue Wu	西南 SW 西南偏南 SSW	45 45	18/6 18/6	2312 2342	西南 SW	14	18/6	2400
將軍澳	Tseung Kwan O	東 E 南 S	65 65	18/6 18/6	2133 2205	南 S	27	18/6	2300
青衣	Tsing Yi	東北偏東 ENE	88	18/6	2126	東北偏東 ENE	34	18/6	2200
屯門	Tuen Mun	西北 NW	34	18/6	2226	西北 NW	13	18/6	2300
橫瀾島	Waglan Island	南 S	94	18/6	2130	南 S	72	18/6	2200
黃竹坑	Wong Chuk Hang	東 E	59	18/6	2122	東 E	20	18/6	2200

表 3.1.2　熱帶低氣壓影響香港期間，香港天文台及其他各站所錄得的日雨量(單位爲毫米)
Table 3.1.2 Daily rainfall amounts in millimetres recorded at the Hong Kong Observatory Headquarters and other stations during the passage of the tropical depression

站 (參閱圖 3.1.5) Station (see Fig. 3.1.5)	六月十八日 18 Jun	六月十九日 19 Jun	總雨量 Total
香港天文台Hong Kong Observatory	168.1	1.7	169.8
H19　筲箕灣 Shau Kei Wan	[142.0]	2.0	[144.0]
K04　佐敦谷 Jordan Valley	[171.5]	[1.5]	[173.0]
K06　蘇屋邨 So Uk Estate	[160.0]	1.5	[161.5]
N06　葵涌 Kwai Chung	[166.0]	4.0	[170.0]
N09　沙田 Sha Tin	[168.0]	3.0	[171.0]
N12　元朗 Yuen Long	[111.5]	5.0	[116.5]
N17　東涌 Tung Chung	[119.0]	[5.0]	[124.0]
R21　踏石角 Tap Shek Kok	[112.0]	[2.0]	[114.0]
R26　石崗 Shek Kong	[115.0]	[5.0]	[120.0]
R31　大尾篤 Tai Mei Tuk	[94.0]	[5.0]	[99.0]

註：　[　] 基於不完整的每小時雨量數據。
Note : [　] based on incomplete hourly data.

表 3.1.3　熱帶低氣壓影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.1.3 Times and heights of the maximum sea level and the maximum storm surge recorded at various tide stations in Hong Kong during the passage of the tropical depression

站 (參閱圖1.1) Station (see Fig. 1.1)	最高潮位 (海圖基準面以上) Maximum sea level (above chart datum)			最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide)		
	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time
鰂魚涌 Quarry Bay	1.47	18/6	午夜 mid-night	0.21	18/6	9.55 p.m.
大埔滘 Tai Po Kau	1.59	18/6	11.47 p.m.	0.31	18/6	11.18 p.m.
尖鼻咀 Tsim Bei Tsui	1.80	19/6	0.08 a.m.	0.18	19/6	0.03 a.m.

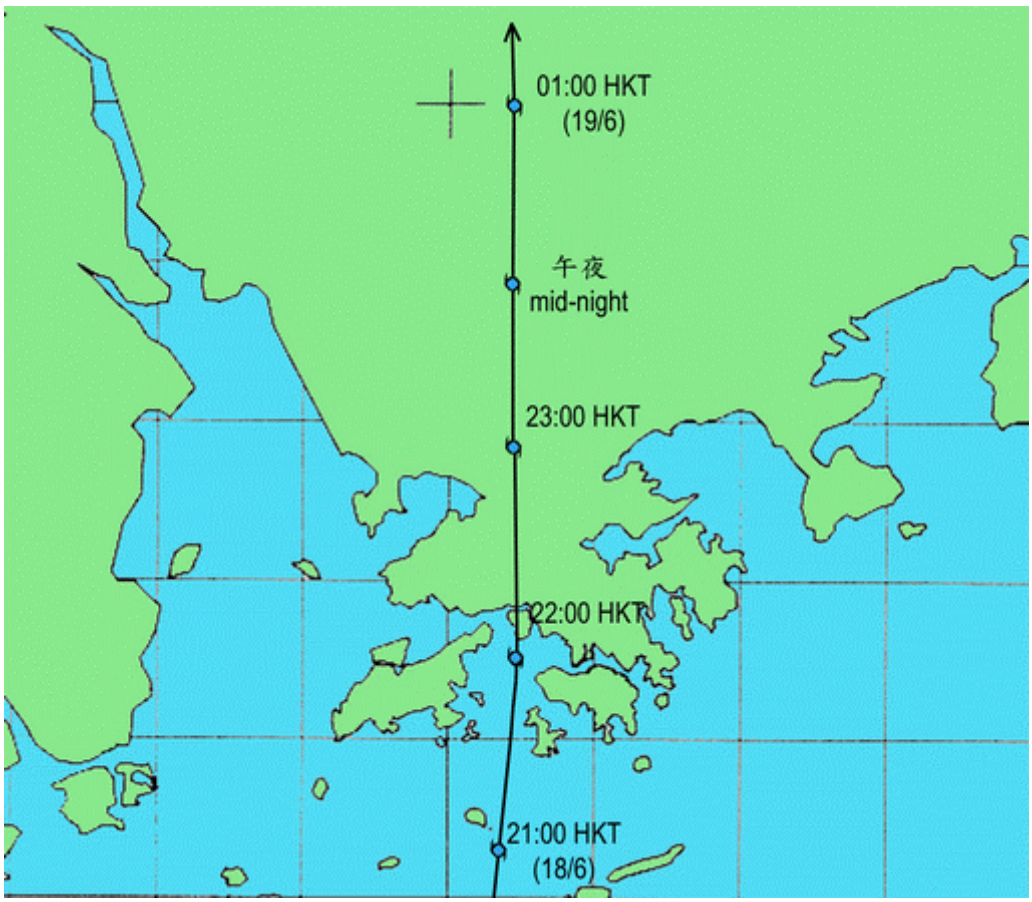


圖 3.1.1.a　　二零零零年六月十八日至十九日熱帶低氣壓的路徑圖。
Figure 3.1.1.a Track of the Tropical Depression : 18 - 19 June 2000.

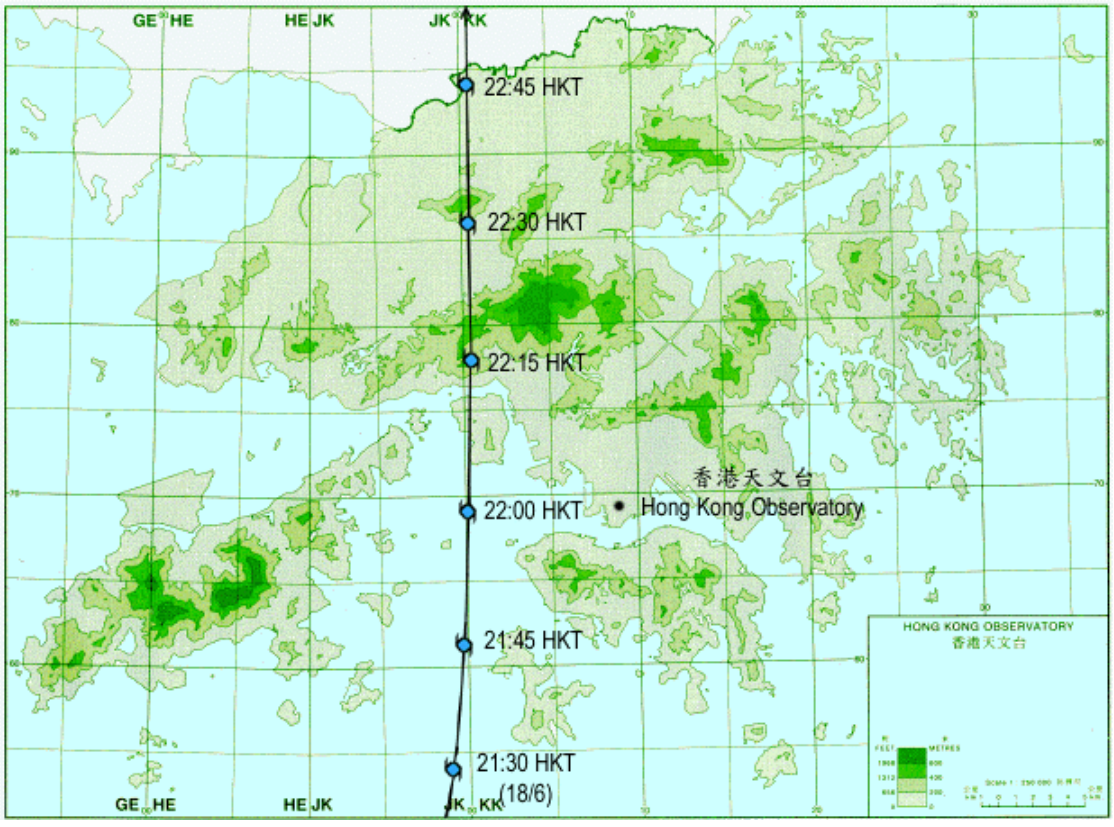


圖 3.1.1.b　　二零零零年六月十八日熱帶低氣壓越過香港時的路徑圖。
Figure 3.1.1.b Track of the Tropical Depression as it crossed Hong Kong on 18 June 2000.

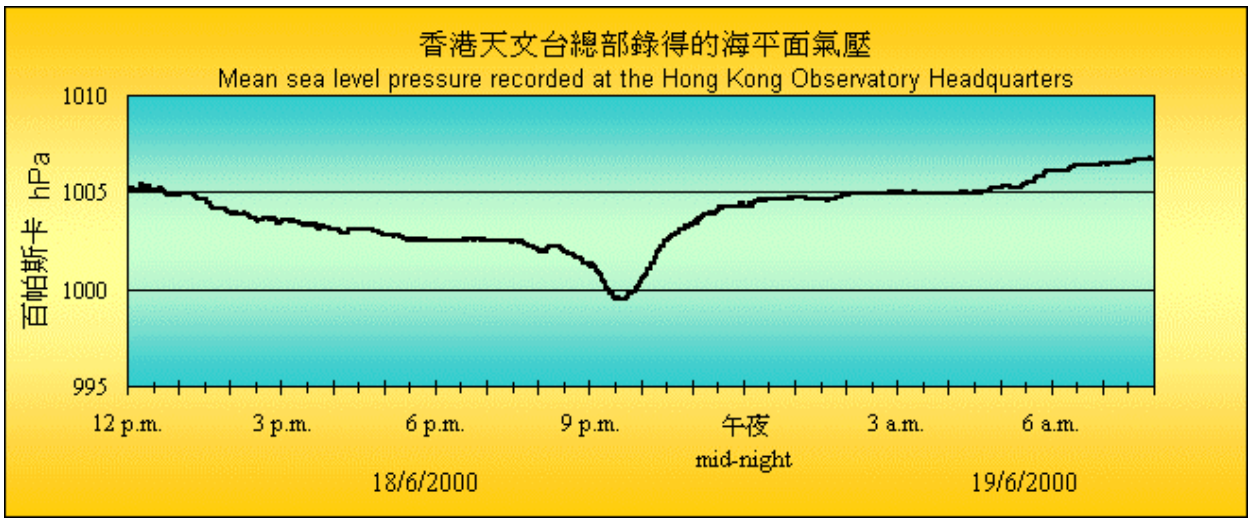


圖 3.1.2　二零零零年六月十八日至十九日香港天文台總部錄得的氣壓變化。
Figure 3.1.2　Trace of pressure recorded at the Hong Kong Observatory Headquarters on 18 - 19 June 2000.

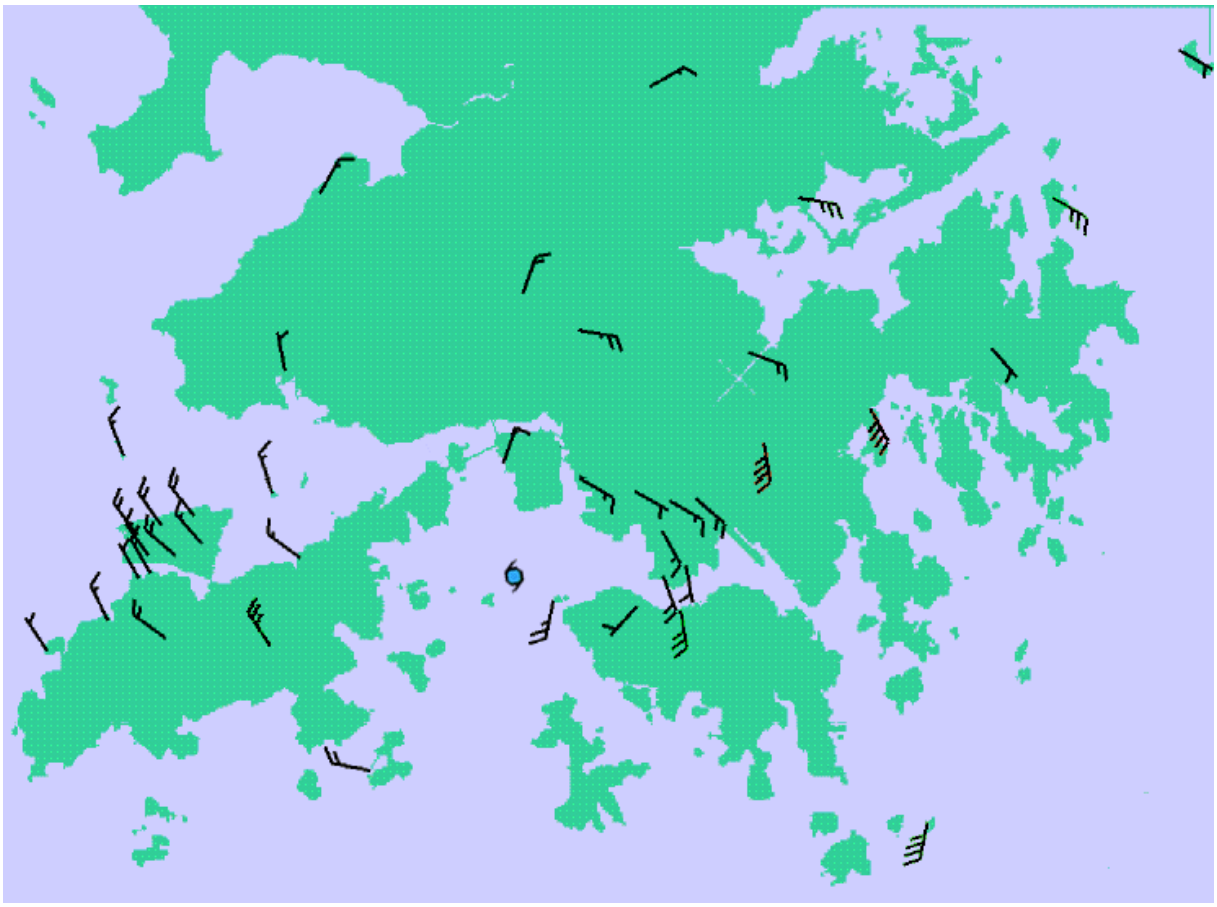


圖 3.1.3　二零零零年六月十八日下午10時香港各站錄得的風向和風速。
Figure 3.1.3　Winds recorded at various stations in Hong Kong at 10 p.m. on 18 June 2000.

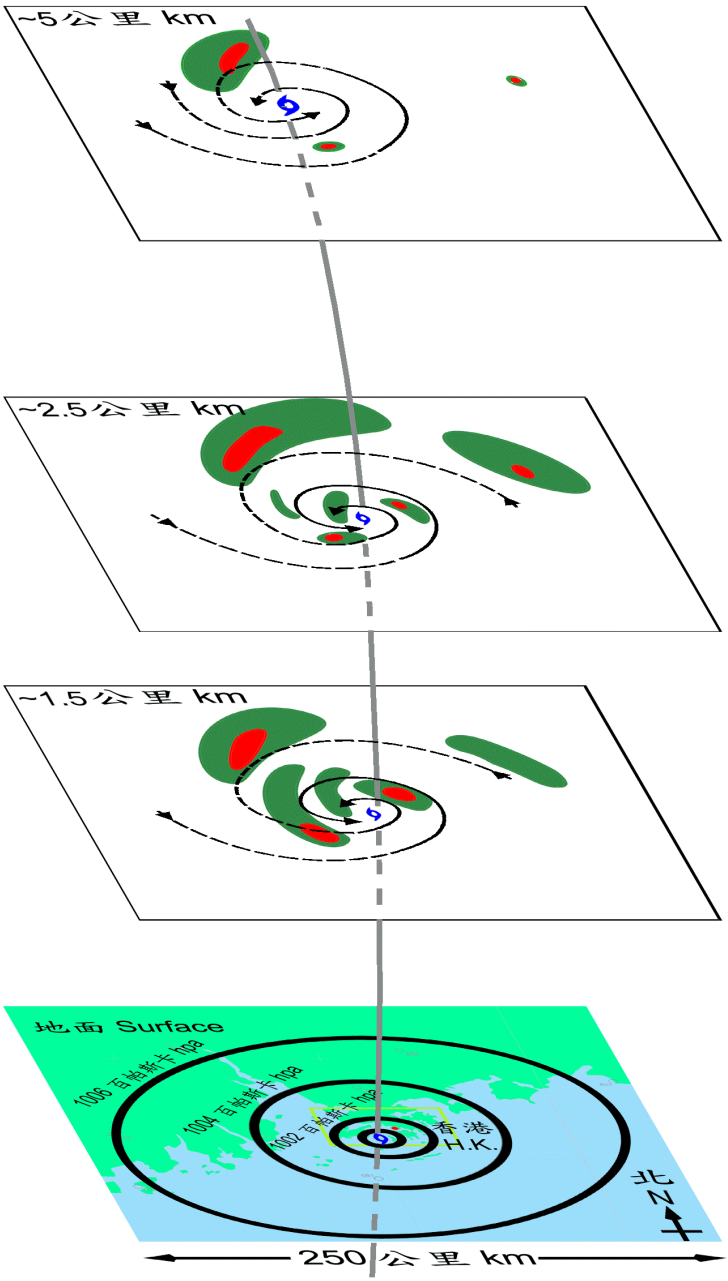


圖 3.1.4　二零零零年六月十八日小型熱帶低氣壓的概念模式，顯示了這熱帶低氣壓的大小，其中心隨著高度向西北的傾斜，及其主要降雨區的位置。在1.5、2.5及5公里高的顏色區域爲雨區內的最高降雨率：深紅色是每小時10至30毫米，深綠色是少於每小時10毫米。

Figure 3.1.4　Conceptual model of the midget tropical depression on 18 June 2000, showing the size of the midget tropical depression, the tilting of its centre to the northwest with height, and the main precipitation pattern. Coloured areas at 1.5, 2.5 and 5 km are areas of maximum rainfall intensity : dark red 10-30 mm/h, dark green less than 10 mm/h.

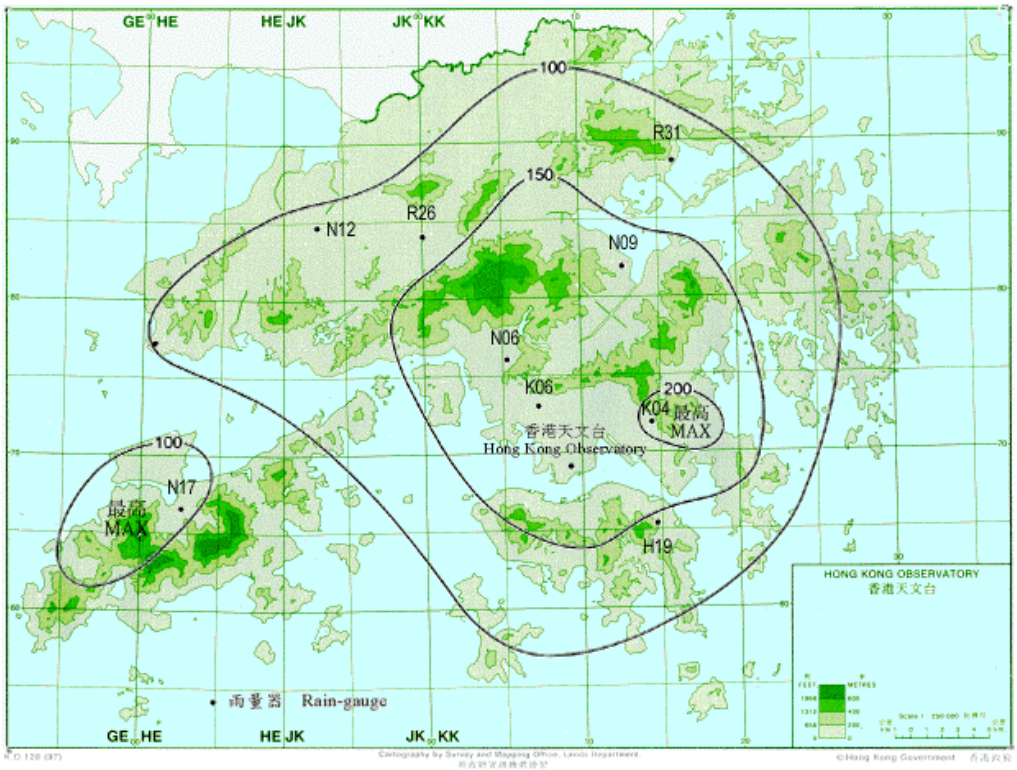


圖 3.1.5　　二零零零年六月十八日至十九日的雨量分佈圖。

Figure 3.1.5　Rainfall distribution on 18 - 19 June 2000.

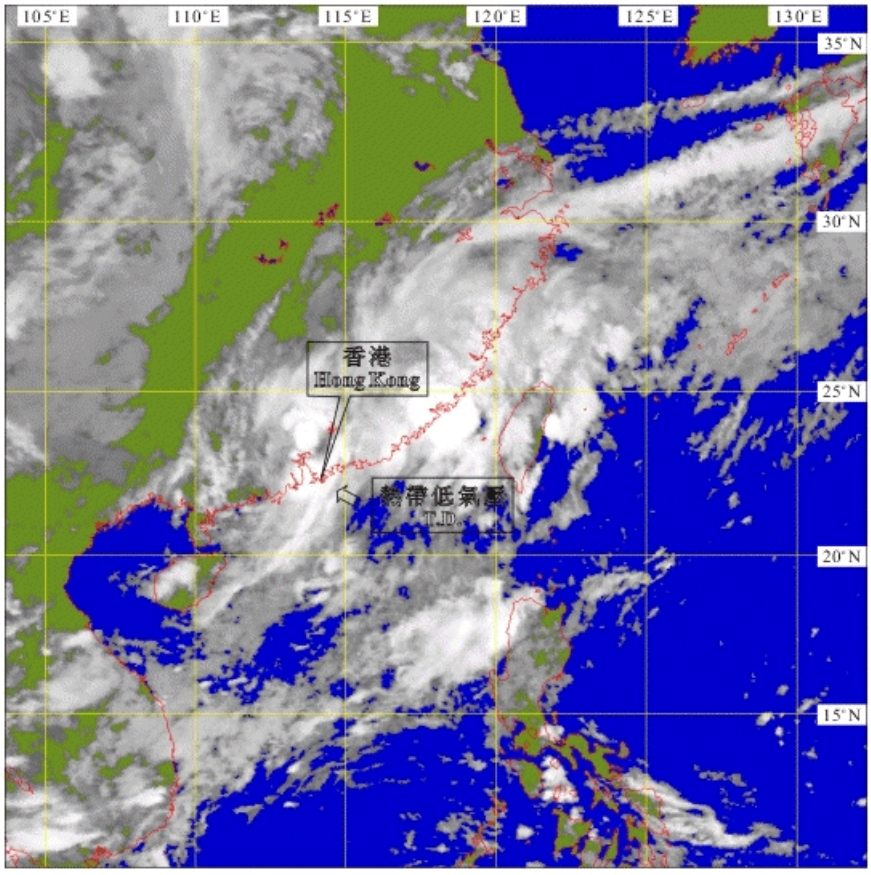


圖 3.1.6　　二零零零年六月十八日約下午10時30分的紅外線衛星圖片。當時，熱帶低氣壓正在登陸香港。（此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5））

Figure 3.1.6　Infra-red imagery at around 10.30 p.m. on 18 June 2000 when the tropical depression was making landfall over Hong Kong. (The cloud imagery was originally captured by GMS-5 of JMA)

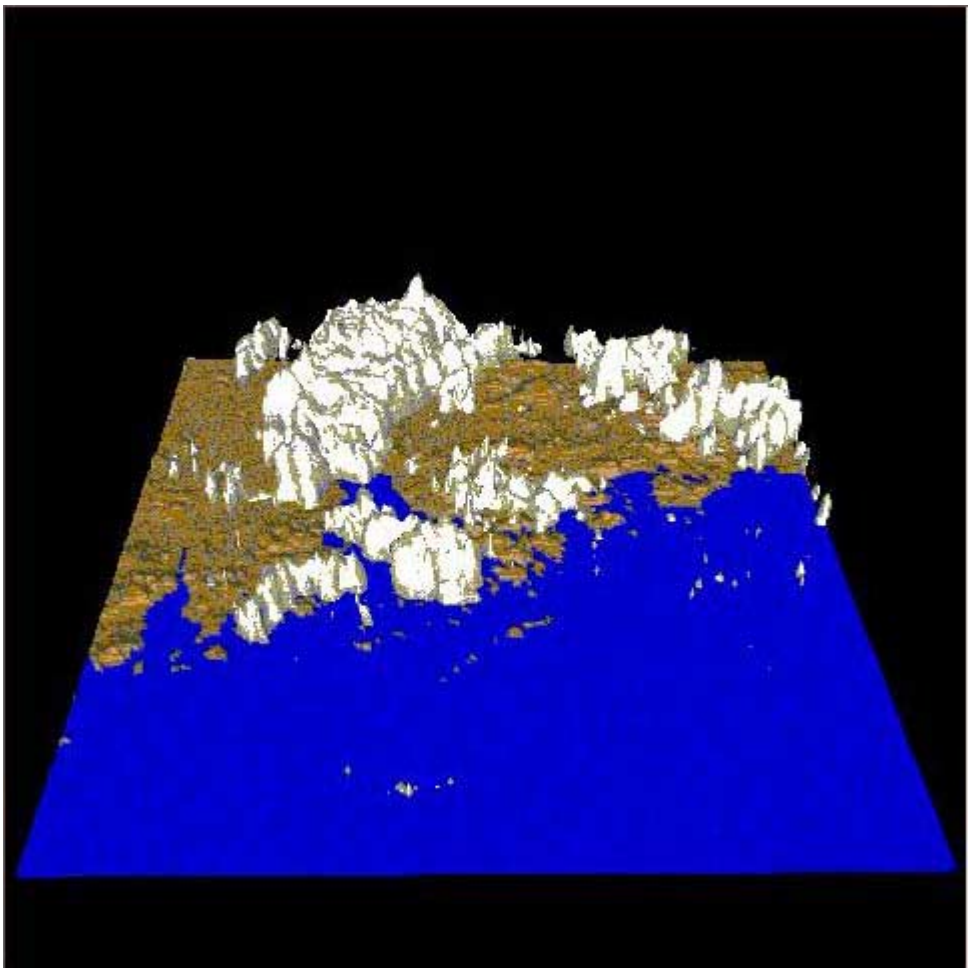


圖 3.1.7　二零零零年六月十八日下午10時的立體雷達回波圖片。當時熱帶低氣壓的螺旋雨帶正爲香港帶來狂風暴雨。

Figure 3.1.7　3-D radar echoes captured at 10 p.m. on 18 June 2000 when the spiral rain bands of the tropical depression was bringing squally showers to Hong Kong.

3.2 颱風啓德(0004) : 七月四日至十一日

啓德在七月四日早上於馬尼拉西北約260公里處發展爲一熱帶低氣壓。它初時沿著呂宋西岸向東北偏北推進。受到在北太平洋西部並離馬尼拉東北偏東約1 250公里的颱風鴻雁的影響，啓德在該晚於呂宋西北部變得緩慢移動。

在啓德及鴻雁所帶來的暴雨下，菲律賓共有40人死亡及14人失蹤。另外，約120萬人受洪水的影響而被迫遷離，總損失約爲450萬美元。

啓德在七月五日於南海上增強爲一熱帶風暴並開始緩慢地向西北移動。翌日它進一步增強爲一強烈熱帶風暴，並在七月七日以逆時針方向打圈轉動時加強成爲一颱風。在衛星雲圖上，啓德的風眼清晰可辨。啓德的最高持續風速及最低中心氣壓分別估計約爲每小時140公里及960百帕斯卡。

啓德的中心在七月八日出現雙眼壁，它同日採取東北偏北途徑移動趨向台灣。它減弱爲一強烈熱帶風暴後，掠過台灣東部沿岸地區。啓德帶來的大雨在台灣造成水浸及山泥傾瀉，約有五人死亡。

離開台灣後，啓德以每小時約30公里的高速向北移動，在七月十日於溫州附近登陸，然後橫過華東沿岸地區。啓德掠過上海後，進入黃海並逐漸減弱爲一熱帶低氣壓。啓德最後在次日變爲一溫帶氣旋。

在香港，一號戒備信號在七月六日下午3時50分懸掛，當時啓德位於香港東南偏東約600公里。在隨後的數日，本港有煙霞，下午及黃昏有零散驟雨及幾陣局部地區性雷暴。啓德在七月七日約上午8時最接近本港，當時它位於香港東南偏東約530公里。香港天文台總部在七月八日下午5時左右錄得最低每小時海平面氣壓爲997.0百帕斯卡。啓德在七月九日加速遠離本港，所有熱帶氣旋警告信號在上午5時45分除下。

在啓德影響香港期間，本港並無損失。

表3.2.1-3.2.3分別是啓德影響香港時各站所錄得的最高風速、日雨量及最高潮汐資料。圖3.2.1-3.2.3是啓德的路徑圖、香港的雨量分佈及衛星雲圖。

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3.2 Typhoon Kai-tak (0004) : 4 - 11 July 2000

Kai-tak developed into a tropical depression about 260 km northwest of Manila on the morning of 4 July. It drifted north-northeastwards along the western coast of Luzon at first. Under the influence Typhoon Kirogi which at that time was over the western North Pacific about 1 250 km east-northeast of Manila, Kai-tak became slow-moving over the northwestern Luzon during the night.

Torrential rain associated with both Kai-tak and Kirogi resulted in 40 deaths and another 14 reported missing in the Philippines. Around 1.2 million people were displaced by flash floods. The total damage was estimated at US$ 4.5 million.

Kai-tak intensified into a tropical storm and began to track northwestwards slowly over the South China Sea on 5 July. It strengthened further into a severe tropical storm the next day and attained typhoon strength on 7 July while performing an anti-clockwise looping motion. A distinct eye became discernible on satellite imageries. The maximum sustained winds and minimum sea-level pressure near the centre of Kai-tak were estimated to be 140 km/h and 960 hPa respectively.

A double eye-wall of Kai-tak displayed on 8 July. It adopted a north-northeastward course and moved towards Taiwan during the day. It weakened into a severe tropical storm before skirting the eastern coast of Taiwan. Heavy rain associated with Kai-tak caused flooding and landslides in Taiwan. Some five persons perished.

Tracking northwards quickly at a speed of about 30 km/h on leaving Taiwan, Kai-tak made landfall near Wenzhou and swept across the coastal areas of eastern China on 10 July. After passing near Shanghai, Kai-tak entered the Yellow Sea and weakened gradually into a tropical depression. It finally became an extratropical cyclone the following day.

In Hong Kong the Standby Signal No. 1 was hoisted at 3.50 p.m. on 6 July when Kai-tak was about 600 km to the east-southeast. During the next few days, the weather in Hong Kong was hazy with scattered showers and isolated thunderstorms in the afternoon. The closest approach of Kai-tak was about 530 km to the east-southeast of Hong Kong at around 8 a.m. on 7 July. The lowest hourly sea-level pressure of 997.0 hPa was recorded at the Hong Kong Observatory Headquarters at 5 p.m on 8 July. As Kai-tak began to accelerate and move away from Hong Kong on 9 July, all tropical cyclone warning signals were lowered at 5.45 a.m.

No damage was incurred in Hong Kong during the passage of Kai-tak.

Information on wind, rainfall and tide during the passage of the Kai-tak is given in Tables 3.2.1 - 3.2.3. Figures 3.2.1 - 3.2.3 show respectively the track of Kai-tak, rainfall distribution in Hong Kong and cloud imageries.

表 3.2.1　在啓德影響下，本港各站在熱帶氣旋警告信號懸掛時所錄得的最高陣風、最高每小時平均風速及風向

Table 3.2.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations during the hoisting of the tropical cyclone warning signal for Kai-tak

站 Station	(參閱圖 1.1) (see Fig. 1.1)	最高陣風 Maximum Gust		日/月 Date/Month	時間 Time	最高每小時平均風速 Maximum Hourly Wind		日/月 Date/Month	時間 Time
		風向 Direction	風速(公里/時) Speed (km/h)			風向 Direction	風速(公里/時) Speed (km/h)		
中環	Central	南 S	31	8/7	2317	西北偏北 NNW	13	8/7	1200
中環廣場	Central Plaza	西南偏南 SSW	41	8/7	2304	南 S	30	8/7	2000
		南 S	41	9/7	0014				
赤鱲角 (機場)	Chek Lap Kok (Airport)	西北 NW	37	8/7	0932	西南偏西 WSW	23	8/7	1500
長洲	Cheung Chau	東南偏東 ESE	34	7/7	1532	東南偏東 ESE	25	7/7	1700
長沙灣	Cheung Sha Wan	西南 SW	25	8/7	1355	西南 SW	14	8/7	1400
青洲	Green Island	西南偏南 SSW	40	7/7	1842	西南偏南 SSW	22	7/7	2000
京士柏	King's Park	東南 SE	23	7/7	2241	東 E	12	8/7	0100
流浮山	Lau Fau Shan	東南偏南 SSE	41	8/7	1514	西南偏西 WSW	25	8/7	1500
北角	North Point	西南偏西 WSW	31	8/7	2108	東北偏東 ENE	16	7/7	1500
平洲	Ping Chau	西南偏西 WSW	30	8/7	1618	西南偏西 WSW	16	8/7	1700
		西南偏西 WSW	30	8/7	1635				
西貢	Sai Kung	西 W	31	8/7	1435	東南偏南 SSE	20	7/7	2200
沙螺灣	Sha Lo Wan	東南 SE	45	7/7	2219	西南 SW	22	8/7	2400
沙田	Sha Tin	西南 SW	25	8/7	1339	西南 SW	14	6/7	1600
石崗	Shek Kong	東北偏東 ENE	40	8/7	1434	東南偏南 SSE	9	8/7	1500
天星碼頭 (九龍)	Star Ferry (Kowloon)	西 W	30	8/7	2243	西北偏西 WNW	14	8/7	1100
打鼓嶺	Ta Kwu Ling	東 E	31	8/7	1350	東北偏東 ENE	12	7/7	1400
大尾篤	Tai Mei Tuk	西南偏西 WSW	34	8/7	1408	西南偏西 WSW	20	8/7	1500
大帽山	Tai Mo Shan	南 S	38	8/7	2311	南 S	23	8/7	2400
塔門	Tap Mun	西 W	30	6/7	1604	東南偏東 ESE	20	7/7	2300
大老山	Tate's Cairn	西南偏南 SSW	45	8/7	2303	西南偏南 SSW	27	8/7	2300
		西南偏南 SSW	45	9/7	0002				
		西南偏南 SSW	45	9/7	0010				
鯽魚湖	Tsak Yue Wu	東北偏北 NNE	27	7/7	1123	東北偏北 NNE	13	7/7	1200
將軍澳	Tseung Kwan O	西 W	27	8/7	1641	西南偏南 SSW	12	8/7	2300
青衣	Tsing Yi	東南 SE	34	7/7	2109	東南 SE	20	7/7	2200
屯門	Tuen Mun	東南偏東 ESE	40	8/7	1527	東南偏南 SSE	16	7/7	1900
橫瀾島	Waglan Island	西南 SW	34	8/7	1924	西南 SW	25	8/7	2000
黃竹坑	Wong Chuk Hang	東南 SE	22	7/7	1606	東南 SE	12	7/7	1700

表 3.2.2　啓德影響香港期間，香港天文台總部及其他各站所錄得的日雨量(單位爲毫米)
Table 3.2.2 Daily rainfall amounts in millimetres recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Kai-tak

站 (參閱圖 3.2.2) Station (see Fig. 3.2.2)	七月六日 6 July	七月七日 7 July	七月八日 8 July	七月九日 9 July	總雨量 Total
香港天文台Hong Kong Observatory	0.2	14.7	5.8	微量 Trace	20.7
H19　筲箕灣 Shau Kei Wan	0.0	1.0	11.5	0.5	13.0
H21　淺水灣 Repulse Bay	0.0	0.0	0.0	0.0	0.0
K04　佐敦谷 Jordan Valley	0.0	0.0	2.0	0.0	2.0
K06　蘇屋邨 So Uk Estate	0.0	0.5	1.0	0.0	1.5
N06　葵涌 Kwai Chung	0.0	2.0	2.5	1.0	5.5
N12　元朗 Yuen Long	3.5	0.0	1.0	30.0	34.5
N17　東涌 Tung Chung	0.5	0.0	0.5	0.0	1.0
R21　踏石角 Tap Shek Kok	0.5	0.0	0.0	2.5	3.0
R26　石崗 Shek Kong	1.5	1.5	30.5	13.0	46.5
R31　大尾篤 Tai Mei Tuk	8.5	0.5	2.0	0.5	11.5

表 3.2.3　啓德影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.2.3 Times and heights of the maximum sea level and the maximum storm surge recorded at various tide stations in Hong Kong during the passage of Kai-tak

站 (參閱圖 1.1) Station (see Fig. 1.1)	最高潮位 (海圖基準面以上) Maximum sea level (above chart datum)			最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide)		
	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time
鰂魚涌 Quarry Bay	2.46	7/7	1.42 p.m.	0.55	8/7	3.59 a.m.
大埔滘 Tai Po Kau	2.45	7/7	2.53 p.m.	0.60	7/7	2.10 a.m.
尖鼻咀 Tsim Bei Tsui	2.62	7/7	1.55 p.m.	0.46	7/7	10.55 a.m.
橫瀾島 Waglan Island	2.46	7/7	2.09 p.m.	0.55	7/7	7.10 p.m.

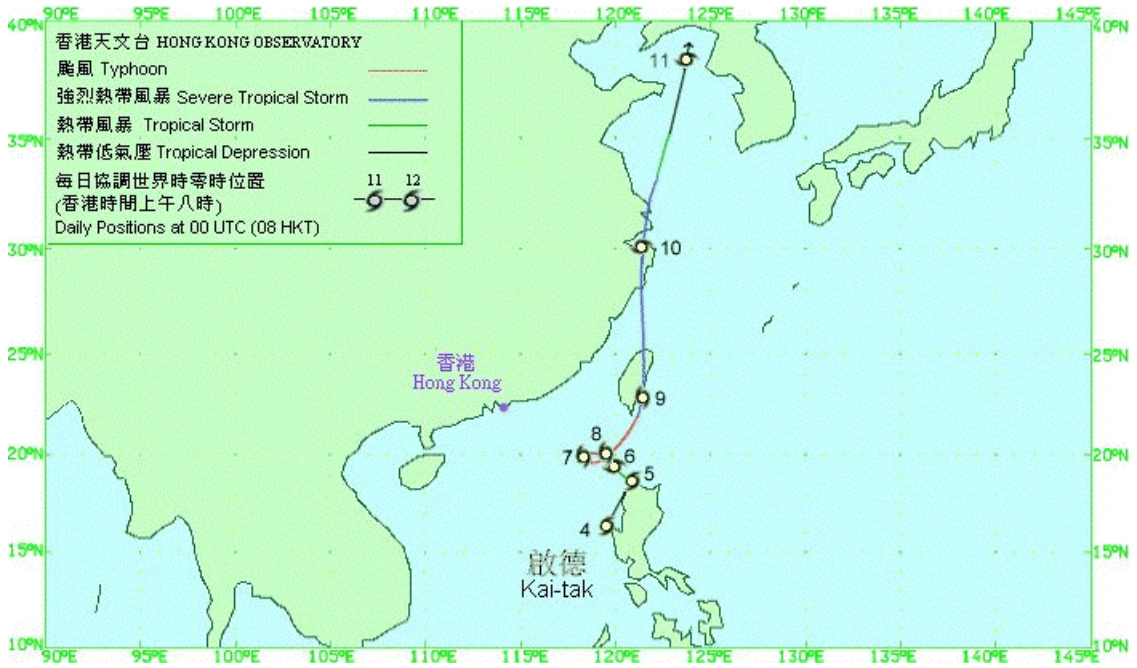

圖 3.2.1　　二零零零年七月四日至十一日颱風啓德(0004)的路徑圖。
Figure 3.2.1　Track of Typhoon Kai-tak (0004) : 4 - 11 July 2000.

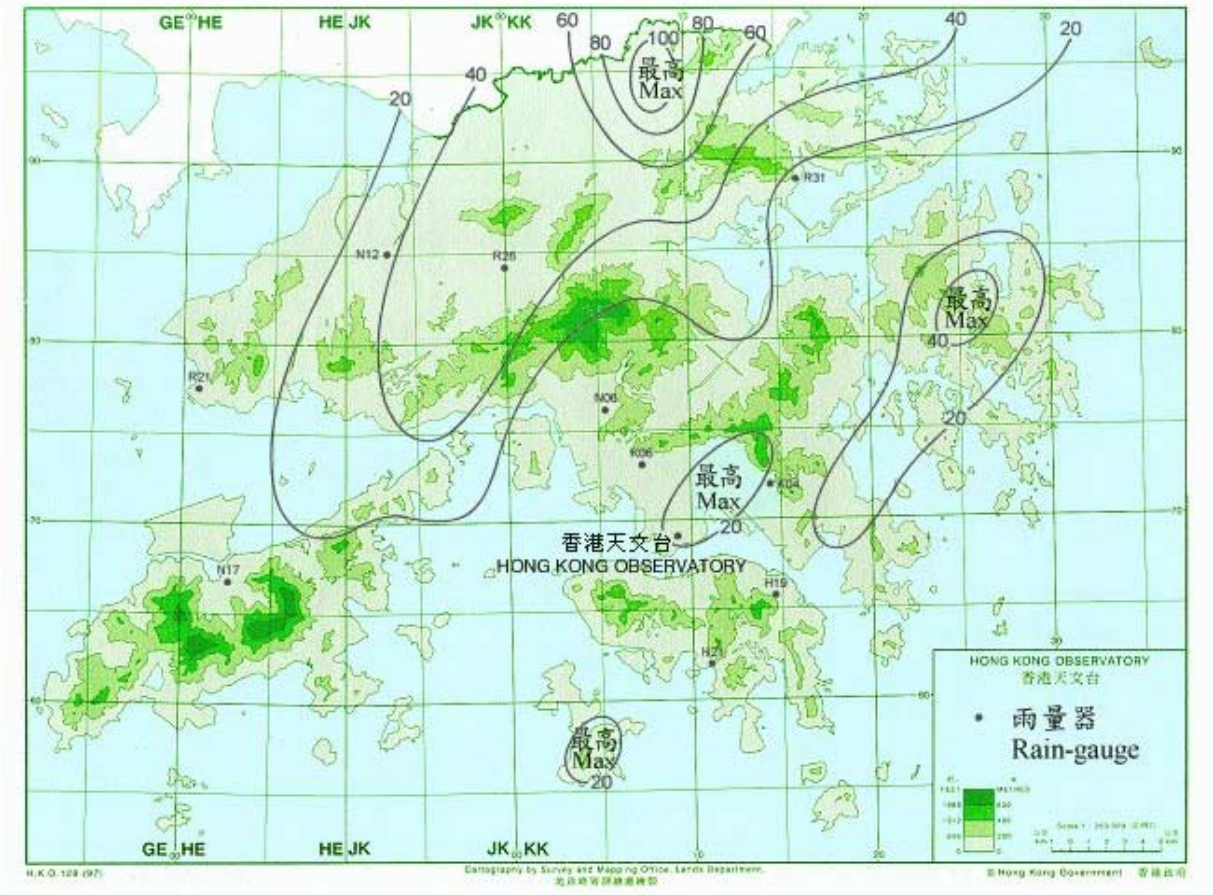

圖 3.2.2　　二零零零年七月六日至九日的雨量分佈圖。
Figure 3.2.2　Rainfall distribution on 6 - 9 July 2000.

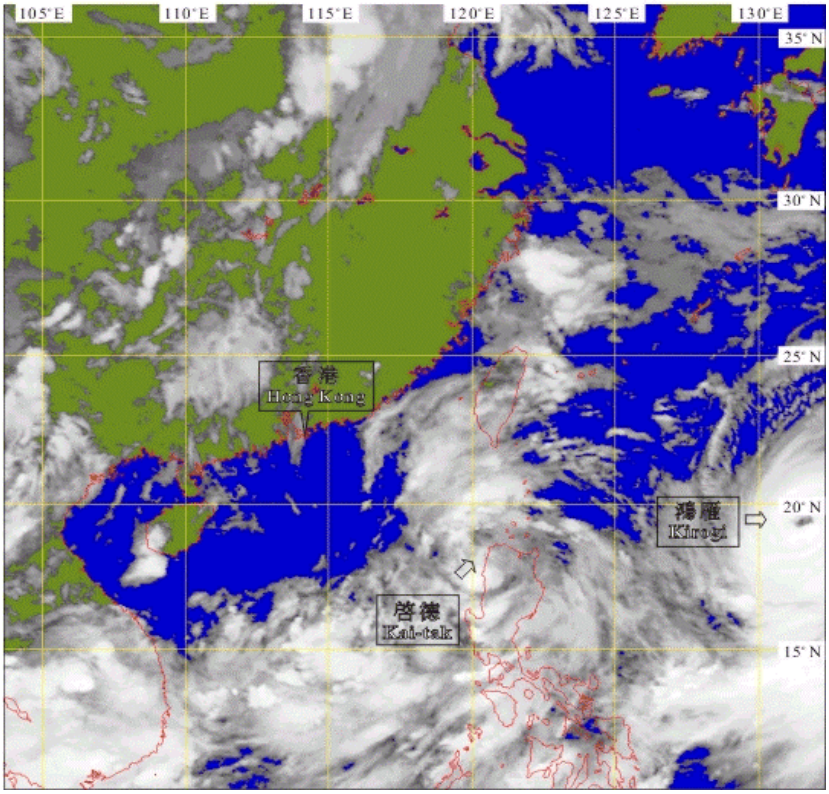

圖 3.2.3.a　二零零零年七月四日約下午10時30分的紅外線衛星圖片。顯示當時啓德及鴻雁的位置。啓德那時候位於呂宋西北部並爲一熱帶低氣壓。（此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5））

Figure 3.2.3.a　Infra-red imagery at around 10.30 p.m. on 4 July 2000 showing the positions of Kai-tak and Kirogi. At that time, Kai-tak was a tropical depression and centred over northwestern Luzon. (The cloud imagery was originally captured by GMS-5 of JMA)

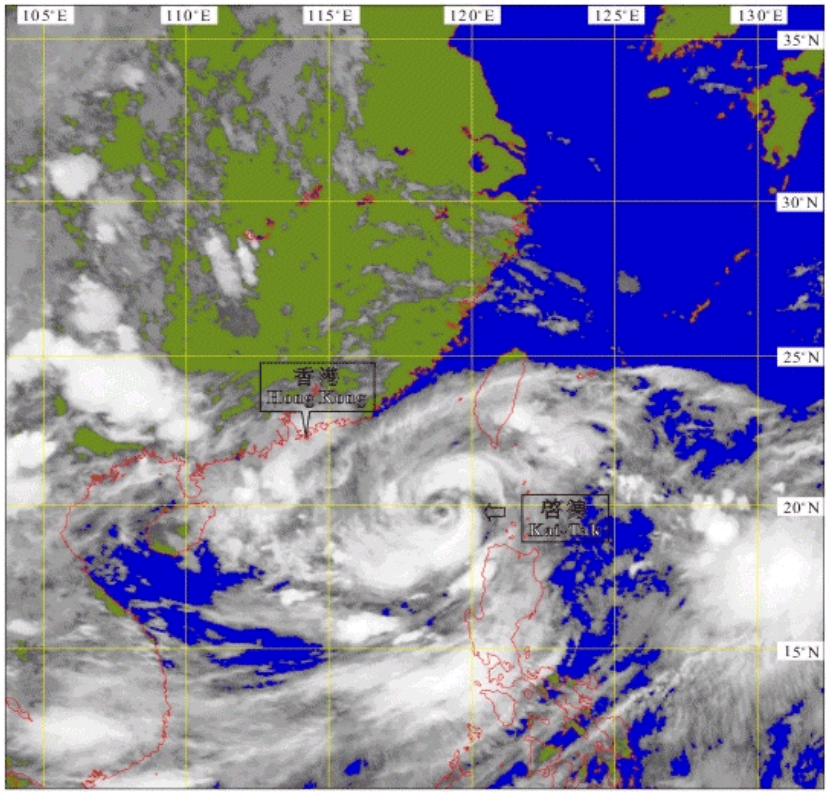

圖 3.2.3.b　二零零零年七月八日約上午1時30分的紅外線衛星圖片。顯示當時颱風啓德中心的雙眼壁。（此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5））

Figure 3.2.3.b　Infra-red imagery at around 1.30 a.m. on 8 July 2000 showing the double eye-wall of Typhoon Kai-tak. (The cloud imagery was originally captured by GMS-5 of JMA)

3.3 熱帶低氣壓：七月十五日至十六日

一低壓區在七月十五日下午於南海上西沙島以東約220公里發展爲一熱帶低氣壓。它隨即向西北移動，在七月十六日傍晚時份於海南島東部登陸並在海口附近消散。

在香港，一號戒備信號在七月十五日下午2時45分懸掛，當時該熱帶低氣壓位於香港以南約610公里。受這熱帶低氣壓的影響，本港在七月十五日及十六日有狂風驟雨。那兩天，本地吹清勁並有時疾勁的偏東風，離岸及高地間中吹強風。

熱帶低氣壓在七月十六日下午5時左右最接近本港，當時它位於香港西南約500公里。香港天文台總部亦在那時候錄得999.2百帕斯卡的最低每小時海平面氣壓。熱帶低氣壓在海南島上消散後，所有熱帶氣旋警告信號在七月十六日晚上9時25分除下。隨著熱帶低氣壓的消散，香港及華南沿岸地區被一股強而活躍偏南氣流所支配。

在熱帶低氣壓的影響下，本港有大樹倒塌，玻璃及招牌墮下的報告，最少有六人受傷。另外，海面亦有大浪，多處海灘因此而懸掛紅旗。一名男子在大埔釣魚時疑被大浪捲走。

表3.3.1-3.3.3分別是熱帶低氣壓影響香港時各站所錄得的最高風速、日雨量及最高潮汐資料。圖3.3.1-3.3.3是熱帶低氣壓的路徑圖、香港的雨量分佈及衛星雲圖。

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3.3 Tropical Depression : 15 - 16 July 2000

An area of low pressure intensified into a tropical depression over the South China Sea about 220 km east of Xisha on the afternoon of 15 July. It then moved northeastwards to make landfall over the eastern part of Hainan Island on the evening of 16 July before dissipating near Haikou.

In Hong Kong, the Standby Signal No. 1 was hoisted at 2.45 p.m. on 15 July when the tropical depression was about 610 km to the south. Under the influence of this tropical depression, there were squally showers in Hong Kong on 15 and 16 July. Local winds during these two days were fresh gusty easterlies, occasionally strong offshore and on high ground.

The tropical depression was closest to Hong Kong at around 5 p.m. on 16 July when it was about 500 km to the southwest. The lowest hourly sea-level pressure of 999.2 hPa was recorded at the Hong Kong Observatory Headquarters at the same time. As the tropical depression dissipated over Hainan Island, all tropical cyclone warning signals were lowered at 9.25 p.m. on 16 July. Following the demise of the tropical depression, Hong Kong and the south China coast came under the influence of a strong and active southerly airstream.

During the passage of the tropical depression, there were reports of toppled trees, fallen glass panes and collapsed signboards in Hong Kong. At least six persons sustained injuries. Seas were rough and red flags were hoisted at several beaches in Hong Kong due to strong waves. In Tai Po, one man went missing while fishing, probably swept away by waves.

Information on wind, rainfall and tide during the passage of the tropical depression is given in Tables 3.3.1 - 3.3.3. Figures 3.3.1 - 3.3.3 show respectively the track of the tropical depression, rainfall distribution in Hong Kong and cloud imagery.

表 3.3.1　在熱帶低氣壓影響下，本港各站在熱帶氣旋警告信號懸掛時所錄得的最高陣風、最高每小時平均風速及風向

Table 3.3.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations during the hoisting of the tropical cyclone warning signal for the tropical depression

站 Station	(參閱圖 1.1) (see Fig. 1.1)	最高陣風 Maximum Gust		日/月 Date/Month	時間 Time	最高每小時平均風速 Maximum Hourly Wind		日/月 Date/Month	時間 Time
		風向 Direction	風速(公里/時) Speed (km/h)			風向 Direction	風速(公里/時) Speed (km/h)		
中環	Central	東 E	59	15/7	1612	東 E	31	16/7	1400
中環廣場	Central Plaza	東北 NE	88	16/7	0910	東北偏東 ENE	58	16/7	1000
赤鱲角(機場)	Chek Lap Kok (Airport)	東 E	58	16/7	1425	東 E	36	16/7	1500
長洲	Cheung Chau	東 E	96	16/7	1912	東 E	54	16/7	1000
長沙灣	Cheung Sha Wan	東北偏東 ENE	65	15/7	2022	東北偏東 ENE	23	16/7	1600
青洲	Green Island	東北偏東 ENE	94	16/7	1122	東北偏東 ENE	56	16/7	1600
京士柏	King's Park	東 E	63	16/7	1929	東 E	27	16/7	1400
流浮山	Lau Fau Shan	東 E	75	16/7	1109	東 E	34	16/7	0100
北角	North Point	東北偏東 ENE	79	16/7	1802	東北偏東 ENE	36	16/7	1000
平洲	Ping Chau	- -	59	16/7	1628	- -	20	16/7	1500
						- -	20	16/7	1600
						- -	20	16/7	1700
西貢	Sai Kung	東北 NE	79	15/7	1958	東北偏東 ENE	43	16/7	1400
沙螺灣	Sha Lo Wan	東 E	90	16/7	1614	東 E	54	16/7	1300
沙田	Sha Tin	東北 NE	68	15/7	1815	東北偏東 ENE	22	16/7	1400
石崗	Shek Kong	東北偏東 ENE	72	15/7	1839	東北偏東 ENE	31	16/7	2000
天星碼頭(九龍)	Star Ferry (Kowloon)	東南偏東 ESE	65	16/7	0929	東 E	34	16/7	1100
打鼓嶺	Ta Kwu Ling	東北偏東 ENE	59	16/7	1538	東北偏東 ENE	25	16/7	1600
大尾篤	Tai Mei Tuk	東 E	76	16/7	1629	東 E	52	16/7	1000
大帽山	Tai Mo Shan	東 E	96	16/7	1101	東 E	67	16/7	1100
塔門	Tap Mun	東南偏東 ESE	70	16/7	2116	東 E	34	16/7	2000
大老山	Tate's Cairn	東 E	108	15/7	2004	東 E	56	16/7	2000
鯽魚湖	Tsak Yue Wu	東北偏東 ENE	54	16/7	1359	東 E	19	16/7	1300
將軍澳	Tseung Kwan O	東 E	62	15/7	1830	東 E	19	16/7	1100
青衣	Tsing Yi	東北 NE	83	16/7	1543	東 E	34	15/7	2100
						東南偏東 ESE	34	16/7	1100
屯門	Tuen Mun	東北 NE	51	16/7	1559	東南偏東 ESE	13	15/7	1600
橫瀾島	Waglan Island	東 E	76	16/7	0950	東 E	56	16/7	1000
黃竹坑	Wong Chuk Hang	東 E	76	16/7	0933	東 E	31	16/7	1400

表 3.3.2　熱帶低氣壓影響香港期間，香港天文台總部及其他各站所錄得的日雨量(單位爲毫米)

Table 3.3.2 Daily rainfall amounts in millimetres recorded at the Hong Kong Observatory Headquarters and other stations during the passage of the tropical depression

站 (參閱圖 3.3.2) Station (see Fig. 3.3.2)	七月十五日 15 Jul	七月十六日 16 Jul	總雨量 Total
香港天文台Hong Kong Observatory	2.1	34.9	37.0
H19　筲箕灣 Shau Kei Wan	2.0	38.5	40.5
H21　淺水灣 Repulse Bay	6.0	32.0	38.0
K04　佐敦谷 Jordan Valley	4.5	36.5	41.0
K06　蘇屋邨 So Uk Estate	5.5	35.5	41.0
N06　葵涌 Kwai Chung	2.5	31.5	34.0
N09　沙田 Sha Tin	0.0	27.0	27.0
N12　元朗 Yuen Long	2.5	21.5	24.0
N17　東涌 Tung Chung	8.5	13.5	22.0
R21　踏石角 Tap Shek Kok	0.0	17.5	17.5
R26　石崗 Shek Kong	1.5	26.5	28.0
R31　大尾篤 Tai Mei Tuk	0.0	23.0	23.0

表 3.3.3　熱帶低氣壓影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮

Table 3.3.3　Times and heights of the maximum sea level and the maximum storm surge recorded at various tide stations in Hong Kong during the passage of the tropical depression

站 (參閱圖 1.1) Station (see Fig. 1.1)	最高潮位 (海圖基準面以上) Maximum sea level (above chart datum)			最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide)		
	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time
鰂魚涌 Quarry Bay	2.65	16/7	8.29 a.m.	0.45	16/7	8.29 a.m.
大埔滘 Tai Po Kau	2.51	16/7	7.24 a.m.	0.47	16/7	1.07 p.m.
尖鼻咀 Tsim Bei Tsui	2.87	16/7	9.33 a.m.	0.33	16/7	5.13 a.m.
橫瀾島 Waglan Island	2.61	16/7	8.23 a.m.	0.44	16/7	1.40 p.m.

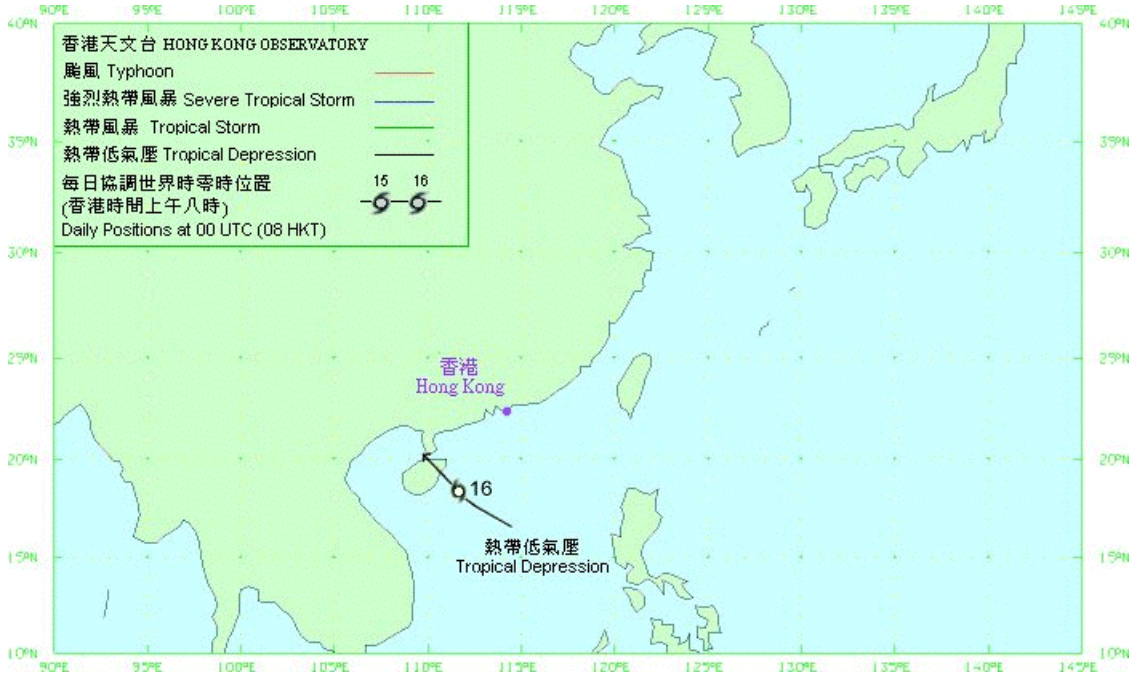

圖 3.3.1　二零零零年七月十五日至十六日熱帶低氣壓的路徑圖。

Figure 3.3.1　Track of the Tropical Depression : 15 - 16 July 2000.

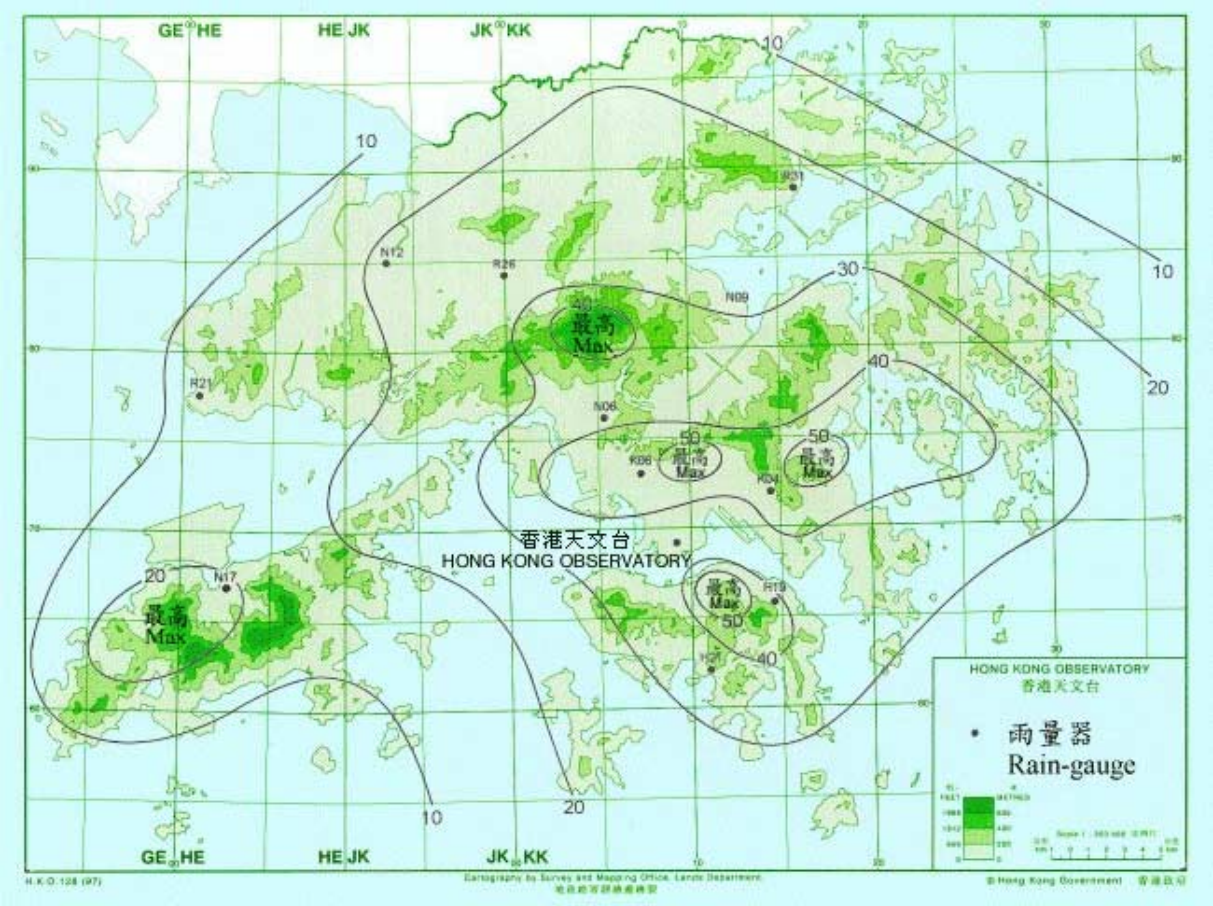

圖 3.3.2　二零零零年七月十五日至十六日的雨量分佈圖。

Figure 3.3.2　Rainfall distribution on 15 - 16 July 2000.

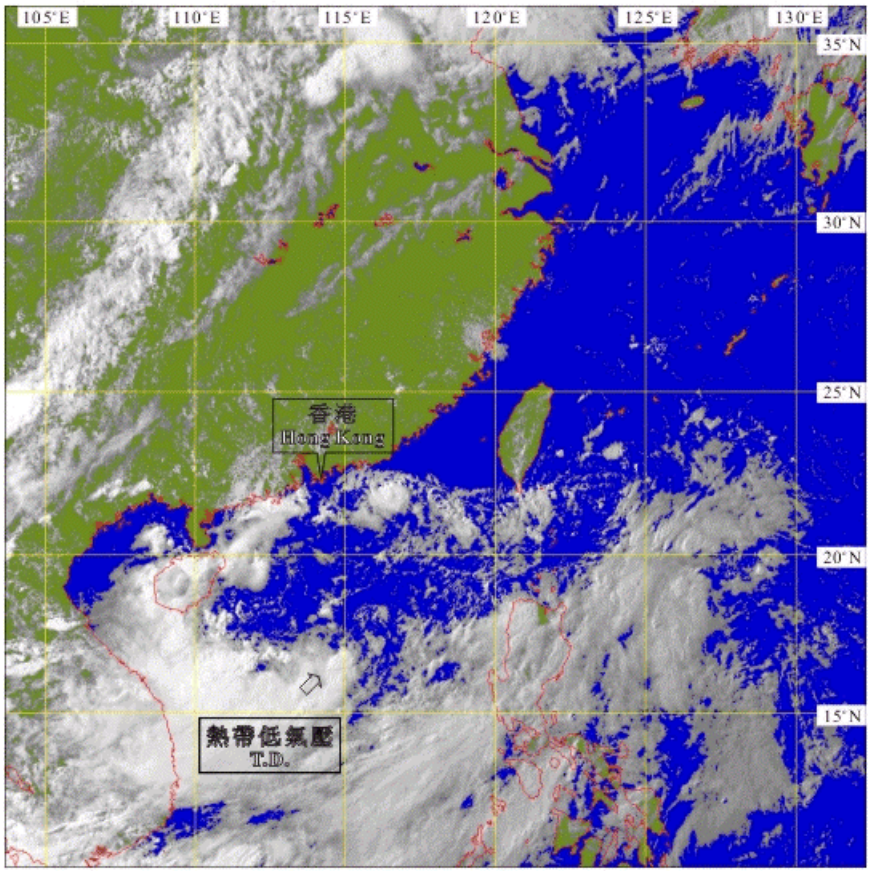

圖 3.3.3　二零零零年七月十五日約下午4時30分的可見光衛星圖片。當時熱帶低氣壓的外圍雨帶正在華南沿岸附近。（此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5））

Figure 3.3.3　Visible imagery at around 4.30 p.m. on 15 July 2000 showing the outer rainbands of the tropical depression in the vicinity of the south China coast. (The cloud imagery was originally captured by GMS-5 of JMA)

3.4 颱風碧利斯(0010)：八月十八日至二十四日

碧利斯在八月十八日於雅蒲島西北偏北約130公里處成爲一熱帶低氣壓。它向西北偏北移動，翌日增強爲一熱帶風暴。

受到副熱帶高壓脊的氣流引導，碧利斯在隨後數日以每小時約20公里的速度穩定地向西北移動，直趨台灣。碧利斯在八月二十日發展成爲一颱風，並繼續增強，在八月二十二日風力達到最強。當時，碧利斯的最高持續風速約爲每小時220公里，最低中心氣壓則約爲915百帕斯卡，是本年在北太平洋西部最強風力的颱風。

在臨近台灣時，碧利斯開始減弱。在蘭嶼東北面約70公里掠過時，該島錄得每小時178公里的持續風速，碧利斯在八月二十二日晚於台灣東部台東附近登陸。碧利斯給台灣帶來的暴雨釀成最少12人死亡，100人受傷，超過1 800間房屋倒塌損毀。約100萬戶的電力受到中斷，數十萬戶的食水供應暫停。在碧利斯的肆虐下，飛機全面停航，農牧業損失初步估計約爲40億元新台幣。

橫掃台灣後，碧利斯進入台灣海峽，在八月二十三日中午時分於福建省廈門市附近作第二次登陸。隨後，碧利斯繼續向內陸推進並迅速減弱，次日它變爲一低壓區。碧利斯過後，福建及廣東省多處地區暴雨成災，超過11人死亡，8人受傷，數十萬人受到影響，幾千間房屋倒塌，直接經濟損失約爲15億元人民幣。

在香港，一號戒備信號在八月二十三日上午6時正懸掛，當時碧利斯位於香港東北偏東約550公里。受到碧利斯的環流的影響，本地風力有所增強，天氣也漸轉不穩定，有幾陣狂風驟雨及雷暴。香港天文台總部在八月二十三日下午4時49分錄得最低瞬時海平面氣壓爲996.7百帕斯卡。碧利斯在下午6時左右最接近本港，當時它位於香港東北面約430公里。由於碧利斯迅速減弱並進一步移入內陸，所有熱帶氣旋警告信號在下午7時15分除下。

碧利斯過後，與其相聯的西南氣流在八月二十四日的清晨爲香港帶來暴雨。黑色暴雨警告信號在早上3時05分發出，到早上5時55分才取消。港島南區雨量最多，淺水灣及鶴咀都在一小時內錄得超過100毫米的雨量，由午夜至早上5時的五個小時內則錄得超過300毫米的雨量。

在暴雨下，本港有逾92宗水浸及23宗山泥傾瀉。港島區情況最爲嚴重。在皇后大道東，由金鐘至摩理臣山道的一段，水深一度達一米。區內不少銀行、店鋪及大廈皆受影響。跑馬地馬場也有水浸，部分投注終端機受損。薄扶林村則水深一度達二米，多名村民由消防員救離。在八月二十四日下午，元朗一個家庭共12人被雨水圍困，由消防員協助脫險。

香港公園附近發生山泥傾瀉，泥沙從香港公園沖至法院道，公園內部分設施遭山泥破壞，法院道亦需暫時封閉。

暴雨亦造成多處道路下陷。在石澳道，路陷嚴重，要封閉多時。

表3.4.1-3.4.3分別是碧利斯影響香港時各站所錄得的最高風速、日雨量及最高潮汐資料。圖3.4.1-3.4.5是碧利斯的路徑圖、香港的雨量分佈、淺水灣及鶴咀的時雨量分佈、雷達回波圖及衛星雲圖。而有關的情況可參見圖3.4.6-3.4.7。

3.4 Typhoon Bilis (0010) : 18 - 24 August 2000

Bilis developed into a tropical depression about 130 km north-northwest of Yap on 18 August. It tracked north-northwestwards and deepened into a tropical storm the next day.

Under the steering flow of the subtropical ridge, Bilis moved northwestwards at a steady speed of about 20 km/h towards Taiwan in the next few days. Bilis reached typhoon strength on 20 August and attained peak intensity on 22 August. The maximum sustained winds near the centre of Bilis were estimated to be about 220 km/h and the minimum pressure near its centre was about 915 hPa, making it the strongest typhoon to affect the western North Pacific in this year.

Bilis began to weaken as it approached Taiwan. After passing about 70 km to the northeast of Lan Yu where sustained winds of about 178 km/h were reported, Bilis made landfall near Taidong on eastern Taiwan on the night of 22 August. As Bilis swept across Taiwan, torrential rain caused at least 12 deaths and 100 injuries. Over 1 800 houses collapsed or sustained damage. Electricity supply to some one million houses was cut off and water supply to several hundred thousand families was disrupted. Air transport came to a halt at the height of the havoc brought by Bilis. Initial estimates of agricultural losses amounted to about NT$ 4 billion.

After rampaging across Taiwan, Bilis entered the Taiwan Strait before making a second landfall near Xiamen in Fujian at around noon on 23 August. It then ploughed further inland and weakened rapidly. Bilis degenerated into an area of low pressure the next day. Many places in Fujian and Guangdong suffered from heavy downpours in the wake of Bilis. Over 11 persons were killed and eight others were injured. Hundreds of thousands of people were affected and thousands of houses collapsed. Direct economic loss was estimated at 1.5 billion RMB.

In Hong Kong the Standby Signal No. 1 was hoisted at 6.00 a.m. on 23 August when Bilis was about 550 km to the east-northeast. Under the influence of the outer circulation of Bilis, local winds strengthened gradually that day. The weather became unsettled with a few squally showers and thunderstorms. The lowest instantaneous sea-level pressure of 996.7 hPa was recorded at the Hong Kong Observatory Headquarters at 4.49 p.m. on 23 August. Bilis passed about 430 km to the northeast of Hong Kong at around 6 p.m. As Bilis weakened rapidly and moved further inland, all tropical cyclone warning signals were lowered at 7.15 p.m.

Active southwesterlies trailing in the wake of Bilis brought heavy rain to Hong Kong on the early morning of 24 August. The Black Rainstorm Warning Signal was issued at 3.05 a.m. and cancelled at 5.55 a.m. Rainfall was the heaviest on the southern part of Hong Kong Island. Both Repulse Bay and Cape D'Aguilar recorded over 100 mm of rainfall in one hour, and over 300 mm between midnight and 5 a.m.

The heavy rain brought over 92 cases of flooding and 23 cases of landslides to Hong Kong. Hong Kong Island was particularly hard hit, with a section of Queen's Road East between Admiralty and Morrison Hill Road under as much as a metre of water at one time. Many of the nearby banks, shops and buildings sustained damage. The Happy Valley Race Course was partly inundated and several of its betting machines were disabled as a result. In Pok Fu Lam Village flood waters reached almost two metres at one time. Several villagers had to be rescued by firemen. In Yuen Long, a family of 12 was trapped by floods on the afternoon of 24 August and had to be brought to safety by firemen.

Debris from a landslip poured across Hong Kong Park onto Supreme Court Road, damaging facilities in the Park and causing Supreme Court Road to be temporarily closed.

The heavy rain also caused road subsidence in several places. A section of Shek O Road was seriously affected and forced to close for some time.

Information on wind, rainfall and tide during the passage of Bilis is given in Tables 3.4.1 - 3.4.3. Figures 3.4.1 - 3.4.5 show the track of Bilis, rainfall distribution in Hong Kong, hourly rainfall at Repulse Bay and Cape D'Aguilar, radar echoes and cloud imageries. And Figures 3.4.6 – 3.4.7 show some of the situations.

表 3.4.1　在碧利斯影響下，本港各站在熱帶氣旋警告信號懸掛時所錄得的最高陣風、最高每小時平均風速及風向

Table 3.4.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations during the hoisting of the tropical cyclone warning signal for Bilis

站 Station	(參閱圖 1.1) (see Fig. 1.1)	最高陣風 Maximum Gust		日/月 Date/Month	時間 Time	最高每小時平均風速 Maximum Hourly Wind		日/月 Date/Month	時間 Time
		風向 Direction	風速(公里/時) Speed (km/h)			風向 Direction	風速(公里/時) Speed (km/h)		
中環	Central	西北 NW	36	23/8	1114	西北 NW	14	23/8	0900
中環廣場	Central Plaza	西南偏西 WSW	77	23/8	1821	西 W	45	23/8	1900
赤鱲角	Chek Lap Kok	西南 SW	59	23/8	1805	西北 NW	25	23/8	1800
(機場)	(Airport)	西南 SW	59	23/8	1806				
長洲	Cheung Chau	西北 NW	83	23/8	1819	西 W	38	23/8	1900
長沙灣	Cheung Sha Wan	西南 SW	31	23/8	1125	西南 SW	14	23/8	1300
青洲	Green Island	西 W	79	23/8	1808	西南 SW	34	23/8	1800
京士柏	King's Park	西南偏南 SSW	47	23/8	1817	西 W	19	23/8	1000
流浮山	Lau Fau Shan	西北 NW	72	23/8	1749	西 W	31	23/8	1900
北角	North Point	西南 SW	51	23/8	1821	西南 SW	25	23/8	1900
平洲	Ping Chau	西北偏西 WNW	41	23/8	1314	西 W	20	23/8	1500
西貢	Sai Kung	西北偏北 NNW	56	23/8	1749	西南偏西 WSW	14	23/8	1800
沙螺灣	Sha Lo Wan	西北 NW	76	23/8	1753	西南 SW	25	23/8	1800
沙田	Sha Tin	西北偏北 NNW	49	23/8	1751	西南 SW	14	23/8	1800
石崗	Shek Kong	西北偏西 WNW	40	23/8	1422	西 W	16	23/8	1200
天星碼頭	Star Ferry	西 W	58	23/8	1821	西 W	30	23/8	1900
(九龍)	(Kowloon)								
打鼓嶺	Ta Kwu Ling	北 N	52	23/8	1718	西南偏西 WSW	12	23/8	1200
						北 N	12	23/8	1800
大帽山	Tai Mo Shan	西 W	70	23/8	1429	西南偏西 WSW	47	23/8	1600
		西 W	70	23/8	1751				
塔門	Tap Mun	西北偏西 WNW	75	23/8	1742	西 W	27	23/8	0600
大老山	Tate's Cairn	西北 NW	59	23/8	1800	西 W	34	23/8	1600
鯽魚湖	Tsak Yue Wu	北 N	47	23/8	1745	西 W	12	23/8	1200
將軍澳	Tseung Kwan O	西南 SW	41	23/8	1834	西南偏西 WSW	13	23/8	0600
						西南 SW	13	23/8	1900
青衣	Tsing Yi	西 W	43	23/8	1055	西 W	23	23/8	1100
屯門	Tuen Mun	西北 NW	62	23/8	1759	西北偏西 WNW	19	23/8	1300
橫瀾島	Waglan Island	北 N	72	23/8	1834	西南偏西 WSW	43	23/8	1800
黃竹坑	Wong Chuk Hang	西南 SW	49	23/8	1817	西北偏西 WNW	13	23/8	1000

表 3.4.2　碧利斯影響香港期間，香港天文台總部及其他各站所錄得的日雨量(單位爲毫米)
Table 3.4.2 Daily rainfall amounts in millimetres recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Bilis

站 (參閱圖 3.4.2) Station (see Fig. 3.4.2)	八月二十三日 23 Aug	八月二十四日 24 Aug	總雨量 Total
香港天文台Hong Kong Observatory	5.9	153.2	159.1
H19　筲箕灣 Shau Kei Wan	5.5	[174.0]	[179.5]
H21　淺水灣 Repulse Bay	8.0	[339.0]	[347.0]
K04　佐敦谷 Jordan Valley	22.0	[189.5]	[211.5]
K06　蘇屋邨 So Uk Estate	11.5	[123.5]	[135.0]
N05　粉嶺 Fanling	19.0	[200.5]	[219.5]
N06　葵涌 Kwai Chung	12.0	[123.5]	[135.5]
N09　沙田 Sha Tin	32.0	174.0	206.0
N12　元朗 Yuen Long	4.0	[96.5]	[100.5]
N17　東涌 Tung Chung	21.5	13.5	35.0
R21　踏石角 Tap Shek Kok	[5.0]	6.0	[11.0]
R26　石崗 Shek Kong	[8.0]	92.0	[100.0]
R31　大尾篤 Tai Mei Tuk	[23.0]	[101.0]	[124.0]

註：　[　] 基於不完整的每小時雨量數據。
Note : [　] based on incomplete hourly data.

表 3.4.3　碧利斯影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.4.3 Times and heights of the maximum sea level and the maximum storm surge recorded at various tide stations in Hong Kong during the passage of Bilis

站 (參閱圖 1.1) Station (see Fig. 1.1)	最高潮位 (海圖基準面以上) Maximum sea level (above chart datum)			最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide)		
	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time
鰂魚涌 Quarry Bay	1.53	23/8	3:35 p.m.	0.13	23/8	3:25 p.m.
大埔滘 Tai Po Kau	1.50	23/8	4:48 p.m.	0.20	23/8	9:36 a.m.
尖鼻咀 Tsim Bei Tsui	1.71	23/8	4:54 p.m.	0.16	23/8	6:49 p.m.
橫瀾島 Waglan Island	1.57	23/8	4:03 p.m.	0.13	23/8	9:04 a.m.

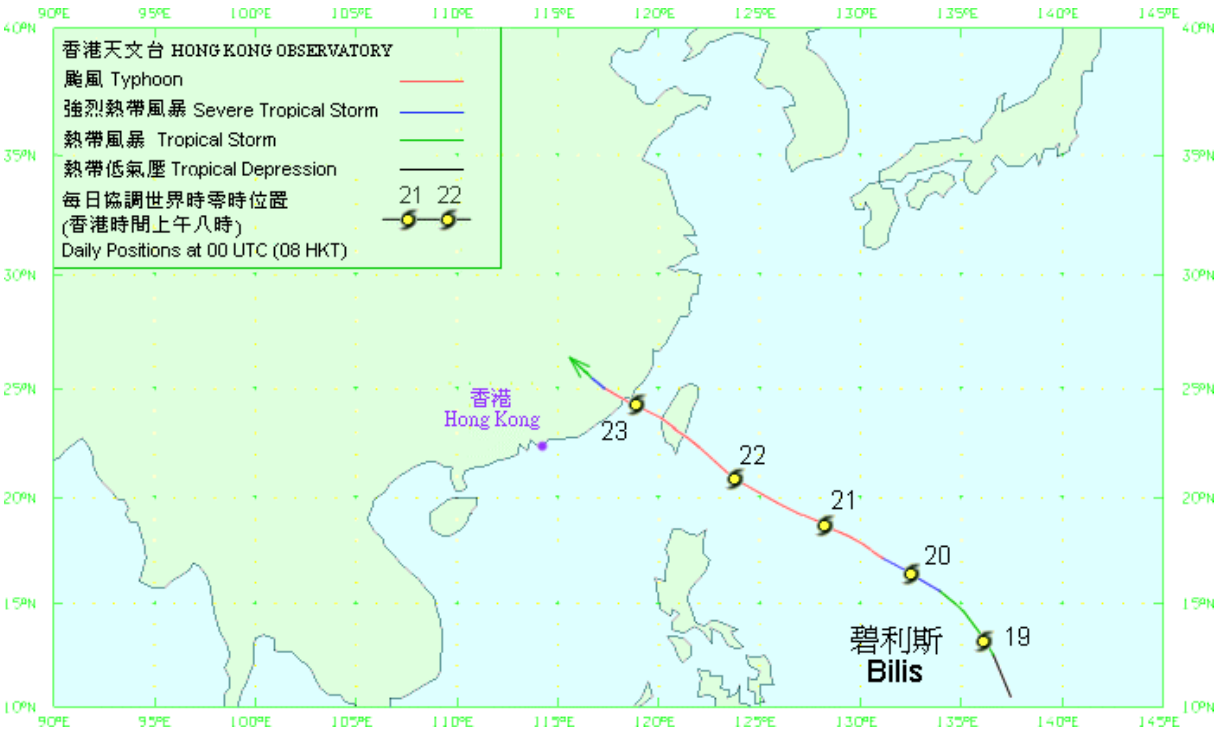

圖 3.4.1　　二零零零年八月十八日至二十四日颱風碧利斯(0010)的路徑圖。
Figure 3.4.1　Track of Typhoon Bilis (0010) : 18 - 24 August 2000.

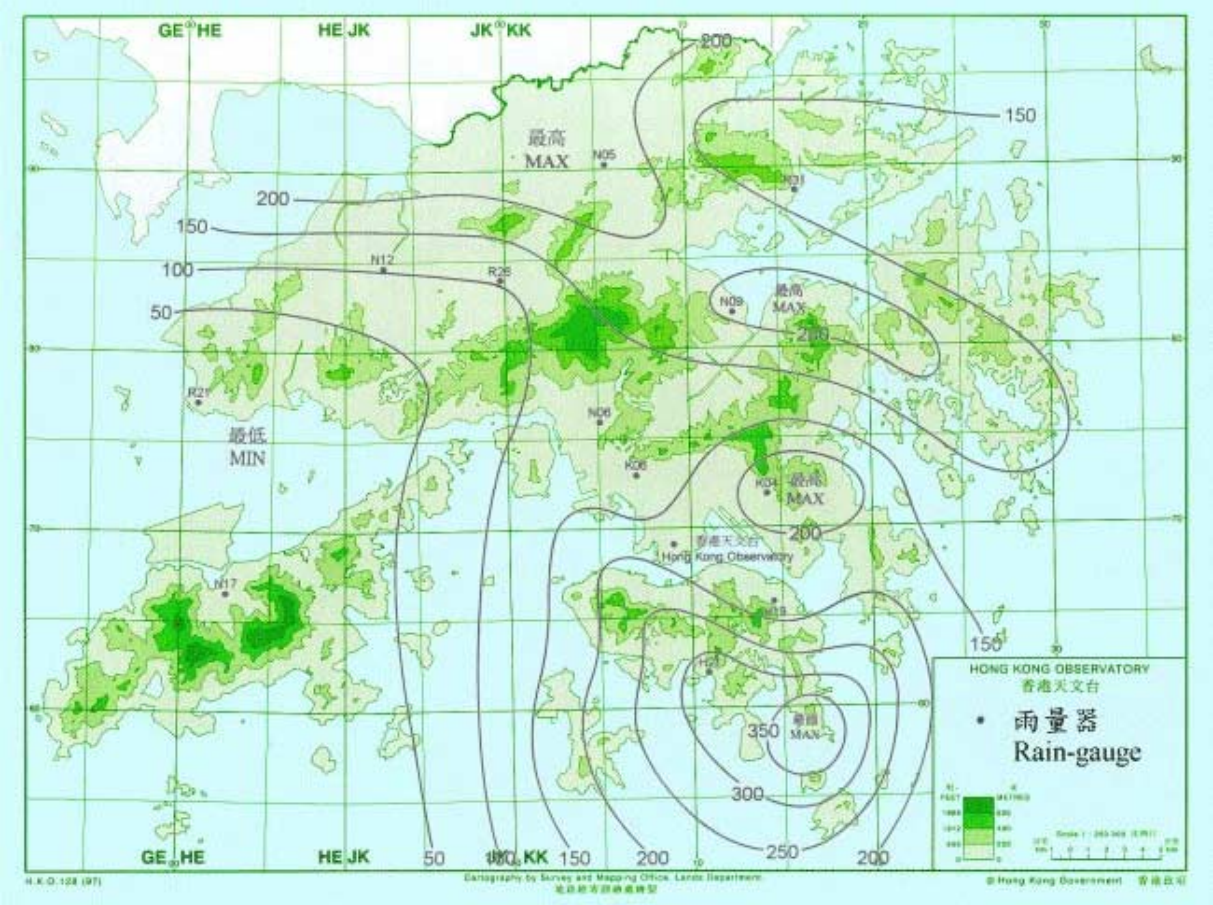

圖 3.4.2　　二零零零年八月二十三日至二十四日的雨量分佈圖。
Figure 3.4.2　Rainfall distribution on 23 - 24 August 2000.

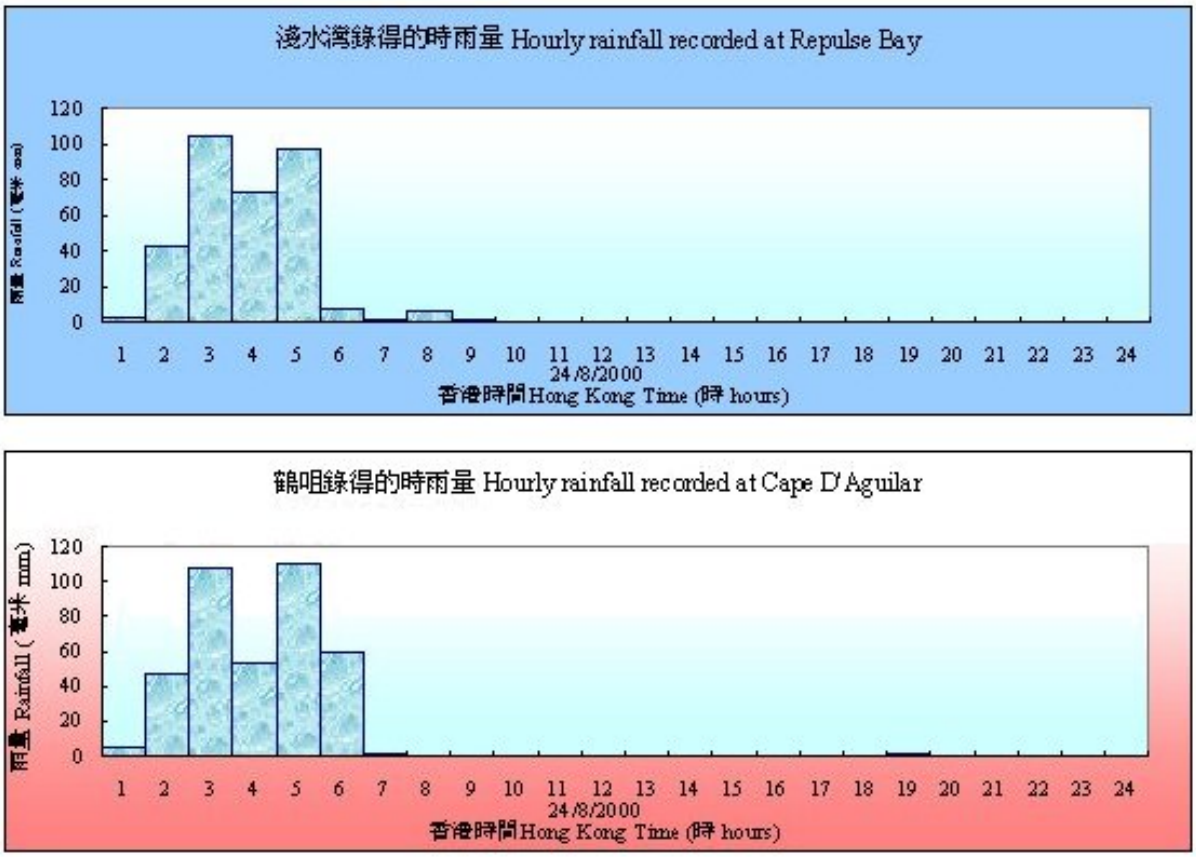

圖 3.4.3　　二零零零年八月二十四日淺水灣及鶴咀錄得的時雨量分佈圖。
Figure 3.4.3　Hourly rainfall (mm) distribution recorded at Repulse Bay and Cape D'Aguilar on 24 August 2000.

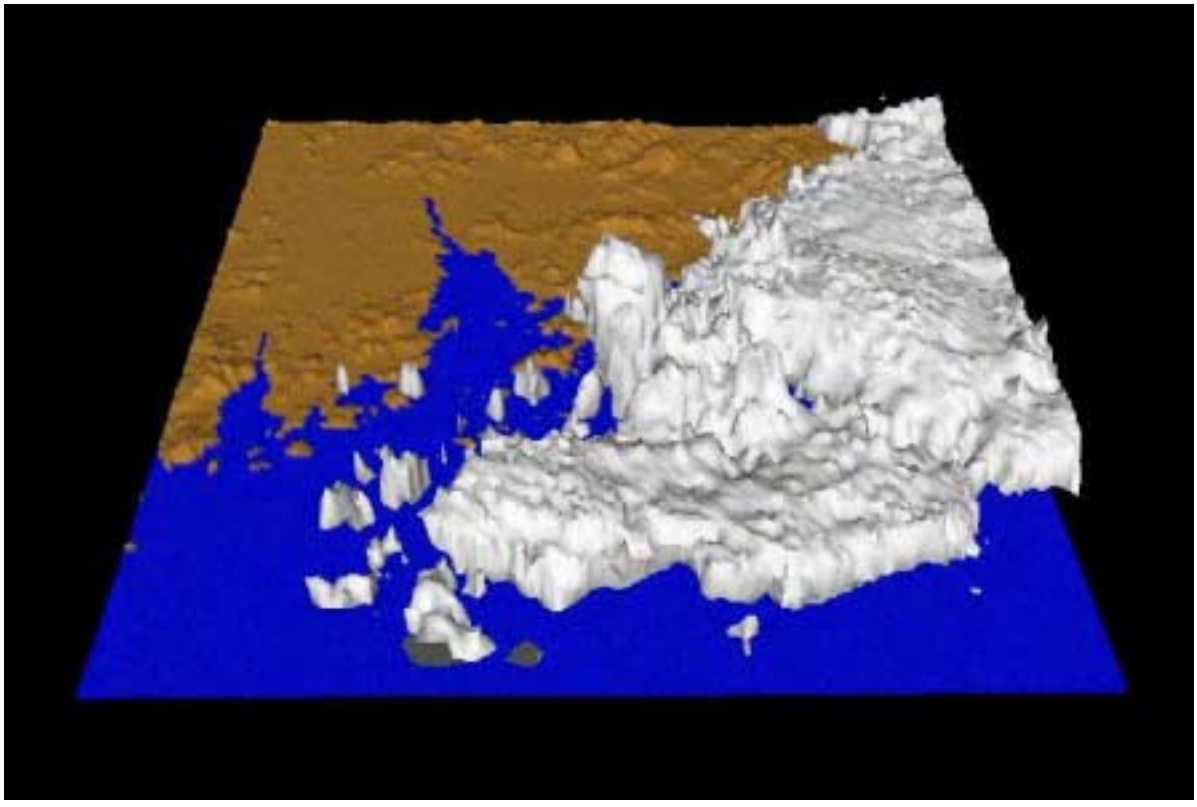

圖 3.4.4　　二零零零年八月二十四日約上午4時的立體雷達回波圖片。當時，黑色暴雨警告正生效。
Figure 3.4.4　3-D radar echoes captured at 4 a.m. on 24 August 2000 when the Black Rainstorm Warning Signal was in force.

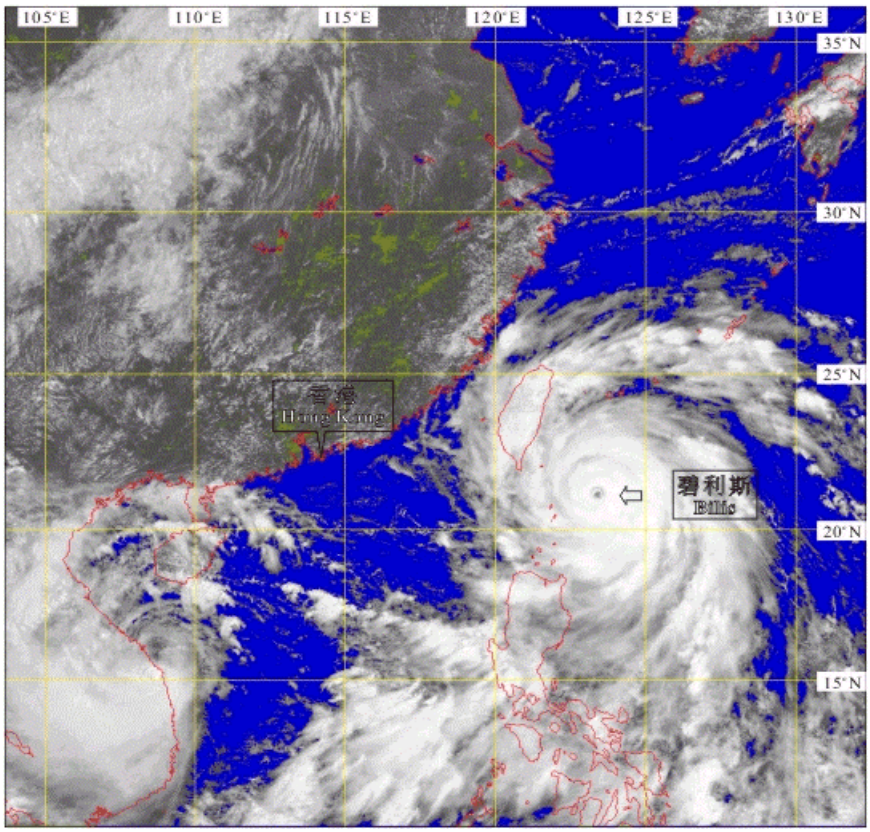

圖 3.4.5.a　二零零零年八月二十二日約上午10時30分的可見光衛星圖片，顯示當時颱風碧利斯清晰的風眼。（此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5））

Figure 3.4.5.a　Visible imagery at around 10.30 a.m. on 22 August 2000 showing the distinct eye of Typhoon Bilis. (The cloud imagery was originally captured by GMS-5 of JMA)

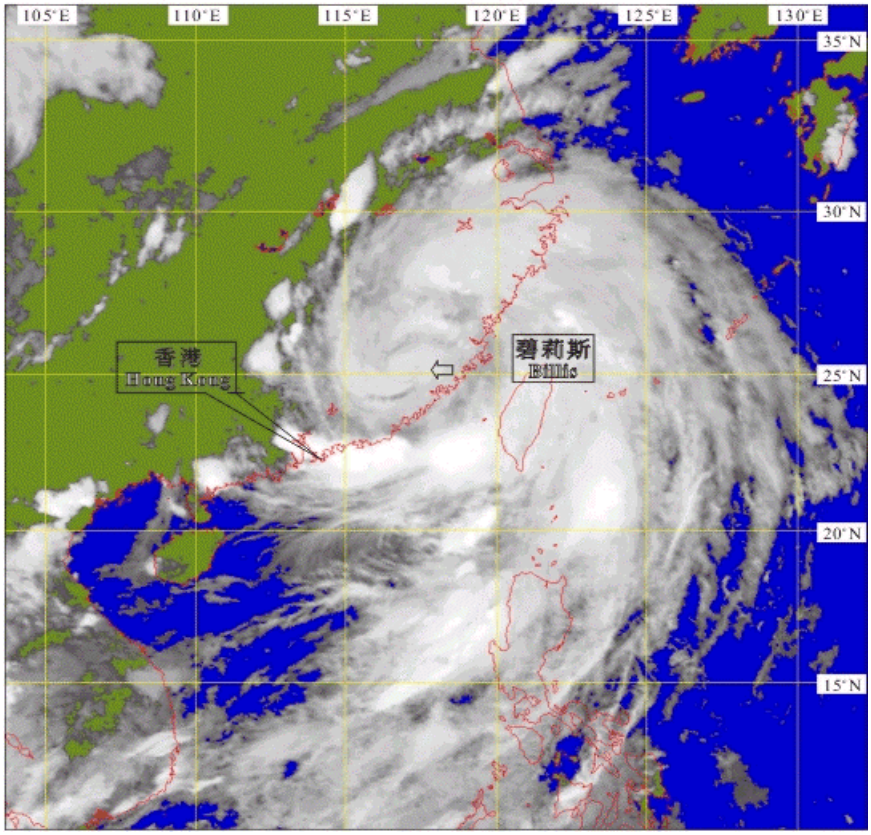

圖 3.4.5.b　二零零零年八月二十三日約下午5時30分的紅外線衛星圖片。當時碧利斯的外圍雨帶正在影響香港。（此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5））

Figure 3.4.5.b　Infra-red imagery at around 5.30 p.m. on 23 August 2000 when Hong Kong was being affected by the rainbands of Bilis. (The cloud imagery was originally captured by GMS-5 of JMA)

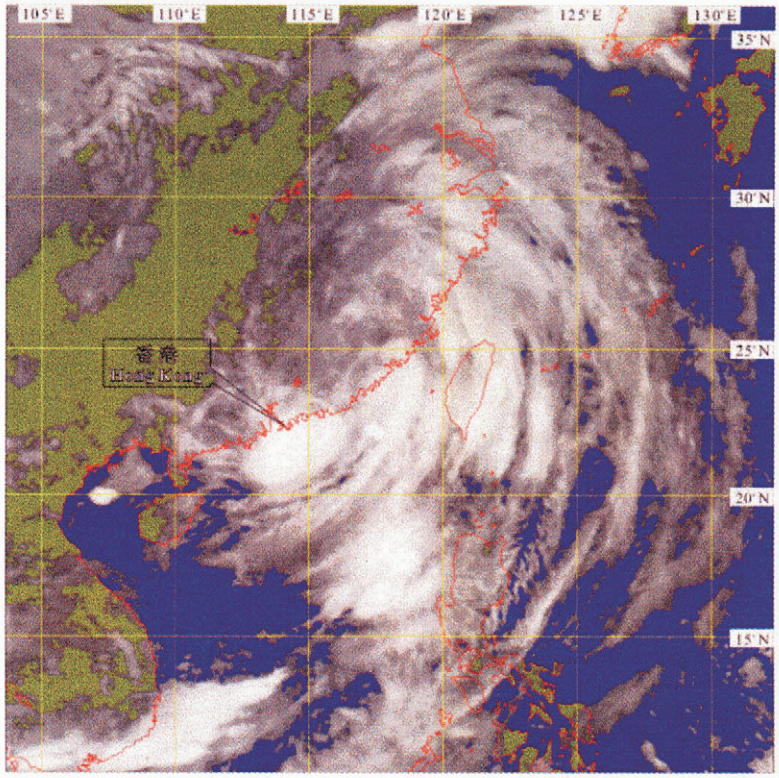

圖 3.4.5.c　二零零零年八月二十四日約上午4時30分的紅外線衛星圖片，當時黑色暴雨警告正生效。（此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5））

Figure 3.4.5.c Infra-red imagery at around 4.30 a.m. on 24 August 2000 when the Black Rainstorm Warning Signal was in force. (The cloud imagery was originally captured by GMS-5 of JMA)

圖 3.4.6　維港上空的一道閃電(星島日報提供)。

Figure 3.4.6　Lightning over Victoria harbour (photograph courtesy of Sing Tao Daily).

圖 3.4.7　香港公園附近的山泥傾瀉(星島日報提供)。
Figure 3.4.7　A landslide near Hong Kong Park (photograph courtesy of Sing Tao Daily).

3.5 強烈熱帶風暴瑪莉亞(0013) : 八月二十七日至九月一日

在八月二十七日早上，一條低壓槽自北向南越過華南沿岸，槽內的低壓區隨後發展爲瑪莉亞。該晚，瑪莉亞在香港東南約250公里處形成爲一熱帶低氣壓。受太平洋上的派比安所影響，在開始的數天，瑪莉亞的移動並不規則。起初，瑪莉亞移動緩慢。隨後，瑪莉亞在八月二十九日向南移動及增強爲一熱帶風暴。它在該晚及翌日早上再次移動緩慢，然後轉北向華南沿岸推進。

在八月三十一日，瑪莉亞以每小時約15公里的速度穩定地向西北偏北移動趨向廣東東部，並在當晚增強爲一強烈熱帶風暴。在雷達回波圖上，可看出瑪莉亞有組織的結構，其中心亦清楚顯現。

瑪莉亞在九月一日清晨登陸於汕尾附近。瑪莉亞繼續向內陸推進，當晚變爲一低壓區。在廣東，瑪莉亞帶來的暴雨造成水浸及山泥傾瀉，最少有23人死亡，374萬人受影響，7 000多間房屋倒塌，直接經濟損失約爲12.8億元人民幣。

在香港，一號戒備信號在八月二十七日晚上11時45分首次懸掛，當時瑪莉亞剛形成爲一熱帶低氣壓並位於香港東南約250公里。受瑪莉亞的外圍雨帶影響，八月二十八日本港大致多雲，有幾陣驟雨。由於瑪莉亞的遠離，八月二十九日本港天晴炎熱，瑪莉亞對香港的威脅也暫時解除。天文台於該日下午2時25分除下所有熱帶氣旋警告信號，當時瑪莉亞位於香港東南偏南約400公里。天文台亦以新聞簡佈通知市民，若瑪莉亞重新對香港構成威脅，便會考慮再次懸掛熱帶氣旋警告信號。同時，香港天文台也繼續發出海上強風及烈風的警報。

在八月三十一日早上，瑪莉亞開始穩定地趨近廣東東部。一號戒備信號在八月三十一日上午10時15分再度懸掛，當時瑪莉亞位於香港東南約290公里。受其外圍雨帶影響，本港當日有狂風驟雨及雷暴。瑪莉亞所引起的暗湧，亦影響沿岸水域。

由於瑪莉亞進一步移近本港並增強爲一強烈熱帶風暴，本地偏北風有所增強，三號強風信號在九月一日上午1時30分懸掛。香港天文台總部在上午2時36分錄得992.4百帕斯卡的最低瞬時海平面氣壓。瑪莉亞約在上午5時最接近本港，當時它位於香港東北偏東約100公里。

瑪莉亞在九月一日上午5時左右於汕尾附近登陸後，本地吹強勁西南風，離岸及高地間中吹烈風。當天早上，瑪莉亞的外圍雨帶繼續爲本港帶來狂風大雨。隨後，瑪莉亞遠離本港並且逐漸減弱，本地風力也轉弱，所有熱帶氣旋警告信號在下午1時20分除下。

八月三十一日，一名男子在大尾督釣魚時，給瑪莉亞引起的湧浪捲走喪生，而另一名少年在石澳游水時亦遇溺身亡。在九月一日，薄扶林及尖沙咀兩地，均有強風導致大樹倒塌，道路封閉的情況。一棵大樹亦於大埔滘九廣鐵路路軌旁塌下，列車服務一度受阻。因強風關係，青馬大橋上層行車線及汀九橋在九月一日早上禁止容易被風吹倒的車輛駛入。

表3.5.1-3.5.3分別是瑪莉亞影響香港時各站所錄得的最高風速、日雨量及最高潮汐資料。圖3.5.1-3.5.5是瑪莉亞的路徑圖、香港天文台總部的氣壓變化圖、香港的雨量分佈圖、衛星雲圖及雷達回波圖。而瑪莉亞造成的破壞可參見圖3.5.6.

3.5 Severe Tropical Storm Maria (0013) : 27 August - 1 September 2000

Maria had its origins in an area of low pressure on a trough which crossed the south China coast from north to south on the morning of 27 August. It began life as a tropical depression about 250 km southeast of Hong Kong that night. Under the influence of Prapiroon over the Pacific, Maria's movement in the first few days of its life was largely erratic. Initially, it was slow moving. Then it moved south, and became a tropical storm on 29 August. It slowed down that night and the next morning and then began to turn north towards the south China coast.

Tracking north-northwestwards at a steady speed of about 15 km/h towards the eastern part of Guangdong on 31 August, Maria became a severe tropical storm that night. Radar image showed that Maria was well organzied and had a distinct centre.

Maria made landfall near Shanwei on the early morning of 1 September. Moving further inland, Maria degenerated into an area of low pressure that night. Heavy rain associated with Maria triggered off landslides and flooding in Guangdong. At least 23 people were killed, 3.74 million people were affected and over 7 000 houses collapsed. Direct economic loss amounted to 1.28 billion RMB.

In Hong Kong, the Standby Signal No. 1 was first hoisted at 11.45 p.m. on 27 August when Maria was about 250 km southeast of Hong Kong and had just developed into a tropical depression. Under the influence of the outer rainbands of Maria, the weather in Hong Kong was mainly cloudy with a few showers the next day. With Maria moving away from Hong Kong, local weather became fine and hot on 29 August. The threat of Maria to Hong Kong being over for the moment, all tropical cyclone warning signals were lowered at 2.25 p.m. that day. At this time, Maria was about 400 km to the south-southeast of Hong Kong. A press release was issued to alert the public that should Maira return to pose a threat to Hong Kong again, the Observatory would consider the re-hoisting of tropical cyclone warning signals. Furthermore, the Hong Kong Observatory continued to warn of strong and gale force winds at sea.

As Maria began to head steadily towards to the eastern part of Guangdong on the morning of 31 August, the Standby Signal No. 1 was again hoisted at 10.15 a.m. when Maria was about 290 km southeast of Hong Kong. Under the influence of the outer rainbands of Maria, there were squally showers and thunderstorms in Hong Kong. Maria's swell also affected the coastal areas.

As Maria moved closer to Hong Kong and intensified into a severe tropical storm, local winds strengthened from the north and the Strong Wind Signal No. 3 was hoisted at 1.30 a.m. on 1 September. The lowest instantaneous mean sea-level pressure of 992.4 hPa was recorded at the Hong Kong Observatory Headquarters at 2.36 a.m. Maria was closest to Hong Kong at around 5 a.m. when it was about 100 m to the east-northeast.

With Maria making landfall near Shanwei at about 5 a.m. on 1 September, local winds became strong southwesterly, occasionally reaching gale force offshore and on high ground. The outer rainbands of Maria continued to bring squalls and heavy rain to Hong Kong that morning. As Maria moved further inland and weakened gradually, local winds moderated. All tropical cyclone warning signals were lowered at 1.20 p.m.

On 31 August, Maria's swells took the life of one man while he was fishing at Tai Mei Tuk. Also, a young swimmer drowned at Shek O. Strong winds brought down trees in Pokfulam and Tsim Sha Tsui, leaving roads blocked there on 1 September. A tree also toppled near a section of the KCR track near Tai Po Kau, rail services were briefly interrupted. Owing to strong winds, the upper deck of Lantau Link and Ting Kau Bridge were closed to all wind susceptible vehicles on the morning of 1 September.

Information on wind, rainfall and tide during the passage of Maria is given in Tables 3.5.1 - 3.5.3. Figures 3.5.1 - 3.5.5 show the track of Maria, trace of pressure recorded at the Hong Kong Observatory Headquarters, rainfall distribution in Hong Kong, cloud imageries and radar echoes. And Figure 3.5.6 shows the damge caused by Maria.

表 3.5.1　在瑪莉亞影響下，本港各站在熱帶氣旋警告信號懸掛時所錄得的最高陣風、最高每小時平均風速及風向

Table 3.5.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations during the hoisting of the tropical cyclone warning signals for Maria

(a)　第一次影響香港期間
First passage

站 Station	(參閱圖 1.1) (see Fig. 1.1)	最高陣風 Maximum Gust				最高每小時平均風速 Maximum Hourly Wind			
		風向 Direction	風速(公里/時) Speed (km/h)	日/月 Date/Month	時間 Time	風向 Direction	風速(公里/時) Speed (km/h)	日/月 Date/Month	時間 Time
中環	Central	東北偏東 ENE	31	28/8	1107	東 E	14	28/8	1200
中環廣場	Central Plaza	東北偏北 NNE	54	28/8	1221	北 N	31	28/8	0800
赤鱲角(機場)	Chek Lap Kok (Airport)	西北 NW	52	29/8	1300	西北 NW	23	29/8	1400
長洲	Cheung Chau	東北 NE	47	28/8	1642	東北偏北 NNE	27	28/8	1200
長沙灣	Cheung Sha Wan	東北 NE	41	29/8	0954	東北 NE	16	29/8	1000
京士柏	King's Park	北 N	45	28/8	0829	北 N	19	28/8	1000
流浮山	Lau Fau Shan	東北 NE	38	28/8	1052	東北偏北 NNE	23	28/8	1100
北角	North Point	東北 NE	38	28/8	1016	東北偏東 ENE	19	28/8	1800
		東北偏北 NNE	38	28/8	1017				
		東北偏北 NNE	38	28/8	1030				
平洲	Ping Chau	東北 NE	25	28/8	1516	東北偏東 ENE	9	28/8	1600
西貢	Sai Kung	北 N	49	28/8	0926	北 N	27	28/8	1000
		北 N	49	29/8	0944	北 N	27	29/8	1200
沙螺灣	Sha Lo Wan	東北 NE	45	28/8	1201	東北偏東 ENE	25	28/8	1200
沙田	Sha Tin	東北偏北 NNE	34	29/8	1409	東北偏北 NNE	14	28/8	1300
石崗	Shek Kong	東北偏北 NNE	34	29/8	1139	北 N	16	29/8	1400
天星碼頭(九龍)	Star Ferry (Kowloon)	東南偏東 ESE	31	28/8	1729	東 E	20	28/8	1800
打鼓嶺	Ta Kwu Ling	東北偏北 NNE	36	29/8	1030	北 N	16	29/8	1300
大帽山	Tai Mo Shan	東北偏北 NNE	62	29/8	0036	北 N	41	28/8	0800
塔門	Tap Mun	北 N	31	29/8	1248	北 N	16	28/8	0900
大老山	Tate's Cairn	東北偏北 NNE	62	28/8	1119	東北偏北 NNE	40	28/8	0800
鯽魚湖	Tsak Yue Wu	東北 NE	41	29/8	1103	東北 NE	20	29/8	1200
將軍澳	Tseung Kwan O	北 N	45	29/8	1216	東北偏北 NNE	14	29/8	1400
青衣	Tsing Yi	東北偏北 NNE	49	28/8	1224	東北偏北 NNE	23	28/8	1300
屯門	Tuen Mun	東北偏北 NNE	40	28/8	1153	東北偏北 NNE	13	28/8	1700
橫瀾島	Waglan Island	東北偏東 ENE	68	28/8	2207	東北偏東 ENE	51	28/8	2300
黃竹坑	Wong Chuk Hang	東北偏東 ENE	41	29/8	0001	東 E	19	28/8	2400

(b) 第二次影響香港期間
Second passage

站 Station	(參閱圖 1.1) (see Fig. 1.1)	最高陣風 Maximum Gust		日/月 Date/Month	時間 Time	最高每小時平均風速 Maximum Hourly Wind		日/月 Date/Month	時間 Time
		風向 Direction	風速(公里/時) Speed (km/h)			風向 Direction	風速(公里/時) Speed (km/h)		
中環	Central	西北 NW	51	1/9	0135	西北偏西 WNW	14	31/8	2100
						西北偏西 WNW	14	31/8	2400
中環廣場	Central Plaza	西 W	115	1/9	0346	西 W	83	1/9	0400
赤鱲角 (機場)	Chek Lap Kok (Airport)	西北偏西 WNW	58	1/9	0615	西 W	40	1/9	0600
長洲	Cheung Chau	西北偏西 WNW	99	1/9	0301	西北偏西 WNW	58	1/9	0400
長沙灣	Cheung Sha Wan	西南偏西 WSW	51	1/9	0710	西 W	16	1/9	0100
青洲	Green Island	西南 SW	45	1/9	1158	西南偏西 WSW	31	1/9	1300
		西南 SW	45	1/9	1159				
京士柏	King's Park	西南偏西 WSW	62	1/9	0735	西 W	27	1/9	0500
流浮山	Lau Fau Shan	西北偏西 WNW	96	1/9	0455	西北偏西 WNW	65	1/9	0600
北角	North Point	西南偏西 WSW	81	1/9	0413	西南偏西 WSW	43	1/9	0500
平洲	Ping Chau	西北偏西 WNW	75	1/9	0346	西 W	14	1/9	1200
西貢	Sai Kung	西 W	75	1/9	0312	西 W	34	1/9	0500
沙螺灣	Sha Lo Wan	東 E	72	31/8	1841	西南 SW	34	1/9	1000
沙田	Sha Tin	西 W	54	1/9	0403	西南偏南 SSW	20	1/9	0900
石崗	Shek Kong	西 W	52	1/9	0353	西南偏西 WSW	20	1/9	0800
天星碼頭 (九龍)	Star Ferry (Kowloon)	西北偏西 WNW	72	1/9	0347	西 W	49	1/9	0500
打鼓嶺	Ta Kwu Ling	西南偏西 WSW	52	1/9	0640	西南偏西 WSW	20	1/9	0800
		西南偏西 WSW	52	1/9	0716				
		西南 SW	52	1/9	0817				
大尾篤	Tai Mei Tuk	西南偏西 WSW	108	1/9	0338	西 W	49	1/9	0500
大帽山	Tai Mo Shan	西南偏西 WSW	117	1/9	0510	西南偏西 WSW	79	1/9	0800
塔門	Tap Mun	西 W	103	1/9	0524	西 W	62	1/9	0500
大老山	Tate's Cairn	西 W	99	1/9	0454	西北偏西 WNW	62	1/9	0300
鯽魚湖	Tsak Yue Wu	西北偏西 WNW	63	1/9	0340	西 W	20	1/9	0500
						西 W	20	1/9	0600
將軍澳	Tseung Kwan O	西北偏西 WNW	65	1/9	0252	西北偏北 NNW	14	31/8	2300
青衣	Tsing Yi	西北偏西 WNW	88	1/9	0334	西北偏西 WNW	43	1/9	0400
屯門	Tuen Mun	西北偏西 WNW	79	1/9	0352	西北偏西 WNW	31	1/9	0700
橫瀾島	Waglan Island	西 W	101	1/9	0532	西 W	67	1/9	0500
黃竹坑	Wong Chuk Hang	西北偏西 WNW	75	1/9	0218	西北偏西 WNW	30	1/9	0300

表 3.5.2　瑪莉亞影響香港期間，香港天文台總部及其他各站所錄得的日雨量(單位爲毫米)
Table 3.5.2 Daily rainfall amounts in millimetres recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Maria

站 (參閱圖 3.5.3) Station (see Fig. 3.5.3)	八月二十八日 28 Aug	八月二十九日 29 Aug	八月三十日 30 Aug	八月三十一日 31 Aug	九月一日 1 Sep	九月二日 2 Sep	總雨量 Total
香港天文台 Hong Kong Observatory	微量 Trace	0.5	0.0	20.7	50.8	93.9	165.9
H19　筲箕灣 Shau Kei Wan	0.0	0.0	0.5	17.0	59.5	[38.0]	[115.0]
H21　淺水灣 Repulse Bay	0.0	0.0	0.5	20.5	107.5	[9.0]	[137.5]
K04　佐敦谷 Jordan Valley	0.0	0.0	0.0	20.5	44.0	[95.0]	[159.5]
K06　蘇屋邨 So Uk Estate	0.5	0.0	0.0	22.0	49.0	[72.5]	[144.0]
N05　粉嶺 Fanling	[0.5]	0.0	[0.0]	[10.0]	39.0	[40.0]	[89.5]
N06　葵涌 Kwai Chung	[0.0]	0.0	[0.0]	[20.5]	53.0	[55.5]	[129.0]
N09　沙田 Sha Tin	0.5	0.0	0.0	18.5	45.0	[77.0]	[141.0]
N12　元朗 Yuen Long	0.0	0.0	4.5	8.5	44.5	[19.5]	[77.0]
R21　踏石角 Tap Shek Kok	0.5	0.0	17.0	9.5	29.0	6.5	62.5
R26　石崗 Shek Kong	0.0	0.0	3.0	9.0	22.0	6.0	40.0
R31　大尾篤 Tai Mei Tuk	2.5	0.0	0.0	15.0	50.5	41.0	109.0

註：　[　] 基於不完整的每小時雨量數據。
Note : [　] based on incomplete hourly data.

表 3.5.3　瑪莉亞影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.5.3 Times and heights of the maximum sea level and the maximum storm surge recorded at various tide stations in Hong Kong during the passage of Maria

	站 (參閱圖 1.1) Station (see Fig. 1.1)	最高潮位 (海圖基準面以上) Maximum sea level (above chart datum)			最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide)		
		高度 (米) Height (m)	日期/月份 Date/Month	時間 Time	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time
第一次影響 香港期間 First passage	鰂魚涌 Quarry Bay	2.79	29/8	8.51 a.m.	0.30	29/8	8.54 a.m.
	大埔滘 Tai Po Kau	2.69	29/8	9.49 a.m.	0.32	29/8	5.09 a.m.
	尖鼻咀 Tsim Bei Tsui	3.06	29/8	9.00 a.m.	0.40	29/8	7.41 a.m.
第二次影響 香港期間 Second passage	鰂魚涌 Quarry Bay	2.52	31/8	10.35 a.m.	0.29	31/8	1.05 p.m.
	大埔滘 Tai Po Kau	2.49	31/8	12.04 p.m.	0.38	31/8	1.59 p.m.
	尖鼻咀 Tsim Bei Tsui	2.90	31/8	10.39 a.m.	0.29	31/8	10.17 a.m.
	橫瀾島 Waglan Island	2.54	31/8	11.01 a.m.	0.38	31/8	1.23 p.m.

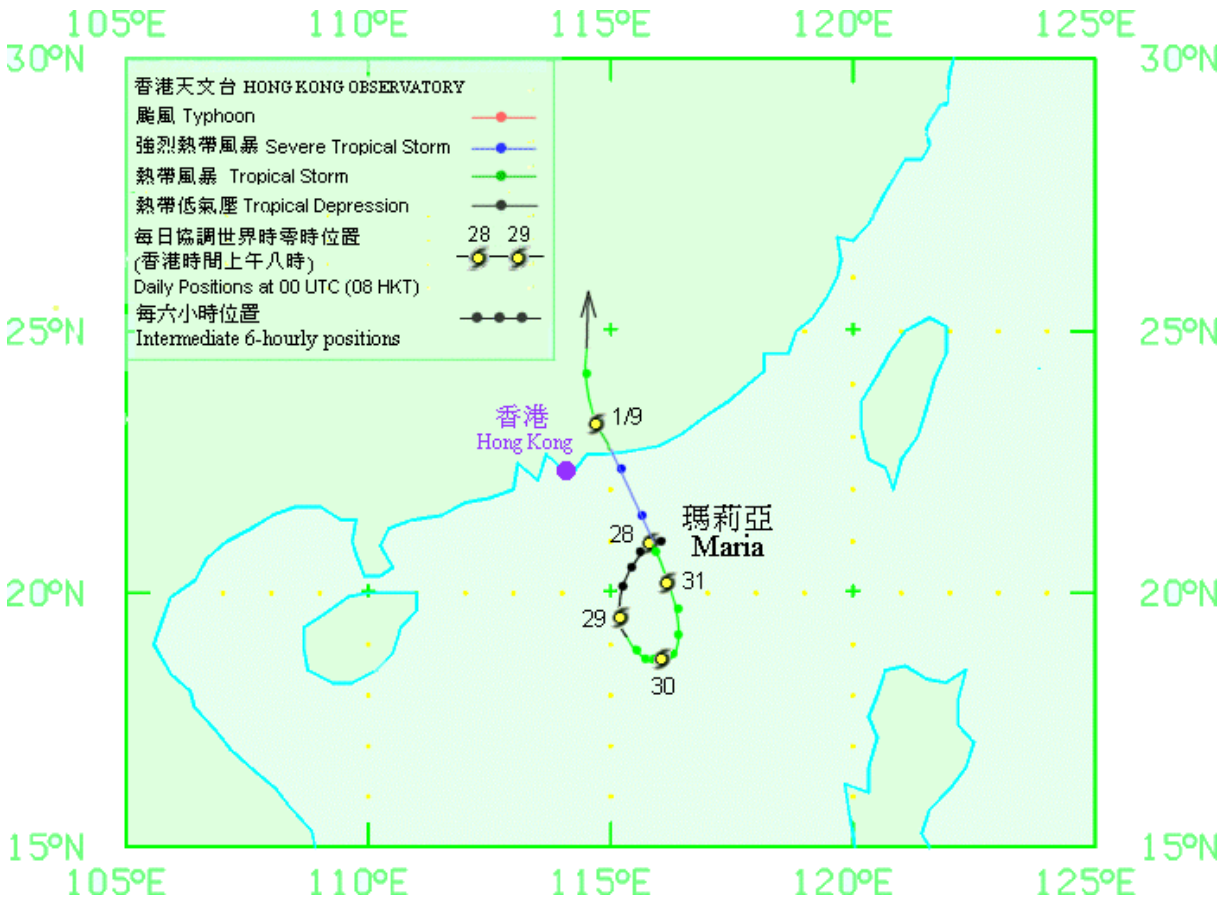

圖 3.5.1　　二零零零年八月二十七日至九月一日強烈熱帶風暴瑪莉亞(0013)的路徑圖。
Figure 3.5.1　Track of Severe Tropical Storm Maria (0013) : 27 August - 1 September 2000.

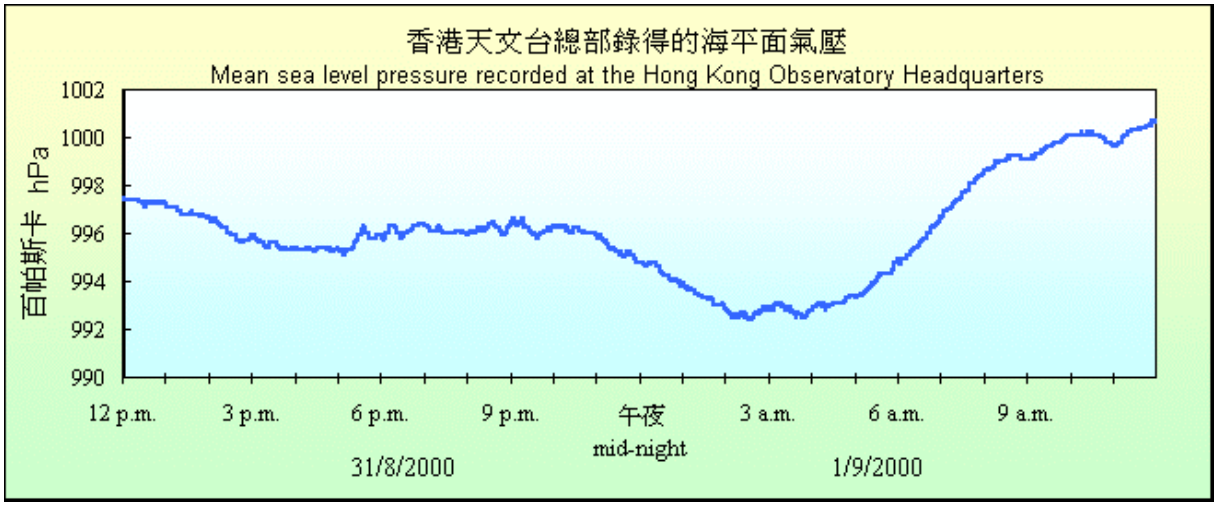

圖 3.5.2　　二零零零年八月三十一日至九月一日香港天文台總部錄得的氣壓變化。
Figure 3.5.2　Trace of pressure recorded at the Hong Kong Observatory Headquarters on 31 August - 1 September 2000.

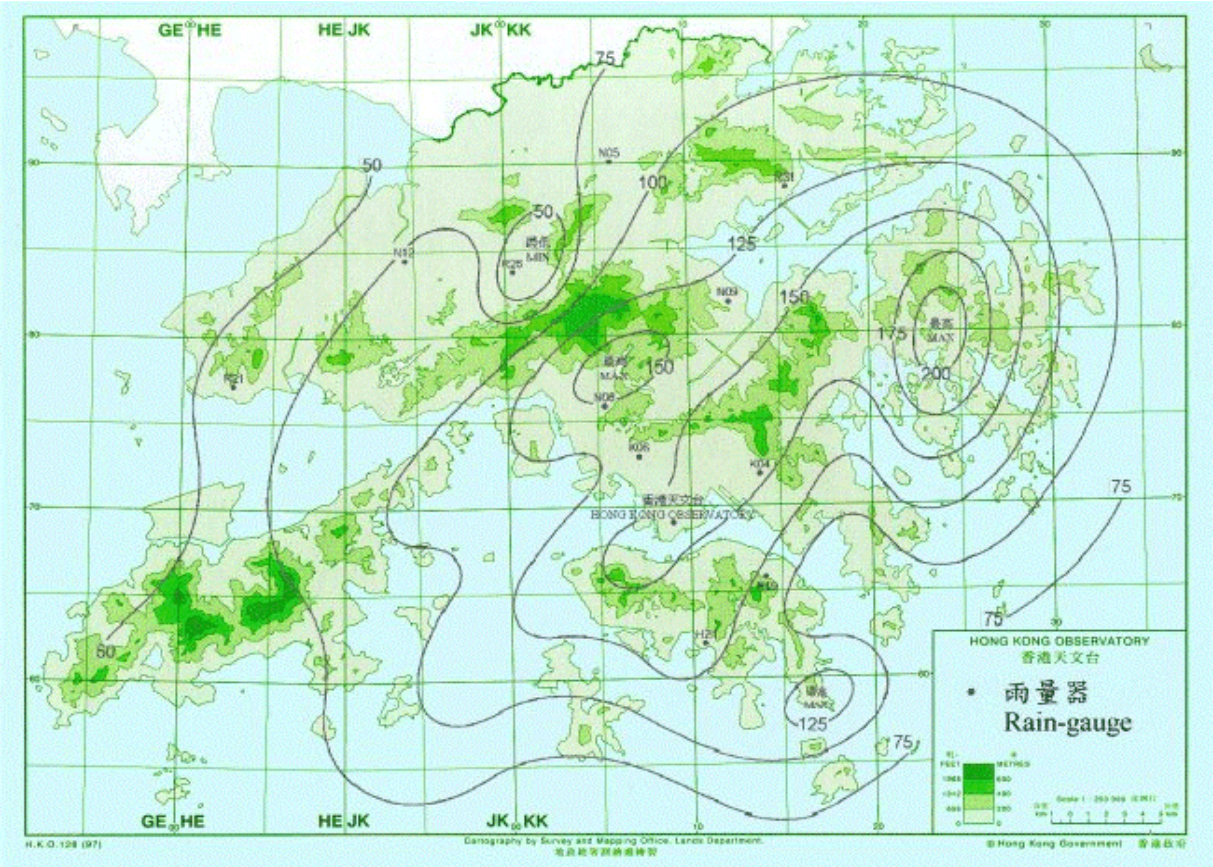

圖 3.5.3　　二零零零年八月二十八日至九月二日的雨量分佈圖。

Figure 3.5.3　　Rainfall distribution on 28 August - 2 September 2000.

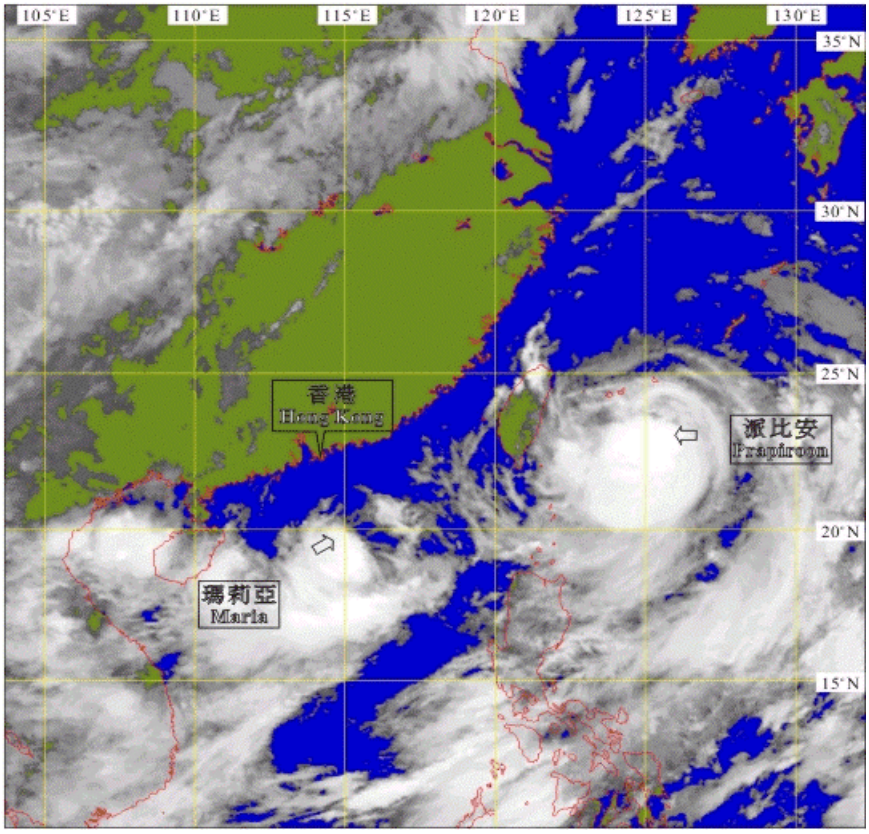

圖 3.5.4.a　　二零零零年八月二十九日約上午7時30分的紅外線衛星圖片，顯示當時瑪莉亞及派比安的位置。當天，受到派比安的影響，瑪莉亞向南緩慢移動，而派比安則向北推進。（此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5））

Figure 3.5.4.a　Infra-red imagery at around 7.30 a.m. on 29 August 2000 showing the positions of Maria and Prapiroon. Under the influence of Prapiroon, Maria was drifting south slowly that day while Prapiroon was heading north. (The cloud imagery was originally captured by GMS-5 of JMA)

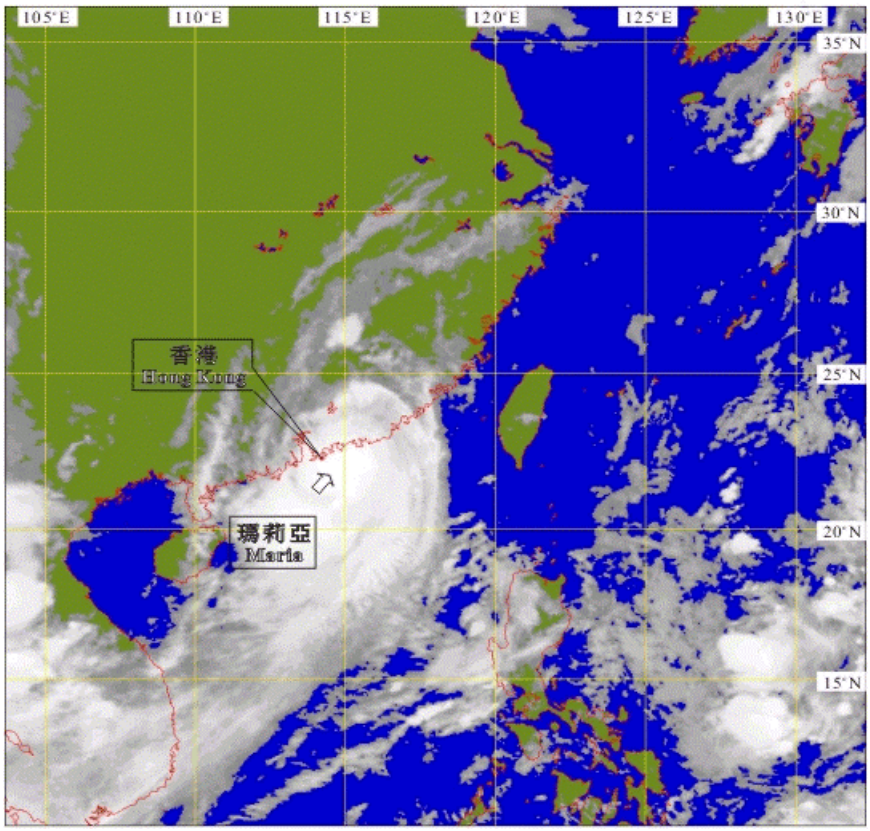

圖 3.5.4.b　二零零零年九月一日約上午1時30分的紅外線衛星圖片。當時，瑪莉亞正將在汕尾附近登陸，其雨帶亦爲香港帶來狂風暴雨。（此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5））

Figure 3.5.4.b Infra-red imagery at around 1.30 a.m. on 1 September 2000. At that time, Maria was just about to make landfall near Shanwei and bringing heavy rain and squalls to Hong Kong. (The cloud imagery was originally captured by GMS-5 of JMA)

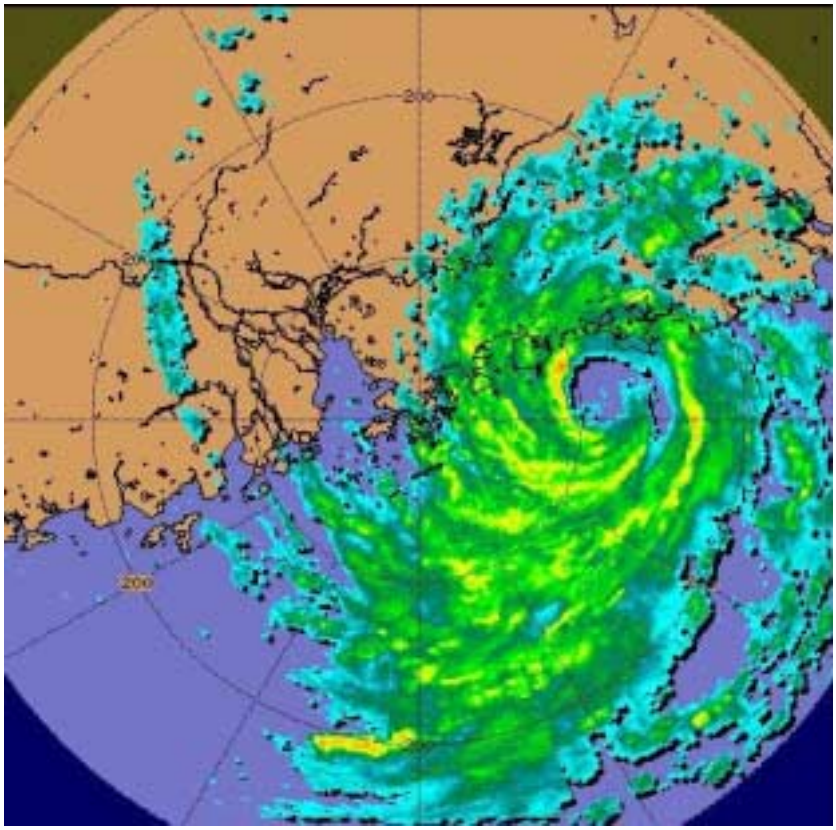

圖 3.5.5.a　二零零零年九月一日約上午1時30分的雷達回波圖片，顯示出當時瑪莉亞的結構及其中心。

Figure 3.5.5.a Radar echoes captured at 1.30 a.m. on 1 September 2000 showing the organization of Maria and its centre.

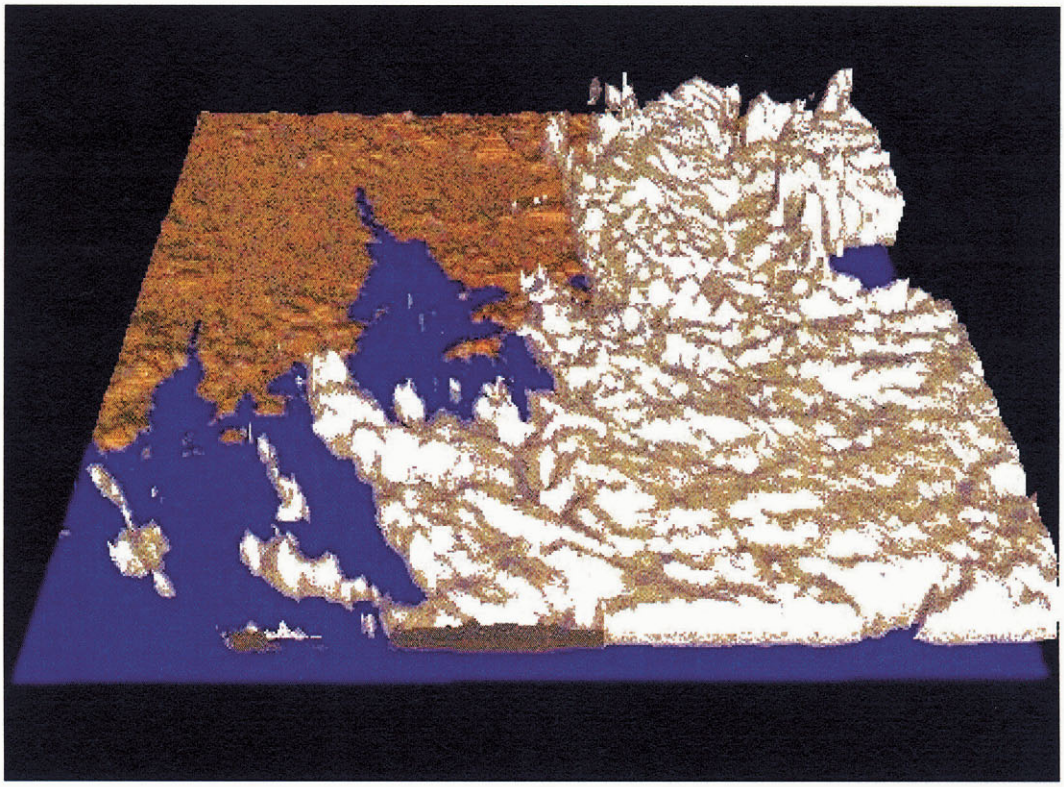

圖 3.5.5.b　二零零零年九月一日約上午1時30分的立體雷達回波圖片。
Figure 3.5.5.b　3-D radar echoes captured at 1.30 a.m. on 1 September 2000.

圖 3.5.6　大埔滘九廣鐵路旁塌下一顆大樹，列車服務一度受阻(文匯報提供)。
Figure 3.5.6　A toppled tree near a section of the Kowloon-Canton Railway track near Tai Po Kau where rail services were briefly interrupted (photograph courtesy of Wen Wei Po).

3.6 颱風悟空(0016) : 九月五日至十日

在南海上，一低壓區在九月五日下午於香港東南偏南約670公里處形成爲一熱帶低氣壓。該熱帶低氣壓初時向東北偏北移動，翌日增強爲一熱帶風暴並命名爲悟空。悟空隨後轉向西移動，在九月七日的清晨加強成爲一強烈熱帶風暴。該日下午，悟空進一步增強爲一颱風，它當時集結於香港東南偏南約400公里。

九月八日，悟空的風力達到最強。悟空的最高持續風速及最低中心氣壓分別估計約爲每小時130公里及965百帕斯卡。當天，衛星雲圖上悟空的風眼清晰可見，其直徑約爲65公里。悟空以每小時約15公里的速度向西推進，九月九日下午在海南島南部登陸。在海南島，共有四人死亡，250萬人受到影響。約2 700間房屋倒塌，250 000公頃農地受到損毀。其他破壞包括堤壩、公路、輸電線路及通訊線路。直接經濟損失約爲14億元人民幣。

登陸後，悟空減弱爲一強烈熱帶風暴。離開海南島後，它繼續西進。在九月十日下午，悟空在越南河內以南約310公里處登陸並減弱爲一熱帶風暴。它在該晚橫過老撾後，便變爲一低壓區。

在香港，一號戒備信號在九月六日下午1時45分懸掛，當時悟空位於香港東南約590公里。該日，本港大致天晴，吹和緩至清勁偏東風。

受到東北季候風的影響，九月七日早上本港短暫時間吹北至東北風。在悟空及季候風的共同影響下，該日下午香港有幾陣驟雨及雷暴，本地轉吹偏東風，風力亦逐漸增強。香港天文台在晚上9時45分懸掛三號強風信號。本港隨後吹清勁至強風程度偏東風，離岸地區間中吹烈風。

悟空在九月八日上午2時左右最接近本港，當時它位於香港以南約370公里。該日，本港大致多雲有幾陣雨，離岸及高地吹強風。九月九日，由於悟空進一步遠離本港並直趨海南島，本地風力開始減弱，所有熱帶氣旋警告信號在上午5時45分除下。

在悟空的影響下，香港天文台總部在九月六日(季候風抵達前的一天)下午3時40分錄得最低瞬時海平面氣壓爲1002.4百帕斯卡。

九月七日，疑因浪大，一艘往蛇口的客輪與一艘貨船在青衣附近相撞，客輪上的一名女乘客受傷。九月八日，將軍澳一幅竹棚給強風吹倒，該處路面一度封閉近兩小時。

表3.6.1-3.6.3分別是悟空影響香港時各站所錄得的最高風速、日雨量及最高潮汐資料。圖3.6.1-3.6.3是悟空的路徑圖、香港的雨量分佈圖及衛星雲圖。

3.6 Typhoon Wukong (0016) : 5 - 10 September 2000

Over the South China Sea, an area of low pressure developed into a tropical depression about 670 km south-southeast of Hong Kong on the afternoon of 5 September. The tropical depression drifted north-northeastwards at first and deepened into a tropical storm named Wukong the next day. Turning towards the west, Wukong intensified into a severe tropical storm on the early morning of 7 September. Wukong strengthened further into a typhoon that afternoon when it was about 400 km south-southeast of Hong Kong.

Wukong attained peak intensity on 8 September. The maximum sustained winds and minimum sea-level pressure near Wukong's centre were estimated to be about 130 km/h and 965 hPa respectively. Satellite imageries on that day showed a well-defined eye about 65 km in diameter. Heading west at a speed of about 15 km/h, Wukong made landfall over the southern part of Hainan Island on the afternoon of 9 September. On Hainan Island, four people were killed and 2.5 million people were affected. Some 2 700 houses collapsed and 250 000 hectares of farmland were affected. Other damage included dams, roads, power lines and communication lines. Direct economic loss was put at 1.4 billion RMB.

After landfall, Wukong weakened into a severe tropical storm. On leaving Hainan Island, it continued to track west to make landfall over Vietnam about 310 km south of Ha Noi on the afternoon of 10 September. Wukong weakened into a tropical storm at the same time. It traversed Laos and degenerated into an area of low pressure that night.

In Hong Kong, the Standby Signal No. 1 was hoisted at 1.45 p.m. on 6 September when Wukong was about 590 km to the southeast. The weather was mainly fine in Hong Kong and local winds were moderate to fresh easterly during the day.

With the arrival of the northeast monsoon, winds briefly turned to northerly or northeasterly on the morning of 7 September. Under the combined influence of Wukong and the monsoon, there were a few showers and thunderstorms in Hong Kong and winds began to strengthen from the east on the afternoon of 7 September. The Strong Wind Signal No.3 was hoisted at 9.45 p.m. Easterly winds then became fresh to strong and occasionally reached gale force offshore.

Wukong was closest to Hong Kong at around 2 a.m. on 8 September when it was about 370 km to the south. That day, it was mainly cloudy with a few rain patches in Hong Kong. Winds were strong offshore and on high ground. As Wukong moved further away in the general direction towards Hainan Island, winds started to moderate on 9 September. All tropical cyclone warning signals were lowered at 5.45 a.m.

During the passage of Wukong, the lowest instantaneous mean sea-level pressure of 1002.4 hPa was recorded at the Hong Kong Observatory Headquarters at 3.40 p.m. on 6 September, a day before the monsoon's arrival.

There was a collision between a ferry to Shekou and a cargo ship near Tsing Yi in rough seas on 7 September. One woman on the ferry was injured. On 8 September, a scaffolding collapsed in Tseung Kwan O due to strong winds, blocking the road there for almost two hours.

Information on wind, rainfall and tide during the passage of Wukong is given in Tables 3.6.1 - 3.6.3. Figures 3.6.1 - 3.6.3 show the track of Wukong, rainfall distribution in Hong Kong and cloud imagery.

表 3.6.1　在悟空影響下，本港各站在熱帶氣旋警告信號懸掛時所錄得的最高陣風、最高每小時平均風速及風向

Table 3.6.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations during the hoisting of the tropical cyclone warning signals for Wukong

站 Station	(參閱圖 1.1) (see Fig. 1.1)	最高陣風 Maximum Gust		日/月 Date/Month	時間 Time	最高每小時平均風速 Maximum Hourly Wind		日/月 Date/Month	時間 Time
		風向 Direction	風速(公里/時) Speed (km/h)			風向 Direction	風速(公里/時) Speed (km/h)		
中環	Central	東南偏東 ESE	54	8/9	1747	東 E	30	8/9	1400
中環廣場	Central Plaza	東北 NE	88	8/9	0715	東北偏東 ENE	52	8/9	1600
赤鱲角(機場)	Chek Lap Kok (Airport)	東 E	52	8/9	1539	東北偏東 ENE	27	8/9	1400
長洲	Cheung Chau	東 E	85	8/9	2337	東北偏東 ENE	45	8/9	1400
長沙灣	Cheung Sha Wan	東北 NE	52	9/9	0232	東北 NE	20	8/9	0900
青洲	Green Island	東北偏東 ENE	90	8/9	0152	東 E	54	8/9	2200
京士柏	King's Park	東北 NE	56	8/9	1411	東北 NE	20	8/9	0300
流浮山	Lau Fau Shan	東 E	54	8/9	2345	東 E	30	8/9	2400
北角	North Point	東北偏東 ENE	63	8/9	1735	東北 NE	30	8/9	0800
		東北偏東 ENE	63	8/9	2027				
平洲	Ping Chau	東 E	49	8/9	2322	東 E	19	8/9	2400
						東 E	19	9/9	0100
西貢	Sai Kung	東北 NE	59	8/9	0156	東北 NE	38	8/9	2200
沙螺灣	Sha Lo Wan	東 E	72	8/9	2247	東 E	41	8/9	2300
沙田	Sha Tin	東北偏北 NNE	51	8/9	1512	東北偏東 ENE	20	8/9	2200
石崗	Shek Kong	東北偏東 ENE	58	7/9	1445	東北偏北 NNE	22	8/9	1600
天星碼頭(九龍)	Star Ferry (Kowloon)	東 E	54	8/9	2117	東 E	30	8/9	2200
打鼓嶺	Ta Kwu Ling	東北偏北 NNE	38	8/9	1120	東北偏北 NNE	19	8/9	1200
大尾篤	Tai Mei Tuk	東北 NE	65	7/9	1422	東北偏東 ENE	45	9/9	0100
大帽山	Tai Mo Shan	東 E	87	8/9	2229	東北 NE	56	8/9	1100
塔門	Tap Mun	東北偏東 ENE	51	8/9	0149	東北偏東 ENE	23	8/9	1600
						東北偏東 ENE	23	8/9	1700
						東北偏東 ENE	23	9/9	0100
大老山	Tate's Cairn	東北偏東 ENE	83	8/9	1506	東北 NE	51	8/9	0900
鯽魚湖	Tsak Yue Wu	東北 NE	51	8/9	2249	東北偏北 NNE	16	7/9	1200
將軍澳	Tseung Kwan O	東北 NE	59	8/9	0707	東北偏北 NNE	19	8/9	0700
						東北偏北 NNE	19	8/9	0800
青衣	Tsing Yi	東北偏東 ENE	75	8/9	1523	東北偏東 ENE	40	8/9	1600
屯門	Tuen Mun	東北偏北 NNE	45	8/9	0930	東北偏北 NNE	16	8/9	1800
橫瀾島	Waglan Island	東 E	96	8/9	0148	東 E	72	8/9	0200
黃竹坑	Wong Chuk Hang	東南 SE	67	8/9	2311	東 E	30	8/9	2300

表 3.6.2　悟空影響香港期間，香港天文台總部及其他各站所錄得的日雨量(單位爲毫米)

Table 3.6.2 Daily rainfall amounts in millimetres recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Wukong

站(參閱圖 3.6.2) Station (see Fig. 3.6.2)		九月六日 6 Sep	九月七日 7 Sep	九月八日 8 Sep	九月九日 9 Sep	總雨量 Total
香港天文台 Hong Kong Observatory		微量 Trace	微量 Trace	1.7	0.8	2.5
H19	筲箕灣 Shau Kei Wan	[0.0]	[0.0]	1.5	0.5	[2.0]
H21	淺水灣 Repulse Bay	[0.0]	[0.0]	7.0	1.0	[8.0]
K04	佐敦谷 Jordan Valley	[0.0]	[0.0]	1.5	0.0	[1.5]
K06	蘇屋邨 So Uk Estate	[0.0]	[0.0]	1.5	1.5	[3.0]
N06	葵涌 Kwai Chung	[0.0]	[0.0]	1.0	0.5	[1.5]
N09	沙田 Sha Tin	[0.0]	[0.5]	1.5	0.0	[2.0]
N12	元朗 Yuen Long	[0.0]	[2.5]	0.0	0.0	[2.5]
N17	東涌 Tung Chung	[0.0]	[0.0]	2.0	3.0	[5.0]
R21	踏石角 Tap Shek Kok	[0.0]	[5.5]	0.0	0.0	[5.5]
R26	石崗 Shek Kong	[0.0]	[1.5]	0.0	0.0	[1.5]
R31	大尾篤 Tai Mei Tuk	[0.0]	[6.5]	0.0	0.0	[6.5]

註：　[　] 基於不完整的每小時雨量數據。

Note : [　] based on incomplete hourly data.

表 3.6.3　悟空影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮

Table 3.6.3 Times and heights of the maximum sea level and the maximum storm surge recorded at various tide stations in Hong Kong during the passage of Wukong

站 (參閱圖 1.1) Station (see Fig. 1.1)	最高潮位 (海圖基準面以上) Maximum sea level (above chart datum)			最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide)		
	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time
鰂魚涌 Quarry Bay	2.48	8/9	5.00 a.m.	0.49	8/9	5.00 a.m.
大埔滘 Tai Po Kau	2.44	8/9	5.31 a.m.	0.55	8/9	1.58 a.m.
尖鼻咀 Tsim Bei Tsui	2.47	8/9	4.54 a.m.	0.49	8/9	4.21 p.m.
橫瀾島 Waglan Island	2.47	8/9	5.40 a.m.	0.53	8/9	7.03 a.m.

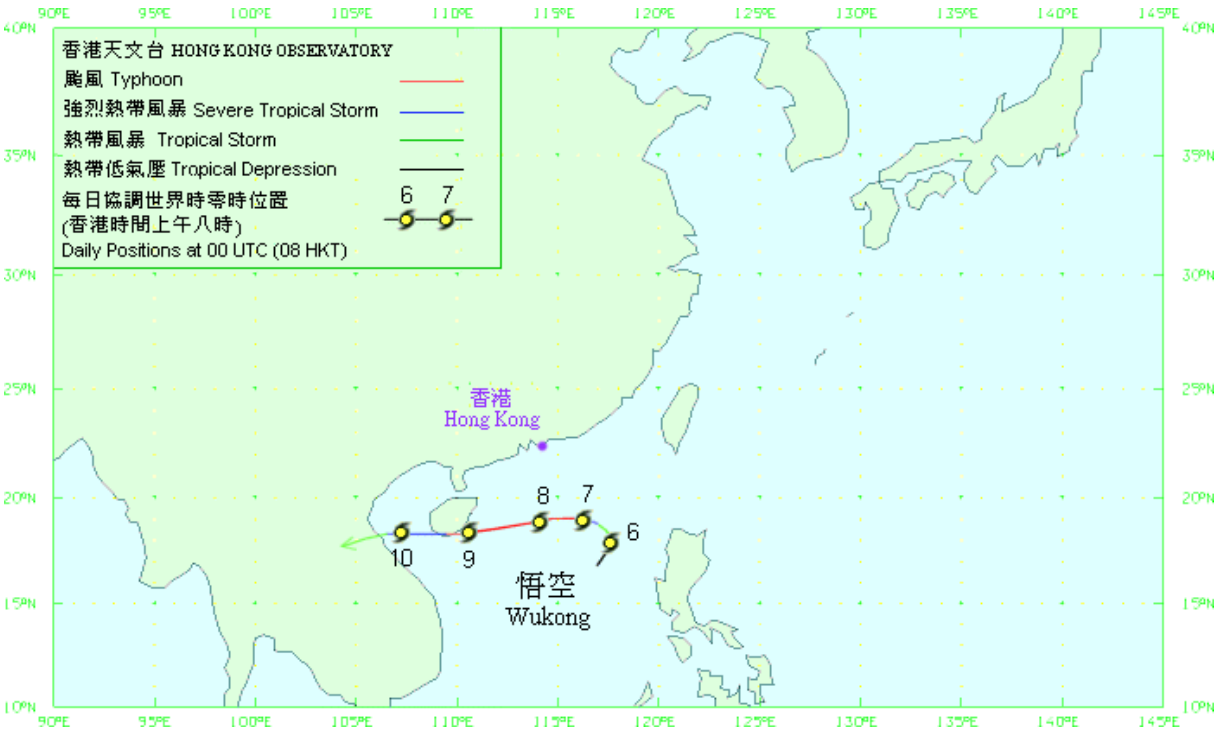

圖 3.6.1　　二零零零年九月五日至十日颱風悟空(0016)的路徑圖。
Figure 3.6.1　Track of Typhoon Wukong (0016) : 5 - 10 September 2000.

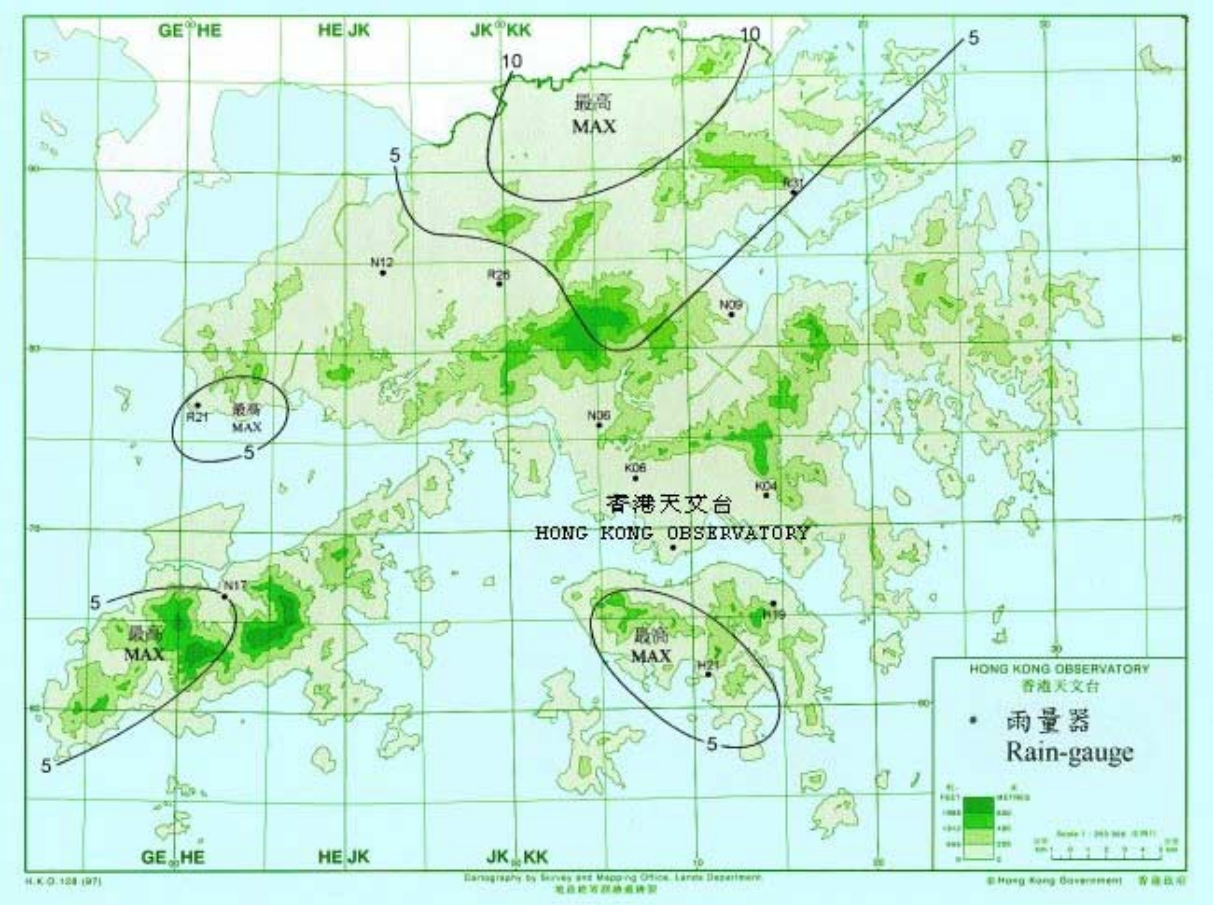

圖 3.6.2　　二零零零年九月六日至九日的雨量分佈圖。
Figure 3.6.2　Rainfall distribution on 6 - 9 September 2000.

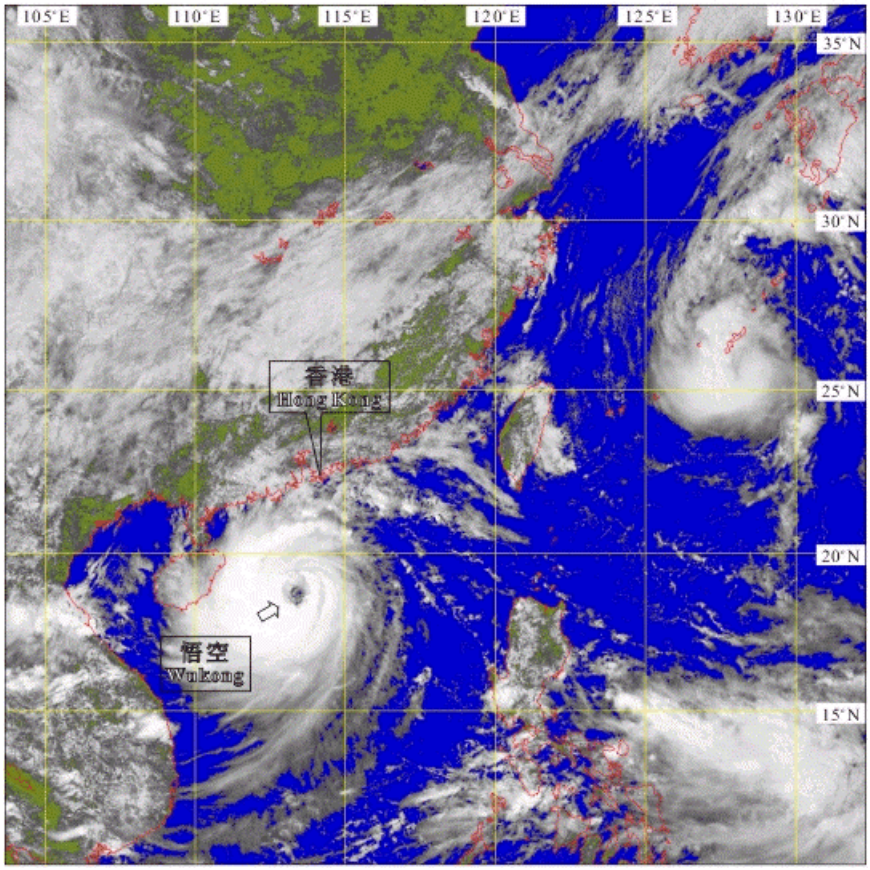

圖 3.6.3　二零零零年九月八日約下午1時30分的可見光衛星圖片，當時悟空的風眼清晰明確。（此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5））

Figure 3.6.3　Visible imagery at around 1.30 p.m. on 8 September 2000 showing Wukong's well-defined eye. (The cloud imagery was originally captured by GMS-5 of JMA)

3.7 強烈熱帶風暴貝碧嘉(0021) : 十月三十一日至十一月八日

貝碧嘉在十月三十一日於雅蒲島以西約800公里處形成爲一熱帶低氣壓。它向西北移動，在十一月二日增強爲一強烈熱帶風暴，接著登陸菲律賓。貝碧嘉是一個星期內，繼象神後，第二個吹襲菲律賓的熱帶氣旋。貝碧嘉跟隨象神的路徑，在十一月二日以西北偏西途徑移動，橫掃菲律賓呂宋。貝碧嘉帶來的大雨，在菲律賓釀成水浸及山泥傾瀉。最少有26人死亡及十多人失蹤，約110 000人需要逃離家園。另外，馬尼拉及鄰近地區多處停電，約1 000萬人受到影響。

貝碧嘉在十一月三日進入南海，次日它減慢移動並轉向北推進。它在十一月五日以每小時約10公里的速度移近華南沿岸。翌日，貝碧嘉減弱爲一熱帶風暴並又再緩慢移動。貝碧嘉在十一月七日進一步減弱爲一熱帶低氣壓，它採取偏西途徑移動，時速約每小時15公里。當日下午，可見光衛星雲圖上，可完全顯示出其低層環流的中心。貝碧嘉於香港南面海域掠過後，趨向廣東西部沿岸，次日早上變爲一低壓區。

在香港，一號戒備信號在十一月四日下午2時40分懸掛，當時貝碧嘉位於香港東南偏南約740公里。在隨後的數日，本港大致多雲並有幾陣微雨，吹和緩北至東北風，離岸風勢間中清勁。香港天文台總部在十一月六日下午3時正錄得最低瞬時海平面氣壓爲1008.6百帕斯卡。翌日，貝碧嘉逐漸減弱爲一熱帶風暴並趨近香港。

十一月七日，受到貝碧嘉的外圍雨帶所影響，本港多雲有雨。本地風力亦轉吹清勁並有時疾勁偏東風，離岸海域及高地間中吹強風。貝碧嘉約在午夜時分最接近本港，當時它位於香港西南偏南約150公里。由於貝碧嘉開始遠離本港並進一步減弱，本地風力亦有所減弱，所有熱帶氣旋警告信號在十一月八日上午7時40分除下。受貝碧嘉的影響，熱帶氣旋警告信號共懸掛了89小時，這是歷來十一月份最長的一次。

貝碧嘉影響香港期間，本港並沒有嚴重破壞及傷亡的報告。

表3.7.1-3.7.3分別是貝碧嘉影響香港時各站所錄得的最高風速、日雨量及最高潮汐資料。圖3.7.1-3.7.3是貝碧嘉的路徑圖、香港的雨量分佈圖及衛星雲圖。

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3.7 Severe Tropical Storm Bebinca (0021) : 31 October - 8 November 2000

Bebinca developed into a tropical depression about 800 km west of Yap on 31 October. Moving northwestwards, it intensified into a severe tropical storm on 2 November prior to landfall over the Philippines. Bebinca was the second tropical cyclone after Xangsane to lash the Philippines within a week. Following the footsteps of Xangsane, Bebinca rampaged across Luzon in the Philippines on a west-northwestward course on 2 November. Heavy rain associated with Bebinca caused flooding and landslides in the Philippines. At least 26 people were killed and over 10 others reported missing. About 110 000 people had to flee their homes. Also, widespread electricity failure affected around 10 million people in Manila and nearby areas.

Upon entering the South China Sea on 3 November, Bebinca slowed down and began to turn northwards the following day. It edged closer the south China coast at a steady speed of about 10 km/h on 5 November. Bebinca weakened into a tropical storm and became slow-moving again the next day. Weakening further into a tropical depression, Bebinca took a westerly track at about 15 km/h on 7 November. Visible satellite imageries depicted a fully exposed low-level circulation center that afternoon. Skirting past over the waters south of Hong Kong, Bebinca moved towards the coastal areas of western Guangdong and degenerated into an area of low pressure the next morning.

In Hong Kong, the Standby Signal No. 1 was hoisted at 2.40 p.m. on 4 November when Bebinca was about 740 km to the south-southeast. During the next few days, the weather was mainly cloudy with a few light rain patches in Hong Kong. Local winds were moderate north to northeasterly, occasionally fresh offshore. The lowest instantaneous mean sea-level pressure of 1008.6 hPa was recorded at the Hong Kong Observatory Headquarters at 3.00 p.m. on 6 November. Bebinca weakened gradually into a tropical depression and came closer to Hong Kong the following day.

Under the influence of the outer rainbands of Bebinca, the weather in Hong Kong was cloudy with rain on 7 November. Local winds became fresh gusty easterly, occasionally strong offshore and on high ground. Bebinca was closest to Hong Kong at around midnight when it was about 150 km to the south-southwest. As Bebinca started to move away from Hong Kong and weakened further, local winds subsided. All tropical cyclone warning signals were lowered at 7.40 a.m. on 8 November. During the passage of Bebinca, tropical cyclone warning signals had to be hoisted for 89 hours, the longest in November.

No significant damage was reported in Hong Kong during the passage of Bebinca.

Information on wind, rainfall and tide during the passage of Bebinca is given in Tables 3.7.1 - 3.7.3. Figures 3.7.1 - 3.7.3 show the track of Bebinca, rainfall distribution in Hong Kong and cloud imagery.

表 3.7.1　在貝碧嘉影響下，本港各站在熱帶氣旋警告信號懸掛時所錄得的最高陣風、最高每小時平均風速及風向

Table 3.7.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations during the hoisting of the tropical cyclone warning signals for Bebinca

站 Station	(參閱圖 1.1) (see Fig. 1.1)	最高陣風 Maximum Gust		日/月 Date/Month	時間 Time	最高每小時平均風速 Maximum Hourly Wind		日/月 Date/Month	時間 Time
		風向 Direction	風速(公里/時) Speed (km/h)			風向 Direction	風速(公里/時) Speed (km/h)		
中環	Central	東南偏東 ESE	56	7/11	2151	東南偏東 ESE	25	7/11	2200
中環廣場	Central Plaza	東北偏東 ENE	96	7/11	2009	東北偏東 ENE	59	7/11	2100
						東北偏東 ENE	59	7/11	2200
赤鱲角 (機場)	Chek Lap Kok (Airport)	東 E	58	7/11	1252	東 E	31	7/11	2400
長洲	Cheung Chau	東 E	83	7/11	2259	東 E	52	7/11	2400
長沙灣	Cheung Sha Wan	東北 NE	68	7/11	2018	東北偏東 ENE	22	7/11	2100
京士柏	King's Park	東 E	62	7/11	2131	東 E	25	7/11	2200
流浮山	Lau Fau Shan	東 E	54	8/11	0112	東 E	23	8/11	0100
北角	North Point	東北 NE	65	7/11	2032	東北 NE	31	7/11	2100
平洲	Ping Chau	東 E	52	8/11	0025	東 E	20	8/11	0100
西貢	Sai Kung	東北 NE	75	7/11	2157	東北 NE	41	7/11	2200
沙螺灣	Sha Lo Wan	東南偏東 ESE	77	7/11	2220	東 E	47	7/11	2400
沙田	Sha Tin	東北 NE	45	7/11	2226	北 N	16	7/11	2100
		東 E	45	7/11	2326	東 E	16	8/11	0100
石崗	Shek Kong	東北偏東 ENE	59	7/11	2300	東北偏東 ENE	31	7/11	2400
天星碼頭 (九龍)	Star Ferry (Kowloon)	東 E	58	7/11	2154	東 E	31	7/11	2300
打鼓嶺	Ta Kwu Ling	東 E	36	8/11	0404	東北偏東 ENE	16	8/11	0200
大尾篤	Tai Mei Tuk	東北偏東 ENE	62	8/11	0034	東北偏東 ENE	45	8/11	0100
大帽山	Tai Mo Shan	東北偏東 ENE	92	7/11	2337	東 E	59	7/11	2400
						東 E	59	8/11	0100
塔門	Tap Mun	東 E	63	8/11	0052	東 E	31	8/11	0300
大老山	Tate's Cairn	東北偏東 ENE	94	7/11	2028	東北偏東 ENE	54	7/11	2000
鯽魚湖	Tsak Yue Wu	東 E	54	7/11	2054	東北偏東 ENE	19	8/11	0400
將軍澳	Tseung Kwan O	東北偏北 NNE	49	7/11	1943	東南 SE	14	7/11	2400
青衣	Tsing Yi	東北偏東 ENE	75	7/11	2118	東北偏東 ENE	38	7/11	2200
屯門	Tuen Mun	東南偏東 ESE	43	8/11	0056	東南 SE	14	8/11	0600
橫瀾島	Waglan Island	東 E	83	7/11	2004	東 E	67	7/11	2100
黃竹坑	Wong Chuk Hang	東北偏東 ENE	67	7/11	2116	東 E	36	7/11	2200

表 3.7.2　貝碧嘉影響香港期間，香港天文台總部及其他各站所錄得的日雨量(單位爲毫米)

Table 3.7.2 Daily rainfall amounts in millimetres recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Bebinca

站(參閱圖 3.7.2) Station (see Fig. 3.7.2)		十一月四日 4 Nov	十一月五日 5 Nov	十一月六日 6 Nov	十一月七日 7 Nov	十一月八日 8 Nov	總雨量 Total
香港天文台 Hong Kong Observatory		微量 Trace	0.0	0.1	23.5	3.1	26.7
H21	淺水灣 Repulse Bay	0.0	[0.0]	0.0	29.0	[3.0]	[32.0]
K04	佐敦谷 Jordan Valley	0.0	[0.0]	1.0	26.0	[3.5]	[30.5]
K06	蘇屋邨 So Uk Estate	0.0	[0.0]	0.5	28.5	[2.0]	[31.0]
N05	粉嶺 Fanling	0.0	[0.0]	0.5	37.5	[5.5]	[43.5]
N06	葵涌 Kwai Chung	0.0	[0.0]	0.0	35.5	[1.0]	[36.5]
N09	沙田 Sha Tin	0.0	[0.0]	0.5	30.5	[2.5]	[33.5]
N12	元朗 Yuen Long	0.0	[0.0]	0.0	37.0	[0.0]	[37.0]
N17	東涌 Tung Chung	0.0	[0.0]	2.0	61.5	[2.0]	[65.5]
R21	踏石角 Tap Shek Kok	0.0	0.0	[0.0]	32.5	0.0	[32.5]
R26	石崗 Shek Kong	0.0	0.0	[0.0]	55.0	1.5	[56.5]
R31	大尾篤 Tai Mei Tuk	0.0	0.0	[0.5]	23.0	7.0	[30.5]

註：　[　] 基於不完整的每小時雨量數據。

Note : [　] based on incomplete hourly data.

表 3.7.3　貝碧嘉影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮

Table 3.7.3 Times and heights of the maximum sea level and the maximum storm surge recorded at various tide stations in Hong Kong during the passage of Bebinca

站 (參閱圖 1.1) Station (see Fig. 1.1)	最高潮位 (海圖基準面以上) Maximum sea level (above chart datum)			最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide)		
	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time	高度 (米) Height (m)	日期/月份 Date/Month	時間 Time
鰂魚涌 Quarry Bay	2.20	6/11	4:29 a.m.	0.29	6/11	4:33 a.m.
大埔滘 Tai Po Kau	2.19	6/11	5:24 a.m.	0.40	6/11	5:45 a.m.
尖鼻咀 Tsim Bei Tsui	2.18	6/11	3:47 a.m.	0.38	8/11	4:13 a.m.
橫瀾島 Waglan Island	2.27	6/11	4:51 a.m.	0.35	6/11	4:51 a.m.

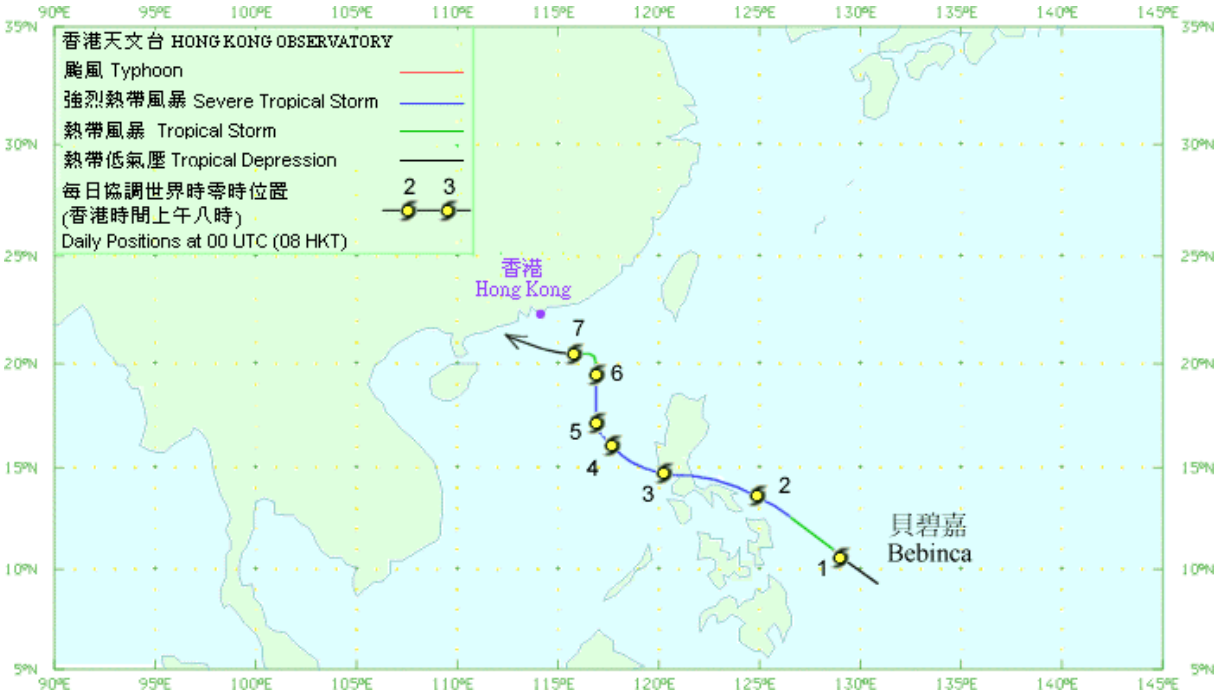

圖 3.7.1　　二零零零年十月三十一日至十一月八日強烈熱帶風暴貝碧嘉(0021)的路徑圖。
Figure 3.7.1　　Track of Severe Tropical Storm Bebinca (0021) : 31 October - 8 November 2000.

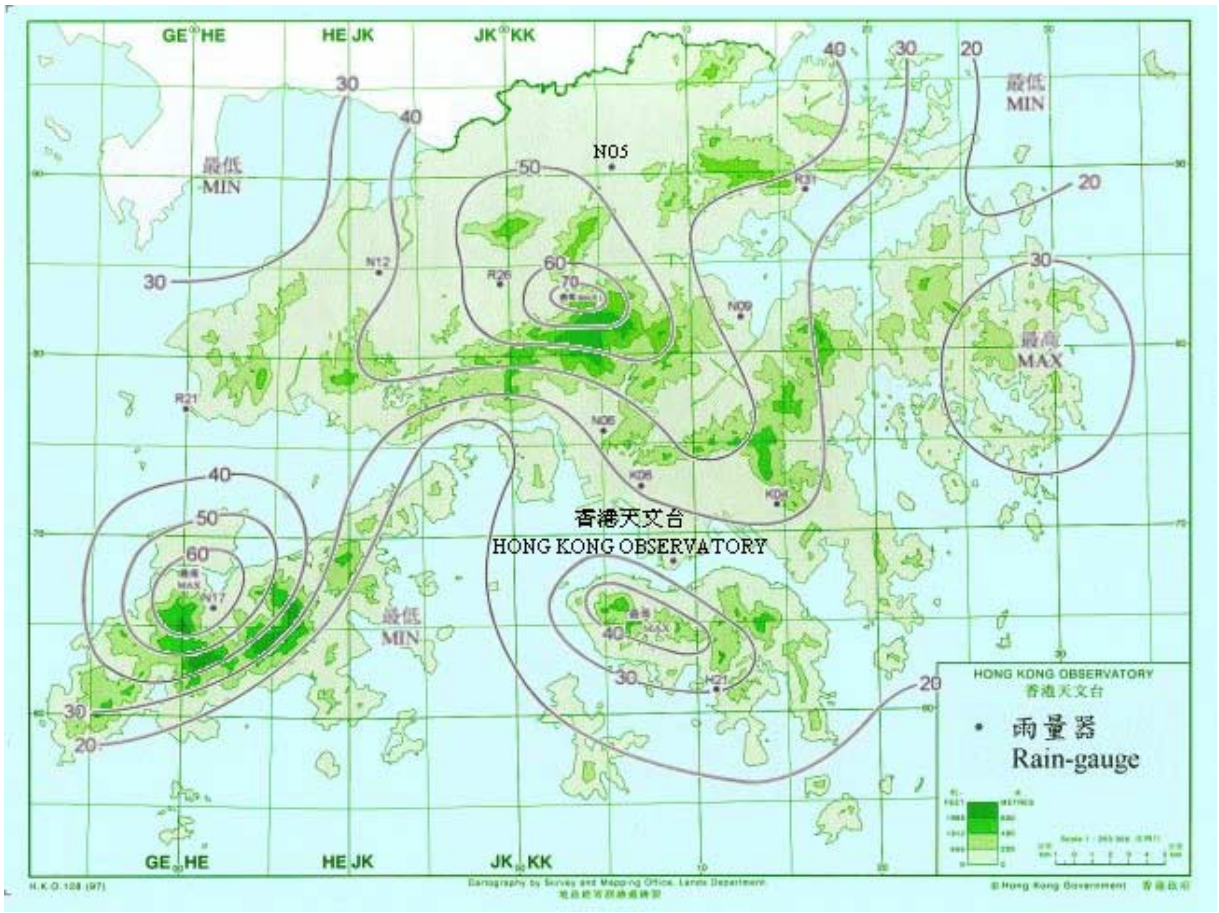

圖 3.7.2　　二零零零年十一月四日至八日的雨量分佈圖。
Figure 3.7.2　　Rainfall distribution on 4 - 8 November 2000.

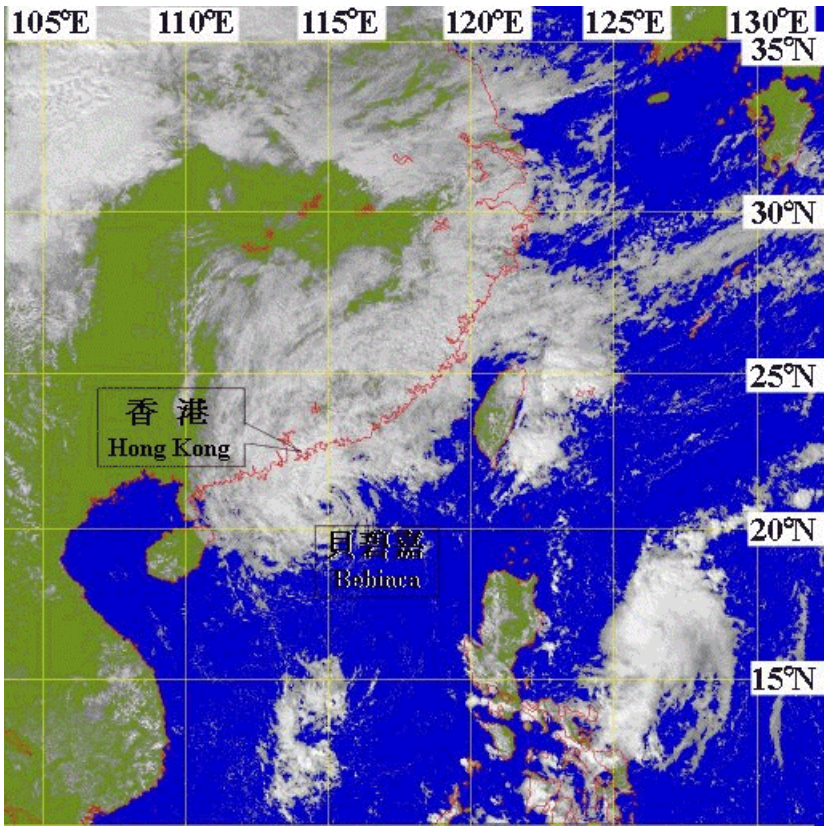

圖 3.7.3　二零零零年十一月七日約下午1時30分的可見光衛星圖片。顯示當時貝碧嘉的低層環流中心。同時，香港正受貝碧嘉的外圍雨帶所影響。（此衛星雲圖接收自日本氣象廳的地球同步氣象衛星（GMS-5））

Figure 3.7.3　Visible imagery at around 1.30 p.m. on 7 November 2000 showing the low-level circulation centre of Bebinca. At the same time, Hong Kong was under the influence of the outer rainbands of Bebinca. (The cloud imagery was originally captured by GMS-5 of JMA)

第四節

熱帶氣旋統計表

Section 4

TROPICAL CYCLONE STATISTICS AND TABLES

表4.1是二零零零年在北太平洋西部及南海區域（即由赤道至北緯45度、東經100度至180度所包括的範圍）的熱帶氣旋一覽。表內所給出的日期只說明某熱帶氣旋在上述範圍內出現的時間，因而不一定包括整個風暴過程。這個限制對表內其他元素亦同樣適用。

表4.2是天文台在二零零零年爲船舶發出的熱帶氣旋警告的次數、時段、首個及末個警告發出的時間。當有熱帶氣旋位於香港責任範圍內時（即由北緯10至30度、東經105至125度所包括的範圍），天文台會發出這些警告。表內使用的時間爲協調世界時。

表4.3是二零零零年熱帶氣旋警告信號發出的次數及其時段的摘要。表內亦提供每次熱帶氣旋警告信號懸掛或除下的時間和發出警報的次數。表內使用的時間爲香港時間。

表4.4是一九五六至二零零零年間熱帶氣旋警告信號發出的次數及其時段的摘要。

表4.5是一九五六至二零零零年間每年位於香港責任範圍內以及每年引致天文台需要懸掛熱帶氣旋警告信號的熱帶氣旋總數。

表4.6是一九五六至二零零零年間天文台懸掛各種熱帶氣旋警告信號的最長、最短及平均時段。

表4.7是二零零零年當熱帶氣旋影響香港時本港的氣象觀測摘要。資料包括熱帶氣旋最接近香港時的位置及時間和當時估計熱帶氣旋中心附近的最低氣壓、京士柏及橫瀾島錄得的最高風速、香港天文台錄得的最低平均海平面氣壓以及香港各潮汐測量站錄得的最大風暴潮（即實際水位高出潮汐表中預計的部分，單位爲米）。

表4.8.1是二零零零年位於香港600公里範圍內的熱帶氣旋及其爲香港所帶來的雨量。

表4.8.2是一八八四至一九三九年以及一九四七至二零零零年間十個爲香港帶來最多雨量的熱帶氣旋和有關的雨量資料。

表4.9是自一九四六年以來，天文台懸掛十號颶風信號時所錄得的氣象資料。內容包括熱帶氣旋吹襲香港時的最近距離及方位、天文台錄得的最低海平面氣壓、香港各站錄得的最高60分鐘平均風速和最高陣風。

表4.10是一九六零至二零零零年間熱帶氣旋在香港所造成的人命傷亡及破壞。資料參考了各政府部門和公共事業機構所提供的報告及本地報章的報導。

TABLE 4.1 is a list of tropical cyclones in 2000 in the western North Pacific and the South China Sea (i.e. the area bounded by the Equator, 45°N, 100°E and 180°). The dates cited are the residence times of each tropical cyclone within the above-mentioned region and as such might not cover the full life-span. This limitation applies to all other elements in the table.

TABLE 4.2 gives the number of tropical cyclone warnings for shipping issued by the Hong Kong Observatory in 2000, the durations of these warnings and the times of issue of the first and last warnings for all tropical cyclones in Hong Kong's area of responsibility (i.e. the area bounded by 10°N, 30°N, 105°E and 125°E). Times are given in hours and minutes in UTC.

TABLE 4.3 presents a summary of the occasions/durations of the hoisting of tropical cyclone warning signals in 2000. The sequence of the signals displayed and the number of tropical cyclone warning bulletins issued for each tropical cyclone are also given. Times are given in hours and minutes in Hong Kong Time.

TABLE 4.4 presents a summary of the occasions/durations of the hoisting of tropical cyclone warning signals from 1956 to 2000 inclusive.

TABLE 4.5 gives the annual number of tropical cyclones in Hong Kong's area of responsibility between 1956 and 2000 and also the annual number of tropical cyclones necessitated the hoisting of tropical cyclone warning signals in Hong Kong.

TABLE 4.6 shows the maximum, mean and minimum durations of the tropical cyclone warning signals hoisted during the period 1956-2000.

TABLE 4.7 is a summary of meteorological information for each tropical cyclone affecting Hong Kong in 2000. Information on the nearest approach together with an estimate of the minimum central pressure of each tropical cyclone during its closest approach, the maximum winds at King’s Park and Waglan Island, the minimum mean sea-level pressure recorded at the Hong Kong Observatory and the maximum storm surge (the excess, in metres, of the actual water level over that predicted in the Tide Tables) recorded at various tide stations in Hong Kong are included.

TABLE 4.8.1 tabulates the amount of rainfall associated with each tropical cyclone that came within 600 km of Hong Kong in 2000.

TABLE 4.8.2 highlights the 10 wettest tropical cyclones in Hong Kong for the period 1884-1939 and 1947-2000.

TABLE 4.9 provides some meteorological information for those typhoons requiring the hoisting of the Hurricane Signal No. 10 in Hong Kong since 1946. The information presented includes the distances and bearings of nearest approach, the minimum mean sea-level pressures recorded at the Hong Kong Observatory and the maximum 60-minute mean winds and maximum gust peak speeds recorded at some stations in Hong Kong.

TABLE 4.10 presents casualties and damage caused by tropical cyclones in Hong Kong : 1960-2000. The information is based on reports from various government departments, public utility companies and local newspapers.

表 4.1　二零零零年在北太平洋西部及南海區域的熱帶氣旋一覽

TABLE 4.1　LIST OF TROPICAL CYCLONES IN THE WESTERN NORTH PACIFIC AND THE SOUTH CHINA SEA IN 2000

熱帶氣旋名稱	Name of tropical cyclone	編號 Code	路徑起點 Beginning of track				最高強度 (估計) Peak intensity (estimated)		路徑終點 End of track				DISP: 消散 Dissipated XT: 變爲溫帶氣旋 Became Extratropical
			日期/月份 Date/Month	時間+ Time+	位置 Position 北緯 °N	東經 °E	風力 (公里每小時) Winds (km/h)	氣壓 (百帕斯卡) Pressure (hPa)	日期/月份 Date/Month	時間+ Time+	位置 Position 北緯 °N	東經 °E	
颱風達維	Typhoon Damrey	(0001)	6 / 5	0600	11.4	133.3	175	935	12 / 5	1200	29.2	149.8	XT
熱帶風暴龍王	Tropical Storm Longwang	(0002)	18 / 5	1800	20.0	124.2	75	992	20 / 5	0600	28.2	139.0	XT
熱帶低氣壓	Tropical Depression		21 / 5	0000	18.5	118.9	55	1002	22 / 5	0000	21.4	124.2	XT
熱帶低氣壓	Tropical Depression		18 / 6	1300	22.1	114.1	60	998	18 / 6	1700	23.0	114.1	DISP
颱風鴻雁	Typhoon Kirogi	(0003)	2 / 7	0600	13.8	132.0	160	945	8 / 7	1800	42.2	145.3	XT
颱風啓德	Typhoon Kai-tak	(0004)	4 / 7	0000	16.4	119.5	140	960	11 / 7	0000	38.3	123.7	XT
熱帶低氣壓	Tropical Depression		15 / 7	0600	16.7	114.4	45	996	16 / 7	1200	19.6	110.6	DISP
熱帶風暴天秤	Tropical Storm Tembin	(0005)	18 / 7	0000	22.8	142.6	75	992	22 / 7	1200	38.2	145.7	DISP
強烈熱帶風暴布拉萬	Severe Tropical Storm Bolaven	(0006)	22 / 7	0000	16.5	126.5	100	980	31 / 7	0000	35.8	129.6	XT
熱帶風暴珍珠	Tropical Storm Chanchu	(0007)	28 / 7	0600	9.7	176.1	65	996	29 / 7	1800	14.3	175.7	DISP
颱風杰拉華	Typhoon Jelawat	(0008)	1 / 8	0000	22.0	153.0	165	945	11 / 8	0000	30.7	120.5	DISP
颱風艾雲尼	Typhoon Ewiniar	(0009)	9 / 8	1200	14.3	140.1	130	965	18 / 8	0600	39.2	149.7	XT
颱風碧利斯	Typhoon Bilis	(0010)	18 / 8	1200	10.5	137.5	220	915	23 / 8	1800	25.8	116.4	DISP
熱帶風暴格美	Tropical Storm Kaemi	(0011)	20 / 8	0000	13.0	114.0	85	985	22 / 8	1800	16.1	106.6	DISP
颱風派比安	Typhoon Prapiroon	(0012)	26 / 8	0600	16.6	132.0	130	965	1 / 9	1200	43.3	134.1	XT
強烈熱帶風暴瑪莉亞	Severe Tropical Storm Maria	(0013)	27 / 8	1800	20.9	116.1	90	980	1 / 9	1200	25.3	114.5	DISP
颱風桑美	Typhoon Saomai	(0014)	2 / 9	1800	15.9	155.7	205	920	16 / 9	0600	39.5	129.4	XT
颱風悟空	Typhoon Wukong	(0016)	5 / 9	0600	16.9	117.0	130	965	10 / 9	1200	17.9	105.0	DISP
強烈熱帶風暴寶霞	Severe Tropical Storm Bopha	(0015)	6 / 9	0000	21.5	136.3	90	988	11 / 9	1200	17.5	122.2	DISP
強烈熱帶風暴清松	Severe Tropical Storm Sonamu	(0017)	14 / 9	0600	20.8	139.9	110	975	18 / 9	0600	45.1	149.4	XT
颱風珊珊	Typhoon Shanshan	(0018)	18 / 9	0000	15.2	172.5	185	930	24 / 9	1200	39.0	178.2	XT
熱帶低氣壓	Tropical Depression		28 / 9	1800	26.7	164.8	55	1004	30 / 9	1200	29.8	168.1	DISP
熱帶低氣壓	Tropical Depression		7 /10	0600	11.3	111.2	55	998	13 /10	1800	17.7	110.5	DISP
颱風摩羯	Typhoon Yagi	(0019)	21 /10	1800	20.6	140.5	120	975	27 /10	1200	25.0	126.0	DISP
颱風象神	Typhoon Xangsane	(0020)	26 /10	0000	9.7	133.0	130	965	1 /11	1200	28.4	125.0	XT
強烈熱帶風暴貝碧嘉	Severe Tropical Storm Bebinca	(0021)	31 /10	1200	9.4	130.8	110	975	7 /11	1800	21.1	113.1	DISP
熱帶低氣壓	Tropical Depression		9 /11	0000	24.2	125.5	45	1004	9 /11	1200	26.0	128.4	XT
熱帶風暴溫比亞	Tropical Storm Rumbia	(0022)	28 /11	0600	8.4	131.2	85	990	3 /12	1800	10.3	114.6	DISP
熱帶低氣壓	Tropical Depression		5 /12	0600	8.6	113.0	55	996	7 /12	1800	9.5	106.6	DISP
颱風蘇力	Typhoon Soulik	(0023)	29 /12	0600	8.2	130.4	140	960	5 / 1 (2001)	0600	17.8	138.8	DISP

+ 時間爲協調世界時

+ Times are given in UTC

表 4.2　　二零零零年爲船舶發出的熱帶氣旋警告
TABLE 4.2　TROPICAL CYCLONE WARNINGS FOR SHIPPING ISSUED IN 2000

熱帶氣旋	Tropical cyclone	發出警告的次數 No. of warnings issued	發出的日期及時間 Date and time of issue of		時段 (小時) Duration (hours)
			首次警告 First warning	末次警告 Last warning	
			日期/月份 時間+ Date/Month Time+	日期/月份 時間+ Date/Month Time+	
熱帶風暴龍王	Tropical Storm Longwang	5	18 / 5 2100	19 / 5 0900	12
熱帶低氣壓	Tropical Depression	9	21 / 5 0000	22 / 5 0000	24
* 熱帶低氣壓	* Tropical Depression	2	18 / 6 1500	18 / 6 1800	3
* 颱風啓德	* Typhoon Kai-tak	50	4 / 7 0000	10 / 7 0000	144
* 熱帶低氣壓	* Tropical Depression	11	15 / 7 0600	16 / 7 1200	30
強烈熱帶風暴布拉萬	Severe Tropical Storm Bolaven	19	22 / 7 1800	25 / 7 0000	54
颱風杰拉華	Typhoon Jelawat	11	9 / 8 1200	10 / 8 1800	30
熱帶風暴格美	Tropical Storm Kaemi	23	20 / 8 0000	22 / 8 1500	63
* 颱風碧利斯	* Typhoon Bilis	14	21 / 8 2100	23 / 8 1200	39
* 強烈熱帶風暴瑪莉亞	* Severe Tropical Storm Maria	38	27 / 8 1500	1 / 9 0300	108
颱風派比安	Typhoon Prapiroon	12	29 / 8 0600	30 / 8 1500	33
* 颱風悟空	* Typhoon Wukong	47	5 / 9 0300	10 / 9 1200	129
強烈熱帶風暴寶霞	Severe Tropical Storm Bopha	23	9 / 9 0300	11 / 9 1500	60
颱風桑美	Typhoon Saomai	15	13 / 9 1500	15 / 9 0900	42
熱帶低氣壓	Tropical Depression	55	7 /10 0600	13 /10 2100	159
颱風摩羯	Typhoon Yagi	10	25 /10 0000	26 /10 0300	27
颱風象神	Typhoon Xangsane	40	27 /10 1500	1 /11 1200	117
* 強烈熱帶風暴貝碧嘉	* Severe Tropical Storm Bebinca	49	2 /11 0000	8 /11 0000	144
強烈熱帶風暴溫比亞	Severe Tropical Storm Rumbia	24	30 /11 2100	3 /12 1800	69
熱帶低氣壓	Tropical Depression	3	7 /12 0600	7 /12 1200	6
	共 Total	460			1209 #

當中共有84小時在同一時間內爲兩個不同的熱帶氣旋發出警告。

Including 84 hours with warnings issued concurrently for two different tropical cyclones.

* 這些熱帶氣旋皆引致天文台需要懸掛熱帶氣旋警告信號。

* Tropical cyclones for which tropical cyclone warning signals were hoisted in Hong Kong.

+ 時間爲協調世界時。

+ Times are given in UTC.

表 4.3　　二零零零年天文台所懸掛的熱帶氣旋警告信號及警報發出的次數
TABLE 4.3　TROPICAL CYCLONE WARNING SIGNALS HOISTED IN HONG KONG AND NUMBER OF WARNING BULLETINS ISSUED IN 2000

摘要 SUMMARY

信號 Signal	次數 No. of occasions	總時段 Total duration	
		時 h	分 min
1	7	280	45
3	3	48	20
8 西北 NW	-	-	
8 西南 SW	-	-	
8 東北 NE	-	-	
8 東南 SE	-	-	
9	-	-	
10	-	-	
共 Total	10	329	5

詳情 DETAILS

熱帶氣旋 Tropical cyclone	警報發出的次數 No. of warning bulletins issued	信號 Signal	懸掛 Hoisted 日期/月份 Date/Month	懸掛 Hoisted 時間* Time*	除下 Lowered 日期/月份 Date/Month	除下 Lowered 時間* Time*
熱帶低氣壓 Tropical Depression	7	3	18 / 6	2115	19 / 6	0145
颱風啓德 T. Kai-tak	66	1	6 / 7	1550	9 / 7	0545
熱帶低氣壓 Tropical Depression	32	1	15 / 7	1445	16 / 7	2125
颱風碧利斯 T. Bilis	15	1	23 / 8	0600	23 / 8	1915
強烈熱帶風暴瑪莉亞 S.T.S. Maria	70	1	27 / 8	2345	29 / 8	1425
		1	31 / 8	1015	1 / 9	0130
		3	1 / 9	0130	1 / 9	1320
颱風悟空 T. Wukong	66	1	6 / 9	1345	7 / 9	2145
		3	7 / 9	2145	9 / 9	0545
強烈熱帶風暴貝碧嘉 S.T.S. Bebinca	92	1	4 / 11	1440	8 / 11	0740

* 香港時間（協調世界時加八小時）
* Hong Kong Time （UTC + 8 hours）

表 4.4　一九五六至二零零零年間每年各熱帶氣旋警告信號的懸掛次數及總時段

TABLE 4.4　FREQUENCY AND TOTAL DURATION OF DISPLAY OF TROPICAL CYCLONE WARNING SIGNALS : 1956-2000

信號 Signals / 年份 Year	1	3	8 西北 NW	8 西南 SW	8 東北 NE	8 東南 SE	9	10	總時段 Total duration 時 h	分 min
1956	5	4	0	0	0	0	0	0	191	25
1957	4	9	1	1	2	2	0	1	295	45
1958	4	5	0	0	1	0	0	0	214	5
1959	1	1	0	0	0	0	0	0	36	35
1960	11	7	0	2	2	2	1	1	432	35
1961	6	7	1	2	1	0	1	1	192	55
1962	4	3	0	1	1	0	1	1	158	10
1963	4	5	0	0	1	0	0	0	175	50
1964	11	14	1	3	5	3	3	2	570	15
1965	7	6	0	0	1	1	0	0	239	40
1966	6	5	0	0	2	2	0	0	284	40
1967	8	6	0	0	2	1	0	0	339	10
1968	7	7	0	1	1	0	1	1	290	10
1969	4	2	0	0	0	0	0	0	110	15
1970	6	8	2	1	2	0	0	0	286	45
1971	9	10	1	3	2	2	1	1	323	25
1972	8	6	0	0	1	1	0	0	288	20
1973	8	6	1	1	1	0	1	0	416	50
1974	12	10	0	0	2	1	1	0	525	20
1975	8	6	1	0	0	1	1	1	292	20
1976	6	6	0	0	1	2	0	0	351	30
1977	8	6	0	0	1	0	0	0	395	10
1978	8	9	1	1	3	2	0	0	462	10
1979	5	5	1	0	2	2	1	1	281	15
1980	10	8	0	0	1	1	0	0	414	5
1981	5	4	0	0	1	1	0	0	202	20
1982	7	4	0	0	0	0	0	0	247	35
1983	8	7	0	1	2	2	1	1	289	42
1984	6	6	0	0	1	0	0	0	280	2
1985	5	4	1	0	0	1	0	0	193	35
1986	6	7	0	1	1	0	0	0	305	0
1987	6	1	0	0	0	0	0	0	165	45
1988	6	4	0	0	0	0	0	0	204	10
1989	7	8	0	0	2	2	0	0	306	10
1990	6	4	0	0	0	0	0	0	245	10
1991	8	6	0	0	1	1	0	0	349	55
1992	5	5	0	0	1	1	0	0	167	5
1993	8	9	0	0	2	4	0	0	325	40
1994	4	3	0	0	0	0	0	0	138	10
1995	8	6	2	2	1	1	0	0	348	50
1996	7	2	0	0	0	1	0	0	189	0
1997	2	3	0	1	1	0	1	0	97	30
1998	5	2	0	0	0	0	0	0	188	35
1999	10	13	4	3	2	0	2	1	520	0
2000	7	3	0	0	0	0	0	0	329	5
共 Total	296	262	17	24	50	37	16	12	12661	59
平均 Mean	6.6	5.8	0.4	0.5	1.1	0.8	0.4	0.3	281	23

表 4.5 一九五六至二零零零年間每年位於香港責任範圍內以及每年引致天文台需要懸掛熱帶氣旋警告信號的熱帶氣旋總數

TABLE 4.5 ANNUAL NUMBER OF TROPICAL CYCLONES IN HONG KONG'S AREA OF RESPONSIBILITY AND THE NUMBER THAT NECESSITATED THE DISPLAY OF TROPICAL CYCLONE WARNING SIGNALS IN HONG KONG : 1956-2000

年份 Year	每年位於香港責任範圍內的熱帶氣旋總數 Annual number of tropical cyclones in Hong Kong's area of responsibility	每年引致天文台需要懸掛熱帶氣旋警告信號的熱帶氣旋總數 Annual number of tropical cyclones necessitating the display of signals in Hong Kong
1956	23	5
1957	12	6
1958	15	5
1959	18	2
1960	18	9
1961	24	6
1962	20	4
1963	13	4
1964	26	10
1965	16	6
1966	17	6
1967	17	8
1968	12	6
1969	11	4
1970	20	6
1971	20	9
1972	15	5
1973	17	9
1974	21	11
1975	12	7
1976	10	5
1977	10	8
1978	20	8
1979	18	6
1980	17	10
1981	15	5
1982	16	5
1983	15	7
1984	14	5
1985	15	5
1986	16	4
1987	12	5
1988	17	6
1989	17	7
1990	18	6
1991	14	6
1992	11	5
1993	14	9
1994	20	4
1995	17	8
1996	15	7
1997	10	2
1998	15	5
1999	12	8
2000	20	7
共 Total	725	281
平均 Mean	16.1	6.2

表 4.6 一九五六至二零零零年間天文台懸掛熱帶氣旋警告信號的時段

TABLE 4.6 DURATION OF TROPICAL CYCLONE WARNING SIGNALS HOISTED IN HONG KONG : 1956-2000

信號 Signal	次數 Number of occasions	每次時段 Duration of each occasion				每年總時段 Total duration per year			
		平均 Mean		最長 Maximum		最短 Minimum		平均 Mean		最長 Maximum		最短 Minimum	
		時 h	分 min	時 h	分 min	時 h	分 min	時 h	分 min	時 h	分 min	時 h	分 min
一號或以上 1 or higher	293	43	13	161	0	4	30	281	23	570	15	36	35
				T. Tida (1964)		T.D. (1958)				(1964)		(1959)	
三號或以上 3 or higher	198	30	39	124	15	4	30	134	50	306	35	17	15
				T. Mary (1960)		T.D. (2000)				(1974)		(1996)	
八號或以上 8 or higher	66	15	36	66	50	2	40	22	53	100	55	0	0
				T. Mary (1960)		S.T.S. Wynne (1984)				(1964)		(1998)	
8 西北 NW	17	6	1	15	45	1	30	2	17	18	0	0	0
8 西南 SW	24	5	7	10	45	2	30	2	43	16	10	0	0
8 東北 NE	50	8	14	35	35	2	35	9	9	40	20	0	0
8 東南 SE	37	7	17	21	45	0	20	5	59	31	15	0	0
九號或以上 9 or higher	17	7	19	12	25	3	0	2	46	19	25	0	0
				T. York (1999)		T. Maggie (1999)				(1964)		(1998)	
10	12	6	34	11	0	2	30	1	45	12	10	0	0
				T. York (1999)		T. Alex (1961)				(1964)		(1998)	

表 4.7　　二零零零年當熱帶氣旋影響香港時本港的氣象觀測摘要

TABLE 4.7　A SUMMARY OF METEOROLOGICAL OBSERVATIONS RECORDED IN HONG KONG DURING THE PASSAGES OF TROPICAL CYCLONES IN 2000

熱帶氣旋 名稱 Name of tropical cyclone	當最接近香港時 Nearest approach to Hong Kong							香港天文台錄得的最低 海平面氣壓(百帕斯卡) Minimum M.S.L. pressure (hPa) at the Hong Kong Observatory				最大風暴潮(米) Maximum storm surge (metres)			
	月份 Month	日期 Date	時間* Hour*	方位 Direction	距離 (公里) Distance (km)	移動方向 及速度 (公里每小時) Movement (km/h)	估計最低 中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	月份 Month	日期 Date	時間* Hour*	瞬時 Inst. 每小時 Hourly	鰂魚涌 Quarry Bay	大埔滘 Tai Po Kau	尖鼻咀 Tsim Bei Tsui	橫瀾島 Waglan Island
熱帶低氣壓 Tropical Depression	6	18	22	西 W	10	北 30 N	998	6	18	21:31, 21:33, 21:36 - 21:40	999.5	0.21	0.31	0.18	-
								6	18	22:00	1000.1				
颱風啓德 T. Kai-tak	7	7	8	東南偏東 ESE	530	南 5 S	965	7	8	17:29	996.9	0.55	0.60	0.46	0.55
								7	8	17:00	997.0				
熱帶低氣壓 Tropical Depression	7	16	17	西南 SW	500	西北偏北 15 NNW	996	7	16	16:37	999.1	0.45	0.47	0.33	0.44
								7	16	17:00	999.2				
颱風碧利斯 T. Bilis	8	23	18	東北 NE	430	西北 NW 20	970	8	23	16:49	996.7	0.13	0.20	0.16	0.13
								8	23	17:00	996.8				
強烈熱帶風暴瑪莉亞 S.T.S. Maria (第一次影響香港期間) (First passage)	8	28	14	東南 SE	220	西南 SW 5	996	8	29	16:02	996.4	0.30	0.32	0.40	-
								8	29	16:00	996.5				
強烈熱帶風暴瑪莉亞 S.T.S. Maria (第二次影響香港期間) (Second passage)	9	1	5	東北偏東 ENE	100	西北偏北 20 NNW	980	9	1	02:36	992.4	0.29	0.38	0.29	0.38
								9	1	04:00	992.7				
颱風悟空 T. Wukong	9	8	2	南 S	370	西 W 10	970	9	6	15:40	1002.4	0.49	0.55	0.49	0.53
								9	6	16:00	1002.4				
強烈熱帶風暴貝碧嘉 S.T.S. Bebinca	11	8	0	西南偏南 SSW	150	西北偏西 20 WNW	1000	11	6	15:00	1008.6	0.29	0.40	0.38	0.35
								11	6	15:00	1008.6				

* 香港時間（協調世界時加八小時）

* Hong Kong Time （UTC + 8 hours）

表 4.7 (續)
TABLE 4.7 (cont'd)

熱帶氣旋名稱 Name of tropical cyclone	月份 Month	最高60分鐘平均風向及風速 (公里每小時) Maximum 60-min mean wind in points and km/h			最高10分鐘平均風向及風速 (公里每小時) Maximum 10-min mean wind in points and km/h			最高陣風風向及風速 (公里每小時) Maximum gust peak speed in km/h with direction in points		
		京士柏 King's Park	赤鱲角(機場) Chek Lap Kok (Airport)	橫瀾島 Waglan Island	京士柏 King's Park	赤鱲角(機場) Chek Lap Kok (Airport)	橫瀾島 Waglan Island	京士柏 King's Park	赤鱲角(機場) Chek Lap Kok (Airport)	橫瀾島 Waglan Island
熱帶低氣壓 Tropical Depression	6	東 E 31	西北偏西 WNW 30	南 S 72	東 E 38	西北偏西 WNW 31	東南偏南 SSE 76	東 E 65	西北 NW 51	南 S 94
颱風啓德 T. Kai-tak	7	東 E 12	西南偏西 WSW 23	西南 SW 25	東 E 13	西南偏西 WSW 25	西南 SW 27	東南 SE 23	西北 NW 37	西南 SW 34
熱帶低氣壓 Tropical Depression	7	東 E 27	東 E 36	東 E 56	東 E 31	東 E 40	東 E 59	東 E 63	東 E 58	東 E 76
颱風碧利斯 T. Bilis	8	西 W 19	西南 SW 31	西南偏西 WSW 45	西南偏西 WSW 20	西北偏西 WNW 45	西南偏西 WSW 49	西南偏南 SSW 47	西南 SW 59	北 N 72
強烈熱帶風暴瑪莉亞 S.T.S. Maria (第一次影響香港期間) (First passage)	8	北 N 20	西北 NW 23	東北偏東 ENE 54	北 N 22	西北 NW 25	東北偏東 ENE 58	北 N 45	西北 NW 52	東北偏東 ENE 68
強烈熱帶風暴瑪莉亞 S.T.S. Maria (第二次影響香港期間) (Second passage)	9	西 W 27	西 W 41	西 W 67	西 W 31	西 W 45	西 W 72	西南偏西 WSW 62	西北偏西 WNW 58	西 W 101
颱風悟空 T. Wukong	9	東北 NE 22	東 E 27	東北偏東 ENE 72	東北 NE 25	東 E 31	東北偏東 ENE 77	東北 NE 56	東 E 52	東 E 96
強烈熱帶風暴貝碧嘉 S.T.S. Bebinca	11	東 E 27	東 E 31	東 E 67	東北偏東 ENE 31	東 E 36	東 E 70	東 E 62	東 E 58	東 E 83

表 4.8.1　　二零零零年位於香港600公里範圍內的熱帶氣旋及其爲本港帶來的雨量

TABLE 4.8.1　RAINFALL ASSOCIATED WITH EACH TROPICAL CYCLONE THAT CAME WITHIN 600 KM OF HONG KONG IN 2000

熱帶氣旋 名稱 Name of tropical cyclone	熱帶氣旋位於 香港600公里 範圍內的時期 Period when tropical cyclone within 600 km of Hong Kong (T_1 → T_2) 日期/月份　時間* Date/Month　Time*	香港天文台錄得的雨量(毫米) Rainfall at the Hong Kong Observatory (mm)				
		(i) 在香港600公里內 within 600 km of Hong Kong (T_1→ T_2)	(ii) 在 T_2 之後 的24小時內 24-hour period after T_2	(iii) 在 T_2 之後 的48小時內 48-hour period after T_2	(iv) 在 T_2 之後 的72小時內 72-hour period after T_2	(i) + (iv) 共 Total (T_1 →T_2 + 72)
熱帶低氣壓 Tropical Depression	(T_1) 18 / 6 2100 - (T_2) 19 / 6 0100	7.6	0.5	31.9	34.5	42.1
颱風啓德 T. Kai-tak	(T_1) 6 / 7 1700 - (T_2) 8 / 7 0600	14.7	5.8	5.8	25.5	40.2
熱帶低氣壓 Tropical Depression	(T_1) 15 / 7 1600 - (T_2) 16 / 7 2000	8.4	80.7	133.1	137.2	145.6
颱風碧利斯 T. Bilis	(T_1) 23 / 8 0400 - (T_2) 24 / 8 0200	68.9	90.2	117.1	169.6	238.5
強烈熱帶風暴瑪莉亞 S.T.S. Maria	(T_1) 28 / 8 0200 - (T_2) 1 / 9 2000	72.0	93.9	94.2	94.2	166.2
颱風悟空 T. Wukong	(T_1) 6 / 9 0900 - (T_2) 9 / 9 1000	2.5	-	-	-	2.5
熱帶低氣壓 # Tropical Depression #	(T_1) 13 / 10 0900 - (T_2) 13 / 10 1800	1.6	7.0	7.4	7.4	9.0
強烈熱帶風暴貝碧嘉 S.T.S. Bebinca	(T_1) 5 / 11 1500 - (T_2) 8 / 11 0200	25.5	1.2	1.2	1.6	27.1
					共 Total	671.2

* 香港時間（協調世界時加八小時）

T_1 - 熱帶氣旋首次出現於香港600公里範圍內的時間。

T_2 - 熱帶氣旋在香港600公里範圍內消散或離開該範圍的時間。

\# 該熱帶氣旋並未導致天文台需要懸掛熱帶氣旋警告信號。

* Hong Kong Time （UTC + 8 hours）

T_1 - The time when a tropical cyclone was first centred within 600 km of Hong Kong.

T_2 - The time when a tropical cyclone was dissipated within or moved outside 600 km of Hong Kong.

\# Tropical cyclone without hoisting of tropical cyclone warning signal in Hong Kong.

表 4.8.2　一八八四至一九三九年及一九四七至二零零零年間十個爲香港帶來最多雨量的熱帶氣旋
TABLE 4.8.2　TEN WETTEST TROPICAL CYCLONES IN HONG KONG (1884-1939, 1947-2000)

熱帶氣旋 Tropical Cyclone			香港天文台錄得的雨量(毫米) Rainfall at the Hong Kong Observatory (mm)				
年份 Year	月份 Month	名稱 Name	(i) 在香港600公里內 within 600 km of Hong Kong ($T_1 \rightarrow T_2$)	(ii) 在 T_2 之後的 24 小時內 24-hour period after T_2	(iii) 在 T_2 之後的 48 小時內 48-hour period after T_2	(iv) 在 T_2 之後的 72 小時內 72-hour period after T_2	(i) + (iv) 共 Total $T_1 \rightarrow$ (T_2+72 小時 hours)
1999	8	森姆 Sam	368.1	178.9	248.1	248.4	616.5
1926	7	-	34.8 #	534.0 #	561.1 #	562.2 #	597.0
1916	6	-	494.8 #	27.9 #	59.4 #	67.2 #	562.0
1965	9	愛娜斯 Agnes	404.6	8.9	64.3	126.1	530.7
1978	7	愛娜斯 Agnes	502.4	12.3	12.3	16.6	519.0
1976	8	愛倫 Ellen	90.7	394.2	421.0	425.4	516.1
1993	9	黛蒂 Dot	459.6	37.9	37.9	37.9	497.5
1982	8	黛蒂 Dot	41.2	322.5	403.1	450.5	491.7
1995	8	海倫 Helen	241.4	146.2	235.2	239.5	480.9
1904	8	-	446.5 #	- #	3.7 #	26.7 #	473.2

T_1 - 熱帶氣旋首次出現於香港600公里範圍內的時間。

T_2 - 熱帶氣旋在香港600公里範圍內消散或離開該範圍的時間。

對於一九六一年以前的熱帶氣旋，欄(i)顯示當它位於香港600公里範圍內的日子裡，天文台所錄得的總日雨量，欄(ii)至(iv)分別是指其後一至三天累積的日雨量。

T_1 - The time when a tropical cyclone was first centred within 600 km of Hong Kong.

T_2 - The time when a tropical cyclone was dissipated within or moved outside 600 km of Hong Kong.

For years prior to 1961, column (i) is the sum of daily rainfall on those days when a tropical cyclone was centred within 600 km of Hong Kong, columns (ii) to (iv) show respectively the accumulated daily rainfall on the following one to three days.

表 4.9　　一九四六至二零零零年間引致天文台需要懸掛十號颶風信號的颱風

TABLE 4.9　TYPHOONS REQUIRING THE HOISTING OF THE HURRICANE SIGNAL NO. 10 DURING THE PERIOD 1946-2000

颱風名稱 Name of typhoon	當最接近天文台時 Nearest approach to the Hong Kong Observatory		最低平均海平面氣壓 (百帕斯卡) Minimum M.S.L. pressure (hPa)		最高60分鐘平均風向及風速 (公里每小時) Maximum 60-min mean wind in points and km/h							最高陣風風向及風速 (公里每小時) Maximum gust peak speed in km/h with direction in points						
	日期/月份 年份 Date/Month Year	(公里) (km)	每小時 Hourly	瞬時 Inst.	香港天文台 Hong Kong Observatory	京士柏 King's Park	啓德機場 Kai Tak Airport	橫瀾島 Waglan Island	長洲 Cheung Chau	大老山 Tate's Cairn	青洲 Green Island	香港天文台 Hong Kong Observatory	京士柏 King's Park	啓德機場 Kai Tak Airport	橫瀾島 Waglan Island	長洲 Cheung Chau	大老山 Tate's Cairn	青洲 Green Island
-	18 / 7 1946	南 S 70	985.7	-	東北 NE -	-	-	-	-	-	-	-	-	-	-	-	-	-
姬羅莉亞 Gloria	22 / 9 1957	西南 SW 55	986.2	984.3	東南偏東 ESE 115	-	東南偏東 ESE 72	東 E 113	-	-	-	東 E 187	-	東北偏東 ENE 158	東北偏東 ENE 185	-	-	-
瑪麗 Mary	9 / 6 1960	西北偏西 WNW 10	974.3	973.8	東南偏南 SSE 96	-	東南偏南 SSE 92	西南偏南 SSW 112	-	-	-	東南偏南 SSE 191	-	東南 SE 164	西南偏南 SSW 194	-	-	-
愛麗斯 Alice	19 / 5 1961	0	981.6	981.1	東北偏東 ENE 83	-	東 E 70	東南偏東 ESE 90	東北偏東 ENE 76	-	-	東 E 166	-	東北偏東 ENE 139	西南 SW 128	東北偏東 ENE 135	-	-
溫黛 Wanda	1 / 9 1962	西南偏南 SSW 20	955.1	953.2	北 N 133	-	北 N 108	西北 NW 148	西北 NW 118	東南 SE 189	-	北 N 259	-	北 N 229	西北偏北 NNW 216	西北 NW 232	東南偏東 ESE 284	-
露比 Ruby	5 / 9 1964	西南 SW 30	971.0	968.2	東 E 110	-	北 N 118	東北偏東 ENE 148	東北 NE 113	東南偏東 ESE 167	-	東北偏北 NNE 227	-	西北 NW 203	東 E 230	東北偏北 NNE 216	東 E 268	-
黛蒂 Dot	13 / 10 1964	東 E 35	978.9	977.3	西北偏北 NNW 88	-	北 N 67	北 N 117	西北偏北 NNW 96	東北偏北 NNE 157	-	北 N 175	-	北 N 198	北 N 184	西北偏西 WNW 205	東北 NE 220	-
雪麗 Shirley	21 / 8 1968	0	968.7	968.6	北 N 68	-	北 N 75	東北偏北 NNE 124	西南偏南 SSW 90	東北偏北 NNE 126	-	北 N 133	-	北 N 151	東北 NE 209	西南偏南 SSW 167	東北偏北 NNE 203	-
露絲 Rose	17 / 8 1971	西南偏西 WSW 20	984.5	982.8	東南 SE 103	-	東南 SE 122	東南偏東 ESE 140	東南 SE 131	南 S 148	-	東南偏東 ESE 224	-	東南偏東 ESE 211	東南偏東 ESE 189	東南 SE 194	南 S 221	-
愛茜 Elsie	14 /10 1975	南 S 50	996.4	996.2	東北偏東 ENE 58	北 N 75	西北偏北 NNW 67	東北偏北 NNE 118	北 N 106	東北 NE 130	西北偏北 NNW 118	東北 NE 140	北 N 137	北 N 140	東北偏東 ENE 176	東北 NE 158	東北偏北 NNE 180	東北 NE 167
荷貝 Hope	2 / 8 1979	西北偏北 NNW 10	961.8	961.6	西 W 75	西北偏西 WNW 79	西 W 115	西南 SW 144	西南偏南 SSW 117	西北 NW 115	西 W 108	西 W 175	西北偏西 WNW 166	西北偏西 WNW 182	西南 SW 198	西南偏西 WSW 185	西北偏西 WNW 229	西 W 167
愛倫 Ellen	9 / 9 1983	西南 SW 45	983.9	983.1	東 E 92	東 E 88	東 E 112	東南偏東 ESE 169	東南偏東 ESE 171	東 E 126	南 S 137	東 E 185	東 E 167	東 E 203	東 E 227	東南偏南 SSE 238	東北偏東 ENE 218	南 S 220*
約克 York	16 / 9 1999	西南偏南 SSW 20	976.8	976.1	東 E 63	北 N 68	東北偏北 NNE 59	東北偏北 NNE 153	東北偏北 NNE 113	-	-	東 E 137	東北偏北 NNE 149	東北偏東 ENE 142	東北偏北 NNE 234	東北 NE 182	-	-

* 估計，超出風速記錄圖的上限。

estimated, exceeding upper limit of anemogram.

表 4.10　　一九六零至二零零零年間熱帶氣旋在香港所造成的人命傷亡及破壞
TABLE 4.10　CASUALTIES AND DAMAGE CAUSED BY TROPICAL CYCLONES IN HONG KONG : 1960-2000

年份 Year	日期 / 月份 Date / Month	Name of tropical cyclone	熱帶氣旋名稱	死亡人數 Persons dead	失蹤人數 Persons missing	受傷人數 Persons injured	遇事越洋船舶 Ocean-going vessels in trouble	受到毀壞或翻沉的小艇數目 Small craft sunk or wrecked	受到損壞的小艇數目 Small craft damaged
1960	4 / 6 - 12 / 6	T. Mary	瑪麗	45	11	127	6	352	462
1961	17 / 5 - 21 / 5	T. Alice	愛麗斯	4	0	20	*	*	*
	7 / 9 - 10 / 9	S.T.S. Olga	奧嘉	7	0	0	0	1	0
1962	28 / 8 - 2 / 9	T. Wanda	溫黛	130	53	*	36	1 297	756
1963	1 / 9 - 9 / 9	T. Faye	菲爾	3	0	51	0	2	0
1964	26 / 5 - 28 / 5	T. Viola	維奧娜	0	0	41	5	18	18
	2 / 8 - 9 / 8	T. Ida	艾黛	5	4	56	3	7	60
	2 / 9 - 6 / 9	T. Ruby	露比	38	6	300	20	32	282
	4 / 9 - 10 / 9	T. Sally	莎莉	9	0	24	0	0	0
	7 /10 - 13 /10	T. Dot	黛蒂	26	10	85	2	31	59
1965	6 / 7 - 16 / 7	T. Freda	法妮黛	2	0	16	0	1	0
	25 / 9 - 28 / 9	T.S. Agnes	愛娜斯	5	0	3	0	0	0
1966	12 / 7 - 14 / 7	S.T.S. Lola	露娜	1	0	6	0	*	6
1967	19 / 8 - 22 / 8	S.T.S. Kate	姬蒂	0	0	3	3	1	0
1968	17 / 8 - 22 / 8	T. Shirley	雪麗	0	0	4	1	*	3
1969	22 / 7 - 29 / 7	T. Viola	維奧娜	0	0	0	0	3	0
1970	1 / 8 - 3 / 8	T.D. -	-	2^{+}	0	0	0	0	0
	8 / 9 - 14 / 9	T. Georgia	喬治亞	0	0	0	2	0	*
1971	15 / 6 - 18 / 6	T. Freda	法妮黛	2	0	30	8	0	0
	16 / 7 - 22 / 7	T. Lucy	露茜	0	0	38	10	2	13
	10 / 8 - 17 / 8	T. Rose	露絲	110	5	286	33	303	*
1972	4 /11 - 9 /11	T. Pamela	柏美娜	1	0	8	3	0	0
1973	14 / 7 - 20 / 7	T. Dot	黛蒂	1	0	38	14	*	*
1974	7 / 6 - 14 / 6	T. Dinah	戴娜	0	0	0	1	*	*
	18 / 7 - 22 / 7	T. Ivy	艾菲	0	0	0	2	*	*
	15 /10 - 19 /10	T. Carmen	嘉曼	1	0	0	5	*	*
	21 /10 - 27 /10	T. Della	黛娜	0	0	0	2	*	*
1975	10 / 8 - 14 / 8	T.D. -	-	2	1	0	3	1	*
	9 /10 - 14 /10	T. Elsie	愛茜	0	0	46	7	2	1
	16 /10 - 23 /10	S.T.S. Flossie	霍蘿茜	0	0	0	1	*	*
1976	22 / 6 - 4 / 7	T. Ruby	露比	3	2	2	0	0	0
	21 / 7 - 26 / 7	S.T.S. Violet	維奧莉	2	1	1	0	0	0
	5 / 8 - 6 / 8	S.T.S. Clara	嘉麗	0	0	4	0	0	0
	21 / 8 - 24 / 8	T.S. Ellen	愛倫	27	3	65	0	4	7
	15 / 9 - 21 / 9	T. Iris	愛莉斯	0	0	27	6	0	1
1977	4 / 7 - 6 / 7	T.D. -	-	0	0	2	0	0	0
	3 / 9 - 5 / 9	T.S. Carla	嘉娜	0	0	1	1	0	0
	22 / 9 - 25 / 9	S.T.S. Freda	法妮黛	1	0	37	2	0	0
1978	24 / 7 - 30 / 7	S.T.S. Agnes	愛娜斯	3	0	134	0	25	42
	9 / 8 - 12 / 8	T.S. Bonnie	邦妮	0	0	0	2	0	0
	23 / 8 - 28 / 8	S.T.S. Elaine	伊蘭	1	0	51	8	5	8
	22 / 9 - 26 / 9	S.T.S. Kit	吉蒂	0	7	0	0	1	0
	7 /10 - 16 /10	S.T.S. Nina	蓮娜	0	0	2	0	0	0
	17 /10 - 29 /10	T. Rita	麗妲	0	0	3	1	5	0

表 4.10 (續)
TABLE 4.10 (cont'd)

年份 Year	日期 / 月份 Date / Month	Name of tropical cyclone	熱帶氣旋名稱	死亡人數 Persons dead	失蹤人數 Persons missing	受傷人數 Persons injured	遇事越洋船舶 Ocean-going vessels in trouble	受到毀壞或翻沉的小艇數目 Small craft sunk or wrecked	受到損壞的小艇數目 Small craft damaged
1979	1 / 7 - 6 / 7	T. Ellis	艾利斯	0	0	0	0	2	0
	26 / 7 - 30 / 7	T.S. Gordon	戈登	0	0	0	0	2	0
	28 / 7 - 3 / 8	T. Hope	荷貝	12	0	260	29	167	207
	6 / 8 - 9 / 8	T.D. -	-	0	0	0	0	3	0
	16 / 9 - 24 / 9	S.T.S. Mac	麥克	1	0	67	2	12	0
1980	5 / 7 - 12 / 7	S.T.S. Ida	艾黛	0	0	0	1	0	0
	18 / 7 - 23 / 7	T. Joe	喬伊	2	1	59	4	0	1
	20 / 7 - 28 / 7	T. Kim	甘茵	0	0	0	0	2	1
	29 /10 - 2 /11	T.S. Cary	卡里	0	0	0	0	0	2
1981	3 / 7 - 7 / 7	S.T.S. Lynn	林茵	0	0	32	0	0	3
1982	27 / 6 - 2 / 7	T.S. Tess	戴絲	0	0	16	0	1	0
	22 / 7 - 30 / 7	T. Andy	安迪	0	0	0	0	0	1
	5 / 9 - 16 / 9	T. Irving	伊文	0	0	0	0	0	2
1983	12 / 7 - 19 / 7	T. Vera	維娜	0	0	0	0	1	0
	29 / 8 - 9 / 9	T. Ellen	愛倫	10	12	333	44	135	225
	10 /10 - 14 /10	T. Joe	喬伊	0	0	58	2	0	3
	20 /10 - 26 /10	S.T.S. Lex	力士	0	0	0	0	0	1
1984	27 / 8 - 7 / 9	T. Ike	艾克	0	0	1	0	0	0
1985	19 / 6 - 25 / 6	T. Hal	哈爾	0	1	13	0	4	2
	1 / 9 - 7 / 9	T. Tess	戴絲	2	0	12	6	1	3
	13 /10 - 22 /10	T. Dot	黛蒂	0	0	1	0	0	0
1986	3 / 7 - 12 / 7	T. Peggy	蓓姬	1	0	26	3	0	3
	9 / 8 - 12 / 8	T.D. -	-	0	0	3	0	1	5
	18 / 8 - 6 / 9	T. Wayne	韋恩	3	1	15+	0	3	0
	11 /10 - 19 /10	T. Ellen	愛倫	0	0	4	1	2	1
1987	16 /10 - 27 /10	T. Lynn	林茵	0	0	1	0	0	0
1988	14 / 7 - 20 / 7	T. Warren	華倫	0	1	12	1	2	1
	19 / 9 - 22 / 9	T. Kit	吉蒂	0	0	0	0	0	1
	18 /10 - 23 /10	T. Pat	帕特	2	0	1	0	0	0
	21 /10 - 29 /10	T. Ruby	露比	0	0	4	0	0	0
1989	16 / 5 - 21 / 5	T. Brenda	布倫達	6	1	119	0	3	5
	11 / 7 - 19 / 7	T. Gordon	戈登	2	0	31	1	0	8
	8 /10 - 14 /10	T. Dan	丹尼	0	0	0	1	0	1
1990	15 / 5 - 19 / 5	T. Marian	瑪麗安	0	0	0	0	0	1
	15 / 6 - 19 / 6	S.T.S. Nathan	彌敦	5	1	1	1	0	2
	21 / 6 - 30 / 6	T. Percy	珀西	1	0	0	0	0	0
	27 / 7 - 31 / 7	S.T.S. Tasha	泰莎	0	0	1	0	1	0
	25 / 8 - 30 / 8	T. Becky	貝姬	0	1	0	0	0	0
	10 / 9 - 20 / 9	T. Ed	義德	0	0	1	0	0	0
1991	15 / 7 - 20 / 7	T. Amy	艾美	0	0	1	1	0	2
	20 / 7 - 24 / 7	S.T.S. Brendan	布倫登	0	0	17	1	1	13
	13 / 8 - 18 / 8	T. Fred	法雷德	0	0	0	0	1	0
1992	9 / 7 - 14 / 7	T. Eli	艾里	0	0	23	0	0	1
	17 / 7 - 18 / 7	T.S. Faye	菲爾	2	0	24	1	0	3
	19 / 7 - 23 / 7	S.T.S. Gary	加里	0	0	18	2	0	0

表 4.10 (續)
TABLE 4.10 (cont'd)

年份 Year	日期 / 月份 Date / Month	Name of tropical cyclone	熱帶氣旋名稱	死亡人數 Persons dead	失蹤人數 Persons missing	受傷人數 Persons injured	遇事越洋船舶 Ocean-going vessels in trouble	受到毀壞或翻沉的小艇數目 Small craft sunk or wrecked	受到損壞的小艇數目 Small craft damaged
1993	21 / 6 - 28 / 6	T. Koryn	高蓮	0	0	183	0	0	2
	16 / 8 - 21 / 8	T. Tasha	泰莎	0	0	35	0	0	7
	9 / 9 - 14 / 9	T. Abe	艾貝	1	0	0	0	0	0
	15 / 9 - 17 / 9	S.T.S. Becky	貝姬	1	0	130	0	0	10
	23 / 9 - 27 / 9	T. Dot	黛蒂	0	1	48	0	1	0
	28 /10 - 5 /11	T. Ira	艾拉	2	0	30	0	1	0
1994	23 / 6 - 25 / 6	T.S. Sharon	莎朗	0	0	5	0	1	1
	25 / 8 - 29 / 8	S.T.S. Harry	夏里	1	0	2	0	0	2
1995	7 / 8 - 12 / 8	S.T.S. Helen	海倫	3	0	35	0	0	0
	25 / 8 - 1 / 9	T. Kent	肯特	0	0	5	0	0	0
	28 / 9 - 4 /10	T. Sibyl	斯寶	0	0	14	0	0	0
1996	5 / 9 - 10 / 9	T. Sally	莎莉	2	0	4	0	0	0
	18 / 9 - 23 / 9	S.T.S. Willie	威利	0	1	0	0	0	0
1997	31 / 7 - 3 / 8	T. Victor	維克托	1	0	58	0	0	0
	20 / 8 - 23 / 8	T. Zita	思蒂	0	0	3	0	0	0
1998	7 / 8 - 11 / 8	S.T.S. Penny	彭妮	1	0	1	0	0	0
	12 / 9 - 14 / 9	T.D. -	-	0	0	10	0	0	0
	15 /10 - 27 /10	T. Babs	寶絲	0	0	14	0	0	0
1999	28 / 4 - 2 / 5	T. Leo	利奧	0	0	14	0	0	0
	2 / 6 - 8 / 6	T. Maggie	瑪姬	0	0	5	0	2	0
	25 / 7 - 28 / 7	T.S. -	-	0	0	18	0	0	0
	19 / 8 - 23 / 8	T. Sam	森姆	4	0	328	0	0	0
	12 / 9 - 17 / 9	T. York	約克	2	0	500	3	*	*
	24 / 9 - 26 / 9	S.T.S. Cam	錦雯	1	0	23	0	0	0
2000	15 / 7 - 16 / 7	T.D. -	-	0	1	6	0	0	0
	27 / 8 - 1 / 9	S.T.S. Maria	瑪莉亞	2	0	0	0	0	0
	5 / 9 - 10 / 9	T. Wukong	悟空	0	0	1	0	0	1

備註： 資料由各有關政府部門及公共事業機構提供，同時亦參考了本地報章上的損毀報導。
N.B.: Based on information supplied by relevant government departments and public utility companies. Damage reports in the local press were also examined and collated.

* 缺乏數據 Data unavailable.
+ 被雷電擊中 Struck by lightning.

第五節

二零零零年熱帶氣旋的位置及強度數據

Section 5

TROPICAL CYCLONE POSITION AND INTENSITY DATA, 2000

以下是二零零零年位於北太平洋西部及南海區域（即由赤道至北緯45度、東經100度至180度所包括的範圍）的熱帶氣旋。其每六小時之位置及強度刊於本節。

熱帶氣旋名稱

颱風達維(0001)
熱帶風暴龍王(0002)
熱帶低氣壓:五月二十一日至二十二日
熱帶低氣壓:六月十八日至十九日
颱風鴻雁(0003)
颱風啓德(0004)
熱帶低氣壓:七月十五日至十六日
熱帶風暴天秤(0005)
強烈熱帶風暴布拉萬(0006)
熱帶風暴珍珠(0007)
颱風杰拉華(0008)
颱風艾雲尼(0009)
颱風碧利斯(0010)
熱帶風暴格美(0011)
颱風派比安(0012)
強烈熱帶風暴瑪莉亞(0013)
颱風桑美(0014)
颱風悟空(0016)
強烈熱帶風暴寶霞(0015)
強烈熱帶風暴清松(0017)
颱風珊珊(0018)
熱帶低氣壓:九月二十九日至三十日
熱帶低氣壓:十月七日至十四日
颱風摩羯(0019)
颱風象神(0020)
強烈熱帶風暴貝碧嘉(0021)
熱帶低氣壓:十一月九日
熱帶風暴溫比亞(0022)
熱帶低氣壓:十二月五日至八日
颱風蘇力(0023)

在本節，風速均取10分鐘內的平均值，單位爲米每秒（1米每秒約爲1.94海里或3.6公里每小時）。熱帶氣旋的強度分爲：-

(a) T.D.: - 熱帶低氣壓
(b) T.S.: - 熱帶風暴
(c) S.T.S.: - 強烈熱帶風暴
(d) T.: - 颱風

Six-hourly position and intensity data are tabulated in this section for the following tropical cyclones in 2000 over the western North Pacific and the South China Sea (i.e. the area bounded by the Equator, 45°N, 100°E and 180°).

Name of tropical cyclone

Typhoon Damrey (0001)

Tropical Storm Longwang (0002)

Tropical Depression of 21 - 22 May

Tropical Depression of 18 - 19 June

Typhoon Kirogi (0003)

Typhoon Kai-tak (0004)

Tropical Depression of 15 - 16 July

Tropical Storm Tembin (0005)

Severe Tropical Storm Bolaven (0006)

Tropical Storm Chanchu (0007)

Typhoon Jelawat (0008)

Typhoon Ewiniar (0009)

Typhoon Bilis (0010)

Tropical Storm Kaemi (0011)

Typhoon Prapiroon (0012)

Severe Tropical Storm Maria (0013)

Typhoon Saomai (0014)

Typhoon Wukong (0016)

Severe Tropical Storm Bopha (0015)

Severe Tropical Storm Sonamu (0017)

Typhoon Shanshan (0018)

Tropical Depression of 29 - 30 September

Tropical Depression of 7 - 14 October

Typhoon Yagi (0019)

Typhoon Xangsane (0020)

Severe Tropical Storm Bebinca (0021)

Tropical Depression of 9 November

Tropical Storm Rumbia (0022)

Tropical Depression of 5 - 8 December

Typhoon Soulik (0023)

In this section, surface winds refer to wind speeds averaged over a period of 10 minutes given in the unit of m/s (1 m/s is about 1.94 knots or 3.6 km/h). Intensities of tropical cyclones are classified as follows:-

(a) T.D. : - tropical depression
(b) T.S. : - tropical storm
(c) S.T.S. : - severe tropical storm
(d) T. : - typhoon

颱風達維(0001)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON DAMREY (0001)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
五月 May	6	0600	T.D.	1002	16	11.4	133.3
		1200	T.D.	1002	16	11.9	132.7
		1800	T.D.	1002	16	12.4	132.2
	7	0000	T.S.	996	21	12.8	131.9
		0600	S.T.S.	985	25	13.1	131.7
		1200	S.T.S.	980	28	13.4	131.6
		1800	S.T.S.	975	31	13.7	131.5
	8	0000	S.T.S.	975	31	14.0	131.6
		0600	T.	970	33	14.3	131.9
		1200	T.	960	39	14.6	132.3
		1800	T.	955	41	15.1	133.0
	9	0000	T.	945	43	15.7	133.6
		0600	T.	935	49	16.4	134.4
		1200	T.	935	49	17.4	135.2
		1800	T.	935	49	18.5	136.0
	10	0000	T.	945	43	19.6	136.8
		0600	T.	950	41	20.8	137.8
		1200	T.	955	39	22.1	138.8
		1800	T.	960	36	23.3	139.7
	11	0000	T.	965	33	24.3	140.4
		0600	S.T.S.	970	31	25.3	141.1
		1200	S.T.S.	975	28	26.1	142.1
		1800	S.T.S.	980	25	27.0	143.8
	12	0000	T.S.	990	23	27.7	145.8
		0600	T.S.	994	18	28.5	147.8
		1200	T.D.	998	16	29.2	149.8

變爲溫帶氣旋

Became Extratropical

熱帶風暴龍王(0002)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM LONGWANG (0002)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
五月 May	18	1800	T.D.	1002	13	20.0	124.2
	19	0000	T.S.	998	18	20.9	125.2
		0600	T.S.	992	21	22.2	126.8
		1200	T.S.	992	21	23.3	128.6
		1800	T.S.	992	21	24.9	131.3
	20	0000	T.S.	996	18	26.6	134.8
		0600	T.D.	998	16	28.2	139.0

變爲溫帶氣旋

Became Extratropical

熱帶低氣壓由五月二十一日至二十二日的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF THE TROPICAL DEPRESSION OF 21 - 22 MAY

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
五月 May	21	0000	T.D.	1002	16	18.5	118.9
		0600	T.D.	1002	16	19.3	119.9
		1200	T.D.	1002	16	20.0	121.2
		1800	T.D.	1002	16	20.7	122.6
	22	0000	T.D.	1002	16	21.4	124.2

變爲溫帶氣旋

Became Extratropical

熱帶低氣壓由六月十八日至十九日的每小時*之位置及強度

HOURLY* POSITION AND INTENSITY DATA OF THE TROPICAL DEPRESSION OF 18 - 19 JUNE

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
六月 Jun	18	1300	T.D.	998	17	22.06	114.06
		1400	T.D.	998	17	22.30	114.09
		1500	T.D.	998	17	22.57	114.10
		1600	T.D.	998	17	22.80	114.10
		1700	T.D.	998	17	23.00	114.10
			消散 Dissipated				

*每小時的數據，這是基於此熱帶低氣壓的生存期少於六小時。

*Hourly data given on account of the lifetime Tropical Depression being less than 6 hours

颱風鴻雁(0003)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON KIROGI (0003)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
七月 Jul	2	0600	T.D.	1002	13	13.8	132.0
		1200	T.D.	998	16	14.3	131.9
		1800	T.D.	998	16	14.8	131.8
	3	0000	T.D.	998	16	15.4	131.7
		0600	T.S.	994	18	16.0	131.6
		1200	T.S.	990	23	16.5	131.6
		1800	S.T.S.	980	28	17.0	131.6
	4	0000	T.	970	33	17.5	131.6
		0600	T.	960	39	18.2	131.6
		1200	T.	950	41	19.1	131.6
		1800	T.	950	41	20.0	131.6
	5	0000	T.	945	43	20.8	132.1
		0600	T.	945	43	21.6	132.6
		1200	T.	950	41	22.4	133.1
		1800	T.	950	41	23.2	133.6
	6	0000	T.	950	41	24.0	134.2
		0600	T.	950	41	24.8	134.7
		1200	T.	955	39	25.7	135.4
		1800	T.	955	39	26.8	136.0
	7	0000	T.	955	39	28.1	136.7
		0600	T.	960	36	29.9	137.6
		1200	T.	960	36	31.8	138.7
		1800	T.	965	33	34.0	139.9
	8	0000	T.	965	33	36.5	141.3
		0600	S.T.S.	970	31	39.0	142.6
		1200	S.T.S.	975	28	41.1	143.9
		1800	S.T.S.	980	25	42.2	145.3

變爲溫帶氣旋

Became Extratropical

颱風啓德(0004)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON KAI-TAK (0004)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
七月 Jul	4	0000	T.D.	994	16	16.4	119.5
		0600	T.D.	994	16	17.3	120.1
		1200	T.D.	994	16	18.1	120.5
		1800	T.D.	994	16	18.6	120.9
	5	0000	T.D.	994	16	18.8	120.9
		0600	T.S.	992	18	18.8	120.7
		1200	T.S.	992	21	18.9	120.4
		1800	T.S.	990	23	19.2	120.1
	6	0000	S.T.S.	985	25	19.5	119.8
		0600	S.T.S.	980	28	19.8	119.5
		1200	S.T.S.	975	31	20.0	119.1
		1800	T.	970	33	20.1	118.8
	7	0000	T.	965	36	19.9	118.6
		0600	T.	960	39	19.7	118.6
		1200	T.	960	39	19.6	118.9
		1800	T.	960	39	19.7	119.1
	8	0000	T.	960	39	19.9	119.4
		0600	T.	965	36	20.1	119.7
		1200	T.	970	33	20.5	120.2
		1800	T.	970	33	21.2	120.8
	9	0000	S.T.S.	980	31	22.8	121.4
		0600	S.T.S.	980	31	24.5	121.6
		1200	S.T.S.	980	31	26.2	121.4
		1800	S.T.S.	980	31	27.9	121.3
	10	0000	S.T.S.	980	31	30.1	121.4
		0600	S.T.S.	985	25	32.3	121.8
		1200	T.S.	990	21	34.3	122.5
		1800	T.D.	994	16	36.3	123.1
	11	0000	T.D.	994	16	38.3	123.7

變爲溫帶氣旋

Became Extratropical

熱帶低氣壓由七月十五日至十六日的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF THE TROPICAL DEPRESSION OF 15 - 16 JULY

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
七月 Jul	15	0600	T.D.	996	13	16.7	114.4
		1200	T.D.	996	13	17.3	113.3
		1800	T.D.	996	13	17.9	112.2
	16	0000	T.D.	996	13	18.5	111.5
		0600	T.D.	996	13	19.0	111.0
		1200	T.D.	996	13	19.6	110.6

消散
Dissipated

熱帶風暴天秤(0005)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM TEMBIN (0005)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
七月 Jul	18	0000	T.D.	1002	13	22.8	142.6
		0600	T.D.	1000	16	23.5	142.1
		1200	T.S.	996	18	24.3	142.0
		1800	T.S.	992	21	25.2	142.0
	19	0000	T.S.	992	21	26.1	142.0
		0600	T.S.	992	21	27.0	142.0
		1200	T.S.	992	21	27.9	142.0
		1800	T.S.	992	21	28.8	142.0
	20	0000	T.S.	992	21	29.7	142.0
		0600	T.S.	992	21	30.5	142.0
		1200	T.S.	992	21	31.3	142.0
		1800	T.S.	992	21	32.1	142.0
	21	0000	T.S.	992	21	32.8	142.0
		0600	T.S.	994	18	33.5	142.0
		1200	T.S.	994	18	34.2	142.2
		1800	T.S.	994	18	35.0	142.5
	22	0000	T.S.	994	18	35.8	143.1
		0600	T.S.	994	18	36.8	144.2
		1200	T.D.	998	16	38.2	145.7

消散
Dissipated

強烈熱帶風暴布拉萬(0006)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TROPICAL STORM BOLAVEN (0006)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
七月 Jul	22	0000	T.D.	1002	12	16.5	126.5
		0600	T.D.	1002	12	16.6	125.9
		1200	T.D.	1002	12	16.8	125.3
		1800	T.D.	1000	13	17.0	124.8
	23	0000	T.D.	1000	13	17.2	124.4
		0600	T.D.	1000	13	17.4	124.0
		1200	T.D.	1000	13	17.7	123.7
		1800	T.D.	1000	13	18.0	123.5
	24	0000	T.D.	996	16	18.4	123.3
		0600	T.D.	996	16	19.1	123.2
		1200	T.D.	996	16	20.4	123.4
		1800	T.D.	996	16	21.8	124.0
	25	0000	T.D.	996	16	23.1	124.8
		0600	T.D.	996	16	24.1	125.5
		1200	T.D.	996	16	25.0	126.2
		1800	T.S.	992	18	25.6	127.1
	26	0000	T.S.	990	21	25.8	128.2
		0600	T.S.	986	23	26.1	129.0
		1200	S.T.S.	982	25	26.3	129.5
		1800	S.T.S.	980	28	26.6	130.0
	27	0000	S.T.S.	980	28	26.9	129.9
		0600	S.T.S.	980	28	27.1	129.8
		1200	S.T.S.	980	28	27.3	129.6
		1800	S.T.S.	980	28	27.4	129.4
	28	0000	S.T.S.	982	25	27.6	129.2
		0600	S.T.S.	982	25	27.8	129.0
		1200	S.T.S.	982	25	28.0	128.8
		1800	S.T.S.	982	25	28.2	128.6
	29	0000	S.T.S.	982	25	28.5	128.5
		0600	S.T.S.	982	25	29.1	128.5
		1200	S.T.S.	982	25	29.9	128.5
		1800	S.T.S.	982	25	30.7	128.5
	30	0000	T.S.	986	21	31.5	128.5
		0600	T.S.	986	21	32.3	128.5
		1200	T.S.	986	21	33.2	128.6
		1800	T.S.	986	21	34.3	128.8
	31	0000	T.S.	986	21	35.8	129.6

變爲溫帶氣旋

Became Extratropical

熱帶風暴珍珠(0007)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM CHANCHU (0007)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
七月 Jul	28	0600	T.D.	1000	16	9.7	176.1
		1200	T.D.	1000	16	10.4	176.0
		1800	T.S.	996	18	11.1	175.9
	29	0000	T.S.	996	18	11.9	175.8
		0600	T.S.	996	18	12.7	175.7
		1200	T.D.	1000	16	13.5	175.7
		1800	T.D.	1000	16	14.3	175.7
			消散 Dissipated				

颱風杰拉華(0008)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON JELAWAT (0008)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
八月 Aug	1	0000	T.D.	1000	16	22.0	153.0
		0600	T.S.	998	18	22.0	152.1
		1200	T.S.	990	23	22.0	151.2
		1800	S.T.S.	980	28	22.0	150.2
	2	0000	T.	970	33	22.1	149.4
		0600	T.	960	39	22.3	148.6
		1200	T.	955	41	22.5	147.7
		1800	T.	950	43	23.1	146.6
	3	0000	T.	950	43	23.7	145.5
		0600	T.	950	43	24.3	144.3
		1200	T.	950	43	24.9	143.0
		1800	T.	950	43	25.3	141.7
	4	0000	T.	950	43	25.7	140.4
		0600	T.	950	43	26.0	139.1
		1200	T.	950	43	26.1	137.7
		1800	T.	950	43	26.1	136.6
	5	0000	T.	950	43	26.1	135.5
		0600	T.	950	43	26.1	134.5
		1200	T.	950	43	26.1	133.5
		1800	T.	950	43	26.0	132.7
	6	0000	T.	950	43	26.0	131.9
		0600	T.	945	46	25.9	131.1
		1200	T.	945	46	25.9	130.5
		1800	T.	945	46	25.9	129.9
	7	0000	T.	945	46	25.9	129.5
		0600	T.	945	46	26.1	129.1
		1200	T.	950	43	26.5	128.7
		1800	T.	955	41	26.9	128.3
	8	0000	T.	955	41	27.3	128.0
		0600	T.	955	41	27.6	127.7
		1200	T.	955	41	27.9	127.4
		1800	T.	955	41	28.2	127.0
	9	0000	T.	955	41	28.5	126.5
		0600	T.	955	41	28.7	125.9
		1200	T.	960	39	28.8	125.1
		1800	T.	965	36	28.9	124.2
	10	0000	T.	970	33	29.0	123.4
		0600	S.T.S.	975	31	29.1	122.6
		1200	S.T.S.	980	28	29.3	121.8
		1800	T.S.	990	23	29.8	120.9
	11	0000	T.D.	996	16	30.7	120.5

消散
Dissipated

颱風艾雲尼(0009)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON EWINIAR (0009)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
八月 Aug	9	1200	T.D.	1000	13	14.3	140.1
		1800	T.D.	1000	13	14.9	139.5
	10	0000	T.D.	998	16	15.6	139.0
		0600	T.S.	994	18	16.6	139.0
		1200	T.S.	994	18	18.0	138.9
		1800	T.S.	992	21	20.2	138.8
	11	0000	T.S.	990	23	23.0	138.7
		0600	S.T.S.	985	25	25.6	138.1
		1200	S.T.S.	985	25	27.5	137.4
		1800	S.T.S.	985	25	29.0	136.2
	12	0000	S.T.S.	985	25	29.7	135.5
		0600	S.T.S.	985	25	30.2	135.8
		1200	S.T.S.	985	25	30.7	136.4
		1800	S.T.S.	985	25	31.1	137.1
	13	0000	S.T.S.	985	25	31.3	138.0
		0600	S.T.S.	985	25	31.5	139.3
		1200	S.T.S.	985	25	31.9	140.9
		1800	S.T.S.	985	25	32.5	142.5
	14	0000	S.T.S.	985	25	33.1	144.1
		0600	S.T.S.	985	25	33.7	145.6
		1200	S.T.S.	980	28	34.2	146.8
		1800	T.	970	33	34.6	147.7
	15	0000	T.	965	36	34.8	148.5
		0600	T.	965	36	35.0	149.4
		1200	T.	965	36	35.4	150.2
		1800	T.	965	36	36.1	150.8
	16	0000	T.	970	33	36.9	150.7
		0600	T.	970	33	37.3	150.7
		1200	S.T.S.	975	31	38.0	150.9
		1800	S.T.S.	980	28	38.3	150.7
	17	0000	S.T.S.	985	25	38.4	150.3
		0600	S.T.S.	985	25	38.6	149.9
		1200	S.T.S.	985	25	38.5	149.7
		1800	T.S.	990	23	38.5	150.0
	18	0000	T.S.	990	23	39.0	149.6
		0600	T.S.	990	23	39.2	149.7

變爲溫帶氣旋

Became Extratropical

颱風碧利斯(0010)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON BILIS (0010)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
八月 Aug	18	1200	T.D.	1002	13	10.5	137.5
		1800	T.D.	1000	16	11.9	136.9
	19	0000	T.S.	996	18	13.2	136.2
		0600	T.S.	994	21	14.5	135.3
		1200	T.S.	990	23	15.3	134.4
		1800	S.T.S.	985	25	15.9	133.5
	20	0000	S.T.S.	980	28	16.5	132.5
		0600	S.T.S.	975	31	17.0	131.5
		1200	T.	965	36	17.6	130.6
		1800	T.	955	41	18.2	129.5
	21	0000	T.	945	46	18.7	128.3
		0600	T.	935	51	19.2	127.2
		1200	T.	925	57	19.7	126.1
		1800	T.	915	61	20.3	125.0
	22	0000	T.	915	61	20.9	123.9
		0600	T.	915	61	21.6	122.9
		1200	T.	925	57	22.4	122.0
		1800	T.	935	49	23.7	120.1
	23	0000	T.	945	41	24.3	118.9
		0600	T.	960	33	24.8	117.7
		1200	S.T.S.	975	25	25.4	116.8
		1800	T.S.	990	18	25.8	116.4

消散
Dissipated

熱帶風暴格美(0011)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM KAEMI (0011)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
八月 Aug	20	0000	T.D.	994	13	13.0	114.0
		0600	T.D.	994	13	13.2	113.6
		1200	T.D.	994	13	13.5	113.3
		1800	T.D.	994	13	13.8	112.9
	21	0000	T.D.	992	16	14.2	112.5
		0600	T.S.	990	18	14.7	112.0
		1200	T.S.	988	21	15.1	111.5
		1800	T.S.	985	23	15.4	110.6
	22	0000	T.S.	985	23	15.7	109.7
		0600	T.S.	985	23	15.9	108.7
		1200	T.S.	990	21	16.0	107.7
		1800	T.D.	994	16	16.1	106.6

消散
Dissipated

颱風派比安(0012)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON PRAPIROON (0012)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
八月 Aug	26	0600	T.D.	996	16	16.6	132.0
		1200	T.D.	996	16	19.0	132.0
		1800	T.S.	994	18	20.6	131.2
	27	0000	T.S.	992	21	21.6	130.4
		0600	T.S.	992	21	22.3	129.7
		1200	T.S.	992	21	22.7	129.0
		1800	T.S.	992	21	23.1	128.3
	28	0000	T.S.	992	21	23.2	127.6
		0600	T.S.	990	23	22.6	126.4
		1200	S.T.S.	985	25	22.9	125.8
		1800	S.T.S.	980	28	23.3	125.5
	29	0000	S.T.S.	975	31	23.7	125.2
		0600	S.T.S.	975	31	24.3	124.9
		1200	S.T.S.	975	31	25.1	124.5
		1800	S.T.S.	975	31	25.9	124.0
	30	0000	T.	970	33	27.0	123.7
		0600	T.	965	36	28.5	123.4
		1200	T.	965	36	30.0	123.1
		1800	T.	965	36	31.5	123.2
	31	0000	T.	965	36	33.3	123.7
		0600	T.	965	36	35.4	124.2
		1200	T.	970	33	37.3	125.2
		1800	S.T.S.	980	28	39.3	126.8
九月 Sep	1	0000	T.S.	985	23	41.0	128.8
		0600	T.S.	988	21	42.4	131.3
		1200	T.S.	990	18	43.3	134.1

變爲溫帶氣旋

Became Extratropical

強烈熱帶風暴瑪莉亞(0013)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TROPICAL STORM MARIA (0013)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
八月 Aug	27	(1500	T.D.	998	13	20.9	116.2)
		1800	T.D.	996	16	20.9	116.1
	28	0000	T.D.	996	16	20.9	115.9
		0600	T.D.	996	16	20.8	115.6
		1200	T.D.	996	16	20.5	115.4
		1800	T.D.	996	16	20.1	115.2
	29	0000	T.D.	996	16	19.5	115.2
		0600	T.S.	994	18	18.9	115.5
		1200	T.S.	990	21	18.7	115.7
		1800	T.S.	990	21	18.7	115.9
	30	0000	T.S.	990	21	18.7	116.1
		0600	T.S.	990	21	18.8	116.2
		1200	T.S.	990	21	19.2	116.4
		1800	T.S.	990	21	19.7	116.4
	31	0000	T.S.	990	21	20.2	116.2
		0600	T.S.	985	23	20.8	115.9
		1200	S.T.S.	980	25	21.5	115.6
		1800	S.T.S.	980	25	22.4	115.2
九月 Sep	1	0000	T.S.	985	23	23.2	114.7
		0600	T.S.	990	18	24.2	114.5
		1200	T.D.	996	16	25.3	114.5

消散
Dissipated

颱風桑美(0014)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON SAOMAI (0014)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. ºN	東經 Long. ºE
九月 Sep	2	1800	T.D.	1002	16	15.9	155.7
	3	0000	T.S.	998	18	15.9	154.9
		0600	T.S.	996	21	15.9	154.2
		1200	T.S.	990	23	15.9	153.5
		1800	S.T.S.	985	25	15.9	152.7
	4	0000	S.T.S.	980	28	16.0	151.8
		0600	S.T.S.	975	31	16.1	150.9
		1200	T.	970	33	16.1	150.0
		1800	T.	965	36	16.1	149.1
	5	0000	T.	970	33	16.0	148.2
		0600	S.T.S.	975	31	15.5	147.9
		1200	S.T.S.	980	28	14.9	147.7
		1800	S.T.S.	985	25	14.2	147.7
	6	0000	S.T.S.	985	25	13.6	147.9
		0600	S.T.S.	985	25	13.8	147.6
		1200	S.T.S.	985	25	14.3	147.3
		1800	S.T.S.	985	25	15.0	146.8
	7	0000	S.T.S.	985	25	16.0	145.8
		0600	S.T.S.	985	25	16.7	144.6
		1200	S.T.S.	980	28	17.3	143.4
		1800	S.T.S.	980	28	17.9	142.2
	8	0000	S.T.S.	980	28	18.4	141.2
		0600	S.T.S.	980	28	19.0	140.3
		1200	S.T.S.	975	31	19.7	139.3
		1800	S.T.S.	975	31	20.3	138.4
	9	0000	T.	970	33	21.0	137.5
		0600	T.	965	36	21.7	136.7
		1200	T.	960	39	22.4	136.0
		1800	T.	950	41	23.2	135.2
	10	0000	T.	940	46	23.8	134.2
		0600	T.	930	51	24.1	133.1
		1200	T.	920	57	24.2	132.4
		1800	T.	920	57	24.5	131.9
	11	0000	T.	925	54	24.9	131.4
		0600	T.	925	54	25.2	130.8
		1200	T.	930	51	25.5	130.2
		1800	T.	935	49	25.7	129.6
	12	0000	T.	940	46	26.0	128.9
		0600	T.	945	43	26.3	128.2
		1200	T.	945	43	26.7	127.6
		1800	T.	945	43	27.0	127.0
	13	0000	T.	945	43	27.4	126.4
		0600	T.	945	43	27.8	125.8
		1200	T.	945	43	27.9	125.2
		1800	T.	945	43	27.9	124.8
	14	0000	T.	945	43	28.0	124.5
		0600	T.	945	43	28.2	124.2
		1200	T.	945	43	28.4	124.2
		1800	T.	950	41	28.7	124.4
	15	0000	T.	955	39	29.1	125.2
		0600	T.	960	36	30.1	126.3
		1200	T.	965	33	31.6	127.4
		1800	S.T.S.	970	31	34.0	128.1
	16	0000	S.T.S.	975	28	36.7	128.8
		0600	S.T.S.	980	25	39.5	129.4

變爲溫帶氣旋
Became Extratropical

颱風悟空(0016)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON WUKONG (0016)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
九月 Sep	5	0600	T.D.	1000	13	16.9	117.0
		1200	T.D.	1000	13	17.2	117.3
		1800	T.D.	994	16	17.5	117.5
	6	0000	T.D.	994	16	17.9	117.6
		0600	T.S.	992	18	18.3	117.6
		1200	T.S.	990	21	18.7	117.3
		1800	S.T.S.	985	25	18.9	116.8
	7	0000	S.T.S.	980	31	19.0	116.2
		0600	T.	975	33	19.0	115.7
		1200	T.	975	33	19.0	115.2
		1800	T.	970	33	19.0	114.8
	8	0000	T.	965	36	18.9	114.2
		0600	T.	965	36	18.8	113.5
		1200	T.	965	36	18.7	112.5
		1800	T.	970	33	18.5	111.5
	9	0000	T.	970	33	18.4	110.6
		0600	T.	970	33	18.3	109.7
		1200	S.T.S.	975	31	18.3	109.0
		1800	S.T.S.	980	28	18.4	108.3
	10	0000	S.T.S.	985	25	18.4	107.3
		0600	T.S.	985	23	18.2	106.1
		1200	T.S.	990	18	17.9	105.0

消散
Dissipated

強烈熱帶風暴寶霞(0015)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TROPICAL STORM BOPHA (0015)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
九月 Sep	6	0000	T.D.	998	16	21.5	136.3
		0600	T.S.	994	18	22.0	136.4
		1200	T.S.	992	21	22.6	136.5
		1800	T.S.	992	21	23.3	136.4
	7	0000	T.S.	990	23	23.9	135.6
		0600	T.S.	990	23	24.4	134.2
		1200	T.S.	990	23	24.7	132.7
		1800	T.S.	990	23	25.0	131.3
	8	0000	T.S.	990	23	25.3	129.8
		0600	S.T.S.	988	25	25.5	128.4
		1200	S.T.S.	988	25	25.8	127.0
		1800	S.T.S.	988	25	25.7	126.0
	9	0000	S.T.S.	988	25	25.4	125.1
		0600	T.S.	990	23	24.8	124.5
		1200	T.S.	990	23	24.1	123.9
		1800	T.S.	990	23	23.4	123.3
	10	0000	T.S.	990	23	22.5	122.8
		0600	T.S.	990	23	21.5	122.4
		1200	T.S.	990	23	20.5	122.0
		1800	T.S.	990	23	19.5	121.8
	11	0000	T.S.	990	23	18.6	121.8
		0600	T.S.	994	21	18.0	122.0
		1200	T.D.	998	16	17.5	122.2

消散
Dissipated

強烈熱帶風暴清松(0017)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TROPICAL STORM SONAMU (0017)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
九月 Sep	14	0600	T.D.	1000	16	20.8	139.9
		1200	T.D.	1000	16	21.7	140.2
		1800	T.D.	1000	16	22.6	140.5
	15	0000	T.D.	1000	16	23.2	140.7
		0600	T.S.	994	18	23.6	141.0
		1200	T.S.	990	23	23.9	141.2
		1800	S.T.S.	980	28	24.3	141.5
	16	0000	S.T.S.	980	28	25.0	141.7
		0600	S.T.S.	980	28	26.1	141.7
		1200	S.T.S.	980	28	27.3	141.6
		1800	S.T.S.	980	28	29.0	141.4
	17	0000	S.T.S.	980	28	31.0	141.4
		0600	S.T.S.	980	28	33.2	142.1
		1200	S.T.S.	980	28	35.8	143.0
		1800	S.T.S.	975	31	38.8	144.3
	18	0000	S.T.S.	980	28	41.8	146.4
		0600	S.T.S.	985	25	45.1	149.4

變爲溫帶氣旋

Became Extratropical

颱風珊珊(0018)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON SHANSHAN (0018)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
九月 Sep	18	0000	T.D.	1000	16	15.2	172.5
		0600	T.S.	998	18	15.6	171.6
		1200	T.S.	996	21	16.0	170.9
		1800	T.S.	996	21	16.3	170.3
	19	0000	T.S.	996	23	16.7	169.9
		0600	S.T.S.	985	25	17.3	169.8
		1200	S.T.S.	980	28	18.1	169.8
		1800	S.T.S.	970	31	19.0	169.8
	20	0000	T.	960	36	19.7	169.1
		0600	T.	950	41	20.3	168.1
		1200	T.	940	46	20.9	167.2
		1800	T.	940	46	21.3	166.6
	21	0000	T.	940	46	21.8	166.2
		0600	T.	935	49	22.4	165.9
		1200	T.	930	51	23.0	165.6
		1800	T.	930	51	23.6	165.4
	22	0000	T.	930	51	24.2	165.3
		0600	T.	930	51	24.9	165.3
		1200	T.	935	49	25.6	165.6
		1800	T.	940	46	26.5	166.0
	23	0000	T.	945	43	27.6	166.5
		0600	T.	950	41	28.8	167.1
		1200	T.	955	39	30.1	168.3
		1800	T.	960	36	31.2	169.8
	24	0000	T.	965	33	32.8	171.8
		0600	S.T.S.	970	31	35.4	174.7
		1200	S.T.S.	975	28	39.0	178.2

變爲溫帶氣旋

Became Extratropical

熱帶低氣壓由九月二十九日至三十日的每六小時之位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF THE TROPICAL DEPRESSION OF 29 - 30 SEPTEMBER

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
九月 Sep	28	1800	T.D.	1004	16	26.7	164.8
	29	0000	T.D.	1004	16	27.4	165.4
		0600	T.D.	1004	16	28.0	166.0
		1200	T.D.	1006	13	28.5	166.5
		1800	T.D.	1006	13	28.8	166.9
	30	0000	T.D.	1006	13	29.1	167.3
		0600	T.D.	1006	13	29.4	167.7
		1200	T.D.	1006	13	29.8	168.1

消散
Dissipated

熱帶低氣壓由十月七日至十四日的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF THE TROPICAL DEPRESSION OF 7 - 14 OCTOBER

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
十月 Oct	7	0600	T.D.	998	16	11.3	111.2
		1200	T.D.	998	16	11.1	111.4
		1800	T.D.	998	16	10.9	111.6
	8	0000	T.D.	998	16	10.9	111.9
		0600	T.D.	998	16	11.0	112.2
		1200	T.D.	998	16	11.2	112.4
		1800	T.D.	998	16	11.5	112.5
	9	0000	T.D.	998	16	12.0	112.5
		0600	T.D.	998	16	12.7	112.3
		1200	T.D.	998	16	13.3	111.6
		1800	T.D.	998	16	13.5	110.7
	10	0000	T.D.	998	16	13.3	110.3
		0600	T.D.	998	16	13.2	110.6
		1200	T.D.	998	16	13.4	110.8
		1800	T.D.	998	16	13.6	111.0
	11	0000	T.D.	998	16	13.8	111.2
		0600	T.D.	998	16	14.0	111.4
		1200	T.D.	998	16	14.2	111.6
		1800	T.D.	998	16	14.4	111.8
	12	0000	T.D.	998	16	14.6	112.0
		0600	T.D.	998	16	15.0	112.3
		1200	T.D.	998	16	15.7	112.5
		1800	T.D.	998	16	16.5	112.5
	13	0000	T.D.	998	16	17.2	112.2
		0600	T.D.	998	16	17.6	111.6
		1200	T.D.	998	16	17.7	111.0
		1800	T.D.	998	16	17.7	110.5

消散
Dissipated

颱風摩羯(0019)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON YAGI (0019)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
十月 Oct	21	1800	T.D.	1000	16	20.6	140.5
	22	0000	T.D.	1000	16	20.8	139.0
		0600	T.D.	1000	16	21.0	137.5
		1200	T.S.	998	18	21.3	136.0
		1800	T.S.	996	21	21.6	134.4
	23	0000	T.S.	996	21	21.9	132.8
		0600	T.S.	996	21	22.3	131.3
		1200	T.S.	992	23	22.5	130.2
		1800	S.T.S.	990	25	22.7	129.2
	24	0000	S.T.S.	985	28	23.0	128.2
		0600	S.T.S.	985	28	23.3	127.2
		1200	S.T.S.	980	31	23.7	126.2
		1800	T.	975	33	24.2	125.4
	25	0000	T.	975	33	24.7	124.8
		0600	T.	975	33	25.1	124.4
		1200	T.	975	33	25.4	124.3
		1800	T.	975	33	25.8	124.5
	26	0000	T.	975	33	26.2	125.0
		0600	S.T.S.	980	31	26.5	125.8
		1200	S.T.S.	990	25	26.5	126.5
		1800	T.S.	996	21	26.3	126.7
	27	0000	T.D.	1000	16	25.9	126.6
		0600	T.D.	1004	13	25.4	126.4
		1200	T.D.	1004	13	25.0	126.0

消散
Dissipated

颱風象神(0020)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON XANGSANE (0020)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
十月 Oct	26	0000	T.D.	1000	16	9.7	133.0
		0600	T.S.	998	18	10.2	131.5
		1200	T.S.	994	21	10.6	130.2
		1800	T.S.	990	23	11.0	128.8
	27	0000	S.T.S.	985	25	11.7	127.5
		0600	S.T.S.	980	28	12.4	126.2
		1200	S.T.S.	975	31	13.0	124.9
		1800	S.T.S.	975	31	13.4	123.7
	28	0000	S.T.S.	975	31	13.8	122.4
		0600	S.T.S.	980	28	14.2	121.4
		1200	S.T.S.	980	28	14.6	120.6
		1800	S.T.S.	980	28	15.1	119.9
	29	0000	S.T.S.	980	28	15.5	119.1
		0600	S.T.S.	980	28	15.8	118.4
		1200	S.T.S.	980	28	16.0	117.9
		1800	S.T.S.	975	31	16.2	117.9
	30	0000	T.	970	33	16.4	118.2
		0600	T.	965	36	16.6	118.6
		1200	T.	965	36	17.1	119.1
		1800	T.	965	36	17.8	119.4
	31	0000	T.	965	36	18.6	119.8
		0600	T.	965	36	19.5	120.1
		1200	T.	965	36	20.9	120.6
		1800	T.	965	36	22.4	121.2
十一月 Nov	1	0000	T.	970	33	24.2	122.0
		0600	S.T.S.	980	28	26.2	123.0
		1200	T.S.	990	23	28.4	125.0

變爲溫帶氣旋

Became Extratropical

強烈熱帶風暴貝碧嘉(0021)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TROPICAL STORM BEBINCA (0021)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
十月 Oct	31	1200	T.D.	1002	13	9.4	130.8
		1800	T.D.	1002	13	10.0	129.9
十一月 Nov	1	0000	T.D.	1000	16	10.6	129.0
		0600	T.S.	998	18	11.4	128.2
		1200	T.S.	994	21	12.1	127.1
		1800	S.T.S.	985	25	12.9	126.1
	2	0000	S.T.S.	975	31	13.6	124.9
		0600	S.T.S.	975	31	14.1	123.7
		1200	S.T.S.	975	31	14.5	122.6
		1800	S.T.S.	975	31	14.6	121.5
	3	0000	S.T.S.	975	31	14.7	120.3
		0600	S.T.S.	975	31	15.0	119.4
		1200	S.T.S.	980	28	15.3	118.6
		1800	S.T.S.	980	28	15.7	118.1
	4	0000	S.T.S.	980	28	16.1	117.7
		0600	S.T.S.	980	28	16.4	117.4
		1200	S.T.S.	980	28	16.6	117.2
		1800	S.T.S.	980	28	16.8	117.0
	5	0000	S.T.S.	980	28	17.1	116.9
		0600	S.T.S.	980	28	17.5	116.9
		1200	S.T.S.	980	28	18.1	116.9
		1800	S.T.S.	980	28	18.8	116.9
	6	0000	S.T.S.	980	28	19.5	116.9
		0600	S.T.S.	985	25	20.0	116.9
		1200	T.S.	994	23	20.3	116.8
		1800	T.S.	998	18	20.5	116.5
	7	0000	T.D.	1000	16	20.5	115.9
		0600	T.D.	1000	16	20.5	115.1
		1200	T.D.	1000	16	20.7	114.2
		1800	T.D.	1000	16	21.1	113.1

消散
Dissipated

熱帶低氣壓在十一月九日的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF THE TROPICAL DEPRESSION OF 9 NOVEMBER

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
十一月 Nov	9	0000	T.D.	1004	13	24.2	125.5
		0600	T.D.	1004	13	25.2	126.9
		1200	T.D.	1004	13	26.0	128.4

變爲溫帶氣旋

Became Extratropical

熱帶風暴溫比亞(0022)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM RUMBIA (0022)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
十一月 Nov	28	0600	T.D.	1000	16	8.4	131.2
		1200	T.S.	996	18	8.5	130.9
		1800	T.S.	992	21	8.6	130.6
	29	0000	T.S.	990	23	8.7	130.3
		0600	T.S.	990	23	8.8	130.0
		1200	T.S.	990	23	8.9	129.6
		1800	T.S.	990	23	9.1	129.0
	30	0000	T.S.	990	23	9.4	128.2
		0600	T.S.	990	23	9.9	127.0
		1200	T.S.	990	23	10.5	125.8
		1800	T.S.	990	23	11.1	124.7
十二月 Dec	1	0000	T.S.	992	21	11.6	123.6
		0600	T.S.	992	21	11.9	122.8
		1200	T.S.	992	21	12.0	122.2
		1800	T.S.	994	18	12.1	121.6
	2	0000	T.S.	994	18	12.0	121.0
		0600	T.D.	998	16	11.9	120.4
		1200	T.D.	998	16	11.8	119.7
		1800	T.D.	998	16	11.7	118.6
	3	0000	T.D.	998	16	11.5	117.2
		0600	T.D.	1000	13	11.2	116.0
		1200	T.D.	1000	13	10.7	115.1
		1800	T.D.	1000	13	10.3	114.6

消散
Dissipated

熱帶低氣壓由十二月五日至八日的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF THE TROPICAL DEPRESSION OF 5 - 8 DECEMBER

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
十二月 Dec	5	0600	T.D.	996	16	8.6	113.0
		1200	T.D.	996	16	8.7	112.8
		1800	T.D.	996	16	8.9	112.5
	6	0000	T.D.	996	16	9.1	112.1
		0600	T.D.	996	16	9.3	111.5
		1200	T.D.	996	16	9.6	110.8
		1800	T.D.	1000	16	9.8	110.1
	7	0000	T.D.	1000	16	10.0	109.3
		0600	T.D.	1000	16	10.0	108.4
		1200	T.D.	1002	13	9.8	107.5
		1800	T.D.	1002	13	9.5	106.6

消散
Dissipated

颱風蘇力(0023)的每六小時之位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON SOULIK (0023)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
十二月 Dec	29	0600	T.D.	1002	13	8.2	130.4
		1200	T.D.	1000	16	9.0	129.4
		1800	T.S.	998	18	9.7	128.5
	30	0000	T.S.	992	21	10.3	127.6
		0600	T.S.	992	21	10.8	127.2
		1200	T.S.	990	23	11.3	127.1
		1800	S.T.S.	988	25	11.8	127.3
	31	0000	S.T.S.	988	25	12.5	127.7
		0600	S.T.S.	988	25	13.3	128.5
		1200	S.T.S.	988	25	13.9	129.5
		1800	S.T.S.	988	25	14.4	130.6
一月 Jan (2001)	1	0000	S.T.S.	988	25	14.8	131.6
		0600	S.T.S.	988	25	15.2	132.4
		1200	S.T.S.	988	25	15.5	133.3
		1800	S.T.S.	988	25	15.7	134.0
	2	0000	S.T.S.	988	25	15.9	134.5
		0600	S.T.S.	988	25	16.2	134.6
		1200	S.T.S.	988	25	16.6	134.7
		1800	S.T.S.	982	28	16.9	134.9
	3	0000	S.T.S.	975	31	17.2	135.2
		0600	T.	970	33	17.5	135.5
		1200	T.	965	36	17.8	135.8
		1800	T.	960	39	18.0	136.2
	4	0000	T.	965	36	18.2	136.6
		0600	T.	970	33	18.3	137.1
		1200	S.T.S.	980	28	18.3	137.5
		1800	T.S.	990	23	18.2	138.0
	5	0000	T.S.	998	18	18.0	138.4
		0600	T.D.	1004	13	17.8	138.8

消散
Dissipated