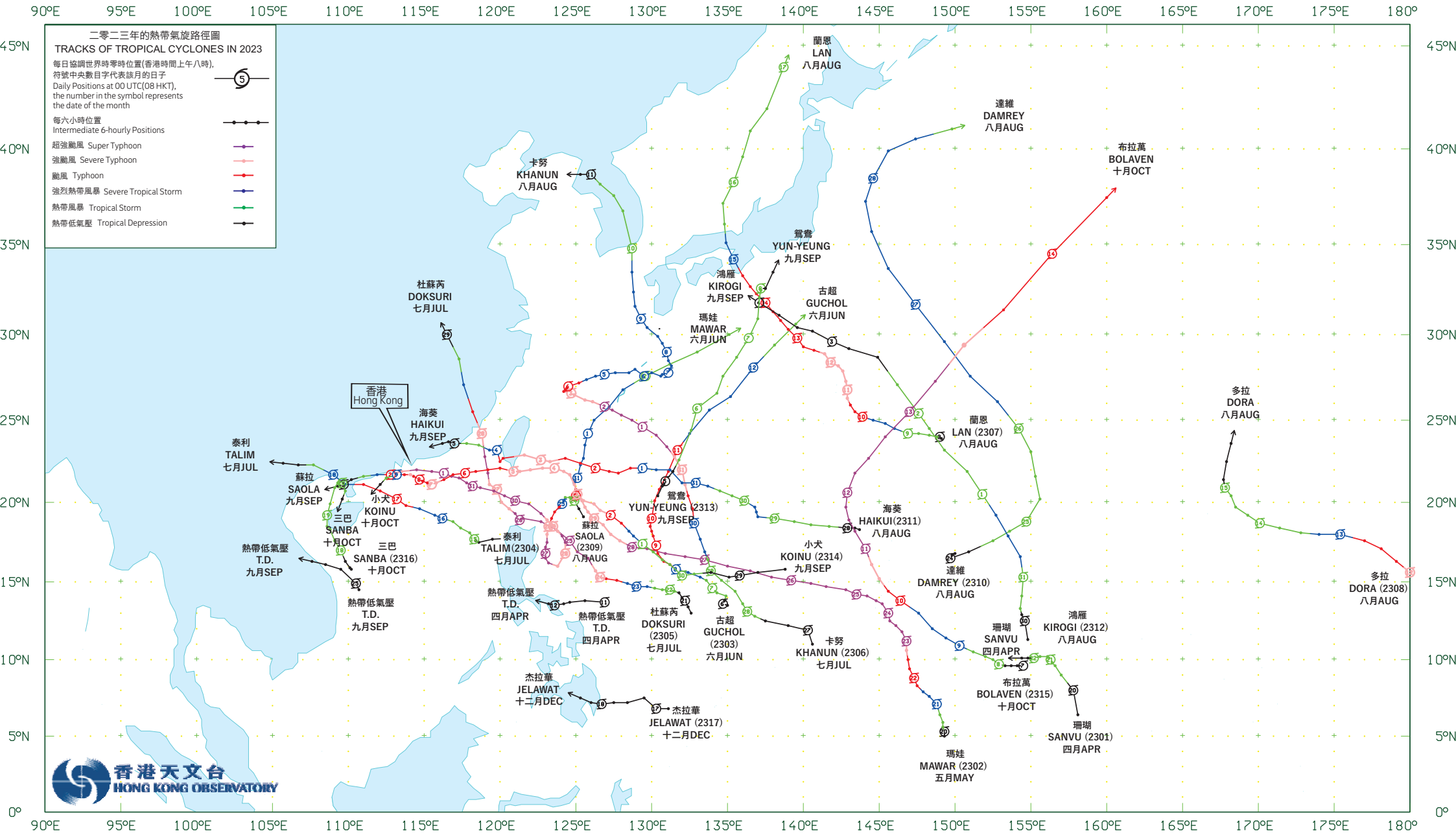
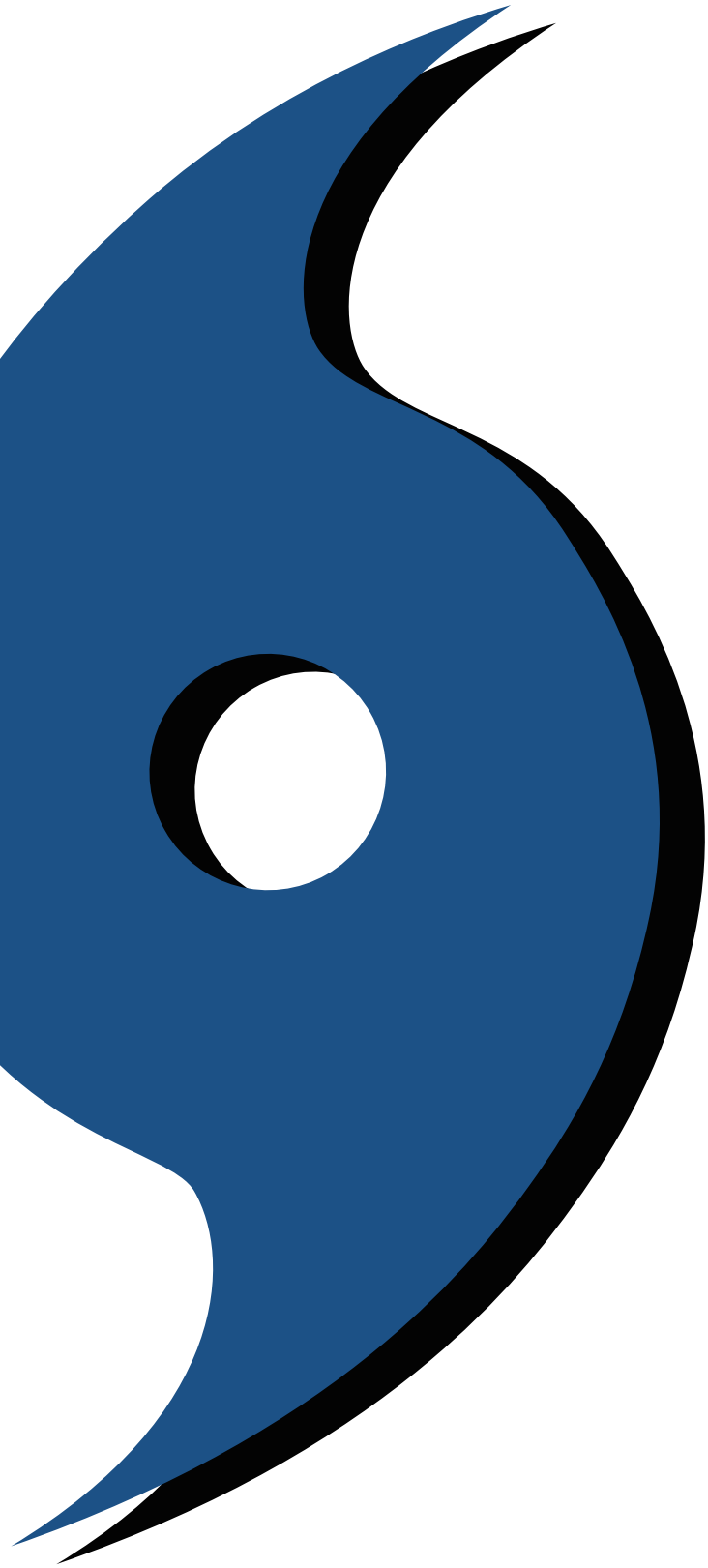

二零二三年的熱帶氣旋路徑圖
TRACKS OF TROPICAL CYCLONES IN 2023
每日協調世界時零時位置(香港時間上午八時),
符號中央數目字代表該月的日子
Daily Positions at 00 UTC(08 HKT),
the number in the symbol represents
the date of the month
每六小時位置
Intermediate 6-hourly Positions
超強颱風 Super Typhoon
強颱風 Severe Typhoon
颱風 Typhoon
強烈熱帶風暴 Severe Tropical Storm
熱帶風暴 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°
香港
Hong Kong
蘭恩
LAN
八月AUG
達維
DAMREY
八月AUG
布拉萬
BOLAVEN
十月OCT
卡努
KHANUN
八月AUG
鴛鴦
YUN-YEUNG
九月SEP
鴻雁
KIROGI
九月SEP
古超
GUCHOL
六月JUN
瑪娃
MAWAR
六月JUN
杜蘇芮
DOKSURI
七月JUL
海葵
HAIKUI
九月SEP
泰利
TALIM
七月JUL
蘇拉
SAOLA
九月SEP
小犬
KOINU
十月OCT
三巴
SANBA
十月OCT
熱帶低氣壓
T.D.
九月SEP
多拉
DORA
八月AUG
蘭恩
LAN (2307)
八月AUG
鴛鴦
YUN-YEUNG (2313)
九月SEP
海葵
HAIKUI(2311)
八月AUG
小犬
KOINU (2314)
九月SEP
達維
DAMREY (2310)
八月AUG
三巴
SANBA (2316)
十月OCT
泰利
TALIM(2304)
七月JUL
蘇拉
SAOLA
(2309)
八月AUG
熱帶低氣壓
T.D.
四月APR
杜蘇芮
DOKSURI
(2305)
七月JUL
古超
GUCHOL
(2303)
六月JUN
卡努
KHANUN (2306)
七月JUL
珊瑚
SANVU
四月APR
鴻雁
KIROGI (2312)
八月AUG
布拉萬
BOLAVEN (2315)
十月OCT
珊瑚
SANVU (2301)
四月APR
多拉
DORA (2308)
八月AUG
杰拉華
JELAWAT
十二月DEC
杰拉華
JELAWAT (2317)
十二月DEC
瑪娃
MAWAR (2302)
五月MAY
香港天文台
HONG KONG OBSERVATORY

2023年熱帶氣旋



19個 熱帶氣旋
影響北太平洋西部及南海
平均: 29 - 30個

11個 達到颱風或以上強度
平均: 14 - 15個

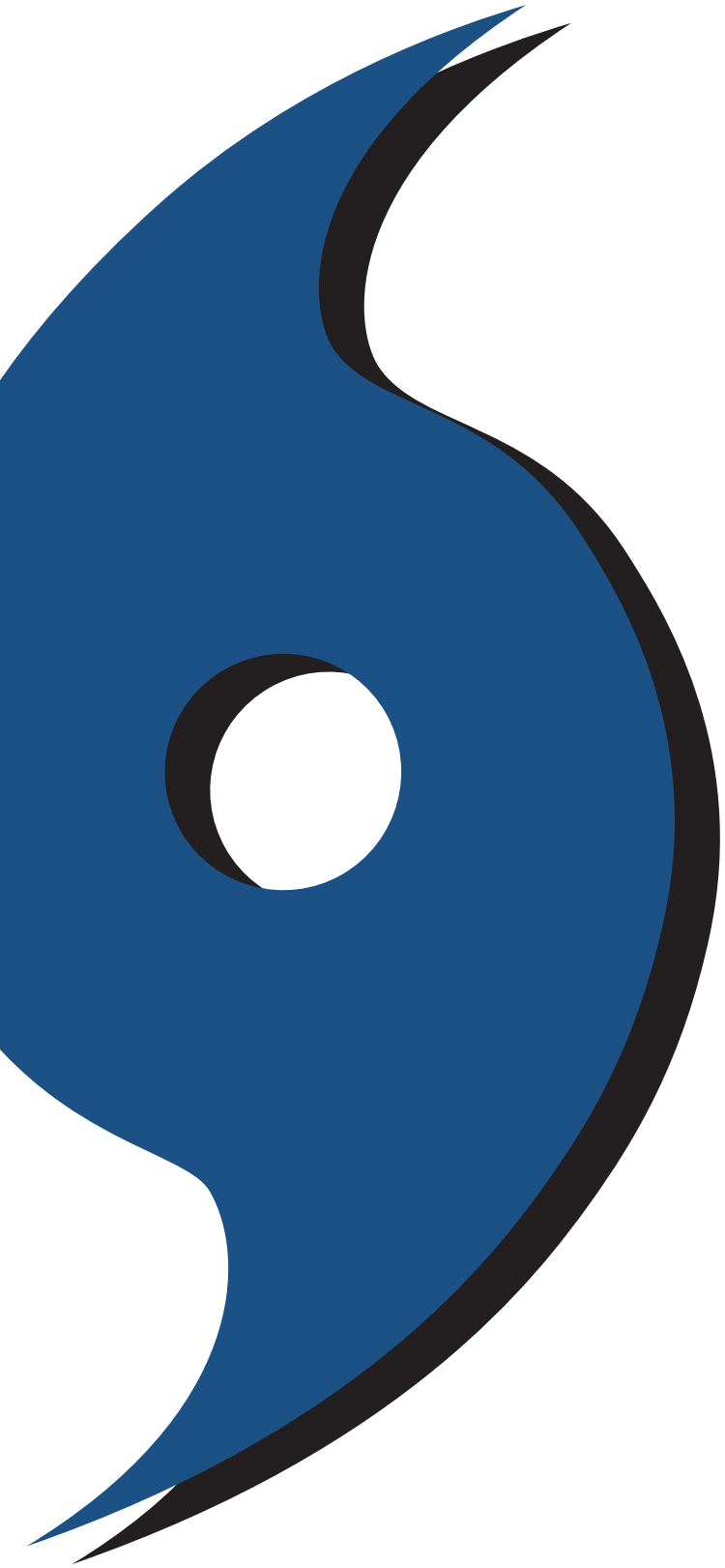
5個 熱帶氣旋影響香港
平均: 約6個

每小時
250公里
900百帕
2023 年最強熱帶氣旋
超強颱風瑪娃(2302)

1427.8毫米
2023年熱帶氣旋為香港帶來的雨量
平均: 704.2 毫米

香港天文台
HONG KONG OBSERVATORY

Tropical Cyclones 2023



19 Tropical Cyclones

affected the western North Pacific and the South China Sea
Normal: 29 - 30

11 Reached Typhoon Intensity or Above

Normal: 14 - 15

5 Tropical Cyclones Affected Hong Kong

Normal: about 6

250 km/h
900 hPa

Strongest Tropical Cyclone in 2023

Super Typhoon Mawar (2302)

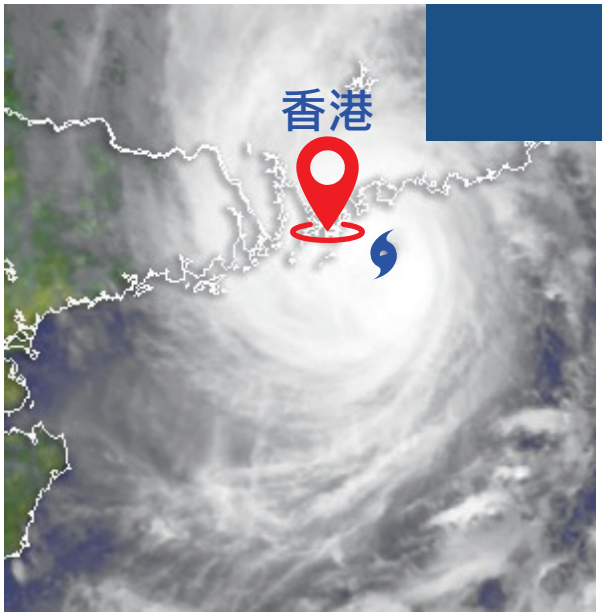
1427.8 mm

Rainfall Brought by Tropical Cyclones to HK

Normal: 704.2 mm

香港天文台
HONG KONG OBSERVATORY

2023年香港風季焦點

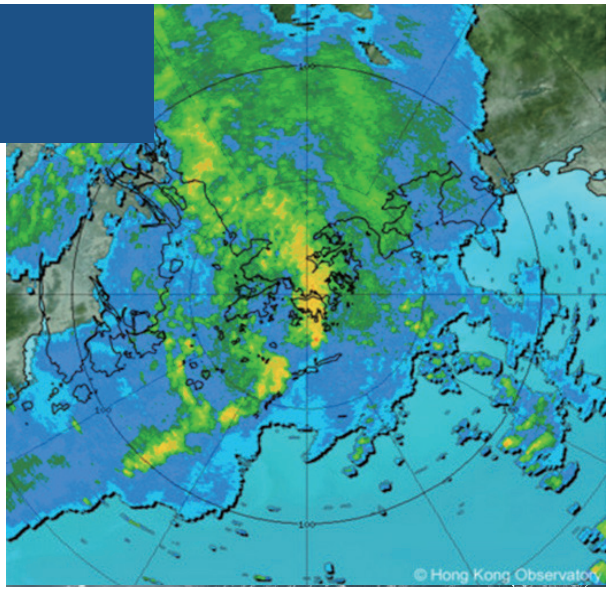


超強颱風 蘇拉

繼2018年山竹後
再次需要發出
十號信號

強颱風 海葵

自1884年為香港帶來
最多雨量的熱帶氣旋
總雨量達641.1毫米



香港天文台
HONG KONG OBSERVATORY

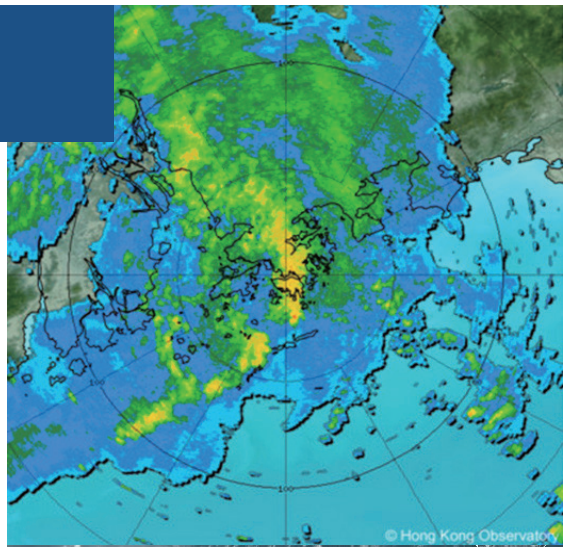
Highlights of 2023 Hong Kong Tropical Cyclone Season

SuperT Saola

No. 10 Signal was issued again since Mangkhut in 2018

ST Haikui

The wettest tropical cyclone to affect HK since 1884, with a total rainfall of 641.1 mm

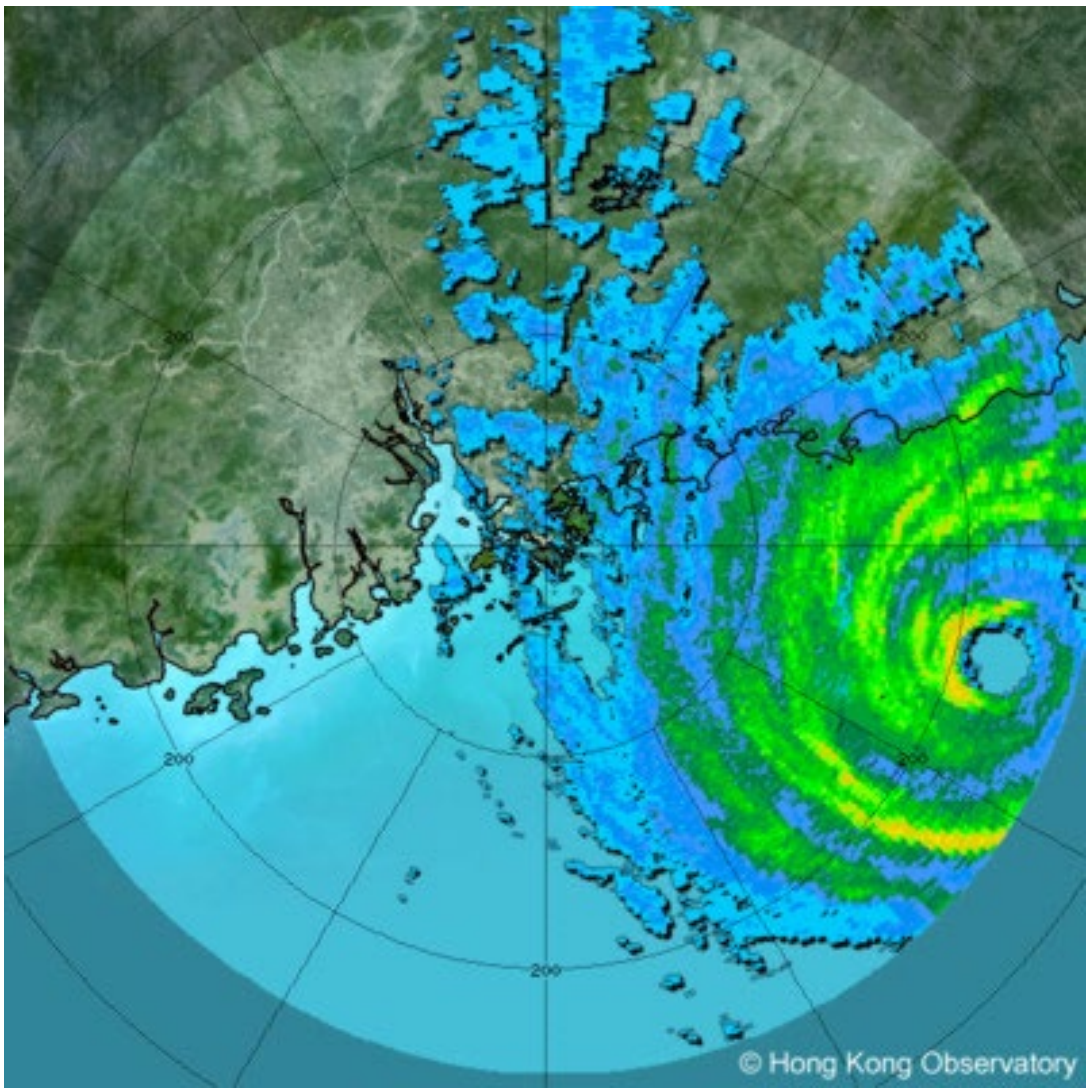


香港天文台
HONG KONG OBSERVATORY

香港天文台
HONG KONG OBSERVATORY

二零二三年熱帶氣旋

TROPICAL CYCLONES IN 2023



二零二四年七月出版
Published July 2024

香港天文台編製
香港九龍彌敦道134A

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

知識產權公告

本刊物的所有內容，包括但不限於所有資料、地圖、文本、圖像、圖畫、圖片、照片、影像，以及數據或其他資料的匯編(下稱「資料」)，均受知識產權保護。資料的知識產權由香港特別行政區政府(下稱「政府」)擁有，或經資料的知識產權擁有人授予政府，為本刊物預期的所有目的而處理該等資料。任何人如欲使用資料用作非商業用途，均須遵守《香港天文台刊物資料的使用條件(非商業用途)》的條款和條件(可於此網頁瀏覽：https://www.hko.gov.hk/tc/publica/non-commercialuse.htm)。此外，除非擬議用途附合《香港天文台刊物資料的使用條件(商業用途)》的條款和條件(可於此網頁瀏覽：https://www.hko.gov.hk/tc/publica/commercialuse.htm) ，並事先取得香港天文台(下稱「天文台」)代表政府所給予的書面授權，否則資料一律嚴禁用作商業用途。如有任何查詢，請以電郵(電郵地址：mailbox@hko.gov.hk)、傳真（+852 2311 9448）或郵遞方式與天文台聯絡。

Intellectual Property Rights Notice

All contents contained in this publication, including but not limited to all data, maps, text, graphics, drawings, diagrams, photographs, videos and compilation of data or other materials (the "Materials") are subject to the intellectual property rights which are either owned by the Government of the Hong Kong Special Administrative Region (the "Government") or have been licensed to the Government by the intellectual property rights' owner(s) of the Materials to deal with such Materials for all the purposes contemplated in this publication. The use of the Materials for non-commercial purposes shall comply with all terms and conditions provided in the "Conditions of the Use of Materials available in the Hong Kong Observatory Publications for Non-commercial Purposes" (which can be found at: https://www.hko.gov.hk/en/publica/non-commercialuse.htm). Besides, the use of the Materials for commercial purposes is strictly prohibited unless all terms and conditions provided in the "Conditions of the Use of Materials available in the Hong Kong Observatory Publications for Commercial Purposes" (which can be found at https://www.hko.gov.hk/en/publica/commercialuse.htm) are complied with and prior written authorisation is obtained from the Hong Kong Observatory (the "Observatory") for and on behalf of the Government. For enquiries, please contact the Observatory by email (mailbox@hko.gov.hk) or by facsimile (+852 2311 9448) or by post.

免責聲明

本刊物載列的資料由政府轄下的天文台編製，只供一般參考。政府雖已盡力確保該等資料準確，但政府(包括其僱員及代理人)對於本刊物所載資料的準確性、可用性、完整性，是否侵權、可靠性、安全性、適時性、適用性或效用，概不作出明確或暗示的保證、聲明或陳述；在中華人民共和國香港特別行政區法律許可的範圍內，對於任何因使用或不當使用或依據這些資料或不能使用這些資料所產生或與之相關的任何損失、毀壞、損害、傷害或死亡(除因政府或其僱員在受僱工作其間疏忽所引致的傷害或死亡外)，政府亦概不承擔任何法律責任(包括但不限於疏忽責任)、義務或責任。

政府保留權利，按其絕對酌情權隨時略去、刪除或編輯由其編製並載列於本刊物的一切資料，而無須給予任何理由或事先通知。使用者有責任自行評估本刊物所載的各項資料，並在根據該等資料行事之前，加以核實(例如參照原本發布的版本)和徵詢獨立意見。

Disclaimer

The information contained in this publication is compiled by the Observatory of the Government for general information only. Whilst the Government endeavours to ensure the accuracy of this general information, the Government (including its servants and agents) makes no warranty, statement or representation, express or implied, with respect to the accuracy, availability, completeness, non-infringement, reliability, security, timeliness, appropriateness or usefulness of the information, contained herein, and in so far as permitted by the laws of the Hong Kong Special Administrative Region of the People's Republic of China, shall not have any legal liability (including but not limited to liability for negligence), obligation or responsibility for any loss, destruction, damages, injury or death (save and to the extent any such injury or death is caused by the negligence of the Government of any of its employees in the course of employment) howsoever arising out of or in connection with any use or misuse of or reliance on the information or inability to use such information.

The Government reserved the right to omit, delete or edit, all information compiled by the Government in this publication at any time in its absolute discretion without giving any reason or prior notice. Users are responsible for making their own assessment of all information contained in this publication and are advised to verify such information by making reference, for example, to original publications and obtaining independent advice before acting upon it.

551.515.2:551.506.1(512.317)

封面

二零二三年九月一日上午8時24分的雷達回波圖像，當時蘇拉環流緊密，風眼清晰，並呈現雙眼壁結構。同時，與蘇拉相關的外圍雨帶正逐漸影響香港。

Cover

Image of radar echoes captured at 8:24 a.m. on 1 September 2023. Saola had a tight circulation with a clear eye and a double eyewall structure at that time. Meanwhile, the outer rainbands associated with Saola were affecting Hong Kong gradually.

目錄

CONTENTS

圖

FIGURE

page

表

TABLES

第一節　　引言

1.1　熱帶氣旋刊物的沿革

除了在一九四零至一九四六年因二次大戰而中斷外，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，年刊第二冊改稱為《無線電探空儀觀測摘要》，而第一冊亦於一九八七年改稱為《香港地面觀測年報》。一九九三年，該兩刊物由一本名為《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。由一九八五年開始，第三冊的覆蓋範圍東面邊界由東經160度伸展至180度。一九八七年，第三冊改稱為《熱帶氣旋年報》，內容大致上維持不變。年報由一九九七年起以中英雙語刊印，一年後加設電腦光碟版，二零零零年以網上版取代印刷版。

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。一九四七至一九六七年的路徑圖則載列於《氣象資料第一冊》內。在早期的刊物內，熱帶氣旋的路徑只顯示每日位置，而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。

為了能回應傳媒、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臨時報告，盡早為有需要的人士提供資料。初時，天文台只就那些曾導致天文台發出烈風或暴風信號以上的熱帶氣旋編寫臨時報告。自一九六八年起，天文台為所有引致天文台發出熱帶氣旋警告信號的熱帶氣旋編寫臨時報告。

1.2 熱帶氣旋等級

為了讓市民對較強的颱風特別提高警覺，天文台在二零零九年開始將「颱風」分為三級，即「颱風」、「強颱風」和「超強颱風」。根據熱帶氣旋中心附近的最高持續地面風速，熱帶氣旋共分為以下六個級別：

(i) 熱帶低氣壓（T.D.）的最高持續風速為每小時62公里或以下。
(ii) 熱帶風暴（T.S.）的最高持續風速為每小時63至87公里。
(iii) 強烈熱帶風暴（S.T.S.）的最高持續風速為每小時88至117公里。
(iv) 颱風#（T.）的最高持續風速為每小時118至149公里。
(v) 強颱風*（S.T.）的最高持續風速為每小時150至184公里。
(vi) 超強颱風*（SuperT.）的最高持續風速為每小時185公里或以上。

1.3 熱帶氣旋命名

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。由二零零零年開始，日本氣象廳根據一套新名單為每個達到熱帶風暴強度的熱帶氣旋命名。這套名單（表1.1）經颱風委員會通過，共有140個名字，分別由亞太區內14個國家或地區提供。這些名字除了用於為國際航空及航海界發放的預測和警報外，也是向國際傳媒發放熱帶氣旋消息時採用的規範名稱。而名單會每年檢討和更新，通常導致嚴重傷亡的熱帶氣旋會依照受影響國家或地區的要求而被刪除。提供該名字的國家或地區會建議新名字取代。

另外，日本氣象廳在一九八一年起已獲委託為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"2301"代表在二零二三年區內第一個被日本氣象廳分類為熱帶風暴或更強的熱帶氣旋。在年報內，此編號會顯示在熱帶氣旋名稱後的括弧內，例如熱帶風暴珊瑚（2301）。

二零零九年以前颱風的最高持續風速為每小時118公里或以上。

* 二零零九年新增等級。

1.4 資料來源

年報內的海平面氣壓及地面風資料，是根據天文台氣象站及測風站網絡所錄得的數據。表1.2及1.3分別是該些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。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。

年報內的雨量資料來自天文台氣象站和雨量站網絡及土力工程處的雨量站。

除特別列明外，年報內提及的最高持續風速均為10分鐘內風速的平均值；每小時平均風速為該小時前60分鐘內的平均風速；每日雨量為當天香港時間午夜前24小時內的總雨量。

1.5 年報內容

年報第二節是二零二三年所有影響北太平洋西部及南海區域的熱帶氣旋的概述。

年報第三節是二零二三年影響香港的熱帶氣旋的個別詳細報告，內容包括：

(i) 該熱帶氣旋對香港造成的影響；
(ii) 發出熱帶氣旋警告信號的過程；
(iii) 香港各地錄得的最高陣風風速及最高每小時平均風速；
(iv) 香港天文台錄得的最低平均海平面氣壓；
(v) 香港天文台及其他地方錄得的每日總雨量；
(vi) 香港各潮汐測量站錄得的最高潮位及最大風暴潮；及
(vii) 氣象衛星雲圖及雷達圖像。

有關熱帶氣旋的各種資料及統計表載於年報第四節內。

二零二三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，則表列於年報第五節內。

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）為準。至於在熱帶氣旋的敍述中，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。香港時間為協調世界時加八小時。

1.6 香港的熱帶氣旋警告系統

表1.4是香港熱帶氣旋警告信號的定義。

由二零零七年開始，發出3號和8號信號的參考範圍由維多利亞港擴展至由八個涵蓋全港並接近海平面的參考測風站組成的網絡(圖1.1顯示二零二三年所採用的八個參考測風站)。這些測風站處於較為空曠的位置，地理上的考慮也包括山脈地勢的自然分隔，可概括地反映全港的風勢。

當參考網絡中半數或以上的測風站錄得或預料持續風速達到指標的風速限值，而且風勢可能持續時，天文台會考慮發出3號或8號信號。

Section 1 INTRODUCTION

1.1 Evolution of tropical cyclone publications

Apart from a disruption due to World War II 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 "Surface Observations in Hong Kong" and "Summary of Radiosonde-Radiowind Ascents" in 1987 and 1981 respectively. In 1993, both publications were merged into one revised publication entitled "Summary of Meteorological Observations in Hong Kong", including surface as well as upper-air data.

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 to provide information on tropical cyclones over the western North Pacific and the South China Sea. The first issue, published in 1971, contained reports on tropical cyclones in 1968 within the area bounded by the Equator, 45°N, 100°E and 160°E. 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 YYYY" but its contents remained largely the same. Starting from 1997, the series was published in both Chinese and English. The CD-ROM version of the publication first appeared in 1998 and the printed version was replaced by the Internet version in 2000.

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. In earlier publications, only daily positions were plotted on the tracks and the time of the daily positions varied to some extent, but then remained fixed at 0000 UTC after 1944. Details of the changes 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 were prepared since 1960 to provide early information to meet the needs of the press, shipping companies and others. These reports were printed and supplied on request. Initially, provisional reports were only available for tropical cyclones for which gale or storm signals or above had been issued in Hong Kong. From 1968 onwards, provisional reports were prepared for all tropical cyclones that necessitated the issuance of tropical cyclone warning signals.

1.2 Classification of tropical cyclones

To enhance public awareness of stronger typhoons, the Observatory further categorised 'Typhoon' into 'Typhoon', 'Severe Typhoon' and 'Super Typhoon' starting from the 2009 tropical cyclone season. Tropical cyclones are now classified into the following six categories according to the maximum sustained surface winds near their centres:

(a) A TROPICAL DEPRESSION (T.D.) has maximum sustained winds of 62 km/h or below.
(b) A TROPICAL STORM (T.S.) has maximum sustained winds in the range 63-87 km/h.
(c) A SEVERE TROPICAL STORM (S.T.S.) has maximum sustained winds in the range 88-117 km/h.
(d) A TYPHOON# (T.) has maximum sustained winds of 118-149 km/h.
(e) A SEVERE TYPHOON* (S.T.) has maximum sustained winds of 150-184 km/h.
(f) A SUPER TYPHOON* (SuperT.) has maximum sustained winds of 185 km/h or more.

1.3 Naming of tropical cyclones

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. With effect from 2000, the Japan Meteorological Agency has been assigned the responsibility to name tropical cyclones attaining tropical storm intensity according to a new list adopted by the Typhoon Committee. It contains a total of 140 names contributed by 14 countries or territories within the Asia Pacific region (Table 1.1). Apart from being used in forecasts and warnings issued to the international aviation and shipping communities, the names are also used officially in information on tropical cyclones issued to the international press. The list is reviewed every year, and usually names of tropical cyclones that have caused serious damage or casualty will be retired upon the requests of countries or territories affected. Countries or territories providing those names will then propose new names as replacement.

Besides, since 1981, Japan Meteorological Agency has been delegated with the responsibility of assigning to each tropical cyclone in the western North Pacific and the South China Sea attaining tropical storm intensity a numerical code of four digits. For example, the first tropical cyclone of tropical storm intensity or above, as classified by Japan Meteorological Agency, within the region in 2023 was assigned the code "2301". In this report, the associated code immediately follows the name of the tropical cyclone in bracket, e.g. Tropical Storm Sanvu (2301).

Prior to 2009, the maximum sustained winds of typhoon was defined to be 118 km/h or more.

* New categories adopted since 2009.

1.4 Data sources

Mean sea level pressure and surface wind data presented in this report were obtained from a network of meteorological stations and anemometers operated by the Hong Kong Observatory. Details of such stations are listed in Tables 1.2 and 1.3.

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.

Rainfall data presented in this report were obtained from a network of meteorological and rainfall stations operated by the Hong Kong Observatory, as well as raingauges operated by the Geotechnical Engineering Office.

Throughout this report, maximum sustained surface winds when used without qualification refer to wind speeds averaged over a period of 10 minutes. Hourly mean 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.

1.5 Content

In Section 2, an overview of all the tropical cyclones over the western North Pacific and the South China Sea in 2023 is presented.

The reports in Section 3 are individual accounts of the life history of tropical cyclones affecting Hong Kong in 2023. 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 mean 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 and radar imageries.

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 in 2023 are tabulated in Section 5.

In this report, different time references are used depending on the 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.

1.6 Hong Kong's Tropical Cyclone Warning System

Table 1.4 shows the meaning of tropical cyclone warning signals in Hong Kong.

Starting from 2007, the reference for the issuance of No.3 and No.8 signals has been expanded from the Victoria Harbour to a network of eight near-sea level reference anemometers covering the whole of Hong Kong. The eight reference anemometers adopted in 2023 are depicted in Figure 1.1. The reference anemometers have good exposure and geographical distribution, taking into account the physical separation created by Hong Kong's natural terrain. Together, they are used to represent the overall wind condition in Hong Kong.

The Observatory will consider issuing the No. 3 or No. 8 signal, as the case may be, when half or more anemometers in the reference network register or are expected to register sustained strong winds or gale/storm force winds, and that the windy conditions are expected to persist.

表 1.1　　二零二二年起生效的熱帶氣旋名單

TABLE 1.1　　Tropical cyclone name list effective from 2022

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	翠絲 Trases
中國	China	海葵 Haikui	銀杏 Yinxing	風神 Fengshen	杜鵑 Dujuan	木蘭 Mulan
朝鮮	DPR Korea	鴻雁 Kirogi	桃芝 Toraji	海鷗 Kalmaegi	舒力基 Surigae	米雷 Meari
中國香港	Hong Kong, China	鴛鴦 Yun-yeung	萬宜 Man-yi	鳳凰 Fung-wong	彩雲 Choi-wan	馬鞍 Ma-on
日本	Japan	小犬 Koinu	天兔 Usagi	天琴 Koto	小熊 Koguma	蝎虎 Tokage
老撾	Lao PDR	布拉萬 Bolaven	帕布 Pabuk	洛鞍 Nokaen	薔琵 Champi	軒嵐諾 Hinnamnor
中國澳門	Macau, China	三巴 Sanba	蝴蝶 Wutip	西望洋 Penha	煙花 In-fa	梅花 Muifa
馬來西亞	Malaysia	杰拉華 Jelawat	聖帕 Sepat	鸚鵡 Nuri	查帕卡 Cempaka	苗柏 Merbok
米克羅尼西亞	Micronesia	艾雲尼 Ewiniar	木恩 Mun	森拉克 Sinlaku	尼伯特 Nepartak	南瑪都 Nanmadol
菲律賓	Philippines	馬力斯 Maliksi	丹娜絲 Danas	黑格比 Hagupit	盧碧 Lupit	塔拉斯 Talas
韓國	RO Korea	格美 Gaemi	百合 Nari	薔薇 Jangmi	銀河 Mirinae	奧鹿 Noru
泰國	Thailand	派比安 Prapiroon	韋帕 Wipha	米克拉 Mekkhala	妮妲 Nida	玫瑰 Kulap
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	山神 Son-Tinh	竹節草 Co-may	巴威 Bavi	康森 Conson	桑卡 Sonca
柬埔寨	Cambodia	安比 Ampil	羅莎 Krosa	美莎克 Maysak	燦都 Chanthu	納沙 Nesat
中國	China	悟空 Wukong	白鹿 Bailu	海神 Haishen	電母 Dianmu	海棠 Haitang
朝鮮	DPR Korea	雲雀 Jongdari	楊柳 Podul	紅霞 Noul	蒲公英 Mindulle	尼格 Nalgae
中國香港	Hong Kong, China	珊珊 Shanshan	玲玲 Lingling	白海豚 Dolphin	獅子山 Lionrock	榕樹 Banyan
日本	Japan	摩羯 Yagi	劍魚 Kajiki	鯨魚 Kujira	圓規 Kompasu	山貓 Yamaneko
老撾	Lao PDR	麗琵 Leepi	藍湖 Nongfa	燦鴻 Chan-hom	南川 Namtheun	帕卡 Pakhar

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	琵琶 Peipah	琵鷺 Peilou	瑪瑙 Malou	珊瑚 Sanvu
馬來西亞	Malaysia	普拉桑 Pulasan	塔巴 Tapah	浪卡 Nangka	妮亞圖 Nyatoh	瑪娃 Mawar
米克羅尼西亞	Micronesia	蘇力 Soulik	米娜 Mitag	沙德爾 Saudel	雷伊 Rai	古超 Guchol
菲律賓	Philippines	西馬侖 Cimaron	樺加沙 Ragasa	紫檀 Narra	馬勒卡 Malakas	泰利 Talim
韓國	RO Korea	飛燕 Jebi	浣熊 Neoguri	簡拉維 Gaenari	鮎魚 Megi	杜蘇芮 Doksuri
泰國	Thailand	山陀兒 Krathon	博羅依 Bualoi	艾莎尼 Atsani	暹芭 Chaba	卡努 Khanun
美國	U.S.A.	百里嘉 Barijat	麥德姆 Matmo	艾濤 Etau	艾利 Aere	蘭恩 Lan
越南	Viet Nam	潭美 Trami	夏浪 Halong	班朗 Bang-lang	桑達 Songda	蘇拉 Saola

註： 在二零二三年，西北太平洋和南海的熱帶氣旋名單沒有新增名字。

Note: In 2023, no new names have been introduced to the list of tropical cyclone names in the western North Pacific and the South China Sea.

表 1.2 年報內各氣壓表的海拔高度及所處氣象站的位置

TABLE 1.2 Elevations of various barometers and positions of weather stations mentioned in this annual report

站 Station		位置 Position		氣壓表的海拔高度(米)
		北緯 Latitude N	東經 Longitude E	Elevation of barometer above M.S.L. (m)
香港天文台總部	Hong Kong Observatory Headquarters	22°18′07″	114°10′27″	40
長洲	Cheung Chau	22°12′04″	114°01′36″	79
香港國際機場	Hong Kong International Airport	22°18′34″	113°55′19″	7
京士柏	King's Park	22°18′43″	114°10′22″	66
流浮山	Lau Fau Shan	22°28′08″	113°59′01″	36
橫瀾島	Waglan Island	22°10′56″	114°18′12″	60

表 1.3　年報內各風速表的海拔高度及所處氣象站的位置

TABLE 1.3　Elevations of various anemometers and positions of the weather stations mentioned in this annual 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	
黃麻角(赤柱)	Bluff Head (Stanley)	22°11′51″	114°12′43″	103
中環碼頭	Central Pier	22°17′20″	114°09′21″	30
長洲*	Cheung Chau*	22°12′04″	114°01′36″	99
長洲泳灘	Cheung Chau Beach	22°12′39″	114°01′45″	27
青洲	Green Island	22°17′06″	114°06′46″	107
香港國際機場*	Hong Kong International Airport*	22°18′34″	113°55′19″	14#%
啟德*	Kai Tak*	22°18′35″	114°12′48″	16
京士柏	King's Park	22°18′43″	114°10′22″	90
南丫島	Lamma Island	22°13′34″	114°06′31″	17
流浮山*	Lau Fau Shan*	22°28′08″	113°59′01″	50
昂坪	Ngong Ping	22°15′31″	113°54′46″	607
北角	North Point	22°17′40″	114°11′59″	26
坪洲	Peng Chau	22°17′28″	114°02′36″	47
平洲	Ping Chau	22°32′48″	114°25′42″	39
西貢*	Sai Kung*	22°22′32″	114°16′28″	32
沙洲	Sha Chau	22°20′45″	113°53′28″	31
沙螺灣	Sha Lo Wan	22°17′28″	113°54′25″	71
沙田*	Sha Tin*	22°24′09″	114°12′36″	16
石崗	Shek Kong	22°26′10″	114°05′05″	26
九龍天星碼頭	Star Ferry (Kowloon)	22°17′35″	114°10′07″	18
打鼓嶺*	Ta Kwu Ling*	22°31′43″	114°09′24″	28
大美督	Tai Mei Tuk	22°28′31″	114°14′15″	71
大帽山	Tai Mo Shan	22°24′38″	114°07′28″	966
大埔滘	Tai Po Kau	22°26′33″	114°11′03″	11
塔門東	Tap Mun East	22°28′06″	114°21′47″	48
大老山	Tate's Cairn	22°21′28″	114°13′04″	587
將軍澳	Tseung Kwan O	22°18′57″	114°15′20″	52
青衣島蜆殼油庫*	Tsing Yi Shell Oil Depot*	22°20′48″	114°05′11″	43
屯門政府合署	Tuen Mun Government Offices	22°23′26″	113°58′36″	69
橫瀾島	Waglan Island	22°10′56″	114°18′12″	83
濕地公園	Wetland Park	22°28′00″	114°00′32″	15
黃竹坑	Wong Chuk Hang	22°14′52″	114°10′25″	30

%由二零二一年十二月二日開始，原有的北跑道重新編配為中跑道。

% The former "North Runway" has been re-designated as the "Centre Runway" since 2 December 2021.

所指風速表在中跑道(原北跑道)近中間位置。

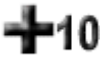
Refer to the wind sensor at the middle of the Centre Runway (the former North Runway).

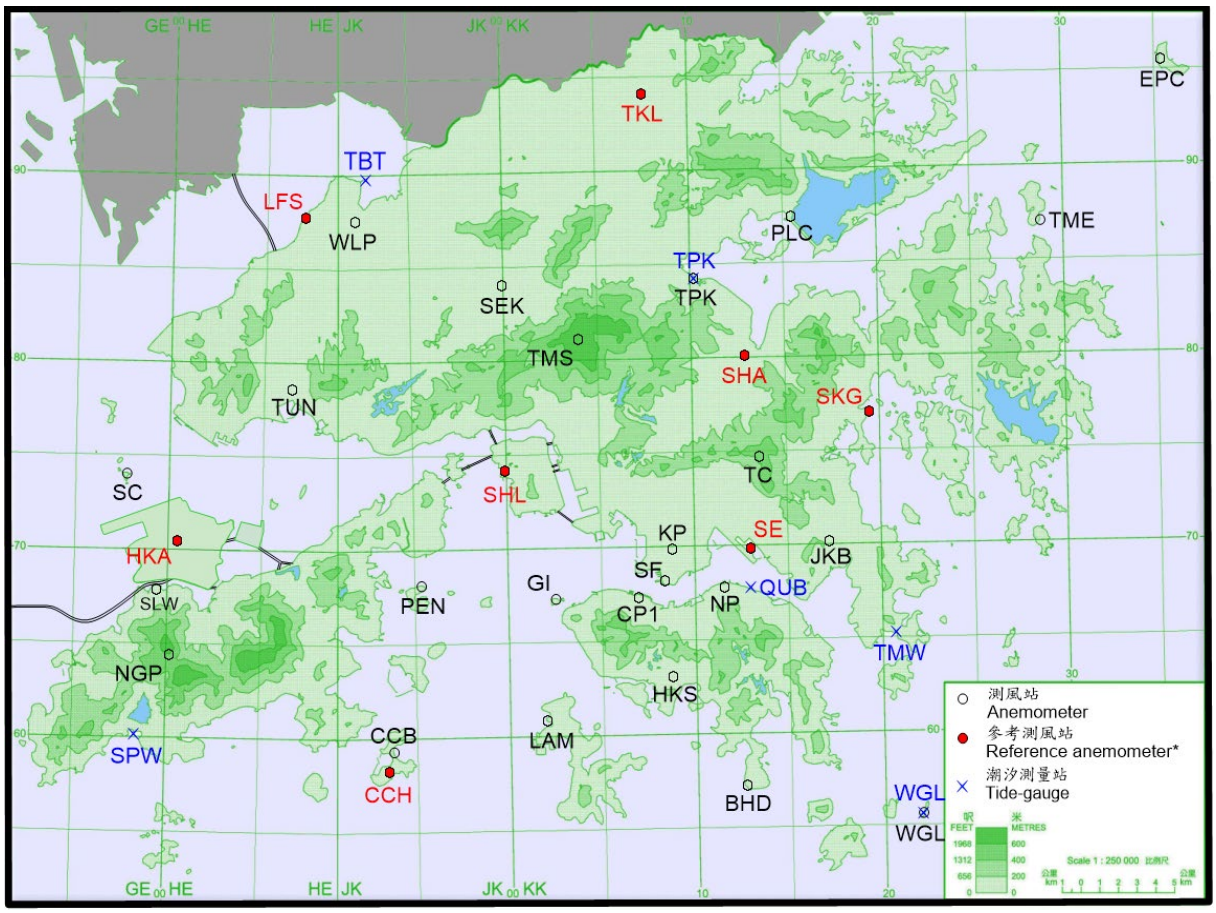
* 參考測風站

* Reference anemometer

表 1.4　　二零二三年香港熱帶氣旋警告信號的意義

TABLE 1.4　Meaning of tropical cyclone warning signals in Hong Kong in 2023

信號 Signals		顯示符號 Symbol Display	信號的意義 Meaning of Signals
戒備 Standby	1		有一熱帶氣旋集結於香港約800公里的範圍內，可能影響本港。 A tropical cyclone is centred within about 800 kilometres (km) of Hong Kong and may affect the territory.
強風 Strong Wind	3		香港近海平面處現正或預料會普遍吹強風，持續風力達每小時41至62公里，陣風更可能超過每小時110公里，且風勢可能持續。 Strong wind is blowing or expected to blow generally in Hong Kong near sea level, with a sustained speed of 41-62 kilometres per hour (km/h), and gusts which may exceed 110 km/h, and the wind condition is expected to persist.
西北 烈風或暴風 NW'LY Gale or Storm	8 西北 NW		香港近海平面處現正或預料會普遍受烈風或暴風從信號所示方向吹襲，持續風力達每小時 63 至 117 公里，陣風更可能超過每小時 180 公里，且風勢可能持續。 Gale or storm force wind is blowing or expected to blow generally in Hong Kong near sea level, with a sustained wind speed of 63-117 km/h from the quarter indicated and gusts which may exceed 180 km/h, and the wind condition is expected to persist.
西南 烈風或暴風 SW'LY Gale or Storm	8 西南 SW		
東北 烈風或暴風 NE'LY Gale or Storm	8 東北 NE		
東南 烈風或暴風 SE'LY Gale or Storm	8 東南 SE		
烈風或暴風風力增強 Increasing Gale or Storm	9		烈風或暴風的風力現正或預料會顯著加強。 Gale or storm force wind is increasing or expected to increase significantly in strength.
颶風 Hurricane	10		風力現正或預料會達到颶風程度，持續風力達每小時118公里或以上，陣風更可能超過每小時220公里。 Hurricane force wind is blowing or expected to blow with sustained speed reaching 118 km/h or above and gusts that may exceed 220 km/h.



* 熱帶氣旋警告系統的參考測風站網絡

*Network of reference anemometers in the tropical cyclone warning system

測風站 Anemometers		測風站 Anemometers	
BHD	黃麻角(赤柱) Bluff Head (Stanley)	TMS	大帽山 Tai Mo Shan
CCB	長洲泳灘 Cheung Chau Beach	TUN	屯門政府合署 Tuen Mun Government Offices
CP1	中環碼頭 Central Pier	WLP	濕地公園 Wetland Park
EPC	平洲 Ping Chau	WGL	橫瀾島 Waglan Island
GI	青洲 Green Island	**參考測風站* Reference anemometers***	
HKS	黃竹坑 Wong Chuk Hang	CCH	長洲 Cheung Chau
JKB	將軍澳 Tseung Kwan O	LFS	流浮山 Lau Fau Shan
KP	京士柏 King's Park	HKA	香港國際機場 Hong Kong International Airport
LAM	南丫島 Lamma Island	SE	啟德 Kai Tak
NGP	昂坪 Ngong Ping	SHA	沙田 Sha Tin
NP	北角 North Point	SHL	青衣島蜆殼油庫 Tsing Yi Shell Oil Depot
PEN	坪洲 Peng Chau	SKG	西貢 Sai Kung
PLC	大美督 Tai Mei Tuk	TKL	打鼓嶺 Ta Kwu Ling
SC	沙洲 Sha Chau	**潮汐測量站 Tide-gauge**	
SEK	石崗 Shek Kong	QUB	鰂魚涌 Quarry Bay
SF	九龍天星碼頭 Star Ferry (Kowloon)	SPW	石壁 Shek Pik
SLW	沙螺灣 Sha Lo Wan	TBT	尖鼻咀 Tsim Bei Tsui
TME	塔門東 Tap Mun East	TMW	大廟灣 Tai Miu Wan
TC	大老山 Tate's Cairn	TPK	大埔滘 Tai Po Kau
TPK	大埔滘 Tai Po Kau	WGL	橫瀾島 Waglan Island

圖1.1 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 annual report

第二節　　二零二三年熱帶氣旋概述

2.1　二零二三年的熱帶氣旋回顧

2.1.1　北太平洋西部(包括南海區域)的熱帶氣旋

二零二三年有19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），遠少於1961-2020年約30個的長期年平均數目。全年有11個熱帶氣旋達到颱風或以上強度，少於1961-2020年約15個的長期年平均數目，其中有五個熱帶氣旋更達到超強颱風程度(中心附近最高持續風速達到每小時185公里或以上)。

圖2.1是二零二三年在北太平洋西部及南海區域熱帶氣旋數目之逐月分佈。

二零二三年內有六個熱帶氣旋在中國登陸，其中一個在香港300公里內的華南沿岸登陸，兩個橫過台灣。兩個登陸菲律賓及一個登陸越南。五月至六月的超強颱風瑪娃(2302)（圖2.3）是二零二三年北太平洋西部及南海區域最強的熱帶氣旋，其中心附近最高持續風速估計為每小時250公里，而最低海平面氣壓為900百帕斯卡（表4.1）。

2.1.2　香港責任範圍內的熱帶氣旋

在二零二三年的19個熱帶氣旋中，有10個出現在香港責任範圍（即北緯10至30度、東經105至125度），少於 1961-2020年約16個的長期年平均數目（表2.1），當中有三個在香港責任範圍內形成。年內，香港天文台總共發出314個供船舶使用的熱帶氣旋警告(表4.2）。

2.1.3　南海區域內的熱帶氣旋

二零二三年共有七個熱帶氣旋影響南海區域（即北緯10至25度、東經105至120度），少於1961-2020年約12個的長期年平均數目，當中有兩個在該區域形成。

2.1.4　影響香港的熱帶氣旋

二零二三年香港的颱風季節始於七月十五日，隨著熱帶低氣壓泰利(2304)於當天早上移向南海北部，天文台發出一號戒備信號。十月九日下午熱帶低氣壓小犬(2314) 進一步遠離本港及減弱，二零二三年颱風季節隨著天文台當天取消所有熱帶氣旋警告信號而結束。

年內共有五個熱帶氣旋影響香港（圖2.2），略少於1961-2020年約六個的長期年平均數目(表2.2)。這五個熱帶氣旋分別為七月的颱風泰利(2304) 及超強颱風杜蘇芮(2305)、八月至九月的超強颱風蘇拉(2309) 及強颱風海葵(2311)、九月至十月的強颱風小犬(2314)。在蘇拉影響香港期間，天文台在九月一日發出十號颶風信號，是年內發出的最高熱帶氣旋警告信號，也是繼二零一八年山竹後再次發出最高級別的熱帶氣旋警告信號。在小犬及泰利影響本港期間，天文台分別發出九號烈風或暴風風力增強信號及八號烈風或暴風信號。而杜蘇芮及海葵引致天文台發出一號戒備信號。

2.1.5 熱帶氣旋的雨量

二零二三年熱帶氣旋為香港帶來的雨量 (即由熱帶氣旋出現於香港600公里範圍內至其消散或離開香港600公里範圍之後72小時期間天文台總部錄得的雨量) 共為1427.8毫米（表4.8.1），約佔年內總雨量2774.5毫米的百分之51.5，是1961-2020年長期年平均值704.2毫米的兩倍以上。

根據上述的定義，強颱風海葵(2311)為香港帶來的雨量為641.1毫米(表4.8.1)，是年內雨量最多的熱帶氣旋，打破了一九九九年颱風森姆的616.5毫米的紀錄，成為自一八八四年有記錄以來為香港帶來最多雨量的熱帶氣旋。

2.2 每月概述

這一節逐月介紹二零二三年北太平洋西部及南海區域的熱帶氣旋概況。影響香港的各熱帶氣旋及傷亡報告則詳述於第三節。

一月至三月

二零二三年一月至三月並無熱帶氣旋在北太平洋西部及南海區域上形成。

四月

一個熱帶低氣壓於四月十一日早上在馬尼拉以東約650公里的北太平洋西部上形成，中心附近最高持續風速估計為每小時45公里。該熱帶低氣壓大致向西移動，翌日在菲律賓中部減弱為低壓區。

熱帶低氣壓珊瑚(2301)於四月二十日凌晨在關島之東南偏東約1 660公里的北太平洋西部上形成，大致向西北方向移動並逐漸增強。珊瑚於當日下午增強為熱帶風暴，並於翌日早上達到其最高強度，中心附近最高持續風速估計為每小時75公里。隨後珊瑚轉向偏西方向移動並減弱，最後於四月二十二日在北太平洋西部上消散。

五月至六月

熱帶低氣壓瑪娃(2302)於五月二十日凌晨在關島之東南偏南約1 070公里的北太平洋西部上形成，向西北偏北方向移動並逐漸增強。瑪娃於五月二十三日早上增強為超強颱風，翌日掠過關島後轉向西北偏西移向呂宋以東海域。五月二十六日凌晨瑪娃達到其最高強度，中心附近最高持續風速估計為每小時250公里。隨後瑪娃逐漸減弱，並於五月二十八日減弱為強颱風，隨後五日逐漸轉向東北方向橫過琉球群島一帶並持續減弱。最後瑪娃於六月三日在日本以南的北太平洋西部上演變為溫帶氣旋。

根據報章報導，瑪娃為關島帶來狂風暴雨，並造成嚴重破壞，島上大部份地方停電。當地錄得七十二小時雨量714毫米。

熱帶低氣壓古超(2303)於六月六日凌晨在雅蒲島之西北約560公里的北太平洋西部上形成，大致向西北方向移動並逐漸增強。古超於六月八日下午增強為颱風，並於六月十日凌晨達到其最高強度，中心附近最高持續風速估計為每小時145公里。隨後轉向東北方向移動，並逐漸減弱。最後古超於六月十二日在日本以南的北太平洋西部上演變為溫帶氣旋。

七月至十月

熱帶低氣壓泰利(2304)於七月十四日上午在東沙之東南約490公里的南海中部上形成，初時向偏西方向移動，並逐漸增強。翌日泰利增強為熱帶風暴並進入南海北部，當晚泰利轉向西北偏西方向移動並持續移向廣東西部沿岸。七月十六日晚上泰利進一步增強為颱風，並於七月十七日上午達到其最高強度，中心附近最高持續風速估計為每小時140公里，當晚泰利在廣東湛江附近登陸，翌日早上橫過雷州半島及北部灣。七月十八日泰利移入廣西內陸，並於翌日早上在越南北部減弱為低壓區。

根據報章報導，泰利吹襲澳門期間，有兩人受傷，另有32宗事故報告，當中包括五宗樹木倒塌及一宗棚架倒塌。此外，泰利亦為廣東、廣西及海南多地帶來狂風暴雨，造成超過91萬人受災，經濟損失超過26億元人民幣。

熱帶低氣壓杜蘇芮(2305)於七月二十日晚上在馬尼拉以東約1 270公里的北太平洋西部上形成，向西北偏北移動，並逐漸增強。七月二十三日晚上杜蘇芮增強為颱風，並採取西北路徑。翌日晚上杜蘇芮進一步發展為超強颱風，並於七月二十五日早上達到其最高強度，中心附近最高持續風速估計為每小時210公里。當晚及翌日早上杜蘇芮橫過呂宋海峽，並轉向西北偏北移動。杜蘇芮橫過南海東北部期間，曾於七月二十六日晚上減弱為強颱風，但翌日晚上再次增強為超強颱風。杜蘇芮於七月二十八日早上在福建省晉江市附近登陸，當日移入內陸並進一步減弱，最後於翌日早上在安徽減弱為低壓區。

根據報章報導，杜蘇芮吹襲菲律賓期間，造成至少25人死亡，52人受傷，超過245萬人受災，超過41 000間房屋受損，經濟損失超過54億菲律賓比索。杜蘇芮在福建、浙江、安徽、江西及廣東造成約295萬人受災，超過15 000間房屋受損，經濟損失超過147億元人民幣。此外，受杜蘇芮的殘餘影響，七月二十九日至八月一日期間，華東、華北及東北多個省市出現廣泛大暴雨。在北京，部分地區錄得最大累積降雨量超過1 000毫米，造成33人死亡，18人失蹤，近129萬人受災。

熱帶低氣壓卡努(2306)於七月二十七日凌晨在沖繩島之東南約2 170公里的北太平洋西部上形成，隨後四天向西北或西北偏北移動，移向琉球群島一帶並逐漸增強。七月三十一日晚上卡努增強為超強颱風，並在翌日早上達到其最高強度，中心附近最高持續風速估計為每小時195公里。隨後卡努採取西北偏西路徑，並逐漸減弱。八月三日下午至八月六日卡努轉向偏東移動，橫過琉球群島一帶。隨後四天卡努再次轉向西北偏北移動，橫過東海，最後於八月十一日下午在朝鮮半島減弱為低壓區。

根據報章報導，卡努為日本帶來狂風暴雨，九州南部部分地區錄得累積降雨量超過1 000毫米，造成一人死亡，97人受傷，超過210間房屋受損，超過三萬戶停水及24萬戶停電，經濟損失超過20億日圓。卡努吹襲韓國期間，有兩人死亡，另有約360宗設施受損報告，超過15 000人需要疏散，經濟損失超過560億韓元。

熱帶低氣壓蘭恩(2307)於八月八日凌晨在硫黃島以東約790公里的北太平洋西部上形成，隨後向西北偏西移動並逐漸增強。八月十日蘭恩轉向西北或西北偏北移動，移向日本本州。翌日蘭恩增強為強颱風，並在早上達到其最高強度，中心附近最高持續風速估計為每小時175公里。八月十二日晚上蘭恩減弱為颱風，並於隨後兩日繼續靠近日本本州。蘭恩於八月十五日橫過日本本州，最後於八月十七日下午在日本海演變為溫帶氣旋。

根據報章報導，蘭恩在吹襲日本期間，有超過60人受傷，130間房屋受損，超過七千戶停水及十萬戶停電。

多拉(2308)在北太平洋東部上形成，於八月十二日早上以強颱風強度越過國際換日線進入北太平洋西部，當時多拉中心附近最高持續風速估計為每小時165公里，並向西北或西北偏西移動，移向威克島一帶。隨後三天多拉逐漸減弱，最後於八月十六日早上在海上減弱為低壓區。

熱帶低氣壓蘇拉(2309)於八月二十三日晚上在高雄之東南約670公里的北太平洋西部上形成，初時移動緩慢，隨後五天蘇拉在呂宋以東海域以逆時針方向轉了一個圈，並迅速增強。八月二十六日晚上蘇拉增強為超強颱風。蘇拉於隨後三日曾兩度從超強颱風減弱為強颱風，但於八月二十九日傍晚再次增強為超強颱風，並採取西北偏西路徑，橫過呂宋海峽。蘇拉於八月三十日凌晨達到其最高強度，中心附近最高持續風速估計為每小時230公里，當日稍後蘇拉維持此強度進入南海，是天文台自一九五零年有記錄以來南海區域內第二強的熱帶氣旋，僅次於二零一四年的超強颱風威馬遜。蘇拉於翌日逐漸靠近廣東沿岸，並一直維持超強颱風強度。九月一日蘇拉轉向西移動，橫過廣東沿岸海域。九月二日蘇拉迅速

減弱，並於下午在廣東陽江市附近登陸。隨後蘇拉繼續橫過廣東西部沿岸，逐步減弱為熱帶低氣壓。蘇拉在九月三日早上進入北部灣，最後於當晚減弱為低壓區。

根據報章報導，蘇拉為菲律賓北部帶來狂風暴雨，造成兩人死亡，三人受傷，兩人失蹤，超過116萬人受災，超過7 800間房屋受損，經濟損失超過24億菲律賓比索。受蘇拉的外圍雨帶影響，台灣有60 宗水浸報告，約200人需要撤離，超過一萬戶停電；福建亦有約45萬人受災，約17萬人需要撤離，超過140間房屋受損，經濟損失超過8.7億元人民幣。珠海有超過16 000宗塌樹，約70輛汽車受損，經濟損失約6 000萬元人民幣。深圳有大樹被強風吹倒，擊中一輛駛經的車輛，造成一死兩傷。此外，蘇拉吹襲澳門期間，造成六人受傷，另有188宗事故報告，澳門國際機場有264班航班取消。

熱帶低氣壓達維(2310)於八月二十三日晚上在硫黃島之東南約1 260公里的北太平洋西部上形成，初時移動緩慢。翌日達維開始加速向東北偏東移動並逐漸增強。隨後兩天達維轉向西北移向日本本州以東海域。達維於八月二十六日下午增強為強烈熱帶風暴，並在翌日晚上達到其最高強度，中心附近最高持續風速估計為每小時110公里。隨後達維逐漸轉向東北移動，最後於八月二十九日早上在日本以東海域演變為溫帶氣旋。

熱帶低氣壓海葵(2311)於八月二十七日晚上在硫黃島之東南偏南約760公里的北太平洋西部上形成，隨後六天向西或西北偏西移動，移向台灣南部，並逐漸增強。九月三日凌晨海葵增強為強颱風，並於當日中午前在台灣以東海域達到其最高強度，中心附近最高持續風速估計為每小時175公里。隨後海葵橫過台灣南部，並逐漸減弱。海葵在九月四日橫過台灣海峽期間減弱為熱帶風暴。海葵於九月五日早上在福建省東山縣附近登陸，隨後移入廣東東部內陸，最後於當晚進一步減弱為低壓區。

根據報章報導，海葵吹襲台灣期間，造成至少143人受傷，超過兩萬戶停水及27萬戶停電，約8 000人需要撤離，經濟損失超過4 300萬美元。海葵在福建省亦造成超過159萬人受災，超過2 500間房屋受損，經濟損失超過50億元人民幣。此外，海葵在廣東東部內陸減弱為低壓區後，其殘餘持續緩慢西移肆虐沿岸地區，相關的大暴雨於九月五日至九月十一日期間影響廣東及廣西多地。深圳於九月七日晚上至八日早上期間錄得最大兩小時雨量195.8毫米、三小時雨量246.8毫米、六小時雨量349.7毫米及十二小時雨量465.5毫米，均打破了深圳自一九五二年有氣象記錄以來各自的紀錄。深圳多個地鐵站被水淹浸，部分路線停運。深圳機場部分航班延誤。深圳水庫在九月八日凌晨需要排洪。海葵在福建、廣東、廣西等地總共造成至少六人死亡或失蹤，超過300萬人受災，經濟損失超過158億元人民幣。

熱帶低氣壓鴻雁(2312)於八月三十日凌晨在關島以東約1 110公里的北太平洋西部上形成，向北移動並逐漸增強。翌日下午鴻雁轉向西北偏北移動及增強為強烈熱帶風暴，並達到其最高強度，中心附近最高持續風速估計為每小時90公里。隨後三日鴻雁向西北或西北偏西移動，移向日本以南海域，並逐漸減弱。最後鴻雁於九月四日下午在日本以南海域減弱為低壓區。

熱帶低氣壓鴛鴦(2313)於九月四日下午在沖繩島之東南偏南約710公里的北太平洋西部上形成，向東北或東北偏北移向日本本州，並逐漸增強。鴛鴦於翌日晚上增強為熱帶風暴，並於九月六日早上達到其最高強度，中心附近最高持續風速估計為每小時75公里。鴛鴦於九月八日逐漸減弱，最後於翌日凌晨在日本本州一帶演變為溫帶氣旋。

根據報章報導，鴛鴦在吹襲日本期間，造成三人死亡，21人受傷，超過2 600間房屋受損，超過170戶停水及兩萬戶停電。

一個熱帶低氣壓於九月二十五日凌晨在峴港之東南偏東約320公里的南海中部上形成，中心附近最高持續風速估計為每小時45公里。當日該熱帶低氣壓向西北或西北偏西移動，最後於翌日早上在越南中部減弱為低壓區。

熱帶低氣壓小犬(2314)於九月二十八日晚上在馬尼拉以東約1 920公里的北太平洋西部上形成，隨後向偏西移動，並逐漸增強。九月三十日下午及隨後三日小犬轉向西北移動，橫過菲律賓以東海域。期間小犬於十月二日下午增強為強颱風，並於當晚達到其最高強度，中心附近最高持續風速估計為每小時175公里。小犬於十月四日採取偏西路徑，移向台灣南部一帶。翌日小犬掠過台灣南部後減弱為颱風，隨後向西南偏西移動，橫過南海北部。小犬於十月六日晚上再次增強為強颱風，並逐漸轉向西北偏西緩慢移動，靠近廣東沿岸。隨後兩日小犬以強颱風至颱風強度進一步緩慢靠近珠江口一帶。但受東北季候風影響，小犬於十月九日迅速減弱，並逐漸轉向西南移動，最後於當晚在陽江沿岸海域逐步減弱為低壓區。

根據報章報導，小犬吹襲台灣期間，造成一死399人受傷，超過六千戶停水及46萬戶停電，約3 000人需要撤離，經濟損失超過1 800萬美元。在澳門，風暴期間有兩人受傷，另有19宗事故報告，當中包括一宗塌樹及一宗山泥傾瀉。

熱帶低氣壓布拉萬(2315)於十月七日早上在關島之東南偏東約1 140公里的北太平洋西部上形成，初時向西緩慢移動。隨後三日布拉萬採取西北偏西或西北路徑，移向硫黃島一帶，並逐漸增強。布拉萬於十月十一日早上增強為超強颱風，並於當晚達到其最高強度，中心附近最高持續風速估計為每小時250公里。翌日布拉萬逐漸轉向東北移動，並於隨後兩日減弱，最後於十月十四日晚上在北太平洋西部演變為溫帶氣旋。

熱帶低氣壓三巴(2316)於十月十七日下午在峴港以東約220公里的南海中部上形成，向西北偏北移動，移向北部灣一帶，並逐漸增強。三巴於翌日早上增強為熱帶風暴，並於十月十九日晚上達到其最高強度，中心附近最高持續風速估計為每小時85公里。三巴於十月二十日在北部灣一帶徘徊，並掠過雷州半島，最後於當晚在北部灣減弱為低壓區。

根據報章報導，受三巴及其殘餘相關的大暴雨影響，十月十七日至二十一日期間，廣東、廣西及海南多地出現嚴重水浸，多個氣象站錄得破紀錄的雨量，其中廣西北海錄得780.3毫米的二十四小時雨量，打破廣西有氣象記錄以來的紀錄。三巴吹襲廣東、廣西及海南期間，造成四人死亡，超過300間房屋倒塌，超過213萬人受災，經濟損失超過58億元人民幣。

十一月

二零二三年十一月並無熱帶氣旋在北太平洋西部及南海區域上形成。

十二月

熱帶低氣壓杰拉華(2317)於十二月十七日凌晨在馬尼拉之東南約1 400公里的北太平洋西部上形成，向西移向菲律賓南部。杰拉華於當日早上達到其最高強度，中心附近最高持續風速估計為每小時55公里。翌日杰拉華移入菲律賓棉蘭老島，並於十二月十九日凌晨在該區減弱為低壓區。

根據報章報導，杰拉華吹襲菲律賓期間，最少一人失蹤，數間房屋受損，多個城鎮停電，超過一萬一千人需要撤離。

備註：人命傷亡及財物損毀數據是根據報章報導輯錄而成。

Section 2 TROPICAL CYCLONE OVERVIEW FOR 2023

2.1 Review of tropical cyclones in 2023

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

In 2023, a total of 19 tropical cyclones occurred over the western North Pacific (WNP) and the South China Sea (SCS) bounded by the Equator, 45°N, 100°E and 180°, considerably less than the long-term (1961 - 2020) average figure of around 30. During the year, 11 of the tropical cyclones attained typhoon intensity or above, less than the long-term average (1961 - 2020) of about 15, with five of them reaching super typhoon intensity (maximum 10-minute wind speed of 185 km/h or above near the centre).

Figure 2.1 shows the monthly frequencies of the occurrence of tropical cyclones in WNP and SCS in 2023.

During the year, six tropical cyclones made landfall over China, with one of them crossing the coast of southern China within 300 km of Hong Kong and two crossed Taiwan. Two made landfall over the Philippines and one made landfall over Vietnam. With an estimated maximum sustained wind speed of 250 km/h and a minimum sea-level pressure of 900 hPa near the centre (Table 4.1), Super Typhoon Mawar (2302) in May to June (Figure 2.3) was the most intense tropical cyclone over the WNP and the SCS in 2023.

2.1.2 Tropical cyclones in Hong Kong's area of responsibility

Amongst the 19 tropical cyclones in 2023, 10 of them occurred inside Hong Kong's area of responsibility (i.e. the area bounded by 10°N, 30°N, 105°E and 125°E), less than the long-term annual average (1961-2020) figure of around 16 (Table 2.1). Three of them developed within Hong Kong's area of responsibility. Altogether, 314 tropical cyclone warnings to ships and vessels were issued by the Hong Kong Observatory this year (Table 4.2).

2.1.3 Tropical cyclones over the South China Sea

Seven tropical cyclones affected SCS bounded by 10°N, 25°N, 105°E and 120°E in 2023, less than the long-term annual average (1961-2020) of around 12. Two of them formed over the region.

2.1.4 Tropical cyclones affecting Hong Kong

In 2023, the typhoon season in Hong Kong started on 15 July. Tropical Depression Talim (2304) moved towards the northern part of the SCS in that morning, necessitating the issuance of the Standby Signal No. 1. The typhoon season ended with the cancellation of all tropical cyclone warning signals on 9 October when Tropical Depression Koinu (2314) further departed from Hong Kong and weakened in that afternoon.

Five tropical cyclones affected Hong Kong during 2023 (Figure 2.2), slightly less than the long-term (1961-2020) average of about six in a year (Table 2.2). They were Typhoon Talim (2304) and Super Typhoon Doksuri (2305) in July, Super Typhoon Saola (2309) and Severe Typhoon Haikui (2311) in August to September and Severe Typhoon Koinu (2314) in September to October. The No. 10 Hurricane Signal was issued during the passage of Saola on 1 September, the highest tropical cyclone warning signal issued in 2023 and the first No. 10 Hurricane Signal since Mangkhut in 2018. The Increasing Gale or Storm Signal No. 9 and the No. 8 Gale or Storm Signal were issued during the passages of Koinu and Talim respectively. Doksuri and Haikui necessitated the issuance of the Standby Signal No. 1 in Hong Kong.

2.1.5 Tropical cyclone rainfall

Tropical cyclone rainfall for Hong Kong (total rainfall recorded at the Hong Kong Observatory Headquarters from the time when a tropical cyclone comes within 600 km of Hong Kong to 72 hours after it has dissipated or moved more than 600 km away from Hong Kong) in 2023 was 1427.8 mm (Table 4.8.1), which accounted for approximately 51.5% of the year's total rainfall of 2774.5 mm and more than double of the 1961-2020 long-term average of 704.2 mm.

According to the above definition, Severe Typhoon Haikui (2311) brought 641.1 mm of rainfall to Hong Kong (Table 4.8.1) and was the wettest tropical cyclone in 2023, breaking the previous record of 616.5 mm set by Typhoon Sam in 1999, and making it the wettest tropical cyclone ever to affect Hong Kong since records began in 1884.

2.2 Monthly overview

A monthly overview of tropical cyclones in 2023 is given in this section. Detailed reports on tropical cyclones affecting Hong Kong, including reports of damage, are presented in Section 3.

JANUARY TO MARCH

No tropical cyclone formed over the western North Pacific and the South China Sea from January to March 2023.

APRIL

A tropical depression formed over the western North Pacific about 650 km east of Manila on the morning of 11 April, with an estimated maximum sustained wind of 45 km/h near its centre. It generally tracked westwards and weakened into an area of low pressure over the central part of the Philippines next day.

Sanvu (2301) formed as a tropical depression over the western North Pacific about 1 660 km east-southeast of Guam in the small hours on 20 April. It moved generally northwestwards and intensified gradually. Sanvu intensified into a tropical storm in that afternoon, reaching its peak intensity next morning with an estimated maximum sustained wind of 75 km/h near its centre. Sanvu turned to move westwards and weakened afterwards. It finally dissipated over the western North Pacific on 22 April.

MAY TO JUNE

Mawar (2302) formed as a tropical depression over the western North Pacific about 1 070 km south-southeast of Guam in the small hours on 20 May. It moved north-northwestwards and intensified gradually. Mawar intensified into a super typhoon on the morning of 23 May. After skirting past Guam, it turned to move west-northwestwards towards the seas east of Luzon the next day. Mawar reached its peak intensity with an estimated sustained wind of 250 km/h near the centre in the small hours on 26 May. It weakened gradually afterwards and became a severe typhoon on 28 May. Mawar turned gradually to move northeastwards across the vicinity of Ryukyu Islands and continued to weaken in the following five days. Mawar finally evolved into an extratropical cyclone over the western North Pacific to the south of Japan on 3 June.

According to press reports, Mawar brought torrential rain and squalls, causing devastation in Guam and power outages in most parts of the island. 72-hour rainfall of 714 millimetres were recorded locally.

Guchol (2303) formed as a tropical depression over the western North Pacific about 560 km northwest of Yap in the small hours on 6 June. It moved generally northwestwards and intensified gradually. Guchol intensified into typhoon on the afternoon of 8 June and reached its peak intensity with an estimated sustained wind of 145 km/h near the centre in the small hours on 10 June. It turned to move northeastwards and weakened gradually afterwards. Guchol finally evolved into an extratropical cyclone over the western North Pacific to the south of Japan on 12 June.

JULY TO OCTOBER

Talim (2304) formed as a tropical depression over the central part of the South China Sea about 490 km southeast of Dongsha on the morning of 14 July. It moved westwards at first and intensified gradually. Talim intensified into a tropical storm and entered the northern part of the South China Sea the next day. Talim turned to move west-northwestwards that night and continued to edge towards the coast of western Guangdong. Talim intensified further into a typhoon on the night of 16 July and attained its peak intensity with an estimated maximum sustained wind of 140 km/h near its centre on the morning of 17 July. Talim made landfall near Zhanjiang, Guangdong that night, and moved across Leizhou Peninsula and Beibu Wan the next morning. It moved into inland Guangxi on 18 July and degenerated into an area of low pressure over the northern part of Vietnam the next morning.

According to press reports, two people were injured when Talim affected Macao. There were also 32 incident reports, including five cases of fallen trees and one case of collapsed scaffoldings. Besides, Talim also brought torrential rain and squalls to many places in Guangdong, Guangxi and Hainan. More than 910 000 people were affected and the economic loss exceeded RMB 2.6 billion.

Doksuri (2305) formed as a tropical depression over the western North Pacific about 1 270 km east of Manila on the night of 20 July. It moved north-northwestwards and intensified gradually. Doksuri intensified into a typhoon on the night of 23 July and tracked northwestwards. It developed further into a super typhoon next night and attained its peak intensity with an estimated maximum sustained wind of 210 km/h near its centre on the morning of 25 July. Doksuri moved across Luzon Strait that night and the next morning, and turned to move north-northwestwards. During its passage across the northeastern part of the South China Sea, Doksuri once weakened into a severe typhoon on the night of 26 July but re-intensified into a super typhoon next night. Doksuri made landfall near Jinjiang of Fujian province on the morning on 28 July. It moved into inland and weakened further that day. It finally degenerated into an area of low pressure over Anhui the next morning.

According to press reports, Doksuri left at least 25 deaths and 52 injuries in the Philippines during its passage. Over 2.45 million people were affected, over 41 000 houses were damaged and economic loss exceeded PHP 5.4 billion. In Fujian, Zhejiang, Anhui, Jiangxi and Guangdong, around 2.95 million people were affected. More than 15 000 houses were damaged and economic loss exceeded RMB 14.7 billion. Besides, affected by the remnant of Doksuri, torrential rain wreaked havoc in many provinces and cities in East China, North China and Northeast China during 29 July – 1 August. In Beijing, some areas recorded maximum cumulative rainfall of more than 1 000 millimetres, causing 33 deaths, 18 missing and 1.29 million people affected.

Khanun (2306) formed as a tropical depression over the western North Pacific about 2 170 km southeast of Okinawa in the small hours on 27 July. It moved northwestwards or north-northwestwards towards the vicinity of the Ryukyu Islands and intensified gradually in the following four days. Khanun intensified into a super typhoon on the night of 31 July, and reached its peak intensity with an estimated sustained wind of 195 km/h near the centre the next morning. It then tracked west-northwestwards and weakened gradually. Khanun turned to move eastwards across the vicinity of the Ryukyu Islands from the afternoon of 3 August to 6 August. Khanun turned to move north-northwestwards again across the East China Sea in the following four days, and finally degenerated into an area of low pressure over the Korean Peninsula on the afternoon of 11 August.

According to press reports, Khanun brought very heavy rain and squalls to Japan. Parts of the southern Kyushu recorded cumulative rainfall of more than 1 000 millimetres, causing one death and 97 injuries. More than 210 houses were damaged. Water and electricity supply to more than 30 000 and 240 000 households were disrupted respectively. Economic loss exceeded 2 billion JPY. Khanun left two deaths in the Republic of Korea during its passage. There were also about 360 reports of damaged facilities. More than 15 000 people were evacuated. Economic loss exceeded 56 billion KRW.

Lan (2307) formed as a tropical depression over the western North Pacific about 790 km east of Iwo Jima in the small hours on 8 August. It then moved west-northwestwards and intensified gradually. Lan turned to move northwestwards or north-northwestwards towards Honshu, Japan on 10 August. Lan intensified into a severe typhoon the next day, and reached its peak intensity with an estimated sustained wind of 175 km/h near the centre in the morning. Lan weakened into a typhoon on the night of 12 August and continued to edge closer to Honshu, Japan in the following two days. Lan moved across Honshu, Japan on 15 August and finally evolved into an extratropical cyclone over the Sea of Japan on the afternoon of 17 August.

According to press reports, Lan left more than 60 injuries in Japan during its passage. 130 houses were damaged. Water and electricity supply to more than 7 000 and 100 000 households were disrupted respectively.

Originating from the eastern North Pacific, Dora (2308) moved across the International Date Line with severe typhoon intensity and entered the western North Pacific on the morning of 12 August. The maximum sustained wind near its centre was estimated to be 165 km/h at the time. It tracked northwestwards or west-northwestwards towards the vicinity of Wake Island. Dora weakened gradually in the following three days and finally degenerated into an area of low pressure over sea on the morning of 16 August.

Saola (2309) formed as a tropical depression over the western North Pacific about 670 km southeast of Gaoxiong on the night of 23 August and moved slowly at first. It then made an anti-clockwise loop over the seas east of Luzon and intensified rapidly in the following five days. Saola intensified into a super typhoon on the night of 26 August. Saola weakened from super typhoon into a severe typhoon twice in the following three days, but intensified into a super typhoon again on the evening of 29 August and tracked west-northwestwards across Luzon Strait. Saola attained its peak intensity with an estimated maximum sustained wind of 230 km/h near its centre in the small hours of 30 August. Saola maintained this intensity and entered the South China Sea later that day, making it the second strongest tropical cyclone in the South China Sea since the Observatory's records began in 1950, just after Super Typhoon Rammasun in 2014. It edged closer to the coast of Guangdong gradually while maintaining super typhoon intensity on the next day. Saola turned to move westwards across the coastal waters of Guangdong on 1 September. It weakened rapidly on 2 September and made landfall near Yangjiang of Guangdong in the afternoon. Saola continued to move across the coast of western Guangdong afterwards and weakened into a tropical depression progressively. Saola entered Beibu Wan on the morning of 3 September and finally weakened into an area of low pressure that night.

According to press reports, Saola brought torrential rain and squalls to the northern part of the Philippines, causing 2 deaths, 3 injuries and 2 missing. More than 1.16 million people were affected, more than 7 800 houses were damaged and economic loss exceeded PHP 2.4 billion. Under the influence of the outer rainbands of Saola, there were 60 reports of flooding in Taiwan. Around 200 people were displaced and electricity supply to more than 10 000 households was disrupted; whereas in Fujian, about 450 000 people were affected, 170 000 people were displaced, more than 140 houses were damaged and economic loss exceeded RMB 870 million. There were over 16 000 reports of fallen trees in Zhuhai. About 70 vehicles were damaged and economic loss was around RMB 60 million. In Shenzhen, a large tree fell under strong winds and hit a passing vehicle, killing one person and injuring two people. Besides, six people were injured when Saola affected Macao. There were also 188 incident reports. 264 flights were cancelled at the Macau International Airport.

Damrey (2310) formed as a tropical depression over the western North Pacific about 1 260 km southeast of Iwo Jima on the night of 23 August and moved slowly at first. It started to pick up speed to track east-northeastwards and intensified gradually the next day. It turned to move northwestwards towards the seas east of Honshu of Japan in the following two days. Damrey intensified into a severe tropical storm on the afternoon of 26 August, and reached its peak intensity with an estimated sustained wind of 110 km/h near the centre the next night. Damrey then gradually turned to move northeastwards and finally evolved into an extratropical cyclone over the seas east of Japan on the morning of 29 August.

Haikui (2311) formed as a tropical depression over the western North Pacific about 760 km south-southeast of Iwo Jima on the night of 27 August. It moved westwards or west-northwestwards towards the southern part of Taiwan and intensified gradually in the following six days. Haikui intensified into a severe typhoon in the small hours on 3 September and attained its peak intensity over the seas east of Taiwan, with an estimated maximum sustained wind of 175 km/h near its centre before noon on that day. It then moved across the southern part of Taiwan and weakened gradually. Haikui weakened into a tropical storm when it moved across the Taiwan Strait on 4 September. Haikui made landfall near Dongshan in Fujian on the morning of 5 September. It then moved into inland eastern Guangdong and finally degenerated into an area of low pressure that night.

According to press reports, at least 143 people were injured when Haikui affected Taiwan. Water and electricity supply to more than 20 000 and 270 000 households were disrupted respectively. Around 8 000 people were displaced. Economic loss exceeded USD 43 million. In Fujian province, more than 1.59 million people were affected, more than 2 500 houses were damaged and economic loss exceeded RMB 5 billion. Besides, after Haikui has weakened into an area of low pressure over inland eastern Guangdong, its remnant continued to move westwards slowly and wreaked havoc in the coastal areas with torrential rain affecting many places in Guangdong and Guangxi provinces during 5 – 11 September. In Shenzhen, from the night of 7 September to the morning of 8 September, maximum 2-hour rainfall of 195.8 millimetres, 3-hour rainfall of 246.8 millimetres, 6-hour rainfall of 349.7 millimetres and 12-hour rainfall of 465.5 millimetres were recorded, all breaking their respective records since Shenzhen's meteorological records began in 1952. Many metro stations were flooded and some of the lines were suspended in Shenzhen. Some flights at Shenzhen Airport were delayed. Water was discharged from Shenzhen Reservoir in the small hours on 8 September. In Fujian, Guangdong and Guangxi, Haikui left at least six deaths or missing. More than three million people were affected and economic loss exceeded RMB 15.8 billion.

Kirogi (2312) formed as a tropical depression over the western North Pacific about 1 110 km east of Guam in the small hours on 30 August. It moved northwards and intensified gradually. Kirogi turned to move north-northwestwards, intensified into a severe tropical storm and attained its peak intensity with an estimated maximum sustained wind of 90 km/h near its centre the next afternoon. It tracked northwestwards or west-northwestwards towards the seas south of Japan and weakened gradually in the following three days. Kirogi finally degenerated into an area of low pressure over the seas south of Japan on the afternoon of 4 September.

Yun-yeung (2313) formed as a tropical depression over the western North Pacific about 710 km south-southeast of Okinawa on the afternoon of 4 September. It moved northeastwards or north-northeastwards towards Honshu, Japan and intensified gradually. Yun-yeung intensified into a tropical storm the next night and attained its peak intensity with an estimated maximum sustained wind of 75 km/h near its centre on the morning of 6 September. It weakened gradually on 8 September and finally evolved into an extratropical cyclone in the vicinity of Honshu, Japan in the small hours of the next day.

According to press reports, Yun-yeung left 3 deaths and 21 injuries in Japan during its passage. More than 2 600 houses were damaged. Water and electricity supply to more than 170 and 20 000 households were disrupted respectively.

A tropical depression formed over the central part of the South China Sea about 320 km east-southeast of Da Nang in the small hours on 25 September, with an estimated maximum sustained wind of 45 km/h near its centre. It moved northwestwards or west-northwestwards that day and finally degenerated into an area of low pressure over the central part of Vietnam the next morning.

Koinu (2314) formed as a tropical depression over the western North Pacific about 1 920 km east of Manila on the night of 28 September. It then moved westwards and intensified gradually. It turned to move northwestwards across the seas east of the Philippines on the afternoon of 30 September and in the following three days. During this period, Koinu intensified into a severe typhoon on the afternoon of 2 October and attained its peak intensity with an estimated maximum sustained wind of 175 km/h near its centre that night. Koinu tracked westwards towards the vicinity of the southern part of Taiwan on 4 October. After moving across the southern part of Taiwan the next day, Koinu weakened into a typhoon and then moved west-southwestwards across the northern part of the South China Sea. Koinu intensified into a severe typhoon again on the night of 6 October and turned gradually to move west-northwestwards, edging slowly towards the coast of Guangdong. It further moved slowly towards the vicinity of the Pearl River Estuary with severe typhoon to typhoon intensity in the following two days. However, under the influence of the northeast monsoon, Koinu weakened rapidly and turned gradually to move southwestwards on 9 October. Finally, it degenerated progressively into an area of low pressure over the coastal waters of Yangjiang that night.

According to press reports, one person was killed and 399 people were injured when Koinu affected Taiwan. Water and electricity supply to more than 6 000 and 460 000 households were disrupted respectively. Around 3 000 people were displaced. Economic loss exceeded USD 18 million. In Macao, two people were injured during the passage of Koinu. There were also 19 incident reports, including one case of fallen tree and one case of landslide.

Bolaven (2315) formed as a tropical depression over the western North Pacific about 1 140 km east-southeast of Guam on the morning of 7 October. It moved slowly westwards at first. It tracked west-northwestwards or northwestwards towards the vicinity of Iwo Jima and intensified gradually in the following three days. Bolaven intensified into a super typhoon on the morning of 11 October and attained its peak intensity with an estimated maximum sustained wind of 250 km/h near its centre that night. Bolaven gradually turned to move northeastwards the next day and weakened in the following two days. Finally, it evolved into an extratropical cyclone over the western North Pacific on the night of 14 October.

Sanba (2316) formed as a tropical depression over the central part of the South China Sea about 220 km east of Da Nang on the afternoon of 17 October. It moved north-northwestwards towards the vicinity of Beibu Wan and intensified gradually. Sanba intensified into a tropical storm the next morning and attained its peak intensity with an estimated maximum sustained wind of 85 km/h near its centre on the night of 19 October. Sanba lingered over the vicinity of Beibu Wan and skirted past Leizhou Peninsula on 20 October. Finally, it degenerated into an area of low pressure over Beibu Wan that night.

According to press reports, under the influence of the torrential rain associated with Sanba and its remnant, there were severe flooding over many places in Guangdong, Guangxi and Hainan provinces during 17 – 21 October. Record-breaking rainfall was recorded at many meteorological stations. Among them, Beihai, Guangxi recorded a 24-hour rainfall of 780.3 millimetres, breaking respective record since meteorological records began in Guangxi. During the passage of Sanba in Guangdong, Guangxi and Hainan, four people were killed, more than 300 houses collapsed and more than 2.13 million people were affected. The economic loss exceeded RMB 5.8 billion.

NOVEMBER

No tropical cyclone formed over the western North Pacific and the South China Sea in November 2023.

DECEMBER

Jelawat (2317) formed as a tropical depression over the western North Pacific about 1 400 km southeast of Manila in the small hours on 17 December and moved westwards towards the southern part of the Philippines. Jelawat attained its peak intensity with an estimated maximum sustained wind of 55 km/h near its centre that morning. Jelawat moved into Mindanao of the Philippines the next day. Finally, it degenerated into an area of low pressure over the region in the small hours on 19 December.

According to press reports, at least one person was found missing in the Philippines during the passage of Jelawat. Several houses were damaged and electricity supply was disrupted in many towns. More than 11 000 people needed to be evacuated.

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

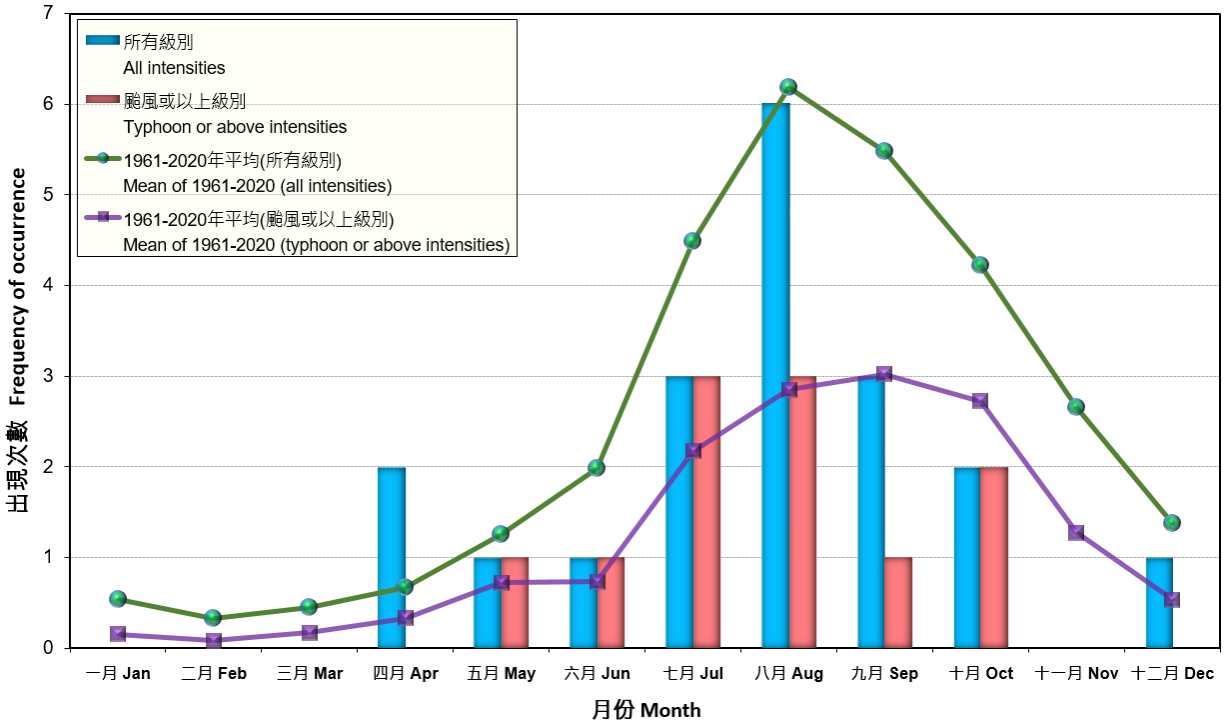


圖 2.1　二零二三年在北太平洋西部及南海區域的熱帶氣旋出現次數之每月分佈 (以熱帶氣旋在該月初次出現為準，假如一熱帶氣旋在九月形成並在十月首次增強為颱風或以上級別，它在「所有級別」及「颱風或以上級別」的統計數字將分別計算在九月及十月份內)。

Figure 2.1　Monthly frequencies of the occurrence of tropical cyclones in the western North Pacific and the South China Sea in 2023 (based on the first occurrence of the tropical cyclone in the month; for example if a tropical cyclone forms in September and first intensifies into typhoon or above intensities in October, its related statistics for “all intensities” and “typhoon or above intensities” will be counted in September and October respectively).

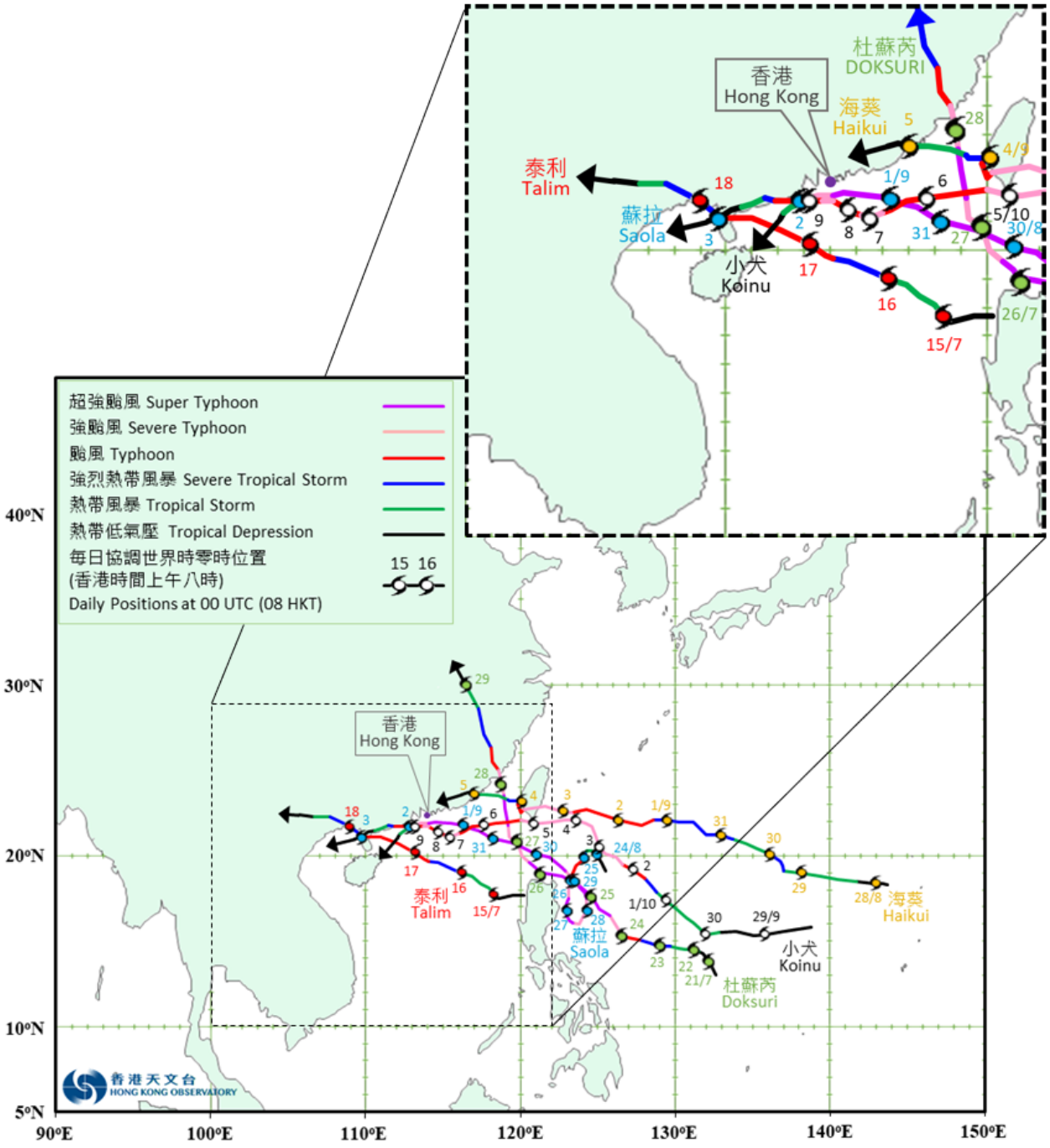


圖 2.2　　二零二三年五個影響香港的熱帶氣旋的路徑圖。

Figure 2.2　Tracks of the five tropical cyclones affecting Hong Kong in 2023.

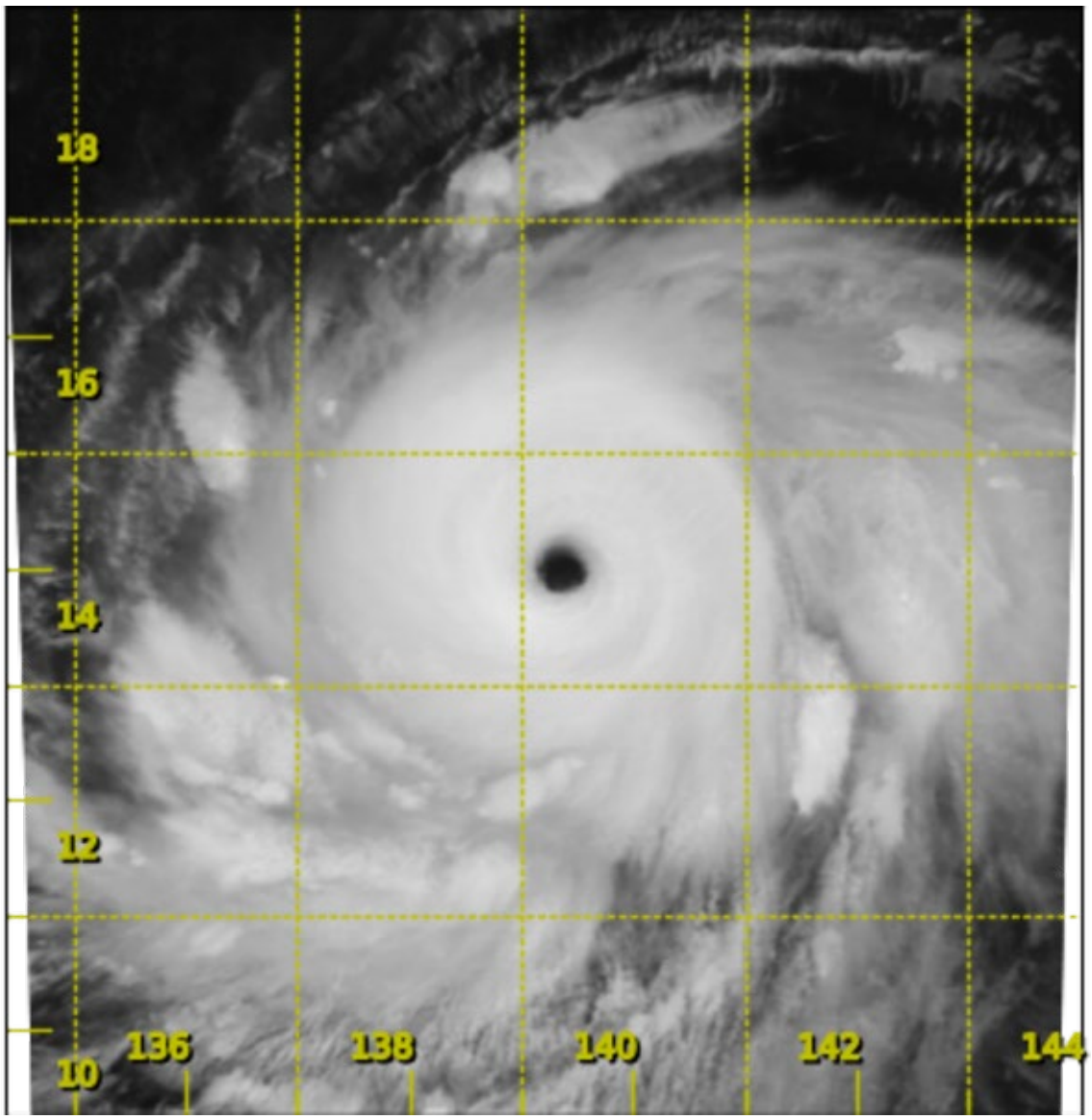


圖2.3　二零二三年五月二十六日上午2時左右超強颱風瑪娃(2302)的紅外線衛星圖片，當時瑪娃達到其最高強度，中心附近最高持續風速估計為每小時250公里，而最低中心氣壓為900百帕斯卡。

Figure 2.3　Infra-red satellite imagery of Super Typhoon Mawar (2302) at around 2 a.m. on 26 May 2023, when Mawar was at its peak intensity with an estimated maximum sustained wind of 250 km/h near its centre and a minimum sea-level pressure of 900 hPa.

〔此衛星圖像接收自日本氣象廳的向日葵9號衛星。〕

[The satellite imagery was originally captured by Himawari-9 Satellite (H-9) of Japan Meteorological Agency (JMA).]

表 2.1 在香港責任範圍內(10°-30°N, 105°-125°E)熱帶氣旋出現之每月分佈(以熱帶氣旋在該月初次出現為準)

Table 2.1 Monthly distribution of the occurrence of tropical cyclones in Hong Kong's area of responsibility (10° - 30°N, 105° - 125°E), based on the first occurrence of the tropical cyclone in the month

月份 Month / 年份 Year	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	共 Total
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
2001					1	2	4	2	2	1	1	1	14
2002	1					1	3	2	3				10
2003				1	1	2	2	3	1	1	1		12
2004			1		1	3	2	2	2	1	2	1	15
2005			1				2	3	4	3	2		15
2006					1	1	3	3	4	1	2	1	16
2007							1	4	3	1	3		12
2008				1	2	1	2	3	5	1	2		17
2009					2	2	3	2	3	4	1		17
2010							3	4	2	2			11
2011					2	3	1	2	2	2			12
2012				1		3	2	3	1	2		2	14
2013						2	3	4	4	3	3		19
2014	1					1	2		3		1	2	10
2015	1			1	1	1	2	2	2	2		1	13
2016					1		3	1	4	3	1	2	15
2017	1			1		1	6	3	4	2	3	1	22
2018	1					2	4	4	2	1	2	1	17
2019							3	3	3	1	3	2	15
2020					1	1	2	4	1	4	4	1	18
2021		1		1		2	4	2	3	3		1	17
2022				1		1		3	3	4		1	13
2023				1	1		2	2	2	2			10
平均 Average (1961-2020)	0.2	0.0	0.1	0.2	0.8	1.4	2.7	3.1	2.7	2.1	1.7	0.7	15.6

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

月份 Month# / 年份 Year	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	共 Total
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
2001						2	2	1	1				6
2002								2	1				3
2003							2	1	1				4
2004						1	1	1					3
2005								1	2				3
2006					1	1		3	1	1			7
2007								1	1				2
2008				1		1		2	1	1			6
2009						2	2	1	3				8
2010							2	1	1	1			5
2011						2	1		1	1			5
2012						2	1	2					5
2013						2	1	2	1		1		7
2014						1	1		2				4
2015						1	1			1			3
2016					1		2	1	2	3			9
2017						1	1	2	2	1			7
2018						1	1	1	2	1			6
2019							2	2	1				5
2020						1	1	1		2			5
2021						1	3	1		2		1	8
2022						1		3		2			6
2023							2	1	1	1			5
平均 Average (1961-2020)	0.0	0.0	0.0	0.1	0.2	0.8	1.5	1.4	1.5	0.9	0.2	0.0	6.0

熱帶氣旋警告信號首次發出的月份。#The month that the tropical cyclone warning signal was first issued.

第三節　　二零二三年影響香港的熱帶氣旋

3.1　颱風泰利(2304)：二零二三年七月十四日至十九日

泰利是二零二三年首個影響香港的熱帶氣旋。泰利吹襲香港期間，天文台需要發出二零二三年首個八號烈風或暴風信號。

熱帶低氣壓泰利於七月十四日上午在東沙之東南約 490 公里的南海中部上形成，初時向偏西方向移動，並逐漸增強。翌日泰利增強為熱帶風暴並進入南海北部，當晚泰利轉向西北偏西方向移動並持續移向廣東西部沿岸。七月十六日晚上泰利進一步增強為颱風，並於七月十七日上午達到其最高強度，中心附近最高持續風速估計為每小時 140 公里，當晚泰利在廣東湛江附近登陸，翌日早上橫過雷州半島及北部灣。七月十八日泰利移入廣西內陸，並於翌日早上在越南北部減弱為低壓區。

根據報章報導，泰利吹襲澳門期間，有兩人受傷，另有 32 宗事故報告，當中包括五宗樹木倒塌及一宗棚架倒塌。此外，泰利亦為廣東、廣西及海南多地帶來狂風暴雨，造成超過 91 萬人受災，經濟損失超過 26 億元人民幣。

天文台在七月十五日上午 4 時 40 分發出一號戒備信號，當時泰利集結在香港之東南約 680 公里。當日本港吹輕微至和緩東北風。隨著泰利靠近廣東沿岸，天文台在七月十六日上午 5 時 40 分改發三號強風信號，當時泰利位於香港之東南約 450 公里。當日本港風力明顯增強，普遍吹強風程度的東至東北風，離岸及高地間中吹烈風。

由於預料泰利會繼續增強及靠近珠江口一帶，而與其相關的烈風區亦會影響香港，天文台在七月十七日上午 12 時 40 分發出八號東北烈風或暴風信號，當時泰利集結在香港以南約 280 公里。隨後泰利移至本港之西南面，本港轉吹東至東南風，天文台在當日上午 6 時 40 分改發八號東南烈風或暴風信號，本港風力進一步增強，普遍風力達強風至烈風程度，高地更達暴風程度。

泰利於七月十七日上午 9 時左右最接近香港，在本港之西南偏南約 250 公里掠過。隨著泰利遠離本港，當日稍後及翌日本港風勢逐漸減弱，天文台在七月十七日下午 4 時 20 分改發三號強風信號，取代八號東南烈風或暴風信號。泰利於內陸減弱及進一步遠離香港，天文台在七月十八日上午 2 時 40 分以一號戒備信號取代三號強風信號，並於上午 8 時 40 分取消所有熱帶氣旋警告信號。但本港離岸海域及高地初時仍受東南強風影響，天文台隨即在當日上午 8 時 41 分發出強烈季候風信號，直至下午 2 時 40 分取消。

在泰利的影響下，昂坪、長洲及橫瀾島錄得的最高每小時平均風速分別為每小時107、81 及 75 公里，而最高陣風則分別為每小時 140、120 及 96 公里。尖鼻咀錄得最高潮位 3.23 米(海圖基準面以上)，而大埔滘則錄得最大風暴潮(天文潮高度以上)0.73米。各站錄得的最低瞬時海平面氣壓如下：

站	最低瞬時海平面氣壓(百帕斯卡)	日期/月份	時間
香港天文台總部	994.1	17/7	上午 3 時 34 分
香港國際機場	994.1	17/7	上午 3 時 51 分
長洲	994.1	17/7	上午 5 時 27 分
京士柏	993.8	17/7	上午 3 時 36 分
流浮山	994.5	17/7	上午 3 時 44 分
坪洲	993.5	17/7	上午 3 時 45 分
沙田	994.7	17/7	上午 3 時 57 分
上水	994.5	17/7	上午 3 時 46 分
打鼓嶺	994.6	17/7	上午 4 時 43 分
大埔	995.0	17/7	上午 3 時 59 分
橫瀾島	993.4	17/7	上午 3 時 46 分

受泰利的外圍下沉氣流及本地風力微弱影響，七月十五日本港大致天晴及極端酷熱，當日稍後本港部分地區亦受高溫觸發的狂風雷暴影響。七月十六日本港間中有狂風驟雨及雷暴。七月十七日至十八日泰利的外圍雨帶間中為本港帶來狂風大驟雨，這兩日多處地區錄得超過 40 毫米雨量，大埔區及北區部分地區更錄得超過 90 毫米雨量。

泰利吹襲香港期間，有539宗塌樹報告及兩宗水浸報告。南灣泳灘有大樹倒塌，壓傷一名女子。風暴期間共造成9人受傷。香港國際機場有8班航班需要轉飛其他地方。

Section 3 TROPICAL CYCLONES AFFECTING HONG KONG IN 2023

3.1 Typhoon Talim (2304): 14 July to 19 July 2023

Talim was the first tropical cyclone affecting Hong Kong in 2023. The Observatory issued the first No. 8 Gale or Storm Signal in 2023 during the passage of Talim.

Talim formed as a tropical depression over the central part of the South China Sea about 490 km southeast of Dongsha on the morning of 14 July. It moved westwards at first and intensified gradually. Talim intensified into a tropical storm and entered the northern part of the South China Sea the next day. Talim turned to move west-northwestwards that night and continued to edge towards the coast of western Guangdong. Talim intensified further into a typhoon on the night of 16 July and attained its peak intensity with an estimated maximum sustained wind of 140 km/h near its centre on the morning of 17 July. Talim made landfall near Zhanjiang, Guangdong that night, and moved across Leizhou Peninsula and Beibu Wan the next morning. It moved into inland Guangxi on 18 July and degenerated into an area of low pressure over the northern part of Vietnam the next morning.

According to press reports, two people were injured when Talim affected Macao. There were also 32 incident reports, including five cases of fallen trees and one case of collapsed scaffoldings. Besides, Talim also brought torrential rain and squalls to many places in Guangdong, Guangxi and Hainan. More than 910 000 people were affected and the economic loss exceeded RMB 2.6 billion.

The Standby Signal No. 1 was issued at 4:40 a.m. on 15 July, when Talim was about 680 km southeast of Hong Kong. Local winds were light to moderate northeasterlies that day. With Talim edging closer to the coast of Guangdong, the No. 3 Strong Wind Signal was issued at 5:40 a.m. on 16 July, when Talim was about 450 km southeast of Hong Kong. Winds over Hong Kong strengthened significantly and were generally strong east to northeasterlies that day, occasionally reaching gale offshore and on high ground.

As Talim was expected to continue to strengthen and move closer to the Pearl River Estuary with its associated gale force winds affecting the territory, the No. 8 Northeast Gale or Storm Signal was issued at 12:40 a.m. on 17 July when Talim was about 280 km south of Hong Kong. With Talim moving to the southwest of Hong Kong, local winds veered to east to southeasterlies. The No. 8 Southeast Gale or Storm Signal was issued at 6:40 a.m. that day. Locally, winds strengthened further to generally strong to gale with winds on high ground even reaching storm force.

Talim came closest to Hong Kong at around 9 a.m. on 17 July, when it skirted past about 250 km south-southwest of the territory. With Talim departing from the territory, local winds moderated gradually later that day and the next day. The No. 8 Southeast Gale or Storm Signal was replaced by the No. 3 Strong Wind Signal at 4:20 p.m. on 17 July. As Talim weakened over inland and moved further away from Hong Kong, the No. 3 Strong Wind Signal was replaced by the No.1 Standby Signal at 2:40 am on 18 July and all tropical cyclone warning signals were cancelled at 8:40 a.m. on that day. However, strong winds from the southeast still affected the offshore waters and high ground of the territory at first. The Strong Monsoon Signal was issued immediately afterwards at 8:41 a.m. and cancelled at 2:40 p.m. that day.

Under the influence of Talim, maximum hourly mean winds of 107, 81 and 75 km/h and gusts of 140, 120 and 96 km/h were recorded at Ngong Ping, Cheung Chau and Waglan Island respectively. A maximum sea level (above chart datum) of 3.23 m was recorded at Tsim Bei Tsui and a maximum storm surge (above astronomical tide) of 0.73 m was recorded at Tai Po Kau. The lowest instantaneous mean sea-level pressures recorded at some selected stations are as follows:

Station	Lowest instantaneous mean sea-level pressure (hPa)	Date/Month	Time
Hong Kong Observatory Headquarters	994.1	17/7	3:34 a.m.
Hong Kong International Airport	994.1	17/7	3:51 a.m.
Cheung Chau	994.1	17/7	5:27 a.m.
King's Park	993.8	17/7	3:36 a.m.
Lau Fau Shan	994.5	17/7	3:44 a.m.
Peng Chau	993.5	17/7	3:45 a.m.
Shatin	994.7	17/7	3:57 a.m.
Sheung Shui	994.5	17/7	3:46 a.m.
Ta Kwu Ling	994.6	17/7	4:43 a.m.
Tai Po	995.0	17/7	3:59 a.m.
Waglan Island	993.4	17/7	3:46 a.m.

Under the influence of the outer subsiding air of Talim and the local light wind condition, it was mainly fine and extremely hot in Hong Kong on 15 July. Squally thunderstorms triggered by high temperatures also affected parts of the territory later that day. There were occasional squally showers and thunderstorms on 16 July. The outer rainbands of Talim brought occasional heavy squally showers to Hong Kong on 17 – 18 July. More than 40 millimetres of rainfall were generally recorded over most parts of the territory on these two days and rainfall even exceeded 90 millimetres in parts of Tai Po and North Districts.

In Hong Kong, there were 539 reports of fallen trees and two reports of flooding during the passage of Talim. A woman was hit by a fallen tree at South Bay Beach. A total of nine people were injured during the passage of Talim. Eight flights were diverted at the Hong Kong International Airport.

表 3.1.1　在泰利影響下，本港各站在熱帶氣旋警告信號生效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 when the tropical cyclone warning signals for Talim were in force

站 (參閱圖 1.1) Station (See Fig. 1.1)		最高陣風 Maximum Gust					最高每小時平均風速 Maximum Hourly Mean Wind				
		風向 Direction		風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time	風向 Direction		風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time
黃麻角(赤柱)	Bluff Head (Stanley)	東南	SE	87	17/7	18:04	東南	SE	54	17/7	15:00
中環碼頭	Central Pier	東	E	85	17/7	05:23	東	E	44	17/7	05:00
長洲	Cheung Chau	東南偏東	ESE	120	17/7	16:52	東南偏東	ESE	81	17/7	15:00
長洲泳灘	Cheung Chau Beach	東	E	136	17/7	16:52	東北偏東	ENE	78	17/7	08:00
青洲	Green Island	-	-	104	17/7	15:24	-	-	62	17/7	15:00
香港國際機場	Hong Kong International Airport	東	E	83	17/7	14:08	東	E	51	17/7	16:00
啟德	Kai Tak	東南	SE	72	17/7	17:02	東南偏東	ESE	37	17/7	17:00
							東南偏東	ESE	37	17/7	18:00
京士柏	King's Park	東	E	78	17/7	14:55	東	E	41	17/7	15:00
南丫島	Lamma Island	東南偏東	ESE	84	17/7	16:54	東	E	49	17/7	09:00
流浮山	Lau Fau Shan	東北偏東	ENE	77	17/7	08:35	東	E	37	17/7	08:00
昂坪	Ngong Ping	東	E	140	17/7	14:11	東	E	107	17/7	15:00
北角	North Point	東北偏東	ENE	83	17/7	06:54	東	E	51	17/7	07:00
坪洲	Peng Chau	東南偏東	ESE	95	17/7	05:34	東南偏東	ESE	59	17/7	09:00
平洲	Ping Chau	東北偏東	ENE	43	17/7	04:21	東北偏東	ENE	12	17/7	05:00
							東	E	12	17/7	09:00
西貢	Sai Kung	東北	NE	92	17/7	04:01	東北偏東	ENE	41	16/7	16:00
							東南	SE	41	17/7	19:00
沙洲	Sha Chau	東南偏東	ESE	84	17/7	14:17	東南	SE	59	17/7	17:00
		東南偏東	ESE	84	17/7	16:14					
		東南	SE	84	17/7	16:31					
沙螺灣	Sha Lo Wan	東	E	95	17/7	12:27	東	E	36	17/7	07:00
沙田	Sha Tin	東北	NE	61	15/7	23:35	東南	SE	22	17/7	21:00
九龍天星碼頭	Star Ferry (Kowloon)	東南偏東	ESE	90	17/7	08:38	東	E	46	17/7	08:00
							東	E	46	17/7	09:00
打鼓嶺	Ta Kwu Ling	東南偏東	ESE	63	17/7	15:59	東南偏東	ESE	30	17/7	16:00
大美督	Tai Mei Tuk	東北偏東	ENE	100	17/7	09:15	東	E	67	17/7	10:00
大帽山	Tai Mo Shan	東南偏東	ESE	143	17/7	18:18	東南偏東	ESE	92	17/7	19:00
塔門東	Tap Mun East	東	E	106	17/7	09:10	東	E	72	17/7	10:00
大老山	Tate's Cairn	東南偏東	ESE	105	17/7	09:08	東南偏東	ESE	77	17/7	06:00
		東南偏東	ESE	105	17/7	09:23					
將軍澳	Tseung Kwan O	東北偏東	ENE	61	17/7	15:16	東南偏東	ESE	19	17/7	22:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	東南偏東	ESE	78	17/7	15:26	東南偏東	ESE	32	17/7	16:00
屯門政府合署	Tuen Mun Government Offices	東南	SE	69	17/7	17:05	東南	SE	28	17/7	17:00
橫瀾島	Waglan Island	東	E	96	17/7	05:16	東	E	75	17/7	06:00
濕地公園	Wetland Park	東	E	54	17/7	06:18	東南偏東	ESE	19	17/7	15:00
黃竹坑	Wong Chuk Hang	東南	SE	81	17/7	09:50	東	E	29	17/7	10:00

石崗、大埔滘 - 沒有資料　　Shek Kong , Tai Po Kau - data not available

青洲 - 沒有風向資料　　Green Island - wind direction not available

表 3.1.2　在泰利影響下，熱帶氣旋警告信號系統的八個參考測風站在熱帶氣旋警告信號生效時錄得持續風力達到強風及烈風程度的時段

Table 3.1.2　Periods during which sustained strong and gale force winds were attained at the eight reference anemometers in the tropical cyclone warning system when tropical cyclone warning signals for Talim were in force

站 (參閱圖 1.1) Station (See Fig. 1.1)		最初達到強風*時間 Start time when strong wind speed* was attained		最後達到強風*時間 End time when strong wind speed* was attained		最初達到烈風#時間 Start time when gale force wind speed# was attained		最後達到烈風#時間 End time when gale force wind speed# was attained	
		日期/月份 Date/Month	時間 Time	日期/月份 Date/Month	時間 Time	日期/月份 Date/Month	時間 Time	日期/月份 Date/Month	時間 Time
長洲	Cheung Chau	16/7	14:37	18/7	08:40	17/7	04:56	18/7	01:31
香港國際機場	Hong Kong International Airport	16/7	00:05	18/7	00:52	-			
啟德	Kai Tak	17/7	17:02	17/7	17:45	-			
流浮山	Lau Fau Shan	17/7	07:11	17/7	08:39	-			
西貢	Sai Kung	16/7	15:07	18/7	01:13	-			

沙田、打鼓嶺及青衣島蜆殼油庫的持續風力未達到強風程度。

The sustained wind speed did not attain strong force at Sha Tin, Ta Kwu Ling and Tsing Yi Shell Oil Depot.

- 未達到指定的風速

- not attaining the specified wind speed

* 十分鐘平均風速達每小時 41 - 62 公里

* 10-minute mean wind speed of 41 - 62 km/h

十分鐘平均風速達每小時 63 - 87 公里

10-minute mean wind speed of 63 - 87 km/h

註: 本表列出持續風力達到強風及烈風程度的起始及終結時間。期間風力可能高於或低於指定的風力。

Note: The table gives the start and end time of sustained strong or gale force winds. Winds might fluctuate above or below the specified wind speeds in between the times indicated.

表 3.1.3　泰利影響香港期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.1.3　Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Talim

站 (參閱圖 3.1.2) Station (See Fig. 3.1.2)			七月十五日 15 Jul	七月十六日 16 Jul	七月十七日 17 Jul	七月十八日 18 Jul	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			2.5	4.9	29.0	10.9	47.3
香港國際機場 Hong Kong International Airport (HKA)			16.8	17.8	44.9	5.6	85.1
長洲 Cheung Chau (CCH)			1.5	3.5	28.5	2.0	35.5
H23	香港仔	Aberdeen	0.5	6.5	22.0	4.5	33.5
N05	粉嶺	Fanling	13.0	7.5	38.5	49.0	108.0
N13	糧船灣	High Island	8.0	6.5	18.0	8.5	41.0
K04	佐敦谷	Jordan Valley	8.0	4.0	26.0	7.0	45.0
N06	葵涌	Kwai Chung	23.5	16.5	37.0	18.5	95.5
H12	半山區	Mid Levels	4.0	3.5	23.5	8.0	39.0
N09	沙田	Sha Tin	9.5	10.0	38.5	28.5	86.5
H19	筲箕灣	Shau Kei Wan	1.5	6.0	21.0	7.5	36.0
K06	蘇屋邨	So Uk Estate	6.5	7.0	37.0	18.0	68.5
R31	大美督	Tai Mei Tuk	14.5	19.5	25.5	22.0	81.5
R21	踏石角	Tap Shek Kok	6.0	20.5	91.0	3.5	121.0
N17	東涌	Tung Chung	36.0	23.5	62.0	2.5	124.0
TMR	屯門水庫	Tuen Mun Reservoir	8.1	14.2	75.9	15.8	114.0

石崗(SEK) - 沒有資料　　Shek Kong (SEK) - data not available

表 3.1.4　泰利影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.1.4　Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Talim

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	2.78	17/7	08:03	0.54	17/7	08:03
石壁	Shek Pik	3.01	17/7	08:20	0.63	17/7	08:20
大廟灣	Tai Miu Wan	2.78	17/7	07:56	0.59	17/7	06:48
大埔滘	Tai Po Kau	2.89	17/7	05:53	0.73	17/7	05:53
尖鼻咀	Tsim Bei Tsui	3.23	17/7	09:23	0.63	17/7	09:39

橫瀾島 - 沒有資料　Waglan Island - data not available

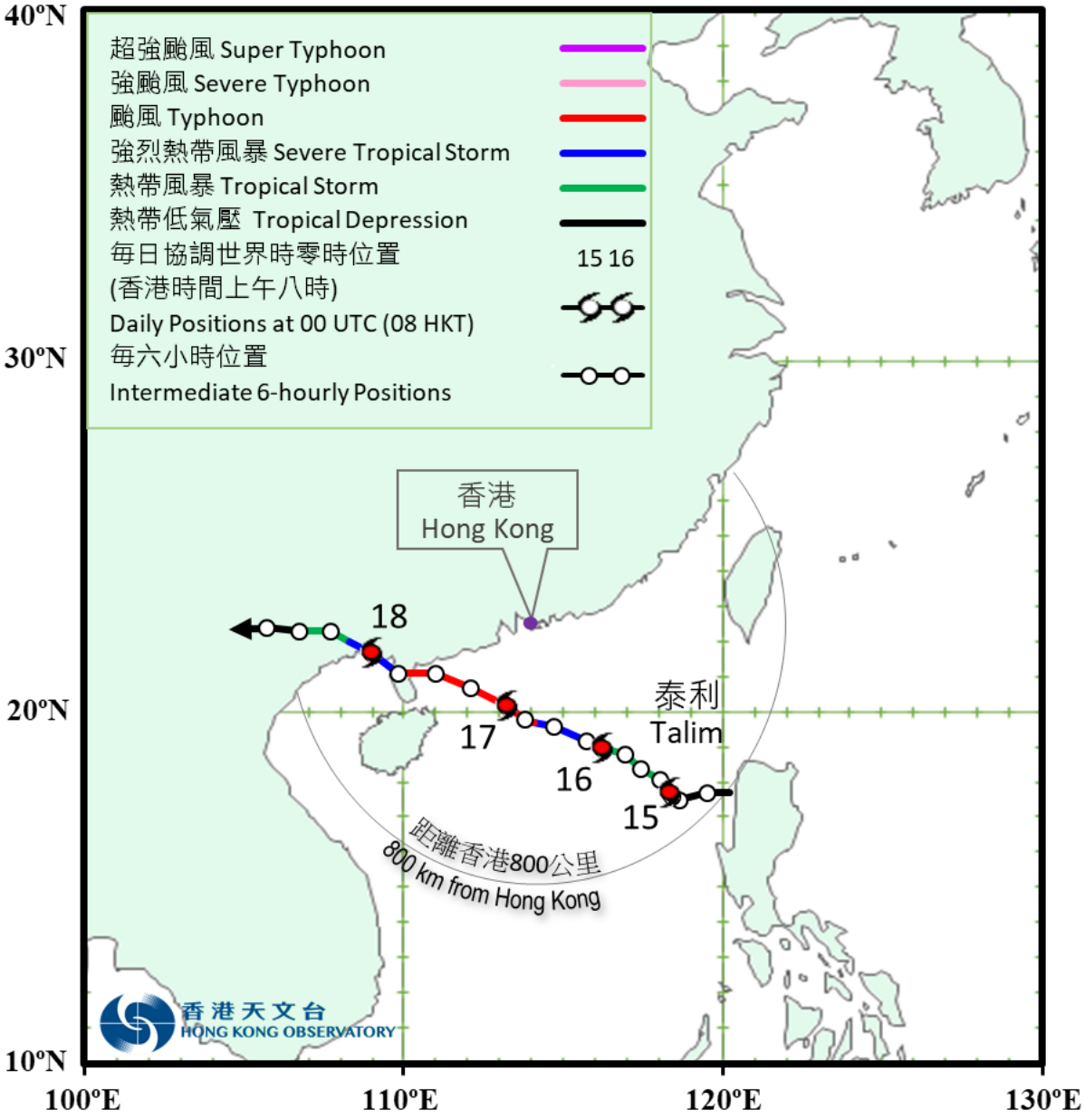


圖 3.1.1a 二零二三年七月十四日至十九日泰利(2304)的路徑圖。

Figure 3.1.1a Track of Talim (2304): 14 - 19 July 2023.

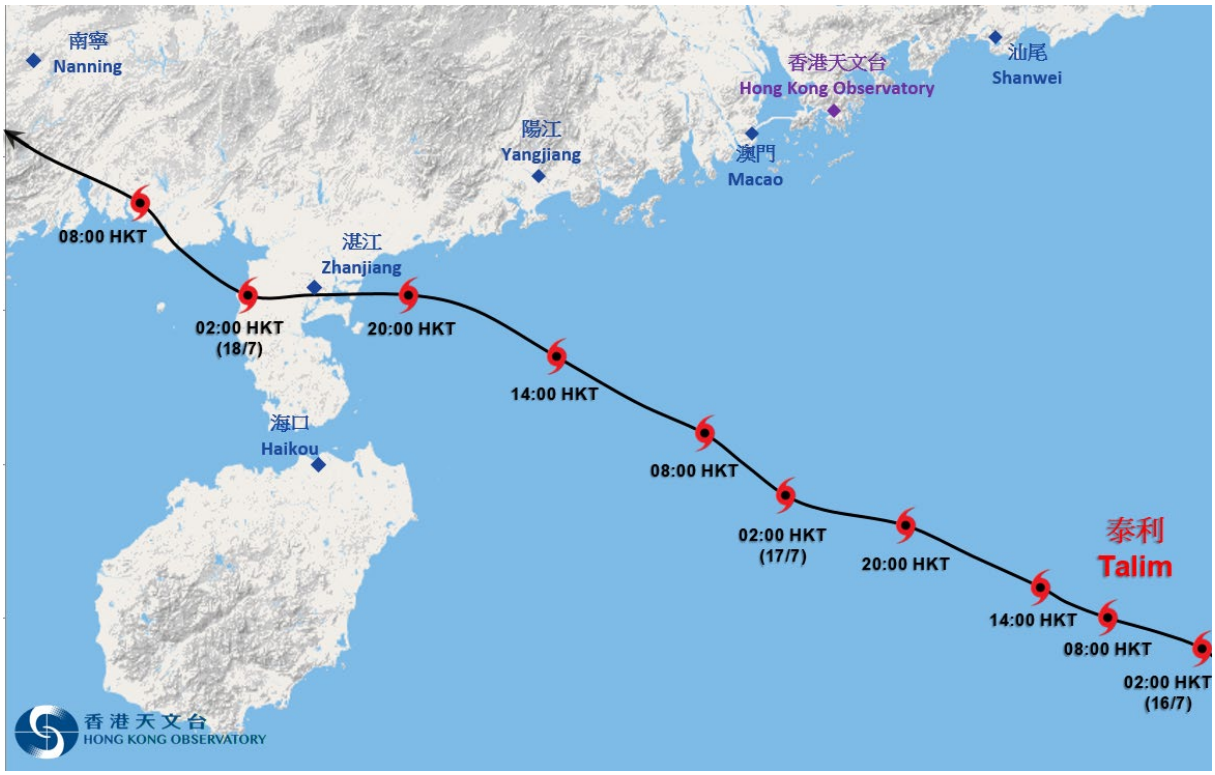


圖 3.1.1b　　泰利(2304)接近香港時的路徑圖。

Figure 3.1.1b　Track of Talim (2304) near Hong Kong.

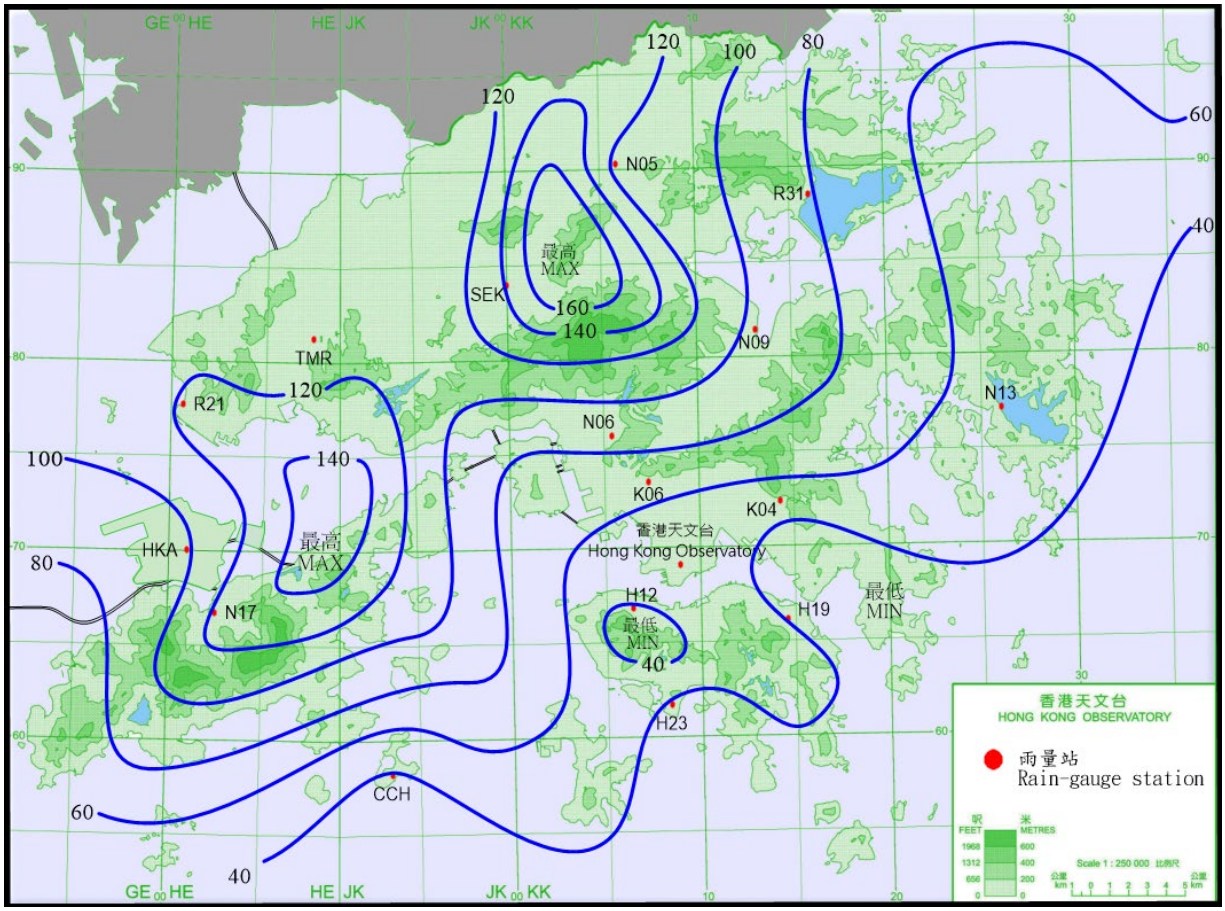


圖 3.1.2　　二零二三年七月十五日至十八日的雨量分佈(等雨量線單位為毫米)。

Figure 3.1.2　Rainfall distribution on 15 – 18 July 2023 (isohyets are in millimetres).

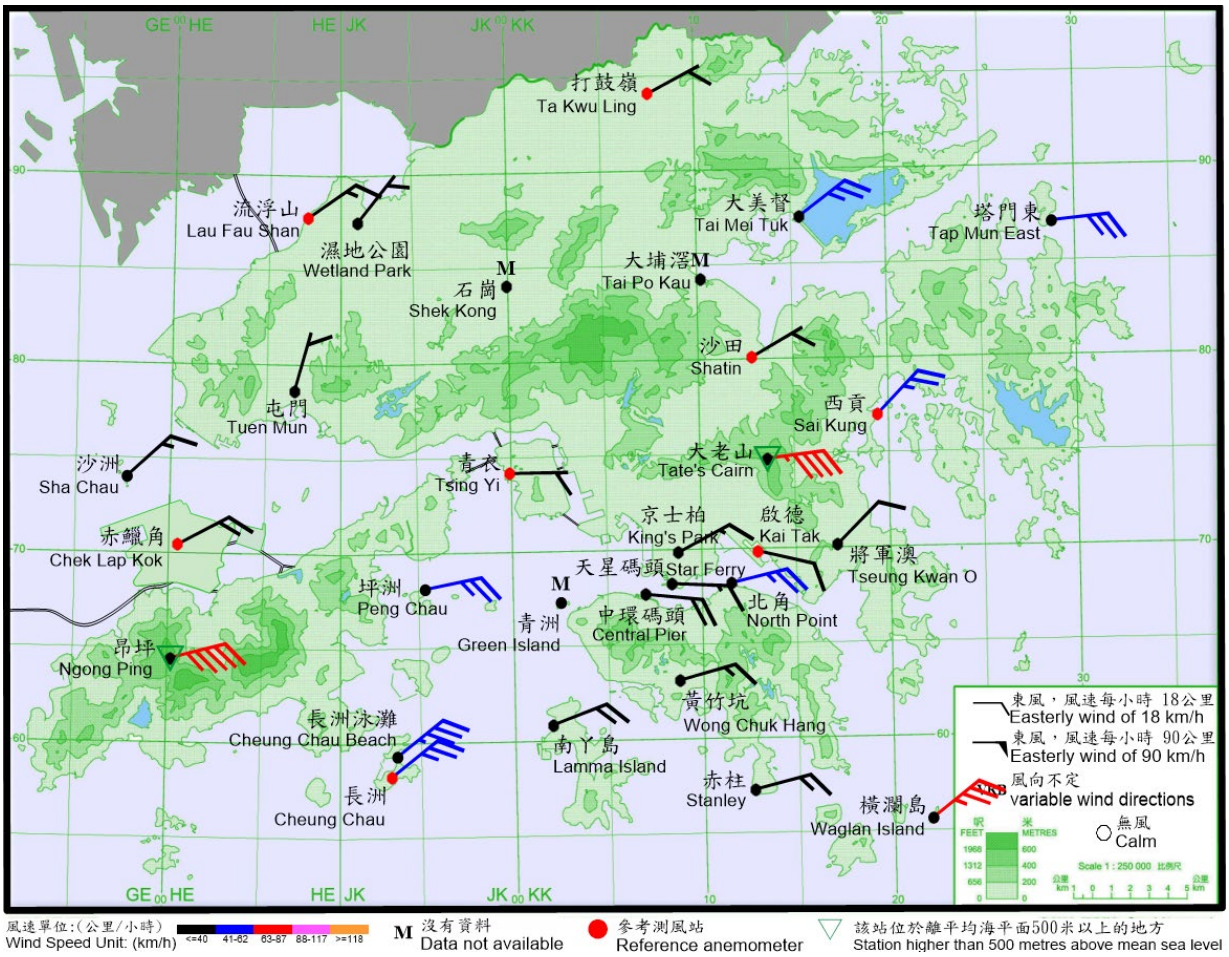


圖 3.1.3a　二零二三年七月十七日上午 2 時 40 分香港各站錄得的十分鐘平均風向和風速。當時橫瀾島、大老山及昂坪的風力達到烈風程度。

Figure 3.1.3a　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 2:40 a.m. on 17 July 2023. Winds at Waglan Island, Tate's Cairn and Ngong Ping reached gale force at the time.

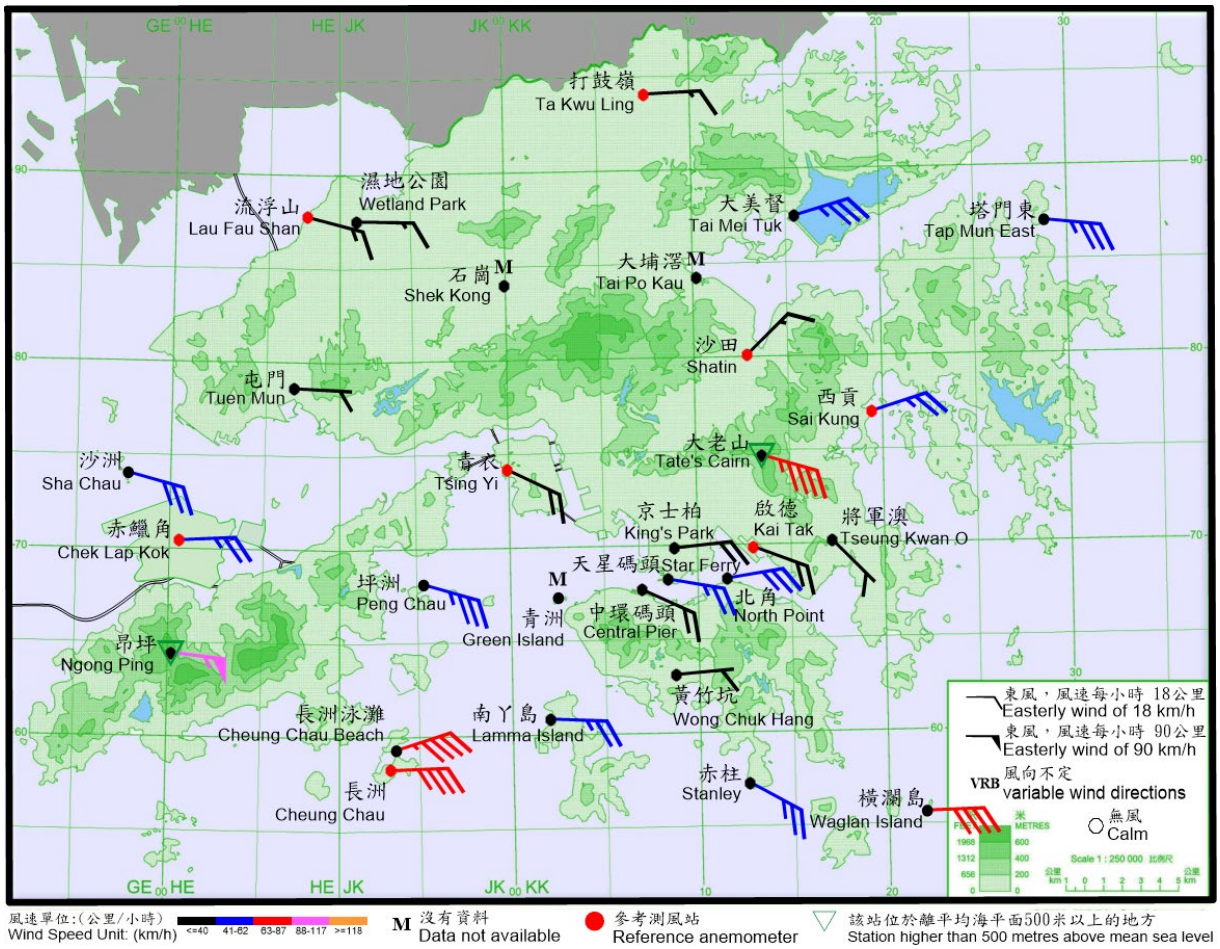


圖 3.1.3b　二零二三年七月十七日上午9時正香港各站錄得的十分鐘平均風向和風速。當時長洲、長洲泳灘、橫瀾島及大老山的風力達到烈風程度，而昂坪的風力更達到暴風程度。

Figure 3.1.3b　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 9:00 a.m. on 17 July 2023. Winds at Cheung Chau, Cheung Chau Beach, Waglan Island and Tate's Cairn reached gale force, and Ngong Ping even reached storm force at the time.

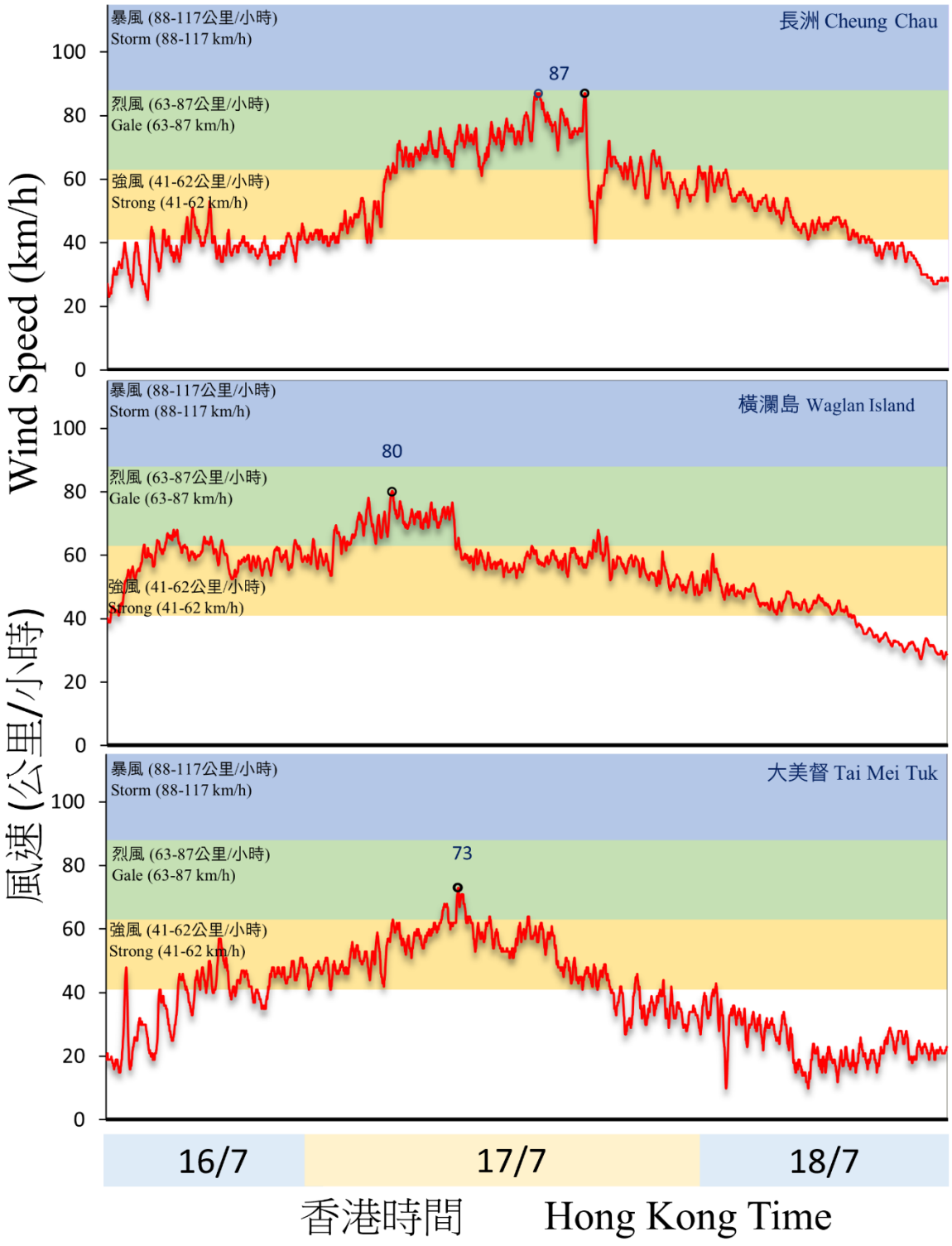


圖 3.1.4　二零二三年七月十六日至十八日的長洲、橫瀾島及大美督錄得的十分鐘平均風速。

Figure 3.1.4　Traces of 10-minute mean wind speed recorded at Cheung Chau, Waglan Island and Tai Mei Tuk on 16 – 18 July 2023.

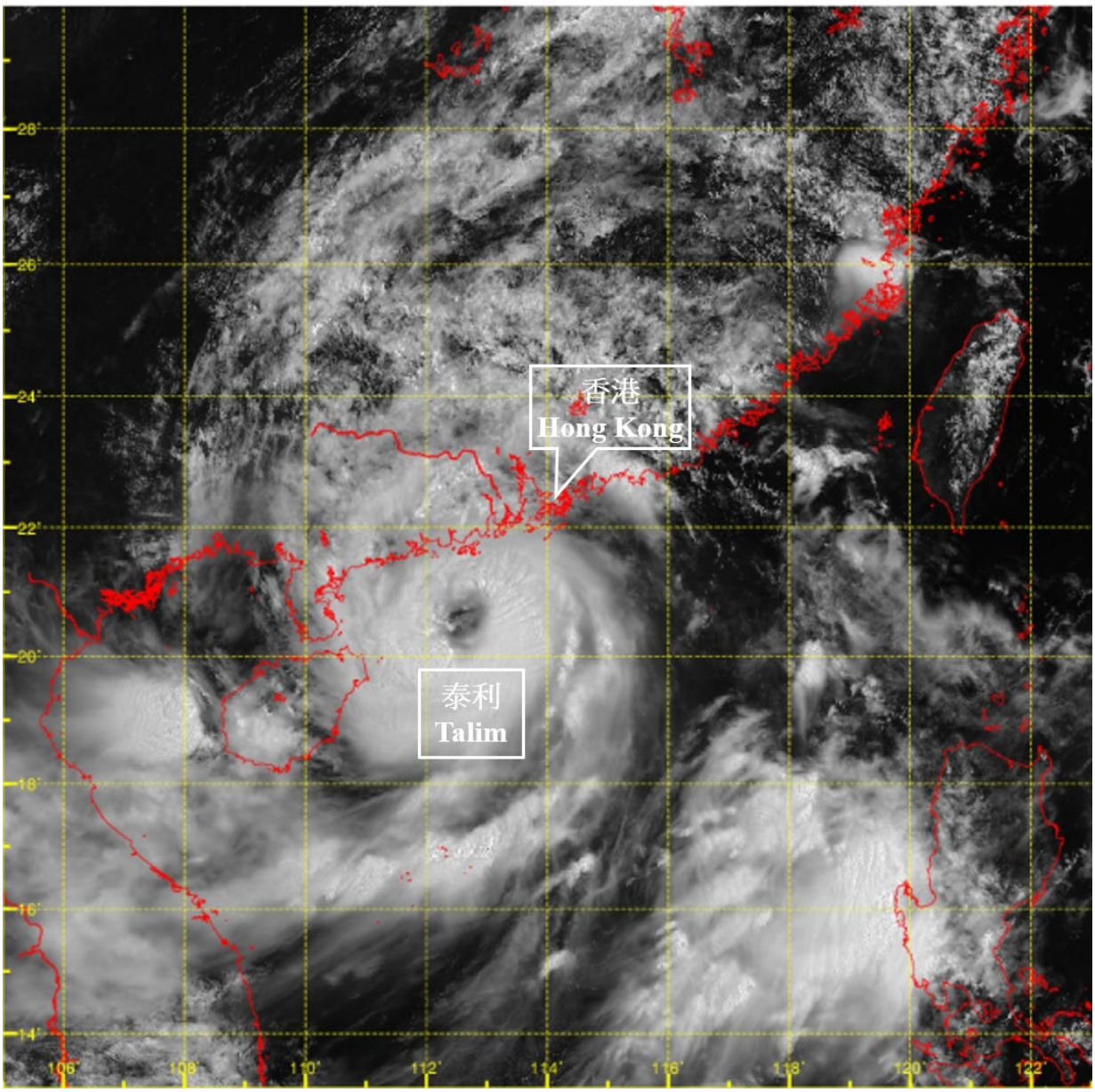


圖 3.1.5　二零二三年七月十七日上午十一時左右的可見光衛星圖片，當時泰利達到其最高強度，中心附近最高持續風速估計為每小時140公里。

Figure 3.1.5　Visible satellite imagery at around 11 a.m. on 17 July 2023 when Talim was at its peak intensity with an estimated maximum sustained wind of 140 km/h near its centre.

〔此衛星圖像接收自日本氣象廳的向日葵9號衛星。〕

[The satellite imagery was originally captured by Himawari-9 Satellite (H-9) of Japan Meteorological Agency (JMA).]

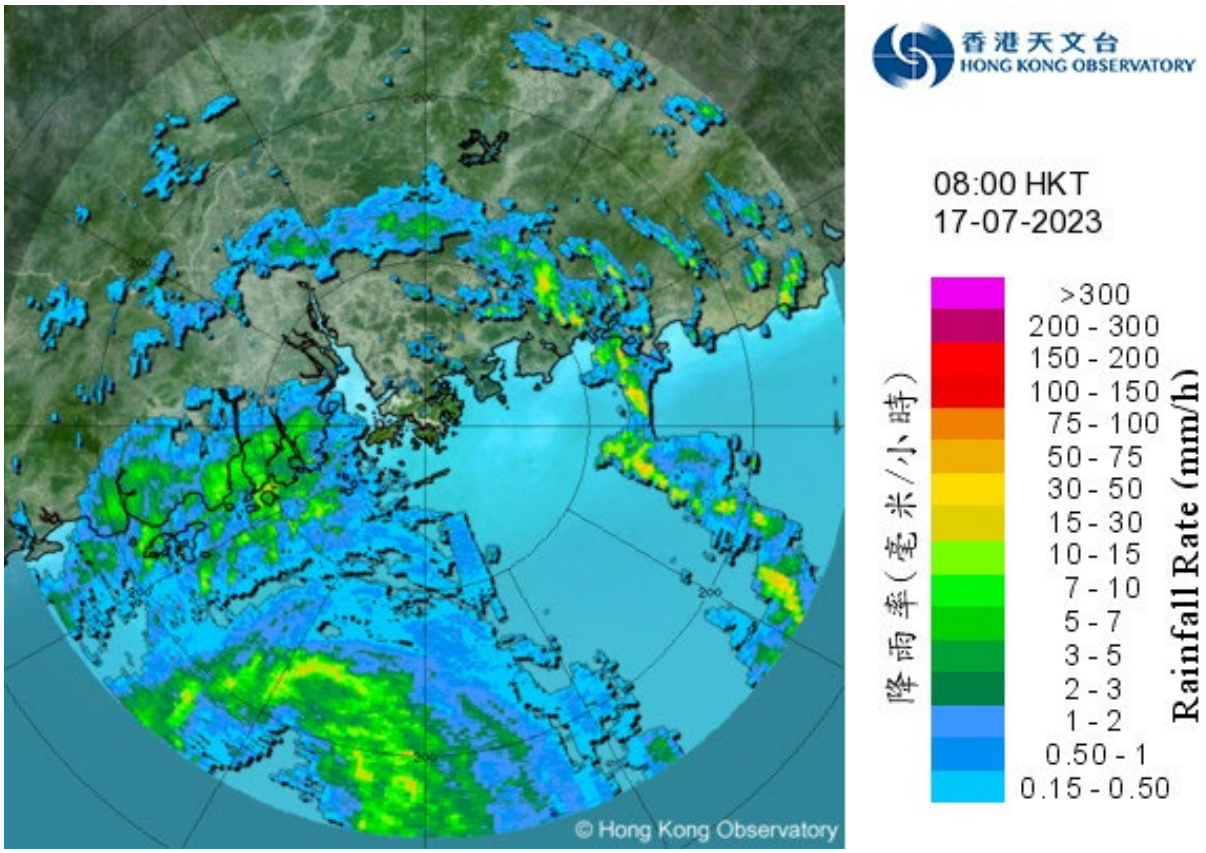


圖 3.1.6　二零二三年七月十七日上午 8 時的雷達回波圖像，當時泰利最接近香港，在本港之西南偏南約 250 公里掠過。與泰利相關的外圍雨帶正影響廣東沿岸。

Figure 3.1.6　Radar echoes captured at 8 a.m. on 17 July 2023 when Talim was closest to Hong Kong, skirting past about 250 km south-southwest of the territory. The outer rainbands associated with Talim were affecting the coast of Guangdong.

圖 3.1.7　南灣泳灘有大樹倒塌，壓傷一名女子。(鳴謝：香港電台)

Figure 3.1.7　A woman was hit by a fallen tree at South Bay Beach. (Courtesy of RTHK)

3.2 超強颱風杜蘇芮(2305)：二零二三年七月二十日至二十九日

杜蘇芮是二零二三年第二個影響香港的熱帶氣旋。

熱帶低氣壓杜蘇芮於七月二十日晚上在馬尼拉以東約1 270公里的北太平洋西部上形成，向西北偏北移動，並逐漸增強。七月二十三日晚上杜蘇芮增強為颱風，並採取西北路徑。翌日晚上杜蘇芮進一步發展為超強颱風，並於七月二十五日早上達到其最高強度，中心附近最高持續風速估計為每小時210公里。當晚及翌日早上杜蘇芮橫過呂宋海峽，並轉向西北偏北移動。杜蘇芮橫過南海東北部期間，曾於七月二十六日晚上減弱為強颱風，但翌日晚上再次增強為超強颱風。杜蘇芮於七月二十八日早上在福建省晉江市附近登陸，當日移入內陸並進一步減弱，最後於翌日早上在安徽減弱為低壓區。

根據報章報導，杜蘇芮吹襲菲律賓期間，造成至少25人死亡，52人受傷，超過245萬人受災，超過41 000間房屋受損，經濟損失超過54億菲律賓比索。杜蘇芮在福建、浙江、安徽、江西及廣東造成約295萬人受災，超過15 000間房屋受損，經濟損失超過147億元人民幣。此外，受杜蘇芮的殘餘影響，七月二十九日至八月一日期間，華東、華北及東北多個省市出現廣泛大暴雨。在北京，部分地區錄得最大累積降雨量超過1 000毫米，造成33人死亡，18人失蹤，近129萬人受災。

天文台於七月二十六日晚上8時40分發出一號戒備信號，當時杜蘇芮集結在香港之東南偏東約730公里。當晚及翌日本港普遍吹和緩至清勁北至西北風，離岸及高地間中吹強風。杜蘇芮於七月二十八日上午2時左右最接近本港，位置在香港以東約500公里。天文台總部於當日上午5時28分錄得最低瞬時海平面氣壓995.2百帕斯卡。隨著杜蘇芮在福建省晉江市附近登陸並減弱，對香港的威脅解除，天文台於七月二十八日下午12時40分取消所有熱帶氣旋警告信號。

杜蘇芮掠過期間，尖鼻咀錄得最高潮位(海圖基準面以上)2.52米，而大埔滘則錄得最大風暴潮(天文潮高度以上)0.48米。

杜蘇芮對香港的影響不大，期間並沒有嚴重破壞報告。受杜蘇芮外圍下沉氣流影響，七月二十六日至二十七日本港普遍天晴及極端酷熱，而悶熱的天氣亦在七月二十七日黃昏觸發狂風雷暴。七月二十八日本港天氣仍然酷熱，部分時間有陽光及局部地區有驟雨。

3.2 Super Typhoon Doksuri (2305): 20 to 29 July 2023

Doksuri was the second tropical cyclone affecting Hong Kong in 2023.

Doksuri formed as a tropical depression over the western North Pacific about 1 270 km east of Manila on the night of 20 July. It moved north-northwestwards and intensified gradually. Doksuri intensified into a typhoon on the night of 23 July and tracked northwestwards. It developed further into a super typhoon next night and attained its peak intensity with an estimated maximum sustained wind of 210 km/h near its centre on the morning of 25 July. Doksuri moved across Luzon Strait that night and the next morning, and turned to move north-northwestwards. During its passage across the northeastern part of the South China Sea, Doksuri once weakened into a severe typhoon on the night of 26 July but re-intensified into a super typhoon next night. Doksuri made landfall near Jinjiang of Fujian province on the morning on 28 July. It moved into inland and weakened further that day. It finally degenerated into an area of low pressure over Anhui the next morning.

According to press reports, Doksuri left at least 25 deaths and 52 injuries in the Philippines during its passage. Over 2.45 million people were affected, over 41 000 houses were damaged and economic loss exceeded PHP 5.4 billion. In Fujian, Zhejiang, Anhui, Jiangxi and Guangdong, around 2.95 million people were affected. More than 15 000 houses were damaged and economic loss exceeded RMB 14.7 billion. Besides, affected by the remnant of Doksuri, torrential rain wreaked havoc in many provinces and cities in East China, North China and Northeast China during 29 July – 1 August. In Beijing, some areas recorded maximum cumulative rainfall of more than 1 000 millimetres, causing 33 deaths, 18 missing and 1.29 million people affected.

The Standby Signal No. 1 was issued at 8:40 p.m. on the night of 26 July, when Doksuri was about 730 km east-southeast of Hong Kong. Local winds were moderate to fresh north to northwesterlies, occasionally strong offshore and on high ground that night and the next day. Doksuri came closest to the territory at around 2 a.m. on 28 July, when it skirted past about 500 km east of Hong Kong. The lowest instantaneous mean sea-level pressure of 995.2 hPa was recorded at the Observatory Headquarters at 5:28 a.m. on that day. As Doksuri made landfall near Jinjiang of Fujian province and weakened, it no longer posed a threat to Hong Kong and all tropical cyclone warning signals were cancelled at 12:40 p.m. on 28 July.

During the passage of Doksuri, a maximum sea level (above chart datum) of 2.52 m was recorded at Tsim Bei Tsui, while a maximum storm surge of 0.48 m (above astronomical tide) was recorded at Tai Po Kau.

Doksuri had no major impact on Hong Kong and no significant damage was reported. Under the influence of the outer subsiding air associated with Doksuri, local weather was generally fine and extremely hot on 26-27 July. The oppressive heat also triggered squally thunderstorms on the evening of 27 July. The weather remained very hot with sunny periods and isolated showers on 28 July.

表 3.2.1　在杜蘇芮影響下，本港各站在熱帶氣旋警告信號生效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 when the tropical cyclone warning signals for Doksuri were in force

站 (參閱圖 1.1) Station (See Fig. 1.1)		最高陣風 Maximum Gust					最高每小時平均風速 Maximum Hourly Mean Wind				
		風向 Direction		風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time	風向 Direction		風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time
黃麻角(赤柱)	Bluff Head (Stanley)	東北	NE	45	27/7	19:34	東北偏東	ENE	12	27/7	20:00
中環碼頭	Central Pier	西	W	44	27/7	13:54	西	W	18	27/7	16:00
長洲	Cheung Chau	東	E	64	27/7	20:06	東	E	24	27/7	21:00
長洲泳灘	Cheung Chau Beach	東北偏北	NNE	69	27/7	19:57	東	E	25	27/7	21:00
青洲	Green Island	東北	NE	55	27/7	19:49	東北	NE	30	27/7	20:00
香港國際機場	Hong Kong International Airport	東北偏東	ENE	44	27/7	20:34	東	E	23	27/7	21:00
啟德	Kai Tak	東北偏北	NNE	37	27/7	19:22	西北	NW	12	28/7	09:00
		東北	NE	37	27/7	19:23					
京士柏	King's Park	東南偏東	ESE	32	27/7	19:17	東北	NE	12	27/7	13:00
南丫島	Lamma Island	東	E	38	27/7	19:50	西北偏北	NNW	19	27/7	09:00
流浮山	Lau Fau Shan	西北偏北	NNW	34	27/7	14:31	西北偏北	NNW	22	27/7	17:00
昂坪	Ngong Ping	東北	NE	34	26/7	21:16	西北偏北	NNW	19	27/7	05:00
北角	North Point	東北偏東	ENE	42	27/7	19:23	西	W	18	27/7	15:00
		東北偏東	ENE	42	27/7	19:24	東	E	18	27/7	20:00
坪洲	Peng Chau	東北偏東	ENE	49	27/7	19:48	西北偏西	WNW	20	27/7	15:00
平洲	Ping Chau	西南偏南	SSW	24	27/7	18:46	西南偏南	SSW	7	27/7	19:00
西貢	Sai Kung	東北偏北	NNE	60	27/7	18:57	北	N	21	27/7	10:00
沙洲	Sha Chau	東南偏東	ESE	42	27/7	20:10	北	N	24	27/7	10:00
沙螺灣	Sha Lo Wan	東北偏東	ENE	30	27/7	20:39	東	E	12	27/7	21:00
沙田	Sha Tin	東北偏北	NNE	41	27/7	18:48	東北	NE	10	27/7	10:00
石崗	Shek Kong	東南偏東	ESE	60	27/7	19:03	東南	SE	19	27/7	20:00
九龍天星碼頭	Star Ferry (Kowloon)	東	E	30	27/7	19:39	西	W	18	27/7	15:00
打鼓嶺	Ta Kwu Ling	東南偏東	ESE	41	27/7	18:51	北	N	11	27/7	10:00
大美督	Tai Mei Tuk	東北	NE	61	27/7	18:35	東南偏南	SSE	19	27/7	19:00
大帽山	Tai Mo Shan	北	N	45	26/7	22:03	北	N	35	26/7	22:00
		東北	NE	45	27/7	19:19					
塔門東	Tap Mun East	東北偏東	ENE	61	27/7	18:35	西南偏南	SSW	21	27/7	19:00
大老山	Tate's Cairn	東	E	46	27/7	19:13	北	N	30	27/7	05:00
將軍澳	Tseung Kwan O	東北	NE	55	27/7	19:08	東北偏東	ENE	12	27/7	11:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	東北	NE	33	27/7	19:43	西南偏西	WSW	12	27/7	14:00
		東北	NE	33	27/7	20:00	東	E	12	27/7	20:00
							西北	NW	12	28/7	10:00
屯門政府合署	Tuen Mun Government Offices	西	W	35	28/7	10:46	西	W	15	28/7	11:00
橫瀾島	Waglan Island	東北	NE	52	27/7	19:41	北	N	27	27/7	09:00
		東北	NE	52	27/7	19:42	南	S	27	27/7	20:00
濕地公園	Wetland Park	東	E	30	27/7	19:20	西北偏北	NNW	6	27/7	14:00
黃竹坑	Wong Chuk Hang	東北偏東	ENE	32	27/7	19:32	西北	NW	10	27/7	10:00

大埔滘 - 沒有資料　Tai Po Kau - data not available

表 3.2.2　杜蘇芮影響香港期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.2.2　Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Doksuri

站 Station			七月二十六日 26 Jul	七月二十七日 27 Jul	七月二十八日 28 Jul	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			0.0	6.9	0.0	6.9
香港國際機場 Hong Kong International Airport (HKA)			0.0	6.6	0.0	6.6
長洲 Cheung Chau (CCH)			0.0	2.5	0.0	2.5
H23	香港仔	Aberdeen	0.5	27.0	0.0	27.5
N05	粉嶺	Fanling	0.0	3.5	0.0	3.5
N13	糧船灣	High Island	0.0	14.0	0.0	14.0
K04	佐敦谷	Jordan Valley	0.0	1.0	0.0	1.0
N06	葵涌	Kwai Chung	0.0	13.0	0.0	13.0
H12	半山區	Mid Levels	1.5	10.0	0.0	11.5
N09	沙田	Sha Tin	0.0	7.0	0.0	7.0
H19	筲箕灣	Shau Kei Wan	0.0	2.0	0.0	2.0
SEK	石崗	Shek Kong	0.0	3.0	0.0	3.0
K06	蘇屋邨	So Uk Estate	0.0	10.5	0.0	10.5
R31	大美督	Tai Mei Tuk	0.0	2.0	0.0	2.0
R21	踏石角	Tap Shek Kok	0.0	8.0	0.0	8.0
N17	東涌	Tung Chung	0.0	14.0	0.0	14.0
TMR	屯門水庫	Tuen Mun Reservoir	0.0	1.0	0.0	1.0

表 3.2.3　杜蘇芮影響香港期間，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 tide stations in Hong Kong during the passage of Doksuri

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	2.24	28/7	04:27	0.35	28/7	00:00
石壁	Shek Pik	2.28	28/7	03:58	0.28	28/7	00:39
大廟灣	Tai Miu Wan	2.21	28/7	03:38	0.38	28/7	09:45
大埔滘	Tai Po Kau	2.39	28/7	05:04	0.48	28/7	07:10
尖鼻咀	Tsim Bei Tsui	2.52	28/7	04:45	0.40	28/7	02:13

橫瀾島 - 沒有資料　Waglan Island - data not available

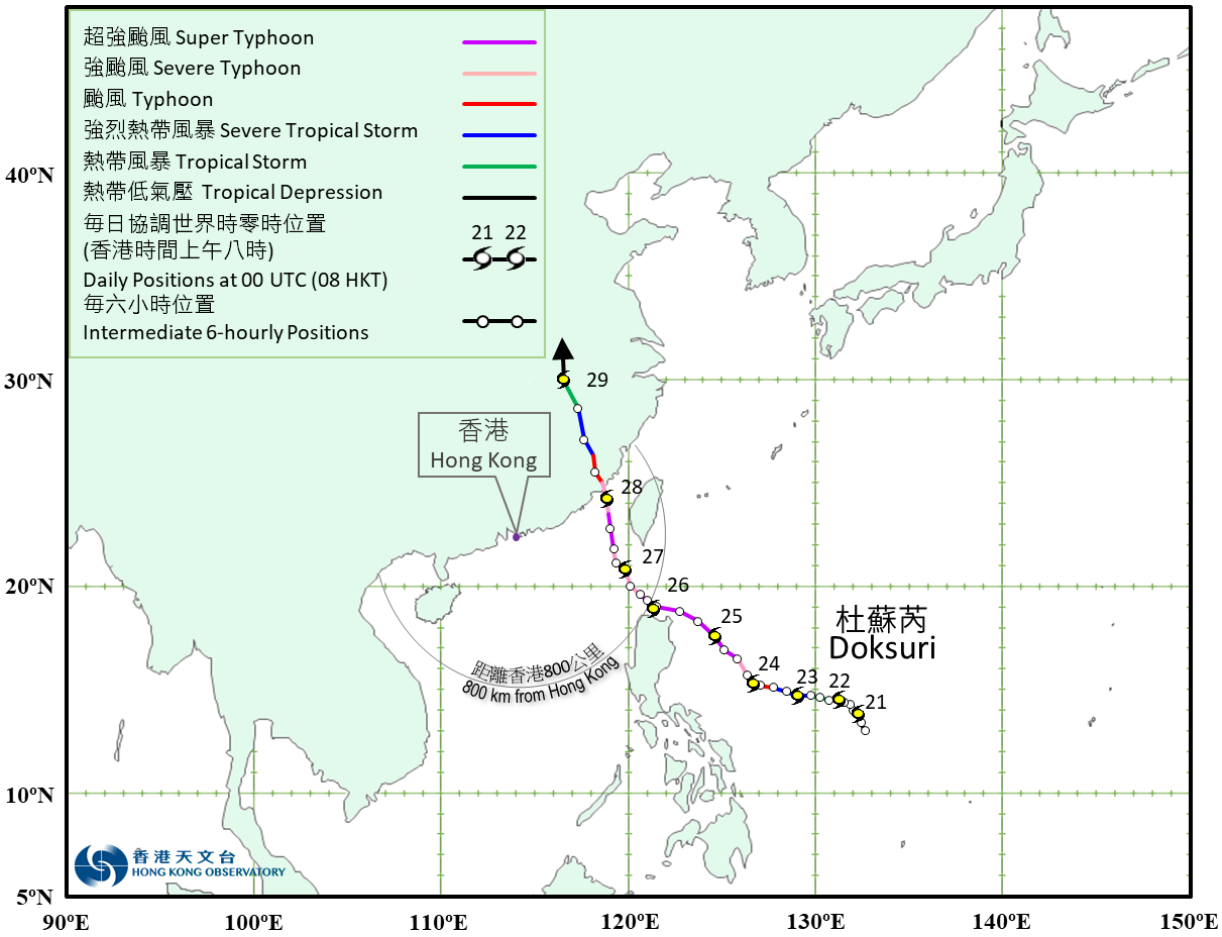


圖 3.2.1　　二零二三年七月二十日至七月二十九日杜蘇芮(2305)的路徑圖。

Figure 3.2.1　Track of Doksuri (2305): 20 - 29 July 2023.

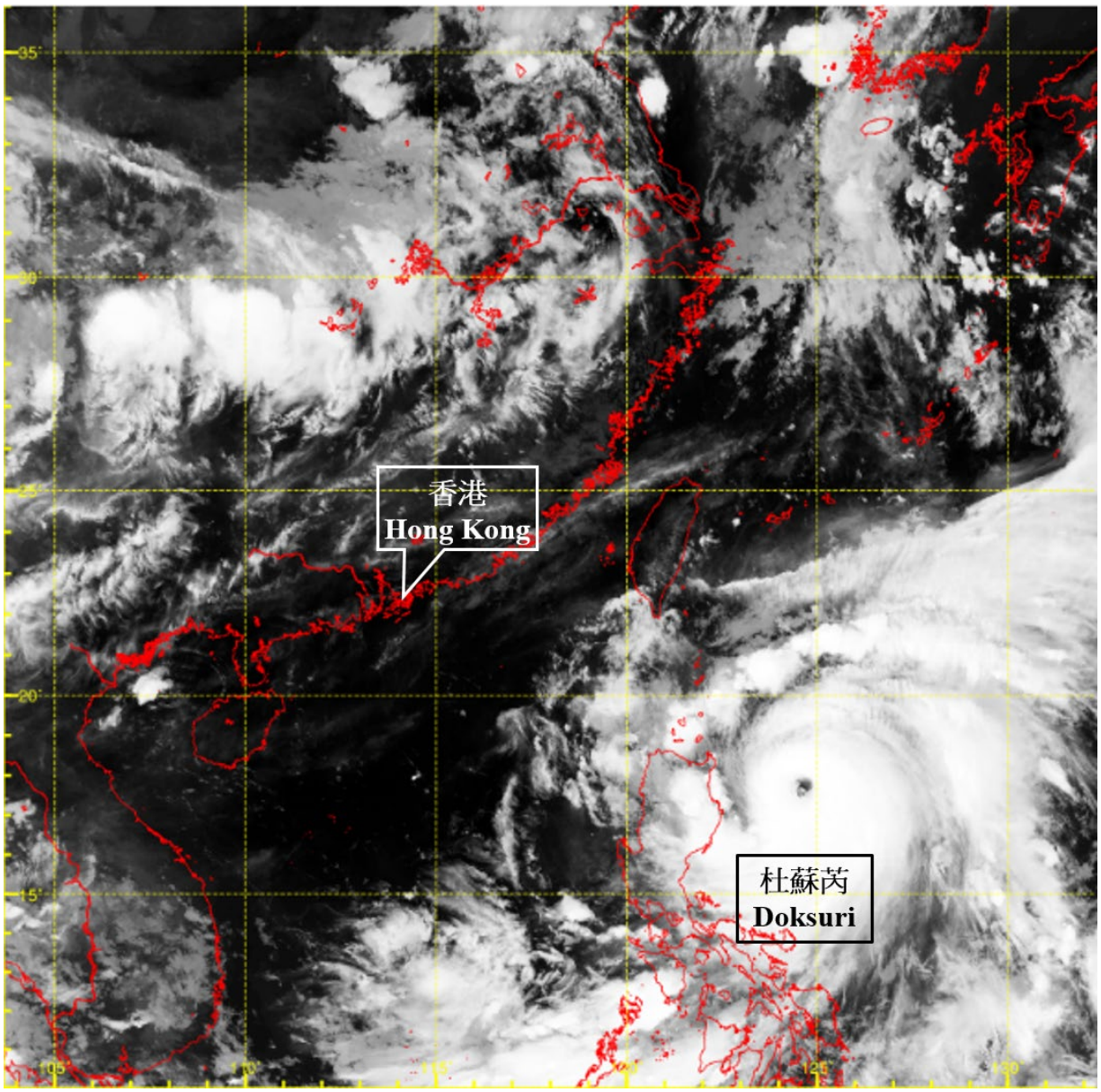


圖 3.2.2a　二零二三年七月二十五日上午八時左右的紅外線衛星圖片，當時杜蘇芮達到其最高強度，中心附近最高持續風速估計為每小時210公里。

Figure 3.2.2a　Infra-red satellite imagery at around 8 a.m. on 25 July 2023 when Doksuri was at its peak intensity with an estimated maximum sustained wind of 210 km/h near its centre.

〔此衛星圖像接收自日本氣象廳的向日葵9號衛星。〕

[The satellite imagery was originally captured by Himawari-9 Satellite (H-9) of Japan Meteorological Agency (JMA).]

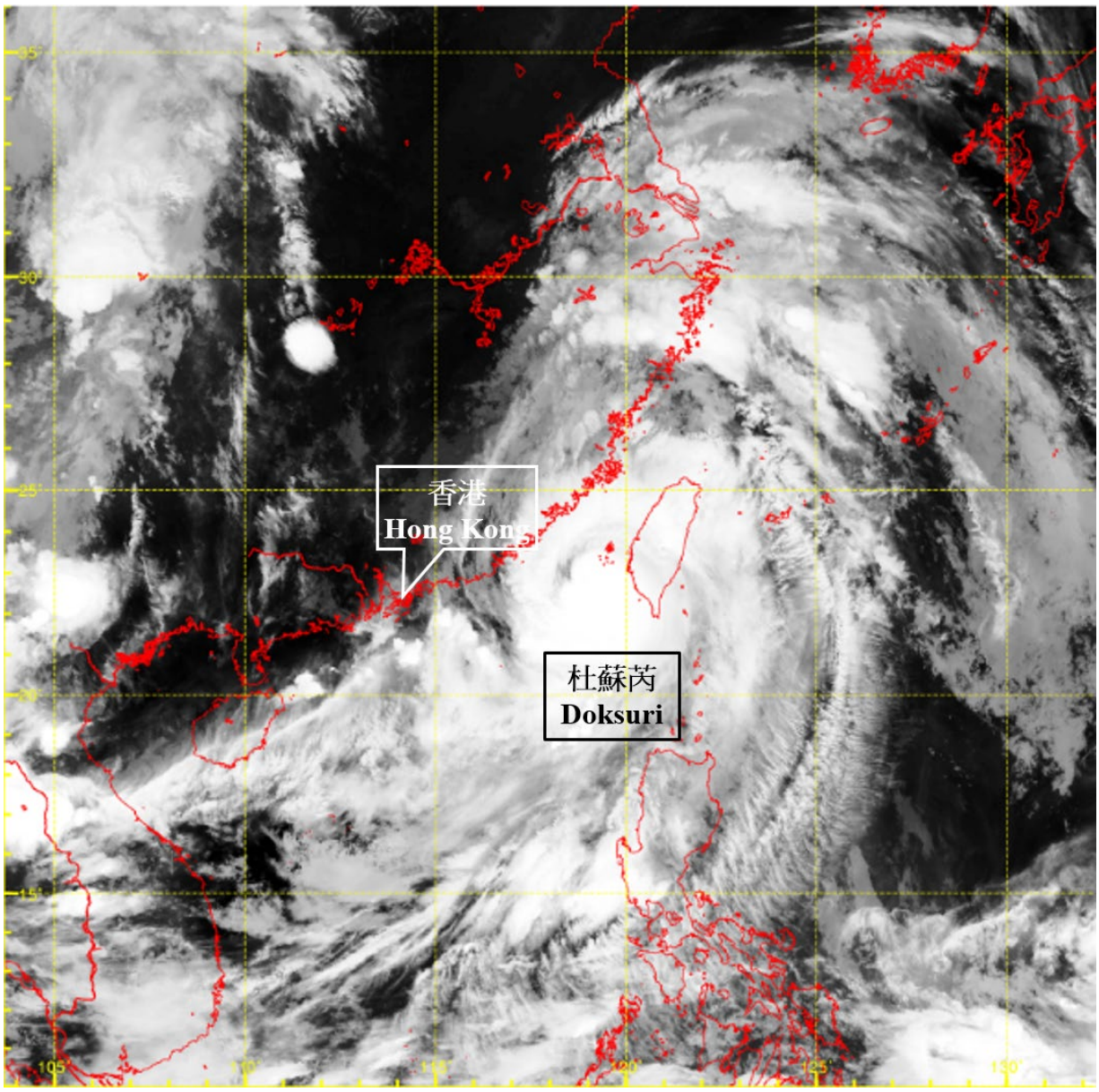


圖 3.2.2b　二零二三年七月二十八日上午二時左右的紅外線衛星圖片，當時杜蘇芮最接近本港，在香港以東約500公里掠過。

Figure 3.2.2b　Infra-red satellite imagery at around 2 a.m. on 28 July 2023. Doksuri was closest to the territory at the time, skirting past around 500 km east of Hong Kong.

〔此衛星圖像接收自日本氣象廳的向日葵9號衛星。〕

[The satellite imagery was originally captured by Himawari-9 Satellite (H-9) of Japan Meteorological Agency (JMA).]

3.3 超強颱風蘇拉(2309)：二零二三年八月二十三日至九月三日

蘇拉是二零二三年第三個影響香港的熱帶氣旋。繼二零一八年超強颱風山竹襲港後，天文台在蘇拉襲港期間再次需要發出十號颶風信號。在八號或以上信號生效期間，蘇拉的中心附近最高持續風力為每小時210公里，打破了一九七九年超強颱風荷貝每小時205公里的紀錄，創下自一九四六年有記錄以來天文台在發出八號或以上信號期間的最高熱帶氣旋強度。

熱帶低氣壓蘇拉於八月二十三日晚上在高雄之東南約670公里的北太平洋西部上形成，初時移動緩慢，隨後五天蘇拉在呂宋以東海域以逆時針方向轉了一個圈，並迅速增強。八月二十六日晚上蘇拉增強為超強颱風。蘇拉於隨後三日曾兩度從超強颱風減弱為強颱風，但於八月二十九日傍晚再次增強為超強颱風，並採取西北偏西路徑，橫過呂宋海峽。蘇拉於八月三十日凌晨達到其最高強度，中心附近最高持續風速估計為每小時230公里，當日稍後蘇拉維持此強度進入南海，是天文台自一九五零年有記錄以來南海區域內第二強的熱帶氣旋，僅次於二零一四年的超強颱風威馬遜。蘇拉於翌日逐漸靠近廣東沿岸，並一直維持超強颱風強度。九月一日蘇拉轉向西移動，橫過廣東沿岸海域。九月二日蘇拉迅速減弱，並於下午在廣東陽江市附近登陸。隨後蘇拉繼續橫過廣東西部沿岸，逐步減弱為熱帶低氣壓。蘇拉在九月三日早上進入北部灣，最後於當晚減弱為低壓區。

根據報章報導，蘇拉為菲律賓北部帶來狂風暴雨，造成兩人死亡，三人受傷，兩人失蹤，超過116萬人受災，超過7 800間房屋受損，經濟損失超過24億菲律賓比索。受蘇拉的外圍雨帶影響，台灣有60宗水浸報告，約200人需要撤離，超過一萬戶停電；福建亦有約45萬人受災，約17萬人需要撤離，超過140間房屋受損，經濟損失超過8.7億元人民幣。珠海有超過16 000宗塌樹，約70輛汽車受損，經濟損失約6 000萬元人民幣。深圳有大樹被強風吹倒，擊中一輛駛經的車輛，造成一死兩傷。此外，蘇拉吹襲澳門期間，造成六人受傷，另有188宗事故報告，澳門國際機場有264班航班取消。

天文台在八月三十日下午5時40分發出一號戒備信號，當時蘇拉集結在香港之東南偏東約630公里。當晚及翌日早上本港吹和緩至清勁偏北風。隨著蘇拉靠近廣東沿岸，天文台在八月三十一日下午3時40分發出三號強風信號，當時蘇拉位於香港之東南偏東約380公里。晚間本港風勢有所增強，高地吹達強風程度偏北風。

由於預料蘇拉在九月一日稍後會以強颱風至超強颱風強度相當接近珠江口一帶，對本港構成威脅，天文台在九月一日上午2時40分發出八號西北烈風或暴風信號，當時蘇拉集結在香港東南偏東約280公里。由於蘇拉環流緊密，日間稍後本港風力迅速增強，多處地方吹烈風程度的北至西北風，離岸及高地吹暴風。蘇拉繼續以超強颱風強度逼近香港，天文台在九月一日下午6時20分發出九號烈風或暴風風力增強信號，當時蘇拉已移至天文台總部之東南偏東約80公里。傍晚本港風力顯著增強，普遍吹烈風至暴風程度的東至東北風，高地風力更達颶風程度。有見蘇拉眼壁及其相關具破壞力的颶風將會直接吹襲香港，天文台在下午8時15分發出十號颶風信號，當時蘇拉位於天文台總部之東南約50公里。晚上本港多處吹暴風，南部地區及高地則持續受颶風吹襲。蘇拉於當晚9時左右最接近香港，在天文台總部之東南偏南約40公里掠過。

隨著蘇拉在香港以南掠過，本港逐漸轉吹東至東南風。其後蘇拉減弱並逐漸遠離香港。當香港不再受颶風威脅，天文台在九月二日上午3時40分改發八號東南烈風或暴風信號。日間本港風力繼續減弱，天文台在九月二日下午4時20分改發三號強風信號，並於下午8時20分改發一號戒備信號。隨著蘇拉進一步遠離本港，天文台在當晚11時40分取消所有熱帶氣旋警告信號。

政府飛行服務隊曾於九月一日早上派出定翼機到蘇拉中心附近進行觀測。從機上拍攝到的相片顯示蘇拉發展成熟，風眼清晰，眼壁完整。當時的雷達圖像亦顯示蘇拉呈現雙眼壁結構。隨著蘇拉於當日稍後逼近本港，蘇拉的內眼壁因眼壁置換而逐漸縮小。雷達圖像(圖3.3.6c)顯示蘇拉於九月一日晚上在本港以南掠過時，其環流相當緊密，最大風力只集中在距離中心約10至15公里的位置。

蘇拉的暴風至颶風於九月一日至二日影響本港多處地區。橫瀾島、昂坪及長洲泳灘錄得的最高每小時平均風速分別為每小時153、133及130公里，而最高陣風則分別為每小時183、189及176公里。蘇拉影響香港期間，本港整體的風力與二零一七年的天鴿相若，但較二零一八年的山竹弱(見表3.3.2)。

蘇拉引發的風暴潮導致本港部分沿岸低窪地區出現水浸，包括沙田、大埔及大澳。尖鼻咀錄得最高潮位3.41米(海圖基準面以上)，而大埔滘則錄得最大風暴潮(天文潮高度以上)1.48米。而在西貢的水位感應儀於九月一日午夜曾錄得海圖基準面以上約4.5米。各站錄得的最低瞬時海平面氣壓如下：

站	最低瞬時海平面氣壓(百帕斯卡)	日期/月份	時間
香港天文台總部	986.7	1/9	下午9時45分
香港國際機場	988.4	1/9	下午10時58分
長洲*	982.8	1/9	下午10時24分
京士柏	986.9	1/9	下午9時24分
流浮山	989.9	1/9	下午8時41分
坪洲	986.3	1/9	下午9時53分
沙田	988.9	1/9	下午8時27分
上水	991.5	1/9	下午7時36分
打鼓嶺	991.2	1/9	下午8時30分
大埔	991.5	1/9	下午7時49分
橫瀾島	979.1	1/9	下午8時48分

八月三十日及三十一日本港部分時間有陽光，日間炎熱及乾燥。在蘇拉環流的影響下，九月一日稍後本港天氣急速轉壞及有狂風大驟雨。九月一至二日本港大部分地區錄得超過150毫米雨量，而中西區、灣仔區及荃灣區的雨量更超過250毫米。

蘇拉吹襲香港期間，至少有86人受傷，另有超過4 000宗塌樹報告、21宗水浸報告及七宗山泥傾瀉報告。全港亦有約40宗棚架、招牌及窗戶受損報告，部分地方的電力供應亦受影響。香港國際機場有460班航班取消。香港水域有19宗船隻損壞報告，包括一艘貨船在愉景灣附近擱淺。

風暴期間，全港多處路段因塌樹、高空墮物、棚架倒塌或水浸等需要封閉。旺角砵蘭街有棚架塌下，阻礙兩條行車線。李鄭屋邨有大廈天台的十多塊太陽能板被強風吹跌至對開的道路。將軍澳創新園有大樓玻璃窗在強風下鬆脫掉落街上。沙田城門河畔的單車徑及行人隧道出現水浸。鑽石山有大樹塌下，壓彎燈柱及擊中一輛的士。油麻地有酒店幕牆的玻璃從高處墮下，擊中對開的三輛車輛。鴨脷洲有棚架塌下，擊中路邊一輛的士及一輛輕型貨車。堅尼地城有大廈天台的組合屋被強風吹倒，擊中一輛客貨車。

*基於不完整的數據

3.3 Super Typhoon Saola (2309): 23 August to 3 September 2023

Saola was the third tropical cyclone affecting Hong Kong in 2023. Saola necessitated the issuance of the Hurricane Signal No. 10 again since Super Typhoon Mangkhut hitting Hong Kong in 2018. During the period of tropical cyclone warning signal No. 8 or above was in force, the maximum sustained wind near the centre of Saola was 210 km/h, breaking the previous record of 205 km/h set by Super Typhoon Hope in 1979 and setting the highest record since records began in 1946.

Saola formed as a tropical depression over the western North Pacific about 670 km southeast of Gaoxiong on the night of 23 August and moved slowly at first. It then made an anti-clockwise loop over the seas east of Luzon and intensified rapidly in the following five days. Saola intensified into a super typhoon on the night of 26 August. Saola weakened from super typhoon into a severe typhoon twice in the following three days, but intensified into a super typhoon again on the evening of 29 August and tracked west-northwestwards across Luzon Strait. Saola attained its peak intensity with an estimated maximum sustained wind of 230 km/h near its centre in the small hours of 30 August. Saola maintained this intensity and entered the South China Sea later that day, making it the second strongest tropical cyclone in the South China Sea since the Observatory's records began in 1950, just after Super Typhoon Rammasun in 2014. It edged closer to the coast of Guangdong gradually while maintaining super typhoon intensity on the next day. Saola turned to move westwards across the coastal waters of Guangdong on 1 September. It weakened rapidly on 2 September and made landfall near Yangjiang of Guangdong in the afternoon. Saola continued to move across the coast of western Guangdong afterwards and weakened into a tropical depression progressively. Saola entered Beibu Wan on the morning of 3 September and finally weakened into an area of low pressure that night.

According to press reports, Saola brought torrential rain and squalls to the northern part of the Philippines, causing 2 deaths, 3 injuries and 2 missing. More than 1.16 million people were affected, more than 7 800 houses were damaged and economic loss exceeded PHP 2.4 billion. Under the influence of the outer rainbands of Saola, there were 60 reports of flooding in Taiwan. Around 200 people were displaced and electricity supply to more than 10 000 households was disrupted; whereas in Fujian, about 450 000 people were affected, 170 000 people were displaced, more than 140 houses were damaged and economic loss exceeded RMB 870 million. There were over 16 000 reports of fallen trees in Zhuhai. About 70 vehicles were damaged and economic loss was around RMB 60 million. In Shenzhen, a large tree fell under strong winds and hit a passing vehicle, killing one person and injuring two people. Besides, six people were injured when Saola affected Macao. There were also 188 incident reports. 264 flights were cancelled at the Macau International Airport.

The Standby Signal No. 1 was issued at 5:40 p.m. on 30 August, when Saola was about 630 km east-southeast of Hong Kong. Local winds were moderate to fresh northerlies that night and next morning. With Saola edging closer to the coast of Guangdong, the No. 3 Strong Wind Signal was issued at 3:40 p.m. on 31 August, when Saola was about 380 km east-southeast of Hong Kong. Winds over Hong Kong strengthened overnight, with strong northerlies on high ground.

Since Saola was expected to come rather close to the Pearl River Estuary with severe typhoon to super typhoon intensity and posed threat to the territory later on 1 September, the No. 8 Northwest Gale or Storm Signal was issued at 2:40 a.m. on 1 September when Saola was about 280 km east-southeast of Hong Kong. As the circulation of Saola was compact, local winds strengthened rapidly later during the day, with gale force north to northwesterlies over many places and reaching storm force offshore and on high ground. Saola continued to approach Hong Kong with super typhoon intensity. The Increasing Gale or Storm Signal No. 9 was issued at 6:20 p.m. on 1 September when Saola was about 80 km east-southeast of the Observatory Headquarters. Local winds strengthened significantly in the evening, with gale to storm force east to northeasterlies generally over the territory and reaching hurricane force on high ground. Since the eyewall of Saola and its associated destructive hurricane force winds were expected to lash Hong Kong directly, the Hurricane Signal No. 10 was issued at 8:15 p.m. when Saola was about 50 km southeast of the Observatory Headquarters. Many places of the territory were affected by storm force winds at night; whereas southern part of the territory and high ground were persistently battered by hurricane force winds. Saola came closest to Hong Kong at around 9 p.m. when its centre was located at about 40 km to the south-southeast of the Observatory Headquarters.

With Saola skirting past south of Hong Kong, local winds veered to east to southeasterlies gradually. Saola then weakened and departed from Hong Kong gradually. When hurricane force winds no longer affected the territory, the No. 8 Southeast Gale or Storm Signal was issued at 3:40 a.m. on 2 September to replace the Hurricane Signal No. 10. Local winds continued to subside during the day. The No. 3 Strong Wind Signal was issued at 4:20 p.m. on 2 September, followed by the issuance of No. 1 Standby Signal at 8:20 p.m. With Saola further departing from Hong Kong, all tropical cyclone warning signals were cancelled at 11:40 p.m.

Government Flying Service dispatched a fixed-wing aircraft to conduct surveillance near the centre of Saola on the morning of 1 September. The photo taken from the aircraft showed that Saola was a mature tropical cyclone with a clear eye and well-defined eyewalls. Radar imagery at that time also showed that Saola had a double eyewall structure. While Saola approached Hong Kong later that day, its inner eyewall shrunk gradually due to eyewall replacement. When Saola passed south of Hong Kong on the night of 1 September, radar imagery (Figure 3.3.6c) depicted that its circulation was rather compact, with the strongest winds concentrating at only about 10-15 kilometres away from the centre.

The storm to hurricane force winds of Saola impacted many places in Hong Kong on 1 – 2 September. Maximum hourly mean winds of 153, 133 and 130 km/h and gusts of 183, 189 and 176 km/h were recorded at Waglan Island, Ngong Ping and Cheung Chau Beach respectively. During the passage of Saola, the overall wind strength in Hong Kong was similar to that of Hato in 2017, but relatively weaker than that of Mangkhut in 2018 (Table 3.3.2).

The storm surge induced by Saola resulted in flooding in some low-lying coastal areas of Hong Kong, including Sha Tin, Tai Po, and Tai O. A maximum sea level (above chart datum) of 3.41 m was recorded at Tsim Bei Tsui and a maximum storm surge (above astronomical tide) of 1.48 m was recorded at Tai Po Kau. The water level sensor at Sai Kung recorded about 4.5 mCD at midnight on 1 September. The lowest instantaneous mean sea-level pressures recorded at some selected stations are as follows:

Station	Lowest instantaneous mean sea-level pressure (hPa)	Date/Month	Time
Hong Kong Observatory Headquarters	986.7	1/9	9:45 p.m.
Hong Kong International Airport	988.4	1/9	10:58 p.m.
Cheung Chau *	982.8	1/9	10:24 p.m.
King's Park	986.9	1/9	9:24 p.m.
Lau Fau Shan	989.9	1/9	8:41 p.m.
Peng Chau	986.3	1/9	9:53 p.m.
Sha Tin	988.9	1/9	8:27 p.m.
Sheung Shui	991.5	1/9	7:36 p.m.
Ta Kwu Ling	991.2	1/9	8:30 p.m.
Tai Po	991.5	1/9	7:49 p.m.
Waglan Island	979.1	1/9	8:48 p.m.

Locally, it was hot and dry with sunny periods during the day on 30 and 31 August. Under the influence of the circulation of Saola, the local weather deteriorated rapidly with squally heavy showers later on 1 September. On 1 – 2 September, more than 150 millimetres of rainfall were recorded over most parts of the territory and rainfall even exceeded 250 millimetres over Central and Western, Wan Chai and Tsuen Wan Districts.

In Hong Kong, more than 86 people were injured. There were also over 4 000 reports of fallen trees, 21 reports of flooding and 7 reports of landslides during the passage of Saola. There were also about 40 reports of damaged scaffolding, signboards and windows. Power supply was temporarily interrupted in some places. 460 flights were cancelled at the Hong Kong International Airport. There were 19 reports of ships lost or damaged in Hong Kong waters, including a cargo ship running aground near Discovery Bay.

During the passage of Saola, many road sections in Hong Kong needed to be closed due to fallen trees, falling objects, collapsed scaffoldings or flooding. A scaffolding collapsed on Portland Street in Mangkok, blocking two traffic lanes. More than ten solar panels on the roof of a building in Lei Cheng Uk Estate were blown onto the roads by strong winds. A glass window of a building in Tseung Kwan O InnoPark was loosened due to strong winds and fell onto the streets. The cycle track and pedestrian subway next to the Shing Mun River in Sha Tin were flooded. A tree fell in Diamond Hill, bending a lamppost and hitting a taxi. A glass curtain wall of a hotel in Yau Ma Tei fell down and hit three nearby cars. A scaffolding collapsed in Ap Lei Chau, hitting a taxi and a light goods vehicle. A modular house on the roof of a building in Kennedy Town was blown down by strong winds and hit a truck.

*based on incomplete data

表 3.3.1　在蘇拉影響下，本港各站在熱帶氣旋警告信號生效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 when the tropical cyclone warning signals for Saola were in force

站 (參閱圖 1.1) Station (See Fig. 1.1)		最高陣風 Maximum Gust					最高每小時平均風速 Maximum Hourly Mean Wind				
		風向 Direction		風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time	風向 Direction		風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time
中環碼頭	Central Pier	東	E	140	1/9	22:49	東	E	79	1/9	23:00
		東	E	140	1/9	22:51					
長洲	Cheung Chau	東北偏北	NNE	171	1/9	22:10	東北偏北	NNE	114	1/9	23:00
長洲泳灘	Cheung Chau Beach	-	-	176	1/9	22:43	-	-	130	1/9	23:00
青洲	Green Island	東北偏北	NNE	180	1/9	21:46	東北偏北	NNE	126	1/9	22:00
香港國際機場	Hong Kong International Airport	東北偏東	ENE	105	2/9	00:09	東北偏東	ENE	69	2/9	01:00
啟德	Kai Tak	東北	NE	117	1/9	21:33	東南偏東	ESE	47	2/9	00:00
京士柏	King's Park	東北偏北	NNE	121	1/9	21:16	東北偏北	NNE	51	1/9	22:00
南丫島	Lamma Island	北	N	138	1/9	20:59	西北	NW	80	1/9	20:00
流浮山	Lau Fau Shan	東北偏北	NNE	122	1/9	22:01	北	N	76	1/9	21:00
昂坪	Ngong Ping	東北偏東	ENE	189	2/9	00:06	東北偏東	ENE	133	2/9	00:00
北角	North Point	東北偏東	ENE	140	1/9	22:56	東北偏東	ENE	90	1/9	23:00
坪洲	Peng Chau	東北	NE	147	1/9	21:53	東	E	108	2/9	00:00
平洲	Ping Chau	東北偏東	ENE	86	1/9	21:41	東北偏東	ENE	42	1/9	22:00
西貢	Sai Kung	北	N	138	1/9	20:11	東北	NE	80	1/9	22:00
沙洲	Sha Chau	北	N	136	1/9	22:08	北	N	94	1/9	23:00
沙螺灣	Sha Lo Wan	東北偏東	ENE	116	1/9	23:44	東北偏東	ENE	65	2/9	00:00
沙田	Sha Tin	東北偏北	NNE	97	1/9	21:22	東北偏北	NNE	44	1/9	22:00
石崗	Shek Kong	-	-	115	1/9	23:16	-	-	51	1/9	23:00
九龍天星碼頭	Star Ferry (Kowloon)	東	E	111	1/9	23:45	東	E	65	2/9	00:00
打鼓嶺	Ta Kwu Ling	東北偏東	ENE	107	1/9	23:39	東北偏東	ENE	45	2/9	00:00
大美督	Tai Mei Tuk	東北偏東	ENE	138	1/9	21:27	東北偏東	ENE	99	1/9	23:00
		東	E	138	1/9	22:47					
大帽山	Tai Mo Shan	東北偏東	ENE	176	1/9	21:11	北	N	110	1/9	20:00
塔門東	Tap Mun East	東	E	138	1/9	23:00	東	E	102	1/9	23:00
大老山	Tate's Cairn	東北偏東	ENE	183	1/9	21:07	東北	NE	129	1/9	22:00
將軍澳	Tseung Kwan O	東北	NE	122	1/9	20:52	東北	NE	44	1/9	22:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	西北	NW	114	1/9	19:26	西北偏北	NNW	47	1/9	20:00
屯門政府合署	Tuen Mun Government Offices	東北偏北	NNE	108	1/9	23:00	東北偏北	NNE	28	2/9	00:00
橫瀾島	Waglan Island	東北偏北	NNE	183	1/9	20:44	東北	NE	153	1/9	22:00
濕地公園	Wetland Park	東北偏東	ENE	81	1/9	23:30	東北	NE	30	2/9	00:00
黃竹坑	Wong Chuk Hang	東北	NE	123	1/9	21:48	東	E	46	2/9	00:00
		東	E	123	1/9	23:52					

黃麻角(赤柱)、大埔滘 - 沒有資料　Bluff Head (Stanley), Tai Po Kau - data not available

長洲泳灘、石崗 - 沒有風向資料　Cheung Chau Beach, Shek Kong - wind direction not available

表 3.3.2　蘇拉與近年引致天文台需要發出十號颶風信號的熱帶氣旋(山竹及天鴿)襲港期間錄得的最高60分鐘平均風速及最高陣風

Table 3.3.2　Maximum 60-minute mean wind speeds and maximum gusts recorded during the passage of Saola and the tropical cyclones necessitating the issuance of No. 10 signals recently (Mangkhut and Hato)

站 (參閱圖 1.1) Station (See Fig. 1.1)		最高60分鐘平均風速/最高陣風 (公里/小時) Maximum 60-minute mean wind speeds / Maximum gust peak speeds (km/h)		
		2017	2018	2023
		天鴿 Hato	山竹 Mangkhut	蘇拉 Saola
中環碼頭	Central Pier	76/137	99/169	86/140
長洲	Cheung Chau	128/171	157/212	116/171
青洲	Green Island	-	128/229	127/180
香港國際機場	Hong Kong International Airport	92/144	101/157	71/105
流浮山	Lau Fau Shan	70/112	96/166	76/122
昂坪	Ngong Ping	142/224	-	133/189
啟德	Kai Tak	67/130	81/142	50/117
北角	North Point	85/137	110/171	91/140
西貢	Sai Kung	70/112	112/180	83/138
沙田	Sha Tin	40/104	51/149	44/97
九龍天星碼頭	Star Ferry (Kowloon)	63/112	85/135	66/111
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	45/106	59/137	48/114
打鼓嶺	Ta Kwu Ling	43/99	52/133	46/107
大美督	Tai Mei Tuk	101/140	139/198	102/138
大帽山	Tai Mo Shan	121/196	175/250	113/176
大老山	Tate’s Cairn	118/187	166/256	135/183
橫瀾島	Waglan Island	137/193	161/220	154/183

- 沒有資料/ data not available

表 3.3.3　在蘇拉影響下，熱帶氣旋警告信號系統的八個參考測風站在熱帶氣旋警告信號生效時錄得持續風力達到強風及烈風程度的時段

Table 3.3.3　Periods during which sustained strong and gale force winds were attained at the eight reference anemometers in the tropical cyclone warning system when tropical cyclone warning signals for Saola were in force

站 (參閱圖 1.1) Station (See Fig. 1.1)		最初達到強風*時間 Start time when strong wind speed* was attained		最後達到強風*時間 End time when strong wind speed* was attained		最初達到烈風#時間 Start time when gale force wind speed# was attained		最後達到烈風#時間 End time when gale force wind speed# was attained	
		日期/月份 Date/Month	時間 Time	日期/月份 Date/Month	時間 Time	日期/月份 Date/Month	時間 Time	日期/月份 Date/Month	時間 Time
長洲	Cheung Chau	1/9	10:49	2/9	23:34	1/9	16:29	2/9	08:32
香港國際機場	Hong Kong International Airport	1/9	15:46	2/9	11:30	1/9	19:34	2/9	01:14
啟德	Kai Tak	1/9	16:43	2/9	01:30	-			
流浮山	Lau Fau Shan	1/9	13:57	2/9	08:13	1/9	19:10	1/9	23:48
西貢	Sai Kung	1/9	15:25	2/9	13:31	1/9	19:36	2/9	00:15
沙田	Sha Tin	1/9	20:55	1/9	22:04	-			
打鼓嶺	Ta Kwu Ling	1/9	20:39	2/9	01:04	-			
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	1/9	17:55	1/9	20:49	-			

青衣島蜆殼油庫 - 數據不完整
Tsing Yi Shell Oil Depot - incomplete data

- 未達到指定的風速
- not attaining the specified wind speed

* 十分鐘平均風速達每小時 41 - 62 公里
* 10-minute mean wind speed of 41 - 62 km/h

十分鐘平均風速達每小時 63 - 87 公里
10-minute mean wind speed of 63 - 87 km/h

註:　本表列出持續風力達到強風及烈風程度的起始及終結時間。期間風力可能高於或低於指定的風力。

Note: The table gives the start and end time of sustained strong or gale force winds. Winds might fluctuate above or below the specified wind speeds in between the times indicated.

表 3.3.4　蘇拉影響香港期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.3.4　Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Saola

站 (參閱圖 3.3.3) Station (See Fig. 3.3.3)			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(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			0.0	0.4	98.9	80.4	179.7
香港國際機場 Hong Kong International Airport (HKA)			微量 Trace	微量 Trace	73.0	95.0	168.0
長洲 Cheung Chau (CCH)			0.0	0.0	39.5	35.0	74.5
H23	香港仔	Aberdeen	0.0	1.0	84.0	65.5	150.5
N05	粉嶺	Fanling	0.0	2.5	78.0	24.0	104.5
N13	糧船灣	High Island	0.0	0.0	96.0	35.0	131.0
K04	佐敦谷	Jordan Valley	0.0	1.0	114.5	75.5	191.0
N06	葵涌	Kwai Chung	0.0	0.5	127.0	107.0	234.5
H12	半山區	Mid Levels	0.0	1.5	92.0	110.0	203.5
N09	沙田	Sha Tin	0.0	1.5	112.5	55.5	169.5
H19	筲箕灣	Shau Kei Wan	0.0	0.0	102.0	64.0	166.0
SEK	石崗	Shek Kong	0.0	3.5	148.5	87.0	239.0
K06	蘇屋邨	So Uk Estate	0.0	0.0	124.0	83.0	207.0
R31	大美督	Tai Mei Tuk	0.0	0.5	92.0	32.5	125.0
R21	踏石角	Tap Shek Kok	0.0	0.0	81.0	86.0	167.0
N17	東涌	Tung Chung	0.0	2.0	65.0	120.0	187.0
TMR	屯門水庫	Tuen Mun Reservoir	0.0	0.0	100.2	81.7	181.9

表 3.3.5　蘇拉影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.3.5　Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Saola

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	3.07	1/9	09:54	0.76	1/9	23:50
石壁	Shek Pik	3.07	1/9	10:09	0.72	2/9	04:40
大廟灣	Tai Miu Wan	3.02	1/9	09:45	0.91	1/9	22:45
大埔滘	Tai Po Kau	3.32	1/9	23:19	1.48	1/9	21:57
尖鼻咀	Tsim Bei Tsui	3.41	1/9	10:19	0.73	2/9	04:11

橫瀾島 - 沒有資料　Waglan Island - data not available

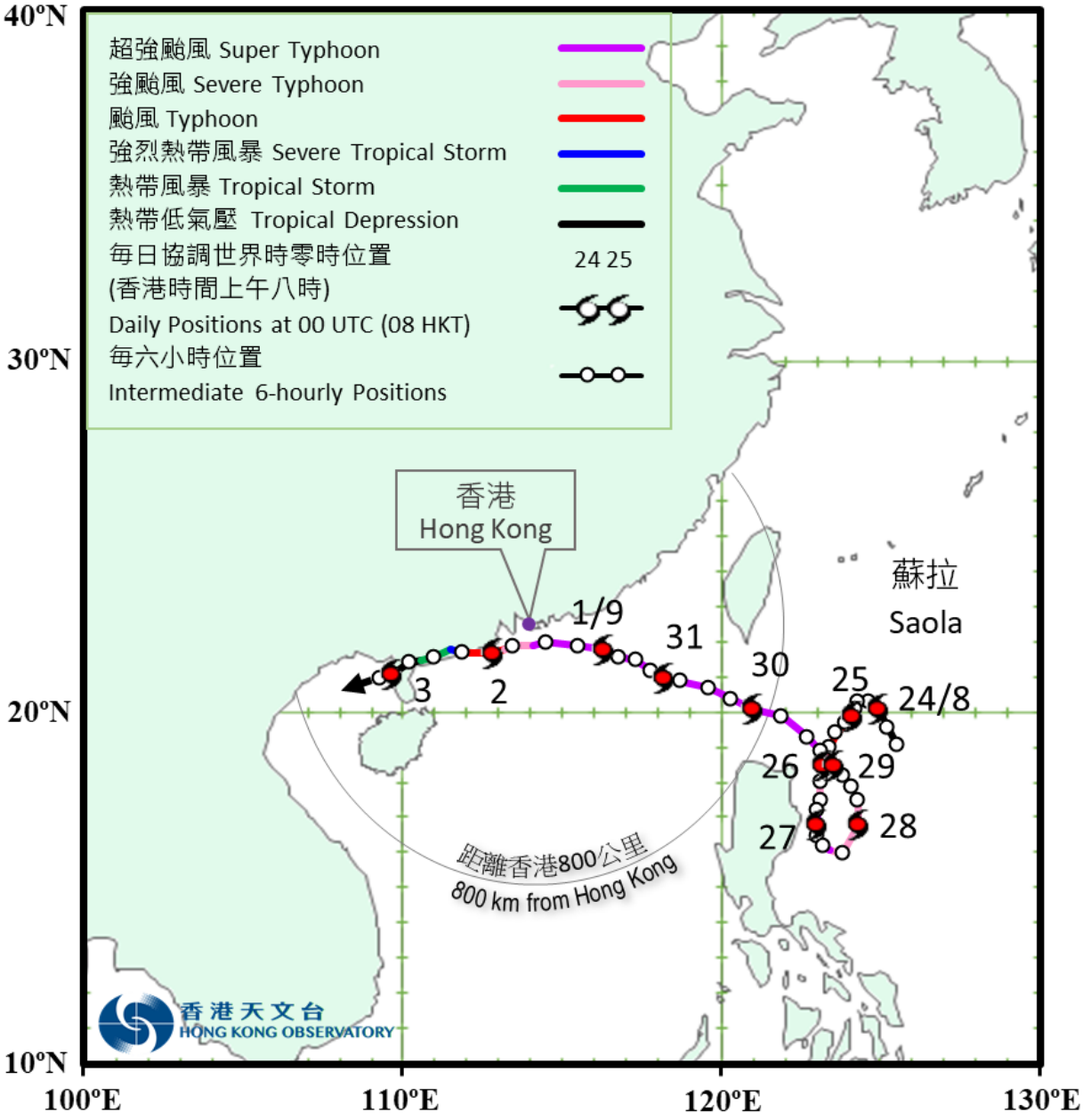


圖 3.3.1a　　二零二三年八月二十三日至九月三日蘇拉(2309)的路徑圖。

Figure 3.3.1a　Track of Saola (2309): 23 August - 3 September 2023.

圖 3.3.1b　蘇拉(2309)接近香港時的路徑圖。

Figure 3.3.1b　Track of Saola (2309) near Hong Kong.

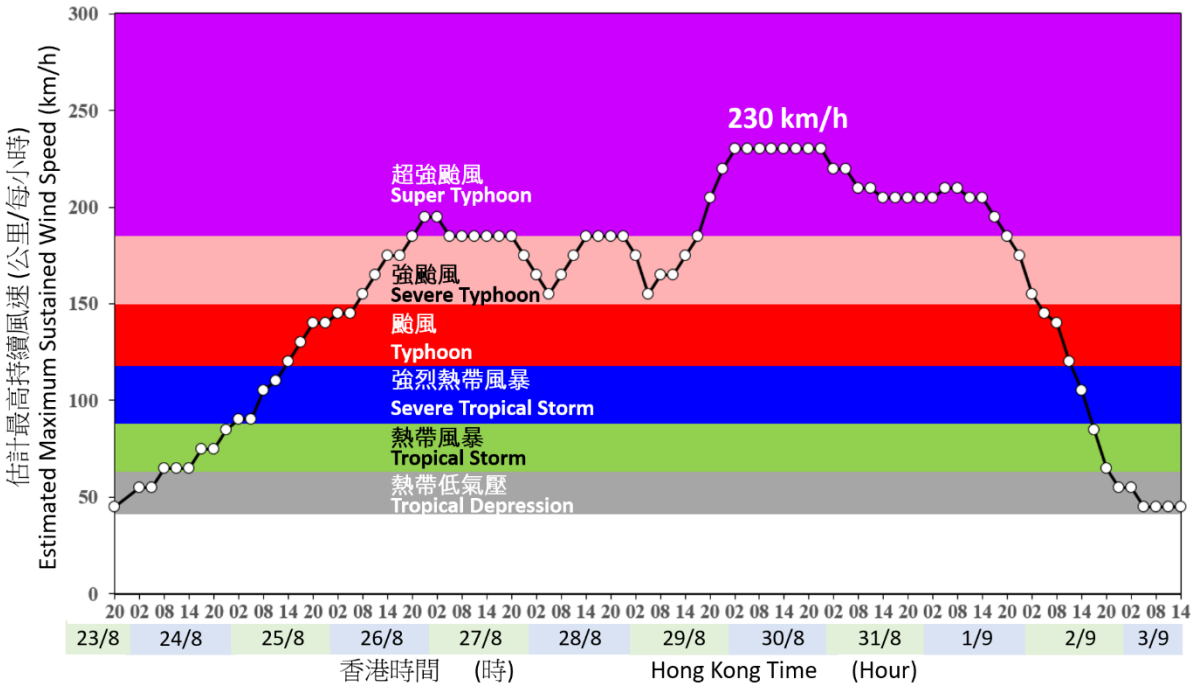


圖 3.3.2　二零二三年八月二十三日至九月三日蘇拉(2309)之估計最高持續風速的時間序列。

Figure 3.3.2　Time series of the estimated maximum sustained wind speed near the centre of Saola (2309): 23 August - 3 September 2023.

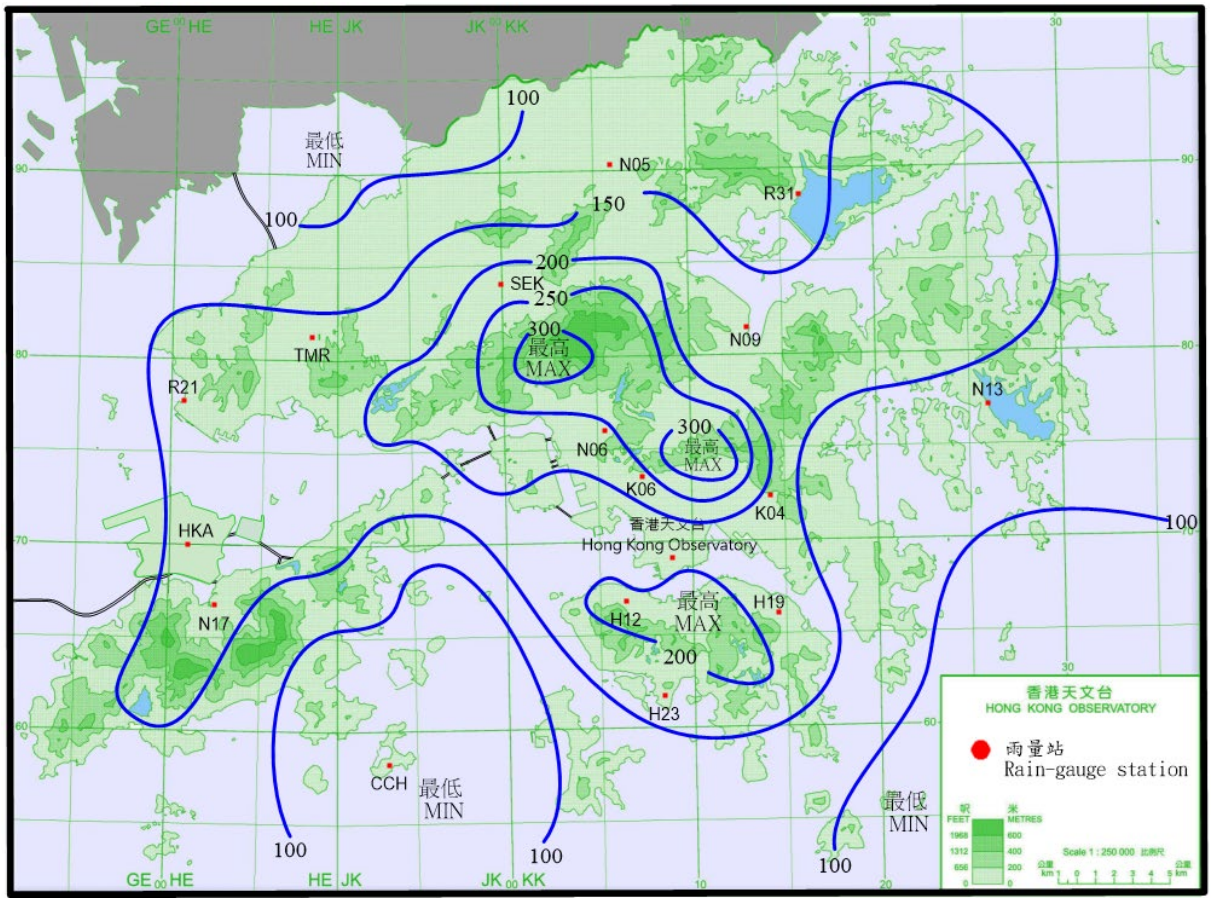


圖 3.3.3　二零二三年八月三十日至九月二日的雨量分佈(等雨量線單位為毫米)。

Figure 3.3.3　Rainfall distribution on 30 August – 2 September 2023 (isohyets are in millimetres).

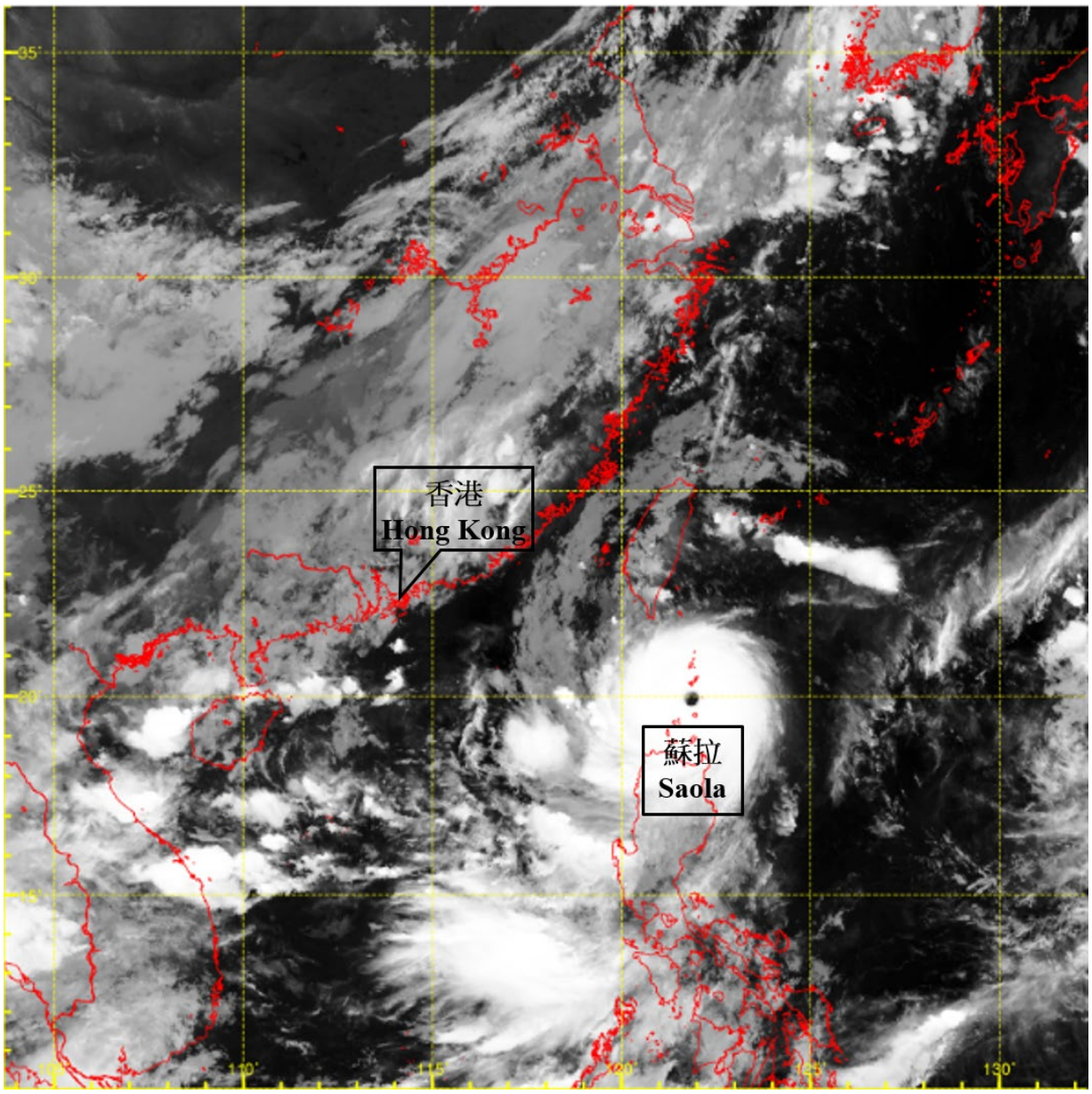


圖 3.3.4a　二零二三年八月三十日上午二時左右的紅外線衛星圖片。當時蘇拉達到其最高強度，中心附近最高持續風速估計為每小時230公里。

Figure 3.3.4a　Infra-red satellite imagery at around 2 a.m. on 30 August 2023 when Saola was at its peak intensity with an estimated maximum sustained wind of 230 km/h near its centre.

〔此衛星圖像接收自日本氣象廳的向日葵9號衛星。〕

[The satellite imagery was originally captured by Himawari-9 Satellite (H-9) of Japan Meteorological Agency (JMA).]

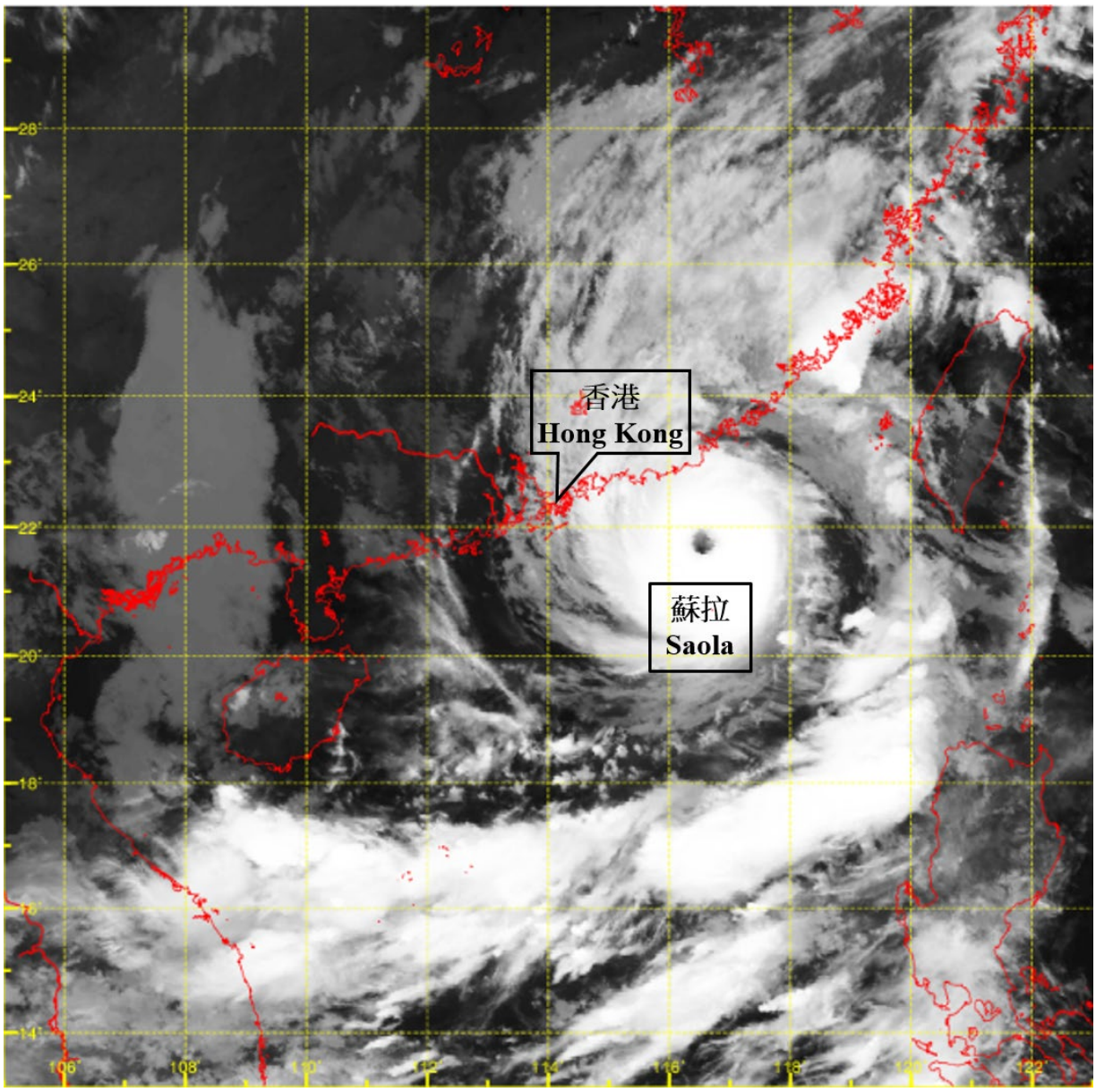


圖 3.3.4b　二零二三年九月一日上午五時左右的紅外線衛星圖片。當時八號西北烈風或暴風信號正生效，而蘇拉中心附近最高持續風速估計為每小時210公里。

Figure 3.3.4b　Infra-red satellite imagery at around 5 a.m. on 1 September 2023. The No. 8 Northwest Gale or Storm Signal was in force and the maximum sustained wind near the centre of Saola was estimated to be 210 km/h at that time.

〔此衛星圖像接收自日本氣象廳的向日葵9號衛星。〕

[The satellite imagery was originally captured by Himawari-9 Satellite (H-9) of Japan Meteorological Agency (JMA).]

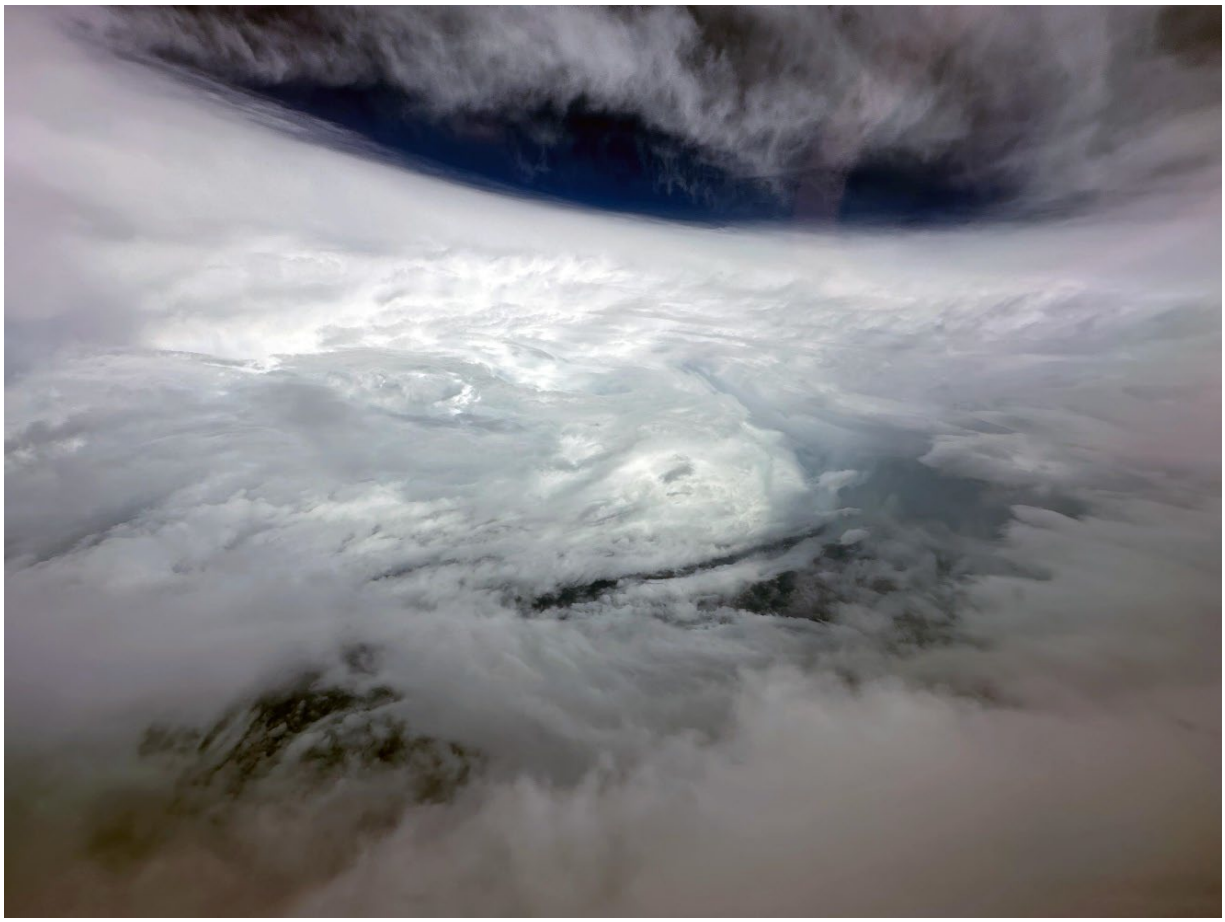


圖 3.3.5　政府飛行服務隊於九月一日早上派出一架定翼機到蘇拉附近進行觀測。從定翼機拍攝到的相片顯示蘇拉發展成熟，風眼清晰，眼壁完整。(鳴謝相片來源：政府飛行服務隊)

Figure 3.3.5　Government Flying Service (GFS) dispatched a fixed-wing aircraft to conduct surveillance near Saola on the morning of 1 September. The photo taken at the aircraft showed that Saola was a mature tropical cyclone with a clear eye and well-defined eyewalls. (Courtesy of GFS)

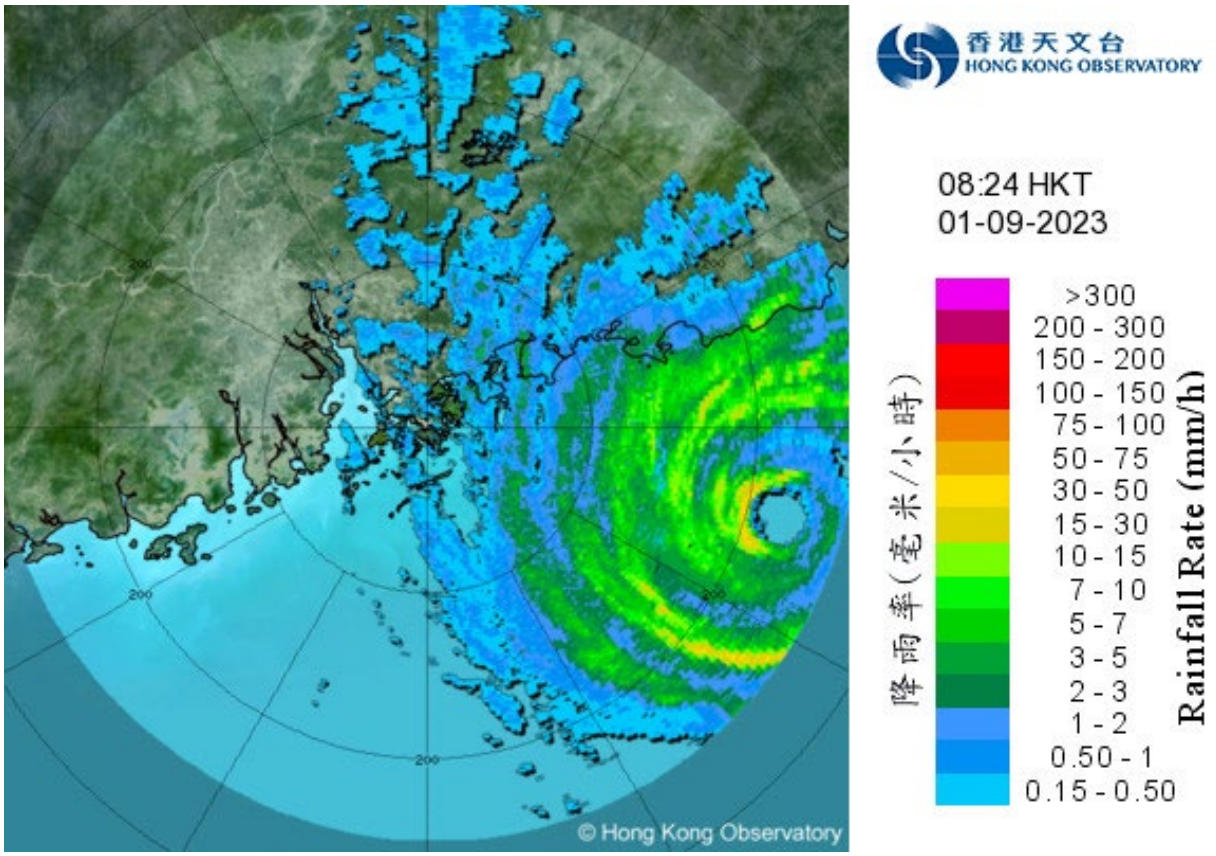


圖 3.3.6a　二零二三年九月一日上午8時24分的雷達回波圖像，當時蘇拉環流緊密，風眼清晰，並呈現雙眼壁結構。同時，與蘇拉相關的外圍雨帶正逐漸影響香港。

Figure 3.3.6a　Image of radar echoes captured at 8:24 a.m. on 1 September 2023. Saola had a tight circulation with a clear eye and a double eyewall structure at that time. Meanwhile, the outer rainbands associated with Saola were affecting Hong Kong gradually.

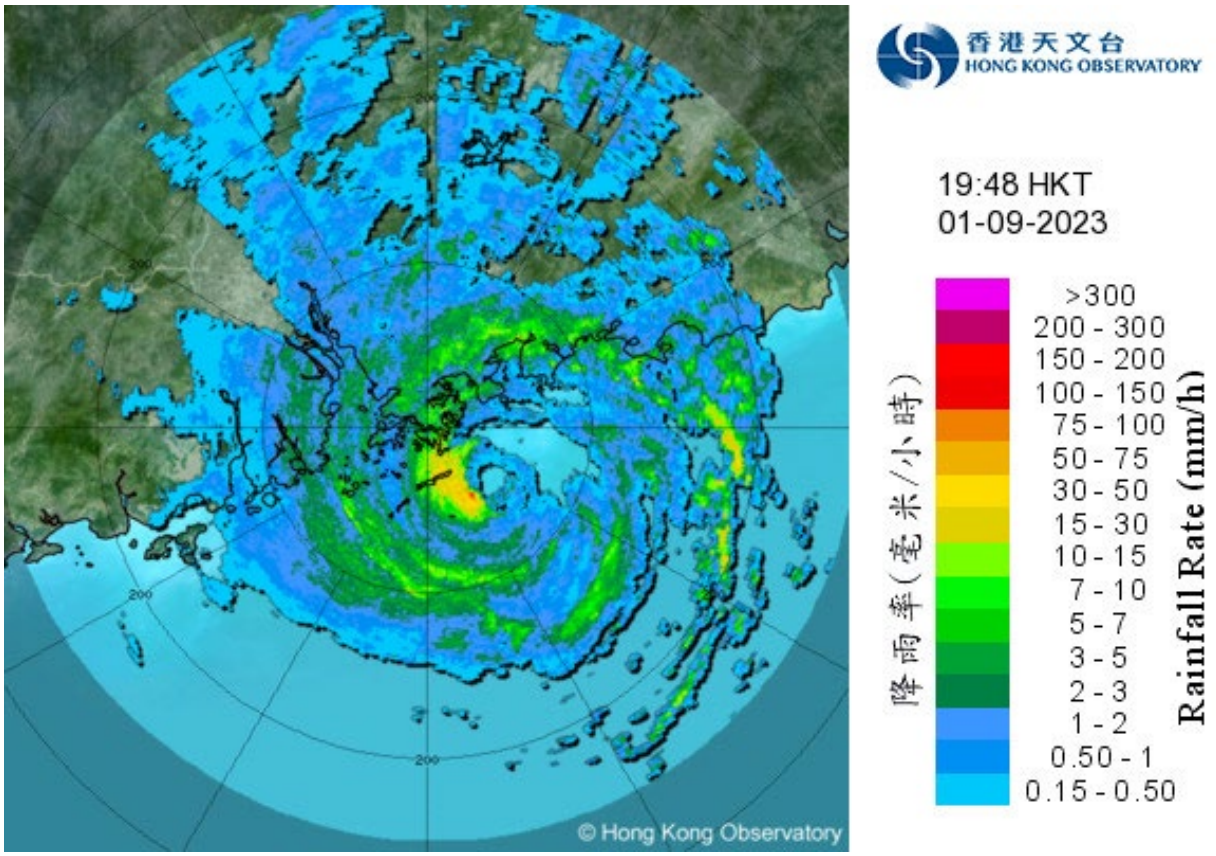


圖 3.3.6b　二零二三年九月一日下午7時48分的雷達回波圖像，當時蘇拉的內眼壁明顯縮小。同時，與蘇拉相關的外圍雨帶稍為減弱，但其眼壁附近的對流仍非常強烈。

Figure 3.3.6b　Image of radar echoes captured at 7:48 p.m. on 1 September 2023. The inner eyewall of Saola shrunk apparently. Meanwhile, the outer rainbands associated with Saola weakened slightly but the convections near the eyewall of Saola remained very intense.

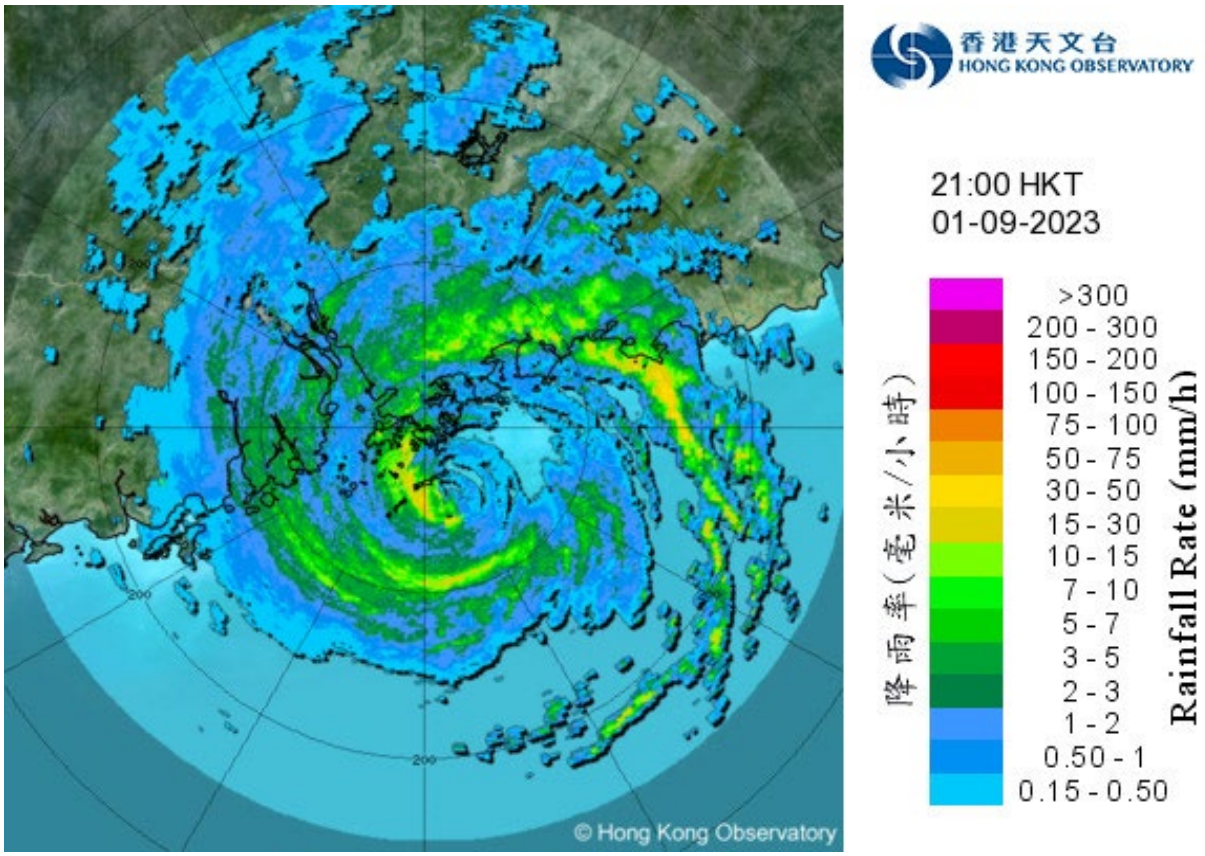


圖 3.3.6c　二零二三年九月一日下午9時的雷達回波圖像，當時蘇拉最接近香港，在天文台總部之東南偏南約40公里掠過。同時，蘇拉的眼壁正影響本港。

Figure 3.3.6c　Image of radar echoes captured at 9 p.m. on 1 September 2023 when Saola was closest to Hong Kong, skirting past about 40 km south-southeast of the Observatory Headquarters. Meanwhile, the eyewall of Saola was affecting Hong Kong.

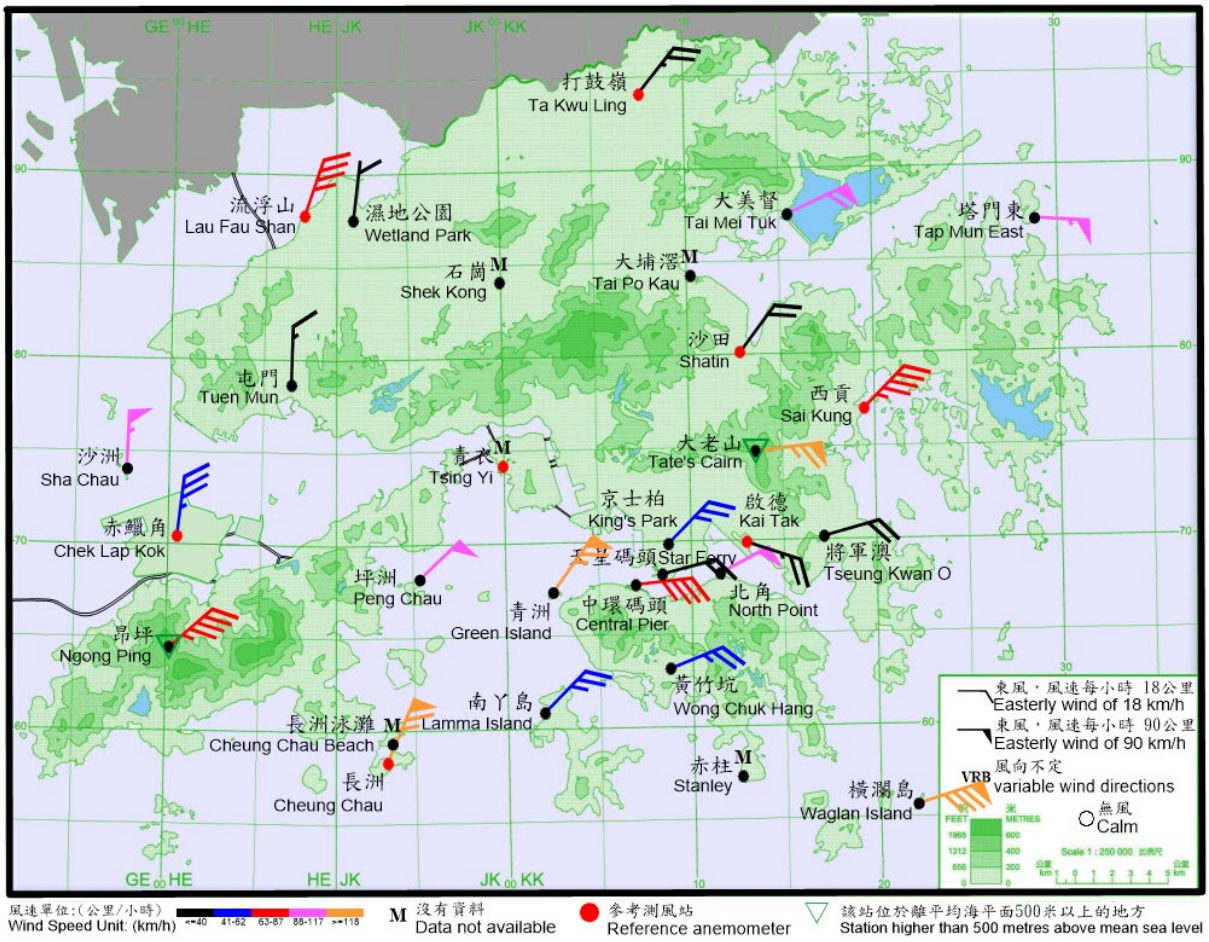


圖 3.3.7a　二零二三年九月一日下午10時20分香港各站錄得的十分鐘平均風向和風速。當時本港普遍吹東北風，長洲、橫瀾島、青州及大老山的風力達到颶風程度。

Figure 3.3.7a　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 10:20 p.m. on 1 September 2023. Local winds were generally northeasterlies, with winds at Cheung Chau, Waglan Island, Green Island and Tate's Cairn reaching hurricane force at the time.

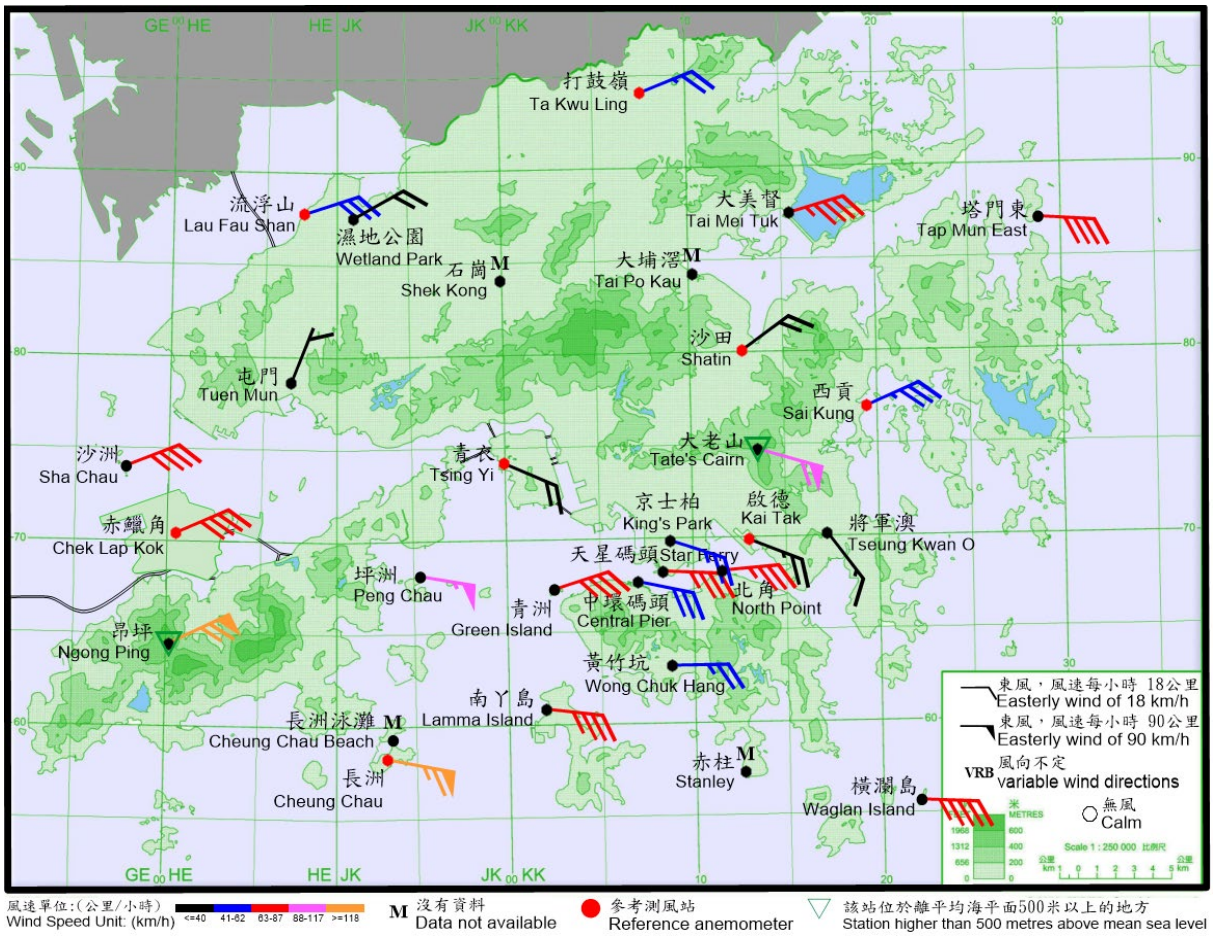


圖 3.3.7b　二零二三年九月二日上午12時20分香港各站錄得的十分鐘平均風向和風速。當時本港普遍吹東風，長洲及昂坪的風力達到颶風程度。

Figure 3.3.7b　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 12:20 a.m. on 2 September 2023. Local winds were generally easterlies, with winds at Cheung Chau and Ngong Ping reaching hurricane force at the time.

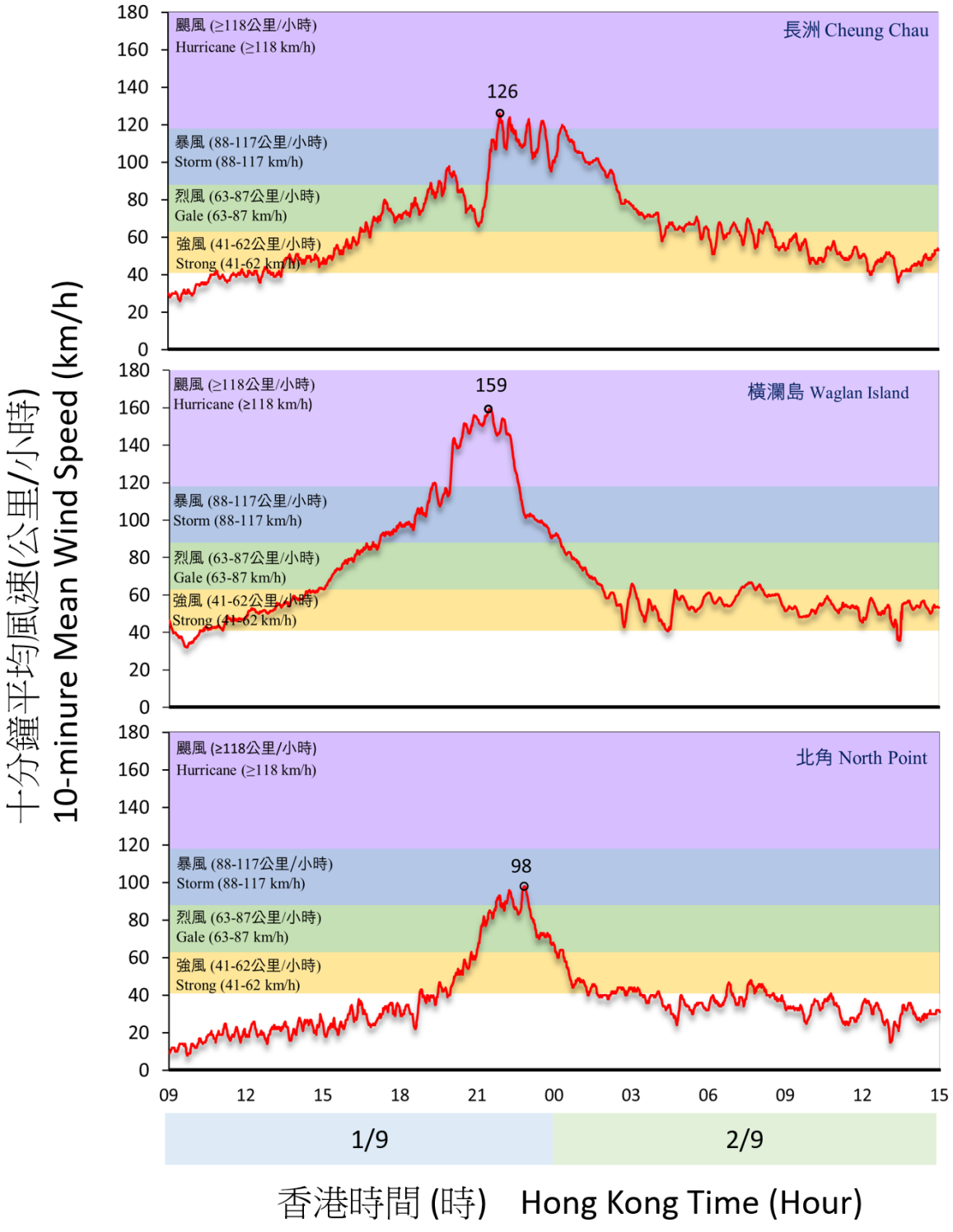


圖 3.3.8　二零二三年九月一日至二日的長洲、橫瀾島及北角錄得的十分鐘平均風速。

Figure 3.3.8　Traces of 10-minute mean wind speed recorded at Cheung Chau, Waglan Island and North Point on 1 – 2 September 2023.

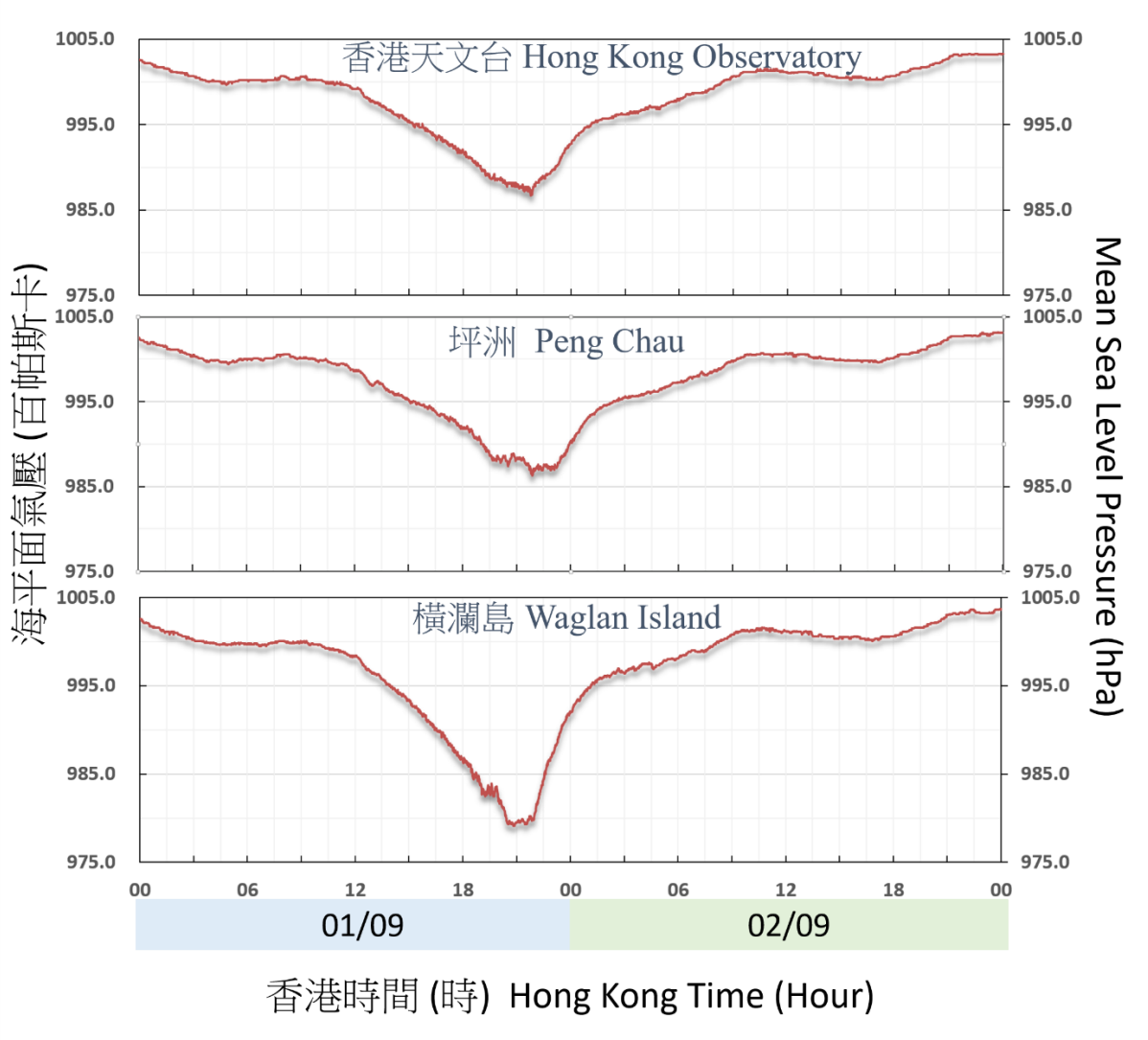


圖 3.3.9　二零二三年九月一日至二日香港天文台、坪洲及橫瀾島錄得的海平面氣壓。

Figure 3.3.9　Traces of mean sea-level pressure recorded at the Hong Kong Observatory, Peng Chau and Waglan Island on 1 – 2 September 2023.

圖 3.3.10　蘇拉襲港期間，本港多處有樹木倒塌。(鳴謝：李子祥博士及 Dr. Martin Williams (左下相片))

Figure 3.3.10　The passage of Saola resulted in fallen trees in many parts of Hong Kong. (Courtesy of Dr. T. C. Lee and Dr. Martin Williams (bottom left))

圖 3.3.11　蘇拉襲港期間，鑽石山有大樹塌下，壓彎燈柱及擊中一輛的士。(鳴謝：有線新聞)

Figure 3.3.11　During the passage of Saola, a tree fell down in Diamond Hill, bending a lamppost and hitting a taxi. (Courtesy of i-CABLE News)

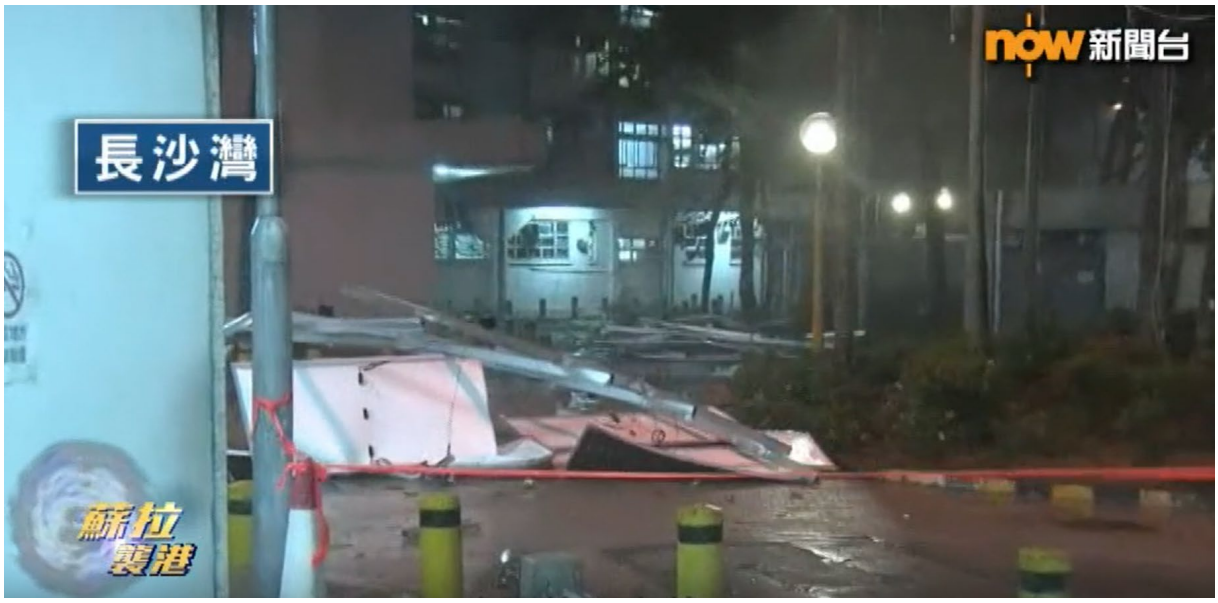


圖 3.3.12　蘇拉襲港期間，李鄭屋邨有大廈天台的太陽能板被強風吹跌至對開的道路。(鳴謝：Now新聞)

Figure 3.3.12　During the passage of Saola, solar panels on the roof of a building in Lei Cheng Uk Estate were blown onto the roads by strong winds. (Courtesy of Now News)

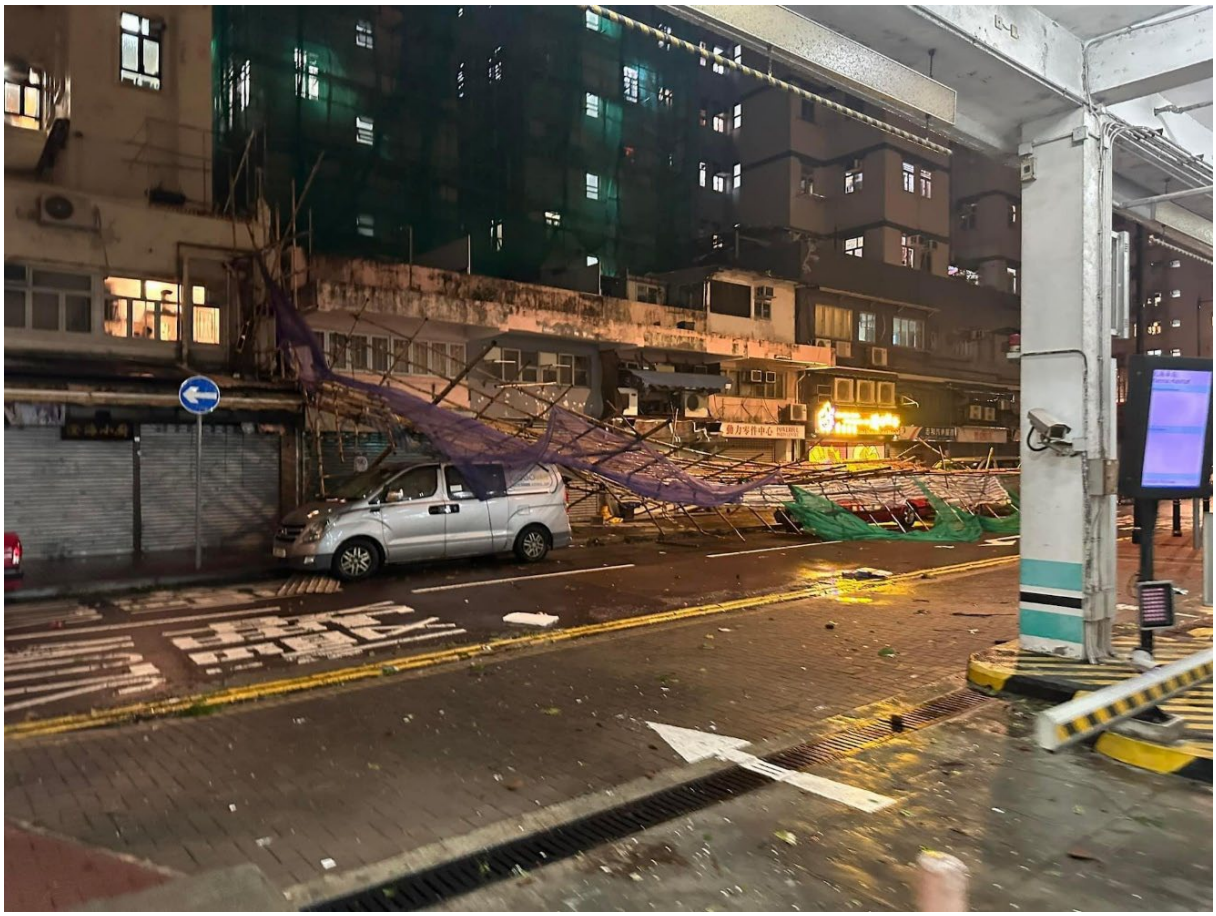


圖 3.3.13　蘇拉襲港期間，鴨脷洲有棚架塌下，擊中路邊一輛的士及一輛輕型貨車。(鳴謝：Hosing Ma)

Figure 3.3.13　During the passage of Saola, a scaffolding collapsed in Ap Lei Chau, hitting a taxi and a light goods vehicle. (Courtesy of Hosing Ma)

圖 3.3.14　蘇拉襲港期間，堅尼地城有大廈天台的組合屋被強風吹倒，擊中一輛客貨車。(鳴謝：Bosco Chu)

Figure 3.3.14　During the passage of Saola, a modular house on the roof of a building in Kennedy Town was blown down by strong winds and hit a truck. (Courtesy of Bosco Chu)

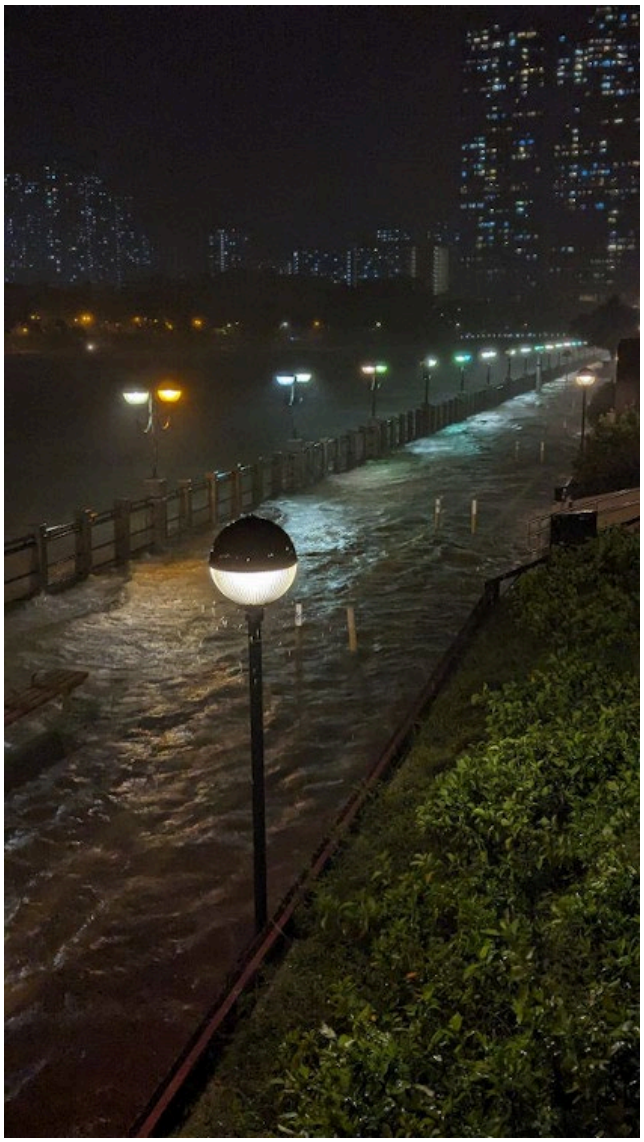


圖 3.3.15　蘇拉引起的風暴潮導致沙田城門河出現水浸。(鳴謝：Poon Chi Ming)

Figure 3.3.15　Shing Mun River in Sha Tin was flooded due to storm surge induced by Saola. (Courtesy of Poon Chi Ming)

3.4 強颱風海葵(2311)：二零二三年八月二十七日至九月五日

海葵是二零二三年第四個影響香港的熱帶氣旋。雖然天文台在海葵靠近本港期間只需發出一號戒備信號，但與海葵殘餘相關的低壓槽在九月七日晚上至九月八日上午為本港帶來持續不斷的傾盆大雨，打破多個雨量紀錄並引致多區出現嚴重水浸。總括而言，海葵及其殘餘為香港帶來的雨量[1]達641.1毫米，打破了一九九九年颱風森姆的616.5毫米的紀錄，成為自一八八四年有記錄以來為香港帶來最多雨量的熱帶氣旋。

熱帶低氣壓海葵於八月二十七日晚上在硫黃島之東南偏南約760公里的北太平洋西部上形成，隨後六天向西或西北偏西移動，移向台灣南部，並逐漸增強。九月三日凌晨海葵增強為強颱風，並於當日中午前在台灣以東海域達到其最高強度，中心附近最高持續風速估計為每小時175公里。隨後海葵橫過台灣南部，並逐漸減弱。海葵在九月四日橫過台灣海峽期間減弱為熱帶風暴。海葵於九月五日早上在福建省東山縣附近登陸，隨後移入廣東東部內陸，最後於當晚進一步減弱為低壓區。

根據報章報導，海葵吹襲台灣期間，造成至少143人受傷，超過兩萬戶停水及27萬戶停電，約8 000人需要撤離，經濟損失超過4 300萬美元。海葵在福建省亦造成超過159萬人受災，超過2 500間房屋受損，經濟損失超過50億元人民幣。此外，海葵在廣東東部內陸減弱為低壓區後，其殘餘持續緩慢西移肆虐沿岸地區，相關的大暴雨於九月五日至九月十一日期間影響廣東及廣西多地。深圳於九月七日晚上至八日早上期間錄得最大兩小時雨量195.8毫米、三小時雨量246.8毫米、六小時雨量349.7毫米及十二小時雨量465.5毫米，均打破了深圳自一九五二年有氣象記錄以來各自的紀錄。深圳多個地鐵站被水淹浸，部分路線停運。深圳機場部分航班延誤。深圳水庫在九月八日凌晨需要排洪。海葵在福建、廣東、廣西等地總共造成至少六人死亡或失蹤，超過300萬人受災，經濟損失超過158億元人民幣。

本港方面，天文台於九月四日上午4時40分發出一號戒備信號，當時海葵集結在香港以東約610公里。當日及翌日日間本港普遍吹和緩西至西北風，離岸及高地風勢間中清勁。天文台總部於當日下午3時24分錄得最低瞬時海平面氣壓1000.7百帕斯卡。海葵於九月五日下午八時左右最接近本港，位置在香港之東北約250公里。隨著海葵在廣東東部內陸減弱為低壓區，天文台於九月五日下午9時40分取消所有熱帶氣旋警告信號。

海葵掠過期間，尖鼻咀錄得最高潮位 (海圖基準面以上) 2.53米，而大埔滘則錄得最大風暴潮 (天文潮高度以上) 0.39米。

[1]即熱帶氣旋出現於香港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，天文台總部錄得的雨量

受海葵的外圍下沉氣流影響，除局部地區有驟雨及狂風雷暴外，九月三日至四日本港普遍天晴及酷熱。受海葵殘餘影響，九月五日至六日本港大致多雲及有幾陣驟雨。在廣東沿岸與海葵殘餘相關的低壓槽於九月七日晚上開始為香港帶來大雨及狂風雷暴。傾盆大雨一直影響本港至翌日。在滂沱大雨期間，天文台總部於九月七日晚上十一時至午夜十二時期間錄得158.1毫米雨量，是自一八八四年有記錄以來最高的一小時雨量。天文台總部亦在這場驚人暴雨期間錄得兩小時雨量201.0毫米及十二小時雨量605.8毫米，均打破其各自的紀錄。而九月七日下午四時至翌日下午四時的二十四小時雨量達638.5毫米，約為本港全年平均總雨量的四分之一，僅次於一八八九年五月三十日歷史雨災的紀錄。九月七日至八日本港多處錄得超過400毫米雨量，而港島東區及南區的雨量更超過800毫米。長時間大雨之下，天文台需要發出黑色暴雨警告信號，並持續生效達16小時35分鐘，是自一九九二年設立暴雨警告系統以來的最長紀錄。

持續的大雨引致本港多處出現嚴重水浸及山泥傾瀉，造成大規模交通受阻及設施損壞。全港有60宗水浸報告及超過200宗山泥傾瀉報告，而部分地方一度停電停水。暴雨期間有兩人死亡，超過140人受傷。黃大仙出現嚴重水浸，黃大仙港鐵站有大量雨水沿電梯及樓梯湧入月台及隧道，觀塘線部分路段需要停駛。而鄰近的黃大仙中心北館地下全層被水淹沒，對出的龍翔道亦出現水浸，多輛汽車被困。沙田李屋村有村屋倒塌。筲箕灣耀興道附近一處山坡發生山泥傾瀉，有多塊巨石跌下擋路，有汽車被石塊擊中，附近亦因水管爆裂，部分住宅暫停供水。柴灣環翠邨停車場被水淹浸，水深高達半架車。香港島多處地方有路面出現地陷，當中包括淺水灣、石澳及柴灣等。其中香島道與淺水灣道交界一處路陷，一輛駛經的私家車墮入深坑。因山泥傾瀉和路陷，石澳道曾需全線封閉。

3.4 Severe Typhoon Haikui (2311): 27 August to 5 September 2023

Haikui was the fourth tropical cyclone affecting Hong Kong in 2023. While only the Standby Signal No. 1 was issued during the approach of Haikui, the trough of low pressure associated with the remnant of Haikui brought incessant downpour to Hong Kong from the night of 7 September to the morning of 8 September, breaking a number of rainfall records and triggering severe flooding in many parts of Hong Kong. Overall, Haikui and its remnant brought 641.1 millimetres of rainfall[2] to Hong Kong, breaking the previous record of 616.5 millimetres set by Typhoon Sam in 1999, and making it the wettest tropical cyclone ever to affect Hong Kong since records began in 1884.

Haikui formed as a tropical depression over the western North Pacific about 760 km south-southeast of Iwo Jima on the night of 27 August. It moved westwards or west-northwestwards towards the southern part of Taiwan and intensified gradually in the following six days. Haikui intensified into a severe typhoon in the small hours on 3 September and attained its peak intensity over the seas east of Taiwan, with an estimated maximum sustained wind of 175 km/h near its centre before noon on that day. It then moved across the southern part of Taiwan and weakened gradually. Haikui weakened into a tropical storm when it moved across the Taiwan Strait on 4 September. Haikui made landfall near Dongshan in Fujian on the morning of 5 September. It then moved into inland eastern Guangdong and finally degenerated into an area of low pressure that night.

According to press reports, at least 143 people were injured when Haikui affected Taiwan. Water and electricity supply to more than 20 000 and 270 000 households were disrupted respectively. Around 8 000 people were displaced. Economic loss exceeded USD 43 million. In Fujian province, more than 1.59 million people were affected, more than 2 500 houses were damaged and economic loss exceeded RMB 5 billion. Besides, after Haikui has weakened into an area of low pressure over inland eastern Guangdong, its remnant continued to move westwards slowly and wreaked havoc in the coastal areas with torrential rain affecting many places in Guangdong and Guangxi provinces during 5 – 11 September. In Shenzhen, from the night of 7 September to the morning of 8 September, maximum 2-hour rainfall of 195.8 millimetres, 3-hour rainfall of 246.8 millimetres, 6-hour rainfall of 349.7 millimetres and 12-hour rainfall of 465.5 millimetres were recorded, all breaking their respective records since Shenzhen's meteorological records began in 1952. Many metro stations were flooded and some of the lines were suspended in Shenzhen. Some flights at Shenzhen Airport were delayed. Water was discharged from Shenzhen Reservoir in the small hours on 8 September. In Fujian, Guangdong, Guangxi, Haikui left at least six deaths or missing. More than three million people were affected and economic loss exceeded RMB 15.8 billion.

In Hong Kong, the Standby Signal No. 1 was issued at 4:40 a.m. on 4 September, when Haikui was about 610 km east of Hong Kong. Local winds were generally moderate west to northwesterlies, occasionally fresh offshore and on high ground on that day and during the day next day. The lowest instantaneous mean sea-level pressure of 1000.7 hPa was recorded at the Observatory Headquarters at 3:24 p.m. on that day. Haikui came closest to the territory at around 8 p.m. on 5 September, when it was about 250 km northeast of Hong Kong. As Haikui weakened into an area of low pressure over inland eastern Guangdong, all tropical cyclone warning signals were cancelled at 9:40 p.m. on 5 September.

[2] defined as the total rainfall recorded at the Hong Kong Observatory Headquarters from the time when a tropical cyclone was first centred within 600 km of Hong Kong to 72 hours after it had dissipated within or moved outside 600 km of Hong Kong

During the passage of Haikui, a maximum sea level (above chart datum) of 2.53 m was recorded at Tsim Bei Tsui, while a maximum storm surge of 0.39 m (above astronomical tide) was recorded at Tai Po Kau.

Under the influence of the outer subsiding air of Haikui, apart from isolated showers and squally thunderstorms, it was generally fine and very hot during the day in Hong Kong on 3 – 4 September. Affected by the remnant of Haikui, it was mainly cloudy with a few showers on 5 – 6 September. The trough of low pressure associated with the remnant of Haikui over the coast of Guangdong started to bring heavy rain and squally thunderstorms to Hong Kong on the night of 7 September. The heavy downpour continued to affect the territory till the next day. During the torrential rain, the Hong Kong Observatory Headquarters registered a record-breaking hourly rainfall of 158.1 millimetres from 11 p.m. to midnight on 7 September, the highest since records began in 1884. The 2-hour total rainfall of 201.0 millimetres and 12-hour total rainfall of 605.8 millimetres recorded at the Observatory Headquarters during this phenomenal rainstorm also broke their respective records. Moreover, the 24-hour rainfall from 4 p.m. on 7 September to 4 p.m. next day reached 638.5 millimetres, about a quarter of the normal annual total rainfall of Hong Kong and just next to the highest records kept by the historical rainstorm on 30 May 1889. More than 400 millimetres of rainfall were recorded over many parts of the territory and rainfall even exceeded 800 millimetres over the Eastern District and Southern District of Hong Kong Island on 7 – 8 September. The prolonged heavy rain necessitated the issuance of the Black Rainstorm Warning for 16 hours and 35 minutes, setting the longest record since the introduction of the rainstorm warning system in 1992.

The unrelenting heavy rain triggered flash floods and landslides in many parts of Hong Kong, resulting in widespread traffic disruption and damage to infrastructures. Locally, there were 60 reports of flooding and over 200 reports of landslides. Power and water supply were temporarily interrupted in some places. Two people were killed and more than 140 were injured during the rainstorm. Wong Tin Sin was swamped by severe flooding. At Wong Tai Sin Mass Transit Railway Station, rainwater poured into the station platform and tunnel along the elevators and stairs. Parts of the Kwun Tong Line were suspended. The entire underground floor of the nearby Temple Mall North was submerged. The Lung Cheung Road in front of the mall was also flooded with many vehicles trapped. A house collapsed at Lei Uk Tsuen in Sha Tin. A landslide occurred on a mountain slope near Yiu Hing Road in Shau Kei Wan with many boulders falling and blocking the road. A vehicle was hit by the rocks. Water pipes were damaged and water supply to nearby residences was suspended. The car park at Wan Tsui Estate in Chai Wan was flooded with the water depth reaching half a vehicle. There were road subsidence in different places of Hong Kong Island, including Repulse Bay, Shek O, and Chai Wan. A passing vehicle fell into a subsided hole at the intersection of Island Road and Repulse Bay Road. Shek O Road was once closed due to landslides and road subsidence.

表 3.4.1　在海葵影響下，本港各站在熱帶氣旋警告信號生效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 when the tropical cyclone warning signals for Haikui were in force

站(參閱圖 1.1) Station (See Fig. 1.1))		最高陣風 Maximum Gust					最高每小時平均風速 Maximum Hourly Mean Wind				
		風向 Direction		風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time	風向 Direction		風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time
中環碼頭	Central Pier	東北偏東	ENE	29	4/9	22:58	西北偏西	WNW	18	5/9	11:00
長洲	Cheung Chau	西北偏西	WNW	44	5/9	07:29	西北	NW	22	5/9	10:00
長洲泳灘	Cheung Chau Beach	-	-	36	4/9	20:45	-	-	14	5/9	08:00
青洲	Green Island	西北	NW	40	4/9	07:43	西北	NW	28	5/9	09:00
香港國際機場	Hong Kong International Airport	東北	NE	37	4/9	20:44	西北偏北	NNW	24	5/9	11:00
啟德	Kai Tak	西北	NW	29	5/9	17:42	西北	NW	12	5/9	12:00
京士柏	King's Park	北	N	36	4/9	22:03	東北偏北	NNE	14	4/9	23:00
南丫島	Lamma Island	西北	NW	25	5/9	09:10	西北偏北	NNW	15	5/9	09:00
流浮山	Lau Fau Shan	東北偏北	NNE	58	4/9	20:13	西北偏北	NNW	21	5/9	12:00
							西北偏北	NNW	21	5/9	15:00
昂坪	Ngong Ping	東北偏北	NNE	40	5/9	09:40	東北偏北	NNE	23	5/9	00:00
北角	North Point	西南偏西	WSW	26	4/9	04:44	西南偏西	WSW	18	4/9	05:00
		西南偏西	WSW	26	4/9	04:45					
		西南偏西	WSW	26	4/9	05:06					
		西南偏西	WSW	26	4/9	05:15					
坪洲	Peng Chau	北	N	40	4/9	20:37	西北	NW	24	5/9	08:00
平洲	Ping Chau	西北偏西	WNW	20	5/9	11:16	西北偏西	WNW	8	5/9	12:00
西貢	Sai Kung	北	N	33	4/9	23:26	北	N	17	4/9	11:00
沙洲	Sha Chau	北	N	58	4/9	20:36	西北偏北	NNW	29	4/9	21:00
沙螺灣	Sha Lo Wan	東北偏東	ENE	30	4/9	20:55	西	W	8	4/9	21:00
							西南偏西	WSW	8	5/9	07:00
沙田	Sha Tin	東北	NE	24	4/9	22:15	東北	NE	9	4/9	12:00
石崗	Shek Kong	-	-	39	4/9	19:57	-	-	12	5/9	13:00
九龍天星碼頭	Star Ferry (Kowloon)	西北偏西	WNW	35	5/9	10:28	西	W	18	4/9	16:00
打鼓嶺	Ta Kwu Ling	北	N	28	4/9	10:03	東北偏北	NNE	12	4/9	11:00
大美督	Tai Mei Tuk	東北	NE	43	4/9	22:02	東北	NE	19	4/9	22:00
大帽山	Tai Mo Shan	東北偏北	NNE	54	4/9	23:32	東北偏北	NNE	42	5/9	00:00
		東北偏北	NNE	54	4/9	23:38					
塔門東	Tap Mun East	西北偏西	WNW	43	4/9	18:26	西北偏西	WNW	17	5/9	10:00
大老山	Tate's Cairn	東北偏北	NNE	57	4/9	22:19	東北偏北	NNE	44	4/9	23:00
將軍澳	Tseung Kwan O	東北偏東	ENE	27	4/9	08:40	東北偏東	ENE	12	4/9	12:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	北	N	39	4/9	20:21	西北	NW	10	4/9	09:00
							西北	NW	10	4/9	10:00
							西北偏西	WNW	10	4/9	18:00
屯門政府合署	Tuen Mun Government Offices	東北偏北	NNE	34	4/9	20:29	西北偏西	WNW	12	4/9	16:00
橫瀾島	Waglan Island	西北偏西	WNW	30	5/9	12:05	西北偏北	NNW	22	5/9	02:00
濕地公園	Wetland Park	西北偏北	NNW	24	4/9	20:18	西南偏西	WSW	6	4/9	16:00
黃竹坑	Wong Chuk Hang	西	W	32	4/9	22:44	西北偏北	NNW	8	5/9	10:00

黃麻角(赤柱)、大埔滘 – 沒有資料　　Bluff Head (Stanley), Tai Po Kau – data not available

長洲泳灘、石崗 – 沒有風向資料　　Cheung Chau Beach, Shek Kong – wind direction not available

表 3.4.2　海葵及其殘餘影響香港期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.4.2　Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Haikui and its remnant

站 (參閱圖 3.4.4) Station (See Fig. 3.4.4)			九月四日 4 Sep	九月五日 5 Sep	九月六日 6 Sep	九月七日 7 Sep	九月八日 8 Sep	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			微量 Trace	0.4	0.0	215.7	425.0	641.1
香港國際機場 Hong Kong International Airport (HKA)			4.8	微量 Trace	微量 Trace	90.9	71.0	166.7
長洲 Cheung Chau (CCH)			0.0	0.0	0.5	35.0	113.0	148.5
H23	香港仔	Aberdeen	0.0	0.0	0.0	175.0	375.0	550.0
N05	粉嶺	Fanling	0.0	0.0	0.0	224.5	373.5	598.0
N13	糧船灣	High Island	0.5	0.0	0.5	34.5	114.0	149.5
K04	佐敦谷	Jordan Valley	0.0	1.0	0.0	197.5	348.5	547.0
N06	葵涌	Kwai Chung	0.0	0.0	0.0	150.5	379.5	530.0
H12	半山區	Mid Levels	0.0	0.5	0.5	148.0	311.5	460.5
N09	沙田	Sha Tin	0.0	0.5	0.5	167.5	234.5	403.0
H19	筲箕灣	Shau Kei Wan	0.0	1.0	0.0	260.5	546.0	807.5
SEK	石崗	Shek Kong	7.5	0.0	0.0	72.5	291.0	371.0
K06	蘇屋邨	So Uk Estate	0.0	1.0	0.5	209.0	429.0	639.5
R31	大美督	Tai Mei Tuk	0.0	0.0	0.5	196.0	138.0	334.5
R21	踏石角	Tap Shek Kok	13.0	0.0	0.0	74.5	78.0	165.5
N17	東涌	Tung Chung	8.5	0.0	0.0	79.0	72.5	160.0
TMR	屯門水庫	Tuen Mun Reservoir	6.0	0.0	0.0	96.1	118.5	220.6

表 3.4.3　海葵影響香港期間，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 tide stations in Hong Kong during the passage of Haikui

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	2.31	5/9	00:40	0.29	4/9	11:35
石壁	Shek Pik	2.26	5/9	00:55	0.23	4/9	19:49
大廟灣	Tai Miu Wan	2.23	5/9	00:51	0.29	4/9	19:18
大埔滘	Tai Po Kau	2.46	5/9	00:49	0.39	4/9	12:01
尖鼻咀	Tsim Bei Tsui	2.53	4/9	13:23	0.32	4/9	21:07

橫瀾島 – 沒有資料　Waglan Island – data not available

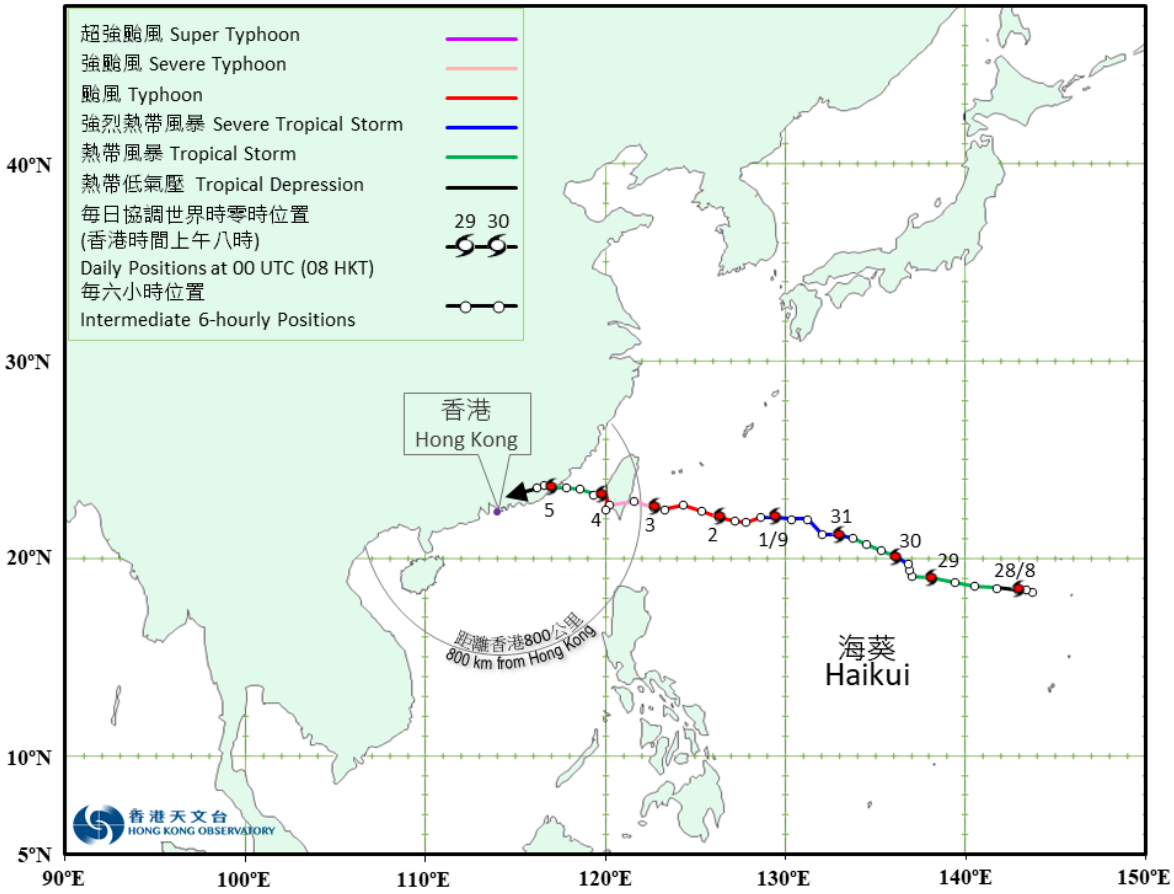


圖 3.4.1a　　二零二三年八月二十七日至九月五日海葵(2311)的路徑圖。

Figure 3.4.1a　Track of Haikui (2311): 27 August – 5 September 2023.

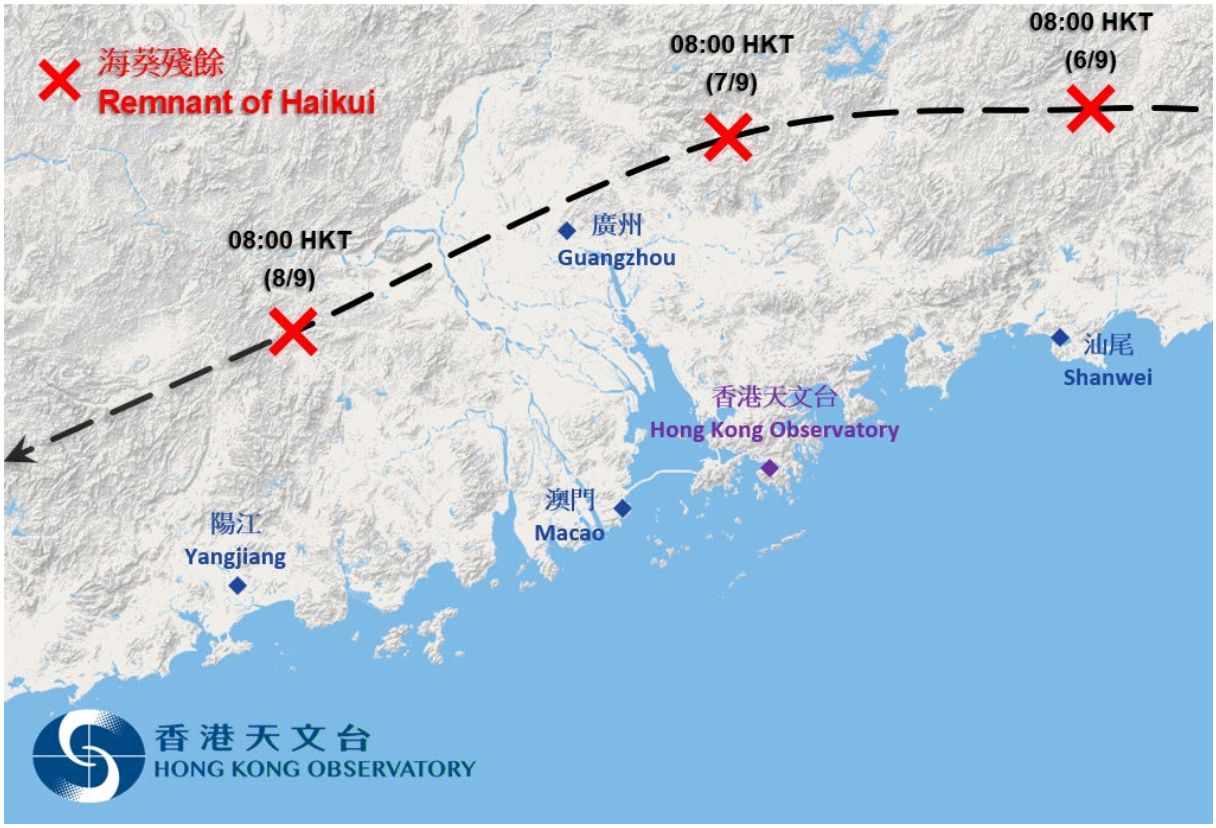


圖 3.4.1b　二零二三年九月六日至八日海葵殘餘的中心的大約位置。

Figure 3.4.1b　Approximate location of the centre of the remnant of Haikui on 6 – 8 September 2023.

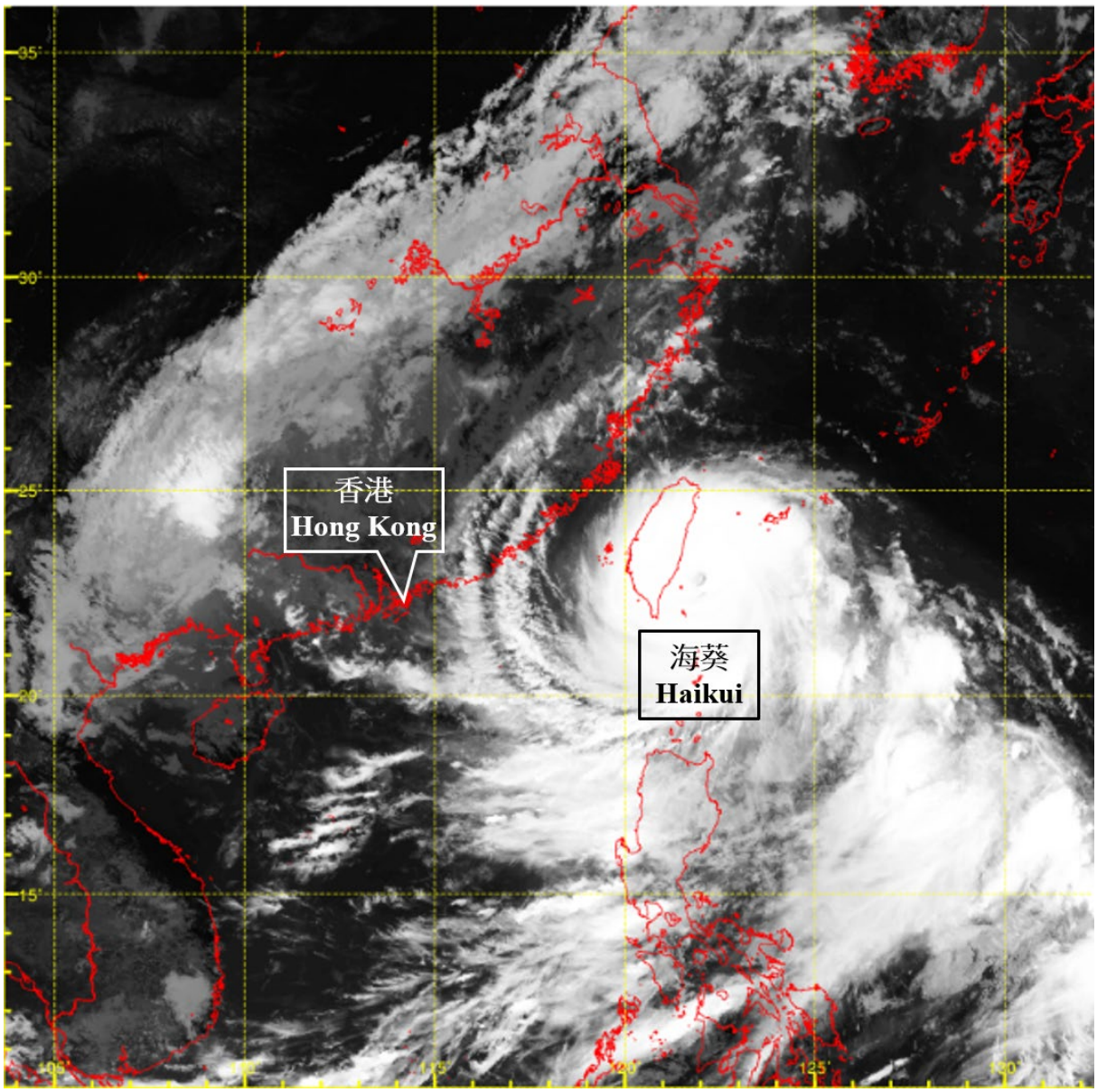


圖 3.4.2a　二零二三年九月三日上午十一時左右的紅外線衛星圖片，當時海葵達到其最高強度，中心附近最高持續風速估計為每小時175公里。

Figure 3.4.2a　Infra-red satellite imagery at around 11 a.m. on 3 September 2023 when Haikui was at its peak intensity with an estimated maximum sustained wind of 175 km/h near its centre.

〔此衛星圖像接收自日本氣象廳的向日葵9號衛星。〕

[The satellite imagery was originally captured by Himawari-9 Satellite (H-9) of Japan Meteorological Agency (JMA).]

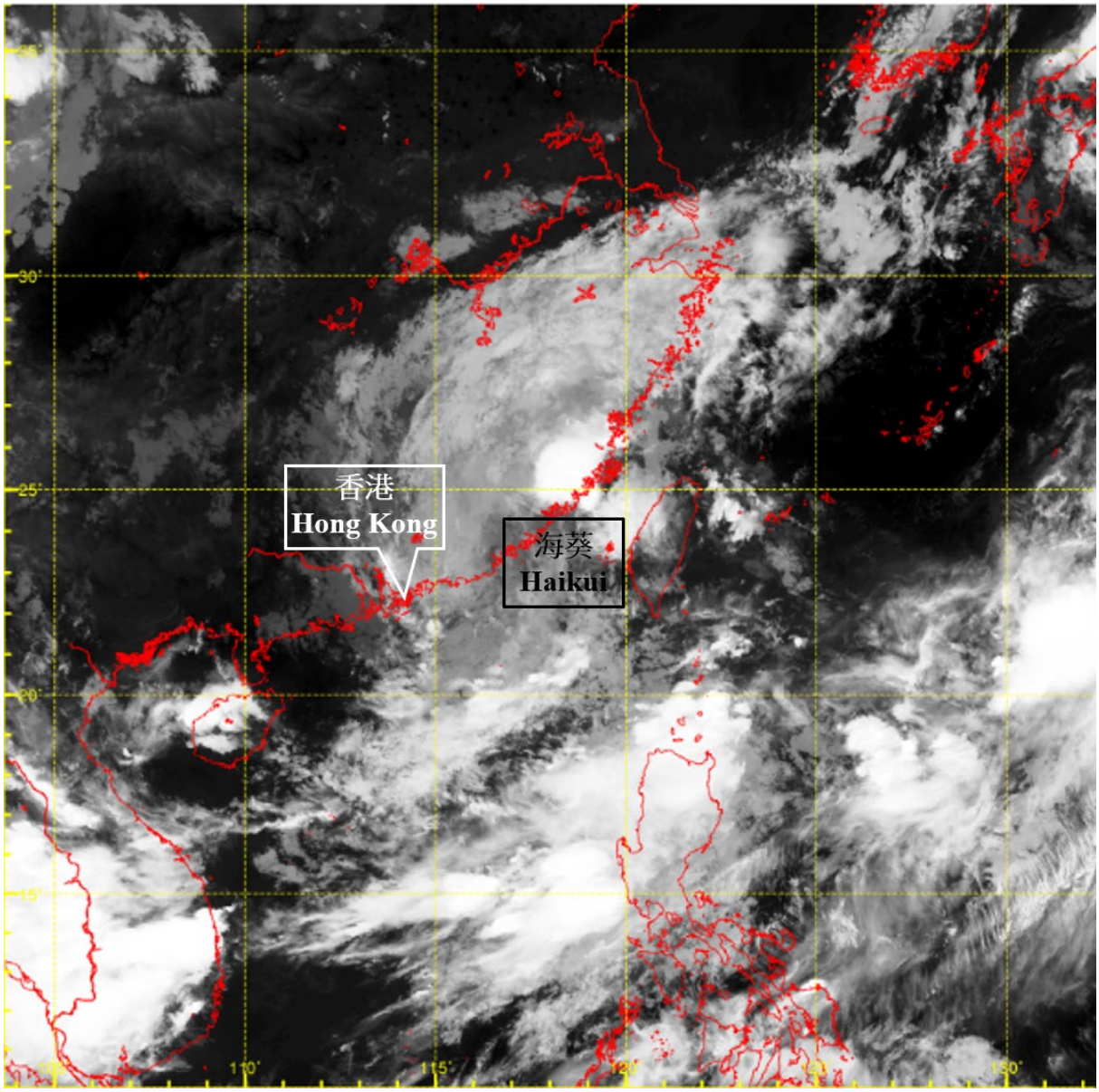


圖 3.4.2b　二零二三年九月五日下午八時左右的紅外線衛星圖片，當時海葵最接近本港，在香港之東北約250公里。

Figure 3.4.2b　Infra-red satellite imagery at around 8 p.m. on 5 September 2023. Haikui was closest to the territory at the time, around 250 km northeast of Hong Kong.

〔此衛星圖像接收自日本氣象廳的向日葵9號衛星。〕

[The satellite imagery was originally captured by Himawari-9 Satellite (H-9) of Japan Meteorological Agency (JMA).]

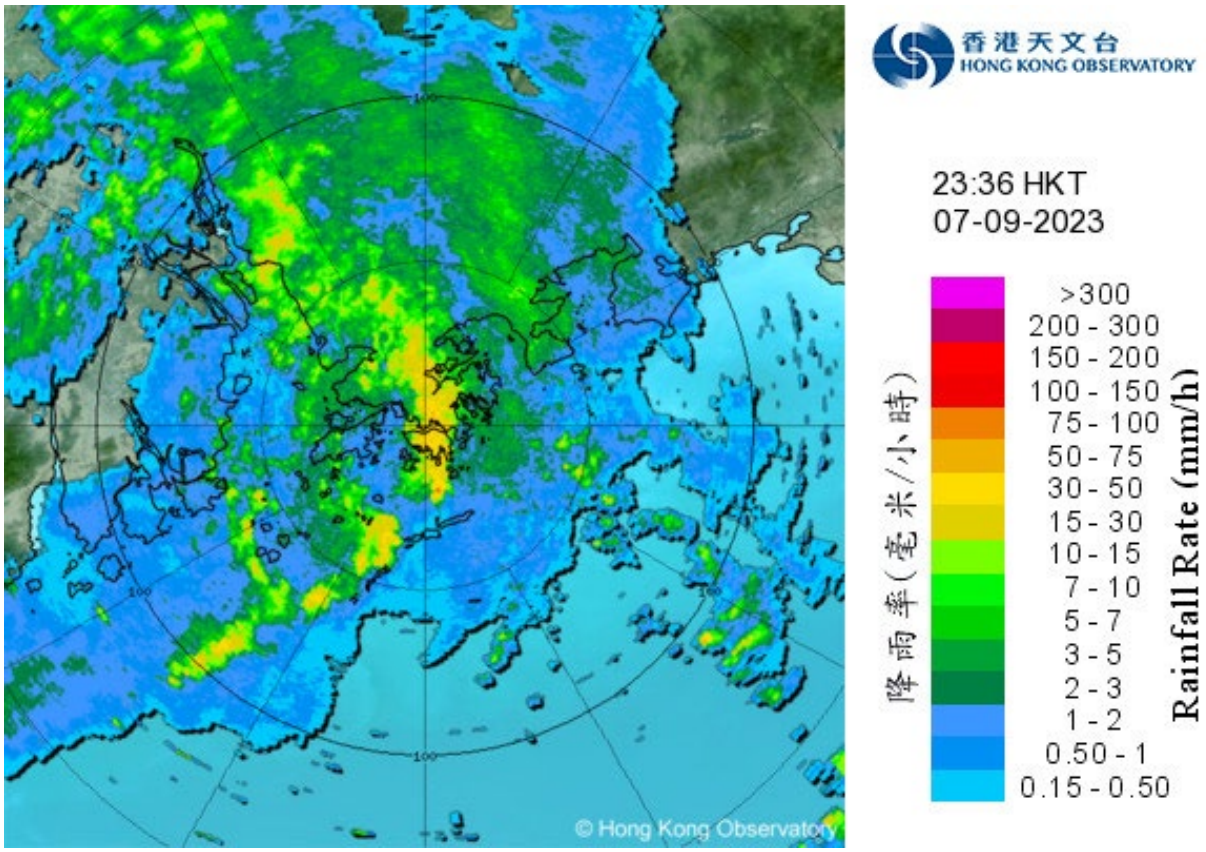


圖 3.4.3a　二零二三年九月七日晚上11時36分滂沱大雨影響香港期間的雷達回波圖像。

Figure 3.4.3a　Image of radar echoes captured at 11:36 p.m. on 7 September 2023 when torrential rain was affecting Hong Kong.

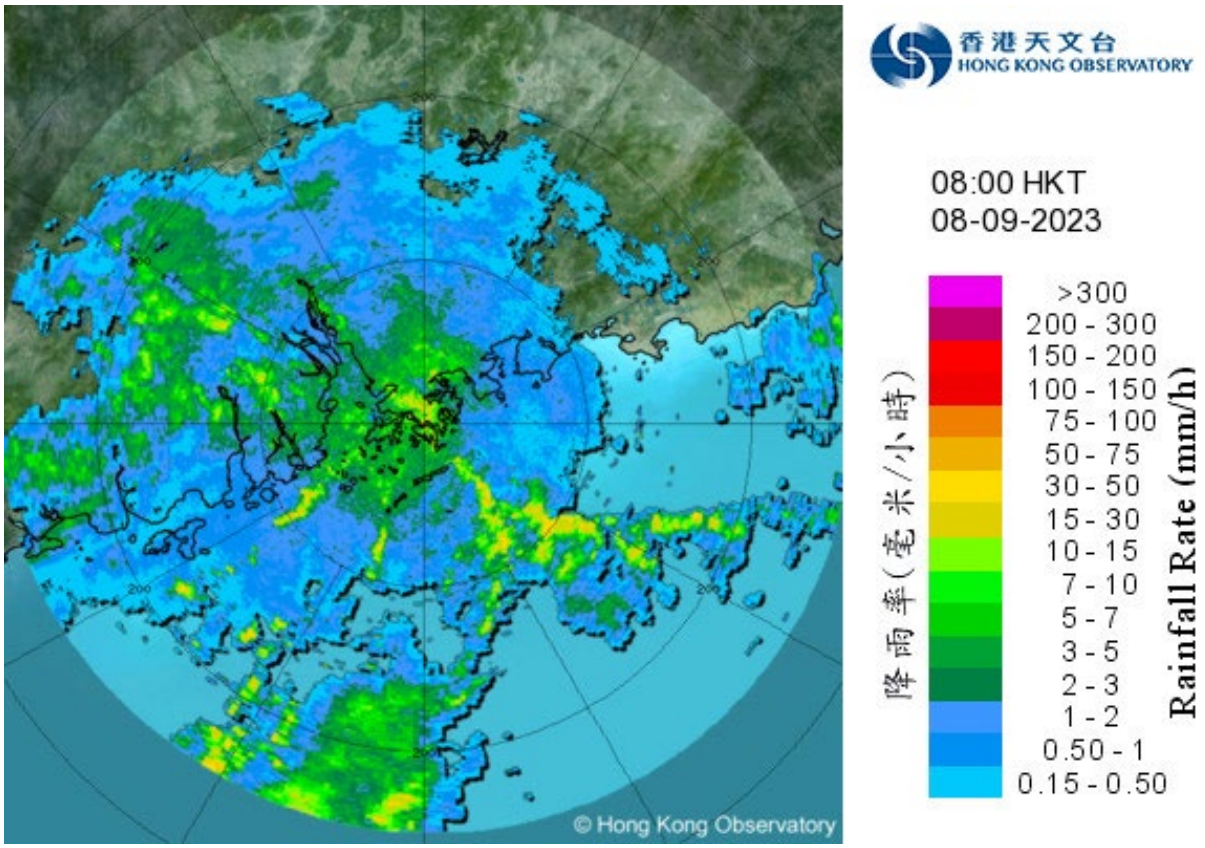


圖 3.4.3b　二零二三年九月八日上午8時的雷達回波圖像，當時海葵殘餘的中心已移至香港西北面，但與其相關的大雨仍然影響本港。

Figure 3.4.3b　Image of radar echoes captured at 8:00 a.m. on 8 September 2023. While the remnant low pressure area associated with Haikui moved to the northwest of Hong Kong, its associated heavy rain was still affecting the territory.

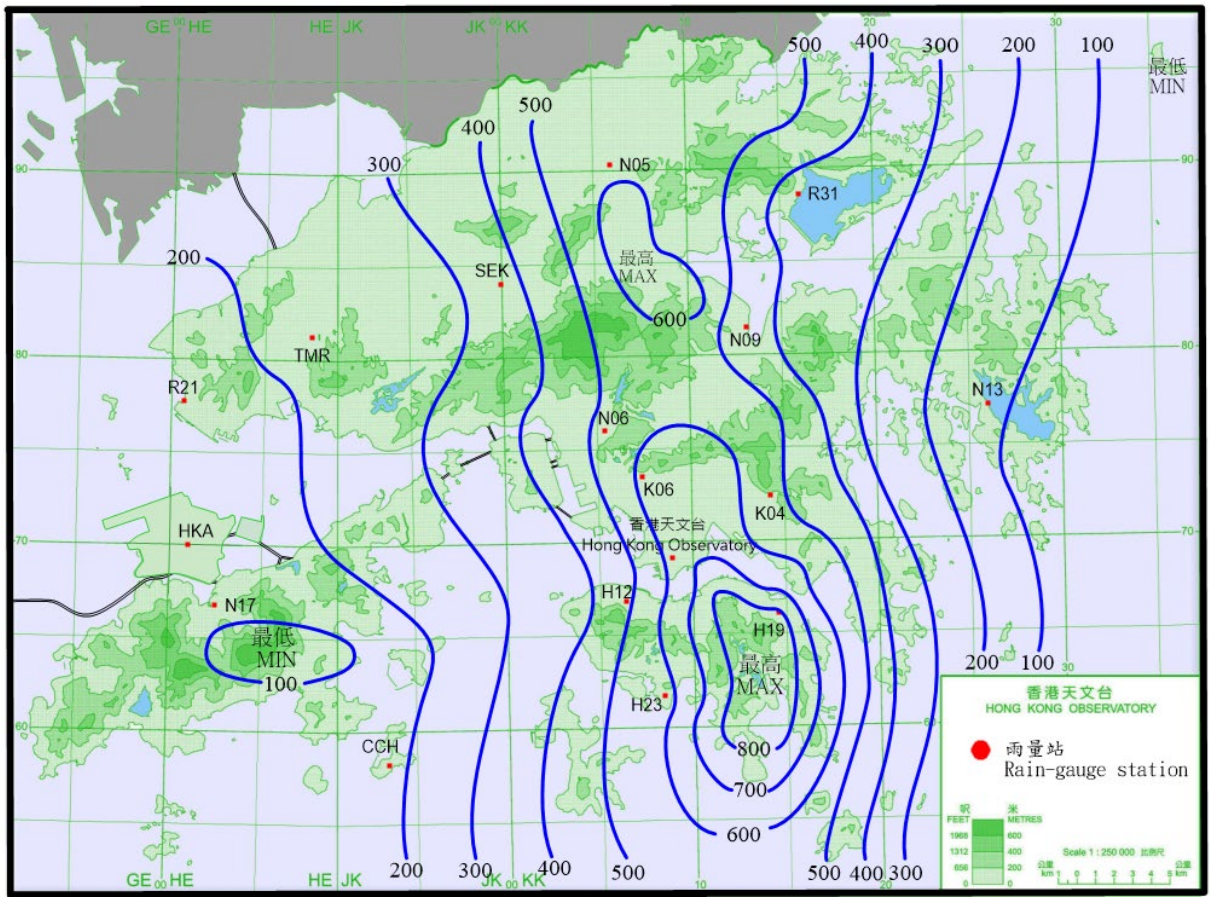


圖 3.4.4　二零二三年九月四日至八日的雨量分佈(等雨量線單位為毫米)。

Figure 3.4.4　Rainfall distribution on 4 – 8 September 2023 (isohyets are in millimetres).

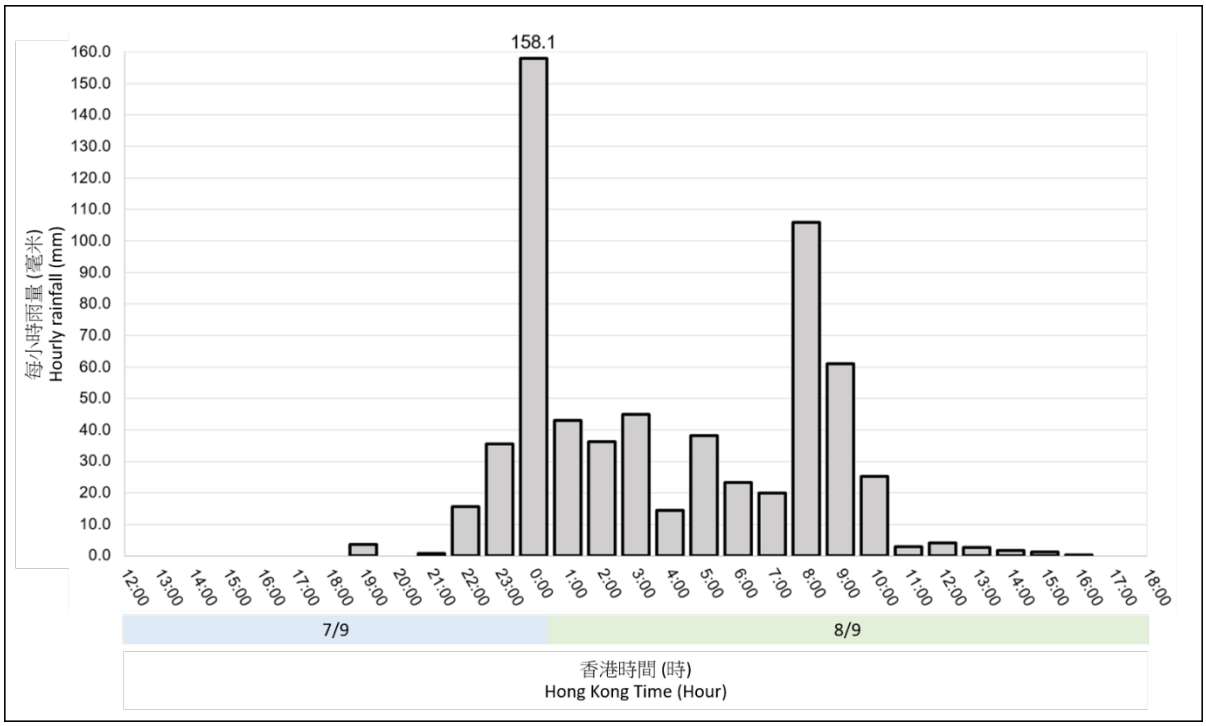


圖 3.4.5　二零二三年九月七日正午12時至九月八日下午6時香港天文台總部錄得的每小時雨量。

Figure 3.4.5　Hourly rainfall recorded at the Hong Kong Observatory Headquarters from noon on 7 September to 6 p.m. on 8 September 2023.

圖 3.4.6　二零二三年九月七日至八日暴雨期間黃大仙出現嚴重水浸。(鳴謝：商台新聞)

Figure 3.4.6　Serious flooding in Wong Tai Sin during the rainstorm on 7 – 8 September 2023. (Courtesy of CRHK News)

圖 3.4.7　二零二三年九月七日至八日暴雨期間筲箕灣出現山泥傾瀉。(鳴謝：土力工程處)

Figure 3.4.7　Landslide in Shau Kei Wan during the rainstorm on 7 – 8 September 2023. (Courtesy of Geotechnical Engineering Office)

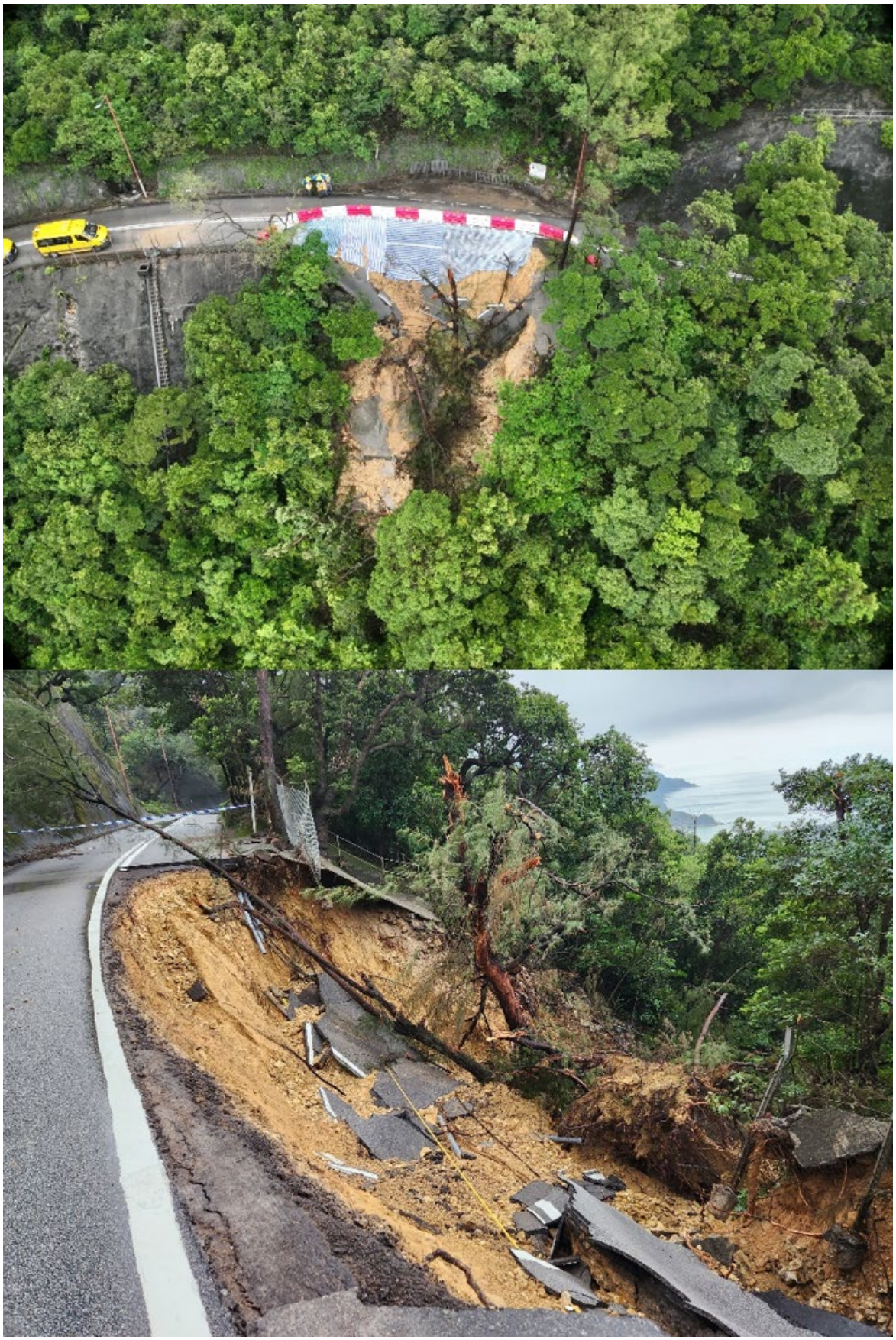


圖 3.4.8　二零二三年九月七日至八日暴雨期間石澳道出現路陷。(鳴謝：土力工程處)

Figure 3.4.8　Road subsidence in Shek O Road during the rainstorm on 7 – 8 September 2023. (Courtesy of Geotechnical Engineering Office)

3.5 強颱風小犬(2314)：二零二三年九月二十八日至十月九日

小犬是二零二三年第五個影響香港的熱帶氣旋。繼同年的蘇拉襲港後，天文台在小犬襲港期間再次需要發出九號烈風或暴風風力增強信號。小犬於十月八日至九日為本港帶來狂風大驟雨。天文台在十月九日錄得369.7毫米雨量，是十月份總雨量正常值120.3毫米的三倍以上，亦是有記錄以來十月份的最高日雨量。此外，十月八日下午三時至翌日下午三時的二十四小時雨量達439.8毫米，打破了十月份的最高紀錄。

熱帶低氣壓小犬於九月二十八日晚上在馬尼拉以東約1 920公里的北太平洋西部上形成，隨後向偏西移動，並逐漸增強。九月三十日下午及隨後三日小犬轉向西北移動，橫過菲律賓以東海域。期間小犬於十月二日下午增強為強颱風，並於當晚達到其最高強度，中心附近最高持續風速估計為每小時175公里。小犬於十月四日採取偏西路徑，移向台灣南部一帶。翌日小犬掠過台灣南部後減弱為颱風，隨後向西南偏西移動，橫過南海北部。小犬於十月六日晚上再次增強為強颱風，並逐漸轉向西北偏西緩慢移動，靠近廣東沿岸。隨後兩日小犬以強颱風至颱風強度進一步緩慢靠近珠江口一帶。但受東北季候風影響，小犬於十月九日迅速減弱，並逐漸轉向西南移動，最後於當晚在陽江沿岸海域逐步減弱為低壓區。

根據報章報導，小犬吹襲台灣期間，造成一死399人受傷，超過六千戶停水及46萬戶停電，約3 000人需要撤離，經濟損失超過1 800萬美元。在澳門，風暴期間有兩人受傷，另有19宗事故報告，當中包括一宗塌樹及一宗山泥傾瀉。

天文台在十月四日晚上9時40分發出一號戒備信號，當時小犬集結在香港以東約790公里。在東北季候風及小犬的共同影響下，翌日本港普遍吹和緩至清勁偏北風，離岸及高地間中吹強風。隨著小犬靠近廣東沿岸，天文台在十月六日下午5時40分發出三號強風信號，當時小犬位於香港之東南偏東約260公里。十月七日至翌日早上本港風勢逐漸增強，多處地方吹達強風程度偏北風，離岸及高地間中吹烈風。

由於小犬穩定地靠近珠江口一帶，預料與其相關的烈風區會影響本港，天文台在十月八日下午12時40分發出八號東北烈風或暴風信號，當時小犬集結在天文台總部之東南偏南約90公里。隨後本地風力顯著增強，南部多處地方吹烈風，離岸及高地更達暴風程度。小犬在下午稍後進一步靠近本港，對本港構成威脅。當小犬的眼壁影響香港以南約50公里的黃茅洲時，該站之風速在短時間內急劇上升，錄得高達每小時120公里的颶風風力。天文台在十月八日晚上7時正發出九號烈風或暴風風力增強信號，當時小犬位於天文台總部以南只有約70公里。隨後黃茅洲風力進一步增強，與小犬相關的強雨帶亦影響本港。小犬當晚最接近本港，以強颱風強度於天文台總部以南約70公里掠過。

隨著小犬減弱並逐漸遠離香港，香港不再受颶風威脅，天文台在十月八日晚上11時50分改發八號東北烈風或暴風信號。隨後本港風力繼續減弱，天文台在十月九日上午11時40分改發三號強風信號，並於下午2時40分改發一號戒備信號。隨著小犬進一步遠離本港及減弱，天文台在當日下午4時20分取消所有熱帶氣旋警告信號。

風力結構上，小犬在南海北部時的環流相當緊密，衛星圖像(圖3.5.3c)顯示其螺旋雲帶覆蓋範圍遠小於二零一八年環流廣闊的山竹，即使跟同年的蘇拉相比，小犬的雲帶亦更為細小。而雷達圖像(圖3.5.4b)顯示當小犬在香港以南近距離掠過時，小犬緊密及風力達颶風程度的眼壁距離長洲只有約30公里。

在小犬的影響下，橫瀾島、青洲及長洲錄得的最高每小時平均風速分別為每小時89、71及71公里，而最高陣風則分別為每小時111、103及94公里。橫瀾島錄得最高潮位2.84米(海圖基準面以上)，而尖鼻咀則錄得最大風暴潮(天文潮高度以上) 0.65米。各站錄得的最低瞬時海平面氣壓如下：

站	最低瞬時海平面氣壓(百帕斯卡)	日期/月份	時間
香港天文台總部	1005.1	5/10	下午2時54分
香港國際機場	1005.8	5/10	下午3時19分
長洲	1005.5	5/10	下午3時03分
京士柏	1005.2	5/10	下午3時04分
流浮山	1005.2	5/10	下午3時01分
坪洲	1005.1	5/10	下午2時43分
沙田	1005.5	5/10	下午2時45分
上水	1005.4	5/10	下午2時37分
打鼓嶺	1005.2	5/10	下午3時07分
大埔	1005.8	5/10	下午3時10分
橫瀾島	1004.6	8/10	下午4時20分

受小犬的外圍下沉氣流影響，十月四日至五日本港日間普遍天晴及天氣酷熱。天文台氣溫於十月四日下午上升至34.6度，是有記錄以來最高的十月絕對最高氣溫。此外，當日平均氣溫達30.8度，亦是有記錄以來十月份的最高。十月六日雖然日間部分時間有陽光，但隨著小犬靠近廣東沿岸，本港天氣於當晚至翌日轉為多雲及有幾陣狂風驟雨。受小犬相關的強雨帶影響，十月八日至九日本港有狂風大驟雨，天文台需要在十月九日

上午發出黑色暴雨警告。本港大部分地區在十月八日至九日錄得超過300毫米雨量，而中西區、灣仔區、黃大仙區及觀塘區的雨量更超過600毫米。

小犬吹襲香港期間，有至少205宗塌樹報告、35宗山泥傾瀉報告及7宗水浸報告。跑馬地有大樹塌下，擊中兩名清潔工人。風暴期間共造成29人受傷。將軍澳一處山坡有山泥傾瀉。小犬亦嚴重影響本港的公共交通，港鐵所有露天段的鐵路服務曾一度暫停。香港國際機場至少有90班航班取消。此外，部分旅客因陸路交通暫停而需要在機場逗留。

3.5 Severe Typhoon Koinu (2314): 28 September to 9 October 2023

Koinu was the fifth tropical cyclone affecting Hong Kong in 2023. Koniu necessitated the issuance of the Increasing Gale or Storm Signal No. 9 again since Saola hitting Hong Kong in the same year. Koinu brought squally heavy showers to Hong Kong on 8 – 9 October. The rainfall recorded at the Observatory on 9 October reached 369.7 millimetres, more than three times of October's monthly total normal figure of 120.3 millimetres and was the highest daily rainfall on record for October. Moreover, the 24-hour rainfall from 3 p.m. on 8 October to 3 p.m. next day reached 439.8 millimetres, breaking the highest record for October.

Koinu formed as a tropical depression over the western North Pacific about 1 920 km east of Manila on the night of 28 September. It then moved westwards and intensified gradually. It turned to move northwestwards across the seas east of the Philippines on the afternoon of 30 September and in the following three days. During this period, Koinu intensified into a severe typhoon on the afternoon of 2 October and attained its peak intensity with an estimated maximum sustained wind of 175 km/h near its centre that night. Koinu tracked westwards towards the vicinity of the southern part of Taiwan on 4 October. After moving across the southern part of Taiwan the next day, Koinu weakened into a typhoon and then moved west-southwestwards across the northern part of the South China Sea. Koinu intensified into a severe typhoon again on the night of 6 October and turned gradually to move west-northwestwards, edging slowly towards the coast of Guangdong. It further moved slowly towards the vicinity of the Pearl River Estuary with severe typhoon to typhoon intensity in the following two days. However, under the influence of the northeast monsoon, Koinu weakened rapidly and turned gradually to move southwestwards on 9 October. Finally, it degenerated progressively into an area of low pressure over the coastal waters of Yangjiang that night.

According to press reports, one person was killed and 399 people were injured when Koinu affected Taiwan. Water and electricity supply to more than 6 000 and 460 000 households were disrupted respectively. Around 3 000 people were displaced. Economic loss exceeded USD 18 million. In Macao, two people were injured during the passage of Koinu. There were also 19 incident reports, including one case of fallen tree and one case of landslide.

The Standby Signal No. 1 was issued at 9:40 p.m. on 4 October, when Koinu was about 790 km east of Hong Kong. Under the combined effect of the northeast monsoon and Koinu, local winds were generally moderate to fresh northerlies the next day, occasionally strong offshore and on high ground. With Koinu edging closer to the coast of Guangdong, the No. 3 Strong Wind Signal was issued at 5:40 p.m. on 6 October, when Koinu was about 260 km east-southeast of Hong Kong. Local winds strengthened gradually from 7 October to the next morning, with strong northerlies prevailing over many places and gale winds occasionally affecting offshore and high ground.

As Koinu steadily approached the vicinity of the Pearl River Estuary and its associated gale force winds were expected to affect Hong Kong, the No. 8 Northeast Gale or Storm Signal was issued at 12:40 p.m. on 8 October when Koinu was about 90 km south-southeast of the Observatory Headquarters. Local winds then strengthened significantly with gale winds prevailing over many places in the southern part of the territory, and even reached storm force offshore and on high ground. Koinu came further closer to Hong Kong later in the afternoon, posing a threat to Hong Kong. When the eyewall of Koinu affected Huangmaozhou, around 50 km to the south of Hong Kong, the wind speed at that station increased sharply within a short period of time, reaching hurricane force winds up to 120 km/h. The Increasing Gale or Storm Signal No. 9 was issued at 7:00 p.m. on 8 October when Koinu was only about 70 km south of the Observatory Headquarters. Subsequently, winds at Huangmaozhou further strengthened and the intense rainbands associated with Koinu also affected Hong Kong. Koinu came closest to Hong Kong that night, skirting past about 70 km to the south of the Observatory Headquarters with severe typhoon intensity.

As Koinu weakened and departed from Hong Kong gradually, hurricane force winds no longer posed threat to the territory and the No. 8 Northeast Gale or Storm Signal was issued at 11:50 p.m. on 8 October to replace the Increasing Gale or Storm Signal No. 9. With local winds continuing to moderate, the No. 3 Strong Wind Signal was issued at 11:40 a.m. on 9 October, followed by the issuance of No. 1 Standby Signal at 2:40 p.m. As Koinu further departed from the territory and weakened, all tropical cyclone warning signals were cancelled at 4:20 p.m on that day.

As regards the wind structure, the circulation of Koinu over the South China Sea was rather compact. Satellite imageries (Figure 3.5.3c) showed that the coverage of its spiral rainbands was much smaller than the extensive circulation of Mangkhut and even smaller than that of Saola in the same year. Radar imagery (Figure 3.5.4b) depicted that, when Koinu passed closely south of Hong Kong, the tight and hurricane force wind bearing eyewall of Koinu was only about 30 kilometers away from Cheung Chau.

Under the influence of Koinu, maximum hourly mean winds of 89, 71 and 71 km/h and gusts of 111, 103 and 94 km/h were recorded at Waglan Island, Green Island and Cheung Chau respectively. A maximum sea level (above chart datum) of 2.84 m was recorded at Waglan Island and a maximum storm surge (above astronomical tide) of 0.65 m was recorded at Tsim Bei Tsui. The lowest instantaneous mean sea-level pressures recorded at some selected stations are as follows:

Station	Lowest instantaneous mean sea-level pressure (hPa)	Date/Month	Time
Hong Kong Observatory Headquarters	1005.1	5/10	2:54 p.m.
Hong Kong International Airport	1005.8	5/10	3:19 p.m.
Cheung Chau	1005.5	5/10	3:03 p.m.
King's Park	1005.2	5/10	3:04 p.m.
Lau Fau Shan	1005.2	5/10	3:01 p.m.
Peng Chau	1005.1	5/10	2:43 p.m.
Sha Tin	1005.5	5/10	2:45 p.m.
Sheung Shui	1005.4	5/10	2:37 p.m.
Ta Kwu Ling	1005.2	5/10	3:07 p.m.
Tai Po	1005.8	5/10	3:10 p.m.
Waglan Island	1004.6	8/10	4:20 p.m.

Under the influence of the outer subsiding air of Koinu, it was generally fine and very hot in Hong Kong during the day on 4 – 5 October. The temperature at the Observatory soared to a maximum of 34.6 degrees on the afternoon of 4 October, the highest monthly absolute maximum temperature on record for October. Moreover, the daily mean temperature on that day reached 30.8 degrees, also the highest on record for October. With Koinu edging closer to the coast of Guangdong, while there were sunny periods during the day on 6 October, the local weather turned cloudy with a few squally showers from that night to the next day. Affected by the intense rainbands associated with Koinu, there were squally heavy showers in Hong Kong on 8 – 9 October, necessitating the issuance of the Black Rainstorm Warning on the morning of 9 October. More than 300 millimetres of rainfall were recorded over most parts of Hong Kong and rainfall even exceeded 600 millimetres in Central and Western, Wan Chai, Wong Tai Sin and Kwun Tong Districts on 8 – 9 October.

In Hong Kong, there were at least 205 reports of fallen trees, 35 reports of landslides and 7 reports of flooding during the passage of Koinu. A tree fell and hit two cleaning workers in Happy Valley. A total of 29 people were injured during the passage of Koinu. A landslide occurred on a mountain slope in Tseung Kwan O. Public transportation services in Hong Kong were also seriously affected by Koinu. Train services on all open sections of the MTR railway were once suspended. At least 90 flights were cancelled at the Hong Kong International Airport. Besides, some passengers had to stay at the airport due to suspension of land transport.

表 3.5.1　在小犬影響下，本港各站在熱帶氣旋警告信號生效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 when the tropical cyclone warning signals for Koinu were in force

站 (參閱圖 1.1) Station (See Fig. 1.1)		最高陣風 Maximum Gust					最高每小時平均風速 Maximum Hourly Mean Wind				
		風向 Direction		風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time	風向 Direction		風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time
黃麻角(赤柱)	Bluff Head (Stanley)	東	E	94	8/10	20:47	東南	SE	48	9/10	01:00
中環碼頭	Central Pier	東北偏東	ENE	75	8/10	20:09	東	E	42	8/10	23:00
長洲	Cheung Chau	北	N	94	8/10	17:54	東	E	71	9/10	01:00
長洲泳灘	Cheung Chau Beach	東北	NE	98	8/10	20:56	東北	NE	68	8/10	21:00
青洲	Green Island	東北偏北	NNE	103	8/10	17:15	北	N	71	8/10	19:00
香港國際機場	Hong Kong International Airport	東北偏北	NNE	59	8/10	20:09	東北偏北	NNE	36	8/10	23:00
啟德	Kai Tak	東南偏東	ESE	67	9/10	02:39	東南偏東	ESE	28	9/10	01:00
京士柏	King's Park	東北偏北	NNE	78	8/10	18:46	東北偏北	NNE	32	8/10	19:00
南丫島	Lamma Island	東北偏東	ENE	78	8/10	21:18	西北偏北	NNW	40	8/10	02:00
流浮山	Lau Fau Shan	東北偏北	NNE	59	8/10	14:07	東北偏北	NNE	39	8/10	20:00
		東北偏北	NNE	59	8/10	19:23					
昂坪	Ngong Ping	東	E	96	9/10	02:15	東	E	67	9/10	03:00
北角	North Point	東	E	81	8/10	21:56	東北偏東	ENE	51	8/10	23:00
坪洲	Peng Chau	東北	NE	82	8/10	20:18	東北	NE	50	8/10	21:00
平洲	Ping Chau	東北偏東	ENE	44	9/10	03:59	東北偏東	ENE	17	9/10	00:00
西貢	Sai Kung	北	N	83	8/10	17:11	北	N	46	8/10	19:00
沙洲	Sha Chau	北	N	87	8/10	20:11	北	N	65	8/10	21:00
沙螺灣	Sha Lo Wan	東北	NE	47	8/10	22:21	東北	NE	21	8/10	22:00
沙田	Sha Tin	東北	NE	61	9/10	00:23	東北偏北	NNE	22	8/10	19:00
九龍天星碼頭	Star Ferry (Kowloon)	東	E	59	9/10	00:42	東	E	28	9/10	02:00
		東	E	59	9/10	00:43					
打鼓嶺	Ta Kwu Ling	東北偏北	NNE	56	8/10	00:51	東北偏北	NNE	24	7/10	23:00
							東北偏北	NNE	24	8/10	19:00
大美督	Tai Mei Tuk	東北偏北	NNE	99	8/10	17:11	東北	NE	60	8/10	20:00
大帽山	Tai Mo Shan	東北偏東	ENE	110	8/10	12:09	東北	NE	67	8/10	09:00
塔門東	Tap Mun East	東北偏東	ENE	71	9/10	03:26	東北偏東	ENE	44	9/10	04:00
大老山	Tate's Cairn	東北	NE	135	8/10	18:39	東北偏東	ENE	102	8/10	19:00
將軍澳	Tseung Kwan O	東北偏北	NNE	71	8/10	19:52	東北偏北	NNE	24	8/10	21:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	西北	NW	44	8/10	03:31	西北	NW	22	7/10	12:00
屯門政府合署	Tuen Mun Government Offices	北	N	55	8/10	20:53	東北偏北	NNE	17	9/10	03:00
橫瀾島	Waglan Island	東北	NE	111	8/10	16:20	東北	NE	89	8/10	17:00
							東北偏東	ENE	89	8/10	19:00
濕地公園	Wetland Park	東北偏北	NNE	37	8/10	13:36	東北偏北	NNE	10	8/10	23:00
黃竹坑	Wong Chuk Hang	東	E	87	8/10	18:17	東北偏東	ENE	27	8/10	21:00

石崗、大埔滘- 沒有資料　　Shek Kong, Tai Po Kau – data not available

表 3.5.2　在小犬影響下，熱帶氣旋警告信號系統的八個參考測風站在熱帶氣旋警告信號生效時錄得持續風力達到強風及烈風程度的時段

Table 3.5.2　Periods during which sustained strong and gale force winds were attained at the eight reference anemometers in the tropical cyclone warning system when tropical cyclone warning signals for Koinu were in force

站 (參閱圖 1.1) Station (See Fig. 1.1)		最初達到強風* 時間 Start time when strong wind speed* was attained		最後達到強風* 時間 End time when strong wind speed* was attained		最初達到烈風# 時間 Start time when gale force wind speed# was attained		最後達到烈風# 時間 End time when gale force wind speed# was attained	
		日期/月份 Date/Month	時間 Time	日期/月份 Date/Month	時間 Time	日期/月份 Date/Month	時間 Time	日期/月份 Date/Month	時間 Time
長洲	Cheung Chau	7/10	20:02	9/10	08:15	8/10	18:01	9/10	02:02
流浮山	Lau Fau Shan	8/10	18:31	8/10	19:47	-			
西貢	Sai Kung	8/10	12:17	9/10	04:17	-			

香港國際機場、啟德、沙田、打鼓嶺及青衣島蜆殼油庫的持續風力未達到強風程度。
The sustained wind speed did not attain strong force at Hong Kong International Airport, Kai Tak, Sha Tin, Ta Kwu Ling and Tsing Yi Shell Oil Depot.

- 未達到指定的風速
- not attaining the specified wind speed

* 十分鐘平均風速達每小時 41 - 62 公里
* 10-minute mean wind speed of 41 - 62 km/h

十分鐘平均風速達每小時 63 - 87 公里
10-minute mean wind speed of 63 - 87 km/h

註:　本表列出持續風力達到強風及烈風程度的起始及終結時間。期間風力可能高於或低於指定的風力。

Note:　The table gives the start and end time of sustained strong or gale force winds. Winds might fluctuate above or below the specified wind speeds in between the times indicated.

表 3.5.3　小犬影響香港期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.5.3　Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Koinu

站 (參閱圖 3.5.2) Station (See Fig. 3.5.2)			十月四日 4 Oct	十月五日 5 Oct	十月六日 6 Oct	十月七日 7 Oct	十月八日 8 Oct	十月九日 9 Oct	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			0.0	0.0	微量 Trace	1.9	92.2	369.7	463.8
香港國際機場 Hong Kong International Airport (HKA)			0.0	0.0	0.1	9.8	42.7	351.9	404.5
長洲 Cheung Chau (CCH)			0.0	0.0	0.0	0.5	117.0	249.0	366.5
H23	香港仔	Aberdeen	0.0	0.0	0.0	1.0	128.5	329.5	459.0
N05	粉嶺	Fanling	0.0	0.0	0.0	3.5	42.5	210.5	256.5
N13	糧船灣	High Island	0.0	0.0	0.0	0.5	90.0	224.0	314.5
K04	佐敦谷	Jordan Valley	0.0	0.0	0.0	3.0	111.0	445.5	559.5
N06	葵涌	Kwai Chung	0.0	0.0	0.0	0.0	73.0	328.0	401.0
H12	半山區	Mid Levels	0.0	0.0	0.0	2.0	110.0	422.5	534.5
N09	沙田	Sha Tin	0.0	0.0	0.0	3.0	117.0	366.0	486.0
H19	筲箕灣	Shau Kei Wan	0.0	0.0	0.0	0.0	153.5	418.0	571.5
SEK	石崗	Shek Kong	0.0	0.0	0.0	0.5	65.0	271.0	336.5
K06	蘇屋邨	So Uk Estate	0.0	0.0	0.0	0.5	109.0	330.5	440.0
R31	大美督	Tai Mei Tuk	0.0	0.0	0.0	1.0	87.5	234.0	322.5
R21	踏石角	Tap Shek Kok	0.0	0.0	0.0	3.5	28.5	215.0	247.0
N17	東涌	Tung Chung	0.0	0.0	0.0	7.0	120.0	381.5	508.5
TMR	屯門水庫	Tuen Mun Reservoir	0.0	0.0	0.1	1.8	38.5	221.2	261.6

表 3.5.4　小犬影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.5.4　Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Koinu

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	2.67	7/10	01:57	0.50	6/10	20:17
石壁	Shek Pik	2.65	6/10	02:04	0.58	6/10	14:50
大廟灣	Tai Miu Wan	2.68	7/10	02:21	0.53	7/10	02:21
大埔滘	Tai Po Kau	2.77	7/10	02:36	0.56	7/10	02:36
尖鼻咀	Tsim Bei Tsui	2.78	5/10	00:06	0.65	9/10	14:06
橫瀾島	Waglan Island	2.84	7/10	02:08	0.56	6/10	14:16

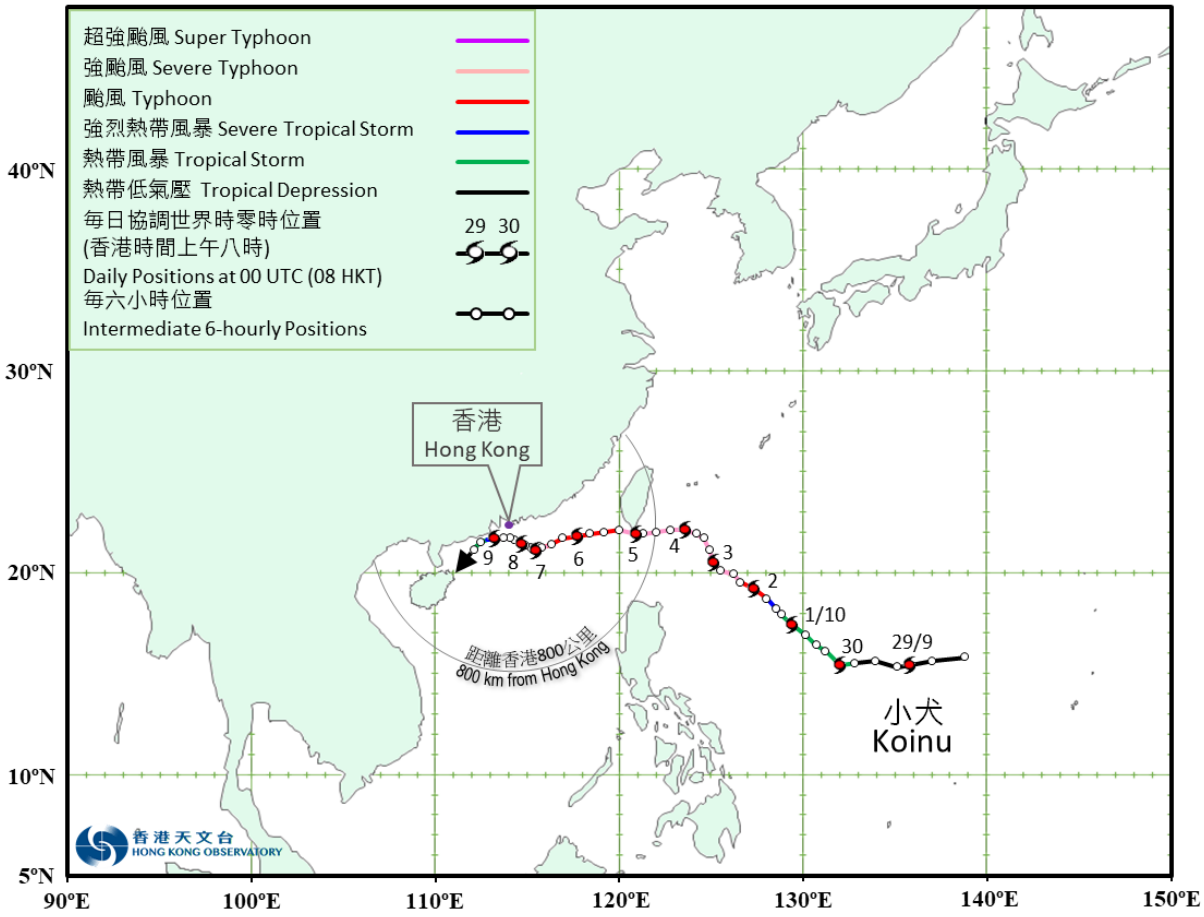


圖 3.5.1a　　二零二三年九月二十八日至十月九日小犬(2314)的路徑圖。

Figure 3.5.1a　Track of Koinu (2314): 28 September – 9 October 2023.

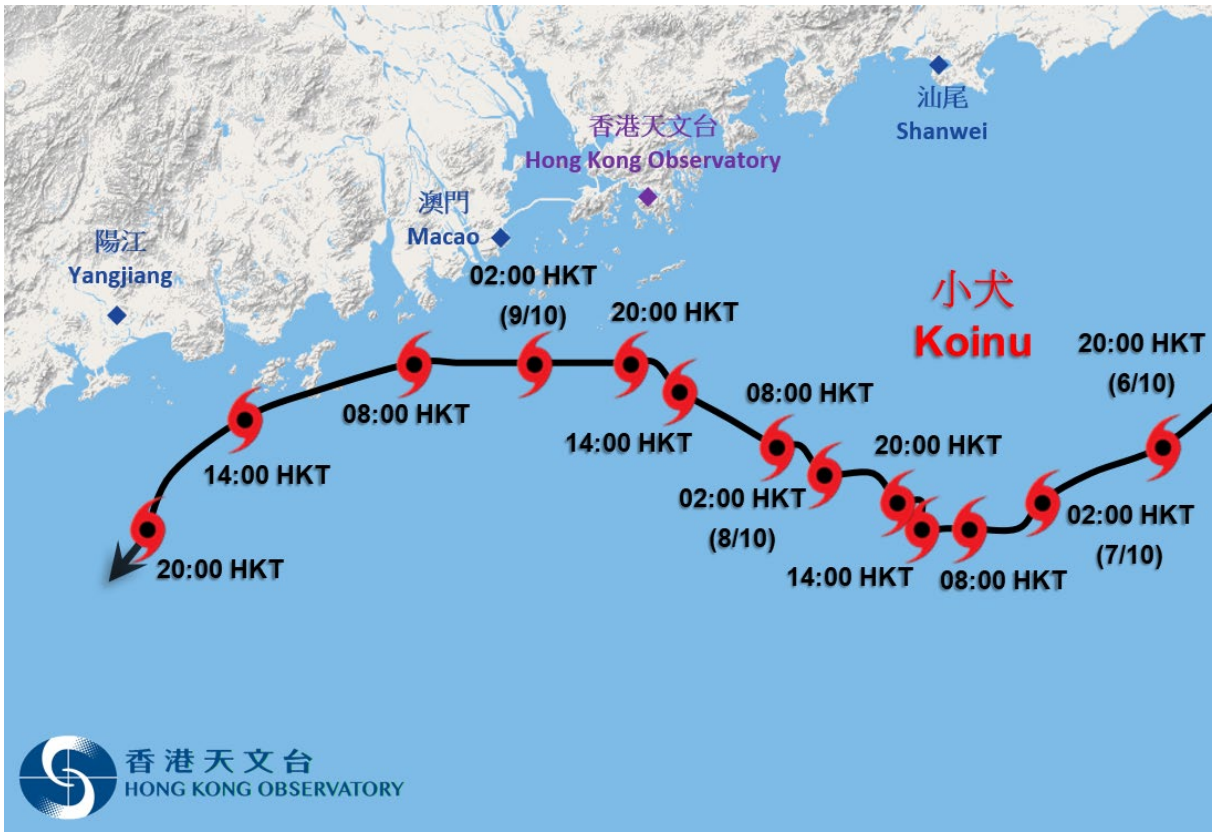


圖 3.5.1b　　小犬(2314)接近香港時的路徑圖。

Figure 3.5.1b　　Track of Koinu (2314) near Hong Kong.

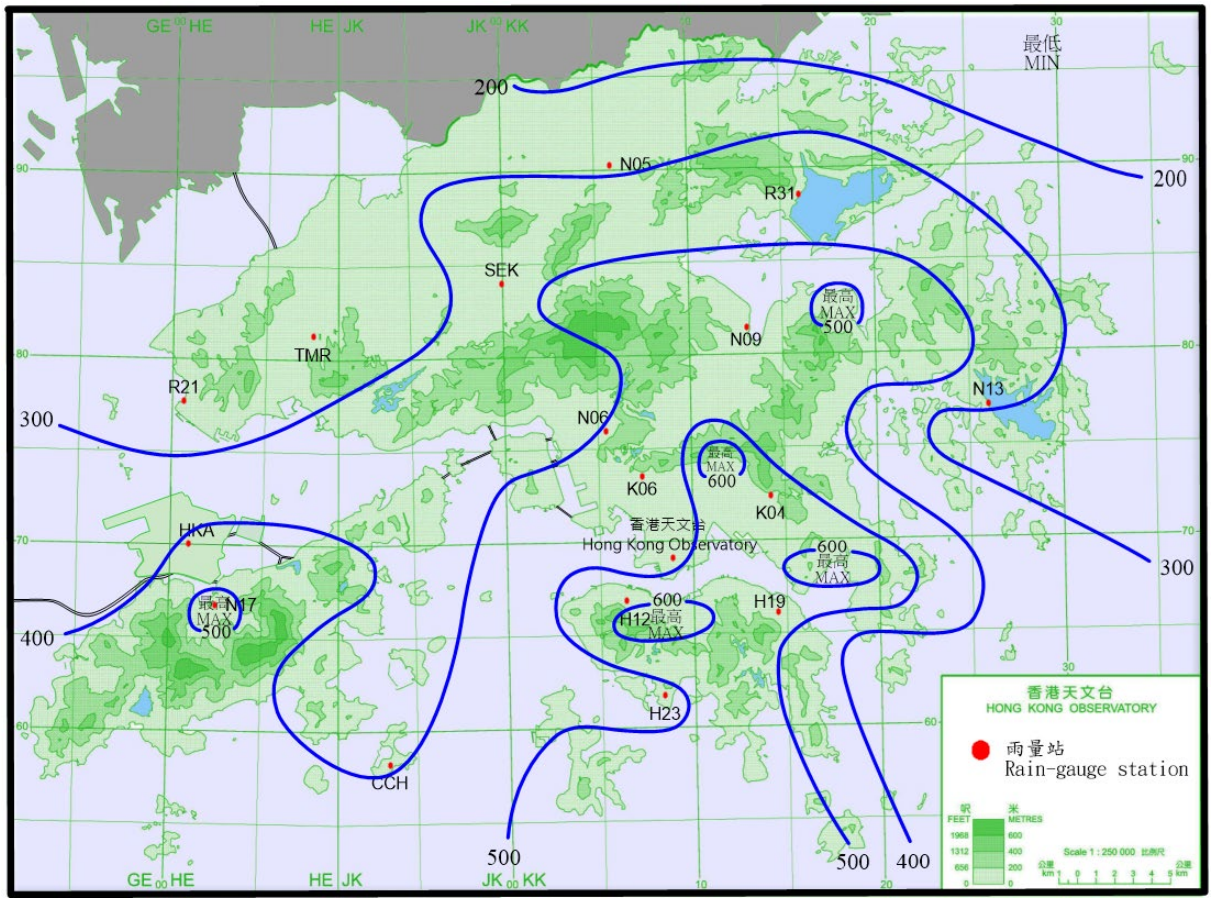


圖 3.5.2　　二零二三年十月四日至九日的雨量分佈(等雨量線單位為毫米)。

Figure 3.5.2　Rainfall distribution on 4 – 9 October 2023 (isohyets are in millimetres).

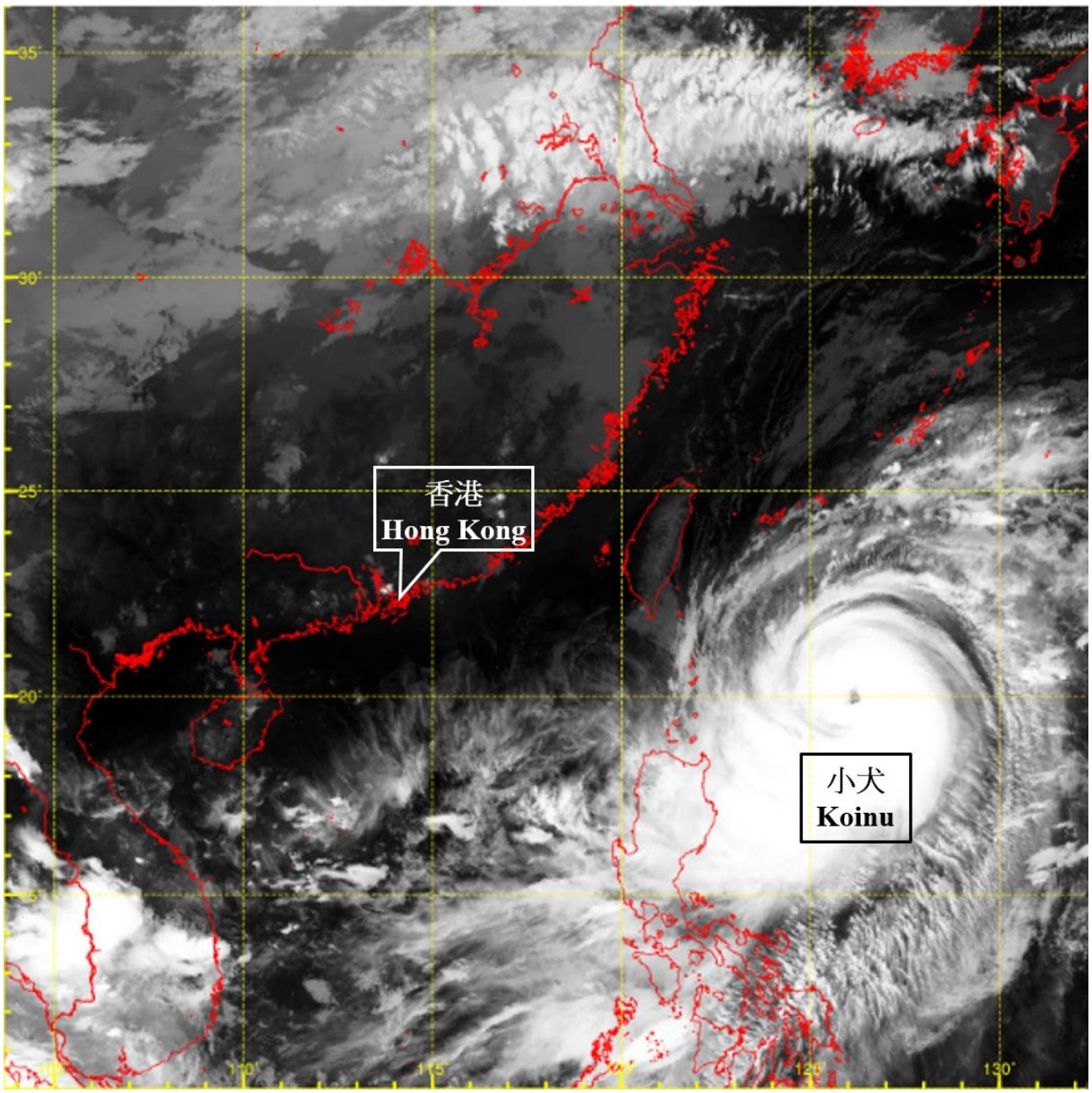


圖 3.5.3a　二零二三年十月二日晚上八時左右的紅外線衛星圖片。當時小犬達到其最高強度，中心附近最高持續風速估計為每小時175公里。

Figure 3.5.3a　Infra-red satellite imagery at around 8 p.m. on 2 October 2023 when Koinu was at its peak intensity with an estimated maximum sustained wind of 175 km/h near its centre.

〔此衛星圖像接收自日本氣象廳的向日葵9號衛星。〕

[The satellite imagery was originally captured by Himawari-9 Satellite (H-9) of Japan Meteorological Agency (JMA).]

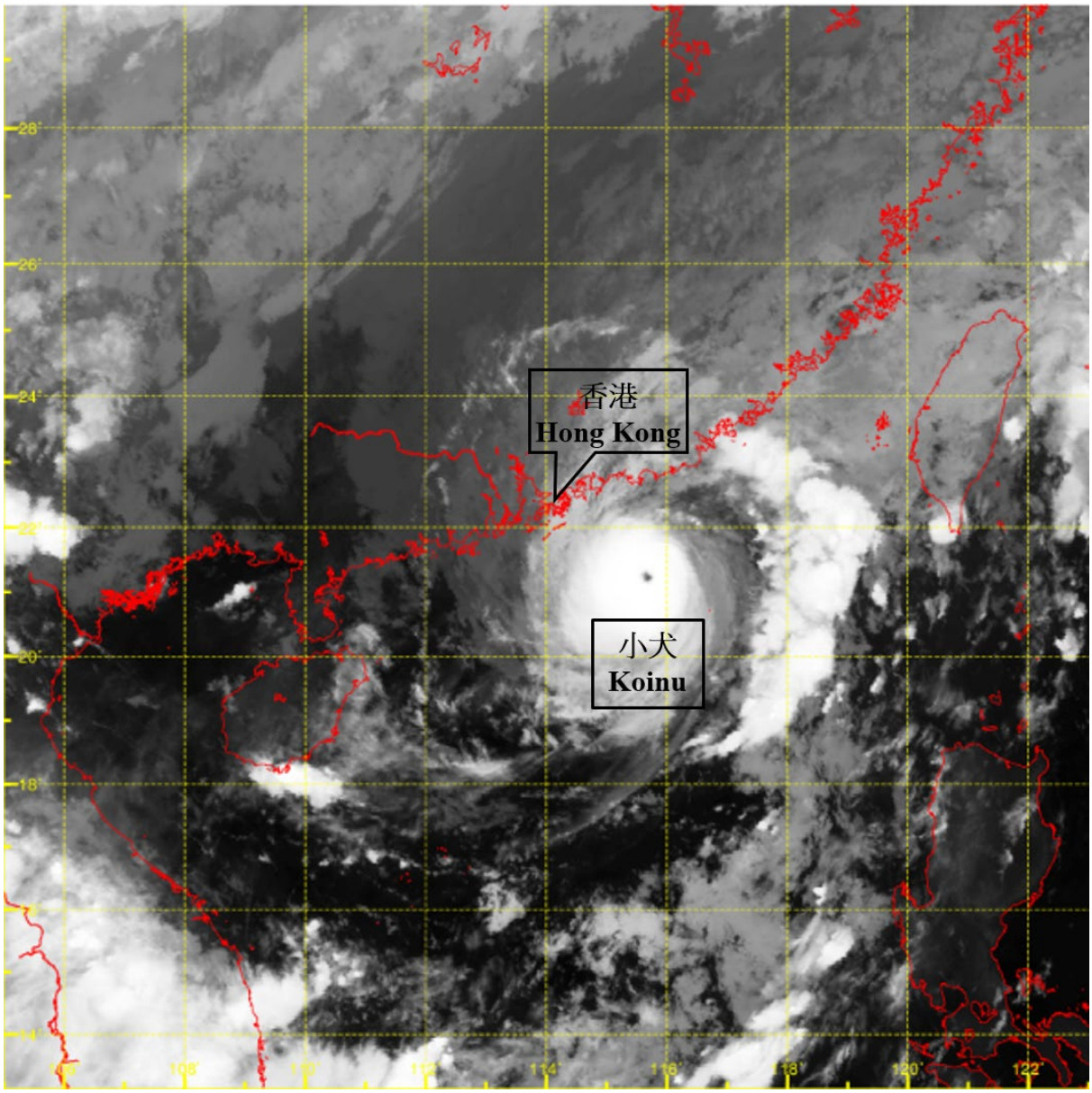
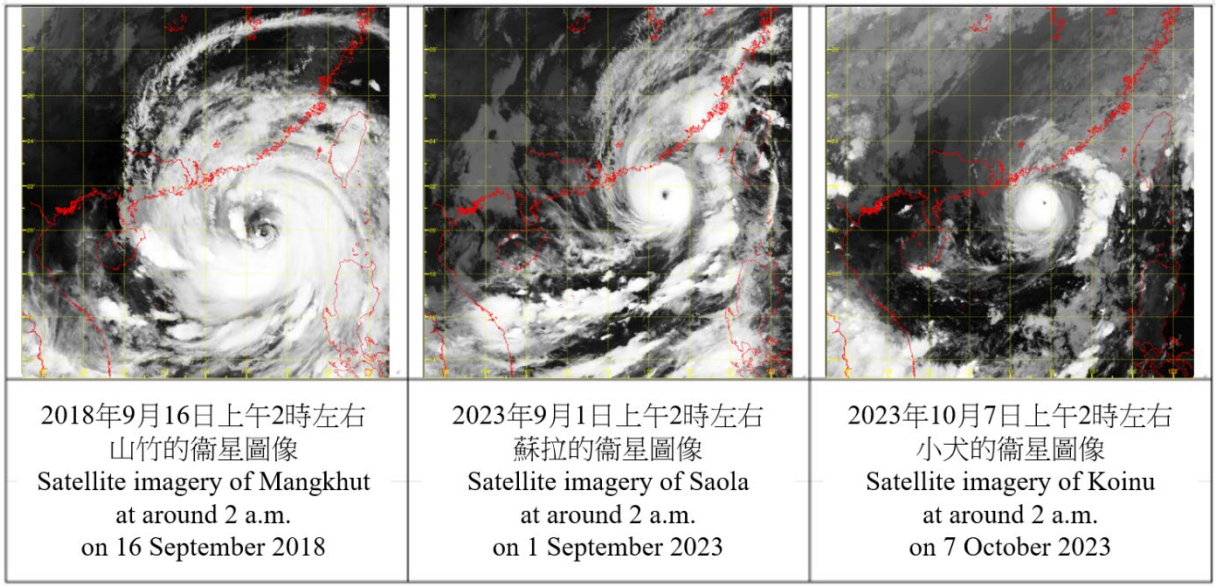


圖 3.5.3b　二零二三年十月七日上午二時左右的紅外線衛星圖片。小犬的環流緊密，螺旋雲帶覆蓋範圍相當細小。此外，當時小犬的中心附近最高持續風速估計為每小時165公里。

Figure 3.5.3b　Infra-red satellite imagery at around 2 a.m. on 7 October 2023. The circulation of Koinu was compact with rather small coverage of the spiral rainbands. In addition, the maximum sustained wind near the centre of Koinu was estimated to be 165 km/h.

〔此衛星圖像接收自日本氣象廳的向日葵9號衛星。〕

[The satellite imagery was originally captured by Himawari-9 Satellite (H-9) of Japan Meteorological Agency (JMA).]



2018年9月16日上午2時左右 山竹的衛星圖像 Satellite imagery of Mangkhut at around 2 a.m. on 16 September 2018	2023年9月1日上午2時左右 蘇拉的衛星圖像 Satellite imagery of Saola at around 2 a.m. on 1 September 2023	2023年10月7日上午2時左右 小犬的衛星圖像 Satellite imagery of Koinu at around 2 a.m. on 7 October 2023

圖 3.5.3c　熱帶氣旋山竹(左)、蘇拉(中)及小犬(右)的紅外線衛星圖像。

Figure 3.5.3c　Infra-red satellite imageries of tropical cyclones Mangkhut (left), Saola (middle) and Koinu (right).

〔衛星圖像接收自日本氣象廳的向日葵8/9號衛星。〕

[The satellite imageries were originally captured by Himawari-8/Himawari-9 Satellite (H-8/H-9) of Japan Meteorological Agency (JMA).]

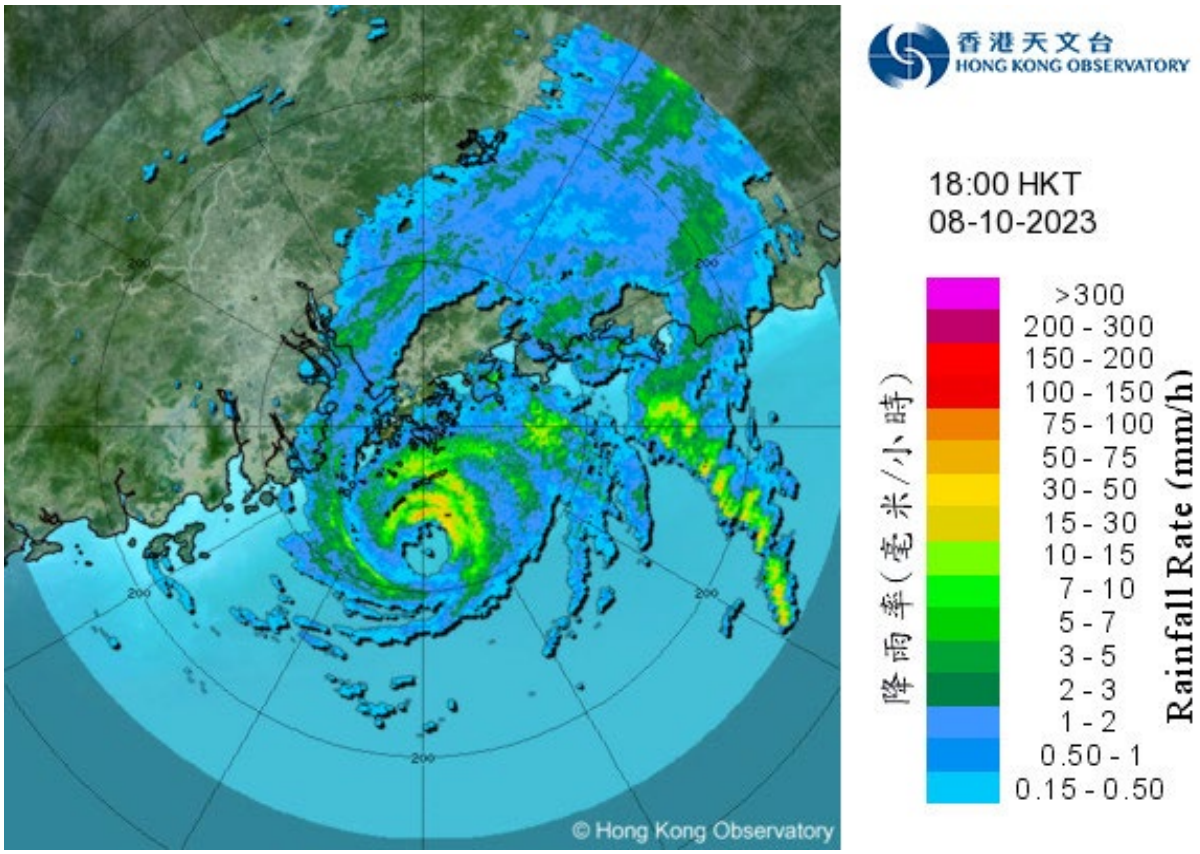


圖 3.5.4a　二零二三年十月八日下午6時00分的雷達回波圖像，受小犬的眼壁影響，位於香港以南的黃茅洲之風速在短時間內急劇上升，錄得高達每小時120公里的颶風風力。

Figure 3.5.4a　Image of radar echoes captured at 6:00 p.m. on 8 October 2023. Affected by the eyewall of Koinu, wind speed recorded at Huangmaozhou over the south of Hong Kong increased sharply within a short period of time, reaching hurricane force winds up to 120 km/h.

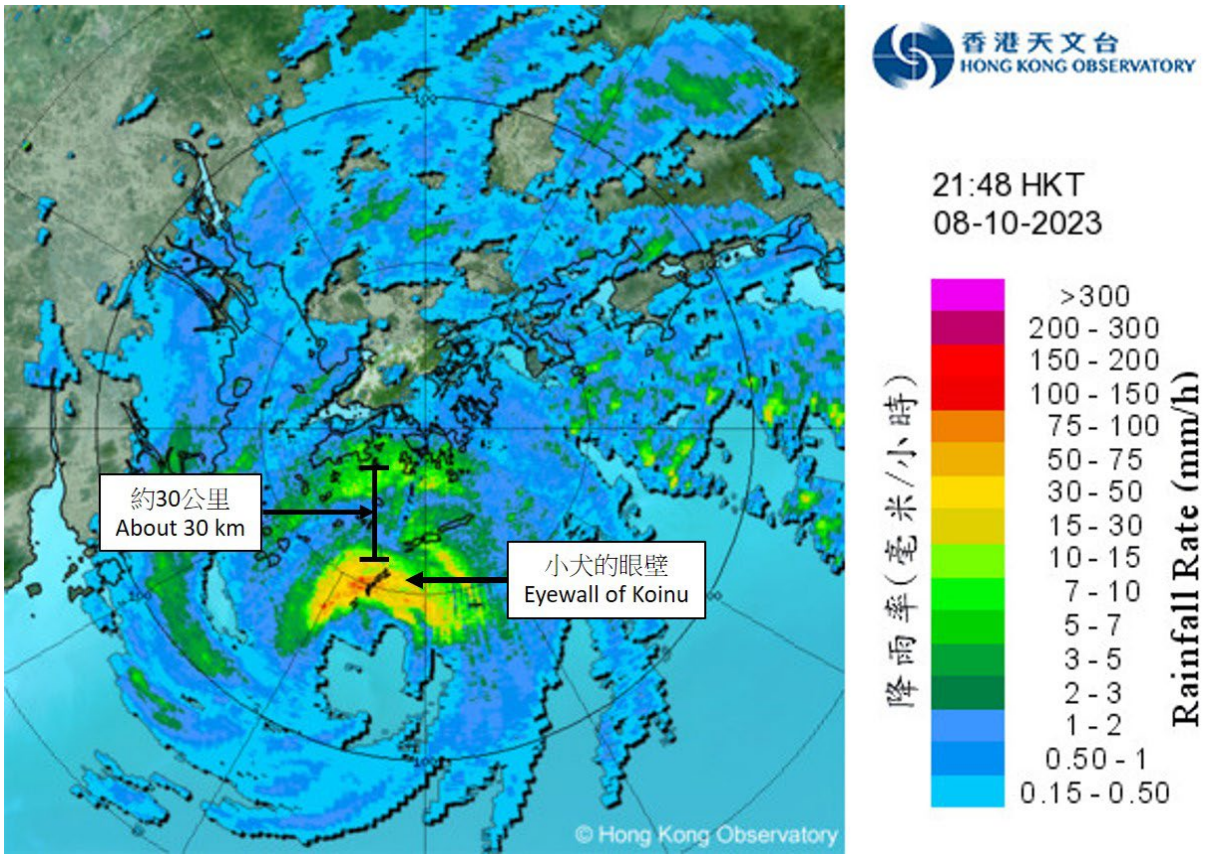


圖 3.5.4b　二零二三年十月八日晚上9時48分的雷達回波圖像。當時小犬在香港以南近距離掠過，其緊密及風力達颶風程度的眼壁距離長洲只有約30公里。同時，與小犬相關的強雨帶亦影響本港。

Figure 3.5.4b　Image of radar echoes captured at 9:48 p.m. on 8 October 2023 when Koinu passed closely south of Hong Kong. Its tight eyewall, with winds reaching hurricane force, was only about 30 kilometers away from Cheung Chau. Meanwhile, intense rainbands associated with Koinu was also affecting Hong Kong.

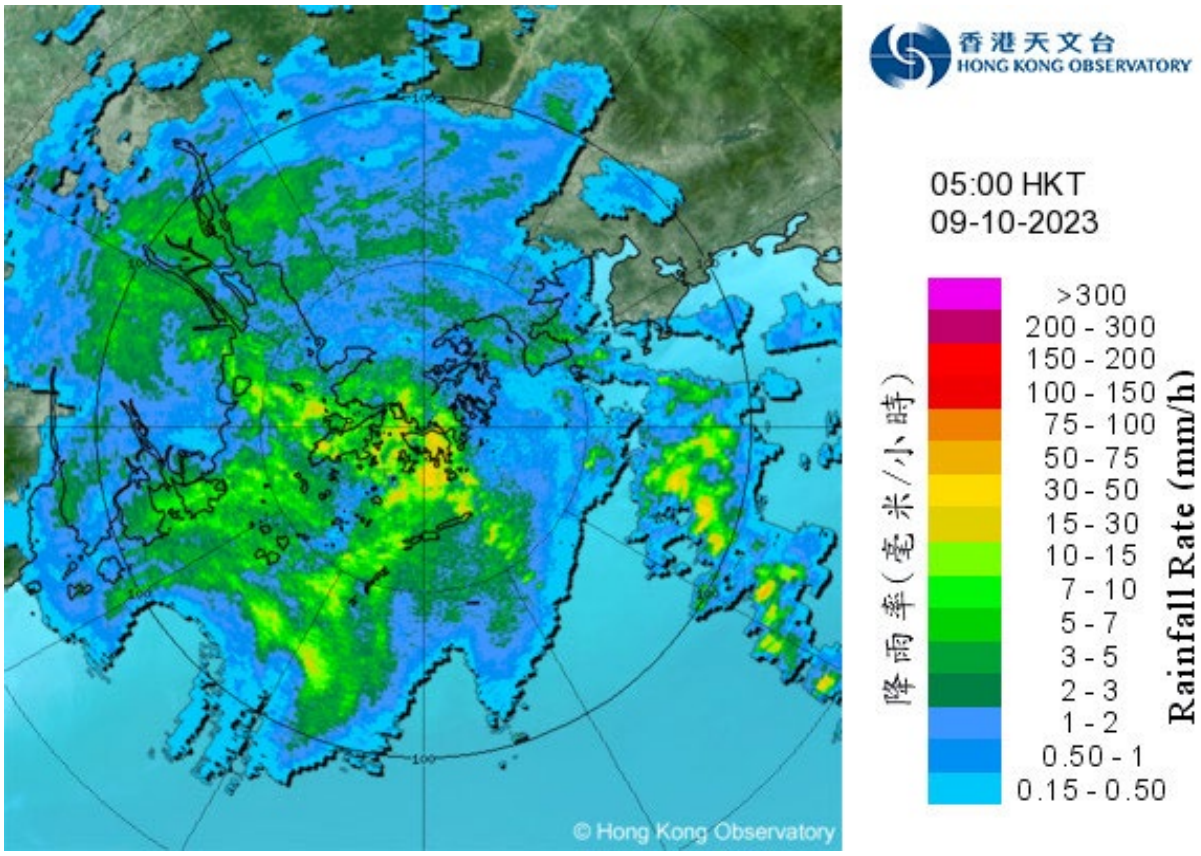


圖 3.5.4c　二零二三年十月九日上午5時的雷達回波圖像。與小犬相關的強雨帶正影響本港，當時黑色暴雨警告信號正生效。

Figure 3.5.4c　Image of radar echoes captured at 5:00 a.m. on 9 October 2023 when intense rainbands associated with Koinu was affecting Hong Kong. The Black Rainstorm Warning was in force at that time.

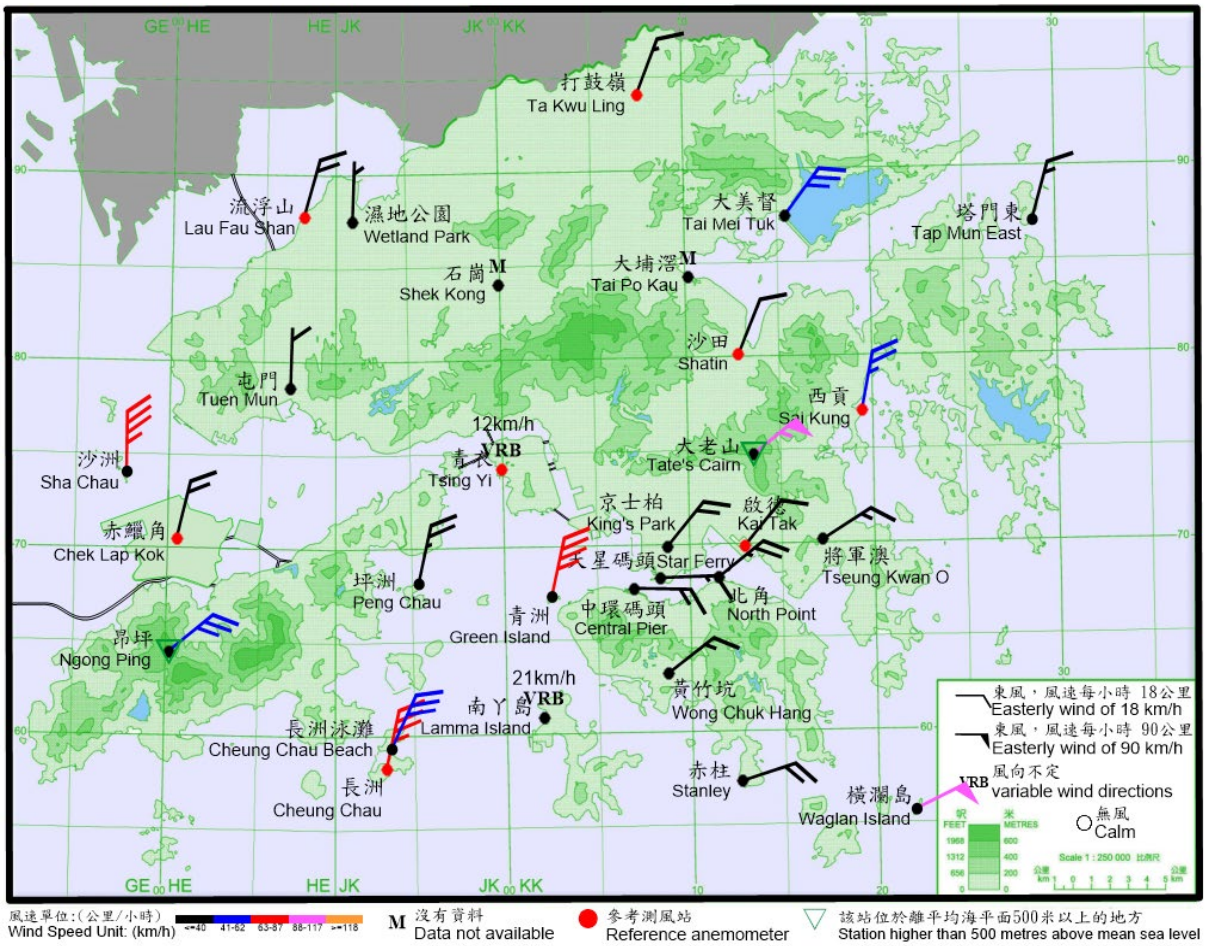


圖 3.5.5a　二零二三年十月八日晚上7時香港各站錄得的十分鐘平均風向和風速。當時本港普遍吹北至東北風，長洲、青洲及沙洲吹烈風，而橫瀾島及大老山的風力更達暴風程度。

Figure 3.5.5a　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 7:00 p.m. on 8 October 2023. Local winds were generally north to northeasterlies, with gale winds prevailing at Cheung Chau, Green Island and Sha Chau at the time. Winds at Waglan Island and Tate's Cairn even reached storm force.

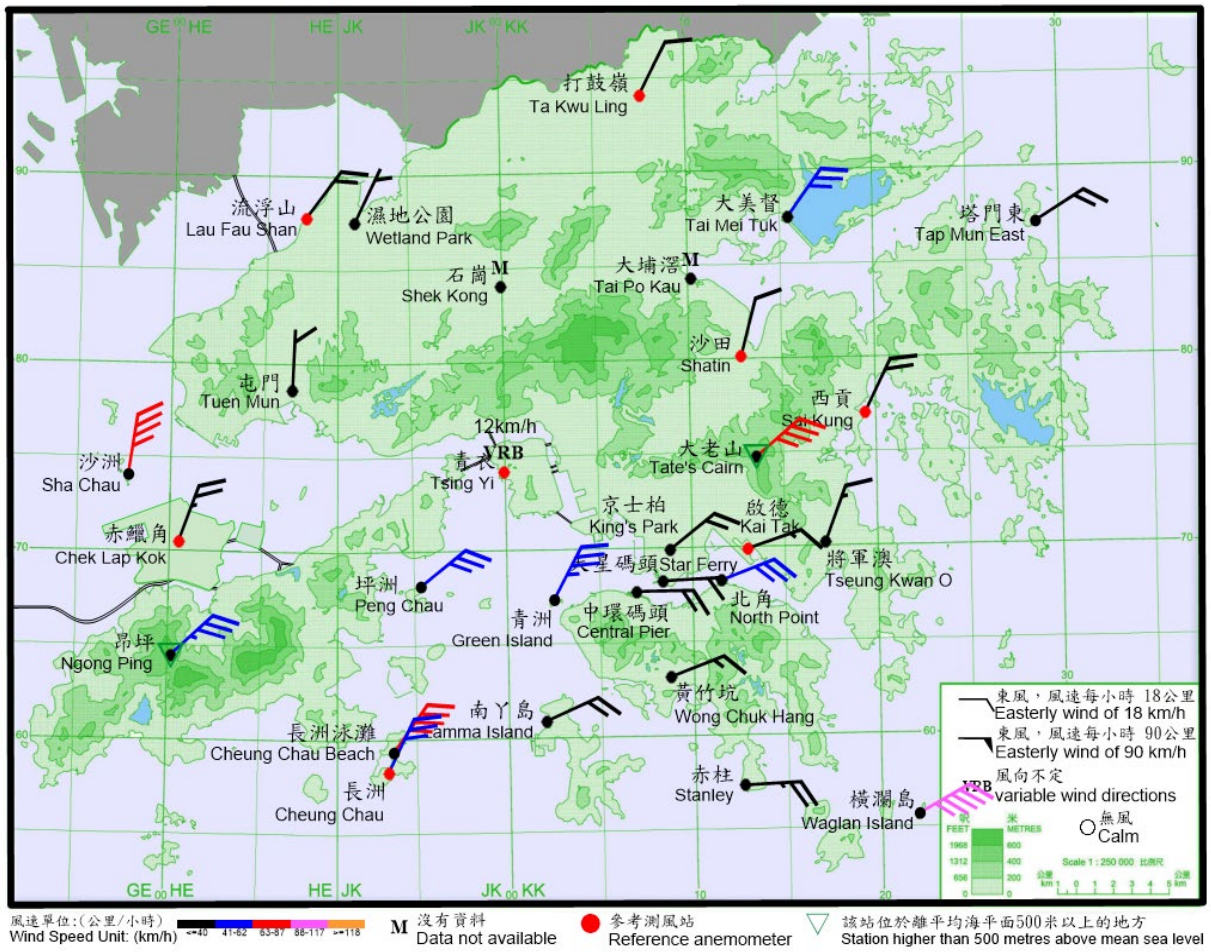


圖 3.5.5b　二零二三年十月八日晚上8時30分香港各站錄得的十分鐘平均風向和風速。當時本港普遍吹東北風。長洲泳灘、沙洲及大老山吹烈風，而橫瀾島的風力更達暴風程度。

Figure 3.5.5b　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 8:30 p.m. on 8 October 2023. Local winds were generally northeasterlies, with gale winds prevailing at Cheung Chau Beach, Sha Chau and Tate's Cairn at the time. Winds at Waglan Island even reached storm force.

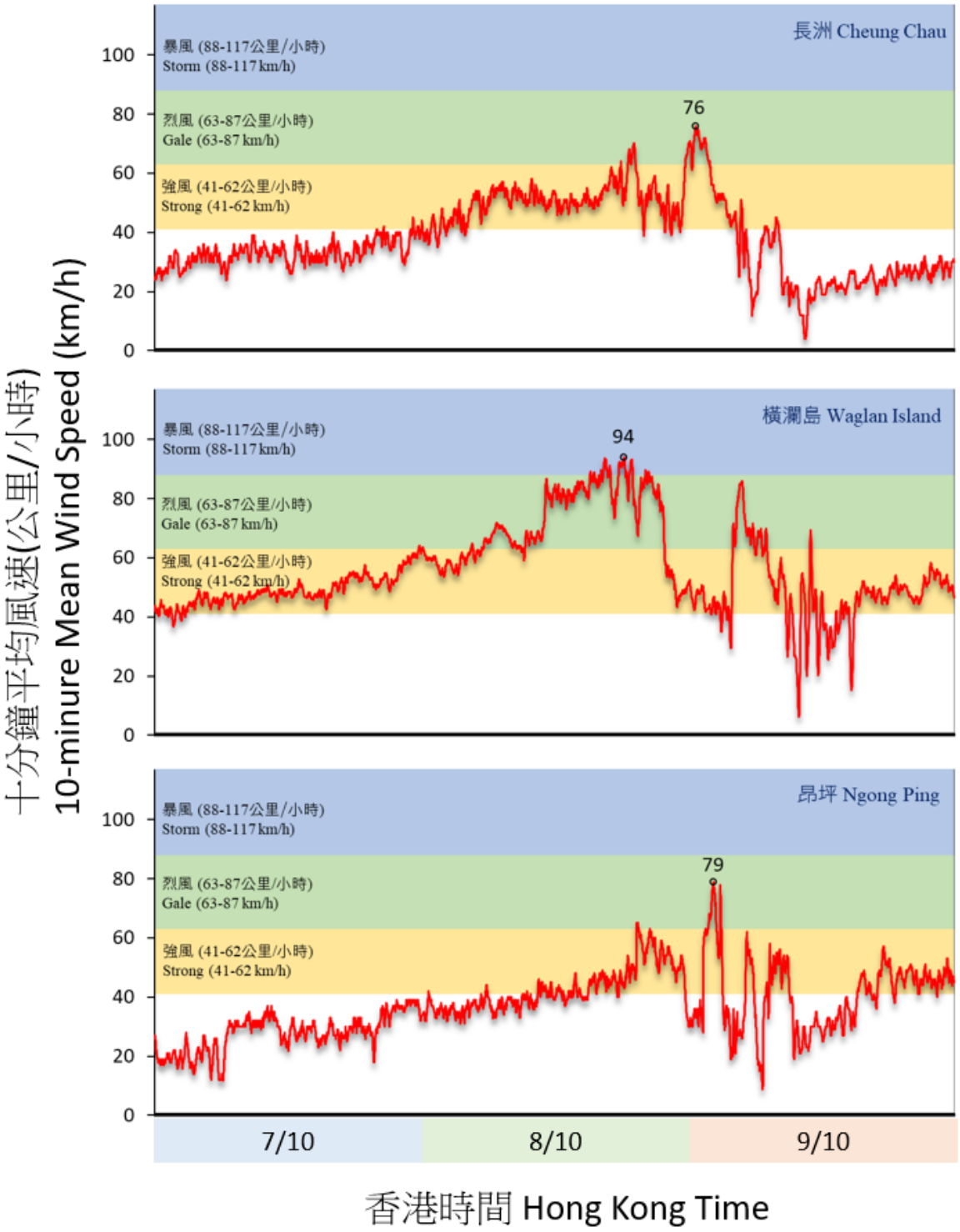


圖 3.5.6　二零二三年十月七日至九日的長洲、橫瀾島及昂坪錄得的十分鐘平均風速。

Figure 3.5.6　Traces of 10-minute mean wind speed recorded at Cheung Chau, Waglan Island and Ngong Ping on 7 – 9 October 2023.

圖 3.5.7　跑馬地有大樹塌下，擊中兩名清潔工人。(鳴謝：Now 新聞)

Figure 3.5.7　A tree fell and hit two cleaning workers in Happy Valley. (Courtesy of Now News)

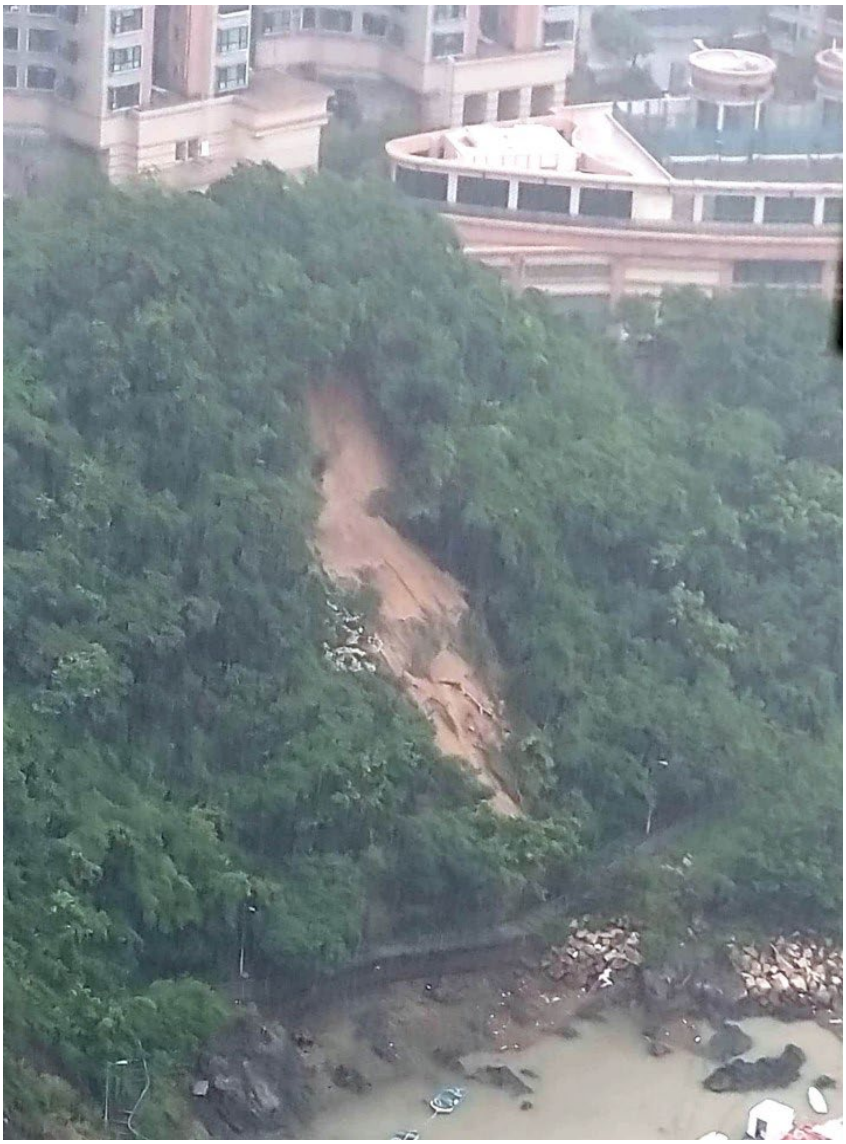


圖 3.5.8　將軍澳一處山坡有山泥傾瀉。(鳴謝：方國珊)

Figure 3.5.8　A landslide occurred on a mountain slope in Tseung Kwan O. (Courtesy of Fong Kwok Shan)

第四節　　熱帶氣旋統計表

表4.1是二零二三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。表內所列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是天文台在二零二三年為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。表內使用的時間為協調世界時。

表4.3是二零二三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生效的時間和發出警報的次數。表內使用的時間為香港時間。

表4.4是一九五六至二零二三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是一九五六至二零二三年間每年位於香港責任範圍內以及每年引致天文台需要發出熱帶氣旋警告信號的熱帶氣旋總數。

表4.6是一九五六至二零二三年間天文台發出各種熱帶氣旋警告信號的最長、最短及平均時段。

表4.7是二零二三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、香港國際機場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，單位為米）。

表4.8.1是二零二三年位於香港600公里範圍內的熱帶氣旋及其為香港所帶來的雨量。

表4.8.2是一八八四至一九三九年以及一九四七至二零二三年十個為香港帶來最多雨量的熱帶氣旋和有關的雨量資料。

表4.9是自一九四六年至二零二三年間，天文台發出十號颶風信號時所錄得的氣象資料，包括熱帶氣旋吹襲香港時的最近距離及方位、天文台錄得的最低平均海平面氣壓、香港各站錄得的最高60分鐘平均風速和最高陣風。

表4.10是二零二三年熱帶氣旋在香港所造成的損失。資料參考了各政府部門和公共事業機構所提供的報告、本地報章的報導及香港保險業聯會提供的數據。

表4.11是一九六零至二零二三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。

表4.12是二零二三年天文台發出的熱帶氣旋路徑預測驗証。

Section 4 TROPICAL CYCLONE STATISTICS AND TABLES

TABLE 4.1 is a list of tropical cyclones in 2023 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 2023, 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 issuing of tropical cyclone warning signals in 2023. 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 issuing of tropical cyclone warning signals from 1956 to 2023 inclusive.

TABLE 4.5 gives the annual number of tropical cyclones in Hong Kong's area of responsibility between 1956 and 2023 and also the annual number of tropical cyclones necessitated the issuing of tropical cyclone warning signals in Hong Kong.

TABLE 4.6 shows the maximum, mean and minimum durations of the tropical cyclone warning signals issued during the period 1956-2023.

TABLE 4.7 is a summary of meteorological information for each tropical cyclone affecting Hong Kong in 2023, including the position, time and the estimated minimum central pressure of each tropical cyclone during its closest approach to Hong Kong, the maximum winds at King’s Park, Hong Kong International Airport 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.

TABLE 4.8.1 tabulates the amount of rainfall associated with each tropical cyclone that came within 600 km of Hong Kong in 2023.

TABLE 4.8.2 highlights the 10 wettest tropical cyclones in Hong Kong for the period 1884-1939 and 1947-2023.

TABLE 4.9 provides some meteorological information for those typhoons requiring the issuing of the Hurricane Signal No. 10 in Hong Kong from 1946 to 2023. 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 contains damage caused by tropical cyclones in 2023. The information is based on reports from various government departments, public utility companies, local newspapers and data provided by the Hong Kong Federation of Insurers.

TABLE 4.11 presents casualties and damage caused by tropical cyclones in Hong Kong: 1960-2023. The information is based on reports from various government departments, public utility companies and local newspapers.

TABLE 4.12 shows verification of the tropical cyclone track forecasts issued by the Hong Kong Observatory in 2023.

表 4.1　　二零二三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 2023

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: 變為溫帶氣旋 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	
熱帶低氣壓	Tropical Depression	-	11 / 04	0000	13.7	126.9	45	1002	12 / 04	0600	13.6	123.2	DISP
熱帶風暴珊瑚	Tropical Storm Sanvu	2301	19 / 04	1800	6.4	158.1	75	998	22 / 04	1200	10.1	154.4	DISP
超強颱風瑪娃	Super Typhoon Mawar	2302	19 / 05	1800	5.0	149.3	250	900	02 / 06	1800	30.0	135.1	XT
颱風古超	Typhoon Guchol	2303	05 / 06	1800	13.5	135.0	145	955	12 / 06	1200	30.6	139.5	XT
颱風泰利	Typhoon Talim	2304	14 / 07	0300	17.7	120.2	140	960	18 / 07	1800	22.4	105.7	DISP
超強颱風杜蘇芮	Super Typhoon Doksuri	2305	20 / 07	1200	13.0	132.6	210	915	29 / 07	0000	30.0	116.5	DISP
超強颱風卡努	Super Typhoon Khanun	2306	26 / 07	1800	11.0	140.6	195	925	11 / 08	0600	38.7	125.3	DISP
強颱風蘭恩	Severe Typhoon Lan	2307	07 / 08	1800	23.9	149.1	175	940	17 / 08	0000	44.0	138.7	XT
強颱風多拉	Severe Typhoon Dora	2308	12 / 08	0000	15.6	180.0	165	960	15 / 08	1800	23.6	168.2	DISP
超強颱風蘇拉	Super Typhoon Saola	2309	23 / 08	1200	19.1	125.5	230	915	03 / 09	0600	21.0	109.3	DISP
強烈熱帶風暴達維	Severe Tropical Storm Damrey	2310	23 / 08	1200	16.8	150.0	110	980	28 / 08	1800	41.0	149.8	XT
強颱風海葵	Severe Typhoon Haikui	2311	27 / 08	1200	18.3	143.7	175	940	05 / 09	1200	23.6	116.2	DISP
強烈熱帶風暴鴻雁	Severe Tropical Storm Kirogi	2312	29 / 08	1800	11.3	154.8	90	988	04 / 09	0000	31.8	137.1	DISP
熱帶風暴鴛鴦	Tropical Storm Yun-yeung	2313	04 / 09	0600	20.4	130.4	75	995	08 / 09	1200	33.5	138.0	XT
熱帶低氣壓	Tropical Depression	-	24 / 09	1800	14.5	110.7	45	1002	25 / 09	1800	16.3	107.6	DISP
強颱風小犬	Severe Typhoon Koinu	2314	28 / 09	1200	15.8	138.8	175	945	09 / 10	1200	21.1	112.1	DISP
超強颱風布拉萬	Super Typhoon Bolaven	2315	07 / 10	0000	9.6	154.5	250	905	14 / 10	0600	37.5	160.0	XT
熱帶風暴三巴	Tropical Storm Sanba	2316	17 / 10	0600	15.8	110.2	85	995	20 / 10	1200	20.2	109.6	DISP
熱帶低氣壓杰拉華	Tropical Depression Jelawat	2317	16 / 12	1800	6.8	131.1	55	1002	18 / 12	1200	7.5	125.3	DISP

+時間為協調世界時。

+Times are given in UTC.

表 4.2　　二零二三年為船舶發出的熱帶氣旋警告

TABLE 4.2　TROPICAL CYCLONE WARNINGS FOR SHIPPING ISSUED IN 2023

熱帶氣旋名稱	Name of 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 Date/Month	時間+ Time+	日期/月份 Date/Month	時間+ Time+	
熱帶低氣壓	Tropical Depression	14	11 / 4	1200	13 / 4	0300	39
超強颱風瑪娃	Super Typhoon Mawar	10	30 / 5	0000	31 / 5	0000	24
* 颱風泰利	* Typhoon Talim	38	14 / 7	0300	18 / 7	1200	105
* 超強颱風杜蘇芮	* Super Typhoon Doksuri	31	24 / 7	1800	28 / 7	1200	90
超強颱風卡努	Super Typhoon Khanun	13	2 / 8	1800	4 / 8	0600	36
* 超強颱風蘇拉	* Super Typhoon Saola	86	24 / 8	0300	3 / 9	0900	246
* 強颱風海葵	* Severe Typhoon Haikui	28	2 / 9	0900	5 / 9	1200	75
熱帶低氣壓	Tropical Depression	9	24 / 9	1800	25 / 9	1800	24
* 強颱風小犬	* Severe Typhoon Koinu	55	3 /10	0300	9 /10	1500	156
熱帶風暴三巴	Tropical Storm Sanba	30	17 /10	0600	20 /10	1500	81
	共 Total	314					852

* 這些熱帶氣旋引致天文台需要發出熱帶氣旋警告信號。

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

+ 時間為協調世界時。

+ Times are given in UTC.

表 4.3　二零二三年天文台所發出的熱帶氣旋警告信號及警報發出的次數

TABLE 4.3　TROPICAL CYCLONE WARNING SIGNALS ISSUED IN HONG KONG AND NUMBER OF WARNING BULLETINS ISSUED IN 2023

摘要 SUMMARY

信號 Signal	次數 No. of occasions	總時段 Total duration	
		時 h	分 min
1	8	183	0
3	6	90	20
8 西北 NW	1	15	40
8 西南 SW	0	0	0
8 東北 NE	3	24	10
8 東南 SE	2	22	20
9	2	6	45
10	1	7	25
共 Total	23	349	40

詳情 DETAILS

熱帶氣旋名稱 Name of tropical cyclone	警報發出的次數 No. of warning bulletins issued	信號 Signal	發出 Issued		取消 Cancelled	
			日期/月份 Date/Month	時間* Time*	日期/月份 Date/Month	時間* Time*
颱風泰利 Typhoon Talim	81	1	15/07	04:40	16/07	05:40
		3	16/07	05:40	17/07	00:40
		8 東北 NE	17/07	00:40	17/07	06:40
		8 東南 SE	17/07	06:40	17/07	16:20
		3	17/07	16:20	18/07	02:40
		1	18/07	02:40	18/07	08:40
超強颱風杜蘇芮 Super Typhoon Doksuri	41	1	26/07	20:40	28/07	12:40
超強颱風蘇拉 Super Typhoon Saola	85	1	30/08	17:40	31/08	15:40
		3	31/08	15:40	01/09	02:40
		8 西北 NW	01/09	02:40	01/09	18:20
		9	01/09	18:20	01/09	20:15
		10	01/09	20:15	02/09	03:40
		8 東南 SE	02/09	03:40	02/09	16:20
		3	02/09	16:20	02/09	20:20
		1	02/09	20:20	02/09	23:40
強颱風海葵 Severe Typhoon Haikui	43	1	04/09	04:40	05/09	21:40
強颱風小犬 Severe Typhoon Koinu	119	1	04/10	21:40	06/10	17:40
		3	06/10	17:40	08/10	12:40
		8 東北 NE	08/10	12:40	08/10	19:00
		9	08/10	19:00	08/10	23:50
		8 東北 NE	08/10	23:50	09/10	11:40
		3	09/10	11:40	09/10	14:40
		1	09/10	14:40	09/10	16:20

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

表 4.4　一九五六至二零二三年間每年各熱帶氣旋警告信號的發出次數及總時段

TABLE 4.4　FREQUENCY AND TOTAL DURATION OF DISPLAY OF TROPICAL CYCLONE WARNING SIGNALS : 1956 - 2023

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
2001	6	6	1	1	2	1	0	0	253	35
2002	3	2	0	0	0	1	0	0	144	25
2003	4	5	1	1	1	1	1	0	158	0
2004	3	2	1	1	1	0	0	0	77	35
2005	3	1	0	0	0	0	0	0	142	45
2006	10	3	0	0	0	0	0	0	317	50
2007	4	3	0	1	0	0	0	0	86	50
2008	8	9	2	2	3	2	1	0	347	0
2009	13	9	1	1	1	2	1	0	255	30
2010	8	3	0	0	0	0	0	0	220	0
2011	8	5	0	0	0	1	0	0	213	0
2012	9	7	0	0	2	3	1	1	252	45
2013	10	7	1	1	0	1	0	0	292	50
2014	6	3	0	0	0	1	0	0	145	45
2015	4	3	1	0	0	0	0	0	136	50
2016	11	7	2	2	0	0	0	0	283	0
2017	12	11	2	1	3	2	1	1	259	40
2018	12	7	0	0	1	1	1	1	422	25
2019	7	3	0	0	1	0	0	0	177	25
2020	6	7	0	0	2	1	1	0	194	45
2021	9	6	0	0	1	1	0	0	282	50
2022	8	8	1	0	2	3	0	0	315	10
2023	8	6	1	0	3	2	2	1	349	40
共 Total	468	385	31	35	73	60	25	16	17991	34
平均 Mean	6.9	5.7	0.5	0.5	1.1	0.9	0.4	0.2	264	35

表 4.5 一九五六至二零二三年間每年位於香港責任範圍內以及每年引致天文台需要發出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 - 2023

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發出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
2001	14	6
2002	10	3
2003	12	4
2004	15	3
2005	15	3
2006	16	7
2007	12	2
2008	17	6
2009	17	8
2010	11	5
2011	12	5
2012	14	5
2013	19	7
2014	10	4
2015	13	3
2016	15	9
2017	22	7
2018	17	6
2019	15	5
2020	18	5
2021	17	8
2022	13	6
2023	10	5
平均 Mean	15.6	5.9

表 4.6　一九五六至二零二三年間天文台發出熱帶氣旋警告信號的時段

TABLE 4.6　DURATION OF TROPICAL CYCLONE WARNING SIGNALS ISSUED IN HONG KONG : 1956 - 2023

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 分 h min	時 分 h min	時 分 h min	時 分 h min	時 分 h min	時 分 h min
一號或以上 1 or higher	417	43 9	161 0 (桃麗達 Tilda, 1964)	4 30 (熱帶低氣壓 T.D., 2000)	264 35	570 15 (1964)	36 35 (1959)
三號或以上 3 or higher	280	29 31	124 15 (瑪麗 Mary, 1960)	4 5 (熱帶低氣壓 T.D., 2006)	121 33	306 35 (1974)	15 5 (2004)
八號或以上 8 or higher	107	14 54	66 50 (瑪麗 Mary, 1960)	2 40 (雲茜 Wynne, 1984)	23 27	100 55 (1964)	0 0
8 西北 NW	31	6 10	15 45	1 30	2 49	18 0	0 0
8 西南 SW	35	4 58	10 45	2 0	2 33	16 10	0 0
8 東北 NE	73	7 49	35 35	1 35	8 23	40 20	0 0
8 東南 SE	60	7 57	22 0	0 20	7 1	31 30	0 0
九號或以上 9 or higher	26	7 3	12 25 (約克 York, 1999)	2 0 (杜鵑 Dujuan, 2003)	2 42	19 25 (1964)	0 0
十號 10	16	6 30	11 0 (約克 York, 1999)	2 30 (愛麗斯 Alice, 1961)	1 32	12 10 (1964)	0 0

註：( ) 內為創造該記錄的熱帶氣旋名稱及年份。

Note: ( ) are the years and the names of the tropical cyclones which created the record.

表 4.7　　二零二三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 2023

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	石壁 Shek Pik	大廟灣 Tai Miu Wan	大埔滘 Tai Po Kau	尖鼻咀 Tsim Bei Tsui	橫瀾島 Waglan Island
颱風泰利 Typhoon Talim	7	17	09:00	西南偏南 SSW	250	18	西北偏西 WNW	965	7	17	03:34 - 03:37# 04:00	994.1 994.6	0.54	0.63	0.59	0.73	0.63	-
超強颱風杜蘇芮 Super Typhoon Doksuri	7	28	02:00	東 E	500	26	北 N	930	7	28	0528 - 05:32# 05:00	995.2 995.3	0.35	0.28	0.38	0.48	0.40	-
超強颱風蘇拉 Super Typhoon Saola	9	1	21:00	東南偏南 SSE	40	16	西南偏西 WSW	945	9	1	21:45 21:00, 22:00	986.7 987.8	0.76	0.72	0.91	1.48	0.73	-
強颱風海葵 Severe Typhoon Haikui	9	5	20:00	東北 NE	250	8	西南偏西 WSW	1000	9	4	15:24 - 15:25# 16:00, 17:00	1000.7 1001.0	0.29	0.23	0.29	0.39	0.32	-
強颱風小犬 Severe Typhoon Koinu	10	8	20:00	南 S	70	6	西 W	955	10	5	14:54 - 15:57# 15:00, 16:00	1005.1 1005.2	0.50	0.58	0.53	0.56	0.65	0.56

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

\# 最初及最後錄得的時間　　\# First and last time recorded

\- 沒有資料　　\- data not available

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		香港國際機場 Hong Kong International Airport		橫瀾島 Waglan Island		京士柏 King's Park		香港國際機場 Hong Kong International Airport		橫瀾島 Waglan Island		京士柏 King's Park		香港國際機場 Hong Kong International Airport		橫瀾島 Waglan Island	
颱風泰利 Typhoon Talim	7	東 E	41	東 E	51	東 E	75	東 E	45	東 E	57	東 E	80	東 E	78	東 E	83	東 E	96
超強颱風杜蘇芮 Super Typhoon Doksuri	7	東北偏北 NNE	14	東 E	24	東 E	27	東北偏北 NNE	18	東 E	30	東北 NE	47	東南偏東 ESE	32	東北偏東 ENE	44	東北 NE	52
超強颱風蘇拉 Super Typhoon Saola	8	東北偏北 NNE	51	東北偏東 ENE	71	東北偏北 NNE	154	東北偏北 NNE	58	東北偏東 ENE	75	東北 NE	159	東北偏北 NNE	121	東北偏東 ENE	105	東北偏北 NNE	183
強颱風海葵 Severe Typhoon Haikui	9	東北偏北 NNE	14	西北偏北 NNW	24	西北偏北 NNW	23	東北偏北 NNE	18	東北偏北 NNE	27	西北偏西 WNW	26	北 N	36	東北 NE	37	西北偏西 WNW	30
強颱風小犬 Severe Typhoon Koinu	10	東北偏北, 東北 NNE,NE	32	東北偏北 NNE	36	東北 NE	90	東北 NE	36	東北偏北 NNE	40	東北 NE	94	東北偏北 NNE	78	東北偏北 NNE	59	東北 NE	111

表 4.8.1　二零二三年位於香港600公里範圍內的熱帶氣旋及其為本港帶來的雨量期間，天文台錄得的雨量

TABLE 4.8.1　RAINFALL ASSOCIATED WITH EACH TROPICAL CYCLONE THAT CAME WITHIN 600 KM OF HONG KONG IN 2023

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 Date/Month 時間* 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 小時 hours)
颱風泰利 Typhoon Talim	(T_1) 15 / 7 1500 - (T_2) 18 / 7 1100	43.2	7.9	12.8	12.8	56.0
超強颱風杜蘇芮 Super Typhoon Doksuri	(T_1) 27 / 7 0800 - (T_2) 28 / 7 1700	6.9	8.4	21.7	77.5	84.4
超強颱風蘇拉 Super Typhoon Saola	(T_1) 30 / 8 1700 - (T_2) 3 / 9 1400	179.8	0.0	0.4 +	0.4	180.2
強颱風海葵 Severe Typhoon Haikui	(T_1) 3 / 9 2300 - (T_2) 5 / 9 2000	0.4 +	0.0	5.8	640.7	641.1
強颱風小犬 Severe Typhoon Koinu	(T_1) 5 /10 1400 - (T_2) 9 /10 2000	462.7	3.4	3.4	3.4	466.1
熱帶風暴三巴 # Tropical Storm Sanba #	(T_1) 19 /10 1500 - (T_2) 20 /10 2000	0.4	微量 Trace	微量 Trace	微量 Trace	0.4
					共 Total	1427.8

* 香港時間（協調世界時加八小時）。

\# 該熱帶氣旋並未導致天文台需要發出熱帶氣旋警告信號。

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。

\+ 強颱風海葵的雨量與超強颱風蘇拉的雨量出現了0.4毫米的重疊部份。

* Hong Kong Time （UTC + 8 hours）.

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

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.

\+ Rainfall amount of Severe Typhoon Haikui overlapped the rainfall amount of Super Typhoon Saola by 0.4 mm.

表 4.8.2　一八八四至一九三九年及一九四七至二零二三年間十個為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 - 2023)

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)
2023	9	海葵 Haikui	0.4 ++	0.0	5.8	640.7	641.1
1999	8	森姆 Sam	368.1	178.9	248.1	248.4	616.5
1926	7	熱帶氣旋 T.C.	34.8 #	534.0 #	561.1 #	562.2 #	597.0
1916	6	熱帶氣旋 T.C.	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
2016	10	莎莉嘉 Sarika	195.6	223.2	223.2	295.7+	491.3

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。

\+ 當中的72.5毫米雨量與超強颱風海馬重疊出現。

++ 當中的0.4毫米雨量與超強颱風蘇拉重疊出現。

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.

\+ 72.5 mm of rainfall overlapped with the rainfall of Super Typhoon Haima.

++ 0.4 mm of rainfall overlapped with the rainfall of Super Typhoon Saola.

表 4.9　　一九四六至二零二三年間引致天文台需要發出十號颶風信號的颱風

TABLE 4.9　TYPHOONS REQUIRING THE ISSUING OF THE HURRICANE SIGNAL NO. 10 DURING THE PERIOD 1946 - 2023

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 Date/Month	年份 Year	方位 Direction	距離 (公里) Distance (km)	每小時 Hourly	瞬時 Inst.	香港天文台 Hong Kong Observatory	京士柏 King's Park	啟德機場 # 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	啟德機場 # 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	-		-	
韋森特 Vicente	24 / 7	2012	西南 SW	100	986.3	986.0	東 E	56	東南偏東 ESE	56	東南偏東 ESE	70	東 E	108	東南偏東 ESE	128	東 E	117	東北 NE	92	東南偏東 ESE	117	東南偏東 ESE	110	東 E	135	東南偏東 ESE	149	東 E	184	東南偏東 ESE	166	東北 NE	155
天鴿 Hato	23 / 8	2017	西南偏南 SSW	60	986.7	986.3	東 E	62	東南偏東 ESE	54	東南偏東 ESE	67	東 E	137	東南偏東 ESE	128	東北偏東 ENE	118	-		東 E	122	東南偏東 ESE	113	東北 NE	130	東 E	193	東南 SE	171	東北 NE	187	-	
山竹 Mangkhut	16 / 9	2018	西南偏南 SSW	100	977.6	977.0	東 E	81	東 E	70	東南偏東 ESE	81	東北 NE	161	東 E	157	東北偏東 ENE	166	東北 NE	128	東 E	169	東北偏北 NNE	161	東北偏東 ENE	142	東北 NE	220	東 E	212	東北偏東 ENE	256	東北偏北 NNE	229
蘇拉 Saola	1 / 9	2023	東南偏南 SSE	40	987.8	986.7	東 E	62	東北偏北 NNE	51	西北,東 NW,E	50	東北偏北 NNE	154	東北偏北 NNE	116	東北偏東, 東北 ENE, NE	135	東北偏北 NNE	127	東 E	122	東北偏北 NNE	121	東北 NE	117	東北偏北 NNE	183	東北偏北 NNE	171	東北偏東 ENE	183	東北偏北 NNE	180

隨著香港國際機場遷移到赤鱲角，啟德的氣象所已於一九九八年七月六日關閉。啟德測風站於一九九八年九月四日開始運作。

With the moving of the Hong Kong International Airport to Chek Lap Kok, the meteorological office at Kai Tak was closed on 6 July 1998. Kai Tak anemometer station started operation on 4 September 1998.

* 估計，超出風速記錄圖的上限。

* Estimated, exceeding upper limit of anemogram.

表 4.10　二零二三年熱帶氣旋在香港所造成的損失

TABLE 4.10 DAMAGE CAUSED BY TROPICAL CYCLONES IN HONG KONG IN 2023

熱帶氣旋名稱 Name of tropical cyclone	月份 Month	物質損毀 Damage in physical terms							金錢損失（百萬港元）* Damage in monetary terms (million HK$)						保險索賠總額# (百萬港元) The total amount of insurance claims (million HK$) **(b)**	估計直接經濟損失@ (百萬港元) Estimated direct economic loss (million HK$) **(a) + (b)**
		農業 Agriculture	公用建設 (處) Public works facilities (site)	公用業務 (處) Public utilities (site)	物業單位 (個) Property (unit)	山泥傾瀉及斜坡倒塌 (宗) Landslip and collapse of slope (case)	受到損壞的船隻數目 (艘) Ships lost or damaged (number)	塌樹報告 (宗) Report(s) of fallen trees (case)	農業 Agriculture	公用建設 Public works facilities	公用業務 Public utilities	私人物業 Private property	工業 Industry	共 Total **(a)**		
颱風泰利 Typhoon Talim	7	樹木倒塌 Tree Failure: 2 噸 tons	欄杆 Railing: 5 棚架 Scaffolding: 1	電纜 Power transmission cable: 1 公共巴士 Public bus: 10 鐵路 Railway: 1 電信設施 Telecommunication facilities: 19	7		5	539		0.0250	0.7316			0.7566	11.0073	11.7639
超強颱風杜蘇芮 Super Typhoon Doksuri	7		路燈柱 Lamppost: 21	公共巴士 Public bus: 3 電信設施 Telecommunication facilities: 26							0.3410			0.3410		
超強颱風蘇拉 Super Typhoon Saola	8 - 9	農地 Farmland: 431 公頃 hectares 農作物 Crops: 3,863 噸 tons 樹木倒塌 Tree Failure: 34 噸 tons	長椅 Bench: 18 天橋 Bridge: 1 路燈柱 Lamppost: 37 救生艇 Life boat: 1 小徑 Minor footpath: 3 隔音屏障 Noise barrier: 1 告示板 Notice board: 3 公園照明 Park lighting: 27 涼亭 Pavilion/Arbour: 13 公共廁所 Public toilet: 1 欄杆 Railing: 13 避雨亭 Rain Shelter: 7 河堤 River embankment: 1 道路 Road: 9處 sites, 1公里 km 棚架 Scaffolding: 3 太陽能板 Solar panel: 17	電力供應 Electric supply: 5 煤氣供應設施 Gas supply facilities: 3 公共巴士 Public bus: 36 鐵路 Railway: 6 電信設施 Telecommunication facilities: 57 污水處理廠 Treatment works: 2 供水 Water supply: 2	188	7	19	4,046	60.6452	0.6532	5.2678	0.2426	2.3800	69.1888	410.4960	479.6848
強颱風海葵及其殘餘相關暴雨 Severe Typhoon Haikui and rainstorm associated with its remnant	9	農地 Farmland: 199.4 公頃 hectares 家畜(家豬) Livestock(pig): 1,557 頭 heads 淡水魚 Freshwater fish: 1,478 噸 tons 樹木倒塌 Tree Failure: 2 噸 tons	天橋 Bridge: 1 路燈柱 Lamppost: 2 升降機 Lift: 3 小徑 Minor footpath: 51 空曠地區 Open area: 23 欄杆 Railing: 5 河堤 River embankment: 7 道路 Road: 33處 sites, 14.5公里 km 其他 Others: 16	電力供應 Electric supply: 11 火警警報系統 Fire alarm system: 1 煤氣供應設施 Gas supply facilities: 4 公共巴士 Public bus: 67 鐵路 Railway: 6 電信設施 Telecommunication facilities: 66 污水處理廠 Treatment works: 45 供水 Water supply: 3	584	214	2		28.7595	9.2035	96.9961	1.9260	0.7370	137.6220	1601.6622	1739.2842
強颱風小犬 Severe Typhoon Koinu	10	樹木倒塌 Tree Failure: 1 噸 ton	路燈柱 Lamppost: 1 小徑 Minor footpath: 6 空曠地區 Open area: 4 欄杆 Railing: 2 道路 Road: 7處 sites, 4公里 km 道路屏障 Road barrier: 1	公共巴士 Public bus: 6 電信設施 Telecommunication facilities: 41 供水 Water supply: 1	8	35	6	205		0.0481	1.2407		0.0189	1.3077	140.9883	142.2961

#保險索償數據由香港保險業聯會提供，有關數據已經按參與調查的機構的所佔的市場份額作調整。請注意2023年的保險索償數據只涵蓋颱風泰利、超強颱風蘇拉、強颱風海葵及其殘餘相關暴雨和強颱風小犬。

The insurance claim figure is provided by the Hong Kong Federation of Insurers. The data have been adjusted by the market shares of the companies participating in the survey. Note that the insurance claim figure is only available for Typhoon Talim, Super Typhoon Saola, Severe Typhoon Haikui and rainstorm associated with its remnant, and Severe Typhoon Koinu in 2023.

*資料由各有關政府部門及公共事業機構提供，並已扣除相關的保險索償 (截至2024年4月30日)。

* The data is provided by relevant government departments and public utility companies (up to 30 April 2024). Items with insurance claim made have been excluded.

@ 直接經濟損失估算僅供參考，可能受到調查數據和分析方法的各種不確定性的影響。估算詳情及免責聲明可參考附件一。

@ The estimates are for reference only and may be subject to various uncertainties in the survey responses and analysis method. Please refer to Annex 1 for details of estimation and disclaimer.

由於四捨五入關係，表內個別項目的數字加起來可能與總數略有出入。

The sum of figures may not add up to total due to rounding.

表 4.11　一九六零至二零二三年間熱帶氣旋在香港所造成的人命傷亡及破壞

TABLE 4.11　CASUALTIES AND DAMAGE CAUSED BY TROPICAL CYCLONES IN HONG KONG : 1960 - 2023

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
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

表 4.11 (續)
TABLE 4.11 (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
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
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
2001	30 / 6 - 3 / 7	T. Durian	榴槤	0	0	1	0	0	0
	1 / 7 - 8 / 7	T. Utor	尤特	1	0	1	0	1	0
	23 / 7 - 26 / 7	T. Yutu	玉兔	0	0	10	0	0	0
	28 / 8 - 1 / 9	T.S. Fitow	菲特	2	0	0	0	0	0
2002	15 / 8 - 20 / 8	S.T.S. Vongfong	黃蜂	0	0	2	0	0	1
	10 / 9 - 13 / 9	S.T.S. Hagupit	黑格比	0	0	32	0	0	3
2003	16 / 7 - 23 / 7	S.T.S. Koni	天鵝	0	0	15	0	0	0
	17 / 7 - 25 / 7	T. Imbudo	伊布都	1	0	45	0	2	8
	17 / 8 - 26 / 8	T. Krovanh	科羅旺	0	0	11	0	0	2
	29 / 8 - 3 / 9	T. Dujuan	杜鵑	0	4	24	0	1	4
2004	14 / 7 - 16 / 7	T.S. Kompasu	圓規	0	0	12	0	0	0
2005	10 / 8 - 14 / 8	S.T.S. Sanvu	珊瑚	0	0	0	0	0	1
	16 / 9 - 19 / 9	T.S. Vicente	韋森特	2	0	0	0	0	0
	21 / 9 - 28 / 9	T. Damrey	達維	0	0	5	0	0	1
2006	9 / 5 - 18 / 5	T. Chanchu	珍珠	0	0	6	0	1	0
	27 / 6 - 29 / 6	T.S. Jelawat	杰拉華	1	0	0	0	0	0
	31 / 7 - 4 / 8	T. Prapiroon	派比安	0	0	8	0	1	4
	6 / 8 - 10 / 8	S.T.S. Bopha	寶霞	0	0	0	0	0	1
	23 / 8 - 25 / 8	T.D. -	-	0	0	0	0	0	1
	12 / 9 - 13 / 9	T.D. -	-	0	0	1	0	0	0
	27 /10 - 6 /11	T. Cimaron	西馬侖	0	0	4	0	0	0

表 4.11 (續)
TABLE 4.11 (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
2007	5 / 8 - 11 / 8	S.T.S. Pabuk	帕布	1	0	17	0	0	0
2008	15 / 4 - 20 / 4	T. Neoguri	浣熊	0	0	2	0	0	0
	18 / 6 - 26 / 6	T. Fengshen	風神	0	0	17	0	0	0
	4 / 8 - 8 / 8	S.T.S. Kammuri	北冕	0	0	37	0	0	0
	17 / 8 - 23 / 8	T. Nuri	鸚鵡	2	0	112	0	0	0
	19 / 9 - 25 / 9	T. Hagupit	黑格比	0	0	58	0	10	0
2009	15 / 7 - 19 / 7	T. Molave	莫拉菲	0	0	5	0	3	0
	1 / 8 - 9 / 8	S.T.S. Goni	天鵝	4	0	10	0	1	0
	9 / 9 - 12 / 9	T.S. Mujigae	彩虹	0	0	1	0	0	0
	12 / 9 - 16 / 9	T. Koppu	巨爵	0	0	74	0	0	0
2010	19 / 7 - 23 / 7	T. Chanthu	燦都	4	0	30	0	0	0
2011	18 / 6 - 25 / 6	T.S. Haima	海馬	0	0	3	0	1	0
	25 / 7 - 31 / 7	S.T.S. Nock-ten	洛坦	0	0	4	0	0	1
	23 / 9 - 1 /10	T. Nesat	納沙	0	0	26	0	1	1
	27 / 9 - 5 /10	S.T. Nalgae	尼格	0	0	1	0	0	0
2012	26 / 6 - 30 / 6	T.S. Doksuri	杜蘇芮	0	0	2	0	1	0
	20 / 7 - 25 / 7	S.T. Vicente	韋森特	0	0	138	0	1	0
	12 / 8 - 18 / 8	T. Kai-tak	啟德	0	0	1	0	0	0
	18 / 8 - 30 / 8	S.T. Tembin	天秤	1	0	1	0	0	0
2013	9 / 8 - 16 / 8	SuperT. Utor	尤特	0	1	9	0	0	0
	17 / 9 - 23 / 9	SuperT. Usagi	天兔	0	0	17	0	0	1
2014	14 / 6 - 15 / 6	T.S. Hagibis	海貝思	0	0	1	0	0	0
	14 / 9 - 17 / 9	T. Kalmaegi	海鷗	0	0	29	0	0	0
2016	31 / 7 - 2 / 8	T. Nida	妮妲	0	0	12	0	0	0
	16 /10 - 18 /10	SuperT. Sarika	莎莉嘉	0	1	2	0	0	0
	20 /10 - 21 /10	SuperT. Haima	海馬	0	0	13	0	0	3
2017	11 / 6 - 13 / 6	S.T.S. Merbok	苗柏	0	0	10	0	0	2
	22 / 7 - 23 / 7	T.S. Roke	洛克	0	0	0	0	0	2
	22 / 8 - 23 / 8	SuperT. Hato	天鴿	0	0	129	1	0	36
	26 / 8 - 27 / 8	S.T.S. Pakhar	帕卡	0	0	62	0	0	15
	2 / 9 - 4 / 9	S.T.S. Mawar	瑪娃	0	0	0	0	0	8
	14 /10 - 16 /10	S.T. Khanun	卡努	0	0	22	0	0	3
2018	5 / 6 - 8 / 6	T.S. Ewiniar	艾雲尼	0	0	1	0	0	6
	17 / 7 - 24 / 7	T.S. Son-Tinh	山神	0	0	2	0	0	1
	9 / 8 - 15 / 8	S.T.S. Bebinca	貝碧嘉	0	0	1	0	0	13
	11 / 9 - 13 / 9	T.S. Barijat	百里嘉	0	0	0	0	0	2
	14 / 9 - 17 / 9	SuperT. Mangkhut	山竹	0	0	458	0	0	708
	31 /10 - 2 /11	SuperT. Yutu	玉兔	1	0	0	0	0	2
2019	2 / 7 - 3 / 7	T.D. Mun	木恩	0	0	0	0	0	2
	30 / 7 - 3 / 8	T.S. Wipha	韋帕	0	0	20	0	0	8
	24 / 8 - 25 / 8	S.T.S. Bailu	白鹿	0	0	0	0	0	2
2020	12 / 6 - 14 / 6	T.S. Nuri	鸚鵡	1	0	1	0	1	5
	31 / 7 - 1 / 8	T.S. Sinlaku	森拉克	0	0	4	0	0	4
	18 / 8 - 19 / 8	T. Higos	海高斯	0	0	7	0	0	0
	11 /10 - 14 /10	T.S. Nangka	浪卡	0	0	3	0	0	2
	22 /10 - 24 /10	T. Saudel	沙德爾	0	0	0	0	0	1
2021	6 / 7 - 7 / 7	T.D. -	-	0	0	0	0	0	2
	18 / 7 - 20 / 7	T. Cempaka	查帕卡	1	0	0	0	0	6
	2 / 8 - 4 / 8	T.S. Lupit	盧碧	0	0	0	0	0	2
	8 /10 - 10 /10	T.S. Lionrock	獅子山	2	0	14	0	0	7
	12 /10 - 14 /10	T. Kompasu	圓規	0	0	20	0	0	1
2022	29 / 6 - 3 / 7	T. Chaba	暹芭	0	0	3	0	0	7
	9 / 8 - 10 / 8	T.S. Mulan	木蘭	0	0	0	0	0	2
	23 / 8 - 25 / 8	T. Ma-on	馬鞍	0	0	1	0	0	3
	16 /10 - 18 /10	T. Nesat	納沙	0	0	8	0	0	0
	30 /10 - 3 /11	S.T.S. Nalgae	尼格	0	0	1	0	2	0
2023	15 / 7 - 18 / 7	T. Talim	泰利	0	0	9	0	0	5
	30 / 8 - 2 / 9	SuperT. Saola	蘇拉	0	0	86	0	0	19
	4 / 9 - 8 / 9	S.T. Haikui#	海葵#	2	0	144	0	0	2
	4 /10 - 9 /10	S.T. Koinu	小犬	0	0	29	0	0	6

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。

* 缺乏數據

\+ 被雷電擊中

\# 包括其殘餘相關暴雨

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.

* Data unavailable.

\+ Struck by lightning.

\# Including rainstorm associated with its remnant

表 4.12　　二零二三年天文台發出的熱帶氣旋路徑預測驗証 (誤差單位為公里)

TABLE 4.12　VERIFICATION OF THE TROPICAL CYCLONE TRACK FORECASTS ISSUED BY THE HONG KONG OBSERVATORY IN 2023 (ERROR IN THE UNIT OF KM)

熱帶氣旋名稱	Name of tropical cyclone	編號 Code	最高強度 Maximum Intensity	24 小時預測位置 24-hour forecast position		48 小時預測位置 48-hour forecast position		72 小時預測位置 72-hour forecast position		96 小時預測位置 96-hour forecast position		120 小時預測位置 120-hour forecast position	
				平均誤差 Average error	預測數目 No. of forecasts	平均誤差 Average error	預測數目 No. of forecasts	平均誤差 Average error	預測數目 No. of forecasts	平均誤差 Average error	預測數目 No. of forecasts	平均誤差 Average error	預測數目 No. of forecasts
瑪娃	Mawar	2302	SuperT.	39	28	123	24	223	20	329	16	436	12
古超	Guchol	2303	T.	45	24	90	20	167	16	247	12	373	8
泰利	Talim	2304	T.	41	15	57	11	91	7	186	3	-	-
杜蘇芮	Doksuri	2305	SuperT.	48	30	72	26	117	22	167	18	165	14
卡努	Khanun	2306	SuperT.	58	57	100	54	159	50	261	46	450	37
蘭恩	Lan	2307	S.T.	37	12	60	10	63	6	101	2	-	
蘇拉	Saola	2309	SuperT.	65	39	122	35	173	31	241	27	334	23
海葵	Haikui	2311	S.T.	119	28	260	24	441	20	692	16	1073	12
鴻雁	Kirogi	2312	S.T.S.	-	-	-	-	-	-	-	-	-	-
鴛鴦	Yun-yeung	2313	T.S.	198	14	336	10	551	6	912	2	-	-
小犬	Koinu	2314	S.T.	60	38	108	34	126	30	123	26	137	22
三巴	Sanba	2316	T.S.	91	10	213	6	306	2	-	-	-	-
杰拉華	Jelawat	2317	T.D.	288	3	-	-	-	-	-	-	-	-
熱帶低氣壓(4月11日至12日)	Tropical Depression (11 - 12 Apr)	-	T.D.	121	1	-	-	-	-	-	-	-	-
熱帶低氣壓(9月25日至26日)	Tropical Depression (25 - 26 Sep)	-	T.D.	76	1	-	-	-	-	-	-	-	-
平均誤差 Average Error				70		126		193		278		397	
預測總數 Total number of forecasts				300		254		210		168		128	

註：

1. 驗証包括當熱帶氣旋中心位於北緯7至36度，東經100至140度內，香港天文台發出觀測時間為協調世界時00時、06時、12時及18時的熱帶氣旋路徑。
2. 誤差是指香港天文台最佳路徑位置(見第五節)及預測位置的距離，單位為公里。

Note:

1. Verification includes tropical cyclone forecast tracks issued by the Hong Kong Observatory at 00, 06, 12 and 18 UTC for tropical cyclones within the area bounded by 7°N and 36°N, 100°E to 140°E.
2. Error refers to the distance between the tropical cyclone best track position (see Section 5) and forecast position of the Hong Kong Observatory, in the unit of km.

第五節　　二零二三年熱帶氣旋的位置及強度數據

以下是二零二三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。

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

(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
(e) S.T.: - 強颱風
(f) Super T.: - 超強颱風

Section 5 TROPICAL CYCLONE POSITION AND INTENSITY DATA, 2023

Six-hourly position and intensity data are tabulated in this section for the following tropical cyclones in 2023 over the western North Pacific and the South China Sea (i.e. the area bounded by the Equator, 45°N, 100°E and 180°).

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
(e) S.T. : - severe typhoon
(f) Super T. : - super typhoon

熱帶低氣壓(由四月十一日至十二日)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL DEPRESSION (11 - 12 APRIL)

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
四月 Apr	11	0000	T.D.	1002	13	13.7	126.9
		0600	T.D.	1002	13	13.8	125.6
		1200	T.D.	1002	13	13.7	124.6
		1800	T.D.	1002	13	13.6	124.2
	12	0000	T.D.	1002	13	13.5	123.6
		0600	T.D.	1002	13	13.6	123.2
			消散 Dissipated				

熱帶風暴珊瑚(2301)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM SANVU (2301)

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
四月 Apr	19	1800	T.D.	1004	13	6.4	158.1
	20	0000	T.D.	1002	16	8.0	157.8
		0600	T.S.	1000	18	9.0	157.0
		1200	T.S.	1000	18	9.6	156.6
		1800	T.S.	1000	18	9.8	156.4
	21	0000	T.S.	998	21	10.0	156.3
		0600	T.S.	998	21	10.1	156.2
		1200	T.S.	998	21	10.2	156.1
		1800	T.S.	1000	18	10.2	155.6
	22	0000	T.S.	1000	18	10.1	155.2
		0600	T.D.	1002	16	10.1	154.8
		1200	T.D.	1004	13	10.1	154.4
			消散 Dissipated				

超強颱風瑪娃(2302)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SUPER TYPHOON MAWAR (2302)

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	19	1800	T.D.	1004	13	5.0	149.3
	20	0000	T.D.	1000	16	5.3	149.3
		0600	T.S.	995	18	5.6	149.2
		1200	T.S.	990	21	5.9	149.2
		1800	T.S.	985	23	6.4	149.0
	21	0000	S.T.S.	980	25	7.1	148.8
		0600	S.T.S.	975	28	7.6	148.3
		1200	S.T.S.	970	31	7.9	147.9
		1800	T.	965	33	8.3	147.5
	22	0000	T.	960	36	8.8	147.3
		0600	T.	955	39	9.4	147.0
		1200	T.	950	41	10.0	146.9
		1800	S.T.	940	46	10.6	146.8
	23	0000	SuperT.	930	52	11.2	146.8
		0600	SuperT.	918	59	11.8	146.5
		1200	SuperT.	922	57	12.2	146.1
		1800	SuperT.	926	54	12.5	145.7
	24	0000	SuperT.	926	54	13.0	145.6
		0600	SuperT.	930	52	13.6	145.2
		1200	SuperT.	930	52	13.8	144.8
		1800	SuperT.	922	57	14.1	144.2
	25	0000	SuperT.	918	59	14.2	143.5
		0600	SuperT.	910	64	14.5	142.8
		1200	SuperT.	905	67	14.7	141.5
		1800	SuperT.	900	69	14.9	140.5
	26	0000	SuperT.	900	69	15.1	139.2
		0600	SuperT.	900	69	15.3	137.9
		1200	SuperT.	905	67	15.7	136.5
		1800	SuperT.	910	64	16.0	135.0
	27	0000	SuperT.	914	61	16.4	133.5
		0600	SuperT.	918	59	16.6	132.2
		1200	SuperT.	922	57	16.8	130.9
		1800	SuperT.	926	54	17.1	129.7
	28	0000	SuperT.	930	52	17.2	128.7
		0600	S.T.	934	49	17.6	127.9
		1200	S.T.	934	49	18.0	127.3
		1800	S.T.	934	49	18.6	126.8
	29	0000	S.T.	934	49	19.0	126.2
		0600	S.T.	934	49	19.4	125.8
		1200	S.T.	938	46	19.7	125.6
		1800	S.T.	942	43	20.1	125.4
	30	0000	T.	946	41	20.4	125.0
		0600	T.	950	39	20.5	125.0
		1200	T.	954	36	20.8	125.0
		1800	T.	958	33	21.2	124.9
	31	0000	S.T.S.	962	31	21.5	125.1
		0600	S.T.S.	962	31	22.3	125.3
		1200	S.T.S.	962	31	22.7	125.5
		1800	S.T.S.	966	28	23.5	125.6

超強颱風瑪娃(2302)的每六小時位置及強度 (續)

SIX-HOURLY POSITION AND INTENSITY DATA OF SUPER TYPHOON MAWAR (2302) (CON'T)

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	1	0000	S.T.S.	970	25	24.2	125.8
		0600	S.T.S.	970	25	25.0	126.2
		1200	S.T.S.	970	25	25.8	127.2
		1800	S.T.S.	970	25	26.8	128.1
	2	0000	T.S.	975	23	27.6	129.6
		0600	T.S.	975	23	28.3	131.2
		1200	T.S.	980	21	29.0	133.0
		1800	T.S.	985	18	30.0	135.1
			變為溫帶氣旋 Became Extratropical				

颱風古超(2303)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON GUCHOL (2303)

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	5	1800	T.D.	1002	13	13.5	135.0
	6	0000	T.D.	1002	13	13.6	134.7
		0600	T.D.	1000	16	13.8	134.8
		1200	T.S.	998	18	14.1	134.9
		1800	T.S.	998	18	14.3	134.3
	7	0000	T.S.	995	21	14.6	134.0
		0600	T.S.	990	23	15.1	133.6
		1200	S.T.S.	985	25	15.3	133.2
		1800	S.T.S.	980	28	15.6	132.4
	8	0000	S.T.S.	975	31	15.8	131.6
		0600	T.	970	33	16.1	131.2
		1200	T.	965	36	16.3	130.8
		1800	T.	960	39	16.8	130.4
	9	0000	T.	960	39	17.3	130.3
		0600	T.	960	39	17.9	130.1
		1200	T.	960	39	18.2	130.0
		1800	T.	955	41	18.5	129.9
	10	0000	T.	955	41	19.0	130.0
		0600	T.	955	41	20.1	130.2
		1200	T.	960	39	20.8	130.5
		1800	T.	960	39	21.9	131.1

颱風古超(2303)的每六小時位置及強度 (續)

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON GUCHOL (2303) (CON'T)

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	11	0000	T.	970	33	23.2	131.7
		0600	S.T.S.	975	31	24.2	132.5
		1200	S.T.S.	980	28	25.6	133.8
		1800	S.T.S.	985	25	26.4	135.2
	12	0000	S.T.S.	985	25	28.1	136.7
		0600	T.S.	990	23	29.4	138.1
		1200	T.S.	995	21	30.6	139.5
			變為溫帶氣旋 Became Extratropical				

颱風泰利(2304)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON TALIM (2304)

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	14	0300	T.D.	998	13	17.7	120.2
		0600	T.D.	998	13	17.7	119.5
		1200	T.D.	998	13	17.5	118.6
		1800	T.D.	995	16	17.6	118.4
	15	0000	T.S.	992	18	17.7	118.3
		0600	T.S.	992	18	18.1	118.0
		1200	T.S.	990	21	18.4	117.4
		1800	T.S.	988	23	18.8	116.9
	16	0000	S.T.S.	984	25	19.0	116.2
		0600	S.T.S.	980	28	19.2	115.7
		1200	S.T.S.	975	31	19.6	114.7
		1800	T.	970	33	19.8	113.8
	17	0000	T.	965	36	20.2	113.2
		0600	T.	960	39	20.7	112.1
		1200	T.	960	39	21.1	111.0
		1800	S.T.S.	975	31	21.1	109.8
	18	0000	S.T.S.	984	25	21.7	109.0
		0600	T.S.	990	21	22.3	107.7
		1200	T.D.	995	16	22.3	106.7
		1800	T.D.	998	13	22.4	105.7
			消散 Dissipated				

超強颱風杜蘇芮(2305)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF
SUPER TYPHOON DOKSURI (2305)

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	20	1200	T.D.	1002	13	13.0	132.6
		1800	T.D.	1002	13	13.4	132.4
	21	0000	T.D.	998	16	13.8	132.2
		0600	T.D.	998	16	14.0	132.0
		1200	T.D.	998	16	14.3	131.8
		1800	T.S.	995	18	14.4	131.5
	22	0000	T.S.	995	18	14.5	131.2
		0600	T.S.	990	21	14.5	130.7
		1200	T.S.	985	23	14.6	130.2
		1800	S.T.S.	980	25	14.7	129.7
	23	0000	S.T.S.	975	28	14.7	129.0
		0600	S.T.S.	970	31	14.9	128.4
		1200	T.	960	36	15.1	127.7
		1800	T.	955	39	15.2	127.0
	24	0000	S.T.	945	43	15.3	126.6
		0600	S.T.	935	49	15.7	126.3
		1200	SuperT.	930	52	16.5	125.8
		1800	SuperT.	925	54	16.9	125.1
	25	0000	SuperT.	915	59	17.6	124.6
		0600	SuperT.	915	59	18.3	123.7
		1200	SuperT.	920	57	18.8	122.7
		1800	SuperT.	920	57	19.0	121.5
	26	0000	SuperT.	925	54	18.9	121.3
		0600	SuperT.	930	52	19.3	121.0
		1200	S.T.	940	46	19.6	120.6
		1800	S.T.	940	46	20.0	120.1
	27	0000	S.T.	945	43	20.8	119.8
		0600	S.T.	940	46	21.1	119.3
		1200	SuperT.	930	52	21.8	119.2
		1800	SuperT.	930	52	22.8	119.0
	28	0000	S.T.	940	46	24.2	118.8
		0600	T.	965	33	25.5	118.2
		1200	S.T.S.	980	25	27.1	117.6
		1800	T.S.	990	21	28.6	117.3
	29	0000	T.D.	998	16	30.0	116.5
			消散 Dissipated				

超強颱風卡努(2306)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SUPER TYPHOON KHANUN (2306)

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	26	1800	T.D.	1002	13	11.0	140.6
	27	0000	T.D.	998	16	11.9	140.3
		0600	T.D.	998	16	12.2	139.0
		1200	T.D.	998	16	12.5	137.5
		1800	T.S.	995	18	12.8	136.8
	28	0000	T.S.	995	18	13.1	136.3
		0600	T.S.	995	18	13.6	136.0
		1200	T.S.	995	18	14.4	135.5
		1800	T.S.	990	21	15.1	134.6
	29	0000	T.S.	990	21	15.7	133.9
		0600	T.S.	985	23	16.4	133.7
		1200	S.T.S.	980	25	16.9	133.5
		1800	S.T.S.	975	28	17.7	133.2
	30	0000	S.T.S.	970	31	18.7	132.8
		0600	T.	960	36	19.6	132.7
		1200	T.	955	39	20.4	132.4
		1800	S.T.	945	43	21.1	132.2
	31	0000	S.T.	940	46	22.0	132.0
		0600	S.T.	935	49	22.8	131.5
		1200	SuperT.	930	52	23.4	131.0
		1800	SuperT.	930	52	24.1	130.3
八月 Aug	1	0000	SuperT.	925	54	24.6	129.4
		0600	SuperT.	925	54	25.0	128.7
		1200	SuperT.	925	54	25.3	128.0
		1800	SuperT.	930	52	25.6	127.4
	2	0000	SuperT.	930	52	25.8	126.9
		0600	S.T.	935	49	26.1	126.1
		1200	S.T.	935	49	26.2	125.6
		1800	S.T.	935	49	26.5	124.9
	3	0000	S.T.	940	46	26.6	124.7
		0600	S.T.	945	43	26.7	124.2
		1200	T.	950	41	26.8	124.3
		1800	T.	960	36	26.9	124.4
	4	0000	T.	965	33	27.0	124.5
		0600	T.	965	33	27.2	125.2
		1200	S.T.S.	970	31	27.4	125.7
		1800	S.T.S.	970	31	27.6	126.3
	5	0000	S.T.S.	970	31	27.7	126.9
		0600	S.T.S.	970	31	27.8	127.6
		1200	S.T.S.	970	31	27.8	128.5
		1800	S.T.S.	975	28	28.0	128.9
	6	0000	S.T.S.	975	28	27.6	129.5
		0600	S.T.S.	975	28	27.8	130.0
		1200	S.T.S.	975	28	27.6	130.6
		1800	S.T.S.	975	28	27.7	130.7

超強颱風卡努(2306)的每六小時位置及強度 (續)

SIX-HOURLY POSITION AND INTENSITY DATA OF SUPER TYPHOON KHANUN (2306) (CON'T)

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	7	0000	S.T.S.	975	28	27.8	131.1
		0600	S.T.S.	975	28	28.0	131.2
		1200	S.T.S.	975	28	28.2	131.3
		1800	S.T.S.	975	28	28.5	131.1
	8	0000	S.T.S.	975	28	29.0	131.0
		0600	S.T.S.	975	28	29.5	130.7
		1200	S.T.S.	975	28	29.9	130.4
		1800	S.T.S.	975	28	30.4	129.7
	9	0000	S.T.S.	975	28	30.9	129.3
		0600	S.T.S.	975	28	31.6	128.9
		1200	S.T.S.	975	28	32.4	128.8
		1800	S.T.S.	978	25	33.5	128.7
	10	0000	T.S.	982	23	34.8	128.7
		0600	T.S.	985	21	36.8	128.1
		1200	T.S.	985	21	37.6	127.5
		1800	T.S.	988	18	38.2	126.6
	11	0000	T.D.	992	16	38.7	126.0
		0600	T.D.	996	13	38.7	125.3
			消散 Dissipated				

強颱風蘭恩(2307)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TYPHOON LAN (2307)

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	7	1800	T.D.	1002	13	23.9	149.1
	8	0000	T.D.	1000	16	24.0	149.0
		0600	T.S.	998	18	24.0	148.8
		1200	T.S.	995	21	24.1	148.3
		1800	T.S.	995	21	24.2	147.6
	9	0000	T.S.	990	23	24.2	146.9
		0600	S.T.S.	985	25	24.5	146.0
		1200	S.T.S.	980	28	24.8	145.4
		1800	S.T.S.	975	31	25.0	144.6
	10	0000	T.	970	33	25.2	143.9
		0600	T.	965	36	25.5	143.4
		1200	T.	955	41	25.9	143.1
		1800	S.T.	945	46	26.3	142.9
	11	0000	S.T.	940	49	26.8	142.9
		0600	S.T.	940	49	27.3	142.8
		1200	S.T.	940	49	27.9	142.6
		1800	S.T.	945	46	28.2	142.3
	12	0000	S.T.	950	43	28.4	141.8
		0600	S.T.	950	43	28.9	141.4
		1200	T.	955	41	29.1	140.7
		1800	T.	960	39	29.3	140.0
	13	0000	T.	960	39	29.8	139.6
		0600	T.	960	39	30.3	139.0
		1200	T.	960	39	30.8	138.5
		1800	T.	960	39	31.3	138.0
	14	0000	T.	960	39	31.8	137.5
		0600	T.	960	39	32.3	136.9
		1200	T.	965	36	32.7	136.5
		1800	T.	970	33	33.3	136.0
	15	0000	S.T.S.	980	28	34.2	135.4
		0600	S.T.S.	985	25	35.1	134.9
		1200	T.S.	990	23	36.1	134.8
		1800	T.S.	995	21	37.2	134.7
	16	0000	T.S.	995	21	38.3	135.4
		0600	T.S.	995	21	39.6	136.0
		1200	T.S.	995	21	40.9	136.5
		1800	T.S.	995	21	42.0	137.6
	17	0000	T.S.	995	21	44.0	138.7
			變為溫帶氣旋 Became Extratropical				

強颱風多拉(2308)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TYPHOON DORA (2308)

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	12	0000	S.T.	960	46	15.6	180.0
		0600	T.	968	41	16.3	179.1
		1200	T.	974	36	17.1	178.1
		1800	T.	978	33	17.6	177.0
	13	0000	S.T.S.	984	28	18.0	175.4
		0600	S.T.S.	988	25	18.0	174.0
		1200	T.S.	992	23	18.1	172.8
		1800	T.S.	992	23	18.4	171.4
	14	0000	T.S.	995	21	18.7	170.1
		0600	T.S.	995	21	19.2	169.3
		1200	T.S.	995	21	19.7	168.5
		1800	T.S.	995	21	20.4	168.2
	15	0000	T.S.	998	18	20.9	167.8
		0600	T.D.	1002	16	21.4	167.7
		1200	T.D.	1002	16	22.5	167.9
		1800	T.D.	1006	13	23.6	168.2
			消散 Dissipated				

超強颱風蘇拉(2309)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SUPER TYPHOON SAOLA (2309)

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	23	1200	T.D.	1000	13	19.1	125.5
		1800	T.D.	998	16	19.6	125.2
	24	0000	T.S.	996	18	20.1	124.9
		0600	T.S.	996	18	20.3	124.6
		1200	T.S.	994	21	20.3	124.3
		1800	S.T.S.	988	25	20.1	124.2
	25	0000	S.T.S.	984	28	19.9	124.1
		0600	T.	978	33	19.7	123.9
		1200	T.	972	39	19.4	123.6
		1800	T.	968	41	19.0	123.4
	26	0000	S.T.	960	43	18.5	123.2
		0600	S.T.	950	49	18.0	123.1
		1200	SuperT.	945	52	17.5	123.1
		1800	SuperT.	935	54	17.2	123.0
	27	0000	SuperT.	945	52	16.8	123.0
		0600	SuperT.	945	52	16.5	123.0
		1200	SuperT.	945	52	16.2	123.2
		1800	S.T.	955	46	16.0	123.8
	28	0000	S.T.	955	46	16.8	124.3
		0600	SuperT.	945	52	17.5	124.3
		1200	SuperT.	945	52	17.9	124.1
		1800	S.T.	950	49	18.2	123.8
	29	0000	S.T.	955	46	18.5	123.5
		0600	S.T.	950	49	18.9	123.1
		1200	SuperT.	930	57	19.3	122.7
		1800	SuperT.	915	64	19.9	121.9
	30	0000	SuperT.	915	64	20.1	121.0
		0600	SuperT.	915	64	20.4	120.3
		1200	SuperT.	915	64	20.7	119.6
		1800	SuperT.	920	61	20.9	118.7
	31	0000	SuperT.	925	59	21.0	118.2
		0600	SuperT.	930	57	21.2	117.8
		1200	SuperT.	930	57	21.5	117.3
		1800	SuperT.	930	57	21.6	116.8
九月 Sep	1	0000	SuperT.	925	59	21.8	116.3
		0600	SuperT.	930	57	21.9	115.5
		1200	SuperT.	945	52	22.0	114.5
		1800	S.T.	960	43	21.9	113.5
	2	0000	T.	972	39	21.7	112.8
		0600	S.T.S.	984	28	21.7	111.9
		1200	T.S.	996	18	21.6	111.0
		1800	T.D.	998	16	21.4	110.2
	3	0000	T.D.	1000	13	21.1	109.7
		0600	T.D.	1000	13	21.0	109.3
			消散 Dissipated				

強烈熱帶風暴達維(2310)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TROPICAL STORM DAMREY (2310)

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	23	1200	T.D.	1002	13	16.8	150.0
		1800	T.D.	1002	13	16.7	149.8
	24	0000	T.D.	1002	13	16.5	149.7
		0600	T.D.	1000	16	16.9	150.9
		1200	T.S.	998	18	17.6	152.5
		1800	T.S.	998	18	18.2	153.6
	25	0000	T.S.	998	18	18.8	154.7
		0600	T.S.	995	21	20.2	155.6
		1200	T.S.	995	21	21.6	155.3
		1800	T.S.	992	23	23.1	155.0
	26	0000	T.S.	992	23	24.5	154.2
		0600	S.T.S.	988	25	26.1	152.8
		1200	S.T.S.	988	25	27.6	151.0
		1800	S.T.S.	988	25	29.6	149.3
	27	0000	S.T.S.	988	25	31.7	147.4
		0600	S.T.S.	984	28	33.7	145.6
		1200	S.T.S.	980	31	35.7	144.5
		1800	S.T.S.	984	28	37.3	144.1
	28	0000	S.T.S.	984	28	38.5	144.6
		0600	S.T.S.	988	25	39.9	145.6
		1200	S.T.S.	988	25	40.5	147.4
		1800	T.S. 變為溫帶氣旋 Became Extratropical	992	23	41.0	149.8

強颱風海葵(2311)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TYPHOON HAIKUI (2311)

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	1200	T.D.	1002	13	18.3	143.7
		1800	T.D.	1000	13	18.4	143.4
	28	0000	T.D.	998	16	18.4	142.9
		0600	T.S.	995	18	18.5	141.7
		1200	T.S.	995	18	18.6	140.5
		1800	T.S.	992	21	18.8	139.4
	29	0000	T.S.	988	23	19.0	138.1
		0600	S.T.S.	984	25	19.1	137.0
		1200	S.T.S.	980	28	19.4	136.9
		1800	S.T.S.	984	25	19.7	136.8
	30	0000	T.S.	988	23	20.1	136.1
		0600	T.S.	988	23	20.4	135.3
		1200	T.S.	988	23	20.7	134.5
		1800	S.T.S.	984	25	21.0	133.7
	31	0000	S.T.S.	980	28	21.2	132.9
		0600	S.T.S.	980	28	21.2	132.0
		1200	S.T.S.	980	28	22.0	131.2
		1800	S.T.S.	975	31	22.0	130.3
九月 Sep	1	0000	S.T.S.	975	31	22.1	129.4
		0600	T.	970	33	22.1	128.6
		1200	T.	970	33	21.8	127.8
		1800	T.	965	36	21.9	127.2
	2	0000	T.	965	36	22.1	126.3
		0600	T.	960	39	22.4	125.3
		1200	T.	960	39	22.7	124.3
		1800	S.T.	950	43	22.5	123.3
	3	0000	S.T.	945	46	22.6	122.7
		0600	S.T.	940	49	22.9	121.6
		1200	T.	955	41	22.7	120.2
		1800	T.	970	33	22.5	120.0
	4	0000	S.T.S.	980	28	23.2	119.8
		0600	S.T.S.	984	25	23.2	119.3
		1200	T.S.	992	21	23.5	118.6
		1800	T.S.	995	18	23.6	117.8
	5	0000	T.D.	998	16	23.6	117.0
		0600	T.D.	998	16	23.7	116.6
		1200	T.D.	1000	13	23.6	116.2
			消散 Dissipated				

強烈熱帶風暴鴻雁(2312)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TROPICAL STORM KIROGI (2312)

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	29	1800	T.D.	1000	13	11.3	154.8
	30	0000	T.D.	998	16	12.5	154.6
		0600	T.D.	998	16	12.9	154.4
		1200	T.S.	995	18	13.3	154.3
		1800	T.S.	992	21	14.1	154.4
	31	0000	T.S.	990	23	15.3	154.5
		0600	S.T.S.	988	25	16.6	154.3
		1200	S.T.S.	988	25	17.9	153.5
		1800	S.T.S.	988	25	19.2	152.7
九月 Sep	1	0000	T.S.	990	23	20.5	151.8
		0600	T.S.	990	23	21.9	150.8
		1200	T.S.	992	21	23.2	149.3
		1800	T.S.	992	21	24.5	148.3
	2	0000	T.S.	995	18	25.4	147.6
		0600	T.S.	995	18	27.1	146.2
		1200	T.D.	998	16	28.7	144.9
		1800	T.D.	998	16	29.2	143.0
	3	0000	T.D.	998	16	29.6	141.9
		0600	T.D.	998	16	30.2	140.6
		1200	T.D.	998	16	30.4	139.6
		1800	T.D.	1000	13	31.1	138.4
	4	0000	T.D.	1000	13	31.8	137.1
			消散 Dissipated				

熱帶風暴鴛鴦(2313)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM YUN-YEUNG (2313)

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	4	0600	T.D.	1002	13	20.4	130.4
		1200	T.D.	1002	13	21.0	130.7
		1800	T.D.	1002	13	21.1	130.8
	5	0000	T.D.	1000	16	21.3	130.9
		0600	T.D.	1000	16	21.9	131.4
		1200	T.S.	998	18	22.6	131.8
		1800	T.S.	998	18	24.4	132.6
	6	0000	T.S.	995	21	25.7	133.0
		0600	T.S.	995	21	26.6	134.3
		1200	T.S.	995	21	27.6	134.7
		1800	T.S.	995	21	28.7	135.6
	7	0000	T.S.	995	21	29.8	136.4
		0600	T.S.	995	21	30.9	137.0
		1200	T.S.	995	21	32.1	137.1
		1800	T.S.	995	21	32.5	137.2
	8	0000	T.S.	998	18	32.6	137.2
		0600	T.D.	1000	16	32.6	137.5
		1200	T.D. 變為溫帶氣旋 Became Extratropical	1002	13	33.5	138.0

熱帶低氣壓(由九月二十五日至二十六日)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL DEPRESSION (25 - 26 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	24	1800	T.D.	1002	13	14.5	110.7
	25	0000	T.D.	1002	13	14.9	110.5
		0600	T.D.	1002	13	15.8	109.5
		1200	T.D.	1002	13	16.1	108.5
		1800	T.D. 消散 Dissipated	1002	13	16.3	107.6

強颱風小犬(2314)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TYPHOON KOINU (2314)

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	1200	T.D.	1002	13	15.8	138.8
		1800	T.D.	1002	13	15.6	137.0
	29	0000	T.D.	998	16	15.4	135.8
		0600	T.D.	998	16	15.3	135.1
		1200	T.D.	998	16	15.6	133.9
		1800	T.S.	995	18	15.5	132.8
	30	0000	T.S.	995	18	15.4	132.0
		0600	T.S.	995	18	16.1	131.2
		1200	T.S.	990	21	16.4	130.7
		1800	T.S.	990	23	16.9	130.1
十月 Oct	1	0000	T.S.	990	23	17.4	129.4
		0600	S.T.S.	985	25	17.9	128.8
		1200	S.T.S.	980	31	18.2	128.5
		1800	T.	975	36	18.7	128.0
	2	0000	T.	960	41	19.2	127.3
		0600	S.T.	955	43	19.5	126.6
		1200	S.T.	945	49	19.9	126.2
		1800	S.T.	945	49	20.1	125.5
	3	0000	S.T.	950	46	20.5	125.1
		0600	S.T.	950	46	21.1	124.9
		1200	S.T.	945	49	21.7	124.6
		1800	S.T.	950	46	21.9	124.2
	4	0000	S.T.	945	49	22.1	123.6
		0600	S.T.	945	49	22.1	122.8
		1200	S.T.	945	49	22.0	122.0
		1800	S.T.	945	49	21.9	121.3
	5	0000	S.T.	950	46	21.9	120.9
		0600	T.	960	41	22.1	120.0
		1200	T.	965	39	22.0	119.2
		1800	T.	970	36	21.9	118.4
	6	0000	T.	965	39	21.8	117.7
		0600	T.	960	41	21.7	116.9
		1200	T.	960	41	21.4	116.3
		1800	S.T.	950	46	21.2	115.8
	7	0000	S.T.	950	46	21.1	115.5
		0600	S.T.	955	43	21.1	115.3
		1200	T.	960	41	21.2	115.2
		1800	T.	960	41	21.3	114.9
	8	0000	T.	960	41	21.4	114.7
		0600	T.	960	41	21.6	114.3
		1200	S.T.	955	43	21.7	114.1
		1800	T.	965	39	21.7	113.7
	9	0000	S.T.S.	985	28	21.7	113.2
		0600	T.S.	998	21	21.5	112.5
		1200	T.D.	1006	13	21.1	112.1
			消散 Dissipated				

超強颱風布拉萬(2315)的每六小時位置及強度

SIX-HOURLY POSITION AND INTENSITY DATA OF SUPER TYPHOON BOLAVEN (2315)

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	0000	T.D.	1000	13	9.6	154.5
		0600	T.D.	998	16	9.6	154.1
		1200	T.D.	998	16	9.6	153.7
		1800	T.D.	998	16	9.6	153.3
	8	0000	T.S.	995	18	9.7	152.9
		0600	T.S.	995	18	10.0	152.5
		1200	T.S.	992	21	10.2	152.0
		1800	T.S.	988	23	10.5	151.2
	9	0000	S.T.S.	984	25	10.9	150.3
		0600	S.T.S.	984	25	11.4	149.4
		1200	S.T.S.	980	28	12.0	148.5
		1800	S.T.S.	976	31	13.0	147.6
	10	0000	T.	968	36	13.8	146.4
		0600	T.	964	39	14.4	145.6
		1200	S.T.	955	43	15.2	145.0
		1800	S.T.	945	49	16.1	144.5
	11	0000	SuperT.	935	54	17.1	144.1
		0600	SuperT.	920	61	18.2	143.4
		1200	SuperT.	905	69	18.9	143.0
		1800	SuperT.	905	69	19.7	142.8
	12	0000	SuperT.	905	69	20.6	142.9
		0600	SuperT.	905	69	21.8	143.4
		1200	SuperT.	905	69	22.7	144.3
		1800	SuperT.	915	64	24.0	145.4
	13	0000	SuperT.	925	59	25.5	147.0
		0600	SuperT.	940	52	27.3	148.7
		1200	S.T.	950	46	29.4	150.6
		1800	T.	960	41	31.4	153.2
	14	0000	T.	968	36	34.5	156.4
		0600	T. 變為溫帶氣旋 Became Extratropical	972	33	37.5	160.0

熱帶風暴三巴(2316)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM SANBA (2316)

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	17	0600	T.D.	1004	13	15.8	110.2
		1200	T.D.	1002	16	15.9	110.1
		1800	T.D.	1002	16	16.3	109.8
	18	0000	T.S.	1000	18	17.0	109.5
		0600	T.S.	1000	18	17.6	109.1
		1200	T.S.	1000	18	18.3	108.8
		1800	T.S.	1000	18	18.5	108.6
	19	0000	T.S.	1000	18	19.2	108.6
		0600	T.S.	1000	18	19.9	108.8
		1200	T.S.	998	21	20.9	109.1
		1800	T.S.	995	23	21.2	109.3
	20	0000	T.S.	998	21	21.2	109.6
		0600	T.S.	1000	18	20.7	109.8
		1200	T.D.	1008	13	20.2	109.6
			消散 Dissipated				

熱帶低氣壓杰拉華(2317)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL DEPRESSION JELAWAT (2317)

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	16	1800	T.D.	1004	13	6.8	131.1
	17	0000	T.D.	1002	16	6.8	130.3
		0600	T.D.	1002	16	7.5	129.5
		1200	T.D.	1002	16	7.2	128.4
		1800	T.D.	1002	16	7.2	127.5
	18	0000	T.D.	1004	13	7.1	126.7
		0600	T.D.	1004	13	7.2	126.0
		1200	T.D.	1004	13	7.5	125.3
			消散 Dissipated				

附件一

颱風泰利(2304)、超強颱風蘇拉(2309)、強颱風海葵(2311)及其殘餘相關暴雨和強颱風小犬(2314)引致香港直接經濟損失的估算

1. 數據收集

(A) 政府部門、公共事業機構及其他組織報告的損失

香港天文台在 2023 年 10 月至 2024 年 4 月向以下的政府部門、公共事業機構及其他組織進行調查，收集颱風泰利、超強颱風蘇拉、強颱風海葵及其殘餘相關暴雨和強颱風小犬所造成的破壞及經濟損失的數據：

政府部門

漁農自然護理署、建築署、屋宇署、民航處、土木工程拓展署、渠務署、機電工程署、環境保護署、消防處、食物環境衞生署、政府產業署、路政署、民政事務總署、房屋署、地政總署、康樂及文化事務署、海事處、社會福利署、水務署。

公共事業機構及其他組織

中華電力有限公司、中國移動香港有限公司、城巴有限公司、愉景灣航運服務有限公司、環球全域電訊有限公司、香港中華煤氣有限公司、香港機場管理局、香港寬頻網絡有限公司、香港電燈有限公司、香港紅十字會、香港鐵路有限公司、香港電訊有限公司、香港電車有限公司、國際環球通訊網絡(香港)有限公司、九龍巴士(一九三三)有限公司、珀麗灣客運有限公司、新渡輪服務有限公司、信德中旅船務管理有限公司及天星小輪有限公司。

截至 2024 年 4 月 30 日，政府部門、公共事業機構及其他組織報告的損失如下：

	政府部門、公共事業機構及其他組織報告的損失（港元)
颱風泰利	756,562
超強颱風蘇拉	69,188,779
強颱風海葵及其殘餘相關暴雨	137,622,024
強颱風小犬	1,307,735

為避免與(B)保險索償數據重複計算，相關的保險索償已在數據中扣除。

(B) 保險索償數據

因颱風泰利、超強颱風蘇拉、強颱風海葵及其殘餘相關暴雨和強颱風小犬而產生的香港保險索償統計數字由香港保險業聯會根據其成員調查提供。調查的資料如下：

	參與調查的保險公司的數目	根據保險業監管局發佈的 2022 年度一般保險業務的統計數字的市場份額
颱風泰利	43	65%
超強颱風蘇拉	47	67%
強颱風海葵及其殘餘相關暴雨	48	67%
強颱風小犬	39	60%

(B1) 颱風泰利保險索償數據

截至 2023 年 9 月 17 日，根據調查所得的保險索償數字如下：

	索償總額（港元)
(i) 財產損壞、業務中斷、工程保險 - 物料損壞	5,142,716
(ii) 僱員補償、汽車及旅遊	2,012,059

按參與調查的機構所佔的市場份額(65%)作調整，泰利保險索償數字估計為(5,142,716 港元+ 2,012,059 港元) / 65% = 11,007,346 港元

(B2) 超強颱風蘇拉保險索償數據

截至 2023 年 11 月 1 日，根據調查所得的保險索償數字如下：

	索償總額（港元)
(i) 財產損壞、業務中斷、工程保險 - 物料損壞	241,670,928
(ii) 僱員補償、汽車及旅遊	33,361,386

按參與調查的機構所佔的市場份額(67%)作調整，蘇拉保險索償數字估計為(241,670,928 港元+ 33,361,386 港元) / 67% = 410,495,992 港元

(B3) 強颱風海葵及其殘餘相關暴雨保險索償數據

截至 2023 年 11 月 7 日，根據調查所得的保險索償數字如下：

	索償總額（港元)
(i) 財產損壞、業務中斷、工程保險 - 物料損壞	955,901,252
(ii) 僱員補償、汽車及旅遊	117,212,425

按參與調查的機構所佔的市場份額(67%)作調整，海葵及其殘餘相關暴雨保險索償數字估計為(955,901,252 港元+ 117,212,425 港元) / 67% = 1,601,662,205 港元

(B4) 強颱風小犬保險索償數據

截至 2023 年 12 月 8 日，根據調查所得的保險索償數字如下：

	索償總額（港元)
(i) 財產損壞、業務中斷、工程保險 - 物料損壞	78,884,302
(ii) 僱員補償、汽車及旅遊	5,708,699

按參與調查的機構所佔的市場份額(60%)作調整，小犬保險索償數字估計為(78,884,302 港元+ 5,708,699 港元) / 60% = 140,988,334 港元

2. 颱風泰利、超強颱風蘇拉、強颱風海葵及其殘餘相關暴雨和強颱風小犬引致直接經濟損失的估算

颱風泰利引致直接經濟損失的估算是 (A)政府部門、公共事業機構及其他組織報告的損失 (扣除相關的保險索償)及 (B1)保險索償數字 (按參與調查的機構的所佔的市場份額作調整)的總和。

= 756,562 港元 + 11,007,346 港元

= 11,763,908 港元 (約 一千二百萬港元)

超強颱風蘇拉引致直接經濟損失的估算是 (A)政府部門、公共事業機構及其他組織報告的損失 (扣除相關的保險索償)及 (B2)保險索償數字 (按參與調查的機構的所佔的市場份額作調整)的總和。

= 69,188,779 港元 + 410,495,992 港元

= 479,684,771 港元 (約 四億八千萬港元)

強颱風海葵及其殘餘相關暴雨引致直接經濟損失的估算是 (A)政府部門、公共事業機構及其他組織報告的損失 (扣除相關的保險索償)及 (B2)保險索償數字 (按參與調查的機構的所佔的市場份額作調整)的總和。

= 137,622,024 港元 + 1,601,662,205 港元

= 1,739,284,229 港元 (約 十七億港元)

強颱風小犬引致直接經濟損失的估算是 (A)政府部門、公共事業機構及其他組織報告的損失 (扣除相關的保險索償)及 (B2)保險索償數字 (按參與調查的機構的所佔的市場份額作調整)的總和。

= 1,307,735 港元 + 140,988,334 港元

= 142,296,069 港元 (約 一億四千萬港元)

3. 免責聲明

直接經濟損失的估算是基於香港天文台向政府部門、公共事業機構及其他組織所收集的經濟損失數據、香港保險業聯會向成員收集的保險索償統計數字，以及相關政府報告所作出的。由於所收集的數據並非詳盡無遺，估算的損失亦有可能受到調查回應和分析方法的各種局限所影響，因此直接經濟損失估算僅供參考。

鳴謝

香港天文台感謝所有參與調查的政府部門、公共事業機構及其他組織、香港保險業聯會提供保險索償數字，以及政府統計處為經濟損失調查及估算方法提供的專業意見。

Annex 1

Estimated Direct Economic Losses in Hong Kong caused by Typhoon Talim (2304), Super Typhoon Saola (2309), Severe Typhoon Haikui (2311) and rainstorm associated with its remnant, and Severe Typhoon Koinu (2314)

1. Data collection

(A) Losses reported by government departments, public utility companies and other organizations

The Hong Kong Observatory conducted a survey to collect data on damages and economic losses caused by Typhoon Talim, Super Typhoon Saola, Severe Typhoon Haikui and rainstorm associated with its remnant, and Severe Typhoon Koinu from the following government departments, public utilities and other organizations between October 2023 and April 2024:

Government departments

Agriculture, Fisheries and Conservation Department, Architectural Services Department, Buildings Department, Civil Aviation Department, Civil Engineering and Development Department, Drainage Services Department, Electrical and Mechanical Services Department, Environmental Protection Department, Fire Services Department, Food and Environmental Hygiene Department, Government Property Agency, Highways Department, Home Affairs Department, Housing Department, Lands Department, Leisure and Cultural Services Department, Marine Department, Social Welfare Department, Water Supplies Department.

Public utility companies and other organizations

China Light and Power Company Limited, China Mobile Hong Kong Company Limited, City Bus Limited, Discovery Bay Transportation Services Limited, HGC Global Communications Limited, Hong Kong and China Gas Company Limited, Hong Kong Airport Authority, Hong Kong Broadband Network Limited, Hong Kong Electric Company Limited, Hong Kong Red Cross, Mass Transit Railway Corporation Limited, Hong Kong Telecommunications Limited, Hong Kong Tramways Limited, Reach Networks Hong Kong Limited, Kowloon Motor Bus Company (1933) Limited, Park Island Transport Company Limited, Sun Ferry Services Company Limited, Shun Tak China Travel Shipping Management Limited and the “Star” Ferry Company, Limited.

As of 30 April 2024, the losses reported from government departments, public utilities and other organizations are as follow:

	The losses reported from government departments, public utilities and other organizations (HK$)
Typhoon Talim	756,562
Super Typhoon Saola	69,188,779
Severe Typhoon Haikui and rainstorm associated with its remnant	137,622,024
Severe Typhoon Koinu	1,307,735

To avoid double counting the insurance claims data in part (B), items with insurance claims covered have been excluded.

(B) Insurance claims data

The insurance claims statistics incurred by Typhoon Talim, Super Typhoon Saola, Severe Typhoon Haikui and rainstorm associated with its remnant, and Severe Typhoon Koinu in Hong Kong are provided by the Hong Kong Federation of Insurers (HKFI) based on its member surveys. Details of the statistics are as follows :

	Number of insurance companies participated in the survey	Market share according to the Annual Statistics for General Business 2022 issued by the Insurance Authority
Typhoon Talim	43	65%
Super Typhoon Saola	47	67%
Severe Typhoon Haikui and rainstorm associated with its remnant	48	67%
Severe Typhoon Koinu	30	60%

(B1) Insurance claims data of Typhoon Talim

The insurance claims incurred as of 17 September 2023 are as follows :

	Total claims incurred (HK$)
(i) Property Damage, Business Interruption and Contractors' All Risks (CAR)	5,142,716
(ii) Employees' Compensation (EC), Motor and Travel	2,012,059

Adjusted by market share of the participating companies (65%), the insurance claims incurred by Talim is estimated to be (HK$ 5,142,716 + HK$ 2,012,059) / 65% = HK$ 11,007,346

(B2) Insurance claims data of Super Typhoon Saola

The insurance claims incurred as of 1 November 2023 are as follows :

	Total claims incurred (HK$)
(i) Property Damage, Business Interruption and Contractors' All Risks (CAR)	241,670,928
(ii) Employees' Compensation (EC), Motor and Travel	33,361,386

Adjusted by market share of the participating companies (67%), the insurance claims incurred by Saola is estimated to be (HK$ 241,670,928 + HK$ 33,361,386) / 67% = HK$ 410,495,992

(B3) Insurance claims data of Severe Typhoon Haikui and rainstorm associated with its remnant

The insurance claims incurred as of 7 November 2023 are as follows :

	Total claims incurred (HK$)
(i) Property Damage, Business Interruption and Contractors' All Risks (CAR)	955,901,252
(ii) Employees' Compensation (EC), Motor and Travel	117,212,425

Adjusted by market share of the participating companies (67%), the insurance claims incurred by Severe Typhoon Haikui and rainstorm associated with its remnant are estimated to be (HK$ 955,901,252 + HK$ 117,212,425) / 67% = HK$ 1,601,662,205

(B4) Insurance claims data of Severe Typhoon Koinu

The insurance claims incurred as of 8 December 2023 are as follows :

	Total claims incurred (HK$)
(i) Property Damage, Business Interruption and Contractors' All Risks (CAR)	78,884,302
(ii) Employees' Compensation (EC), Motor and Travel	5,708,699

Adjusted by market share of the participating companies (60%), the insurance claims incurred by Koinu is estimated to be (HK$ 78,884,302 + HK$ 5,708,699) / 60% = HK$ 140,988,334

2. Estimation of direct economic losses caused by Typhoon Talim, Super Typhoon Saola, Severe Typhoon Haikui and rainstorm associated with its remnant, and Severe Typhoon Koinu

The estimated direct economic losses due to Typhoon Talim in Hong Kong are considered to be the sum of **(A)** total reported losses of government departments, public utilities and other organizations (net of related insurance claims) and **(B1)** insurance claims (adjusted by market share of companies participating in the survey):
= HK$ 756,562 + HK$ 11,007,346
= HK$ 11,763,908 (around HK$ 12 million)

The estimated direct economic losses due to Super Typhoon Saola in Hong Kong are considered to be the sum of **(A)** total reported losses of government departments, public utilities and other organizations (net of related insurance claims) and **(B2)** insurance claims (adjusted by market share of companies participating in the survey):
= HK$ 69,188,779 + HK$ 410,495,992
= HK$ 479,684,771 (around HK$ 480 million)

The estimated direct economic losses due to Severe Typhoon Haikui and rainstorm associated with its remnant in Hong Kong are considered to be the sum of **(A)** total reported losses of government departments, public utilities and other organizations (net of related insurance claims) and **(B2)** insurance claims (adjusted by market share of companies participating in the survey):
= HK$ 137,622,024 + HK$ 1,601,662,205
= HK$ 1,739,284,229 (around HK$ 1.7 billion)

The estimated direct economic losses due to Severe Typhoon Koinu in Hong Kong are considered to be the sum of **(A)** total reported losses of government departments, public utilities and other organizations (net of related insurance claims) and **(B2)** insurance claims (adjusted by market share of companies participating in the survey):
= HK$ 1,307,735 + HK$ 140,988,334
= HK$ 142,296,069 (around HK$ 140 million)

3. Disclaimer

The estimated direct economic losses are based on the best available information from the responses of government departments, public utilities and other organizations to the survey conducted by the Hong Kong Observatory, statistics on insurance claims collected from the members of the Hong Kong Federation of Insurers and other relevant government reports at the time of assessment. The estimates are for reference only as the data collection are by no means exhaustive and may be subject to various limitations in the survey responses and analysis method.

Acknowledgement

The Hong Kong Observatory gratefully acknowledges the government departments, public utilities and other organizations involved in the survey, the Hong Kong Federation of Insurers for providing insurance claims, and the Census and Statistics Department for providing professional advice to the survey and analysis methods of economic losses.