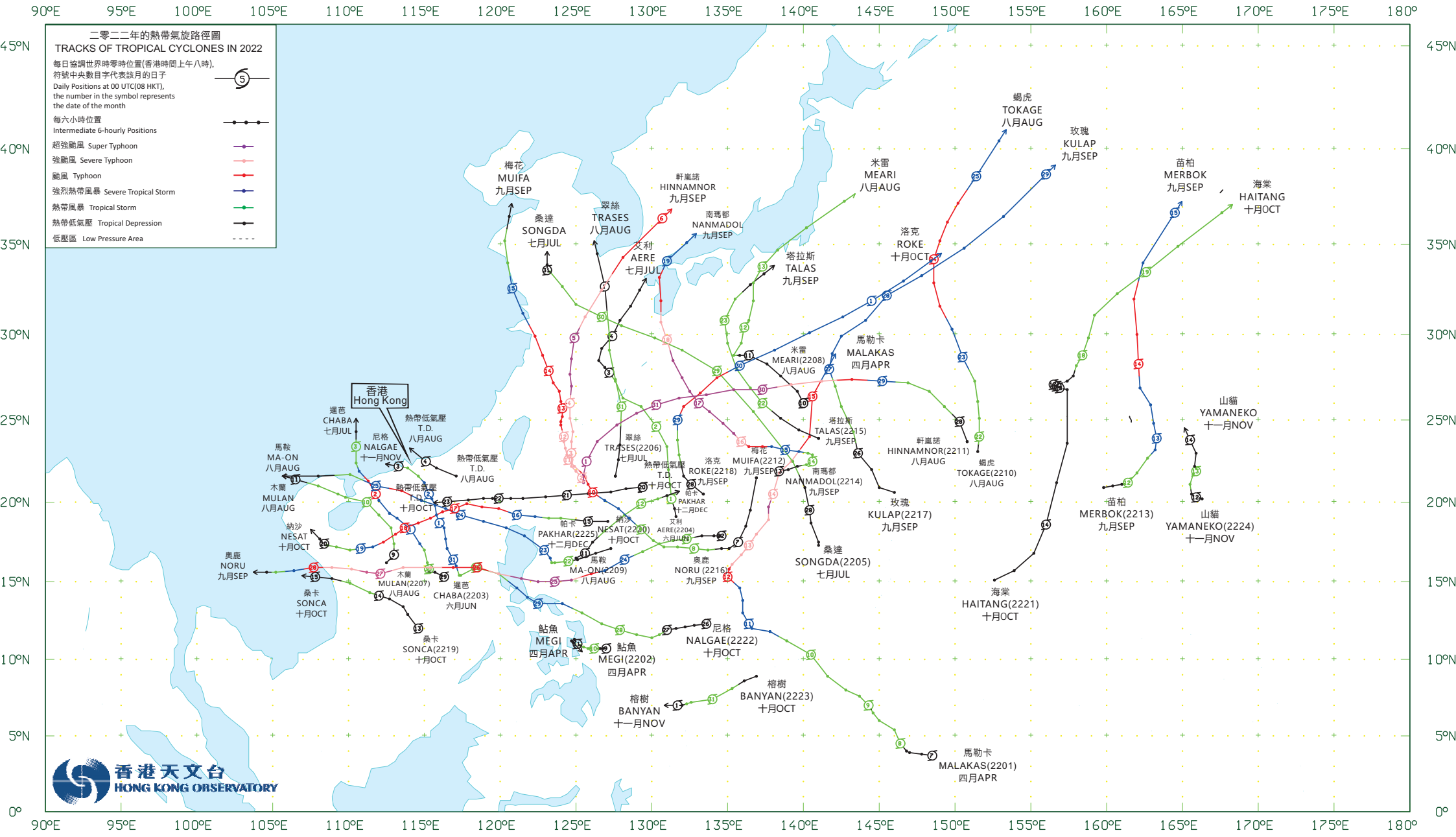
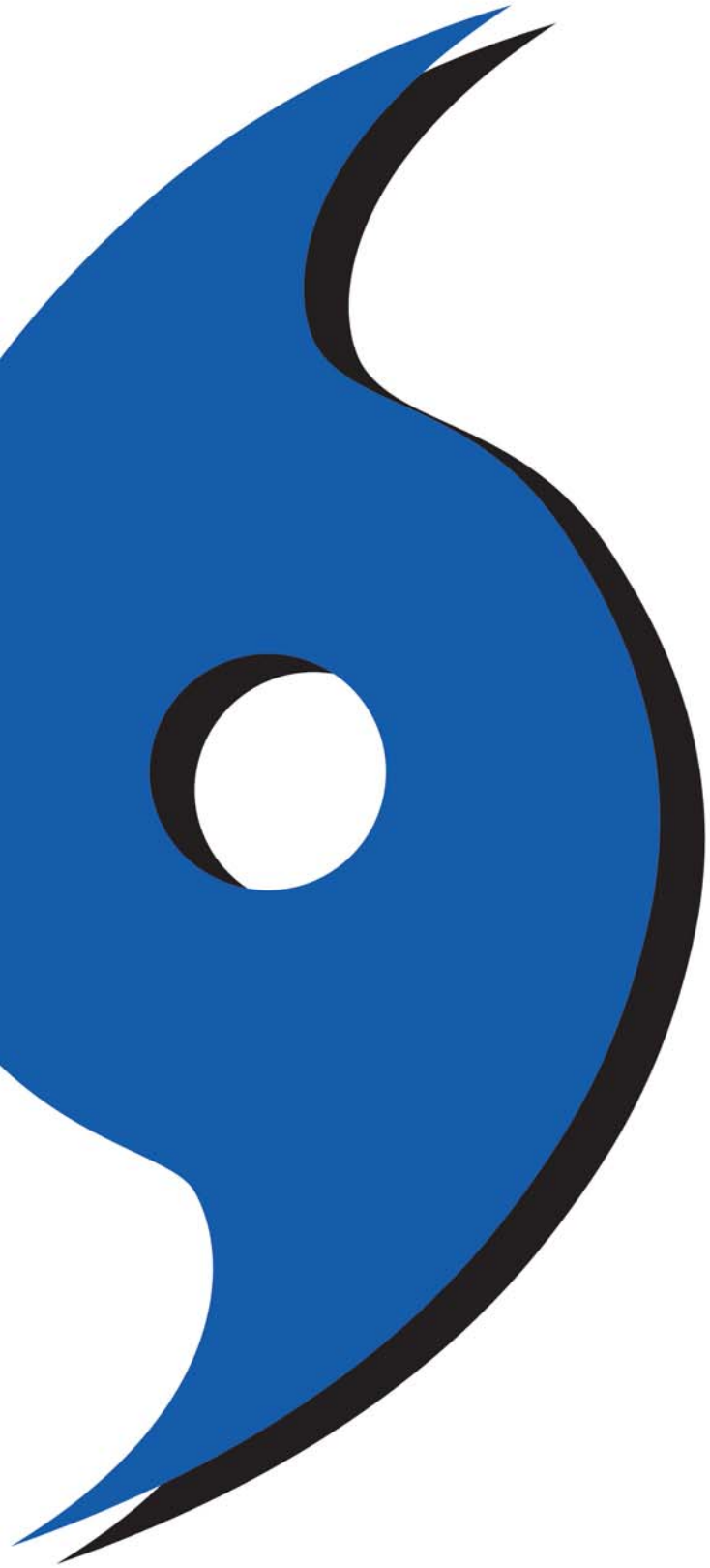

二零二二年的熱帶氣旋路徑圖
TRACKS OF TROPICAL CYCLONES IN 2022
每日協調世界時零時位置(香港時間上午八時),
符號中央數目字代表該月的日子
Daily Positions at 00 UTC(08 HKT),
the number in the symbol represents
the date of the month
每六小時位置
Intermediate 6-hourly Positions
超強颱風 Super Typhoon
強颱風 Severe Typhoon
颱風 Typhoon
強烈熱帶風暴 Severe Tropical Storm
熱帶風暴 Tropical Storm
熱帶低氣壓 Tropical Depression
低壓區 Low Pressure Area
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
梅花
MUIFA
九月SEP
桑達
SONGDA
七月JUL
翠絲
TRASES
八月AUG
軒嵐諾
HINNAMNOR
九月SEP
南瑪都
NANMADOL
九月SEP
艾利
AERE
七月JUL
米雷
MEARI
八月AUG
塔拉斯
TALAS
九月SEP
洛克
ROKE
十月OCT
蝎虎
TOKAGE
八月AUG
玫瑰
KULAP
九月SEP
苗柏
MERBOK
九月SEP
海棠
HAITANG
十月OCT
山貓
YAMANEKO
十一月NOV
馬勒卡
MALAKAS
四月APR
遮芭
CHABA
七月JUL
尼格
NALGAE
十一月NOV
熱帶低氣壓
T.D.
八月AUG
馬鞍
MA-ON
八月AUG
木蘭
MULAN
八月AUG
熱帶低氣壓
T.D.
十月OCT
納沙
NESAT
十月OCT
奧鹿
NORU
九月SEP
桑卡
SONCA
十月OCT
鮎魚
MEGI
四月APR
榕樹
BANYAN
十一月NOV
榕樹
BANYAN(2223)
十月OCT
鮎魚
MEGI(2202)
四月APR
尼格
NALGAE(2222)
十月OCT
桑卡
SONCA(2219)
十月OCT
遮芭
CHABA(2203)
六月JUN
木蘭
MULAN(2207)
八月AUG
馬鞍
MA-ON(2209)
八月AUG
帕卡
PAKHAR(2225)
十二月DEC
納沙
NESAT(2220)
十月OCT
艾利
AERE(2204)
六月JUL
奧鹿
NORU (2216)
九月SEP
翠絲
TRASES(2206)
七月JUL
熱帶低氣壓
T.D.
十月OCT
洛克
ROKE(2218)
九月SEP
梅花
MUIFA(2212)
九月SEP
南瑪都
NANMADOL(2214)
九月SEP
塔拉斯
TALAS(2215)
九月SEP
米雷
MEARI(2208)
八月AUG
桑達
SONGDA(2205)
七月JUL
玫瑰
KULAP(2217)
九月SEP
軒嵐諾
HINNAMNOR(2211)
八月AUG
蝎虎
TOKAGE(2210)
八月AUG
馬勒卡
MALAKAS(2201)
四月APR
海棠
HAITANG(2221)
十月OCT
苗柏
MERBOK(2213)
九月SEP
山貓
YAMANEKO(2224)
十一月NOV
香港天文台
HONG KONG OBSERVATORY

2022 年熱帶氣旋



27 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

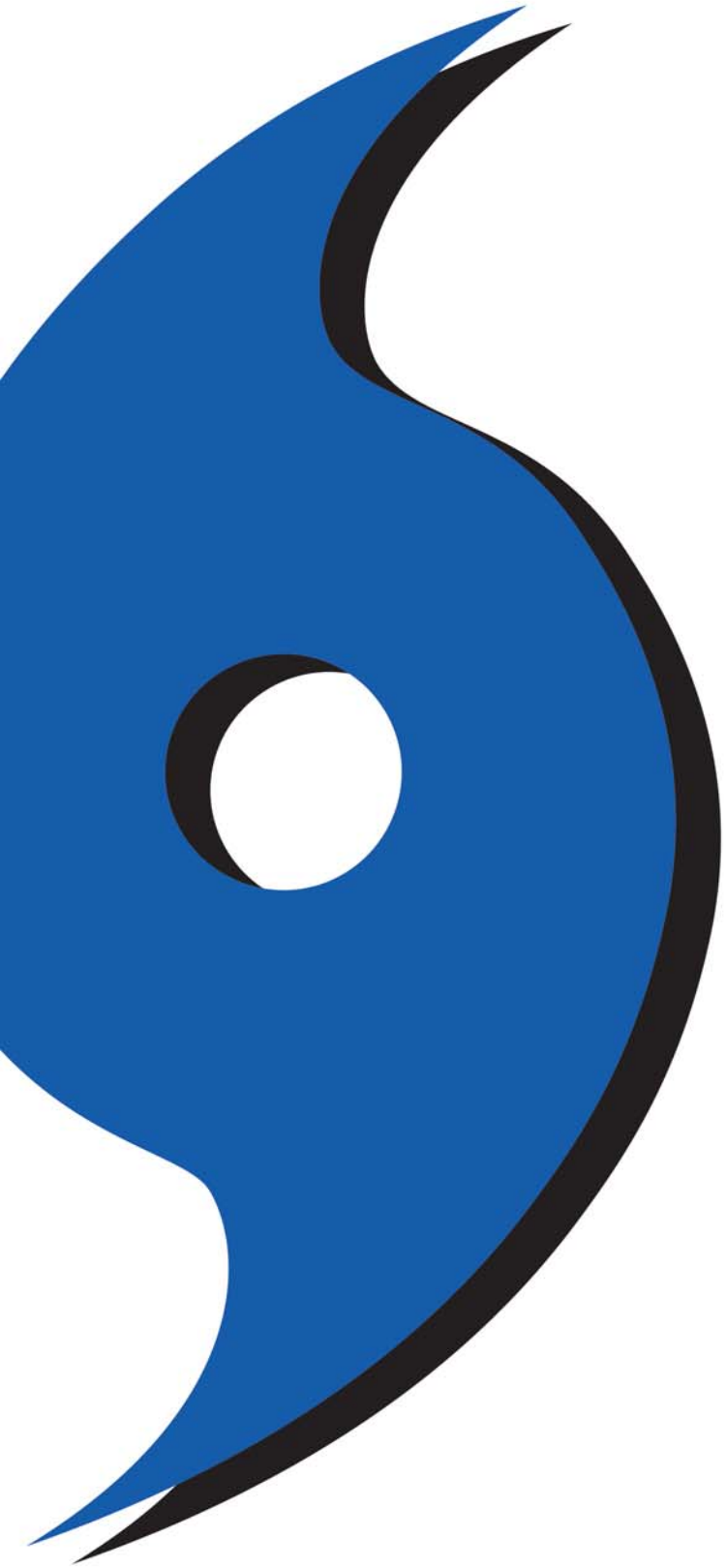
6 個 **熱帶氣旋影響香港**
平均: 約6個

每小時
230 公里
910 百帕
2022 年最強熱帶氣旋
超強颱風軒嵐諾(2211)

697.4 毫米
2022 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 Cyclone for 2022



27 ***Tropical Cyclones***

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

11 ***Reaching Typhoons or above***

Normal: 14 - 15

6 ***Tropical Cyclones affected Hong Kong***

Normal: about 6

230 ***km/h***

910 ***hPa***

2022 The Strongest Tropical Cyclone

Super Typhoon Hinnamnor (2211)

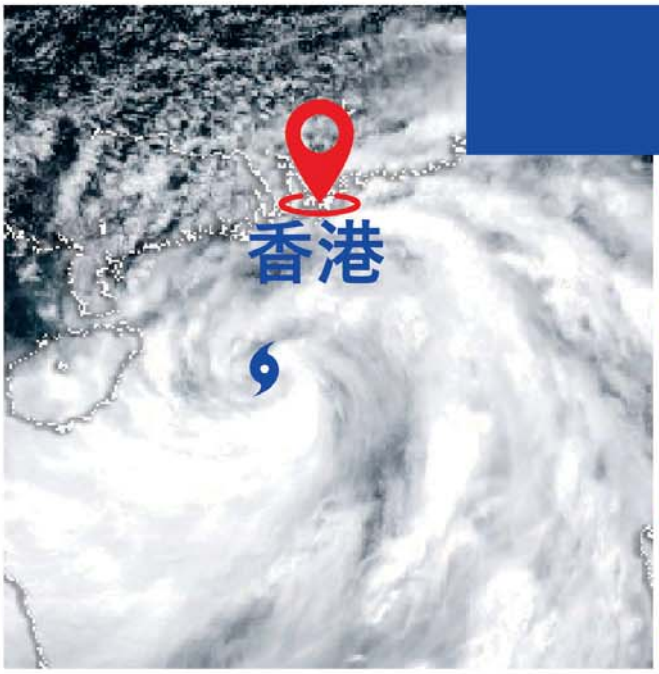
697.4 ***mm***

2022 Tropical Cyclone Rainfall brought to HK

Normal: 704.2 mm

香港天文台
HONG KONG OBSERVATORY

2022年香港颱風季節焦點



颱風 暹芭

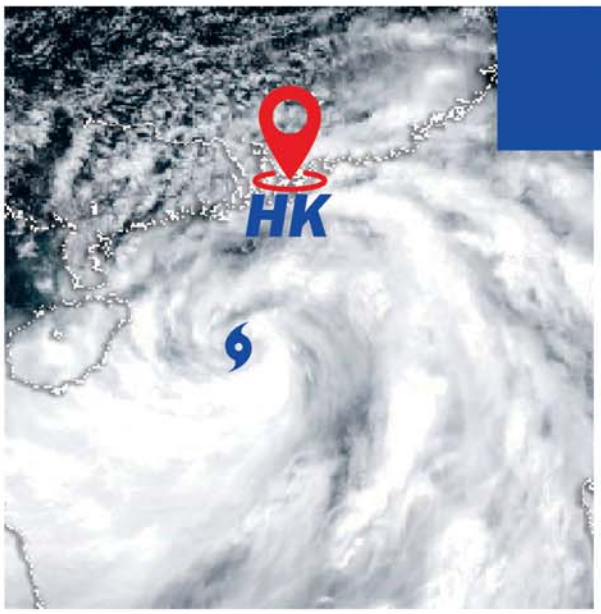
首個在香港特別行政區成立紀念日發出的八號警告信號

強烈熱帶風暴 尼格

第三個熱帶氣旋需要在十一月發出八號警告信號

香港天文台
HONG KONG OBSERVATORY

Highlights of 2022 Hong Kong Tropical Cyclone Season



T Chaba

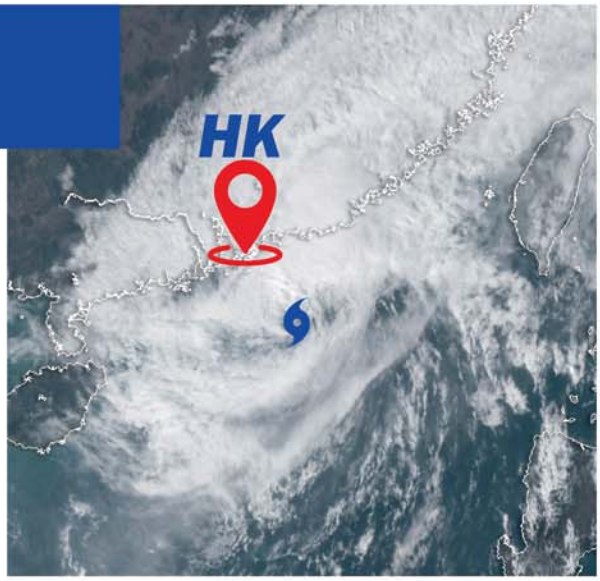
The 1st time

No. 8 Signal on the HKSAR Establishment Day

STS Nalgae

The 3rd Tropical Cyclone necessitating the issuance of

No. 8 Signal in November

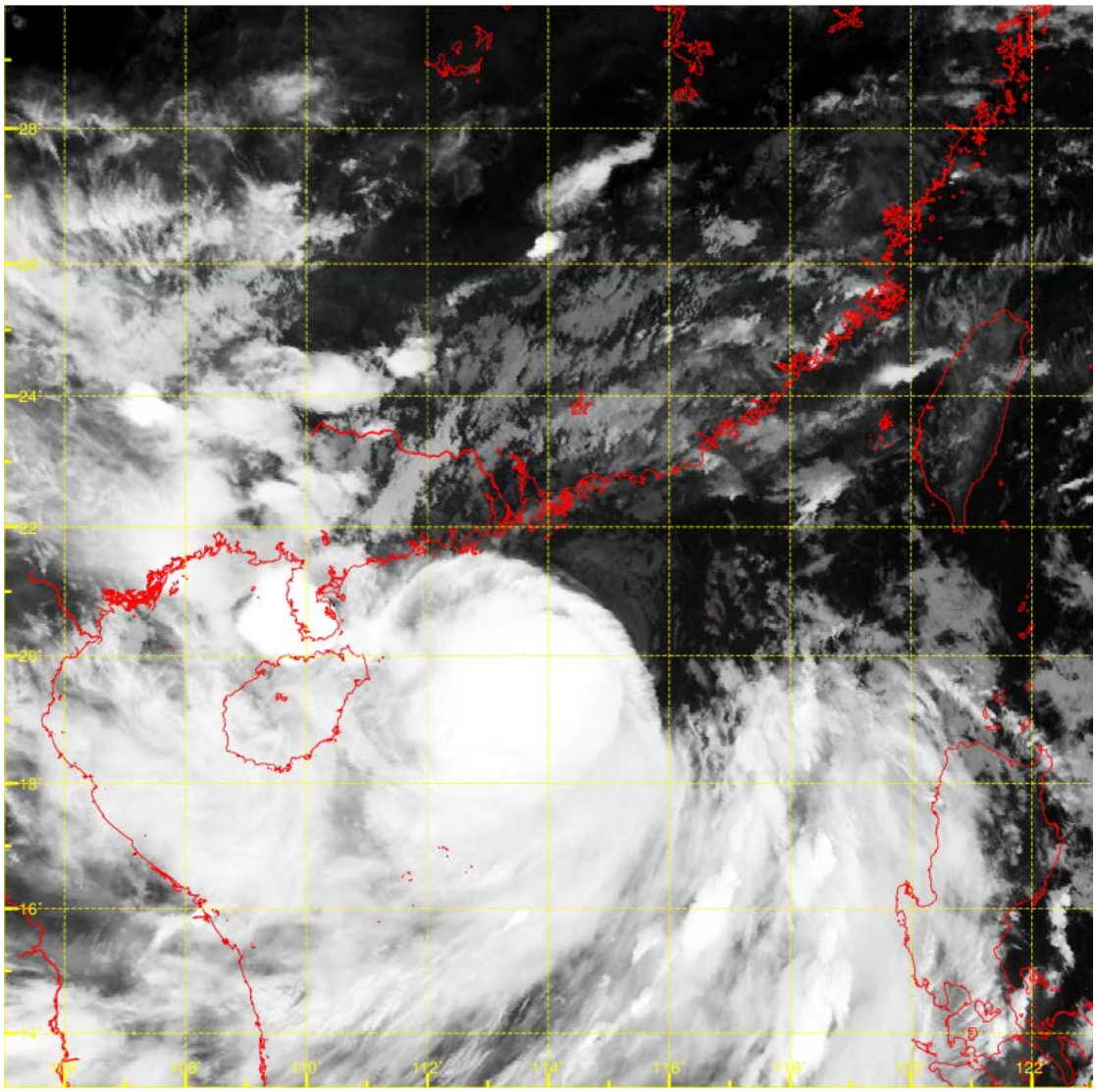


香港天文台
HONG KONG OBSERVATORY

香港天文台
HONG KONG OBSERVATORY

二零二二年熱帶氣旋

TROPICAL CYCLONES IN 2022



二零二三年七月出版
Published July 2023

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

二零二二年八月二十四日晚上11時左右的紅外線衛星圖片，當時馬鞍達到其最高強度，中心附近最高持續風速估計為每小時120公里。

〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

Cover

Infra-red satellite imagery around 11 p.m. on 24 August 2022 when Ma-on was at its peak intensity with an estimated maximum sustained wind of 120 km/h near its centre.

[The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

目錄

頁

1. 引言

1.1	熱帶氣旋刊物的沿革	14
1.2	熱帶氣旋等級	15
1.3	熱帶氣旋命名	15
1.4	資料來源	16
1.5	年報內容	16
1.6	香港的熱帶氣旋警告系統	17

2. 二零二二年熱帶氣旋概述

2.1	二零二二年的熱帶氣旋回顧	27
2.2	每月概述	28

3. 二零二二年影響香港的熱帶氣旋

3.1	颱風暹芭(2203)：二零二二年六月二十九日至七月三日	47
3.2	熱帶低氣壓：二零二二年八月三日至四日	61
3.3	熱帶風暴木蘭(2207)：二零二二年八月九日至十一日	69
3.4	颱風馬鞍(2209)：二零二二年八月二十一日至二十六日	79
3.5	颱風納沙(2220)：二零二二年十月十五日至二十日	94
3.6	強烈熱帶風暴尼格(2222)：二零二二年十月二十六日至十一月三日	105

4. 熱帶氣旋統計表 120

5. 二零二二年熱帶氣旋的位置及強度數據 138

附件一: 颱風暹芭(2203)、颱風馬鞍(2209)及強烈熱帶風暴尼格(2222)引致香港直接經濟損失的估算 158

CONTENTS

		page
1.	INTRODUCTION	
	1.1 Evolution of tropical cyclone publications	18
	1.2 Classification of tropical cyclones	19
	1.3 Naming of tropical cyclones	19
	1.4 Data sources	20
	1.5 Content	20
	1.6 Hong Kong's Tropical Cyclone Warning System	21
2.	TROPICAL CYCLONE OVERVIEW FOR 2022	
	2.1 Review of tropical cyclones in 2022	34
	2.2 Monthly overview	35
3.	TROPICAL CYCLONES AFFECTING HONG KONG IN 2022	
	3.1 Typhoon Chaba (2203): 29 June to 3 July 2022	49
	3.2 Tropical Depression: 3 to 4 August 2022	62
	3.3 Tropical Storm Mulan (2207): 9 to 11 August 2022	70
	3.4 Typhoon Ma-on (2209): 21 to 26 August 2022	81
	3.5 Typhoon Nesat (2220): 15 to 20 October 2022	95
	3.6 Severe Tropical Storm Nalgae (2222): 26 October to 3 November 2022	107
4.	TROPICAL CYCLONE STATISTICS AND TABLES	121
5.	TROPICAL CYCLONE POSITION AND INTENSITY DATA, 2022	139
Annex 1:	Estimated Direct Economic Losses in Hong Kong caused by Typhoon Chaba (2203), Typhoon Ma-on (2209) and Severe Tropical Storm Nalgae (2222)	161

圖

		頁
卷首插圖:	二零二二年北太平洋西部及南海區域的熱帶氣旋路徑圖	
	二零二二年熱帶氣旋	
	二零二二年香港颱風季節焦點	
1.1	年報內提及的測風站及潮汐測量站之分佈地點	26
2.1	二零二二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	42
2.2	二零二二年六個影響香港的熱帶氣旋的路徑圖	43
2.3	二零二二年八月三十日下午8時左右超強颱風軒嵐諾(2211)的紅外線衛星圖片	44
3.1.1a	二零二二年六月二十九日至七月三日暹芭的路徑圖	54
3.1.1b	暹芭接近香港時的路徑圖	55
3.1.2	二零二二年六月二十九日至七月三日的雨量分佈	55
3.1.3a	二零二二年七月二日上午7時正香港各站錄得的十分鐘平均風向和風速	56
3.1.3b	二零二二年七月二日晚上10時正香港各站錄得的十分鐘平均風向和風速	57
3.1.4	二零二二年七月一日至二日橫瀾島及長洲錄得的十分鐘平均風速	58
3.1.5	二零二二年七月二日上午5時左右的紅外線衛星圖片	59
3.1.6	二零二二年七月二日上午10時正的雷達回波圖像	60
3.1.7	西貢有樹木的樹枝被吹倒 (圖片由商業電台提供)	60
3.2.1a	二零二二年八月三日至四日熱帶低氣壓的路徑圖	65
3.2.1b	熱帶低氣壓接近香港時的路徑圖	66
3.2.2	二零二二年八月三日至五日的雨量分佈	66
3.2.3	二零二二年八月四日上午11時正的可見光衛星圖片	67
3.2.4	二零二二年八月四日上午9時正的雷達回波圖像	68
3.3.1	二零二二年八月九日至十一日木蘭的路徑圖	74
3.3.2	二零二二年八月九日至十日的雨量分佈	75
3.3.3	二零二二年八月十日上午2時40分香港各站錄得的十分鐘平均風向和風速	76
3.3.4	二零二二年八月十日上午2時左右的紅外線衛星圖片	77
3.3.5	二零二二年八月九日晚上7時48分的雷達回波圖像	78

3.4.1a	二零二二年八月二十一日至二十六日馬鞍(2209)的路徑圖	86
3.4.1b	馬鞍接近香港時的路徑圖	87
3.4.2	二零二二年八月二十三日至二十五日的雨量分佈	87
3.4.3a	二零二二年八月二十四日晚上10時30分香港各站錄得的十分鐘平均風向和風	88
3.4.3b	二零二二年八月二十五日早上2時30分香港各站錄得的十分鐘平均風向和風速	89
3.4.4	二零二二年八月二十四日至二十五日橫瀾島、長洲及坪洲錄得的十分鐘平均風速	90
3.4.5	二零二二年八月二十四日至二十五日在鰂魚涌、大埔滘及尖鼻咀錄得的潮位(海圖基準面以上)及風暴潮(天文潮高度以上)	91
3.4.6	二零二二年八月二十四日晚上11時左右的紅外線衛星圖片	92
3.4.7	二零二二年八月二十五日正午12時的雷達回波圖像	93
3.5.1	二零二二年十月十五日至二十日納沙(2220)的路徑圖	99
3.5.2	二零二二年十月十六日至十八日的雨量分佈	100
3.5.3	二零二二年十月十七日晚上8時正香港各站錄得的十分鐘平均風向和風速	101
3.5.4	二零二二年十月十七日晚上8時左右的紅外線衛星圖片	102
3.5.5	二零二二年十月十八日下午3時正的雷達回波圖像	103
3.5.6	山頂道有大樹倒塌，擊中一輛巴士(圖片由香港電台提供)	104
3.6.1a	二零二二年十月二十六日至十一月三日尼格(2222)的路徑圖	112
3.6.1b	尼格接近香港時的路徑圖	112
3.6.2	二零二二年十月三十日至十一月三日的雨量分佈	113
3.6.3a	二零二二年十一月二日下午6時30分香港各站錄得的十分鐘平均風向和風速	114
3.6.3b	二零二二年十一月二日下午10時10分香港各站錄得的十分鐘平均風向和風速	115
3.6.3c	二零二二年十一月三日上午2時50分香港各站錄得的十分鐘平均風向和風速	116
3.6.4	二零二二年十一月二日至三日的長洲及橫瀾島錄得的十分鐘平均風速	117
3.6.5	二零二二年十月三十一日下午2時左右的可見光衛星圖片	118
3.6.6	二零二二年十一月一日下午9時正的雷達回波圖像	119

FIGURE

page

FRONTISPIECE: Tracks of tropical cyclones in the western North Pacific and the South China Sea in 2022
Tropical cyclone for 2022
Highlights of 2022 Hong Kong typhoon season

1.1	Locations of anemometers and tide gauge stations mentioned in this annual report	26
2.1	Monthly frequencies of the occurrence of tropical cyclones in the western North Pacific and the South China Sea in 2022	42
2.2	Tracks of the six tropical cyclones affecting Hong Kong in 2022	43
2.3	Infra-red satellite imagery of Super Typhoon Hinnamnor (2211) around 8 p.m. on 30 August 2022	44
3.1.1a	Track of Chaba: 29 June – 3 July 2022	54
3.1.1b	Track of Chaba near Hong Kong	55
3.1.2	Rainfall distribution on 29 June – 3 July 2022	55
3.1.3a	10-minute mean wind direction and speed recorded at various stations in Hong Kong at 7:00 a.m. on 2 July 2022	56
3.1.3b	10-minute mean wind direction and speed recorded at various stations in Hong Kong at 10:00 p.m. on 2 July 2022	57
3.1.4	Traces of 10-minute mean wind speed recorded at Waglan Island and Cheung Chau on 1 – 2 July 2022	58
3.1.5	Infra-red satellite imagery around 5 a.m. on 2 July 2022	59
3.1.6	Image of radar echoes at 10 a.m. on 2 July 2022	60
3.1.7	Some branches of a tree were blown down in Sai Kung (Courtesy of Commercial Radio Hong Kong)	60
3.2.1a	Track of the tropical depression: 3 – 4 August 2022	65
3.2.1b	Track of the tropical depression near Hong Kong	66
3.2.2	Rainfall distribution on 3 – 5 August 2022	66
3.2.3	Visible satellite imagery at 11:00 a.m. on 4 August 2022	67
3.2.4	Image of radar echoes at 9:00 a.m. on 4 August 2022	68
3.3.1	Track of Mulan : 9 – 11 August 2022	74
3.3.2	Rainfall distribution on 9 – 10 August 2022	75
3.3.3	10-minute mean wind direction and speed recorded at various stations in Hong Kong at 2:40 a.m. on 10 August 2022	76
3.3.4	Infra-red satellite imagery around 2 a.m. on 10 August 2022	77
3.3.5	Image of radar echoes at 7:48 p.m. on 9 August 2022	78

3.4.1a	Track of Ma-on: 21 – 26 August 2022	86
3.4.1b	Track of Ma-on near Hong Kong	87
3.4.2	Rainfall distribution on 23 – 25 August 2022	87
3.4.3a	10-minute mean wind direction and speed recorded at various stations in Hong Kong at 10:30 p.m. on 24 August 2022	88
3.4.3b	10-minute mean wind direction and speed recorded at various stations in Hong Kong at 2:30 a.m. on 25 August 2022	89
3.4.4	Traces of 10-minute mean wind speed recorded at Waglan Island, Cheung Chau and Peng Chau on 24 – 25 August 2022	90
3.4.5	Traces of sea level (above chart datum) and storm surge (above astronomical tide) recorded at Quarry Bay, Tai Po Kau, and Tsim Bei Tsui on 24 – 25 August 2022	91
3.4.6	Infra-red satellite imagery around 11 p.m. on 24 August 2022	92
3.4.7	Image of radar echoes at 12 noon on 25 August 2022	93
3.5.1	Track of Nesat (2220): 15 – 20 October 2022	99
3.5.2	Rainfall distribution on 16 – 18 October 2022	100
3.5.3	10-minute mean wind direction and speed recorded at various stations in Hong Kong at 8:00 p.m. on 17 October 2022	101
3.5.4	Infra-red satellite imagery at around 8 p.m. on 17 October 2022	102
3.5.5	Image of radar echoes at 3 p.m. on 18 October 2022	103
3.5.6	A bus travelling on the Peak was hit by a fallen tree (Courtesy of RTHK)	104
3.6.1a	Track of Nalgae (2222): 26 October – 3 November 2022	112
3.6.1b	Track of Nalgae near Hong Kong	112
3.6.2	Rainfall distribution on 30 October – 3 November 2022	113
3.6.3a	10-minute mean wind direction and speed recorded at various stations in Hong Kong at 6:30 p.m. on 2 November 2022	114
3.6.3b	10-minute mean wind direction and speed recorded at various stations in Hong Kong at 10:10 p.m. on 2 November 2022	115
3.6.3c	10-minute mean wind direction and speed recorded at various stations in Hong Kong at 2:50 a.m. on 3 November 2022	116
3.6.4	Traces of 10-minute mean wind speed recorded at Cheung Chau and Waglan Island on 2 – 3 November 2022	117
3.6.5	Visible satellite imagery at around 2 p.m. on 31 October 2022	118
3.6.6	Image of radar echoes at 9 p.m. on 1 November 2022	119

表

		頁
1.1	二零二二年一月一日起生效的熱帶氣旋名單	22
1.2	年報內各氣壓表的海拔高度及所處氣象站的位置	23
1.3	年報內各風速表的海拔高度及所處氣象站的位置	24
1.4	二零二二年香港熱帶氣旋警告信號的意義	25
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	45
2.2	影響香港的熱帶氣旋之每月分佈	46
3.1.1	在暹芭影響下，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	51
3.1.2	在暹芭影響下，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	52
3.1.3	暹芭影響香港期間，香港天文台總部及其他各站所錄得的日雨量	53
3.1.4	暹芭影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮	53
3.2.1	在熱帶低氣壓影響下，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	63
3.2.2	熱帶低氣壓影響香港期間，香港天文台總部及其他各站所錄得的日雨量	64
3.2.3	熱帶低氣壓影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮	64
3.3.1	在木蘭影響下，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	71
3.3.2	在木蘭影響下，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程度的時段	72
3.3.3	木蘭影響香港期間，香港天文台總部及其他各站所錄得的日雨量	73
3.3.4	木蘭影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮	73
3.4.1	在馬鞍影響下，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	83
3.4.2	在馬鞍影響下，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	84
3.4.3	馬鞍影響香港期間，香港天文台總部及其他各站所錄得的日雨量	85
3.4.4	馬鞍影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮	85

3.5.1	在納沙影響下，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	96
3.5.2	在納沙影響下，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程度的時段	97
3.5.3	納沙影響香港期間，香港天文台總部及其他各站所錄得的日雨量	98
3.5.4	納沙影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮	98
3.6.1	在尼格影響下，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	109
3.6.2	在尼格影響下，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	110
3.6.3	尼格影響香港期間，香港天文台總部及其他各站所錄得的日雨量	111
3.6.4	尼格影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮	111
4.1	二零二二年在北太平洋西部及南海區域的熱帶氣旋一覽	122
4.2	二零二二年為船舶發出的熱帶氣旋警告	123
4.3	二零二二年天文台所發出的熱帶氣旋警告信號及警報發出的次數	124
4.4	一九五六至二零二二年間每年各熱帶氣旋警告信號的發出次數及總時段	125
4.5	一九五六至二零二二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	126
4.6	一九五六至二零二二年間天文台發出熱帶氣旋警告信號的時段	127
4.7	二零二二年當熱帶氣旋影響香港時本港的氣象觀測摘要	128
4.8.1	二零二二年位於香港600公里範圍內的熱帶氣旋及其為本港帶來雨量期間，天文台錄得的雨量	130
4.8.2	一八八四至一九三九年及一九四七至二零二二年間十個為香港帶來最多雨量的熱帶氣旋	131
4.9	一九四六至二零二二年間引致天文台需要發出十號颶風信號的颱風	132
4.10	二零二二年熱帶氣旋在香港所造成的損失	133
4.11	一九六零至二零二二年間熱帶氣旋在香港所造成的人命傷亡及破壞	134
4.12	二零二二年天文台發出的熱帶氣旋預測路徑驗証	137

TABLES

		page
1.1	Tropical cyclone name list effective from 1 January 2022	22
1.2	Elevations of various barometers and positions of weather stations mentioned in this annual report	23
1.3	Elevations of various anemometers and positions of the weather stations mentioned in this annual report	24
1.4	Meaning of tropical cyclone warning signals in Hong Kong in 2022	25
2.1	Monthly distribution of the occurrence of tropical cyclones in Hong Kong's area of responsibility (10^{o} – 30^{o}N, 105^{o} – 125^{o}E)	45
2.2	Monthly distribution of tropical cyclones affecting Hong Kong	46
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 Chaba were in force	51
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 Chaba were in force	52
3.1.3	Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Chaba	53
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 Chaba	53
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 the tropical depression were in force	63
3.2.2	Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of the tropical depression	64
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 the tropical depression	64
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 Mulan were in force	71
3.3.2	Periods during which sustained strong force winds were attained at the eight reference anemometers in the tropical cyclone warning system when tropical cyclone warning signals for Mulan were in force	72
3.3.3	Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Mulan	73
3.3.4	Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Mulan	73
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 Ma-on were in force	83
3.4.2	Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations when the tropical cyclone warning signals for Ma-on were in force	84
3.4.3	Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Ma-on	85
3.4.4	Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Ma-on	85

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 Nesat were in force	96
3.5.2	Periods during which sustained strong winds were attained at the eight reference anemometers in the tropical cyclone warning system when tropical cyclone warning signals for Nesat were in force	97
3.5.3	Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Nesat	98
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 Nesat	98
3.6.1	Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations when the tropical cyclone warning signals for Nalgae were in force	109
3.6.2	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 Nalgae were in force	110
3.6.3	Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Nalgae	111
3.6.4	Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Nalgae	111
4.1	List of tropical cyclones in the western North Pacific and the South China Sea in 2022	122
4.2	Tropical cyclone warnings for shipping issued in 2022	123
4.3	Tropical cyclone warning signals issued in Hong Kong and number of warning bulletins issued in 2022	124
4.4	Frequency and total duration of display of tropical cyclone warning signals :1956 – 2022	125
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 – 2022	126
4.6	Duration of tropical cyclone warning signals issued in Hong Kong: 1956 – 2022	127
4.7	A summary of meteorological observations recorded in Hong Kong during the passages of tropical cyclones in 2022	128
4.8.1	Rainfall associated with each tropical cyclone that came within 600 km of Hong Kong in 2022	130
4.8.2	Ten wettest tropical cyclones in Hong Kong (1884 – 1939, 1947 – 2022)	131
4.9	Typhoons requiring the issuing of the Hurricane Signal No. 10 during the period 1946 – 2022	132
4.10	Damage caused by tropical cyclones in Hong Kong in 2022	133
4.11	Casualties and damage caused by tropical cyclones in Hong Kong: 1960 – 2022	134
4.12	Verification of the tropical cyclone forecast tracks issued by the Hong Kong Observatory in 2022	137

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“2201”代表在二零二二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，例如超強颱風馬勒卡（2201）。

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

年報第二節是二零二二年所有影響北太平洋西部及南海區域的熱帶氣旋的概述。

年報第三節是二零二二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。

二零二二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顯示二零二二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 2022 was assigned the code "2201". In this report, the associated code immediately follows the name of the tropical cyclone in bracket, e.g. Super Typhoon Malakas (2201).

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 2022 is presented.

The reports in Section 3 are individual accounts of the life history of tropical cyclones affecting Hong Kong in 2022. 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 2022 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 2022 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　　二零二二年一月一日起生效的熱帶氣旋名單

TABLE 1.1　　Tropical cyclone name list effective from 1 January 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： 在二零二二年，西北太平洋和南海的熱帶氣旋名單今年新增五個名字：「西望洋」、「琵鷺」、「紫檀」、「簡拉維」及「班朗」，分別取代舊有名字「黃蜂」、「蓮花」、「莫拉菲」、「天鵝」及「環高」。

Note: In 2022, five new names, “Penha”, “Peilou”, “Narra”, “Gaenari” and “Bang-lang”, have been introduced to the list of tropical cyclone names in the western North Pacific and the South China Sea in 2022 to replace the old names of “Vongfong”, “Linfa”, “Molave”, “Goni” and “Vamco” respectively.

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 existing "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 existing North Runway).

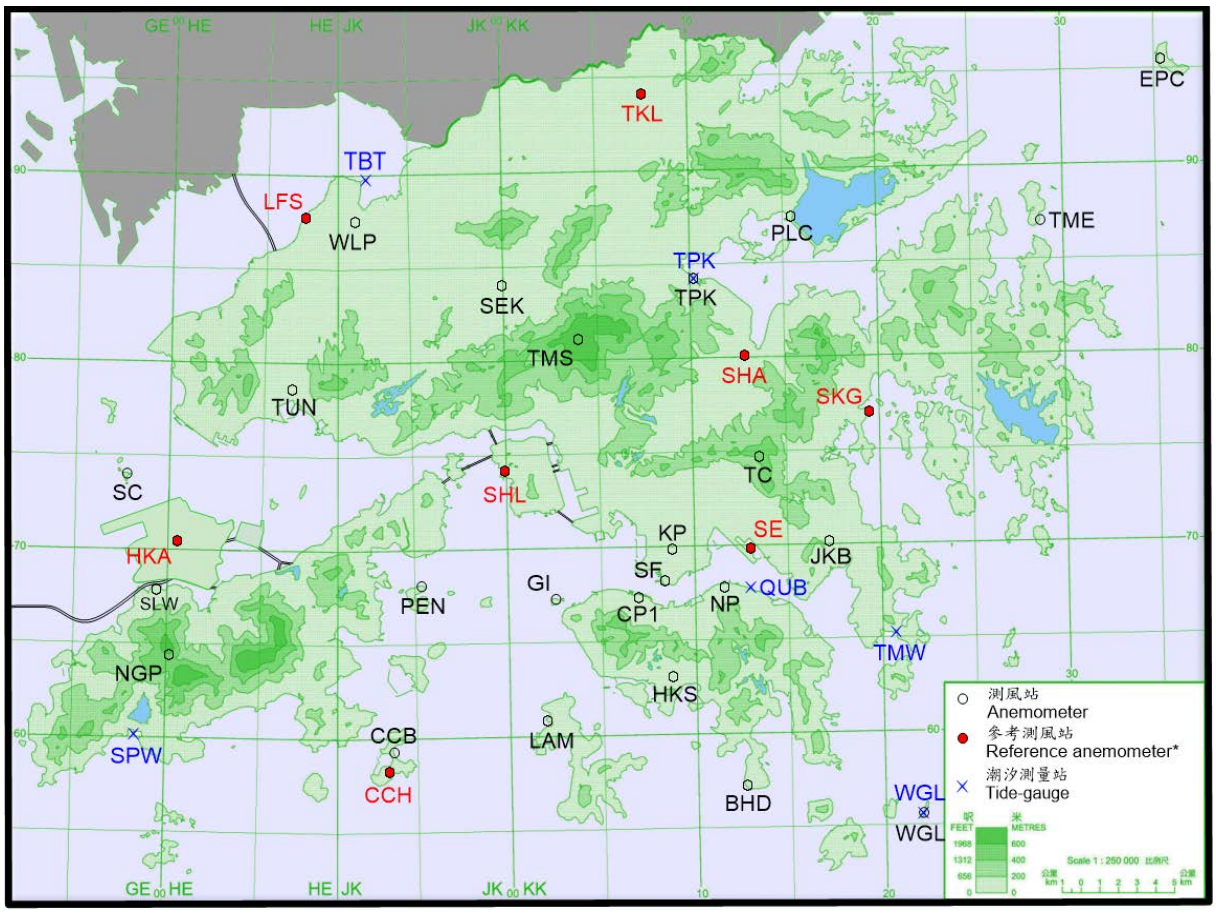
* 參考測風站

* Reference anemometer

表 1.4　　二零二二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 2022

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　　二零二二年熱帶氣旋概述

2.1　二零二二年的熱帶氣旋回顧

2.1.1　北太平洋西部(包括南海區域)的熱帶氣旋

二零二二年有27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），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，其中有四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是二零二二年在北太平洋西部及南海區域熱帶氣旋數目之逐月分佈。

二零二二年內有六個熱帶氣旋在中國登陸，其中兩個在香港300公里內的華南沿岸登陸。三個橫過菲律賓及三個登陸越南。八月至九月的超強颱風軒嵐諾(2211)（圖2.3）是二零二二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230公里，而最低海平面氣壓為910百帕斯卡（表4.1）。

2.1.2　香港責任範圍內的熱帶氣旋

在二零二二年的27個熱帶氣旋中，有13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），當中有五個在香港責任範圍內形成。年內，香港天文台總共發出318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

二零二二年共有9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，當中有四個在南海上形成。

2.1.4　影響香港的熱帶氣旋

二零二二年香港的颱風季節始於六月二十九日，當天隨著熱帶低氣壓暹芭(2203)在南海中部上形成，天文台發出一號戒備信號。十一月三日熱帶低氣壓尼格(2222) 在珠海登陸後減弱並移入內陸，二零二二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。

年內共有六個熱帶氣旋影響香港（圖2.2），與1961-2020年約六個的長期年平均數目相若(表2.2)。這六個熱帶氣旋分別為六月至七月的颱風暹芭(2203)、八月的熱帶低氣壓、熱帶風暴木蘭(2207)及颱風馬鞍(2209)、十月的颱風納沙(2220)、十月至十一月的強烈熱帶風暴尼格(2222)。天文台在暹芭、馬鞍及尼格影響香港期間，分別在七月一日、八月二十四日及十一月二日發出八號烈風或風暴信號，是年內發出的最高熱帶氣旋警告信號。天文台在暹芭吹襲香港期間發出的八號烈風或風暴信號，是有記錄以來首個在香港特別行政區成立紀念日發出的八號熱帶氣旋警告信號。尼格則是自一九四六年以來第三個需要在十一月發出八號警告信號的熱帶氣旋。木蘭及納沙吹襲本港期間天文台曾發出三號強風信號。而熱帶低氣壓引致天文台發出一號戒備信號。

2.1.5 熱帶氣旋的雨量

二零二二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697.4毫米（表4.8.1），約佔年內總雨量2205.4毫米的百分之31.6，略低於1961-2020年長期年平均值的704.2毫米。

根據上述的定義，熱帶風暴木蘭(2207)為香港帶來的雨量為206.5毫米(表4.8.1)，是年內雨量最多的熱帶氣旋。

2.2 每月概述

這一節逐月介紹二零二二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

二零二二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

熱帶低氣壓馬勒卡(2201)於四月七日早上在雅蒲島之東南偏東約1 320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。馬勒卡於四月十二日早上發展為颱風，轉向東北方向移動，移向硫黃島一帶。四月十四日凌晨馬勒卡進一步增強為超強颱風並達到其最高強度，中心附近最高持續風速估計為每小時185公里。隨後馬勒卡開始減弱，最後在四月十五日於日本以南海域演變為溫帶氣旋。

熱帶低氣壓鮎魚(2202)於四月九日早上在馬尼拉之東南偏東約780公里的北太平洋西部上形成，向偏西方向緩慢移向菲律賓並逐漸增強。翌日早上鮎魚增強為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65公里。其後鮎魚在菲律賓東部徘徊並逐漸減弱，最後於四月十二日在菲律賓東部消散。

根據報章報導，鮎魚為菲律賓帶來暴雨，多處出現水浸及山泥傾瀉，造成至少214人死亡及132人失踪，超過200萬人受災。

五月

二零二二年五月並無熱帶氣旋在北太平洋西部及南海區域上形成。

六月至十一月

暹芭(2203) 於六月二十九日早上在西沙之東南偏東約460公里的南海中部上發展為熱帶低氣壓，當日向西北偏西方向緩慢移動，並逐漸增強。翌日暹芭發展為熱帶風暴並大致採取西北偏北路徑移向廣東西部沿岸。暹芭於七月二日上午進一步增強為颱風並達到其最高強度，中心附近最高持續風速估計為每小時120公里。當日下午稍後暹芭在茂名市附近登陸，隨後移入內陸並減弱，最後於七月三日晚上在廣西內陸減弱為低壓區。

根據報章報導，暹芭為廣東帶來狂風暴雨，多處出現水浸。茂名市有逾23萬戶停電。暹芭也在廣東引發多個龍捲風，大量建築物受損。在惡劣天氣下，一艘工程船在香港西南約160海里沉沒，造成12名船員死亡、14人失蹤。

熱帶低氣壓艾利(2204) 於六月三十日晚上在沖繩島之東南偏南約890公里的北太平洋西部上形成，向北移向琉球群島一帶並逐漸增強。翌日早上艾利增強為熱帶風暴並於下午達到其最高強度，中心附近最高持續風速估計為每小時75公里。艾利於七月二日轉向西北方向移動，掠過琉球群島一帶並逐漸減弱，最後於七月五日在日本九州減弱為低壓區。

熱帶低氣壓桑達(2205)於七月二十七日下午在硫黃島以南約830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。桑達於七月二十八日晚上發展為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65公里。隨後兩天桑達迅速向西北偏西移動並減弱，最後於七月三十一日晚上在黃海減弱為低壓區。

熱帶低氣壓翠絲(2206)於七月三十日下午在沖繩島以南約510公里的北太平洋西部上形成，向北移向琉球群島一帶並逐漸增強。七月三十一日早上翠絲增強為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65公里。翠絲隨後橫過東海並逐漸減弱，最後於八月一日在朝鮮半島減弱為低壓區。

一個熱帶低氣壓於八月三日晚上在香港之東南偏東約310公里的南海東北部上形成，採取西北偏西路徑移向珠江口以東一帶，中心附近最高持續風速估計為每小時45公里。該熱帶低氣壓於八月四日早上在惠東沿岸登陸，中午後在廣東內陸減弱為一個低壓區。

熱帶低氣壓木蘭(2207)於八月九日凌晨在香港之西南偏南約700公里的南海中部上形成，初時向北至東北偏北方向移動。當日下午木蘭增強為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65公里。木蘭在八月九日晚上轉向西北移動，八月十日掠過海南島東北部及雷州半島南部，晚上橫過北部灣。八月十一日木蘭在越南北部登陸及在內陸減弱為低壓區。

熱帶低氣壓米雷(2208)於八月十日早上在硫黃島之西北約190公里的北太平洋西部上形成，向西北方向移動並逐漸增強。八月十一日晚上米雷增強為熱帶風暴並採取偏北路徑移向日本本州。八月十二日晚上米雷達到其最高強度，中心附近最高持續風速估計為每小時75公里。米雷翌日轉向東北掠過日本本州南岸，最後於八月十四日在日本以東海域演變為溫帶氣旋。

根據報章報導，米雷掠過日本期間帶來狂風暴雨，造成約10 000戶停電。

熱帶低氣壓馬鞍(2209)於八月二十一日下午在馬尼拉之東北偏東約730公里的北太平洋西部上形成，向西南偏西方向移動並逐漸增強。八月二十二日馬鞍轉向西北偏西方向移動，八月二十三日凌晨發展為強烈熱帶風暴。馬鞍於當日橫過呂宋北部並在晚上進入南海北部。翌日馬鞍採取西北偏西路徑迅速橫過南海北部，移向廣東西部沿岸。當晚馬鞍進一步發展為颱風並達到其最高強度，中心附近最高持續風速估計為每小時120公里。受南海北部較強的垂直風切變影響，其後馬鞍逐漸減弱。八月二十五日中午前馬鞍於茂名電白附近登陸，最後於八月二十六日在越南北部減弱為低壓區。

根據報章報導，受馬鞍相關的狂風暴雨影響，珠海鐵路及船運服務暫停。

熱帶低氣壓蝎虎(2210)於八月二十二日凌晨在硫黃島以東約1 050公里的北太平洋西部上形成，大致採取偏北路徑移動並逐漸增強。八月二十三日晚上蝎虎增強為颱風，並於八月二十四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。蝎虎隨後逐漸減弱，最後於八月二十五日在日本以東的北太平洋西部演變為溫帶氣旋。

熱帶低氣壓軒嵐諾(2211)於八月二十八日凌晨在硫黃島以東約970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。八月二十九日軒嵐諾採取偏西路徑移向琉球群島一帶並迅速增強。八月三十日早上軒嵐諾發展為超強颱風，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230公里。隨後三日軒嵐諾逐漸減弱為強颱風並轉向偏南方向緩慢移動，在台灣以東海域徘徊。九月三日軒嵐諾轉向北移動，橫過琉球群島一帶。九月四日下午軒嵐諾再次發展為超強颱風，翌日轉向東北偏北移動並逐漸減弱。最後軒嵐諾於九月六日在日本本州以北海域演變為溫帶氣旋。

根據報章報導，軒嵐諾掠過石垣島和宮古島期間，造成2人受傷，約3 000戶停電，而在日本九州造成超過35 000戶停電。此外，軒嵐諾亦在韓國造成至少11人死亡，1 人失蹤。

熱帶低氣壓梅花(2212)於九月六日下午在雅蒲島以北約1 340公里的北太平洋西部上形成，向西南偏南方向移動。隨後四日梅花逐漸轉向西北偏北，移向琉球群島一帶，並逐漸增強。九月十一日凌晨梅花增強為強颱風，並於下午達到其最高強度，中心附近最高持續風速估計為每小時175公里。隨後梅花逐漸減弱，橫過琉球群島一帶並移向江蘇及浙江沿岸。九月十四日及十五日梅花橫過華東沿岸地區，最後於九月十六日在山東附近減弱為低壓區。

根據報章報導，梅花吹襲石垣島期間，造成至少2人受傷。此外，受梅花影響，浙江省鐵路及航空服務暫停。

熱帶低氣壓苗柏(2213)於九月十一日下午在威克島之西北偏西約740公里的北太平洋西部上形成，初時向東或東北偏東方向移動並逐漸增強。九月十三日凌晨苗柏增強為強烈熱帶風暴，並採取大致偏北路徑移動。翌日早上苗柏進一步增強為颱風，並於下午達到其最高強度，中心附近最高持續風速估計為每小時130公里。隨後苗柏逐漸減弱，最後於九月十五日在北太平洋西部上演變為溫帶氣旋。

熱帶低氣壓南瑪都(2214)於九月十三日早上在硫黃島之西南約440公里的北太平洋西部上形成，初時移動緩慢並逐漸增強。翌日南瑪都增強為熱帶風暴並採取偏西路徑移向琉球群島一帶。九月十六日下午南瑪都進一步增強為超強颱風並大致轉向西北方向移動。九月十七日凌晨南瑪都達到其最高強度，中心附近最高持續風速估計為每小時220公里。隨後南瑪都轉向西北偏北方向移動並逐漸減弱。九月十八日南瑪都橫過日本九州，翌日在日本本州演變為溫帶氣旋。

根據報章報導，南瑪都吹襲九州期間，造成5人死亡，153人受傷，約43萬戶停電，約800班航班取消及鐵路服務暫停。

熱帶低氣壓塔拉斯(2215)於九月二十一日下午在硫黃島之西南偏南約100公里的北太平洋西部上形成，向西北方向移動並逐漸增強。九月二十二日早上塔拉斯增強為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65公里。隨後塔拉斯轉向東北方向移動並逐漸減弱，最後於九月二十四日在日本本州沿岸演變為溫帶氣旋。

根據報章報導，塔拉斯影響日本期間，造成3人死亡，6人受傷。

熱帶低氣壓奧鹿(2216)於九月二十二日早上在馬尼拉之東北偏東約1 500公里的北太平洋西部上形成，向西南偏西移向呂宋，並逐漸增強。九月二十四早上奧鹿開始迅速增強，翌日發展為超強颱風並採取偏西路徑移動。當日早上奧鹿達到其最高強度，中心附近最高持續風速估計為每小時220公里。隨後奧鹿橫過呂宋，在九月二十六日減弱為颱風。奧鹿進入南海中部後重新組織，九月二十七日再次發展為超強颱風。奧鹿於九月二十八日在峴港附近登陸並減弱，最後於九月二十九日在中南半島消散。

根據報章報導，奧鹿掠過菲律賓期間最少造成12人死亡，5人失蹤。奧鹿吹襲期間，於越南造成7人死亡，以及在泰國造成1人死亡，2人受傷。奧鹿亦為柬埔寨帶來狂風暴雨，造成16人死亡。

熱帶低氣壓玫瑰(2217)於九月二十五日下午在硫黃島之東南約670公里的北太平洋西部上形成，向西北方向移動，並逐漸增強。翌日下午玫瑰在硫黃島一帶增強為熱帶風暴，隨後逐漸轉向東北移動並持續增強。九月二十七日早上玫瑰進一步增強為強烈熱帶風暴並於翌日下午達到其最高強度，中心附近最高持續風速估計為每小時110公里。最後玫瑰於九月二十九日在日本以東的北太平洋西部上演變為溫帶氣旋。

熱帶低氣壓洛克(2218)於九月二十八日凌晨在沖繩島之東南約860公里的北太平洋西部上形成，初時向西北方向移動，隨後於當日下午轉向偏北方向移動並迅速增強。九月二十九日下午洛克增強為颱風並轉向東北方向移動。當晚洛克達到其最高強度，中心附近最高持續風速估計為每小時140公里。隨後洛克逐漸減弱，最後於十月一日在日本以東的北太平洋西部上演變為溫帶氣旋。

熱帶低氣壓桑卡(2219)於十月十三日早上在峴港之東南偏東約820公里的南海南部上形成，大致向西北方向移向越南中部，並逐漸增強。翌日下午桑卡增強為熱帶風暴，並達到其最高強度，中心附近最高持續風速估計為每小時65公里。隨後桑卡逐漸減弱，最後於十月十五日登陸越南中部後在內陸消散。

根據報章報導，桑卡為越南帶來狂風暴雨，造成9人死亡，經濟損失約8 200萬美元。

熱帶低氣壓海棠(2221)於十月十三日下午在關島之東北偏東約850公里的北太平洋西部上形成，初時向東北方向移動，翌日逐漸採取偏北方向移動。海棠於十月十五日凌晨減弱為低壓區，其殘餘隨後兩日繼續向北移動。與其相關的殘餘低壓區於十月十七日下午再度增強為熱帶低氣壓，大致向東北方向移動並逐漸增強。十月十八日凌晨海棠增強為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65公里。翌日海棠在北太平洋西部演變為溫帶氣旋。

熱帶低氣壓納沙(2220)於十月十五日凌晨在馬尼拉之東北約800公里的北太平洋西部上形成，向西移向呂宋海峽，並逐漸增強。翌日下午納沙進入南海北部並增強為颱風。十月十七日納沙轉向西南偏西方向移向西沙一帶，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145公里。受東北季候風影響，納沙隨後三日逐漸減弱，最後於十月二十日在海南島之西南的南海中部上減弱為低壓區。

一個熱帶低氣壓於十月二十日上午在馬尼拉之東北約1 130公里的北太平洋西部上形成，向偏西方向移動。十月二十一日下午該熱帶低氣壓達到其最高強度，中心附近最高持續風速估計為每小時55公里。翌日該熱帶低氣壓橫過呂宋海峽並進入南海北部，最後於十月二十三日在東沙以南的南海北部減弱為低壓區。

熱帶低氣壓尼格(2222)於十月二十六日早上在馬尼拉以東約1 390公里的北太平洋西部上形成，大致向西北偏西移向菲律賓並逐漸增強。十月二十九日凌晨尼格增強為強烈熱帶風暴並橫過菲律賓。翌日尼格減弱為熱帶風暴並進入南海中部。當晚尼格轉向西北偏北方向移動並再度逐漸增強。十月三十一日下午尼格再次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110公里。十一月二日尼格持續靠近廣東沿岸，但因受東北季候風影響，下午尼格減弱為熱帶風暴。當晚尼格在香港以南水域掠過，翌日早上在珠海登陸，隨後在廣東西部減弱為低壓區。

根據報章報導，尼格吹襲菲律賓期間，造成155人死亡，129人受傷，34人失蹤，超過200萬人受災，經濟損失超過1億2千萬美元。

熱帶低氣壓榕樹(2223)於十月三十日下午在雅蒲島之西南偏西約140公里的北太平洋西部上形成，向西南偏西方向移動。十月三十一日凌晨榕樹增強為熱帶風暴，並於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。隨後榕樹減弱，最後於十一月一日在菲律賓以東的北太平洋西部上減弱為低壓區。

熱帶低氣壓山貓(2224)於十一月十二日凌晨在威克島之西北偏北約110公里的北太平洋西部上形成，向西北偏西方向移動。當晚山貓增強為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65公里，晚上逐漸轉向偏北方向移動。山貓最後於十一月十四日在威克島之西北偏北的北太平洋西部上減弱為低壓區。

十二月

熱帶低氣壓帕卡(2225)於十二月十一日凌晨在馬尼拉之東北偏東約480公里的北太平洋西部上形成，大致向東北移動並逐漸增強。當晚帕卡發展為熱帶風暴，並於十二月十二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75公里。隨後帕卡逐漸減弱，當晚在琉球群島以南的北太平洋西部上減弱為低壓區。

備註：人命傷亡及財物損毀數據是根據報章報導輯錄而成。

Section 2 TROPICAL CYCLONE OVERVIEW FOR 2022

2.1 Review of tropical cyclones in 2022

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

In 2022, a total of 27 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°, 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 four 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 2022.

During the year, six tropical cyclones made landfall over China, with two of them crossing the south China coast within 300 km of Hong Kong. Three traversed the Philippines and three made landfall over Vietnam. With an estimated maximum sustained wind speed of 230 km/h and a minimum sea-level pressure of 910 hPa near the centre (Table 4.1), Super Typhoon Hinnamnor (2211) in August to September (Figure 2.3) was the most intense tropical cyclone over the WNP and the SCS in 2022.

2.1.2 Tropical cyclones in Hong Kong's area of responsibility

Amongst the 27 tropical cyclones in 2022, 13 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), slightly more than the long-term annual average (1961-2020) figure of around 16 (Table 2.1). Five of them developed within Hong Kong's area of responsibility. Altogether, 318 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

Nine tropical cyclones affected SCS bounded by 10°N, 25°N, 105°E and 120°E in 2022, less than the long-term annual average (1961-2020) of around 12. Four of them formed over the SCS.

2.1.4 Tropical cyclones affecting Hong Kong

In 2022, the typhoon season in Hong Kong started on 29 June when Tropical Depression Chaba (2203) formed over the central part of the SCS, necessitating the issuance of the Standby Signal No. 1. The typhoon season ended with the cancellation of all tropical cyclone warning signals on 3 November when Tropical Depression Nalgae (2222) weakened and moved inland after making landfall over Zhuhai.

Six tropical cyclones affected Hong Kong during 2022 (Figure 2.2), on par with the long-term (1961-2020) average of about six in a year (Table 2.2). They were Typhoon Chaba (2203) in June to July, Tropical Depression, Tropical Storm Mulan (2207) and Typhoon Ma-on (2209) in August, Typhoon Nesat (2220) in October, and Severe Tropical Storm Nalgae (2222) in October to November. The No. 8 Gale or Storm Signal was issued during the passage of Chaba, Ma-on and Nalgae on 1 July, 24 August and 2 November respectively, the highest tropical cyclone warning signal issued in 2022. The No. 8 Gale or Storm Signal issued during the passage of Chaba was the first time on the HKSAR Establishment Day. Nalgae was the third tropical cyclone necessitating the issuance of the No. 8 Signal in November since 1946. The No. 3 Strong Wind Signal was issued during the passage of Mulan and Nesat. The Tropical Depression 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 2022 was 697.4 mm (Table 4.8.1). This accounted for approximately 31.6% of the year's total rainfall of 2205.4 mm and slightly less than the 1961-2020 long-term average of 704.2 mm.

According to the above definition, Tropical Storm Mulan (2207) brought 206.5 mm of rainfall to Hong Kong (Table 4.8.1) and was the wettest tropical cyclone in 2022.

2.2 Monthly overview

A monthly overview of tropical cyclones in 2022 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 2022.

APRIL

Malakas (2201) formed as a tropical depression over the western North Pacific about 1 320 km east-southeast of Yap on the morning of 7 April. It generally moved northwestwards and intensified gradually. Malakas developed into a typhoon on the morning of 12 April. It turned to move northeastwards towards the vicinity of Iwo Jima. Malakas further intensified into a super typhoon in the small hours on 14 April and reached its peak intensity with an estimated maximum sustained wind of 185 km/h near its centre. Malakas started to weaken afterwards and finally evolved into an extratropical cyclone over the seas south of Japan on 15 April.

Megi (2202) formed as a tropical depression over the western North Pacific about 780 km east-southeast of Manila on the morning of 9 April. It moved slowly westwards towards the Philippines and intensified gradually. Megi intensified into a tropical storm the next morning and reached its peak intensity with an estimated maximum sustained wind of 65 km/h near its centre. Megi then lingered over the eastern part of the Philippines and weakened gradually. It finally dissipated over the eastern part of the Philippines on 12 April.

According to press reports, Megi brought torrential rain to the Philippines with flooding and landslides reported in many places. There were at least 214 deaths and 132 missing. Over 2 million people were affected.

MAY

No tropical cyclone formed over the western North Pacific and the South China Sea in May 2022.

JUNE TO NOVEMBER

Chaba (2203) developed into a tropical depression over the central part of the South China Sea about 460 km east-southeast of Xisha on the morning of 29 June. It moved slowly west-northwestwards on that day and intensified gradually. Chaba developed into a tropical storm the next day and moved generally north-northwestwards towards the coast of western Guangdong. It further intensified into a typhoon on the morning of 2 July, reaching its peak intensity with an estimated maximum sustained wind of 120 km/h near its centre. Chaba made landfall near Maoming later in that afternoon. It then moved inland and weakened afterwards. Chaba finally degenerated into an area of low pressure over inland Guangxi on the night of 3 July.

According to press reports, Chaba brought torrential rain and squalls to Guangdong and there were flooding over many places. Power supply to over 230 000 households in Maoming was suspended. Chaba also triggered quite a number of tornados in Guangdong, resulting in a large number of building damages. Under inclement weather, a construction vessel sank over the seas about 160 miles southwest of Hong Kong. 12 crew members were killed and 14 others were reported missing.

Aere (2204) formed as a tropical depression over the western North Pacific about 890 km south-southeast of Okinawa on the night of 30 June. It moved northwards towards the vicinity of the Ryukyu Islands and intensified gradually. Aere intensified into a tropical storm the next morning and reached its peak intensity with an estimated maximum sustained wind of 75 km/h near its centre in the afternoon. Aere turned to move northwestwards skirting past the vicinity of Ryukyu Islands on 2 July and weakened gradually. It finally degenerated into an area of low pressure over Kyushu, Japan on 5 July.

Songda (2205) formed as a tropical depression over the western North Pacific about 830 km south of Iwo Jima on the afternoon of 27 July. It moved north-northwestwards and intensified gradually. Songda developed into a tropical storm on the night of 28 July and reached its peak intensity with an estimated maximum sustained wind of 65 km/h near its centre. It moved rapidly west-northwestwards in the following two days and weakened. Songda finally degenerated into an area of low pressure over the Yellow Sea on the night of 31 July.

Trases (2206) formed as a tropical depression over the western North Pacific about 510 km south of Okinawa on the afternoon of 30 July. It moved northwards towards the vicinity of the Ryukyu Islands and intensified gradually. Trases intensified into a tropical storm on the morning of 31 July and reached its peak intensity with an estimated maximum sustained wind of 65 km/h near its centre. It then moved across the East China Sea and weakened gradually. Trases finally degenerated into an area of low pressure over the Korean Peninsula on 1 August.

A tropical depression formed over the northeastern part of the South China Sea about 310 km east-southeast of Hong Kong on the night of 3 August. It tracked west-northwestwards towards the east of the Pearl River Estuary with an estimated maximum sustained wind of 45 km/h near its centre. The tropical depression made landfall over the coast of Huidong on the morning of 4 August and degenerated into an area of low pressure over inland Guangdong after noon.

Mulan (2207) formed as a tropical depression over the central part of the South China Sea about 700 km south-southwest of Hong Kong in the small hours on 9 August. It moved north to north-northeastwards at first. Mulan intensified into a tropical storm in the afternoon and reached its peak intensity with an estimated maximum sustained wind of 65 km/h near its centre. It turned to move northwestwards on the night of 9 August. Mulan skirted past the northeastern part of Hainan Island and the southern part of Leizhou Peninsula on 10 August and moved across Beibu Wan at night. It made landfall over the northern part of Vietnam and weakened into an area of low pressure over inland on 11 August.

Meari (2208) formed as a tropical depression over the western North Pacific about 190 km northwest of Iwo Jima on the morning of 10 August. It moved northwestwards and intensified gradually. Meari intensified into a tropical storm on the night of 11 August and generally tracked northwards towards Honshu, Japan. Meari reached its peak intensity on the night of 12 August with an estimated maximum sustained wind of 75 km/h near its centre. It moved northeastwards and skirted past the southern coast of Honshu, Japan on the next day and finally evolved into an extratropical cyclone over the seas east of Japan on 14 August.

According to press reports, Meari brought torrential rain and squalls to Japan which caused about 10 000 households without electricity supply during its passage.

Ma-on (2209) formed as a tropical depression over the western North Pacific about 730 km east-northeast of Manila on the afternoon of 21 August. It moved west-southwestwards and intensified gradually. Ma-on turned to track west-northwestwards on 22 August and developed into a severe tropical storm in the small hours on 23 August. It moved across the northern part of Luzon that day and entered the northern part of the South China Sea at night. Ma-on tracked west-northwestwards and moved rapidly across the northern part of the South China Sea towards the coast of western Guangdong the next day. Ma-on further developed into a typhoon that night, reaching its peak intensity with an estimated maximum sustained wind of 120 km/h near its centre. Affected by relatively strong vertical wind shear over the northern part of the South China Sea, Ma-on weakened gradually afterwards. It made landfall near Dianbai, Maoming before noon on 25 August and finally weakened into an area of low pressure over the northern part of Vietnam on 26 August.

According to press reports, the rail and shipping services in Zhuhai were suspended under the influence of the torrential rain and squalls associated with Ma-on.

Tokage (2210) formed as a tropical depression over the western North Pacific about 1 050 km east of Iwo Jima in the small hours of 22 August. It generally tracked northwards and intensified gradually. Tokage intensified into a typhoon on the night of 23 August and reached its peak intensity in the small hours on 24 August with an estimated maximum sustained wind of 145 km/h near its centre. It then weakened gradually and finally evolved into an extratropical cyclone over the western North Pacific to the east of Japan on 25 August.

Hinnamnor (2211) formed as a tropical depression over the western North Pacific about 970 km east of Iwo Jima in the small hours on 28 August. It generally moved northwestwards and intensified gradually. Hinnamnor tracked westwards towards the vicinity of the Ryukyu Islands and intensified rapidly on 29 August. Hinnamnor developed into a super typhoon on the morning of 30 August, reaching its peak intensity that night with an estimated maximum sustained wind of 230 km/h near its centre. It weakened into a severe typhoon gradually and turned to move southwards slowly, lingering over the seas east of Taiwan in the following three days. Hinnamnor turned to move northwards across the vicinity of the Ryukyu Islands on 3 September. It developed into a super typhoon again on the afternoon of 4 September. Hinnamnor turned to move north-northeastwards the next day and weakened gradually. It finally evolved into an extratropical cyclone over the seas north of Honshu, Japan on 6 September.

According to press reports, 2 persons were injured and electricity supply to around 3 000 households in Ishigaki Jima and Miyako Jima were suspended during the passage of Hinnamnor. There were more than 35 000 households without electricity supply in Kyushu, Japan. Moreover, Hinnamnor also caused at least 11 deaths and 1 missing in Korea.

Muifa (2212) formed as a tropical depression over the western North Pacific about 1 340 km north of Yap on the afternoon of 6 September and moved south-southwestwards. It turned to track gradually north-northwestwards towards the vicinity of the Ryukyu Islands and intensified gradually in the following four days. Muifa intensified into a severe typhoon in the small hours on 11 September and reached its peak intensity in the afternoon with an estimated maximum sustained wind of 175 km/h near its centre. Muifa weakened gradually afterwards and moved across the vicinity of the Ryukyu Islands towards the coast of Jiangsu and Zhejiang. Muifa moved across the coastal area of the East China on 14 and 15 September and finally weakened into an area of low pressure near Shandong on 16 September.

According to press reports, at least 2 people were injured in Ishigaki Jima during the passage of Muifa. Moreover, the rail and aviation services in Zhejiang were suspended under the influence of Muifa.

Merbok (2213) formed as a tropical depression over the western North Pacific about 740 km west-northwest of Wake Island on the afternoon of 11 September. It moved east or east-northeastwards at first and intensified gradually. Merbok intensified into a severe tropical storm in the small hours on 13 September and tracked generally northwards. Merbok further intensified into a typhoon the next morning and reached its peak intensity in the afternoon with an estimated maximum sustained wind of 130 km/h near its centre. Merbok weakened gradually afterwards and finally evolved into an extratropical cyclone over the western North Pacific on 15 September.

Nanmadol (2214) formed as a tropical depression over the western North Pacific about 440 km southwest of Iwo Jima on the morning of 13 September. It moved slowly at first and intensified gradually. Nanmadol intensified into a tropical storm the next day and tracked westwards towards the vicinity of the Ryukyu Islands. It further intensified into a super typhoon on the afternoon of 16 September and turned to move generally northwestwards. Nanmadol reached its peak intensity in the small hours on 17 September with an estimated maximum sustained wind of 220 km/h near its centre. It turned to move north-northwestwards and weakened gradually afterwards. Nanmadol swept across Kyushu, Japan on 18 September and finally evolved into an extratropical cyclone over Honshu, Japan, the next day.

According to press reports, Nanmadol left 5 deaths, 153 injuries in Kyushu, Japan during its passage. Electricity supply to about 430 000 households was interrupted. Over 800 flights were cancelled and rail services were suspended.

Talas (2215) formed as a tropical depression over the western North Pacific about 100 km south-southwest of Iwo Jima on the afternoon of 21 September. It moved northwestwards and intensified gradually. Talas intensified into a tropical storm on the morning of 22 September and reached its peak intensity with an estimated maximum sustained wind of 65 km/h near its centre. It turned to move northeastwards and weakened gradually afterwards. Talas finally evolved into an extratropical cyclone over the coast of Honshu, Japan on 24 September.

According to press reports, under the influence of Talas, there were 3 deaths and 6 injuries in Japan.

Noru (2216) formed as a tropical depression over the western North Pacific about 1 500 km east-northeast of Manila on the morning of 22 September. It moved west-southwestwards towards Luzon and intensified gradually. Noru started to intensify rapidly on the morning of 24 September. It developed into a super typhoon on the next day and tracked westwards. Noru reached its peak intensity that morning with an estimated maximum sustained wind of 220 km/h near its centre. Noru moved across Luzon afterwards and weakened into a typhoon on 26 September. It reorganized after entering the central part of the South China Sea and developed into a super typhoon again on 27 September. Noru made landfall near Da Nang on 28 September and weakened. It finally dissipated over the Indochina Peninsula on 29 September.

According to press reports, at least 12 persons were killed and 5 persons were missing when Noru skirted past the Philippines. It also caused 7 deaths in Vietnam. There were 1 death and 2 injuries in Thailand during the passage of Noru. Noru also brought torrential rain and squalls to Cambodia, leaving 16 deaths.

Kulap (2217) formed as a tropical depression over the western North Pacific about 670 km southeast of Iwo Jima on the afternoon of 25 September. It moved northwestwards and intensified gradually. Kulap intensified into a tropical storm over the vicinity of Iwo Jima the next afternoon. It then gradually turned to move northeastwards and continued to intensify. Kulap further intensified into a severe tropical storm on the morning of 27 September and reached its peak intensity in the next afternoon with an estimated maximum sustained wind of 110 km/h near its centre. It finally evolved into an extratropical cyclone over the western North Pacific to the east of Japan on 29 September.

Roke (2218) formed as a tropical depression over the western North Pacific about 860 km southeast of Okinawa in the small hours on 28 September and moved northwestwards at first. It then turned to move northwards that afternoon and intensified rapidly. Roke intensified into a typhoon on the afternoon of 29 September and turned to move northeastwards. It reached its peak intensity that night with an estimated maximum sustained wind of 140 km/h near its centre. Roke weakened gradually afterwards and finally evolved into an extratropical cyclone over the western North Pacific to the east of Japan on 1 October.

Sonca (2219) formed as a tropical depression over the southern part of the South China Sea about 820 km east-southeast of Da Nang on the morning of 13 October. It moved generally northwestwards towards the central part of Vietnam and intensified gradually. Sonca intensified into a tropical storm on the afternoon of the next day and reached its peak intensity with an estimated maximum sustained wind of 65 km/h near its centre. It weakened gradually afterwards. Sonca finally dissipated inland after making landfall over the central part of Vietnam on 15 October.

According to press reports, Sonca brought torrential rain and squalls to Vietnam, leaving 9 deaths with economic loss of around US$82 million.

Haitang (2221) formed as a tropical depression over the western North Pacific about 850 km east-northeast of Guam on the afternoon of 13 October. It moved northeastwards at first and tracked northwards gradually the next day. Haitang weakened into an area of low pressure in the small hours on 15 October and its remnant continued to track northwards in the following two days. The low pressure area associated with the remnant of Haitang re-intensified into a tropical depression on the afternoon of 17 October. Haitang moved generally northeastwards and intensified gradually. It intensified into a tropical storm in the small hours on 18 October, reaching its peak intensity with an estimated maximum sustained wind of 65 km/h near its centre. Haitang evolved into an extratropical cyclone over the western North Pacific the next day.

Nesat (2220) formed as a tropical depression over the western North Pacific about 800 km northeast of Manila in the small hours on 15 October. It moved westwards towards Luzon Strait and intensified gradually. Nesat entered the northern part of the South China Sea and intensified into a typhoon on the afternoon of the next day. It turned to move west-southwestwards towards the vicinity of Xisha on 17 October. Nesat reached its peak intensity that night with an estimated maximum sustained wind of 145 km/h near its centre. Under the influence of the northeast monsoon, it weakened gradually in the following three days and finally degenerated into an area of low pressure over the central part of the South China Sea to the southwest of Hainan Island on 20 October.

A tropical depression formed over the western North Pacific about 1 130 km northeast of Manila on the morning of 20 October and moved westwards. The tropical depression reached its peak intensity on the afternoon of 21 October with an estimated maximum sustained wind of 55 km/h near its centre. It skirted past Luzon Strait and entered the northern part of the South China Sea the next day. The tropical depression finally degenerated into an area of low pressure over the northern part of the South China Sea to the south of Dongsha on 23 October.

Nalgae (2222) formed as a tropical depression over the western North Pacific about 1 390 km east of Manila on the morning of 26 October. It moved generally west-northwestwards towards the Philippines and intensified gradually. Nalgae intensified into a severe tropical storm in the small hours on 29 October and moved across the Philippines. It weakened into a tropical storm next day and entered the central part of the South China Sea. Nalgae turned to move north-northwestwards that night and intensified gradually again. Nalgae re-intensified into a severe tropical storm on the afternoon of 31 October and attained its peak intensity with an estimated maximum sustained wind of 110 km/h near its centre. Nalgae continued to edge closer to coast of Guangdong on 2 November. However, it weakened into a tropical storm in the afternoon due to the influence of the northeast monsoon. Nalgae skirted past the waters south of Hong Kong that night and made landfall over Zhuhai the next morning. It degenerated into an area of low pressure over the western part of Guangdong afterwards.

According to press reports, the passage of Nalgae left 155 deaths, 129 injuries and 34 missing in the Philippines. Over 2 million people were affected and economic loss exceeded 120 million USD.

Banyan (2223) formed as a tropical depression over the western North Pacific about 140 km west-southwest of Yap on the afternoon of 30 October and tracked west-southwestwards. Banyan intensified into a tropical storm in the small hours on 31 October, reaching its peak intensity that morning with an estimated maximum sustained wind of 75 km/h near its centre. It weakened afterwards and finally degenerated into an area of low pressure over the western North Pacific to the east of the Philippines on 1 November.

Yamaneko (2224) formed as a tropical depression over the western North Pacific about 110 km north-northwest of Wake Island in the small hours on 12 November and moved west-northwestwards. It intensified into a tropical storm that night, reaching its peak intensity that morning with an estimated maximum sustained wind of 65 km/h near its centre. Yamaneko gradually turned to move northwards at night and finally degenerated into an area of low pressure over the western North Pacific to the north-northwest of Wake Island on 14 November.

DECEMBER

Pakhar (2225) formed as a tropical depression over the western North Pacific about 480 km east-northeast of Manila in the small hours on 11 December. It moved generally northeastwards and intensified gradually. Pakhar developed into a tropical storm that night and reached its peak intensity in the small hours on 12 December with an estimated maximum sustained wind of 75 km/h near its centre. It then weakened gradually and degenerated into an area of low pressure over the western North Pacific to the south of Ryukyu Islands that night.

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

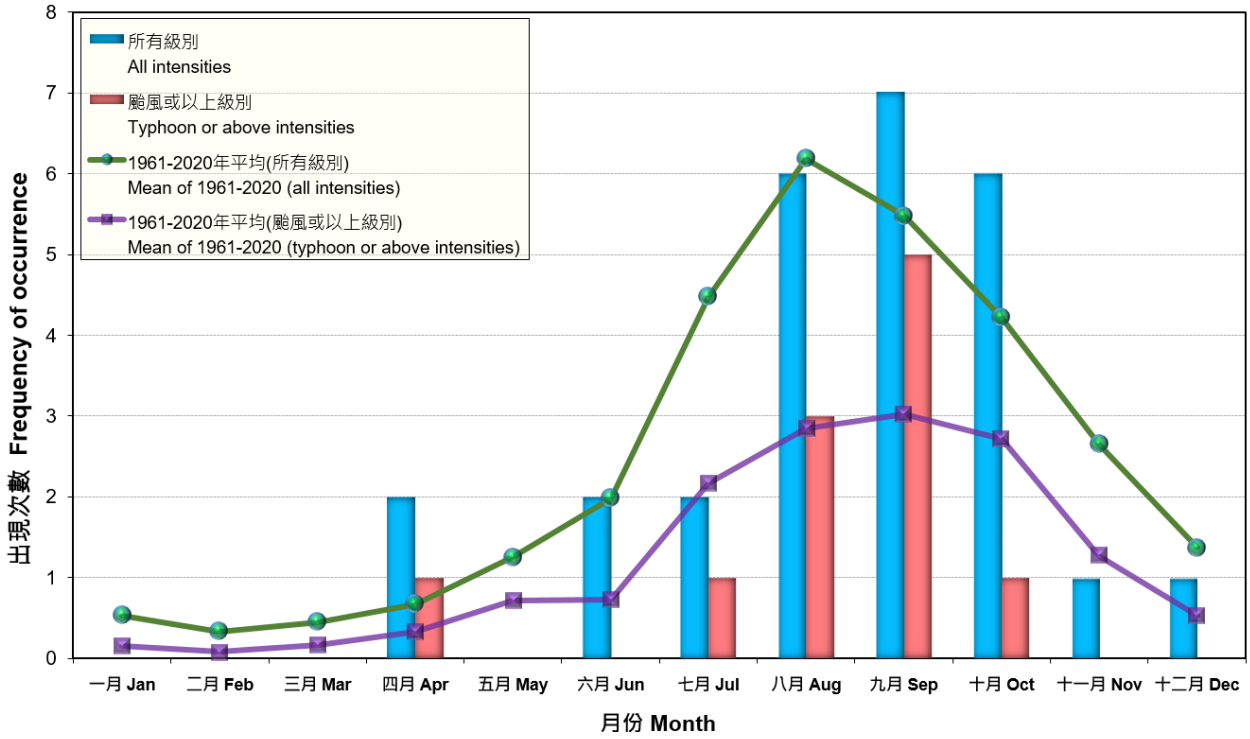


圖 2.1　二零二二年在北太平洋西部及南海區域的熱帶氣旋出現次數之每月分佈 (以熱帶氣旋在該月初次出現為準，假如一熱帶氣旋在九月形成並在十月首次增強為颱風或以上級別，它在「所有級別」及「颱風或以上級別」的統計數字將分別計算在九月及十月份內)。

Figure 2.1　Monthly frequencies of the occurrence of tropical cyclones in the western North Pacific and the South China Sea in 2022 (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).

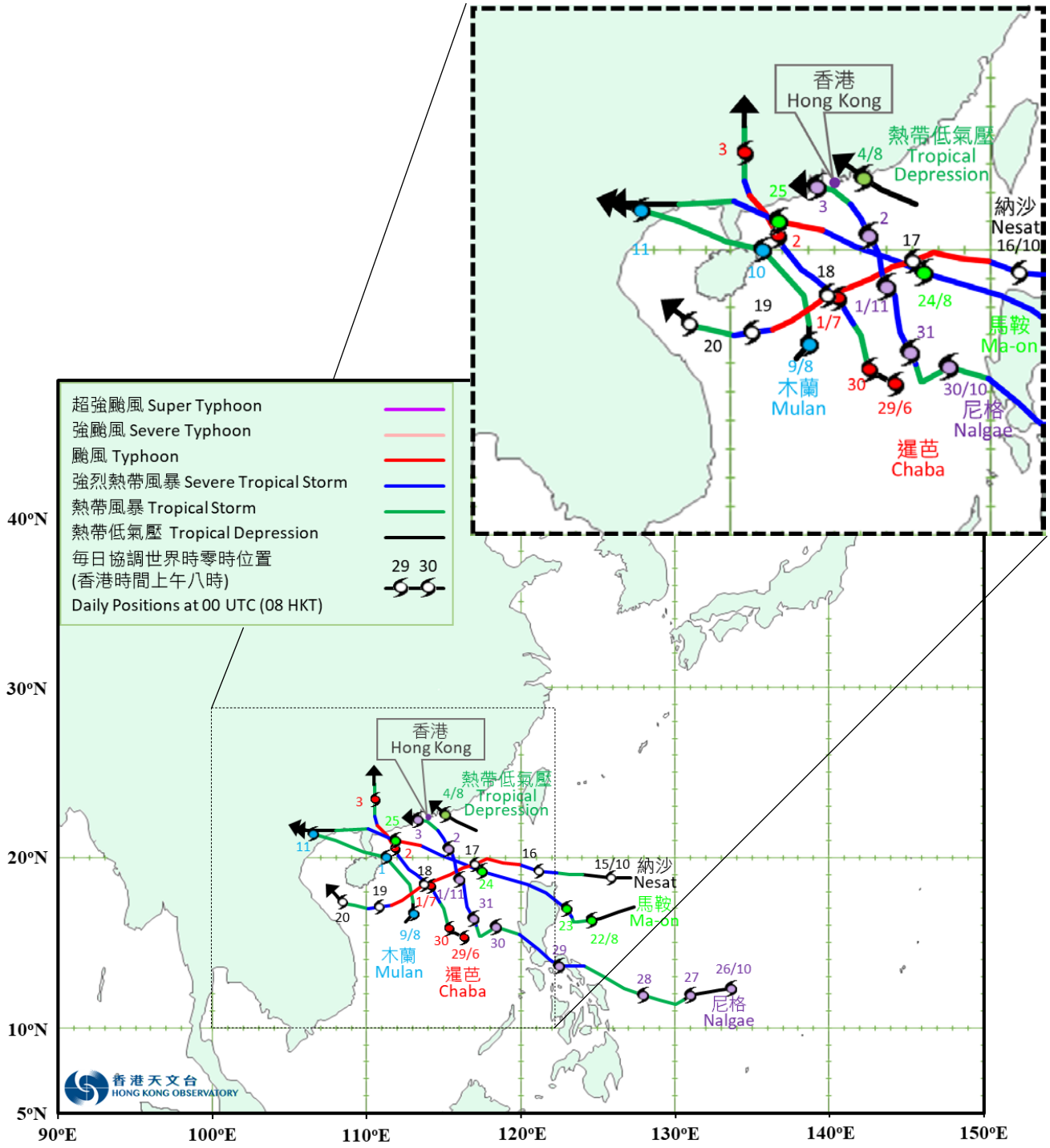


圖 2.2　　二零二二年六個影響香港的熱帶氣旋的路徑圖。

Figure 2.2　Tracks of the six tropical cyclones affecting Hong Kong in 2022.

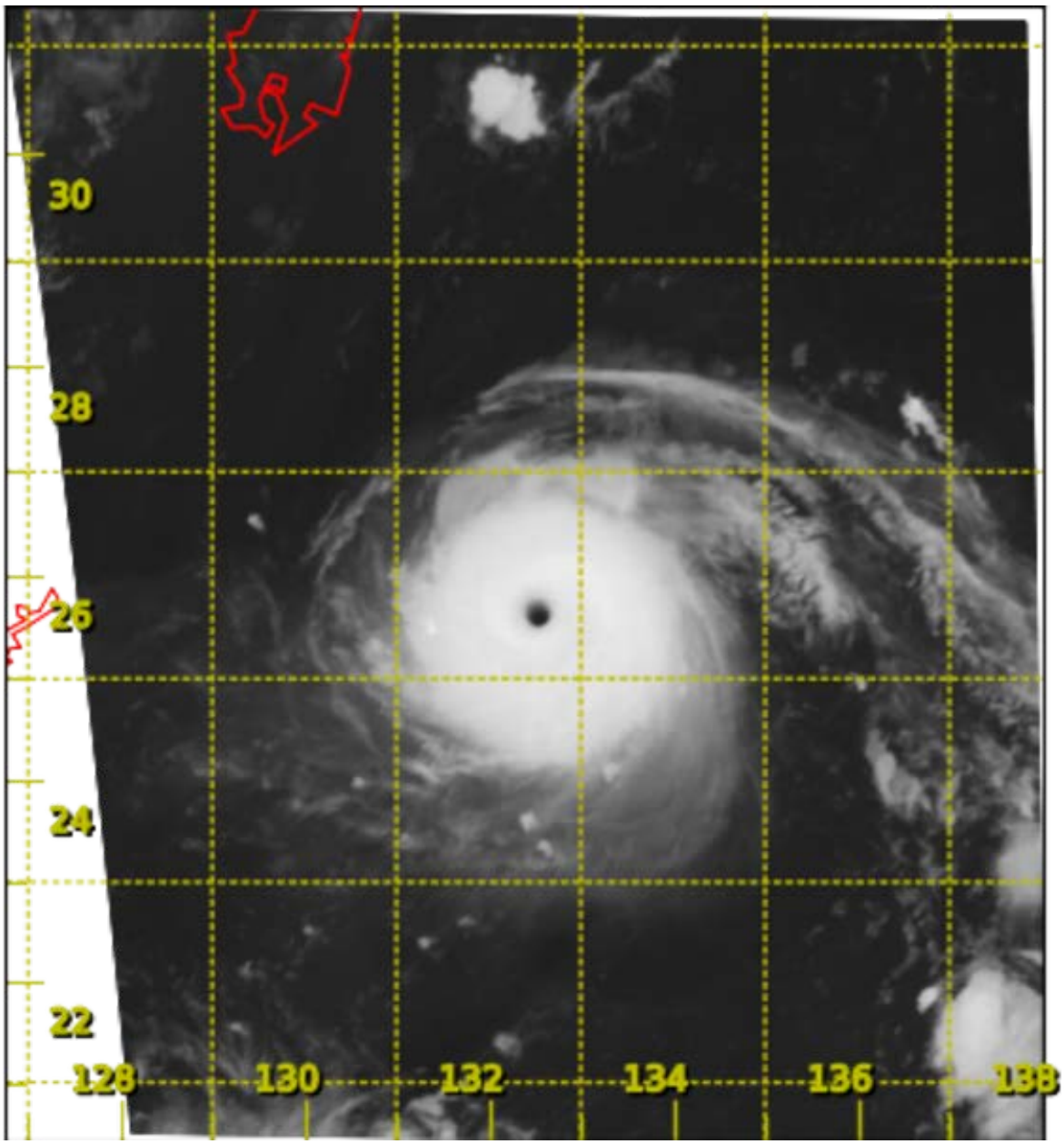


圖2.3　二零二二年八月三十日下午8時左右超強颱風軒嵐諾(2211)的紅外線衛星圖片，當時軒嵐諾達到其最高強度，中心附近最高持續風速估計為每小時230公里，而最低中心氣壓為910百帕斯卡。

Figure 2.3　Infra-red satellite imagery of Super Typhoon Hinnamnor (2211) around 8 p.m. on 30 August 2022, when Hinnamnor was at its peak intensity with an estimated maximum sustained wind of 230 km/h near its centre and a minimum sea-level pressure of 910 hPa.

〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

[The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

表 2.1 在香港責任範圍內(10º-30ºN, 105º-125ºE)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 (10º - 30ºN, 105º - 125ºE), 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
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
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　　二零二二年影響香港的熱帶氣旋

3.1　颱風暹芭(2203)：二零二二年六月二十九日至七月三日

暹芭是二零二二年首個影響香港的熱帶氣旋。暹芭吹襲香港期間，天文台需要發出八號烈風或暴風信號，這亦是有記錄以來首個在香港特別行政區成立紀念日發出的八號熱帶氣旋警告信號。

暹芭於六月二十九日早上在西沙之東南偏東約460公里的南海中部上發展為熱帶低氣壓，當日向西北偏西方向緩慢移動，並逐漸增強。翌日暹芭發展為熱帶風暴並大致採取西北偏北路徑移向廣東西部沿岸。暹芭於七月二日上午進一步增強為颱風並達到其最高強度，中心附近最高持續風速估計為每小時120公里。當日下午稍後暹芭在茂名市附近登陸，隨後移入內陸並減弱，最後於七月三日晚上在廣西內陸減弱為低壓區。

根據報章報導，暹芭為廣東帶來狂風暴雨，多處出現水浸。茂名市有逾23萬戶停電。暹芭也在廣東引發多個龍捲風，大量建築物受損。在惡劣天氣下，一艘工程船在香港西南約160海里沉沒，造成12名船員死亡、14人失蹤。

天文台在六月二十九日晚上9時10分發出一號戒備信號，當時暹芭集結在香港之東南偏南約760公里。晚間本港吹和緩至清勁偏東風，離岸及高地間中吹強風。隨著暹芭逐漸靠近廣東西部沿岸，天文台在六月三十日晚上10時40分發出三號強風信號，當時暹芭位於香港以南約570公里。七月一日日間本港普遍吹偏東強風，離岸及高地間中吹烈風。由於預料暹芭會有所增強，而與其相關的烈風區亦會繼續靠近珠江口，天文台在七月一日晚上7時10分發出八號東南烈風或暴風信號，當時暹芭集結在香港之西南偏南約370公里。當晚及翌日早上本港普遍吹強風至烈風程度的東至東南風，離岸及高地間中吹暴風。

暹芭在七月二日上午10時左右最接近香港，在本港之西南偏西約310公里掠過。隨著暹芭在茂名市附近登陸並逐漸遠離香港，下午稍後本港風力有所緩和，天文台在七月二日下午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。由於與暹芭相關的外圍雨帶繼續影響珠江口，七月二日晚上至七月三日早上本港仍持續吹達強風程度的南至東南風，離岸及高地間中吹烈風。暹芭在七月三日繼續減弱及進一步遠離香港，天文台在當日下午2時10分以一號戒備信號取代三號強風信號。隨著當晚暹芭在廣西內陸減弱為低壓區，天文台在晚上7時40分取消所有熱帶氣旋警告信號。但受西南季候風影響，本港離岸海域及高地仍然吹強風，天文台在七月三日晚上7時50分發出強烈季候風信號，直至七月五日早上7時45分取消。

在暹芭的影響下，昂坪、長洲及青洲錄得的最高每小時平均風速分別為每小時102、83及64公里，而最高陣風則分別為每小時149、107及106公里。尖鼻咀錄得最高潮位3.21米(海圖基準面以上)，而大埔滘及石壁則錄得最大風暴潮(天文潮高度以上) 0.70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	997.8	1/7	下午6時13分
香港國際機場	996.7	2/7	下午2時48分
長洲	996.7	2/7	下午4時06分
京士柏	997.7	1/7	下午6時06分
流浮山	996.8	2/7	下午2時56分
坪洲	996.7	2/7	下午3時08分
沙田	998.2	2/7	下午4時46分
上水	997.5	2/7	下午3時05分
打鼓嶺	997.8	2/7	下午6時36分
大埔	998.2	2/7	下午6時31分
橫瀾島	997.4	1/7	下午5時39分

受暹芭的外圍雨帶影響，六月三十日至七月三日本港間中有狂風大驟雨及雷暴，期間大部分地區錄得超過150毫米雨量，而銅鑼灣及灣仔的雨量更超過250毫米。

暹芭吹襲香港期間至少有3人受傷，另有595宗塌樹報告及兩宗水浸報告。大圍及中環有大樹倒塌，共壓毀兩輛的士。中環、深水埗及沙田均有棚架倒塌。黃大仙及馬料水亦分別有帆布廣告及竹棚花牌被強風吹倒。香港國際機場有35班航班需要轉飛其他地方。

Section 3 TROPICAL CYCLONES AFFECTING HONG KONG IN 2022

3.1 Typhoon Chaba (2203): 29 June to 3 July 2022

Chaba was the first tropical cyclone affecting Hong Kong in 2022. The No. 8 Gale or Storm Signal was issued during the passage of Chaba and it is also the first time on the HKSAR Establishment Day.

Chaba developed into a tropical depression over the central part of the South China Sea about 460 km east-southeast of Xisha on the morning of 29 June. It moved slowly west-northwestwards on that day and intensified gradually. Chaba developed into a tropical storm the next day and moved generally north-northwestwards towards the coast of western Guangdong. It further intensified into a typhoon on the morning of 2 July, reaching its peak intensity with an estimated wind of 120 km/h near its centre. Chaba made landfall near Maoming later in that afternoon. It then moved inland and weakened afterwards. Chaba finally degenerated into an area of low pressure over inland Guangxi on the night of 3 July.

According to press reports, Chaba brought torrential rain and squalls to Guangdong and there were flooding over many places. Power supply to over 230 000 households in Maoming was suspended. Chaba also triggered numerous of tornados in Guangdong, resulting in damage to a large number of buildings. Under inclement weather, a construction vessel sank over the seas about 160 miles southwest of Hong Kong. 12 crew members died and 14 others were reported missing.

The Standby Signal No. 1 was issued at 9:10 p.m. on 29 June when Chaba was about 760 km south-southeast of Hong Kong. Local winds were moderate to fresh easterlies, occasionally reaching strong force offshore and on high ground during the night. With Chaba edging closer to the coast of western Guangdong, the No. 3 Strong Wind Signal was issued at 10:40 p.m. on 30 June when Chaba was about 570 km south of the territory. Local winds were generally strong from the east during the day of 1 July, occasionally reaching gale force offshore and on high ground. As Chaba was expected to further intensify and its associated gale force winds would also continue to edge closer to the Pearl River Estuary, the No. 8 Southeast Gale or Storm Signal was issued at 7:10 p.m. on 1 July when Chaba was about 370 km south-southwest of Hong Kong. Local winds were strong to gale force east to southeasterlies, occasionally reaching storm force offshore and on high ground at night and the next morning.

Chaba came closest to Hong Kong at around 10 a.m. on 2 July when it skirted past about 310 km west-southwest of the territory. With Chaba making landfall near Maoming and gradually departing from Hong Kong, local winds moderated later in the afternoon and the No. 3 Strong Wind Signal was issued to replace the No. 8 Southeast Gale or Storm Signal at 4:20 p.m. on 2 July. As the outer rainband associated with Chaba kept affecting the Pearl River Estuary, strong south to southeasterly winds continued to affect Hong Kong on the night of 2 July and the morning of 3 July and occasionally reached gale force offshore and on high ground. Chaba continued to weaken and moved further away from Hong Kong on 3 July. The Standby Signal No. 1 was issued to replace the No. 3 Strong Wind Signal at 2:10 p.m. on that day. With Chaba degenerating into an area of low pressure over inland Guangxi, all tropical cyclone warning signals were cancelled at 7:40 p.m. on that night. However, under the influence of the southwest monsoon, strong winds still affected the offshore waters and high

ground of Hong Kong and necessitated the issuance of the Strong Monsoon Signal from 7:50 p.m. on 3 July till 7:45 a.m. on 5 July.

Under the influence of Chaba, maximum hourly mean winds of 102, 83 and 64 km/h and maximum gusts of 149, 107 and 106 km/h were recorded at Ngong Ping, Cheung Chau and Green Island respectively. A maximum sea level (above chart datum) of 3.21 m was recorded at Tsim Bei Tsui and a maximum storm surge (above astronomical tide) of 0.70 m was recorded at Tai Po Kau and Shek Pik. 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	997.8	1/7	6:13 p.m.
Hong Kong International Airport	996.7	2/7	2:48 p.m.
Cheung Chau	996.7	2/7	4:06 p.m.
King's Park	997.7	1/7	6:06 p.m.
Lau Fau Shan	996.8	2/7	2:56 p.m.
Peng Chau	996.7	2/7	3:08 p.m.
Sha Tin	998.2	2/7	4:46 p.m.
Sheung Shui	997.5	2/7	3:05 p.m.
Ta Kwu Ling	997.8	2/7	6:36 p.m.
Tai Po	998.2	2/7	6:31 p.m.
Waglan Island	997.4	1/7	5:39 p.m.

Affected by the outer rainbands of Chaba, there were occasional heavy squally showers and thunderstorms in Hong Kong from 30 June to 3 July. Over 150 mllimetres of rainfall were recorded over most parts of the territory during this period and rainfall even exceeded 250 millimetres in Causeway Bay and Wan Chai.

In Hong Kong, at least 3 persons were injured during the passage of Chaba. There were 595 reports of fallen trees and two reports of flooding. The fallen trees in Tai Wai and Central damaged two taxis. Some scaffoldings at Central, Sham Shui Po and Sha Tin collapsed. An advertisement banner at Wong Tai Sin and a flower plaque at Ma Liu Shui were also blown down by strong winds. 35 flights to the Hong Kong International Airport were diverted.

表 3.1.1　在暹芭影響下，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 Chaba 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	81	1/7	12:57	東	E	46	1/7	13:00
長洲	Cheung Chau	東南偏東	ESE	107	2/7	07:08	東南偏東	ESE	83	2/7	10:00
長洲泳灘	Cheung Chau Beach	東	E	101	2/7	06:14	東	E	77	2/7	10:00
青洲	Green Island	東	E	106	2/7	07:13	南	S	64	2/7	23:00
香港國際機場	Hong Kong International Airport	西南偏南	SSW	93	2/7	21:47	東南偏東	ESE	54	2/7	09:00
		南	S	93	2/7	21:48					
啟德	Kai Tak	東	E	80	2/7	12:08	東	E	37	2/7	09:00
京士柏	King's Park	東	E	75	2/7	06:52	東	E	35	1/7	23:00
南丫島	Lamma Island	東	E	90	1/7	13:00	東南偏東	ESE	48	2/7	10:00
流浮山	Lau Fau Shan	東	E	79	2/7	09:39	東南偏南	SSE	46	3/7	02:00
		東南	SE	79	2/7	15:30					
昂坪	Ngong Ping	東	E	149	2/7	12:21	東	E	102	2/7	07:00
北角	North Point	東	E	83	1/7	21:45	東北偏東	ENE	48	1/7	12:00
坪洲	Peng Chau	東南偏東	ESE	89	2/7	06:29	東	E	58	1/7	13:00
平洲	Ping Chau	東北偏東	ENE	49	1/7	16:01	東	E	15	1/7	16:00
西貢	Sai Kung	東北偏東	ENE	81	1/7	12:57	東南偏南	SSE	54	2/7	22:00
沙洲	Sha Chau	南	S	96	2/7	21:48	南	S	63	3/7	00:00
沙螺灣	Sha Lo Wan	東	E	104	2/7	09:44	東	E	40	2/7	09:00
沙田	Sha Tin	東北	NE	64	1/7	13:43	東南偏南	SSE	25	2/7	18:00
九龍天星碼頭	Star Ferry (Kowloon)	東南偏東	ESE	82	2/7	12:07	東	E	46	2/7	13:00
打鼓嶺	Ta Kwu Ling	東	E	68	2/7	08:21	東	E	28	2/7	09:00
大美督	Tai Mei Tuk	東北偏東	ENE	93	1/7	16:11	東	E	60	1/7	17:00
大帽山	Tai Mo Shan	東南	SE	138	2/7	09:49	東南偏東	ESE	91	2/7	13:00
		東南	SE	138	2/7	09:53					
大埔滘	Tai Po Kau	東	E	92	1/7	13:10	東南偏東	ESE	48	2/7	07:00
							東南偏東	ESE	48	2/7	08:00
塔門東	Tap Mun East	東	E	94	1/7	14:40	東南偏東	ESE	68	2/7	07:00
		東南	SE	94	2/7	21:07					
大老山	Tate's Cairn	東	E	109	1/7	14:39	東南偏東	ESE	75	1/7	18:00
將軍澳	Tseung Kwan O	東南	SE	60	2/7	10:19	東南	SE	22	2/7	16:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	東	E	83	2/7	08:58	東南	SE	43	2/7	23:00
屯門政府合署	Tuen Mun Government Offices	東南偏南	SSE	83	2/7	22:08	東南偏南	SSE	36	2/7	23:00
							東南偏南	SSE	36	3/7	00:00
橫瀾島	Waglan Island	東	E	95	1/7	12:40	東北偏東	ENE	70	1/7	12:00
濕地公園	Wetland Park	東南	SE	65	2/7	16:14	東南偏東	ESE	24	2/7	16:00
							東南偏南	SSE	24	3/7	02:00
黃竹坑	Wong Chuk Hang	東北偏東	ENE	84	1/7	23:58	東北偏東	ENE	32	2/7	09:00

黃麻角(赤柱)、石崗 - 沒有資料　Bluff Head (Stanley), Shek Kong - data not available

昂坪 - 數據不完整　Ngong Ping - incomplete data

表 3.1.2　在暹芭影響下，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 Chaba 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	30/6	12:03	3/7	18:33	1/7	13:04	2/7	21:44
香港國際機場	Hong Kong International Airport	1/7	12:35	3/7	17:38	-			
流浮山	Lau Fau Shan	1/7	11:04	3/7	09:56	-			
啟德	Kai Tak	2/7	09:39	2/7	09:43	-			
西貢	Sai Kung	1/7	10:55	3/7	00:37	-			
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	2/7	19:06	3/7	07:31	-			

沙田及打鼓嶺的持續風力未達到強風程度。

The sustained wind speed did not attain strong force at Sha Tin and Ta Kwu Ling.

- 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　　暹芭影響香港期間，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 Chaba

站 (參閱圖 3.12) Station (See Fig. 3.1.2)			六月二十九日 29 Jun	六月三十日 30 Jun	七月一日 1 Jul	七月二日 2 Jul	七月三日 3 Jul	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			0.7	64.9	63.0	72.4	0.0	201.0
香港國際機場 Hong Kong International Airport (HKA)			0.1	33.0	45.1	108.6	0.1	186.9
長洲 Cheung Chau (CCH)			0.0	15.5	35.0	34.5	0.0	85.0
H23	香港仔	Aberdeen	0.0	49.5	44.0	47.5	0.0	141.0
N05	粉嶺	Fanling	0.0	26.5	21.0	68.5	2.0	118.0
N13	糧船灣	High Island	7.5	55.5	35.0	27.0	1.0	126.0
K04	佐敦谷	Jordan Valley	1.0	69.0	63.5	94.5	5.0	233.0
N06	葵涌	Kwai Chung	0.5	55.0	57.5	96.0	0.0	209.0
H12	半山區	Mid Levels	0.0	79.0	63.0	60.5	0.0	202.5
N09	沙田	Sha Tin	3.0	35.5	53.0	107.0	4.0	202.5
H19	筲箕灣	Shau Kei Wan	0.0	77.0	62.0	47.0	2.0	188.0
SEK	石崗	Shek Kong	1.5	18.0	42.0	90.5	0.0	152.0
K06	蘇屋邨	So Uk Estate	1.5	65.0	58.0	95.5	0.0	220.0
R31	大美督	Tai Mei Tuk	2.5	27.0	21.5	69.0	11.5	131.5
R21	踏石角	Tap Shek Kok	1.5	24.0	31.0	90.5	0.0	147.0
N17	東涌	Tung Chung	0.0	33.0	54.5	119.5	0.0	207.0
TMR	屯門水庫	Tuen Mun Reservoir	11.9	23.4	35.4	121.8	2.1	194.6

表 3.1.4　　暹芭影響香港期間，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 Chaba

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	2.63	2/7	09:26	0.50	2/7	19:04
石壁	Shek Pik	2.94	2/7	10:19	0.70	2/7	08:19
大廟灣	Tai Miu Wan	2.64	2/7	08:30	0.56	1/7	18:56
大埔滘	Tai Po Kau	2.77	2/7	08:17	0.70	1/7	19:54
尖鼻咀	Tsim Bei Tsui	3.21	2/7	10:49	0.64	2/7	22:47

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

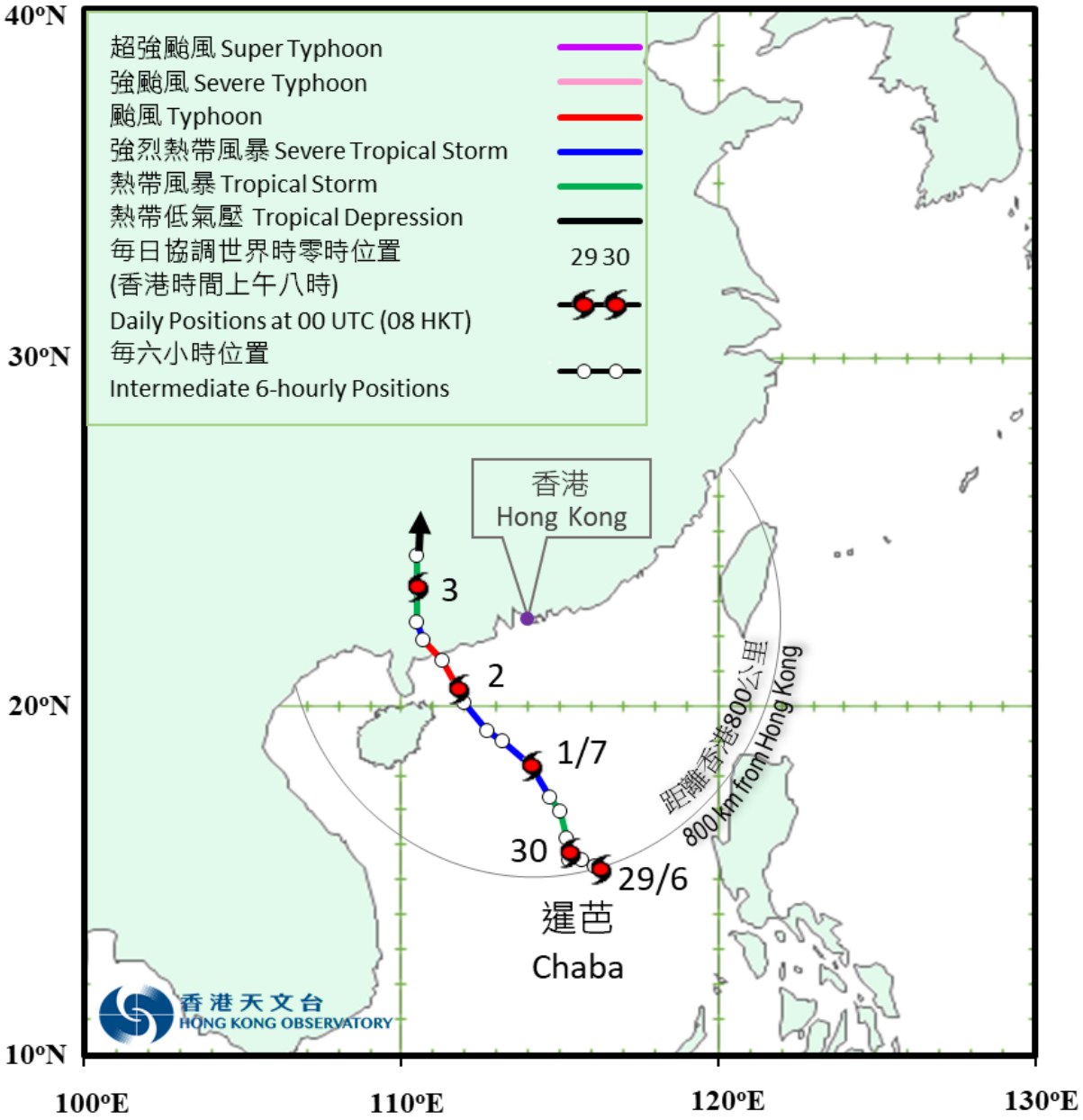


圖 3.1.1a　　二零二二年六月二十九日至七月三日暹芭(2203)的路徑圖。

Figure 3.1.1a　Track of Chaba(2203): 29 June – 3 July 2022.

圖 3.1.1b　　暹芭接近香港時的路徑圖。

Figure 3.1.1b　Track of Chaba near Hong Kong.

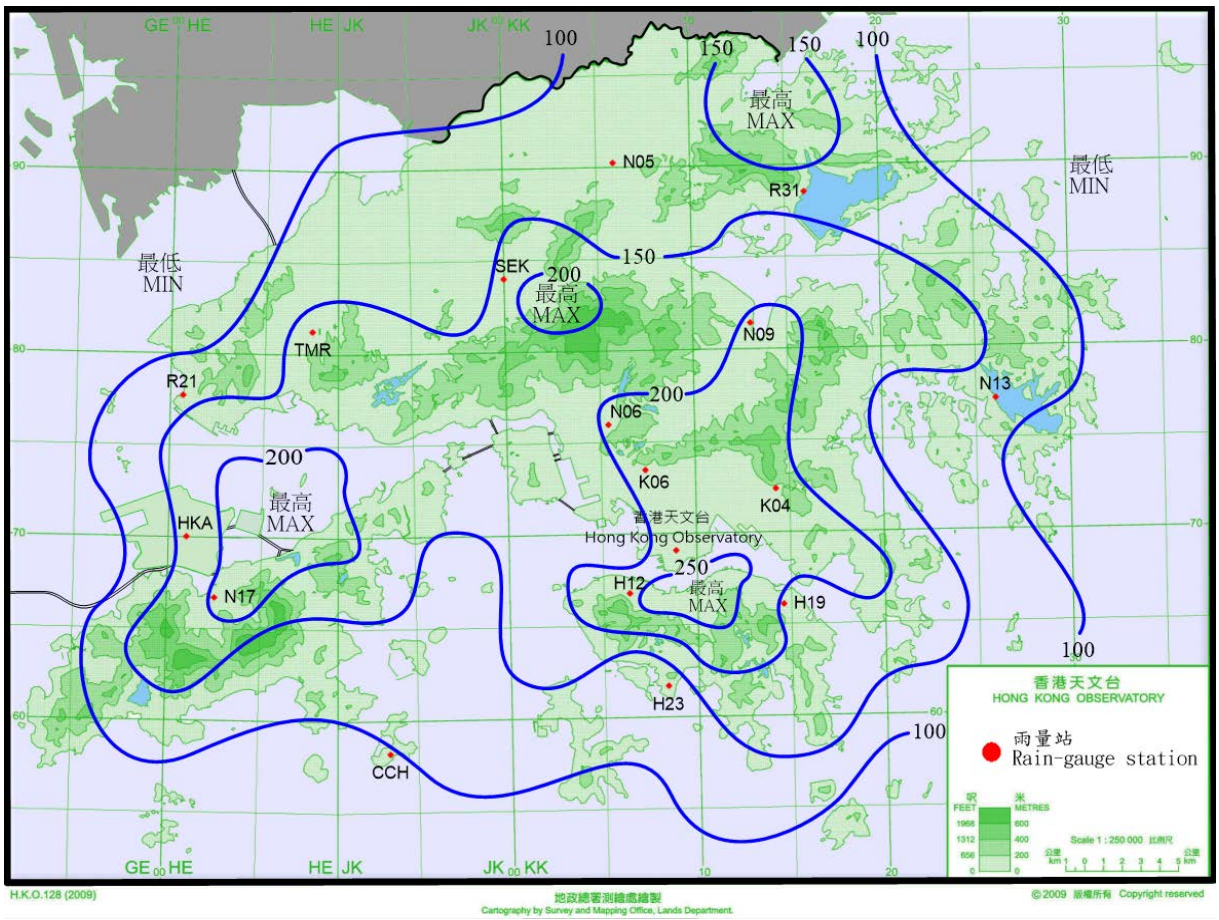


圖 3.1.2　　二零二二年六月二十九日至七月三日的雨量分佈(等雨量線單位為毫米)。

Figure 3.1.2　Rainfall distribution on 29 June – 3 July 2022 (isohyets are in millimetres).

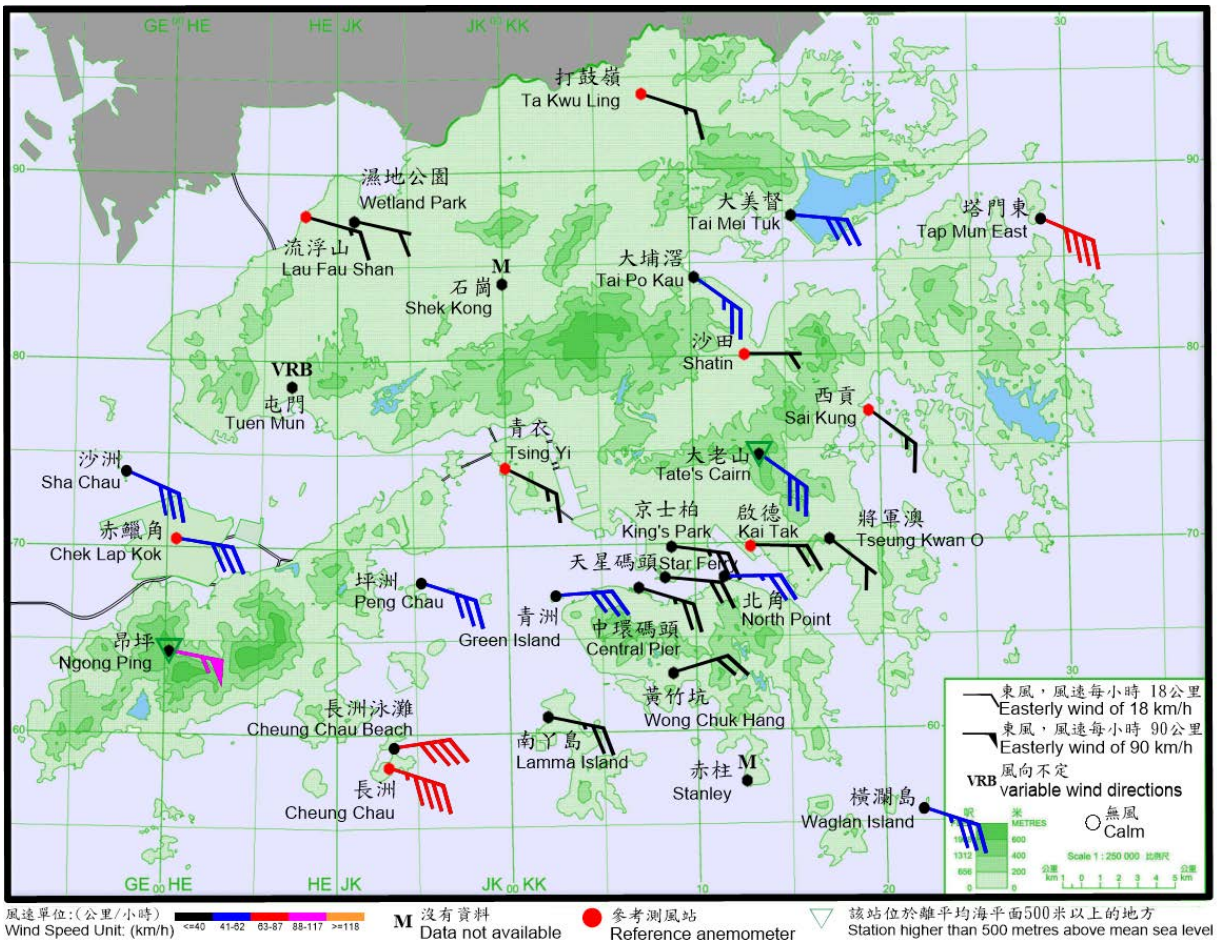


圖 3.1.3a　二零二二年七月二日上午 7 時正香港各站錄得的十分鐘平均風向和風速。

Figure 3.1.3a　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 7:00 a.m. on 2 July 2022.

註：　屯門當時錄得的十分鐘平均風速為每小時19公里。

Note:　The 10-minute mean wind speeds recorded at the time at Tuen Mun was 19 km/h.

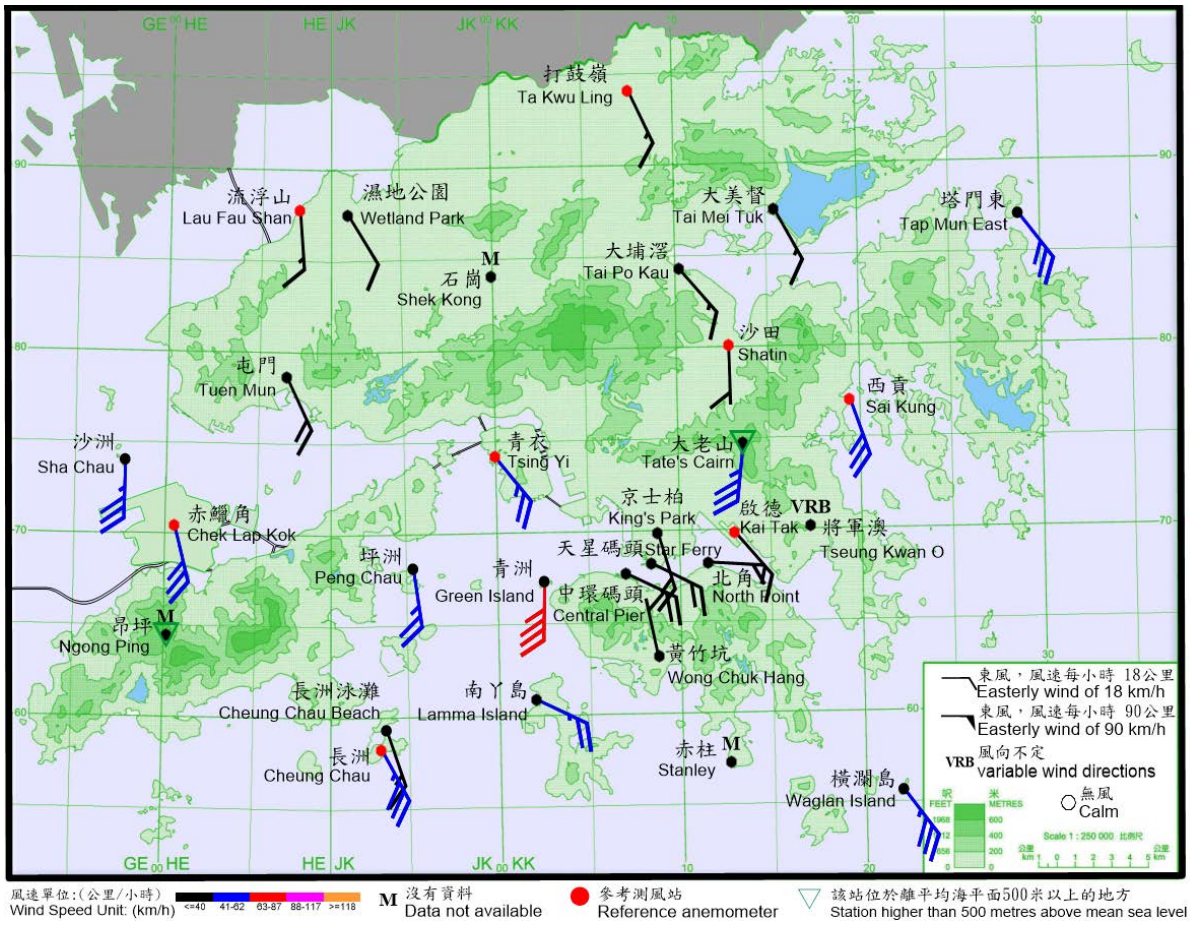


圖 3.1.3b　二零二二年七月二日晚上10時正香港各站錄得的十分鐘平均風向和風速。

Figure 3.1.3b　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 10:00 p.m. on 2 July 2022.

註：　將軍澳當時錄得的十分鐘平均風速為每小時11公里。

Note:　The 10-minute mean wind speeds recorded at the time at Tseung Kwan O was 11 km/h.

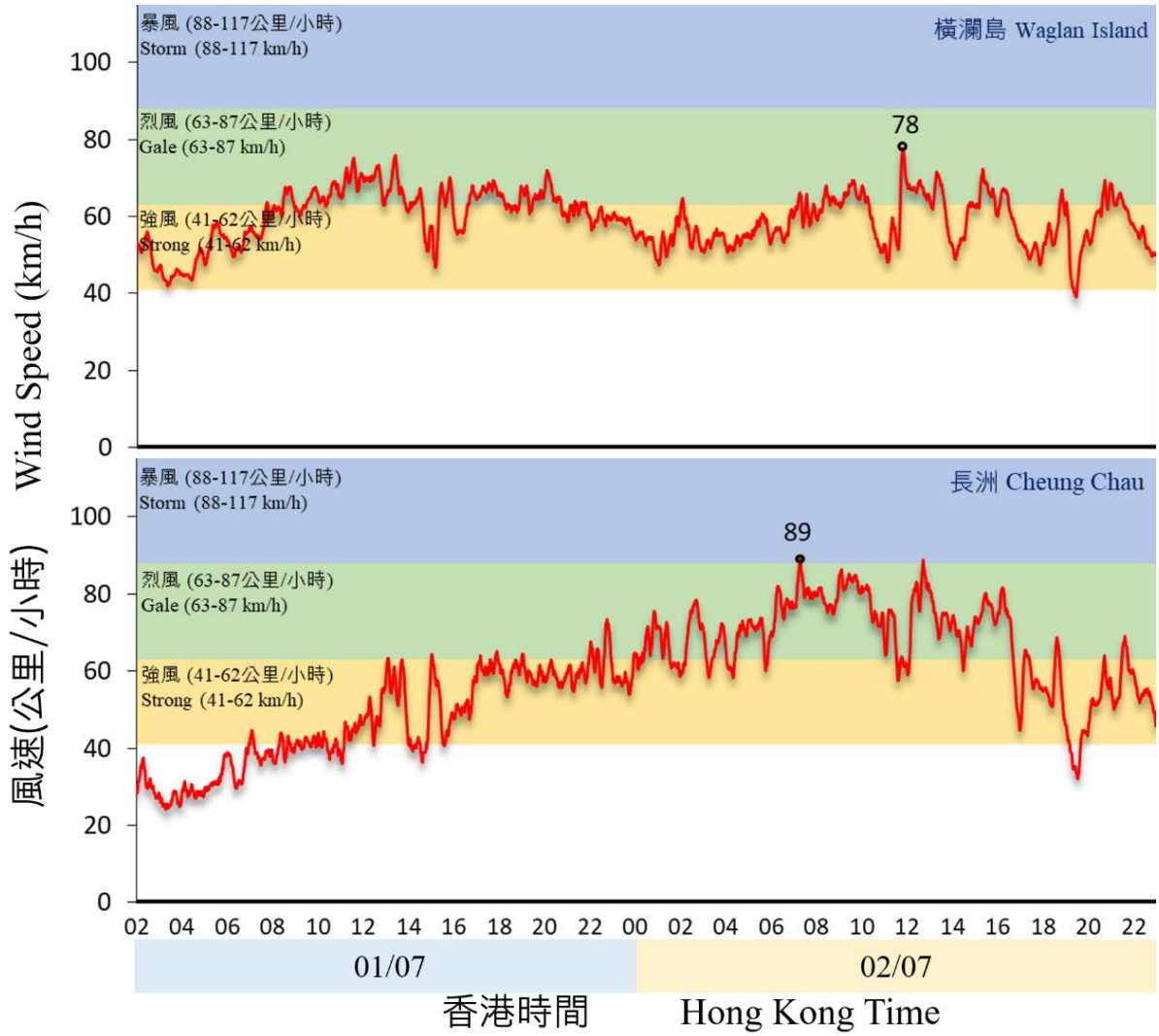


圖 3.1.4 二零二二年七月一日至二日橫瀾島及長洲錄得的十分鐘平均風速。

Figure 3.1.4 Traces of 10-minute mean wind speed recorded at Waglan Island and Cheung Chau on 1 – 2 July 2022.

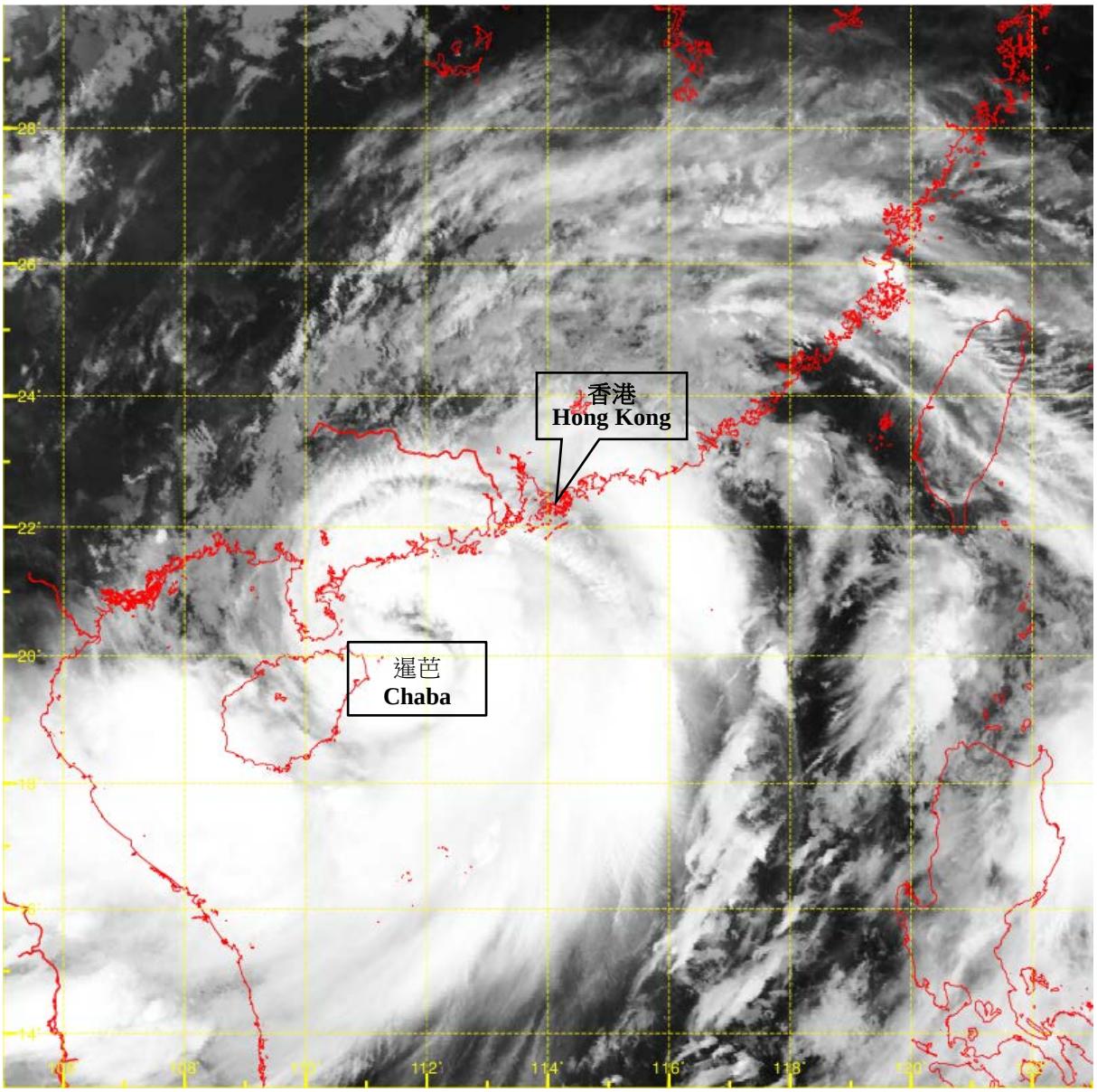


圖 3.1.5　二零二二年七月二日上午5時左右的紅外線衛星圖片，當時暹芭達到其最高強度，中心附近最高持續風速估計為每小時120公里。

Figure 3.1.5　Infra-red satellite imagery around 5 a.m. on 2 July 2022 when Chaba was at its peak intensity with estimated maximum sustained winds of 120 km/h near its centre.

〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

[The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

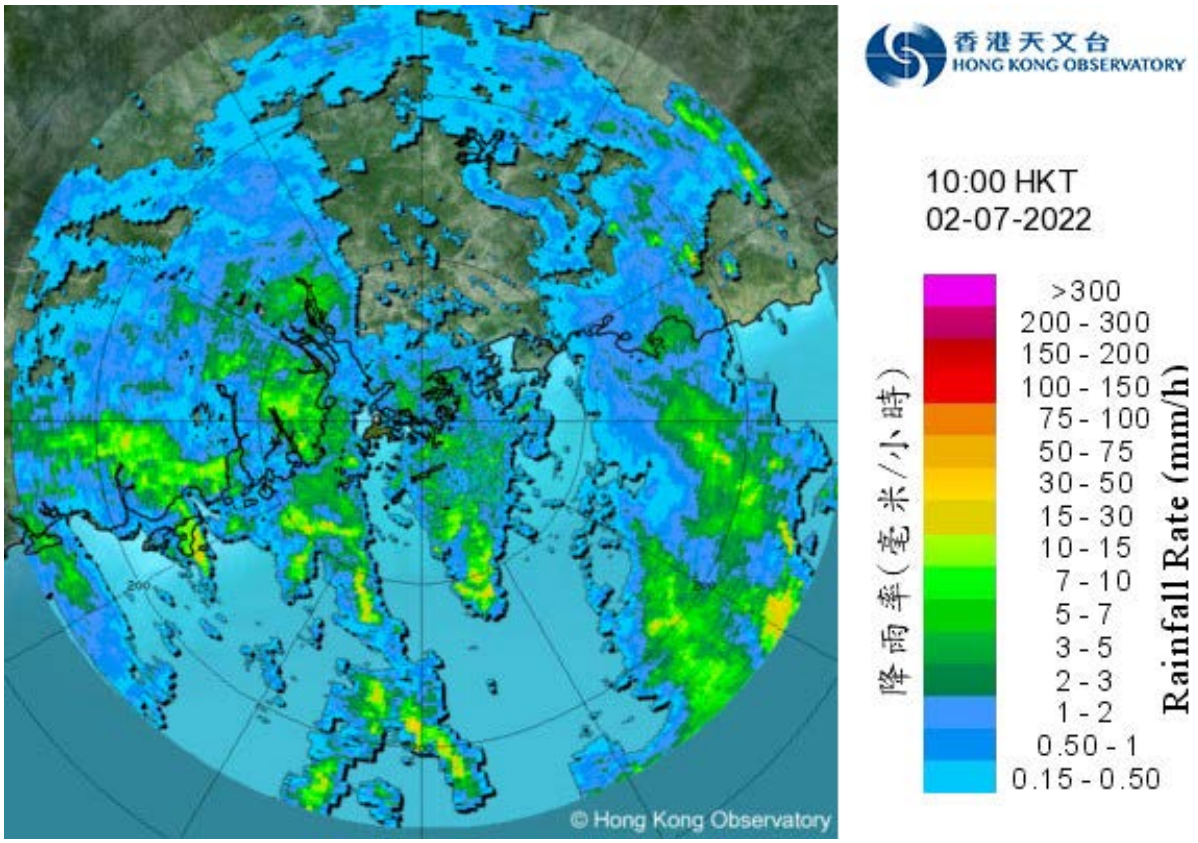


圖 3.1.6　二零二二年七月二日上午 10 時正的雷達回波圖像，當時暹芭最接近香港，在本港之西南偏西約 310 公里掠過。與暹芭相關的雨帶正影響廣東沿岸及南海北部。

Figure 3.1.6　Image of radar echoes at 10 a.m. on 2 July 2022 when Chaba was closest to Hong Kong, skirting past about 310 km west-southwest of the territory. The rainbands associated with Chaba were affecting the coast of Guangdong and the northern part of the South China Sea.

圖 3.1.7　西貢有樹木的樹枝被吹倒 (圖片由商業電台提供)

Figure 3.1.7　Some branches of a tree were blown down in Sai Kung (Courtesy of Commercial Radio Hong Kong)

3.2 熱帶低氣壓：二零二二年八月三日至四日

八月三日晚上一個熱帶低氣壓在南海東北部形成，成為二零二二年第二個影響香港的熱帶氣旋。

該熱帶低氣壓在香港之東南偏東約310公里的南海東北部上形成，採取西北偏西路徑移向珠江口以東一帶，中心附近最高持續風速估計為每小時45公里。該熱帶低氣壓於八月四日早上在惠東沿岸登陸，中午後在廣東內陸減弱為一個低壓區。

香港天文台於八月三日晚上10時10分發出一號戒備信號，當時熱帶低氣壓集結在香港之東南偏東約250公里。由於該熱帶低氣壓的環流組織較為鬆散，八月四日早上本港只普遍吹輕微至和緩的北至西北風。熱帶低氣壓於當日上午11時左右最接近本港，位置在香港天文台之東北約80公里。隨著該熱帶低氣壓在廣東內陸減弱為一個低壓區，天文台在八月四日下午2時40分取消所有熱帶氣旋警告信號。

受熱帶低氣壓及其殘餘低壓區的雨帶影響，八月三日至五日本港間中有大驟雨及狂風雷暴。八月五日的雨勢較大，當日天文台曾兩度發出黃色暴雨警告。八月三日至五日這三天期間本港普遍錄得超過100毫米雨量，東部地區的雨量更超過200毫米。

熱帶低氣壓對香港的影響不大，其間並沒有嚴重破壞報告。天文台總部於八月四日上午4時15分錄得最低瞬時海平面氣壓1003.6百帕斯卡。尖鼻咀在熱帶低氣壓掠過期間錄得最高潮位 (海圖基準面以上) 2.21米，而大埔滘則錄得最大風暴潮 (天文潮高度以上) 0.23米。

3.2 Tropical Depression: 3 to 4 August 2022

A tropical depression formed over the northeastern part of the South China Sea on the night of 3 August and it was the second tropical cyclone affecting Hong Kong in 2022.

The tropical depression formed over the northeastern part of the South China Sea about 310 km east-southeast of Hong Kong. It tracked west-northwestwards towards the east of the Pearl River Estuary with an estimated maximum sustained wind of 45 km/h near its centre. The tropical depression made landfall over the coast of Huidong on the morning of 4 August and degenerated into an area of low pressure over inland Guangdong after noon.

The Observatory issued the Standby Signal No. 1 at 10:10 p.m. on 3 August when the tropical depression was about 250 km east-southeast of Hong Kong. As the circulation of the tropical depression was relatively loose, local winds were only generally light to moderate north to northwesterlies on the morning of 4 August. The tropical depression came closest to Hong Kong at around 11 a.m. on that day when it was about 80 km northeast of the Observatory Headquarters. With the tropical depression degenerating into an area of low pressure over inland Guangdong, all tropical cyclone warning signals were cancelled at 2:40 p.m. on 4 August.

Under the influence of the rainbands of the tropical depression and its remnant low pressure area, there were occasional heavy showers and squally thunderstorms in Hong Kong on 3 - 5 August. The rain was heaviest on 5 August and the Observatory issued the Amber Rainstorm Warning twice on that day. More than 100 millimetres of rainfall were generally recorded over Hong Kong during 3 - 5 August, rainfall even exceeded 200 millimetres over the eastern part of the territory.

The tropical depression did not cause any significant damage in Hong Kong during its passage. At the Observatory Headquarters, the lowest instantaneous mean sea-level pressure of 1003.6 hPa was recorded at 4:15 a.m. on 4 August. A maximum sea level (above chart datum) of 2.21 m and a maximum storm surge of 0.23 m (above astronomical tide) were recorded at Tsim Bei Tsui and Tai Po Kau respectively.

表 3.2.1　在熱帶低氣壓影響下，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 the tropical depression 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	西北偏西	WNW	27	4/8	09:30	西	W	19	4/8	10:00
長洲	Cheung Chau	西	W	32	4/8	08:57	西	W	19	4/8	09:00
長洲泳灘	Cheung Chau Beach	西	W	26	4/8	08:38	西	W	11	4/8	09:00
青洲	Green Island	西北偏北	NNW	33	4/8	06:23	東北偏東	ENE	23	4/8	00:00
香港國際機場	Hong Kong International Airport	西北偏西	WNW	37	4/8	08:38	西	W	18	4/8	09:00
啟德	Kai Tak	東南偏東	ESE	21	4/8	14:34	西	W	9	4/8	10:00
京士柏	King's Park	西	W	25	4/8	09:39	西	W	10	4/8	10:00
南丫島	Lamma Island	西北	NW	32	4/8	09:36	西北	NW	22	4/8	10:00
流浮山	Lau Fau Shan	北	N	31	4/8	07:27	北	N	15	4/8	08:00
北角	North Point	西南偏西	WSW	26	4/8	09:37	西	W	18	4/8	10:00
		西南偏西	WSW	26	4/8	09:39					
坪洲	Peng Chau	西北偏西	WNW	30	4/8	09:08	西北	NW	16	4/8	10:00
平洲	Ping Chau	西	W	25	4/8	10:06	西南偏西	WSW	12	4/8	11:00
西貢	Sai Kung	東南偏南	SSE	27	4/8	14:38	東南偏南	SSE	9	4/8	14:00
		東南偏南	SSE	27	4/8	14:40					
沙洲	Sha Chau	西南偏西	WSW	33	4/8	08:21	北	N	18	4/8	08:00
沙螺灣	Sha Lo Wan	西南	SW	26	4/8	08:10	西北偏西	WNW	10	4/8	09:00
沙田	Sha Tin	東北偏北	NNE	17	4/8	06:24	北	N	6	4/8	07:00
九龍天星碼頭	Star Ferry (Kowloon)	西	W	24	4/8	09:32	西	W	19	4/8	10:00
		西	W	24	4/8	09:33					
打鼓嶺	Ta Kwu Ling	西北	NW	14	4/8	08:12	西北	NW	4	4/8	09:00
大美督	Tai Mei Tuk	東南	SE	24	4/8	13:59	西	W	11	4/8	11:00
		東南	SE	24	4/8	14:40					
大埔滘	Tai Po Kau	西北偏西	WNW	24	4/8	08:19	西	W	10	4/8	09:00
塔門東	Tap Mun East	西北	NW	29	4/8	07:23	西北	NW	14	4/8	08:00
大老山	Tate's Cairn	西北	NW	37	4/8	08:01	西北偏北	NNW	26	4/8	07:00
將軍澳	Tseung Kwan O	東北偏北	NNE	17	3/8	22:11	東北偏北	NNE	6	3/8	23:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	西北偏西	WNW	19	4/8	06:35	西北	NW	10	4/8	07:00
		西北偏西	WNW	19	4/8	06:36					
屯門政府合署	Tuen Mun Government Offices	東北偏北	NNE	21	4/8	08:21	東北偏北	NNE	10	4/8	09:00
橫瀾島	Waglan Island	東北	NE	26	3/8	22:16	東北	NE	21	3/8	23:00
		東北	NE	26	3/8	22:17					
		東北	NE	26	3/8	22:18					
濕地公園	Wetland Park	西北	NW	12	4/8	07:22	西南偏西	WSW	3	4/8	13:00
黃竹坑	Wong Chuk Hang	-	-	23	3/8	23:58	-	-	6	4/8	14:00

黃麻角(赤柱)、昂坪、石崗、大帽山 - 沒有資料　Bluff Head (Stanley), Ngong Ping, Shek Kong, Tai Mo Shan - data not available

青洲 - 數據不完整　Green Island - incomplete data

黃竹坑 - 沒有風向資料　Wong Chuk Hang - wind direction not available

表 3.2.2　熱帶低氣壓影響香港期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.2.2　Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of the tropical depression

站 (參閱圖 3.2.2) Station (See Fig. 3.2.2)			八月三日 3 Aug	八月四日 4 Aug	八月五日 5 Aug	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			34.9	14.9	165.5	215.3
香港國際機場 Hong Kong International Airport (HKA)			0.3	68.4	52.1	120.8
長洲 Cheung Chau (CCH)			3.0	5.0	61.0	69.0
H23	香港仔	Aberdeen	19.0	8.5	148.5	176.0
N05	粉嶺	Fanling	2.0	67.0	93.0	162.0
N13	糧船灣	High Island	3.0	30.0	117.5	150.5
K04	佐敦谷	Jordan Valley	96.0	23.0	147.5	266.5
N06	葵涌	Kwai Chung	14.0	13.0	146.5	173.5
H12	半山區	Mid Levels	22.0	11.5	170.0	203.5
N09	沙田	Sha Tin	24.5	44.0	135.0	203.5
H19	筲箕灣	Shau Kei Wan	33.5	9.0	156.0	198.5
SEK	石崗	Shek Kong	3.5	34.0	60.5	98.0
K06	蘇屋邨	So Uk Estate	16.0	16.5	161.5	194.0
R31	大美督	Tai Mei Tuk	28.0	39.0	125.0	192.0
R21	踏石角	Tap Shek Kok	5.0	29.5	53.5	88.0
N17	東涌	Tung Chung	1.0	40.5	55.0	96.5
TMR	屯門水庫	Tuen Mun Reservoir	12.5	19.5	73.3	105.3

表 3.2.3　熱帶低氣壓影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.2.3　Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of the tropical depression

站 (參閱圖 1.1) Station (See Fig. 1.1)		最高潮位 (海圖基準面以上) Maximum sea level (above chart datum)			最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide)		
		高度(米) Height (m)	日期/月份 Date/Month	時間 Time	高度(米) Height (m)	日期/月份 Date/Month	時間 Time
鰂魚涌	Quarry Bay	1.84	4/8	13:56	0.15	3/8	22:11
石壁	Shek Pik	1.88	4/8	12:56	0.07	4/8	12:12
大廟灣	Tai Miu Wan	1.78	4/8	11:35	0.15	3/8	22:02
大埔滘	Tai Po Kau	1.84	4/8	10:37	0.23	3/8	22:15
尖鼻咀	Tsim Bei Tsui	2.21	4/8	13:38	0.14	4/8	12:48

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

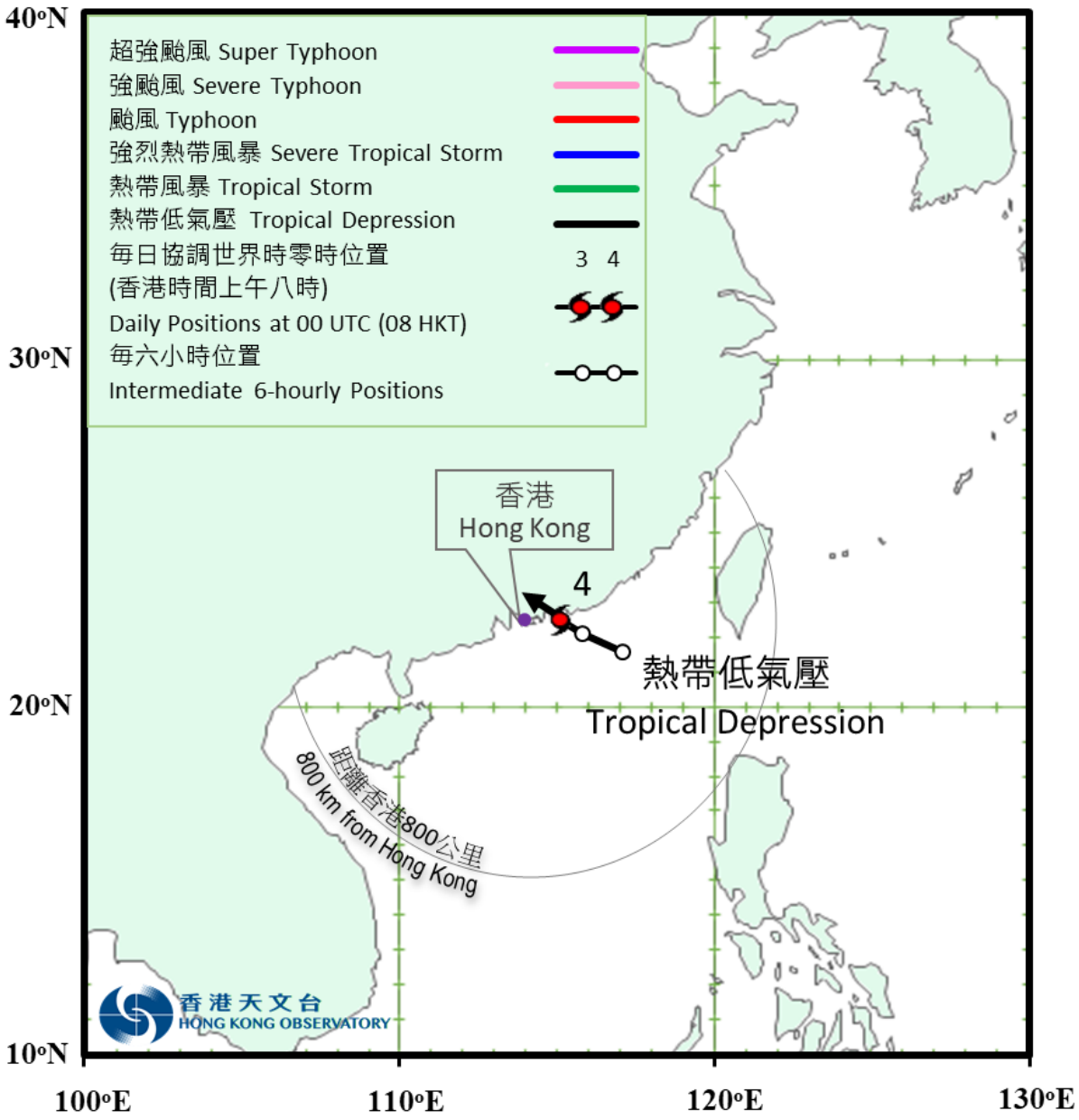


圖 3.2.1a　　二零二二年八月三日至四日熱帶低氣壓的路徑圖。

Figure 3.2.1a　Track of the tropical depression: 3 – 4 August 2022.

圖 3.2.1b　　熱帶低氣壓接近香港時的路徑圖。

Figure 3.2.1b　Track of the tropical depression near Hong Kong.

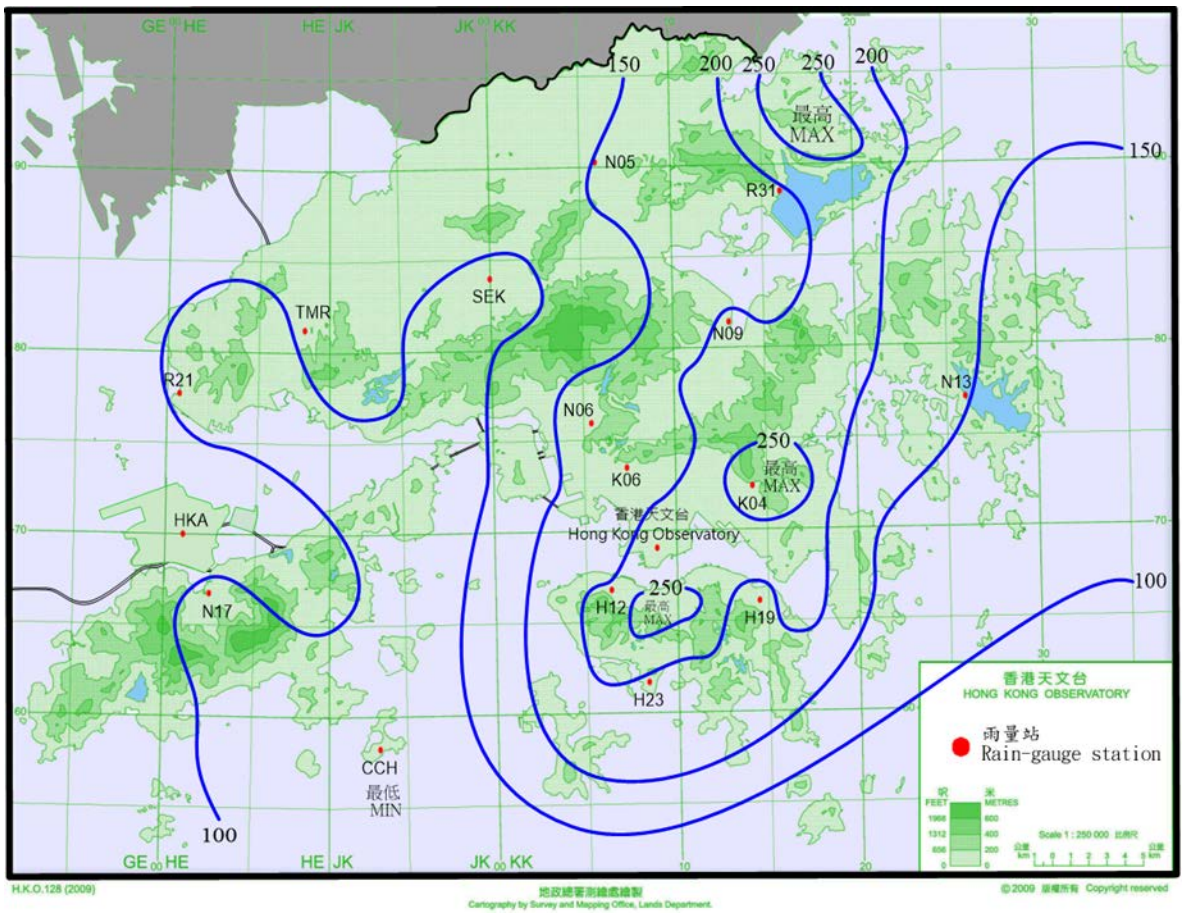


圖 3.2.2　　二零二二年八月三日至五日的雨量分佈(等雨量線單位為毫米) 。

Figure 3.2.2　Rainfall distribution on 3 – 5 August 2022 (isohyets are in millimetres).

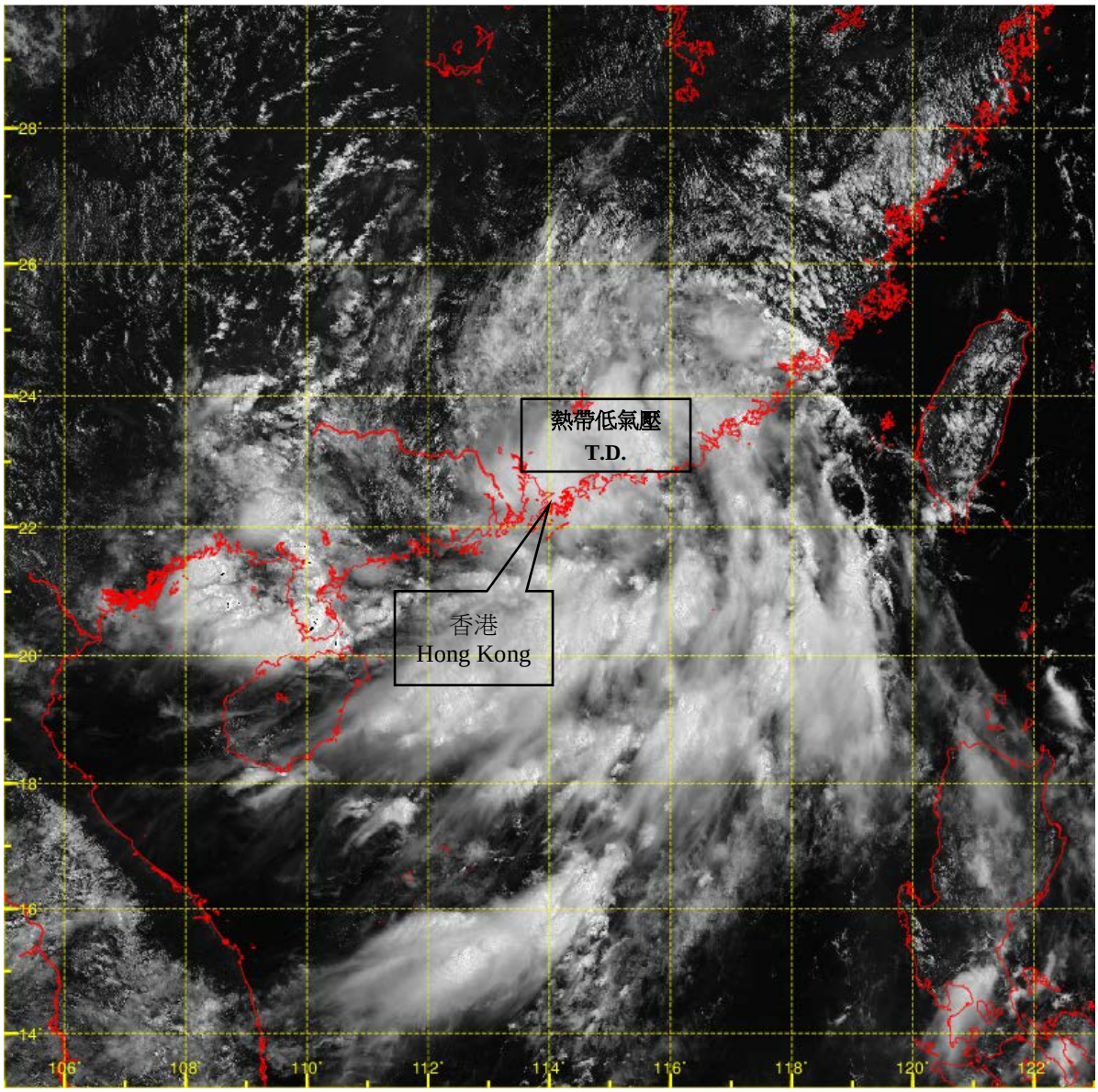


圖 3.2.3　二零二二年八月四日上午11時正的可見光衛星圖片，當時熱帶低氣壓最接近本港，位置在香港天文台之東北約80公里。

Figure 3.2.3　Visible satellite imagery at 11:00 a.m. on 4 August 2022 when the tropical depression was closest to Hong Kong and it was about 80 km northeast of the Observatory Headquarters.

〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

[The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

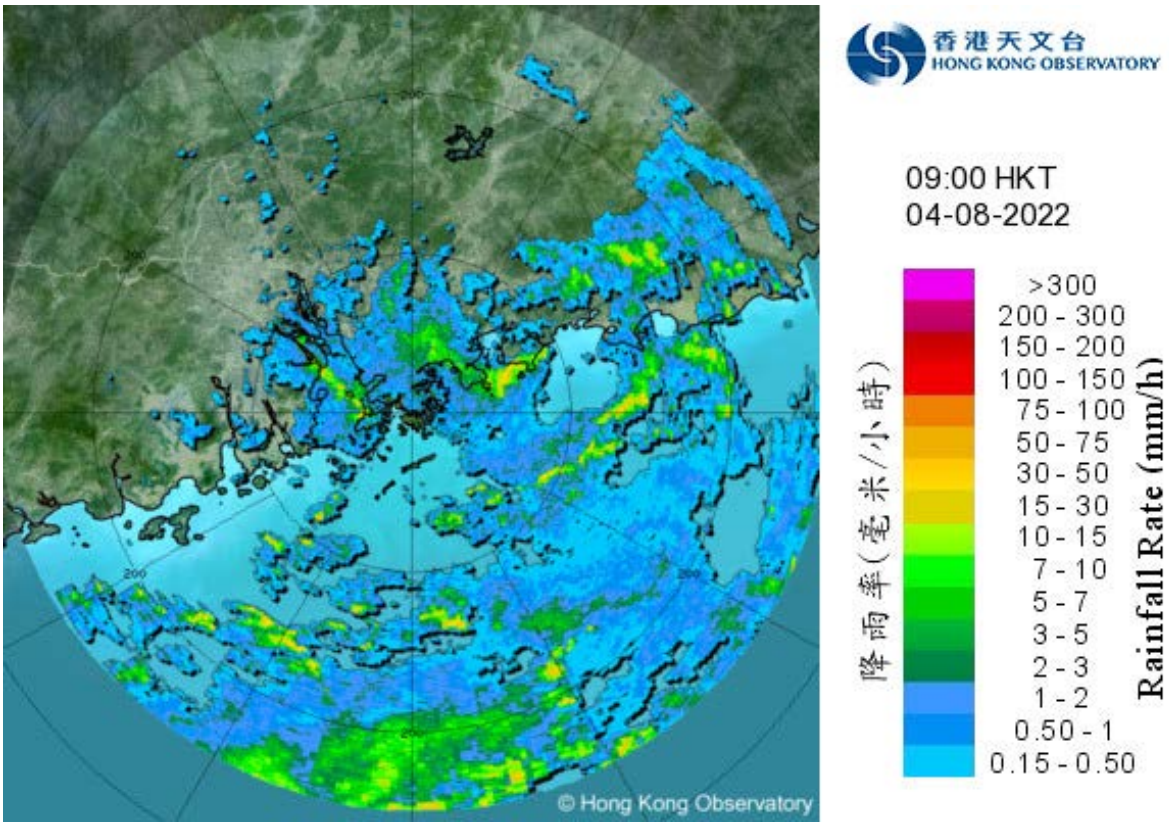


圖 3.2.4　二零二二年八月四日上午9時正的雷達回波圖像，與熱帶低氣壓相關的雨帶正影響廣東沿岸及南海北部。

Figure 3.2.4　Image of radar echoes at 9:00 a.m. on 4 August 2022. The rainbands associated with the tropical depression affecting the coast of Guangdong and the northern part of the South China Sea.

3.3 熱帶風暴木蘭(2207)：二零二二年八月九日至十一日

木蘭是二零二二年第三個影響香港的熱帶氣旋。

熱帶低氣壓木蘭於八月九日凌晨在香港之西南偏南約700公里的南海中部上形成，初時向北至東北偏北方向移動。當日下午木蘭增強為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65公里。木蘭當晚轉向西北移動，八月十日掠過海南島東北部及雷州半島南部，晚上橫過北部灣。八月十一日木蘭在越南北部登陸及在內陸減弱為低壓區。

八月九日凌晨木蘭形成後，香港天文台在當日上午3時40分發出一號戒備信號，當時木蘭集結在香港之西南偏南約670公里。本港當日早上普遍吹和緩至清勁偏東風，離岸及高地間中吹強風。隨著木蘭向北靠近海南島一帶，天文台在八月九日上午11時25分發出三號強風信號，當時木蘭位於香港之西南偏南約590公里。當日下午及翌日本港普遍吹清勁至強風程度的東至東南風，離岸及高地間中吹烈風。在與木蘭相關的強雨帶影響下，長洲在八月九日晚上9時左右曾錄得每小時108公里的陣風。木蘭於八月十日早上8時左右最接近香港，在本港西南約400公里處掠過。隨著木蘭遠離香港，本港風力在八月十日日間逐漸緩和，天文台於當日下午6時20分取消所有熱帶氣旋警告信號。

在木蘭的影響下，尖鼻咀錄得最高潮位(海圖基準面以上) 3.21米，而大埔滘則錄得最大風暴潮(天文潮高度以上) 0.51米。天文台總部於八月九日下午4時31分錄得最低瞬時海平面氣壓1001.5百帕斯卡。

木蘭廣闊的外圍雨帶在八月九日至十日為本港帶來大驟雨、猛烈陣風及雷暴。這兩天期間本港普遍地區錄得超過100毫米雨量，大嶼山部分地區的雨量更超過200毫米。

木蘭吹襲香港期間，本港有多宗塌樹報告。在猛烈陣風下尖沙咀有圍板被吹翻。柴灣及灣仔分別有大樹倒塌，損毀六輛小巴及一支街燈。觀塘及跑馬地亦有大樹被強風吹倒阻礙行車線，引致交通受阻。

3.3 Tropical Storm Mulan (2207): 9 to 11 August 2022

Mulan was the third tropical cyclone affecting Hong Kong in 2022.

Mulan formed as a tropical depression over the central part of the South China Sea about 700 km south-southwest of Hong Kong in the small hours on 9 August. It moved north to north-northeastwards at first. Mulan intensified into a tropical storm in the afternoon and reached its peak intensity with an estimated maximum sustained wind of 65 km/h near its centre. It turned to move northwestwards that night. Mulan skirted past the northeastern part of Hainan Island and the southern part of Leizhou Peninsula on 10 August and moved across Beibu Wan at night. It made landfall over the northern part of Vietnam and weakened into an area of low pressure over inland on 11 August.

After the formation of Mulan in the small hours on 9 August, the Hong Kong Observatory issued the Standby Signal No. 1 at 3:40 a.m. when Mulan was about 670 km south-southwest of Hong Kong. Local winds were moderate to fresh easterlies in that morning, occasionally reaching strong force offshore and on high ground. With Mulan moving northwards and edging closer to the vicinity of Hainan Island, the Strong Wind Signal No. 3 was issued at 11:25 a.m. on 9 August when Mulan was about 590 km south-southwest of Hong Kong. Local winds were generally fresh to strong east to southeasterlies that night and the next day, occasionally reaching gale force offshore and on high ground. Affected by the intense rainbands associated with Mulan, gust of 108 km/h was recorded at Cheung Chau at around 9 p.m. on 9 August. Mulan was closest to Hong Kong at around 8 a.m. on 10 August, skirting past at around 400 km southwest of the territory. With Mulan departing from Hong Kong, local winds moderated gradually during the day on 10 August and all tropical cyclone warning signals were cancelled at 6:20 p.m. on that day.

Under the influence of Mulan, a maximum sea level (above chart datum) of 3.21 m and a maximum storm surge of 0.51 m (above astronomical tide) were recorded at Tsim Bei Tsui and Tai Po Kau respectively. At the Observatory Headquarters, the lowest instantaneous mean sea-level pressure of 1001.5 hPa was recorded at 4:31 p.m. on 9 August.

The broad outer rainbands of Mulan brought heavy showers, violent gusts and thunderstorms to Hong Kong on 9 - 10 August. More than 100 millimetres of rainfall were generally recorded over Hong Kong on these two days and rainfall even exceeded 200 millimetres over parts of Lantau Island.

A number of fallen trees were reported in Hong Kong during the passage of Mulan. A hoarding in Tsim Sha Tsui was blown down under violent gusts. There were toppled trees at Chai Wan and Wan Chai, damaging six minibuses and a street lamp. The fallen trees at Kwun Tong and Happy Valley also blocked traffic lanes, resulting in disruption of traffic.

表 3.3.1　在木蘭影響下，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 Mulan 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	東南	SE	71	9/8	14:31	東南偏東	ESE	39	10/8	05:00
長洲	Cheung Chau	東南偏東	ESE	108	9/8	20:59	東南偏東	ESE	69	10/8	03:00
長洲泳灘	Cheung Chau Beach	東	E	102	9/8	20:59	東	E	62	10/8	05:00
青洲	Green Island	東南偏東	ESE	94	10/8	11:42	東	E	47	10/8	03:00
香港國際機場	Hong Kong International Airport	東南偏南	SSE	77	10/8	14:16	東南偏東	ESE	40	10/8	06:00
啟德	Kai Tak	東南偏東	ESE	71	10/8	05:09	東	E	30	10/8	03:00
京士柏	King's Park	東南偏南	SSE	78	10/8	11:41	東	E	35	10/8	03:00
南丫島	Lamma Island	東南偏東	ESE	82	10/8	05:18	東	E	37	10/8	05:00
流浮山	Lau Fau Shan	東南偏東	ESE	58	9/8	15:26	東南	SE	27	10/8	15:00
北角	North Point	東	E	72	9/8	14:30	東	E	39	9/8	08:00
坪洲	Peng Chau	東南	SE	77	10/8	11:43	東南偏東	ESE	42	10/8	05:00
平洲	Ping Chau	東南偏東	ESE	31	9/8	19:40	東北偏東	ENE	8	9/8	13:00
							東	E	8	10/8	18:00
西貢	Sai Kung	東南	SE	77	9/8	08:42	東南偏南	SSE	32	10/8	16:00
沙洲	Sha Chau	南	S	85	10/8	14:19	東南	SE	44	10/8	11:00
沙螺灣	Sha Lo Wan	東	E	87	10/8	03:37	東	E	35	10/8	05:00
沙田	Sha Tin	東	E	57	9/8	11:09	東南偏南	SSE	21	10/8	09:00
九龍天星碼頭	Star Ferry (Kowloon)	東	E	77	10/8	11:39	東	E	39	10/8	08:00
打鼓嶺	Ta Kwu Ling	東	E	61	10/8	05:01	東	E	24	10/8	02:00
大美督	Tai Mei Tuk	東北偏東	ENE	85	9/8	19:45	東	E	53	9/8	20:00
大帽山	Tai Mo Shan	東南偏東	ESE	118	10/8	06:15	東南偏東	ESE	82	10/8	05:00
大埔滘	Tai Po Kau	東南	SE	73	10/8	07:50	東南	SE	40	10/8	02:00
							東南偏東	ESE	40	10/8	04:00
塔門東	Tap Mun East	東南偏東	ESE	98	9/8	19:33	東南偏東	ESE	66	9/8	20:00
大老山	Tate's Cairn	東南偏東	ESE	107	9/8	11:04	東南偏東	ESE	63	10/8	05:00
		東南偏東	ESE	107	9/8	11:05					
將軍澳	Tseung Kwan O	東	E	58	10/8	02:09	東南	SE	18	10/8	03:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	東南	SE	67	10/8	06:49	東南偏東	ESE	24	10/8	03:00
屯門政府合署	Tuen Mun Government Offices	東南偏東	ESE	69	10/8	10:41	東南	SE	26	10/8	15:00
橫瀾島	Waglan Island	東	E	91	9/8	06:59	東	E	63	9/8	08:00
濕地公園	Wetland Park	東南	SE	47	10/8	09:58	東南偏東	ESE	17	10/8	10:00
黃竹坑	Wong Chuk Hang	-	-	69	9/8	12:30	-	-	27	10/8	05:00

黃麻角(赤柱)、昂坪、石崗 - 沒有資料　Bluff Head (Stanley), Ngong Ping, Shek Kong - data not available

黃竹坑 - 沒有風向資料　Wong Chuk Hang - wind direction not available

表 3.3.2　在木蘭影響下，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程度的時段

Table 3.3.2　Periods during which sustained strong force winds were attained at the eight reference anemometers in the tropical cyclone warning system when tropical cyclone warning signals for Mulan 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	
		日期/月份 Date/Month	時間 Time	日期/月份 Date/Month	時間 Time
長洲	Cheung Chau	9/8	07:29	10/8	16:01
香港國際機場	Hong Kong International Airport	9/8	21:19	10/8	14:39
西貢	Sai Kung	9/8	08:47	9/8	21:37

流浮山，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 Lau Fau Shan, Kai Tak, Sha Tin, Ta Kwu Ling and Tsing Yi Shell Oil Depot.

* 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

註:　本表列出持續風力達到強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 force winds. Winds might fluctuate above or below the specified wind speeds in between the times indicated.

表 3.3.3　木蘭影響香港期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.3.3　Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Mulan

站 (參閱圖 3.3.2) Station (See Fig. 3.3.2)			八月九日 9 Aug	八月十日 10 Aug	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			72.0	49.7	121.7
香港國際機場 Hong Kong International Airport (HKA)			48.6	121.4	170.0
長洲 Cheung Chau (CCH)			39.0	116.5	155.5
H23	香港仔	Aberdeen	69.5	44.5	114.0
N05	粉嶺	Fanling	99.5	36.0	135.5
N13	糧船灣	High Island	41.0	59.0	100.0
K04	佐敦谷	Jordan Valley	74.0	48.0	122.0
N06	葵涌	Kwai Chung	92.0	62.5	154.5
H12	半山區	Mid Levels	54.5	53.0	107.5
N09	沙田	Sha Tin	95.5	37.0	132.5
H19	筲箕灣	Shau Kei Wan	57.0	34.0	91.0
SEK	石崗	Shek Kong	86.5	89.0	175.5
K06	蘇屋邨	So Uk Estate	96.0	64.5	160.5
R31	大美督	Tai Mei Tuk	75.5	46.5	122.0
R21	踏石角	Tap Shek Kok	60.0	86.0	146.0
N17	東涌	Tung Chung	66.0	163.5	229.5
TMR	屯門水庫	Tuen Mun Reservoir	81.3	85.7	167.0

表 3.3.4　木蘭影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.3.4　Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Mulan

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	2.72	10/8	05:31	0.40	9/8	11:54
石壁	Shek Pik	2.82	10/8	06:37	0.42	9/8	22:35
大廟灣	Tai Miu Wan	2.72	10/8	05:33	0.44	9/8	21:21
大埔滘	Tai Po Kau	2.74	10/8	05:30	0.51	9/8	20:24
尖鼻咀	Tsim Bei Tsui	3.21	10/8	07:35	0.39	9/8	18:31

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

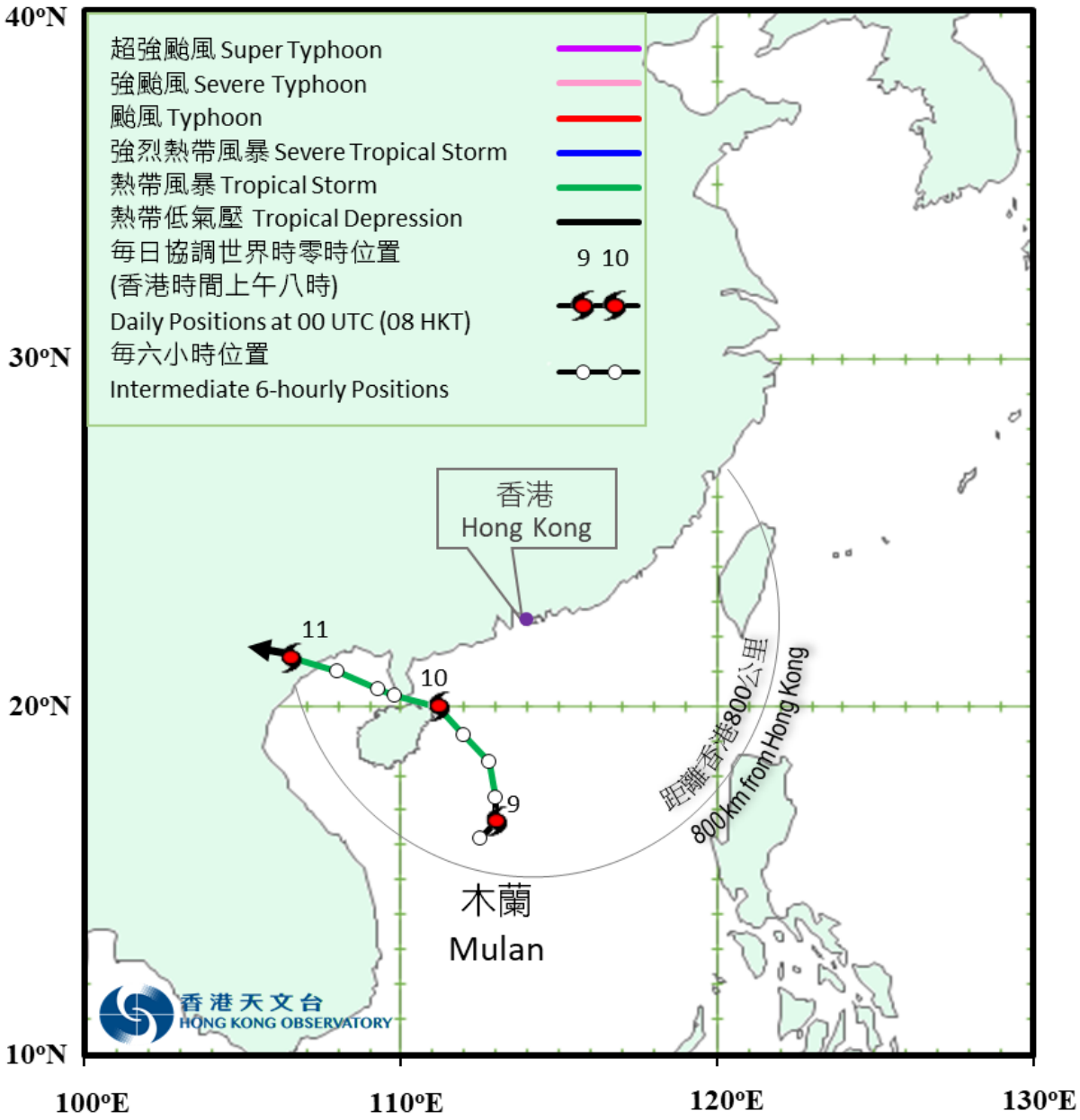


圖 3.3.1　　二零二二年八月九日至十一日木蘭(2207)的路徑圖。

Figure 3.3.1　Track of Mulan(2207) : 9 – 11 August 2022.

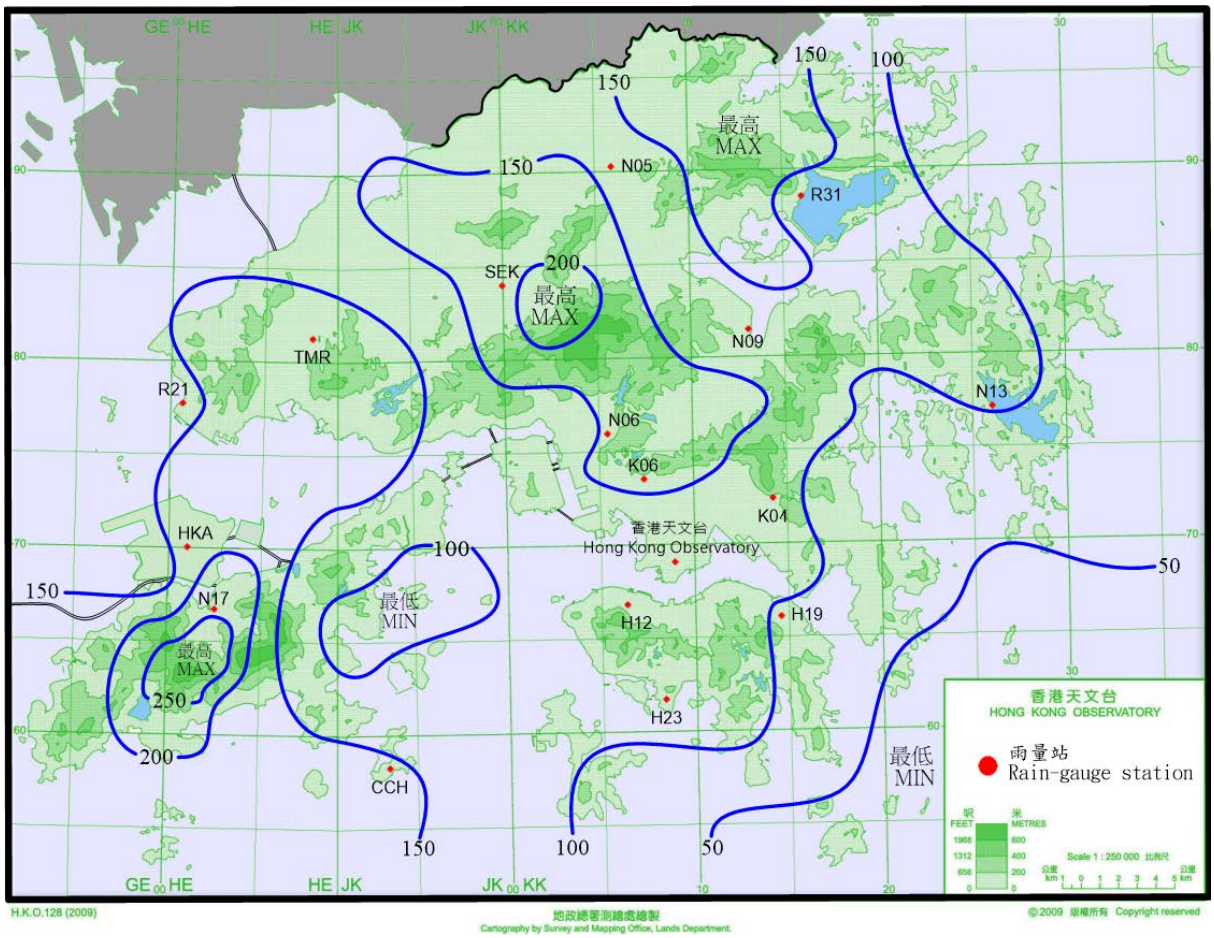


圖 3.3.2　　二零二二年八月九日至十日的雨量分佈(等雨量線單位為毫米)。

Figure 3.3.2　Rainfall distribution on 9 – 10 August 2022 (isohyets are in millimetres).

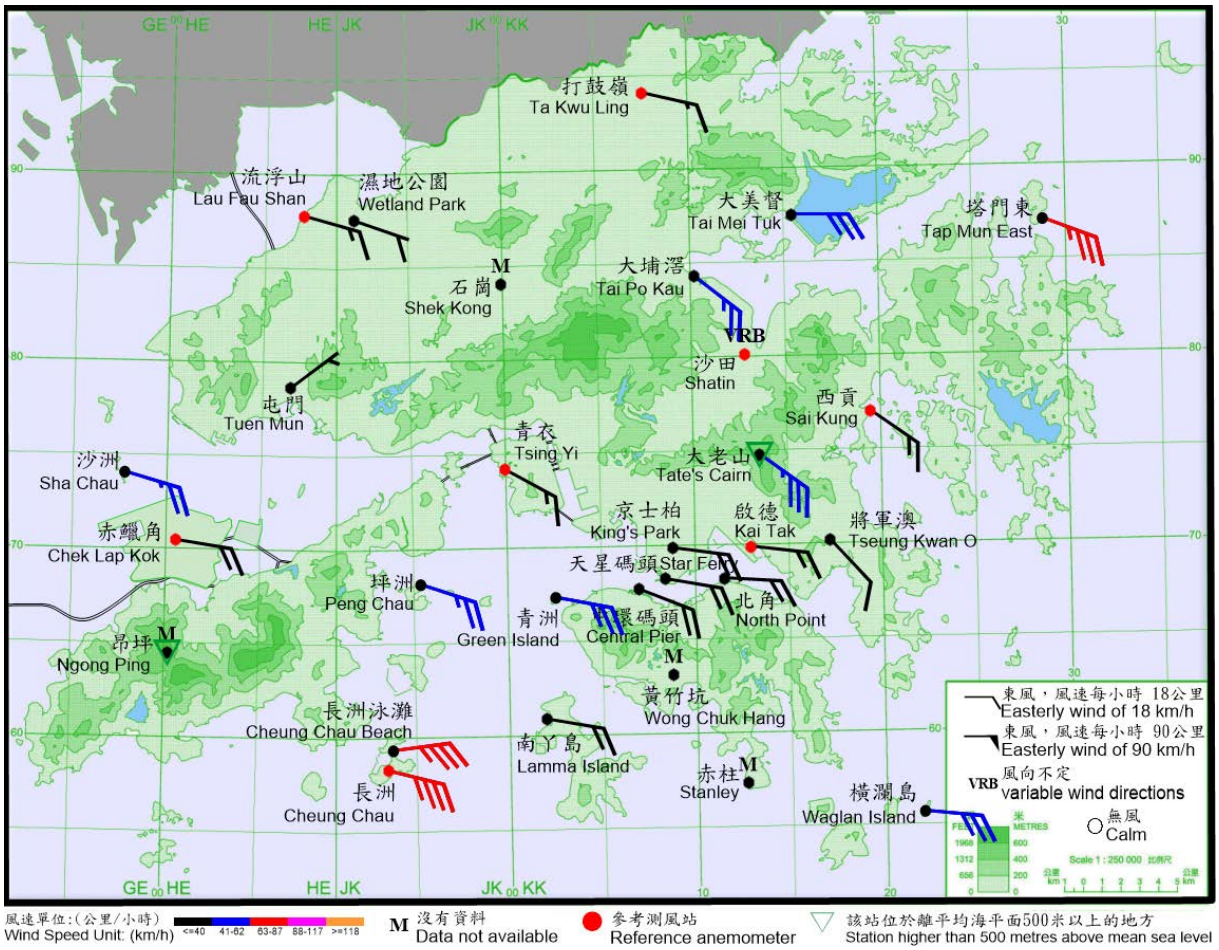


圖 3.3.3　　二零二二年八月十日上午 2 時 40 分香港各站錄得的十分鐘平均風向和風速。

Figure 3.3.3　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 2:40 a.m. on 10 August 2022.

註：　沙田當時錄得的十分鐘平均風速為每小時12公里。

Note:　The 10-minute mean wind speeds recorded at the time at Sha Tin was 12 km/h.

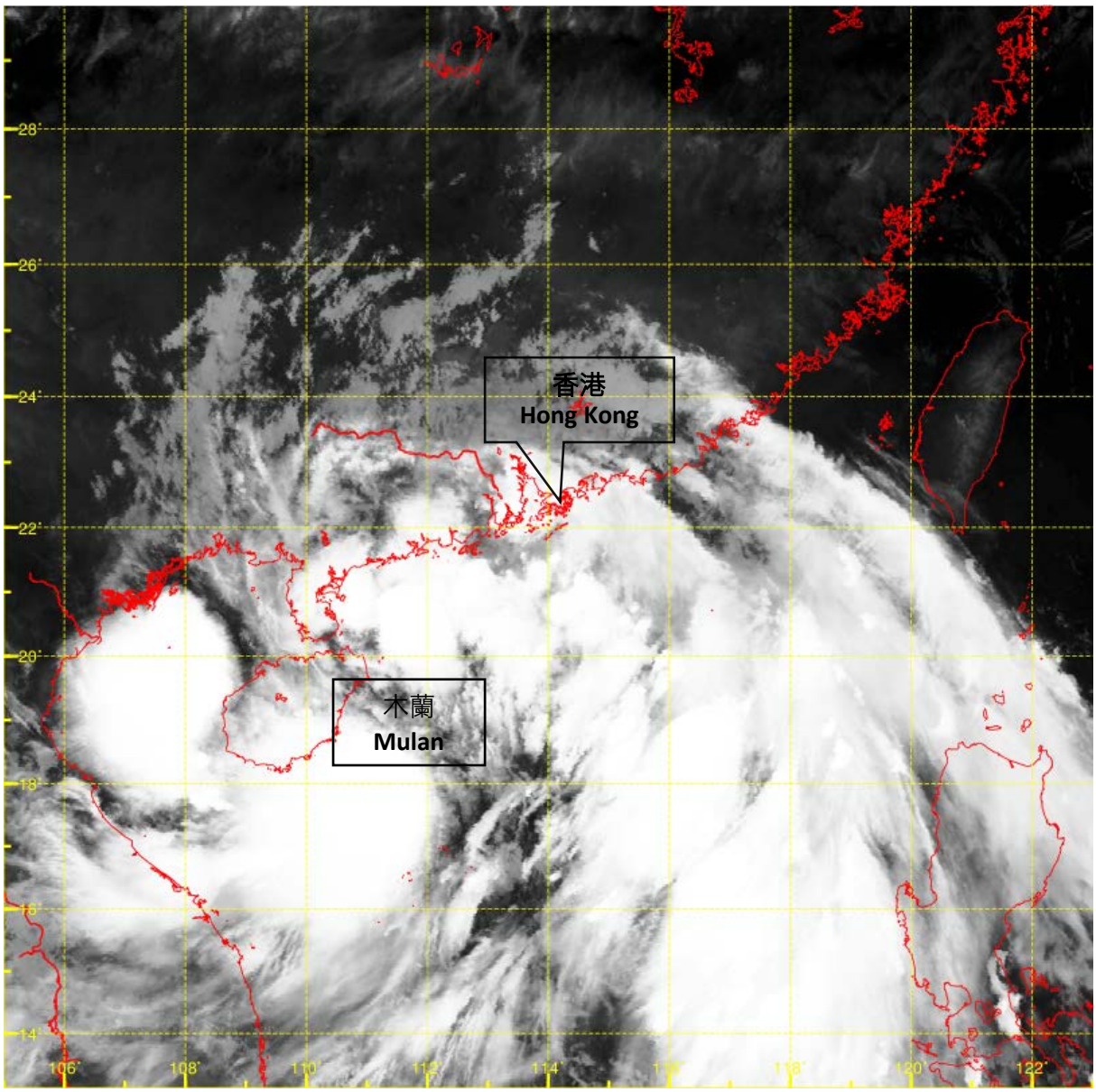


圖 3.3.4　二零二二年八月十日上午 2 時左右的紅外線衛星圖片顯示木蘭廣闊的環流。木蘭的強雨帶主要集中在其外圍，具有季風低壓的特徵。

Figure 3.3.4　Infra-red satellite imagery around 2 a.m. on 10 August 2022 showing Mulan's broad circulation. Mulan exhibited characteristics of a monsoon depression with intense rainbands mainly locating around the periphery.

〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

[The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

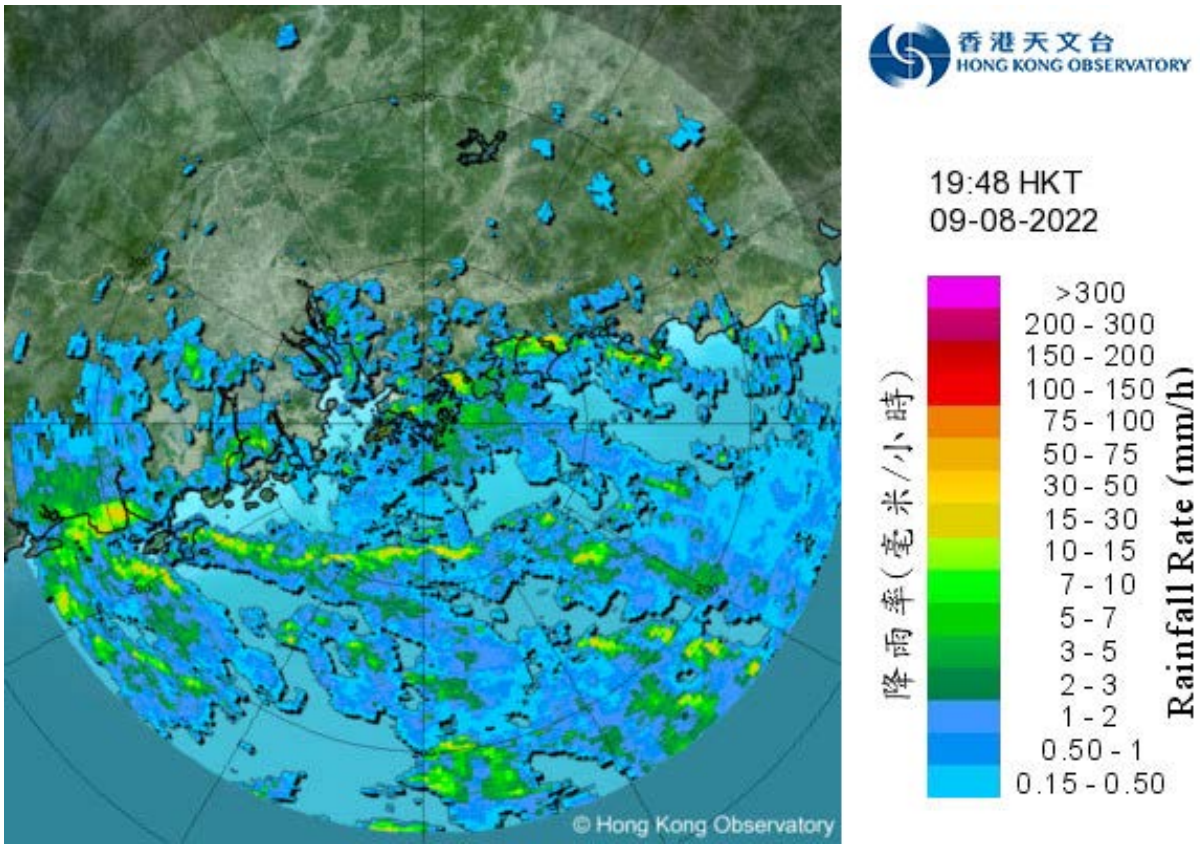


圖 3.3.5　二零二二年八月九日晚上 7 時 48 分的雷達回波圖像，當時與木蘭相關的強雨帶正影響香港。

Figure 3.3.5　Image of radar echoes at 7:48 p.m. on 9 August 2022 when the intense rainbands associated with Mulan were affecting Hong Kong.

3.4 颱風馬鞍(2209)：二零二二年八月二十一日至二十六日

馬鞍是二零二二年第四個影響香港的熱帶氣旋。馬鞍吹襲香港期間，天文台需要發出2022年第二個八號烈風或暴風信號。

熱帶低氣壓馬鞍於八月二十一日下午在馬尼拉之東北偏東約730公里的北太平洋西部上形成，向西南偏西方向移動並逐漸增強。八月二十二日馬鞍轉向西北偏西方向移動，八月二十三日凌晨發展為強烈熱帶風暴。馬鞍於當日橫過呂宋北部並在晚上進入南海北部。翌日馬鞍採取西北偏西路徑迅速橫過南海北部，移向廣東西部沿岸。當晚馬鞍進一步發展為颱風並達到其最高強度，中心附近最高持續風速估計為每小時120公里。受南海北部較強的垂直風切變影響，其後馬鞍逐漸減弱。八月二十五日中午前馬鞍於茂名電白附近登陸，最後於八月二十六日在越南北部減弱為低壓區。

根據報章報導，受馬鞍相關的狂風暴雨影響，珠海鐵路及船運服務暫停。

天文台在八月二十三日晚上9時10分發出一號戒備信號，當時馬鞍集結在香港之東南偏東約760公里。晚間本港吹輕微至和緩北至東北風。隨著馬鞍迅速靠近廣東沿岸，天文台在八月二十四日下午12時40分發出三號強風信號，當時馬鞍位於香港之東南約420公里。下午本港風力明顯增強，普遍吹強風程度的東至東北風，離岸及高地間中吹烈風。隨著馬鞍進一步靠近本港，天文台在當日晚上7時25分發出八號東北烈風或暴風信號，當時馬鞍集結在香港之東南偏南約270公里。晚上本港風力進一步增強，普遍地區吹強風至烈風程度東至東北風，高地間中吹暴風。

午夜後馬鞍移至本港之西南面，本港轉吹東至東南風，天文台在八月二十五日上午1時40分改發八號東南烈風或暴風信號。馬鞍在八月二十五日上午2時左右最接近香港，在本港之西南偏南約190公里掠過。隨著馬鞍逐漸遠離香港，本港普遍風力減弱，天文台在八月二十五日早上9時20分改發三號強風信號，取代八號東南烈風或暴風信號。當日下午馬鞍繼續減弱及進一步遠離香港，天文台在當日下午2時10分以一號戒備信號取代三號強風信號，並於下午4時10分取消所有熱帶氣旋警告信號。

在馬鞍的影響下，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95、82及75公里，而最高陣風則分別為每小時144、111及103公里。尖鼻咀錄得最高潮位3.27米(海圖基準面以上)，而大廟灣及尖鼻咀則錄得最大風暴潮(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	999.4	24/8	下午 4 時 11 分
香港國際機場	999.1	24/8	下午 4 時 08 分
長洲	999.5	24/8	下午 5 時 13 分
京士柏	999.1	24/8	下午 4 時 13 分
流浮山	999.5	24/8	下午 4 時 02 分
坪洲	999.3	24/8	下午 3 時 49 分
沙田	999.7	24/8	下午 4 時 02 分
上水	999.1	24/8	下午 4 時 21 分
打鼓嶺	999.6	24/8	下午 4 時 17 分
大埔	999.8	24/8	下午 4 時 11 分
橫瀾島	999.0	24/8	下午 4 時 00 分

受馬鞍前沿的下沉氣流影響，八月二十四日初時本港大致天晴及酷熱。隨著馬鞍靠近，當日稍後本港轉為多雲。馬鞍的外圍雨帶在八月二十四日晚上至八月二十五日間中為本港帶來狂風大驟雨，多處地區錄得超過50毫米雨量。

馬鞍吹襲香港期間至少有一人受傷，另有279宗塌樹報告及一宗水浸報告。紅磡有鋁窗被強風吹倒，飛墜至行人過路處。

3.4 Typhoon Ma-on (2209): 21 to 26 August 2022

Ma-on was the fourth tropical cyclone affecting Hong Kong in 2022. The Observatory issued the second No. 8 Gale or Storm Signal in 2022 during the passage of Ma-on.

Ma-on formed as a tropical depression over the western North Pacific about 730 km east-northeast of Manila on the afternoon of 21 August. It moved west-southwestwards and intensified gradually. Ma-on turned to track west-northwestwards on 22 August and developed into a severe tropical storm in the small hours on 23 August. It moved across the northern part of Luzon that day and entered the northern part of the South China Sea at night. Ma-on tracked west-northwestwards and moved rapidly across the northern part of the South China Sea towards the coast of western Guangdong the next day. Ma-on further developed into a typhoon that night, reaching its peak intensity with an estimated maximum sustained wind of 120 km/h near its centre. Affected by relatively strong vertical wind shear over the northern part of the South China Sea, Ma-on weakened gradually afterwards. It made landfall near Dianbai, Maoming before noon on 25 August and finally weakened into an area of low pressure over the northern part of Vietnam on 26 August.

According to press reports, the rail and shipping services in Zhuhai were suspended under the influence of the torrential rain and squalls associated with Ma-on.

The Standby Signal No. 1 was issued at 9:10 p.m. on 23 August when Ma-on was about 760 km east-southeast of Hong Kong. Local winds were light to moderate north to northeasterlies. With Ma-on approaching the coast of Guangdong quickly, the No. 3 Strong Wind Signal was issued at 12:40 p.m. on 24 August when Ma-on was about 420 km southeast of Hong Kong. Local winds strengthened significantly in the afternoon, becoming generally strong east to northeasterlies and occasionally reaching gale force offshore and on high ground. With Ma-on edging even closer to Hong Kong, the No. 8 Northeast Gale or Storm Signal was issued at 7:25 p.m. that night when Ma-on was about 270 km south-southeast of the territory. Local winds further strengthened at night, becoming generally strong to gale force east to northeasterlies and occasionally reaching storm force on high ground.

Ma-on moved to the southwest of Hong Kong after midnight and local winds veered to east to southeasterlies. The No. 8 Southeast Gale or Storm Signal was issued at 1:40 a.m. on 25 August. Ma-on came closest to Hong Kong at around 2 a.m. on 25 August when it skirted past about 190 km south-southwest of the territory. With Ma-on gradually departing from Hong Kong and local winds moderating, the No. 8 Southeast Gale or Storm Signal was replaced by the No. 3 Strong Wind Signal at 9:20 a.m. on 25 August. As Ma-on continued to weaken and moved further away from Hong Kong in the afternoon, the Standby Signal No. 1 was issued at 2:10 p.m. to replace the No. 3 Strong Wind Signal and all tropical cyclone warning signals were cancelled at 4:10 p.m. that day.

Under the influence of Ma-on, maximum hourly mean winds of 95, 82 and 75 km/h and gusts of 144, 111 and 103 km/h were recorded at Ngong Ping, Cheung Chau, and Waglan Island respectively. A maximum sea level (above chart datum) of 3.27 m was recorded at Tsim Bei Tsui and a maximum storm surge (above astronomical tide) of 0.73 m was recorded at Tai Miu Wan and 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	999.4	24/8	4:11 p.m.
Hong Kong International Airport	999.1	24/8	4:08 p.m.
Cheung Chau	999.5	24/8	5:13 p.m.
King's Park	999.1	24/8	4:13 p.m.
Lau Fau Shan	999.5	24/8	4:02 p.m.
Peng Chau	999.3	24/8	3:49 p.m.
Sha Tin	999.7	24/8	4:02 p.m.
Sheung Shui	999.1	24/8	4:21 p.m.
Ta Kwu Ling	999.6	24/8	4:17 p.m.
Tai Po	999.8	24/8	4:11 p.m.
Waglan Island	999.0	24/8	4:00 p.m.

Under the influence of the subsiding air ahead of Ma-on, the weather of Hong Kong was mainly fine and very hot at first on 24 August. With Ma-on edging closer, the weather became cloudy later that day. The outer rainbands of Ma-on also brought occasional heavy squally showers to Hong Kong on the night of 24 August and on 25 August. More than 50 millimetres of rainfall were recorded over many places.

In Hong Kong, one person was injured during the passage of Ma-on. There were 279 reports of fallen trees and one report of flooding. An aluminium window was blown down by strong winds and fell to a pedestrian crossing place in Hung Hom.

表 3.4.1　在馬鞍影響下，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 Ma-on 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	東南偏東	ESE	75	25/8	00:05	東	E	46	24/8	21:00
							東	E	46	24/8	22:00
長洲	Cheung Chau	東南偏東	ESE	111	25/8	01:57	東南偏東	ESE	82	25/8	04:00
長洲泳灘	Cheung Chau Beach	東北偏東	ENE	102	24/8	21:43	東	E	73	25/8	02:00
青洲	Green Island	東北偏東	ENE	105	24/8	22:27	東北偏東	ENE	72	24/8	22:00
香港國際機場	Hong Kong International Airport	東南偏東	ESE	75	25/8	07:59	東南偏東	ESE	45	25/8	04:00
啟德	Kai Tak	東南偏東	ESE	83	25/8	00:45	東南偏東	ESE	35	25/8	05:00
京士柏	King's Park	東	E	71	25/8	00:45	東	E	36	25/8	02:00
南丫島	Lamma Island	東南偏東	ESE	86	25/8	03:13	東南偏東	ESE	49	25/8	04:00
		東南偏東	ESE	86	25/8	03:36					
流浮山	Lau Fau Shan	東南偏南	SSE	69	25/8	08:40	東北偏東	ENE	37	24/8	23:00
昂坪	Ngong Ping	東南偏東	ESE	144	25/8	04:27	東	E	95	25/8	02:00
							東	E	95	25/8	03:00
北角	North Point	東北偏東	ENE	85	24/8	21:31	東北偏東	ENE	53	24/8	22:00
坪洲	Peng Chau	東	E	86	24/8	22:04	東	E	62	24/8	23:00
平洲	Ping Chau	東北偏東	ENE	44	24/8	21:51	東	E	16	24/8	22:00
西貢	Sai Kung	東北偏東	ENE	81	24/8	22:54	東南偏南	SSE	49	25/8	05:00
沙洲	Sha Chau	東南偏南	SSE	79	25/8	03:46	東南	SE	53	25/8	04:00
沙螺灣	Sha Lo Wan	東南	SE	98	25/8	03:38	東	E	38	25/8	00:00
沙田	Sha Tin	東	E	87	24/8	21:36	東	E	21	24/8	22:00
九龍天星碼頭	Star Ferry (Kowloon)	東	E	82	25/8	02:18	東南偏東	ESE	40	25/8	04:00
打鼓嶺	Ta Kwu Ling	東	E	58	25/8	07:24	東	E	24	25/8	03:00
大美督	Tai Mei Tuk	東	E	90	25/8	00:26	東北偏東	ENE	62	24/8	18:00
							東	E	62	25/8	01:00
大埔滘	Tai Po Kau	東南偏東	ESE	83	25/8	00:55	東	E	49	24/8	23:00
塔門東	Tap Mun East	東南	SE	99	25/8	04:31	東南偏東	ESE	66	25/8	02:00
							東南偏東	ESE	66	25/8	03:00
大老山	Tate's Cairn	東	E	107	24/8	22:37	東南偏東	ESE	72	25/8	00:00
將軍澳	Tseung Kwan O	東	E	67	25/8	00:57	東北偏北	NNE	19	24/8	21:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	東南	SE	83	25/8	02:39	東南	SE	33	25/8	09:00
屯門政府合署	Tuen Mun Government Offices	東南	SE	69	25/8	03:50	東南	SE	27	25/8	05:00
橫瀾島	Waglan Island	東南偏東	ESE	103	25/8	01:59	東南偏東	ESE	75	25/8	04:00
濕地公園	Wetland Park	東南偏南	SSE	51	25/8	11:59	東北偏東	ENE	18	24/8	21:00
黃竹坑	Wong Chuk Hang	-	-	77	25/8	00:54	-	-	25	25/8	03:00
							-	-	25	25/8	04:00

黃麻角(赤柱)、石崗、大帽山 - 沒有資料　Bluff Head (Stanley), Shek Kong, Tai Mo Shan - data not available

黃竹坑 - 沒有風向資料　Wong Chuk Hang - wind direction not available

表 3.4.2　在馬鞍影響下，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 3.4.2　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 Ma-on 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	24/8	16:56	25/8	12:31	24/8	22:49	25/8	08:52
香港國際機場	Hong Kong International Airport	24/8	20:15	25/8	11:42	-			
流浮山	Lau Fau Shan	24/8	18:37	25/8	08:50	-			
啟德	Kai Tak	25/8	04:05	25/8	07:11	-			
西貢	Sai Kung	24/8	15:50	25/8	12:11	-			
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	25/8	08:42	25/8	09:00	-			

沙田及打鼓嶺的持續風力未達到強風程度。
The sustained wind speed did not attain strong force at Sha Tin and Ta Kwu Ling.

- 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 3.4.3　馬鞍影響香港期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.4.3　Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Ma-on

站 (參閱圖 3.4.2) Station (See Fig. 3.4.2)			八月二十三日 23 Aug	八月二十四日 24 Aug	八月二十五日 25 Aug	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			0.0	5.5	48.1	53.6
香港國際機場 Hong Kong International Airport (HKA)			0.0	3.0	64.9	67.9
長洲 Cheung Chau (CCH)			0.0	4.5	38.0	42.5
H23	香港仔	Aberdeen	0.0	5.0	16.5	21.5
N05	粉嶺	Fanling	0.0	7.5	59.0	66.5
N13	糧船灣	High Island	0.0	5.5	53.5	59.0
K04	佐敦谷	Jordan Valley	0.0	5.5	59.0	64.5
N06	葵涌	Kwai Chung	0.0	11.5	50.5	62.0
H12	半山區	Mid Levels	0.0	6.0	36.0	42.0
N09	沙田	Sha Tin	0.0	8.5	65.0	73.5
H19	筲箕灣	Shau Kei Wan	0.0	9.0	52.5	61.5
SEK	石崗	Shek Kong	0.0	[7.5]	56.0	[63.5]
K06	蘇屋邨	So Uk Estate	0.0	7.5	44.0	51.5
R31	大美督	Tai Mei Tuk	0.0	8.5	64.5	73.0
R21	踏石角	Tap Shek Kok	0.0	2.5	52.0	54.5
N17	東涌	Tung Chung	0.0	9.0	75.0	84.0
TMR	屯門水庫	Tuen Mun Reservoir	0.0	2.4	60.7	63.1

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

表 3.4.4　馬鞍影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.4.4　Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Ma-on

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	2.73	25/8	07:09	0.59	25/8	03:51
石壁	Shek Pik	2.94	25/8	07:12	0.70	25/8	04:39
大廟灣	Tai Miu Wan	2.65	25/8	06:48	0.73	25/8	03:52
大埔滘	Tai Po Kau	2.65	25/8	05:02	0.70	25/8	00:26
尖鼻咀	Tsim Bei Tsui	3.27	25/8	08:23	0.73	25/8	02:00

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

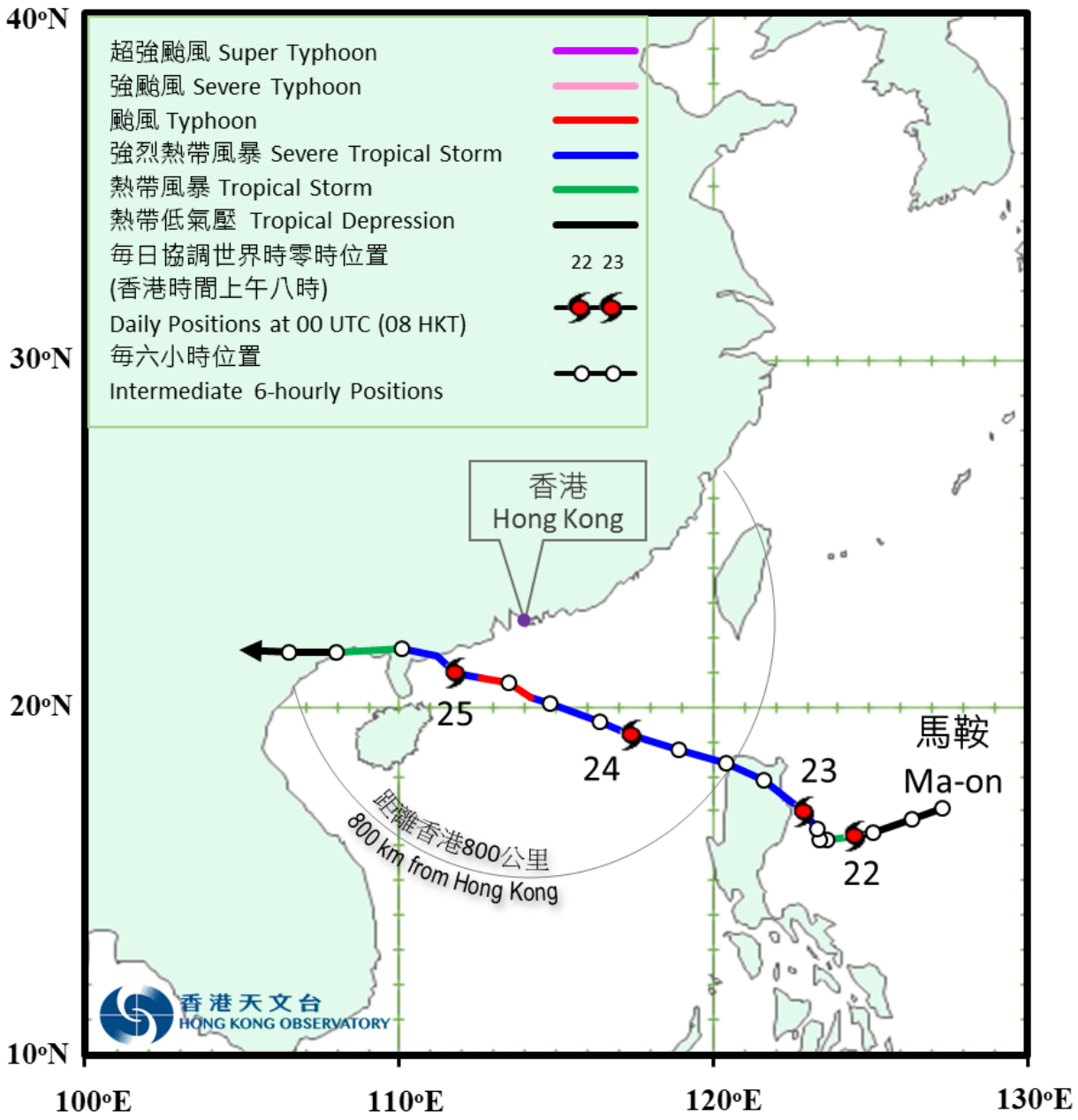


圖 3.4.1a　　二零二二年八月二十一日至二十六日馬鞍(2209)的路徑圖。

Figure 3.4.1a　Track of Ma-on(2209): 21 - 26 August 2022.

圖 3.4.1b　　馬鞍接近香港時的路徑圖。

Figure 3.4.1b　Track of Ma-on near Hong Kong.

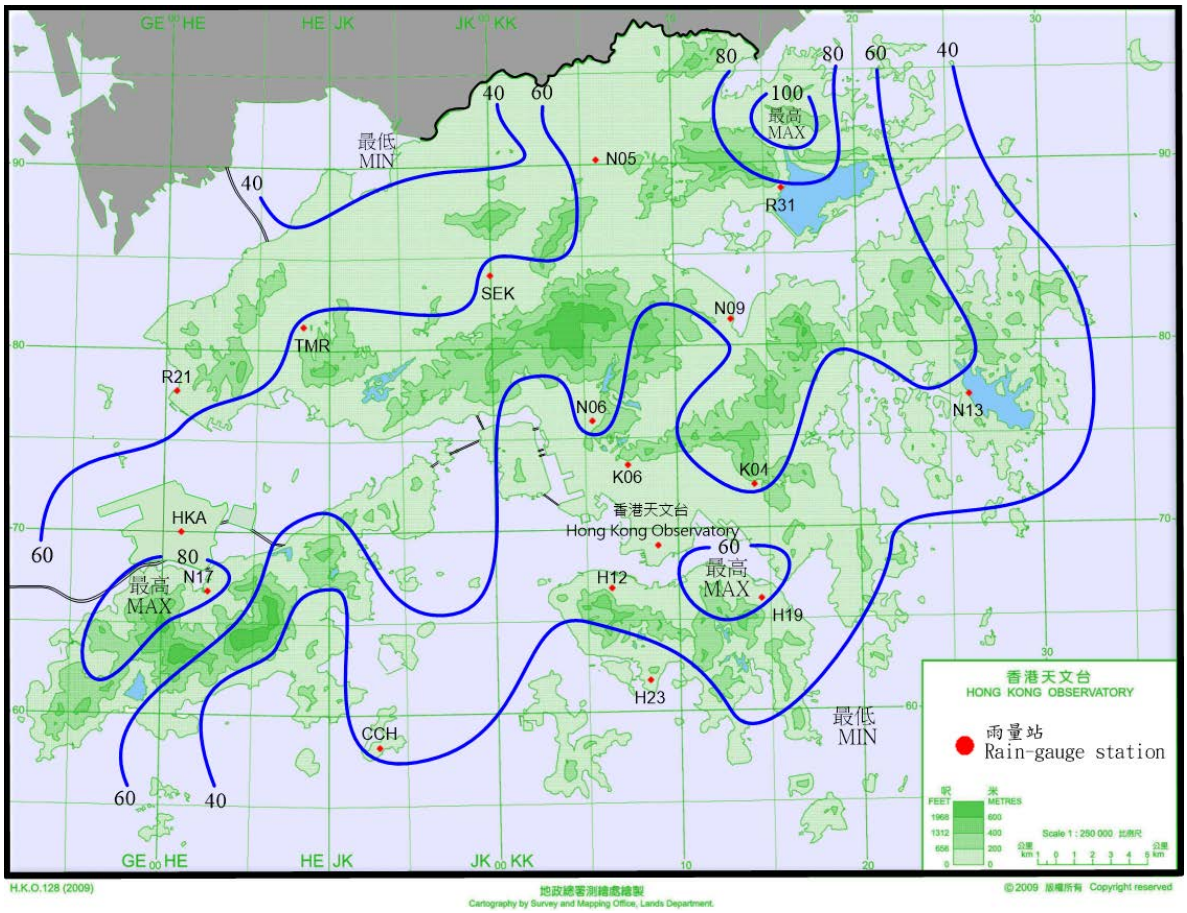


圖 3.4.2　　二零二二年八月二十三日至二十五日的雨量分佈(等雨量線單位為毫米)。

Figure 3.4.2　Rainfall distribution on 23 – 25 August 2022 (isohyets are in millimetres).

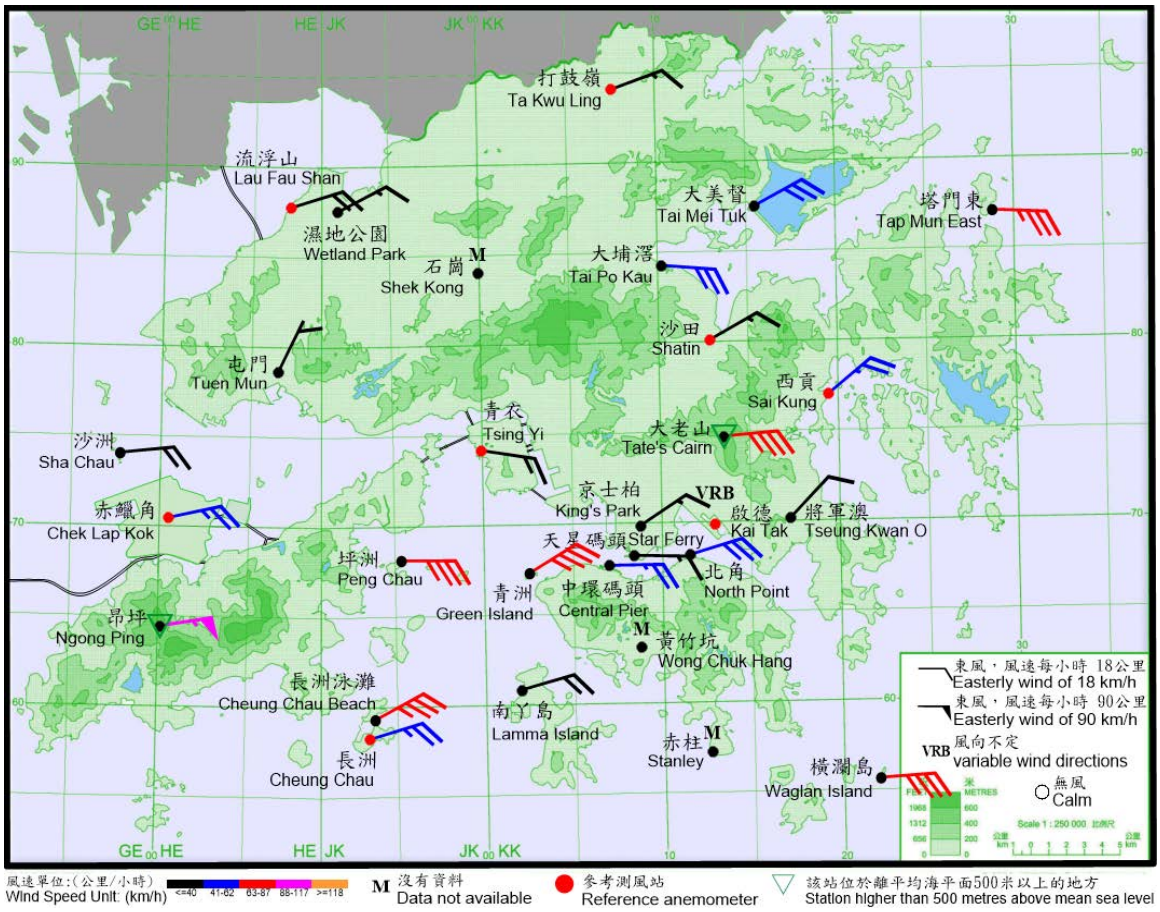


圖 3.4.3a　二零二二年八月二十四日晚上 10 時 30 分香港各站錄得的十分鐘平均風向和風速。

Figure 3.4.3a　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 10:30 p.m. on 24 August 2022.

註：　啟德當時錄得的十分鐘平均風速為每小時18公里。

Note:　The 10-minute mean wind speed recorded at the time at Kai Tak was 18 km/h.

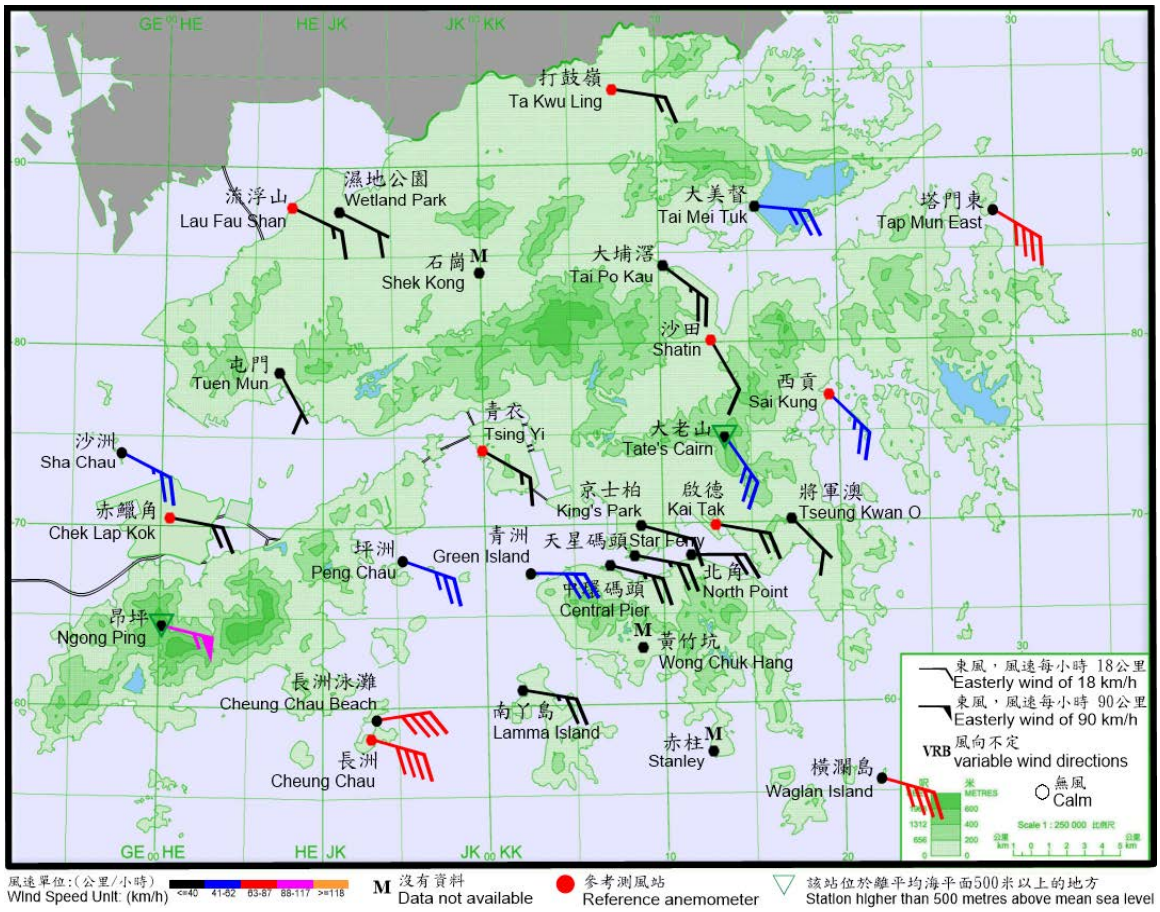


圖 3.4.3b　二零二二年八月二十五日早上 2 時 30 分香港各站錄得的十分鐘平均風向和風速。

Figure 3.4.3b　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 2:30 a.m. on 25 August 2022.

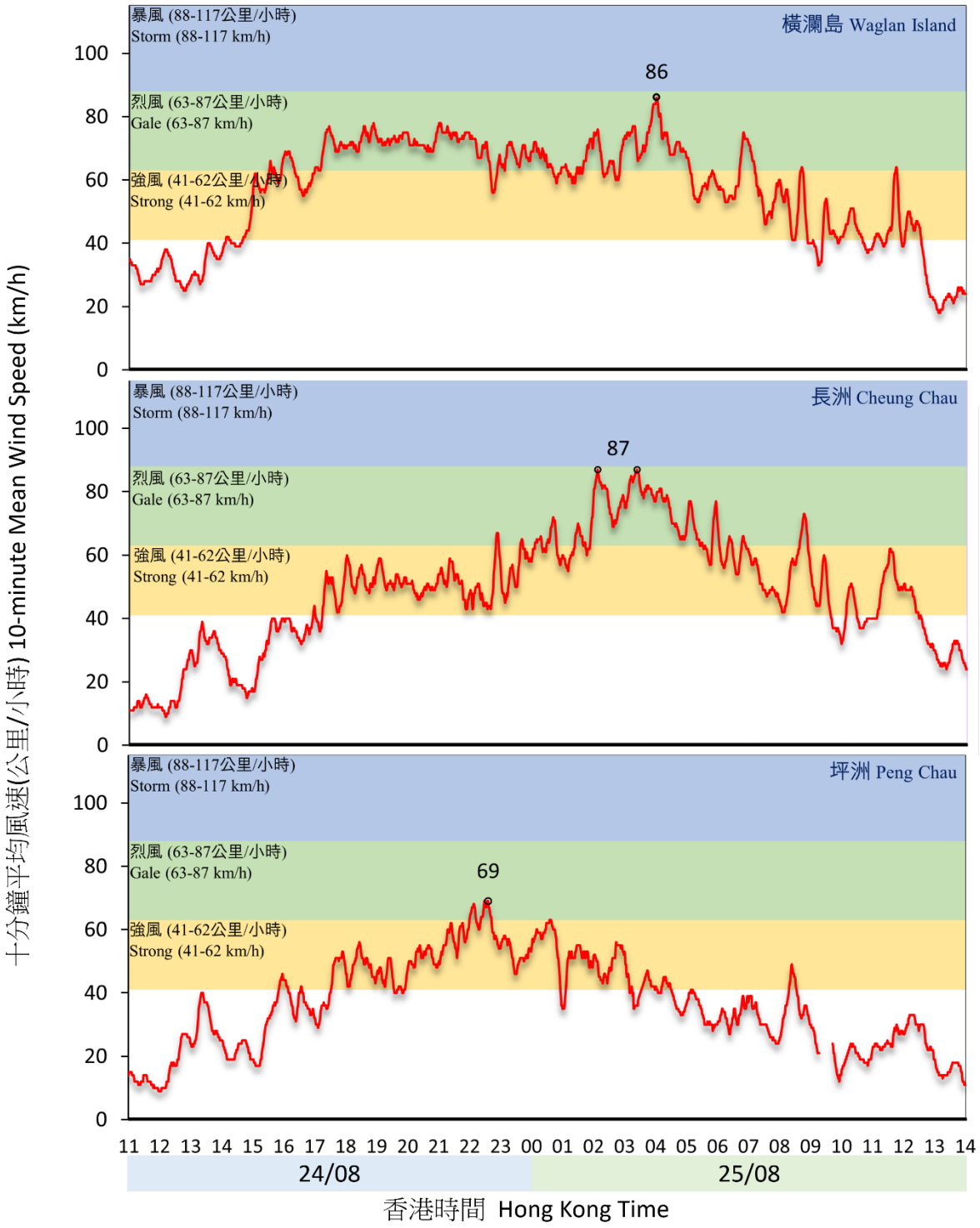


圖 3.4.4　二零二二年八月二十四日至二十五日橫瀾島、長洲及坪洲錄得的十分鐘平均風速。

Figure 3.4.4　Traces of 10-minute mean wind speed recorded at Waglan Island, Cheung Chau and Peng Chau on 24 – 25 August 2022.

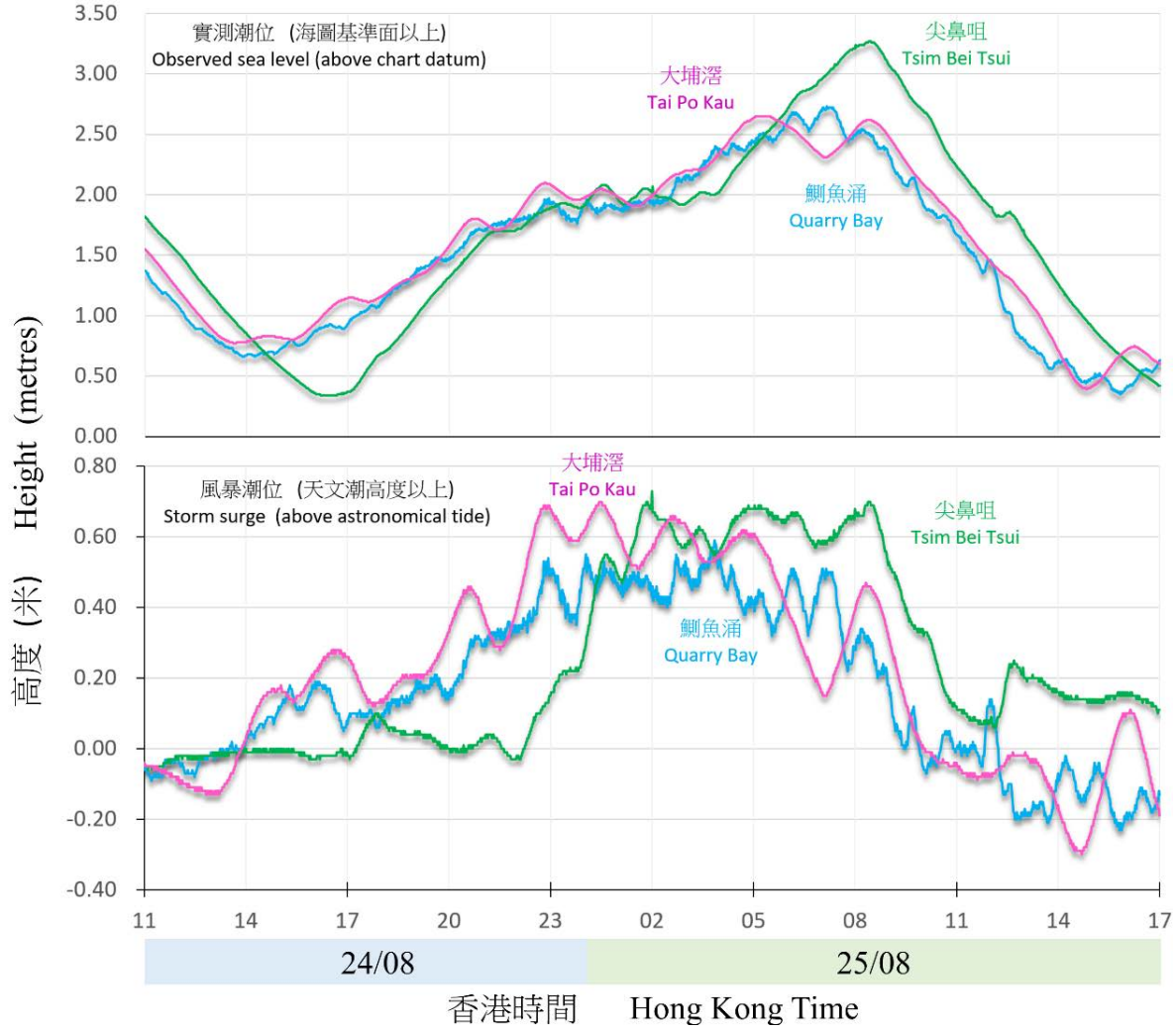


圖 3.4.5　二零二二年八月二十四日至二十五日在鰂魚涌、大埔滘及尖鼻咀錄得的潮位(海圖基準面以上)及風暴潮(天文潮高度以上)。

Figure 3.4.5　Traces of sea level (above chart datum) and storm surge (above astronomical tide) recorded at Quarry Bay, Tai Po Kau, and Tsim Bei Tsui on 24 - 25 August 2022.

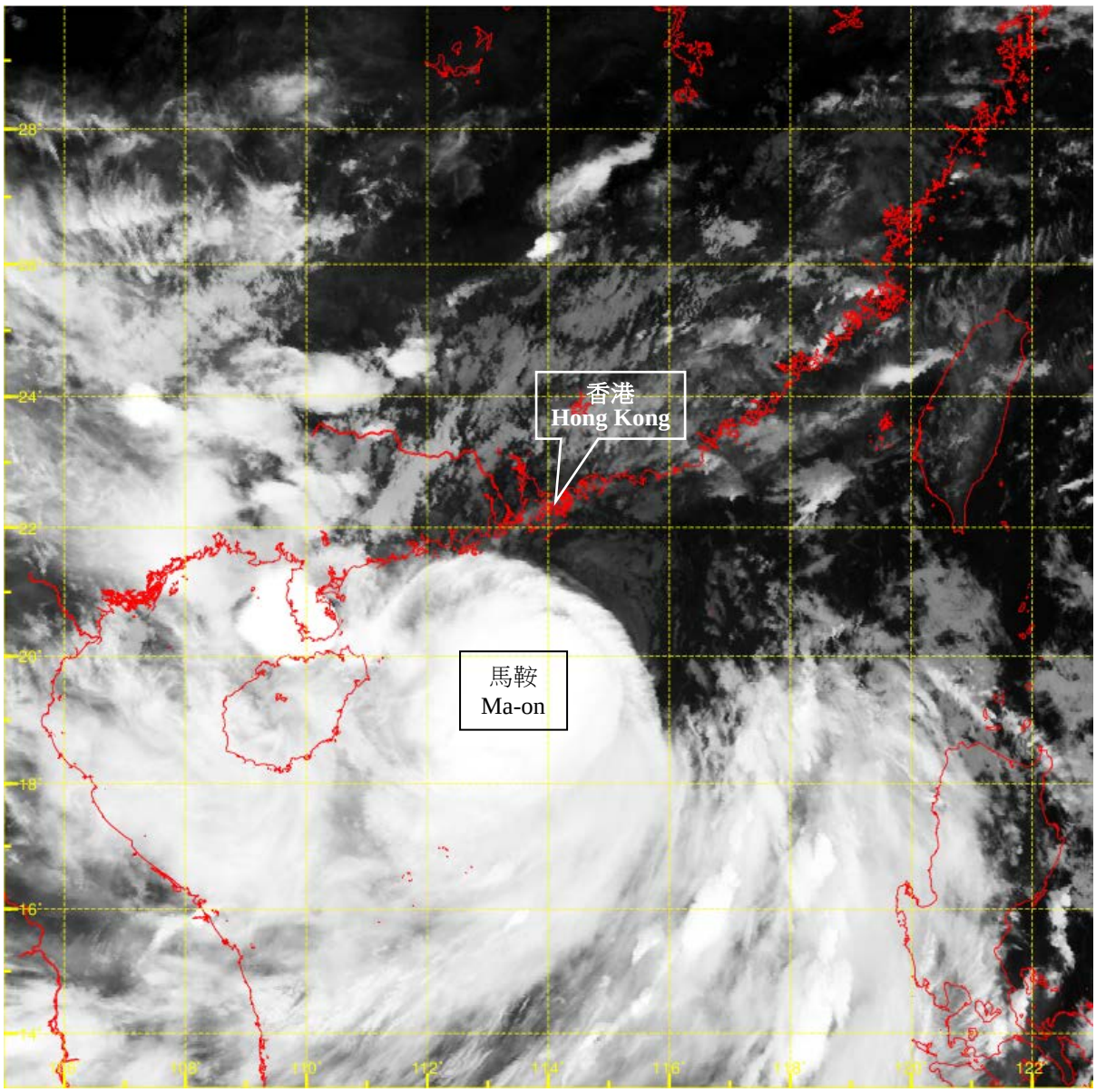


圖 3.4.6　二零二二年八月二十四日晚上11時左右的紅外線衛星圖片，當時馬鞍達到其最高強度，中心附近最高持續風速估計為每小時120公里。

Figure 3.4.6　Infra-red satellite imagery around 11 p.m. on 24 August 2022 when Ma-on was at its peak intensity with an estimated maximum sustained wind of 120 km/h near its centre.

〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

[The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

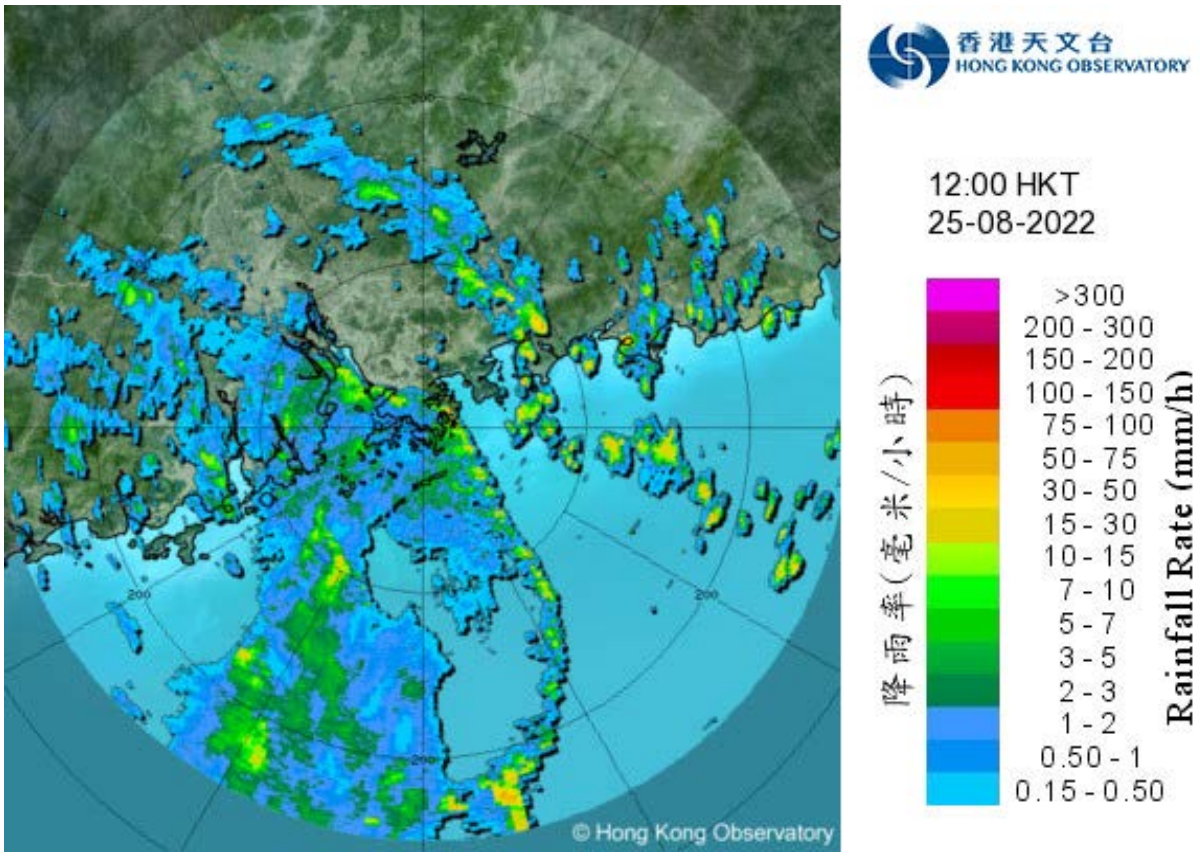


圖 3.4.7　二零二二年八月二十五日正午 12 時的雷達回波圖像。與馬鞍相關的雨帶正影響廣東沿岸及南海北部。

Figure 3.4.7　Image of radar echoes at 12 noon on 25 August 2022. The rainbands associated with Ma-on were affecting the coast of Guangdong and the northern part of the South China Sea.

3.5 颱風納沙(2220)：二零二二年十月十五日至二十日

納沙是二零二二年第五個影響香港的熱帶氣旋。

熱帶低氣壓納沙於十月十五日凌晨在馬尼拉之東北約800公里的北太平洋西部上形成，向西移向呂宋海峽，並逐漸增強。翌日下午納沙進入南海北部並增強為颱風。十月十七日納沙轉向西南偏西方向移向西沙一帶，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145公里。受東北季候風影響，納沙隨後三日逐漸減弱，最後於十月二十日在海南島之西南的南海中部上減弱為低壓區。

天文台在十月十六日下午9時20分發出一號戒備信號，當時納沙集結在香港之東南偏東約530公里。晚間本港吹清勁北風，離岸及高地間中吹強風。隨著納沙繼續靠近華南沿岸及逐漸增強，天文台在十月十七日上午11時30分改發三號強風信號，當時納沙位於香港之東南約400公里。在東北季候風及納沙的共同影響下，當日下午本港普遍吹強風程度的偏北風，高地間中吹烈風。納沙於十月十七日下午5時左右最接近香港，在本港東南偏南約380公里掠過。隨後納沙遠離香港並減弱，本港天氣逐漸受東北季候風支配，風勢仍然頗大，天文台於十月十八日下午3時40分取消所有熱帶氣旋警告信號，並同時發出強烈季候風信號，直至翌日上午8時40分取消。

在納沙的影響下，鰂魚涌錄得最高潮位2.84米(海圖基準面以上)，而大廟灣則錄得最大風暴潮(天文潮高度以上) 0.76米。天文台總部於十月十七日下午2時38分錄得最低瞬時海平面氣壓1007.2百帕斯卡。

十月十七日本港大致多雲，天氣溫暖。隨著華南的東北季候風增強，十月十八日凌晨本港氣溫開始顯著下降，當日下午天氣清涼，氣溫普遍較前一日低十度左右。而在納沙的外圍雨帶影響下，十月十八日本港間中有雨，南部地區錄得超過20毫米雨量。

納沙吹襲香港期間，至少有10宗塌樹報告。山頂道有大樹倒塌，擊中一輛巴士，7名乘客受傷。中環亦有大樹倒塌，電車服務受阻。尖沙咀有外牆招牌鬆脫墮地，擊傷一名途人。

3.5 Typhoon Nesat (2220): 15 to 20 October 2022

Nesat was the fifth tropical cyclone affecting Hong Kong in 2022.

Nesat formed as a tropical depression over the western North Pacific about 800 km northeast of Manila in the small hours on 15 October. It moved westwards towards Luzon Strait and intensified gradually. Nesat entered the northern part of the South China Sea and developed into a typhoon on the afternoon of the next day. It turned to move west-southwestwards towards the vicinity of Xisha on 17 October. Nesat reached its peak intensity on that night with an estimated maximum sustained wind of 145 km/h near its centre. Under the influence of the northeast monsoon, it weakened gradually in the following three days and finally degenerated into an area of low pressure over the central part of the South China Sea to the southwest of Hainan Island on 20 October.

The Standby Signal No. 1 was issued at 9:20 p.m. on 16 October, when Nesat was about 530 km east-southeast of Hong Kong. Local winds were fresh northerlies and occasionally strong offshore and on high ground overnight. As Nesat intensified gradually and continued to edge closer to the coast of southern China, the No. 3 Strong Wind Signal was issued at 11:30 a.m. on 17 October when Nesat was about 400 km southeast of Hong Kong. Under the combined effect of the northeast monsoon and Nesat, local winds were generally strong northerlies and occasionally reached gale force on high ground. Nesat came closest to Hong Kong at around 5 p.m. on 17 October, skirting past about 380 km south-southeast of the territory. With Nesat weakening and moving away from Hong Kong afterwards, the weather of Hong Kong was dominated by the northeast monsoon gradually and local winds remained strong. All tropical cyclone warning signals were cancelled at 3:40 p.m. on 18 October. The Strong Monsoon Signal was issued at the same time and lasted till 8:40 a.m. the next day.

Under the influence of Nesat, a maximum sea level (above chart datum) of 2.84 m was recorded at Quarry Bay and a maximum storm surge (above astronomical tide) of 0.76 m was recorded at Tai Miu Wan. At the Observatory Headquarters, the lowest instantaneous mean sea-level pressure of 1007.2 hPa was recorded at 2:38 p.m. on 17 October.

It was mainly cloudy and warm in Hong Kong on 17 October. With the strengthening of the northeast monsoon over southern China, local temperatures started to drop appreciably on the early morning of 18 October and the weather became cool in the afternoon, with temperatures generally about ten degrees lower than those of the day before. Affected by the outer rainbands of Nesat, there were occasional rain in Hong Kong on 18 October. More than 20 millimetres of rainfall were generally recorded over the southern part of Hong Kong.

There were at least 10 reports of fallen trees in Hong Kong during the passage of Nesat. Seven passengers were injured when a bus travelling on the Peak was hit by a fallen tree. Tram service was also disrupted due to a fallen tree in Central. A pedestrian was hurt by a fallen wall signboard in Tsim Sha Tsui.

表 3.5.1　在納沙影響下，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 Nesat 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	NE	59	17/10	20:56	東北偏北	NNE	26	18/10	09:00
長洲	Cheung Chau	北	N	88	17/10	19:31	北	N	57	17/10	20:00
長洲泳灘	Cheung Chau Beach	東北	NE	80	17/10	19:24	東北偏北	NNE	45	18/10	00:00
青洲	Green Island	北	N	100	17/10	20:03	東北偏北	NNE	61	17/10	23:00
香港國際機場	Hong Kong International Airport	東北偏北	NNE	60	17/10	23:24	東北偏北	NNE	33	18/10	00:00
		東北偏東	ENE	60	18/10	10:18					
啟德	Kai Tak	東北偏北	NNE	75	17/10	18:32	西北偏北	NNW	31	17/10	20:00
京士柏	King's Park	東北偏北	NNE	71	17/10	19:22	東北偏北	NNE	28	17/10	21:00
南丫島	Lamma Island	北	N	62	17/10	21:46	西北偏北	NNW	30	17/10	08:00
流浮山	Lau Fau Shan	北	N	75	18/10	03:54	北	N	48	18/10	05:00
昂坪	Ngong Ping	東北偏東	ENE	92	17/10	22:55	東北偏東	ENE	59	18/10	00:00
北角	North Point	東北	NE	64	17/10	19:30	東北偏北	NNE	35	17/10	21:00
坪洲	Peng Chau	北	N	79	17/10	18:11	北	N	50	17/10	19:00
平洲	Ping Chau	北	N	47	17/10	05:08	北	N	15	17/10	09:00
							東北	NE	15	17/10	23:00
西貢	Sai Kung	東北偏北	NNE	76	17/10	19:22	北	N	40	17/10	20:00
							北	N	40	17/10	21:00
沙洲	Sha Chau	東北偏北	NNE	83	18/10	04:41	北	N	50	17/10	09:00
							東北偏北	NNE	50	18/10	03:00
沙螺灣	Sha Lo Wan	東北	NE	51	17/10	22:34	東北	NE	22	18/10	00:00
沙田	Sha Tin	東北	NE	64	17/10	20:34	東北	NE	22	17/10	22:00
九龍天星碼頭	Star Ferry (Kowloon)	北	N	36	18/10	05:20	西北偏西	WNW	10	17/10	10:00
打鼓嶺	Ta Kwu Ling	北	N	59	17/10	23:02	東北偏北	NNE	29	18/10	09:00
大美督	Tai Mei Tuk	東北	NE	75	17/10	18:34	東北	NE	43	17/10	21:00
		東北偏北	NNE	75	17/10	20:27					
大帽山	Tai Mo Shan	東北	NE	104	17/10	22:42	東北	NE	75	18/10	09:00
大埔滘	Tai Po Kau	東北	NE	60	17/10	18:18	東北偏北	NNE	28	17/10	20:00
塔門東	Tap Mun East	北	N	70	17/10	07:46	北	N	33	17/10	06:00
大老山	Tate's Cairn	東北偏北	NNE	114	17/10	21:04	東北偏北	NNE	82	17/10	22:00
將軍澳	Tseung Kwan O	東北	NE	66	18/10	05:16	東北	NE	19	17/10	20:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	西北	NW	54	17/10	14:45	西北偏北	NNW	24	17/10	15:00
屯門政府合署	Tuen Mun Government Offices	東北偏北	NNE	67	18/10	10:05	東北偏北	NNE	21	18/10	11:00
橫瀾島	Waglan Island	東北偏北	NNE	75	18/10	01:39	東北偏北	NNE	62	18/10	01:00
濕地公園	Wetland Park	東北偏北	NNE	54	17/10	22:12	東北	NE	17	18/10	11:00
							東北偏北	NNE	17	18/10	12:00
黃竹坑	Wong Chuk Hang	西北偏西	WNW	67	18/10	02:26	西北	NW	15	17/10	13:00

黃麻角(赤柱)、石崗 - 沒有資料　Bluff Head (Stanley), Shek Kong - data not available

表 3.5.2　在納沙影響下，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程度的時段

Table 3.5.2　Periods during which sustained strong winds were attained at the eight reference anemometers in the tropical cyclone warning system when tropical cyclone warning signals for Nesat 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	
		日期/月份 Date/Month	時間 Time	日期/月份 Date/Month	時間 Time
長洲	Cheung Chau	16/10	22:45	18/10	15:07
流浮山	Lau Fau Shan	17/10	15:12	18/10	12:08
西貢	Sai Kung	17/10	18:27	18/10	12:27

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.

* 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

註:　本表列出持續風力達到強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 force winds. Winds might fluctuate above or below the specified wind speeds in between the times indicated.

表 3.5.3　納沙影響香港期間，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 Nesat

站 (參閱圖 3.5.2) Station (See Fig. 3.5.2)			十月十六日 16 Oct	十月十七日 17 Oct	十月十八日 18 Oct	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			0.0	0.0	19.7	19.7
香港國際機場 Hong Kong International Airport (HKA)			0.0	0.4	21.1	21.5
長洲 Cheung Chau (CCH)			0.0	0.0	26.5	26.5
H23	香港仔	Aberdeen	0.0	0.0	20.0	20.0
N05	粉嶺	Fanling	0.0	0.5	10.5	11.0
N13	糧船灣	High Island	0.0	0.0	14.5	14.5
K04	佐敦谷	Jordan Valley	0.0	0.0	23.0	23.0
N06	葵涌	Kwai Chung	0.0	0.0	15.5	15.5
H12	半山區	Mid Levels	0.0	0.0	30.0	30.0
N09	沙田	Sha Tin	0.0	0.0	18.0	18.0
H19	筲箕灣	Shau Kei Wan	0.0	0.0	21.5	21.5
SEK	石崗	Shek Kong	0.0	[0.0]	13.0	[13.0]
K06	蘇屋邨	So Uk Estate	0.0	0.0	18.5	18.5
R21	踏石角	Tap Shek Kok	0.0	0.0	14.5	14.5
N17	東涌	Tung Chung	0.0	0.5	27.5	28.0
TMR	屯門水庫	Tuen Mun Reservoir	0.0	0.0	28.1	28.1

註 : [ ] 基於不完整的每小時雨量數據。　Note : [ ] based on incomplete hourly data.
大美督(R31) - 沒有資料　Tai Mei Tuk (R31) - data not available

表 3.5.4　納沙影響香港期間，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 Nesat

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	2.84	18/10	02:18	0.70	18/10	02:18
石壁	Shek Pik	2.83	18/10	02:49	0.71	18/10	03:30
大廟灣	Tai Miu Wan	2.83	18/10	02:38	0.76	18/10	03:08
大埔滘	Tai Po Kau	2.81	18/10	01:43	0.69	18/10	04:30
尖鼻咀	Tsim Bei Tsui	2.80	18/10	03:48	0.72	18/10	04:55

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

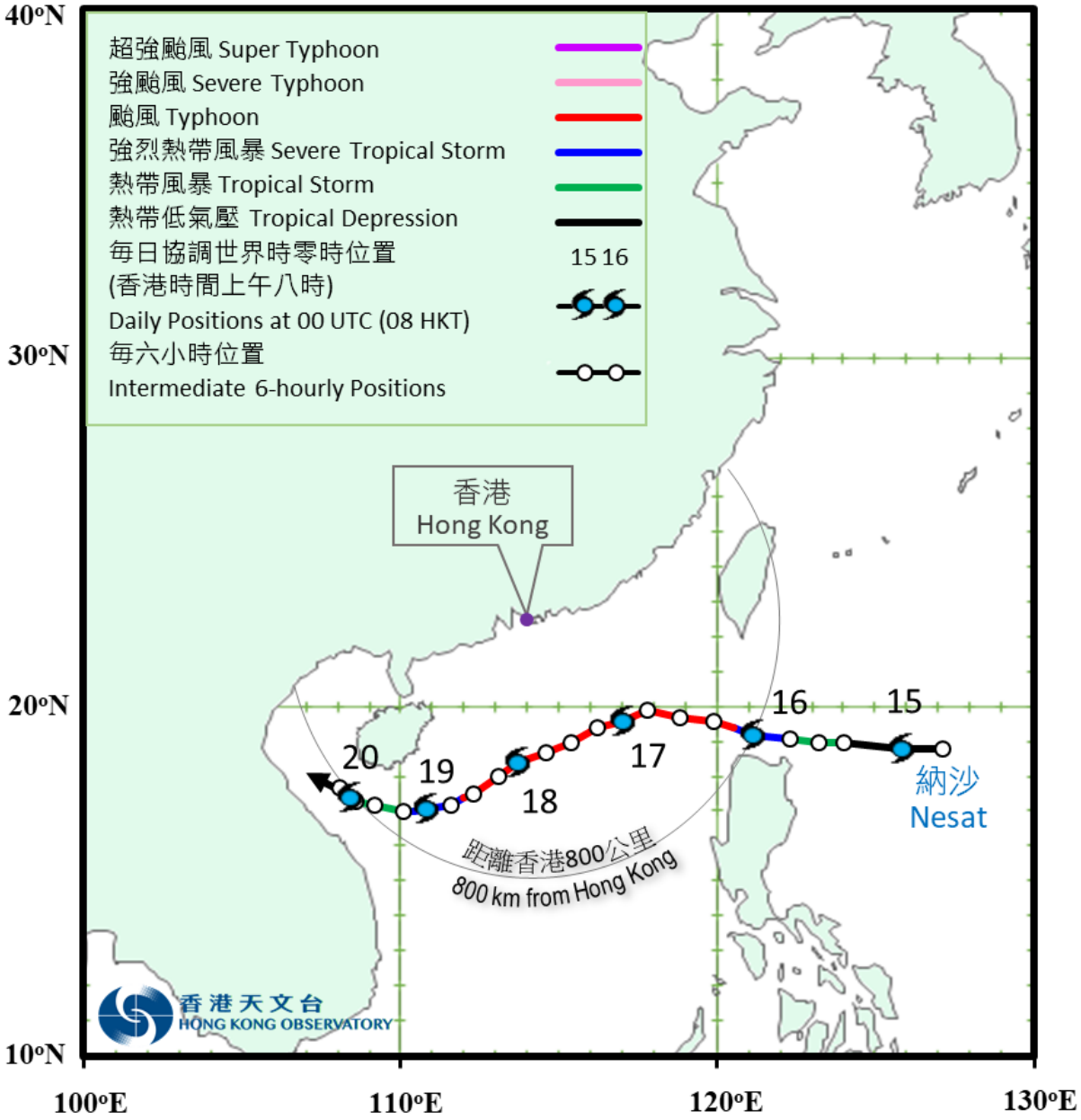


圖 3.5.1　　二零二二年十月十五日至二十日納沙(2220)的路徑圖。

Figure 3.5.1　Track of Nesat (2220): 15 – 20 October 2022.

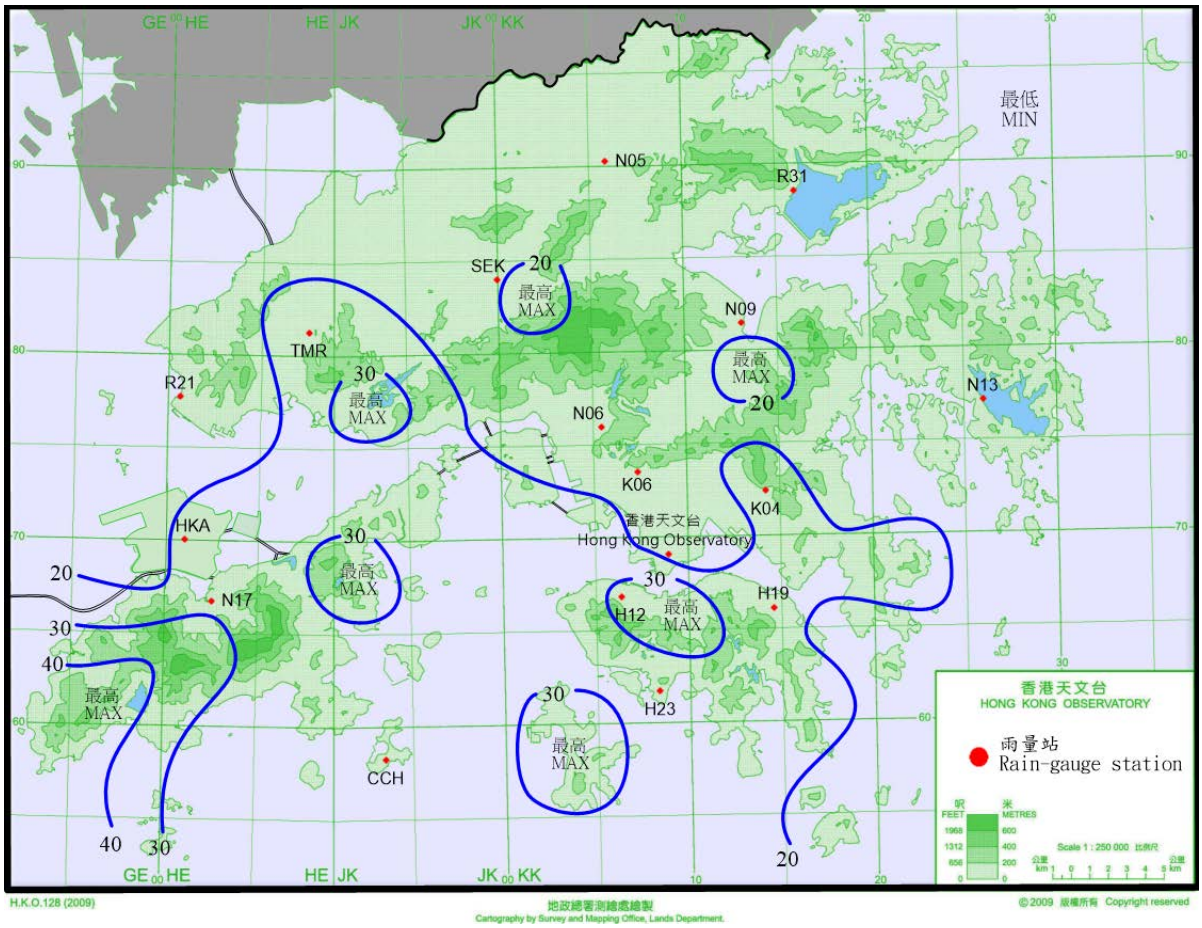


圖 3.5.2　　二零二二年十月十六日至十八日的雨量分佈(等雨量線單位為毫米)。

Figure 3.5.2　Rainfall distribution on 16 – 18 October 2022 (isohyets are in millimetres).

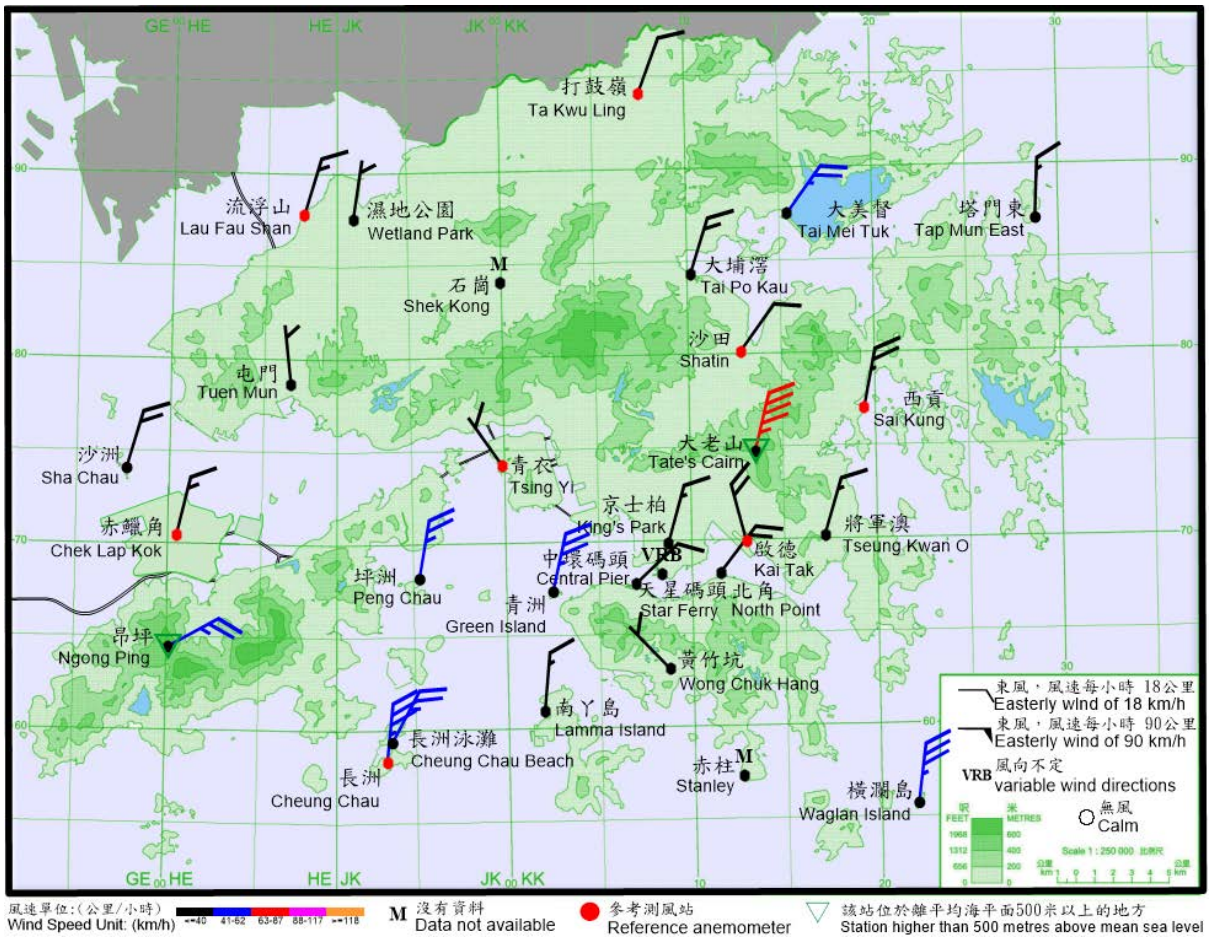


圖 3.5.3　　二零二二年十月十七日晚上8時正香港各站錄得的十分鐘平均風向和風速。

Figure 3.5.3　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 8:00 p.m. on 17 October 2022.

註：　天星碼頭當時錄得的十分鐘平均風速為每小時8公里。

Note:　The 10-minute mean wind speed recorded at the time at Star Ferry was 8 km/h.

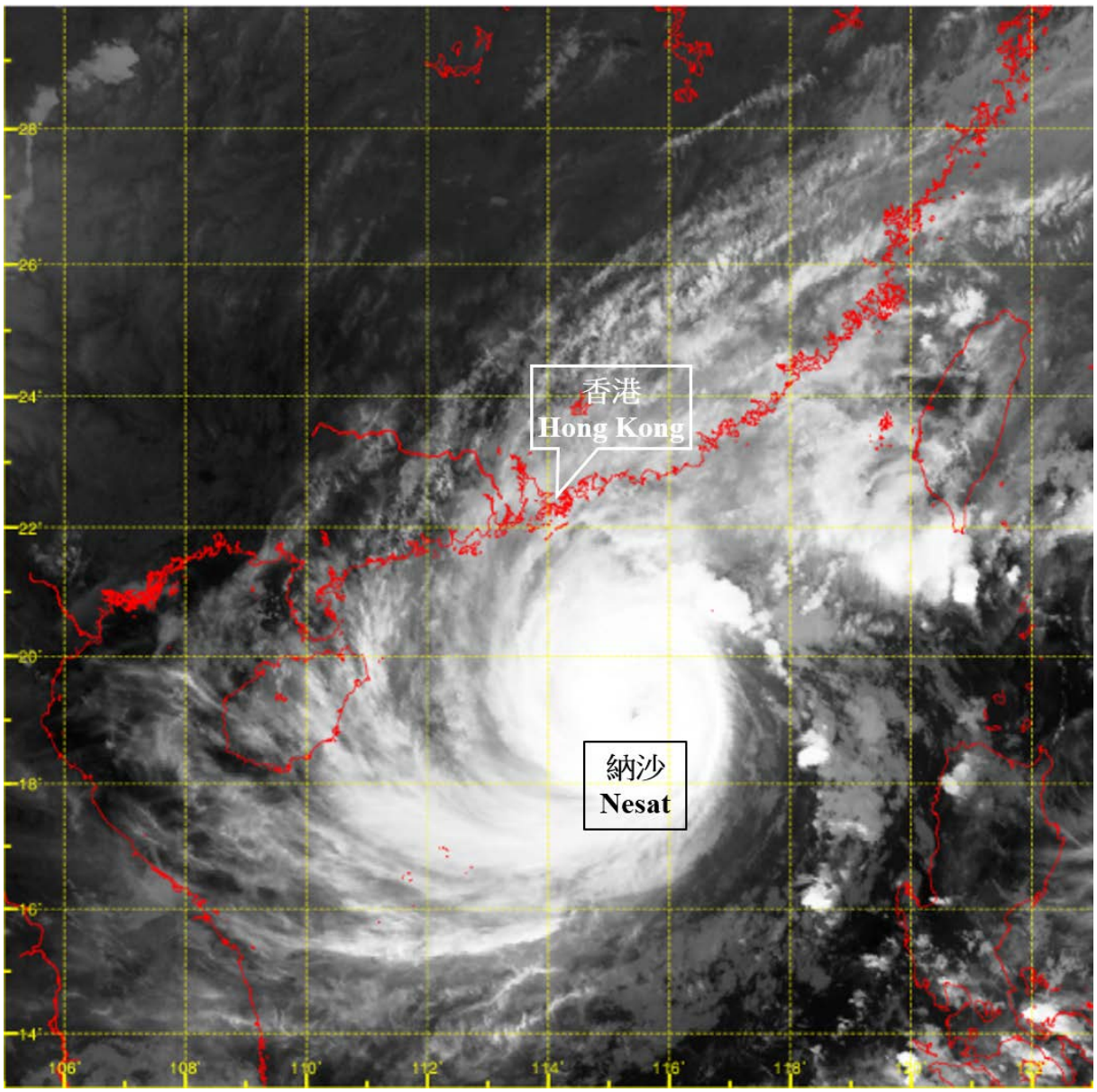


圖 3.5.4　二零二二年十月十七日晚上8時左右的紅外線衛星圖片，當時納沙達到其最高強度，中心附近最高持續風速估計為每小時145公里。

Figure 3.5.4　Infra-red satellite imagery at around 8 p.m. on 17 October 2022 when Nesat was at its peak intensity with an estimated maximum sustained wind of 145 km/h near its centre.

〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

[The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

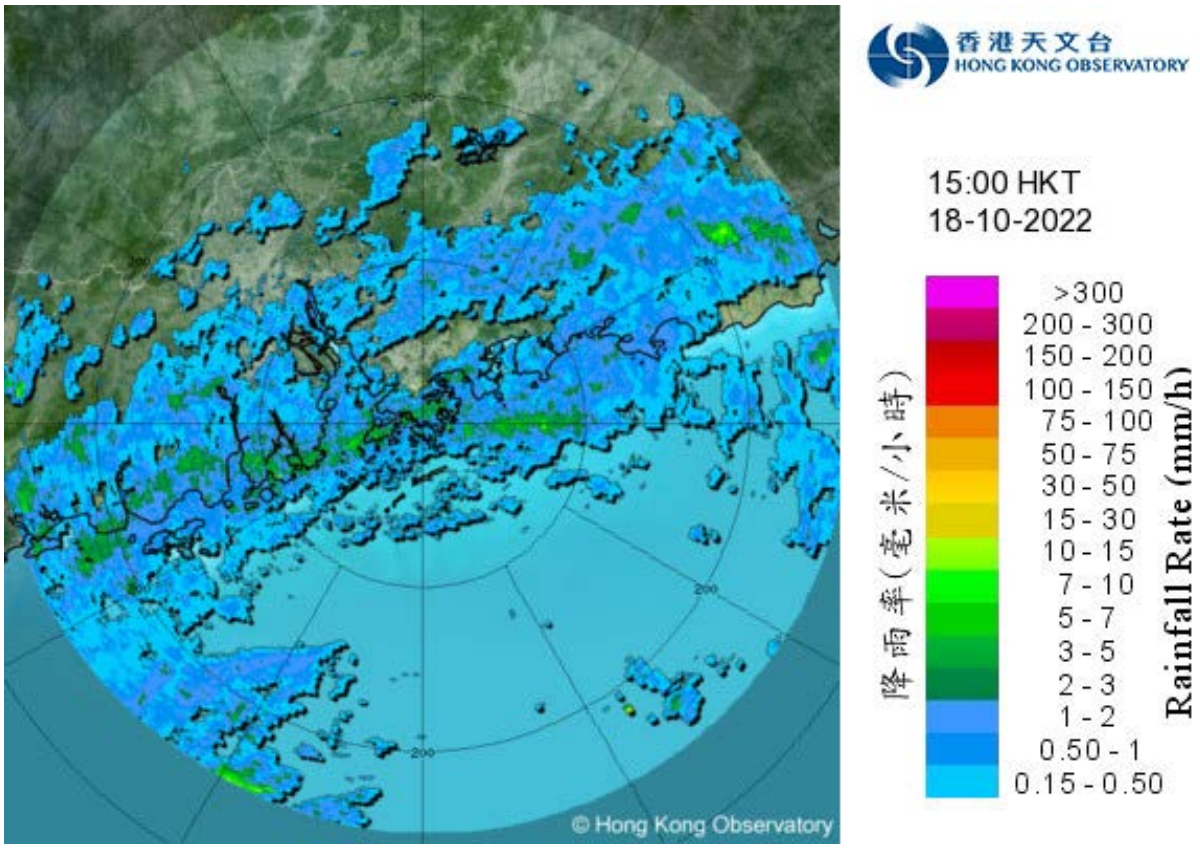


圖 3.5.5　二零二二年十月十八日下午3時正的雷達回波圖像。與納沙相關的雨帶正影響廣東沿岸及南海北部。

Figure 3.5.5　Image of radar echoes at 3 p.m. on 18 October 2022. The rainbands associated with Nesat were affecting the coast of Guangdong and the northern part of the South China Sea.

圖 3.5.6　　山頂道有大樹倒塌，擊中一輛巴士(圖片由香港電台提供)。

Figure 3.5.6　A bus travelling on the Peak was hit by a fallen tree (Courtesy of RTHK).

3.6 強烈熱帶風暴尼格(2222)：二零二二年十月二十六日至十一月三日

尼格是二零二二年第六個影響香港的熱帶氣旋。尼格吹襲香港期間，天文台需要發出二零二二年第三個八號烈風或暴風信號。尼格亦是自一九四六年以來第三個需要在十一月發出八號警告信號的熱帶氣旋。

熱帶低氣壓尼格於十月二十六日早上在馬尼拉以東約1 390公里的北太平洋西部上形成，大致向西北偏西移向菲律賓並逐漸增強。十月二十九日凌晨尼格增強為強烈熱帶風暴並橫過菲律賓。翌日尼格減弱為熱帶風暴並進入南海中部。當晚尼格轉向西北偏北方向移動並再度逐漸增強。十月三十一日下午尼格再次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110公里。十一月二日尼格持續靠近廣東沿岸，但因受東北季候風影響，下午尼格減弱為熱帶風暴。當晚尼格在香港以南水域掠過，翌日早上在珠海登陸，隨後在廣東西部減弱為低壓區。

根據報章報導，尼格吹襲菲律賓期間，造成155人死亡，129人受傷，34人失蹤，超過200萬人受災，經濟損失超過1億2千萬美元。

天文台在十月三十日晚上10時10分發出一號戒備信號，當時尼格集結在香港之東南偏南約800公里。晚間本港吹清勁北風，離岸間中吹強風。隨著尼格靠近廣東沿岸及逐步增強，天文台在十月三十一日下午4時20分改發三號強風信號，當時尼格位於香港之東南偏南約600公里。在尼格及東北季候風的共同影響下，當晚及翌日本港普遍吹強風程度的偏北風，高地間中吹烈風。

雖然尼格在靠近廣東沿岸時開始逐漸減弱，但由於預料尼格會以熱帶風暴強度在十一月二日稍後相當接近珠江口一帶，天文台在當日下午1時40分發出八號西北烈風或暴風信號，當時尼格集結在香港之東南約160公里。因與尼格相關的烈風範圍較為細小，當日下午本港普遍風力維持強風程度的北至西北風，高地吹烈風。傍晚尼格開始採取較為偏西路徑移動，本港逐漸轉吹東北風，天文台在十一月二日晚上8時40分改發八號東北烈風或暴風信號。隨著尼格掠過香港以南水域，在其與東北季候風的共同影響下，本港晚間風勢顯著增強，普遍吹強風至烈風程度的北至東北風，南部離岸及高地的風力更曾達到暴風程度。

尼格於十一月三日上午2時左右最接近香港，在天文台總部之西南約40公里掠過。隨著尼格移至本港的西南面，本港轉吹東南風，天文台在當日上午2時40分改發八號東南烈風或暴風信號。尼格在十一月三日上午5時左右在珠海登陸。隨著尼格減弱並移入內陸，本港風勢隨即緩和，天文台在當日上午5時20分改發三號強風信號，取代八號東南烈風或暴風信號，並於上午6時20分取消所有熱帶氣旋警告信號。

在尼格的影響下，昂坪、橫瀾島及長洲錄得的最高每小時平均風速分別為每小時92、87及85公里，而最高陣風則分別為每小時132、112及123公里。尖鼻咀錄得最高潮位3.00米(海圖基準面以上)，而大廟灣則錄得最大風暴潮(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	1005.8	2/11	上午4時16分
香港國際機場	1005.0	3/11	上午2時20分
長洲	1003.2	3/11	上午1時27分
京士柏	1005.7	2/11	上午3時50分
流浮山	1006.8	31/10	下午2時37分
坪洲	1004.8	3/11	上午1時20分
沙田	1006.5	2/11	上午4時19分
上水	1007.0	31/10	下午2時05分
打鼓嶺	1007.1	31/10	下午2時04分
大埔	1007.1	31/10	下午2時00分
橫瀾島	1004.2	2/11	下午3時35分

十月三十一日本港部分時間有陽光及乾燥。隨著尼格的外圍雨帶影響本港，十一月一日至三日本港間中有狂風驟雨。這三天本港普遍錄得超過40毫米雨量，而市區及東部地區的雨量更超過100毫米。

尼格吹襲香港期間，有一人受傷，另有11宗塌樹報告。旺角有大樹倒塌，壓毀一支燈柱。

3.6 Severe Tropical Storm Nalgae (2222): 26 October to 3 November 2022

Nalgae was the sixth tropical cyclone affecting Hong Kong in 2022. The Observatory issued the third No. 8 Gale or Storm Signal in 2022 during the passage of Nalgae. Moreover, Nalgae was the third tropical cyclone necessitating the issuance of the No. 8 Signal in November since 1946.

Nalgae formed as a tropical depression over the western North Pacific about 1 390 km east of Manila on the morning of 26 October. It moved generally west-northwestwards towards the Philippines and intensified gradually. Nalgae intensified into a severe tropical storm in the small hours on 29 October and moved across the Philippines. It weakened into a tropical storm next day and entered the central part of the South China Sea. Nalgae turned to move north-northwestwards that night and intensified gradually again. Nalgae re-intensified into a severe tropical storm on the afternoon of 31 October and attained its peak intensity with an estimated maximum sustained wind of 110 km/h near its centre. Nalgae continued to edge closer to the coast of Guangdong on 2 November. However, it weakened into a tropical storm in the afternoon due to the influence of the northeast monsoon. Nalgae skirted past the waters south of Hong Kong that night and made landfall over Zhuhai the next morning. It degenerated into an area of low pressure over the western part of Guangdong thereafter.

According to press reports, the passage of Nalgae left 155 deaths, 129 injuries and 34 missing in the Philippines. Over 2 million people were affected and economic loss exceeded 120 million USD.

The Standby Signal No. 1 was issued at 10:10 p.m. on 30 October, when Nalgae was about 800 km south-southeast of Hong Kong. Local winds were fresh northerlies, occasionally strong offshore overnight. With Nalgae edging closer to the coast of Guangdong and gradually intensifying, the No. 3 Strong Wind Signal was issued at 4:20 p.m. on 31 October, when Nalgae was about 600 km south-southeast of Hong Kong. Under the combined effect of Nalgae and the northeast monsoon, local winds were generally strong northerlies that night and next day, occasionally reaching gale force on high ground.

Although Nalgae began to weaken gradually when it approached the coast of Guangdong, as Nalgae was expected to come rather close to the vicinity of the Pearl River Estuary with tropical storm strength later on 2 November, the No. 8 Northwest Gale or Storm Signal was issued at 1:40 p.m. that day when Nalgae was about 160 km southeast of Hong Kong. As the extent of gales associated with Nalgae was rather small, local winds maintained generally strong north to northwesterlies, reaching gale force on high ground in that afternoon. In the evening, Nalgae began to take on a more westerly track and local winds gradually veered to northeasterlies. The No. 8 Northeast Gale or Storm Signal was issued at 8:40 p.m. on 2 November. With Nalgae skirting past the waters south of Hong Kong, together with the combined effect of the northeast monsoon, local winds strengthened significantly overnight. Winds were generally strong to gale north to northeasterlies, once reaching storm force offshore over the southern part of the territory and on high ground.

Nalgae came closest to Hong Kong at around 2 a.m. on 3 November, when it skirted past about 40 km southwest of the Hong Kong Observatory. As Nalgae moved to the southwest of the territory, local winds veered to southeasterlies. The No. 8 Southeast Gale or Storm Signal was issued at 2:40 a.m. that day. Nalgae made landfall over Zhuhai at around 5 a.m. on 3 November. With Nalgae weakening and moving inland, local winds soon subsided. The No. 8 Southeast Gale or Storm Signal was replaced by the No. 3 Strong Wind Signal at 5:20 a.m. and all tropical cyclone warning signals were cancelled at 6:20 a.m. that day.

Under the influence of Nalgae, maximum hourly mean winds of 92, 87 and 85 km/h and gusts of 132, 112 and 123 km/h were recorded at Ngong Ping, Waglan Island and Cheung Chau respectively. A maximum sea level (above chart datum) of 3.00 m was recorded at Tsim Bei Tsui and a maximum storm surge (above astronomical tide) of 0.73 m was recorded at Tai Miu Wan. 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	1005.8	2/11	4:16 a.m.
Hong Kong International Airport	1005.0	3/11	2:20 a.m.
Cheung Chau	1003.2	3/11	1:27 a.m.
King's Park	1005.7	2/11	3:50 a.m.
Lau Fau Shan	1006.8	31/10	2:37 p.m.
Peng Chau	1004.8	3/11	1:20 a.m.
Shatin	1006.5	2/11	4:19 a.m.
Sheung Shui	1007.0	31/10	2:05 p.m.
Ta Kwu Ling	1007.1	31/10	2:04 p.m.
Tai Po	1007.1	31/10	2:00 p.m.
Waglan Island	1004.2	2/11	3:35 p.m.

Locally, it was dry with sunny periods on 31 October. Affected by the outer rainbands associated with Nalgae, there were occasional squally showers in Hong Kong on 1 – 3 November. More than 40 millimetres of rainfall were generally recorded over Hong Kong in these three days and rainfall even exceeded 100 millimetres over the urban areas and the eastern part of the territory.

In Hong Kong, one person was injured during the passage of Nalgae. There were also 11 reports of fallen trees. A tree fell in Mong Kok and hit a lamp post.

表 3.6.1　在尼格影響下，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 3.6.1　Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations when the tropical cyclone warning signals for Nalgae 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	78	3/11	01:17	東	E	48	3/11	02:00
長洲	Cheung Chau	東	E	123	3/11	01:35	東南偏東	ESE	85	3/11	03:00
長洲泳灘	Cheung Chau Beach	東北偏東	ENE	120	3/11	01:33	東北偏東	ENE	85	3/11	02:00
青洲	Green Island	東北	NE	103	2/11	23:24	東北偏東	ENE	72	3/11	01:00
香港國際機場	Hong Kong International Airport	東	E	82	3/11	02:53	東北偏東	ENE	51	3/11	03:00
啟德	Kai Tak	東	E	71	3/11	00:10	東南偏東	ESE	33	3/11	03:00
京士柏	King's Park	東	E	77	3/11	01:22	東	E	35	3/11	02:00
南丫島	Lamma Island	東	E	87	3/11	01:23	東	E	49	3/11	02:00
流浮山	Lau Fau Shan	東北偏北	NNE	72	31/10	22:06	東北偏北	NNE	40	31/10	23:00
昂坪	Ngong Ping	東	E	132	3/11	02:17	東	E	92	3/11	03:00
北角	North Point	東北偏東	ENE	87	2/11	23:40	東北偏東	ENE	55	3/11	00:00
坪洲	Peng Chau	東	E	99	3/11	01:11	東	E	70	3/11	02:00
平洲	Ping Chau	北	N	49	31/10	03:29	東北偏東	ENE	17	3/11	00:00
西貢	Sai Kung	北	N	83	1/11	19:34	東北偏東	ENE	46	3/11	00:00
沙洲	Sha Chau	北	N	78	3/11	00:51	北	N	60	3/11	01:00
沙螺灣	Sha Lo Wan	東	E	82	3/11	03:07	東	E	35	3/11	03:00
沙田	Sha Tin	東北偏北	NNE	87	2/11	22:58	東南	SE	25	3/11	04:00
九龍天星碼頭	Star Ferry (Kowloon)	東	E	75	3/11	01:05	東	E	45	3/11	02:00
打鼓嶺	Ta Kwu Ling	東北偏北	NNE	66	2/11	01:48	東北偏北	NNE	29	31/10	12:00
大美督	Tai Mei Tuk	東北	NE	81	1/11	18:18	東北偏東	ENE	58	3/11	02:00
大帽山	Tai Mo Shan	東北偏北	NNE	111	31/10	20:55	東北	NE	82	1/11	21:00
		東南偏東	ESE	111	3/11	02:31					
大埔滘	Tai Po Kau	東南偏東	ESE	69	3/11	01:54	東	E	45	3/11	02:00
塔門東	Tap Mun East	東	E	81	3/11	00:22	東	E	66	3/11	01:00
大老山	Tate's Cairn	東北偏東	ENE	125	2/11	21:11	東北偏東	ENE	92	2/11	22:00
將軍澳	Tseung Kwan O	北	N	64	1/11	19:02	東北偏北	NNE	24	2/11	23:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	西北偏北	NNW	61	1/11	00:47	西北偏北	NNW	28	31/10	14:00
屯門政府合署	Tuen Mun Government Offices	東南	SE	60	3/11	04:06	東南	SE	22	3/11	05:00
橫瀾島	Waglan Island	東北	NE	112	2/11	22:07	東北	NE	87	2/11	22:00
濕地公園	Wetland Park	東北偏北	NNE	48	1/11	00:05	東北偏東	ENE	14	3/11	03:00
黃竹坑	Wong Chuk Hang	東北偏東	ENE	80	3/11	00:22	東北偏東	ENE	30	3/11	02:00

黃麻角(赤柱)、石崗 - 沒有資料　Bluff Head (Stanley), Shek Kong - data not available

表 3.6.2　在尼格影響下，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 3.6.2　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 Nalgae 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	31/10	01:01	3/11	04:19	1/11	20:23	3/11	03:26
香港國際機場	Hong Kong International Airport	3/11	01:49	3/11	04:24	-			
流浮山	Lau Fau Shan	31/10	09:18	1/11	14:01	-			
西貢	Sai Kung	31/10	16:37	3/11	00:35	-			

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 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 3.6.3　尼格影響香港期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.6.3　Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Nalgae

站 (參閱圖 3.6.2) Station (See Fig. 3.6.2)			十月三十日 30 Oct	十月三十一日 31 Oct	十一月一日 1 Nov	十一月二日 2 Nov	十一月三日 3 Nov	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			0.0	0.0	4.5	23.7	58.1	86.3
香港國際機場 Hong Kong International Airport (HKA)			0.0	0.0	15.4	18.5	21.6	55.5
長洲 Cheung Chau (CCH)			[0.0]	0.0	7.5	11.5	[8.0]	[27.0]
H23	香港仔	Aberdeen	0.0	0.0	8.0	33.5	44.0	85.5
N05	粉嶺	Fanling	0.0	0.0	7.5	20.0	22.5	50.0
N13	糧船灣	High Island	0.0	0.0	4.5	49.0	37.5	91.0
K04	佐敦谷	Jordan Valley	0.0	0.0	9.5	43.5	67.0	120.0
N06	葵涌	Kwai Chung	0.0	0.0	4.0	20.0	35.0	59.0
H12	半山區	Mid Levels	0.0	0.0	7.5	29.0	38.5	75.0
N09	沙田	Sha Tin	0.0	0.0	8.0	51.5	46.0	105.5
H19	筲箕灣	Shau Kei Wan	0.0	0.0	4.5	44.0	60.5	109.0
SEK	石崗	Shek Kong	[0.0]	0.0	6.5	[27.5]	21.0	[55.0]
K06	蘇屋邨	So Uk Estate	0.0	0.0	7.5	32.5	43.0	83.0
R31	大美督	Tai Mei Tuk	0.0	0.0	11.5	34.0	36.5	82.0
R21	踏石角	Tap Shek Kok	0.0	0.0	3.0	9.0	14.0	26.0
N17	東涌	Tung Chung	0.0	0.0	5.5	32.5	36.5	74.5
TMR	屯門水庫	Tuen Mun Reservoir	0.0	0.0	1.9	19.8	19.2	40.9

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

表 3.6.4　尼格影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.6.4　Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Nalgae

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	2.93	2/11	02:38	0.65	2/11	08:54
石壁	Shek Pik	2.99	2/11	02:41	0.70	2/11	10:05
大廟灣	Tai Miu Wan	2.95	2/11	03:14	0.73	2/11	08:02
大埔滘	Tai Po Kau	2.95	1/11	01:56	0.69	2/11	09:38
尖鼻咀	Tsim Bei Tsui	3.00	2/11	03:54	0.70	2/11	12:02

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

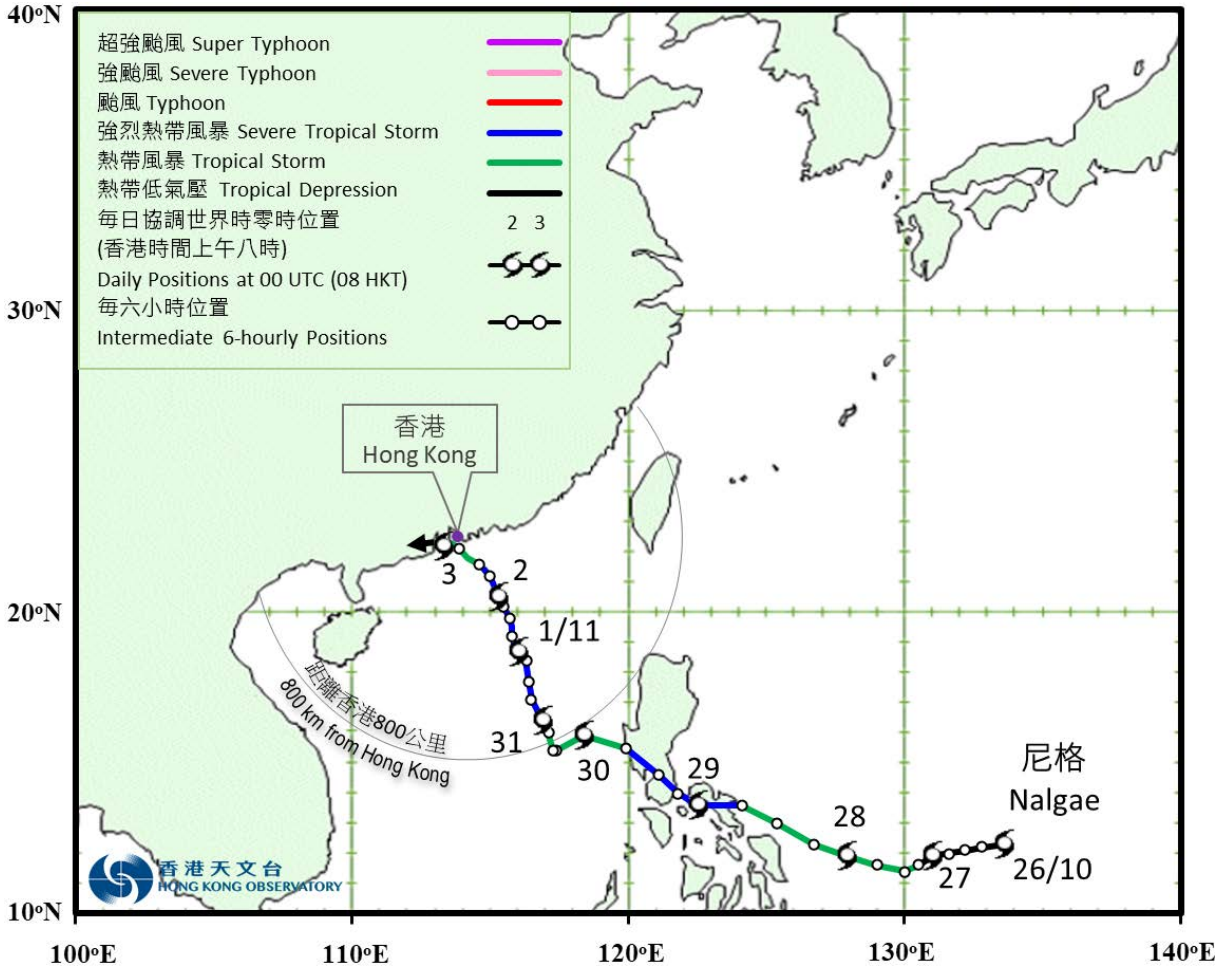


圖 3.6.1a　　二零二二年十月二十六日至十一月三日尼格(2222)的路徑圖。

Figure 3.6.1a　Track of Nalgae (2222): 26 October - 3 November 2022.

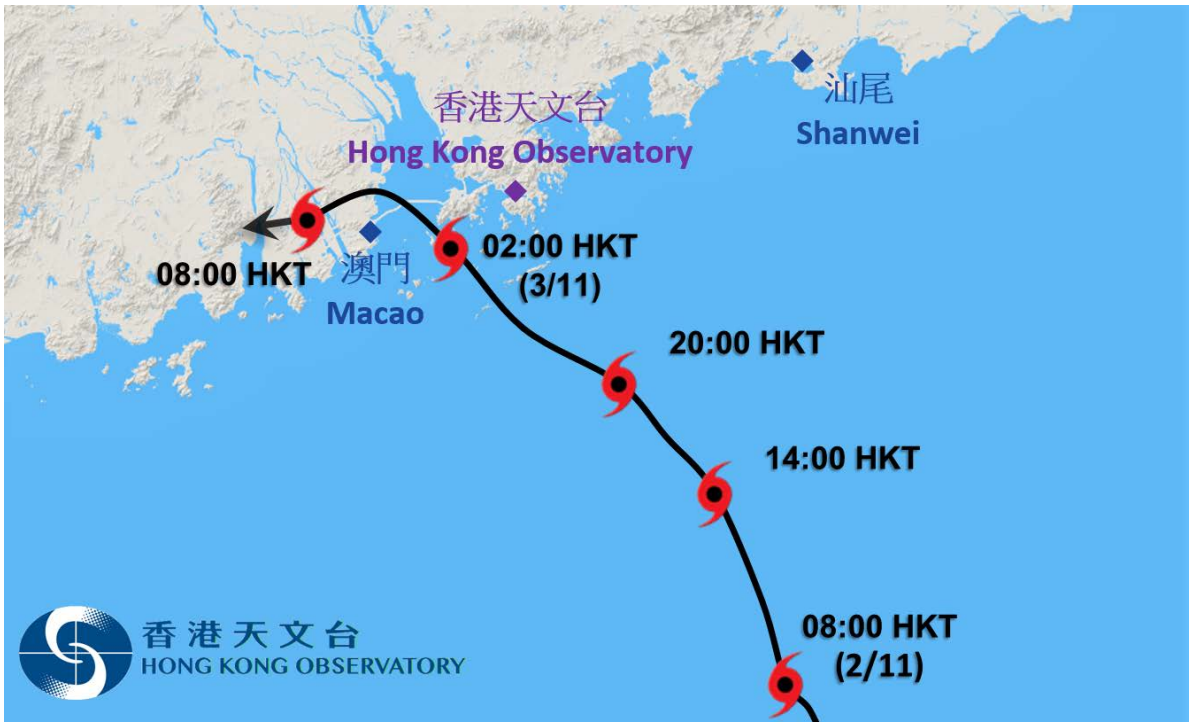


圖 3.6.1b　　尼格接近香港時的路徑圖。

Figure 3.6.1b　Track of Nalgae near Hong Kong.

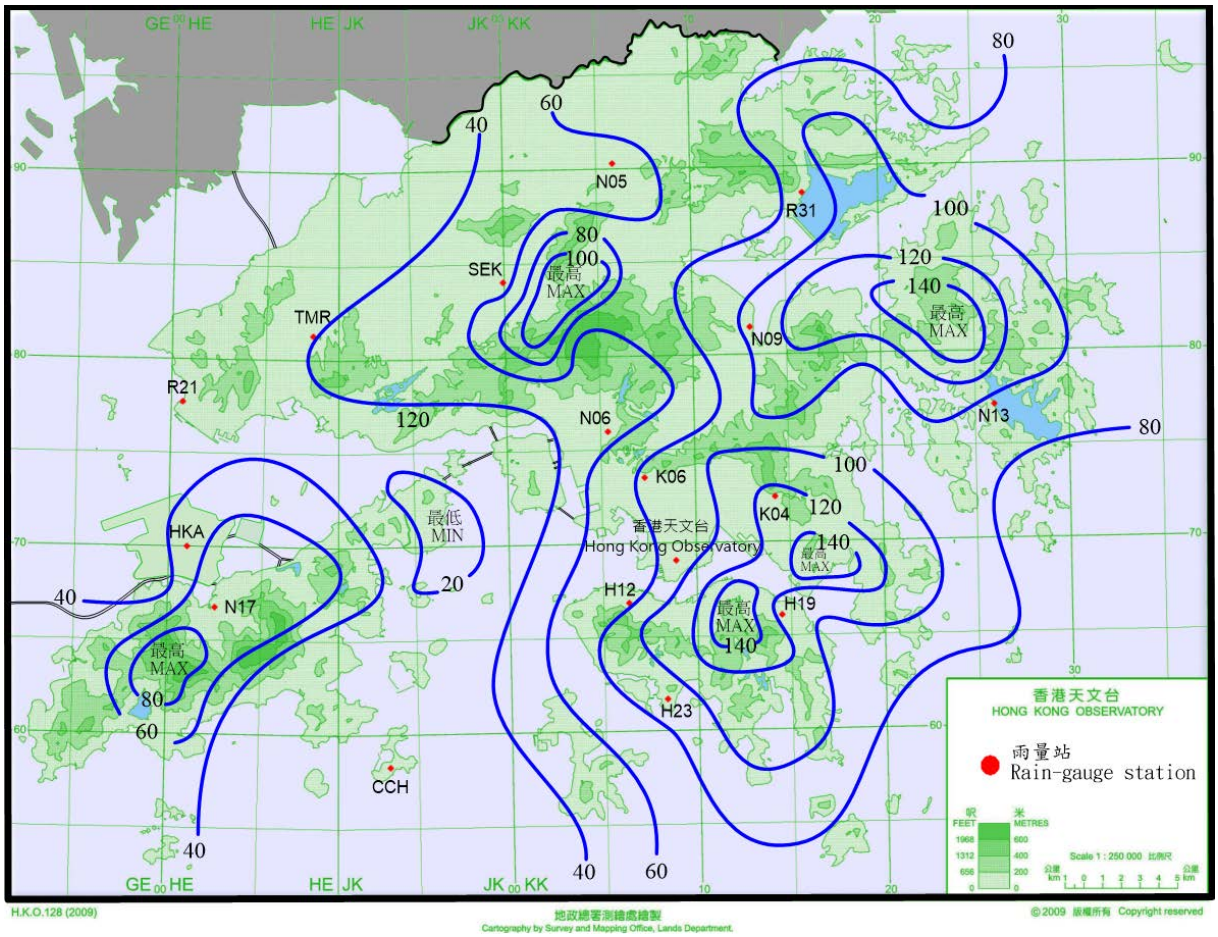


圖 3.6.2　二零二二年十月三十日至十一月三日的雨量分佈(等雨量線單位為毫米)。

Figure 3.6.2　Rainfall distribution on 30 October – 3 November 2022 (isohyets are in millimetres).

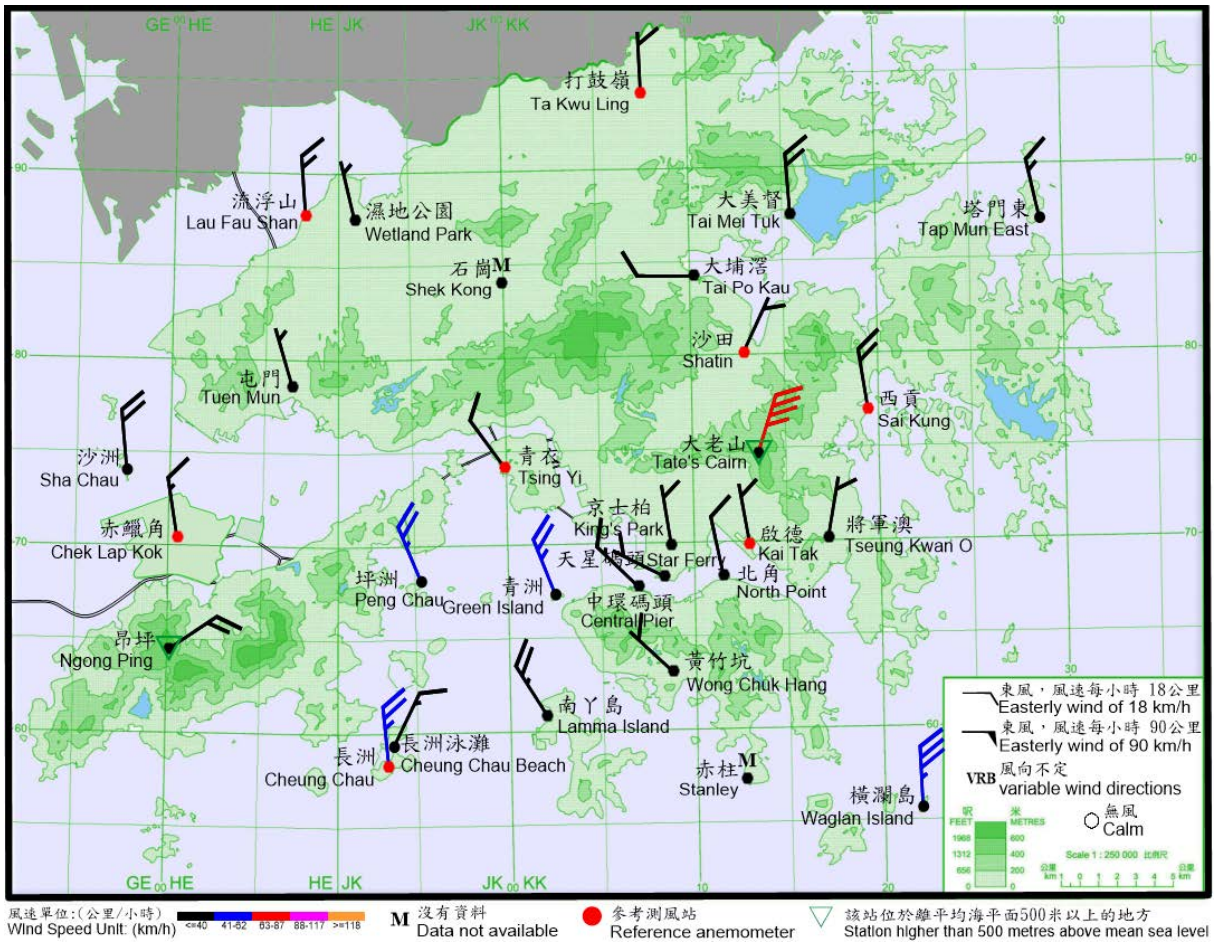


圖 3.6.3a　二零二二年十一月二日下午 6 時 30 分香港各站錄得的十分鐘平均風向和風速。當時本港普遍吹北至西北風。

Figure 3.6.3a　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 6:30 p.m. on 2 November 2022. Local winds were generally north to northwesterlies at that time.

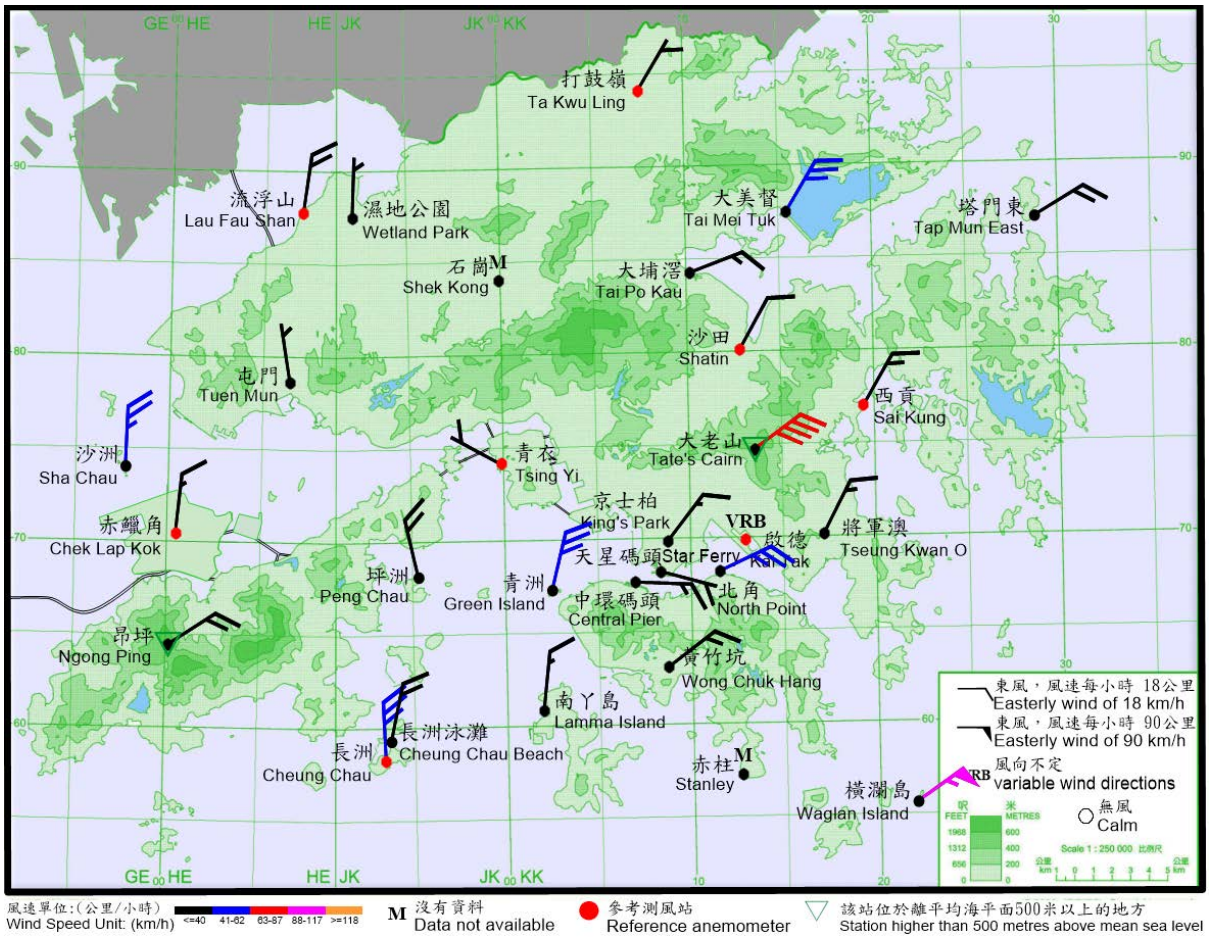


圖 3.6.3b　二零二二年十一月二日下午 10 時 10 分香港各站錄得的十分鐘平均風向和風速。當時本港普遍吹北至東北風，橫瀾島的風力達到暴風程度。

Figure 3.6.3b　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 10:10 p.m. on 2 November 2022. Local winds were generally north to northeasterlies and winds at Waglan Island reached storm force at the time.

註：　啟德當時錄得的十分鐘平均風速為每小時 21 公里。

Note:　The 10-minute mean wind speed recorded at the time at Kai Tak was 21 km/h.

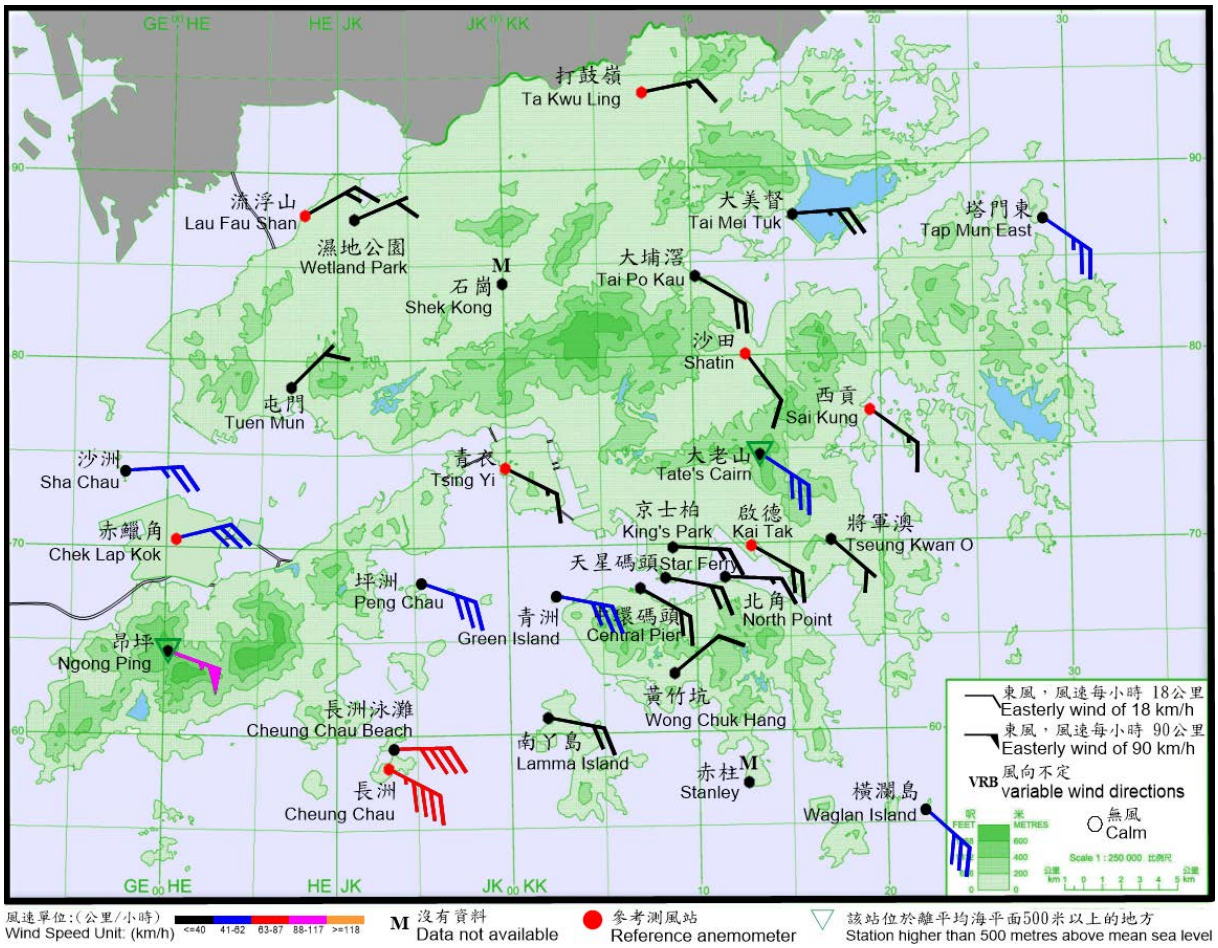


圖 3.6.3c　二零二二年十一月三日上午 2 時 50 分香港各站錄得的十分鐘平均風向和風速。當時本港普遍吹東至東南風，昂坪的風力達到暴風程度。

Figure 3.6.3c　10-minute mean wind direction and speed recorded at various stations in Hong Kong at 2:50 a.m. on 3 November 2022. Local winds were generally east to southeasterlies and winds at Ngong Ping reached storm force at the time.

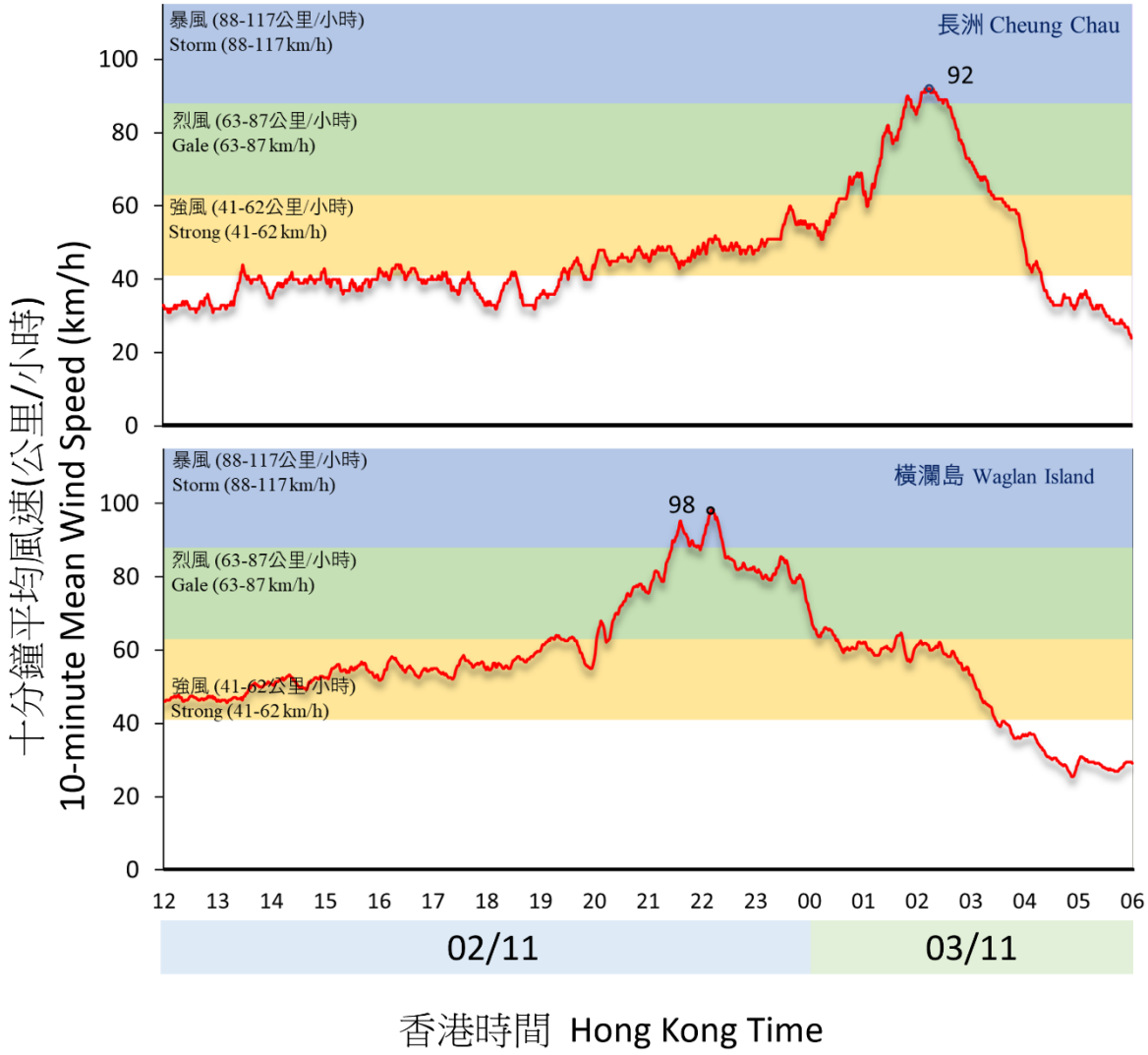


圖 3.6.4　二零二二年十一月二日至三日的長洲及橫瀾島錄得的十分鐘平均風速。

Figure 3.6.4　Traces of 10-minute mean wind speed recorded at Cheung Chau and Waglan Island on 2 – 3 November 2022.

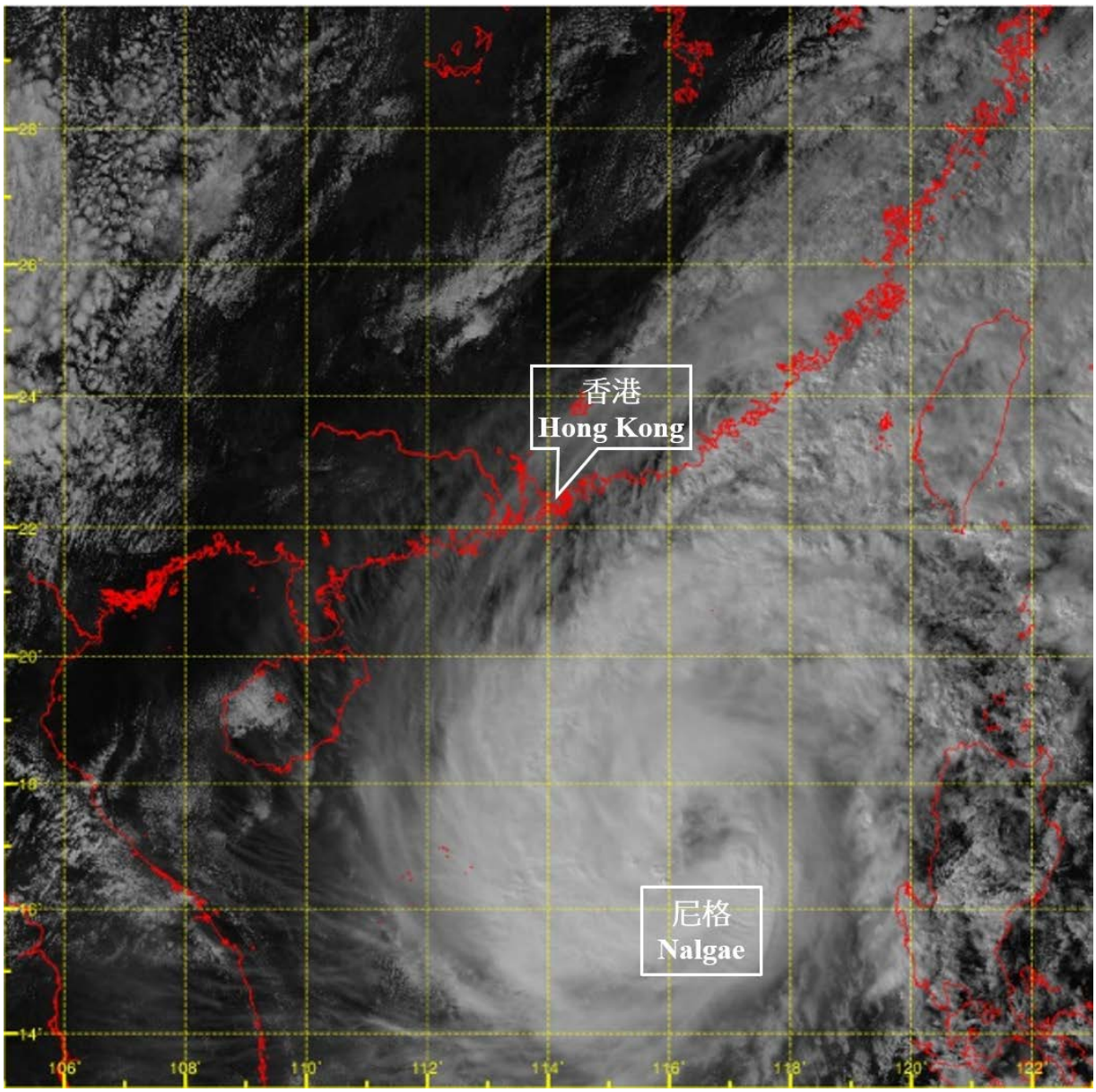


圖 3.6.5　二零二二年十月三十一日下午 2 時左右的可見光衛星圖片，當時尼格達到其最高強度，中心附近最高持續風速估計為每小時 110 公里。

Figure 3.6.5　Visible satellite imagery at around 2 p.m. on 31 October 2022 when Nalgae was at its peak intensity with an estimated maximum sustained wind of 110 km/h near its centre.

〔此衛星圖像接收自日本氣象廳的向日葵 8 號衛星。〕

[The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency.]

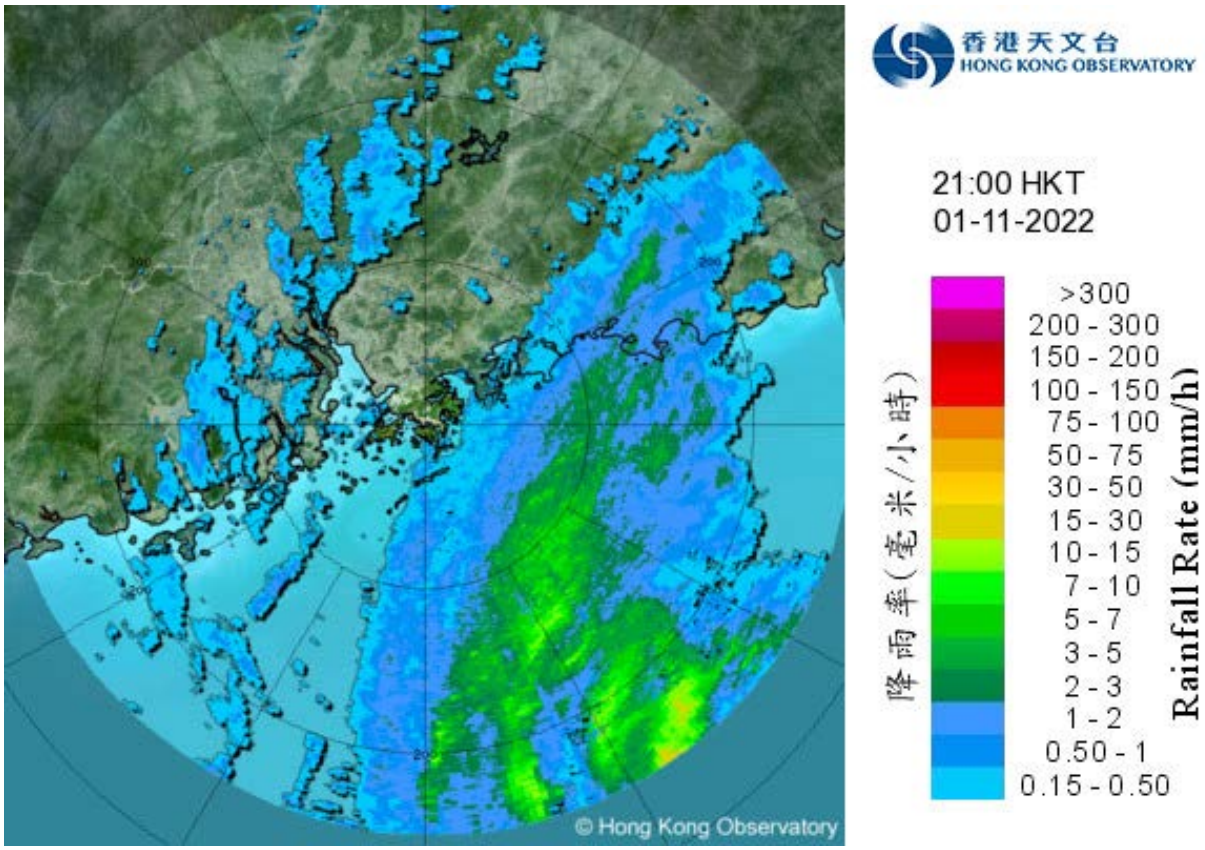


圖 3.6.6　二零二二年十一月一日下午 9 時正的雷達回波圖像。尼格的外圍雨帶正影響南海北部及廣東沿岸。

Figure 3.6.6　Image of radar echoes at 9 p.m. on 1 November 2022. The outer rainbands associated with Nalgae were affecting the northern part of the South China Sea and the coast of Guangdong.

第四節　　熱帶氣旋統計表

表4.1是二零二二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是天文台在二零二二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是二零二二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是一九五六至二零二二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是一九五六至二零二二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是一九五六至二零二二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是二零二二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是二零二二年位於香港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二零二二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是自一九四六年至二零二二年間，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是二零二二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是一九六零至二零二二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是二零二二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 2022 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 2022, 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 2022. 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 2022 inclusive.

TABLE 4.5 gives the annual number of tropical cyclones in Hong Kong's area of responsibility between 1956 and 2022 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 1956-2022.

TABLE 4.7 is a summary of meteorological information for each tropical cyclone affecting Hong Kong in 2022, 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 2022.

TABLE 4.8.2 highlights the 10 wettest tropical cyclones in Hong Kong for the period 1884-1939 and 1947-2022.

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 2022. 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 2022. 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: 1960-2022. 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 2022.

表 4.1　　二零二二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 2022

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 Disspiated 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	
超強颱風馬勒卡	Super Typhoon Malakas	2201	07 / 04	0000	3.7	148.5	185	935	15 / 04	0600	28.2	141.7	XT
熱帶風暴鮎魚	Tropical Storm Megi	2202	09 / 04	0000	10.7	127.0	65	995	11 / 04	1500	11.1	124.8	DISP
颱風暹芭	Typhoon Chaba	2203	29 / 06	0000	15.3	116.3	120	965	03 / 07	0900	24.7	110.6	DISP
熱帶風暴艾利	Tropical Storm Aere	2204	30 / 06	1200	19.1	131.6	75	988	04 / 07	1800	32.5	129.2	DISP
熱帶風暴桑達	Tropical Storm Songda	2205	27 / 07	0600	17.3	141.0	65	994	31 / 07	0600	33.9	123.1	DISP
熱帶風暴翠絲	Tropical Storm Trases	2206	30 / 07	0600	21.6	127.6	65	996	01 / 08	0600	34.5	126.4	DISP
熱帶低氣壓	Tropical Depression	-	03 / 08	1200	21.6	117.1	45	1002	04 / 08	0300	22.8	114.7	DISP
熱帶風暴木蘭	Tropical Storm Mulan	2207	08 / 08	1800	16.2	112.5	65	994	11 / 08	0000	21.4	106.5	DISP
熱帶風暴米雷	Tropical Storm Meari	2208	10 / 08	0000	26.0	140.0	75	995	13 / 08	1800	37.3	142.7	XT
颱風馬鞍	Typhoon Ma-On	2209	21 / 08	0600	17.1	127.3	120	978	25 / 08	1800	21.6	106.5	DISP
颱風蝎虎	Typhoon Tokage	2210	21 / 08	1800	23.1	151.5	145	955	25 / 08	0600	40.4	152.9	XT
超強颱風軒嵐諾	Super Typhoon Hinnamnor	2211	27 / 08	1800	23.7	150.8	230	910	06 / 09	0000	36.4	130.7	XT
強颱風梅花	Severe Typhoon Muifa	2212	06 / 09	0600	21.5	136.9	175	945	15 / 09	1800	36.5	120.6	DISP
颱風苗柏	Typhoon Merbok	2213	11 / 09	0600	20.9	159.8	130	955	15 / 09	0000	36.7	164.5	XT
超強颱風南瑪都	Super Typhoon Nanmadol	2214	13 / 09	0000	21.9	138.4	220	910	19 / 09	0600	35.1	132.3	XT
熱帶風暴塔拉斯	Tropical Storm Talas	2215	21 / 09	0600	23.9	141.0	65	1000	23 / 09	1800	33.4	137.4	XT
超強颱風奧鹿	Super Typhoon Noru	2216	22 / 09	0000	17.9	134.6	220	910	28 / 09	1800	15.6	104.6	DISP
強烈熱帶風暴玫瑰	Severe Tropical Storm Kulap	2217	25 / 09	0600	20.6	146.0	110	975	29 / 09	0000	38.7	156.0	XT
颱風洛克	Typhoon Roke	2218	27 / 09	1800	20.5	133.4	140	965	01 / 10	1200	34.1	148.4	XT
熱帶風暴桑卡	Tropical Storm Sonca	2219	13 / 10	0000	12.0	114.6	65	996	15 / 10	0000	15.3	107.8	DISP
熱帶風暴海棠	Tropical Storm Haitang	2221	13 / 10	0600	15.1	152.6	65	1000	19 / 10	1200	36.7	167.6	XT
颱風納沙	Typhoon Nesat	2220	14 / 10	1800	18.8	127.1	145	960	20 / 10	0600	17.7	108.1	DISP
熱帶低氣壓	Tropical Depression	-	20 / 10	0000	20.9	129.4	55	1004	23 / 10	0300	19.8	115.9	DISP
強烈熱帶風暴尼格	Severe Tropical Storm Nalgae	2222	26 / 10	0000	12.3	133.6	110	982	03 / 11	0000	22.2	113.3	DISP
熱帶風暴榕樹	Tropical Storm Banyan	2223	30 / 10	0600	8.9	136.9	75	998	01 / 11	0000	7.0	131.7	DISP
熱帶風暴山貓	Tropical Storm Yamaneko	2224	11 / 11	1800	20.2	166.3	65	1004	14 / 11	0000	23.8	165.5	DISP
熱帶風暴帕卡	Tropical Storm Pakhar	2225	10 / 12	1800	16.5	125.0	75	996	12 / 12	1200	20.4	131.0	DISP

+時間為協調世界時。

+Times are given in UTC.

表 4.2　　二零二二年為船舶發出的熱帶氣旋警告

TABLE 4.2　TROPICAL CYCLONE WARNINGS FOR SHIPPING ISSUED IN 2022

熱帶氣旋	Tropical cyclone	發出警告的次數 No. of warnings issued	發出的日期及時間 Date and time of issue of				時段 (小時) Duration (hours)
			首次警告 First warning		末次警告 Last warning		
			日期/月份 Date/Month	時間+ Time+	日期/月份 Date/Month	時間+ Time+	
熱帶風暴鮎魚	Tropical Storm Megi	7	11 / 4	0600	12 / 4	0000	18
* 颱風暹芭	* Typhoon Chaba	39	29 / 6	0300	3 / 7	1200	105
* 熱帶低氣壓	* Tropical Depression	8	3 / 8	1200	4 / 8	0600	18
* 熱帶風暴木蘭	* Tropical Storm Mulan	19	8 / 8	1800	11 / 8	0000	54
* 颱風馬鞍	* Typhoon Ma-on	32	21 / 8	2100	25 / 8	1800	93
超強颱風軒嵐諾	Super Typhoon Hinnamnor	23	2 / 9	0900	5 / 9	0300	66
強颱風梅花	Severe Typhoon Muifa	32	10 / 9	1800	14 / 9	1500	93
超強颱風奧鹿	Super Typhoon Noru	30	24 / 9	1800	28 / 9	0900	87
熱帶風暴桑卡	Tropical Storm Sonca	17	13 /10	0600	14 /10	2100	39
* 颱風納沙	* Typhoon Nesat	42	15 /10	0600	20 /10	0900	123
熱帶低氣壓	Tropical Depression	21	21 /10	0000	23 /10	0600	54
* 強烈熱帶風暴尼格	* Severe Tropical Storm Nalgae	43	28 /10	1800	3 /11	0000	126
熱帶風暴帕卡	Tropical Storm Pakhar	5	10 /12	1500	11 /12	0300	12
	共 Total	318					888

* 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　　二零二二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 2022

摘要 SUMMARY

信號 Signal	次數 No. of occasions	總時段 Total duration	
		時 h	分 min
1	8	105	5
3	8	159	20
8 西北 NW	1	7	0
8 西南 SW	0	0	0
8 東北 NE	2	12	15
8 東南 SE	3	31	30
9	0	0	0
10	0	0	0
共 Total	22	315	10

詳情 DETAILS

熱帶氣旋 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*
颱風暹芭 Typhoon Chaba	102	1	29/06	21:10	30/06	22:40
		3	30/06	22:40	01/07	19:10
		8 SE	01/07	19:10	02/07	16:20
		3	02/07	16:20	03/07	14:10
		1	03/07	14:10	03/07	19:40
熱帶低氣壓 Tropical Depression	20	1	03/08	22:10	04/08	14:40
熱帶風暴木蘭 Tropical Storm Mulan	43	1	09/08	03:40	09/08	11:25
		3	09/08	11:25	10/08	18:20
颱風馬鞍 Typhoon Ma-on	49	1	23/08	21:10	24/08	12:40
		3	24/08	12:40	24/08	19:25
		8 NE	24/08	19:25	25/08	01:40
		8 SE	25/08	01:40	25/08	09:20
		3	25/08	09:20	25/08	14:10
		1	25/08	14:10	25/08	16:10
颱風納沙 Typhoon Nesat	46	1	16/10	21:20	17/10	11:30
		3	17/10	11:30	18/10	15:40
強烈熱帶風暴尼格 Severe Tropical Storm Nalgae	85	1	30/10	22:10	31/10	16:20
		3	31/10	16:20	02/11	13:40
		8 NW	02/11	13:40	02/11	20:40
		8 NE	02/11	20:40	03/11	02:40
		8 SE	03/11	02:40	03/11	05:20
		3	03/11	05:20	03/11	06:20

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

表 4.4 一九五六至二零二二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 - 2022

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
共 Total	460	379	30	35	70	58	23	15	17641	54
平均 Mean	6.9	5.7	0.4	0.5	1.0	0.9	0.3	0.2	263	19

表 4.5 一九五六至二零二二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 - 2022

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
平均 Mean	15.7	5.9

表 4.6　一九五六至二零二二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 - 2022

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	412	42 49	161 0 (桃麗達 Tilda, 1964)	4 30 (熱帶低氣壓 T.D., 2000)	263 19	570 15 (1964)	36 35 (1959)
三號或以上 3 or higher	277	29 14	124 15 (瑪麗 Mary, 1960)	4 5 (熱帶低氣壓 T.D., 2006)	120 53	306 35 (1974)	15 5 (2004)
八號或以上 8 or higher	104	14 36	66 50 (瑪麗 Mary, 1960)	2 40 (雲茜 Wynne, 1984)	22 40	100 55 (1964)	0 0
8 西北 NW	30	5 51	15 45	1 30	2 37	18 0	0 0
8 西南 SW	35	4 58	10 45	2 0	2 36	16 10	0 0
8 東北 NE	70	7 48	35 35	1 35	8 9	40 20	0 0
8 東南 SE	58	7 50	22 0	0 20	6 47	31 30	0 0
九號或以上 9 or higher	24	7 2	12 25 (約克 York, 1999)	2 0 (杜鵑 Dujuan, 2003)	2 31	19 25 (1964)	0 0
十號 10	15	6 26	11 0 (約克 York, 1999)	2 30 (愛麗斯 Alice, 1961)	1 26	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　　二零二二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 2022

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
颱風暹芭 Typhoon Chaba	7	2	10:00	西南偏西 WSW	310	18	西北 NW	965	7	1	18:13	997.8	0.50	0.70	0.56	0.70	0.64	-
										2	18:13 - 18:14	997.8						
									7	2	18:00	998.0						
熱帶低氣壓 Tropical Depression	8	4	11:00	東北 NE	80	18	西北 NW	1002	8	4	04:15 - 14:40#	1003.6	0.15	0.07	0.15	0.23	0.14	-
											05:00	1003.6						
熱帶風暴木蘭 Tropical Storm Mulan	8	10	08:00	西南 SW	400	25	西北偏西 WNW	994	8	9	16:31	1001.5	0.40	0.42	0.44	0.51	0.39	-
											17:00, 18:00	1001.7						
颱風馬鞍 Typhoon Ma-on	8	25	02:00	西南偏南 SSW	190	30	西 W	978	8	24	16:11 - 16:22#	999.4	0.59	0.70	0.73	0.70	0.73	-
											16:00	999.7						
颱風納沙 Typhoon Nesat	10	17	17:00	東南偏南 SSE	380	16	西南偏西 WSW	965	10	17	14:38 - 15:47#	1007.2	0.70	0.71	0.76	0.69	0.72	-
											15:00	1007.3						
強烈熱帶風暴尼格 Severe Tropical Storm Nalgae	11	3	02:00	西南 SW	40	10	西 W	998	11	2	04:16 - 17:06#	1005.8	0.65	0.70	0.73	0.69	0.70	-
											16:00	1005.8						

* 香港時間（協調世界時加八小時）

\# 最初及最後錄得的時間

\- 沒有資料

* Hong Kong Time （UTC + 8 hours）

\# First and last time recorded

\- 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	
颱風暹芭 Typhoon Chaba	7	東 E	36	東南偏東 ESE	55	東北偏東 ENE	71	東 E	45	東南偏南 SSE	60	東南偏東 ESE	78	東 E	75	西南偏南,南 SSW, S	93	東 E	95
熱帶低氣壓 Tropical Depression	8	東 E	13	西南偏西,西 WSW, W	18	東北 NE	23	東 E	14	西 W	29	東北 NE	24	西 W	25	西北偏西 WNW	37	東北 NE	26
熱帶風暴木蘭 Tropical Storm Mulan	8	東 E	36	東 E	40	東 E	64	東 E	40	東南偏東 ESE	50	東 E	78	東南偏南 SSE	78	東南偏南 SSE	77	東 E	91
颱風馬鞍 Typhoon Ma-on	8	東 E	36	東南偏東 ESE	45	東南 SE	76	東 E	38	東, 東南偏東 E,ESE	49	東南 SE	86	東 E	71	東南偏東 ESE	75	東南偏東 ESE	103
颱風納沙 Typhoon Nesat	10	北, 東北偏北 N, NNE	28	東北偏北 NNE	36	東北偏北 NNE	62	東北偏北 NNE	35	東北偏北 NNE	40	東北偏北 NNE	64	東北偏北 NNE	71	東北偏北, 東北偏東 NNE, ENE	60	東北偏北 NNE	75
強烈熱帶風暴尼格 Severe Tropical Storm Nalgae	11	東 E	36	東北偏東 ENE	51	東北 NE	92	東 E	40	東北偏東 ENE	55	東北 NE	98	東 E	77	東 E	82	東北 NE	112

表 4.8.1　　二零二二年位於香港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 2022

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)
颱風暹芭 Typhoon Chaba	(T_1) 30 / 6 2000 - (T_2) 3 / 7 1700	136.7	0.2	0.6	1.1	137.8
熱帶低氣壓 Tropical Depression	(T_1) 3 / 8 2000 - (T_2) 4 / 8 1100	1.1	121.1	179.5	184.8	185.9
熱帶風暴木蘭 Tropical Storm Mulan	(T_1) 9 / 8 1000 - (T_2) 11 / 8 0000	118.1	12.4	88.4	88.4	206.5
颱風馬鞍 Typhoon Ma-on	(T_1) 24 / 8 0300 - (T_2) 25 / 8 1900	53.6	0.1	0.1	0.1	53.7
颱風納沙 Typhoon Nesat	(T_1) 16 /10 1800 - (T_2) 19 /10 0000	19.7	0.0	0.0	0.0	19.7
熱帶低氣壓 # Tropical Depression #	(T_1) 22 /10 1400 - (T_2) 23 /10 1100	微量 Trace	0.0	0.0	0.0	微量 Trace
強烈熱帶風暴尼格 Severe Tropical Storm Nalgae	(T_1) 31 /10 1700 - (T_2) 3 /11 0800	82.5	7.8	7.8	11.3	93.8
					共 Total	697.4

* 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。

* 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.

表 4.8.2　一八八四至一九三九年及一九四七至二零二二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 - 2022)

熱帶氣旋 Tropical Cyclone			香港天文台錄得的雨量(毫米) Rainfall at the Hong Kong Observatory (mm)				
年份 Year	月份 Month	名稱 Name	(i) 在香港600公里內 within 600 km of Hong Kong ($T_1 \rightarrow T_2$)	(ii) 在 T_2 之後的 24 小時內 24-hour period after T_2	(iii) 在 T_2 之後的 48 小時內 48-hour period after T_2	(iv) 在 T_2 之後的 72 小時內 72-hour period after T_2	(i) + (iv) 共 Total $T_1 \rightarrow$ (T_2+72 小時 hours)
1999	8	森姆 Sam	368.1	178.9	248.1	248.4	616.5
1926	7	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
1995	8	海倫 Helen	241.4	146.2	235.2	239.5	480.9

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。

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 SuperT. Haima.

表 4.9　　一九四六至二零二二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 - 2022

颱風名稱 Name of typhoon	當最接近天文台時 Nearest approach to the Hong Kong Observatory			最低平均海平面氣壓 (百帕斯卡) Minimum M.S.L. pressure (hPa)		最高60分鐘平均風向及風速 (公里每小時) Maximum 60-min mean wind in points and km/h							最高陣風風向及風速 (公里每小時) Maximum gust peak speed in km/h with direction in points						
	日期/月份 年份 Date/Month Year	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

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　二零二二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 2022

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	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)**		
颱風暹芭 Typhoon Chaba	6 - 7		公園照明 Park lighting: 3 遊樂場 Playground: 1 路燈柱 Lamppost : 2 棚架 Scaffolding: 1	巴士擋風玻璃 Windscreens of bus: 1 鐵路 Railway: 1	7		7	595		0.0330	0.9440	0.2283		1.2053	10.2409	11.4461
熱帶低氣壓 Tropical Depression	8			巴士擋風玻璃 Windscreens of bus: 1								0.0045		0.0045		
熱帶風暴木蘭 Tropical Storm Mulan	8		路燈柱 Lamppost : 2	巴士擋風玻璃 Windscreens of bus: 6	1		2	4		0.0268		0.0749		0.1017		
颱風馬鞍 Typhoon Ma-on	8		告示板 Notice board: 1 著陸扶手 Landing handrail: 1 路燈柱 Lamppost : 1 道路 Road : 1 棚架 Scaffolding: 1	巴士擋風玻璃 Windscreens of bus: 3	2		3	279		0.0564	0.6860	0.0263		0.7687	4.3339	5.1026
颱風納沙 Typhoon Nesat	10			鐵路 Railway: 1				10			0.0320			0.0320		
強烈熱帶風暴尼格 Severe Tropical Storm Nalgae	11 - 12		小徑 Minor footpath: 1 遊樂場 Playground: 1 運動場 Sports ground: 2 路標 Signpost: 1 路燈柱 Lamppost : 1	鐵路 Railway: 1	3	1	2	11		0.0850	0.5135	0.0083		0.6068	3.7279	4.3346

#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2022年的保險索償數據只涵蓋颱風暹芭、颱風馬鞍及強烈熱帶風暴尼格。

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 Chaba, Typhoon Ma-on and Severe Tropical Storm Nalgae in 2022.

*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2023年5月31日)。

* The data is provided by relevant government departments and public utility companies (up to 31 May 2023). 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　　一九六零至二零二二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 - 2022

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

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
1985	19 / 6 - 25 / 6	T. Hal	哈爾	0	1	13	0	4	2
	1 / 9 - 7 / 9	T. Tess	戴絲	2	0	12	6	1	3
	13 /10 - 22 /10	T. Dot	黛蒂	0	0	1	0	0	0
1986	3 / 7 - 12 / 7	T. Peggy	蓓姬	1	0	26	3	0	3
	9 / 8 - 12 / 8	T.D. -	-	0	0	3	0	1	5
	18 / 8 - 6 / 9	T. Wayne	韋恩	3	1	15+	0	3	0
	11 /10 - 19 /10	T. Ellen	愛倫	0	0	4	1	2	1
1987	16 /10 - 27 /10	T. Lynn	林茵	0	0	1	0	0	0
1988	14 / 7 - 20 / 7	T. Warren	華倫	0	1	12	1	2	1
	19 / 9 - 22 / 9	T. Kit	吉蒂	0	0	0	0	0	1
	18 /10 - 23 /10	T. Pat	帕特	2	0	1	0	0	0
	21 /10 - 29 /10	T. Ruby	露比	0	0	4	0	0	0
1989	16 / 5 - 21 / 5	T. Brenda	布倫達	6	1	119	0	3	5
	11 / 7 - 19 / 7	T. Gordon	戈登	2	0	31	1	0	8
	8 /10 - 14 /10	T. Dan	丹尼	0	0	0	1	0	1
1990	15 / 5 - 19 / 5	T. Marian	瑪麗安	0	0	0	0	0	1
	15 / 6 - 19 / 6	S.T.S. Nathan	彌敦	5	1	1	1	0	2
	21 / 6 - 30 / 6	T. Percy	珀西	1	0	0	0	0	0
	27 / 7 - 31 / 7	S.T.S. Tasha	泰莎	0	0	1	0	1	0
	25 / 8 - 30 / 8	T. Becky	貝姬	0	1	0	0	0	0
	10 / 9 - 20 / 9	T. Ed	義德	0	0	1	0	0	0
1991	15 / 7 - 20 / 7	T. Amy	艾美	0	0	1	1	0	2
	20 / 7 - 24 / 7	S.T.S. Brendan	布倫登	0	0	17	1	1	13
	13 / 8 - 18 / 8	T. Fred	法雷德	0	0	0	0	1	0
1992	9 / 7 - 14 / 7	T. Eli	艾里	0	0	23	0	0	1
	17 / 7 - 18 / 7	T.S. Faye	菲爾	2	0	24	1	0	3
	19 / 7 - 23 / 7	S.T.S. Gary	加里	0	0	18	2	0	0
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

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
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
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

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

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.

表 4.12　　二零二二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 2022 (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
馬勒卡	Malakas	2201	SuperT.	63	17	79	13	150	9	259	5	377	1
鮎魚	Megi	2202	T.S.	80	6	224	2	-	-	-	-	-	-
暹芭	Chaba	2203	T.	76	13	79	9	125	5	319	1	-	-
艾利	Aere	2204	T.S.	43	13	74	9	132	5	209	1	-	-
桑達	Songda	2205	T.S.	103	8	212	4	-	-	-	-	-	-
翠絲	Trases	2206	T.S.	83	1	-	-	-	-	-	-	-	-
木蘭	Mulan	2207	T.S.	92	6	89	2	-	-	-	-	-	-
米雷	Meari	2208	T.S.	88	11	188	7	403	1	-	-	-	-
馬鞍	Ma-On	2209	T.	108	14	233	10	404	6	635	2	-	-
軒嵐諾	Hinnamnor	2211	SuperT.	58	26	91	22	117	18	154	14	224	10
梅花	Muifa	2212	S.T.	95	35	174	31	226	27	277	23	316	19
南瑪都	Nanmadol	2214	SuperT.	85	18	123	14	158	10	128	6	213	3
塔拉斯	Talas	2215	T.S.	63	5	108	2	-	-	-	-	-	-
奧鹿	Noru	2216	SuperT.	84	23	148	19	180	15	202	11	270	7
洛克	Roke	2218	T.	219	10	534	6	974	2	-	-	-	-
桑卡	Sonca	2219	T.S.	87	4	-	-	-	-	-	-	-	-
納沙	Nesat	2220	T.	46	19	86	15	146	11	200	7	266	3
尼格	Nalgae	2222	S.T.S.	68	25	101	21	136	17	189	13	342	9
帕卡	Pakhar	2225	T.S.	112	4	-	-	-	-	-	-	-	-
熱帶低氣壓 (10月20日至23日)	Tropical Depression (20 - 23 Oct)	-	T.D.	100	9	96	5	137	1	-	-	-	-
平均誤差 Average Error				83		140		189		223		289	
預測總數 Total number of forecasts				267		191		127		83		52	

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　　二零二二年熱帶氣旋的位置及強度數據

以下是二零二二年位於北太平洋西部及南海區域 (即由赤道至北緯45度、東經100度至180度所包括的範圍) 的熱帶氣旋。其每六小時之位置及強度刊於本節。

熱帶氣旋名稱		頁
超強颱風馬勒卡	(2201)	140
熱帶風暴鮎魚	(2202)	141
颱風暹芭	(2203)	141
熱帶風暴艾利	(2204)	142
熱帶風暴桑達	(2205)	142
熱帶風暴翠絲	(2206)	143
熱帶低氣壓	(由八月三日至四日)	143
熱帶風暴木蘭	(2207)	144
熱帶風暴米雷	(2208)	144
颱風馬鞍	(2209)	145
颱風蝎虎	(2210)	145
超強颱風軒嵐諾	(2211)	146
強颱風梅花	(2212)	147
颱風苗柏	(2213)	148
超強颱風南瑪都	(2214)	149
熱帶風暴塔拉斯	(2215)	149
超強颱風奧鹿	(2216)	150
強烈熱帶風暴玫瑰	(2217)	151
颱風洛克	(2218)	152
熱帶風暴桑卡	(2219)	152
熱帶風暴海棠	(2221)	153
颱風納沙	(2220)	154
熱帶低氣壓	(由十月二十日至二十三日)	154
強烈熱帶風暴尼格	(2222)	155
熱帶風暴榕樹	(2223)	156
熱帶風暴山貓	(2224)	156
熱帶風暴帕卡	(2225)	157

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, 2022

Six-hourly position and intensity data are tabulated in this section for the following tropical cyclones in 2022 over the western North Pacific and the South China Sea (i.e. the area bounded by the Equator, 45°N, 100°E and 180°).

Name of tropical cyclone		Page
Super Typhoon Malakas	(2201)	140
Tropical Storm Megi	(2202)	141
Typhoon Chaba	(2203)	141
Tropical Storm Aere	(2204)	142
Tropical Storm Songda	(2205)	142
Tropical Storm Trases	(2206)	143
Tropical Depression of 3 – 4 August		143
Tropical Storm Mulan	(2207)	144
Tropical Storm Meari	(2208)	144
Typhoon Ma-On	(2209)	145
Typhoon Tokage	(2210)	145
Super Typhoon Hinnamnor	(2211)	146
Severe Typhoon Muifa	(2212)	147
Typhoon Merbok	(2213)	148
Super Typhoon Nanmadol	(2214)	149
Tropical Storm Talas	(2215)	149
Super Typhoon Noru	(2216)	150
Severe Tropical Storm Kulap	(2217)	151
Typhoon Roke	(2218)	152
Tropical Storm Sonca	(2219)	152
Tropical Storm Haitang	(2221)	153
Typhoon Nesat	(2220)	154
Tropical Depression of 20 – 23 October		154
Severe Tropical Storm Nalgae	(2222)	155
Tropical Storm Banyan	(2223)	156
Tropical Storm Yamaneko	(2224)	156
Tropical Storm Pakhar	(2225)	157

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

超強颱風馬勒卡(2201)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF SUPER TYPHOON MALAKAS (2201)

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	7	0000	T.D.	1000	13	3.7	148.5
		0600	T.D.	1000	13	3.8	147.8
		1200	T.D.	998	16	3.9	147.0
		1800	T.D.	998	16	4.0	146.8
	8	0000	T.S.	994	18	4.5	146.4
		0600	T.S.	994	18	5.4	146.0
		1200	T.S.	990	21	6.0	145.0
		1800	T.S.	990	21	6.5	144.6
	9	0000	T.S.	990	21	7.0	144.3
		0600	T.S.	990	21	7.6	143.7
		1200	T.S.	988	23	8.0	142.8
		1800	T.S.	988	23	8.9	141.6
	10	0000	T.S.	988	23	10.3	140.5
		0600	T.S.	988	23	11.2	138.9
		1200	S.T.S.	984	25	11.8	137.8
		1800	S.T.S.	980	28	12.0	136.6
	11	0000	S.T.S.	975	31	12.3	136.4
		0600	S.T.S.	975	31	13.0	136.0
		1200	S.T.S.	975	31	13.8	136.0
		1800	S.T.S.	975	31	14.6	135.8
	12	0000	T.	965	36	15.3	135.0
		0600	T.	960	39	15.8	135.1
		1200	S.T.	950	43	16.1	135.3
		1800	S.T.	945	46	16.7	135.9
	13	0000	S.T.	940	49	17.3	136.4
		0600	S.T.	940	49	18.0	136.9
		1200	S.T.	940	49	18.9	137.7
		1800	SuperT.	935	52	19.7	137.7
	14	0000	S.T.	940	49	20.5	138.0
		0600	S.T.	945	46	21.8	138.4
		1200	S.T.	950	43	22.5	139.2
		1800	T.	955	41	24.0	140.4
	15	0000	T.	965	36	26.4	140.6
		0600	S.T.S. 變為溫帶氣旋 Became Extratropical	975	31	28.2	141.7

熱帶風暴鮎魚(2202)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM MEGI (2202)

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	9	0000	T.D.	1000	13	10.7	127.0
		0600	T.D.	1000	13	10.7	126.8
		1200	T.D.	1000	13	10.7	126.6
		1800	T.D.	998	16	10.7	126.5
	10	0000	T.S.	995	18	10.7	126.2
		0600	T.S.	995	18	10.7	125.8
		1200	T.S.	995	18	10.8	125.5
		1800	T.S.	995	18	10.9	125.3
	11	0000	T.D.	998	16	11.0	125.1
		0600	T.D.	998	16	11.3	124.9
		1200	T.D.	1000	13	11.2	124.7
		1500	T.D.	1000	13	11.1	124.8
			消散 Dissipated				

颱風暹芭(2203)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON CHABA (2203)

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	29	0000	T.D.	996	13	15.3	116.3
		0600	T.D.	996	13	15.4	116.1
		1200	T.D.	994	16	15.6	115.7
		1800	T.D.	994	16	15.6	115.3
	30	0000	T.S.	990	18	15.8	115.3
		0600	T.S.	986	21	16.2	115.2
		1200	T.S.	982	23	17.0	115.0
		1800	S.T.S.	978	25	17.4	114.7
七月 Jul	1	0000	S.T.S.	975	28	18.3	114.1
		0600	S.T.S.	970	31	19.0	113.2
		1200	S.T.S.	970	31	19.3	112.7
		1800	S.T.S.	970	31	20.1	112.0
	2	0000	T.	965	33	20.5	111.8
		0600	T.	965	33	21.3	111.3
		1200	S.T.S.	978	25	21.9	110.7
		1800	T.S.	982	23	22.4	110.5
	3	0000	T.S.	988	18	23.4	110.5
		0600	T.D.	990	16	24.3	110.5
		0900	T.D.	992	13	24.7	110.6
			消散 Dissipated				

熱帶風暴艾利(2204)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM AERE (2204)

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	30	1200	T.D.	1000	13	19.1	131.6
		1800	T.D.	998	16	19.6	131.5
七月 Jul	1	0000	T.S.	994	18	20.2	131.3
		0600	T.S.	988	21	21.1	131.2
		1200	T.S.	988	21	22.0	131.1
		1800	T.S.	988	21	23.4	131.0
	2	0000	T.S.	988	21	24.6	130.3
		0600	T.S.	988	21	25.8	129.3
		1200	T.S.	990	18	26.3	128.1
		1800	T.S.	990	18	27.3	127.6
	3	0000	T.D.	996	16	27.8	127.2
		0600	T.D.	996	16	28.1	126.9
		1200	T.D.	1000	13	28.5	126.5
		1800	T.D.	1000	13	29.2	126.7
	4	0000	T.D.	1000	13	29.9	127.4
		0600	T.D.	1000	13	30.8	127.9
		1200	T.D.	1000	13	31.6	128.6
		1800	T.D.	1000	13	32.5	129.2
			消散 Dissipated				

熱帶風暴桑達(2205)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM SONGDA (2205)

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	27	0600	T.D.	1002	13	17.3	141.0
		1200	T.D.	1000	16	17.5	141.0
		1800	T.D.	1000	16	18.7	140.5
	28	0000	T.D.	1000	16	19.5	140.4
		0600	T.D.	1000	16	20.9	140.1
		1200	T.S.	994	18	22.5	139.3
		1800	T.S.	994	18	25.5	136.7
	29	0000	T.S.	994	18	27.9	134.3
		0600	T.S.	994	18	29.1	132.0
		1200	T.S.	994	18	29.8	130.2
		1800	T.S.	994	18	30.5	128.0
	30	0000	T.S.	994	18	31.0	126.7
		0600	T.S.	994	18	31.7	125.0
		1200	T.S.	994	18	32.7	124.1
		1800	T.S.	994	18	33.5	123.3
	31	0000	T.D.	996	16	33.6	123.1
		0600	T.D.	998	13	33.9	123.1
			消散 Dissipated				

熱帶風暴翠絲(2206)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM TRASES (2206)

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	30	0600	T.D.	1000	13	21.6	127.6
		1200	T.D.	998	16	22.6	127.8
		1800	T.D.	998	16	23.5	127.9
	31	0000	T.S.	996	18	25.8	128.0
		0600	T.S.	996	18	27.4	127.6
		1200	T.S.	996	18	29.1	127.2
		1800	T.S.	996	18	30.0	127.2
八月 Aug	1	0000	T.D.	998	16	32.7	126.9
		0600	T.D.	1000	13	34.5	126.4
			消散 Dissipated				

熱帶低氣壓(由八月三日至四日)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL DEPRESSION (3 - 4 AUGUST)

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	3	1200	T.D.	1002	13	21.6	117.1
		1800	T.D.	1002	13	22.1	115.8
	4	0000	T.D.	1002	13	22.5	115.1
		0300	T.D.	1002	13	22.8	114.7
			消散 Dissipated				

熱帶風暴木蘭(2207)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM MULAN (2207)

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	8	1800	T.D.	998	13	16.2	112.5
	9	0000	T.D.	996	16	16.7	113.0
		0600	T.S.	994	18	17.4	113.0
		1200	T.S.	994	18	18.4	112.8
		1800	T.S.	994	18	19.2	112.0
	10	0000	T.S.	994	18	20.0	111.2
		0600	T.S.	994	18	20.3	109.8
		1200	T.S.	994	18	20.5	109.3
		1800	T.S.	994	18	21.0	108.0
	11	0000	T.D.	998	13	21.4	106.5
			消散 Dissipated				

熱帶風暴米雷(2208)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM MEARI (2208)

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	10	0000	T.D.	1006	13	26.0	140.0
		0600	T.D.	1006	13	26.7	139.6
		1200	T.D.	1006	13	27.6	138.5
		1800	T.D.	1006	13	28.3	137.6
	11	0000	T.D.	1004	16	28.8	136.4
		0600	T.D.	1004	16	28.8	135.8
		1200	T.S.	998	18	28.8	135.4
		1800	T.S.	998	18	29.5	135.9
	12	0000	T.S.	998	18	30.4	136.1
		0600	T.S.	998	18	30.8	136.4
		1200	T.S.	995	21	31.9	136.7
		1800	T.S.	995	21	32.9	136.7
	13	0000	T.S.	995	21	33.8	137.3
		0600	T.S.	995	21	34.7	138.3
		1200	T.S.	995	21	35.9	140.2
		1800	T.S.	995	21	37.3	142.7
			變為溫帶氣旋 Became Extratropical				

颱風馬鞍(2209)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON MA-ON (2209)

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	21	0600	T.D.	1000	13	17.1	127.3
		1200	T.D.	998	16	16.8	126.3
		1800	T.D.	998	16	16.4	125.1
	22	0000	T.S.	995	18	16.3	124.5
		0600	T.S.	992	21	16.2	123.6
		1200	T.S.	988	23	16.2	123.4
		1800	S.T.S.	985	25	16.5	123.3
	23	0000	S.T.S.	985	25	17.0	122.9
		0600	S.T.S.	985	25	17.9	121.6
		1200	S.T.S.	985	25	18.4	120.4
		1800	S.T.S.	982	28	18.8	118.9
	24	0000	S.T.S.	980	31	19.2	117.4
		0600	S.T.S.	980	31	19.6	116.4
		1200	S.T.S.	980	31	20.1	114.8
		1800	T.	978	33	20.7	113.5
	25	0000	S.T.S.	982	28	21.0	111.8
		0600	T.S.	988	23	21.7	110.1
		1200	T.D.	995	16	21.6	108.0
		1800	T.D.	1000	13	21.6	106.5
			消散 Dissipated				

颱風蝎虎(2210)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON TOKAGE (2210)

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	21	1800	T.D.	1000	16	23.1	151.5
	22	0000	T.S.	998	18	24.0	151.6
		0600	T.S.	998	18	25.1	151.6
		1200	T.S.	995	21	26.1	151.5
		1800	T.S.	990	23	27.3	151.3
	23	0000	S.T.S.	980	28	28.7	150.5
		0600	S.T.S.	975	31	30.3	149.8
		1200	T.	965	36	31.6	149.0
		1800	T.	955	41	32.9	148.6
	24	0000	T.	955	41	34.2	148.6
		0600	T.	955	41	35.2	149.0
		1200	T.	960	39	36.2	149.5
		1800	T.	965	36	37.2	150.2
	25	0000	S.T.S.	975	31	38.6	151.4
		0600	S.T.S.	980	28	40.4	152.9
			變為溫帶氣旋 Became Extratropical				

超強颱風軒嵐諾(2211)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF SUPER TYPHOON HINNAMNOR (2211)

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	1800	T.D.	1002	13	23.7	150.8
	28	0000	T.D.	1000	16	24.9	150.3
		0600	T.S.	996	18	25.8	149.3
		1200	T.S.	992	21	26.7	148.3
		1800	T.S.	988	23	27.2	146.9
	29	0000	S.T.S.	980	28	27.3	145.2
		0600	T.	965	36	27.4	143.2
		1200	S.T.	950	43	27.3	141.2
		1800	S.T.	940	49	27.1	139.2
	30	0000	SuperT.	930	54	26.8	137.3
		0600	SuperT.	920	59	26.8	135.4
		1200	SuperT.	910	64	26.5	133.6
		1800	SuperT.	910	64	26.3	131.8
	31	0000	SuperT.	910	64	25.9	130.3
		0600	SuperT.	910	64	25.4	129.0
		1200	SuperT.	910	64	24.7	127.7
		1800	SuperT.	910	64	23.7	126.4
九月 Sep	1	0000	SuperT.	910	64	22.5	125.7
		0600	SuperT.	915	61	21.7	125.5
		1200	SuperT.	925	57	21.3	125.5
		1800	SuperT.	935	52	21.2	125.5
	2	0000	S.T.	945	46	21.5	125.4
		0600	S.T.	945	46	21.9	125.0
		1200	S.T.	950	43	22.2	124.7
		1800	S.T.	950	43	22.4	124.7
	3	0000	S.T.	950	43	23.0	124.7
		0600	S.T.	950	43	23.7	124.7
		1200	S.T.	950	43	24.3	124.8
		1800	S.T.	945	46	25.1	124.6
	4	0000	S.T.	940	49	26.0	124.6
		0600	SuperT.	935	52	27.0	124.7
		1200	SuperT.	935	52	27.7	124.6
		1800	SuperT.	935	52	28.6	124.7
	5	0000	SuperT.	935	52	29.8	124.9
		0600	S.T.	940	49	31.0	125.6
		1200	S.T.	950	43	32.5	126.7
		1800	T.	960	39	34.3	128.1
	6	0000	T.	970	33	36.4	130.7
			變為溫帶氣旋 Became Extratropical				

強颱風梅花(2212)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TYPHOON MUIFA (2212)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
九月 Sep	6	0600	T.D.	1002	13	21.5	136.9
		1200	T.D.	1000	16	19.5	136.5
		1800	T.D.	1000	16	18.5	136.2
	7	0000	T.D.	1000	16	17.5	135.7
		0600	T.D.	1000	16	17.1	135.1
		1200	T.D.	1000	16	17.1	134.6
		1800	T.S.	996	18	17.0	133.7
	8	0000	T.S.	996	18	17.1	132.8
		0600	T.S.	992	21	17.2	131.7
		1200	T.S.	992	21	17.2	130.8
		1800	T.S.	988	23	17.6	130.1
	9	0000	T.S.	988	23	18.3	129.3
		0600	S.T.S.	984	25	19.0	128.5
		1200	S.T.S.	980	28	19.6	127.8
		1800	S.T.S.	975	31	20.1	126.9
	10	0000	T.	972	33	20.6	126.1
		0600	T.	965	39	21.1	125.8
		1200	T.	960	41	21.7	125.5
		1800	S.T.	955	43	22.2	124.9
	11	0000	S.T.	950	46	22.6	124.5
		0600	S.T.	945	49	22.9	124.4
		1200	S.T.	945	49	23.3	124.3
		1800	S.T.	950	46	23.7	124.2
	12	0000	S.T.	955	43	24.0	124.2
		0600	T.	960	41	24.7	124.0
		1200	T.	965	39	24.9	124.0
		1800	T.	965	39	25.2	124.1
	13	0000	T.	960	41	25.7	124.1
		0600	T.	960	41	26.1	124.0
		1200	T.	960	41	26.7	123.9
		1800	T.	960	41	27.2	123.5
	14	0000	T.	960	41	27.9	123.2
		0600	T.	960	41	28.8	122.8
		1200	T.	965	39	29.9	122.3
		1800	S.T.S.	975	31	31.2	121.5
	15	0000	S.T.S.	984	25	32.6	120.8
		0600	T.S.	990	21	34.0	120.5
		1200	T.S.	990	21	35.2	120.3
		1800	T.D.	992	16	36.5	120.6
			消散 Dissipated				

颱風苗柏(2213)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON MERBOK (2213)

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	11	0600	T.D.	1000	13	20.9	159.8
		1200	T.D.	998	16	21.0	160.4
		1800	T.D.	998	16	21.1	161.0
	12	0000	T.S.	995	18	21.2	161.4
		0600	T.S.	990	21	21.8	162.0
		1200	T.S.	985	23	22.7	162.7
		1800	S.T.S.	980	25	23.2	163.2
	13	0000	S.T.S.	975	28	23.9	163.3
		0600	S.T.S.	970	28	24.8	163.1
		1200	S.T.S.	965	31	25.9	162.9
		1800	S.T.S.	965	31	26.9	162.2
	14	0000	T.	960	33	28.3	162.1
		0600	T.	955	36	30.0	162.0
		1200	T.	960	33	32.0	161.8
		1800	S.T.S.	965	31	34.0	162.4
	15	0000	S.T.S.	970	28	36.7	164.5
			變為溫帶氣旋 Became Extratropical				

超強颱風南瑪都(2214)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF SUPER TYPHOON NANMADOL (2214)

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	13	0000	T.D.	1000	13	21.9	138.4
		0600	T.D.	1000	13	22.0	139.0
		1200	T.D.	998	16	22.2	139.6
		1800	T.S.	995	18	22.3	140.2
	14	0000	T.S.	995	18	22.5	140.6
		0600	T.S.	990	21	22.9	140.6
		1200	T.S.	985	23	23.0	140.3
		1800	S.T.S.	980	25	23.1	139.7
	15	0000	S.T.S.	980	25	23.2	138.8
		0600	S.T.S.	975	31	23.4	137.9
		1200	T.	965	36	23.4	137.3
		1800	T.	950	41	23.4	136.4
	16	0000	S.T.	935	46	23.7	135.9
		0600	SuperT.	925	52	24.2	135.4
		1200	SuperT.	915	59	24.8	134.7
		1800	SuperT.	910	61	25.5	133.8
	17	0000	SuperT.	910	61	26.0	133.1
		0600	SuperT.	910	61	26.7	132.5
		1200	SuperT.	915	57	27.5	132.0
		1800	SuperT.	925	52	28.5	131.4
	18	0000	S.T.	930	49	29.7	131.0
		0600	S.T.	940	43	30.7	130.6
		1200	T.	960	39	31.9	130.6
		1800	T.	965	36	33.2	130.5
	19	0000	S.T.S.	975	31	34.1	131.0
		0600	S.T.S.	980	25	35.1	132.3
		變為溫帶氣旋 Became Extratropical					

熱帶風暴塔拉斯(2215)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM TALAS (2215)

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	21	0600	T.D.	1004	13	23.9	141.0
		1200	T.D.	1004	13	24.4	139.7
		1800	T.D.	1002	16	25.1	138.5
	22	0000	T.S.	1000	18	26.0	137.3
		0600	T.S.	1000	18	26.9	136.5
		1200	T.S.	1000	18	28.0	135.6
		1800	T.S.	1000	18	29.5	135.0
	23	0000	T.S.	1000	18	30.8	134.8
		0600	T.S.	1000	18	32.0	135.5
		1200	T.D.	1002	16	32.8	136.5
		1800	T.D.	1004	13	33.4	137.4
		變為溫帶氣旋 Became Extratropical					

超強颱風奧鹿(2216)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF SUPER TYPHOON NORU (2216)

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	22	0000	T.D.	1000	13	17.9	134.6
		0600	T.D.	1000	13	17.9	134.5
		1200	T.D.	998	16	17.9	134.1
		1800	T.D.	998	16	17.9	133.3
	23	0000	T.S.	994	18	17.7	132.3
		0600	T.S.	994	18	17.6	131.4
		1200	T.S.	990	21	17.4	130.5
		1800	T.S.	985	23	16.9	129.4
	24	0000	S.T.S.	980	25	16.4	128.2
		0600	S.T.S.	970	31	15.7	126.9
		1200	T.	950	41	15.5	126.0
		1500	S.T.	940	46	15.3	125.3
		1800	SuperT.	930	52	15.1	124.7
	25	0000	SuperT.	910	61	15.0	123.6
		0600	SuperT.	920	57	15.0	122.5
		1200	SuperT.	930	52	15.2	121.4
		1800	S.T.	940	46	15.5	119.9
	26	0000	T.	950	41	15.9	118.5
		0600	T.	950	41	15.9	116.9
		1200	S.T.	945	43	15.9	115.4
		1800	S.T.	935	49	15.9	113.6
	27	0000	SuperT.	920	57	15.5	112.1
		0600	SuperT.	925	54	15.6	111.2
		1200	S.T.	935	49	15.8	110.2
		1800	S.T.	945	43	15.9	108.9
	28	0000	T.	955	39	15.9	107.7
		0600	S.T.S.	975	28	15.7	106.4
		1200	T.S.	990	21	15.6	105.2
		1800	T.D.	996	16	15.6	104.6
			消散 Dissipated				

強烈熱帶風暴玫瑰(2217)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TROPICAL STORM KULAP (2217)

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	25	0600	T.D.	1002	13	20.6	146.0
		1200	T.D.	1000	16	20.9	145.0
		1800	T.D.	1000	16	22.0	144.5
	26	0000	T.D.	1000	16	23.0	143.6
		0600	T.S.	998	18	24.3	143.3
		1200	T.S.	995	21	25.8	142.5
		1800	T.S.	992	23	27.0	142.1
	27	0000	S.T.S.	985	25	28.0	141.7
		0600	S.T.S.	985	25	28.9	141.9
		1200	S.T.S.	985	25	29.9	142.5
		1800	S.T.S.	985	25	30.8	144.1
	28	0000	S.T.S.	980	28	32.2	145.5
		0600	S.T.S.	975	31	33.3	147.8
		1200	S.T.S.	975	31	34.8	150.6
		1800	S.T.S.	975	31	36.5	153.2
	29	0000	S.T.S. 變為溫帶氣旋 Became Extratropical	975	31	38.7	156.0

颱風洛克(2218)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON ROKE (2218)

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	27	1800	T.D.	1002	13	20.5	133.4
	28	0000	T.D.	1000	16	21.1	132.6
		0600	T.D.	1000	16	21.6	132.1
		1200	T.S.	998	18	22.9	131.8
		1800	T.S.	995	21	23.8	131.7
	29	0000	S.T.S.	990	25	25.0	131.7
		0600	T.	975	33	25.8	132.1
		1200	T.	965	39	26.6	133.2
		1800	T.	975	33	27.5	134.3
	30	0000	S.T.S.	980	31	28.2	135.8
		0600	S.T.S.	985	28	29.1	138.1
		1200	S.T.S.	985	28	30.1	140.4
		1800	S.T.S.	985	28	31.0	142.6
十月 Oct	1	0000	S.T.S.	990	25	31.9	144.5
		0600	S.T.S.	990	25	33.0	146.6
		1200	S.T.S.	990	25	34.1	148.4
			變為溫帶氣旋 Became Extratropical				

熱帶風暴桑卡(2219)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM SONCA (2219)

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	13	0000	T.D.	1000	13	12.0	114.6
		0600	T.D.	1000	13	12.9	113.9
		1200	T.D.	1000	13	13.4	113.6
		1800	T.D.	1000	13	13.9	112.7
	14	0000	T.D.	998	16	14.1	112.0
		0600	T.S.	996	18	14.3	111.4
		1200	T.S.	996	18	14.9	110.1
		1800	T.D.	998	16	15.2	108.9
	15	0000	T.D.	1002	13	15.3	107.8
			消散 Dissipated				

熱帶風暴海棠(2221)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM HAITANG (2221)

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	13	0600	T.D.	1002	13	15.1	152.6
		1200	T.D.	1000	16	15.7	153.9
		1800	T.D.	1000	16	16.8	155.2
	14	0000	T.D.	1000	16	18.6	156.0
		0600	T.D.	1000	16	21.2	156.7
		1200	T.D.	1000	16	23.6	157.4
		1800	T.D.	1002	13	26.8	157.4
	15	0000	LOW	1004	11	26.9	156.9
	16	0000	LOW	1006	11	27.0	156.7
	17	0000	LOW	1006	11	27.1	156.5
		0600	T.D.	1004	13	27.3	157.4
		1200	T.D.	1002	16	27.6	157.8
		1800	T.S.	1000	18	28.2	158.0
	18	0000	T.S.	1000	18	28.8	158.4
		0600	T.S.	1000	18	29.8	158.8
		1200	T.S.	1000	18	31.1	159.2
		1800	T.S.	1000	18	32.3	160.7
	19	0000	T.S.	1000	18	33.5	162.6
		0600	T.S.	1000	18	34.9	164.7
		1200	T.S.	1000	18	36.7	167.6
			變為溫帶氣旋 Became Extratropical				

LOW : 低壓區 Low Pressue Area

颱風納沙(2220)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TYPHOON NESAT (2220)

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	14	1800	T.D.	1000	13	18.8	127.1
	15	0000	T.D.	998	16	18.8	125.8
		0600	T.S.	994	18	19.0	124.0
		1200	T.S.	992	21	19.0	123.2
		1800	S.T.S.	988	25	19.1	122.3
	16	0000	S.T.S.	980	31	19.2	121.1
		0600	T.	975	33	19.6	119.9
		1200	T.	970	36	19.7	118.8
		1800	T.	970	36	19.9	117.8
	17	0000	T.	965	39	19.6	117.0
		0600	T.	965	39	19.4	116.2
		1200	T.	960	41	19.0	115.4
		1800	T.	960	41	18.7	114.6
	18	0000	T.	960	41	18.4	113.7
		0600	T.	965	39	18.0	113.1
		1200	T.	975	33	17.5	112.3
		1800	S.T.S.	985	28	17.2	111.6
	19	0000	S.T.S.	988	25	17.1	110.8
		0600	T.S.	990	23	17.0	110.1
		1200	T.S.	994	18	17.2	109.2
		1800	T.S.	994	18	17.3	108.6
	20	0000	T.D.	1002	16	17.4	108.4
		0600	T.D.	1006	13	17.7	108.1
			消散 Dissipated				

熱帶低氣壓(由十月二十日至二十三日)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL DEPRESSION (20 - 23 OCTOBER)

月份 Month	日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
十月 Oct	20	0000	T.D.	1006	13	20.9	129.4
		0600	T.D.	1006	13	20.8	128.3
		1200	T.D.	1006	13	20.6	127.3
		1800	T.D.	1006	13	20.5	125.8
	21	0000	T.D.	1006	13	20.4	124.4
		0600	T.D.	1004	16	20.3	123.0
		1200	T.D.	1004	16	20.2	121.5
		1800	T.D.	1004	16	20.2	120.7
	22	0000	T.D.	1004	16	20.2	119.9
		0600	T.D.	1006	13	20.2	119.5
		1200	T.D.	1006	13	20.2	118.9
		1800	T.D.	1006	13	20.1	117.9
	23	0000	T.D.	1006	13	20.0	116.5
		0300	T.D.	1006	13	19.8	115.9
			消散 Dissipated				

強烈熱帶風暴尼格(2222)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF SEVERE TROPICAL STORM NALGAE (2222)

月份 Month		日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
十月	Oct	26	0000	T.D.	1000	13	12.3	133.6
			0600	T.D.	1000	13	12.2	132.8
			1200	T.D.	998	16	12.1	132.2
			1800	T.D.	998	16	12.0	131.6
		27	0000	T.D.	998	16	11.9	131.0
			0600	T.S.	995	18	11.6	130.5
			1200	T.S.	995	18	11.4	130.0
			1800	T.S.	992	21	11.6	129.0
		28	0000	T.S.	988	23	11.9	127.9
			0600	T.S.	988	23	12.3	126.7
			1200	T.S.	988	23	13.0	125.4
			1800	S.T.S.	984	25	13.6	124.1
		29	0000	S.T.S.	984	25	13.6	122.5
			0600	S.T.S.	984	25	14.0	121.8
			1200	S.T.S.	984	25	14.6	121.1
			1800	T.S.	988	23	15.5	119.9
		30	0000	T.S.	988	23	15.9	118.4
			0600	T.S.	988	23	15.4	117.4
			1200	T.S.	988	23	15.4	117.3
			1800	S.T.S.	986	25	16.0	117.1
		31	0000	S.T.S.	984	28	16.4	116.9
			0600	S.T.S.	982	31	17.1	116.5
			1200	S.T.S.	982	31	17.7	116.4
			1800	S.T.S.	982	31	18.4	116.3
十一月	Nov	1	0000	S.T.S.	982	31	18.7	116.0
			0600	S.T.S.	982	31	19.2	115.8
			1200	S.T.S.	982	31	19.8	115.7
			1800	S.T.S.	986	28	20.2	115.5
		2	0000	S.T.S.	986	28	20.5	115.3
			0600	S.T.S.	992	25	21.1	115.0
			1200	T.S.	998	23	21.6	114.6
			1800	T.S.	998	23	22.1	113.9
		3	0000	T.D.	1008	16	22.2	113.3
				消散 Dissipated				

熱帶風暴榕樹(2223)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM BANYAN (2223)

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	30	0600	T.D.	1004	13	8.9	136.9
			1200	T.D.	1002	16	8.6	136.1
			1800	T.S.	1000	18	8.1	135.3
		31	0000	T.S.	998	21	7.4	134.0
			0600	T.S.	1000	18	7.2	132.6
			1200	T.S.	1000	18	7.1	132.3
			1800	T.D.	1002	16	7.0	132.0
十一月	Nov	1	0000	T.D.	1004	13	7.0	131.7
				消散 Dissipated				

熱帶風暴山貓(2224)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM YAMANEKO (2224)

月份 Month		日期 Date	時間 (協調世界時) Time (UTC)	強度 Intensity	估計最低中心氣壓 (百帕斯卡) Estimated minimum central pressure (hPa)	估計最高風速 (米每秒) Estimated maximum surface winds (m/s)	北緯 Lat. °N	東經 Long. °E
十一月	Nov	11	1800	T.D.	1008	13	20.2	166.3
		12	0000	T.D.	1008	13	20.3	165.9
			0600	T.D.	1006	16	20.5	165.6
			1200	T.S.	1004	18	21.1	165.5
			1800	T.S.	1004	18	21.7	165.7
		13	0000	T.S.	1004	18	21.9	165.9
			0600	T.S.	1004	18	22.1	165.9
			1200	T.D.	1006	16	22.2	165.8
			1800	T.D.	1008	13	23.0	165.9
		14	0000	T.D.	1008	13	23.8	165.5
				消散 Dissipated				

熱帶風暴帕卡(2225)的每六小時位置及強度
SIX-HOURLY POSITION AND INTENSITY DATA OF TROPICAL STORM PAKHAR (2225)

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	10	1800	T.D.	1002	13	16.5	125.0
	11	0000	T.D.	1000	16	16.8	125.6
		0600	T.D.	1000	16	17.5	126.1
		1200	T.S.	998	18	18.2	126.9
		1800	T.S.	996	21	19.2	128.2
	12	0000	T.S.	996	21	19.9	129.3
		0600	T.S.	998	18	20.2	130.4
		1200	T.D.	1000	16	20.4	131.0
			消散 Dissipated				

附件一

颱風暹芭(2203)、颱風馬鞍(2209)及強烈熱帶風暴尼格(2222)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 1 月至 5 月向以下的政府部門、公共事業機構及其他組織進行調查，收集颱風暹芭、颱風馬鞍及強烈熱帶風暴尼格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 2023 年 5 月 31 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）
颱風暹芭	1,205,275
颱風馬鞍	768,720
強烈熱帶風暴尼格	606,770

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

因颱風暹芭、颱風馬鞍及強烈熱帶風暴尼格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 2021 年度一般保險業務的統計數字的市場份額
颱風暹芭	45	69%
颱風馬鞍	50	77%
強烈熱帶風暴尼格	46	71%

(B1) 颱風暹芭保險索償數據

截至 2022 年 9 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	5,939,305
(ii) 僱員補償、汽車及旅遊	1,126,898

按參與調查的機構所佔的市場份額(69%)作調整，暹芭保險索償數字估計為(5,939,305 港元+ 1,126,898 港元) / 69% =10,240,874 港元

(B2) 颱風馬鞍保險索償數據

截至 2022 年 10 月 24 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	2,533,226
(ii) 僱員補償、汽車及旅遊	803,893

按參與調查的機構所佔的市場份額(77%)作調整，馬鞍保險索償數字估計為(2,533,226 港元+ 803,893 港元) / 77% = 4,333,921 港元

(B3) 強烈熱帶風暴尼格保險索償數據

截至 2023 年 1 月 2 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	1,417,898
(ii) 僱員補償、汽車及旅遊	1,228,893

按參與調查的機構所佔的市場份額(71%)作調整，馬鞍保險索償數字估計為(1,417,898 港元+ 1,228,893 港元) / 71% = 3,727,875 港元

2. 颱風暹芭、颱風馬鞍及強烈熱帶風暴尼格引致直接經濟損失的估算

颱風暹芭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。

= 1,205,275 港元 + 10,240,874 港元

= 11,446,149 港元 (約 一千一百萬港元)

颱風馬鞍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。

= 768,720 港元 + 4,333,921 港元

= 5,102,641 港元 (約 五百一十萬港元)

強烈熱帶風暴尼格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。

= 606,770 港元 + 3,727,875 港元

= 4,334,645 港元 (約 四百三十萬港元)

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 Chaba (2203), Typhoon Ma-on (2209) and Severe Tropical Storm Nalgae (2222)

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 Chaba, Typhoon Ma-on and Severe Tropical Storm Nalgae from the following government departments, public utilities and other organizations between January and May 2023:

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 31 May 2023, 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 Chaba	1,205,275
Typhoon Ma-on	768,720
Severe Tropical Storm Nalgae	606,770

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 Chaba, Typhoon Ma-on and Severe Tropical Storm Nalgae 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 2021 issued by the Insurance Authority
Typhoon Chaba	45	69%
Typhoon Ma-on	50	77%
Severe Tropical Storm Nalgae	46	71%

(B1) Insurance claims data of Typhoon Chaba

The insurance claims incurred as of 1 September 2022 are as follows :

	Total claims incurred (HK$)
(i) Property Damage, Business Interruption and Contractors' All Risks (CAR)	5,939,305
(ii) Employees' Compensation (EC), Motor and Travel	1,126,898

Adjusted by market share of the participating companies (69%), the insurance claims incurred by Chaba is estimated to be (HK$ 5,939,305 + HK$ 1,126,898) / 69% = HK$ 10,240,874

(B2) Insurance claims data of Typhoon Ma-on

The insurance claims incurred as of 24 October 2022 are as follows :

	Total claims incurred (HK$)
(i) Property Damage, Business Interruption and Contractors' All Risks (CAR)	2,533,226
(ii) Employees' Compensation (EC), Motor and Travel	803,893

Adjusted by market share of the participating companies (77%), the insurance claims incurred by Ma-on is estimated to be (HK$ 2,533,226 + HK$ 803,893) / 77% = HK$ 4,333,921

(B3) Insurance claims data of Severe Tropical Storm Nalgae

The insurance claims incurred as of 2 January 2023 are as follows :

	Total claims incurred (HK$)
(i) Property Damage, Business Interruption and Contractors' All Risks (CAR)	1,417,898
(ii) Employees' Compensation (EC), Motor and Travel	1,228,893

Adjusted by market share of the participating companies (71%), the insurance claims incurred by Nalgae is estimated to be (HK$ 1,417,898 + HK$ 1,228,893) / 71% = HK$ 3,727,875

2. Estimation of direct economic losses caused by Typhoon Chaba, Typhoon Ma-on and Severe Tropical Storm Nalgae

The estimated direct economic losses due to Typhoon Chaba 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$ 1,205,275 + HK$ 10,240,874
= HK$ 11,446,149 (around HK$ 11 million)

The estimated direct economic losses due to Typhoon Ma-on 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$ 768,720 + HK$ 4,333,921
= HK$ 5,102,641 (around HK$ 5.1 million)

The estimated direct economic losses due to Severe Tropical Storm Nalgae 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$ 606,770 + HK$ 3,727,875
= HK$ 4,334,645 (around HK$ 4.3 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.