

### 3.6 颱風圓規(2118)：二零二一年十月八日至十四日

圓規是二零二一年第七個影響香港的熱帶氣旋。在十月九日至十二日短短四日內，香港接連受熱帶氣旋獅子山及圓規吹襲，天文台均需發出八號烈風或暴風信號。而獅子山的八號信號取消時間與圓規的八號信號發出時間僅相距60小時40分鐘，這是自一九四六年以來由兩個熱帶氣旋所引致的八號信號相距時間最短的紀錄。

圓規於十月八日晚上在馬尼拉以東約1 020公里的北太平洋西部上發展為熱帶低氣壓，初時向偏北方向移動，並逐漸增強。十月十日圓規加速向偏西方向移動，十月十一日發展為強烈熱帶風暴及橫過呂宋海峽。圓規在十月十二日向西橫過南海北部，翌日早上進一步發展為颱風並達到其最高強度，其中心附近最高持續風速估計為每小時120公里。十月十三日圓規橫過海南島並迅速減弱，十月十四日在北部灣減弱為低壓區。

根據報章報導，圓規吹襲菲律賓期間，造成40人死亡，5人受傷，17人失蹤，超過五十萬人須要撤離。此外，圓規帶來的暴雨令廣東的鹽田港及海南島的三個港口關閉，海上運輸服務暫停。

天文台在十月十一日下午4時正發出強烈季候風信號。在東北季候風及圓規的外圍環流共同影響下，當晚本港吹清勁北至東北風，離岸吹強風。隨著圓規進入南海東北部，天文台在十月十二日上午12時40分發出三號強風信號，取代強烈季候風信號，當時圓規集結在香港之東南偏東約770公里。當日早上本港普遍吹清勁至強風程度的北至東北風，離岸及高地間中吹烈風。由於圓規逐漸靠近廣東沿岸，預料本港風力會在晚上進一步增強，天文台在十月十二日下午5時20分發出八號東北烈風或暴風信號，當時圓規集結在香港之東南約480公里。十月十三日上午本港吹強風至烈風程度的東至東北風，離岸間中吹暴風，高地風力更達颶風程度。圓規在十月十三日上午4時最接近本港，在本港以南約360公里掠過。隨著圓規登陸海南島及逐漸遠離香港，下午本港風力有所減弱，天文台在十月十三日下午4時40分改發三號強風信號，取代八號東北烈風或暴風信號。翌日凌晨圓規繼續減弱及進一步遠離香港，天文台在十月十四日上午4時40分以一號戒備信號取代三號強風信號，並於當日早上6時20分取消所有熱帶氣旋警告信號。

在圓規的影響下，大老山、橫瀾島及長洲泳灘錄得的最高每小時平均風速分別為每小時111、85及76公里，而最高陣風則分別為每小時153、110及119公里。大埔滘錄得最高潮位3.53米(海圖基準面以上)，而石壁則錄得最大風暴潮(天文潮高度以上) 1.36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	997.3	13/10	上午3時04分
香港國際機場	998.5	13/10	上午3時14分
長洲	996.6	13/10	上午3時13分
京士柏	997.2	13/10	上午3時08分
流浮山	998.7	13/10	上午3時07分
坪洲	997.5	13/10	上午3時11分
沙田	998.6	13/10	上午3時08分
上水	999.3	13/10	上午3時07分
打鼓嶺	999.1	13/10	上午3時14分
大埔	999.2	13/10	上午3時13分
橫瀾島	996.3	13/10	上午2時53分

受乾燥東北季候風影響，十月十一日本港大致天晴。圓規的外圍雨帶在十月十二日至十三日為本港帶來大驟雨。隨著圓規減弱及遠離香港，十月十四日本港雨勢減弱，短暫時間有陽光。十月十二日至十四日期間香港大部分地區錄得超過100毫米雨量。

圓規吹襲香港期間至少有20人受傷，另有877宗塌樹報告及10宗水浸報告。黃大仙及灣仔分別有大樹倒塌，壓毀五輛汽車。圓規所引發的風暴潮令本港多處地區的水位升高超過一米，由於適逢天文漲潮，兩者的疊加效應導致本港部分低窪地區出現水浸，當中沙田城門河一帶的單車徑及行人隧道被淹浸，杏花邨及小西灣藍灣半島對出長廊亦有輕微水浸，柴灣有工業大廈地下的停車場被海水湧入，一個保安更亭及水馬被沖毀。鯉魚門三家村有村屋出現水浸。大澳有一名居民因水浸被困家中，需要救援人員協助。

### 3.6 Typhoon Kompasu (2118): 8 - 14 October 2021

Kompasu was the seventh tropical cyclone affecting Hong Kong in 2021. Tropical Cyclones Lionrock and Kompasu successively hit Hong Kong within four days between 9 – 12 October and both necessitated the issuance of No. 8 Gale or Storm Signal. The time separation between the cancellation of the No. 8 signal for Lionrock and the issuance of the No. 8 signal for Kompasu was only 60 hours 40 minutes, the shortest record of break time between two No. 8 signals for two tropical cyclones since 1946.

Kompasu developed as a tropical depression over the western North Pacific about 1 020 km east of Manila on the night of 8 October. It moved northwards at first and intensified gradually. Kompasu picked up speed towards the west on 10 October. It developed into a severe tropical storm while moving across the Luzon Strait on 11 October. Kompasu moved westwards across the northern part of the South China Sea on 12 October. It further developed into a typhoon on the morning of next day, reaching its peak intensity with an estimated sustained wind of 120 km/h near its centre. Kompasu moved across Hainan Island on 13 October and weakened rapidly. It degenerated into an area of low pressure over Beibu Wan on 14 October.

According to press reports, Kompasu left 40 deaths, 5 injuries, 17 missing and over 500 000 people evacuated in the Philippines during its passage. Besides, the Yantian Port in Guangdong and 3 ports in Hainan Island were closed and the marine transportation services were suspended owing to the torrential rain brought by Kompasu.

The Strong Monsoon Signal was issued at 4:00 p.m. on 11 October. Under the combined effect of the northeast monsoon and the outer circulation of Kompasu, local winds were fresh north to northeasterlies, reaching strong force offshore. With Kompasu entering the northeastern part of the South China Sea, the No. 3 Strong Wind Signal was issued to replace the Strong Monsoon Signal at 12:40 a.m. on 12 October when Kompasu was about 770 km east-southeast of Hong Kong. Local winds were generally fresh to strong north to northeasterlies, occasionally reaching gale force offshore and on high ground that morning. Since Kompasu gradually edged closer to the coast of Guangdong, local winds were expected to strengthen further at night and the No. 8 Northeast Gale or Storm Signal was issued at 5:20 p.m. on 12 October when Kompasu was about 480 km southeast of Hong Kong. Local winds were strong to gale force east to northeasterlies, occasionally reaching storm force offshore and even hurricane force on high ground on the morning of 13 October. Kompasu came closest to Hong Kong at around 4 a.m. on 13 October when it skirted past about 360 km south of Hong Kong. With Kompasu making landfall over Hainan Island and gradually departing from Hong Kong, local winds moderated in the afternoon. The No. 3 Strong Wind Signal was issued to replace the No. 8 Northeast Gale or Storm Signal at 4:40 p.m. on 13 October. As Kompasu continued to weaken and further departed from Hong Kong in the next early morning, the No. 1 Standby Signal was issued to replace the No. 3 Strong Wind Signal at 4:40 a.m. on 14 October and all tropical cyclone warning signals were cancelled at 6:20 a.m. on that day.

Under the influence of Kompasu, maximum hourly mean winds of 111, 85 and 76 km/h and maximum gusts of 153, 110 and 119 km/h were recorded at Tate's Cairn, Waglan Island and Cheung Chau Beach respectively. A maximum sea level of 3.53 m (above chart datum) was recorded at Tai Po Kau and a maximum storm surge of 1.36 m (above astronomical tide) was recorded at 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	997.3	13/10	03:04 am
Hong Kong International Airport	998.5	13/10	03:14 am
Cheung Chau	996.6	13/10	03:13 am
King's Park	997.2	13/10	03:08 am
Lau Fau Shan	998.7	13/10	03:07 am
Peng Chau	997.5	13/10	03:11 am
Sha Tin	998.6	13/10	03:08 am
Sheung Shui	999.3	13/10	03:07 am
Ta Kwu Ling	999.1	13/10	03:14 am
Tai Po	999.2	13/10	03:13 am
Waglan Island	996.3	13/10	02:53 am

Affected by the dry northeast monsoon, local weather was mainly fine on 11 October. The outer rainbands of Kompasu brought heavy showers to Hong Kong on 12 – 13 October. With Kompasu weakening and moving away from Hong Kong, rain eased off locally and there were sunny intervals on 14 October. Over 100 millimetres of rainfall was recorded over most parts of the territory during 12 – 14 October.

In Hong Kong, at least 20 persons were injured during the passage of Kompasu. There were 877 reports of fallen trees and 10 reports of flooding. The fallen trees in Wong Tai Sin and Wan Chai damaged five vehicles. The storm surge brought by Kompasu raised the water level in Hong Kong generally by more than one metre. Coinciding with the astronomical high tide, the aggregated effect resulted in the inundation of some low-lying areas in Hong Kong. The cycle tracks and subways near Shing Mun River in Sha Tin were flooded. Minor flooding was also reported in the promenade of Heng Fa Chuen and Island Resort in Siu Sai Wan. With sea water flowing into the carpark of an industrial building in Chai Wan, a security guard post and water-filled barriers were washed away. Some village houses of Sam Ka Tsuen in Lei Yue Mun were inundated. A resident in Tai O was trapped by flooding and needed to be rescued.

表 3.6.1 在圓規影響下，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 Kompasu 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	91	13/10	10:24	東	E	53	13/10	10:00
長洲	Cheung Chau	東南	SE	103	13/10	10:41	東北偏北	NNE	65	13/10	04:00
長洲泳灘	Cheung Chau Beach	東北	NE	119	13/10	07:31	東北偏東	ENE	76	13/10	10:00
青洲	Green Island	東北偏北	NNE	125	13/10	03:35	東北偏北	NNE	78	13/10	04:00
香港國際機場	Hong Kong International Airport	東	E	75	13/10	10:59	東	E	44	13/10	12:00
		東	E	75	13/10	11:00					
啟德	Kai Tak	東北偏東	ENE	80	13/10	10:22	東	E	33	13/10	11:00
京士柏	King's Park	東北偏東	ENE	79	13/10	09:12	東	E	35	13/10	11:00
南丫島	Lamma Island	東北偏東	ENE	89	13/10	07:16	西北偏北	NNW	48	12/10	05:00
流浮山	Lau Fau Shan	東北偏北	NNE	75	13/10	03:32	北	N	40	12/10	16:00
昂坪	Ngong Ping	東北偏東	ENE	138	13/10	10:48	東	E	90	13/10	11:00
北角	North Point	東北偏東	ENE	86	13/10	11:52	東	E	57	13/10	10:00
坪洲	Peng Chau	東	E	98	13/10	10:38	東	E	66	13/10	11:00
西貢	Sai Kung	北	N	81	12/10	21:08	東北偏東	ENE	50	13/10	10:00
沙洲	Sha Chau	北	N	95	13/10	01:10	北	N	64	13/10	02:00
沙螺灣	Sha Lo Wan	東	E	71	13/10	10:39	東	E	36	13/10	12:00
沙田	Sha Tin	東	E	70	13/10	10:15	東北	NE	24	12/10	22:00
九龍天星碼頭	Star Ferry (Kowloon)	東	E	85	13/10	10:50	東	E	38	13/10	13:00
打鼓嶺	Ta Kwu Ling	東北偏北	NNE	72	12/10	22:02	東北偏北	NNE	34	12/10	23:00
大美督	Tai Mei Tuk	東北偏北	NNE	94	13/10	04:15	東北	NE	61	13/10	05:00
							東北偏東	ENE	61	13/10	12:00
大帽山	Tai Mo Shan	東南偏東	ESE	119	13/10	10:03	東	E	80	13/10	05:00
大埔滘	Tai Po Kau	東	E	79	13/10	11:37	東	E	48	13/10	12:00
塔門東	Tap Mun East	東	E	108	13/10	11:23	東	E	71	13/10	11:00
大老山	Tate's Cairn	東北	NE	153	13/10	04:28	東北偏東	ENE	111	13/10	05:00
將軍澳	Tseung Kwan O	西北偏北	NNW	67	12/10	07:02	北	N	27	12/10	08:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	東	E	64	13/10	05:34	西北偏北	NNW	25	12/10	13:00
屯門政府合署	Tuen Mun Government Offices	東北偏北	NNE	55	12/10	23:08	北	N	21	13/10	00:00
		東北偏北	NNE	55	12/10	23:13					
橫瀾島	Waglan Island	東北	NE	110	13/10	04:37	東北	NE	85	13/10	06:00
濕地公園	Wetland Park	東北偏北	NNE	48	13/10	04:01	東北偏北	NNE	17	13/10	04:00
黃竹坑	Wong Chuk Hang	東	E	89	13/10	07:15	東北	NE	32	13/10	09:00
							東北	NE	32	13/10	10:00

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

表 3.6.2 在圓規影響下，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 Kompasu were in force

站 (參閱圖 1.1) Station (See Fig. 1.1)		最初達到強風*		最後達到強風*		最初達到烈風#		最後達到烈風#	
		時間		時間		時間		時間	
		Start time when strong wind speed* was attained		End time when strong wind speed* was attained		Start time when gale force wind speed# was attained		End time when gale force wind speed# was attained	
		日期/月份	時間	日期/月份	時間	日期/月份	時間	日期/月份	時間
		Date/Month	Time	Date/Month	Time	Date/Month	Time	Date/Month	Time
長洲	Cheung Chau	12/10	00:40	14/10	05:14	13/10	03:05	13/10	14:59
香港國際機場	Hong Kong International Airport	13/10	03:48	13/10	12:57	-			
流浮山	Lau Fau Shan	12/10	01:48	13/10	04:40	-			
西貢	Sai Kung	12/10	13:25	13/10	15:09	-			

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 圓規影響香港期間，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 Kompasu

站 (參閱圖 3.6.2) Station (See Fig. 3.6.2)			十月十二日 12 Oct	十月十三日 13 Oct	十月十四日 14 Oct	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			0.2	57.7	13.3	71.2
香港國際機場 Hong Kong International Airport (HKA)			微量 Trace	102.3	11.1	113.4
長洲 Cheung Chau (CCH)			0.0	90.5	2.0	92.5
H23	香港仔	Aberdeen	0.5	86.5	12.5	99.5
N05	粉嶺	Fanling	0.0	94.0	5.0	99.0
N13	糧船灣	High Island	1.0	68.5	11.5	81.0
K04	佐敦谷	Jordan Valley	0.5	70.0	14.0	84.5
N06	葵涌	Kwai Chung	0.0	77.5	25.5	103.0
H12	半山區	Mid Levels	0.0	73.5	10.0	83.5
N09	沙田	Sha Tin	0.0	97.5	12.5	110.0
H19	筲箕灣	Shau Kei Wan	0.5	67.5	9.5	77.5
SEK	石崗	Shek Kong	0.0	96.0	19.5	115.5
K06	蘇屋邨	So Uk Estate	0.0	79.0	13.5	92.5
R31	大美督	Tai Mei Tuk	0.0	89.5	13.5	103.0
N17	東涌	Tung Chung	0.0	160.0	7.0	167.0
TMR	屯門水庫	Tuen Mun Reservoir	0.3	69.4	8.5	78.2

踏石角(R21) - 沒有資料 Tap Shek Kok (R21) - data not available

表 3.6.4 圓規影響香港期間，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 Kompasu

站 (參閱圖 1.1) Station (See Fig. 1.1)		最高潮位 (海圖基準面以上) Maximum sea level (above chart datum)			最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide)		
		高度(米) Height (m)	日期/月份 Date/Month	時間 Time	高度(米) Height (m)	日期/月份 Date/Month	時間 Time
鰂魚涌	Quarry Bay	3.38	13/10	01:53	1.13	13/10	08:49
石壁	Shek Pik	3.38	13/10	02:26	1.36	13/10	09:32
大廟灣	Tai Miu Wan	3.48	13/10	02:16	1.21	13/10	08:42
大埔滘	Tai Po Kau	3.53	13/10	02:03	1.16	13/10	07:57
尖鼻咀	Tsim Bei Tsui	3.29	13/10	03:17	1.27	13/10	10:59

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

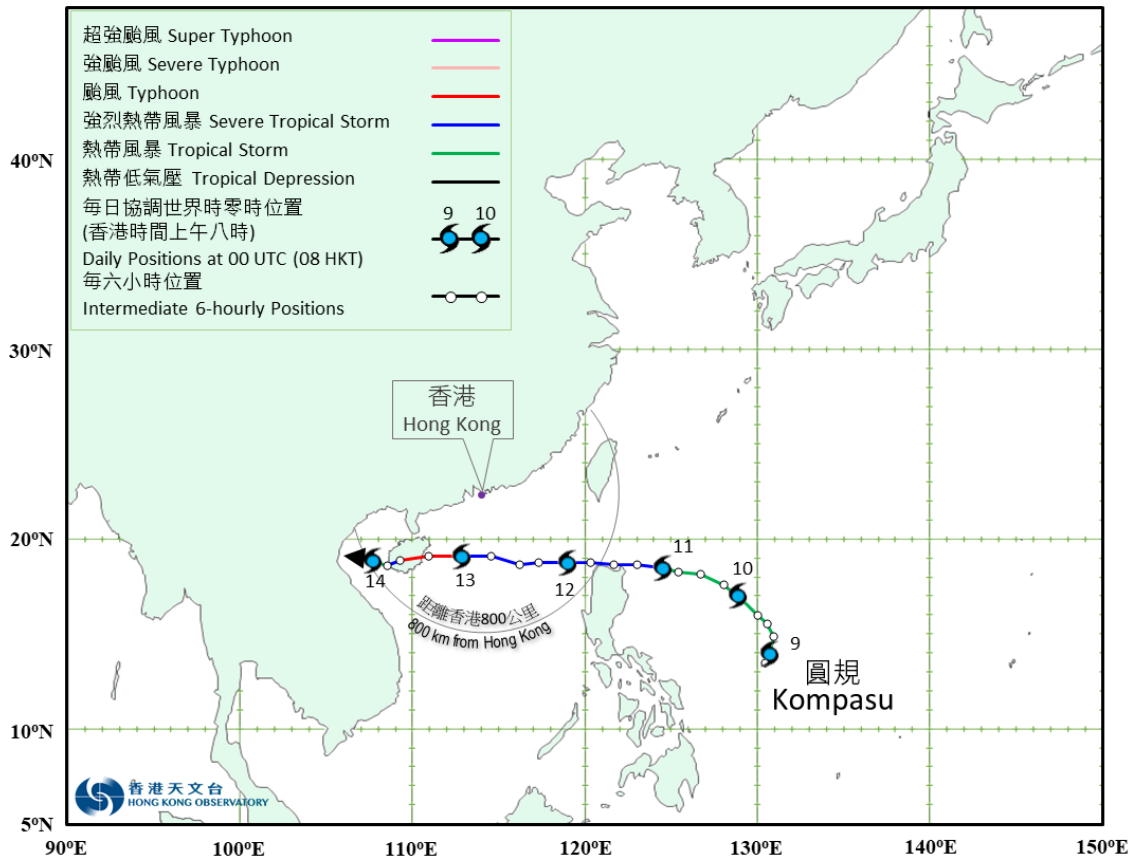


圖 3.6.1 二零二一年十月八日至十四日圖規(2118)的路徑圖。

Figure 3.6.1 Track of Kompasu (2118): 8 - 14 October 2021.

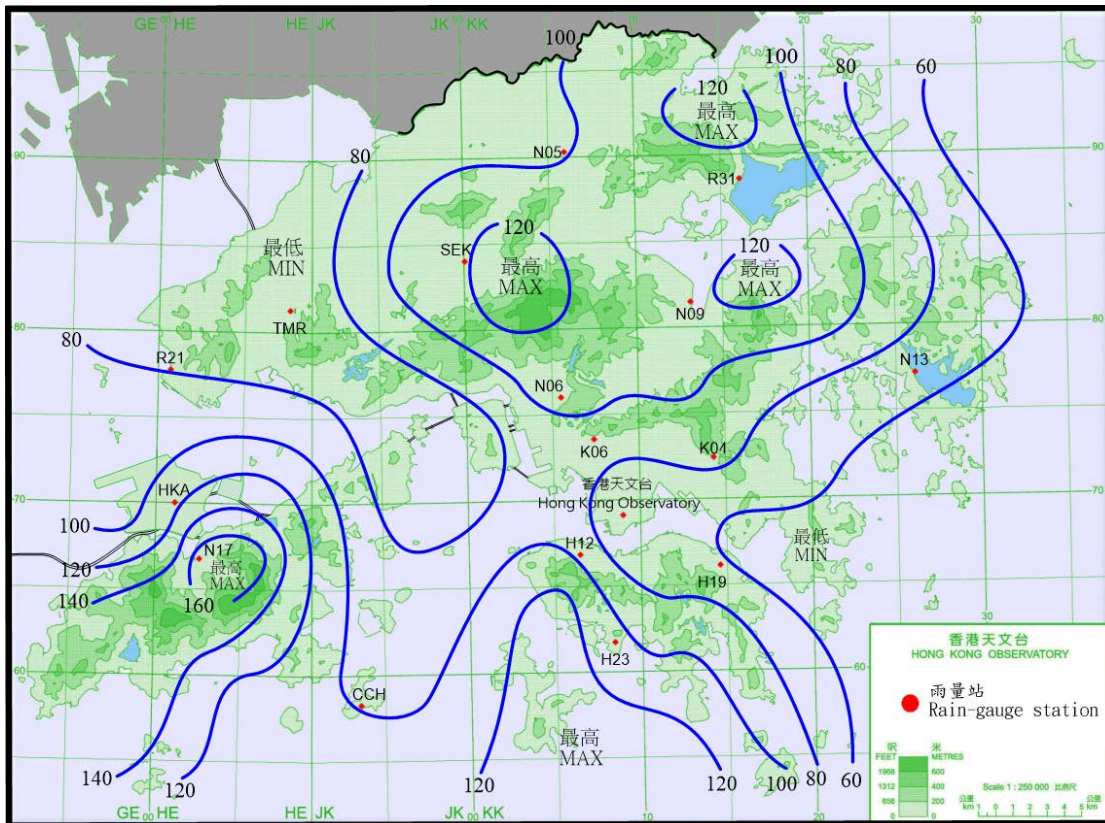


圖 3.6.2 二零二一年十月十二日至十四日的雨量分佈(等雨量線單位為毫米)。

Figure 3.6.2 Rainfall distribution on 12 - 14 October 2021 (isohyets are in millimetres).



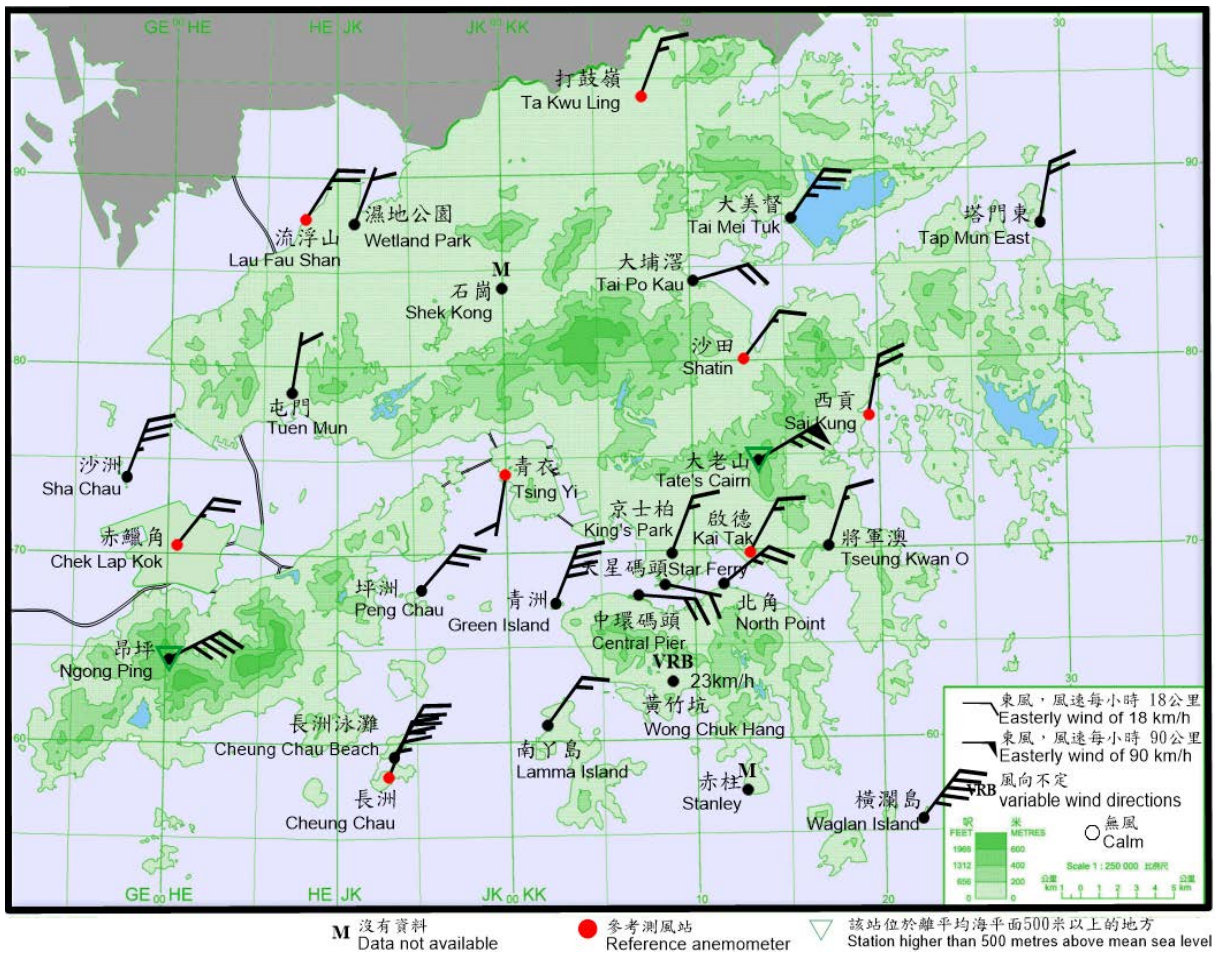


圖 3.6.3a 二零二一年十月十三日上午 4 時 20 分香港各站錄得的十分鐘平均風向和風速。當時大老山風力達到颶風程度，而青洲、昂坪、橫瀾島、長洲及長洲泳灘的風力達到烈風程度。

Figure 3.6.3a 10-minute mean wind direction and speed recorded at various stations in Hong Kong at 4:20 a.m. on 13 October 2021. At that time, winds at Tate's Cairn reached hurricane force, while winds at Green Island, Ngong Ping, Waglan Island, Cheung Chau and Cheung Chau Beach reached gale force.

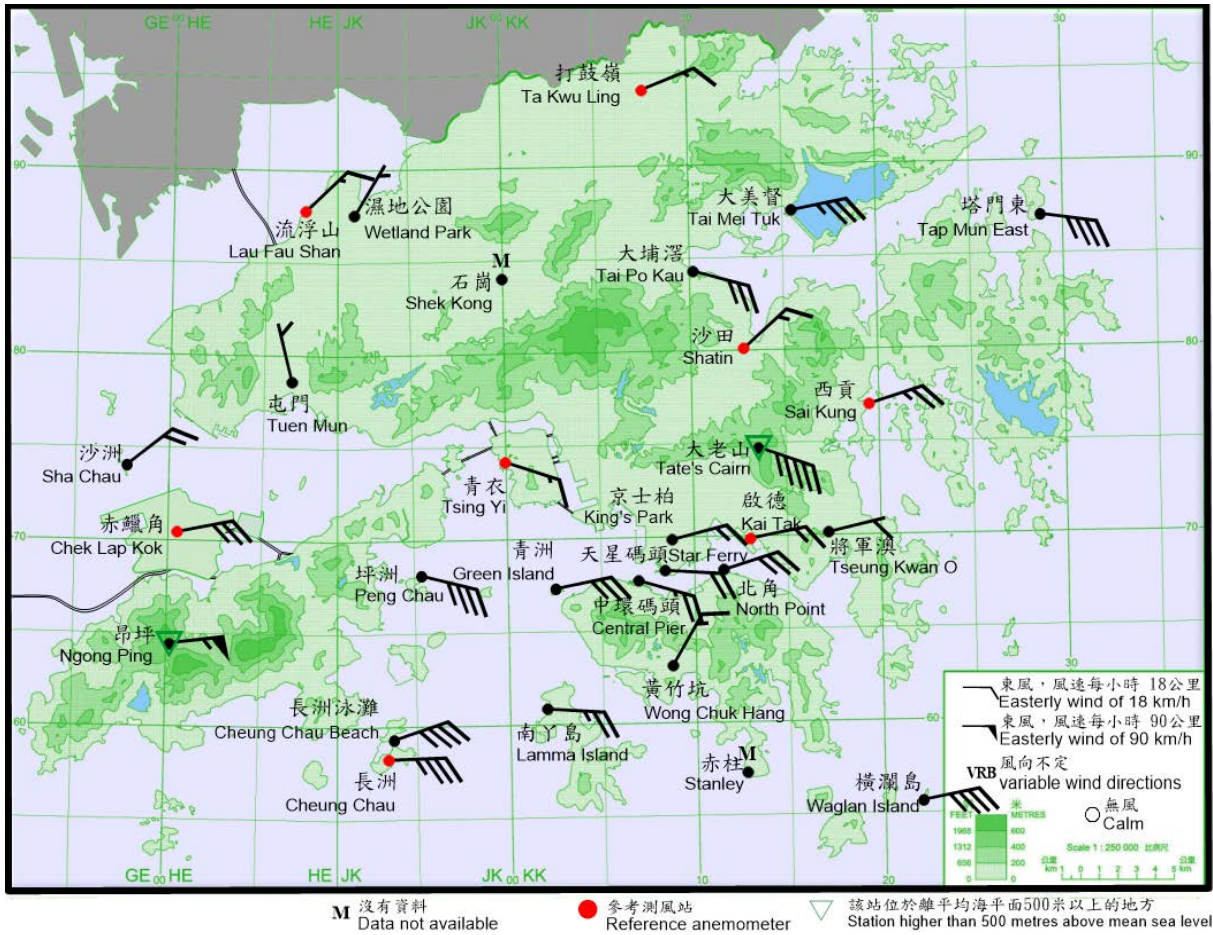


圖 3.6.3b 二零二一年十月十三日上午 11 時正香港各站錄得的十分鐘平均風向和風速。當時昂坪及大老山風力達到暴風程度，而長洲、長洲泳灘、坪洲、塔門東及橫瀾島風力達到烈風程度。

Figure 3.6.3b 10-minute mean wind direction and speed recorded at various stations in Hong Kong at 11:00 a.m. on 13 October 2021. At that time, winds at Ngong Ping and Tate's Cairn reached storm force, while winds at Cheung Chau, Cheung Chau Beach, Peng Chau, Tap Mun East and Waglan Island reached gale force.

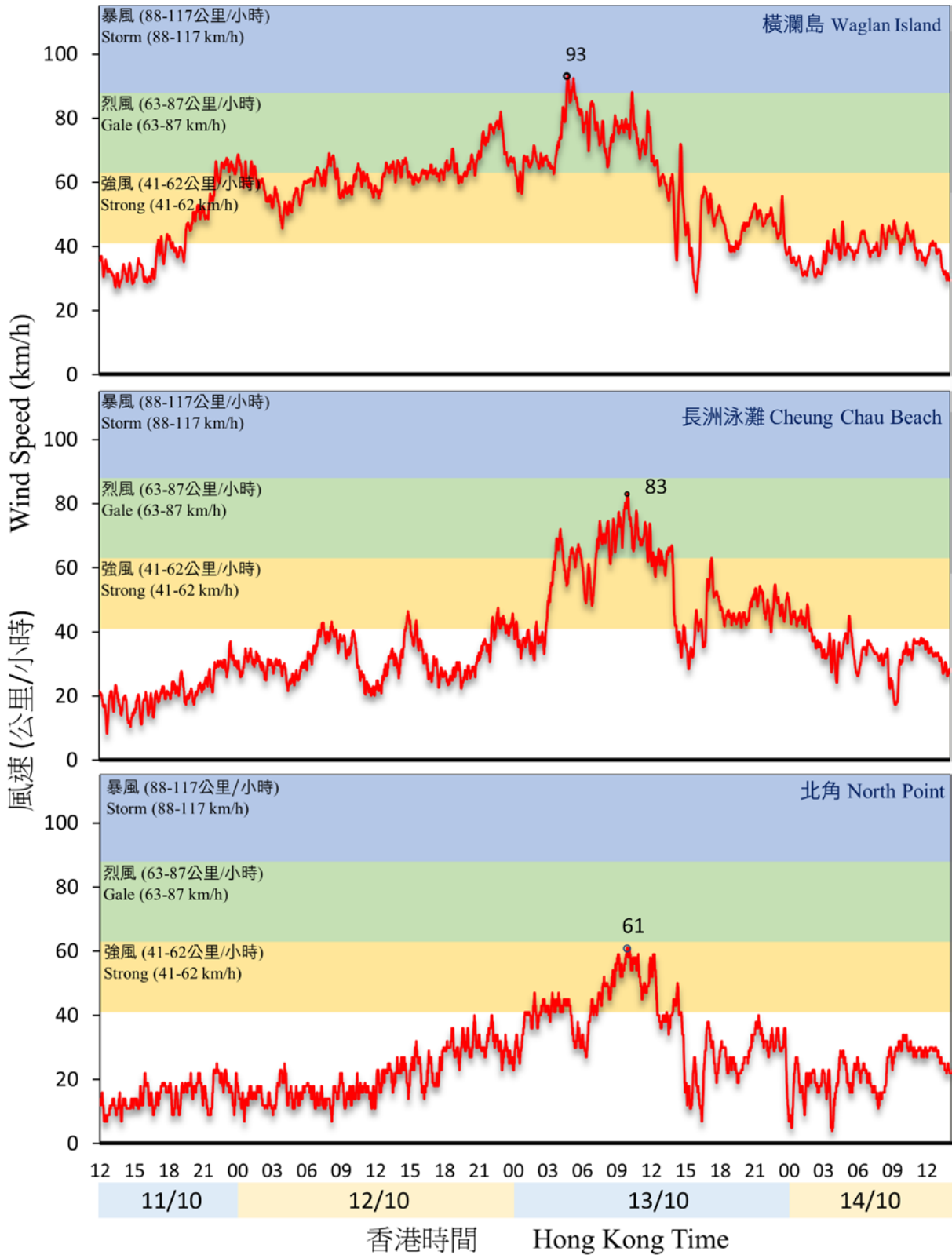


圖 3.6.4 二零二一年十月十一日至十四日橫瀾島、長洲泳灘及北角錄得的十分鐘風速。

Figure 3.6.4 Traces of 10-minute wind speed recorded at Waglan Island, Cheung Chau Beach and North Point on 11 - 14 October 2021.

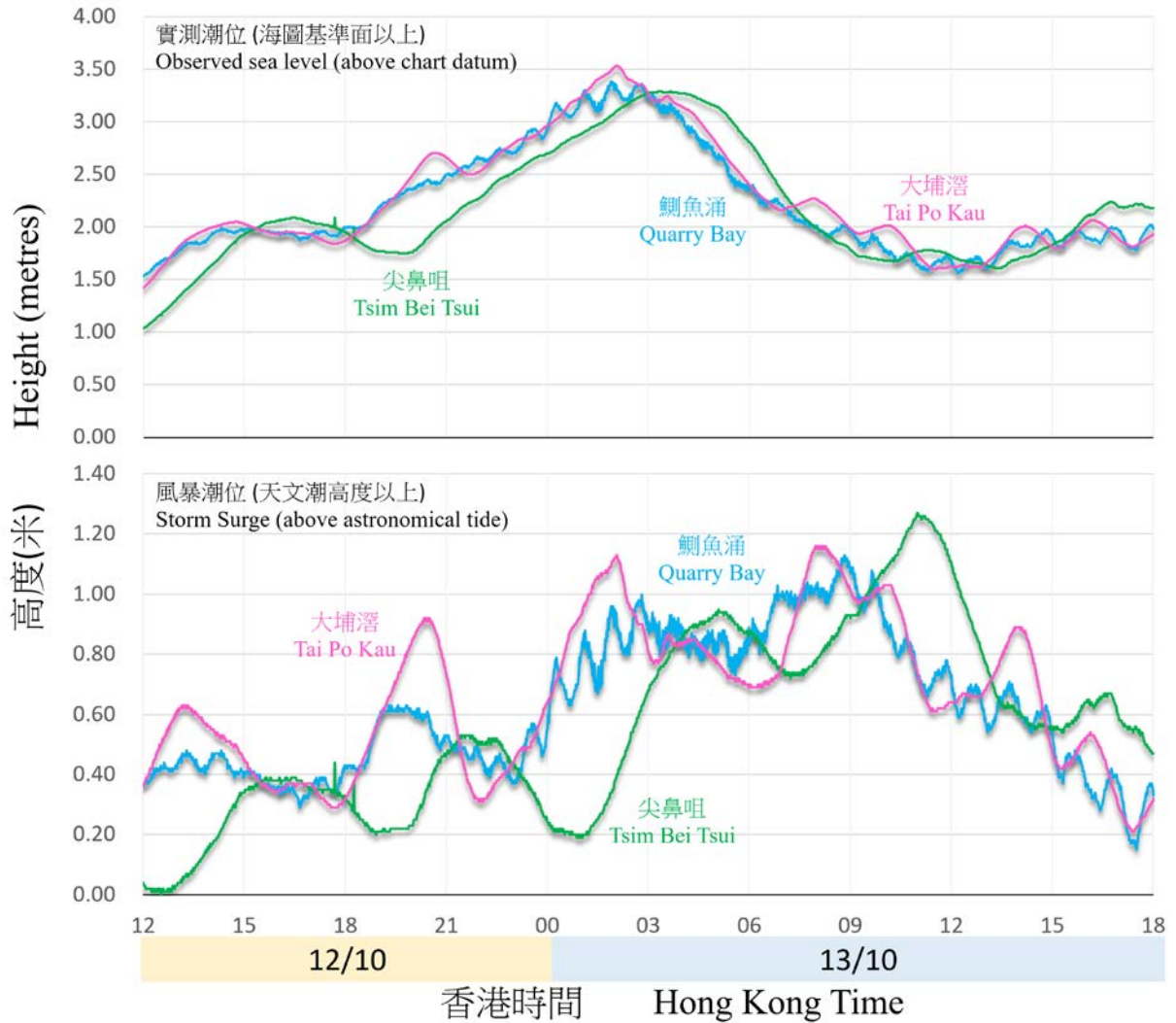


圖 3.6.5 二零二一年十月十二日至十三日在鰗魚涌、大埔滘及尖鼻咀錄得的潮位(海圖基準面以上)及風暴潮(天文潮高度以上)。

Figure 3.6.5 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 12 - 13 October 2021.

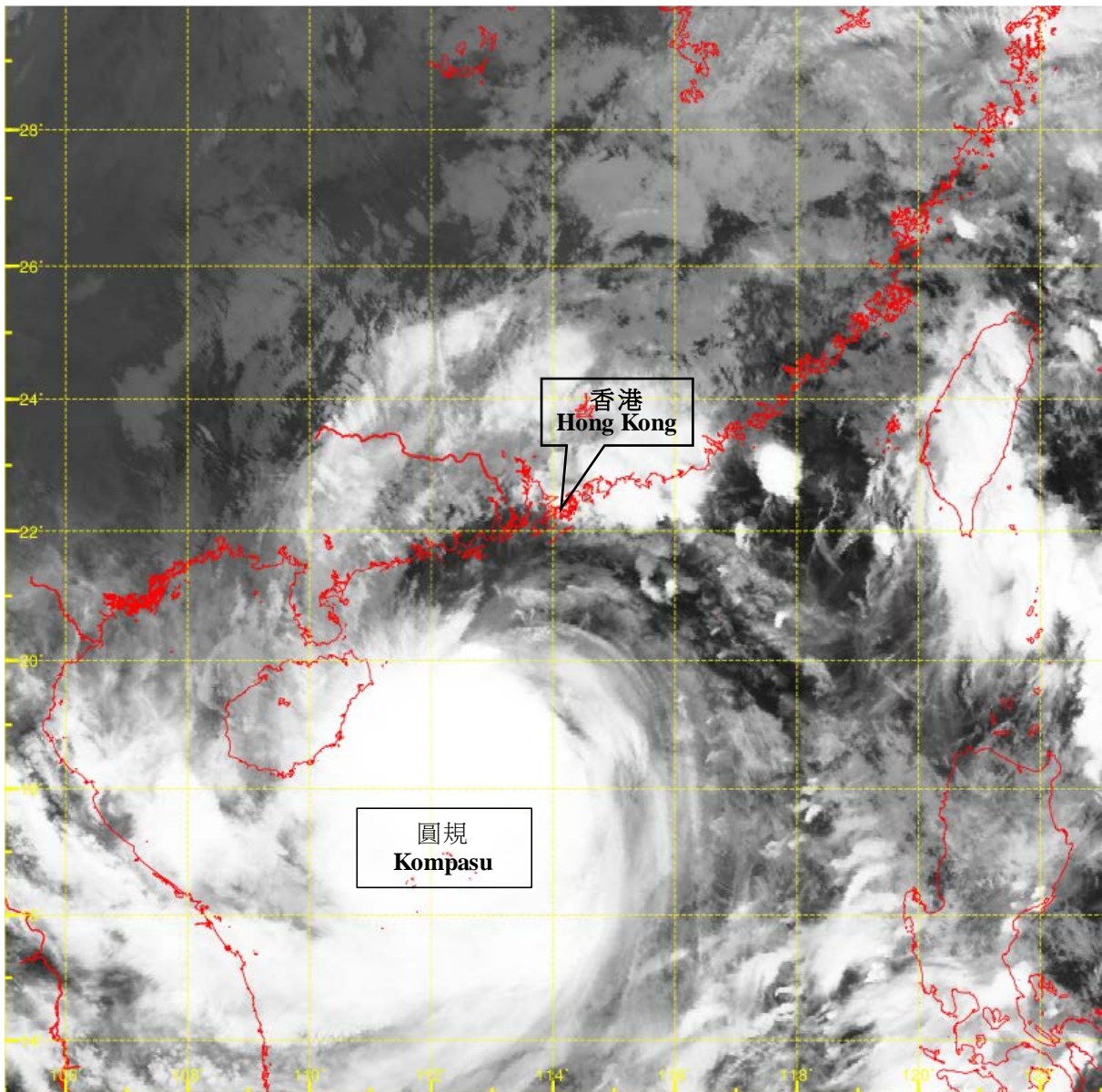


圖 3.6.6 二零二一年十月十三日上午 5 時左右的紅外線衛星圖片，當時圓規達到其最高強度，中心附近最高持續風速估計為每小時 120 公里。

Figure 3.6.6 Infra-red satellite imagery around 5 a.m. on 13 October 2021 when Kompasu 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.]

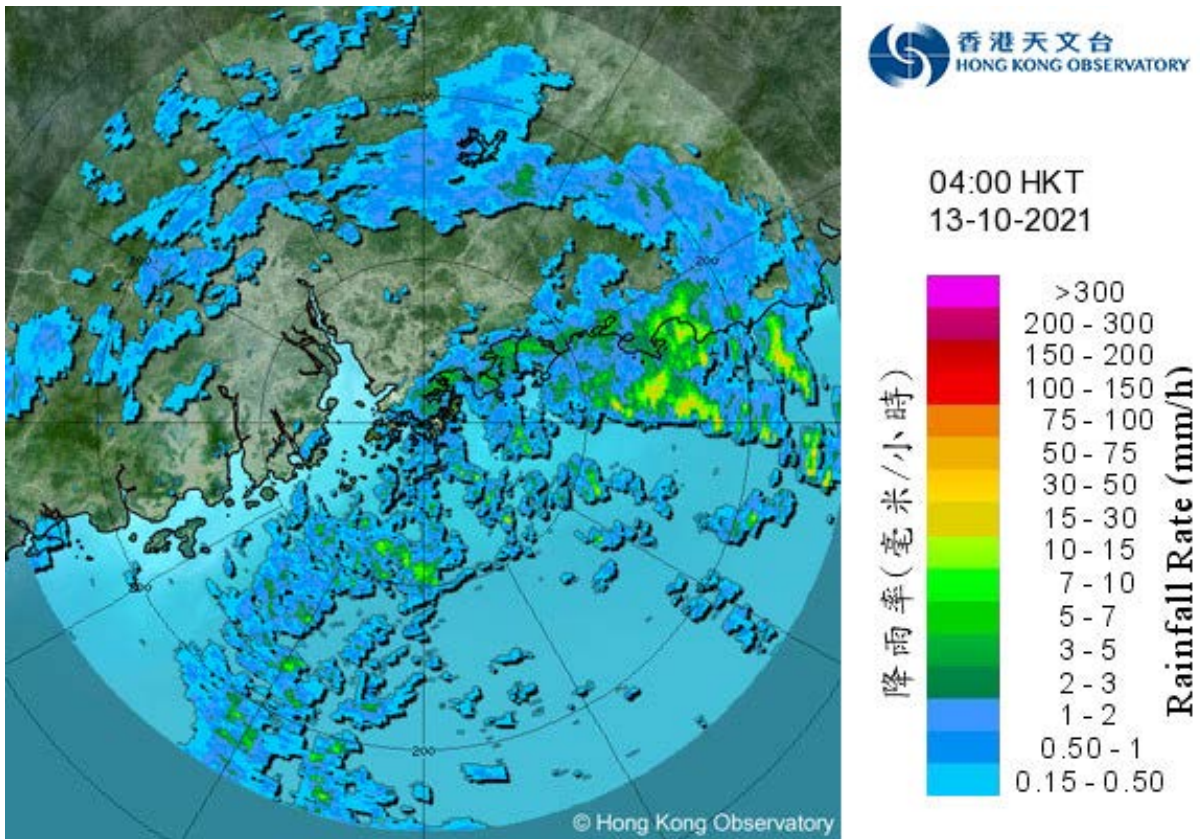


圖 3.6.7 二零二一年十月十三日上午 4 時的雷達回波圖像，當時圓規最接近本港，在本港以南約 360 公里掠過。與圓規相關的雨帶正影響廣東沿岸及南海北部。

Figure 3.6.7 Radar echoes captured at 4 a.m. on 13 October 2021 when Kompasu was closest to Hong Kong, skirting past about 360 km south of the territory. The rainbands associated with Kompasu were affecting the coast of Guangdong and the northern part of the South China Sea.

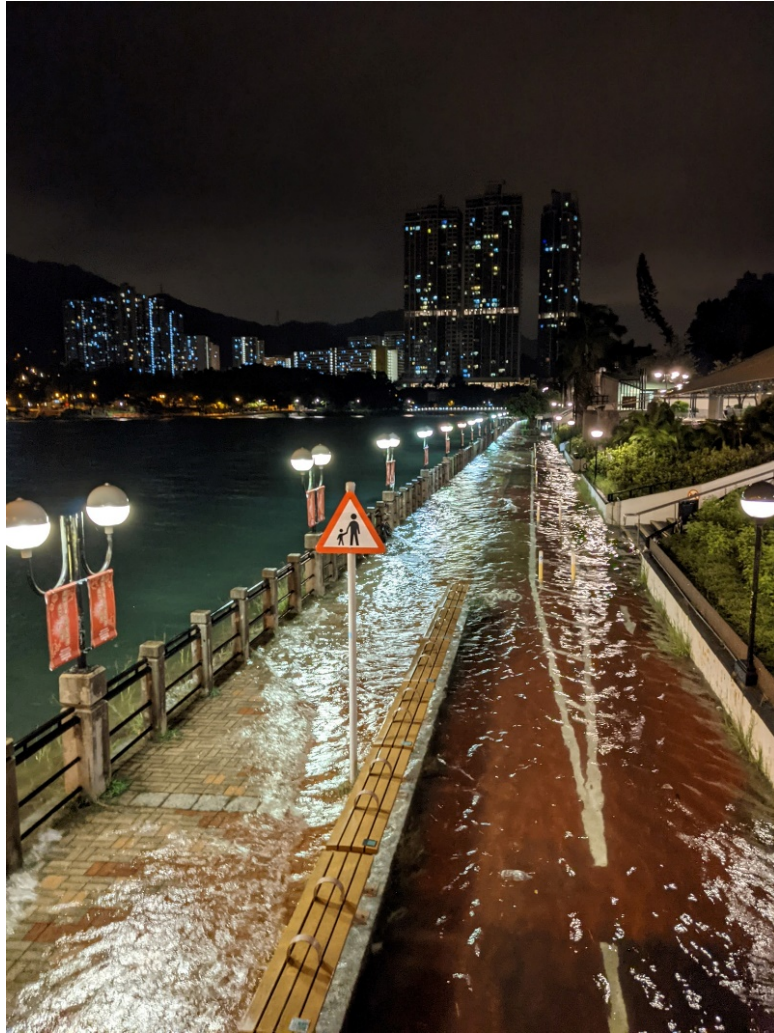


圖 3.6.8a 二零二一年十月十三日凌晨圓規引起的風暴潮導致城門河出現水浸。  
(圖片由 Poon Chi Ming(上)及 Hiu Cheng Chow(下)提供)

Figure 3.6.8a Flooding of Shing Mun River due to storm surge induced by Kompasu on the early morning of 13 October 2021.  
(Courtesy of Poon Chi Ming (top) and Hiu Cheng Chow (bottom))



圖 3.6.8b 二零二一年十月十三日圓規吹襲期間，黃大仙東頭邨有樹木被吹倒。  
(圖片由香港電台提供)

Figure 3.6.8b A tree was blown down at Tung Tau Estate, Wong Tai Sin during the passage of Kompasu on 13 October 2021. (Courtesy of Radio Television Hong Kong)