

3.4 熱帶風暴浪卡 (2016)：二零二零年十月十一日至十四日

浪卡是二零二零年第四個影響香港的熱帶氣旋。雖然浪卡在香港以南約440公里掠過，但在其與東北季候風的共同影響下，天文台需要發出年內第二個八號烈風或暴風信號。浪卡是一九六一年以來距離香港最遠而發出八號烈風或暴風信號的熱帶氣旋。

熱帶低氣壓浪卡於十月十一日下午在東沙之東南約500公里的南海中部上形成，隨後採取西北偏西路徑移向海南島，並逐漸增強。浪卡於十月十二日下午增強為熱帶風暴，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85公里。浪卡於十月十三日晚上橫過海南島並逐漸減弱，翌日進入北部灣，當晚在越南內陸減弱為低壓區。

根據報章報導，浪卡吹襲海南期間，一艘貨輪於琼州海峽附近翻沉，船上有兩人遇難、三人失蹤。浪卡亦為越南帶來狂風大雨，造成最少兩人死亡、一人失蹤。

香港天文台在十月十一日晚上8時40分發出一號戒備信號，當時浪卡集結在香港之東南約780公里。翌日本港普遍吹和緩東至東北風。隨著浪卡逐漸靠近華南沿岸，天文台在十月十二日下午5時10分發出三號強風信號，當時浪卡位於香港之東南偏南約480公里。晚間本港風勢開始增強，離岸及高地吹強風。浪卡於十月十三日上午2時最接近香港，在香港以南約440公里附近掠過。隨著浪卡逐漸移到香港之南至西南方，並與東北季候風的共同影響下，天文台預料本港風勢會進一步增強，在十月十三日上午5時40分發出八號東北烈風或暴風信號，當時浪卡位於香港以南約450公里。日間本港普遍吹強風程度的東至東北風，離岸及高地吹烈風。整體來說，香港南部地區風勢較大，多處錄得烈風，而北部則風勢較弱。當浪卡在海南島登陸及逐漸減弱，天文台於十月十三日晚上7時40分改發三號強風信號。浪卡在十月十四日凌晨進入北部灣並遠離香港，對本港的影響減退，天文台於當日上午2時40分取消所有熱帶氣旋警告信號。但在東北季候風的影響下，本港多處地區仍然吹強風，天文台隨即發出強烈季候風信號，直至翌日上午10時15分取消。

在浪卡的影響下，橫瀾島、長洲泳灘及在維多利亞港的青洲錄得的最高每小時平均風速分別為每小時82、66及66公里，而最高陣風則分別為每小時97、90及91公里。大埔滘錄得最高潮位2.79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)0.74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	1006.7	12/10	下午3時53分
香港國際機場	1006.6	12/10	下午3時37分
長洲	1006.1	12/10	下午3時52分
京士柏	1006.3	12/10	下午3時15分
流浮山	1006.2	12/10	下午3時11分
坪洲	1006.6	12/10	下午3時59分
沙田	1007.0	12/10	下午3時05分
上水	1006.5	12/10	下午3時32分
打鼓嶺	1006.8	12/10	下午3時07分
大埔	1007.3	12/10	下午3時10分
橫瀾島	1006.8	12/10	下午4時37分

十月十一日及十二日本港大致天晴及乾燥。隨著浪卡的外圍雨帶逐漸靠近廣東沿岸，十月十二日晚上及十月十三日本港多雲有雨。雖然浪卡遠離，但在東北季候風的影響下，十月十四日本港仍然有幾陣雨。十月十一日至十四日期間本港大部分地區錄得超過20毫米雨量。

浪卡吹襲香港期間，最少有3人受傷，另有接近250宗塌樹報告。深水埗及元朗分別有的士及客貨車被塌樹擊中損毀。荃灣亦有村屋被樹枝壓毀。西區有商業大廈外牆的帆布廣告被強風吹翻，現場交通受阻。

3.4 Tropical Storm Nangka (2016): 11 to 14 October 2020

Nangka was the fourth tropical cyclone that affected Hong Kong in 2020. Although Nangka skirted past at about 440 km south of Hong Kong, its combined effect with the northeast monsoon necessitated the issuance of the second No. 8 Gale or Storm Signal this year. Nangka is also the farthest tropical cyclone with the issuance of No. 8 Gale or Storm Signal in Hong Kong since 1961.

Nangka formed as a tropical depression over the central part of the South China Sea about 500 km southeast of Dongsha on the afternoon of 11 October. It then moved west-northwestwards towards Hainan Island and intensified gradually. Nangka intensified into a tropical storm on the afternoon of 12 October, reaching its peak intensity at night with an estimated maximum sustained wind of 85 km/h near its centre. It moved across Hainan Island on the night of 13 October and weakened gradually. Nangka entered Beibu Wan on 14 October and finally degenerated into an area of low pressure over inland Vietnam at night.

According to press reports, a cargo ship overturned near Qiongzhou Strait when Nangka was hitting Hainan. Two crew members on board died and three were missing. Nangka also brought heavy rain and squalls to Vietnam, leaving at least two deaths and one missing.

In Hong Kong, the Standby Signal No. 1 was issued at 8:40 p.m. on 11 October when Nangka was about 780 km southeast of the territory. Moderate east to northeasterly winds generally affected Hong Kong the next day. With Nangka edging closer to the south China coast, the Strong Wind Signal No. 3 was issued at 5:10 p.m. on 12 October when Nangka was about 480 km south-southeast of Hong Kong. Local winds started to strengthen during the night with winds reaching strong force offshore and on high ground. Nangka came closest to Hong Kong at around 2 a.m. on 13 October with its centre passing about 440 km south of Hong Kong. With Nangka moving gradually to the south to southwest of Hong Kong, local winds were expected to strengthen further under its combined effect with the northeast monsoon. The No. 8 Northeast Gale or Storm Signal was issued at 5:40 a.m. on 13 October when Nangka was about 450 km south of Hong Kong. Local winds were generally strong east to northeasterlies during the day, reaching gale force offshore and on high ground. Overall, winds were generally stronger over the southern part of Hong Kong with numerous places recording gale force wind, while winds were weaker over the northern part of the territory. When Nangka made landfall over Hainan Island and weakened gradually, the Strong Wind Signal No. 3 was issued at 7:40 p.m. on 13 October. After Nangka entered Beibu Wan in the small hours on 14 October and moved far away from Hong Kong, its impact to territory had diminished and all tropical cyclone warning signals were cancelled at 2:40 a.m. on that day. Nevertheless, strong winds still affected many places in Hong Kong under the influence of the northeast monsoon. The Strong Monsoon Signal was issued immediately afterwards and lasted till 10:15 a.m. the following day.

Under the influence of Nangka, maximum hourly mean winds of 82, 66 and 66 km/h and maximum gusts of 97, 90 and 91 km/h were recorded at Waglan Island, Cheung Chau Beach and Green Island in the Victoria Harbour respectively. A maximum sea level (above chart datum) of 2.79 m was recorded at Tai Po Kau, and a maximum storm surge (above astronomical tide) of 0.74 m 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	1006.7	12/10	3:53 p.m.
Hong Kong International Airport	1006.6	12/10	3:37 p.m.
Cheung Chau	1006.1	12/10	3:52 p.m.
King's Park	1006.3	12/10	3:15 p.m.
Lau Fau Shan	1006.2	12/10	3:11 p.m.
Peng Chau	1006.6	12/10	3:59 p.m.
Sha Tin	1007.0	12/10	3:05 p.m.
Sheung Shui	1006.5	12/10	3:32 p.m.
Ta Kwu Ling	1006.8	12/10	3:07 p.m.
Tai Po	1007.3	12/10	3:10 p.m.
Waglan Island	1006.8	12/10	4:37 p.m.

Locally, it was mainly fine and dry on 11 and 12 October. With the outer rainbands of Nangka edging closer to the coast of Guangdong gradually, it was cloudy with rain in Hong Kong on the night of 12 October and on 13 October. Although Nangka had moved away, there were still a few rain patches in Hong Kong on 14 October under the influence of the northeast monsoon. More than 20 millimetres of rainfall were recorded over most parts of the territory during 11 – 14 October.

In Hong Kong, at least three people were injured during the passage of Nangka and there were around 250 reports of fallen trees. A taxi and a passenger van were hit by fallen trees at Sham Shui Po and Yuen Long respectively. A village house in Tsuen Wan was damaged by falling branches. An advertisement banner of a commercial building in western District was blown down, disrupting the traffic nearby.

表 3.4.1 在浪卡影響下，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 Nangka were in force.

站 (參閱圖 1.1) Station (See Fig. 1.1)		最高陣風 Maximum Gust				最高每小時平均風速 Maximum Hourly Mean Wind					
		風向 Direction	風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time	風向 Direction	風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time		
黃麻角(赤柱)	Bluff Head (Stanley)	東	E	77	13/10	11:46	東	E	40	13/10	21:00
中環碼頭	Central Pier	東	E	71	13/10	19:21	東	E	42	13/10	15:00
		東	E	42	13/10	16:00					
長洲	Cheung Chau	東	E	81	13/10	13:27	東	E	56	14/10	00:00
		東	E	81	14/10	01:42					
長洲泳灘	Cheung Chau Beach	東北偏東	ENE	90	13/10	13:31	東北偏東	ENE	66	13/10	20:00
青洲	Green Island	東北偏東	ENE	91	13/10	19:32	東北偏東	ENE	66	13/10	20:00
香港國際機場	Hong Kong International Airport	東	E	62	13/10	12:26	東	E	42	13/10	13:00
		東北偏東	ENE	62	13/10	13:47					
啟德	Kai Tak	東北偏東	ENE	70	13/10	19:24	東	E	29	14/10	02:00
京士柏	King's Park	東	E	69	13/10	19:36	東	E	28	14/10	02:00
南丫島	Lamma Island	東南偏東	ESE	82	13/10	19:45	東	E	35	14/10	00:00
流浮山	Lau Fau Shan	東北偏東	ENE	48	14/10	00:27	東北偏東	ENE	26	13/10	17:00
							東北偏東	ENE	26	13/10	18:00
							東北偏東	ENE	26	13/10	19:00
北角	North Point	東	E	77	13/10	18:35	東	E	44	14/10	02:00
坪洲	Peng Chau	東	E	82	13/10	19:27	東	E	54	13/10	20:00
平洲	Ping Chau	東北偏東	ENE	40	13/10	20:59	東	E	16	13/10	23:00
西貢	Sai Kung	東北偏東	ENE	81	13/10	19:26	東北偏東	ENE	48	13/10	12:00
沙洲	Sha Chau	東北	NE	57	13/10	10:14	東	E	36	14/10	00:00
沙螺灣	Sha Lo Wan	東	E	70	13/10	19:44	東	E	37	13/10	20:00
		東	E	70	13/10	19:53					
沙田	Sha Tin	東北	NE	69	13/10	11:28	東北偏東	ENE	22	13/10	13:00
九龍天星碼頭	Star Ferry (Kowloon)	東	E	65	14/10	02:00	東	E	35	14/10	00:00
打鼓嶺	Ta Kwu Ling	東	E	48	13/10	19:59	東	E	17	13/10	20:00
大美督	Tai Mei Tuk	東北偏東	ENE	71	13/10	11:43	東北偏東	ENE	49	13/10	13:00
大帽山	Tai Mo Shan	東南偏東	ESE	113	13/10	19:41	東南偏東	ESE	73	14/10	00:00
大埔滘	Tai Po Kau	東	E	55	13/10	22:58	東	E	39	14/10	02:00
		東	E	55	13/10	22:59					
塔門東	Tap Mun East	東	E	68	14/10	00:07	東	E	48	14/10	01:00
大老山	Tate's Cairn	東	E	96	13/10	11:46	東	E	63	13/10	12:00
將軍澳	Tseung Kwan O	東南	SE	49	14/10	01:23	北	N	16	13/10	07:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	東南	SE	50	13/10	12:58	東南偏東	ESE	22	13/10	14:00
屯門政府合署	Tuen Mun Government Offices	東北偏北	NNE	47	13/10	06:47	北	N	14	13/10	08:00
橫瀾島	Waglan Island	東北偏東	ENE	97	13/10	11:33	東北偏東	ENE	82	13/10	12:00
		東北偏東	ENE	97	13/10	19:58					
濕地公園	Wetland Park	東	E	35	14/10	00:23	東	E	14	14/10	01:00
黃竹坑	Wong Chuk Hang	東北偏東	ENE	70	13/10	18:11	東北偏東	ENE	30	13/10	20:00

昂坪、石崗 - 沒有資料 Ngong Ping, Shek Kong - data not available

表 3.4.2 在浪卡影響下，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 Nangka 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*	
		時間		時間	
		Start time when strong wind speed* was attained		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	13/10	03:05	14/10	02:40
香港國際機場	Hong Kong International Airport	13/10	11:48	14/10	02:13
西貢	Sai Kung	13/10	11:11	14/10	02:40

所有參考測風站的持續風力未達到烈風#程度。

The sustained wind speed did not attain gale# force at all reference anemometers.

啟德、沙田、流浮山、打鼓嶺、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, Lau Fau Shan, 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

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 3.4.3 浪卡影響香港期間，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 Nangka

站 (參閱圖 3.4.2) Station (See Fig. 3.4.2)			十月十一日 11 Oct	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)			0.0	0.6	26.0	1.2	27.8
香港國際機場 Hong Kong International Airport (HKA)			0.0	微量 Trace	13.5	微量 Trace	13.5
長洲Cheung Chau (CCH)			0.0	0.0	7.0	0.0	7.0
H23	香港仔	Aberdeen	0.0	0.5	17.5	1.0	19.0
N05	粉嶺	Fanling	0.0	0.0	14.5	0.0	14.5
N13	糧船灣	High Island	0.0	0.0	18.5	0.0	18.5
K04	佐敦谷	Jordan Valley	0.0	0.5	36.5	2.5	39.5
N06	葵涌	Kwai Chung	0.0	0.5	24.5	2.0	27.0
H12	半山區	Mid Levels	0.0	0.0	28.0	3.0	31.0
N09	沙田	Sha Tin	0.0	0.0	35.5	0.5	36.0
H19	筲箕灣	Shau Kei Wan	0.0	0.5	29.0	0.5	30.0
SEK	石崗	Shek Kong	0.0	0.0	31.0	1.0	32.0
K06	蘇屋邨	So Uk Estate	0.0	0.5	24.5	1.5	26.5
R31	大美督	Tai Mei Tuk	0.0	0.0	25.5	0.5	26.0
R21	踏石角	Tap Shek Kok	0.0	0.0	10.0	0.0	10.0
N17	東涌	Tung Chung	0.0	0.0	27.0	0.5	27.5
TMR	屯門水庫	Tuen Mun Reservoir	0.0	0.0	11.3	0.0	11.3

表 3.4.4 浪卡影響香港期間，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 Nangka

站 (參閱圖 1.1) Station (See Fig. 1.1)		最高潮位 (海圖基準面以上) Maximum sea level (above chart datum)			最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide)		
		高度(米) Height (m)	日期/月份 Date/Month	時間 Time	高度(米) Height (m)	日期/月份 Date/Month	時間 Time
鰂魚涌	Quarry Bay	2.65	13/10	06:25	0.61	13/10	12:59
石壁	Shek Pik	2.72	13/10	05:57	0.74	13/10	13:11
大廟灣	Tai Miu Wan	2.68	13/10	05:41	0.70	13/10	12:49
大埔滘	Tai Po Kau	2.79	13/10	06:05	0.72	13/10	13:50
尖鼻咀	Tsim Bei Tsui	2.78	13/10	06:05	0.72	13/10	15:26

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

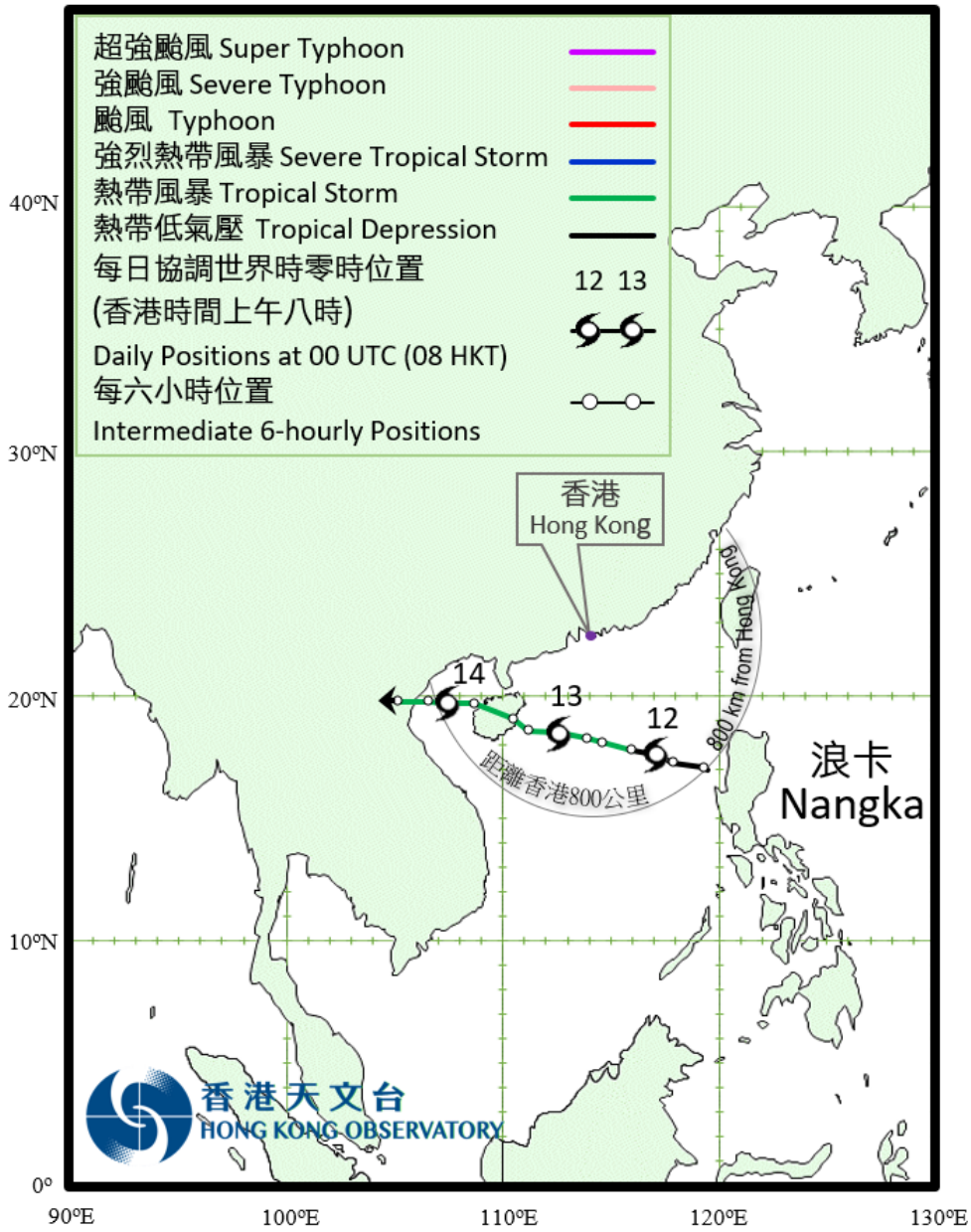


圖 3.4.1 二零二零年十月十一日至十五日浪卡的路徑圖。
 Figure 3.4.1 Track of Nangka: 11 – 15 October 2020.

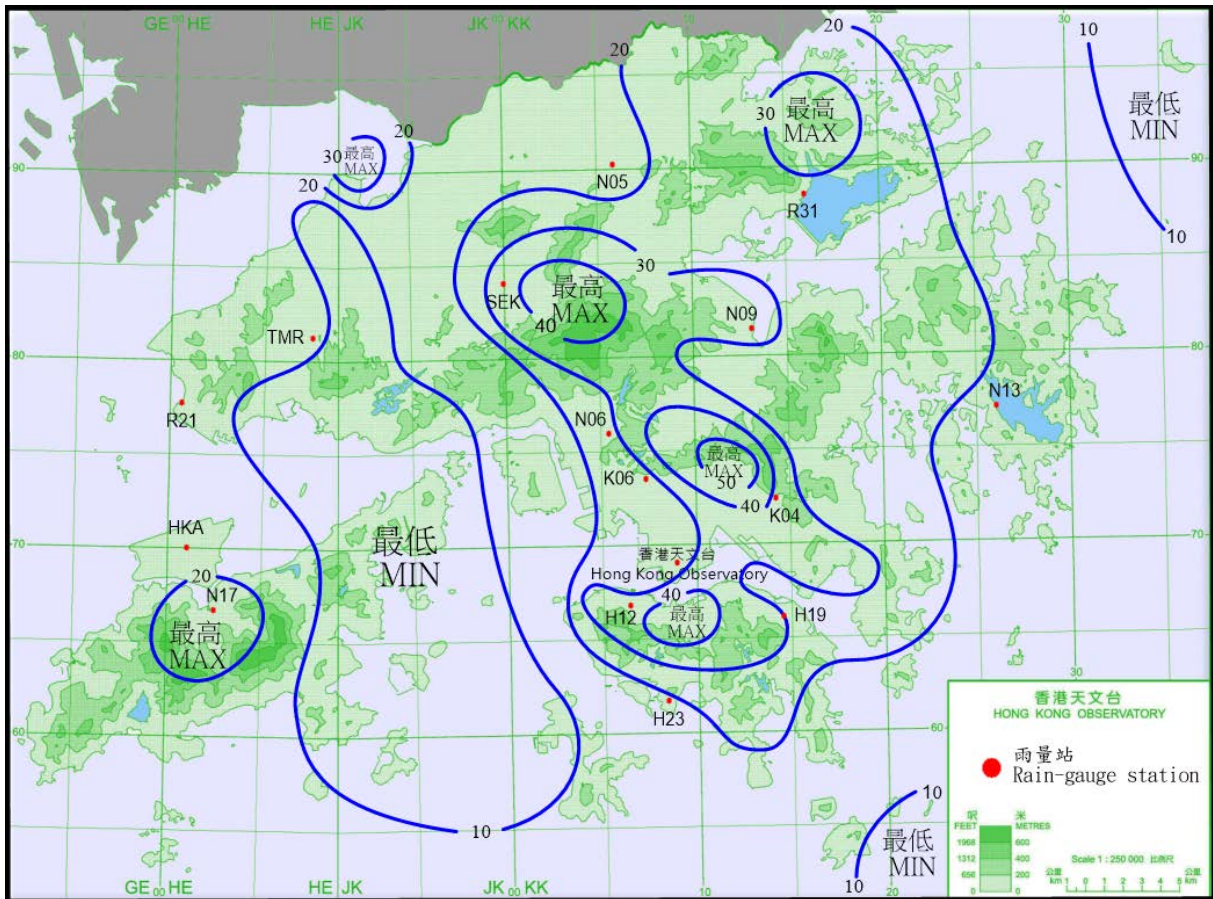


圖 3.4.2 二零二零年十月十一日至十四日的雨量分佈(等雨量線單位為毫米)。
 Figure 3.4.2 Rainfall distribution on 11 - 14 October 2020 (isohyets in millimetres).

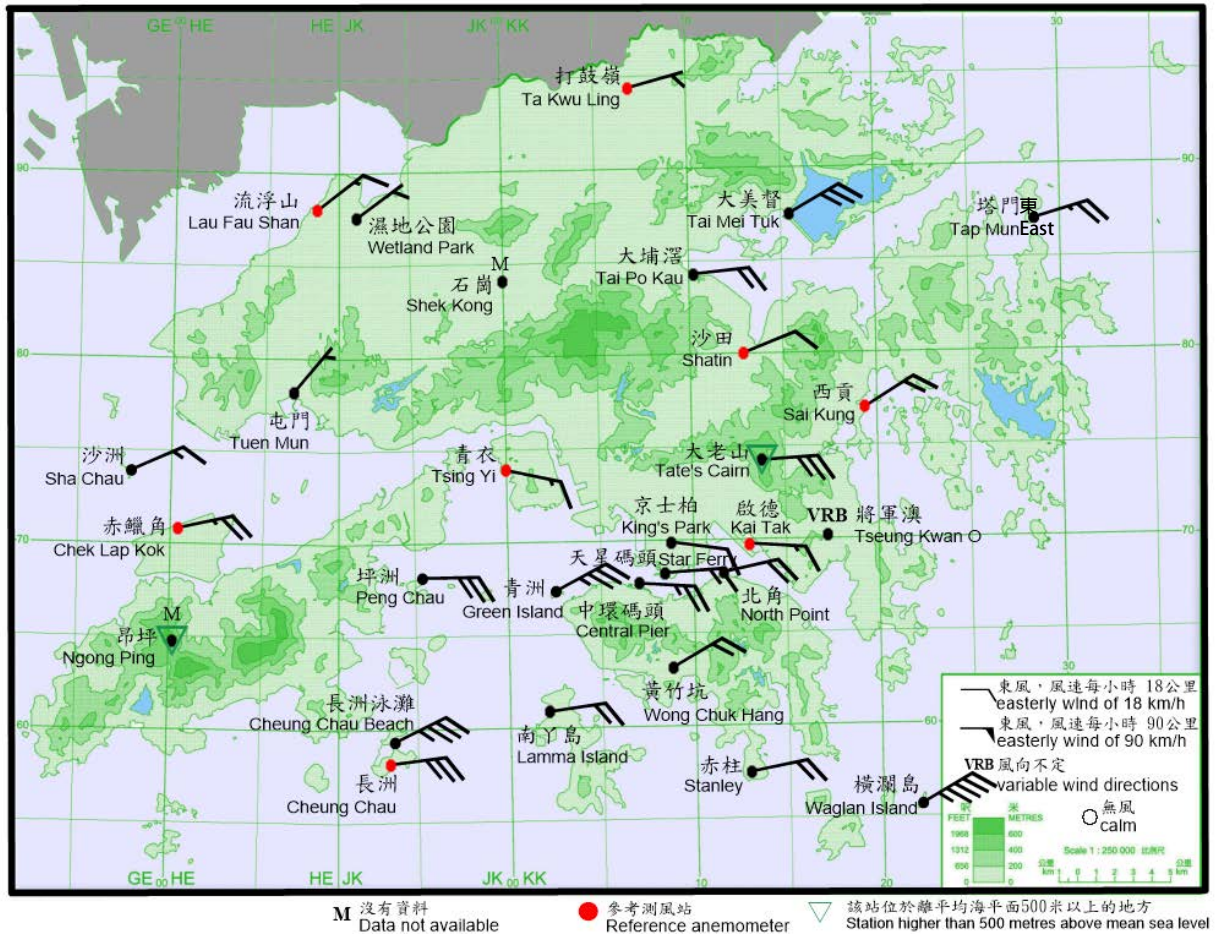


圖 3.4.3 二零二零年十月十三日下午三時二十分香港各站錄得的十分鐘平均風向和風速。當時橫瀾島的風力達到烈風程度，而長洲、長洲泳灘、青州、中環碼頭、大老山及大美督的風力達到強風程度。

Figure 3.4.3 10-minute mean wind direction and speed recorded at various stations in Hong Kong at 3:20 p.m. on 13 October 2020. Winds at Waglan Island reached gale force, while winds at Cheung Chau, Cheung Chau Beach, Green Island, Central Pier, Tate's Cairn and Tai Mei Tuk reached strong force at the time.

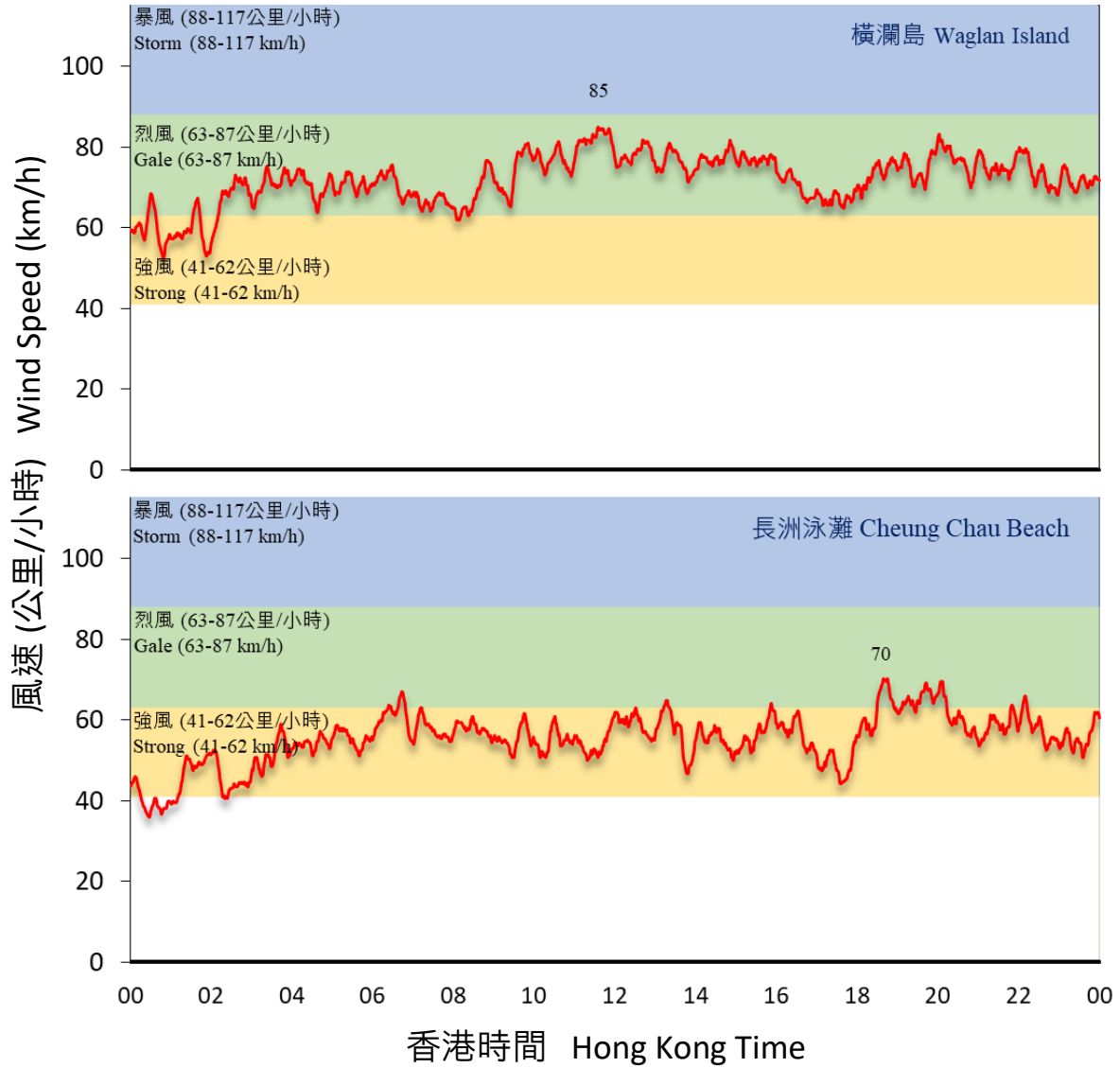


圖 3.4.4 二零二零年十月十三日長洲泳灘及橫瀾島錄得的十分鐘風速。
 Figure 3.4.4 Traces of 10-minute wind speed recorded at Cheung Chau Beach and Waglan Island on 13 October 2020.

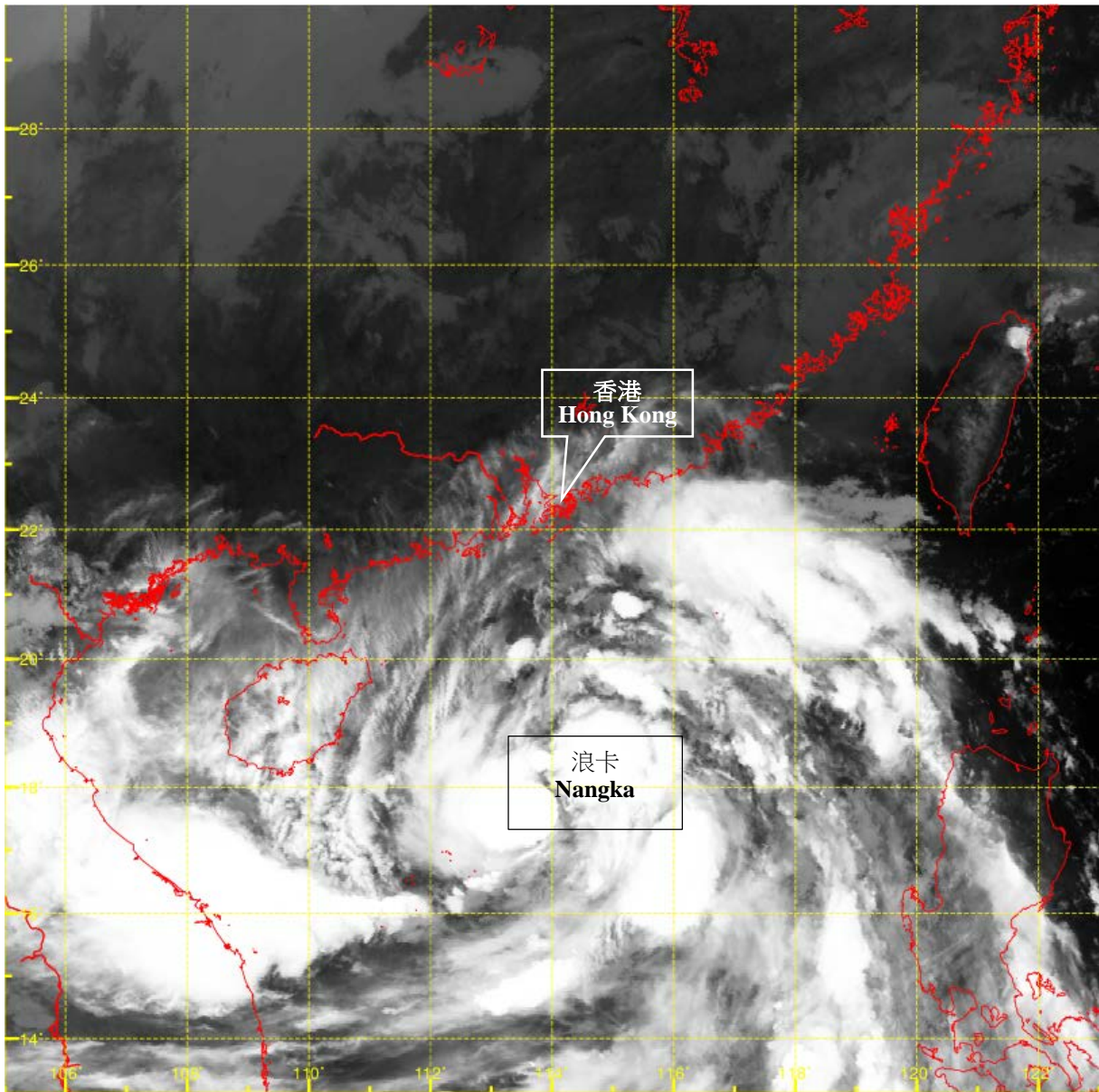


圖 3.4.5 二零二零年十月十二日下午11時左右的紅外線衛星圖片，當時浪卡達到其最高強度，中心附近最高持續風速估計為每小時85公里。

Figure 3.4.5 Infra-red satellite imagery around 11 p.m. on 12 October 2020, when Nangka was at its peak intensity with estimated maximum sustained winds of 85 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).]

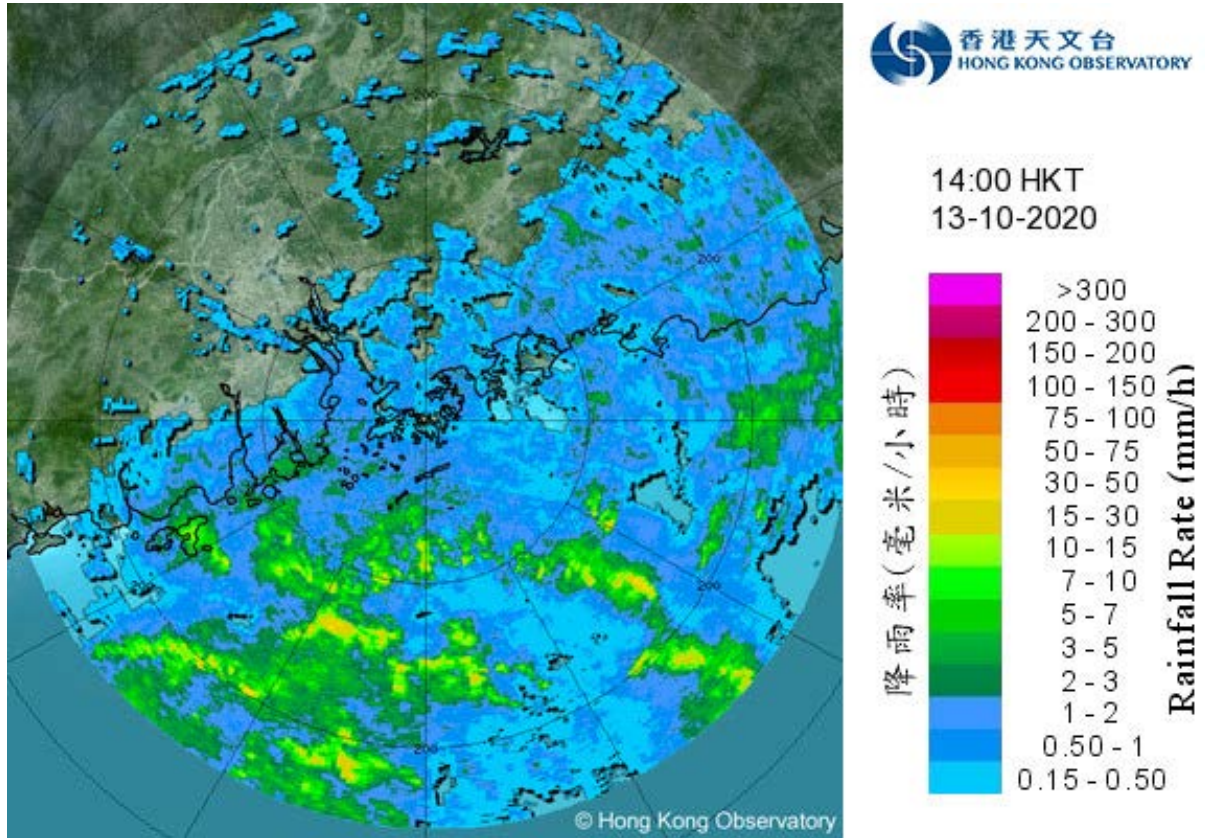


圖 3.4.6 二零二零年十月十三日下午 2 時正的雷達回波圖像，當時浪卡集結在香港之西南約 520 公里，與浪卡相關的雨帶正影響廣東沿岸及南海北部。

Figure 3.4.6 Image of radar echoes at 2:00 p.m. on 13 October 2020 when Nangka was about 520 km southwest of Hong Kong. The rainbands associated with Nangka were affecting the coast of Guangdong and the northern part of the South China Sea.