

3.5 超強颱風莫蘭蒂(1614)：二零一六年九月十日及十五日

莫蘭蒂是二零一六年第五個導致香港天文台需要發出熱帶氣旋警告信號的熱帶氣旋。

熱帶低氣壓莫蘭蒂於九月十日清晨在關島以西約390公里的北太平洋西部上形成，向西北偏西方向移動並迅速增強。莫蘭蒂於九月十二日發展為超強颱風，翌日達到其最高強度，中心附近最高持續風速估計為每小時250公里。莫蘭蒂於九月十三日晚上橫過呂宋海峽後，翌日採取西北路徑橫掃台灣西南沿岸海域，移向福建並逐漸減弱。莫蘭蒂於九月十五日凌晨在廈門附近登陸，當日移入內陸並進一步減弱，最後於九月十六日凌晨在江西減弱為一個低壓區。

根據報章報導，莫蘭蒂吹襲台灣期間，造成至少兩人死亡，63人受傷，超過100萬戶停水停電，海陸空交通癱瘓。莫蘭蒂亦在福建及江西等地造成嚴重破壞，最少有29人死亡、15人失蹤，約250萬人受災，18 000間房屋倒塌，直接經濟損失超過117億元人民幣。

香港天文台於九月十四日上午10時10分發出一號戒備信號，當時莫蘭蒂集結在香港以東約650公里。當日本港普遍吹和緩至清勁西北風，高地間中吹強風。天文台總部於九月十四日下午3時31分錄得最低瞬時海平面氣壓1001.3百帕斯卡。隨著莫蘭蒂於九月十五日凌晨在廈門附近登陸並減弱，對香港的威脅解除，天文台於上午4時20分取消所有熱帶氣旋警告信號。莫蘭蒂於當日上午稍後11時左右最接近本港，位置在香港之東北約460公里。

莫蘭蒂掠過期間，橫瀾島錄得最高潮位（海圖基準面以上）2.16米，而鰂魚涌則錄得最大風暴潮（天文潮高度以上）0.41米。

莫蘭蒂對香港的影響不大，期間並沒有嚴重破壞報告。在莫蘭蒂的外圍下沉氣流影響下，九月十四日本港日間大致天晴，天氣酷熱，晚間轉為多雲。

表3.5.1 - 3.5.3 分別是莫蘭蒂影響香港期間各站錄得的最高風速、香港的日雨量及最高潮位資料。圖3.5.1 - 3.5.2 分別為莫蘭蒂的路徑圖及雷達圖像。

3.5 Super Typhoon Meranti (1614): 10 – 15 September 2016

Meranti was the fifth tropical cyclone necessitating the issuance of tropical cyclone warning signal by the Hong Kong Observatory in 2016.

Meranti formed as a tropical depression over the western North Pacific about 390 km west of Guam on the early morning of 10 September. It moved west-northwestward and intensified rapidly. Meranti developed into a super typhoon on 12 September and reached its peak intensity the next day with an estimated sustained wind of 250 km/h. After moving across the Luzon Strait on the night of 13 September, Meranti moved northwestward and swept across the coastal waters of southwestern Taiwan the next day. It continued to move towards Fujian and weakened gradually. Meranti made landfall near Xiamen in the early morning of 15 September. It moved inland and weakened further on that day, before finally degenerating into an area of low pressure over Jiangxi early in the morning on 16 September.

According to press reports, at least two persons were killed and 63 were injured in Taiwan during the passage of Meranti. Electricity and water supply of over 1 million households were interrupted. Transportation services were paralyzed. Meranti also wreaked havoc in Fujian and Jiangxi, resulting in at least 29 deaths, 15 missing, about 2.5 million people affected and 18 000 houses collapsed. Direct economic losses exceeded 11.7 billion RMB.

In Hong Kong, the Standby Signal No. 1 was issued at 10:10 a.m. on 14 September when Meranti was about 650 km east of Hong Kong. Local winds were generally moderate to fresh from the northwest and occasionally strong on high ground that day. At the Observatory Headquarters, the lowest instantaneous mean sea-level pressure of 1001.3 hPa was recorded at 3:31 p.m. on 14 September. As Meranti made landfall near Xiamen on the early morning of 15 September and weakened, it no longer posed a threat to Hong Kong and all tropical cyclone warning signals were cancelled at 4:20 a.m. Meranti came closest to the territory around 11 a.m. later that morning when it was about 460 km northeast of Hong Kong.

During the passage of Meranti, a maximum sea level (above chart datum) of 2.16 m was recorded at Waglan Island, while a maximum storm surge of 0.41 m (above astronomical tide) was recorded at Quarry Bay.

Meranti had no major impact on Hong Kong and no significant damage was reported. Under the influence of the outer subsiding air associated with Meranti, local weather was mainly fine and very hot during the day on 14 September before turning cloudy that night.

Information on the maximum wind, daily rainfall and maximum sea level reached in Hong Kong during the passage of Meranti is given in Tables 3.5.1 - 3.5.3 respectively. Figures 3.5.1 - 3.5.2 show respectively the track and satellite imageries of Meranti.

表 3.5.1 在莫蘭蒂影響下，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 tropical cyclone warning signals for Meranti 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 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)	西北	NW	27	14/9	14:05	西北	NW	14	14/9	16:00
中環碼頭	Central Pier	西	W	41	14/9	16:25	西北偏西	WNW	22	14/9	20:00
長洲	Cheung Chau	西北偏北	NNW	43	14/9	16:17	西北	NW	25	14/9	18:00
		西北	NW	43	14/9	17:30					
長洲泳灘	Cheung Chau Beach	西北偏西	WNW	43	14/9	16:27	西北偏西	WNW	19	14/9	16:00
青洲	Green Island	西北偏北	NNW	49	14/9	19:15	西北偏北	NNW	31	14/9	21:00
香港國際機場	Hong Kong International Airport	西北偏北	NNW	40	14/9	17:25	西北偏北	NNW	31	14/9	23:00
啟德	Kai Tak	西	W	38 88	14/9	15:44	西北	NW	22	14/9	17:00
京士柏	King's Park	西北偏北	NNW	34	14/9	22:36	北	N	13	14/9	21:00
流浮山	Lau Fau Shan	西北偏西	WNW	40	14/9	15:56	西北偏北	NNW	30	14/9	19:00
		西北偏西	WNW	40	14/9	15:59					
		西北偏西	WNW	40	14/9	16:00					
昂坪	Ngong Ping	西北偏西	WNW	41	14/9	14:34	西北偏西	WNW	25	14/9	15:00
北角	North Point	西南偏西	WSW	40	14/9	15:09	西南偏西	WSW	27	14/9	16:00
坪洲	Peng Chau	西北偏西	WNW	45	14/9	15:43	西北偏西	WNW	30	14/9	17:00
平洲	Ping Chau	西北偏西	WNW	23	14/9	13:24	西北	NW	9	14/9	21:00
西貢	Sai Kung	西北偏北	NNW	41	14/9	23:15	東北偏北	NNE	23	14/9	11:00
沙洲	Sha Chau	西北偏北	NNW	49	14/9	17:23	西北偏北	NNW	30	15/9	00:00
沙螺灣	Sha Lo Wan	西	W	27	14/9	14:12	西	W	12	14/9	14:00
沙田	Sha Tin	北	N	30	15/9	01:40	北	N	12	15/9	02:00
							北	N	12	15/9	03:00
石崗	Shek Kong	西北偏西	WNW	31	14/9	13:21	西北偏西	WNW	12	14/9	14:00
九龍天星碼頭	Star Ferry (Kowloon)	西北偏西	WNW	36	14/9	17:40	西	W	25	14/9	16:00
打鼓嶺	Ta Kwu Ling	西北偏西	WNW	30	14/9	16:57	西北偏北	NNW	12	14/9	15:00
大美督	Tai Mei Tuk	東北	NE	36	14/9	15:42	東北偏東	ENE	14	14/9	11:00
大帽山	Tai Mo Shan	西北偏北	NNW	58	14/9	21:35	西北偏北	NNW	40	14/9	22:00
大埔滘	Tai Po Kau	西北偏西	WNW	38	14/9	15:28	西北	NW	19	14/9	15:00
塔門	Tap Mun	西	W	36	14/9	21:25	西北偏西	WNW	14	14/9	14:00
大老山	Tate's Cairn	西北偏北	NNW	58	14/9	22:53	西北偏北	NNW	45	15/9	00:00
將軍澳	Tseung Kwan O	北	N	31	14/9	21:32	北	N	12	14/9	22:00
							北	N	12	14/9	23:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	西北	NW	36	14/9	20:06	西北偏西	WNW	19	14/9	17:00
屯門政府合署	Tuen Mun Government Offices	西	W	41	14/9	17:19	西北偏西	WNW	14	14/9	15:00
							西北偏西	WNW	14	14/9	16:00
橫瀾島	Waglan Island	西北偏西	WNW	41	14/9	15:28	西北偏西	WNW	30	14/9	16:00
濕地公園	Wetland Park	西北偏北	NNW	30	14/9	17:11	西北偏北	NNW	13	14/9	18:00

黃竹坑- 沒有資料 Wong Chuk Hang - data not available.

表 3.5.2 莫蘭蒂掠過期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.5.2 Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Meranti

站 Station		九月十四日 14 Sep	九月十五日 15 Sep	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory		0.0	0.7	0.7
香港國際機場 Hong Kong International Airport (HKA)		0.0	0.0	0.0
長洲 Cheung Chau (CCH)		0.0	0.0	0.0
H23	香港仔 Aberdeen	0.0	0.0	0.0
N05	粉嶺 Fanling	0.0	0.0	0.0
N13	糧船灣 High Island	0.0	1.0	1.0
K04	佐敦谷 Jordan Valley	0.0	0.0	0.0
N06	葵涌 Kwai Chung	0.0	0.0	0.0
H12	半山區 Mid Levels	0.0	0.0	0.0
N09	沙田 Sha Tin	0.0	0.0	0.0
H19	筲箕灣 Shau Kei Wan	0.0	0.0	0.0
SEK	石崗 Shek Kong	0.0	0.0	0.0
K06	蘇屋邨 So Uk Estate	0.0	0.5	0.5
R31	大美督 Tai Mei Tuk	0.0	0.0	0.0
R21	踏石角 Tap Shek Kok	0.0	0.0	0.0
TMR	屯門水庫 Tuen Mun Reservoir	0.1	0.0	0.1
N17	東涌 Tung Chung	0.0	0.0	0.0

表 3.5.3 莫蘭蒂掠過期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.5.3 Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Meranti

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
鯪魚涌	Quarry Bay	2.07	15/9	04:20	0.41	15/9	02:12
石壁	Shek Pik	1.91	14/9	21:15	0.21	15/9	02:56
大廟灣	Tai Miu Wan	1.94	15/9	04:20	0.31	15/9	02:22
大埔滘	Tai Po Kau	1.92	15/9	04:20	0.30	15/9	02:43
尖鼻咀	Tsim Bei Tsui	2.14	14/9	10:10	0.20	15/9	04:20
橫瀾島	Waglan Island	2.16	15/9	04:20	0.40	15/9	02:22

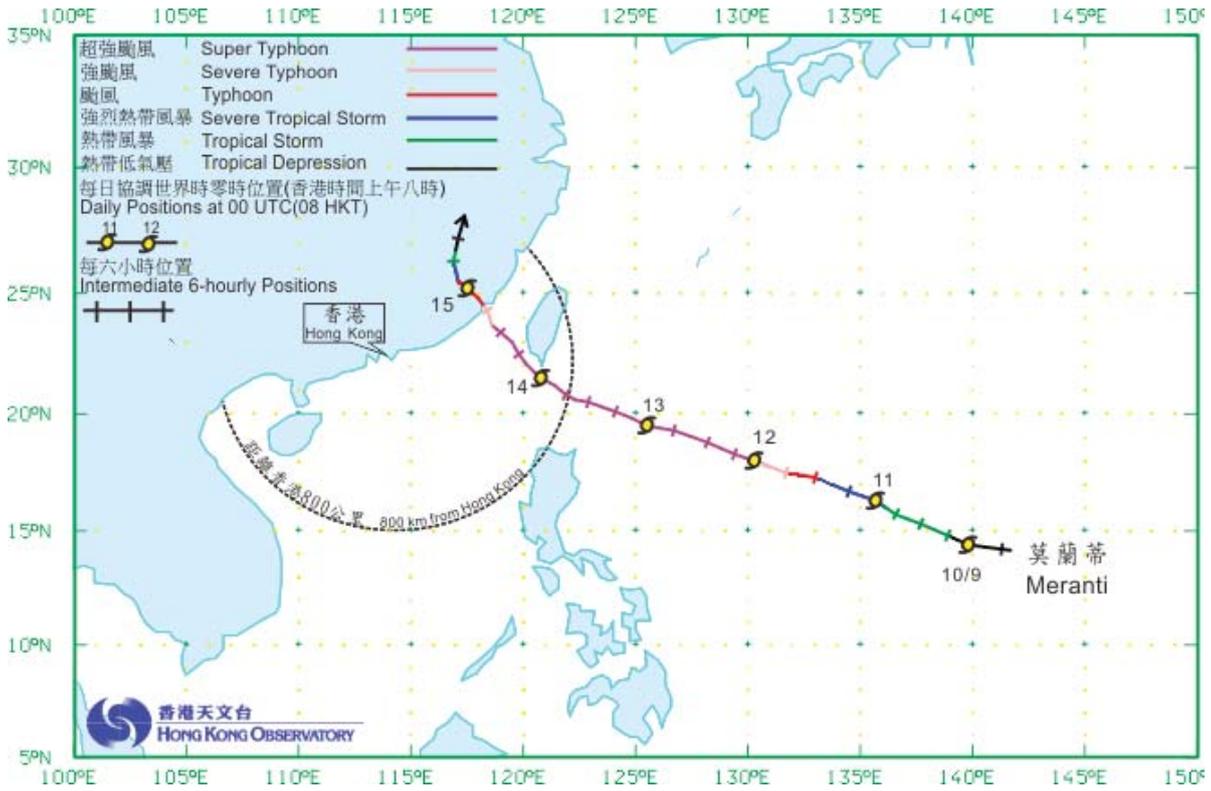


圖 3.5.1 二零一六年九月十日及十五日莫蘭蒂(1614)的路徑圖。
 Figure 3.5.1 Track of Meranti (1614) on 10 - 15 September 2016.

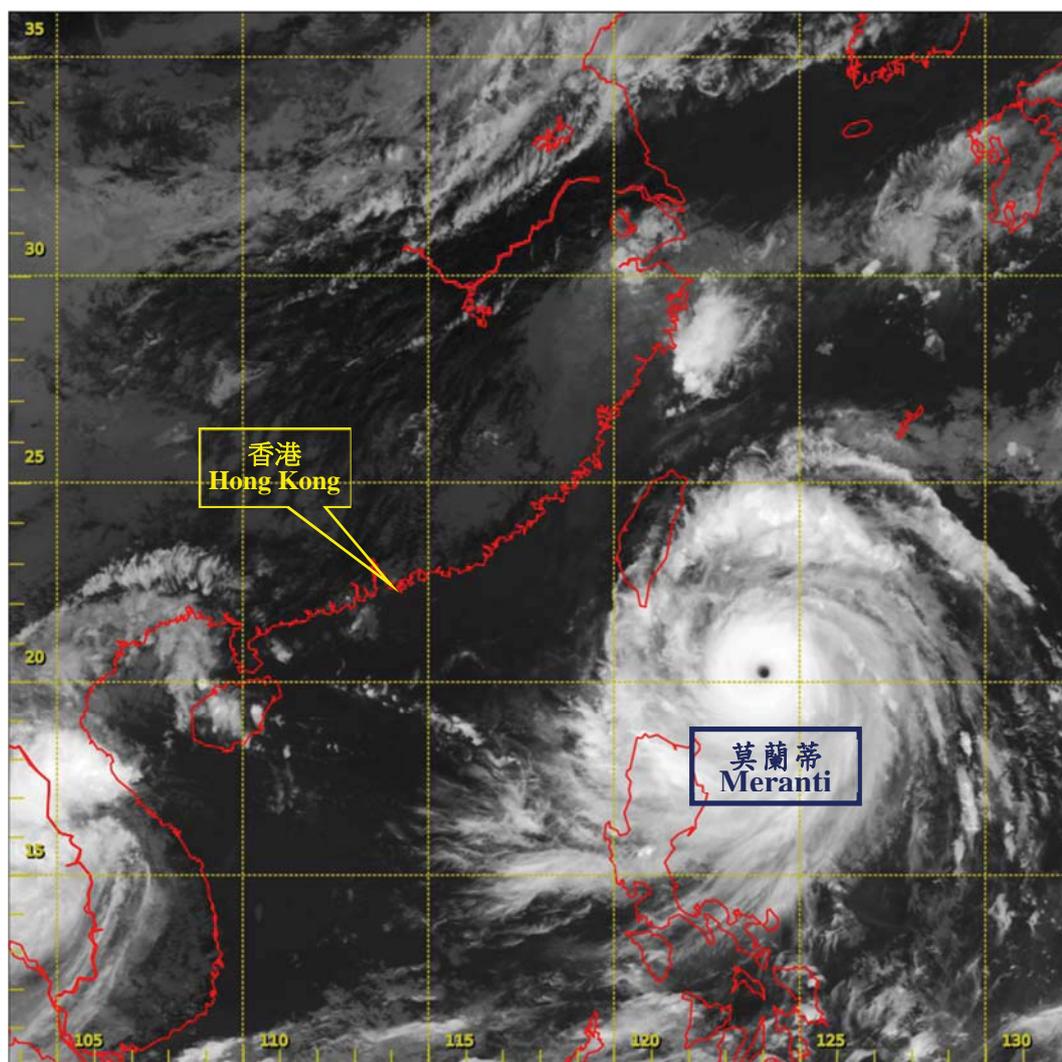


圖 3.5.2a 二零一六年九月十三日下午 2 時左右的紅外線衛星圖片，當時莫蘭蒂達到其最高強度，中心附近最高持續風速估計為每小時 250 公里。

Figure 3.5.2a Infra-red satellite imagery around 2 p.m. on 13 September 2016 when Meranti was at its peak intensity with estimated maximum sustained winds of 250 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).]

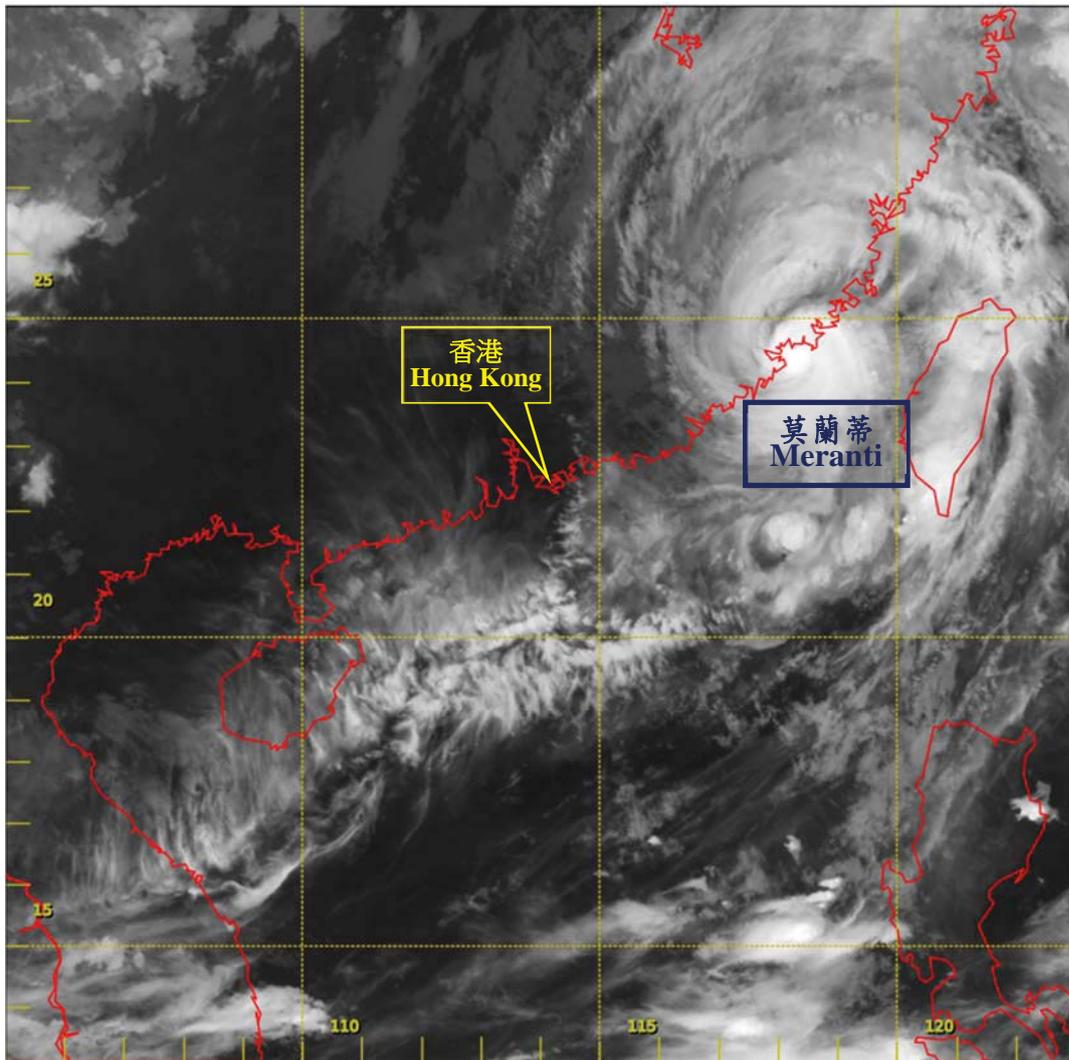


圖 3.5.2b 二零一六年九月十五日上午 2 時左右的紅外線衛星圖片，當時莫蘭蒂已減弱為強颱風，並即將在廈門附近登陸。

Figure 3.5.2b Infra-red satellite imagery around 2 a.m. on 15 September 2016. Meranti had weakened into a severe typhoon and was about to make landfall near Xiamen.

[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).]