

3.7 熱帶風暴艾利(1619)：二零一六年十月五日至十四日

艾利是二零一六年第七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。

熱帶低氣壓艾利於十月五日下午在東沙以東約900公里的北太平洋西部上形成，向西至西北偏西移動，橫過呂宋海峽，翌日進入南海東北部，並增強為熱帶風暴。艾利在十月七日清晨掠過東沙以南海域後，移動轉為緩慢，並向偏北方向漂移，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85公里。十月八日艾利向東北緩慢移動，翌日幾乎停留不動，並逐漸減弱。

十月十日艾利開始加速轉向西南方移動，當晚在東沙附近減弱為一個低壓區。但與艾利相關的殘餘低壓區在隨後兩天繼續採取西南路徑移向西沙附近海域，於十月十三日早上在海南島以南再度增強為熱帶低氣壓，並轉向偏西方向移動，翌日凌晨登陸越南中部後減弱為一個低壓區，進入內陸消散。

根據報章報導，艾利的外圍環流為台灣南部帶來大雨，部分地區出現水浸，海陸交通受到影響。

香港天文台於十月六日下午8時40分發出一號戒備信號，當時艾利集結在香港之東南偏東約420公里。隨後兩天本港普遍吹和緩至清勁偏北風，高地間中吹強風。天文台總部於十月七日下午3時24分錄得最低瞬時海平面氣壓1005.2百帕斯卡。艾利於當日傍晚8時左右最接近本港，位置在香港之東南偏東約260公里。由於一股東北季候風於十月九日凌晨抵達廣東沿岸，艾利開始減弱，翌日轉向西南移動遠離香港。隨著艾利對香港的威脅減低，天文台於十月九日上午3時45分取消所有熱帶氣旋警告信號。

艾利掠過期間，尖鼻咀錄得最高潮位（海圖基準面以上）2.54米，而大埔滘則錄得最大風暴潮（天文潮高度以上）0.29米。

由於艾利的環流相當細小，它對香港的影響不大，沒有造成任何嚴重破壞。十月七日及八日本港只有幾陣狂風驟雨。在東北季候風的影響下，十月九日本港天氣較涼及乾燥。

表3.7.1 - 3.7.3 分別是艾利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3.7.1 - 3.7.4 分別為艾利的路徑圖、本港的雨量分佈圖、艾利的衛星及雷達圖像。

3.7 Tropical Storm Aere (1619): 5 – 14 October 2016

Aere was the seventh tropical cyclone necessitating the issuance of tropical cyclone warning signals by the Hong Kong Observatory in 2016.

Aere formed as a tropical depression over the western North Pacific about 900 km east of Dongsha on the afternoon of 5 October. Moving west to west-northwestwards, it moved across the Luzon Strait and entered the northeastern part of the South China Sea the next day while intensifying into a tropical storm. After crossing the sea areas south of Dongsha in the early morning on 7 October, Aere slowed down and drifted northwards during the day, reaching its peak intensity in the afternoon with an estimated sustained wind of 85 km/h near its centre. Aere moved northeastwards slowly on 8 October and became almost stationary the next day as it weakened gradually.

Aere picked up speed and turned to move southwestwards on 10 October, degenerating into an area of low pressure near Dongsha that night. However, its remnant low pressure area continued to track to the southwest towards the sea areas around Xisha over the next couple of days. It re-intensified into a tropical depression south of Hainan Island on the morning of 13 October and turned westwards. After making landfall over the central part of Vietnam early next morning, Aere weakened into an area of low pressure before dissipating further inland.

According to press reports, the outer circulation of Aere brought heavy rain to southern Taiwan and caused flooding in some areas. Land and sea transportation services were affected.

In Hong Kong, the Standby Signal No. 1 was issued at 8:40 p.m. on 6 October when Aere was about 420 km east-southeast of Hong Kong. Local winds were generally moderate to fresh northerly on 7 and 8 October, occasionally reaching strong force on high ground. At the Observatory Headquarters, the lowest instantaneous mean sea-level pressure of 1005.2 hPa was recorded at 3:24 p.m. on 7 October. Aere came closest to the territory around 8 p.m. that evening, passing at a distance of about 260 km to the east-southeast of Hong Kong. As the northeast monsoon reached the coastal area of Guangdong early in the early morning on 9 October, Aere started to weaken and turn southwestwards away from Hong Kong the next day. With the threat of Aere to Hong Kong diminishing, all tropical cyclone warning signals were cancelled at 3:45 a.m. on 9 October.

During the passage of Aere, a maximum sea level (above chart datum) of 2.54 m was recorded at Tsim Bei Tsui, while a maximum storm surge of 0.29 m (above astronomical tide) was recorded at Tai Po Kau.

With its rather small circulation, Aere had no major impact on Hong Kong and brought no significant damage. Locally, there were only a few squally showers on 7 and 8 October. Under the influence of the northeast monsoon, the weather was relatively cool and dry on 9 October.

Information on the maximum wind, daily rainfall and maximum sea level reached in Hong Kong during the passage of Aere is given in Tables 3.7.1 - 3.7.3 respectively. Figures 3.7.1 - 3.7.4 show respectively the track of Aere, the rainfall distribution for Hong Kong, satellite imageries and a related radar imagery of Aere.

表 3.7.1 在艾利影響下，本港各站在熱帶氣旋警告信號生效時所錄得的最高陣風、最高每小時平均風速及風向

Table 3.7.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations when tropical cyclone warning signals for Aere were in force

站 (參閱圖 1.1) Station (See Fig. 1.1)		最高陣風 Maximum Gust				最高每小時平均風速 Maximum Hourly Mean Wind					
		風向 Direction	風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time	風向 Direction	風速 (公里/時) Speed (km/h)	日期/月份 Date/Month	時間 Time		
黃麻角 (赤柱)	Bluff Head (Stanley)	東北偏東	ENE	38	7/10	00:52	東南偏東	ESE	22	7/10	01:00
中環碼頭	Central Pier	東	E	40	6/10	22:09	西北偏西	WNW	22	8/10	10:00
長洲	Cheung Chau	東北偏北	NNE	52	8/10	21:46	北	N	31	8/10	22:00
長洲泳灘	Cheung Chau Beach	東北偏東	ENE	56	6/10	22:39	東北	NE	30	8/10	22:00
青洲	Green Island	東北	NE	56	6/10	21:24	北	N	38	8/10	22:00
香港國際 機場	Hong Kong International Airport	西北偏北	NNW	49	7/10	13:30	北	N	30	8/10	12:00
		西北偏北	NNW	49	7/10	13:31					
啟德	Kai Tak	東北偏北	NNE	43	9/10	00:21	北	N	16	8/10	08:00
							西北	NW	16	8/10	12:00
京士柏	King's Park	東北偏東	ENE	45	8/10	07:24	東北偏北	NNE	14	8/10	09:00
流浮山	Lau Fau Shan	北	N	49	8/10	22:57	北	N	31	8/10	23:00
北角	North Point	西北偏北	NNW	38	8/10	11:25	北	N	19	8/10	09:00
坪洲	Peng Chau	北	N	38	8/10	18:29	西北偏北	NNW	25	8/10	20:00
平洲	Ping Chau	北	N	31	8/10	22:59	西北偏北	NNW	7	8/10	08:00
							西北偏北	NNW	7	8/10	09:00
西貢	Sai Kung	東北偏北	NNE	59	8/10	20:23	北	N	30	8/10	19:00
沙洲	Sha Chau	北	N	72	7/10	13:24	北	N	41	8/10	23:00
沙螺灣	Sha Lo Wan	東北偏北	NNE	30	8/10	16:24	東北偏北	NNE	14	8/10	17:00
							北	N	14	8/10	21:00
							北	N	14	8/10	22:00
沙田	Sha Tin	東北偏北	NNE	41	8/10	22:02	東北偏北	NNE	14	8/10	23:00
							北	N	14	8/10	22:00
石崗	Shek Kong	東	E	30	7/10	00:55	東北	NE	13	7/10	13:00
		東北	NE	30	7/10	13:38					
九龍天星 碼頭	Star Ferry (Kowloon)	東	E	40	6/10	22:05	西北偏西	WNW	16	8/10	10:00
打鼓嶺	Ta Kwu Ling	西北偏北	NNW	30	7/10	08:57	北	N	13	7/10	10:00
大美督	Tai Mei Tuk	東北	NE	59	8/10	08:12	東北	NE	30	8/10	10:00
大埔滘	Tai Po Kau	北	N	31	8/10	08:35	西北偏西	WNW	14	8/10	09:00
塔門	Tap Mun	北	N	49	9/10	03:34	西北偏北	NNW	19	8/10	07:00
大老山	Tate's Cairn	北	N	76	8/10	19:22	北	N	54	9/10	00:00
							北	N	54	9/10	01:00
將軍澳	Tseung Kwan O	西北偏北	NNW	34	8/10	03:34	西北偏北	NNW	13	8/10	18:00
青衣島蜆 殼油庫	Tsing Yi Shell Oil Depot	西北	NW	38	8/10	08:53	西北	NW	16	8/10	10:00
屯門政府 合署	Tuen Mun Government Offices	東北偏北	NNE	36	7/10	13:20	東北偏北	NNE	14	7/10	14:00
橫瀾島	Waglan Island	東	E	65	7/10	00:23	東	E	47	7/10	01:00
濕地公園	Wetland Park	北	N	31	9/10	01:10	東北偏東	ESE	13	7/10	14:00

昂坪及大帽山 – 資料不齊全

Ngong Ping and Tai Mo Shan – data incomplete

表 3.7.2 艾利掠過期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.7.2 Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Aere

站 (參閱圖 3.7.2) Station (See Fig. 3.7.2)			十月六日 6 Oct	十月七日 7 Oct	十月八日 8 Oct	十月九日 9 Oct	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory			16.7	17.3	微量 Trace	0.0	34.0
香港國際機場 Hong Kong International Airport (HKA)			微量 Trace	0.6	0.0	0.0	0.6
長洲 Cheung Chau (CCH)			18.0	[7.5]	0.0	0.0	[25.5]
H23	香港仔	Aberdeen	14.0	3.5	0.0	0.0	17.5
N05	粉嶺	Fanling	0.0	3.5	0.0	0.0	3.5
N13	糧船灣	High Island	24.0	1.5	0.0	0.0	25.5
K04	佐敦谷	Jordan Valley	14.0	12.0	0.0	0.0	26.0
N06	葵涌	Kwai Chung	0.0	10.0	0.0	0.0	10.0
H12	半山區	Mid Levels	27.0	18.0	0.0	0.0	45.0
N09	沙田	Sha Tin	2.5	3.5	0.5	1.0	7.5
H19	筲箕灣	Shau Kei Wan	23.0	5.5	0.0	0.0	28.5
SEK	石崗	Shek Kong	[0.0]	[5.5]	[0.0]	[0.0]	[5.5]
K06	蘇屋邨	So Uk Estate	1.5	16.5	0.0	0.0	18.0
R31	大美督	Tai Mei Tuk	[2.5]	[10.5]	0.0	0.0	[13.0]
R21	踏石角	Tap Shek Kok	[0.0]	[2.5]	0.0	0.0	[2.5]
TMR	屯門水庫	Tuen Mun Reservoir	0.3	2.8	0.0	0.0	3.1
N17	東涌	Tung Chung	1.0	1.0	0.0	0.0	2.0

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

表 3.7.3 艾利掠過期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.7.3 Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Aere

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	2.34	7/10	00:04	0.23	7/10	13:12
石壁	Shek Pik	2.42	7/10	00:16	0.24	7/10	13:26
大廟灣	Tai Miu Wan	2.30	6/10	23:59	0.26	7/10	20:08
大埔滘	Tai Po Kau	2.41	7/10	01:05	0.29	7/10	06:26
尖鼻咀	Tsim Bei Tsui	2.54	7/10	01:24	0.28	7/10	15:05
橫瀾島	Waglan Island	2.45	6/10	23:53	0.26	7/10	20:12

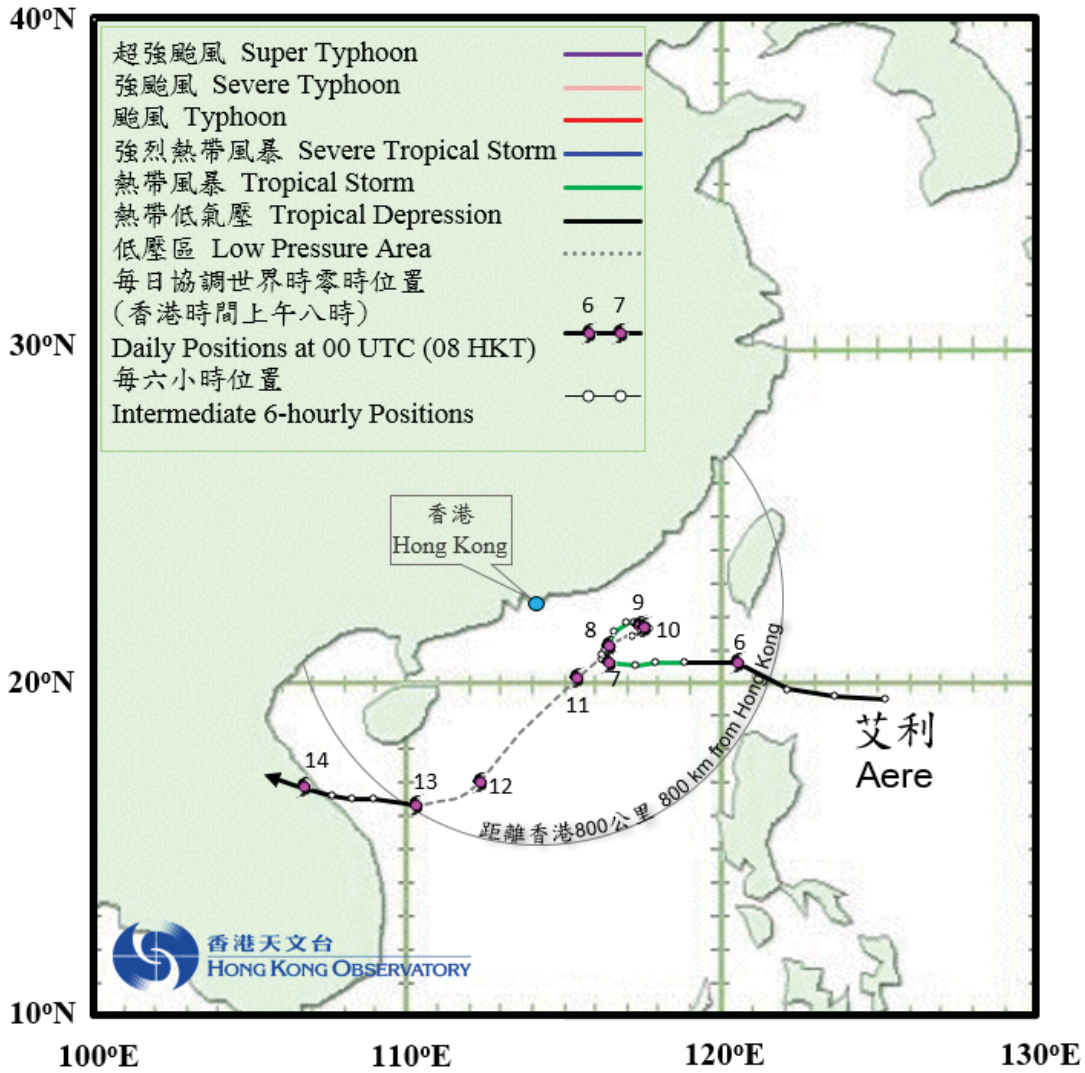


圖 3.7.1

二零一六年十月五日至十四日艾利(1619)的路徑圖。

Figure 3.7.1

Track of Aere (1619) on 5 - 14 October 2016.

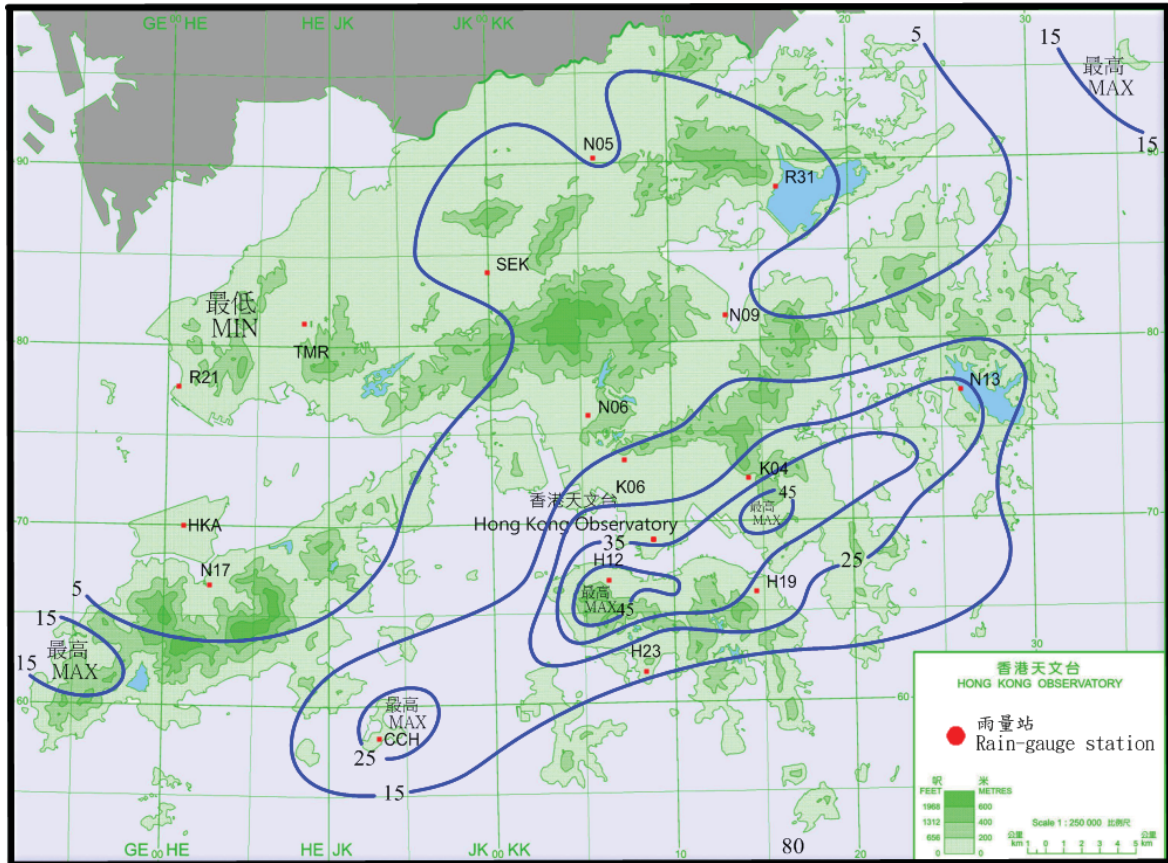


圖 3.7.2 二零一六年十月六日至九日的雨量分佈(等雨量線單位為毫米)。

Figure 3.7.2 Rainfall distribution on 6 – 9 October 2016 (isohyets are in millimetres).

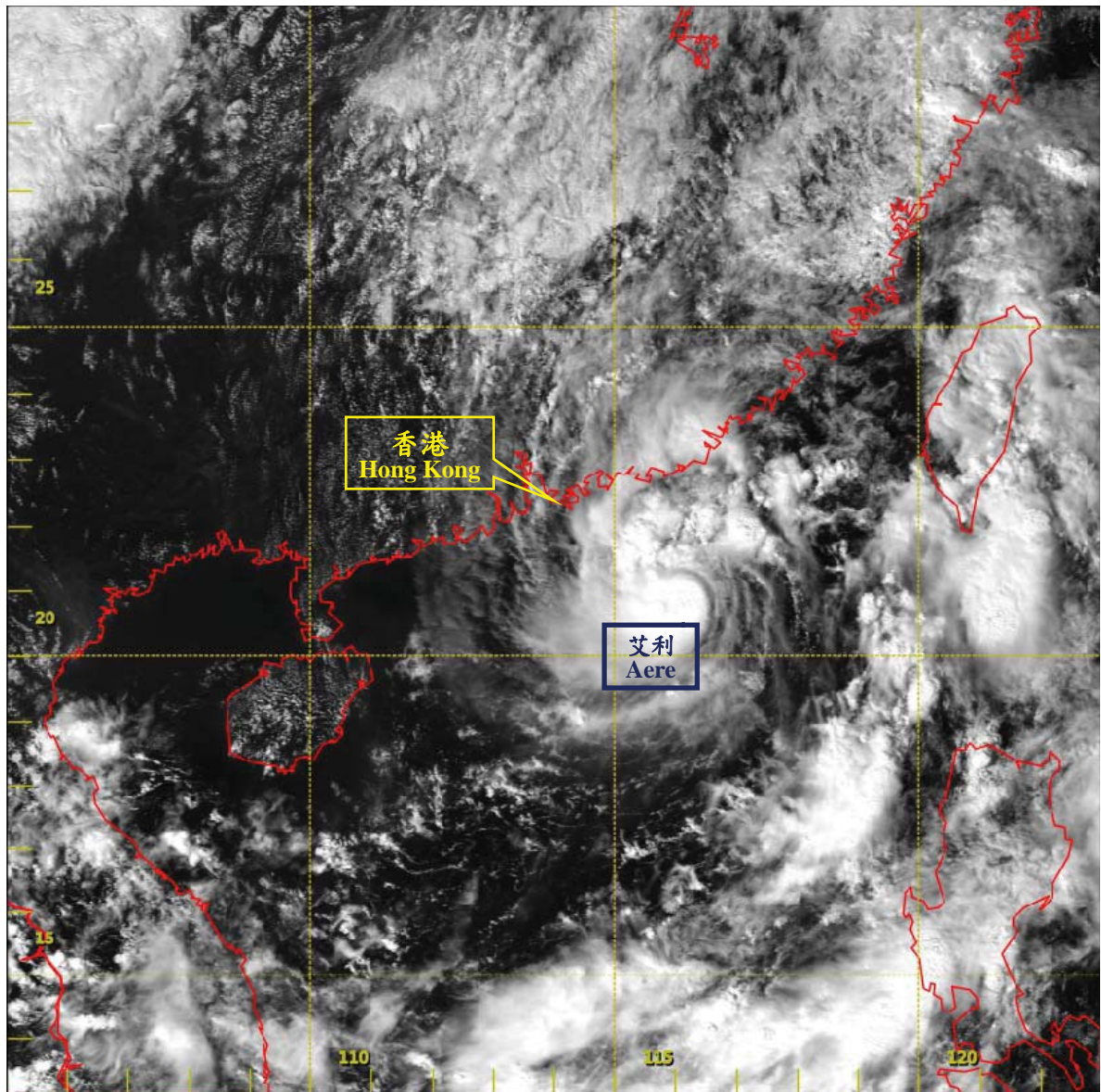


圖 3.7.3a 二零一六年十月七日下午 2 時左右的可見光衛星圖片，當時艾利達到其最高強度，中心附近最高持續風速估計為每小時 85 公里。

Figure 3.7.3a Visible satellite imagery around 2 p.m. on 7 October 2016 when Aere 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).]

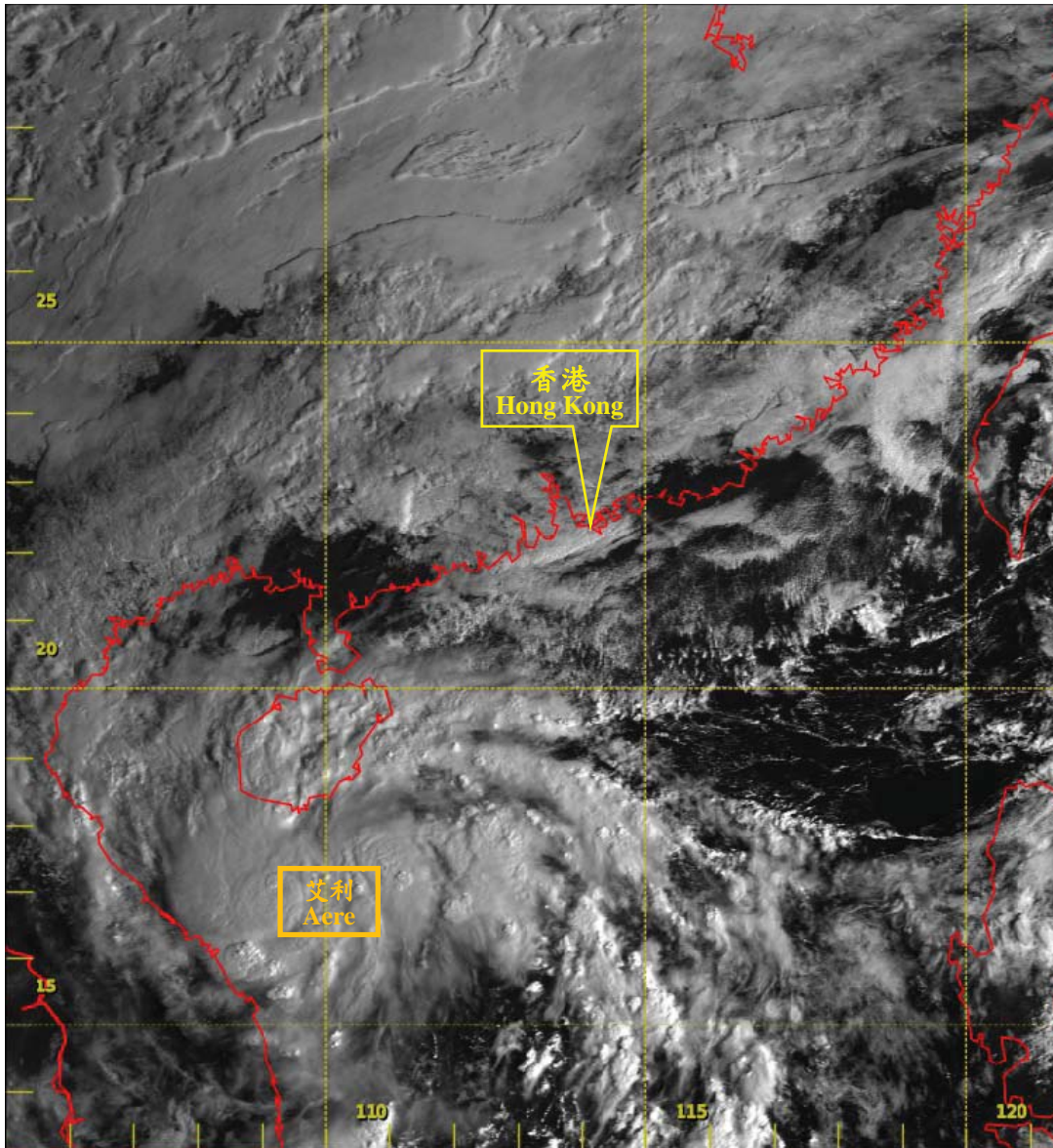


圖 3.7.3b 二零一六年十月十三日上午 8 時左右的可見光衛星圖片，當時艾利在海南島以南再度增強為熱帶低氣壓。

Figure 3.7.3b Visible satellite imagery around 8 a.m. on 13 October 2016 when Aere re-intensified into a tropical depression south of Hainan Island.

〔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).]

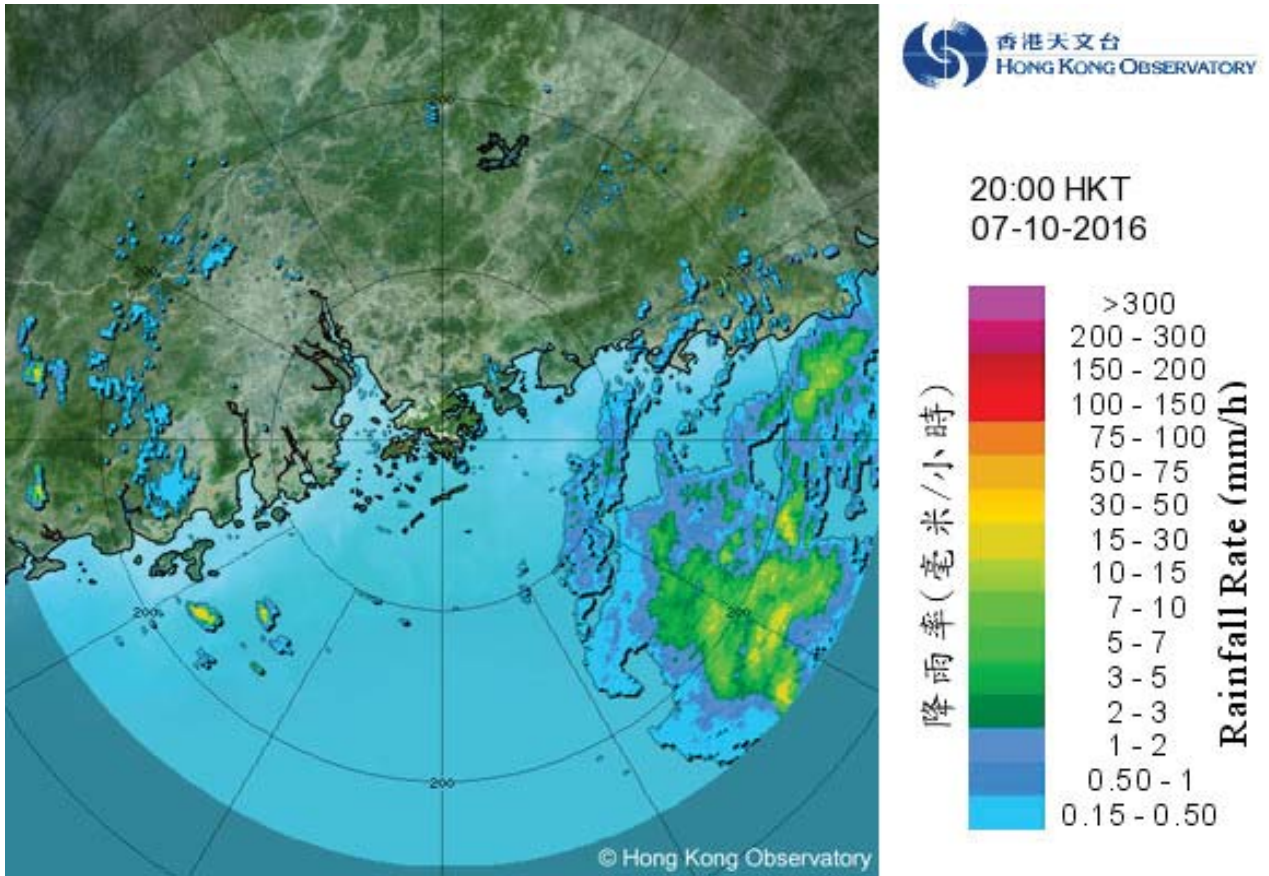


圖 3.7.4 二零一六年十月七日下午八時正的雷達圖像，當時熱帶風暴艾利最接近本港，其中心集結在香港之東南偏東約 260 公里。

Figure 3.7.4 Image of radar echoes at 8 p.m. on 7 October 2016, when Tropical Storm Aere was closest to Hong Kong with its centre about 260 km to the east-southeast.