

每月天氣摘要 二零一六年十月

Monthly Weather Summary October 2016



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1. 二零一六年十月天氣回顧

雖然有數個熱帶氣旋相繼在本港附近經過，以及本月日照時間只為正常的百分之80以下，二零一六年十月本港的平均氣溫仍創新高。本月平均最高氣溫29.1度、平均氣溫26.8度及平均最低氣溫25.0度分別較各自正常數值高1.3度，皆為有記錄以來十月份的最高。繼颱風鮎魚的殘餘環流在九月底掠過華南後，熱帶風暴艾利於十月最初數天在本港對出的廣東沿岸水域徘徊。而超強颱風莎莉嘉及超強颱風海馬於十月十六日至二十一日的一星期內相繼襲港。莎莉嘉於十月十九日為本港帶來傾盆大雨及破紀錄的十月份最高一小時雨量。天文台須發出黑色暴雨警告信號。而海馬於十月二十一日影響本港期間，天文台亦須發出八號烈風或暴風信號。本月總雨量為624.4毫米，約是十月正常數值100.9毫米之六倍以上，是有記錄以來十月份的第二最高。而本年首十個月的累積雨量為2888.9毫米，較同期正常數值2334.0毫米多約百分之24。

鮎魚移離後，不穩定天氣於十月一日持續影響廣東沿岸水域，本港清晨亦有大驟雨及雷暴。市區及新界東部普遍錄得超過70毫米雨量，天文台亦發出紅色暴雨警告。隨著一個弱低壓系統經本港南面往西南方向移離廣東沿岸，本港於隨後四天陽光增多和驟雨減少。同時，繼弱低壓區掠過後，艾利於十月六日進入南海東北部並於其後數天在香港東南面徘徊，十月十日晚上減弱為一個低壓區。本港於十月六日日間天氣普遍晴朗及炎熱，天文台的氣溫上升至最高的32.4度，為本月的最高氣溫。當晚本港有幾陣驟雨，隨後四天陽光逐漸增多。

隨著艾利減弱並移向西沙，與東北季候風相關的較涼空氣逐漸向南擴展至廣東沿岸，天文台於十月十一日氣溫降至最低的22.0度，為該月最低的氣溫。受到一股強風程度的偏東風氣流影響，本港於十月十一至十二日風勢頗大及有幾陣雨，其後風力逐漸減弱，本港隨後四天大致天晴。

同時，強颱風莎莉嘉於十月十六日早上橫過呂宋後進入南海及往西北偏西移動，莎莉嘉於十月十八日早上在海南島登陸並於十月十九日橫過北部灣。在莎莉嘉及華南上空東北季候風的共同影響下，十月十七日至十九日本港風勢頗大及有狂風驟雨。東北季候風與莎莉嘉相關的偏南氣流的輻合引致本港於十月十八日至十九日持續有大雨和雷暴。雨勢在十月十九日下午最大，為本港普遍帶來超過100毫米雨量，而市區、沙田及大埔的雨量更超過200毫米，天文台須要發出自暴雨警告系統在1992年開始運作以來首個十月份的黑色暴雨警告。天文台於當日下午三至四時錄得的一小時雨量為78.7毫米，亦是自1884年有記錄以來十月份的最高紀錄。

隨著莎莉嘉在廣西內陸消散，超強颱風海馬於十月二十日早上橫過呂宋並進入南海北部。受海馬前沿的下沉氣流影響，當日本港大致天晴及有煙霞。海馬移向廣東東部沿岸期間逐漸減弱為一個颱風並於十月二十一日中午在汕尾附近登陸。隨著海馬靠近，本港風力顯著增強，日間多處吹烈風。海馬的外圍雨帶亦為本港帶來狂風和大雨。九龍城、黃大仙及新界東部的雨量超過100毫米。隨著海馬移入內陸，本港隨後三天天氣好轉，

部分時間有陽光及局部地區有幾陣驟雨。

隨著華南上空的高空反氣旋建立，本港於十月二十五日至二十八日天氣轉為晴朗及炎熱。十月二十九日的冷鋒為本港帶來較涼天氣及幾陣驟雨。翌日本港風勢仍然頗大，短暫時間有陽光。季候風於本月最後一日緩和，本港天氣亦轉為大致天晴。

本月有五個熱帶氣旋影響南海及北太平洋西部。

本月沒有航機因惡劣天氣須轉飛其他地方。表 1.1 載列本月發出及取消各種警告/信號的詳情。



1. The Weather of October 2016

October 2016 was marked by record-breaking high mean temperatures, despite a succession of cyclonic systems passing by in the vicinity of Hong Kong and the duration of sunshine falling under 80 percent of the October normal. The monthly mean maximum temperature of 29.1 degrees, monthly mean temperature of 26.8 degrees and monthly mean minimum temperature of 25.0 degrees were all 1.3 degrees above their respective normals and were the highest ever on record for October. After the passage of the remnant circulation of Severe Typhoon Megi over southern China in late September, Tropical Storm Aere hovered for days over the coastal waters of Guangdong at the doorstep of Hong Kong in early October. Then came Severe Super Typhoon Sarika and Super Typhoon Haima in less than a week between 16 and 21 October. The former brought torrential rain that broke the October hourly rainfall record and triggered the Black Rainstorm Warning on 19 October, while the latter led to the issuance of the No. 8 Gale or Storm Signal on 21 October. The monthly rainfall recorded at the Hong Kong Observatory was 624.4 millimetres, more than six times the October normal of 100.9 millimetres and the second highest on record for October. The accumulated rainfall of 2888.9 millimetres up to the end of October was about 24 percent above the normal figure of 2334.0 millimetres for the same period.

In the wake of Megi, unsettled weather prevailed over the coastal waters of Guangdong, with heavy showers and thunderstorms affecting Hong Kong early in the morning on 1 October. The Red Rainstorm Warning was issued as more than 70 millimetres of rainfall generally fell over the urban areas and the eastern part of the New Territories. Local weather was a combination of increasing sunshine and decreasing showers over the following four days as a weak low pressure system drifted southwestward off the coast of Guangdong and passed by to the south of Hong Kong. Meanwhile, Aere followed the weak low into the northeastern part of the South China Sea on 6 October and lingered for days to the southeast of Hong Kong before weakening into an area of low pressure on the night of 10 October. Locally, it was generally fine and hot during the day on 6 October and temperature at the Hong Kong Observatory rose to a maximum of 32.4 degrees, the highest of the month. After some showers that night, the weather gradually turned sunnier over the next four days.

As Aere weakened and drifted away towards Xisha, cooler air associated with the

northeast monsoon gradually spread south towards the coastal areas of Guangdong. Temperature at the Hong Kong Observatory fell to a minimum of 22.0 degrees on 11 October, the lowest of the month. Local weather turned windier under a strong easterly airstream, and after some rain patches on 11 and 12 October, it became mainly fine over the next four days as the winds gradually subsided.

Meanwhile, Severe Typhoon Sarika moved across Luzon and entered the South China Sea on the morning of 16 October. Tracking west-northwestwards, Sarika made landfall over Hainan Island on the morning of 18 October and moved across Beibu Wan on 19 October. Under the combined effect of Sarika and the northeast monsoon over southern China, local weather became windy with squally showers on 17-19 October. The convergence between the northeast monsoon and the southerly airstream associated with Sarika triggered prolonged periods of heavy rain and thunderstorms on 18 and 19 October. The rain was most intense on the afternoon of 19 October, with more than 100 millimetres of rainfall falling generally over Hong Kong and rainfall even exceeding 200 millimetres over the urban areas, Shatin and Tai Po, necessitating the issuance of the first ever Black Rainstorm Warning in October since the Rainstorm Warning System commenced operation in 1992. The hourly rainfall of 78.7 millimetres recorded at the Hong Kong Observatory between 3 and 4 p.m. that day was also the highest in October since records began in 1884.

As Sarika dissipated over inland Guangxi, Super Typhoon Haima moved across Luzon and entered the northern part of the South China Sea on the morning of 20 October. Affected by the subsiding air ahead of Haima, it was mainly fine and hazy in Hong Kong that day. Haima weakened gradually into a typhoon as it edged towards the coast of eastern Guangdong and made landfall near Shanwei around noon on 21 October. With the approach of Haima, local winds strengthened significantly and reached gale force in many places during the day. The rainbands of Haima also brought squalls and heavy rain to Hong Kong. More than 100 millimetres of rainfall fell over Kowloon City, Wong Tai Sin and the eastern part of the New Territories. As Haima moved further inland, local weather improved with sunny periods and a few isolated showers over the next three days.

With the establishment of an upper-air anticyclone over southern China, local weather became fine and hot on 25-28 October. The passage of a cold front on 29 October brought cooler weather and some showers. The weather remained windy with sunny intervals the next day before mainly fine weather returned on the last day of the month as the monsoon winds subsided.

Five tropical cyclones occurred over the South China Sea and the western North Pacific in the month.

During the month, no aircraft was diverted due to adverse weather. Details of the issuance and cancellation of various warnings/signals in the month are summarized in Table 1.1.

表 1.1 二零一六年十月發出的警告及信號
Table 1.1 Warnings and Signals issued in October 2016

熱帶氣旋警告信號

Tropical Cyclones Warning Signals

熱帶氣旋名稱 Name of Tropical Cyclone	信號 Signal Number	開始時間 Beginning Time		終結時間 Ending Time	
		日/月 day/month	時 hour	日/月 day/month	時 hour
艾利 AERE	1	6/10	2040	9/10	0345
莎莉嘉 SARIKA	1	16/10	2120	17/10	1340
	3	17/10	1340	18/10	2210
海馬 HAIMA	1	20/10	0820	20/10	2040
	3	20/10	2040	21/10	0610
	8NW	21/10	0610	21/10	1415
	8SW	21/10	1415	21/10	1720
	3	21/10	1720	21/10	2210

暴雨警告信號

Rainstorm Warnings

顏色 Colour	開始時間 Beginning Time		終結時間 Ending Time	
	日/月 day/month	時 hour	日/月 day/month	時 hour
黃色 Amber	1/10	0525	1/10	0555
紅色 Red	1/10	0555	1/10	0700
黃色 Amber	1/10	0700	1/10	0735
黃色 Amber	18/10	1525	18/10	1815
黃色 Amber	19/10	1300	19/10	1530
紅色 Red	19/10	1530	19/10	1600
黑色 Black	19/10	1600	19/10	1715
紅色 Red	19/10	1715	19/10	1815
黃色 Amber	19/10	1815	19/10	1930

新界北水浸特別報告

Special Announcement on Flooding in the northern New Territories

開始時間 Beginning Time		終結時間 Ending Time	
日/月 day/month	時 hour	日/月 day/month	時 hour
18/10	1730	18/10	2015
19/10	1325	19/10	2150

強烈季候風信號
Strong Monsoon Signal

開始時間 Beginning Time		終結時間 Ending Time	
日/月 day/month	時 hour	日/月 day/month	時 hour
12/10	2045	13/10	0745
13/10	2245	14/10	0740
18/10	2211	19/10	0845
29/10	1930	29/10	2215

雷暴警告
Thunderstorm Warning

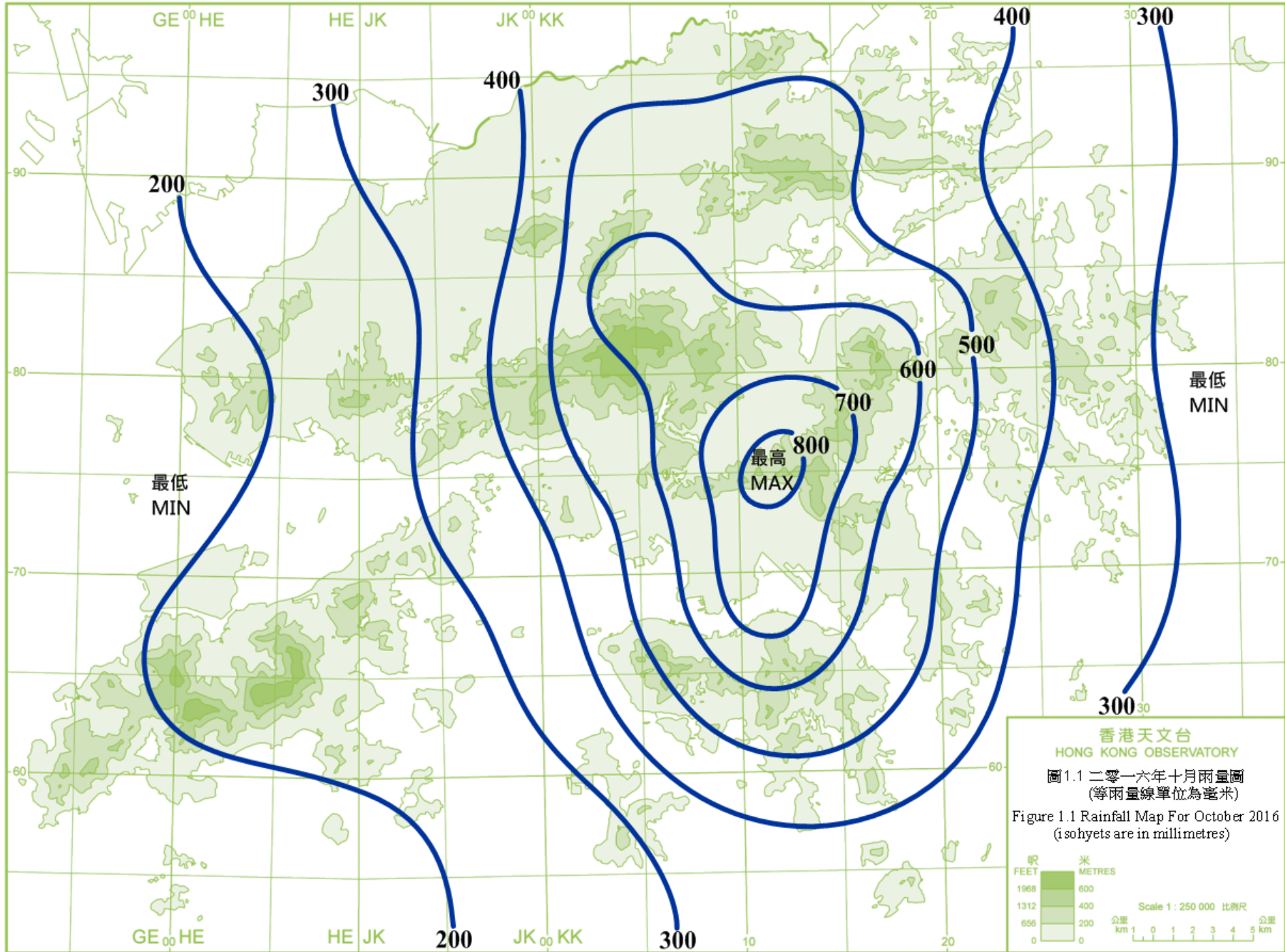
開始時間 Beginning Time		終結時間 Ending Time		開始時間 Beginning Time		終結時間 Ending Time	
日/月 day/month	時 hour	日/月 day/month	時 hour	日/月 day/month	時 hour	日/月 day/month	時 hour
1/10	0325	1/10	1015	1/10	1410	1/10	1445
4/10	0940	4/10	1115	4/10	1615	4/10	1715
6/10	2225	7/10	0130	19/10	1030	19/10	1830

火災危險警告
Fire Danger Warnings

顏色 Colour	開始時間 Beginning Time		終結時間 Ending Time	
	日/月 day/month	時 hour	日/月 day/month	時 hour
黃色 Yellow	9/10	0600	9/10	2045
黃色 Yellow	10/10	0600	10/10	2100
黃色 Yellow	16/10	0600	16/10	1800
黃色 Yellow	30/10	0600	30/10	2230

山泥傾瀉警告
Landslip Warning

開始時間 Beginning Time		終結時間 Ending Time	
日/月 day/month	時 hour	日/月 day/month	時 hour
19/10	0920	19/10	2200



香港天文台
HONG KONG OBSERVATORY
圖 1.1 二零一六年十月雨量圖
(等雨量線單位為毫米)
Figure 1.1 Rainfall Map For October 2016
(isohyets are in millimetres)

尺
FEET
1968
1312
656
0

米
METRES
600
400
200
0

Scale 1 : 250 000 比例尺
公里
km 1 0 1 2 3 4 5 km



圖 1.2 2016 年 10 月 19 日在呈祥道(左)，柴灣道(右)的嚴重水淹 (鳴謝:渠務署)。
Fig. 1.2 Severe flooding at Ching Cheung Road (left) and Chai Wan Road (right) on 19 October 2016 (courtesy of Drainage Services Department).



圖 1.3 海馬吹襲期間，荔枝角消防局附近有樹木被吹倒 (照片由市民提供)。
Fig. 1.3 Tree blown down near Lai Chi Kok Fire Station during the passage of Haima (photo provided by member of the public).

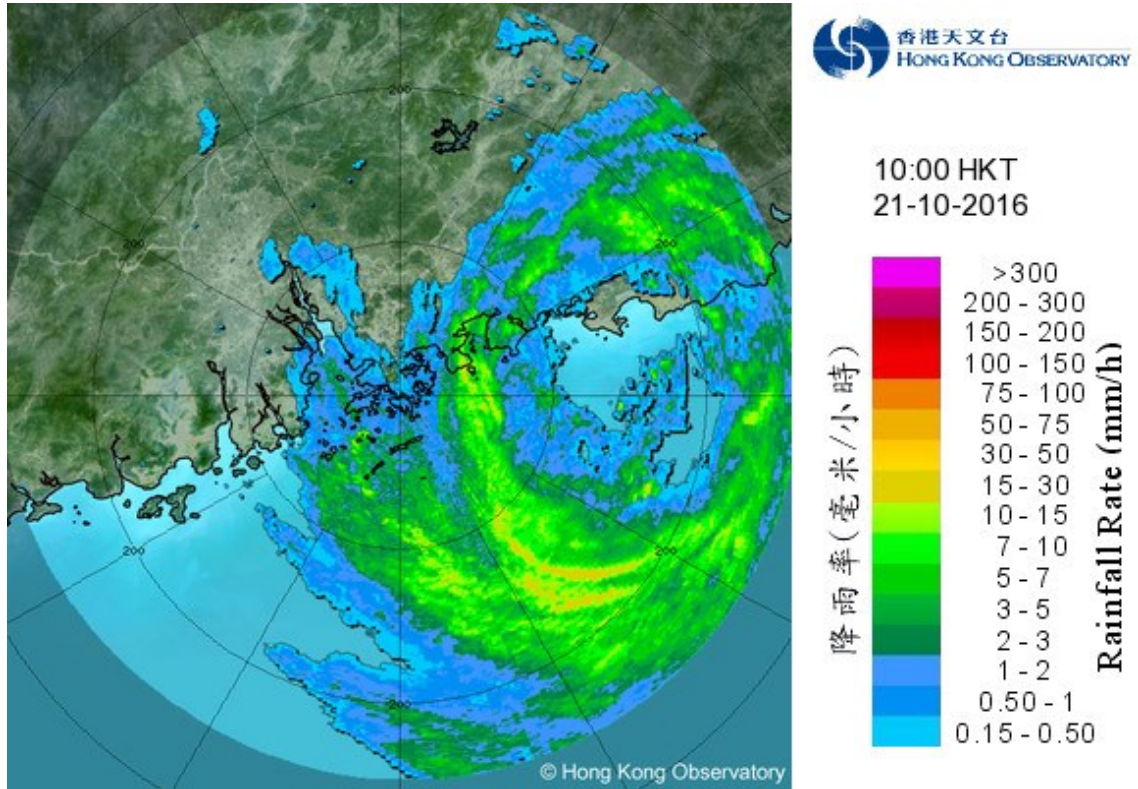


圖 1.4 2016 年 10 月 21 日上午 10 時，海馬登陸香港東面時的雷達回波圖像。
Fig. 1.4 Radar echoes at 10 a.m. on 21 October 2016 as Haima made landfall east of Hong Kong

2.1 二零一六年十月熱帶氣旋概述

二零一六年十月在北太平洋西部及南海區域出現了五個熱帶氣旋，當中有三個熱帶氣旋(艾利、莎莉嘉及海馬)導致天文台需要發出熱帶氣旋警告信號。

熱帶低氣壓暹芭於九月二十八日凌晨在關島之東北偏東約 570 公里的北太平洋西部上形成，初時以偏西路徑移動，九月三十日轉向西北偏北，移向琉球群島一帶並逐漸增強。暹芭於十月三日上午發展為超強颱風，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 220 公里。暹芭掠過琉球群島後採取偏北路徑橫過東海，趨向朝鮮半島南部，十月五日晚上在日本本州以北的海域演變為一股溫帶氣旋。

根據報章報導，暹芭吹襲沖繩島期間，海陸空交通大受影響。暹芭亦在韓國南部地區造成嚴重破壞，多處地區水浸，最少七人死亡，三人失蹤。濟州市約有 25 000 戶停電。

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。

熱帶低氣壓桑達於十月八日下午於硫黃島之東南偏東約 1 640 公里的北太平洋西部上形成，大致向西北移動，並逐漸增強。桑達於十月十日早上於硫黃島以東的海域發展為颱風，並轉向偏北方向移動。隨後兩天桑達加速轉向東北移動及增強為超強颱風，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，於十月十三日演變為一股溫帶氣旋。

熱帶低氣壓莎莉嘉於十月十三日早上在馬尼拉以東約 1 060 公里的北太平洋西部上形成，並採取西北偏西路徑移向菲律賓。莎莉嘉當晚已增強為熱帶風暴，翌日更迅速增強，於十月十五日晚上發展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。莎莉嘉於十月十六日清晨橫過呂宋時減弱為颱風，進入南海後重新組織，當晚再度增強為強颱風。十月十八日早上莎莉嘉在海南島登陸，其後轉向西北移動。十月十九日莎莉嘉橫過北部灣，當天稍後在廣西內陸消散。

根據報章報導，莎莉嘉吹襲菲律賓期間造成最少三人死亡，三人失蹤，多處出現山泥傾瀉，多間房屋倒塌。莎莉嘉吹襲廣東、廣西及海南期間，最少 370 萬人受災，直接經濟損失接近 55 億元人民幣。

熱帶低氣壓海馬於十月十四日下午在關島以南約 710 公里的北太平洋西部上形

成，大致向西北移動，並逐漸增強。海馬於十月十七日晚上發展為超強颱風，並向西北偏西移動，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 230 公里。海馬於十月二十日凌晨橫過呂宋北部及減弱為颱風，日間採取西北路徑進入南海東北部。翌日海馬轉向偏北方向移動，下午在廣東東部汕尾附近登陸，晚間在江西減弱為一個低壓區。

根據報章報導，海馬在呂宋北部造成嚴重破壞，廣泛地區出現水浸及山泥傾瀉，多間房屋倒塌，最少八人死亡，逾 9 萬人需要緊急疏散。海馬亦為廣東及福建帶來狂風大雨，最少 180 萬人受災，約 600 間房屋倒塌，海陸空交通大受影響，直接經濟損失超過 50 億元人民幣。

2.1 Overview of Tropical Cyclones in October 2016

Five tropical cyclones occurred over the western North Pacific and the South China Sea in October 2016. Three of them (Aere, Sarika and Haima) necessitated the issuance of tropical cyclone warning signals by the Observatory in the month.

Chaba formed as a tropical depression over the western North Pacific about 570 km east-northeast of Guam on the early morning of 28 September. Moving generally westward at first, it turned north-northwestwards on 30 September in the general direction of the Ryukyu Islands and intensified gradually. Chaba developed into a super typhoon on the early morning of 3 October, reaching its peak intensity at night with an estimated sustained wind of 220 km/h. After sweeping past the Ryukyu Islands, it moved across the East China Sea on a northerly track towards the southern part of the Korean Peninsula and finally evolved into an extratropical cyclone over the sea areas north of Honshu, Japan on the night of 5 October.

According to press reports, transportation services in Okinawa were seriously affected during the passage of Chaba. Chaba also wreaked havoc and caused extensive flooding in the southern part of the Republic of Korea, resulting in at least seven deaths with three others missing. Electricity supply to about 25 000 households in Jeju was interrupted.

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.

Songda formed as a tropical depression over the western North Pacific about 1 640 km east-southeast of Iwo Jima on the afternoon of 8 October. It moved generally northwestwards and intensified gradually. Songda developed into a typhoon over the sea areas east of Iwo Jima on the morning of 10 October and turned northwards. It picked up speed towards the northeast and intensified into a super typhoon over the next couple of days, reaching its peak intensity with an estimated sustained wind of 185 km/h near its centre before finally evolving into an extratropical cyclone on 13 October.

Sarika formed as a tropical depression over the western North Pacific about 1 060 km east of Manila on the morning of 13 October. Taking a west-northwesterly track towards the Philippines, it intensified into a tropical storm that night. Sarika further intensified rapidly the next day and developed into a super typhoon on the night of 15 October, reaching its peak intensity with an estimated sustained wind of 185 km/h near its centre. Sarika weakened into a typhoon while moving across Luzon in the early morning on 16 October. After entering the South China Sea, it re-organized and re-intensified into a severe typhoon that night. Sarika made landfall over Hainan Island on the morning of 18 October and turned northwestwards. It moved across Beibu Wan on 19 October and dissipated over inland Guangxi later that day.

According to press reports, at least three persons were killed and three others were missing in the Philippines during the passage of Sarika. There were extensive landslides and many houses collapsed. In Guangdong, Guangxi and Hainan, at least 3.7 million people were affected with direct economic loss of around 5.5 billion RMB.

Haima formed as a tropical depression over the western North Pacific about 710 km south of Guam on the afternoon of 14 October. Moving generally northwestwards, Haima intensified gradually and developed into a super typhoon on the night of 17 October. Tracking to the west-northwest, it reached its peak intensity the next day with an estimated sustained wind of 230 km/h near its centre. Haima moved across northern Luzon on the early morning of 20 October and weakened into a typhoon. It then moved northwestwards and entered the northeastern part of the South China Sea during the day. Haima turned northwards on 21 October and made landfall near Shanwei in eastern Guangdong that afternoon, before finally degenerating into an area of low pressure over Jiangxi during the night.

According to press reports, Haima wreaked havoc in northern Luzon with extensive flooding and landslides as well as the collapse of many houses. At least eight people were killed and more than 90 000 people had to be evacuated. Haima also brought heavy rain and squalls to Guangdong and Fujian. At least 1.8 million people were affected and around 600 houses collapsed. Transportation services were seriously affected and the direct economic loss exceeded 5 billion RMB.

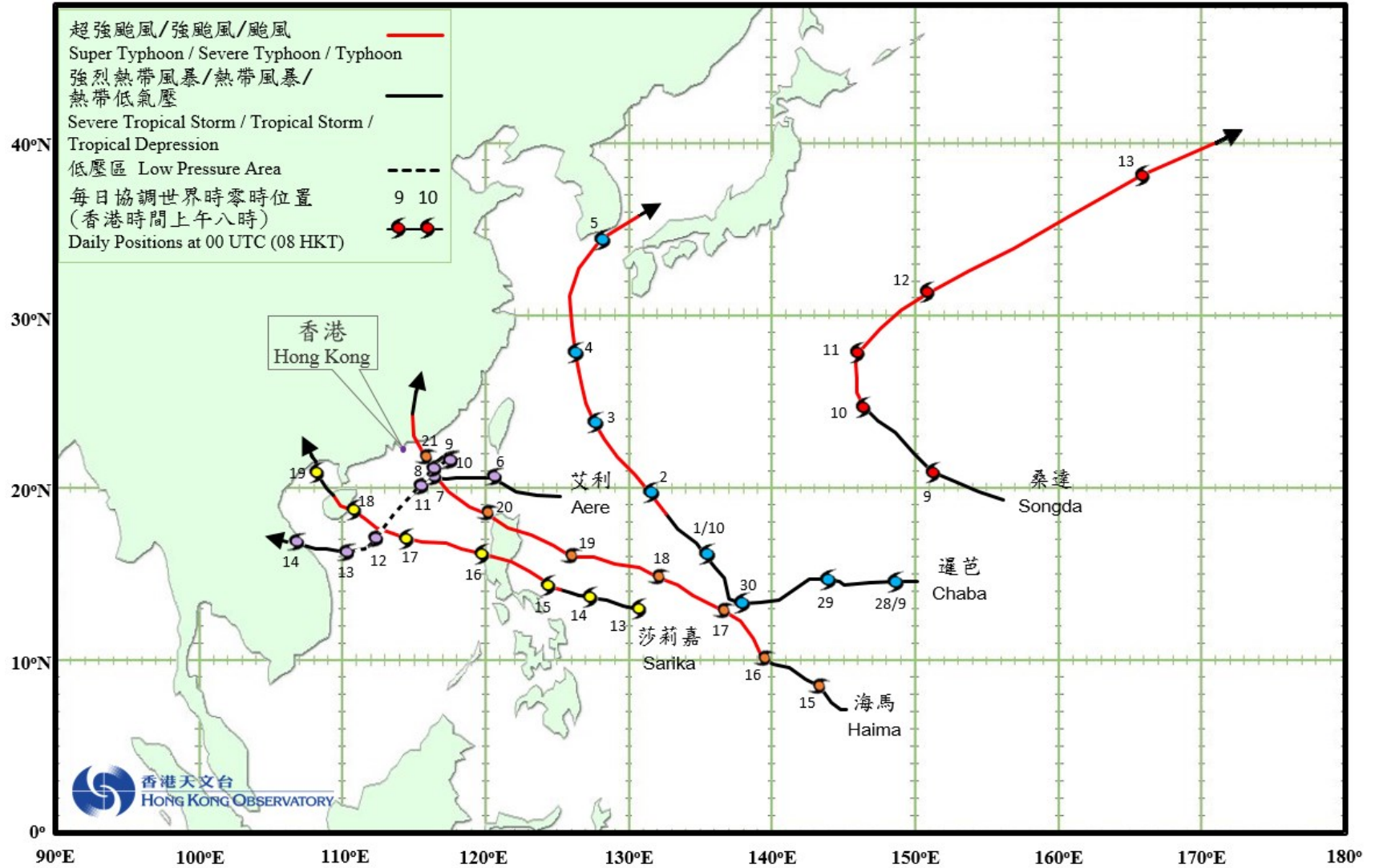


圖 2.1.1 二零一六年十月的熱帶氣旋路徑圖
 Fig. 2.1.1 Tracks of tropical cyclones in October 2016

2.2 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。

2.2 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.

表 2.2.1 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 2.2.1 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 Station (http://www.weather.gov.hk/informtc/station2016_uc.htm)		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
沙田	Sha Tin	東北偏北	NNE	41	8/10	22:02	北	N	14	8/10	21:00
							北	N	14	8/10	22:00
							東北偏北	NNE	14	8/10	23:00
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	ENE	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 2.2.2 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 2.2.2 Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Aere

站 Station		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
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 2.2.3 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 2.2.3 Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Aere

站 Station (http://www.weather.gov.hk/informtc/station2016_uc.htm)		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

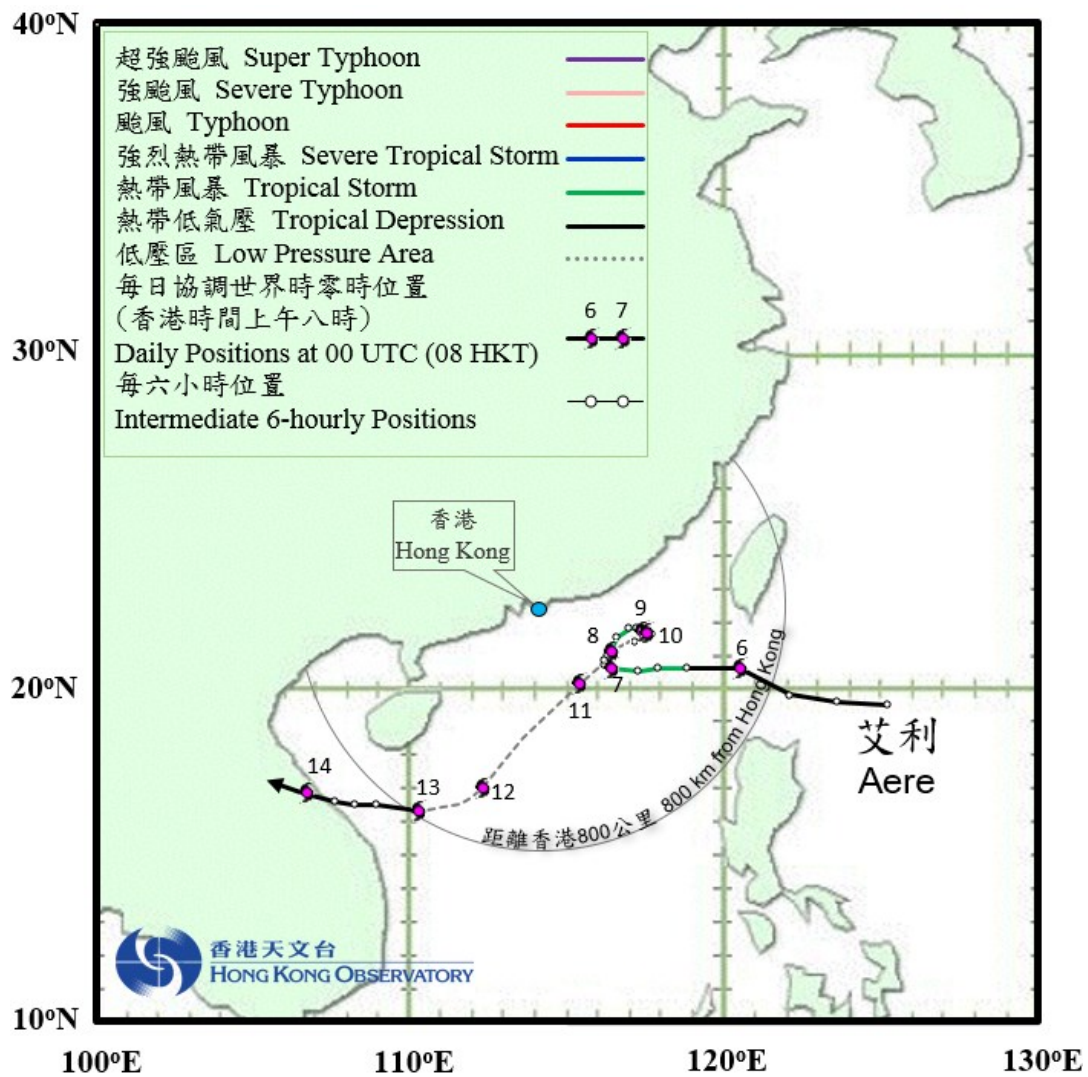


圖 2.2.1 二零一六年十月五日至十四日艾利(1619)的路徑圖。

Fig. 2.2.1 Track of Aere (1619): 5 - 14 October 2016.

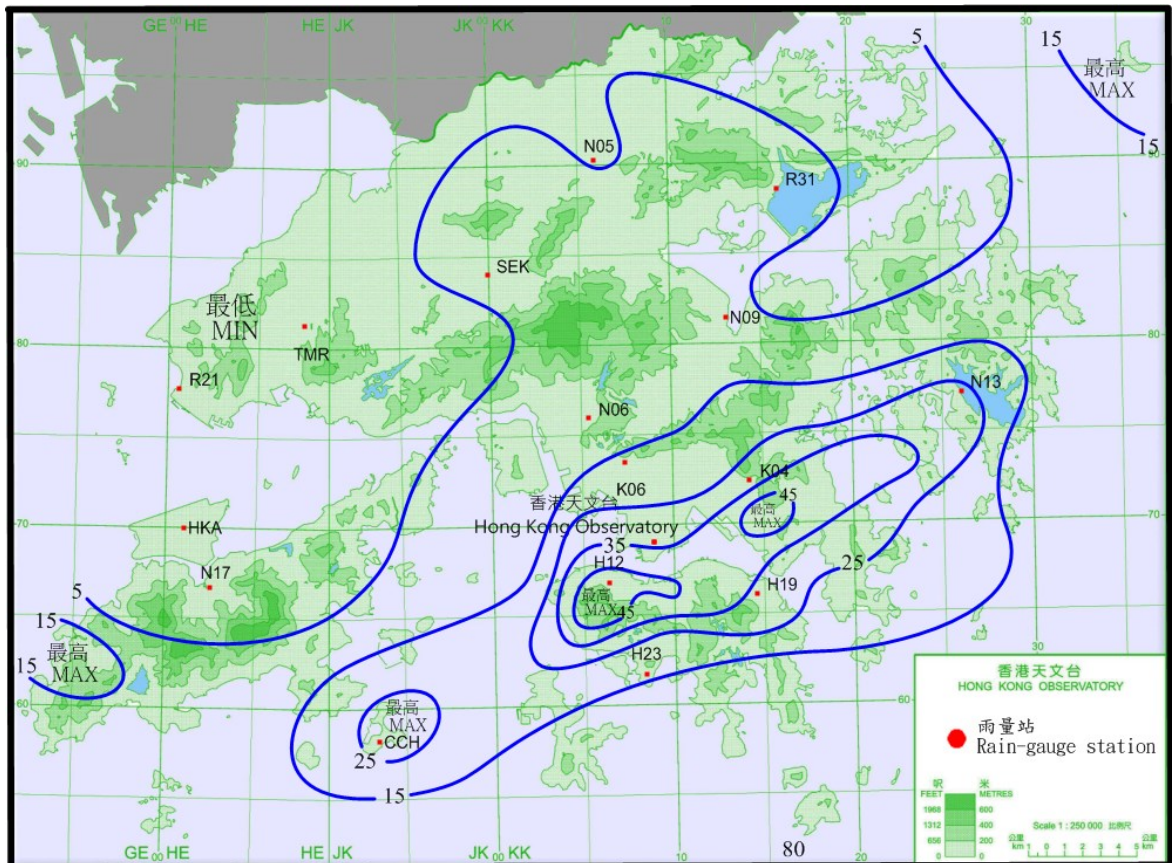


圖 2.2.2 二零一六年十月六日至九日的雨量分佈(等雨量線單位為毫米)。

Fig. 2.2.2 Rainfall distribution on 6 – 9 October 2016 (isohyets are in millimetres).

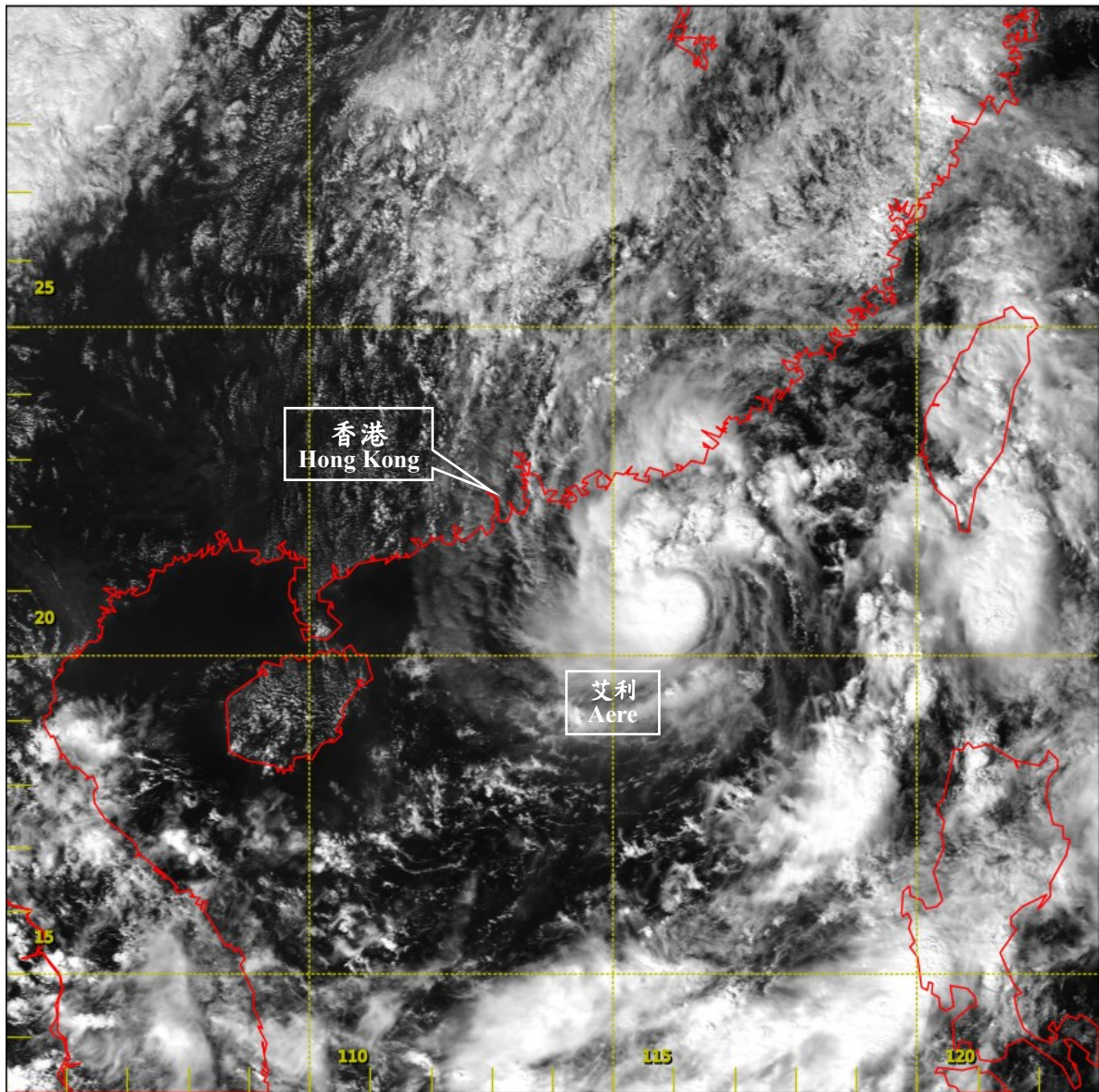


圖 2.2.3a 二零一六年十月七日下午 2 時左右的可見光衛星圖片，當時艾利達到其最高強度，中心附近最高持續風速估計為每小時 85 公里。

[此衛星圖像接收自日本氣象廳的向日葵8號衛星。]

Fig. 2.2.3a 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.

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

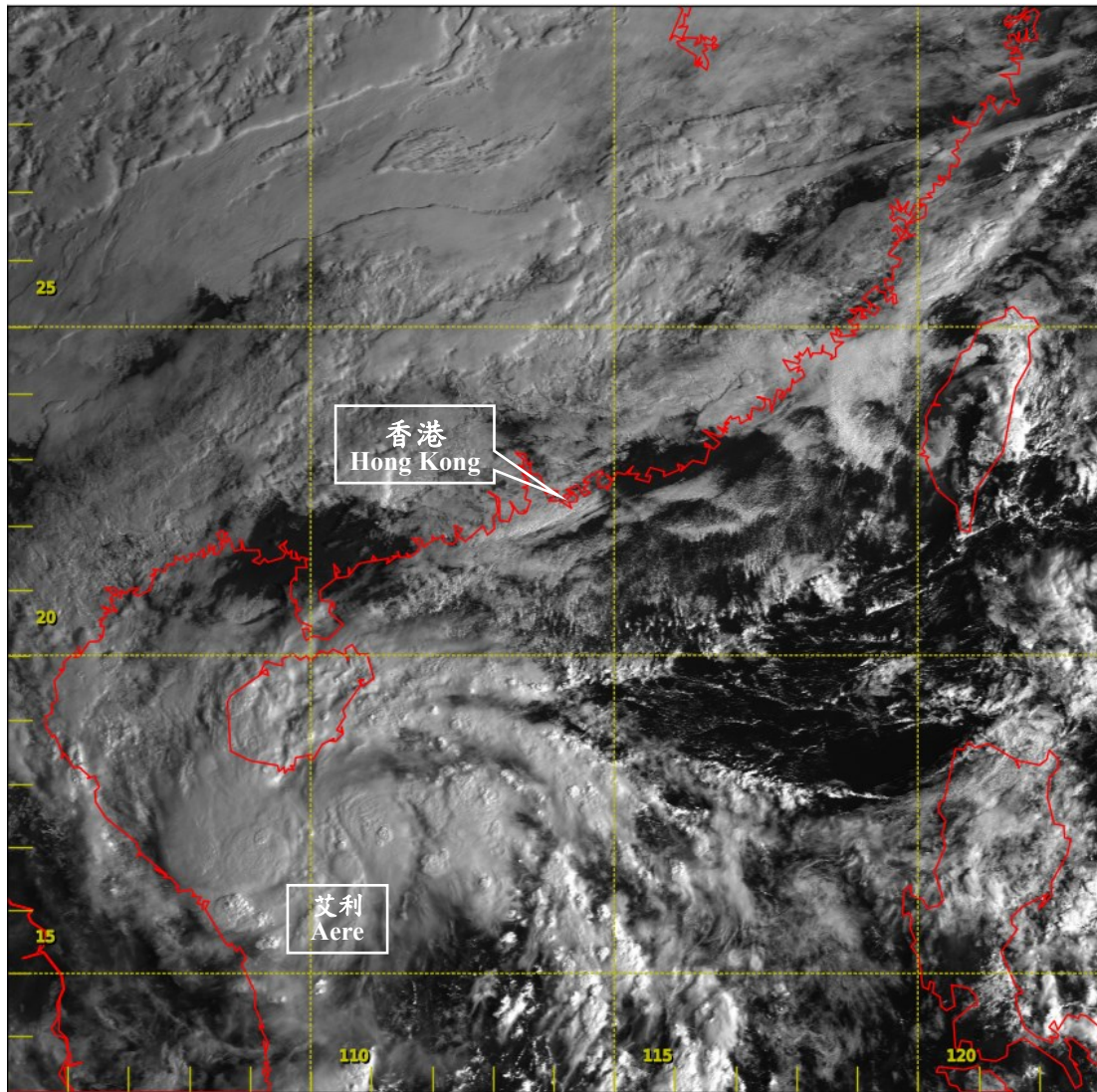


圖 2.2.3b 二零一六年十月十三日上午 8 時左右的可見光衛星圖片，當時艾利在海南島以南再度增強為熱帶低氣壓。

[此衛星圖像接收自日本氣象廳的向日葵8號衛星。]

Fig. 2.2.3b Visible satellite imagery around 8 a.m. on 13 October 2016 when Aere re-intensified into a tropical depression south of Hainan Island.

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

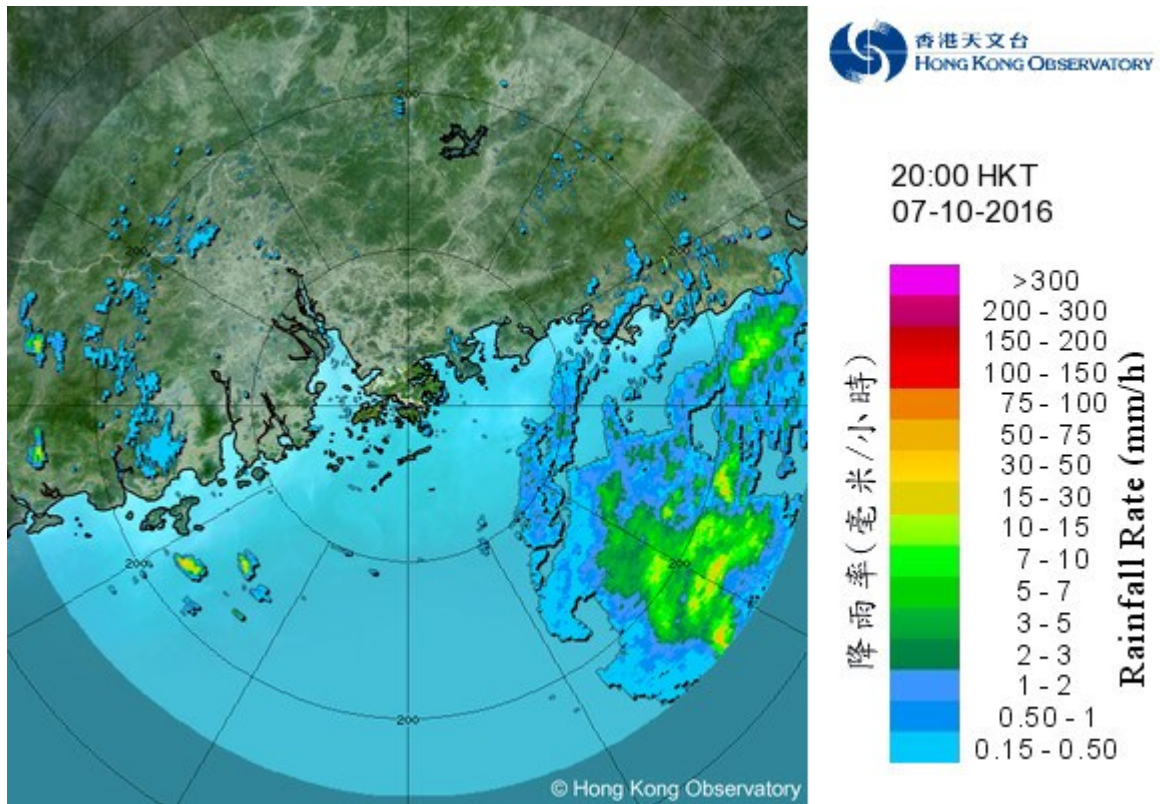


圖 2.2.4 二零一六年十月七日下午八時正的雷達圖像，當時熱帶風暴艾利最接近本港，其中心集結在香港之東南偏東約 260 公里。

Fig. 2.2.4 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.

2.3 超強颱風莎莉嘉(1621)

二零一六年十月十三日至十九日

莎莉嘉是二零一六年第八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。

熱帶低氣壓莎莉嘉於十月十三日早上在馬尼拉以東約 1 060 公里的北太平洋西部上形成，並採取西北偏西路徑移向菲律賓。莎莉嘉當晚已增強為熱帶風暴，翌日更迅速增強，於十月十五日晚上發展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。莎莉嘉於十月十六日清晨橫過呂宋時減弱為颱風，進入南海後重新組織，當晚再度增強為強颱風。十月十八日早上莎莉嘉在海南島登陸，其後轉向西北移動。十月十九日莎莉嘉橫過北部灣，當天稍後在廣西內陸消散。

根據報章報導，莎莉嘉吹襲菲律賓期間造成最少三人死亡，三人失蹤，多處出現山泥傾瀉，多間房屋倒塌。莎莉嘉吹襲廣東、廣西及海南期間，造成最少 370 萬人受災，直接經濟損失接近 55 億元人民幣。

香港天文台於十月十六日晚上 9 時 20 分發出一號戒備信號，當時莎莉嘉集結在香港之東南偏南約 680 公里。當晚及翌日早上本港普遍吹和緩至清勁東北風。由於預料當莎莉嘉移至香港的西南方時本地風力會逐漸增強，天文台於十月十七日下午 1 時 40 分發出三號強風信號，當時莎莉嘉集結在本港之西南偏南約 550 公里。在莎莉嘉及東北季候風的共同影響下，當日下午及翌日本港普遍吹清勁至強風程度的偏東風，離岸及高地間中吹烈風。

莎莉嘉於十月十八日上午 5 時左右最接近香港，在香港西南約 520 公里處掠過。天文台總部則在當日下午 2 時 57 分錄得最低瞬時海平面氣壓 1006.3 百帕斯卡。隨著莎莉嘉於十月十八日晚上進入北部灣並進一步減弱，香港逐漸受東北季候風影響，天文台於晚上 10 時 10 分取消所有熱帶氣旋警告信號，並接續發出強烈季候風信號。受東北季候風影響，晚間本港多處地區間中吹強風，強烈季候風信號一直維持至翌日早上 8 時 45 分才取消。

莎莉嘉影響香港期間，尖鼻咀錄得最高潮位(海圖基準面以上) 3.00 米，而大埔滘則錄得最大風暴潮(天文潮高度以上) 0.59 米。

十月十七日本港早上短暫時間有陽光，但在莎莉嘉的影響下，下午轉為多雲及有幾陣狂風驟雨。莎莉嘉的外圍偏南氣流與東北季候風的輻合引致本港於十月十八日至十九日持續有大雨和雷暴。雨勢在十月十九日下午最大，為本港普遍帶

來超過 100 毫米雨量，而市區、沙田及大埔的雨量更超過 200 毫米，自暴雨警告系統在 1992 年開始運作以來天文台首度在十月份發出黑色暴雨警告。天文台總部於當日下午三至四時錄得 78.7 毫米雨量，是自 1884 年有記錄以來十月份的最高一小時雨量紀錄。山泥傾瀉警告及新界北部水浸特別報告在當日亦曾經生效。

在莎莉嘉吹襲期間，香港有多宗塌樹報告及高空墜物意外。在強風大浪下，西貢橫洲對開海面有一艘內河船翻側，船上 13 名船員有 12 人獲救，但仍有一人失蹤。在黃大仙及龍翔道折斷墜下的樹幹導致兩人受傷。深水埗通州街一個棚架倒塌，旺角西洋菜南街一幢商業大廈外牆亦有一幅廣告帆布被強風吹倒。元朗南坑排及荔枝角鍾山台分別有圍牆倒塌。

在十月十九日下午的暴雨期間，本港最少有 14 宗水浸報告及七宗山泥傾瀉報告。多區道路出現水浸，交通大受影響。其中柴灣及大潭一帶的道路水浸最為嚴重，一輛電單車被沖走，多輛汽車被困。洪水亦沖入柴灣一商場內的店舖。灣仔普樂里的一幅圍牆在暴雨下倒塌。

2.3 Super Typhoon Sarika (1621) 13 - 19 October 2016

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

Sarika formed as a tropical depression over the western North Pacific about 1 060 km east of Manila on the morning of 13 October. Taking a west-northwesterly track towards the Philippines, it intensified into a tropical storm that night. Sarika further intensified rapidly the next day and developed into a super typhoon on the night of 15 October, reaching its peak intensity with an estimated sustained wind of 185 km/h near its centre. Sarika weakened into a typhoon while moving across Luzon in the early morning on 16 October. After entering the South China Sea, it re-organized and re-intensified into a severe typhoon that night. Sarika made landfall over Hainan Island on the morning of 18 October and turned northwestwards. It moved across Beibu Wan on 19 October and dissipated over inland Guangxi later that day.

According to press reports, at least three persons were killed and three others were missing in the Philippines during the passage of Sarika. There were extensive landslides and many houses collapsed. In Guangdong, Guangxi and Hainan, at least 3.7 million people were affected with direct economic loss of around 5.5 billion RMB.

In Hong Kong, the Standby Signal No. 1 was issued at 9:20 p.m. on 16 October when Sarika was about 680 km south-southeast of the territory. Local winds were generally moderate to fresh northeasterly during the night and the next morning. As local winds were expected to strengthen gradually when Sarika moved to the southwest of Hong Kong, the Strong Wind Signal No. 3 was issued at 1:40 p.m. on 17 October when Sarika was about 550 km south-southwest of the territory. Under the combined effect of Sarika and the northeast monsoon, fresh to strong easterlies generally affected Hong Kong in the afternoon and the next day, with winds occasionally reaching gale force offshore and on high ground.

Sarika came closest to the territory around 5 a.m. on 18 October, passing at a distance of about 520 km southwest of Hong Kong. At the Observatory Headquarters, the lowest instantaneous mean sea-level pressure of 1006.3 hPa was recorded at 2:57 p.m. that day. As Sarika entered Beibu Wan and further weakened on the night of 18 October, Hong Kong came increasingly under the influence of the northeast monsoon. The Observatory cancelled all tropical cyclone warning signals at 10:10 p.m. that night and issued the Strong Monsoon Signal immediately afterwards. Under the influence of the northeast monsoon, occasional strong winds affected many places over the territory

during the night. The Strong Monsoon Signal remained in force till 8:45 a.m. the next morning.

Under the influence of Sarika, a maximum sea level (above chart datum) of 3.00 m was recorded at Tsim Bei Tsui, while a maximum storm surge of 0.59 m (above astronomical tide) was recorded at Tai Po Kau.

Locally, there were sunny intervals on the morning of 17 October. Affected by Sarika, the weather became cloudy with a few squally showers in the afternoon. The convergence between the northeast monsoon and the southerly airstream associated with Sarika triggered prolonged periods of heavy rain and thunderstorms on 18 and 19 October. The rain was most intense on the afternoon of 19 October, with more than 100 millimetres of rainfall falling generally over Hong Kong and rainfall even exceeding 200 millimetres over the urban areas, Sha Tin and Tai Po, necessitating the issuance of the first ever Black Rainstorm Warning in October since the Rainstorm Warning System commenced operation in 1992. The hourly rainfall of 78.7 millimetres recorded at the Observatory Headquarters between 3 and 4 p.m. that day was also the highest in October since records began in 1884. Landslip Warning and Special Announcement on Flooding in the Northern New Territories were also in force that day.

In Hong Kong, there were many reports of fallen trees and incidents of falling objects during the passage of Sarika. A river trade vessel was overturned in the waters off Wang Chau in Sai Kung under strong winds and rough seas. Of the 13 crew members on board, 12 were rescued but one was still missing. Falling tree branches injured two persons in Wong Tai Sin and Lung Cheung Road. Scaffoldings at Tung Chau Street in Sham Shui Po collapsed, and an advertisement banner of a commercial building at Sai Yeung Choi Street South in Mong Kok was also blown down. Walls at Nam Hang Pai in Yuen Long and Chung Shan Terrace in Lai Chi Kok collapsed

During the rainstorm on the afternoon of 19 October, there were at least 14 reports of flooding and seven reports of landslide in Hong Kong. Traffic was seriously disrupted as many roads were flooded, with roads near Chai Wan and Tai Tam being the worst affected. A motorcycle was swept away and many vehicles were marooned. Flood water rushed into the stores of a shopping mall in Chai Wan. A wall at Bullock Lane in Wan Chai collapsed under the heavy rain.

表 2.3.1 在莎莉嘉影響下，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 2.3.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations when tropical cyclone warning signals for Sarika were in force

站 Station (http://www.weather.gov.hk/informtc/station2016_uc.htm)		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	76	17/10	19:46	東南偏東	ESE	47	18/10	18:00
中環碼頭	Central Pier	東	E	70	18/10	17:32	東	E	43	17/10	23:00
長洲	Cheung Chau	東南偏東	ESE	99	18/10	12:39	東南偏東	ESE	59	18/10	19:00
長洲泳灘	Cheung Chau Beach	東北偏東	ENE	104	18/10	12:18	東	E	67	18/10	13:00
青洲	Green Island	東北偏東	ENE	90	18/10	17:51	東北	NE	59	17/10	22:00
香港國際機場	Hong Kong International Airport	東南偏東	ESE	59	18/10	17:57	東	E	36	18/10	13:00
啟德	Kai Tak	東	E	83	18/10	17:22	東	E	41	18/10	18:00
京士柏	King's Park	東南偏東	ESE	59	18/10	08:32	東南	SE	30	18/10	22:00
流浮山	Lau Fau Shan	東	E	62	18/10	13:17	東北偏東	ENE	25	17/10	23:00
北角	North Point	東	E	76	18/10	08:04	東	E	45	18/10	08:00
坪洲	Peng Chau	東	E	72	18/10	12:12	東	E	51	18/10	13:00
平洲	Ping Chau	東北偏東	ENE	40	18/10	16:41	東	E	14	18/10	17:00
西貢	Sai Kung	東	E	77	18/10	15:16	東北偏東	ENE	40	18/10	09:00
沙洲	Sha Chau	東南偏東	ESE	63	18/10	12:37	東南偏東	ESE	41	18/10	20:00
沙螺灣	Sha Lo Wan	東	E	68	18/10	11:06	東北偏東	ENE	31	18/10	10:00
							東北偏東	ENE	31	18/10	11:00
							東	E	31	18/10	12:00
沙田	Sha Tin	東南	SE	62	18/10	15:29	東北	NE	16	17/10	09:00
							東北偏北	NNE	16	17/10	10:00
							東北	NE	16	18/10	10:00
							東	E	16	18/10	13:00
石崗	Shek Kong	東	E	67	18/10	17:45	東	E	31	18/10	13:00
九龍天星碼頭	Star Ferry (Kowloon)	東	E	75	18/10	07:43	東	E	40	18/10	13:00
打鼓嶺	Ta Kwu Ling	東	E	65	18/10	15:45	東北偏東	ENE	22	18/10	16:00
							東	E	22	18/10	19:00
大美督	Tai Mei Tuk	東南偏東	ESE	96	18/10	12:10	東	E	63	18/10	16:00
大帽山	Tai Mo Shan	東南	SE	118	18/10	17:42	東南偏東	ESE	77	18/10	15:00
大埔滘	Tai Po Kau	東南偏東	ESE	70	18/10	15:37	東	E	43	18/10	13:00
塔門	Tap Mun	東北偏東	ENE	67	18/10	08:09	東南偏東	ESE	34	18/10	18:00
大老山	Tate's Cairn	東	E	112	18/10	12:05	東	E	68	18/10	11:00
將軍澳	Tseung Kwan O	東	E	58	18/10	11:30	北	N	13	17/10	22:00
							東北偏北	NNE	13	17/10	23:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	東南偏東	ESE	59	18/10	12:19	東南偏東	ESE	23	18/10	13:00
屯門政府合署	Tuen Mun Government Offices	東南偏東	ESE	49	18/10	15:50	東南	SE	16	18/10	19:00
橫瀾島	Waglan Island	東北偏東	ENE	92	17/10	20:54	東北偏東	ENE	72	17/10	22:00
濕地公園	Wetland Park	東南偏東	ESE	43	18/10	12:58	東	E	16	18/10	13:00
		東	E	43	18/10	13:07					
黃竹坑	Wong Chuk Hang	西北偏北	NNW	70	18/10	20:21	西北偏北	NNW	30	18/10	08:00

昂坪- 沒有資料 Ngong Ping - data not available

表 2.3.2 在莎莉嘉影響下，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 2.3.2 Periods during which sustained strong winds were attained at the eight reference anemometers in the tropical cyclone warning system when the tropical cyclone warning signals for Sarika were in force

站 Station (http://www.weather.gov.hk/informtc/station2016_uc.htm)		最初達到強風*時間		最後達到強風*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	17/10	18:45	18/10	22:10
香港國際 機場	Hong Kong International Airport	18/10	12:47	18/10	18:07
啟德	Kai Tak	18/10	17:24	18/10	18:03
西貢	Sai Kung	18/10	08:41	18/10	15:27

流浮山、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, 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 winds. Winds might fluctuate above or below the specified wind speeds in between the times indicated.

表 2.3.3 莎莉嘉掠過香港期間，在香港天文台總部及其他各站所錄得的日雨量
Table 2.3.3 Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Sarika

站 (參閱圖 2.2.2)		十月十六日	十月十七日	十月十八日	十月十九日	總雨量(毫米)
Station (See Fig. 2.2.2)		16 Oct	17 Oct	18 Oct	19 Oct	Total rainfall (mm)
香港天文台 Hong Kong Observatory		0.0	16.7	178.7	223.4	418.8
香港國際機場 Hong Kong International Airport (HKA)		0.0	11.3	87.2	58.3	156.8
長洲 Cheung Chau (CCH)		[0.0]	[7.0]	[46.5]	[31.5]	[85.0]
H23	香港仔 Aberdeen	0.0	17.5	99.0	134.0	250.5
N05	粉嶺 Fanling	0.0	9.0	135.5	231.5	376.0
N13	糧船灣 High Island	0.0	15.5	97.0	79.0	191.5
K04	佐敦谷 Jordan Valley	0.0	19.0	197.0	225.0	441.0
N06	葵涌 Kwai Chung	0.0	14.0	167.5	212.5	394.0
H12	半山區 Mid Levels	0.0	20.0	163.0	155.0	338.0
N09	沙田 Sha Tin	0.0	15.0	205.5	199.5	420.0
H19	筲箕灣 Shau Kei Wan	0.0	21.5	171.5	240.5	433.5
SEK	石崗 Shek Kong	[0.0]	[12.5]	[175.5]	[128.0]	[316.0]
K06	蘇屋邨 So Uk Estate	0.0	17.5	176.0	221.0	414.5
R31	大美督 Tai Mei Tuk	0.5	14.5	139.0	137.5	291.5
R21	踏石角 Tap Shek Kok	0.0	11.0	90.5	44.5	146.0
TMR	屯門水庫 Tuen Mun Reservoir	0.0	8.1	91.7	71.2	171.0
N17	東涌 Tung Chung	0.0	14.5	103.0	50.5	168.0

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

表 2.3.4 莎莉嘉掠過香港期間，在香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 2.3.4 Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Sarika

站 Station (http://www.weather.gov.hk/informtc/station2016_uc.htm)		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	2.74	17/10	22:11	0.43	18/10	10:58
石壁	Shek Pik	2.87	17/10	23:19	0.52	18/10	11:59
大廟灣	Tai Miu Wan	2.73	17/10	22:12	0.45	18/10	10:57
大埔滘	Tai Po Kau	2.83	17/10	22:51	0.59	18/10	04:11
尖鼻咀	Tsim Bei Tsui	3.00	17/10	23:10	0.57	18/10	20:09
橫瀾島	Waglan Island	2.87	17/10	22:17	0.46	18/10	11:26

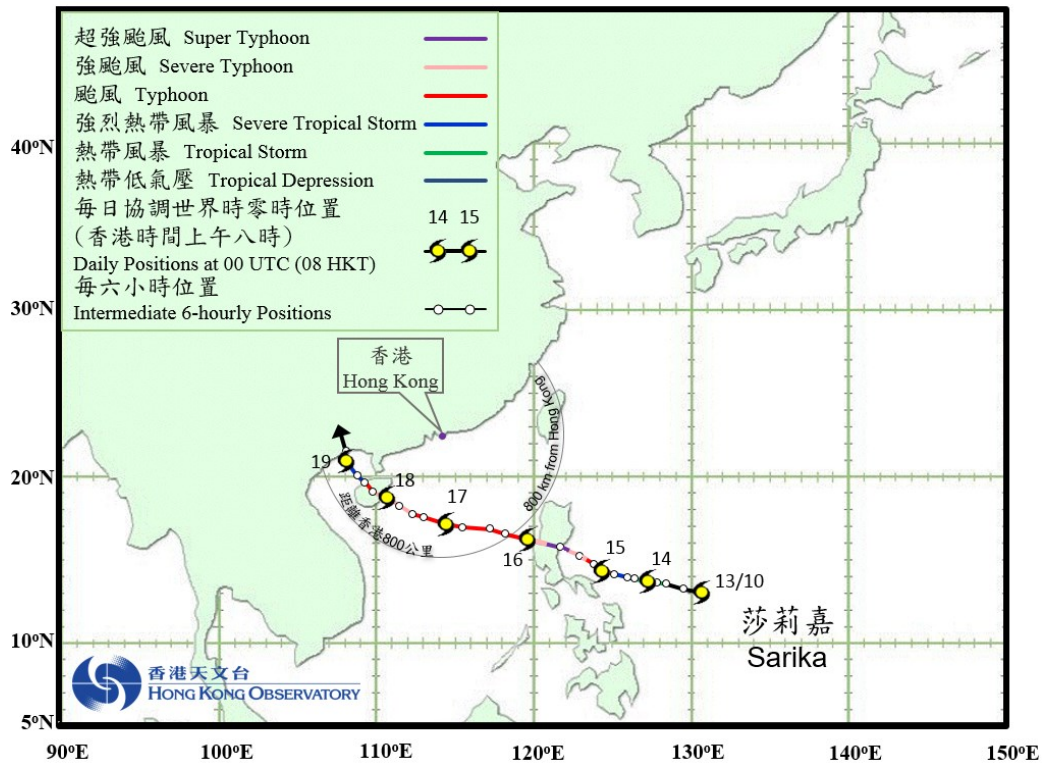


圖 2.3.1 二零一六年十月十三日至十九日莎莉嘉(1621)的路徑圖。

Fig. 2.3.1 Track of Sarika (1621): 13 - 19 October 2016.

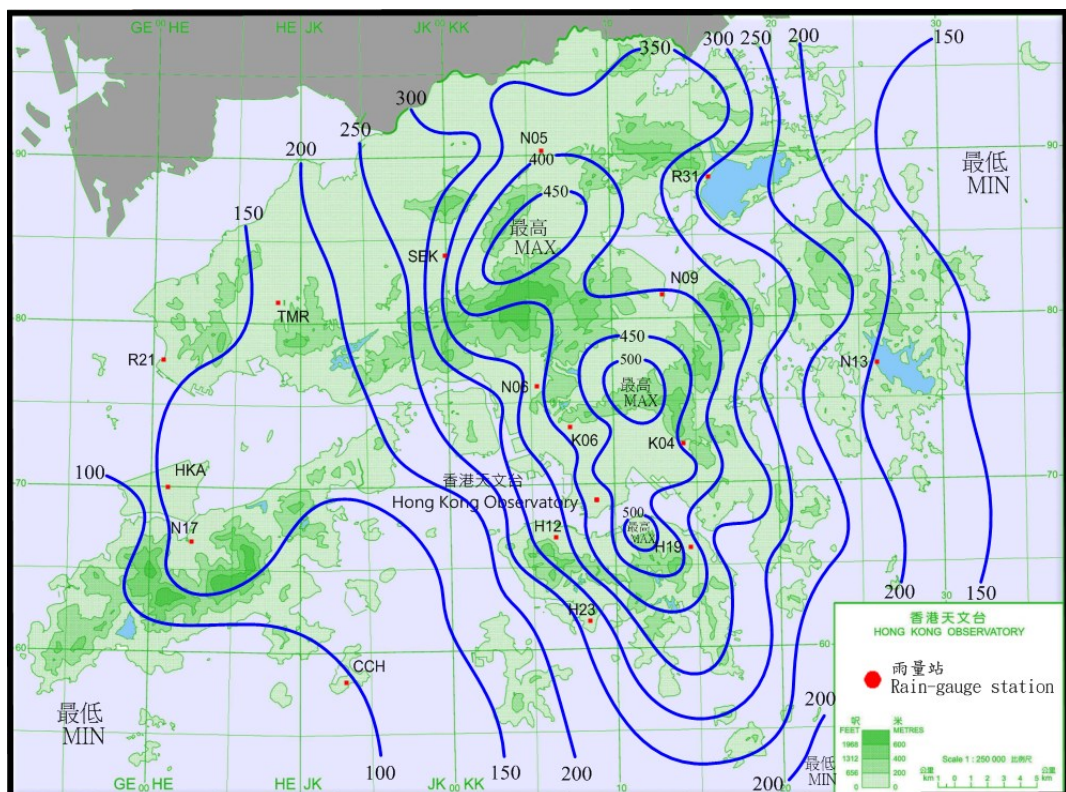


圖 2.3.2 二零一六年十月十六日至十九日的雨量分佈(等雨量線單位為毫米)。

Fig. 2.3.2 Rainfall distribution on 16 – 19 October 2016 (isohyets are in millimetres).

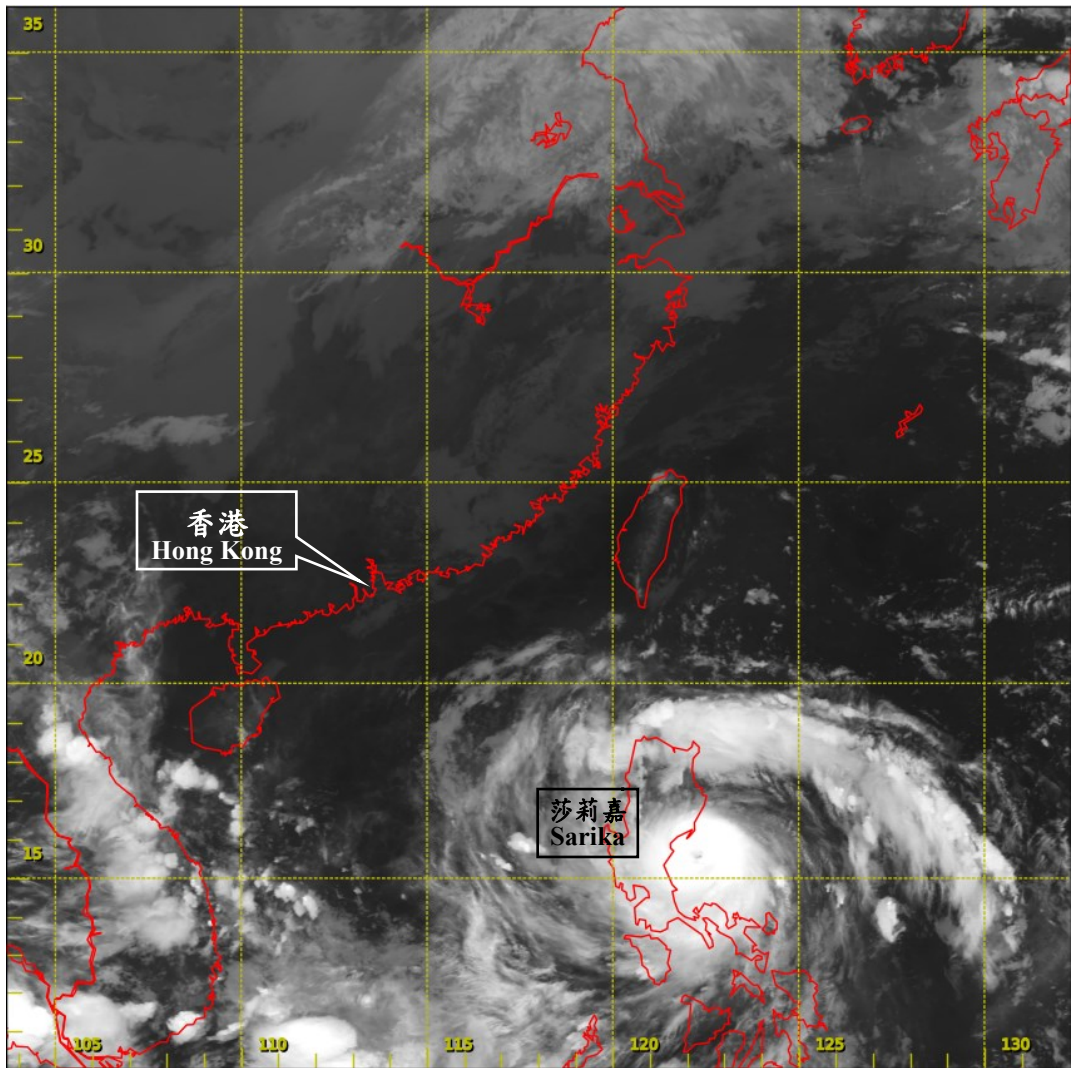


圖 2.3.3a 二零一六年十月十五日晚上 11 時左右的紅外線衛星圖片，當時莎莉嘉達到其最高強度，中心附近最高持續風速估計為每小時 185 公里。
〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

Fig. 2.3.3a Infra-red satellite imagery around 11 p.m. on 15 October 2016 when Sarika was at its peak intensity with estimated maximum sustained winds of 185 km/h near its centre.
[The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

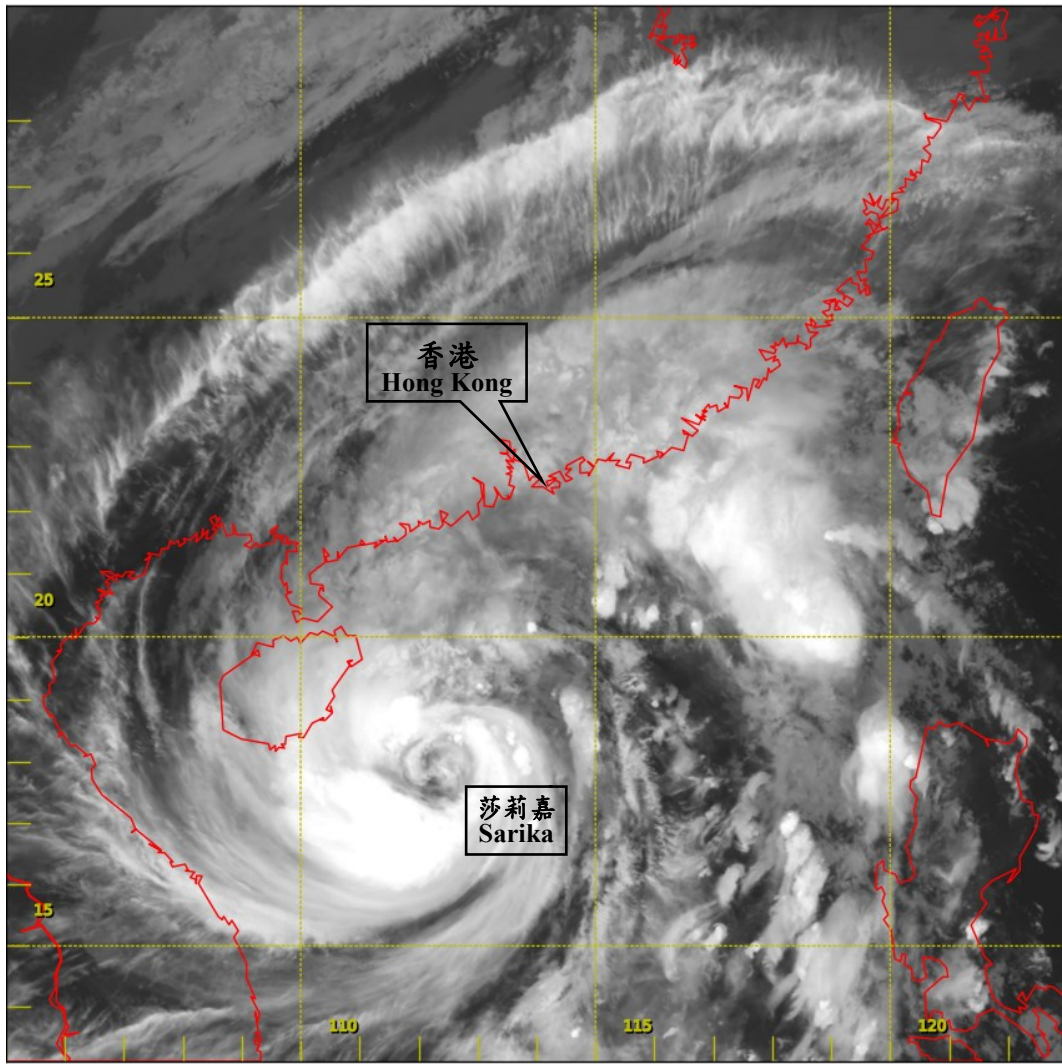


圖 2.3.3b 二零一六年十月十七日晚上 8 時左右的紅外線衛星圖片，當時莎莉嘉再度增強為強颱風，中心附近最高持續風速估計為每小時 155 公里。

〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

Fig. 2.3.3b Infra-red satellite imagery around 8 p.m. on 17 October 2016 when Sarika re-intensified into a severe typhoon with an estimated maximum sustained winds of 155 km/h near its centre.

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

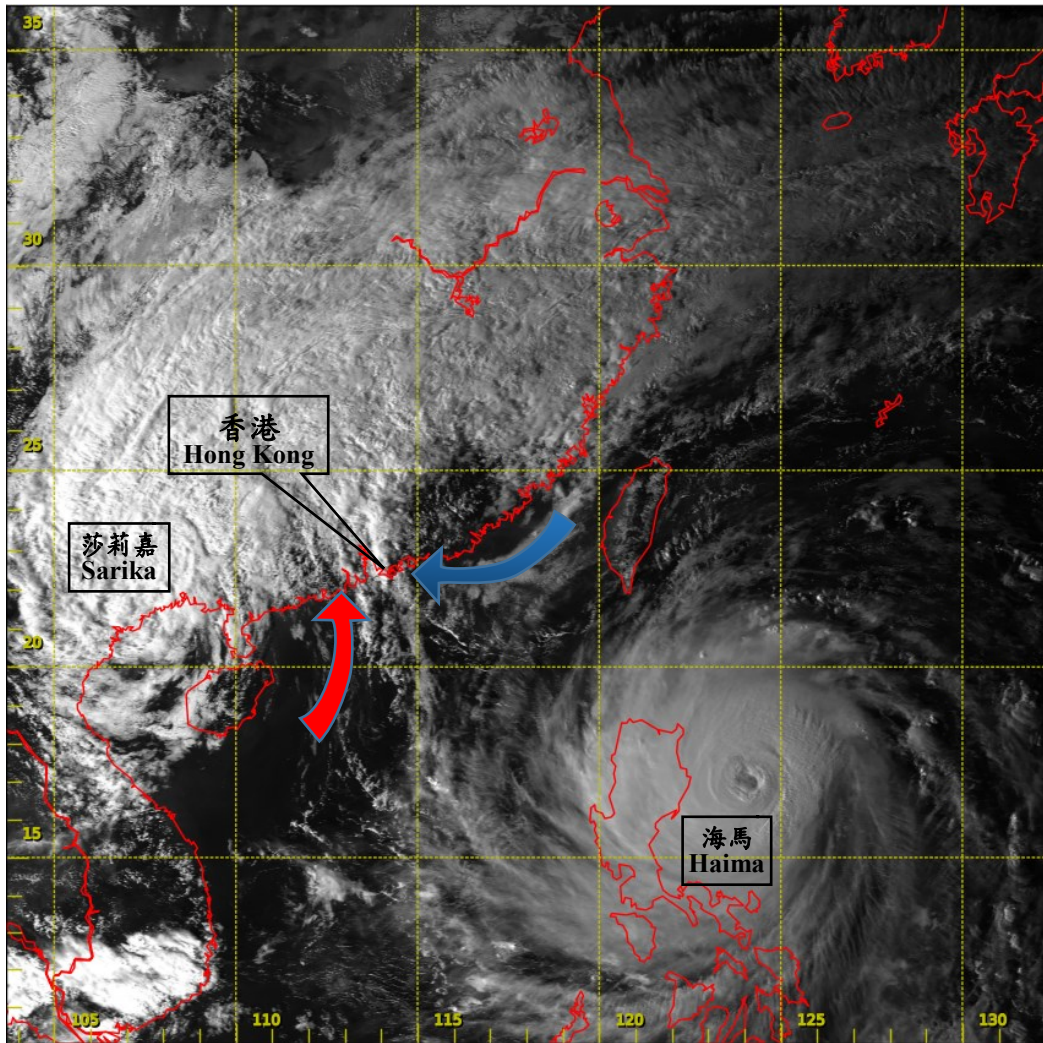


圖 2.3.3c 二零一六年十月十九日下午 4 時左右的可見光衛星圖片，當時莎莉嘉已在廣西內陸減弱為熱帶低氣壓，但其外圍偏南氣流(紅色箭咀)與東北季候風(藍色箭咀)的輻合引致香港附近有大雨和雷暴的發展。同時，位於北太平洋西部的超強颱風海馬正移向呂宋。

[此衛星圖像接收自日本氣象廳的向日葵8號衛星。]

Fig. 2.3.3c Visible satellite imagery around 4 p.m. on 19 October 2016. Sarika had already weakened into a tropical depression over inland Guangxi. However, the convergence between the southerly airstream associated with Sarika (arrow in red) and the northeast monsoon (arrow in blue) triggered heavy rain and thunderstorm development near Hong Kong. Meanwhile, Super Typhoon Haima over the western North Pacific was moving towards Luzon. [The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

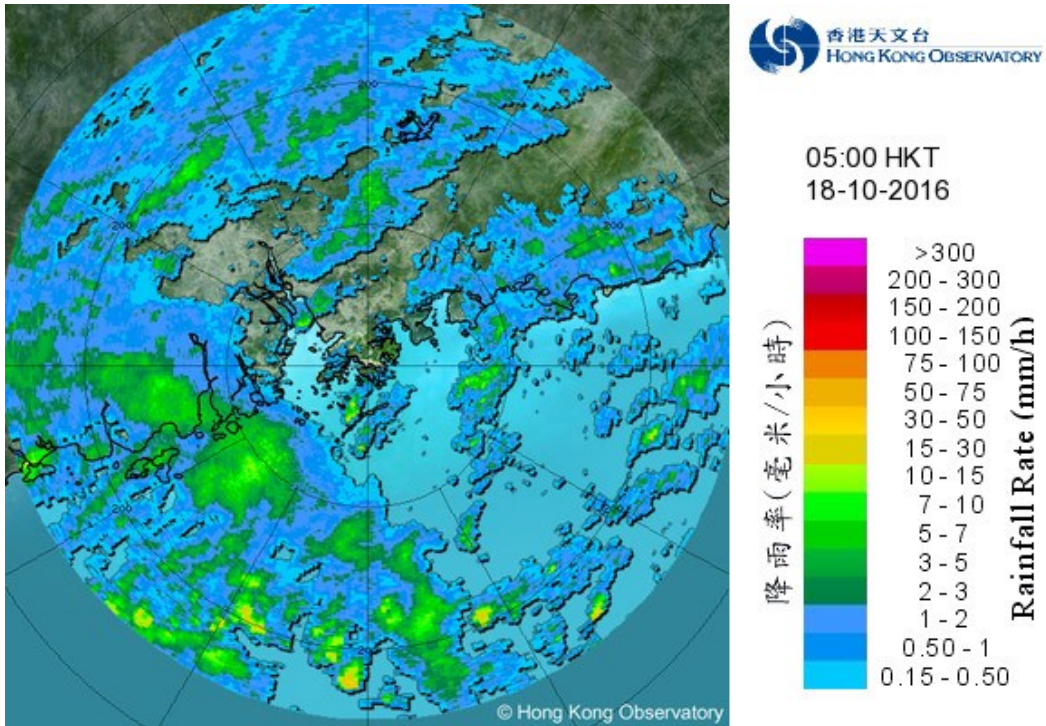


圖 2.3.4a 二零一六年十月十八日上午 5 時的雷達回波圖像，當時莎莉嘉最接近香港，位於本港之西南約 520 公里，其外圍雨帶正影響廣東沿岸及南海北部。

Fig. 2.3.4a Radar echoes captured at 5 a.m. on 18 October 2016, when Sarika was closest to Hong Kong with its centre about 520 km to the southwest. The outer rainbands of Sarika were affecting the coast of Guangdong and the northern part of the South China Sea.

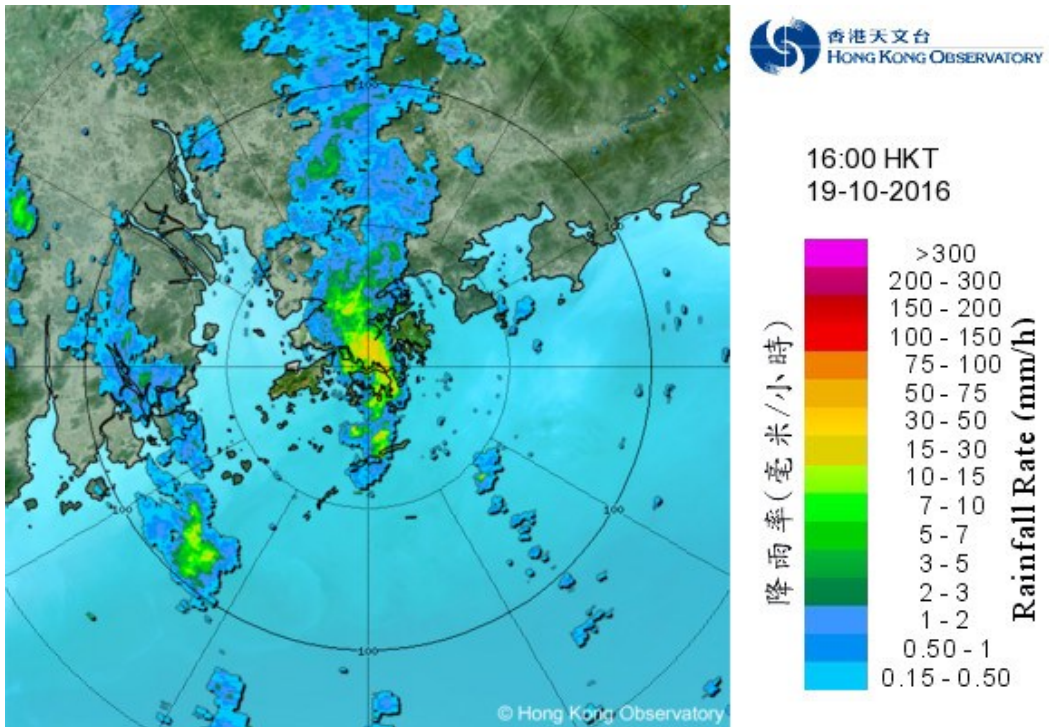


圖 2.3.4b 二零一六年十月十九日下午 4 時的雷達回波圖像，莎莉嘉的外圍偏南氣流與東北季候風的輻合引致香港附近有大雨和雷暴的發展。天文台需要發出黑色暴雨警告、山泥傾瀉警告、新界北部水浸特別報告及雷暴警告。

Fig. 2.3.4b Radar echoes captured at 4 p.m. on 19 October 2016. The convergence between the southerly airstream associated with Sarika and the northeast monsoon triggered heavy rain and thunderstorm development near Hong Kong. Black Rainstorm Warning, Landslip Warning, Special Announcement on Flooding in Northern New Territories and Thunderstorm Warning were issued by the Observatory.



圖 2.3.5 二零一六年十月十九日在呈祥道(上)及柴灣道(下)的嚴重水浸。(鳴謝:渠務署)

Fig. 2.3.5 Severe flooding at Ching Cheung Road (up) and Chai Wan Road (bottom) on 19 October 2016 (courtesy of Drainage Services Department).

2.4 超強颱風海馬 (1622)

二零一六年十月十四日至二十二日

海馬是二零一六年第九個影響香港的熱帶氣旋。海馬吹襲香港期間，天文台需要發出八號烈風或暴風信號，是自一九九五年颱風斯寶以來再一次在十月份發出八號熱帶氣旋警告信號。

熱帶低氣壓海馬於十月十四日下午在關島以南約 710 公里的北太平洋西部上形成，大致向西北移動，並逐漸增強。海馬於十月十七日晚上發展為超強颱風，並向西北偏西移動，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 230 公里。海馬於十月二十日凌晨橫過呂宋北部及減弱為颱風，日間採取西北路徑進入南海東北部。翌日海馬轉向偏北方向移動，下午在廣東東部汕尾附近登陸，晚間在江西減弱為一個低壓區。

根據報章報導，海馬在呂宋北部造成嚴重破壞，廣泛地區出現水浸及山泥傾瀉，多間房屋倒塌，最少八人死亡，逾 9 萬人需要緊急疏散。海馬亦為廣東及福建帶來狂風大雨，最少 180 萬人受災，約 600 間房屋倒塌，海陸空交通大受影響，直接經濟損失超過 50 億元人民幣。

香港天文台在十月二十日早上 8 時 20 分發出一號戒備信號，當時海馬集結在香港之東南偏東約 750 公里。日間本港吹輕微至和緩偏北風。隨著海馬靠近廣東沿岸，天文台在晚上 8 時 40 分發出三號強風信號，當時海馬位於香港之東南約 440 公里。晚間本港風勢逐漸增強，吹清勁北至西北風，高地間中吹強風。由於海馬繼續靠近珠江口以東的沿岸地區，天文台在十月二十一日上午 6 時 10 分發出八號西北烈風或暴風信號，當時海馬集結在香港之東南偏東約 230 公里。本港風力顯著增強，普遍吹強風至烈風程度的西北風。海馬於下午一時左右在汕尾附近登陸並最接近香港，其中心在香港之東北偏東約 110 公里。隨著各區開始轉吹西南風，天文台於下午 2 時 15 分改發八號西南烈風或暴風信號。下午海馬移入內陸及減弱，本港風力逐漸緩和，天文台於下午 5 時 20 分改發三號強風信號，取代八號西南烈風或暴風信號，並於當晚 10 時 10 分取消所有熱帶氣旋警告信號。

在海馬的影響下，九龍天星碼頭、香港國際機場及流浮山錄得的最高每小時平均風速分別為每小時 63、65 及 70 公里，而最高陣風則分別為每小時 88、85 及 110 公里。橫瀾島錄得最高潮位 2.89 米(海圖基準面以上)，而尖鼻咀及橫瀾島則錄得最大風暴潮(天文潮高度以上) 0.65 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	990.7	21/10	上午 11 時 32 分
香港國際機場	992.4	21/10	下午 12 時 11 分
打鼓嶺	989.2	21/10	下午 12 時 26 分
大埔	987.8	21/10	下午 12 時 30 分
沙田	989.7	21/10	下午 12 時 06 分
上水	989.6	21/10	下午 12 時 19 分
流浮山	990.2	21/10	正午 12 時
長洲	990.3	21/10	下午 12 時 05 分
橫瀾島	988.3	21/10	上午 10 時 32 分

在海馬前方的下沉氣流影響下，十月二十日本港部分時間有陽光及有煙霞。海馬的環流於十月二十一日為本港帶來狂風大雨，各區普遍錄得超過 70 毫米雨量，新界東部、九龍城及黃大仙的雨量更超過 100 毫米。隨著海馬移入內陸，十月二十二日本港天氣好轉，部分時間有陽光。

海馬吹襲香港期間，最少有 13 人受傷，另有近 300 宗塌樹報告及多宗高空墜物意外。荔枝角消防局附近及西貢龍尾村分別有大樹塌下，壓毀三輛私家車。東鐵線大學站附近的塌樹則導致列車服務一度受阻。大圍及沙田分別有帆布簷篷及圍板被吹翻，導致兩人受傷。一人在西貢早禾坑對開海面划獨木舟時墮海，其後獲救。在強風的影響下，深圳灣公路大橋一度封閉。香港國際機場有超過 730 班航班取消或延誤。

2.4 Super Typhoon Haima (1622) 14 to 22 October 2016

Haima was the ninth tropical cyclone affecting Hong Kong in 2016. The Observatory issued the No. 8 Gale or Storm Signal during the passage of Haima, necessitating the issuance of the No. 8 Signal once again in October since Typhoon Sibyl in 1995.

Haima formed as a tropical depression over the western North Pacific about 710 km south of Guam on the afternoon of 14 October. Moving generally northwestwards, Haima intensified gradually and developed into a super typhoon on the night of 17 October. Tracking to the west-northwest, it reached its peak intensity the next day with an estimated sustained wind of 230 km/h near its centre. Haima moved across northern Luzon on the early morning of 20 October and weakened into a typhoon. It then moved northwestwards and entered the northeastern part of the South China Sea during the day. Haima turned northwards on 21 October and made landfall near Shanwei in eastern Guangdong that afternoon, before finally degenerating into an area of low pressure over Jiangxi during the night.

According to press reports, Haima wreaked havoc in northern Luzon with extensive flooding and landslides as well as the collapse of many houses. At least eight people were killed and more than 90 000 people had to be evacuated. Haima also brought heavy rain and squalls to Guangdong and Fujian. At least 1.8 million people were affected and around 600 houses collapsed. Transportation services were seriously affected and the direct economic loss exceeded 5 billion RMB.

In Hong Kong, the Standby Signal No. 1 was issued at 8:20 a.m. on 20 October when Haima was about 750 km east-southeast of the territory. Local winds were light to moderate northerlies during the day. As Haima edged closer to the coast of Guangdong, the Strong Wind Signal No. 3 was issued at 8:40 p.m. that night when Haima was about 440 km southeast of Hong Kong. Local winds strengthened gradually during the night, becoming fresh north to northwesterlies and occasionally strong on high ground. With Haima approaching the coastal areas east of the Pearl River Estuary, the No. 8 Northwest Gale or Storm Signal was issued at 6:10 a.m. on 21 October when it was about 230 km east-southeast of Hong Kong. Local winds strengthened significantly and became generally strong to gale force from the northwest. Haima made landfall near Shanwei around 1 p.m. and was closest to Hong Kong with its centre about 110 km east-northeast of the territory. Local winds started to turn southwesterly and the No. 8 Southwest Gale or Storm Signal was issued at 2:15 p.m. on 21 October. With Haima moving inland and weakening in the afternoon, local winds subsided gradually. The No. 8 Southwest Gale or Storm Signal was replaced by the Strong Wind Signal No. 3 at 5:20 p.m., and all tropical cyclone warning signals were cancelled at 10:10 p.m. that night.

Under the influence of Haima, maximum hourly mean winds of 63, 65 and 70 km/h and gusts of 88, 85 and 110 km/h were recorded at Star Ferry (Kowloon), the Hong Kong International Airport and Lau Fau Shan respectively. A maximum sea level (above chart datum) of 2.89 m was recorded at Waglan Island, and a maximum storm surge (above astronomical tide) of 0.65 m was recorded at Tsim Bei Tsui and Waglan Island. 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	990.7	21/10	11:32 a.m.
Hong Kong International Airport	992.4	21/10	12:11 p.m.
Ta Kwu Ling	989.2	21/10	12:26 p.m.
Tai Po	987.8	21/10	12:30 p.m.
Shatin	989.7	21/10	12:06 p.m.
Sheung Shui	989.6	21/10	12:19 p.m.
Lau Fau Shan	990.2	21/10	12:00 noon
Cheung Chau	990.3	21/10	12:05 p.m.
Waglan Island	988.3	21/10	10:32 a.m.

Locally, there were sunny periods and haze on 20 October under the influence of the subsiding air ahead of Haima. The circulation of Haima brought heavy rain and squalls to Hong Kong on 21 October. More than 70 millimetres of rainfall were generally recorded over the territory, and rainfall over the eastern part of the New Territories, Kowloon City and Wong Tai Sin even exceeded 100 millimetres. As Haima moved inland, local weather improved on 22 October with sunny periods.

In Hong Kong, at least 13 people were injured during the passage of Haima. There were nearly 300 reports of fallen trees and many incidents of falling objects. Trees toppled near Lai Chi Kok Fire Station and Lung Mei Tsuen in Sai Kung, damaging three private cars; while fallen trees near the University station of the East Rail Line resulted in a disruption of train services. A canopy in Tai Wai and a hoarding in Sha Tin were blown down, injuring two persons. A canoeist fell into the sea off Tso Wo Hang in Sai Kung and was later rescued. The Shenzhen Bay Bridge was closed under high winds. Over 730 flights were cancelled or delayed at the Hong Kong International Airport.

表 2.4.1 在海馬影響下，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 2.4.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations when the tropical cyclone warning signals for Haima were in force

站 Station (http://www.weather.gov.hk/informtc/station2016_uc.htm)		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)	西北	NW	68	21/10	10:06	西北	NW	40	21/10	11:00
中環碼頭	Central Pier	西	W	85	21/10	09:31	西	W	51	21/10	12:00
長洲	Cheung Chau	西北偏西	WNW	108	21/10	12:21	西北偏西	WNW	67	21/10	13:00
長洲泳灘	Cheung Chau Beach	西北偏西	WNW	101	21/10	11:14	西	W	59	21/10	13:00
		西	W	101	21/10	12:19					
青洲	Green Island	西北偏西	WNW	96	21/10	12:50	西北偏北	NNW	67	21/10	08:00
香港國際機場	Hong Kong International Airport	西北	NW	85	21/10	11:09	西北偏西	WNW	65	21/10	12:00
啟德	Kai Tak	西	W	90	21/10	09:22	西	W	43	21/10	11:00
京士柏	King's Park	西北偏西	WNW	79	21/10	13:19	西北偏西	WNW	31	21/10	13:00
							西北偏西	WNW	31	21/10	14:00
流浮山	Lau Fau Shan	西	W	110	21/10	13:19	西	W	70	21/10	13:00
北角	North Point	西南偏西	WSW	88	21/10	13:49	西南偏西	WSW	58	21/10	14:00
坪洲	Peng Chau	西南	SW	101	21/10	11:35	西南偏西	WSW	59	21/10	11:00
平洲	Ping Chau	西	W	68	21/10	13:02	西	W	38	21/10	15:00
西貢	Sai Kung	西北	NW	79	21/10	09:40	西北	NW	38	21/10	10:00
沙洲	Sha Chau	西	W	68	21/10	12:23	西南偏南	SSW	43	21/10	19:00
沙螺灣	Sha Lo Wan	西南偏南	SSW	72	21/10	16:41	西南偏西	WSW	31	21/10	14:00
沙田	Sha Tin	西南偏西	WSW	75	21/10	12:35	西南	SW	23	21/10	16:00
石崗	Shek Kong	西	W	58	21/10	11:58	西	W	22	21/10	12:00
九龍天星碼頭	Star Ferry (Kowloon)	西	W	88	21/10	12:43	西	W	63	21/10	13:00
打鼓嶺	Ta Kwu Ling	西南偏西	WSW	54	21/10	12:16	西南偏南	SSW	20	21/10	18:00
大美督	Tai Mei Tuk	西北偏西	WNW	104	21/10	12:47	西	W	63	21/10	13:00
大帽山	Tai Mo Shan	西北偏西	WNW	155	21/10	12:33	西北偏西	WNW	115	21/10	13:00
大埔滘	Tai Po Kau	西	W	88	21/10	11:50	西	W	47	21/10	13:00
塔門	Tap Mun	西	W	106	21/10	13:33	西	W	62	21/10	12:00
大老山	Tate's Cairn	西北偏西	WNW	122	21/10	10:40	西北	NW	77	21/10	10:00
將軍澳	Tseung Kwan O	西北偏西	WNW	52	21/10	10:40	西北偏北	NNW	19	21/10	07:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	西北偏西	WNW	85	21/10	12:29	西北偏西	WNW	51	21/10	13:00
屯門政府合署	Tuen Mun Government Offices	西北偏西	WNW	96	21/10	12:03	西北偏西	WNW	40	21/10	13:00
橫瀾島	Waglan Island	西	W	115	21/10	12:35	西南	SW	83	21/10	16:00
							西南	SW	83	21/10	17:00
濕地公園	Wetland Park	西北偏西	WNW	68	21/10	11:08	西北偏西	WNW	22	21/10	12:00
黃竹坑	Wong Chuk Hang	西北偏北	NNW	88	21/10	10:36	西北偏北	NNW	31	21/10	11:00

昂坪 - 沒有資料 Ngong Ping - data not available

表 2.4.2 在海馬影響下，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 2.4.2 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 Haima were in force

站 Station (http://www.weather.gov.hk/informtc/station2016_uc.htm)		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	21/10	0726	21/10	1533	21/10	1104	21/10	1313
香港國際機場	Hong Kong International Airport	21/10	0339	21/10	2132	21/10	1051	21/10	1151
啟德	Kai Tak	21/10	0729	21/10	1311	-			
流浮山	Lau Fau Shan	21/10	0518	21/10	1803	21/10	1047	21/10	1351
西貢	Sai Kung	21/10	0947	21/10	0951	-			
青衣島 蜆殼油庫	Tsing Yi Shell Oil Depot	21/10	1051	21/10	1433	-			

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 2.4.3 海馬掠過期間，香港天文台總部及其他各站所錄得的日雨量

Table 2.4.3 Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Haima

站 (參閱圖 2.2.2) Station (See Fig. 2.2.2)			十月二十日 20 Oct	十月二十一日 21 Oct	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory			0.0	72.5	72.5
香港國際機場 Hong Kong International Airport (HKA)			0.0	24.4	24.4
長洲 Cheung Chau (CCH)			[0.0]	[41.5]	[41.5]
H23	香港仔 Aberdeen		0.0	67.5	67.5
N05	粉嶺 Fanling		0.5	83.0	83.5
N13	糧船灣 High Island		0.0	91.0	91.0
K04	佐敦谷 Jordan Valley		0.0	90.0	90.0
N06	葵涌 Kwai Chung		0.0	95.0	95.0
H12	半山區 Mid Levels		0.0	76.0	76.0
N09	沙田 Sha Tin		0.5	95.5	96.0
H19	筲箕灣 Shau Kei Wan		0.0	91.0	91.0
SEK	石崗 Shek Kong		[0.0]	[61.0]	[61.0]
K06	蘇屋邨 So Uk Estate		0.0	96.0	96.0
R31	大美督 Tai Mei Tuk		[0.0]	122.5	[122.5]
R21	踏石角 Tap Shek Kok		0.0	42.0	42.0
TMR	屯門水庫 Tuen Mun Reservoir		0.0	37.2	37.2
N17	東涌 Tung Chung		[0.0]	[0.0]	[0.0]

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

表 2.4.4 海馬掠過期間，香港各潮汐站所錄得的最高潮位及最大風暴潮

Table 2.4.4 Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Haima

站 Station (http://www.weather.gov.hk/informtc/station2016_uc.htm)		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	2.74	21/10	00:28	0.54	21/10	13:44
石壁	Shek Pik	2.75	21/10	01:01	0.48	21/10	14:15
大埔滘	Tai Po Kau	2.80	21/10	01:28	0.57	21/10	14:16
大廟灣	Tai Miu Wan	2.75	21/10	01:34	0.64	21/10	13:37
尖鼻咀	Tsim Bei Tsui	2.88	21/10	00:19	0.65	21/10	14:42
橫瀾島	Waglan Island	2.89	21/10	01:13	0.65	21/10	13:37

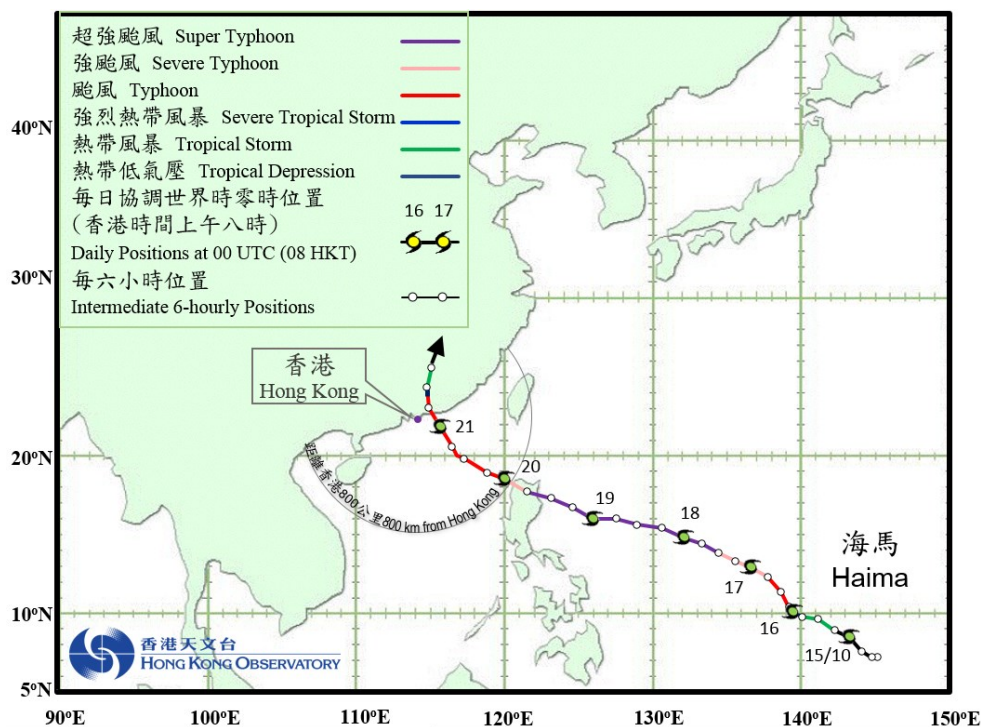


圖 2.4.1a 二零一六年十月十四日至二十二日海馬的路徑圖。

Fig. 2.4.1a Track of Haima: 14 – 22 October 2016.

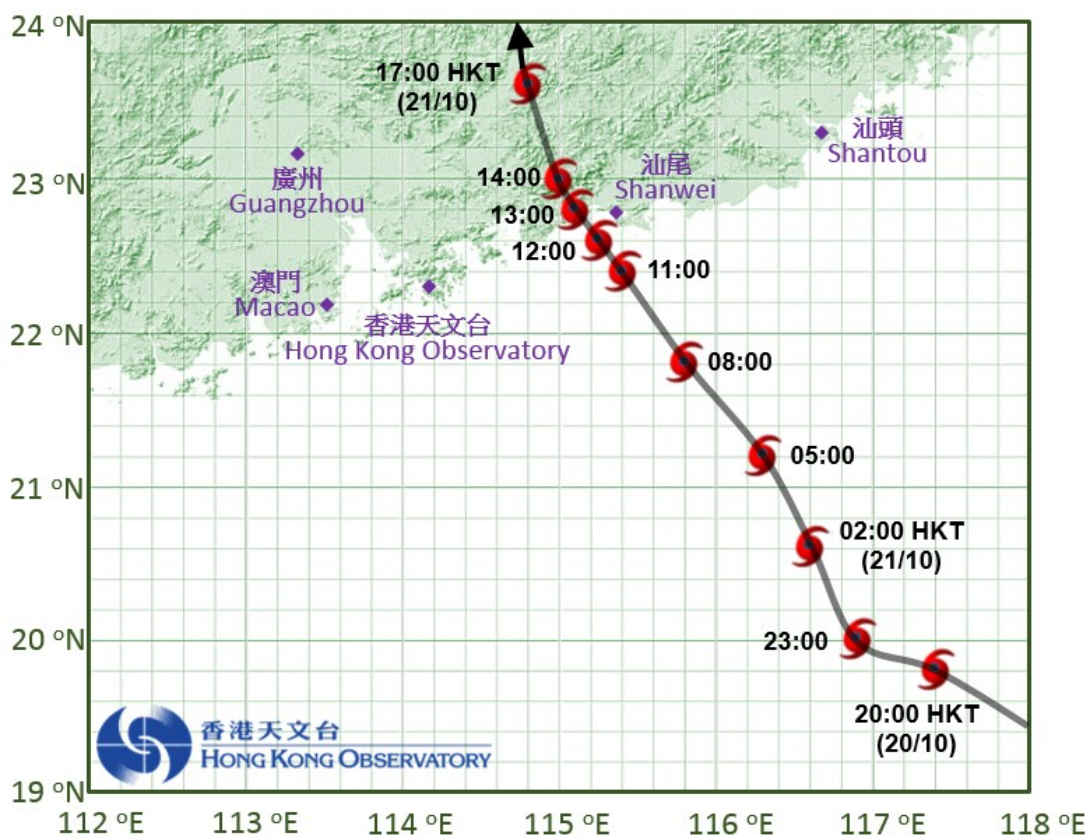


圖 2.4.1b 海馬接近香港時的路徑圖。

Fig. 2.4.1b Track of Haima near Hong Kong.

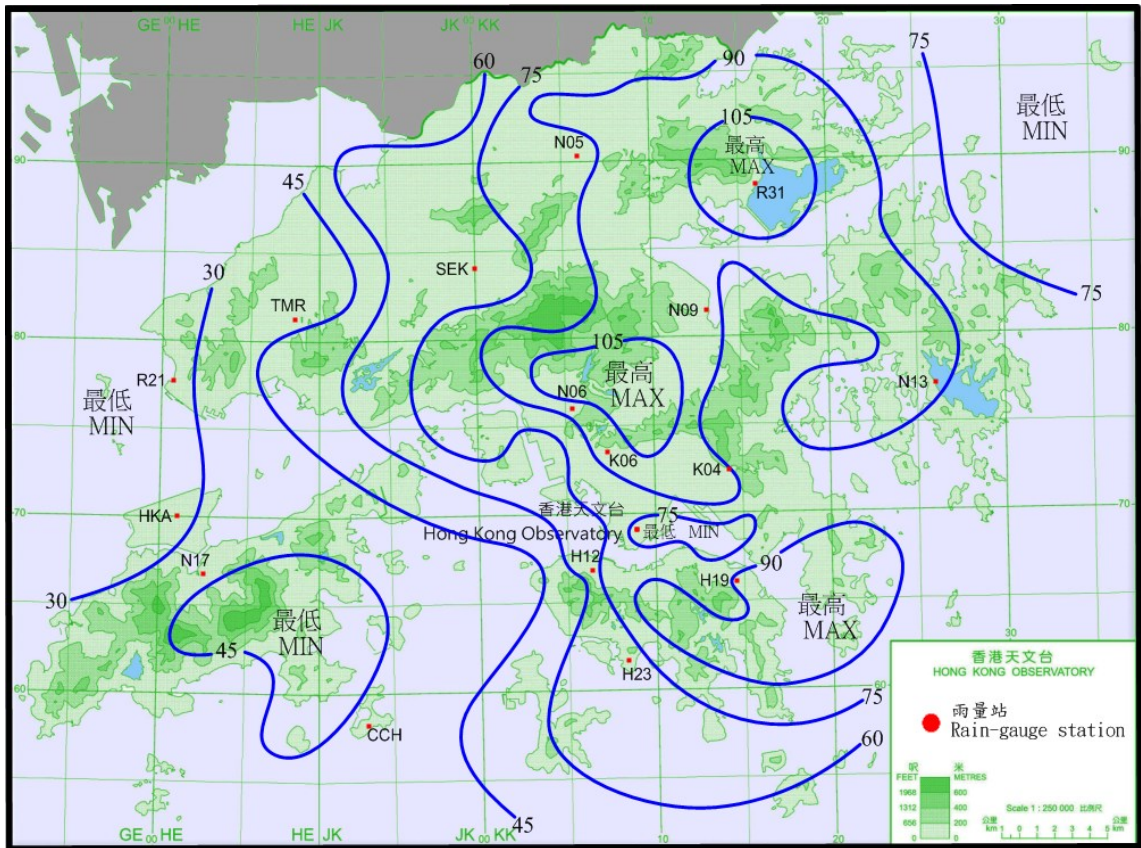


圖 2.4.2 二零一六年十月二十日至二十一日之雨量分佈(等雨量線單位為毫米)。

Fig. 2.4.2 Rainfall distribution on 20 - 21 October 2016 (isohyets in millimetres).

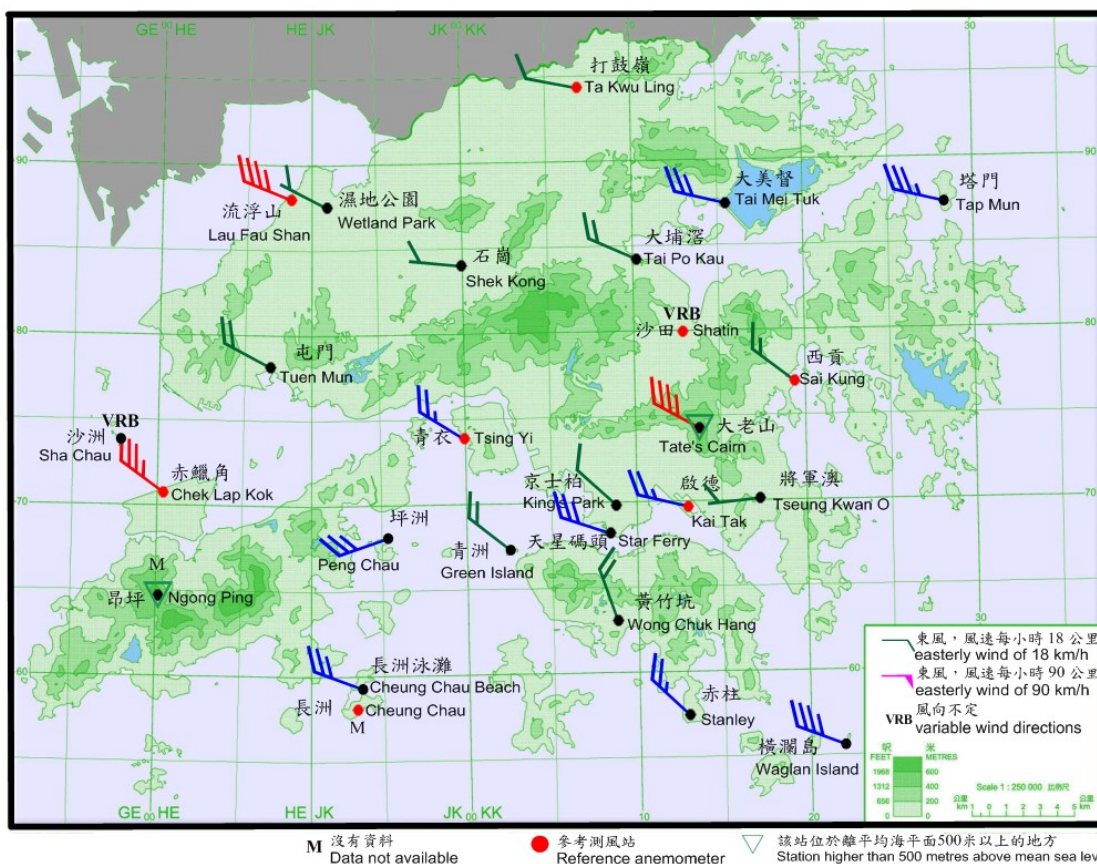


圖 2.4.3 二零一六年十月二十一日上午 11 時香港各站錄得的十分鐘平均風向和風速。當時颱風海馬集結在香港以東約 130 公里。

Fig. 2.4.3 10-minute mean wind direction and speed recorded at various stations in Hong Kong at 11:00 a.m. on 21 October 2016. Typhoon Haima was about 130 km east of Hong Kong at the time.

註： 沙洲及沙田當時錄得的十分鐘平均風速分別為每小時 16 及 23 公里。

Note: The 10-minute mean wind speeds recorded at that time at Sha Chau and Shatin were 16 and 23 km/h respectively.

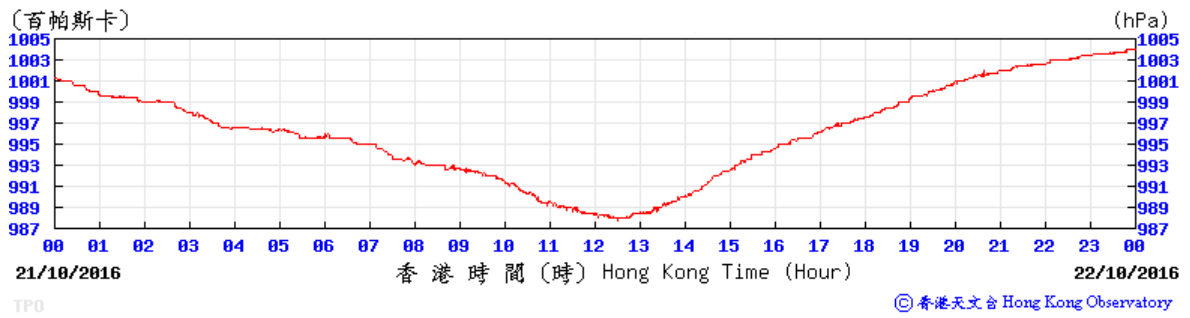
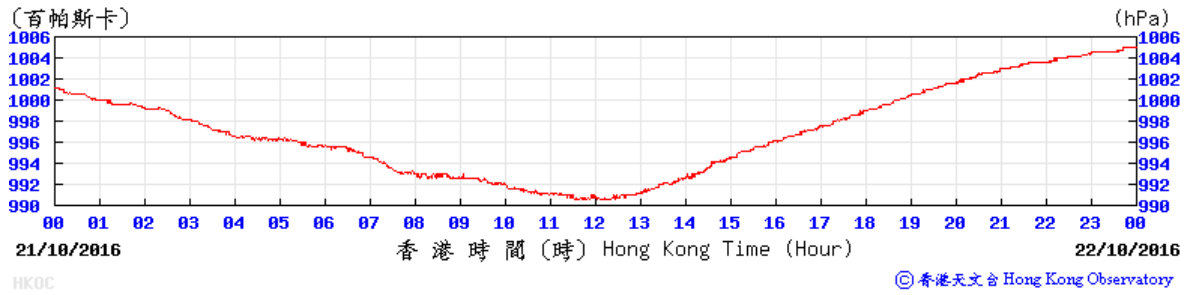


圖 2.4.4 二零一六年十月二十一日天文台總部(上圖)及大埔(下圖)錄得的海平面氣壓。

Fig. 2.4.4 Traces of mean sea-level pressure recorded at the Observatory Headquarters (top panel) and Tai Po (bottom panel) on 21 October 2016.

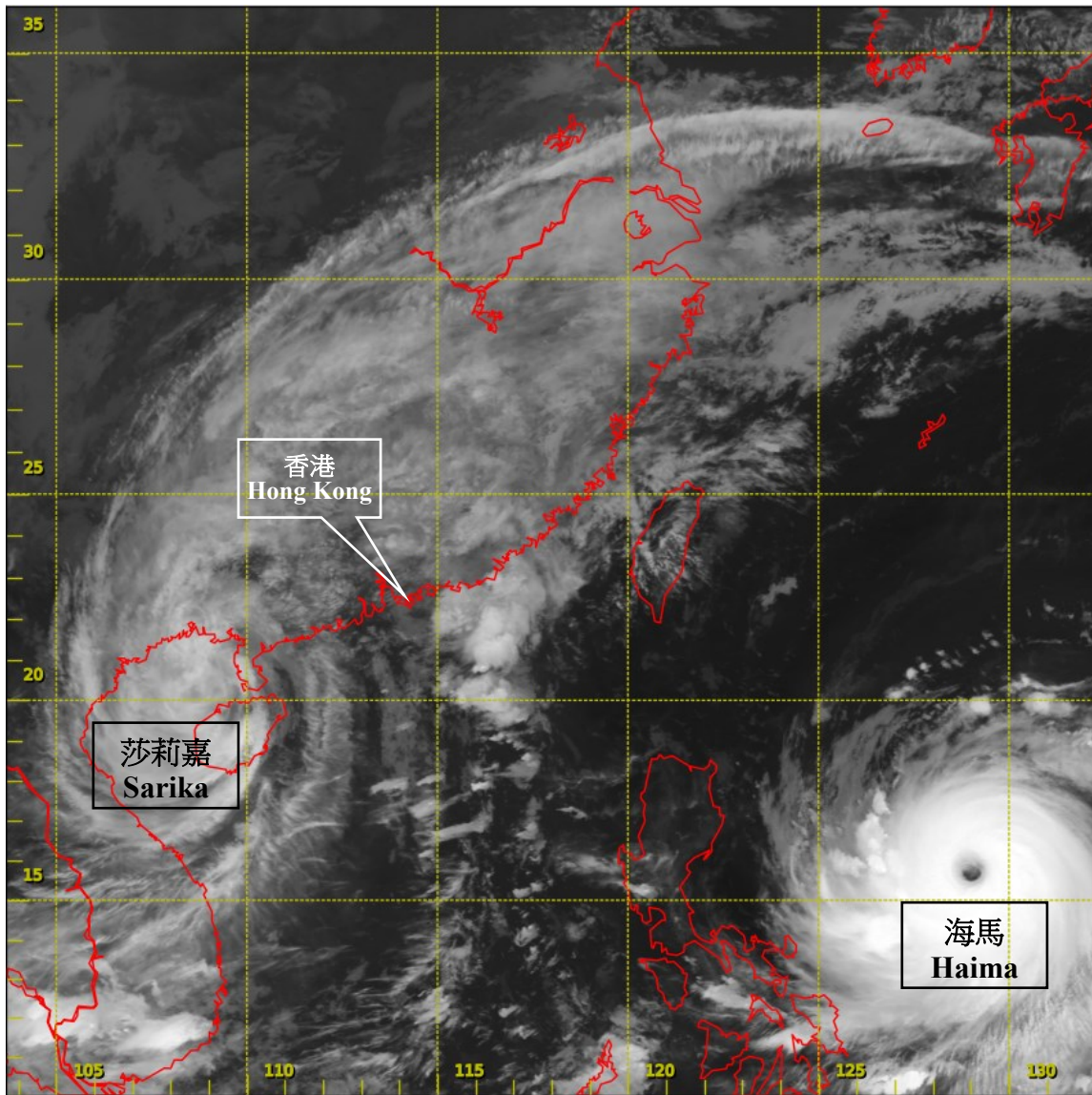


圖 2.4.5a 二零一六年十月十八日晚上 8 時左右的紅外線衛星圖片，當時海馬達到其最高強度，中心附近最高持續風速估計為每小時 230 公里。同時，強烈熱帶風暴莎莉嘉正橫過北部灣。

[此衛星圖像接收自日本氣象廳的向日葵 8 號衛星。]

Fig. 2.4.5a Infra-red satellite imagery around 8 p.m. on 18 October 2016, when Haima was at peak intensity with estimated maximum sustained winds of 230 km/h near its centre. Meanwhile, Severe Tropical Storm Sarika was moving across Beibu Wan.

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

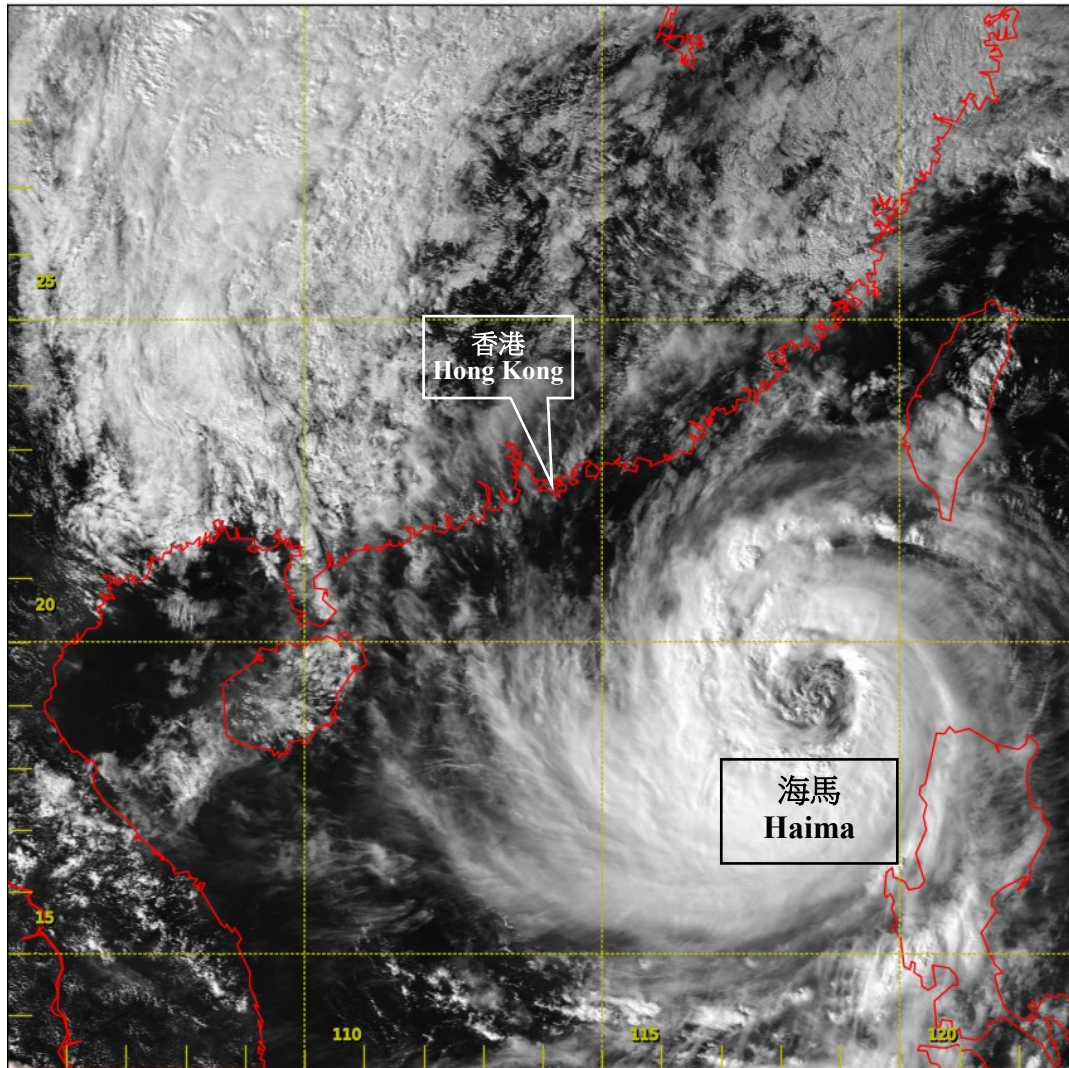


圖 2.4.5b 二零一六年十月二十日下午 3 時左右的可見光衛星圖片，海馬直徑約 130 公里的風眼清晰可見。

〔此衛星圖像接收自日本氣象廳的向日葵 8 號衛星。〕

Fig. 2.4.5b Visible satellite imagery around 3 p.m. on 20 October 2016, showing clearly the eye of Haima with a diameter of about 130 km. [The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

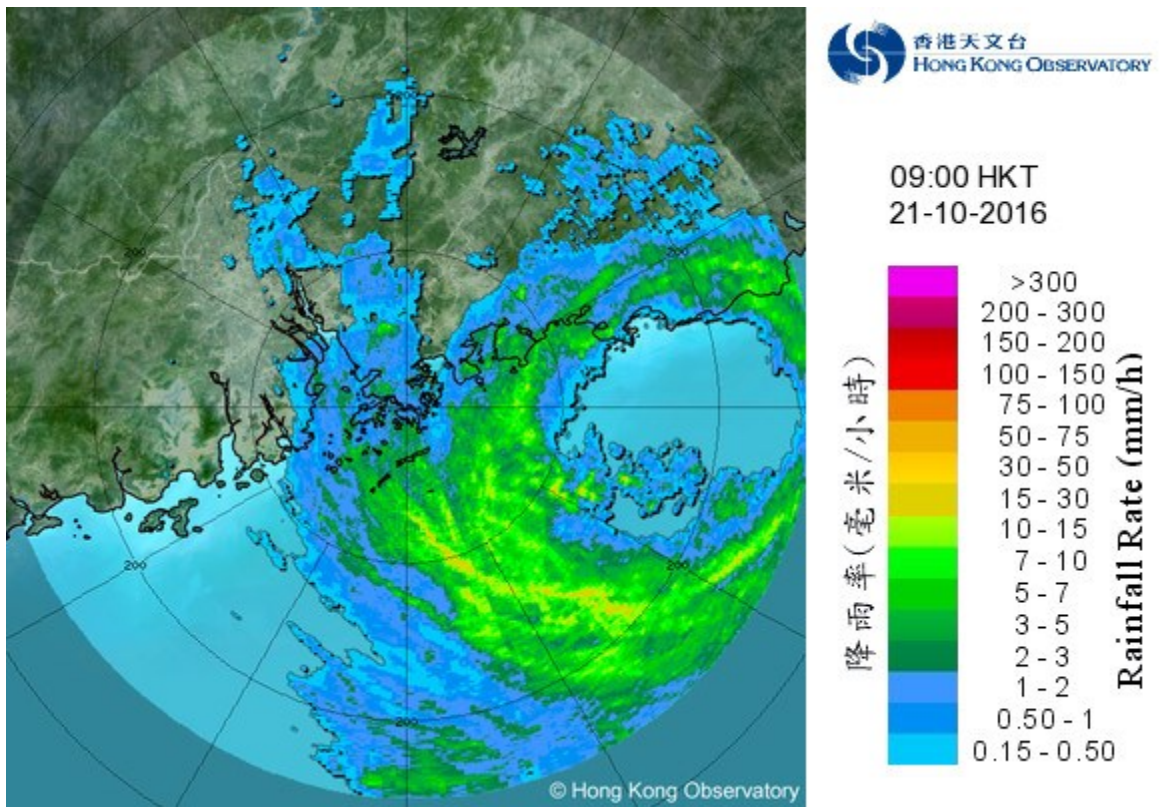


圖 2.4.6a 二零一六年十月二十一日早上 9 時正的雷達回波圖像，海馬擴張的風眼位於香港以東。

Fig. 2.4.6a Image of radar echoes at 9 a.m. on 21 October 2016, with the enlarged eye of Haima located east of Hong Kong.

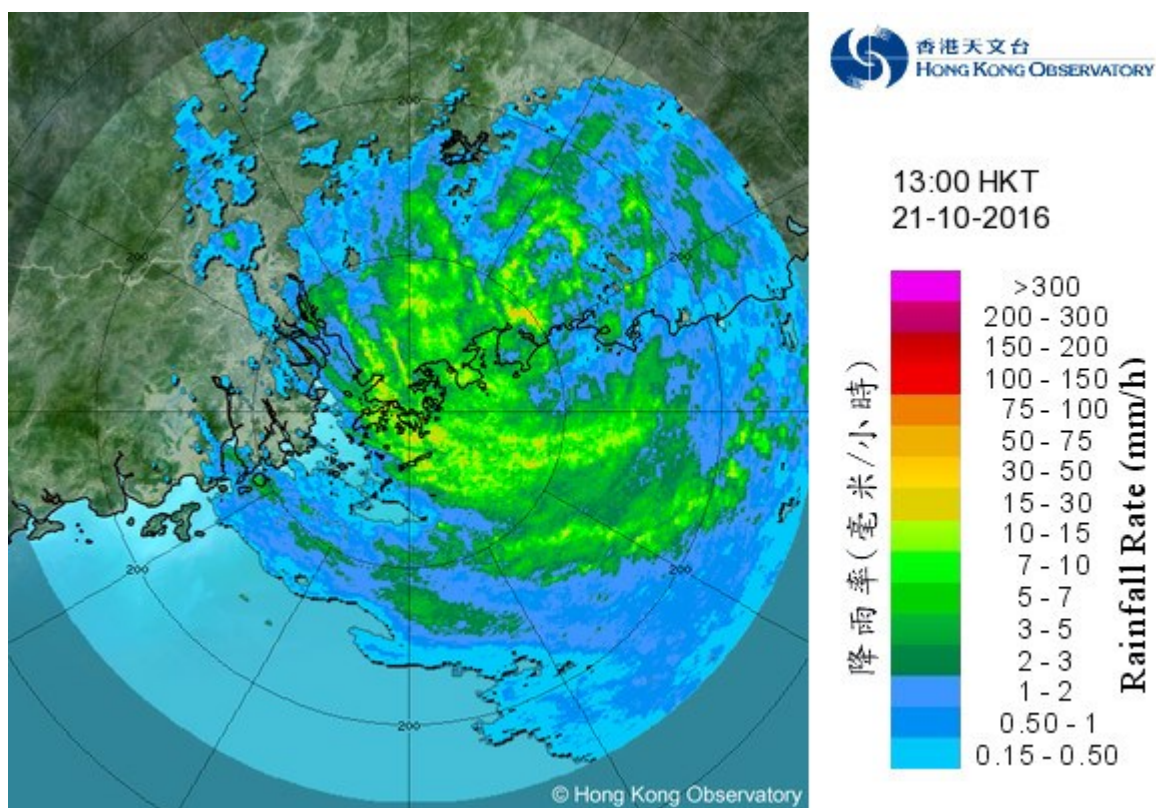


圖 2.4.6b 二零一六年十月二十一日下午 1 時正的雷達回波圖像。當時海馬最接近香港，其中心在本港之東北偏東約 110 公里。海馬的強烈雨帶亦正影響香港。

Fig. 2.4.6b Image of radar echoes at 1 p.m. on 21 October 2016 when Haima was closest to Hong Kong with its centre about 110 km east-northeast of the territory. Hong Kong was also under the influence of the intense rainbands of Haima at the time.

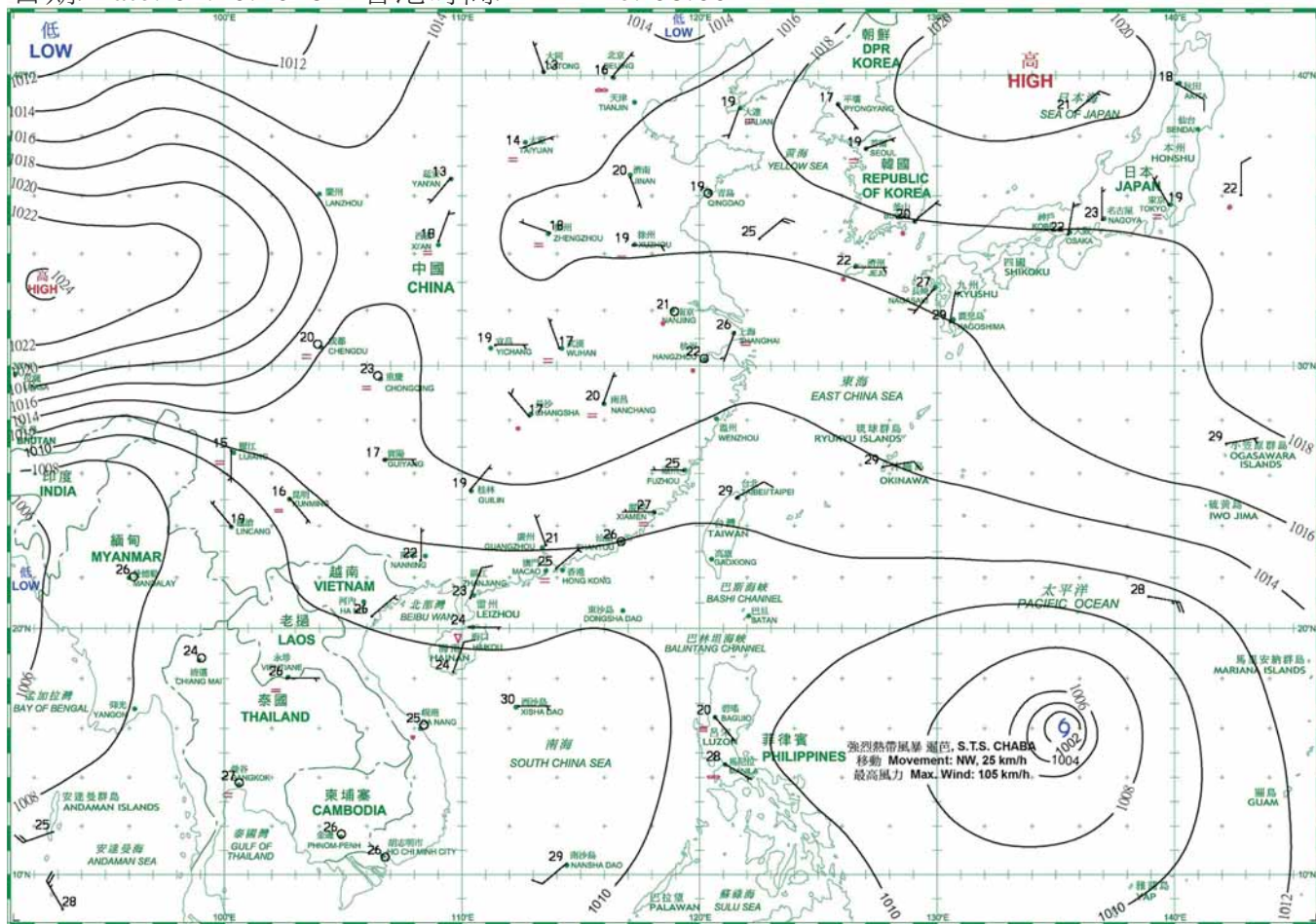


圖 2.4.7 荔枝角消防局附近有樹木被吹倒。(照片由市民提供)

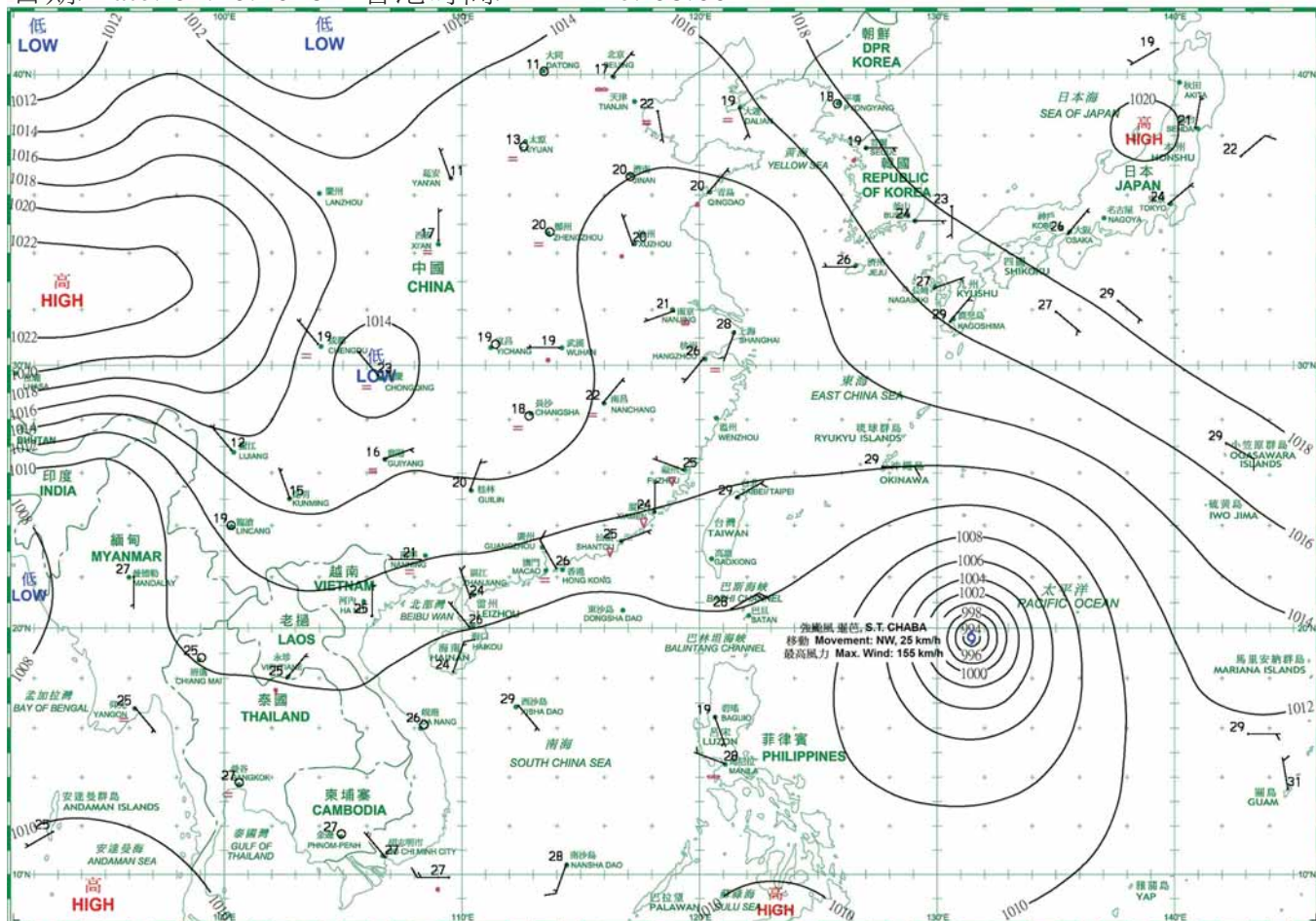
Fig. 2.4.7 Trees blown down near Lai Chi Kok Fire Station. (Photo provided by member of the public)

3. 二零一六年十月每日天氣圖 Daily Weather Maps for October 2016

日期/Date: 01.10.2016 香港時間/HK Time: 08:00

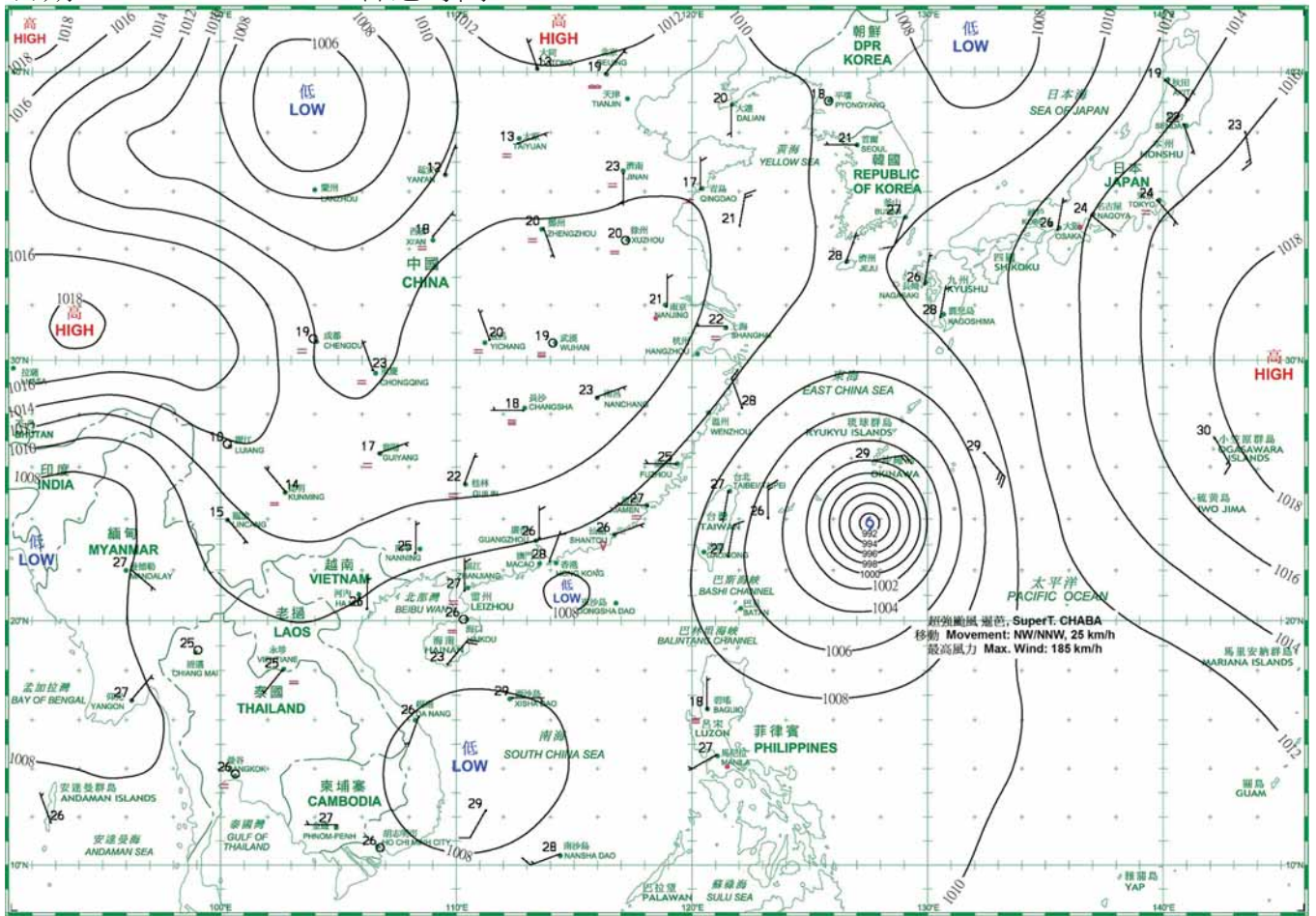


日期/Date: 02.10.2016 香港時間/HK Time: 08:00

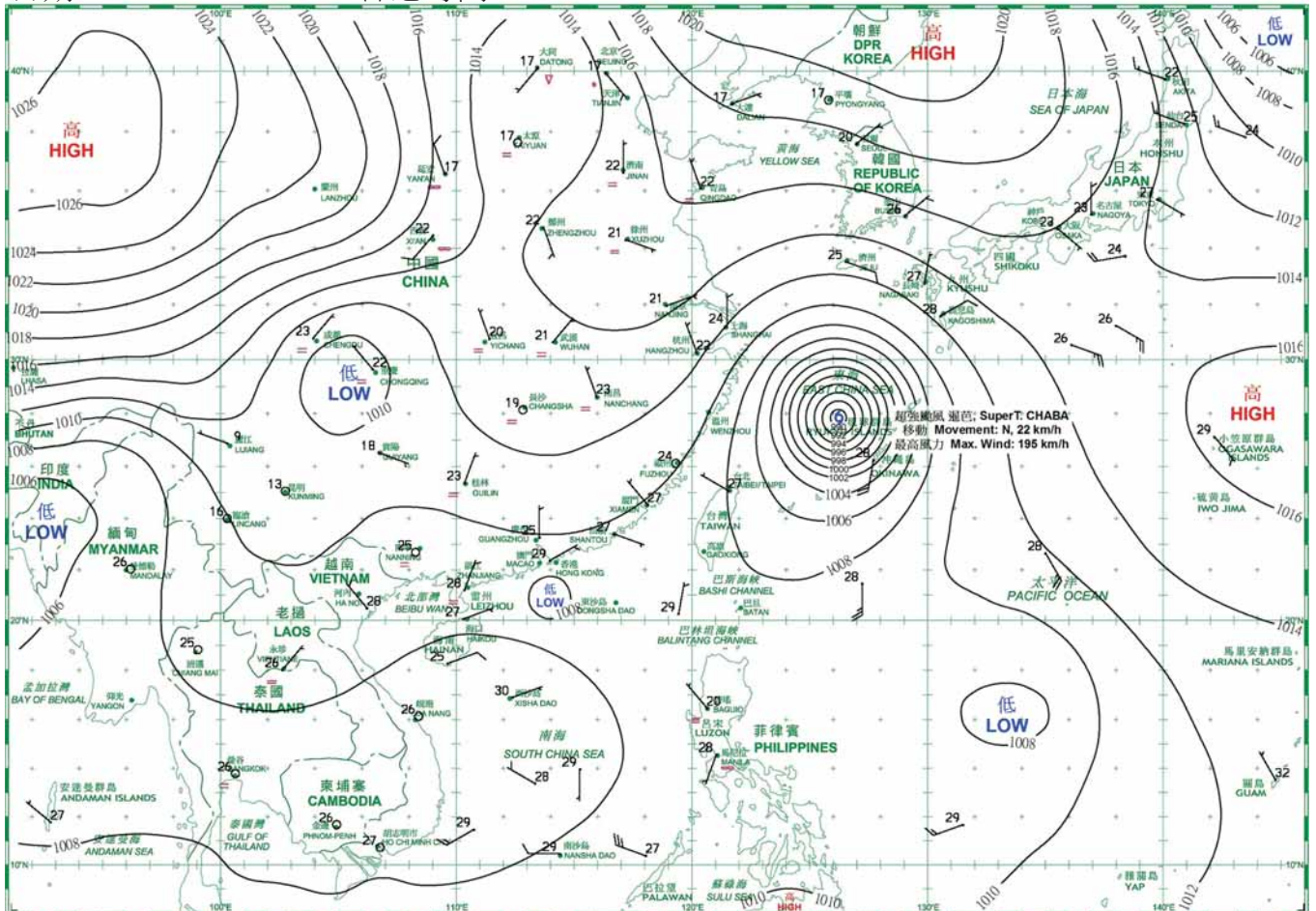


- 等壓線 Isobar(hPa)
- 暖鋒 Warm Front
- 靜止鋒 Stationary Front
- 消散中的冷鋒 Dissipating Cold Front
- 冷鋒 Cold Front
- 錮囚鋒 Occlusion
- 槽軸 (線) Axis of Trough
- 熱帶氣旋中心 Centre of Tropical Cyclone

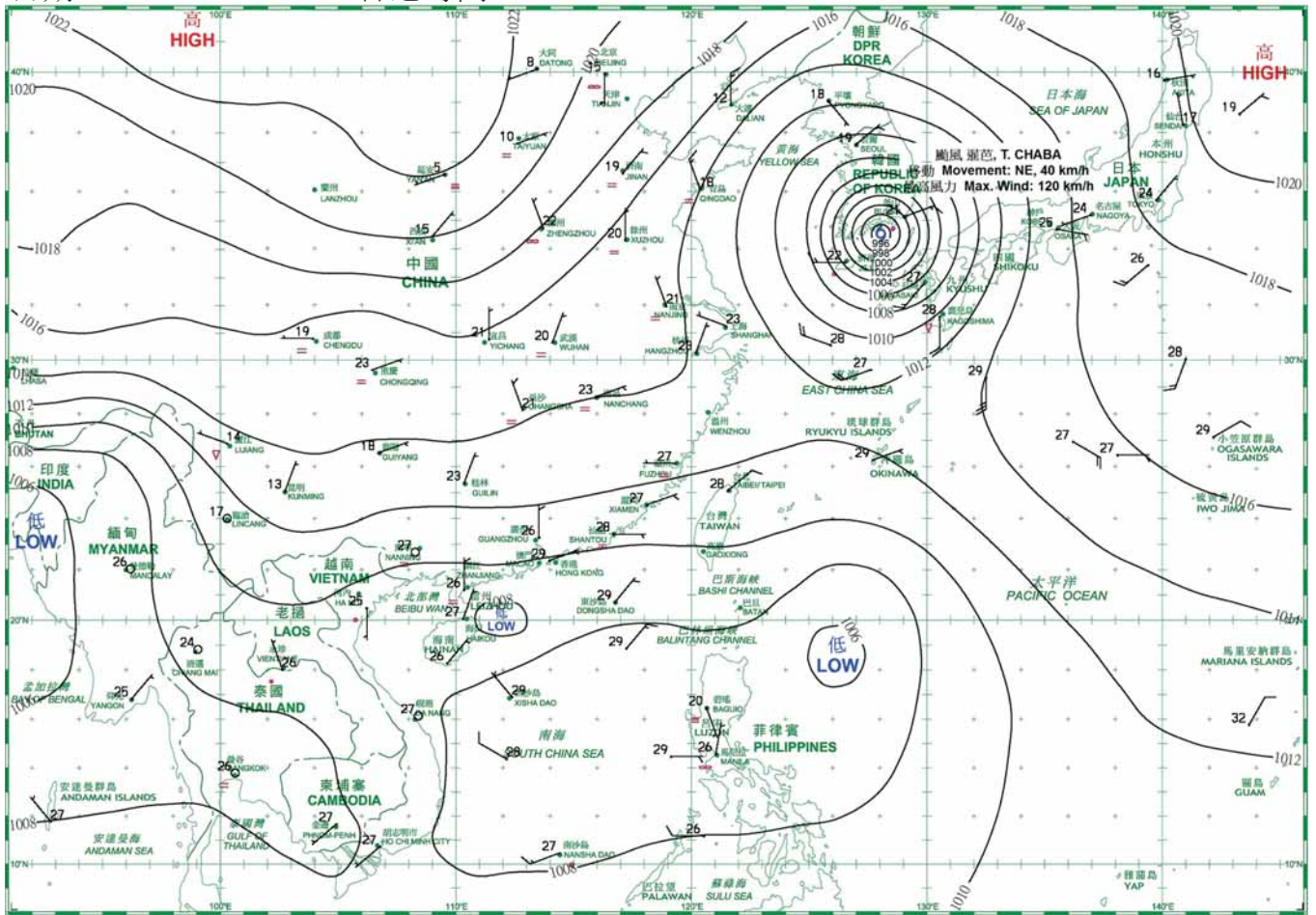
日期/Date: 03.10.2016 香港時間/HK Time: 08:00



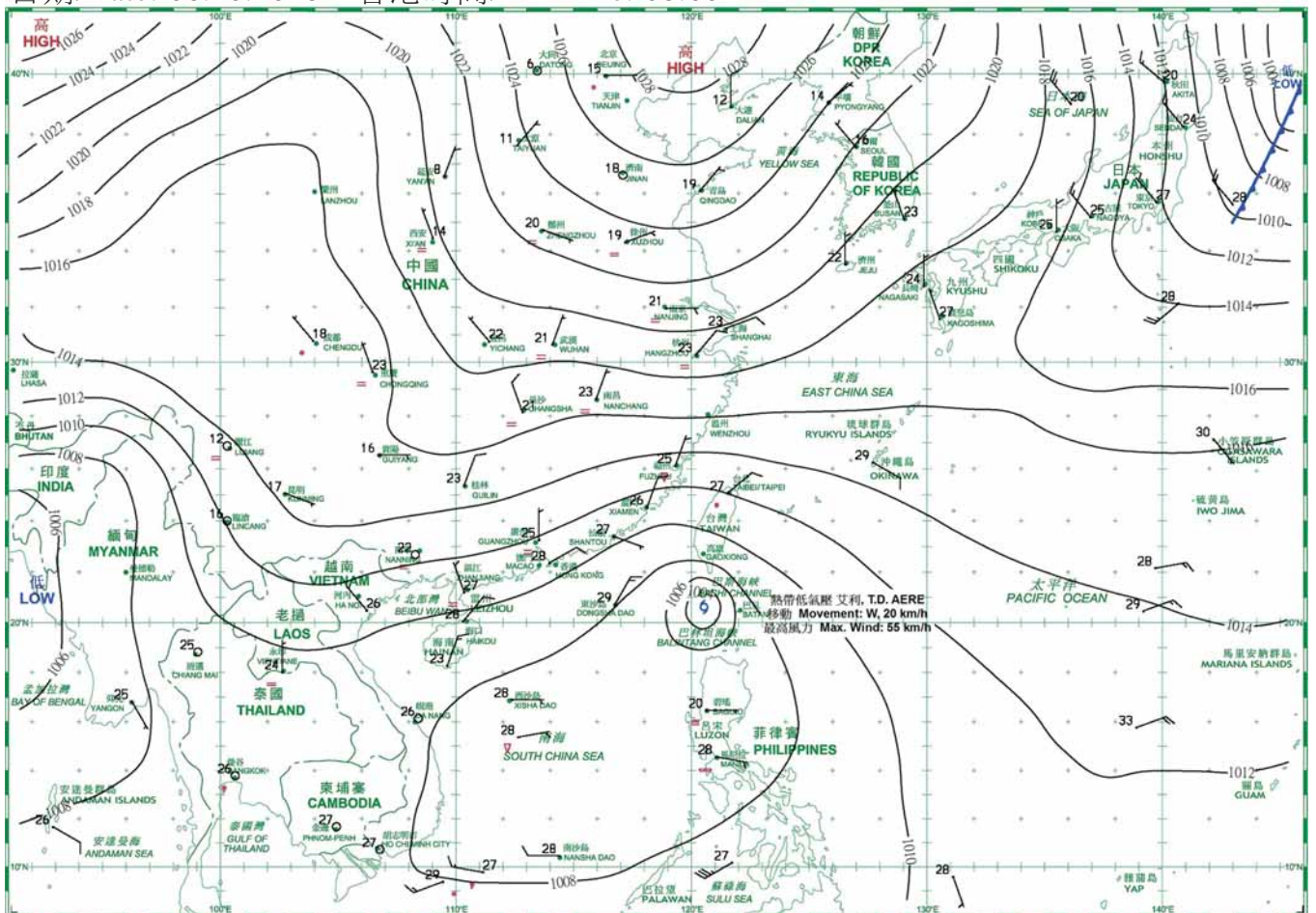
日期/Date: 04.10.2016 香港時間/HK Time: 08:00



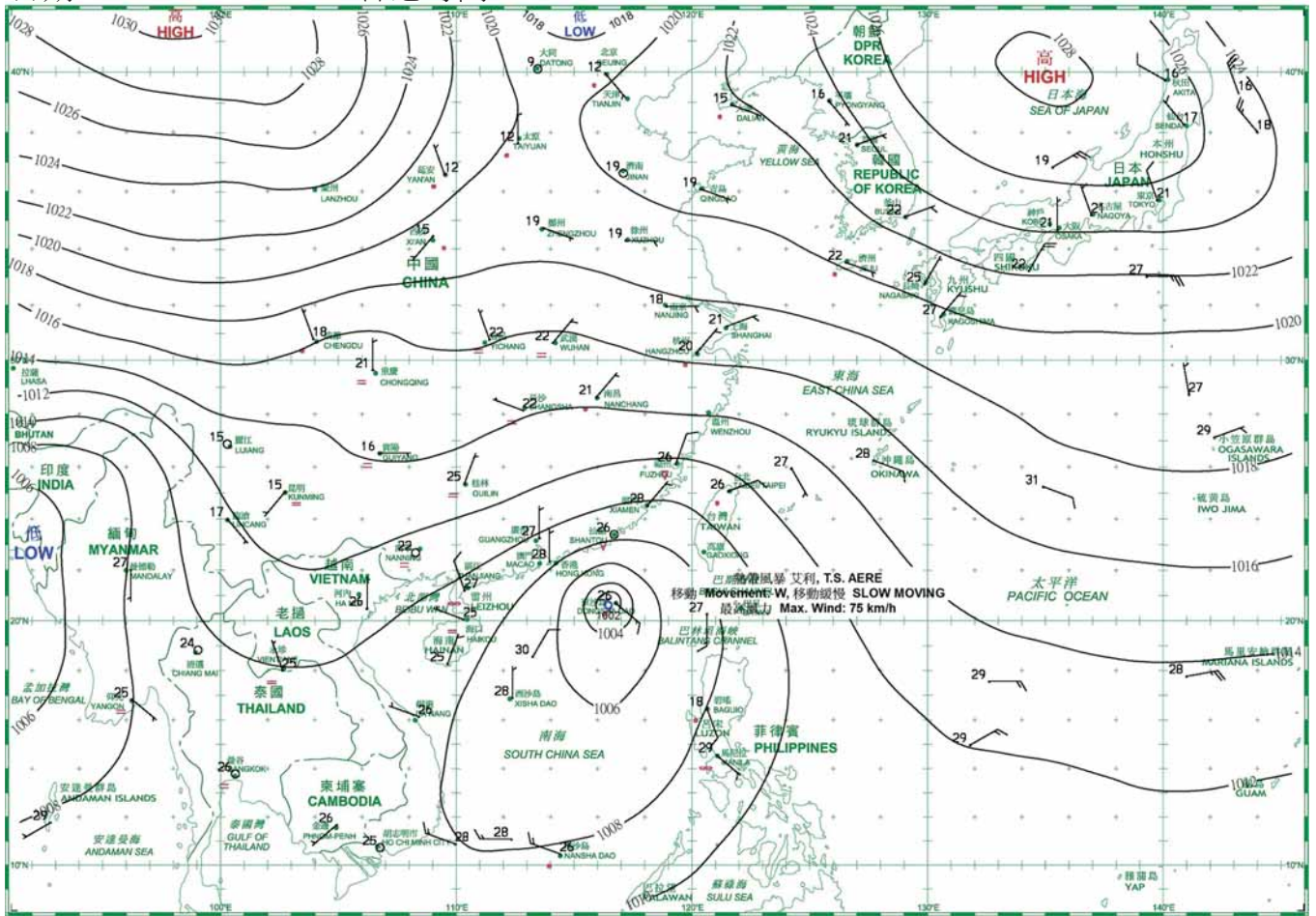
日期/Date: 05.10.2016 香港時間/HK Time: 08:00



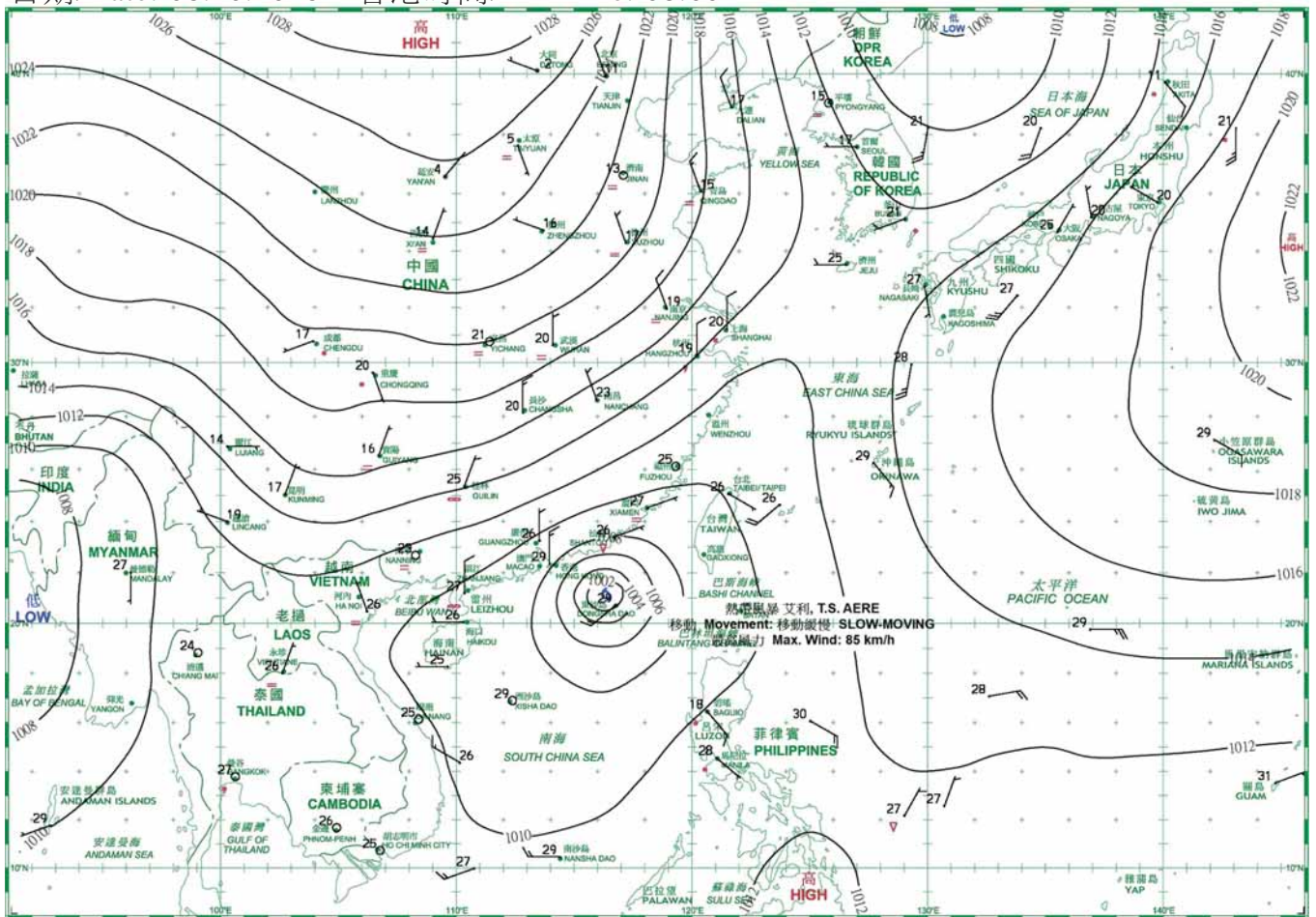
日期/Date: 06.10.2016 香港時間/HK Time: 08:00



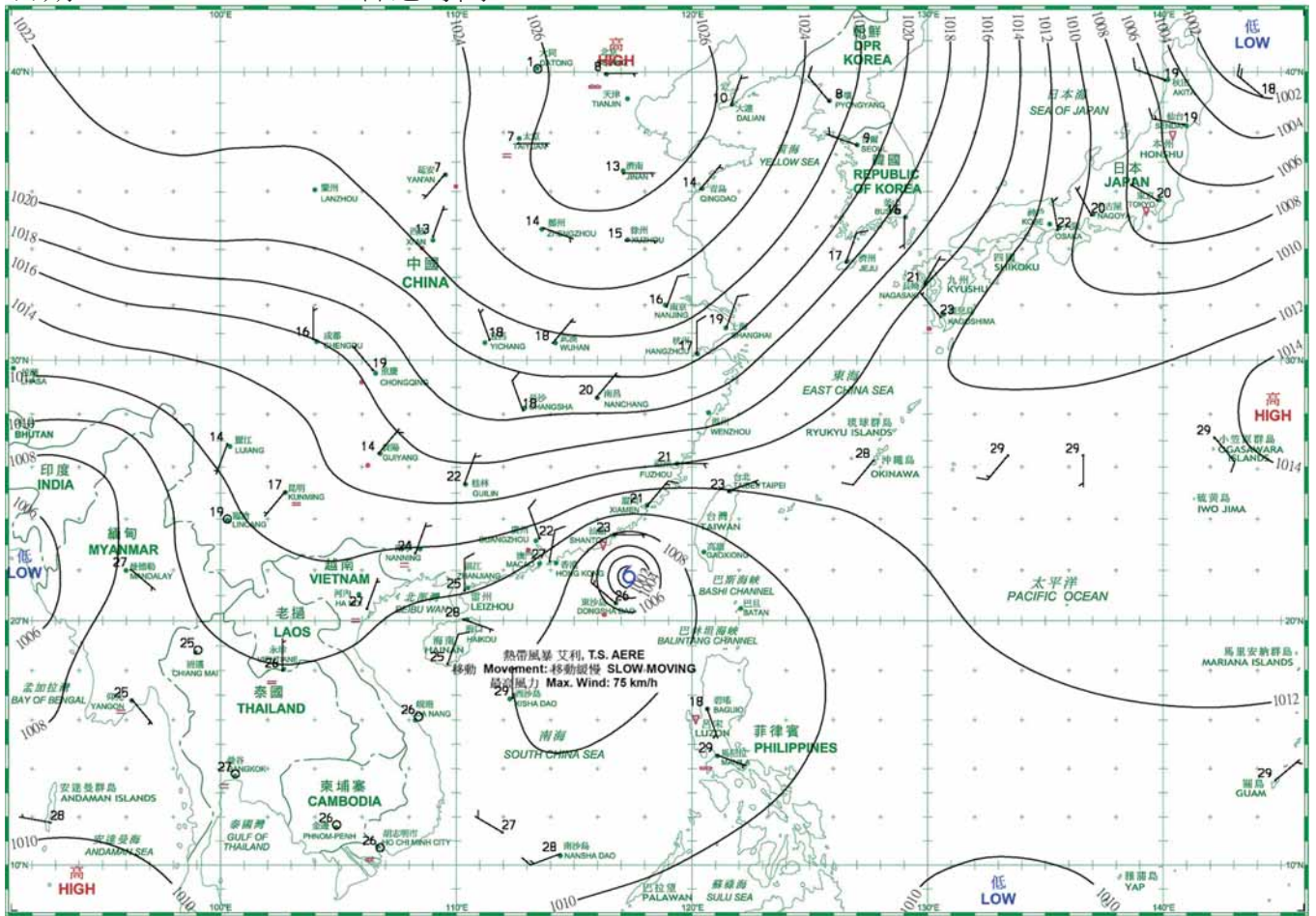
日期/Date: 07.10.2016 香港時間/HK Time: 08:00



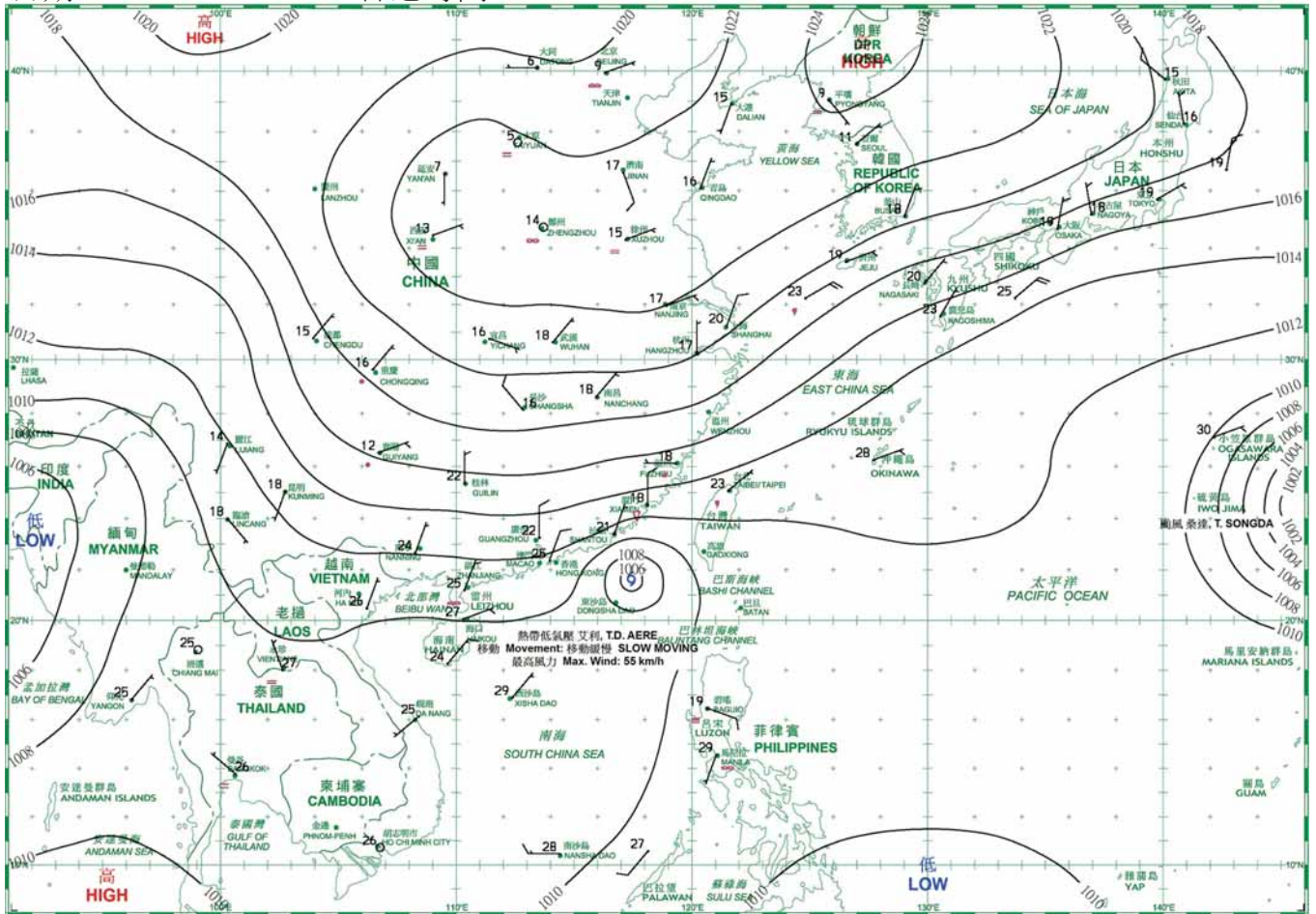
日期/Date: 08.10.2016 香港時間/HK Time: 08:00



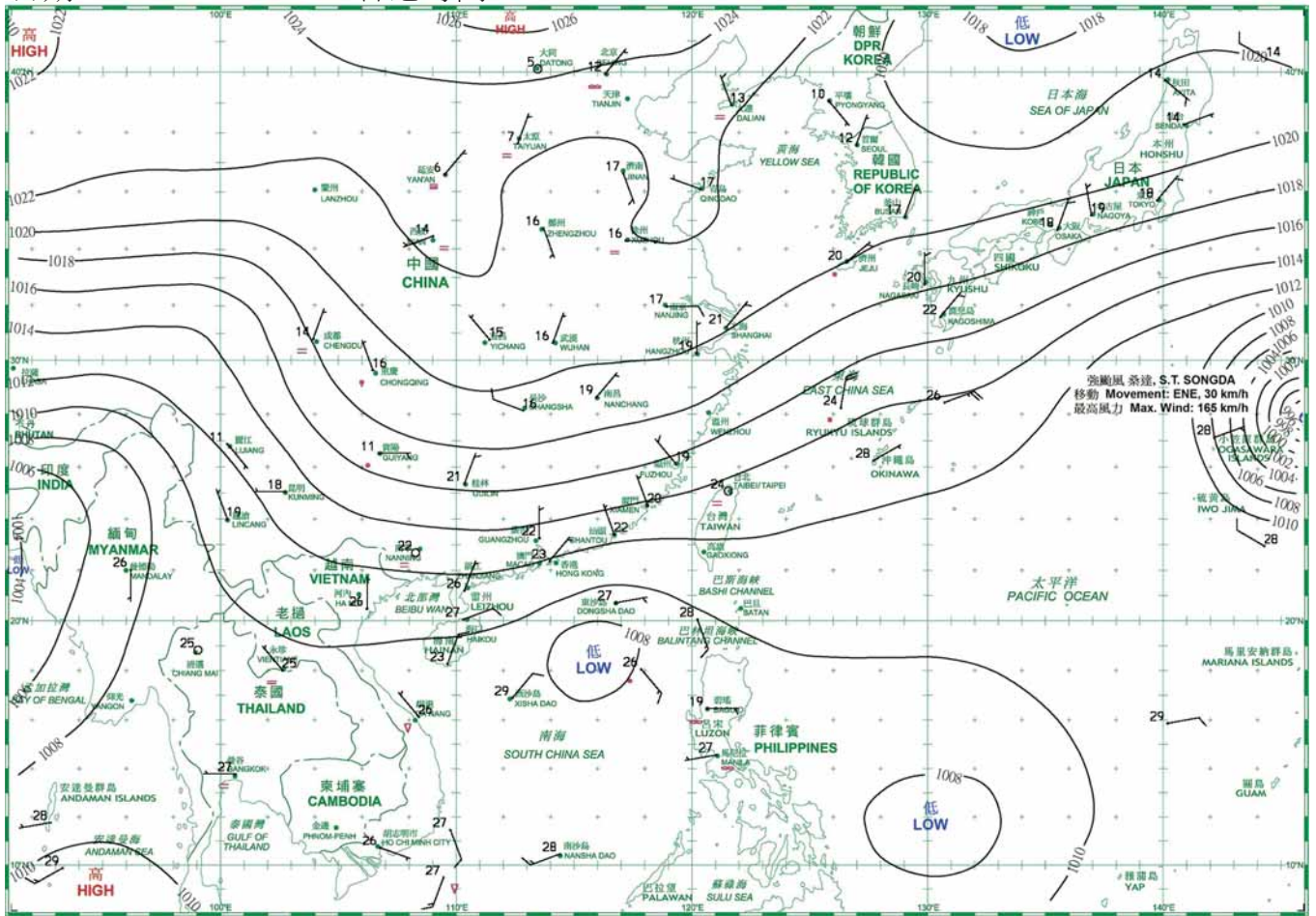
日期/Date: 09.10.2016 香港時間/HK Time: 08:00



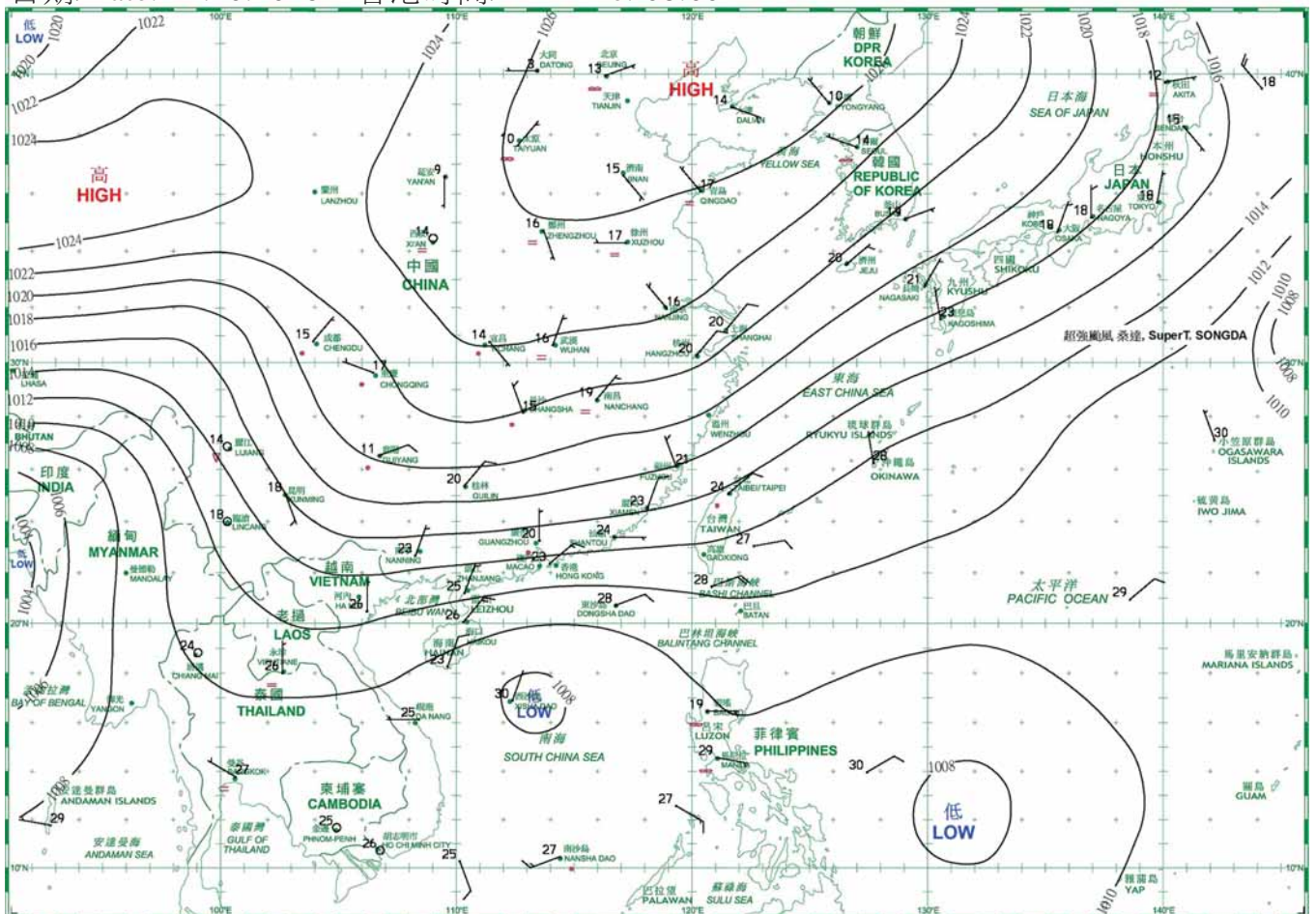
日期/Date: 10.10.2016 香港時間/HK Time: 08:00



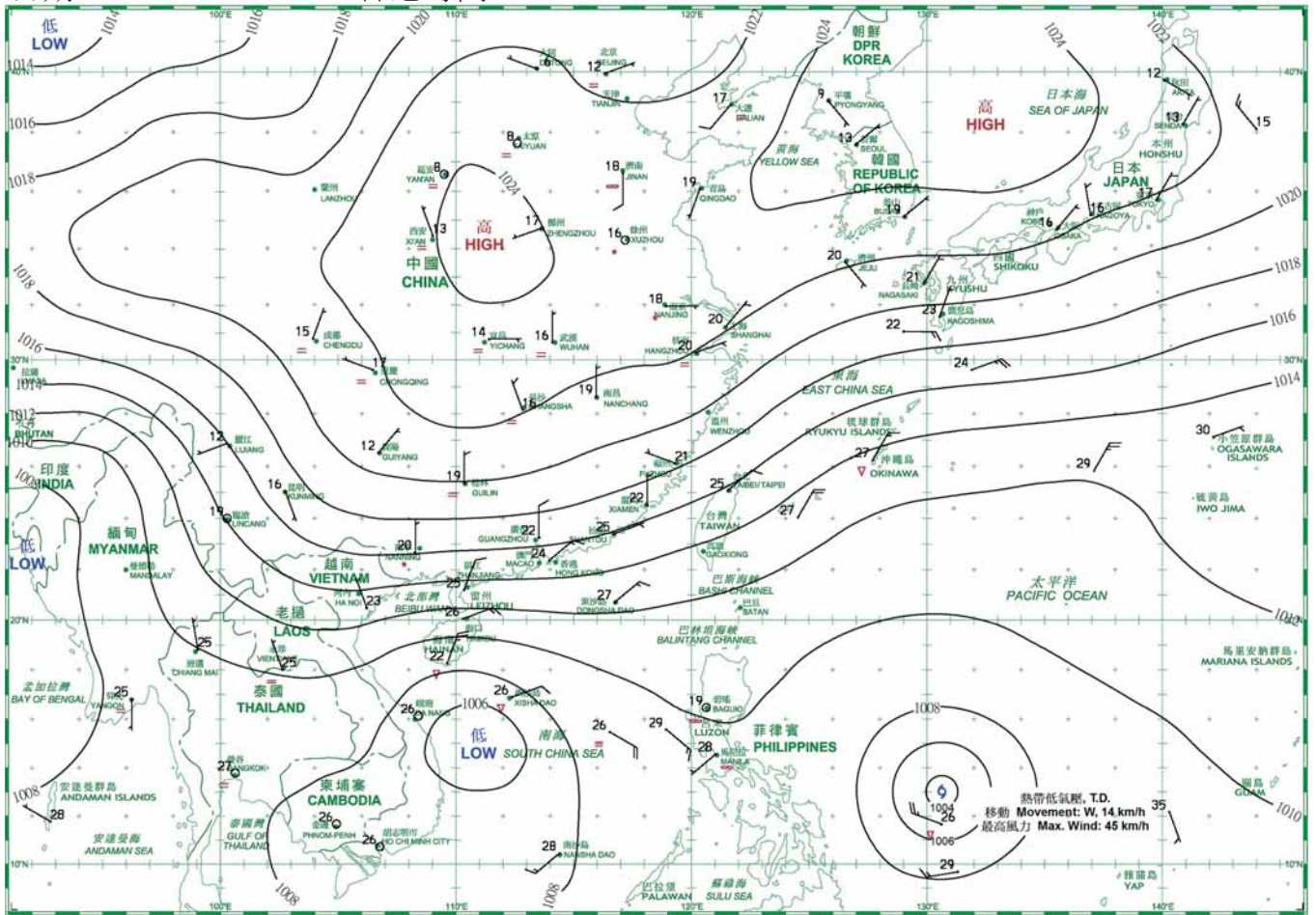
日期/Date: 11.10.2016 香港時間/HK Time: 08:00



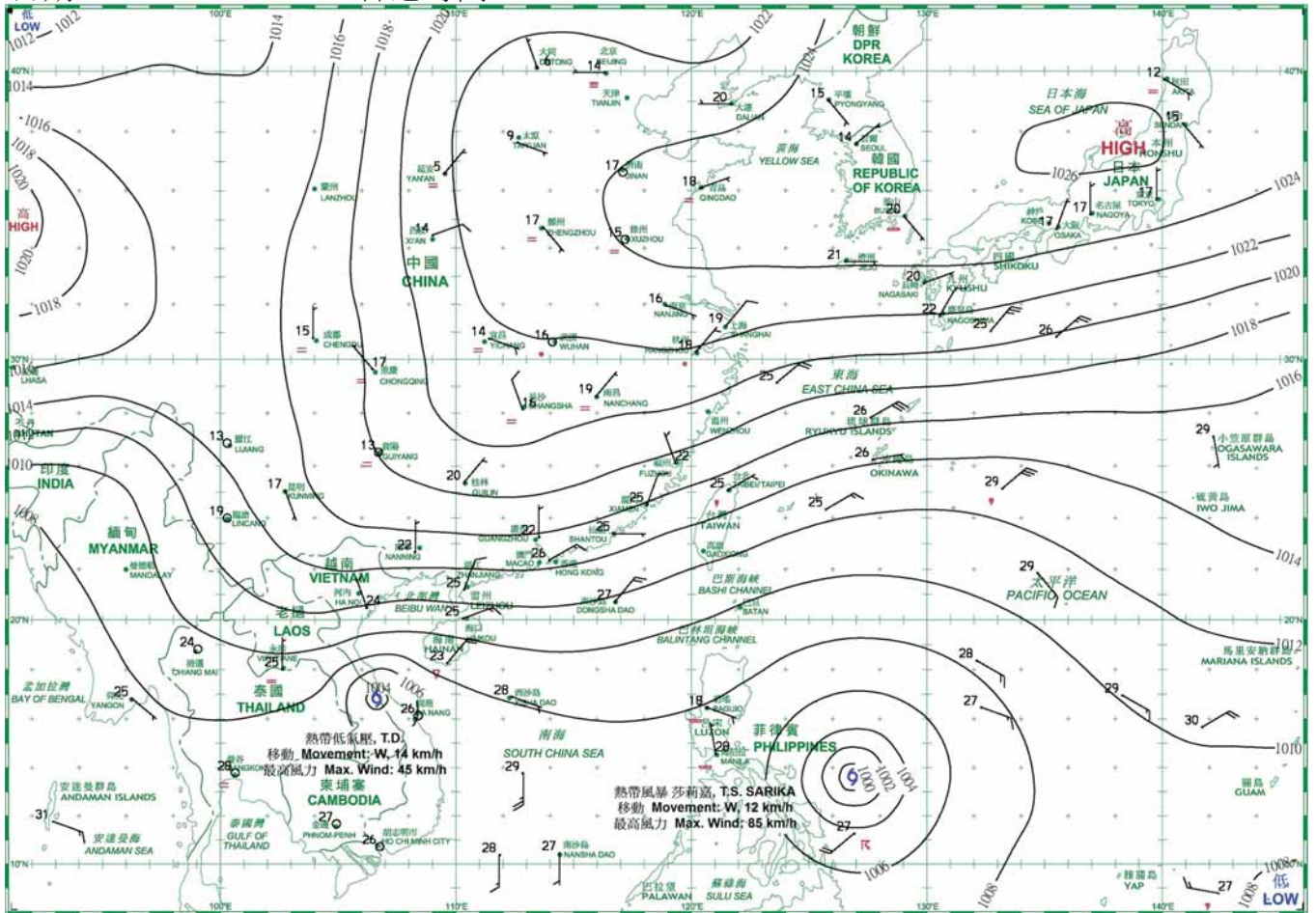
日期/Date: 12.10.2016 香港時間/HK Time: 08:00



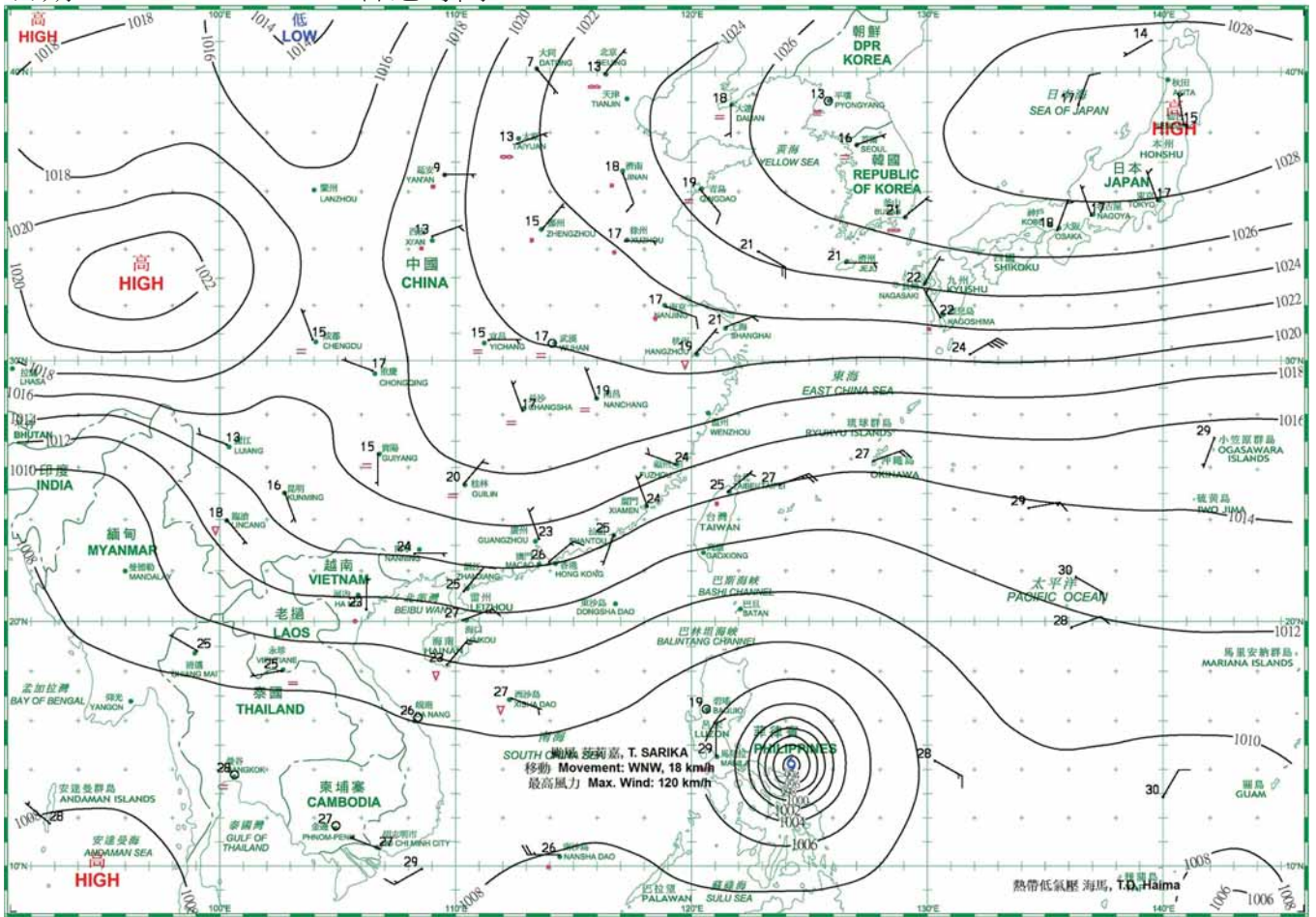
日期/Date: 13.10.2016 香港時間/HK Time: 08:00



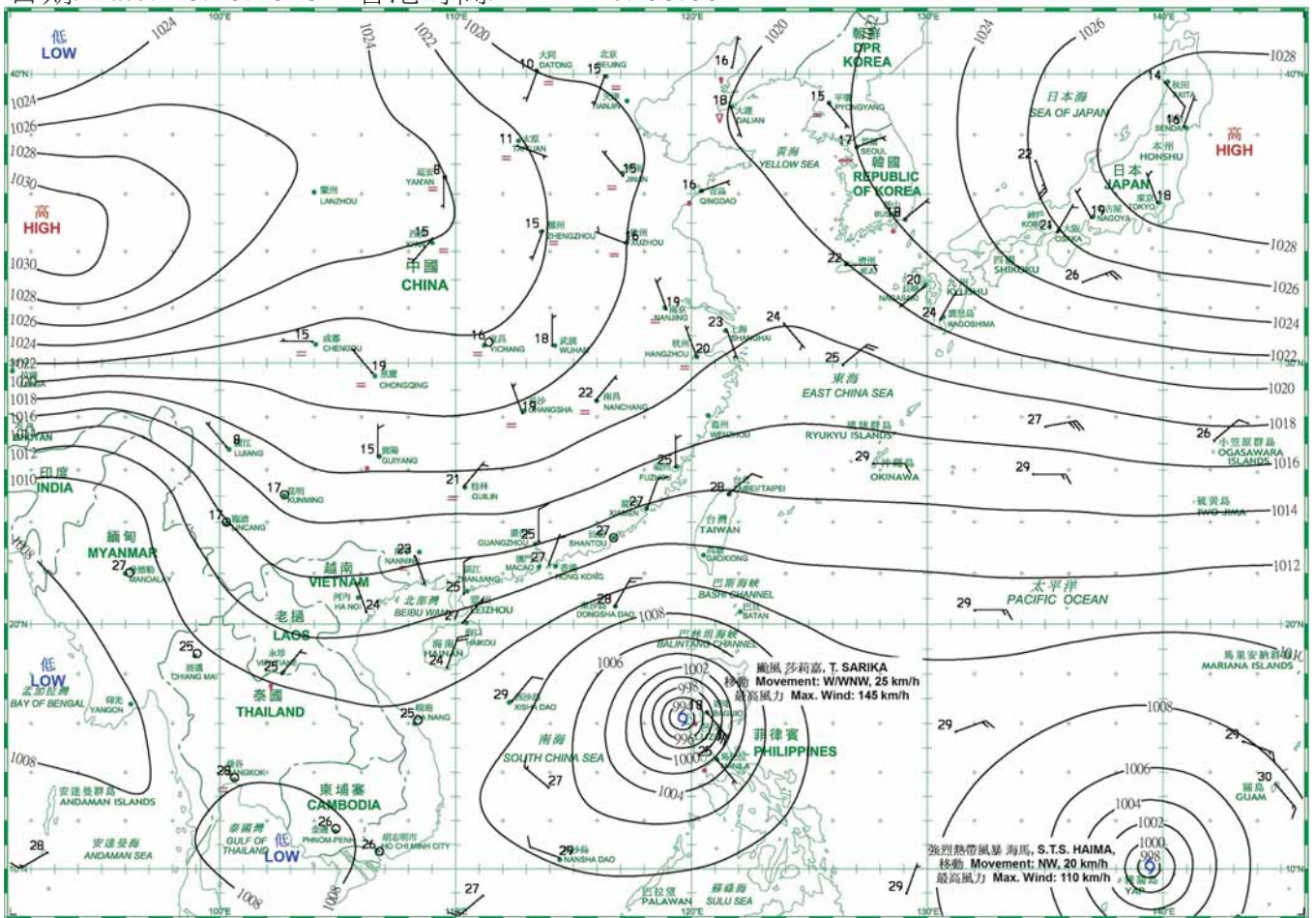
日期/Date: 14.10.2016 香港時間/HK Time: 08:00



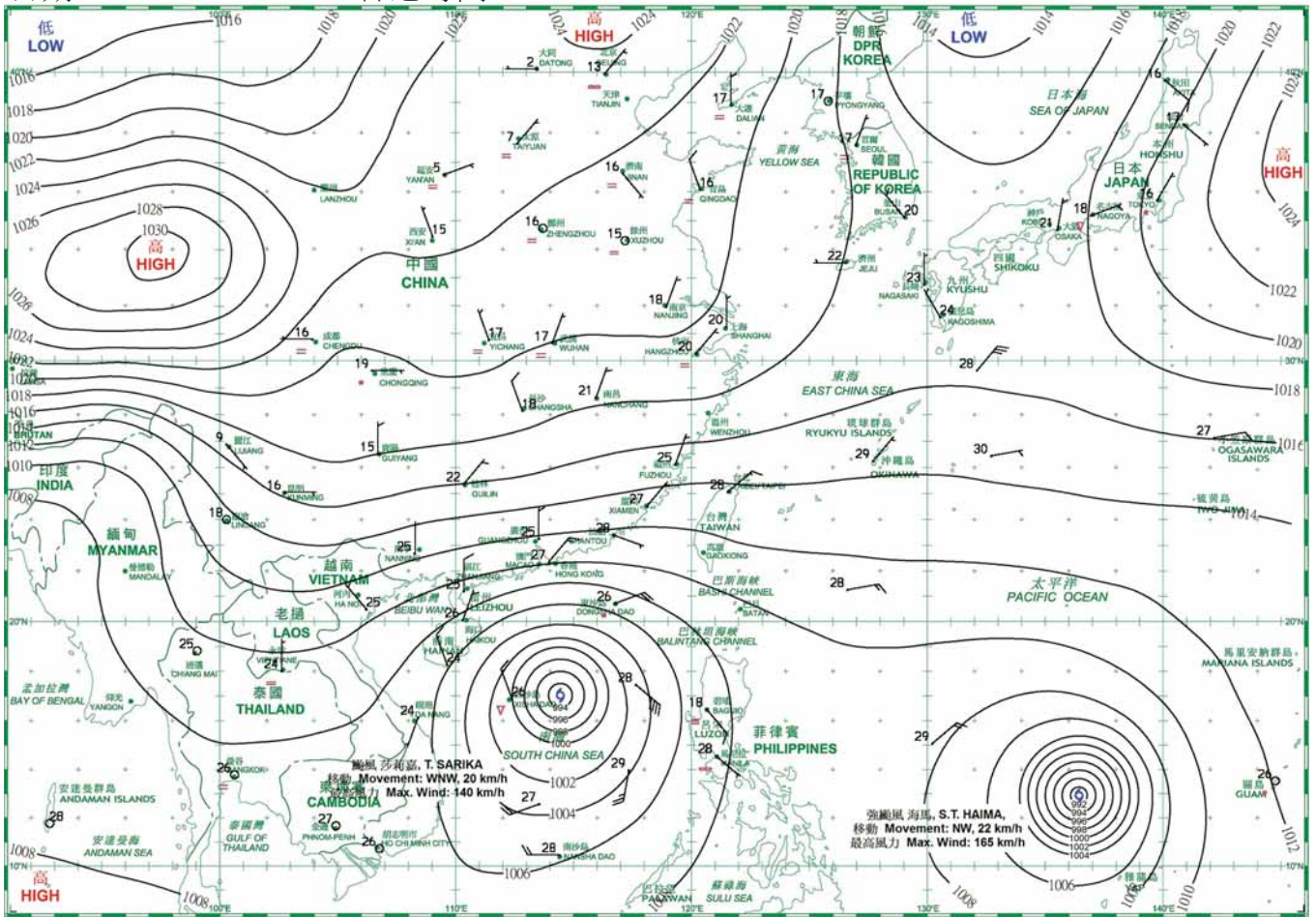
日期/Date: 15.10.2016 香港時間/HK Time: 08:00



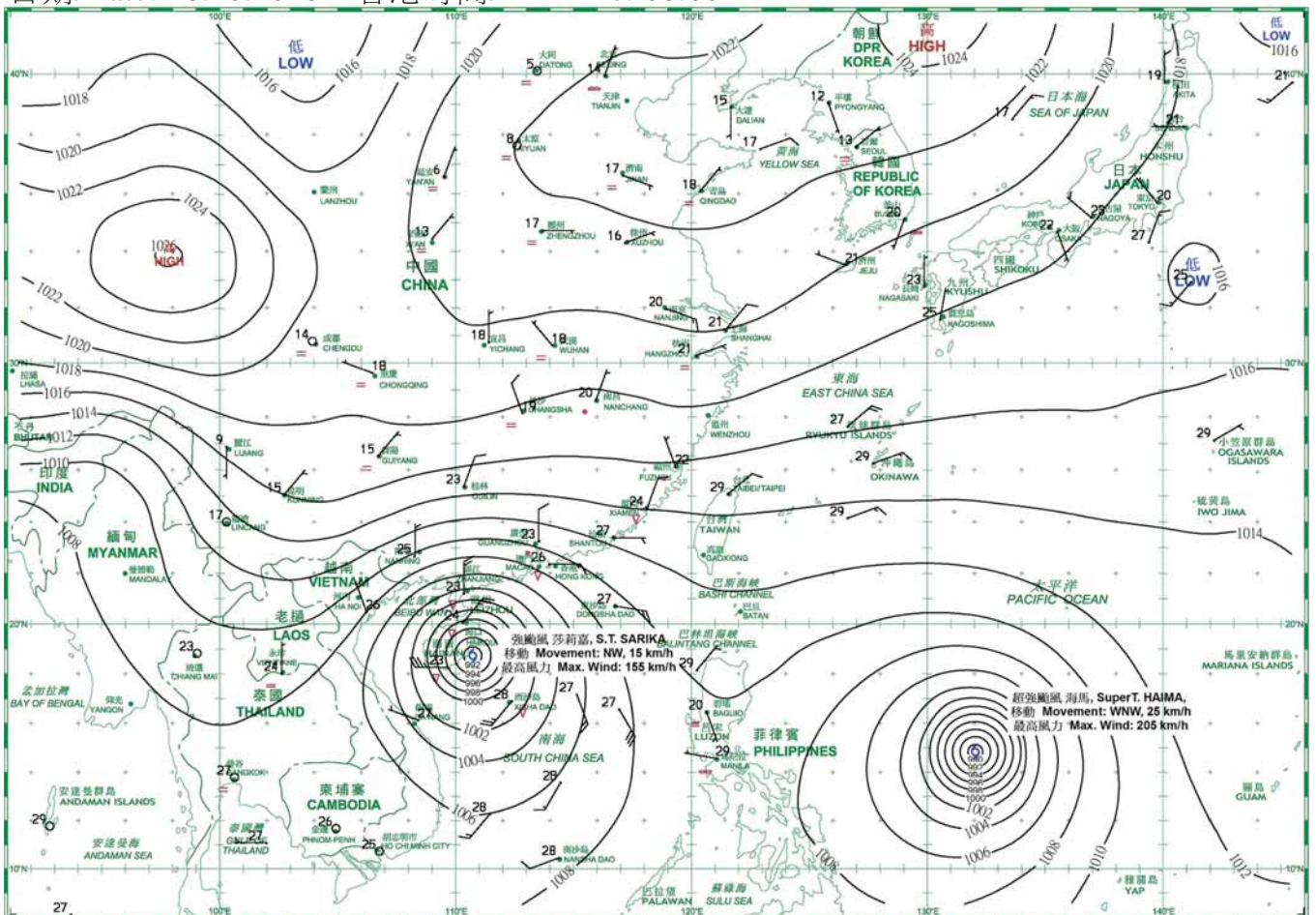
日期/Date: 16.10.2016 香港時間/HK Time: 08:00



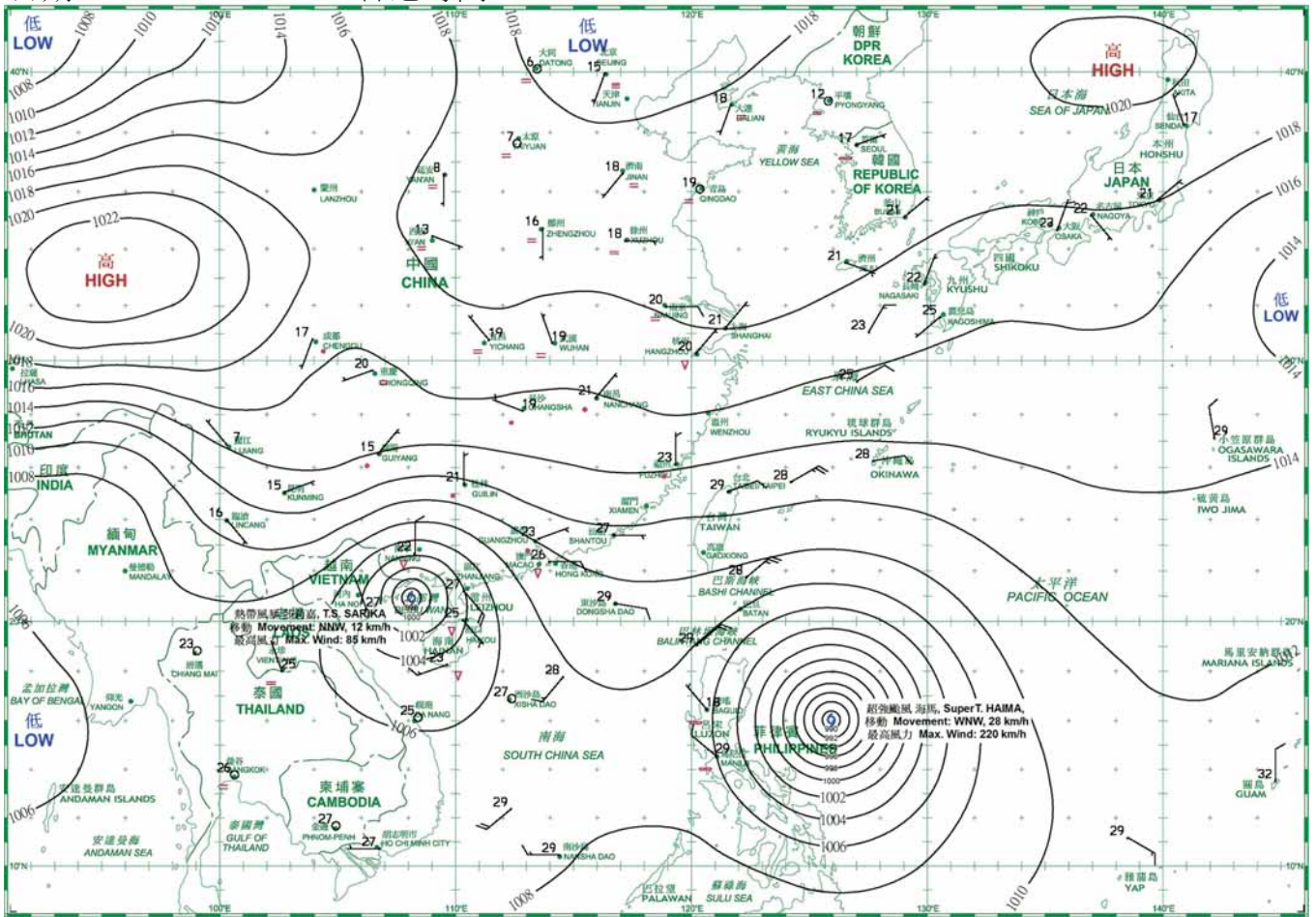
日期/Date: 17.10.2016 香港時間/HK Time: 08:00



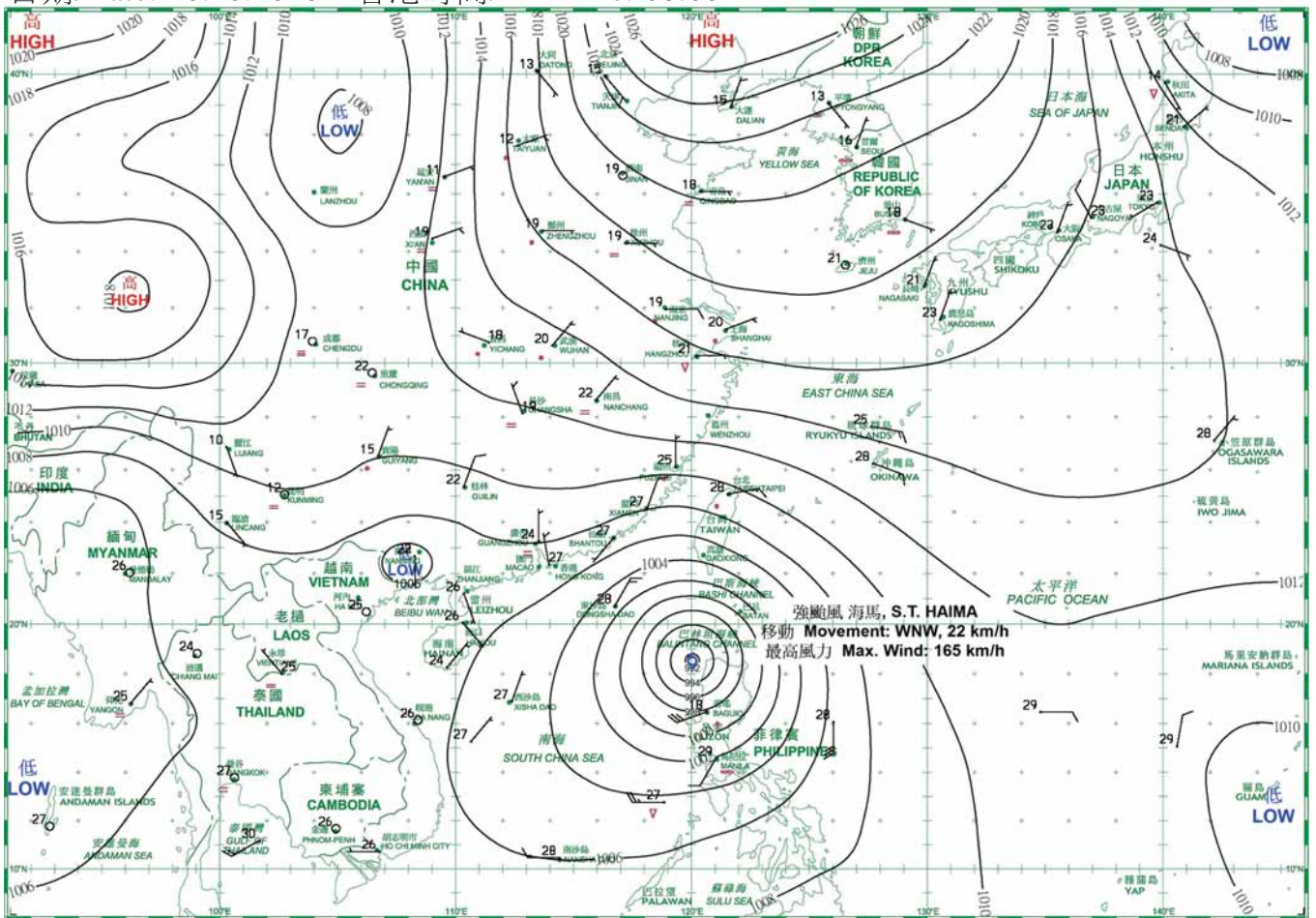
日期/Date: 18.10.2016 香港時間/HK Time: 08:00



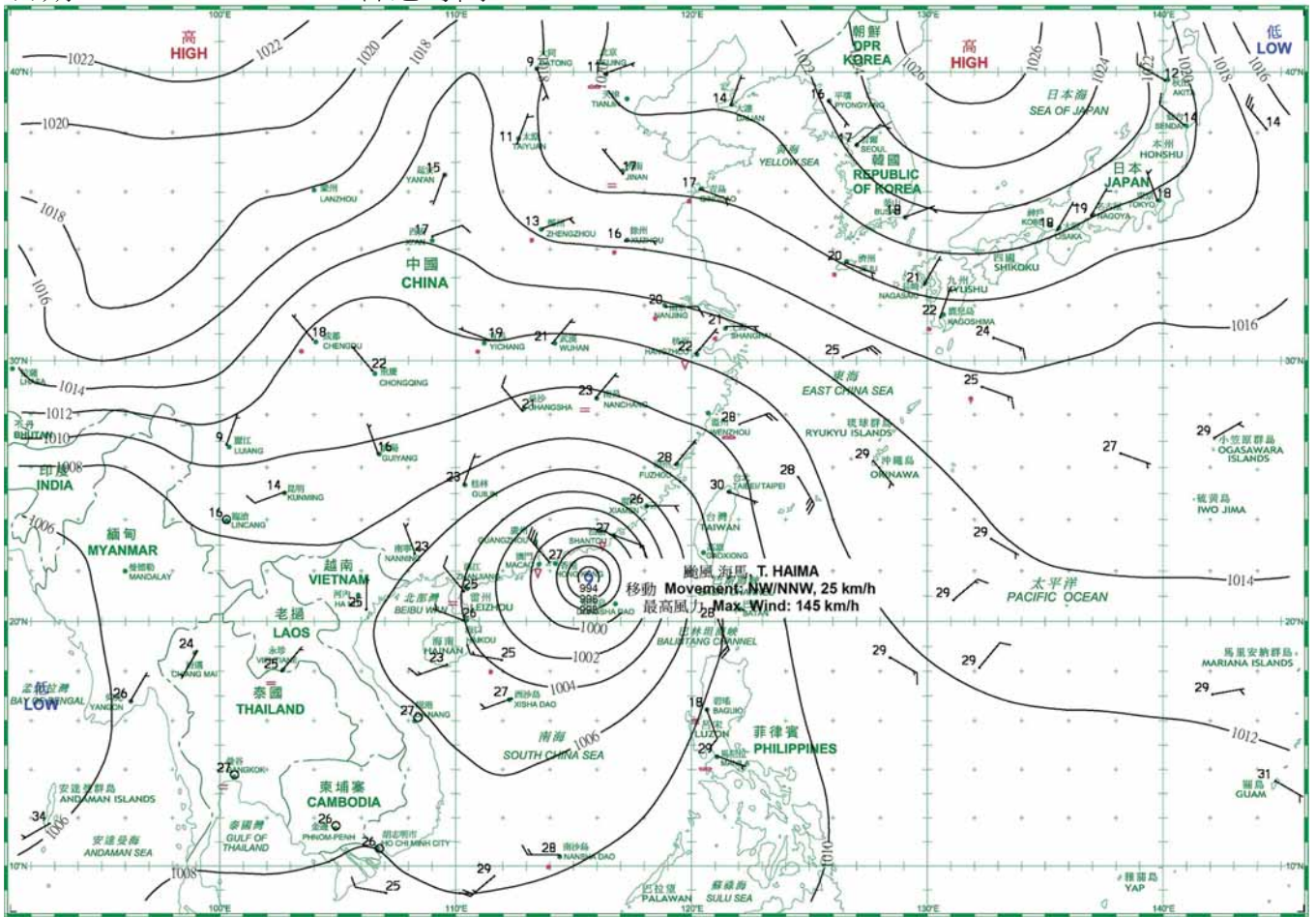
日期/Date: 19.10.2016 香港時間/HK Time: 08:00



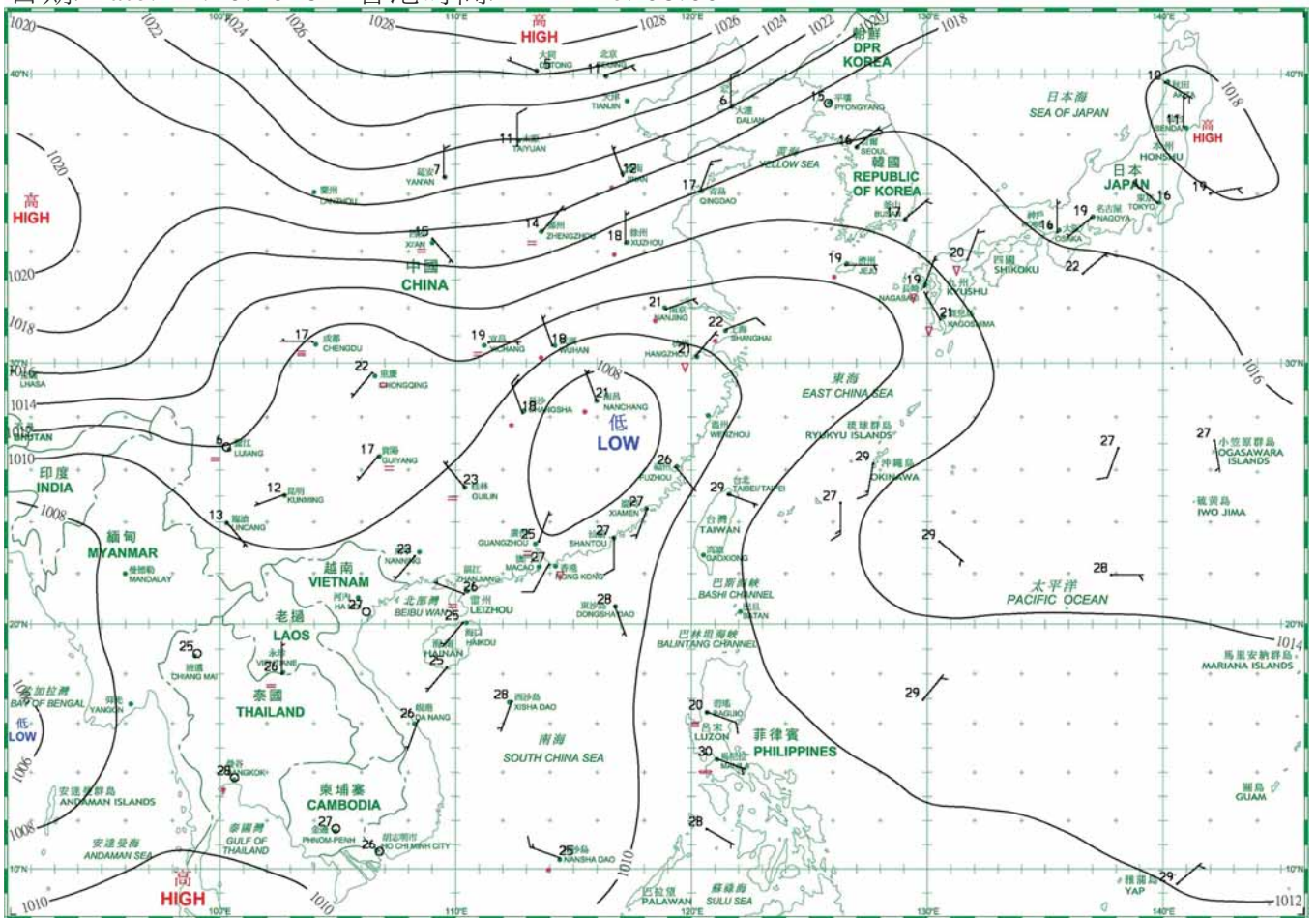
日期/Date: 20.10.2016 香港時間/HK Time: 08:00



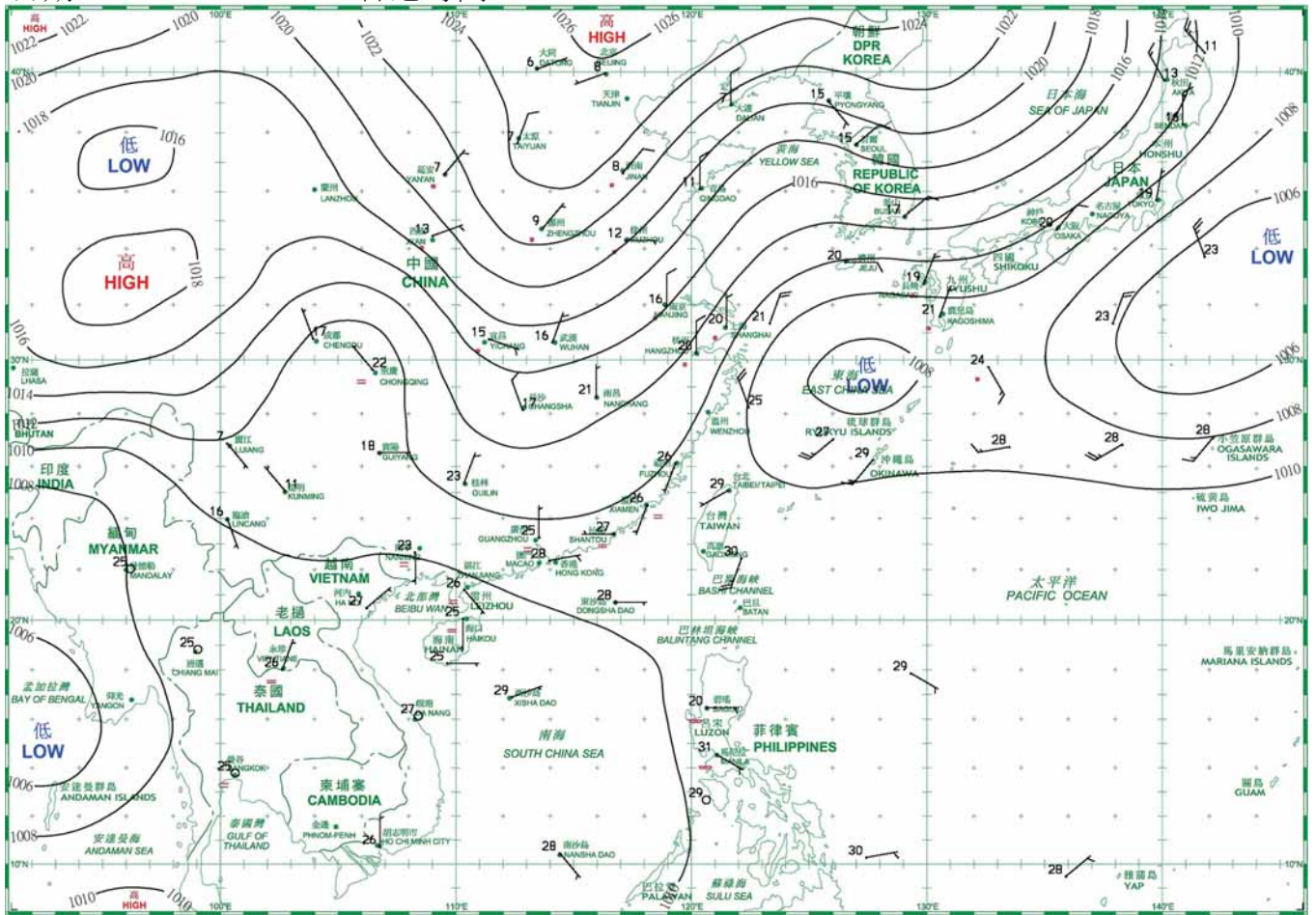
日期/Date: 21.10.2016 香港時間/HK Time: 08:00



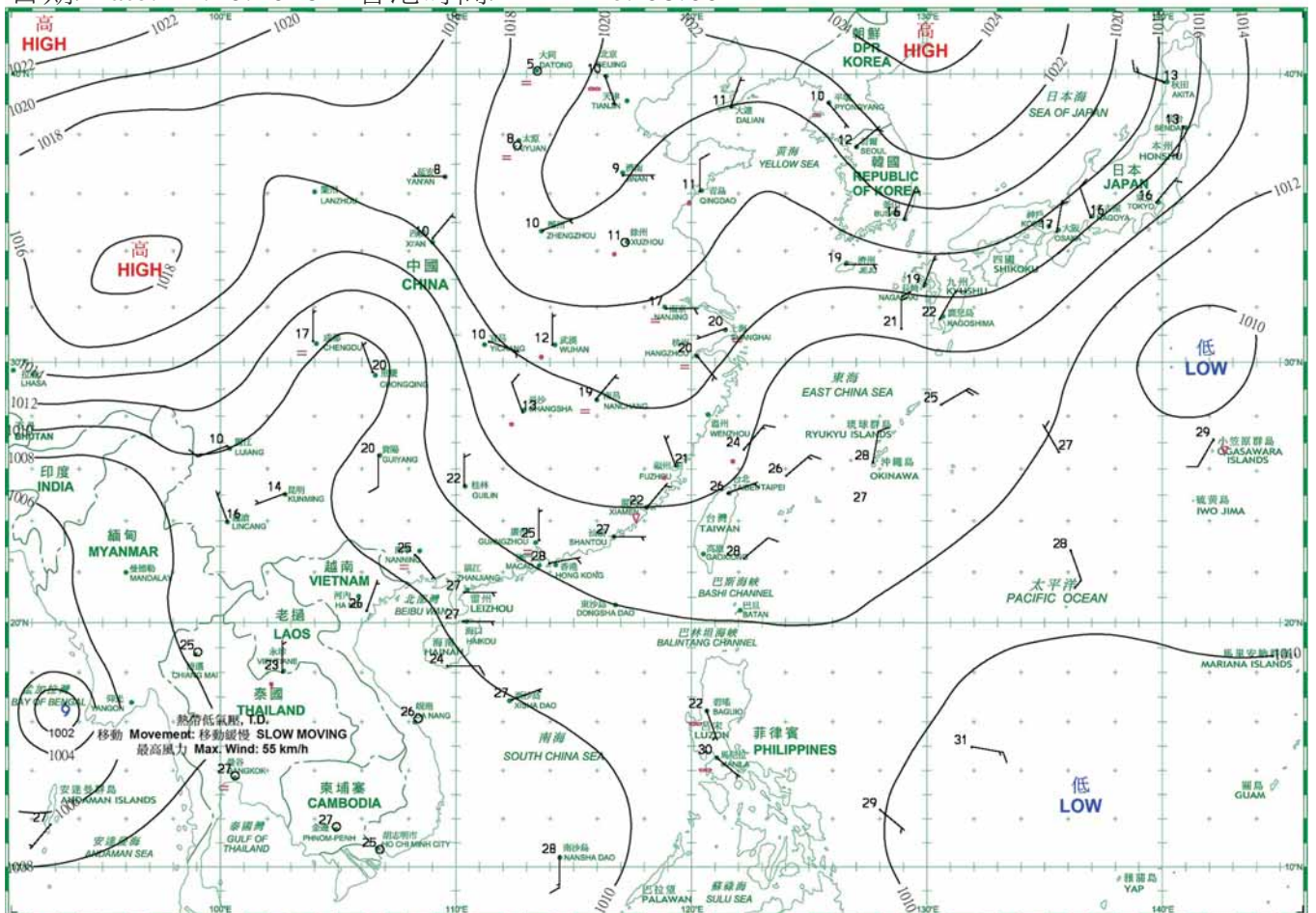
日期/Date: 22.10.2016 香港時間/HK Time: 08:00



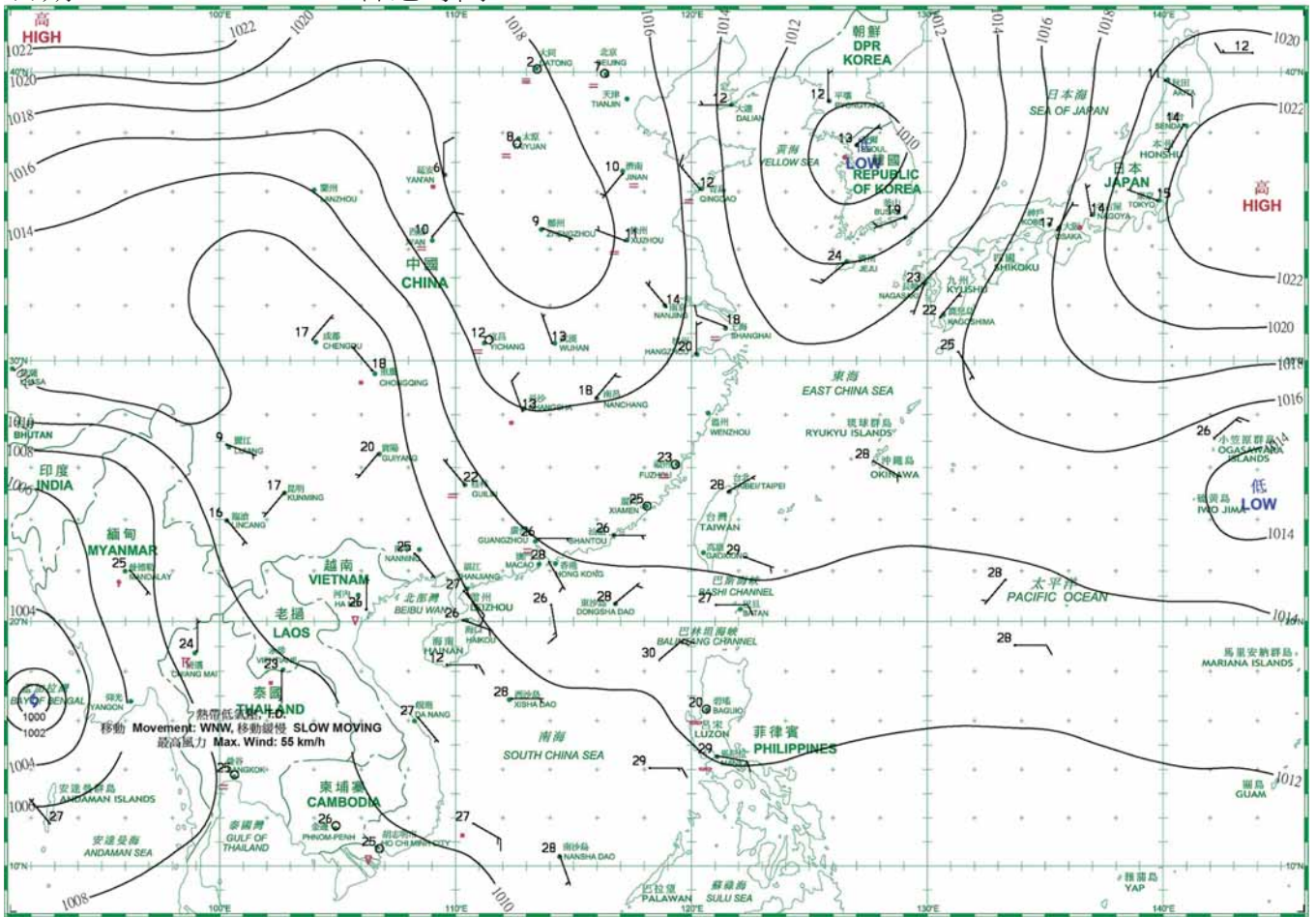
日期/Date: 23.10.2016 香港時間/HK Time: 08:00



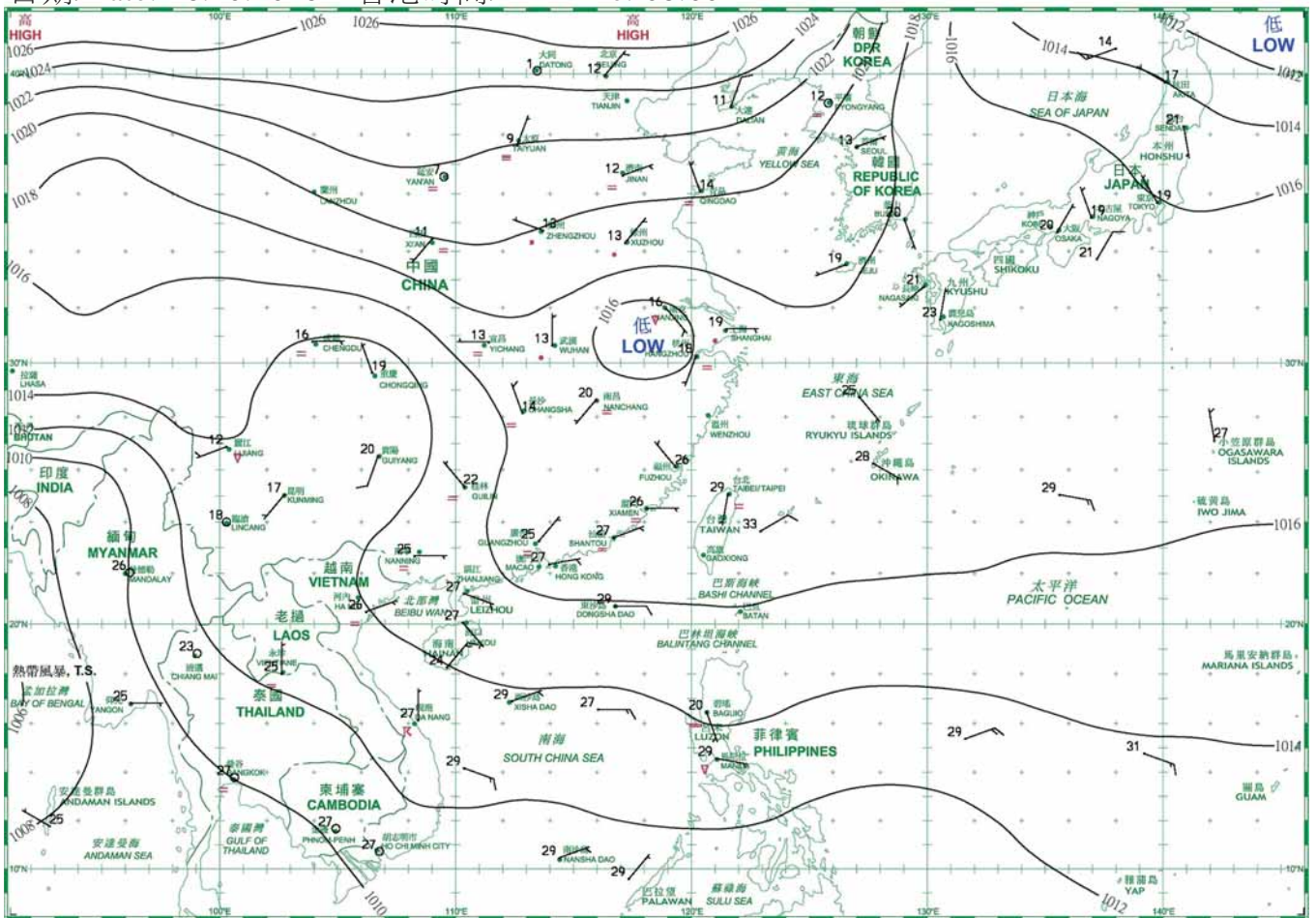
日期/Date: 24.10.2016 香港時間/HK Time: 08:00



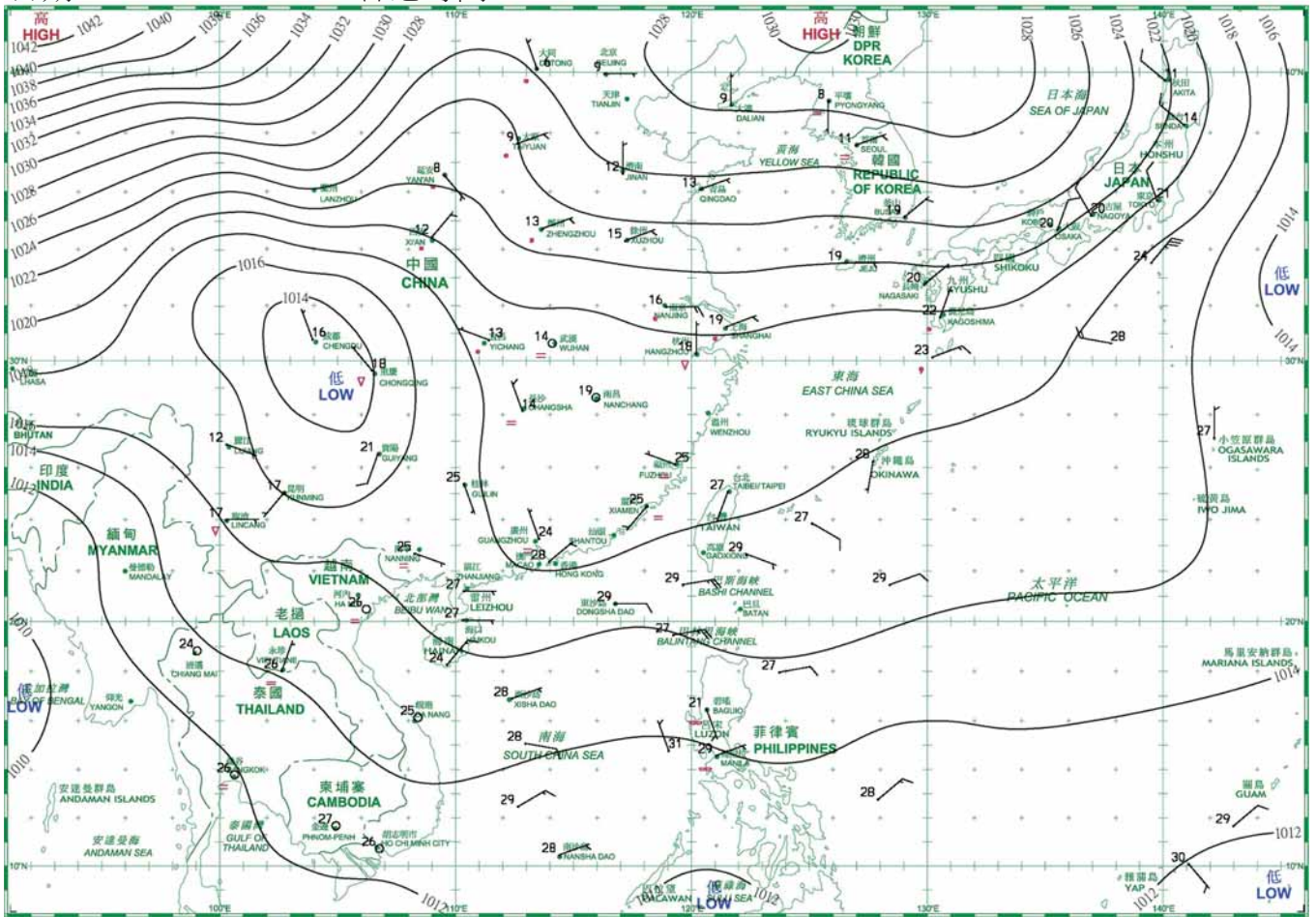
日期/Date: 25.10.2016 香港時間/HK Time: 08:00



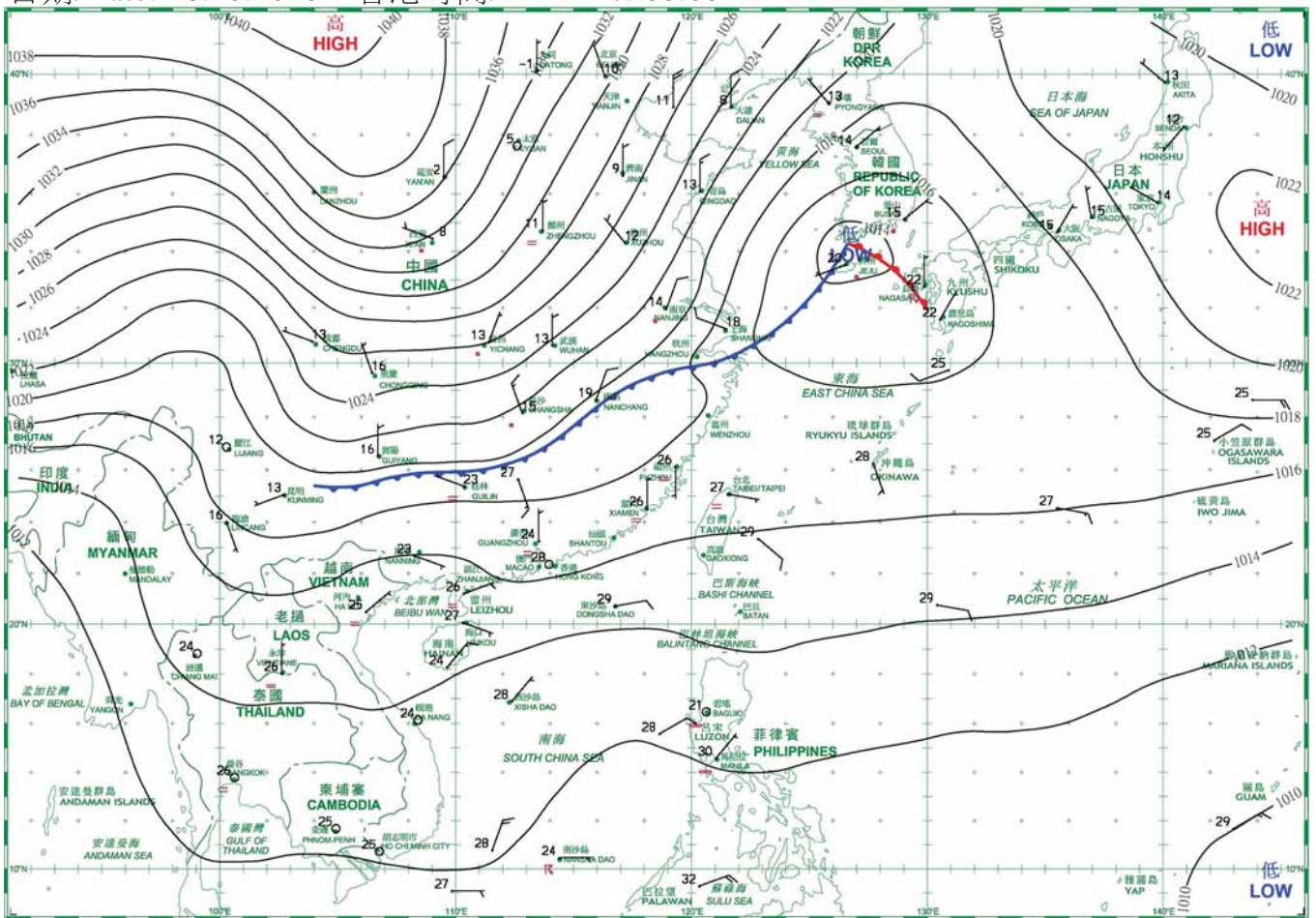
日期/Date: 26.10.2016 香港時間/HK Time: 08:00



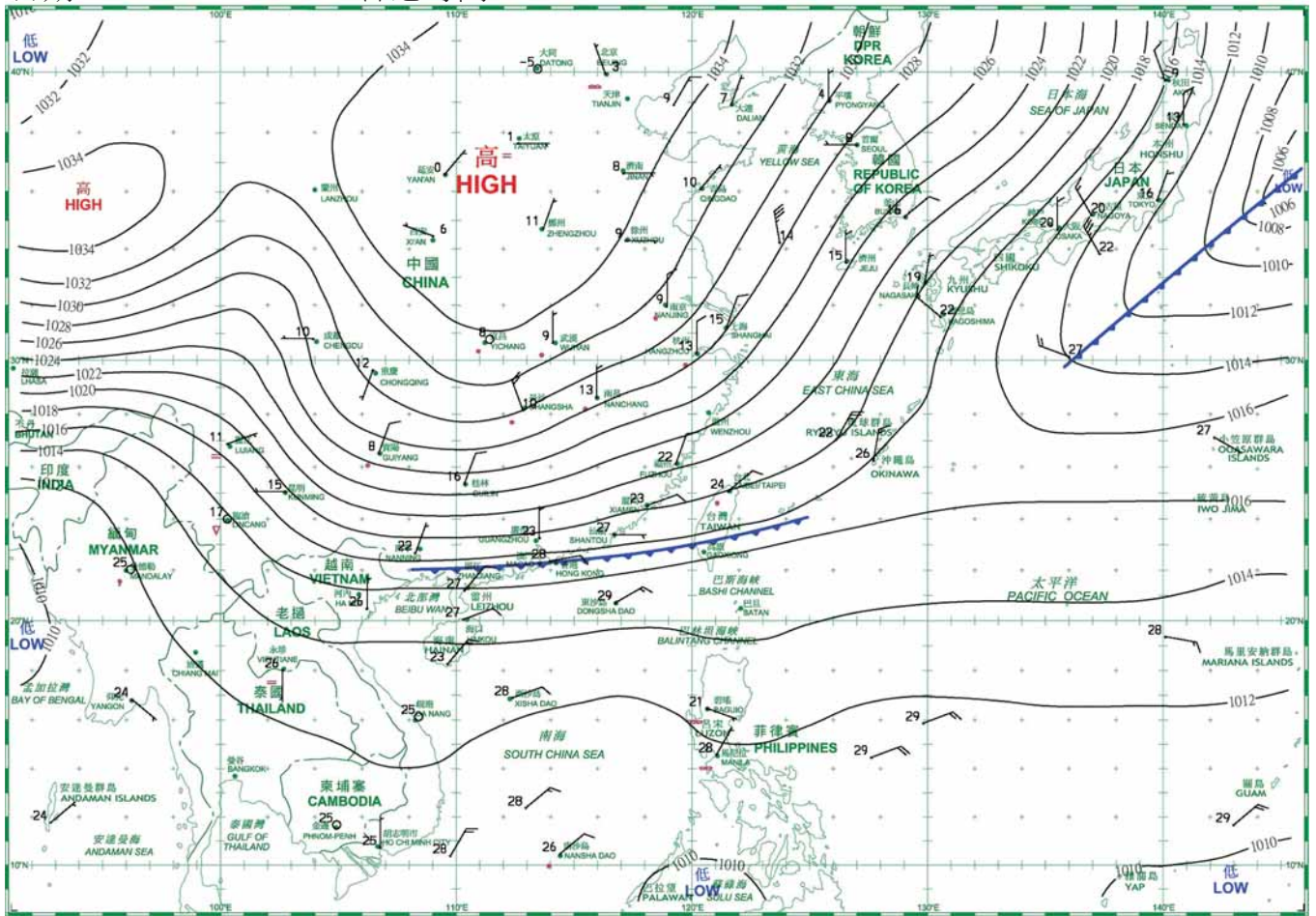
日期/Date: 27.10.2016 香港時間/HK Time: 08:00



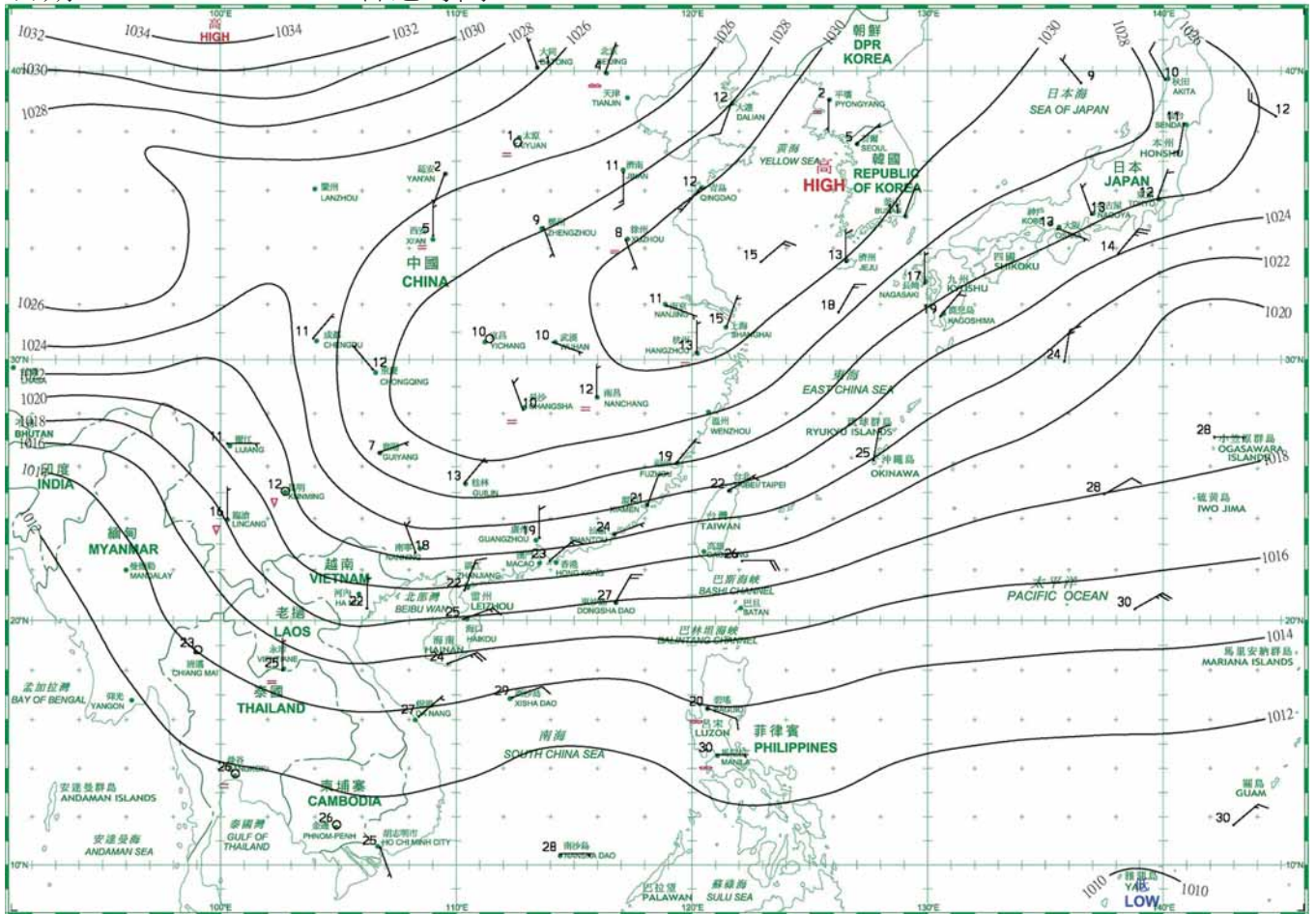
日期/Date: 28.10.2016 香港時間/HK Time: 08:00



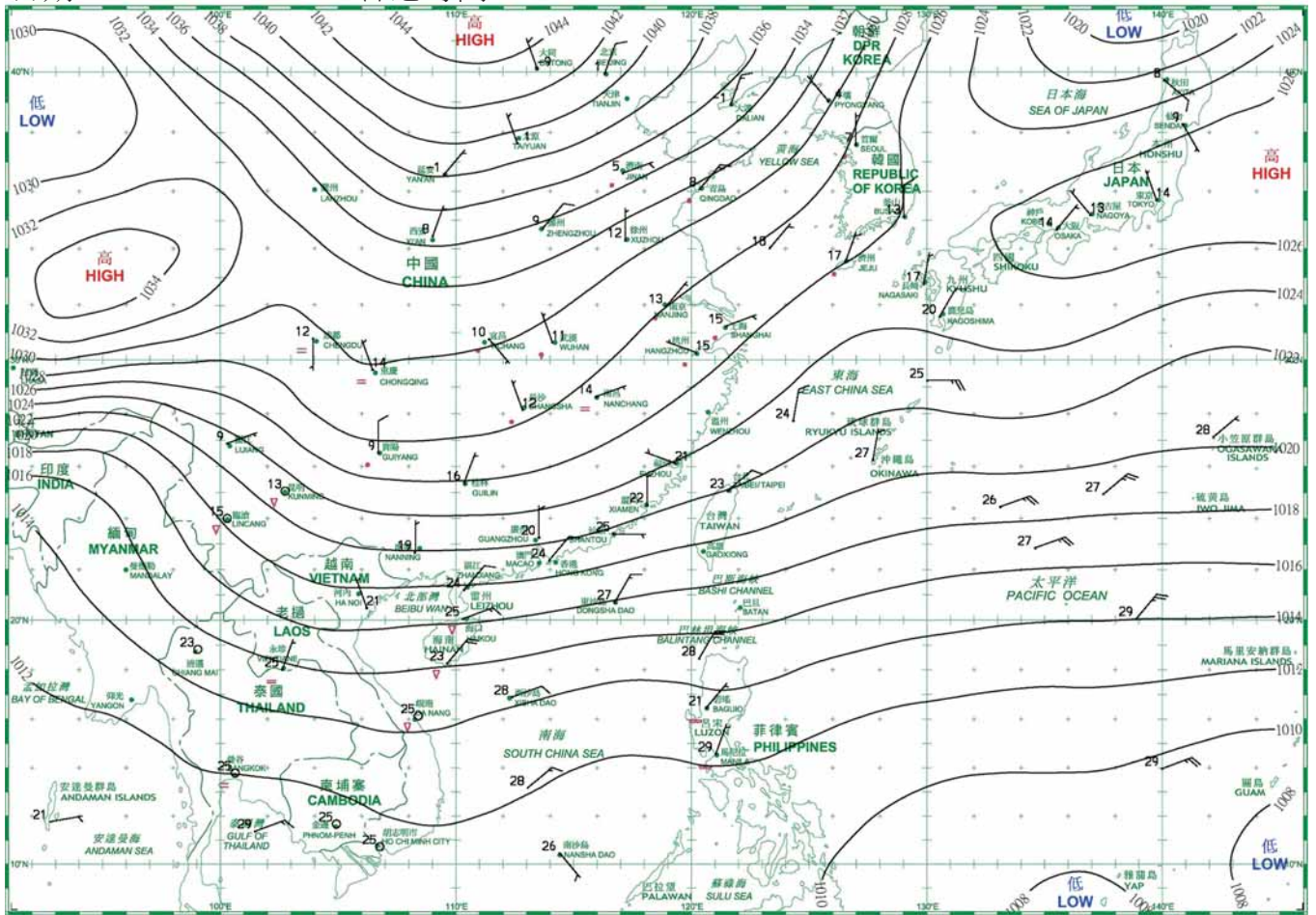
日期/Date: 29.10.2016 香港時間/HK Time: 08:00



日期/Date: 30.10.2016 香港時間/HK Time: 08:00



日期/Date: 31.10.2016 香港時間/HK Time: 08:00



4.1.1 二零一六年十月香港氣象觀測摘錄(一)

4.1.1 Extract of Meteorological Observations in Hong Kong (Part 1), October 2016

日期 Date	平均氣壓 Mean Pressure	氣 溫 Air Temperature			平均 露點溫度 Mean Dew Point Temperature	平均 相對濕度 Mean Relative Humidity	平均雲量 Mean Amount of Cloud	總雨量 Total Rainfall
		最高 Maximum	平均 Mean	最低 Minimum				
十月 October	百帕斯卡 hPa	°C	°C	°C	°C	%	%	毫米 mm
1	1009.9	29.4	26.6	24.0	24.6	89	75	95.5
2	1009.0	29.8	27.6	26.2	24.3	82	76	Tr
3	1007.8	28.3	27.5	26.6	24.1	82	84	0.2
4	1008.1	29.5	27.5	26.5	24.4	83	60	-
5	1008.9	31.9	28.6	26.9	24.3	78	68	Tr
6	1009.1	32.4	28.5	25.9	23.5	75	57	16.7
7	1007.1	29.3	27.7	25.5	23.5	79	86	17.3
8	1006.8	29.9	28.1	27.0	22.4	71	88	Tr
9	1008.9	28.8	26.5	24.9	20.4	69	86	-
10	1010.2	28.1	25.3	23.5	19.4	70	74	-
11	1010.7	26.8	24.5	22.0	20.6	79	88	0.1
12	1012.5	25.8	24.6	23.0	21.6	84	88	0.9
13	1013.5	29.3	26.0	24.2	21.6	77	72	Tr
14	1013.2	29.9	26.7	25.0	21.9	76	70	Tr
15	1012.6	30.3	27.2	24.6	21.6	72	63	-
16	1010.9	30.8	28.0	25.9	22.1	71	62	-
17	1009.1	28.8	26.6	24.1	22.9	81	89	16.7
18	1008.1	25.5	24.8	23.9	24.2	96	91	178.7
19	1008.7	25.9	25.1	24.4	24.6	96	94	223.4
20	1004.6	29.5	27.3	24.7	23.8	82	82	-
21	997.1	28.0	26.1	24.4	23.6	86	96	72.5
22	1007.8	29.4	27.5	26.1	24.4	84	77	1.9
23	1010.0	29.1	27.1	25.8	24.9	88	68	-
24	1011.3	29.1	27.3	26.1	25.2	88	74	Tr
25	1013.3	29.8	27.3	26.1	24.8	87	65	Tr
26	1015.6	30.0	27.1	25.7	24.2	84	47	-
27	1016.0	30.9	27.5	25.4	23.5	79	41	-
28	1014.9	31.5	28.2	26.3	23.3	75	54	-
29	1017.2	29.0	26.7	24.3	22.7	79	70	0.5
30	1019.8	26.6	24.4	22.9	19.4	74	85	-
31	1019.1	28.7	25.5	23.1	19.7	70	66	-
平均/總值 Mean/Total	1010.7	29.1	26.8	25.0	22.9	80	74	624.4
正常* Normal*	1014.1	27.8	25.5	23.7	20.2	73	58	100.9
觀測站 Station	天文台 Hong Kong Observatory							

天文台於十月二十一日 11 時 32 分錄得本月最低氣壓 990.7 百帕斯卡。

The minimum pressure recorded at the Hong Kong Observatory was 990.7 hectopascals at 1132 HKT on 21 October.

天文台於十月六日 13 時 26 分錄得本月最高氣溫 32.4 °C。

The maximum air temperature recorded at the Hong Kong Observatory was 32.4 °C at 1326 HKT on 6 October.

天文台於十月十一日 5 時 43 分錄得本月最低氣溫 22.0 °C。

The minimum air temperature recorded at the Hong Kong Observatory was 22.0 °C at 0543 HKT on 11 October.

京士柏於十月十八日 15 時 3 分錄得本月最高1分鐘平均降雨率 173 毫米/小時。

The maximum 1-minute mean rainfall rate recorded at King's Park was 173 millimetres per hour at 1503 HKT on 18 October.

* 1981-2010 氣候平均值 (除特別列明外) (<http://www.hko.gov.hk/wxinfo/climat/normal/cnormal10.htm>)

* 1981-2010 Climatological normal, unless otherwise specified (<http://www.hko.gov.hk/wxinfo/climat/normal/enormal10.htm>)

Tr - 微量 (降雨量少於 0.05 毫米)

Tr - Trace of rainfall (amount less than 0.05 mm)

4.1.2 二零一六年十月香港氣象觀測摘錄(二)

4.1.2 Extract of Meteorological Observations in Hong Kong (Part 2), October 2016

日期 Date	出現低能見度的時數# Number of hours of Reduced Visibility#	總日照 Total Bright Sunshine	每日太陽總輻射 Daily Global Solar Radiation	總蒸發量 Total Evaporation	盛行風向 Prevailing Wind Direction	平均風速 Mean Wind Speed
十月 October	小時 hours	小時 hours	兆焦耳/米 ² MJ/m ²	毫米 mm	度 degrees	公里/小時 km/h
1	12	5.8	16.05	0.6	090	16.2
2	9	3.0	11.57	4.2	060	17.8
3	0	1.2	8.37	2.0	050	28.5
4	0	4.9	9.68	1.9	050	17.5
5	0	5.7	16.61	4.4	070	18.7
6	0	8.9	18.76	6.8	010	19.3
7	0	3.8	11.82	3.1	010	23.6
8	0	2.1	10.54	3.7	360	35.2
9	0	4.7	15.92	6.1	010	33.0
10	0	6.8	16.51	3.5	020	28.0
11	0	0.7	9.51	3.2	010	29.8
12	0	0.1	4.70	1.3	060	39.7
13	0	6.5	17.41	4.7	080	39.5
14	0	9.0	19.58	3.9	080	34.6
15	0	7.0	15.64	4.5	050	20.3
16	0	7.8	15.66	5.0	020	20.3
17	0	2.2	7.73	N.A.	070	43.5
18	0	-	2.07	N.A.	090	57.5
19	0	0.1	2.27	N.A.	100	36.0
20	7	7.4	14.48	1.9	010	15.8
21	0	-	0.80	N.A.	220	60.8
22	0	5.0	12.47	0.5	220	18.2
23	0	2.8	10.47	2.1	100	6.0
24	0	4.1	12.90	1.9	120	13.8
25	0	9.2	20.00	4.2	090	16.5
26	0	8.5	17.55	3.2	070	17.1
27	0	9.8	19.82	4.6	060	11.1
28	0	10.3	20.33	3.3	020	8.6
29	0	3.7	11.38	5.3	080	31.5
30	0	3.6	12.46	4.1	020	32.3
31	0	7.9	17.24	5.2	070	24.0
平均/總值 Mean/Total	28	152.6	12.91	95.2&	070	26.3
正常* Normal*	142.8 §	193.9	14.05	123.9	080	27.4
觀測站 Station	香港國際機場 Hong Kong International Airport		京士柏 King's Park		橫瀾島^ Waglan Island^	

橫瀾島於十月二十一日 12 時 35 分錄得本月最高陣風 115 公里/小時，風向 280 度。

The maximum gust peak speed recorded at Waglan Island was 115 kilometres per hour from 280 degrees at 1235 HKT on 21 October.

低能見度是指能見度低於 8 公里，不包括出現霧、薄霧或降水。

- 在2004年及以前，香港國際機場的能見度讀數是基於專業氣象觀測員每小時的觀測數據。在2005年及以後，讀數是採用位於機場南跑道中間的能見度儀表在每小時前10分鐘的平均數據。這與使用儀器觀測來改進能見度評估的國際趨勢是一致的。

- 在2007年10月10日前曾出現於此摘錄內香港國際機場2005年及以後的低能見度時數資料乃基於專業氣象觀測員每小時的觀測數據。有關資料已於2007年10月10日起改為以機場南跑道中間之能見度儀表在每小時前10分鐘的平均數據計算。

Reduced visibility refers to visibility below 8 kilometres when there is no fog, mist, or precipitation.

- The visibility readings at the Hong Kong International Airport are based on hourly observations by professional meteorological observers in 2004 and before, and average readings over the 10-minute period before the clock hour of the visibility meter near the middle of the south runway from 2005 onwards. The change of the data source in 2005 is an improvement of the visibility assessment using instrumented observations following the international trend.

- Before 10 October 2007, the number of hours of reduced visibility at the Hong Kong International Airport in 2005 and thereafter displayed in this summary was based on hourly visibility observations by professional meteorological observers. Since 10 October 2007, the data have been revised using the average visibility readings over the 10-minute period before the clock hour, as recorded by the visibility meter near the middle of the south runway.

^ 如橫瀾島未能提供數據，則以長洲或其他鄰近氣象站的數據作補充，以計算盛行風向和平均風速。

^ In case the data are not available from Waglan Island, observations of Cheung Chau or other nearby weather stations will be incorporated in computing the Prevailing Wind Direction and Mean Wind Speed.

* 1981-2010 氣候平均值 (除特別列明外) (<http://www.hko.gov.hk/wxinfo/climat/normal/cnormal10.htm>)

* 1981-2010 Climatological normal, unless otherwise specified (<http://www.hko.gov.hk/wxinfo/climat/normal/enormal10.htm>)

§ 1997-2015 平均值

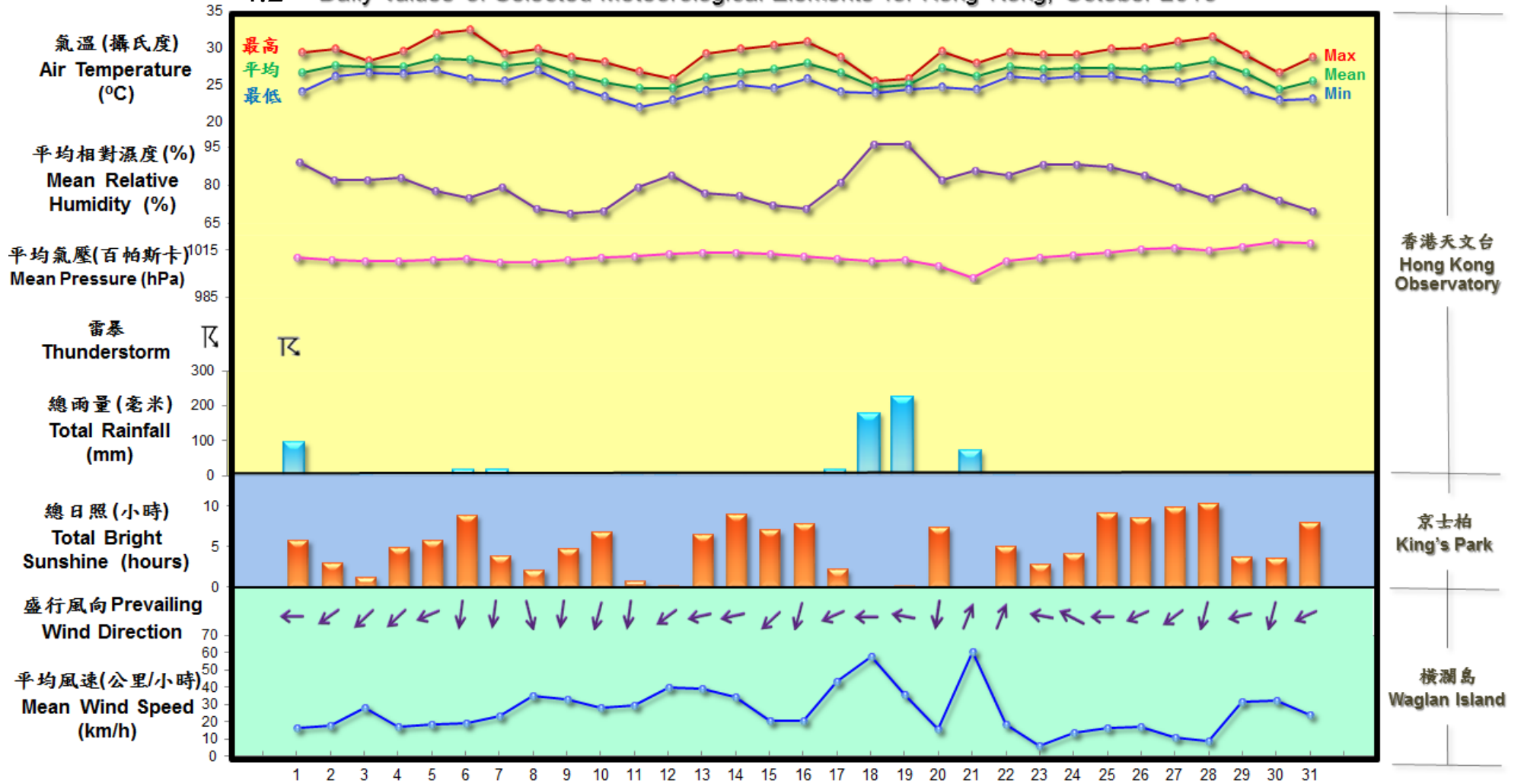
§ 1997-2015 Mean value

& 數據不完整

& Data incomplete

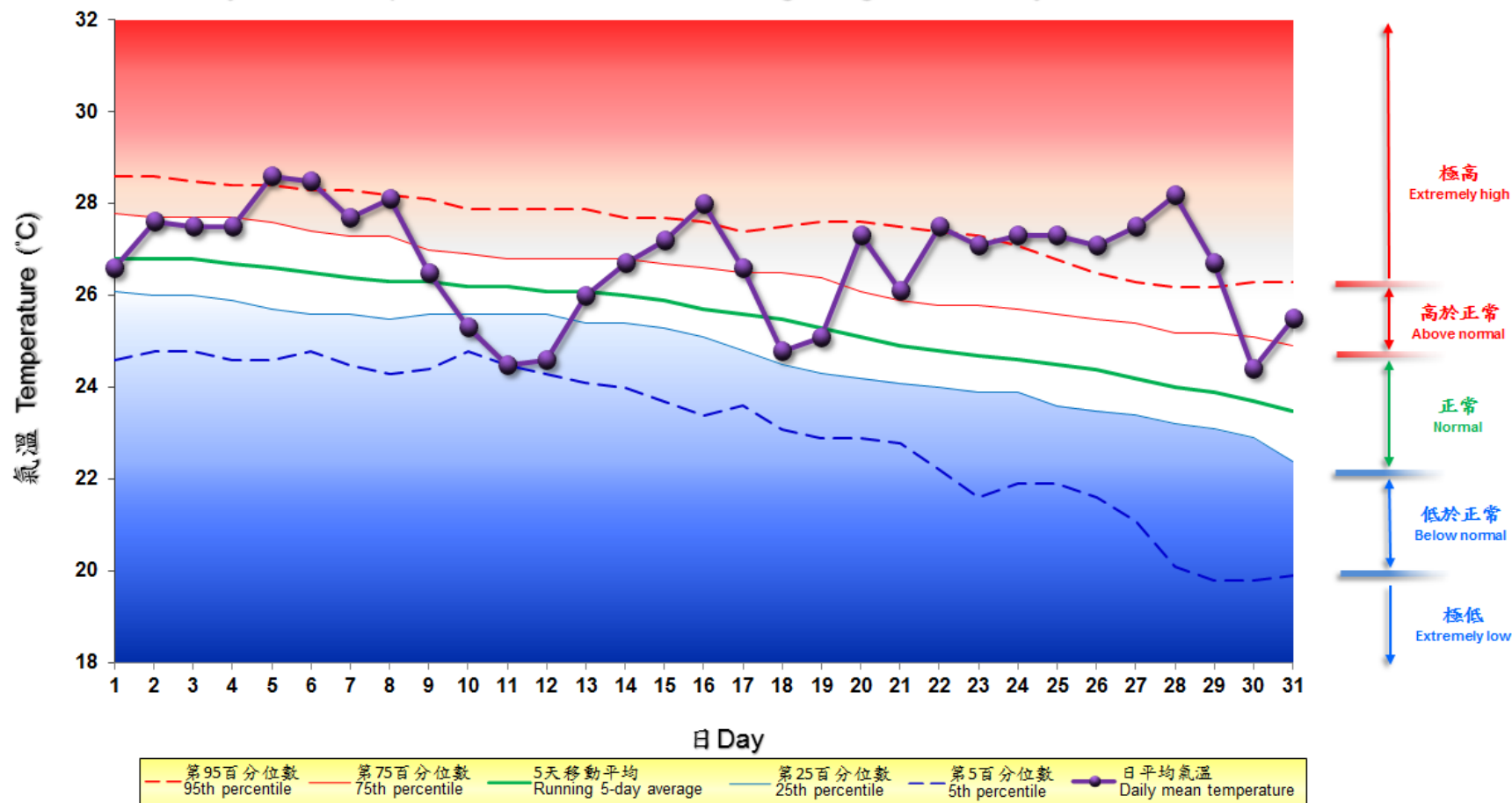
4.2 2016年10月部分香港氣象要素的每日記錄

4.2 Daily Values of Selected Meteorological Elements for Hong Kong, October 2016



4.3 2016年10月香港天文台錄得的日平均氣溫

4.3 Daily Mean Temperature recorded at the Hong Kong Observatory for October 2016



備註:

極高: 高於第 95 百分位數
 高於正常: 介乎第 75 和第 95 百分位數之間
 正常: 介乎第 25 和第 75 百分位數之間
 低於正常: 介乎第 5 和第 25 百分位數之間
 極低: 低於第 5 百分位數
 百分位數值及 5 天移動平均值是基於 1981 至 2010 年的數據計算所得

Remarks:

Extremely high: above 95th percentile
 Above normal: between 75th and 95th percentile
 Normal: between 25th and 75th percentile
 Below normal: between 5th and 25th percentile
 Extremely low: below 5th percentile
 Percentile and 5-day running average values are computed based on the data from 1981 to 2010