每月天氣摘要 二零一六年十二月

Monthly Weather Summary December 2016

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二零一七年一月出版

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1. 二零一六年十二月天氣回顧

由於影響華南沿岸地區的東北季候風在本月大部分時間較弱,二零一六年十二月較正常溫暖。本月的平均氣溫19.6度較正常數值17.9度高1.7度,是自1884年有記錄以來十二月的第三高。本月錄得的總兩量只有6.6毫米,不足正常數值26.8毫米的四分之一。但全年總兩量則為3026.8毫米,較全年正常值2398.5毫米多約百分之26。

受東北季候風影響,本港於本月首兩天天晴及乾燥。由於一道雲帶覆蓋華南沿岸及南海北部,十二月三日轉為多雲。在風力微弱的情況下,隨後兩天有煙霞及日間部分時間有陽光。十二月五日天氣相當溫暖,氣溫上升至25.9度,為本月的最高氣溫。

除十二月十二日及十三日東北季候風緩和而天氣較暖外,本港於十二月六日至十六日期間受到大陸氣流的補充所影響,天氣持續普遍晴朗及乾燥。雖然華南沿岸地區的東風於十二月十一日轉為清勁,但本港氣溫在十二月十四日轉吹北風後才開始顯著下降,隨後兩天顯著較涼。

十二月十七日本港天氣清涼及雲量較多。十二月十八日及十九日陽光充沛,天氣再度回暖。由於一股潮濕海洋氣流影響廣東沿岸,十二月二十日雲量增多,十二月二十一日潮濕及有微雨。翌日雨勢減弱,並於一道冷鋒橫過華南沿岸地區後,乾燥大陸空氣令本港再度轉晴。強風程度的偏東風於十二月二十三日晚上為本港帶來幾陣微雨,大致多雲的天氣持續至聖誕日。

由於東北季候風稍為緩和,本港於十二月二十六日天晴及較暖。一道冷鋒於當晚橫 過本港並帶來強風程度的偏北風,翌日氣溫下降,而在南海中部徘徊並減弱中的熱帶氣 旋洛坦亦助長本地風勢,本港高地出現烈風。受強烈東北季候風影響,一股大陸氣流於 十二月二十七日為本港帶來晴朗及非常乾燥的天氣,而當日天文台亦發出今年入冬以來 首個寒冷天氣警告,翌日早上氣溫降至最低的11.5度,為本月的最低氣溫。

十二月二十八日多雲。隨後東北季候風開始緩和,本月餘下時間氣溫逐步回升及部分時間有陽光。

本月有兩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 December 2016

With the northeast monsoon over the south China coastal areas remaining relatively weak for most of the month, December 2016 was warmer than usual. The monthly mean temperature of 19.6 degrees was 1.7 degrees above the normal figure of 17.9 degrees and the third highest for December since record began in 1884. The total rainfall recorded in the month was only 6.6 millimetres, less than one quarter of the normal figure of 26.8 millimetres. But in terms of rainfall for the whole year, the annual total of 3026.8 millimetres was about 26 percent above the yearly normal of 2398.5 millimetres.

Under the influence of the northeast monsoon, the month started off with fine and dry conditions in Hong Kong on the first two days. The weather became cloudy on 3 December as a band of clouds covered the south China coast and the northern part of the South China Sea. Under light wind conditions, it was hazy with sunny periods over the next couple of days as temperatures climbed to a rather warm 25.9 degrees on 5 December, the highest of the month.

Apart from a lull in the northeast monsoon with relatively warm weather on 12 and 13 December, further replenishments of continental air brought a spell of generally fine and dry conditions to the territory from 6 to 16 December. Easterly winds freshened over the south China coastal areas on 11 December, but temperatures only began falling significantly as the winds turned northerly on 14 December. It was only then that the weather became appreciably cooler over the next couple of days.

After a cool and cloudier day on 17 December, the weather soon warmed up again as sunny skies emerged on 18 and 19 December. With moist maritime air edging back towards the coast of Guangdong, increasing cloudiness on 20 December was followed by a day of humid conditions and light rain on 21 December. The rain eased off the next day and the weather turned fine again as dry continental air returned to the south China coastal areas after the passage of a cold front. The strengthening of easterly winds brought patches of light rain on the night of 23 December, and the weather remained mostly cloudy till Christmas Day.

Despite a fine and relatively warm day on 26 December during another break in the northeast monsoon, the passage of a cold front brought strengthening northerly winds that night and falling temperatures the next day. Windy conditions were enhanced by the presence of a weakening tropical cyclone Nock-Ten over the central part of the South China Sea, with winds reaching gale force on high ground in Hong Kong. Under the influence of the intense northeast monsoon, a continental airstream brought fine and very dry weather to the territory on 27 December, while the first issuance of the Cold Weather Warning this winter saw temperatures plummeting to a minimum of 11.5 degrees the next morning, the lowest in the month.

After a cloudy day on 28 December, the northeast monsoon started to subside and temperatures gradually recovered with sunny periods towards the end of the month.

Two 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 二零一六年十二月發出的警告及信號

Table 1.1 Warnings and Signals issued in December 2016

強烈季候風信號

Strong Monsoon Signal

	時間 ng Time	終結時間 Ending Time		
日/月 day/month			時 hour	
24/12 26/12	0210 2310	24/12 28/12	1145 0745	

火災危險警告

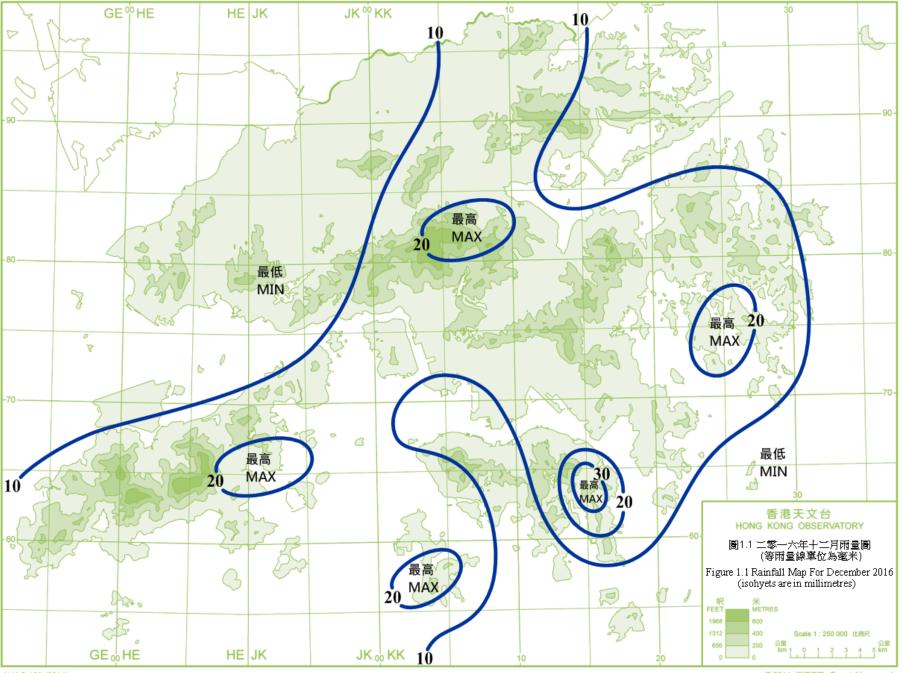
Fire Danger Warnings

顔色 Colour	開始 Beginnin	終結時間 Ending Time		
Coloui	日/月	時	日/月	時
	day/month	hour	day/month	hour
黄色 Yellow 紅色 Red 紅色 Red 黄色 Yellow 黄色 Yellow 黄色 Yellow 黄色 Yellow 黄色 Yellow 黄色 Red 紅色 Red 紅色 Red	4/12 6/12 8/12 11/12 17/12 18/12 25/12 26/12 27/12 29/12 31/12	0600 0830 0615 0600 0600 0600 0600 1145 0600 1130	4/12 7/12 8/12 11/12 17/12 18/12 25/12 27/12 28/12 30/12 31/12	1800 2000 1800 1900 1945 1800 1800 1145 0045 2315 1800

寒冷天氣警告

Cold Weather Warning

	時間 ng Time	終結時間 Ending Time		
日/月 時 day/month hour		日/月 day/month	時 hour	
27/12	1620	29/12	0930	



2. 二零一六年十二月熱帶氣旋概述

二零一六年十二月在北太平洋西部及南海區域出現了兩個熱帶氣旋。

一個熱帶低氣壓於十二月十二日下午在越南南部沿岸海域胡志明市之東南偏東約 370 公里形成,向西北緩慢移動,其中心附近最高持續風力為每小時 45 公里。該熱帶 低氣壓於翌日早上在越南南部登陸,日間在內陸消散。

熱帶低氣壓洛坦於十二月二十一日下午在雅蒲島之東南約 490 公里的的北太平洋西部上形成,向西北移動,並迅速增強。洛坦於十二月二十四日發展為超強颱風及達到其最高強度,中心附近最高持續風速估計為每小時 210 公里。洛坦採取偏西路徑橫過菲律賓中部,於十二月二十六日下午進入南海。受到一股強烈東北季候風影響,洛坦翌日轉向西南移動並在南海中部消散。

根據報章報導,洛坦吹襲菲律賓期間,造成最少六人死亡、八人失蹤,超過 38 萬人被迫撤離家園。

2. Overview of Tropical Cyclones in December 2016

Two tropical cyclones occurred over the western North Pacific and the South China Sea in December 2016.

A tropical depression formed off the coast of southern Vietnam about 370 km east-southeast of Ho Chi Minh City on the afternoon of 12 December. It moved northwest slowly with an estimated sustained wind of 45 km/h near its centre. The tropical depression made landfall over southern Vietnam the next morning and dissipated inland during the day.

Nock-ten formed as a tropical depression over the western North Pacific about 490 km southeast of Yap on the afternoon of 21 December. It moved northwestwards and intensified rapidly. Nock-ten developed into a super typhoon on 24 December, reaching its peak intensity with an estimated wind of 210 km/h near its centre. It took a westerly track across the central part of the Philippines and entered the South China Sea on the afternoon of 26 December. Affected by an intense northeast monsoon, Nock-ten turned southwestwards and dissipated over the central part of the South China Sea the next day.

According to press reports, at least six people were killed and eight were missing in the Philippines during the passage of Nock-ten. Over 380 000 people were forced to leave their homes.

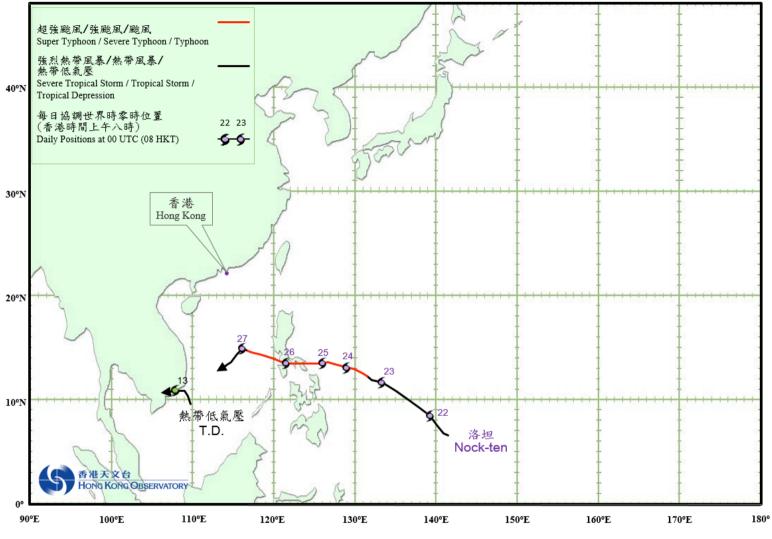
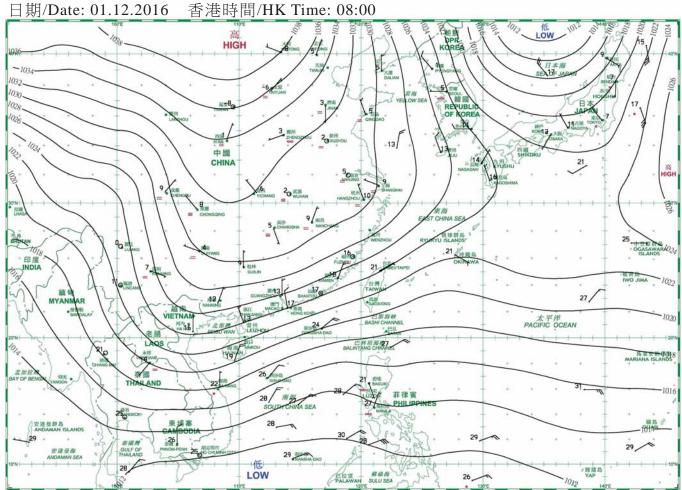
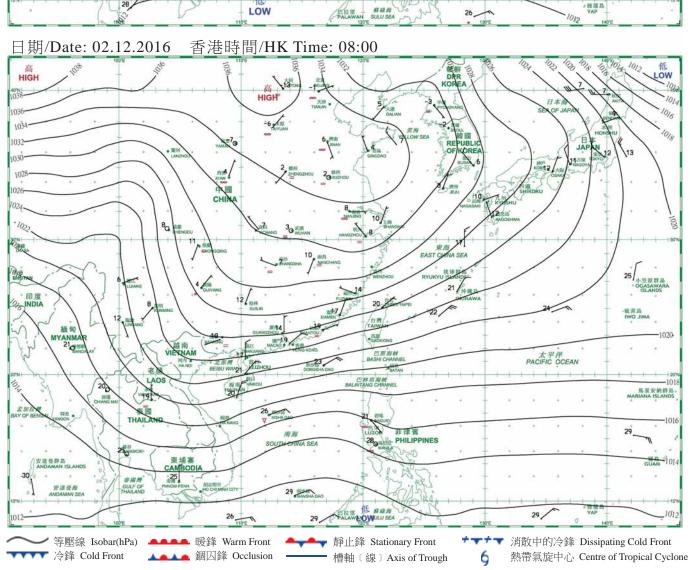
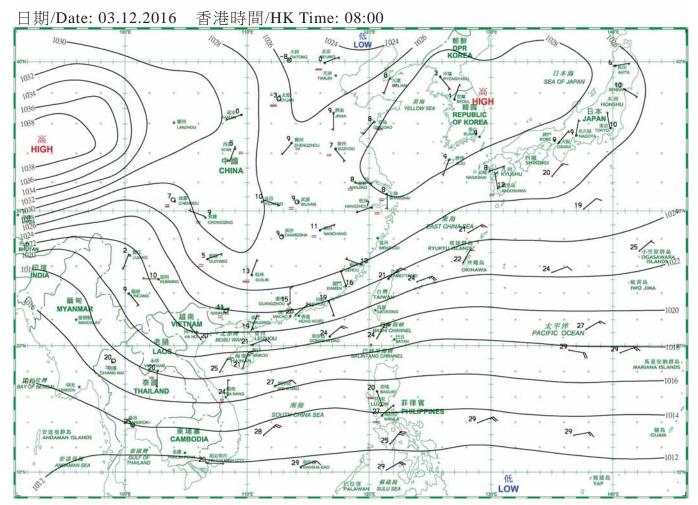


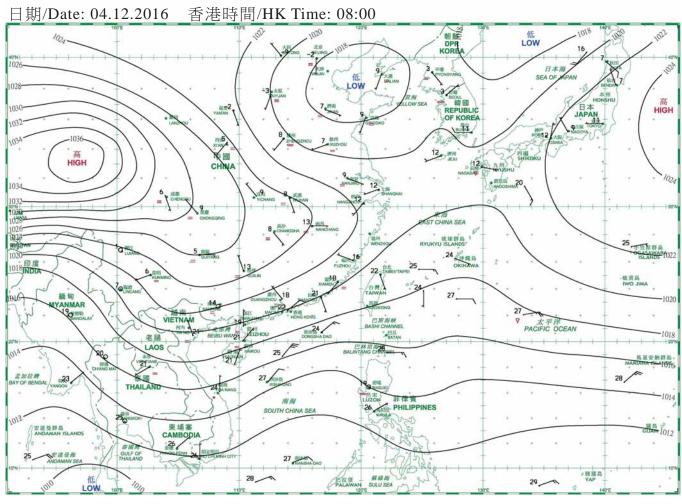
圖 2.1 二零一六年十二月的熱帶氣旋路徑圖

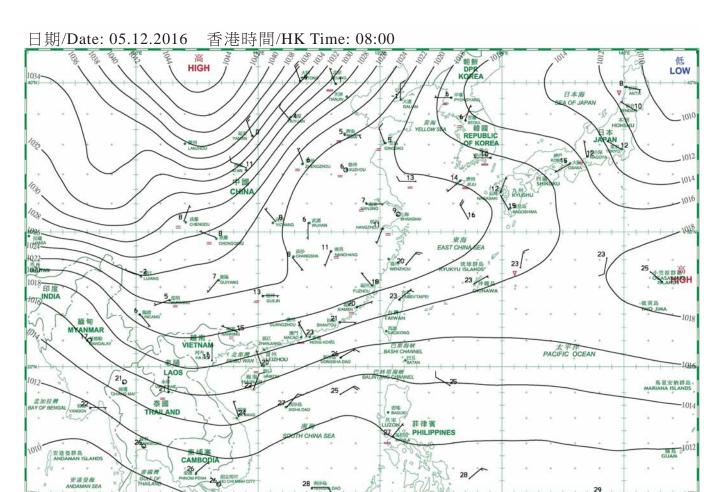
Fig. 2.1 Tracks of tropical cyclones in December 2016

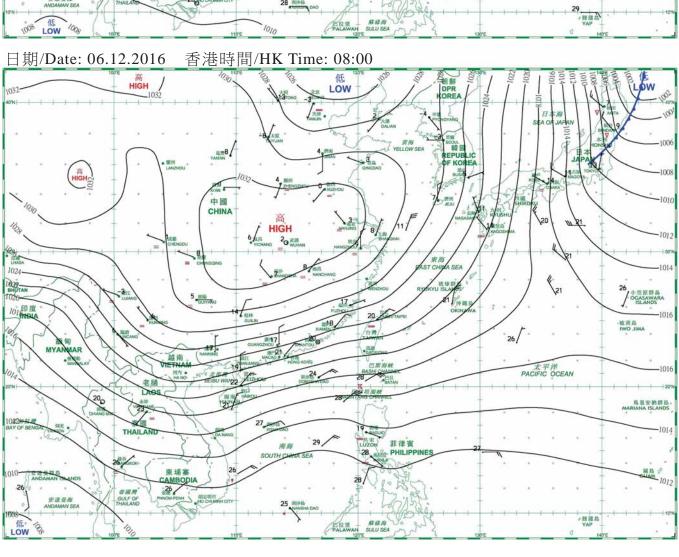


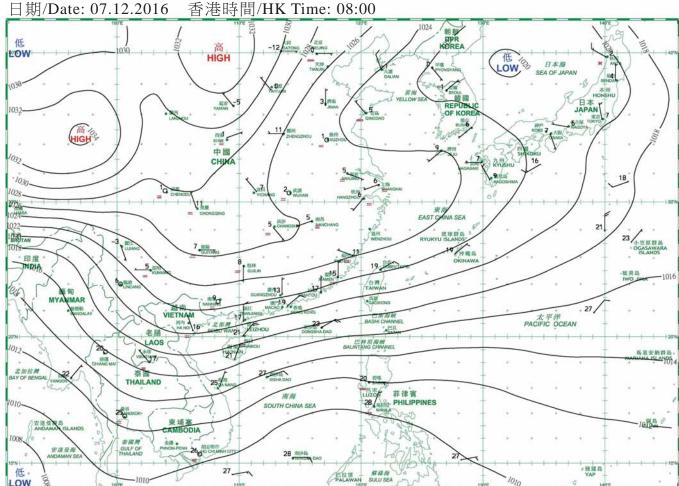


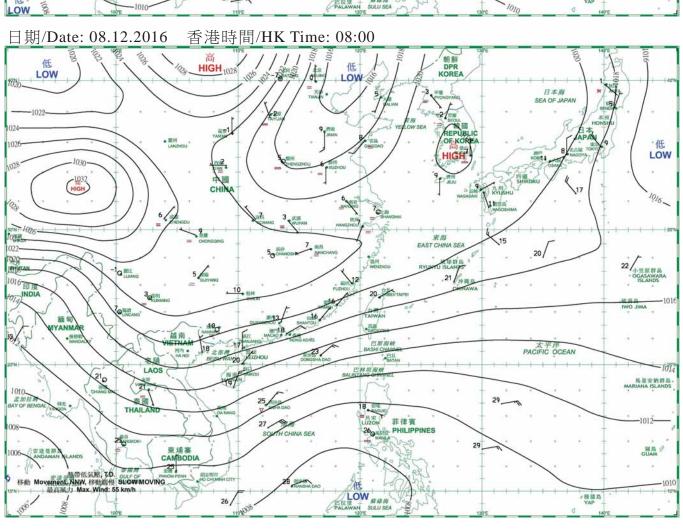


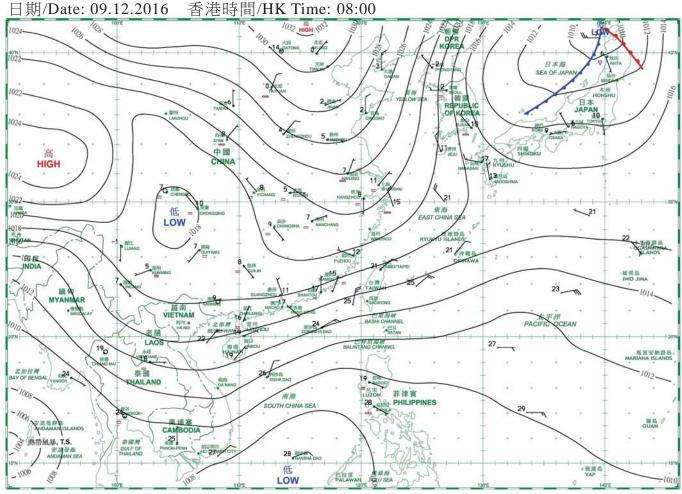


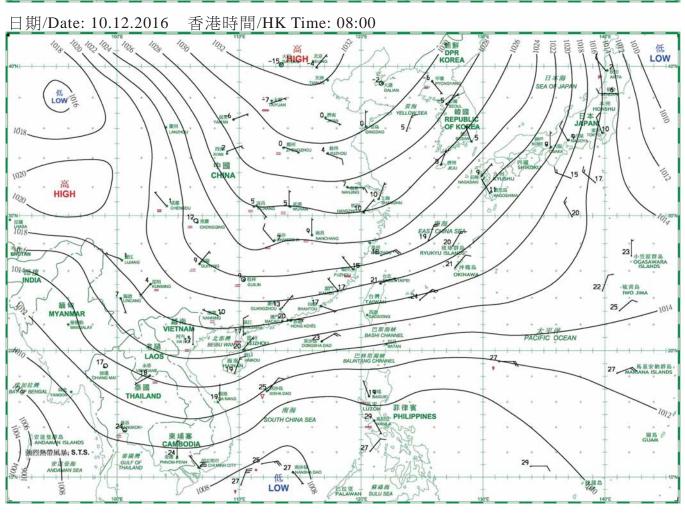


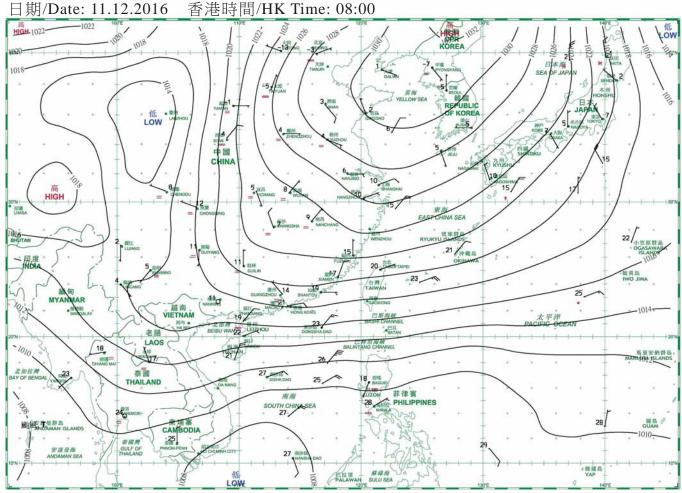


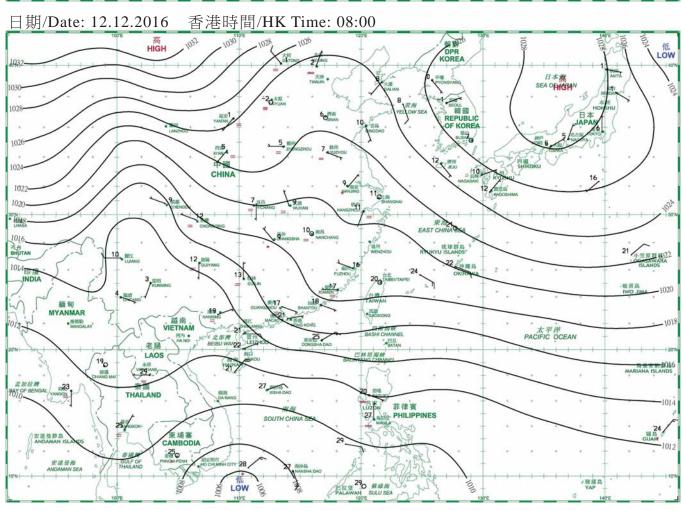


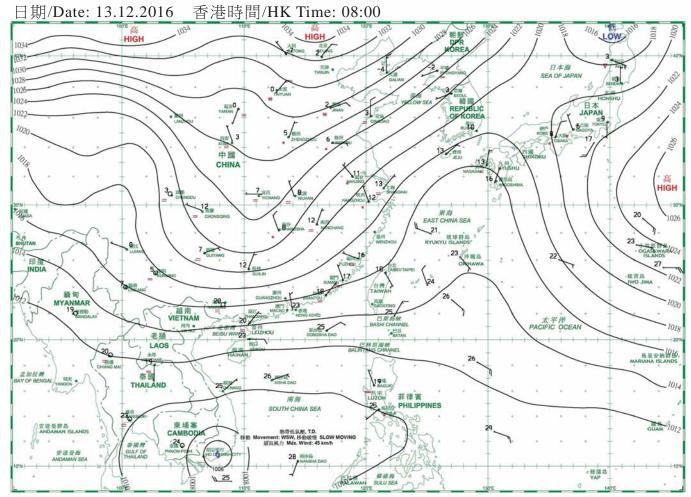


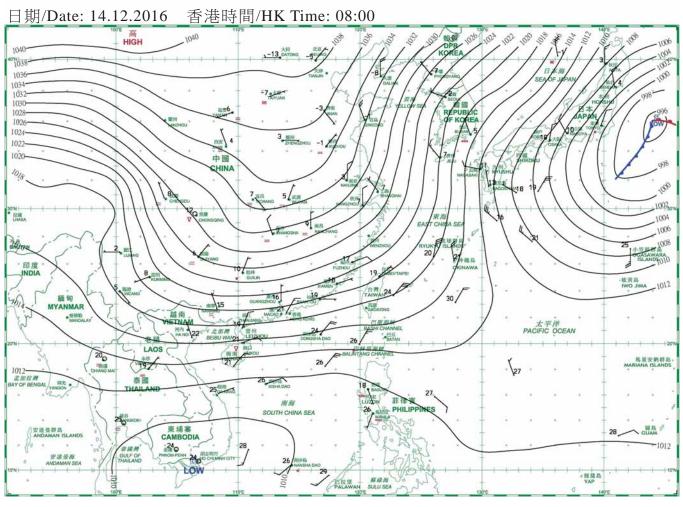


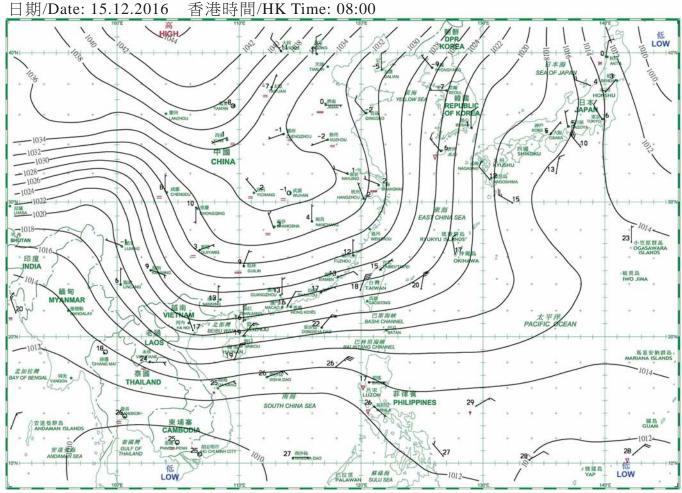


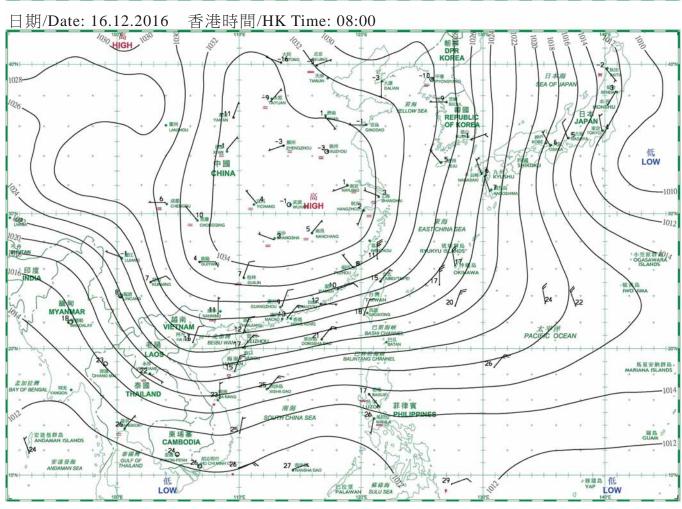


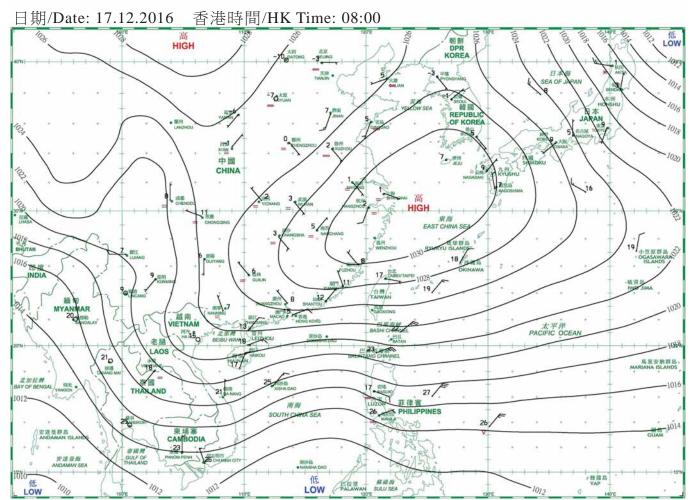


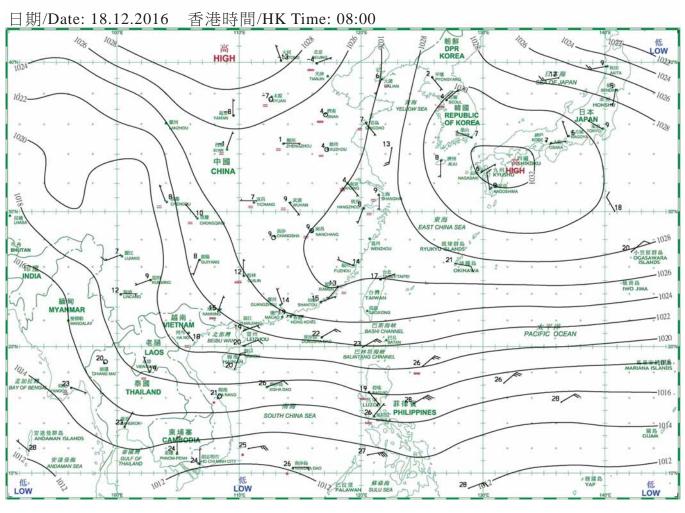


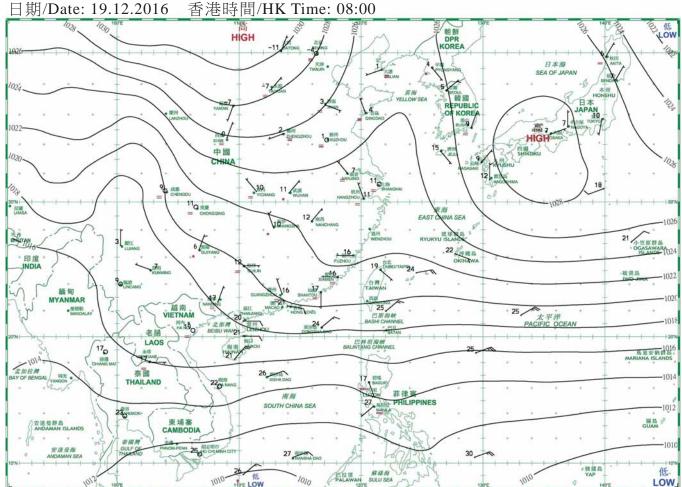


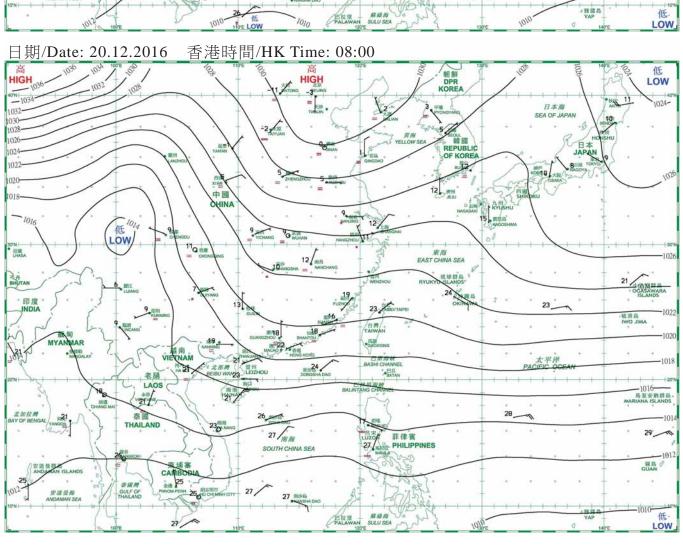


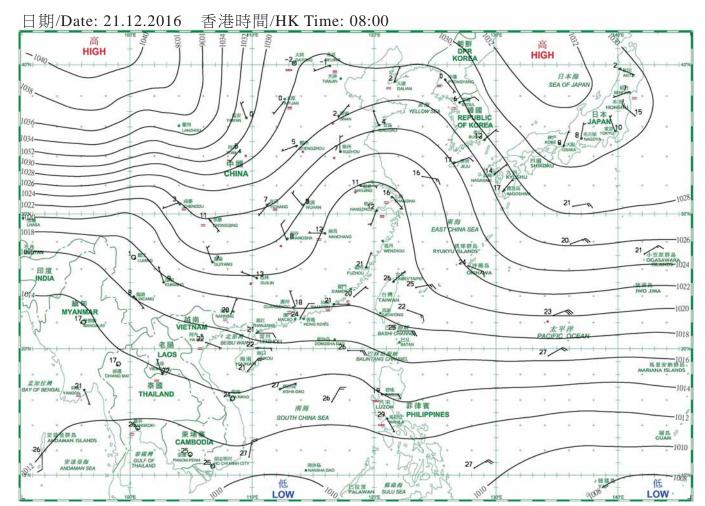


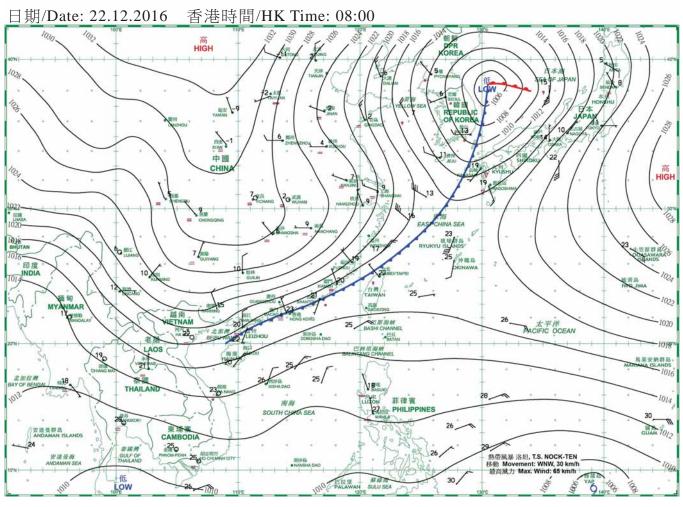


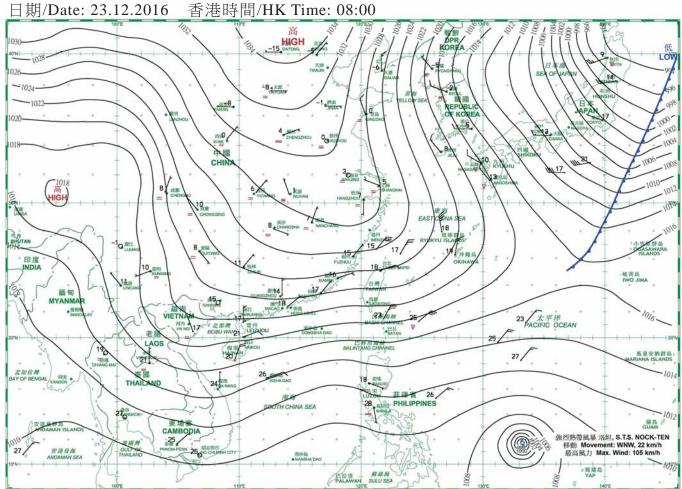


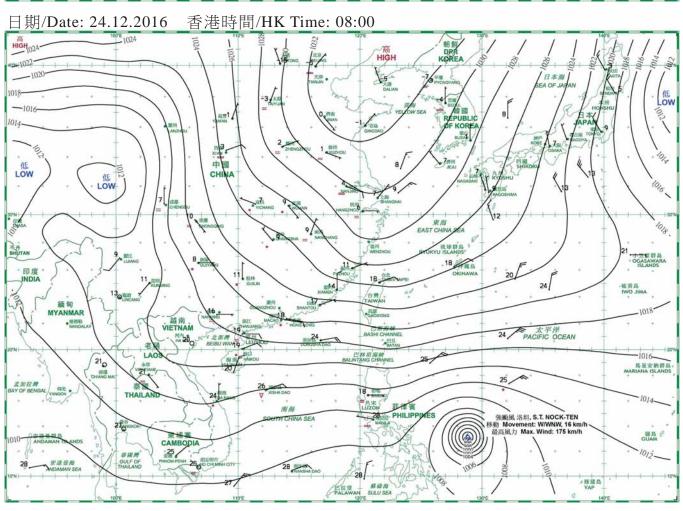


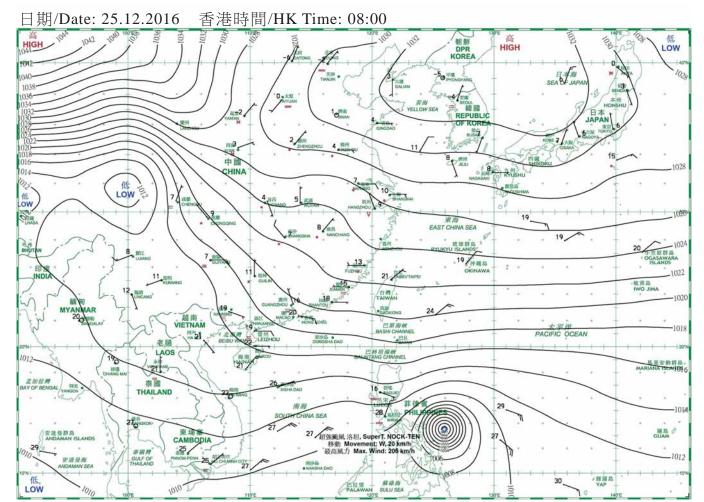


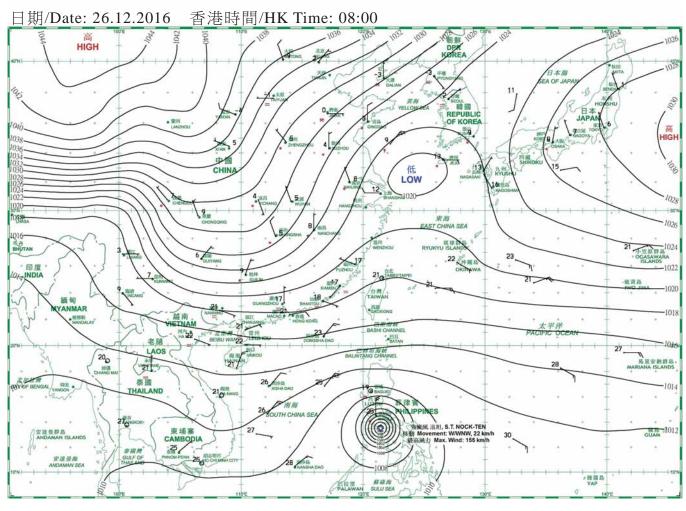


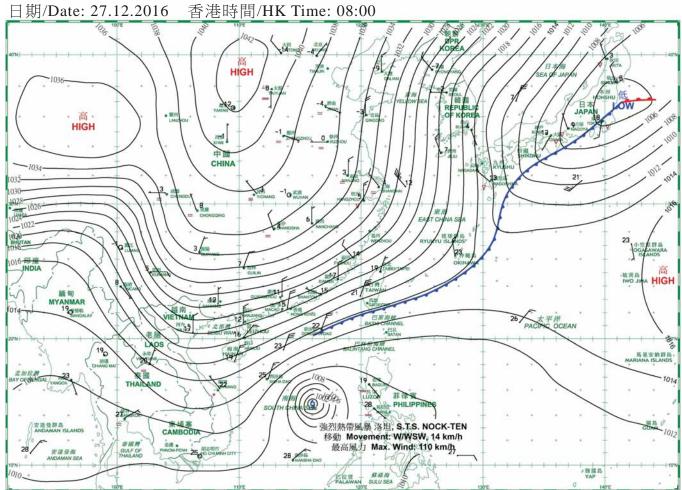


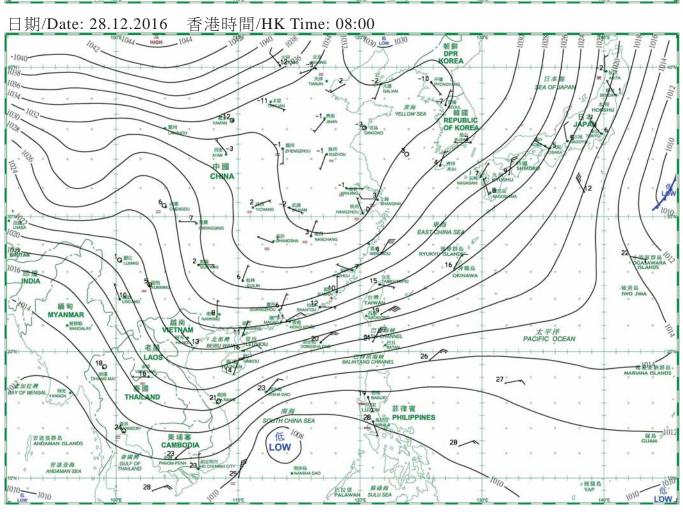


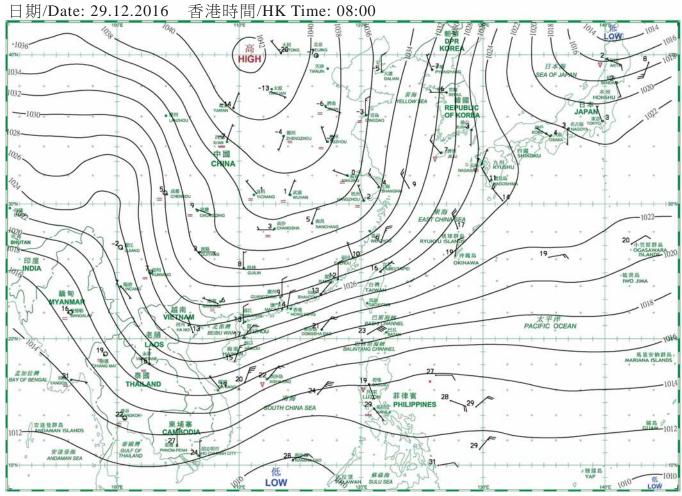


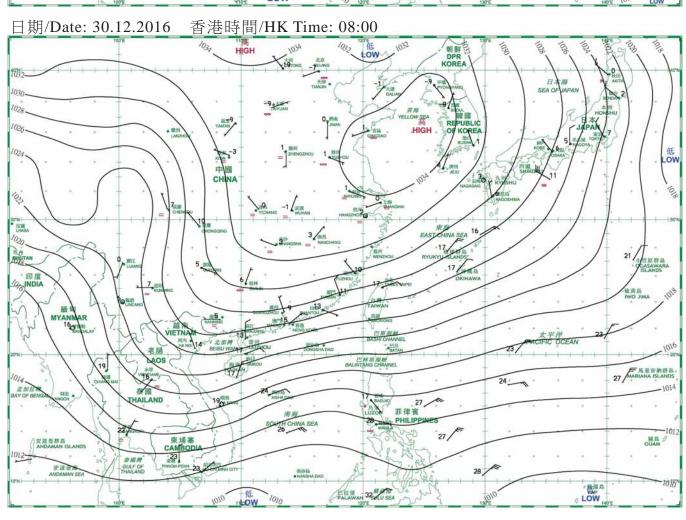


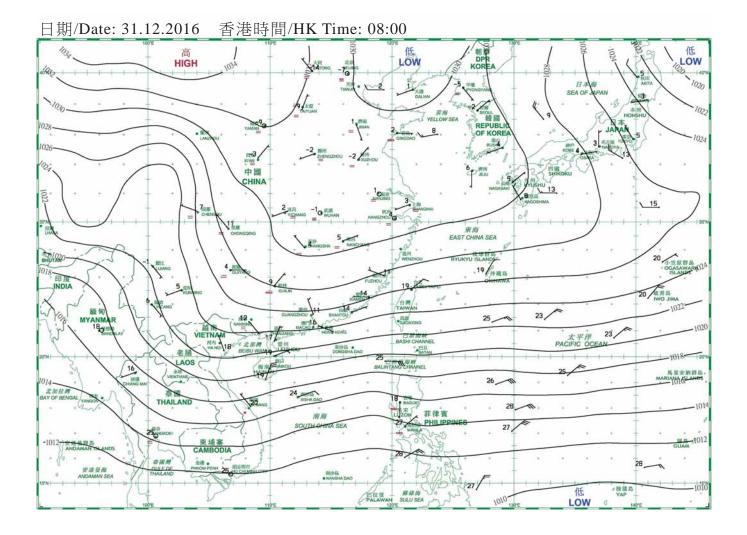












4.1.1 二零一六年十二月香港氣象觀測摘錄(一)

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

日期	平均氣壓				平均 露點溫度	平均 相對濕度	平均雲量 Mean	總雨量
Date	Mean Pressure	最高 Maximum	平均 Mean	最低 Minimum	Mean Dew Point Temperature	Mean Relative Humidity	Amount of Cloud	Total Rainfall
十二月 December	百帕斯卡 hPa	°C	°C	°C	°C	%	%	毫米 mm
1	1022.1	22.4	19.8	17.2	13.4	67	19	-
2	1022.6	22.4	20.5	18.4	15.7	74	77	-
3	1020.9	22.8	21.3	19.9	17.0	77	87	-
4	1018.2	24.9	22.3	21.0	18.4	79	77	Tr
5	1017.7	25.9	23.3	21.8	19.4	79	84	-
6	1020.7	22.9	20.8	19.4	11.1	54	84	Tr
7	1019.1	22.2	19.9	18.2	12.1	61	73	Tr
8	1016.5	21.7	19.2	17.1	11.4	61	27	-
9	1015.4	21.9	19.4	16.5	12.6	65	16	-
10	1016.4	23.1	20.8	18.3	15.6	72	51	-
11	1016.6	21.5	20.4	19.5	16.0	76	51	Tr
12	1015.1	23.3	21.1	19.0	16.9	77	59	Tr
13	1014.5	25.7	22.9	20.7	18.0	75	48	Tr
14	1018.2	23.4	21.4	18.8	14.2	63	80	Tr
15	1022.6	20.4	18.0	15.6	10.6	62	67	-
16	1025.5	17.1	15.2	13.2	7.7	61	17	-
17	1023.2	18.6	16.6	13.7	10.7	68	56	-
18	1021.6	21.3	19.2	17.2	14.8	76	46	-
19	1018.5	22.5	20.3	18.5	15.3	73	29	-
20	1017.3	22.9	21.3	20.0	17.6	80	80	-
21	1016.8	22.6	21.9	21.0	20.1	90	85	2.8
22	1016.8	24.8	22.4	19.7	17.4	75	59	0.1
23	1019.0	21.9	20.2	19.1	15.1	73	78	Tr
24	1019.2	19.5	18.1	16.9	13.8	76	88	3.7
25	1018.4	20.3	19.5	18.4	16.3	82	85	Tr
26	1017.0	23.7	21.4	19.5	17.6	80	53	-
27	1020.4	21.8	16.6	12.8	8.8	61	45	-
28	1023.0	15.7	14.0	11.5	6.3	60	81	-
29	1024.1	17.9	15.9	13.9	6.5	54	80	-
30	1024.2	18.6	16.6	14.8	8.7	60	83	-
31	1022.8	20.7	18.2	15.6	13.4	74	64	-
平均/總值 Mean/Total	1019.5	21.8	19.6	17.7	13.9	70	62	6.6
正常* Normal*	1020.5	20.2	17.9	15.9	11.9	69	52	26.8
觀測站 Station	天文台 Hong Kong Observatory							

天文台於十二月十三日 14 時 42 分錄得本月最低氣壓 1012.8 百帕斯卡。

The minimum pressure recorded at the Hong Kong Observatory was 1012.8 hectopascals at 1442 HKT on 13 December.

天文台於十二月五日 15 時 48 分錄得本月最高氣溫 25.9°C。

The maximum air temperature recorded at the Hong Kong Observatory was 25.9 °C at 1548 HKT on 5 December.

天文台於十二月二十八日 4 時 57 分錄得本月最低氣溫 11.5°C。

The minimum air temperature recorded at the Hong Kong Observatory was 11.5 ° C at 0457 HKT on 28 December.

京士柏於十二月二十一日 9 時 6 分錄得本月最高1分鐘平均降雨率 54 毫米/小時。

The maximum 1-minute mean rainfall rate recorded at King's Park was 54 millimetres per hour at 0906 HKT on 21 December.

- * 1981-2010 氣候平均值 (除特別列明外) (http://www.hko.gov.hk/wxinfo/climat/normal/cnormal12.htm)
- * 1981-2010 Climatological normal, unless otherwise specified (http://www.hko.gov.hk/wxinfo/climat/normal/enormal12.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 二零一六年十二月香港氣象觀測摘錄(二)

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

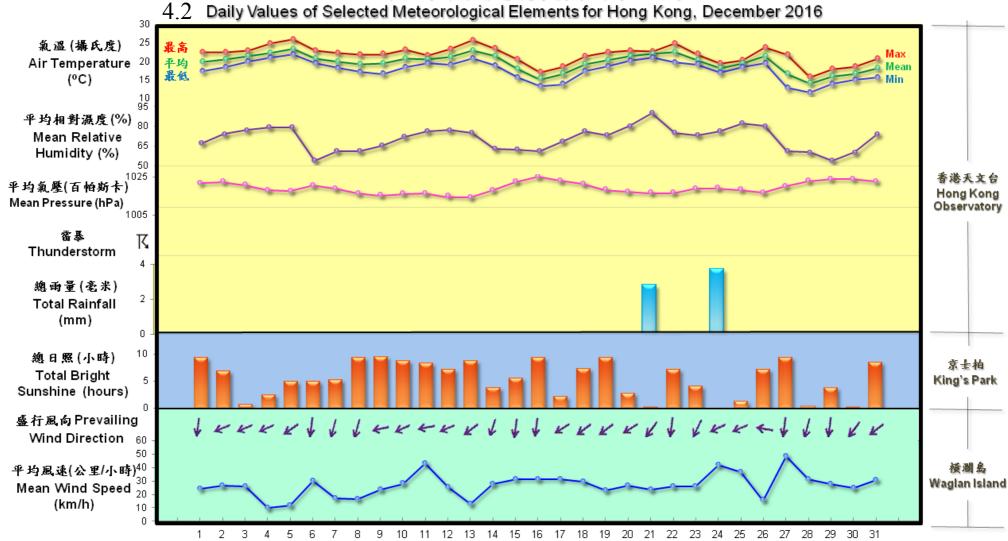
日期 Date	出現低能見度的時數# Number of hours of Reduced Visibility#	總日照 Total Bright Sunshine	每日太陽總輻射 Daily Global Solar Radiation	總蒸發量 Total Evaporation	盛行風向 Prevailing Wind Direction	平均風速 Mean Wind Speed	
十二月 December	小時 hours	小時 hours	兆焦耳/米 ² MJ/m ²	毫米 mm	度 degrees	公里/小時 km/h	
1	2	9.3	16.08	3.1	010	24.3	
2	6	6.8	13.24	0.8	070	26.3	
3	7	0.7	8.32	0.3	070	26.0	
4	13	2.4	9.92	3.2	070	9.8	
5	21	5.0	11.96	4.2	060	12.0	
6	0	4.9	12.00	4.1	010	30.2	
7	5	5.2	11.65	3.8	020	17.3	
8	7	9.3	15.97	2.7	020	16.7	
9	0	9.5	16.59	3.6	080	23.7	
10	5	8.8	15.90	1.0	070	28.0	
11	0	8.3	15.59	3.5	080	42.8	
12	0	7.2	15.18	2.6	070	25.2	
13	5	8.8	15.13	3.1	060	12.7	
14	0	3.8	11.48	5.2	020	27.9	
15	0	5.6	12.56	3.6	010	31.5	
16	0	9.3	15.69	2.8	010	31.1	
17	0	2.1	8.23	1.4	060	31.5	
18	0	7.3	13.56	1.3	060	29.6	
19	0	9.3	16.41	2.3	060	22.8	
20	0	2.7	10.93	1.5	060	26.8	
21	2	0.2	3.70	0.4	040	23.5	
22	2	7.1	14.64	4.8	010	25.9	
23	4	4.1	11.36	2.4	030	25.7	
24	0	-	3.98	1.8	070	41.8	
25	0	1.3	5.93	0.5	070	36.6	
26	10	7.1	14.09	3.8	100	15.6	
27	0	9.4	16.89	4.4	010	48.4	
28	0	0.4	8.34	3.8	020	31.0	
29	0	3.7	11.93	3.3	010	27.8	
30	0	0.2	6.98	1.3	040	24.5	
31	0	8.4	15.48	2.1	060	30.6	
平均/總值 Mean/Total	89	168.2	12.25	82.7	070	26.7	
正常* Normal*	224.9 §	172.2	10.89	83.7	070	26.0	
觀測站 Station	香港國際機場 Hong Kong International Airport	京士柏 King's Park			横瀾島^ Waglan Island^		

横瀾島於十二月二十七日 7 時 53 分錄得本月最高陣風 81 公里/小時,風向 010 度。

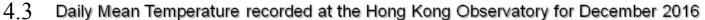
The maximum gust peak speed recorded at Waglan Island was 81 kilometres per hour from 010 degrees at 0753 HKT on 27 December.

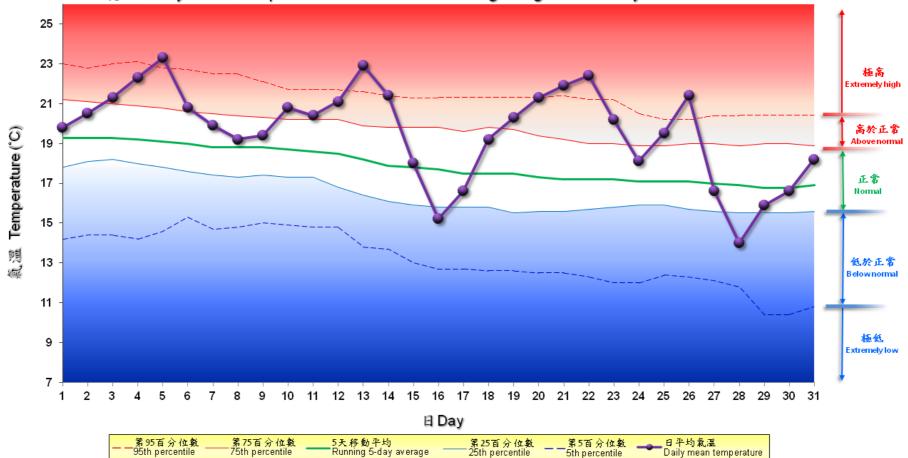
- # 低能見度是指能見度低於 8 公里,不包括出現霧、薄霧或降水。
 - 在2004年及以前,香港國際機場的能見度讀數是基於專業氣象觀測員每小時的觀測數據。在2005年及以後,讀數是採用位於機場 南跑道中間的能見度儀表在每小時前10分鐘的平均數據。這與使用儀器觀測來改進能見度評估的國際趨勢是一致的。
 - 在2007年10月10日前曾出現於此摘錄內香港國際機場2005年及以後的低能見度時數資料乃基於專業氣象觀測員每小時的觀測數據。 有關資料已於2007年10月10日起改為以機場南跑道中間之能見度儀表在每小時前10分鐘的平均數據計算。
- # Reduced visibility refers 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/cnormal12.htm)
- * 1981-2010 Climatological normal, unless otherwise specified (http://www.hko.gov.hk/wxinfo/climat/normal/enormal12.htm)
- § 1997-2015 平均值
- § 1997-2015 Mean value

4.2 2016年12月部分香港氣象要素的每日記錄



4.3 2016年12月香港天文台錄得的日平均氣溫





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

5th percentile

Extremely low: below 5th percentile

Percentile and 5-day running average values are computed

Daily mean temperature

based on the data from 1981 to 2010

5. 二零一六年天氣概況

根據世界氣象組織的初步評估,2016 年很可能是全球有記錄以來最溫暖的年份。根據衛星觀測,在氣温及海面溫度異常高的情况下,北極海冰面積整年均遠低於平均,並有七個月(截至2016年11月)創紀錄新低。各類極端天氣事件於2016年在全球多處肆虐,當中包括非洲、東南亞及中東的熱浪;加拿大及塔斯馬尼亞的災難性山火;中國南部及美國東部的寒潮;非洲南部、南美洲北部、中美洲、加勒比海地區、越南、印度部份地區、印尼、菲律賓、西太平洋熱帶羣島、埃塞俄比亞及澳洲東部部份地區的乾旱;中國長江和北京地區、斯里蘭卡、印度、歐洲西部、尼日爾河盆地及澳洲的暴雨及洪澇;海地、古巴、巴哈馬、中國、朝鮮半島及美國東岸由於熱帶氣旋引致的嚴重破壞及重大傷亡。

赤道太平洋中部和東部自 1950 年以來最強及最長時間的厄爾尼諾事件於 2016 年首數個月穩定地減退,海面溫度於五月返回 ENSO-中性的狀況,並於年底期間轉為稍低於正常。

2016年本港的天氣較正常溫暖,全年平均氣溫為23.6度,較1981-2010年氣候正常值¹¹高0.3度(或較1961-1990年氣候正常值高0.6度),是1884年有記錄以來其中一個第七溫暖的年份,而夏季(6至8月)及秋季(9月至11月)的平均氣溫分別為有記錄以來的第三高及第五高。

高溫天氣方面,2016年的酷熱天氣日數^[2] 為38天,熱夜日數^[3] 為36天,分別是有記錄以來的最高及第二高。在香港天文台錄得全年最高氣溫為7月9日的35.6度。

低温方面,全年的寒冷天氣日數^[4] 為 21 天,較 1981-2010 年氣候正常值多 4 天。在香港天文台錄得全年最低氣溫為 1 月 24 日的 3.1 度。

2016年本港的雨量比正常多,全年雨量為3026.8毫米,較1981-2010年氣候正常值2398.5毫米多約百分之26(較1961-1990年氣候正常值多約百分之37),是有記錄以來的第九高,其中秋季錄得破紀錄的1078.8毫米雨量。受熱帶氣旋莎莉嘉及東北季候風的共同影響,10月19日大雨滂沱,天文台發出了自暴雨警告系統於1992年開始運作以來首個10月份的黑色暴雨警告。全年雷暴報告日數為52天,較1981-2010年正常值多13天。

2016年共有28個熱帶氣旋影響北太平洋西部及南海,較長期平均(1961-2010)約30個為少。全年有13個熱帶氣旋達到颱風或以上強度^[5],比長期平均約15個為少,當中有7個熱帶氣旋達超強颱風程度(中心附近最高十分鐘持續風速達到每小時185公里或以上)。年內有9個熱帶氣旋引致香港天文台發出熱帶氣旋警告信號,較長期年平均約6個為多。天文台在8月妮如及10月海馬吹襲本港期

間發出八號烈風或暴風信號。

至於各月份的詳細天氣論述,可參考「每月天氣摘要」網頁: http://www.weather.gov.hk/wxinfo/pastwx/mws/mwsc_uc.htm

2016年本港發生的重要天氣事件扼述如下:

1月的冰冷寒潮

1月23日至25日期間,本港受一股強烈寒潮影響,出現結冰天氣。香港天文台的氣溫於1月24日下午降至最低的3.1度,是1957年以來最寒冷及有記錄以來其中一個第六寒冷的一天。當日高地錄得零度以下的氣溫,大帽山的最低氣溫降至零下6.0度。此外,高地及新界部分地區亦出現廣泛結霜、霧凇及結冰和降下凍雨及冰粒。

夏季及秋季的高溫天氣

2016 年本港經歷了自 1884 年有記錄以來第三炎熱的夏季。6 月至 8 月平均 氣溫為 29.2 度,較正常值 28.4 度高 0.8 度。

2016 年 6 月是有記錄以來第二炎熱的 6 月,月平均氣溫為 29.4 度,較正常值 27.9 度高 1.5 度。 6 月 24 日至 27 日連續四日的最高氣溫皆為 35.0 度以上,打破了 1963 年 5 月 30 日至 6 月 1 日連續三日的舊紀錄。

2016 年 7 月是有記錄以來其中一個最炎熱的 7 月 , 月平均氣溫為 29.8 度 , 較正常值 28.8 度高 1.0 度 , 與 2014 年 7 月並列最高。香港天文台於 7 月 9 日的最高氣溫高達 35.6 度 , 是有記錄以來 7 月份的第二高。

2016 年本港的秋季亦異常溫暖,9 月至 11 月的平均氣溫高達 25.7 度,是有記錄以來其中一個第五高的秋季。而 2016 年 10 月是有記錄以來最溫暖的 10 月,該月的平均最高氣溫 29.1 度、平均氣溫 26.8 度及平均最低氣溫 25.0 度皆分別較其正常值高 1.3 度,是有記錄以來 10 月份的最高。

1及10月的極端降雨

1月期間影響華南沿岸地區的高空擾動頗為活躍,為本港帶來連場大雨,天文台於1月錄得266.9毫米,是1月份正常數值24.7毫米之10倍以上及1885年有記錄以來1月份的最高兩量。而天文台於1月5日下午1時至2時所錄得的一小時雨量為37.0毫米,亦打破了1月份最高一小時雨量紀錄。暴雨引致天文台發出黄色暴雨警告信號,此乃自暴雨警告系統於1992年開始運作以來最早發出的暴雨警告。

由於 10 月初的暴雨以及熱帶氣旋莎莉嘉和海馬於 10 月 16 至 21 日所帶來的 連場大雨,10 月總雨量 624.4 毫米是 10 月份正常數值 100.9 毫米之六倍以上,是 有記錄以來 10 月份的第二高。其中 10 月 19 日的傾盆大雨引致天文台發出自暴 雨警告系統於 1992 年開始運作以來首個 10 月份的黑色暴雨警告信號。當日下午 3 時至 4 時的一小時雨量為 78.7 毫米,亦打破了 10 月份最高一小時雨量紀錄。

由於 10 月及 11 月的雨量遠超正常, 秋季雨量(9 月至 11 月) 高達 1078.8 毫米, 是秋季正常數值之兩倍以上, 亦是有記錄以來的最高紀錄。

一個活躍的風季

2016 年共有 9 個引致天文台需要發出本地熱帶氣旋警告信號的熱帶氣旋,是 1993 年以來的最高紀錄。其中 10 月份自 1975 年以來首次有 3 個熱帶氣旋導致天文台需要發出熱帶氣旋警告信號。海馬吹襲本港期間,天文台發出了自 1995 年颱風斯寶以來首個 10 月份的八號熱帶氣旋警告信號。2016 年風季活躍的主要成因為菲律賓附近和南海北部的海面溫度比正常高,加上北太平洋西部的大氣狀况提供有利熱帶氣旋進入南海的引導氣流。

表 5.1.1 2016 年破紀錄高溫天氣事件摘要

破紀錄事件 (自 1884 年有記錄以來)	日期/ 週期	新紀錄
1. 最高氣壓	2016年1月24日	1037.7 百帕斯卡
2. 最高 1 月總雨量	2016年1月	266.9 毫米
3. 最高1月1小時雨量	2016年1月5日	37.0 毫米
	下午 1-2 時	
4. 最高 6 月平均最高氣温	2016年6月	32.4 °C
5. 最高氣温在35.0度以上的最長連	2016年6月24-27日	連續四日
續日數		
6. 最高7月平均最高氣温	2016年7月	29.8 °C *
7. 最高全年酷熱天氣日數	2016年	38
8. 最高 10 月平均最高氣温	2016年10月	29.1 °C *
9. 最高 10 月平均氣温	2016年10月	26.8 °C
10. 最高 10 月平均最低氣温	2016年10月	25.0 °C
11. 最高 10 月 1 小時雨量	2016年10月19日	78.7 毫米
	下午 3-4 時	
12. 最高秋季總雨量	2016年9-11月	1078.8 毫米

^{*} 平最高紀錄

附註:

- [1] 1961-1990 年、1971-2000 及 1981-2010 年氣候正常值,可參考: http://www.weather.gov.hk/cis/normal_c.htm。 除特別列明外,本文採用 1981-2010 氣候正常值。
- [2] 酷熱天氣指當日最高氣溫達 33.0 度或以上。
- [3] 熱夜天氣指當日最低氣溫在28.0度或以上。
- [4] 寒冷天氣指當日最低氣溫在 12.0 度或以下。
- [5] 熱帶氣旋分級資料可瀏覽 http://www.hko.gov.hk/informtc/classc.htm。

5. The Year's Weather – 2016

According to the World Meteorological Organization's preliminary assessment, 2016 is very likely to be the world's warmest year on record. Over the Arctic, with unusually high air and sea surface temperatures, the sea ice extent based on satellite observations was well below average throughout the year with seven months (up to November 2016) hitting a record low. Various extreme weather events wreaked havoc in many parts of the world in 2016, including heatwaves in Africa, southeast Asia and Middle East, damaging wildfire in Canada and Tasmania, cold spells in southern China and the eastern United States, drought in southern Africa, northern South America, Central America and the Caribbean, Vietnam, parts of India, Indonesia, the Philippines, various islands of the tropical western Pacific, Ethiopia and parts of eastern Australia, extreme rainfall and flooding in Yangtze and Beijing regions of China, Sri Lanka, India, western Europe, Niger river basin and Australia, and severe damages and heavy casualties due to tropical cyclones in Haiti, Cuba, the Bahamas, China, the Korean Peninsula and the east coast of the United States.

Over the central and eastern equatorial Pacific, the strongest and longest El Niño event since 1950 weakened steadily during the early months of 2016, with sea surface temperatures returning to ENSO-neutral conditions in May and becoming slightly below normal towards the end of the year.

The weather in Hong Kong was also warmer than usual in 2016 with an annual mean temperature of 23.6 degrees, 0.3 degree above the 1981-2010 normal^[1] (or 0.6 degree above the 1961-1990 normal) and among the seventh warmest since records began in 1884. In particular, the mean temperatures for summer (June to August) and autumn (September to November) ranked the third highest and fifth highest respectively on record.

For high temperatures, there were 38 Very Hot Days^[2] and 36 Hot Nights^[3] in Hong Kong in 2016, ranking the highest and the second highest on record respectively. The highest temperature recorded at the Hong Kong Observatory in the year was 35.6 degrees on 9 July.

For low temperatures, the number of Cold Days^[4] in the year was 21 days, 4 days more than the 1981-2010 normal. The lowest temperature recorded at the Hong Kong Observatory in the year was 3.1 degrees on 24 January.

The year 2016 brought more rain than normal in Hong Kong. With a record-breaking autumn rainfall of 1078.8 millimetres, the annual total rainfall amounted to

3026.8 millimetres, a surplus of 26 percent comparing to the 1981-2010 normal of 2398.5 millimetres (or about 37 percent above the 1961-1990 normal) and ranking the ninth highest on record. On 19 October, torrential rain induced by the combined effect of a tropical cyclone (Sarika) and the northeast monsoon necessitated the issuance of the first ever Black Rainstorm Warning in October since the Rainstorm Warning System commenced operation in 1992. The number of days with thunderstorms reported in Hong Kong was 52 days in 2016, about 13 days more than the 1981-2010 normal.

A total of 28 tropical cyclones occurred over the western North Pacific and the South China Sea in 2016, less than the long-term (1961-2010) average of around 30. There were 13 tropical cyclones reaching typhoon intensity^[5] or above during the year, less than the long-term average of about 15, and seven of them reached super typhoon intensity (maximum 10-minute wind speed of 185 km/h or above near the centre). In Hong Kong, nine tropical cyclones necessitated the issuance of tropical cyclone warning signals, higher than the long-term average of about six in a year. The No. 8 Gale or Storm Signals were issued during the passage of Nida in August and Haima in October.

Detailed description of the weather for individual months is available on the Monthly Weather Summary webpage: http://www.hko.gov.hk/wxinfo/pastwx/mws.htm

Some significant weather events in Hong Kong in 2016 are highlighted below:

A Freezing Cold Surge in January

An intense cold surge with freezing temperatures affected Hong Kong during 23 - 25 January. Temperatures at the Hong Kong Observatory dropped to a minimum of 3.1 degrees on the afternoon of 24 January, the coldest day since 1957 and one of the sixth lowest on record. Sub-zero temperatures were recorded on high ground with temperatures at Tai Mo Shan falling to a minimum of -6.0 degrees. There were widespread frost, rime, icing, freezing rain and ice pellets on high ground and in some parts of the New Territories.

High Temperatures in Summer and Autumn

Hong Kong experienced the third hottest summer in 2016 since records began in 1884 with the mean temperature for June to August reaching 29.2 degrees, 0.8 degree above the normal figure of 28.4 degrees.

June 2016 was the second hottest June in Hong Kong on record. The monthly mean temperature of 29.4 degrees was 1.5 degrees above the normal figure of 27.9

degrees. Daily maximum temperatures at the Hong Kong Observatory soared above 35.0 degrees for four consecutive days on 24 - 27 June, breaking the previous record of three consecutive days from 30 May to 1 June in 1963.

July 2016 was one of the hottest July on record with the monthly mean temperature reaching 29.8 degrees, 1.0 degree above the normal figure of 28.8 degrees and on par with the record set in July 2014. The daily maximum temperature at the Hong Kong Observatory reached 35.6 degrees on 9 July, the second highest on record for July.

The weather in Hong Kong was also unseasonably warm in autumn. The mean temperature for September to November 2016 reached 25.7 degrees, one of the fifth highest on record. In particular, October 2016 was the warmest October on record. 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.

Extreme Rainfall in January and October

With active upper-air disturbances affecting the south China coastal areas and bringing outbreaks of heavy rain to Hong Kong in January, the Observatory recorded a total of 266.9 millimetres in the month, more than ten times the January normal of 24.7 millimetres and the highest for January since records began in 1885. Moreover, an hourly rainfall amount of 37 millimetres was recorded at the Observatory between 1 p.m. and 2 p.m. on 5 January, the highest hourly rainfall on record for January. The downpour that day also necessitated the issuance of the Amber Rainstorm Warning, the earliest issued since the rainstorm warning system commenced operation in 1992.

Due to rainstorms in early October and spells of rainy weather associated with tropical cyclones Sarika and Haima between 16 and 21 October, the monthly rainfall recorded in October was 624.4 millimetres, more than six times the October normal of 100.9 millimetres and the second highest on record for October. In particular, torrential rain on 19 October necessitated the issuance of the first ever Black Rainstorm Warning in October since the Rainstorm Warning System commenced operation in 1992. The hourly rainfall amount of 78.7 millimetres between 3 p.m. and 4 p.m. that day was also the highest in October on record.

With rainfall in October and November well above normal, the seasonal rainfall for autumn (September to November) reached 1078.8 millimetres, more than double the autumn normal and the highest on record.

An Active Typhoon Season

Nine tropical cyclones necessitated the issuance of local tropical cyclone warning signals during the year, the highest since 1993. In particular, it was the first time since 1975 that three tropical cyclones necessitated the issuance of tropical cyclone warning signals in October. The No. 8 Signal was raised for Haima, the first time in October since Typhoon Sibyl in 1995. The active tropical cyclone season this year was mainly due to warmer-than-normal sea surface temperature near the Philippines and over the northern part of the South China Sea, as well as favourable atmospheric patterns over the western North Pacific that provided favourable steering flow for tropical cyclones to move towards the South China Sea.

Table 5.1.2 Summary of record-breaking extreme weather events in 2016

Record-breaking Events	Date / Period	New Record
(since records began in 1884)	Date / Feriou	New Record
1. Highest Pressure	24 Jan 2016	1037.7 hPa
Highest Monthly Total Rainfall for January	Jan 2016	266.9 mm
3. Highest 1-Hour Total Rainfall for January	1-2 p.m. on 5 Jan 2016	37.0 mm
Highest Monthly Mean Maximum Temperature for June	Jun 2016	32.4 °C
5. The Longest Consecutive Days of Highest Daily Maximum Temperature above 35.0 °C	24-27 Jun 2016	4 consecutive days
6. Highest Monthly Mean Temperature for July	July 2016	29.8 °C *
7. Highest Annual Number of Very Hot Days	2016	38
8. Highest Monthly Mean Maximum Temperature for October	Oct 2016	29.1 °C *
9. Highest Monthly Mean Temperature for October	Oct 2016	26.8 °C
10. Highest Monthly Mean Minimum Temperature for October	Oct 2016	25.0 °C
11. Highest 1-Hour Total Rainfall for October	3-4 p.m. on 19 Oct 2016	78.7 mm
12. Highest Total Rainfall for Autumn	Sep-Nov 2016	1078.8 mm

^{*} tied highest record

Notes:

- [1] Climatological normals for the reference period of 1961-1990, 1971-2000 and 1981-2010 are available at : http://www.weather.gov.hk/cis/normal_e.htm. Climatological normals of 1981-2010 are referenced in the text unless otherwise stated.
- [2] 'Very Hot Day' refers to the condition with the daily maximum temperature equal to or higher than 33.0 degrees.
- [3] 'Hot Night' refers to the condition with the daily minimum temperature equal to or higher than 28.0 degrees.
- [4] 'Cold Day' refers to the condition with the daily minimum temperature equal to or lower than 12.0 degrees.
- [5] Information on the classification of Tropical Cyclones is available at: http://www.hko.gov.hk/informtc/class.htm

表 5.2.1 二零一六年香港氣象觀測摘要(一)

Table 5.2.1 Summary of Meteorological Observations in Hong Kong (Part1), 2016

	平均氣壓 Mean	氣 温 Air Temperature			平均 露點溫度 Mean	平均 相對濕度 Mean	平均雲量 Mean	總雨量
月份 Month	Pressure	平均日最高 Mean Daily Maximum	平均 Mean	平均日最低 Mean Daily Minimum	Dew Point Temperature	Relative Humidity	Amount of Cloud	Total Rainfall
	百帕斯卡 hPa	°C	°C	°C	°C	%	%	毫米 mm
一 月 January	1020.4	17.8	16.0	14.4	13.0	83	79	266.9
二月 February	1022.2	18.2	15.5	13.4	10.4	74	68	24.8
三月 March	1017.7	20.0	17.5	15.7	14.5	84	79	148.7
四月 April	1011.6	26.0	23.6	21.9	21.6	89	84	211.4
五 月 May	1009.7	29.1	26.7	24.9	23.6	83	78	233.6
六月 June	1007.7	32.4	29.4	27.5	25.8	82	70	347.4
七月 July	1007.0	32.6	29.8	27.4	25.7	79	63	175.9
八月 August	1002.8	31.0	28.4	26.5	25.2	84	72	532.7
九月 September	1007.1	30.4	27.9	26.1	23.9	79	72	323.1
十月 October	1010.7	29.1	26.8	25.0	22.9	80	74	624.4
十一月 November	1017.0	24.5	22.3	20.3	18.3	79	68	131.3
十二月 December	1019.5	21.8	19.6	17.7	13.9	70	62	6.6
平均/總值 Mean/Total	1012.8	26.1	23.6	21.7	19.9	81	72	3026.8
正常* Normal*	1012.9	25.6	23.3	21.4	19.0	78	68	2398.5
觀測站 Station					文台 ; Observatory			

香港天文台於八月二日 3 時 42 分錄得本年最低氣壓 984.5 百帕斯卡。

The annual minimum pressure recorded at the Hong Kong Observatory was 984.5 hectopascals at 0342 HKT on 2 August.

香港天文台於七月九日 15 時 41 分錄得本年最高氣溫 35.6 ℃。

The annual maximum air temperature recorded at the Hong Kong Observatory was 35.6 °C at 1541 HKT on 9 July.

香港天文台於一月二十四日 15 時 30 分錄得本年最低氣溫 3.1 ℃。

The annual minimum air temperature recorded at the Hong Kong Observatory was 3.1 °C at 1530 HKT on 24 January.

横瀾島於八月二日 5 時 23 分錄得本年最高陣風 121 公里/小時,風向 210 度。

The annual maximum gust peak speed recorded at Waglan Island was 121 kilometres per hour from 210 degrees at 0523 HKT on 2 August.

^{* 1981-2010} 氣候平均值 (http://www.weather.gov.hk/cis/normal/1981_2010/normals_c.htm)

^{* 1981-2010} Climatological normal (http://www.weather.gov.hk/cis/normal/1981_2010/normals_e.htm)

表 5.2.2 二零一六年香港氣象觀測摘要(二)

Table 5.2.2 Summary of Meteorological Observations in Hong Kong (Part2), 2016

月份 Month	出現低能見度的時數# Number of hours of Reduced Visibility#		總日照 Total Bright Sunshine	平均每日 太陽總輻射 Mean Daily Global Solar Radiation	總蒸發量 Total Evaporation	盛行風向 Prevailing Wind Direction	平均風速 Mean Wind Speed
		時 urs	小時 hours	兆焦耳/米 ² MJ/m ²	毫米 mm	度 degrees	公里/小時 km/h
一月 January	38	86	67.1	7.15	44.4&	060	29.4
二月 February	78	90	103.3	10.64	72.7	020	21.3
三月 March	90	88	84.8	9.58	64.0&	050	22.8
四月 April	84	16	55.4	9.39	67.5&	040	17.1
五 月 May	35	10	122.2	14.78	105.0&	070	20.2
六月 June	0	1	173.5	17.82	119.4&	220	18.0
七月 July	10	2	218.2	19.50	150.4	230	19.2
八月 August	25	7	148.5	14.60	114.6&	060	17.1
九月 September	45	45	135.7	13.38	103.6&	080	18.9
十月 October	14	28	152.6	12.91	95.2&	070	26.3
十一月 November	51	25	138.3	11.25	84.7&	070	27.0
十二月 December	39	89	168.2	12.25	82.7	070	26.7
平均/總值 Mean/Total	509	487	1567.8	12.77	1104.2&	060	22.0
正常* Normal*	692.3	1312.0§ §	1835.6	12.85	1227.3	080	23.3
觀測站 Station	天文台 Hong Kong Observatory	香港國際機場 Hong Kong International Airport		京士柏 King's Park		横瀾 Waglan	

京士柏於六月六日 6 時 43 分錄得本年最高1分鐘平均降雨率 187 毫米/小時。

The annual maximum 1-minute mean rainfall rate recorded at King's Park was 187 millimetres per hour at 0643 HKT on 6 June.

- # 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.
- * 1981-2010 氣候平均值 (除特別列明外) (http://www.weather.gov.hk/cis/normal/1981_2010/normals_c.htm)
- * 1981-2010 Climatological normal, unless otherwise specified (http://www.weather.gov.hk/cis/normal/1981_2010/normals_e.htm)
- § 1997-2015 平均值
- § 1997-2015 Mean value
- & 數據不完整
- & data incomplete
- ^ 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

表 5.2.3 二零一六年香港氣象觀測摘要(三)

Table 5.2.3 Summary of Meteorological Observations in Hong Kong (Part3), 2016

月份 Month	酷 熱 天 氣 日 數 Number of Very Hot days	熱 夜 日 數 Number of Hot nights	寒冷天氣日數 Number of Cold days	雷暴日數 Number of days with Thunderstorm		
一月 January	-	-	7	2		
二月 February	-	-	10	-		
三月 March	-	-	3	3		
四 月 April	-	-	-	9		
五 月 May	-	2	-	3		
六月 June	13	15	-	8		
七月 July	15	13	-	13		
八月 August	9	4	-	8		
九月 September	1	2	-	5		
十月 October	-	-	-	1		
十一月 November	-	-	-	-		
十二月 December	-	-	1	-		
平均/總值 Mean/Total	38	36	21	52		
正常* Normal*	10.2	17.8	17.1	38.6		
觀測站 Station						

^{* 1981-2010} 氣候平均值 (http://www.weather.gov.hk/cis/normal/1981_2010/normals_c.htm) * 1981-2010 Climatological normal (http://www.weather.gov.hk/cis/normal/1981_2010/normals_e.htm)



圖 5.1 2016年香港月平均氣溫距平

Fig. 5.1 Monthly mean temperature anomalies in Hong Kong in 2016



圖 5.2 2016 年香港月雨量距平

Fig. 5.2 Monthly rainfall anomalies in Hong Kong in 2016

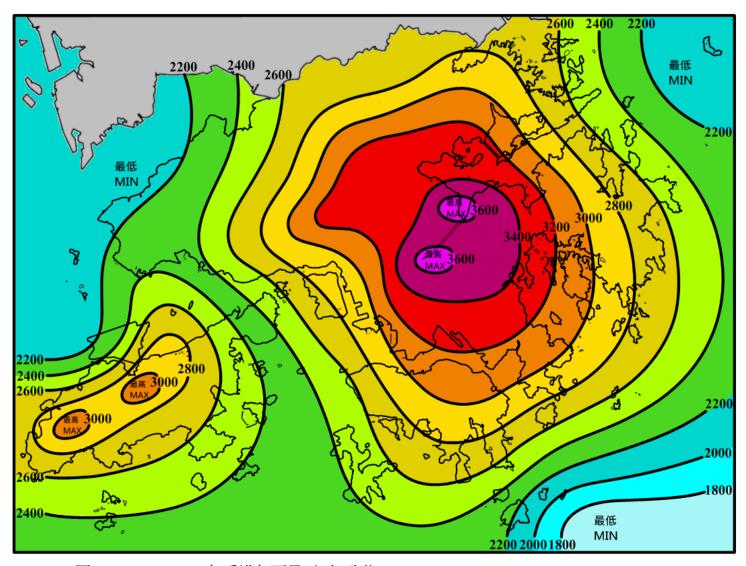


圖 5.3 2016 年香港年雨量(亳米)分佈

Fig. 5.3 Annual rainfall distribution (millimetres) in Hong Kong in 2016



圖 5.4 2016年1月24日在香港各地點的結冰報告

Fig. 5.4 Icing reported at various places in Hong Kong on 24 January 2016

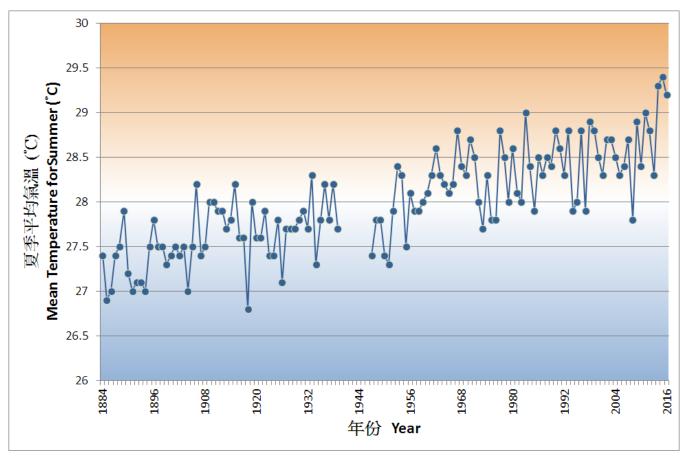


圖 5.5 香港天文台錄得夏季(6月至8月)的平均氣溫的長期趨勢

Fig. 5.5 Long-term trend of summer mean temperature (June to August) recorded at the Hong Kong Observatory



圖 5.6 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. 5.6 Severe flooding at Ching Cheung Road (left) and Chai Wan Road (right) on 19 October 2016 (courtesy of Drainage Services Department)

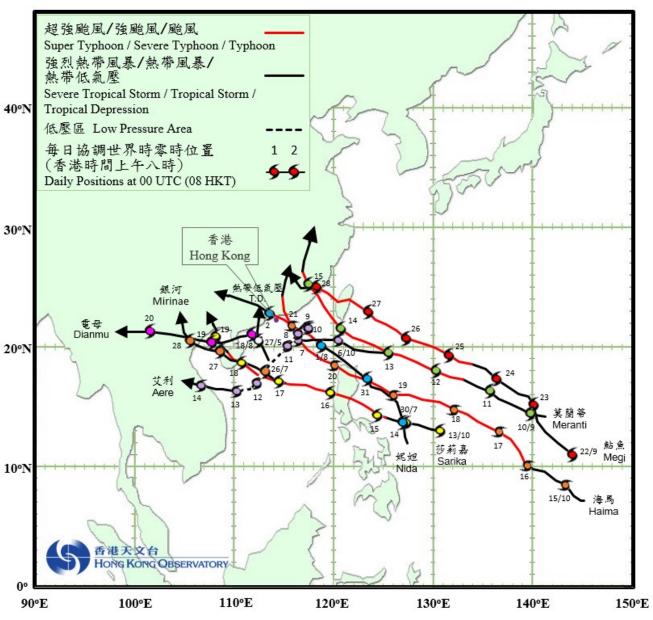


圖 5.7 2016年9個影響香港的熱帶氣旋之路徑

Fig. 5.7 Tracks of the nine tropical cyclones affecting Hong Kong in 2016