## 每月天氣摘要 二零一七年十二月

# Monthly Weather Summary December 2017

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### 1. 二零一七年十二月天氣回顧

與剛過去的十一月相反,二零一七年十二月本港陽光充沛及天氣明朗。除十二月十三日、十七日和二十三日三天外,本月每日皆出現超過兩小時的日照時間,總日照時間為 209.6 小時,較正常值 172.2 小時多 37.4 小時及多約百分之 22。本月的平均氣溫為 17.8 度,較正常值 17.9 度低 0.1 度。全月只錄得微量雨量,大部份於十二月十二日至十四日由一股強烈的偏東季候風所造成。自一八八四年有記錄以來,只有一九零九年十二月並無任何雨量記錄,而二零一七年十二月則為十個錄得微量雨量的十二月之一。然而,二零一七年累積雨量為 2572.1 毫米,亦較正常值 2398.5 毫米多約百分之 7。

受東北季候風引致的乾燥大陸空氣所支配,本港於本月首十一天普遍天晴。一股東北季候風補充抵達華南沿岸並於十二月八日至十日為本港帶來較涼及乾燥的天氣。

受一股清勁至強風程度的偏東氣流影響,十二月十二日至十四日本港風勢頗大、多雲及有幾陣微雨。隨著一道冷鋒於十二月十五日在廣東形成,並於當晚橫過沿岸地區,影響本港的偏東氣流被一股強烈偏北氣流所取代。受冷鋒之後的強烈冬季季候風所影響,隨後六天本港天氣轉為寒冷、風勢頗大及乾燥。十二月十八日香港天文台的氣溫下降至本月最低的 9.8 度,而十二月十九日至二十一日的日間相對濕度下降至百分之 40 以下。除十二月十七日雲量較多外,期間本港天氣持續大致天晴及陽光充沛。

十二月二十二日季候風開始緩和,華南沿岸受較為潮濕的海洋氣流影響,而翌日本港亦受南海北部的雲帶所覆蓋。受一股乾燥大陸氣團的補充影響,覆蓋本港的雲層於十二月二十四日消散,普遍晴朗的天氣持續至月底。

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 2017

In contrast to November, the weather in Hong Kong was sunny and bright in December 2017 and, apart from three days on 13, 17 and 23 December, the territory enjoyed more than two hours of sunshine each day during the month. The monthly total sunshine duration amounted to 209.6 hours, 37.4 hours and 22 percent above the December normal of 172.2 hours. The monthly mean temperature was 17.8 degrees, 0.1 degree below the December normal of 17.9 degrees. Only traces of rainfall were recorded in the month, with most of them occurring during a surge of strong easterly monsoon on 12 – 14 December. The only rain-free December was way back in 1909, and December 2017 was one of ten Decembers with traces of rainfall since records began in 1884. Nevertheless, the total rainfall of 2572.1 millimetres accumulated in 2017 still exceeded the annual normal of 2398.5 millimetres by about 7 percent.

Under the prevalence of dry continental air brought by the northeast monsoon, the weather in Hong Kong was generally fine for the first eleven days of the month, with conditions becoming cooler and drier on 8-10 December as a replenishment of the northeast monsoon reached the south China coastal areas.

A fresh to strong easterly airstream brought windy and cloudier weather with light rain patches to the territory on 12 – 14 December. The easterly winds were soon replaced by a strong northerly airstream as a cold front formed over Guangdong on 15 December and moved across the coastal areas during the night. Affected by an intense winter monsoon behind the cold front, local weather became cold, windy and dry over the next six days. Temperatures at the Hong Kong Observatory on 18 December dropped to a minimum of 9.8 degrees, the lowest of the month, and daytime relative humidity fell below 40 percent on 19 – 21 December. Apart from a cloudy day on 17 December, the weather in Hong Kong remained mostly fine with plenty of sunshine during the period.

The monsoon winds started to subside on 22 December and moister maritime air returned to the south China coast, with cloud bands from the northern part of the South China Sea covering the territory the next day. A replenishment of dry continental air on 24 December soon cleared away the clouds, and generally fine conditions then persisted in Hong Kong till 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 二零一七年十二月發出的警告及信號

### Table 1.1 Warnings and Signals issued in December 2017

### 強烈季候風信號

Strong Monsoon Signal

	時間 ng Time	終結時間 Ending Time		
日/月 時 day/month hour		日/月 day/month	時 hour	
8/12 13/12 16/12	0705 0315 1500	8/12 14/12 17/12	1100 0900 0945	

### 火災危險警告

Fire Danger Warnings

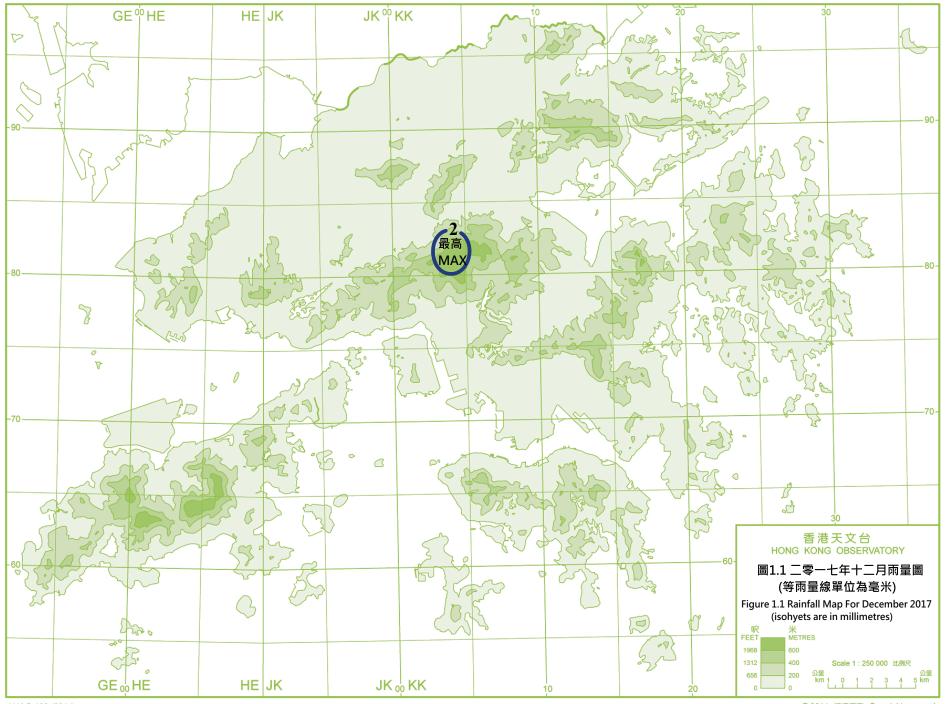
顏色	開始		終結時間	
Colour	Beginnin		Ending Time	
Colour	日/月	時	日/月	時
	day/month	hour	day/month	hour
黃色 Yellow	3/12	0600	3/12	1800
紅色 Red	8/12	0600	11/12	2130
紅色 Red	17/12	0600	21/12	2040
黃色 Yellow	24/12	0600	24/12	1130
紅色 Red	24/12	1130	25/12	2100
黃色 Yellow	26/12	0600	26/12	1930
黃色 Yellow	30/12	1030	30/12	1940
黃色 Yellow	31/12	0600	31/12	1940

### 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 時 day/month hour		
16/12 1620		21/12	1100	





### 2. 二零一七年十二月熱帶氣旋概述

二零一七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。

熱帶低氣壓啟德於十二月十四日早上在馬尼拉之東南偏東約820公里的北太平洋西部上形成,初時移動緩慢。晚上啟德增強為熱帶風暴,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85公里。十二月十六及十七日啟德向西至西南偏西移動,横過菲律賓中部,並減弱為熱帶低氣壓。啟德進入南海南部後再度增強為熱帶風暴,並於十二月十九日轉向西南移動,最後於十二月二十二日清晨在越南以南的海域上減弱為一個低壓區。

根據報章報導,啟德在菲律賓引發嚴重水浸及山泥傾瀉,造成至少 54 人死亡及 24 人失蹤。

熱帶低氣壓天秤於十二月二十一日清晨在馬尼拉之東南偏東約 1250 公里的北太平洋西部上形成,並逐漸增強。隨後兩天天秤朝西南偏西然後偏西方向移動,橫過菲律賓南部。天秤進入南海南部後於十二月二十四日增強為颱風,達到其最高強度,中心附近最高持續風速估計為每小時 130 公里。天秤隨後開始減弱,最終於十二月二十六日在越南以南的海域上減弱為一個低壓區。

根據報章報導,天秤為菲律賓帶來狂風暴雨,引發嚴重水浸及山泥傾瀉,造成至少 240人死亡,超過180人失蹤,逾七萬人無家可歸。

### 2. Overview of Tropical Cyclones in December 2017

Two tropical cyclones occurred over the western North Pacific and the South China Sea in December 2017.

Kai-tak formed as a tropical depression over the western North Pacific about 820 km east-southeast of Manila on the morning of 14 December and moved slowly at first. It intensified into a tropical storm at night, reaching its peak intensity the next day with an estimated maximum sustained wind of 85 km/h near its centre. Kai-tak then tracked west to west-southwestards across the central part of the Philippines on 16 – 17 December and weakened into a tropical depression. After entering the southern part of the South China Sea, Kai-tak re-intensified into a tropical storm and turned southwestwards on 19 December, before finally degenerating into an area of low pressure over the sea areas south of Vietnam early on 22 December.

According to press reports, Kai-tak caused severe flooding and landslides in the Philippines. At least 54 people were killed and 24 people were missing.

Tembin formed as a tropical depression over the western North Pacific about 1250 km east-southeast of Manila on the early morning of 21 December. It intensified gradually, moving west-southwest and then westwards across the southern part of the Philippines over the next two days. After entering the southern part of the South China Sea, Tembin developed into a typhoon and reached its peak intensity with an estimated maximum sustained wind of 130 km/h near its centre on 24 December. It then started to weaken and finally degenerated into an area of low pressure over the sea areas south of Vietnam on 26 December.

According to press reports, torrential rain and squalls brought by Tembin caused severe flooding and landslides in the Philippines. At least 240 people were killed, more than 180 people were missing and over 70 000 people were made homeless.

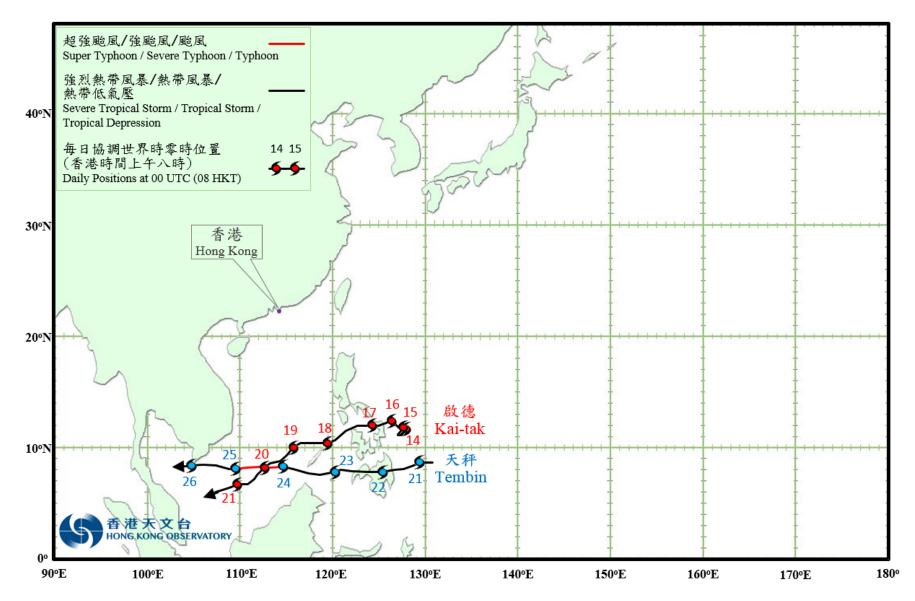
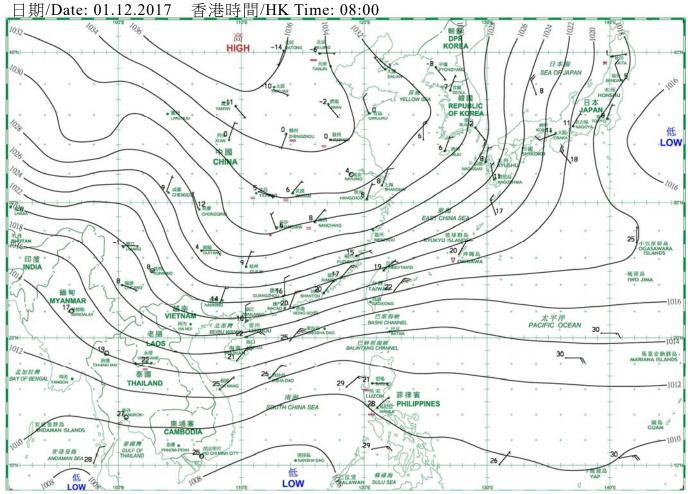
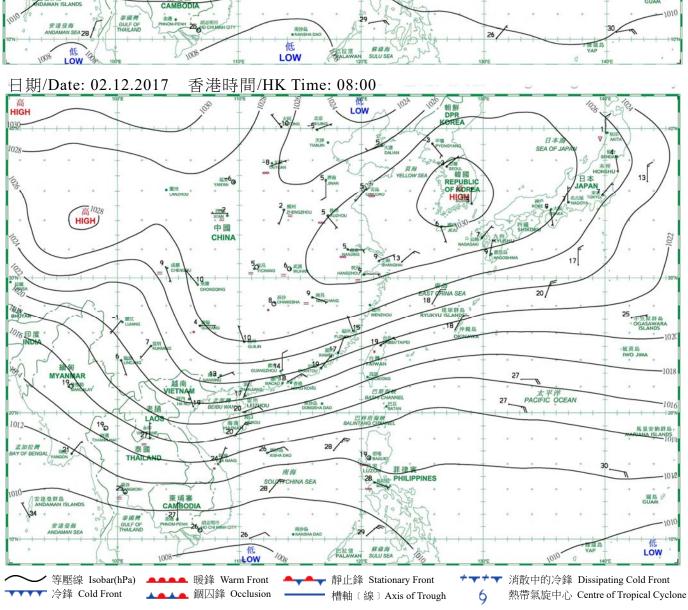


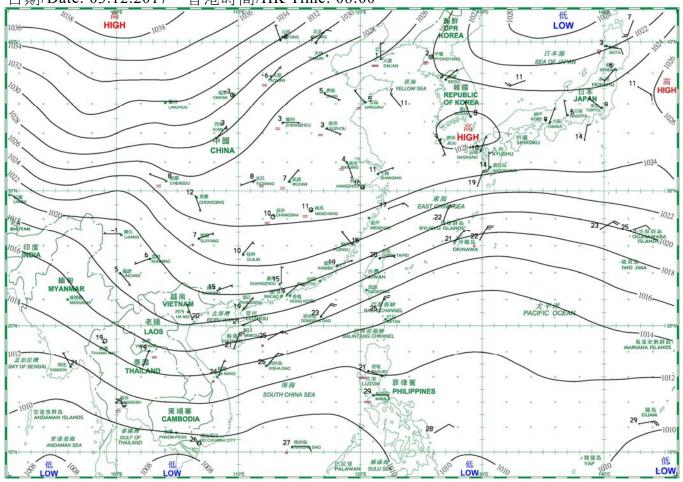
圖 2.1 二零一七年十二月的熱帶氣旋路徑圖

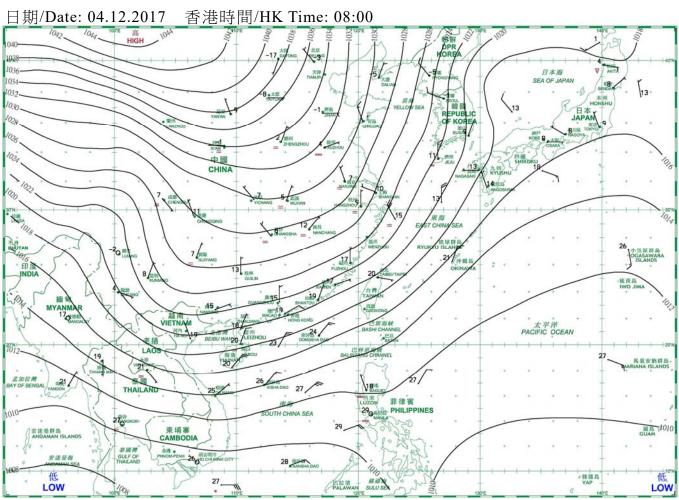
Fig. 2.1 Tracks of tropical cyclones in December 2017



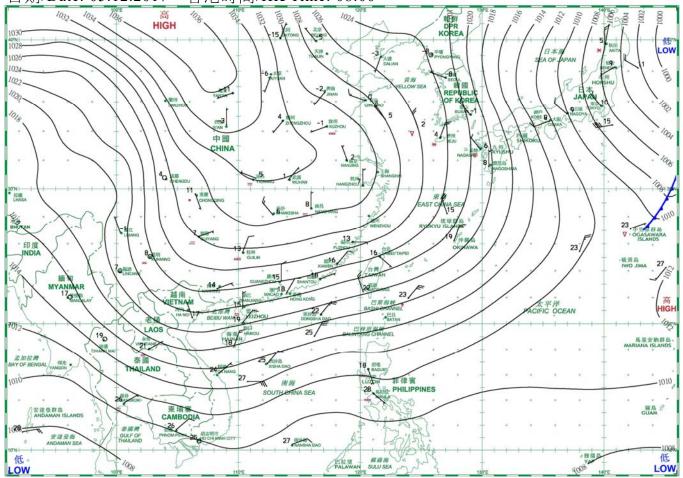


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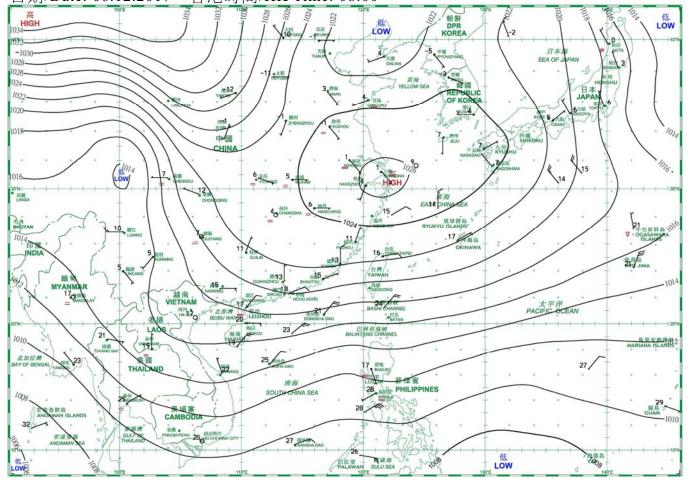


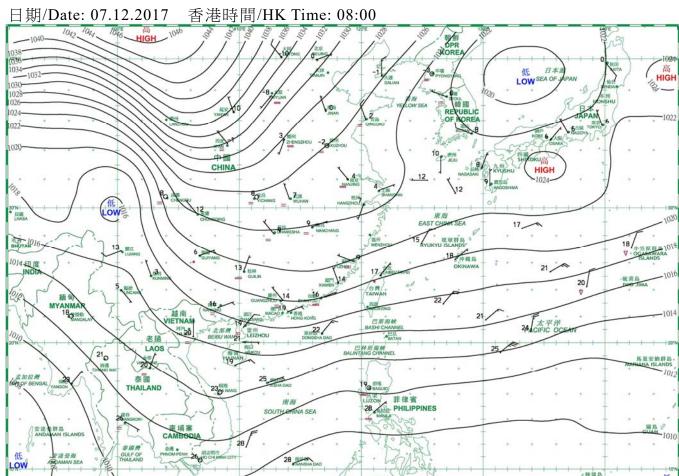


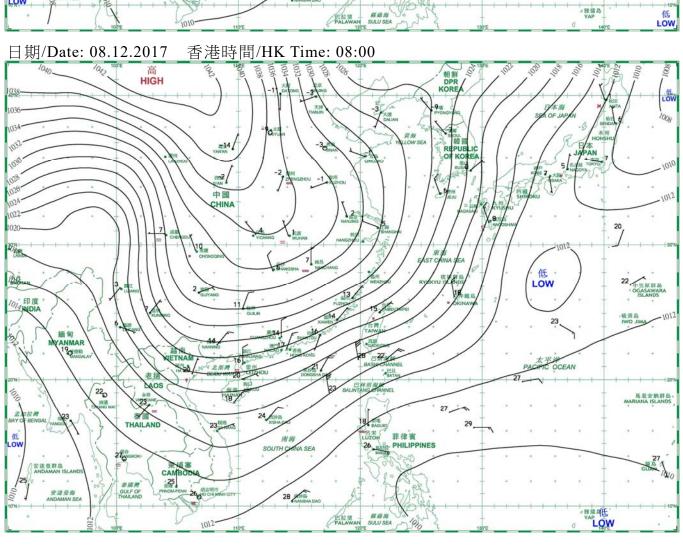
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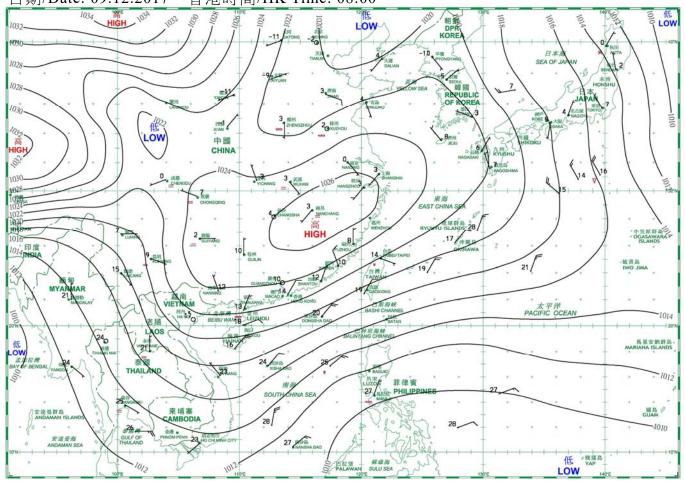
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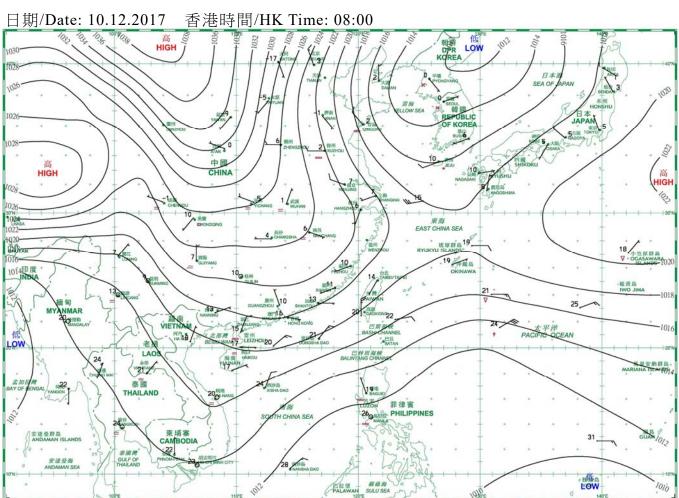


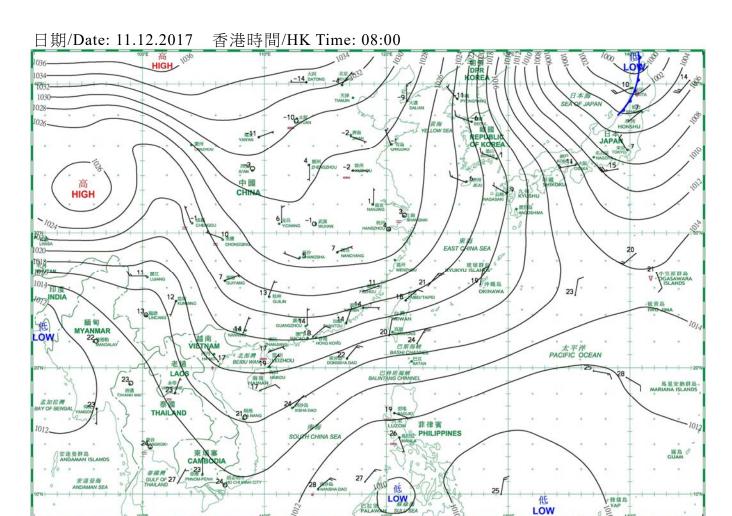


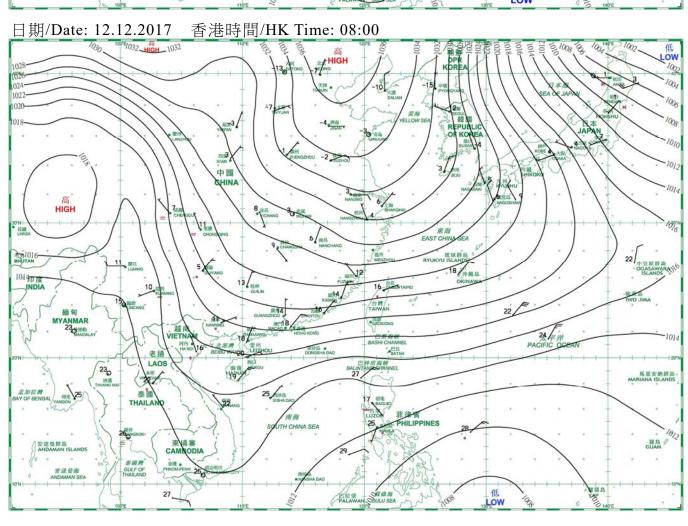


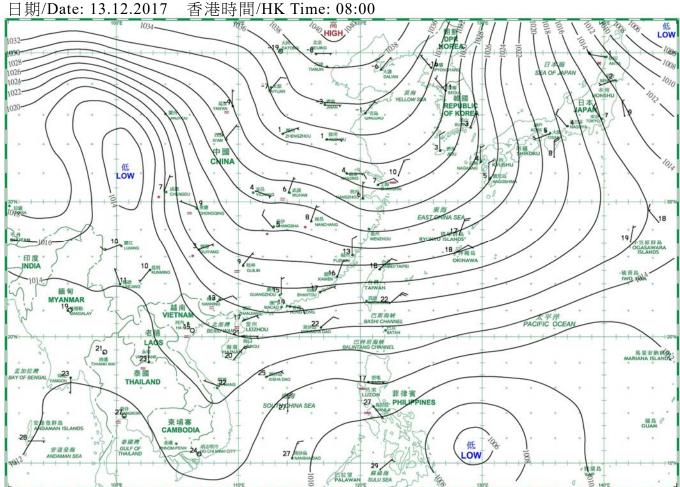
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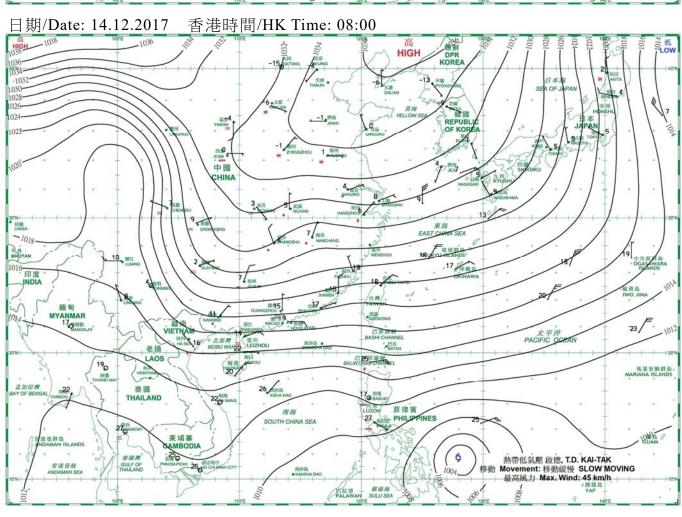




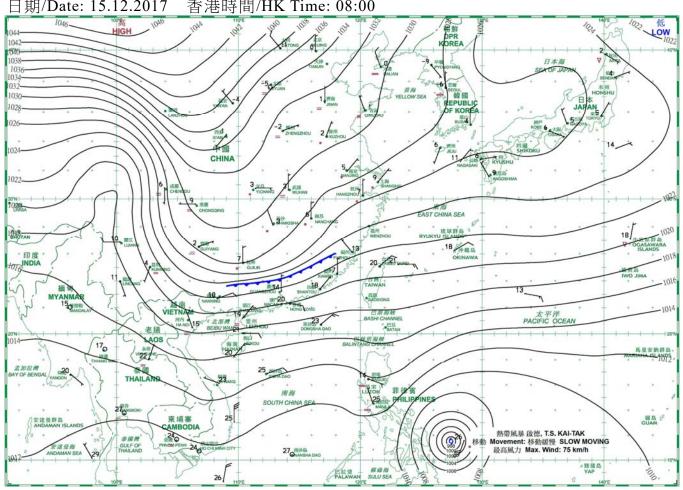


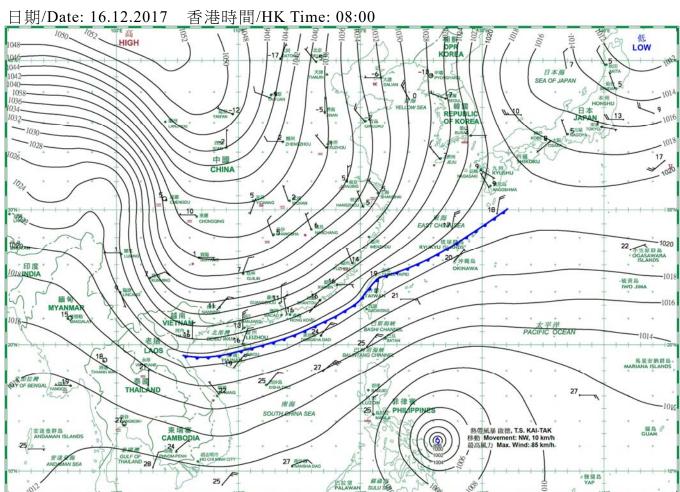




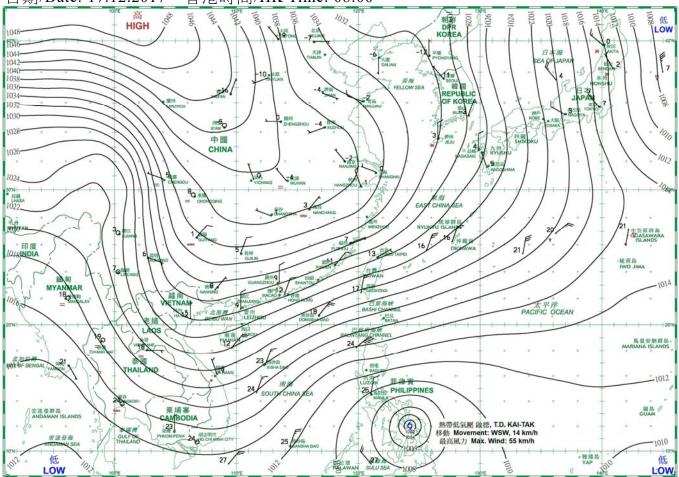


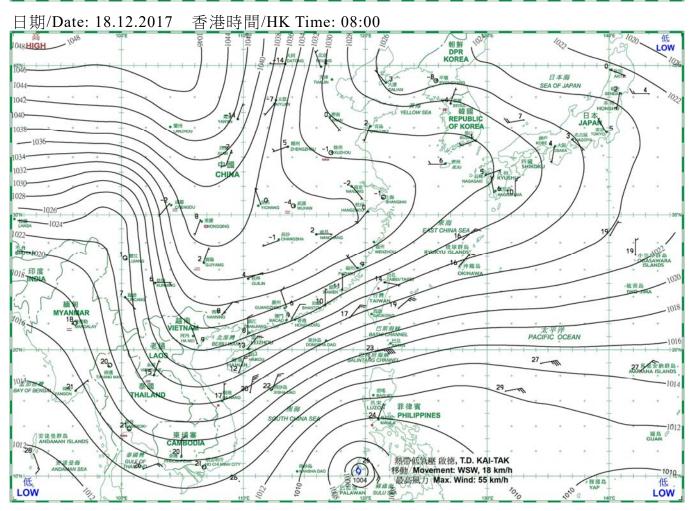
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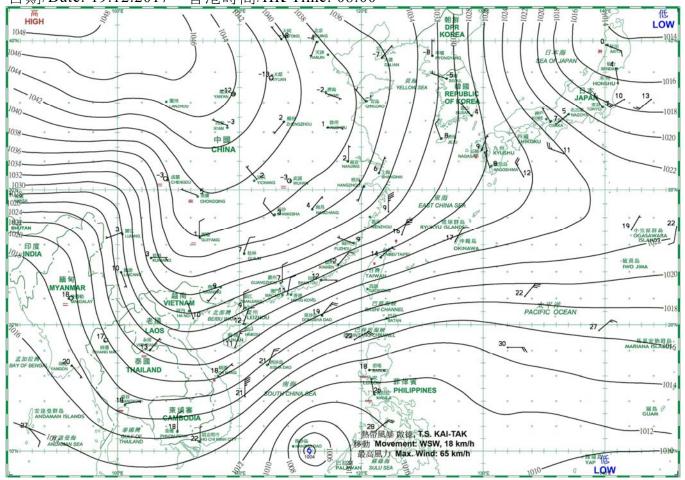


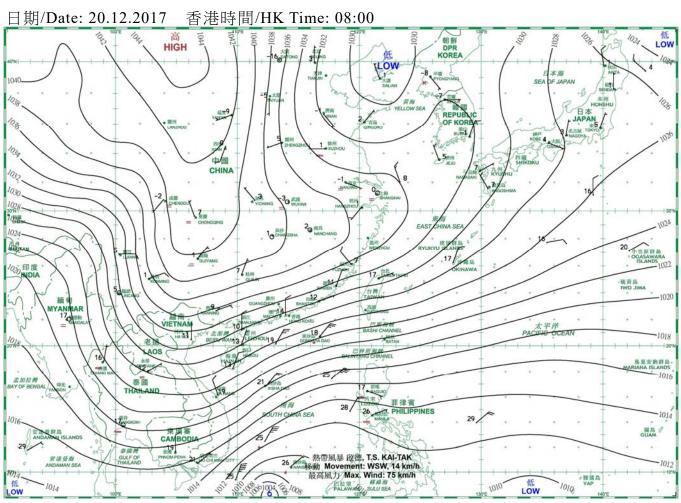
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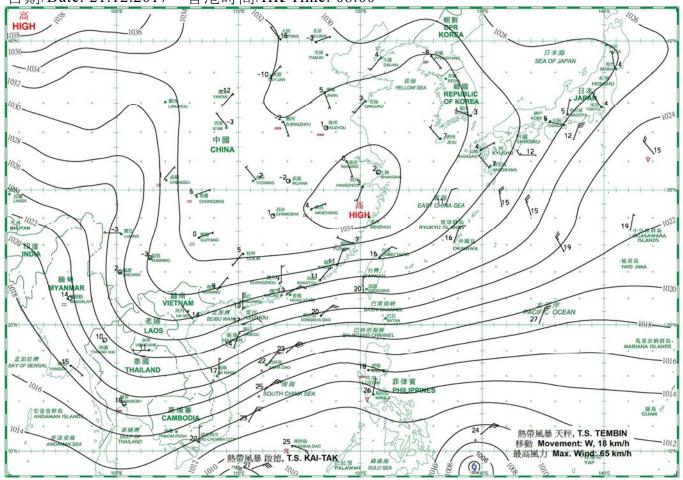


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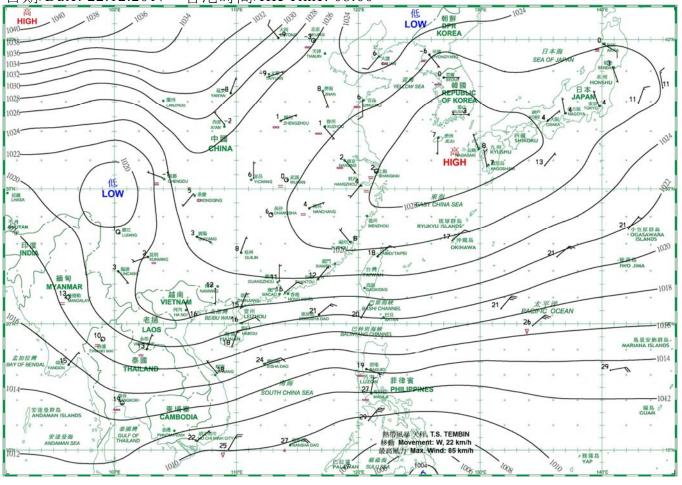




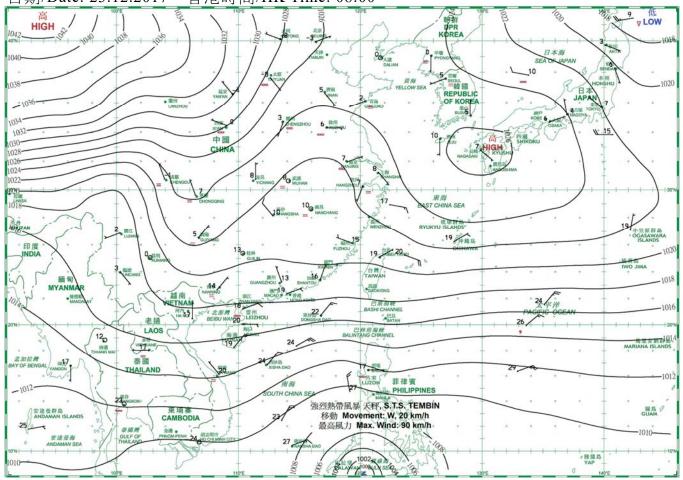
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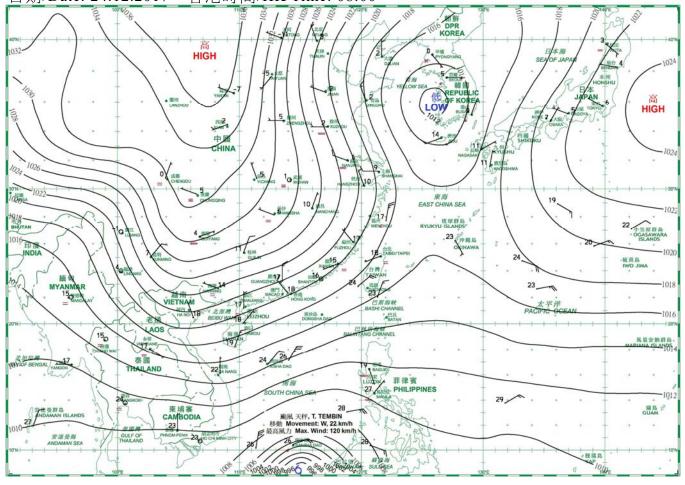
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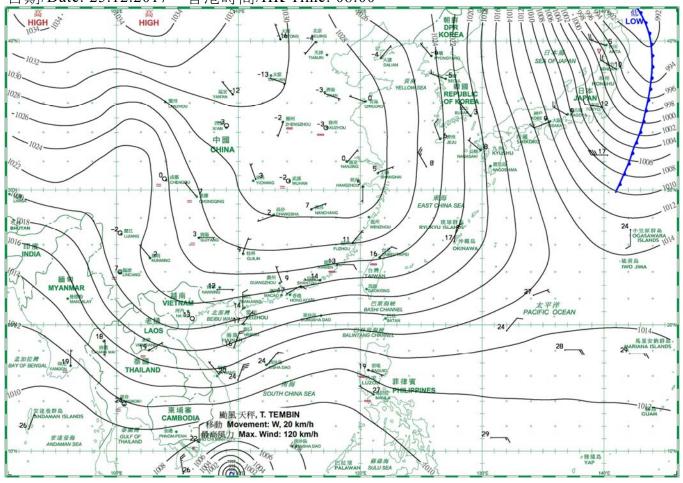
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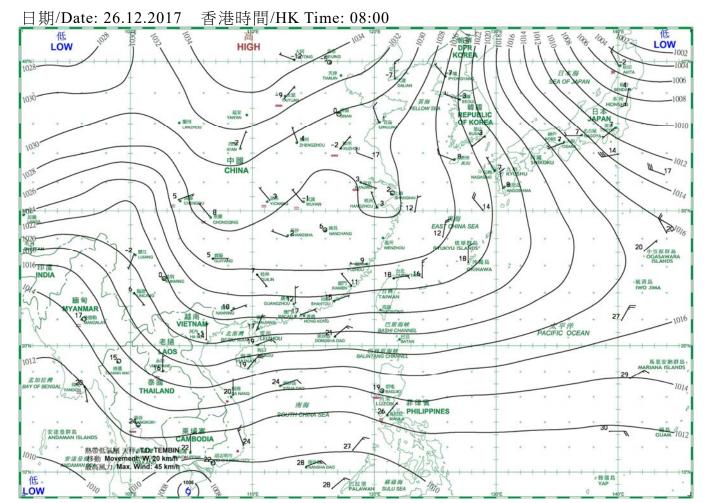




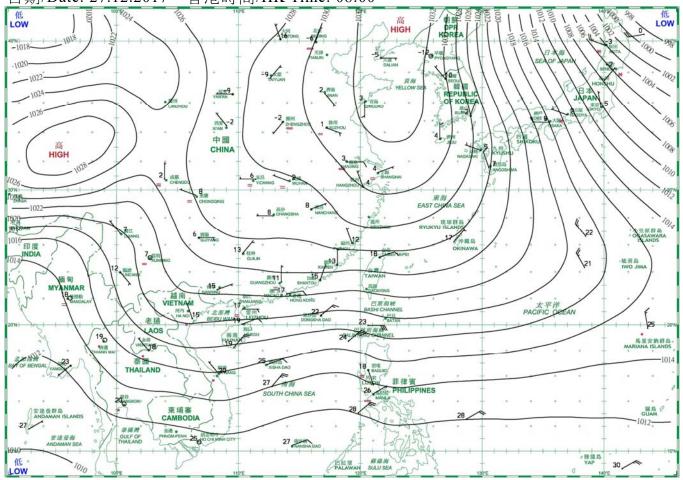


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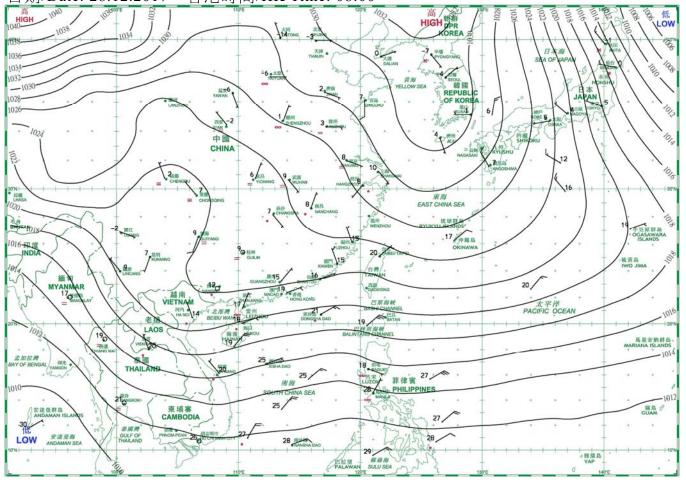




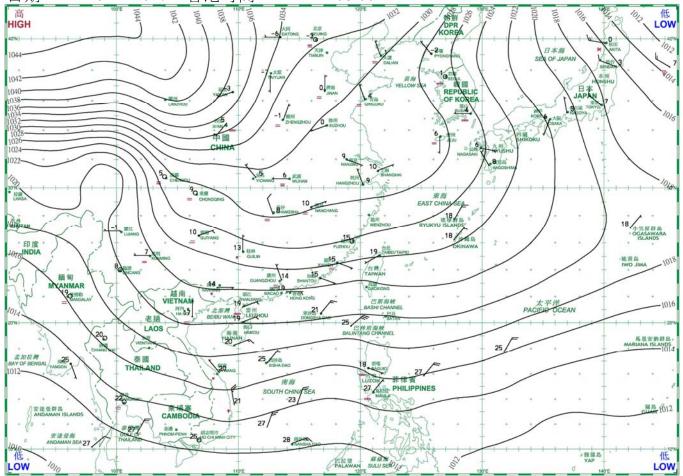
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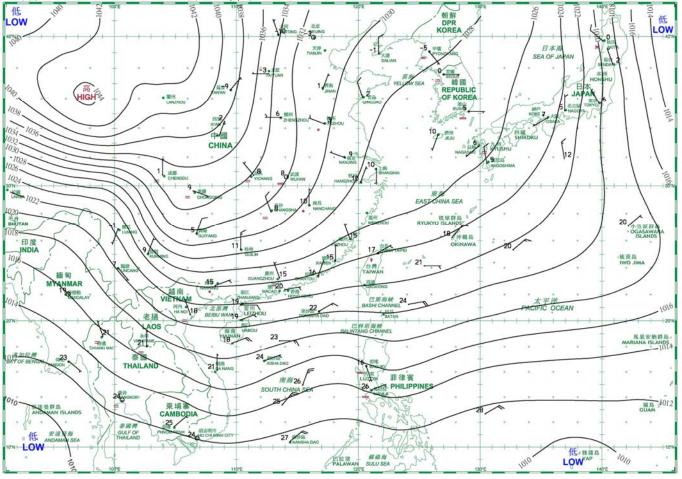




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### 4.1.1 二零一七年十二月香港氣象觀測摘錄(一)

### 4.1.1 Extract of Meteorological Observations in Hong Kong (Part 1), December 2017

日期	平均氣壓	Aiı	氣 溫 r Temperat	u r e	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	1018.8	23.2	21.2	19.7	16.2	73	74	Tr
2	1019.1	22.9	20.1	17.5	15.0	73	65	-
3	1017.7	22.9	20.6	18.9	16.1	76	52	-
4	1018.3	22.3	20.1	18.0	14.7	71	36	-
5	1020.0	20.4	18.9	17.7	13.5	71	78	-
6	1018.5	21.1	18.8	17.5	13.9	73	41	-
7	1018.2	21.8	19.4	17.8	13.4	69	57	-
8	1021.2	19.4	17.6	15.3	6.5	49	9	-
9	1019.7	18.0	15.5	13.3	6.8	56	15	-
10	1018.2	20.4	17.8	14.9	9.7	60	37	-
11	1018.3	21.1	18.9	17.0	10.4	58	57	-
12	1018.4	20.6	18.6	17.4	12.9	70	83	Tr
13	1017.7	19.0	18.4	17.9	14.7	79	89	Tr
14	1018.1	21.1	19.3	18.0	15.3	78	84	Tr
15	1019.2	21.3	19.6	18.5	16.2	81	79	-
16	1023.4	19.5	15.8	12.2	9.7	67	69	-
17	1026.6	14.0	12.3	10.8	5.8	64	81	-
18	1025.5	15.8	12.8	9.8	4.4	57	23	-
19	1025.6	16.5	13.6	10.7	2.1	46	40	-
20	1027.3	17.8	15.2	12.4	1.5	40	29	-
21	1025.7	17.0	15.0	12.4	5.2	53	23	-
22	1021.2	19.1	16.8	14.5	10.0	65	52	-
23	1017.5	21.1	19.0	17.1	14.0	73	91	-
24	1018.1	23.1	20.2	18.1	11.7	60	28	-
25	1019.8	19.7	17.7	16.3	7.6	53	64	-
26	1021.0	19.7	17.6	16.3	12.5	73	69	-
27	1021.2	19.4	17.6	16.2	13.1	75	51	-
28	1020.7	20.6	18.5	17.1	14.1	76	84	Tr
29	1021.3	21.5	19.0	17.7	14.9	77	46	-
30	1021.6	22.6	19.5	17.6	14.1	71	44	-
31	1021.5	21.0	18.1	15.9	11.4	65	33	Tr
平均/總值 Mean/Total	1020.6	20.1	17.8	16.0	11.2	66	54	Tr
正常* Normal*	1020.5	20.2	17.9	15.9	11.9	69	52	26.8
觀測站 Station				天文章 Hong Kong Ol				

天文台於十二月二十三日 15 時 1 分錄得本月最低氣壓 1015.1 百帕斯卡。

The minimum pressure recorded at the Hong Kong Observatory was 1015.1 hectopascals at 1501 HKT on 23 December.

天文台於十二月一日 15 時 21 分錄得本月最高氣溫 23.2°C。

The maximum air temperature recorded at the Hong Kong Observatory was 23.2 ° C at 1521 HKT on 1 December.

天文台於十二月十八日 6 時 44 分錄得本月最低氣溫 9.8 ° C。

The minimum air temperature recorded at the Hong Kong Observatory was 9.8  $^{\rm o}$  C at 0644 HKT on 18 December.

<sup>\* 1981-2010</sup> 氣候平均值 (除特別列明外) (http://www.hko.gov.hk/wxinfo/climat/normal/cnormal12.htm)

<sup>\* 1981-2010</sup> 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 二零一七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 2017

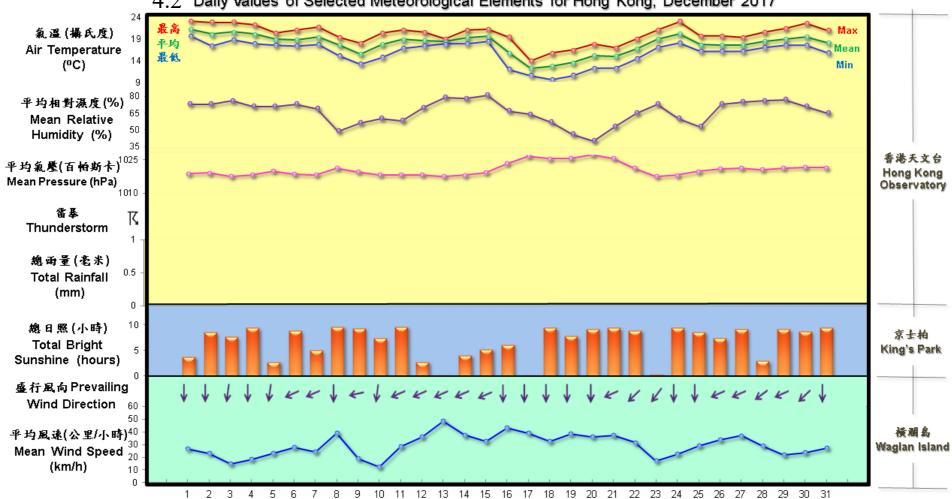
日 期 Date	出現低能見度的時數# Number of hours of Reduced Visibility#	總日照 Total Bright Sunshine	每日太陽總輻射 Daily Global Solar Radiation	總蒸發量 Total Evaporation	盛行風向 Prevailing Wind Direction	平均風速 Mean Wind Speed
十二月	小時	小時	兆焦耳/米²	毫米	度	公里/小時
December	hours	hours	$MJ/m^2$	mm	degrees	km/h
1	0	3.7	10.29	3.1	360	27.0
2	0	8.5	14.54	2.5	360	23.5
3	3	7.6	14.34	2.6	010	15.2
4	2	9.4	16.00	3.4	360	18.4
5	0	2.7	8.11	2.2	010	23.3
6	0	8.8	15.49	2.4	070	28.2
7	4	5.0	11.45	3.9	070	24.6
8	0	9.6	16.14	4.2	360	39.4
9	20	9.3	14.70	2.2	080	18.9
10	20	7.3	13.57	3.9	010	12.4
11	0	9.6	15.63	2.9	070	28.6
12	0	2.7	10.11	2.7	070	36.3
13	0	0.2	4.52	2.5	070	48.6
14	5	4.0	10.57	2.1	070	37.7
15	3	5.2	12.53	2.9	070	32.5
16	0	6.1	13.81	4.3	360	43.5
17	5	0.2	6.49	2.7	360	39.4
18	14	9.4	16.23	2.5	360	32.7
19	0	7.8	15.90	4.6	360	38.7
20	0	9.2	17.41	5.1	360	36.3
21	0	9.4	17.52	2.9	070	37.5
22	0	8.9	15.21	2.5	050	31.8
23	5	0.3	6.51	1.9	040	17.4
24	11	9.4	15.62	5.2	360	22.8
25	0	8.6	14.97	2.9	360	29.1
26	1	7.3	13.47	2.6	070	33.8
27	0	9.2	16.47	3.3	070	37.1
28	2	2.9	9.26	1.7	060	29.4
29	3	9.1	16.63	2.8	070	21.9
30	5	8.7	16.25	3.6	050	23.7
31	3	9.5	16.49	2.8	360	27.4
平均/總值 Mean/Total	106	209.6	13.43	94.9	070	29.6
正常* Normal*	218.1 §	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 Waglan l	

横瀾島於十二月十六日 18 時 9 分錄得本月最高陣風 77 公里/小時,風向 360 度。

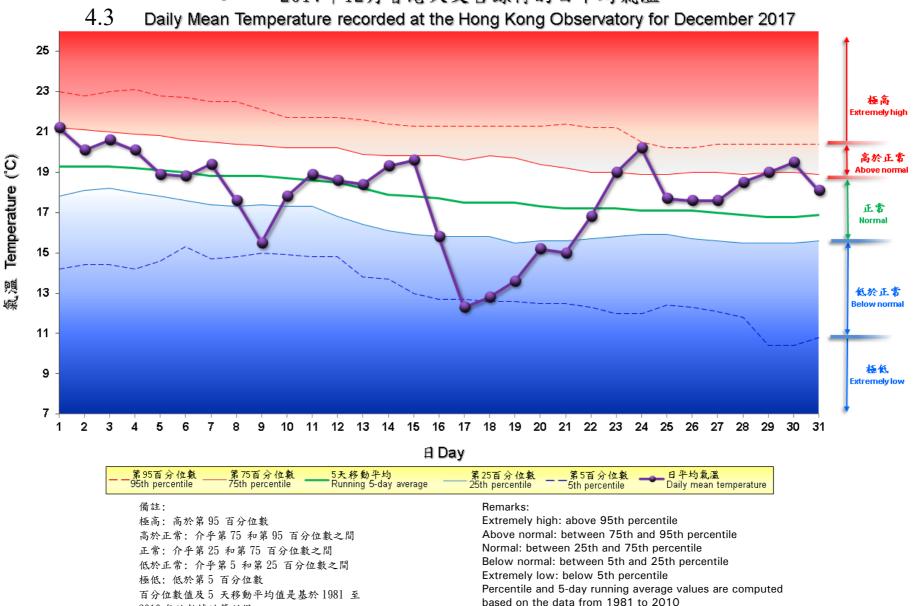
The maximum gust peak speed recorded at Waglan Island was 77 kilometres per hour from 360 degrees at 1809 HKT on 16 December.

- # 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)
- § 1997-2016 平均值
- § 1997-2016 Mean value

4.2 2017年12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, December 2017



### 4.3 2017年12月香港天文台錄得的日平均氣溫



2010年的數據計算所得

### 5. 二零一七年天氣概況

根據世界氣象組織的初步評估,2017年很可能是全球有記錄以來三個最暖的年份之一。北極的海冰面積全年均遠低於平均,首四個月更達到最低紀錄水平。2017年各類極端天氣事件在全球多處肆虐,當中包括智利、阿根廷、澳洲東部、巴基斯坦土爾巴特、伊朗、阿曼、中國上海、美國加州及地中海地區的熱浪;阿根廷部份地區、澳洲東南部及中東波斯灣地區的寒潮;索馬里、肯尼亞、埃塞俄比亞、南蘇丹、烏干達、意大利、西班牙、葡萄牙及朝鮮半島的乾旱。極端降雨引致的嚴重水浸及山泥傾瀉亦影響塞拉利昂、哥倫比亞南部、印度次大陸、斯里蘭卡、秘魯多處地區、華南長江流域及美國西部。熱帶氣旋引致的大風、風暴潮及暴雨為美國德州、加勒比群島、莫桑比克、津巴布韋、馬達加斯加、澳洲、紐西蘭、日本、菲律賓、澳門及華南珠三角地區帶來嚴重破壞及重大傷亡。而高溫及乾旱引發的山火在智利、澳洲東部、紐西蘭、南非、葡萄牙中部、美國、加拿大及地中海地區亦造成災害。

赤道太平洋中部及東部的海水表面溫度於 2017 年上半年稍暖,而下半年卻呈 現降溫趨勢,11 月和 12 月更低於拉尼娜臨界值。

本港方面,2017年的天氣較正常溫暖,全年平均氣溫為23.9度,較1981-2010年氣候正常值<sup>[1]</sup>高0.6度(或較1961-1990年氣候正常值高0.9度),是1884年有記錄以來其中一個第三溫暖的年份,而1月和9月的月平均氣溫分別為18.5度和29.0度,是1884年有記錄以來該月份的最高紀錄。天文台總部於2017年8月22日所錄得最高氣溫36.6度為1884年有記錄以來的歷史新高。全年的熱夜<sup>[3]</sup>數目和酷熱天氣<sup>[2]</sup>日數分別為41及29天,分別為有記錄以來最高及第六高。

低温天氣方面,全年的寒冷天氣<sup>四</sup>日數為 9 天,較 1981-2010 年氣候正常值少 8 天。香港天文台於 12 月 18 日錄得的 9.8 度為全年最低氣溫。

2017 年本港的雨量較正常多,全年雨量為 2572.1 毫米,較 1981-2010 年氣候正常值 2398.5 毫米多約百分之 7 (較 1961-1990 年氣候正常值多約百分之 16)。全年雷暴日數為 48 天,較 1981-2010 年正常值多 9 天。受一道低壓糟影響,本港於5月 24日出現暴雨及狂風雷暴,天文台需要發出全年唯一一次的黑色暴雨警告。

2017年共有32個熱帶氣旋影響北太平洋西部及南海,較長期平均(1961-2010)為多。全年有12個熱帶氣旋達到颱風或以上強度<sup>[5]</sup>,較長期平均約15個為少,當中有四個熱帶氣旋達到超強颱風強度(中心附近最高十分鐘持續風速達到每小時185公里或以上)。年內有七個熱帶氣旋引致香港天文台發出熱帶氣旋警告信號,較長期年平均約六個稍多。天文台在8月天鴿吹襲本港期間曾發出十號颶風信號,而在6月苗柏、7月洛克、8月天鴿及帕卡和10月卡努襲港期間,天文台共五度

發出八號烈風或暴風信號,平了1964年及1999年的紀錄。

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

2017年本港發生的重要天氣事件扼述如下:

### 最溫暖的一月

由於缺乏顯著寒潮影響廣東沿岸地區,2017年1月是有記錄以來最溫暖的1月,該月的平均氣溫及平均最低氣溫分別錄得破紀錄的18.5度及17.0度,分別較各自的正常值高2.2度及2.5度。

### 八月、九月及十月的高溫天氣

受熱帶氣旋天鴿移近香港所帶來的前沿下沉氣流影響,本港於8月22日的天氣相當悶熱,天文台總部的最高氣溫飈升至破紀錄的36.6度。

2017 年 9 月本港的天氣異常炎熱,該月的平均氣溫和平均最低氣溫分別為 29.0 度和 27.2 度,皆為有記錄以來 9 月的最高,分別較各自的正常值高 1.3 和 1.4 度。

2017年10月上半月的天氣同樣地異常炎熱,出現一天酷熱日子及四個熱夜, 是自1884年有記錄以來首次於10月出現熱夜。而10月的平均氣溫為26.3度,較 正常值25.5度高0.8度,是記錄上第五高。

### 一個非常活躍的風季

本年共有七個熱帶氣旋需要發出本地熱帶氣旋警告信號,其中五個更需要發出人號或以上的信號,與 1964 年及 1999 年並列最高紀錄。2017 年本港風季熱帶氣旋活動頻繁的主要原因為南海東北部的海水表面溫度於 7 月、8 月、9 月及 11 月均較正常為高,加上這些月份的大氣形勢為熱帶氣旋進入南海及移向華南提供有利的引導氣流。

#### 超強颱風天鴿的吹襲

2017年8月23日超強颱風天鴿吹襲本港期間,天文台曾發出十號颶風信號, 是2012年7月強颱風韋森特襲港後的首次。天鴿在香港以南水域短暫發展為超強 颱風,是自1979年荷貝以來,首次有熱帶氣旋在八號或以上信號生效期間達到超 強颱風的強度。

天鴿接近本港期間適逢天文大潮及漲潮,天鴿引發的風暴潮導致本港多處低

窪地區被海水淹浸及造成嚴重破壞。鰂魚涌的潮位最高升至 3.57 米(海圖基準面以上),是自 1954 年有儀器觀測記錄以來的第二高,僅次於 1962 年超強颱風溫黛所創的最高潮位紀錄 3.96 米(海圖基準面以上)。詳細資料可參閱超強颱風天鴿的熱帶氣旋報告(http://www.hko.gov.hk/informtc/hato17/hato\_uc.htm)

### 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。

表 5.1.1 2017 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1月平均氣溫	2017年1月	18.5°C
2.	最高1月平均最低氣溫	2017年1月	17.0°C
3.	最高7月日平均氣溫	2017年7月30日	31.8°C*
4.	最高氣溫	2017年8月22日	36.6°C
5.	最高9月平均氣溫	2017年9月	29.0°C*
6.	最高9月平均最低氣溫	2017年9月	27.2°C
7.	最高冬季平均氣溫	2016年12月	18.4°C*
		至 2017 年 2 月	
8.	最多全年熱夜數目	2017年	41 天

<sup>\*</sup> 平最高紀錄

### 5. The Year's Weather – 2017

Globally, according to the World Meteorological Organization's preliminary assessment, 2017 is very likely to be one of the three warmest years on record. Over the Arctic, sea-ice extent was well below average throughout 2017 and reached recordlow levels for the first four months of the year. Various extreme weather events wreaked havoc in many parts of the world in 2017, including heatwaves in Chile, Argentina, eastern Australia, Turbat of Pakistan, Iran, Oman, Shanghai of China, California of the United States and the Mediterranean region, cold spells in parts of Argentina, southeastern Australia and the Gulf region in the Middle East, drought in Somalia, Kenya, Ethiopia, South Sudan, Uganda, Italy, Spain, Portugal, and the Korean Peninsula. Extreme rainfall triggered severe flooding and landslides in Sierra Leone, southern Colombia, the Indian sub-continent, Sri Lanka, many parts of Peru, the Yangtze River basin of southern China and western United States. High winds, storm surges and torrential rain induced by tropical cyclones brought severe damages and heavy casualties to Texas of the United States, the Caribbean islands, Mozambique, Zimbabwe, Madagascar, Australia, New Zealand, Japan, the Philippines, Macao and the Pearl River Delta region in southern China. High temperature and drought also contributed to destructive wildfires in Chile, eastern Australia, New Zealand, South Africa, central Portugal, the United States, Canada, and the Mediterranean region.

The central and eastern equatorial Pacific was slightly warm in the first half of 2017. However, a cooling trend emerged in the second half of the year with sea surface temperature of the region falling below the La Niña threshold in November and December.

Locally, the weather in Hong Kong was warmer than usual in 2017 with an annual mean temperature of 23.9 degrees, 0.6 degree above the 1981-2010 normal[1] (or 0.9 degree above the 1961-1990 normal) and among the third warmest since records began in 1884. In particular, the monthly mean temperatures of 18.5 degrees for January and 29.0 degrees for September both ranked the highest for the respective month since records began in 1884. The daily maximum temperature of 36.6 degrees on 22 August recorded at the Hong Kong Observatory was an all-time high since records began in 1884. There were 41 Hot Nights[3] and 29 Very Hot Days[2] in Hong Kong in 2017, ranking the highest and the sixth highest on record respectively.

For low temperatures, the number of Cold Days[4] in the year was 9 days, which is 8 days less than the 1981-2010 normal. The lowest temperature recorded at the Hong Kong Observatory in the year was 9.8 degrees on 18 December.

The year 2017 brought more rain than normal in Hong Kong. The annual total rainfall was 2572.1 millimetres, a surplus of 7 percent comparing to the 1981-2010 normal of 2398.5 millimetres (or about 16 percent above the 1961-1990 normal). The number of days with thunderstorms reported in Hong Kong was 48 days in 2017, about 9 days more than the 1981-2010 normal. Affected by a trough of low pressure, torrential rain and squally thunderstorms in Hong Kong led to the issuance of the only Black Rainstorm Warning in the year on 24 May.

A total of 32 tropical cyclones occurred over the western North Pacific and the South China Sea in 2017, more than the long-term (1961-2010) average. There were 12 tropical cyclones reaching typhoon intensity[5] or above during the year, less than the long-term average of about 15, and four of them reached super typhoon intensity (maximum 10-minute wind speed of 185 km/h or above near the centre). In Hong Kong, seven tropical cyclones necessitated the issuance of tropical cyclone warning signals, slightly higher than the long-term average of about six in a year. The Hurricane Signal No. 10 was issued during the passage of Hato in August, while the No. 8 Gale or Storm Signals was issued five times for the passages of Merbok in June, Roke in July, Hato and Pakhar in August and Khanun in October, equalling the records of 1964 and 1999.

Detailed description of the weather for individual months is available on the Monthly Weather Summary webpage:

http://www.weather.gov.hk/wxinfo/pastwx/mws.htm

Some significant weather events in Hong Kong in 2017 are highlighted below:

### Warmest January

With no significant cold surge affecting the coastal areas of Guangdong, January 2017 was the warmest January in Hong Kong with record-breaking monthly mean temperature of 18.5 degrees and monthly mean minimum temperature of 17.0 degrees, 2.2 degrees and 2.5 degrees above their respective normals.

#### High Temperatures in August, September and October

As Super Typhoon Hato headed towards Hong Kong, the subsidence effect ahead of its circulation brought oppressive heat to the territory on 22 August as the temperature at the Hong Kong Observatory soared to an all-time record-breaking high of 36.6 degrees.

The weather in Hong Kong was unseasonably hot in September. The monthly mean temperature of 29.0 degrees and monthly mean minimum temperature of 27.2 degrees were the highest ever on record for September, 1.3 degrees and 1.4 degrees above their respective normals.

The weather was also unseasonably hot in Hong Kong in the first half of October with one very hot day and four hot nights. It was also the first time with hot nights occurring in October since records began in 1884. The monthly mean temperature was 26.3 degrees, 0.8 degree above the normal of 25.5 degrees and the fifth highest on record for October.

#### A Very Active Typhoon Season

Seven tropical cyclones necessitated the issuance of tropical cyclone warning signals during the year. Five of them even necessitated the issuance of Signal No.8 or above, a joint record with the years 1964 and 1999. The active tropical cyclone season in 2017 was mainly due to warmer-than-normal sea surface temperature over the northeastern part of the South China Sea in July, August, September and November. The atmospheric pattern during these months also provided favourable steering flow for tropical cyclones to move into the South China Sea and towards southern China.

### The Strike of Super Typhoon Hato

The Observatory issued the highest tropical cyclone warning, No.10 Hurricane Signal, on 23 August 2017 during the passage of Super Typhoon Hato, the first time since Severe Typhoon Vicente in July 2012. Hato momentarily attained super typhoon intensity over the sea areas south of Hong Kong, the first time since Hope in 1979 that a tropical cyclone reached super typhoon intensity during the period when tropical cyclone warning signals No.8 or above were in force in Hong Kong.

With the approach of Hato coinciding with the high water of the astronomical tide, storm surges induced by Hato resulted in serious sea water flooding and damages in many low-lying areas in Hong Kong. The water level at Quarry Bay reached a maximum of 3.57 mCD (metres above Chart Datum), the second highest since instrumental records began in 1954 and only lower than the record high of 3.96 mCD set by Super Typhoon Wanda in 1962. More details can be found in the tropical cyclone report of Super Typhoon Hato

(http://www.hko.gov.hk/informtc/hato17/hato.htm).

#### 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.weather.gov.hk/informtc/class.htm

Table 5.1.2 Summary of record-breaking high temperature events in 2017

	rune 3.1.2 Summary of record of caking high temperature events in 2017						
	Record-breaking Events	Date / Period	New Record				
	(since records began in 1884)	, ,,					
1.	Highest Monthly Mean Temperature for	January 2017	18.5°C				
	January						
2.	Highest Monthly Mean Minimum	January 2017	17.0°C				
	Temperature for January						
3.	Highest Daily Mean Temperature for July	30 July 2017	31.8℃*				
4.	Maximum Temperature	22 August 2017	36.6℃				
5.	Highest Monthly Mean Temperature for	September 2017	29.0°℃*				
	September						
6.	Highest Monthly Mean Minimum	September 2017	27.2℃				
	Temperature for September						
7.	Highest Mean Temperature for Winter	December 2016 to	18.4℃*				
		February 2017					
8.	Highest Annual Number of Hot Nights	2017	41 days				

<sup>\*</sup> tied highest record

### 表 5.2.1 二零一七年香港氣象觀測摘要(一)

Table 5.2.1 Summary of Meteorological Observations in Hong Kong (Part1), 2017

	平均氣壓			平均 露點溫度	平均 相對濕度	平均雲量 Mean	總雨量	
月份 Month	Mean Pressure	平均日最高 Mean Daily Maximum	平均 Mean	平均日最低 Mean Daily Minimum	Mean Dew Point Temperature	Mean Relative Humidity	Amount of Cloud	Total Rainfall
	百帕斯卡 hPa	°C	°C	°C	°C	%	%	毫米 mm
一 月 January	1019.8	20.6	18.5	17.0	14.7	79	66	7.8
二月 February	1020.5	20.0	17.0	14.9	12.2	75	65	19.9
三月 March	1016.4	21.7	19.3	17.3	15.7	81	80	48.0
四月 April	1013.2	26.2	23.3	21.2	19.8	81	69	58.8
五 月 May	1010.5	28.6	26.0	24.2	22.5	82	77	399.3
六月 June	1006.7	31.3	28.8	27.2	25.6	83	78	656.0
七月 July	1006.8	31.4	28.7	26.9	25.5	83	79	570.0
八月 August	1006.3	32.1	29.3	27.3	25.3	80	70	489.1
九月 September	1009.1	31.9	29.0	27.2	25.0	80	65	192.4
十月 October	1012.7	29.0	26.3	24.4	20.4	71	57	99.6
十一月 November	1016.6	24.4	22.2	20.5	17.6	76	74	31.2
十二月 December	1020.6	20.1	17.8	16.0	11.2	66	54	Tr
平均/總值 Mean/Total	1013.3	26.4	23.9	22.0	19.6	78	70	2572.1
正常* Normal*	1012.9	25.6	23.3	21.4	19.0	78	68	2398.5
觀測站 Station					文台 g Observatory			

香港天文台於八月二十三日 9 時 39 分錄得本年最低氣壓 986.3 百帕斯卡。

The annual minimum pressure recorded at the Hong Kong Observatory was 986.3 hectopascals at 0939 HKT on 23 August.

香港天文台於八月二十二日 14 時 0 分錄得本年最高氣溫 36.6℃。

The annual maximum air temperature recorded at the Hong Kong Observatory was 36.6 °C at 1400 HKT on 22 August.

香港天文台於十二月十八日 6 時 44 分錄得本年最低氣溫 9.8 ℃。

The annual minimum air temperature recorded at the Hong Kong Observatory was 9.8  $^{\circ}\text{C}$  at 0644 HKT on 18 December.

京士柏於五月四日 10 時 54 分錄得本年最高1分鐘平均降雨率 184 毫米/小時。

The annual maximum 1-minute mean rainfall rate recorded at King's Park was 184 millimetres per hour at 1054 HKT on 4 May.

<sup>\* 1981-2010</sup> 氣候平均值 (http://www.weather.gov.hk/cis/normal/1981\_2010/normals\_c.htm)

<sup>\* 1981-2010</sup> Climatological normal (http://www.weather.gov.hk/cis/normal/1981\_2010/normals\_e.htm)

Tr - 微量 (降雨量少於 0.05 毫米)

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

### 表 5.2.2 二零一七年香港氣象觀測摘要(二)

Table 5.2.2 Summary of Meteorological Observations in Hong Kong (Part2), 2017

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 <sup>2</sup> MJ/m <sup>2</sup>	毫米 mm	度 degrees	公里/小時 km/h
一月 January	107	81	145.1	11.10	59.4	070	26.4
二月 February	49	34	139.9	13.31	68.5	060	26.7
三月 March	128	50	85.2	10.71	67.3	060	26.5
四月 April	55	8	130.3	14.10	84.1	070	20.1
五 月 May	78	46	126.0	14.30	96.2	080	18.6
六月 June	0	0	138.9	15.42	101.4	240	23.0
七月 July	31	4	162.9	16.55	117.6	090	22.1
八月 August	23	8	205.4	17.92	127.9	230	20.7
九月 September	79	26	187.1	15.82	103.8	080	17.5
十月 October	0	0	228.6	16.35	124.1	070	32.8
十一月 November	22	32	114.3	10.62	81.4	060	28.8
十二月 December	73	106	209.6	13.43	94.9	070	29.6
平均/總值 Mean/Total	645	395	1873.3	14.14	1126.6	070	24.4
正常* Normal*	692.3	1270.8 §	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 l	

横瀾島於八月二十三日 9 時 10 分錄得本年最高陣風 193 公里/小時,風向 080 度。

The annual maximum gust peak speed recorded at Waglan Island was 193 kilometres per hour from 080 degrees at 0910 HKT on 23 August.

- # 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)
- § 1997-2016 平均值
- § 1997-2016 Mean value
- ^ ^ 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 二零一七年香港氣象觀測摘要(三)

Table 5.2.3 Summary of Meteorological Observations in Hong Kong (Part3), 2017

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	-	-	-	-		
二月 February	-	-	6	1		
三月 March	-	-	-	-		
四 月 April	-	-	-	3		
五 月 May	-	-	-	3		
六月 June	6	13	-	9		
七月 July	7	6	-	15		
八月 August	10	14	-	7		
九月 September	5	4	-	8		
十月 October	1	4	-	2		
十一月 November	-	-	-	-		
十二月 December	-	-	3	-		
平均/總值 Mean/Total	29	41	9	48		
正常* Normal*	10.2	17.8	17.1	38.6		
觀測站 Station						

<sup>\* 1981-2010</sup> 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)

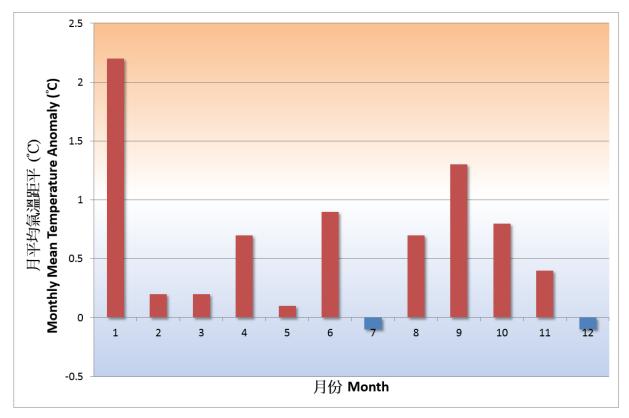


圖 5.1 2017年香港月平均氣溫距平

Fig. 5.1 Monthly mean temperature anomalies in Hong Kong in 2017

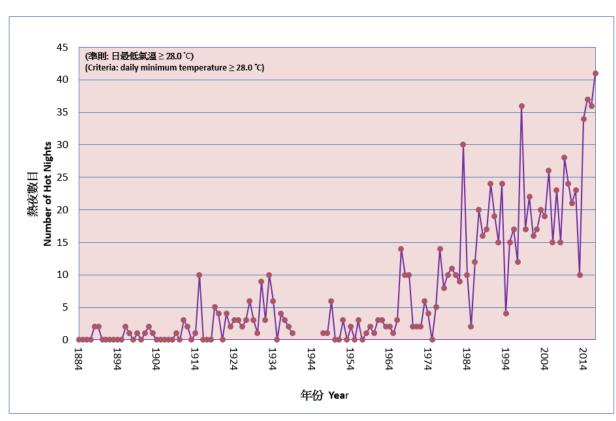


圖 5.2 香港全年熱夜數目的長期時間序列(1884-2017)

Fig. 5.2 Long-term time series of number of hot nights in Hong Kong 1884-2017

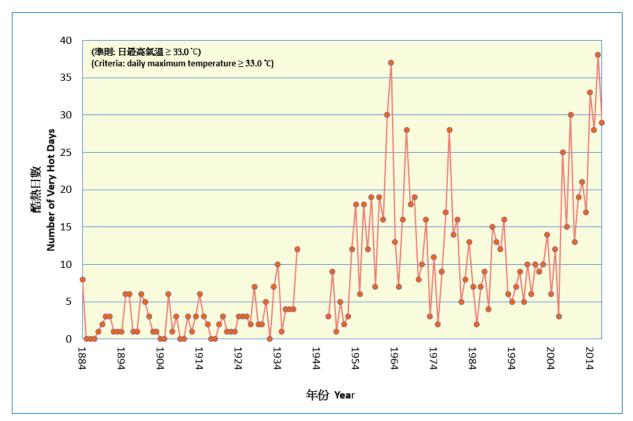


圖 5.3 香港全年酷熱天氣日數的長期時間序列(1884-2017)

Fig. 5.3 Long-term time series of number of very hot days in Hong Kong 1884-2017

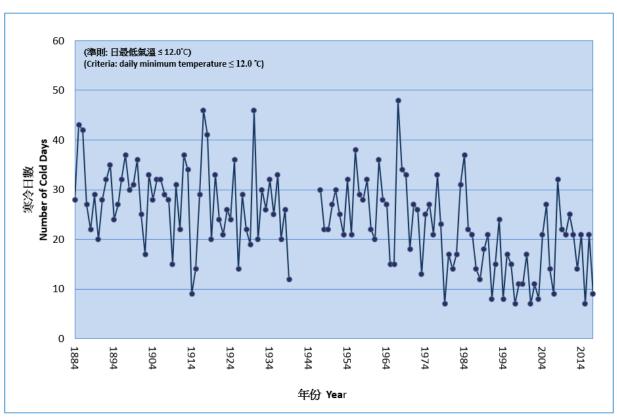


圖 5.4 香港全年寒冷天氣日數的長期時間序列(1884-2017)

Fig. 5.4 Long-term time series of number of cold days in Hong Kong 1884-2017

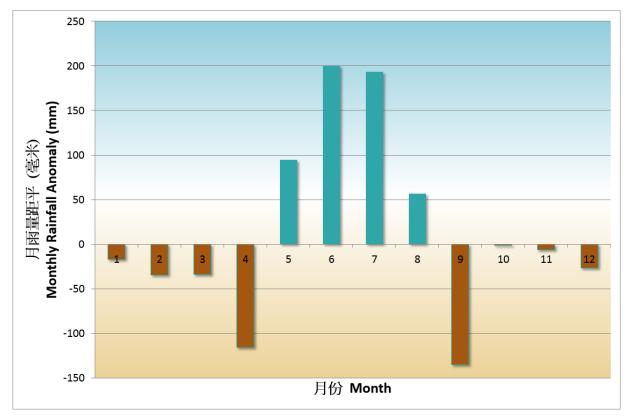


圖 5.5 2017 年香港月雨量距平

Fig. 5.5 Monthly rainfall anomalies in Hong Kong in 2017

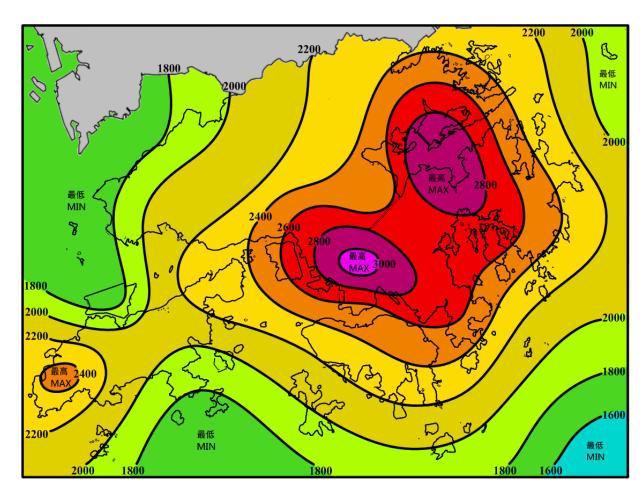


圖 5.6 2017 年香港年雨量(毫米)分佈

Fig. 5.6 Annual rainfall distribution in Hong Kong in 2017

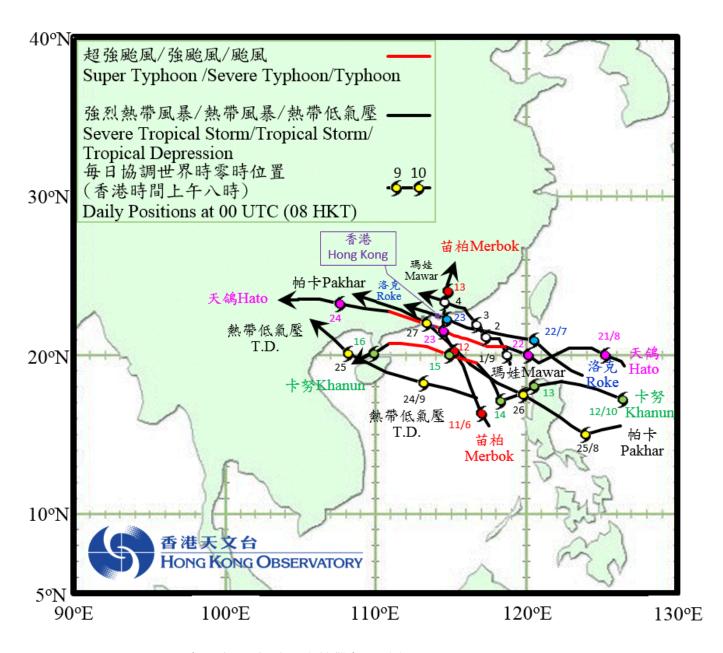


圖 5.7 2017年七個影響香港的熱帶氣旋路徑

Fig. 5.7 Tracks of the seven tropical cyclones affecting Hong Kong in 2017

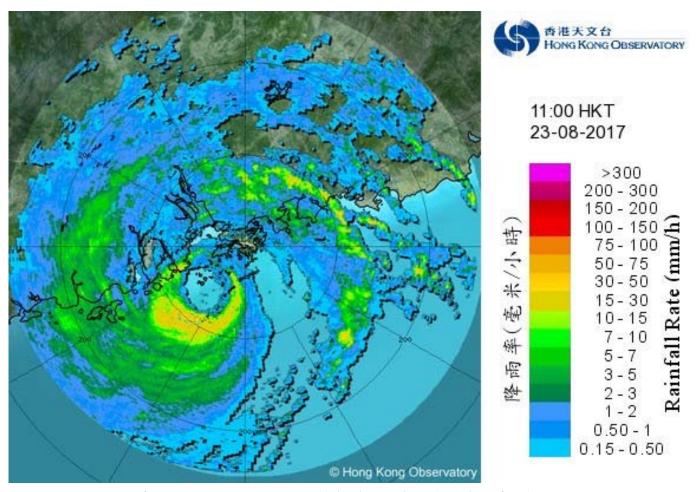
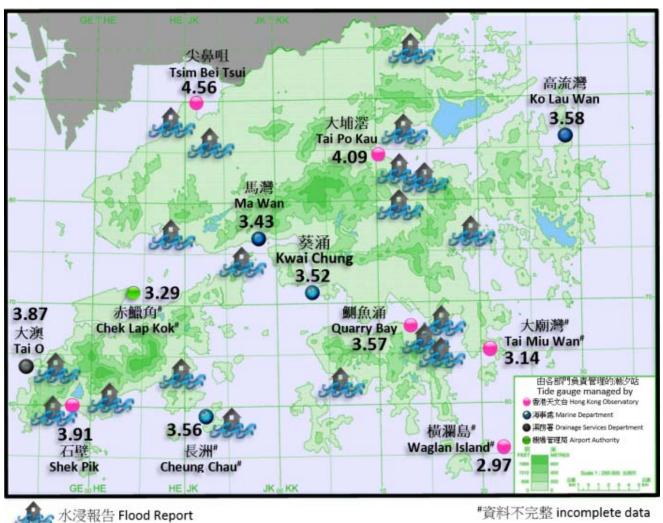


圖 5.8 2017 年 8 月 23 日上午 11 時天鴿在香港西南面的雷達回波圖像。

Fig. 5.8 Image of radar echoes at 11:00 a.m. on 23 August 2017, showing the centre of Hato to the southwest of Hong Kong.



#資料不完整 incomplete data

- 2017年8月23日香港各潮汐站錄得的最高潮位(單位為米,海圖基準面以上)及 圖 5.9 政府部門、新聞及社交媒體所提供的水浸報告。
- Fig. 5.9 Maximum sea level (metres above Chart Datum) recorded at various tide stations in Hong Kong and flood reports from government departments, news and social media on 23 August 2017.