

每月天氣摘要 二零一三年十二月

Monthly Weather Summary December 2013



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二零一四年一月出版

香港天文台編製
香港九龍彌敦道134A

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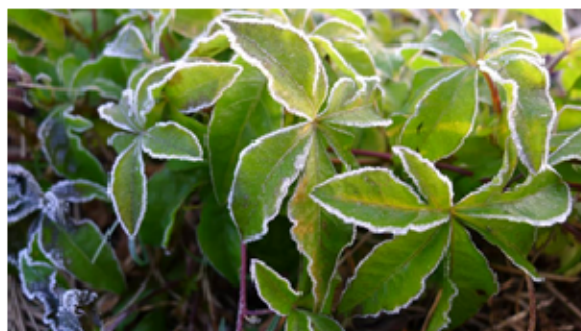
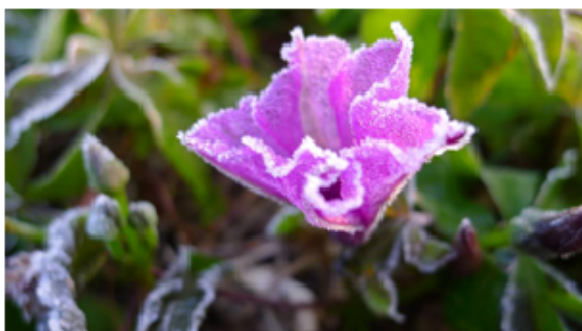
1. 二零一三年十二月天氣回顧

由於本月下半月受冬季季候風帶來的寒流影響，二零一三年十二月本港顯著較正常冷。本月的平均氣溫為 16.1 度，較正常數值 17.9 度低 1.8 度，是自一九七五年以來十二月份的最低平均氣溫。而該活躍冬季季候風亦為本月大部分時間帶來普遍乾燥的天氣，但十二月十四日至十七日的降雨令本月雨量遠高於正常。本月總雨量為 88.3 毫米，為正常 26.8 毫米的三倍以上，是有記錄以來十二月份第十最高。二零一三年全年總雨量為 2847.3 毫米，較正常值 2398.5 毫米多約百分之 19。

在東北季候風支配下，本月首七天本港天氣持續晴朗及非常乾燥。受到覆蓋南海北部及中國東南沿岸的一道廣闊雲帶影響，十二月八日雲量較多及有幾陣雨。十二月九日當一股東北季候風補充抵達本港前，本港天氣溫暖，天文台的氣溫上升至最高的 24.9 度，為本月最高氣溫。而受到東北季候風引致的乾燥內陸氣流影響，十二月九日至十二日大致天晴及有煙霞。

雲帶於十二月十一日再度覆蓋華南沿岸地區，並於十二月十二日及十三日為本港帶來幾陣微雨。受高空擾動靠近的影響，本港於隨後四天雨勢較大及頻密。再加上受到一股強烈冬季季候風影響，本港在十二月十六日及十七日氣溫顯著下降，天色陰暗、有雨及寒冷。隨着與高空擾動相關的雨帶於十二月十八日移離本港，天氣轉為大致天晴及乾燥。天文台於十二月十八日早上的氣溫下降至最低的 9.2 度，是本月最低氣溫，其後兩天本港天氣持續寒冷。

十二月二十一日本港天氣清涼及多雲。另一股冬季季候風的補充於十二月二十二日至月底持續為本港帶來普遍寒冷、晴朗和非常乾燥的天氣。在無雲及微風的情況下，夜間冷卻效應使打鼓嶺於十二月二十八日至三十日的最低氣溫下降至 3 度以下，期間打鼓嶺早上出現結霜現象。



打鼓嶺於二零一三年十二月二十九日早上植物表面出現結霜現象
(鳴謝: Mr Irwin Wong of Weather diary)

本月沒有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。

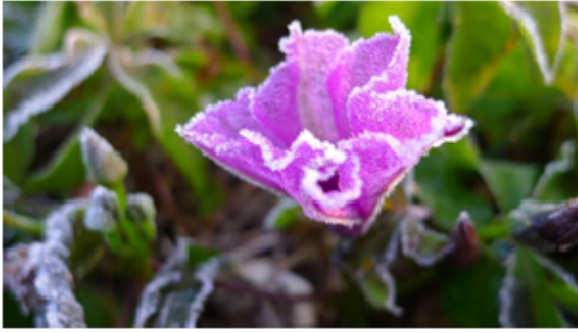
1. The Weather of December 2013

Under the influence of cold spells brought by the winter monsoon during the second half of the month, the weather of December 2013 was significantly colder than usual. The monthly mean temperature of 16.1 degrees was 1.8 degrees below the normal figure of 17.9 degrees, the lowest for December since 1975. The active winter monsoon also maintained generally dry conditions for most parts of the month, and yet the month turned out to be much wetter than usual in terms of rainfall due to the rainy episode between 14 and 17 December. The total rainfall of the month was 88.3 millimetres, more than three times the normal figure of 26.8 millimetres and the tenth highest for December on record. The annual total rainfall of 2013 was 2847.3 millimetres, about 19 percent above the normal figure of 2398.5 millimetres.

Dominated by the northeast monsoon, fine and very dry weather persisted over Hong Kong for the first seven days of the month. Affected by cloud bands over the northern part of the South China Sea and the coast of southeastern China, local weather turned cloudier with rain patches on 8 December. Ahead of the arrival of a replenishment of the northeast monsoon, temperatures reached a warm 24.9 degrees on 9 December, the highest of the month. The northeast monsoon brought a dry continental airstream to Hong Kong and the weather was mainly fine with haze on 9 and 10 December.

Clouds returned to the south China coastal areas on 11 December and brought a few light rain patches to the territory on 12 and 13 December. With the approach of an upper level disturbance, the rain became heavier and more frequent in Hong Kong over the next four days. Coupled with the arrival of an intense winter monsoon, temperatures fell significantly and it was gloomy, rainy and cold on 16 and 17 December. As the rainbands associated with the upper level disturbance moved away on 18 December, local weather turned mainly fine and dry. Temperatures at the Hong Kong Observatory fell to a minimum of 9.2 degrees that morning, the lowest of the month, and the weather remained cold in the next two days.

After a cool and cloudier day on 21 December, further replenishment of the winter monsoon kept the weather generally cold, fine and very dry till the end of the month. Under clear sky and light wind conditions, nocturnal cooling caused temperatures to drop below 3 degrees at Ta Kwu Ling, where frost was reported on the mornings of 28 - 30 December.



Plants coated with frost in Ta Kwu Ling on the morning of 29 December 2013.

(Photo courtesy of Mr Irwin Wong of Weather diary)

There was no tropical cyclone occurred over the western North Pacific and the South China Sea 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 二零一三年十二月發出的警告及信號
Table 1.1 Warnings and Signals issued in December 2013

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
15/12	2110	17/12	0930
19/12	0400	19/12	0745
27/12	0500	27/12	1130

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
紅色 Red	29/11	0000	2/12	2145
紅色 Red	3/12	1800	7/12	0600
黃色 Yellow	7/12	0600	8/12	2130
紅色 Red	11/12	0615	11/12	2300
黃色 Yellow	21/12	0600	22/12	0600
紅色 Red	22/12	0600	22/12	2245
紅色 Red	23/12	1150	2/1	0015

霜凍警告

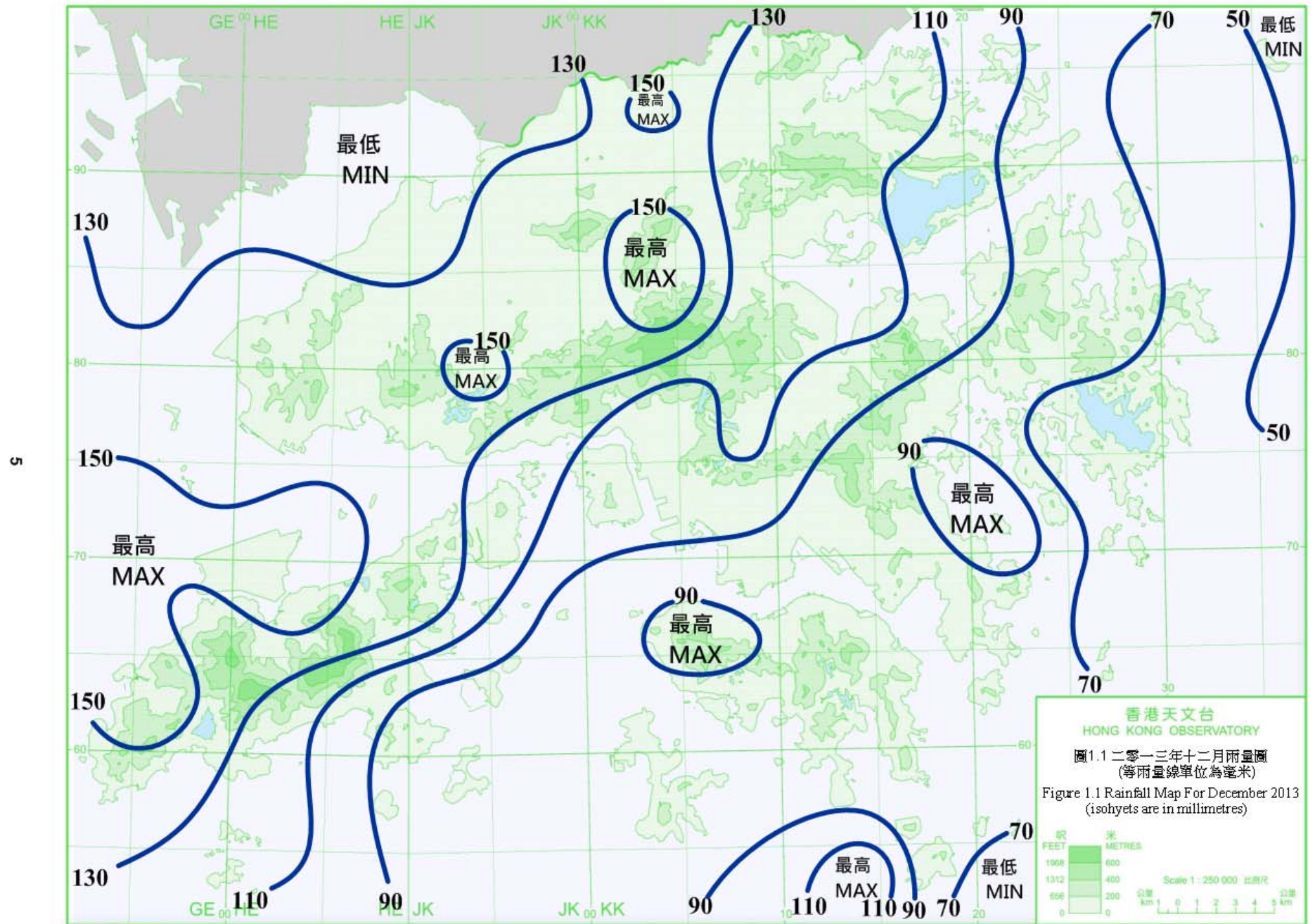
Frost Warning

開始時間 Beginning Time		終結時間 Ending Time	
日/月 day/month	時 hour	日/月 day/month	時 hour
28/12	1630	29/12	0845
29/12	1630	30/12	0845

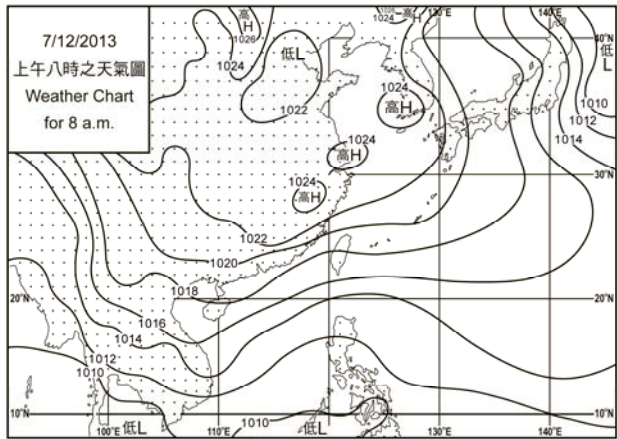
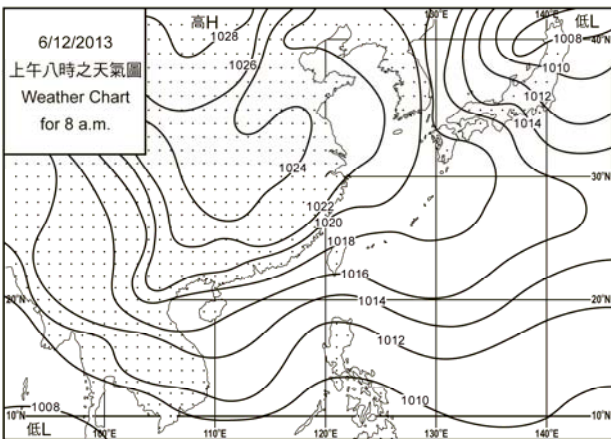
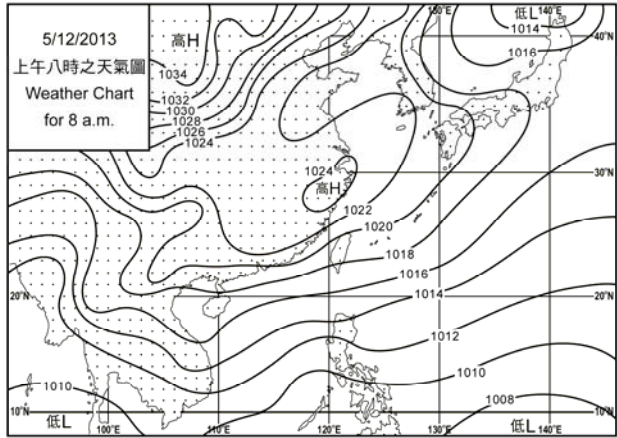
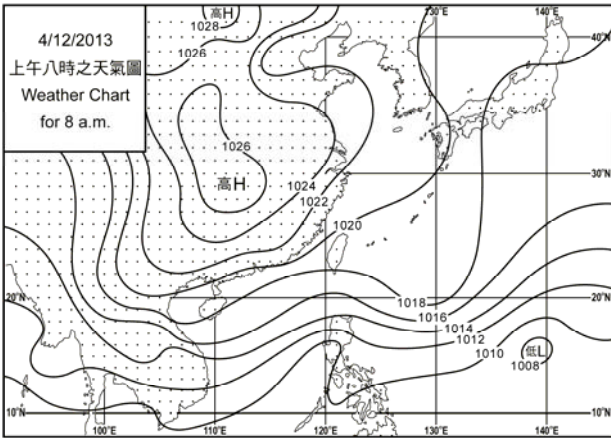
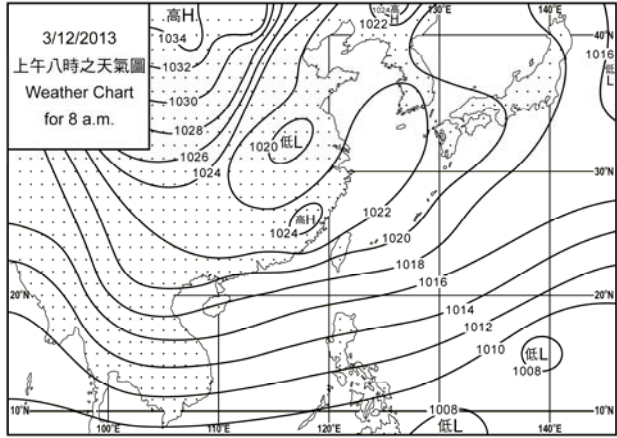
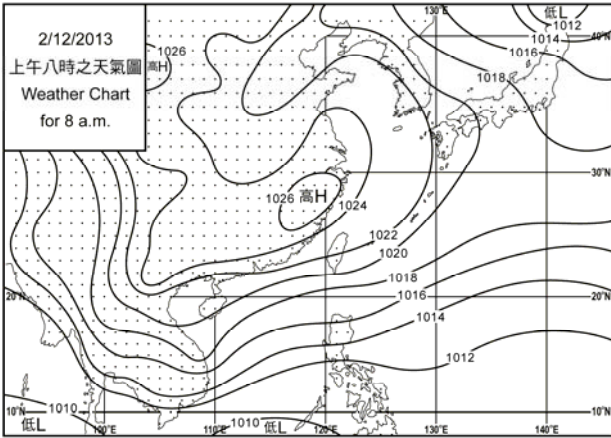
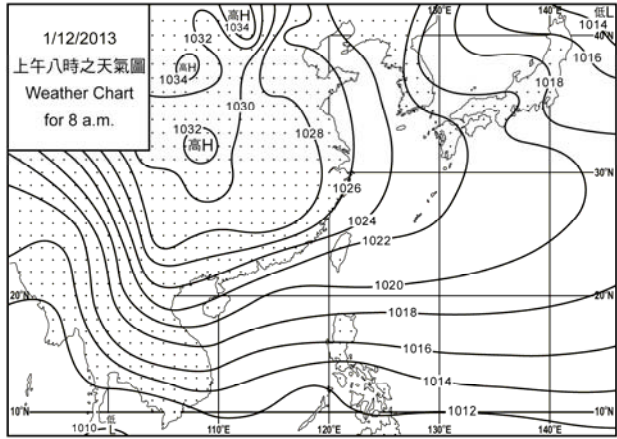
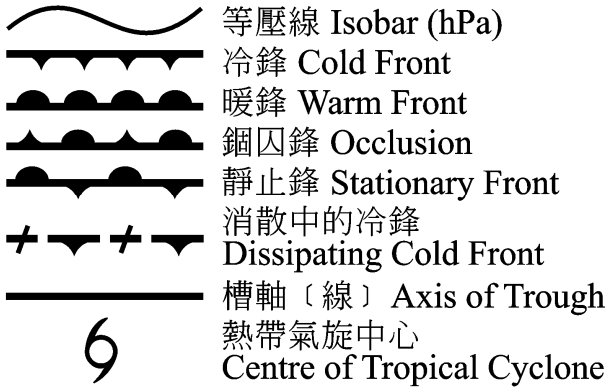
寒冷天氣警告

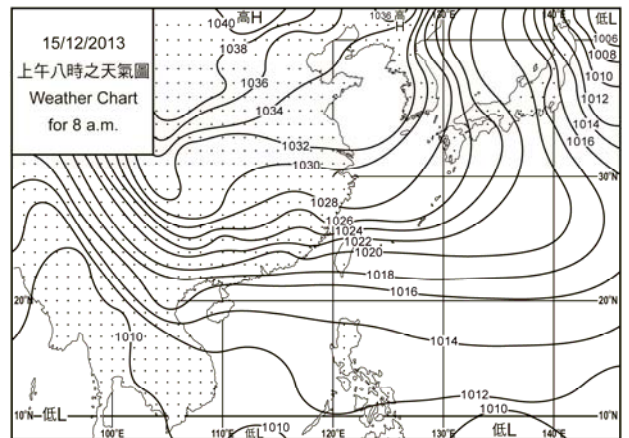
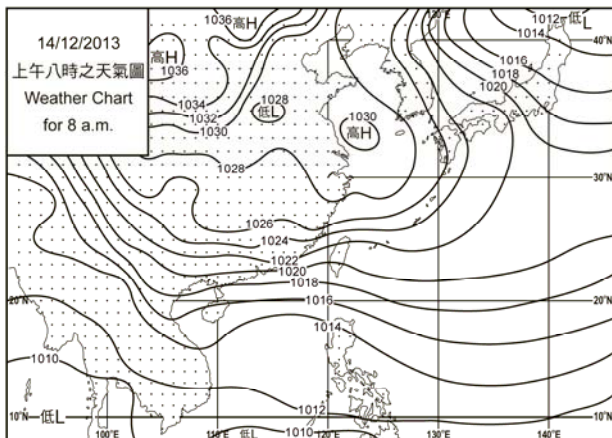
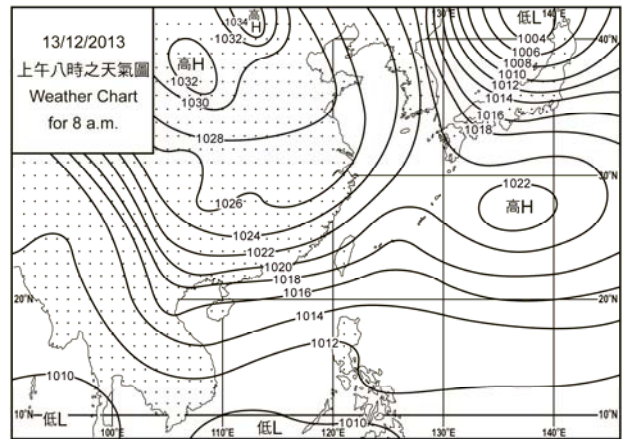
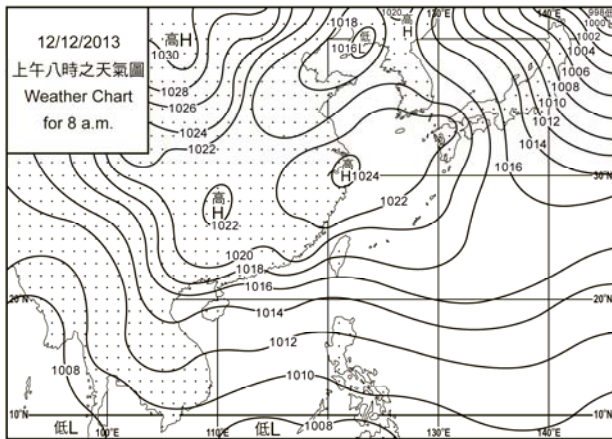
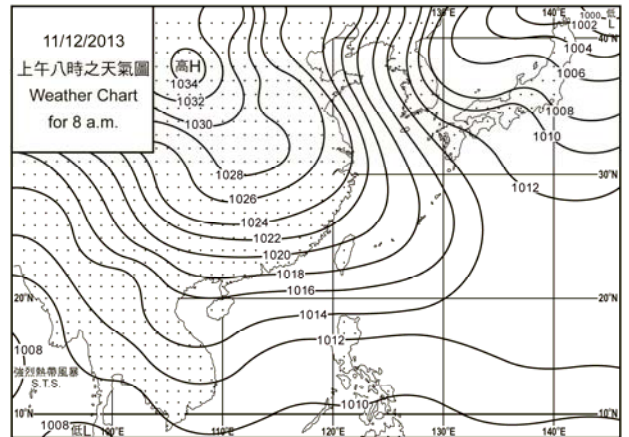
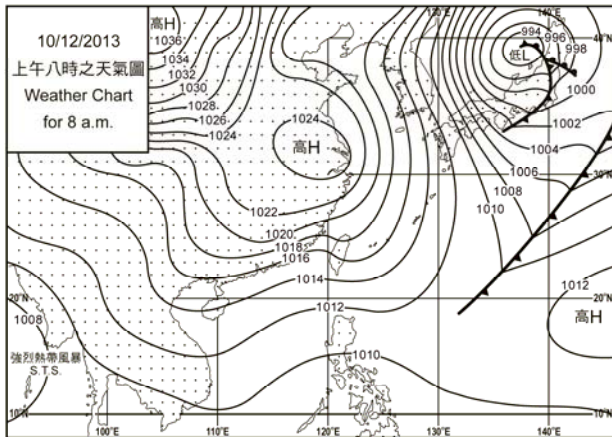
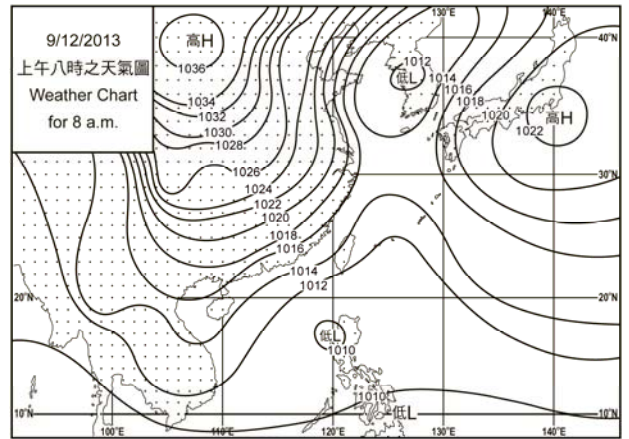
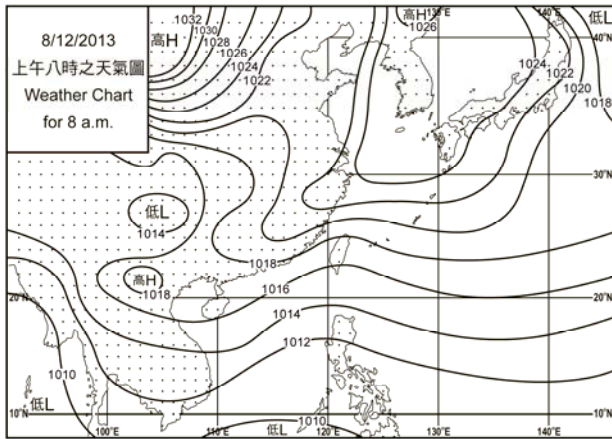
Cold Weather Warning

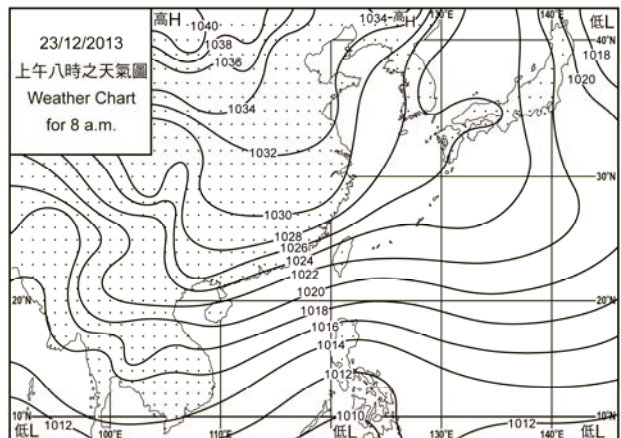
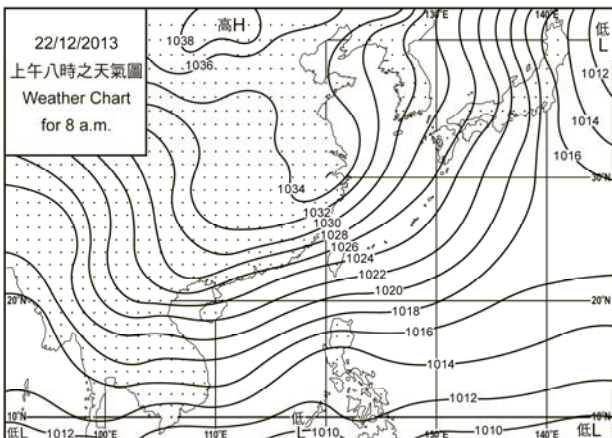
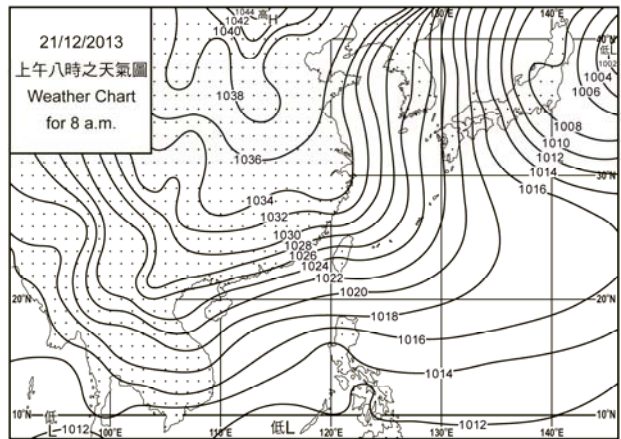
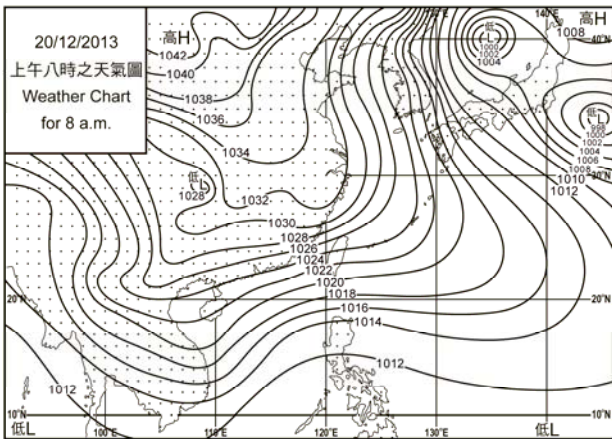
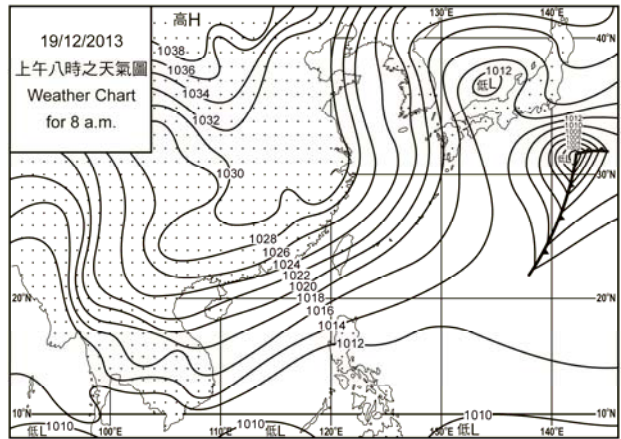
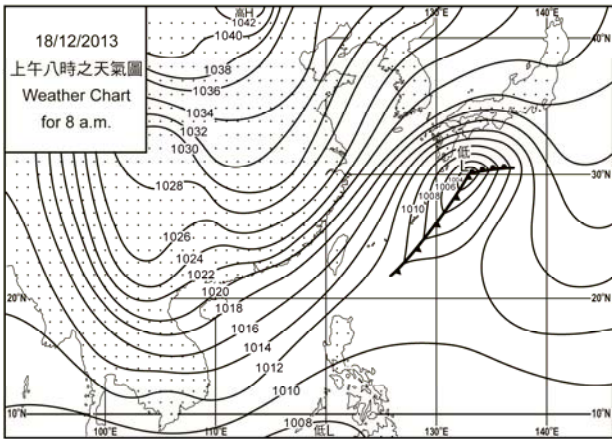
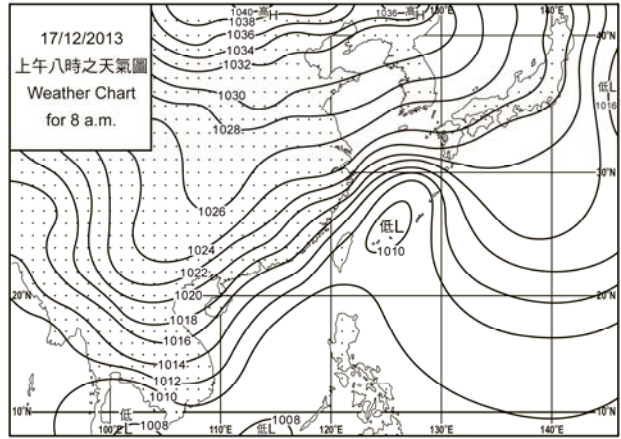
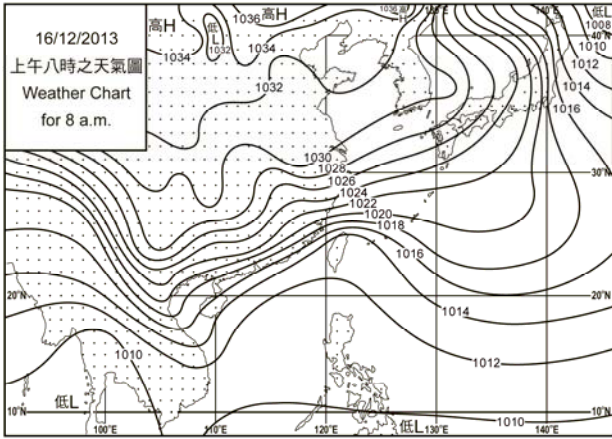
開始時間 Beginning Time		終結時間 Ending Time	
日/月 day/month	時 hour	日/月 day/month	時 hour
16/12	0745	25/12	1015
26/12	1620	1/1	1000

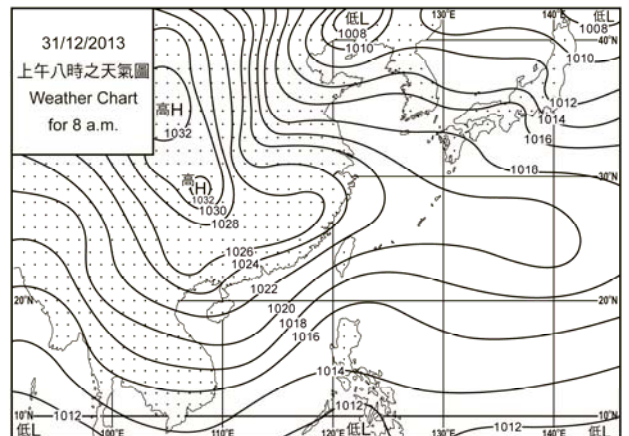
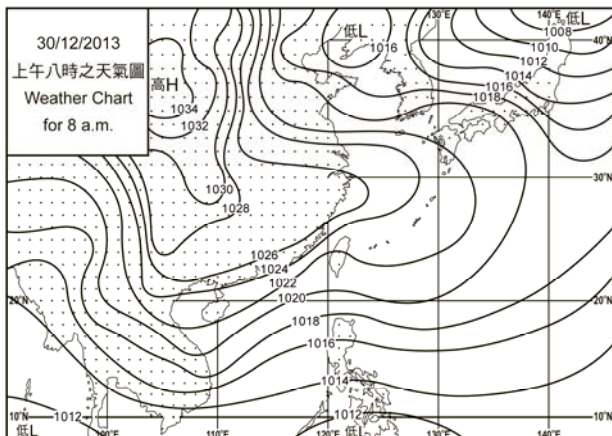
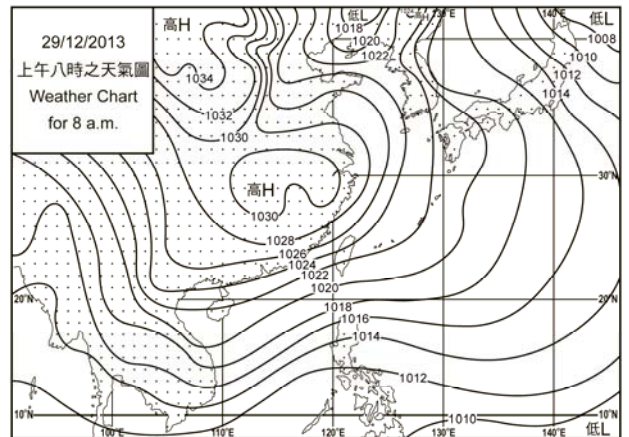
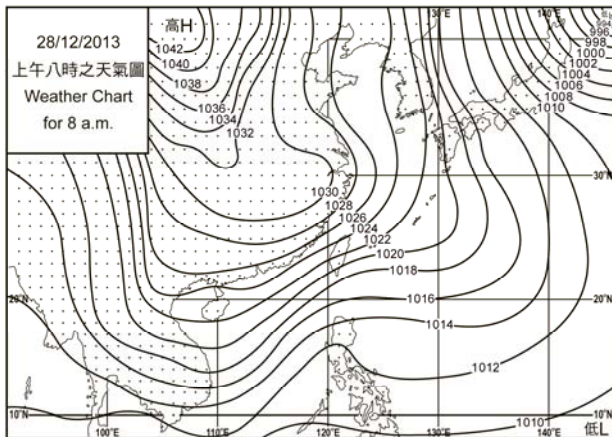
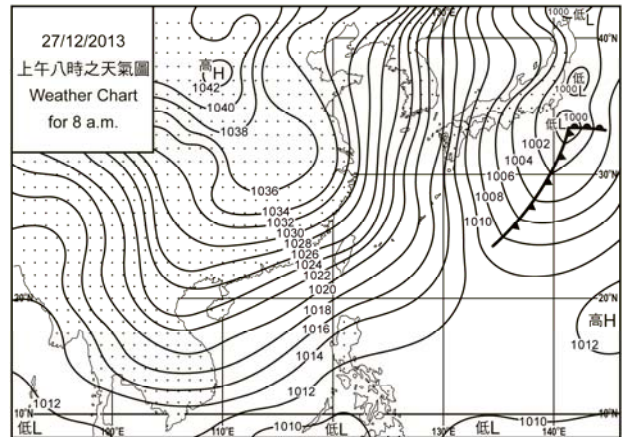
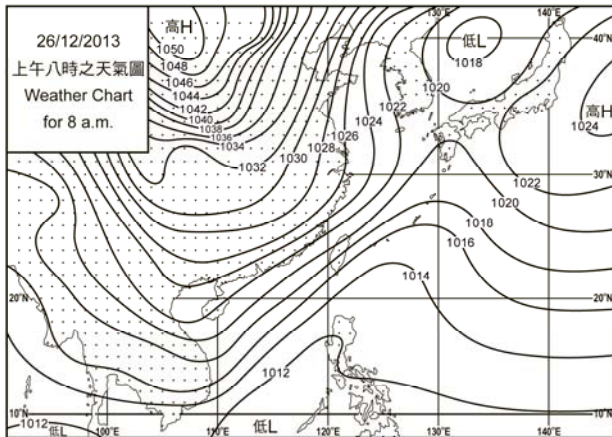
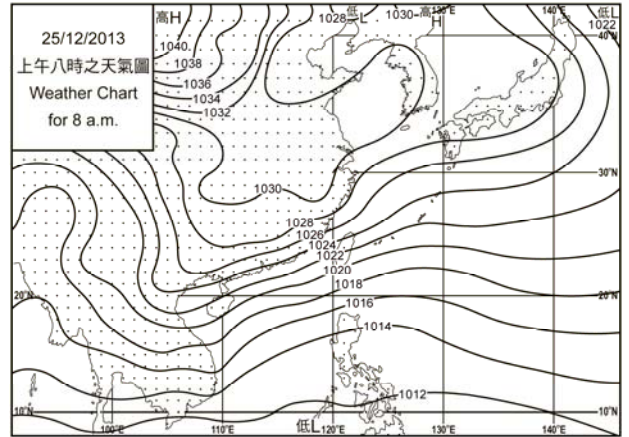
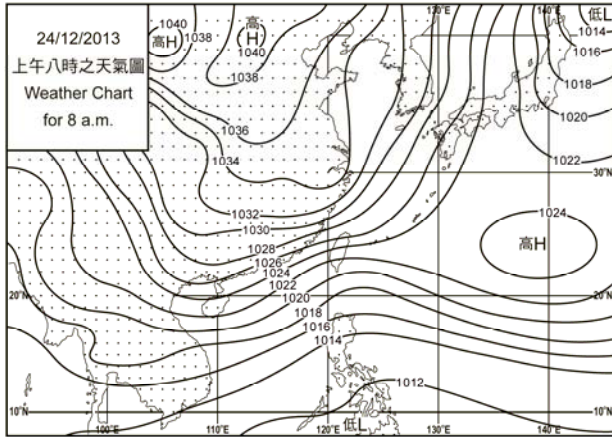


2. 二零一三年十二月每日天氣圖 2. Daily Weather Maps for December 2013









3.1.1 二零一三年十二月香港氣象觀測摘錄(一)

3.1.1 Extract of Meteorological Observations in Hong Kong (Part 1), December 2013

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				
十二月 December	百帕斯卡 hPa	°C	°C	°C	°C	%	%	毫米 mm
1	1021.8	20.7	17.1	14.3	6.3	50	4	-
2	1020.4	21.4	17.7	14.6	7.6	52	10	-
3	1019.2	21.5	18.9	17.3	12.2	66	31	-
4	1018.2	22.8	19.2	16.2	8.6	52	6	-
5	1017.9	21.4	18.3	15.8	7.5	50	5	-
6	1016.9	21.4	18.3	15.7	6.6	47	0	-
7	1017.4	22.1	19.3	16.6	12.3	65	5	-
8	1015.2	21.4	20.0	18.2	15.2	74	77	Tr
9	1013.6	24.9	22.0	19.8	13.9	61	67	-
10	1014.5	21.7	20.1	18.4	13.4	66	80	-
11	1017.0	20.6	19.2	17.8	12.6	66	85	-
12	1017.2	19.3	18.0	16.6	11.3	65	88	Tr
13	1017.9	20.7	19.2	17.9	14.7	75	88	Tr
14	1018.8	20.5	18.8	17.2	16.0	84	92	13.0
15	1016.7	17.6	17.0	16.5	16.6	98	96	22.7
16	1015.0	17.2	13.6	12.2	12.9	96	91	24.8
17	1016.4	13.1	12.3	11.4	11.4	94	92	27.8
18	1019.8	13.4	10.9	9.2	5.6	71	44	-
19	1022.0	15.0	12.0	9.5	5.6	65	40	-
20	1022.9	16.4	13.9	11.3	7.2	64	67	-
21	1024.1	16.0	14.4	13.1	7.3	62	74	-
22	1024.3	16.0	13.5	11.3	6.3	62	26	-
23	1022.5	17.9	14.6	11.3	6.3	58	13	-
24	1023.1	17.9	14.8	12.2	7.1	60	25	-
25	1021.5	17.6	15.3	13.4	6.8	57	46	-
26	1021.1	17.3	14.8	12.5	2.8	45	1	-
27	1023.5	15.5	13.0	11.3	0.6	43	0	-
28	1022.9	14.6	12.0	9.9	0.8	47	0	-
29	1023.0	15.3	12.1	9.3	2.0	51	0	-
30	1022.5	16.3	13.8	10.7	3.4	50	4	-
31	1021.1	18.1	15.3	12.5	4.5	49	0	-
平均/總值 Mean/Total	1019.6	18.6	16.1	14.0	8.6	63	40	88.3
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							

天文台於十二月九日 15 時 4 分錄得本月最低氣壓 1011.3 百帕斯卡。

The minimum pressure recorded at the Hong Kong Observatory was 1011.3 hectopascals at 1504 HKT on 9 December.

天文台於十二月九日 13 時 9 分錄得本月最高氣溫 24.9 °C。

The maximum air temperature recorded at the Hong Kong Observatory was 24.9 °C at 1309 HKT on 9 December.

天文台於十二月十八日 7 時 6 分錄得本月最低氣溫 9.2 °C。

The minimum air temperature recorded at the Hong Kong Observatory was 9.2 °C at 0706 HKT on 18 December.

京士柏於十二月十五日 13 時 30 分錄得本月最高瞬時降雨率 97 毫米/小時。

The maximum instantaneous rate of rainfall recorded at King's Park was 97 millimetres per hour at 1330 HKT on 15 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)

3.1.2 二零一三年十二月香港氣象觀測摘錄(二)

3.1.2 Extract of Meteorological Observations in Hong Kong (Part 2), December 2013

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	0	9.8	17.19	3.5	030	18.9
2	0	9.8	17.69	2.8	030	21.5
3	0	8.5	16.08	3.1	060	24.8
4	4	9.6	15.62	5.0	030	15.7
5	0	9.6	16.60	3.2	030	18.6
6	1	9.6	16.23	4.1	030	19.6
7	13	9.4	15.06	0.7	040	18.7
8	16	1.1	8.20	2.8	060	23.9
9	24	5.6	12.25	4.3	030	18.4
10	24	5.1	10.90	3.2	030	29.8
11	24	1.4	7.79	4.7	060	26.7
12	23	0.8	7.50	1.2	060	33.7
13	16	0.5	4.32	1.5	040	20.8
14	10	0.1	4.23	1.2	060	35.5
15	0	-	1.61	0.8	050	38.3
16	0	-	2.09	0.5	020	39.6
17	0	-	2.42	0.9	020	26.5
18	0	9.0	17.61	3.4	020	41.2
19	0	8.6	16.62	3.0	020	32.0
20	0	7.0	14.05	3.1	040	23.3
21	11	2.1	9.33	2.7	030	25.0
22	24	9.1	15.42	3.2	030	22.5
23	23	9.3	14.90	3.1	030	20.3
24	14	9.1	14.92	2.0	020	22.4
25	22	7.5	12.57	3.2	020	17.6
26	7	9.4	15.65	5.6	020	34.8
27	23	8.9	14.14	2.7	030	36.5
28	18	8.4	12.86	3.3	030	22.5
29	5	9.4	15.03	2.6	030	21.9
30	6	9.3	14.51	3.1	030	10.3
31	10	9.4	14.93	2.2	020	9.4
平均/總值 Mean/Total	318	197.4	12.20	86.7	030	24.9
正常* Normal*	233.7 §	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			橫瀾島 Waglan Island

橫瀾島於十二月十五日 1 時 54 分錄得本月最高陣風 70 公里/小時，風向 070 度。

The maximum gust peak speed recorded at Waglan Island was 70 kilometres per hour from 070 degrees at 0154 HKT on 15 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.

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

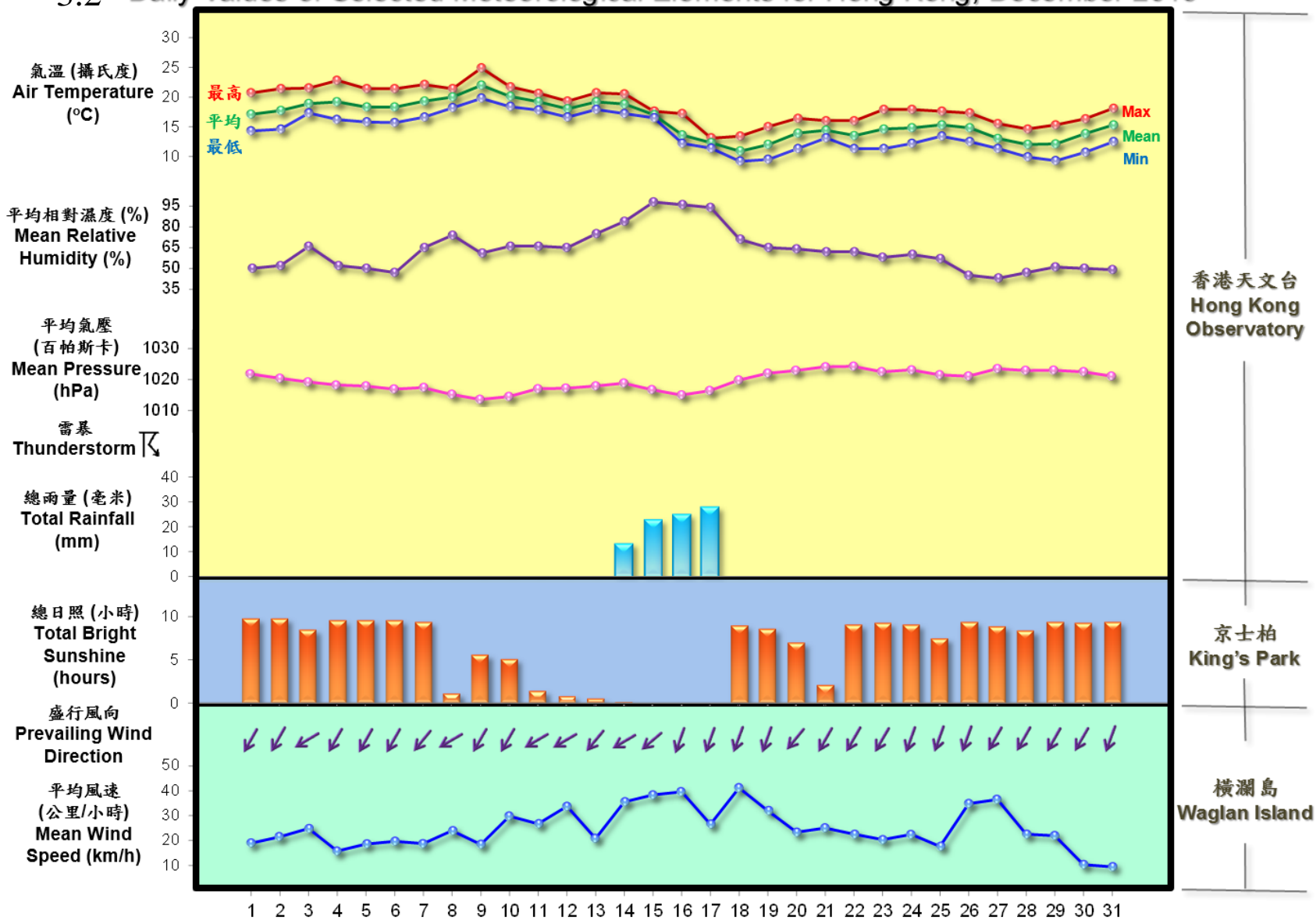
* 1981-2010 Climatological normal, unless otherwise specified (<http://www.hko.gov.hk/wxinfo/climat/normal/enormal12.htm>)

§ 1997-2012 平均值

§ 1997-2012 Mean value

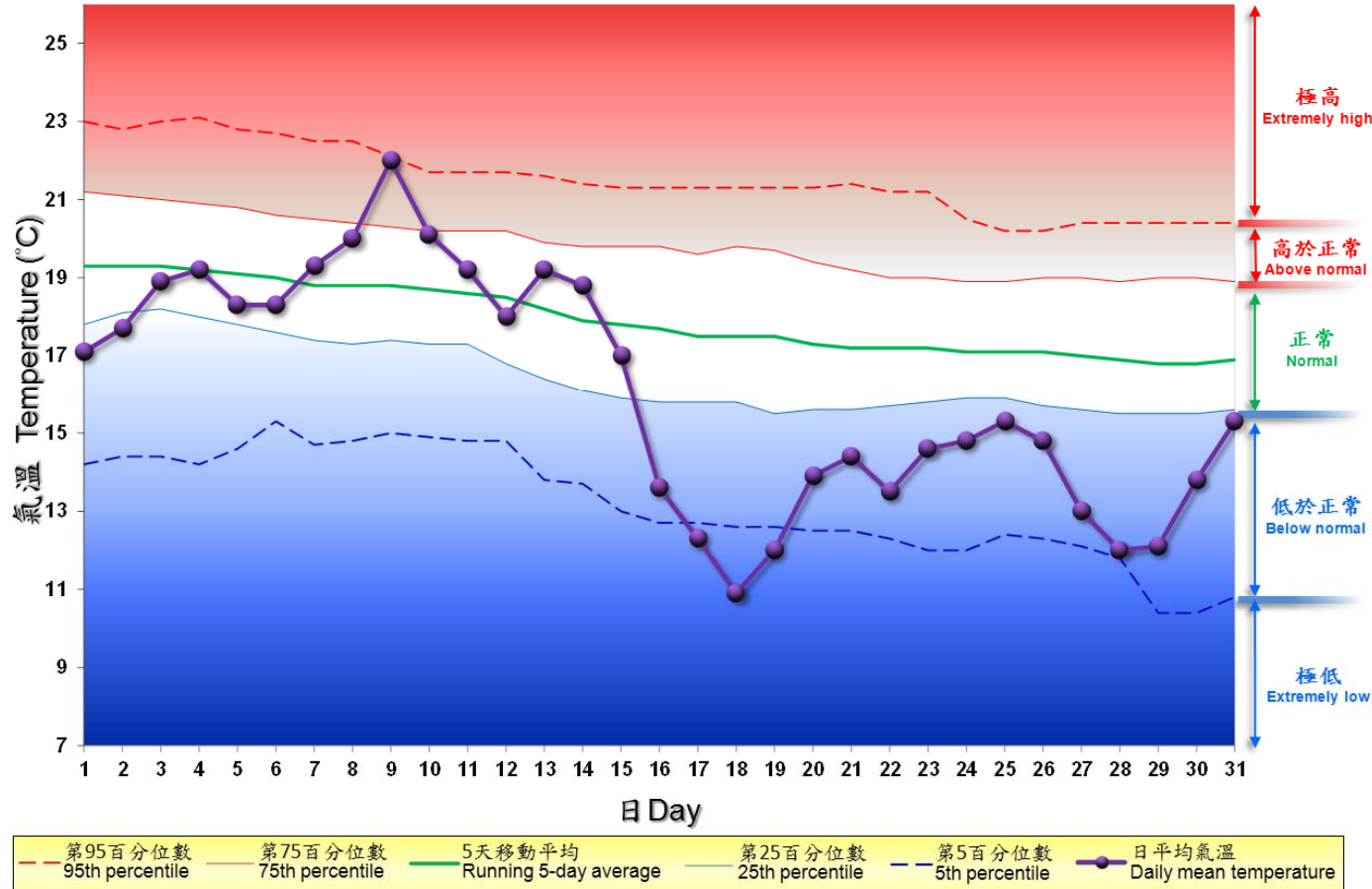
3.2 2013年12月部分香港氣象要素的每日記錄

3.2 Daily Values of Selected Meteorological Elements for Hong Kong, December 2013



3.3 2013年12月香港天文台錄得的日平均氣溫

3.3 Daily Mean Temperature recorded at the Hong Kong Observatory for December 2013



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

4. 二零一三年天氣概況

全球天氣而言，根據 1 月至 11 月的初步評估顯示 2013 年全球平均氣溫有可能是自 1850 年有全球記錄以來十個最溫暖的年份之一。此外，2013 年全球各地出現了很多極端天氣事件，當中包括澳洲、奧地利、巴基斯坦及中國南部的熱浪；巴西、新西蘭、非洲南部及中國南部的嚴重旱災；澳洲昆士蘭和新南威爾斯、莫桑比克、阿根廷、歐洲阿爾卑斯山脈地區、英格蘭南部、波蘭、捷克、俄羅斯及印度的洪澇災害；英國北部、美國本土及中東的大雪；中國南部的超強颱風天兔、菲律賓的超強颱風海燕、印度的特強氣旋風暴費林及在墨西哥、日本、菲律賓、越南和柬埔寨出現由熱帶氣旋引致的暴雨。在太平洋中部及赤道附近的海水表面溫度持續正常，2013 年的拉尼娜及厄爾尼諾現象並不顯著。

整體而言，香港於 2013 年的平均氣溫為 23.3 度，與 1981-2010 年氣候正常值^[1]相等(或較 1961-1990 年氣候正常值的 23.0 度高 0.3 度)。2013 年首三個月的天氣顯著較正常溫暖，特別在 2 月至 3 月受和暖偏東氣流影響下，其平均溫度較同期正常高 1.9 度，為有記錄以來同期的第五最高。然而，年初的溫暖情況大部分被 4 月、7 月及 12 月的較涼天氣所抵消，而 4 月、7 月及 12 月的月平均氣溫分別較正常低 1.1 度、0.8 度及 1.8 度。受 7 月和 8 月的多雨及較陰暗天氣影響，全年熱夜^[2]日數只有 10 天，較正常少約 7 天。極端溫度方面，2013 年酷熱天氣日數^[3]共有 17 天，比 1981-2010 年氣候正常值多出 7 天。全年寒冷日數^[4]共有 14 天，比正常少約 3 天。天文台於 2013 年錄得的最高氣溫為 8 月 12 日的 34.9 度，而最低氣溫為 12 月 18 日的 9.2 度。

受到夏季連場暴雨及不穩定天氣影響，2013 年亦是多雨及多雷暴的一年。全年總雨量為 2847.3 毫米，較 1981-2010 年氣候正常值 2398.5 毫米多約百分之 19 (較 1961-1990 年氣候正常值多約百分之 29)，在天文台錄得的雷暴日數共 53 天，與 1997 年並列為自 1947 年以來的最高紀錄。一道低壓槽於 5 月 22 日為香港帶來滂沱大雨及強烈雷暴，天文台需要發出黑色暴雨警告信號，是自 2010 年 7 月以來首次發出的黑色暴雨警告信號。

2013 年共有 33 個熱帶氣旋影響北太平洋西部及南海，比長期(1961-2010)年平均的約 30 個為多。全年有 14 個熱帶氣旋達到颱風或以上強度^[5]，略低於長期年平均的約 15 個。年內有 7 個熱帶氣旋引致香港天文台發出熱帶氣旋警告信號，略高於長期年平均的約 6 個。天文台分別於 8 月及 9 月在超強颱風尤特及天兔影響香港期間發出八號烈風或暴風信號，其中天兔是 2013 年內影響香港最強的熱帶氣旋。另外，強颱風羅莎是自 2006 年以來首個本港需要在 11 月發出熱帶氣旋警告信號的熱帶氣旋。

至於本年各月份的詳細天氣概況，可參考「每月天氣摘要」網頁：

<http://www.hko.gov.hk/wxinfo/pastwx/mwsc.htm>

於 2013 年在本港發生的重要天氣事件如下：

異常溫暖的二月

本港經歷了一個異常溫暖的 2 月，月內大部分時間受和暖偏東氣流影響，月平均最高氣溫為 22.1 度，而平均氣溫為 19.1 度，兩者皆比正常高出超過 2 度，分別是自 1884 年以來 2 月份的第二最高及第四最高紀錄。

較涼的五月

受一股強烈東北季候風影響，本港 5 月初的天氣明顯較涼。天文台於 2013 年 5 月 2 日早上的最低氣溫下降至 16.6 度，是自 1884 年以來 5 月份的第二最低紀錄。

酷熱的六月

2013 年 6 月較正常炎熱，該月的酷熱天氣日數共有 5 天，較正常多出約 4 天。而 6 月 20 日錄得的最高氣溫為 34.2 度，是有記錄以來 6 月份的第五最高。

多雷暴的七月

受活躍海洋氣流及低壓槽影響，2013 年 7 月天氣較不穩定及有雷暴。天文台於該月錄得的雷暴日數為 14 天，與 1995 年並列為自 1947 年以來的最高紀錄。

九月超強颱風天兔引致的高溫

受超強颱風天兔的外圍下沉大陸氣流影響，2013 年 9 月 21 日本港天氣酷熱，當日於天文台錄得的平均氣溫為 31.2 度，與 2008 年 9 月 22 日和 2010 年 9 月 1 日並列為自 1884 年以來 9 月份的最高紀錄。天文台於當日的最高氣溫為 34.7 度，是有記錄以來 9 月份的第二最高。

五月及九月的幾場大雨

2013 年夏季天氣頗為不穩定，出現多場暴雨。一道低壓槽於 5 月 22 日清晨開始為香港帶來滂沱大雨及強烈雷暴。當日本港普遍錄得超過 150 毫米雨量，而在天文台錄得的雨量為 230.8 毫米，是有記錄以來 5 月份的第十最高。在 9 月初，一股偏東氣流與偏南氣流在珠江口一帶匯聚，並於 2013 年 9 月 5 日為香港帶來大雨，當日天文台錄得 197.7 毫米雨量，是有記錄以來 9 月份的第十一最高。

異常乾燥的十月

由於大部分時間受乾燥的東北季候風所支配，2013 年 10 月本港較正常乾燥，月平均相對濕度為百分之 66，是自 1961 年以來 10 月份的第三最低。

寒冷及多雨的十二月

由於 2013 年 12 月下半月受冬季季候風帶來的寒流影響，該月本港顯著較正常冷，平均氣溫為 16.1 度，較正常數值 17.9 度低 1.8 度，是自 1975 年以來 12 月份的最低平均氣溫。12 月 14 日至 17 日的降雨亦令該月雨量遠高於正常。該月總雨量為 88.3 毫米，是

自 1884 年有記錄以來 12 月份的第十最高。

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] 熱夜天氣指當日最低氣溫在 28.0 度或以上。
- [3] 酷熱天氣指當日最高氣溫達 33.0 度或以上。
- [4] 寒冷天氣指當日最低氣溫在 12.0 度或以下。
- [5] 熱帶氣旋分類資料可瀏覽 <http://www.hko.gov.hk/informtc/classc.htm>。

4. The Year's Weather – 2013

Globally, a preliminary assessment of the global average temperature from January to November suggests that 2013 is likely to be among the ten warmest years since global records began in 1850. Moreover, there were numerous significant weather events around the world in 2013, including heat waves in Australia, Austria, Pakistan and southern China, severe drought in Brazil, New Zealand, southern Africa and southern China, extreme rainfall and flooding in Queensland and New South Wales of Australia, Mozambique, Argentina, Alpine region of Europe, southern England, Poland, Czech Republic, Russia and India, heavy snow in the northern parts of the United Kingdom, the contiguous United States and the Middle East, Super Typhoon Usagi in southern China, Super Typhoon Haiyan in the Philippines, Very Severe Cyclonic Storm Phailin in India as well as torrential rain induced by tropical cyclones in Mexico, Japan, the Philippines, Vietnam and Cambodia. With sea surface temperature over the central and equatorial Pacific remaining largely normal, there was no significant La Nina or El Nino development in 2013.

Overall, the average temperature in Hong Kong in 2013 was 23.3 degrees, on par with the 1981-2010 normal^[1] (or 0.3 degrees above the 1961-1990 normal of 23.0 degrees). The year began with significantly warmer-than-normal weather in the first three months. In particular, under the influence of mild easterly maritime airstreams, the mean temperature of February-March was 1.9 degrees above normal and ranked the fifth highest on record for the same period. However, this warm anomaly was counter-balanced by the cooler weather in April, July and December with monthly mean temperatures 1.1, 0.8 and 1.8 degrees below normal respectively. Affected by the rainy and gloomier weather in July and August, there were only ten Hot Nights^[2] in the year, about seven days below normal. Regarding extreme temperatures, there were 17 Very Hot Days^[3] in 2013, about seven days more than the 1981-2010 normal figure. The number of Cold Days^[4] in the year was 14 days, about three days below normal. In 2013, the maximum temperature recorded at the Hong Kong Observatory was 34.9 degrees on 12 August, and the minimum temperature recorded was 9.2 degrees on 18 December.

Associated with the heavy rain episodes in the unsettled and stormy summer months, 2013 was also a wet and thundery year. The annual total rainfall was 2847.3 millimetres, a surplus of about 19 percent comparing to the 1981-2010 normal of 2398.5 millimetres (and about 29 percent above the 1961-1990 normal), and the total number of days with thunderstorms reported at the Hong Kong Observatory was 53 days, the highest since records began in 1947, tied with the record set in 1997. A trough of low pressure brought torrential rain and intense thunderstorms to Hong Kong on 22 May, necessitating the issuance of Black Rainstorm Warning by the Hong Kong Observatory, the first time since July 2010.

A total of 33 tropical cyclones occurred over the western North Pacific and the South China Sea in 2013, more than the long term (1961-2010) average of around 30. There were 14 tropical cyclones reaching typhoon intensity^[5] or above during the year, slightly below the long term average of about 15. In Hong Kong, seven tropical cyclones necessitated the issuance of local tropical cyclone warning signals, slightly higher than the long term average of about six in a year. The No. 8 Gale or Storm Signal was issued during the passage of Super Typhoons Utor and Usagi in August and September respectively, of which Usagi was also the most intense tropical cyclone affecting Hong Kong in 2013. Furthermore, Severe Typhoon Krosa was the first tropical cyclone that necessitated the issuance of tropical cyclone warning signals in November since 2006.

Detailed descriptions of the weather for individual months are available in the Monthly Weather Summary webpage:

<http://www.hko.gov.hk/wxinfo/pastwx/mws.htm>

Some significant weather events in Hong Kong in 2013 are highlighted below:

Exceptionally Warm in February

Under the influence of mild easterly airstreams for most part of the month, Hong Kong experienced unseasonably warm weather in February 2013. The monthly mean maximum temperature of 22.1 degrees and the mean temperature of 19.1 degrees were more than two degrees above normal and were respectively the second and fourth highest on record for February since records began in 1884.

A Cool Start in May

Affected by an intense northeast monsoon, the weather in Hong Kong was significantly cooler in early May. Temperatures at the Hong Kong Observatory fell to a minimum of 16.6 degrees on the morning of 2 May 2013, the second lowest for May since records began in 1884.

Very Hot in June

June 2013 was hotter than usual with five Very Hot Days^[2], four days more than normal. The maximum temperature of 34.2 degrees recorded at the Hong Kong Observatory on 20 June 2013 was the fifth highest for June since records began in 1884.

A Thundery July

July 2013 was rather unstable and thundery under the influence of active maritime airstreams and troughs of low pressure. The total number of days with thunderstorms reported at the Hong Kong Observatory in the month was 14 days, the highest since records began in 1947, tied with the record set in 1995.

High Temperatures caused by Super Typhoon Usagi in September

Under the influence of a subsiding continental airstream associated with the outer circulation of Super Typhoon Usagi, it was very hot in Hong Kong on 21 September 2013. The daily mean temperature was 31.2 degrees at the Hong Kong Observatory, the highest for September since records began in 1884, tied with the records set on 22 September 2008 and 1 September 2010. The maximum temperature at the Hong Kong Observatory that day was 34.7 degrees, the second highest for September.

Heavy Rain Episodes in May and September

A rather unsettled and stormy summer was accentuated by a couple of heavy rain episodes. A trough of low pressure brought torrential rain and intense thunderstorms to Hong Kong starting from the small hours of 22 May 2013. More than 150 millimetres of rainfall were recorded in many places over the territory. The daily rainfall recorded at the Hong Kong Observatory that day was 230.8 millimetres, the 10th highest daily rainfall for May on record. In early September, an easterly airstream converged with a southerly airstream near Hong Kong and brought heavy rain on 5 September 2013. A total of 197.7 millimetres of rainfall was recorded at the Hong Kong Observatory that day, the 11th highest daily rainfall for September on record.

An Exceptionally Dry October

Under the dominance of a dry continental air mass for most part of the month, October was drier than usual. The monthly mean relative humidity of 66 percent was the third lowest for October since 1961.

A Chilly and Wet December

Under the influence of cold spells brought by the winter monsoon during the second half of the month, December 2013 was significantly colder than usual. The monthly mean temperature of 16.1 degrees was 1.8 degrees below the normal figure of 17.9 degrees, the lowest for December since 1975. Affected by the rainy episode between 14 and 17 December, the month was also much wetter than usual. The monthly total rainfall of 88.3 millimetres was the tenth highest for December since records began in 1884.

Note :

- [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] 'Hot Night' refers to the condition with the daily minimum temperature equal to or higher than 28.0 degrees.
- [3] 'Very Hot Day' refers to the condition with the daily maximum temperature equal to or higher than 33.0 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 4.1.1 二零一三年香港氣象觀測摘要(一)

Table 4.1.1 Summary of Meteorological Observations in Hong Kong (Part1), 2013

月份 Month	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
	平均氣壓 Mean Pressure	平均日最高 Mean Daily Maximum	平均 Mean	平均日最低 Mean Daily Minimum				
	百帕斯卡 hPa	°C	°C	°C				
一月 January	1020.5	19.1	16.7	14.8	11.3	71	58	3.4
二月 February	1018.3	22.1	19.1	17.1	15.4	80	75	1.5
三月 March	1015.7	23.5	20.5	18.5	16.5	79	65	130.5
四月 April	1012.3	23.9	21.5	19.7	19.0	86	81	253.8
五月 May	1008.8	28.2	25.7	23.9	23.2	86	80	509.3
六月 June	1005.5	30.7	28.2	26.5	25.1	84	72	438.6
七月 July	1007.1	30.9	28.0	26.1	25.1	85	72	436.3
八月 August	1004.9	31.1	28.6	26.5	25.3	83	68	445.4
九月 September	1008.5	30.3	27.5	25.7	23.9	82	67	454.2
十月 October	1014.1	28.6	25.7	23.7	18.6	66	45	2.9
十一月 November	1017.3	23.8	21.7	19.7	16.2	72	67	83.1
十二月 December	1019.6	18.6	16.1	14.0	8.6	63	40	88.3
平均/總值 Mean/Total	1012.7	25.9	23.3	21.4	19.0	78	66	2847.3
正常* Normal*	1012.9	25.6	23.3	21.4	19.0	78	68	2398.5
觀測站 Station	天文台 Hong Kong Observatory							

天文台於九月二十二日 22 時 6 分錄得本年最低氣壓 985.7 百帕斯卡。

The annual minimum pressure recorded at the Hong Kong Observatory was 985.7 hectopascals at 2206 HKT on 22 September.

天文台於八月十二日 15 時 11 分錄得本年最高氣溫 34.9 °C。

The annual maximum air temperature recorded at the Hong Kong Observatory was 34.9 °C at 1511 HKT on 12 August.

天文台於十二月十八日 7 時 6 分錄得本年最低氣溫 9.2 °C。

The annual minimum air temperature recorded at the Hong Kong Observatory was 9.2 °C at 0706 HKT on 18 December.

橫瀾島於五月二十六日 6 時 33 分錄得本年最高陣風 113 公里/小時，風向 190 度。

The annual maximum gust peak speed recorded at Waglan Island was 113 kilometres per hour from 190 degrees at 0633 HKT on 26 May.

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

* 1981-2010 Climatological normal (http://www.weather.gov.hk/cis/normal/1981_2010/normal_s_e.htm)

表 4.1.2 二零一三年香港氣象觀測摘要(二)

Table 4.1.2 Summary of Meteorological Observations in Hong Kong (Part2), 2013

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
	小時 hours	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
一月 January	214	363	184.0	12.62	80.6	060	21.2
二月 February	95	67	98.7	11.51	71.1	070	22.6
三月 March	102	51	127.4	11.78	89.1	050	19.5
四月 April	112	98	53.6	8.98	64.6	070	22.9
五月 May	54	25	90.7	12.29	95.1	060	19.7
六月 June	1	2	146.1	15.83	110.9	230	23.4
七月 July	0	0	156.9	16.18	131.0	170	20.3
八月 August	38	19	148.1	14.50	119.1	200	22.7
九月 September	18	26	186.0	15.98	126.3	090	27.4
十月 October	76	111	247.3	17.11	147.4	090	23.6
十一月 November	53	80	133.4	11.14	95.5	080	30.5
十二月 December	215	318	197.4	12.20	86.7	030	24.9
平均/總值 Mean/Total	978	1160	1769.6	13.34	1217.4	070	23.2
正常* Normal*	692.3	1393.0	§	1835.6	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			橫瀾島 Waglan Island

京士柏於四月五日 9 時 16 分錄得本年最高瞬時降雨率 252 毫米/小時。

The annual maximum instantaneous rate of rainfall recorded at King's Park was 252 millimetres per hour at 0916 HKT on 5 April.

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/normal_s_c.htm)

* 1981-2010 Climatological normal, unless otherwise specified (http://www.weather.gov.hk/cis/normal/1981_2010/normal_s_e.htm)

§ 1997-2012 平均值

§ 1997-2012 Mean value

表 4.1.3 二零一三年香港氣象觀測摘要(三)

Table 4.1.3 Summary of Meteorological Observations in Hong Kong (Part3), 2013

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	-	-	3	-
二月 February	-	-	1	-
三月 March	-	-	-	5
四月 April	-	-	-	8
五月 May	1	1	-	10
六月 June	5	6	-	5
七月 July	5	1	-	14
八月 August	5	1	-	7
九月 September	1	1	-	4
十月 October	-	-	-	-
十一月 November	-	-	-	-
十二月 December	-	-	10	-
平均/總值 Mean/Total	17	10	14	53
正常* Normal*	10.2	17.8	17.1	38.6
觀測站 Station	天文台 Hong Kong Observatory			

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

* 1981-2010 Climatological normal (http://www.weather.gov.hk/cis/normal/1981_2010/normal_s_e.htm)

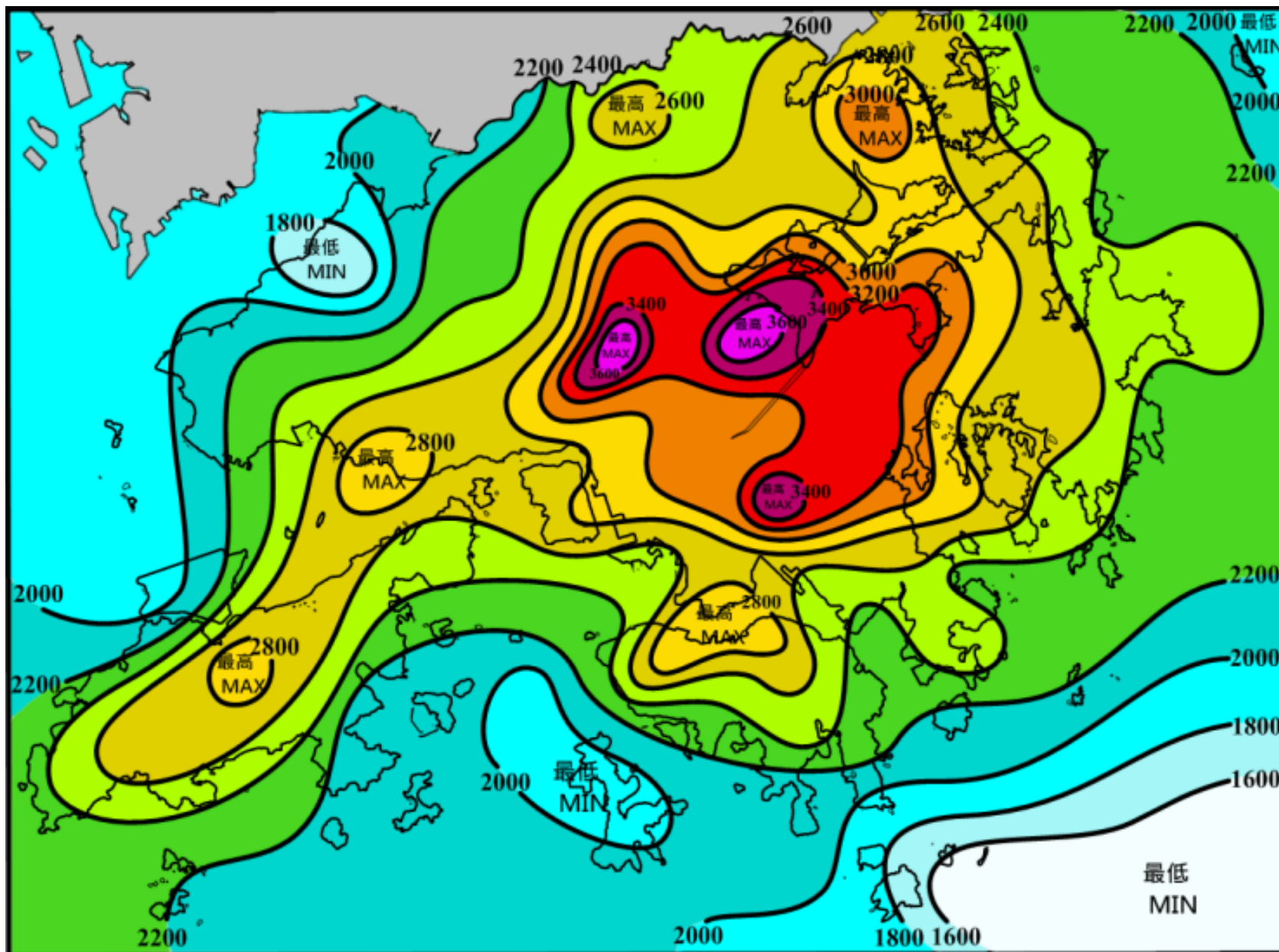


圖 4.1 2013 年香港年雨量分布
Figure 4.1 Annual rainfall distribution in Hong Kong in 2013

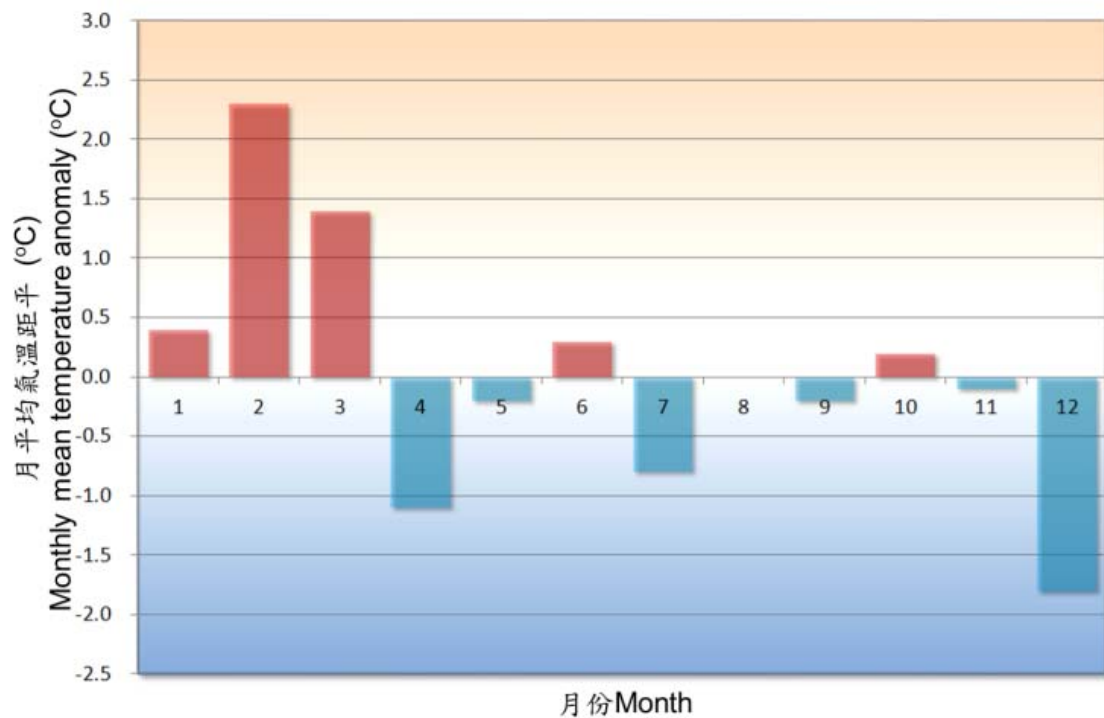


圖 4.2 2013 年香港月平均氣溫距平

Figure 4.2 Monthly mean temperature anomalies in Hong Kong in 2013

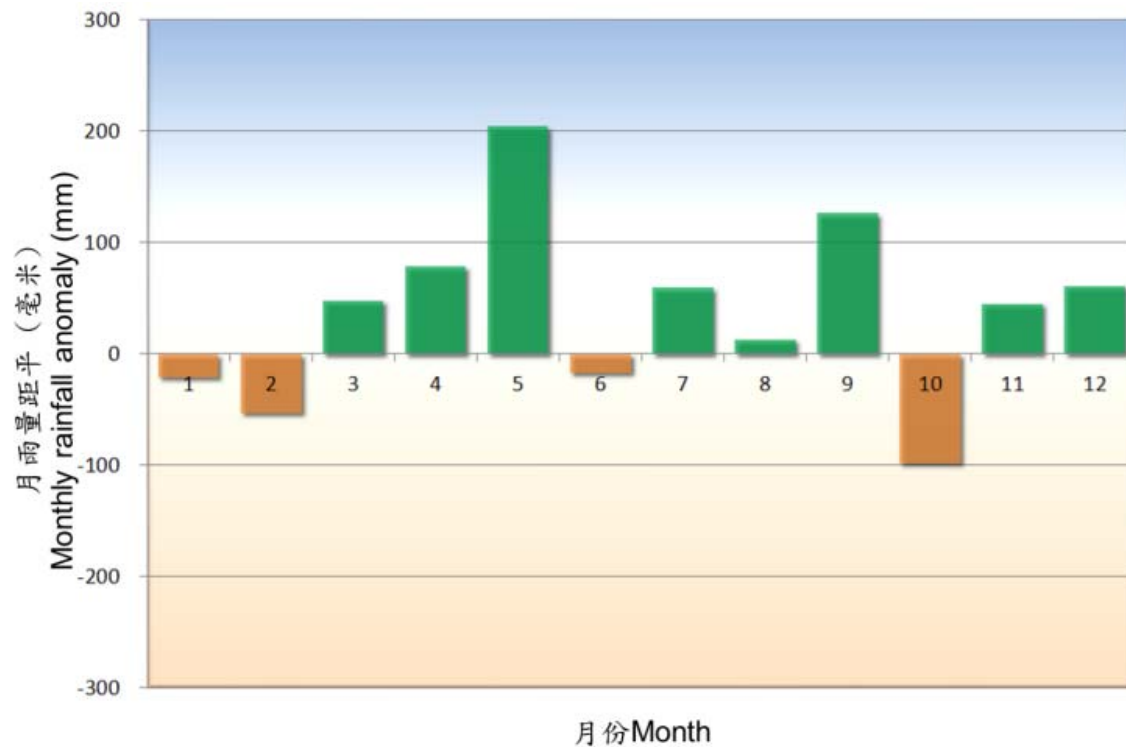


圖 4.3 2013 年香港月雨量距平

Figure 4.3 Monthly rainfall anomalies in Hong Kong in 2013

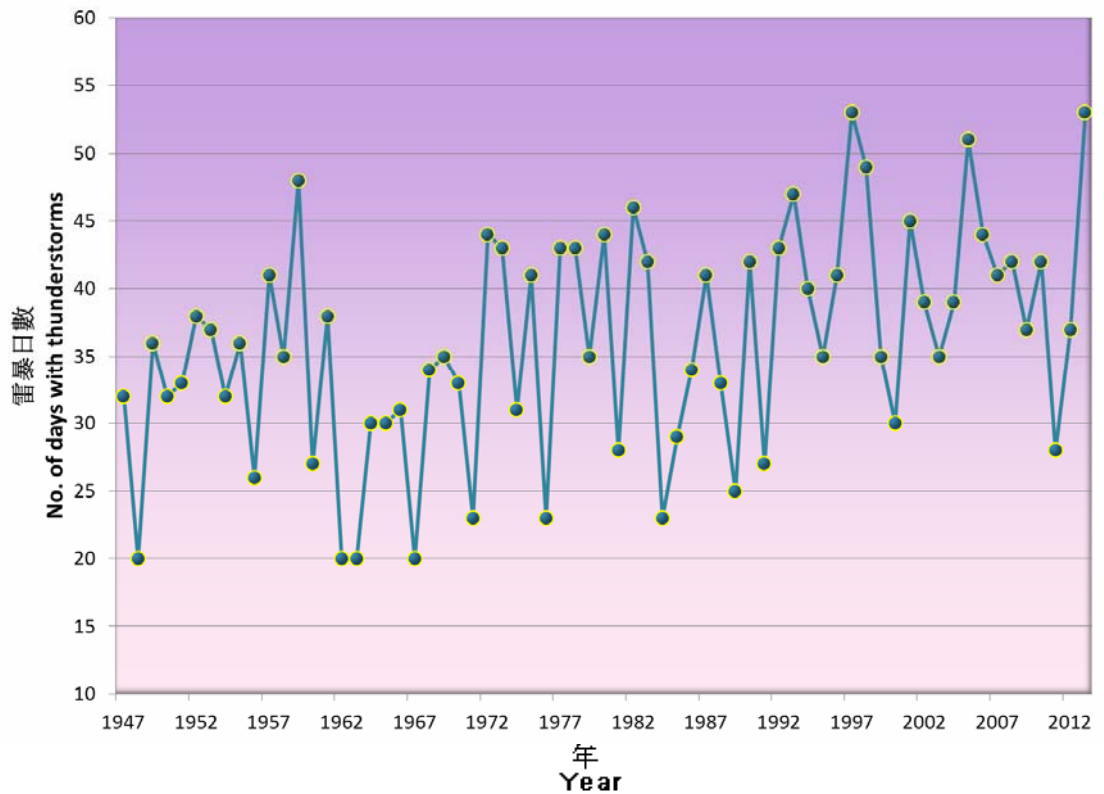


圖 4.4 自 1947 年以來在香港天文台錄得的全年雷暴日數的長期趨勢
 Figure 4.4 Long term trend of thunderstorm days as observed at the Hong Kong Observatory since 1947

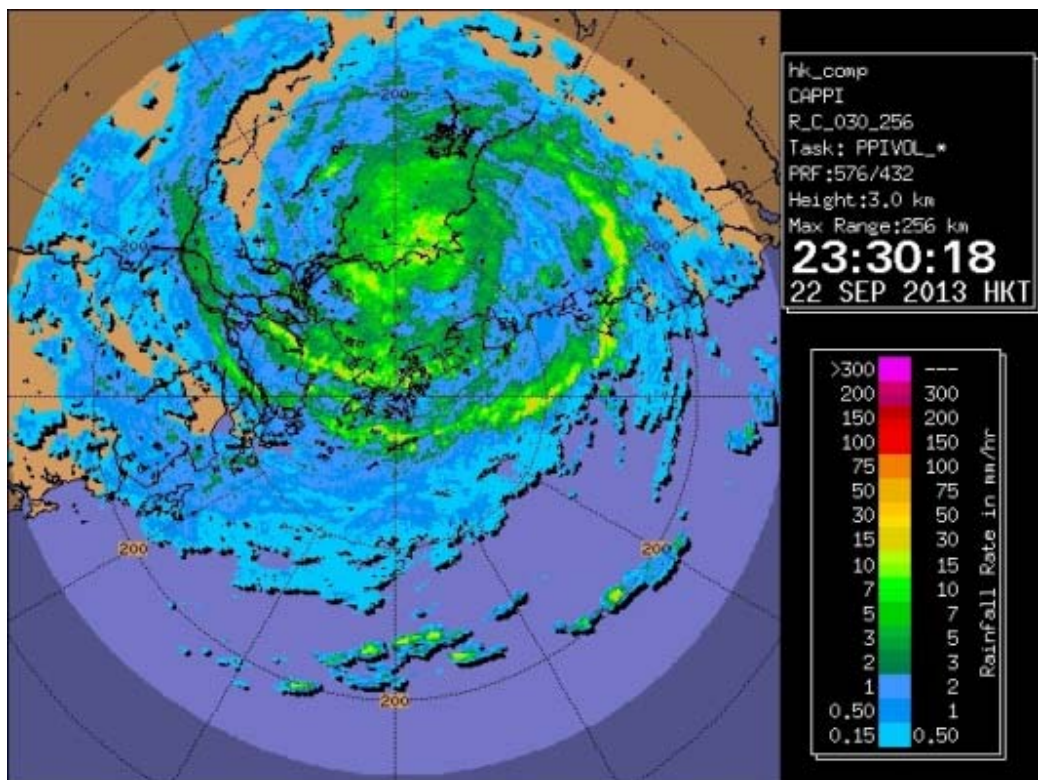


圖 4.5 雷達回波圖像顯示天兔於 2013 年 9 月 22 日晚上在香港以北一百公里內掠過
 Figure 4.5 Radar echoes showing Usagi skirting within 100 kilometres to the north of Hong Kong on the night of 22 September 2013

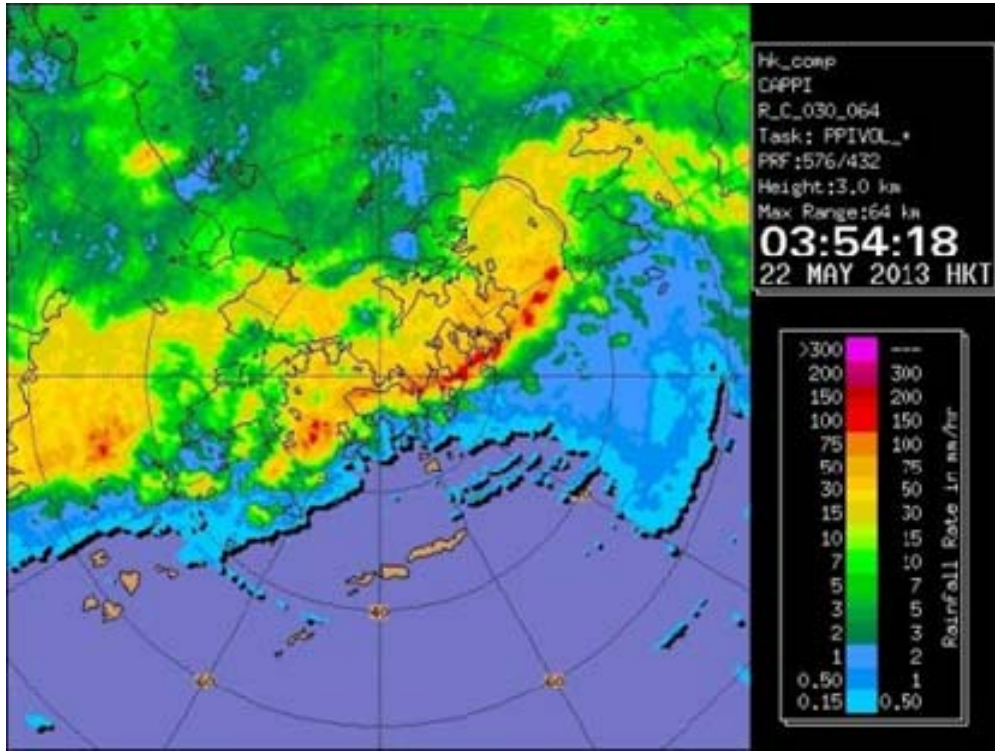


圖 4.6 雷達回波圖像顯示在 2013 年 5 月 22 日上午 3 時 54 分，大雨及強烈雷暴正橫過香港

Fig. 4.6 Radar echoes captured at 3:54 am on 22 May 2013 showing torrential rain and intense thunderstorms moving across the territory



圖 4.7 秀茂坪在 2013 年 5 月 22 日發生嚴重山泥傾瀉 (圖片由「蘋果日報」提供)

Fig. 4.7 Severe landslide in Sau Mau Ping on 22 May 2013 (Photo courtesy of Apple Daily)