

每月天氣摘要 二零一一年十二月

Monthly Weather Summary December 2011



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二零一二年一月出版

香港天文台編製
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Published : January 2012

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1. 二零一一年十二月天氣回顧

由於冬季季候風的補充頻密，二零一一年十二月較正常冷。本月的平均氣溫是 16.9 度，較正常數值 17.8 度低 0.9 度。而本月的寒冷天氣日數（日最低氣溫在 12.0 度或以下）共有 6 天，比正常多約兩天。在大陸氣流支配下，二零一一年十二月本港亦較正常少雨。本月錄得總雨量為 2.8 毫米，少於正常的十分之一。而二零一一年全年雨量為 1487.2 毫米，仍較同期正常數值 2382.7 毫米少約百分之 38。

一道冷鋒於本月首日早上橫過廣東沿岸，與其相關的強烈冬季季候風於當日為本港帶來顯著較涼及部分時間有陽光的天氣。在冬季季候風持續影響下，本港於隨後三天仍較清涼、晴朗及乾燥。受一股清勁偏東氣流影響，十二月五日及六日多雲並有一兩陣雨。隨著該股偏東氣流緩和，十二月七日短暫時間有陽光。

一股強烈冬季季候風於十二月八日早上抵達華南沿岸，本港於十二月八日及九日天氣顯著轉冷。受強烈冬季季候風影響，隨後三天天晴、寒冷及非常乾燥。天文台於十二月十一日的最低氣溫降至 9.6 度，是本月的最低氣溫。隨著冬季季候風於十二月十三日逐漸緩和，十二月十三日至十五日的日間氣溫普遍上升至 20 度以上。

隨著一股冬季季候風的補充抵達華南，十二月十六日至十九日本港持續天晴及乾燥。受一道廣闊雲帶影響，隨後兩天轉為大致多雲。

另一股冬季季候風的補充於十二月二十二日早上抵達華南，並於十二月二十二日及二十三日為本港帶來晴朗及乾燥的天氣。隨著冬季季候風增強，本港其後兩天天氣寒冷及非常乾燥。在冬季季候風持續影響下，本月餘下時間仍然清涼及非常乾燥，局部地區有煙霞。

本月有一個熱帶氣旋影響北太平洋西部及南海，有關報告刊登於第二節。

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 2011

Attributed to the frequent replenishment of the winter monsoon, December 2011 was colder than usual with a monthly mean temperature of 16.9 degrees, 0.9 degrees below the normal figure of 17.8 degrees. There were six cold days (daily minimum temperature at 12.0 degrees or below) in the month, about two days more than normal. The prevalence of continental airstream also brought drier than usual weather to the territory in December 2011. The total rainfall recorded in the month was 2.8 millimetres, less than a tenth of the monthly normal. The annual rainfall for 2011 was 1487.2 millimetres, a deficit of about 38 percent compared to the annual normal of 2382.7 millimetres.

A cold front crossed the coast of Guangdong on the morning of the first day in the month and the associated intense winter monsoon brought significantly cooler weather with sunny periods to Hong Kong on that day. Dominated by the winter monsoon, it remained rather cool, fine and dry for the ensuing three days. Affected by a fresh easterly airstream, the weather became cloudy with rain patches on 5 and 6 December. With the moderation of the easterly airstream, there were sunny intervals on 7 December.

An intense winter monsoon reached the south China coast on the morning of 8 December and brought significantly cooler weather to the territory on 8 and 9 December. Affected by the intense winter monsoon, it was cold, fine and very dry for the next three days. The temperatures at the Hong Kong Observatory fell to a minimum of 9.6 degrees on 11 December, the lowest of the month. While the winter monsoon moderated gradually on 13 December, daytime temperatures rose to above 20 degrees generally from 13 to 15 December.

With the arrival of a replenishment of the winter monsoon at southern China, it remained generally fine and dry from 16 to 19 December. Affected by a broad band of clouds, the weather became mainly cloudy for the ensuing two days.

Another replenishment of the winter monsoon reached southern China on the morning of 22 December and brought fine and dry weather to the territory on 22 and 23 December. With the strengthening of the winter monsoon, local weather was cold and very dry on the next two days. With the persistence of the winter monsoon, it remained cool and dry with localized haze for the rest of the month.

One tropical cyclone occurred over the western North Pacific and the South China Sea in the month. An overview of this tropical cyclone is presented in Section 2.

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 二零一一年十二月發出的警告及信號

Table 1.1 Warnings and Signals issued in December 2011

強烈季候風信號

Strong Monsoon Signal

開始時間 Beginning Time		終結時間 Ending Time		開始時間 Beginning Time		終結時間 Ending Time	
日/月 day/month	時 hour	日/月 day/month	時 hour	日/月 day/month	時 hour	日/月 day/month	時 hour
1/12	1145	2/12	1145	8/12	2045	9/12	1145
10/12	0700	10/12	1600	11/12	0400	11/12	1035

火災危險警告

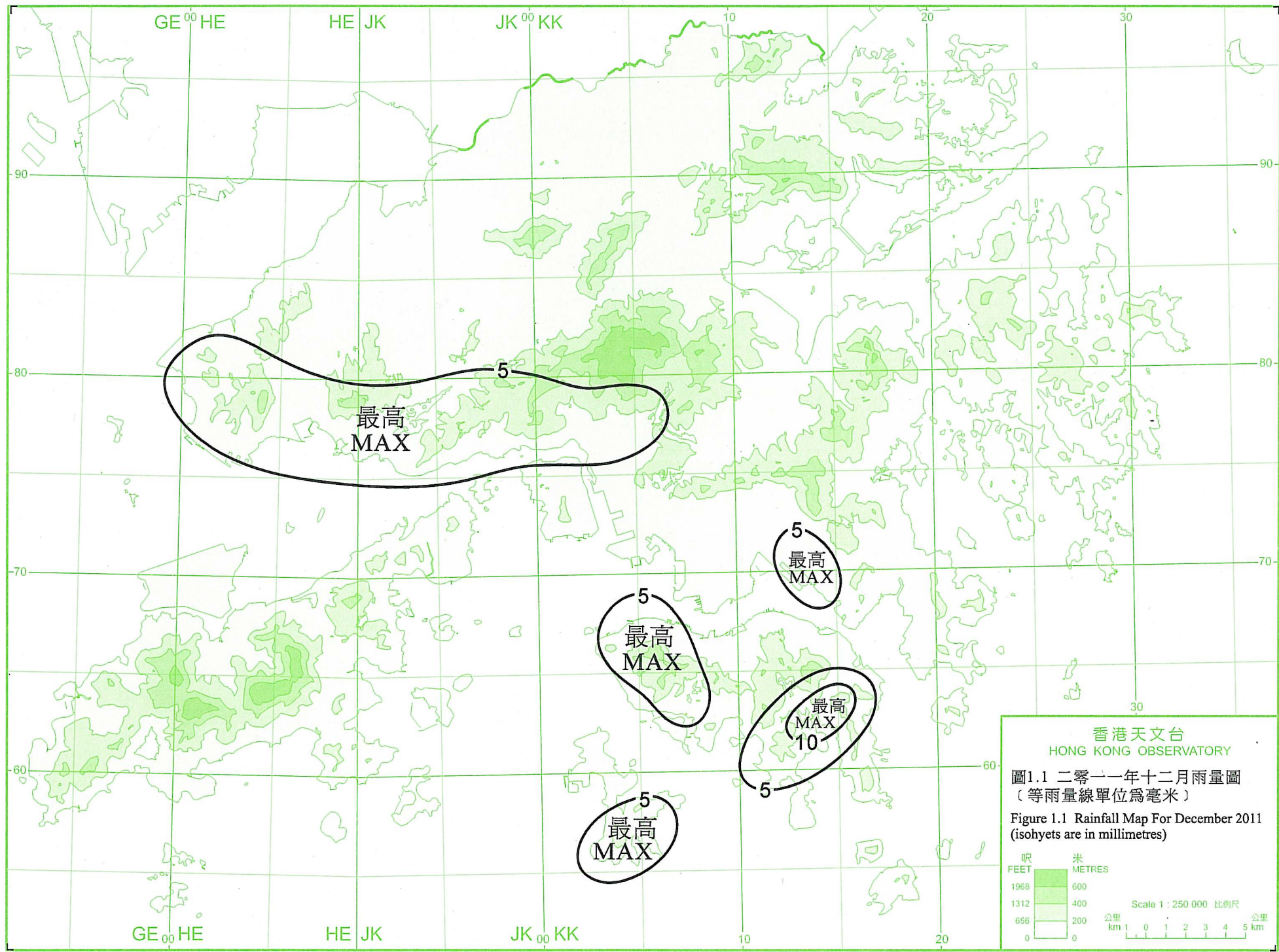
Fire Danger Warnings

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	2/12	0900	4/12	0600
黃色 Yellow	4/12	0600	4/12	1945
紅色 Red	9/12	0600	13/12	1800
紅色 Red	15/12	0600	18/12	1800
紅色 Red	22/12	0600	27/12	0600
黃色 Yellow	27/12	0600	27/12	1800

寒冷天氣警告

Cold Weather Warning

開始時間 Beginning Time		終結時間 Ending Time		開始時間 Beginning Time		終結時間 Ending Time	
日/月 day/month	時 hour	日/月 day/month	時 hour	日/月 day/month	時 hour	日/月 day/month	時 hour
3/12	0120	3/12	1015	9/12	1620	12/12	1045
23/12	1620	26/12	0745				



2.1 二零一一年十二月熱帶氣旋概述

二零一一年十二月在北太平洋西部及南海區域出現了一個熱帶氣旋天鷹，圖 2.1.1 顯示天鷹的路徑。

熱帶低氣壓天鷹於十二月十四日在雅浦島東南約 560 公里的北太平洋西部上形成，並向西北偏西移動。它於十二月十五日增強為熱帶風暴，翌日達到其最高強度，中心附近持續風力達到每小時 75 公里。天鷹於當日黃昏橫過菲律賓南部後於十二月十八日向西移動，進入南海南部。它於翌日向西南偏西移動，並於當日黃昏在越南東南的南海南部上消散。根據報章報導，天鷹吹襲菲律賓期間，引發洪災及山泥傾瀉，造成 1 010 人死亡、超過 1 600 人受傷、約 50 人失蹤，4 000 多棟房屋被毀或受損。



2.1 Overview of Tropical Cyclones in December 2011

One tropical cyclone, named as Washi occurred over the western North Pacific and South China Sea in December 2011. Figure 2.1.1 shows the track of Washi.

Washi formed as a tropical depression over the western North Pacific about 560 km southeast of Yap on 14 December and moved west-northwestwards. It intensified into a tropical storm on 15 December, reaching its peak intensity with an estimated maximum sustained wind of 75 km/h near its centre on the following day and crossed the southern Philippines that evening. Washi entered the southern part of the South China Sea on a westward track on 18 December. It turned to move west-southwestwards on 19 December and dissipated over the southern part of the South China Sea to the southeast of Vietnam that evening. According to press reports, Washi brought flash floods and landslip to the Philippines where 1 010 people were killed, over 1 600 people injured and around 50 people missing. Some 4 000 houses were also damaged or destroyed.

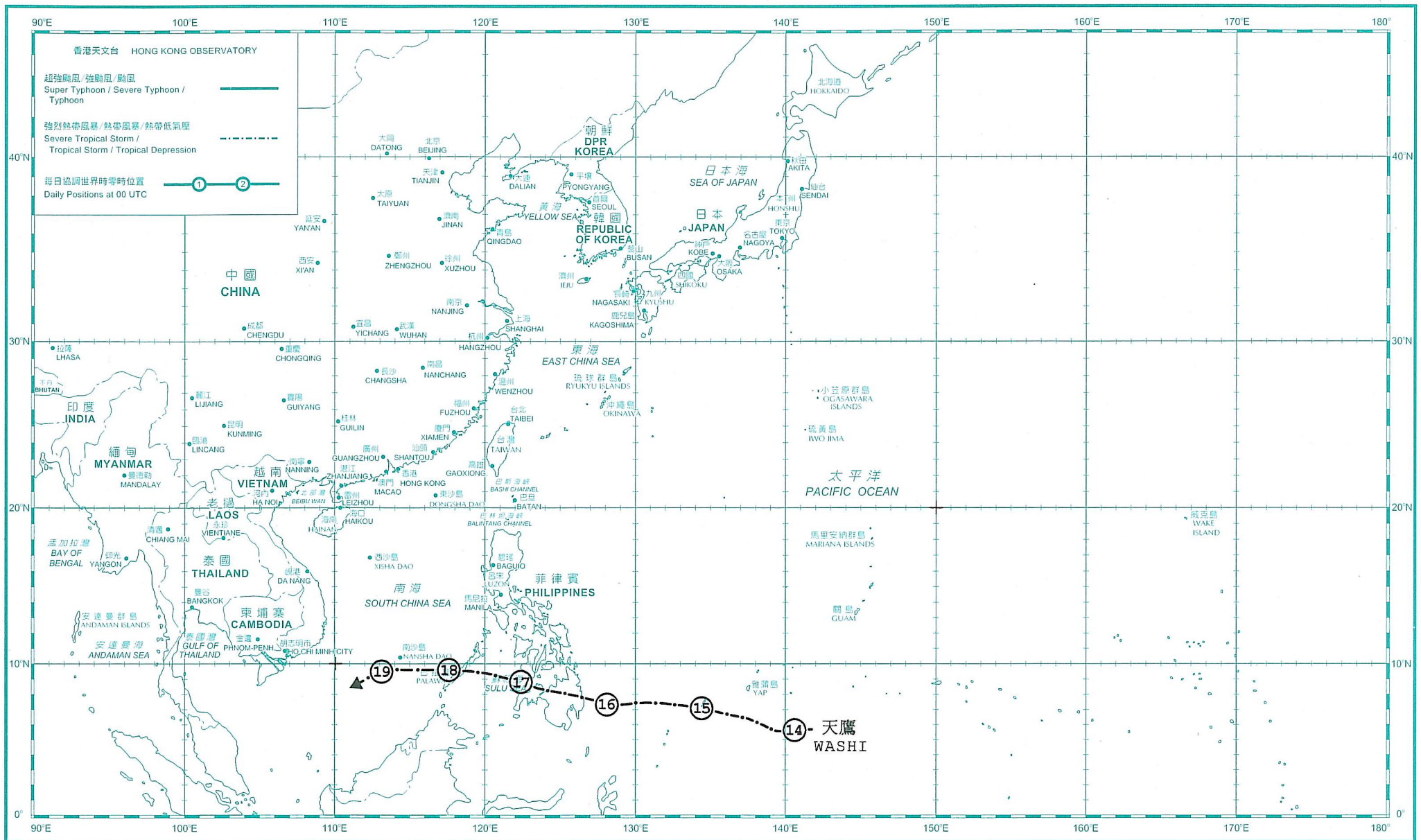






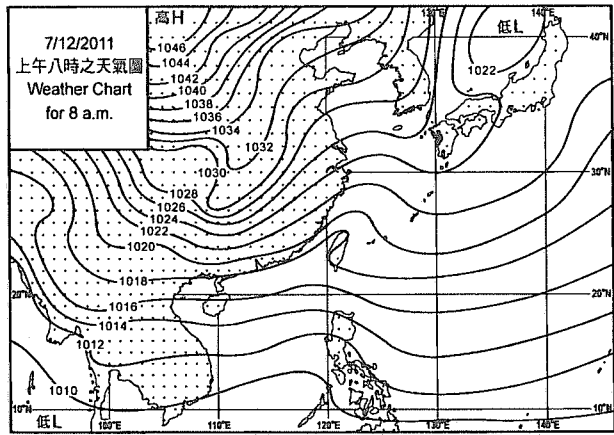
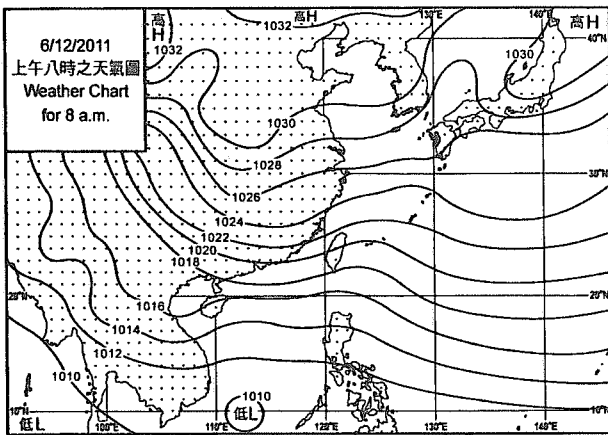
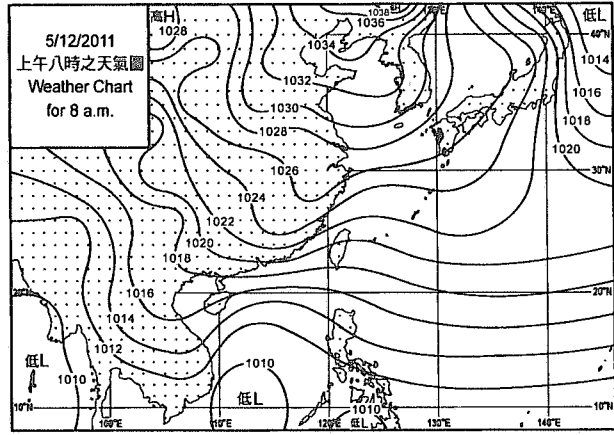
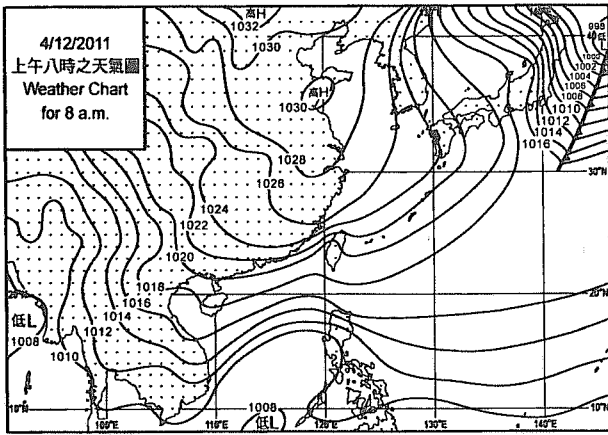
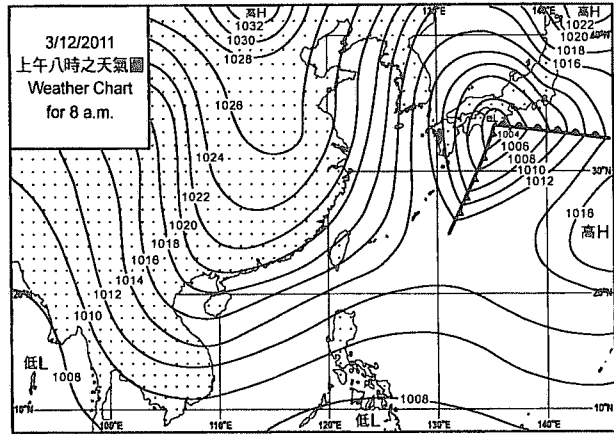
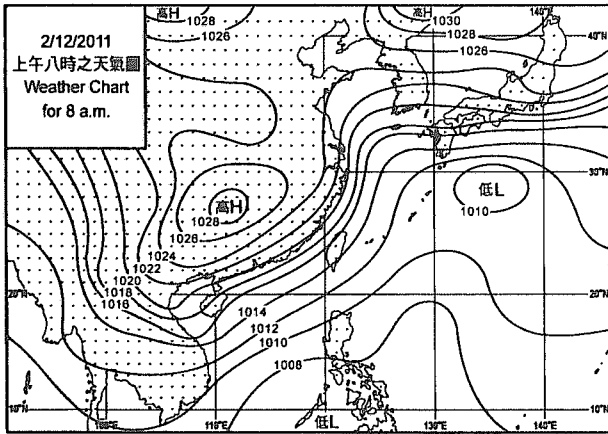
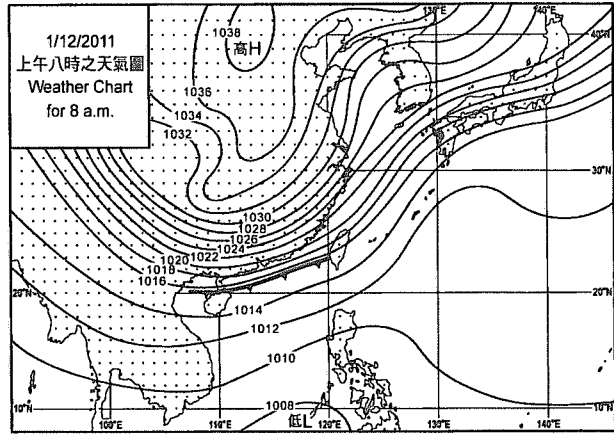
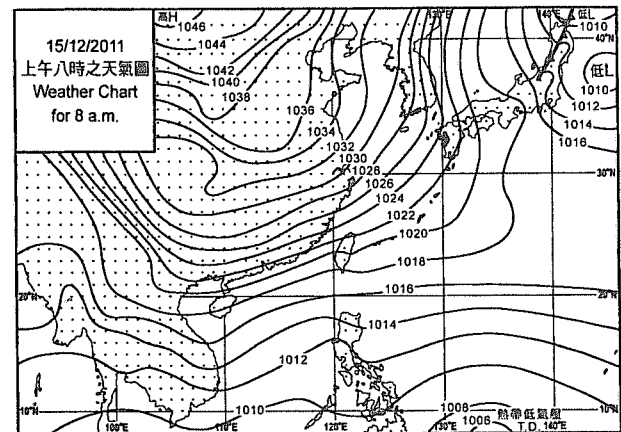
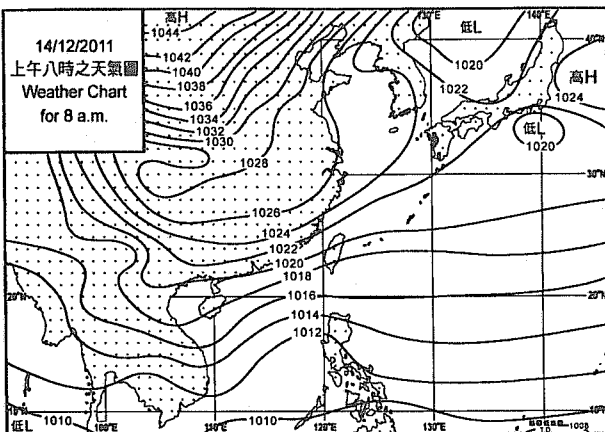
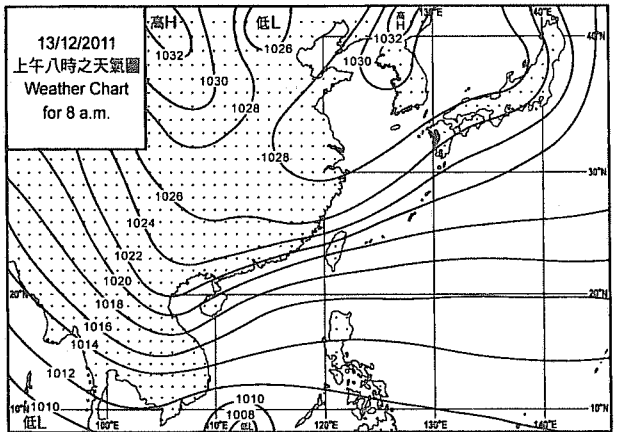
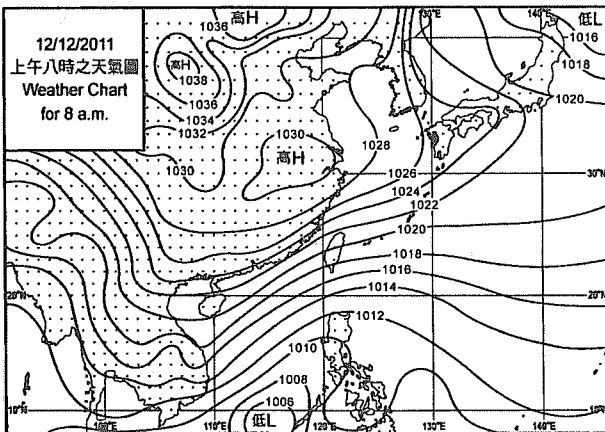
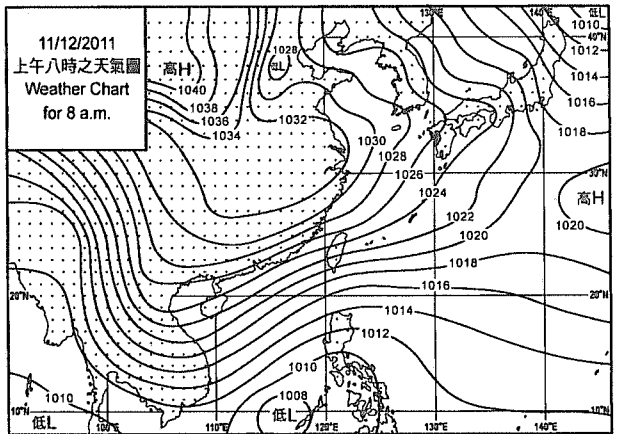
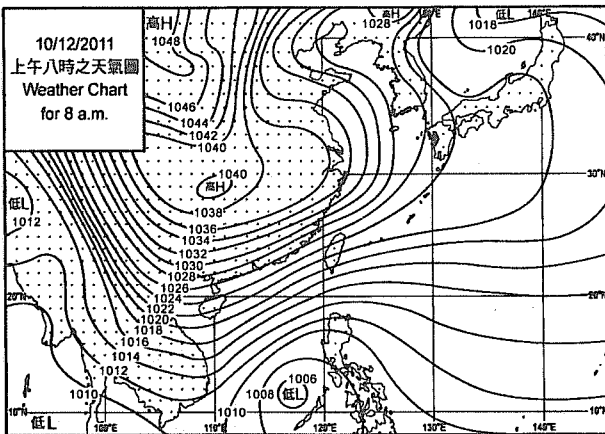
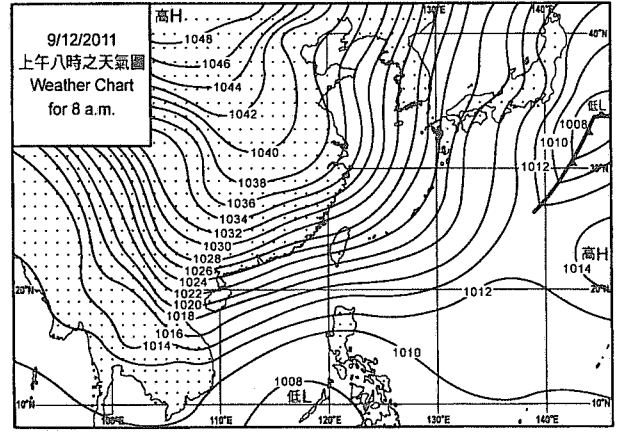
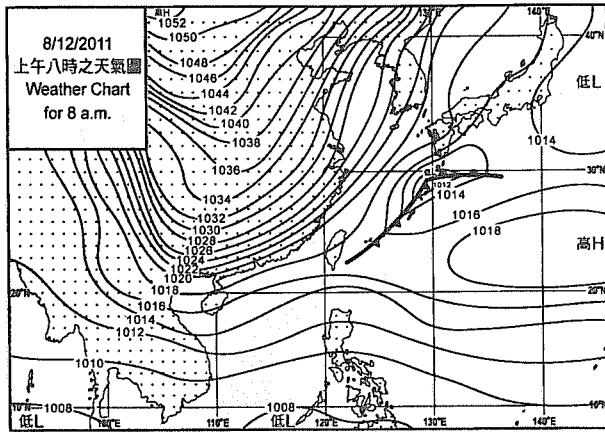


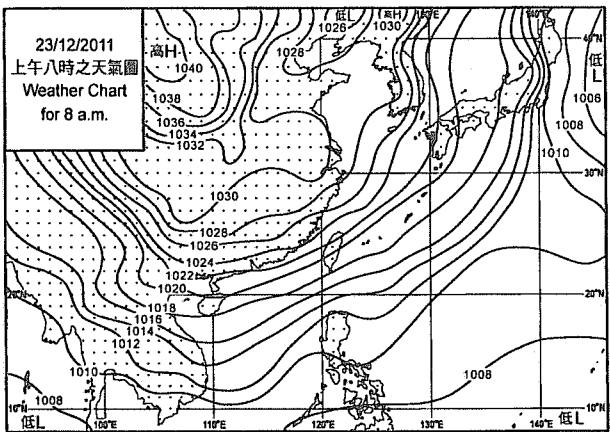
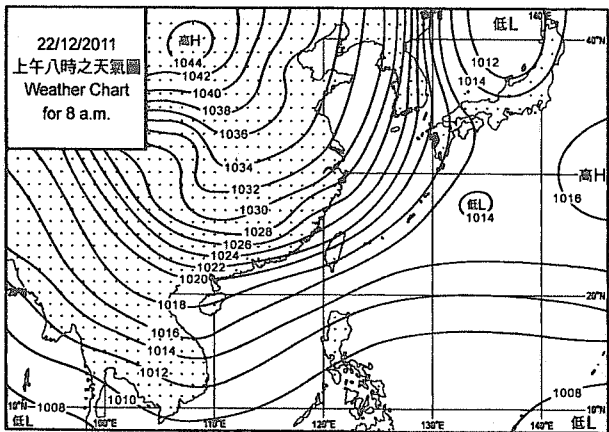
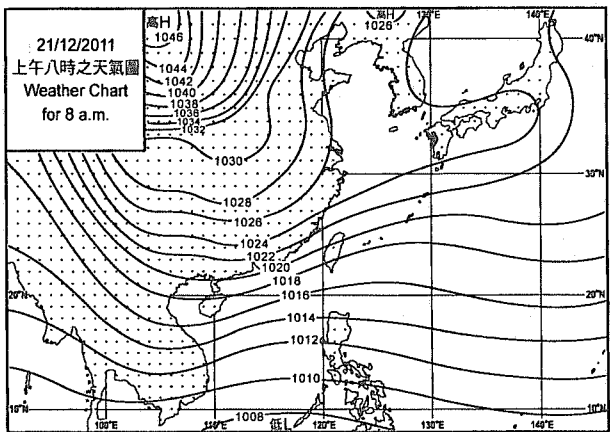
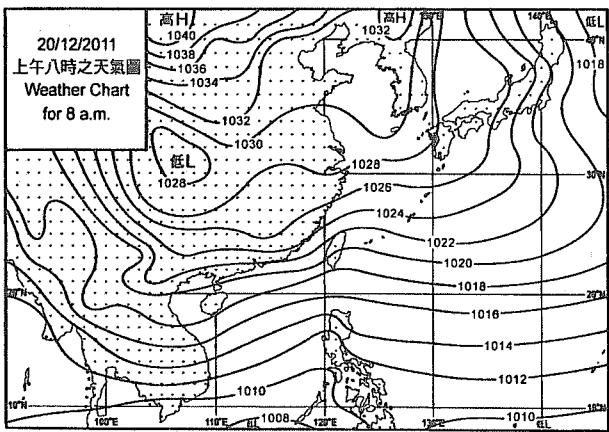
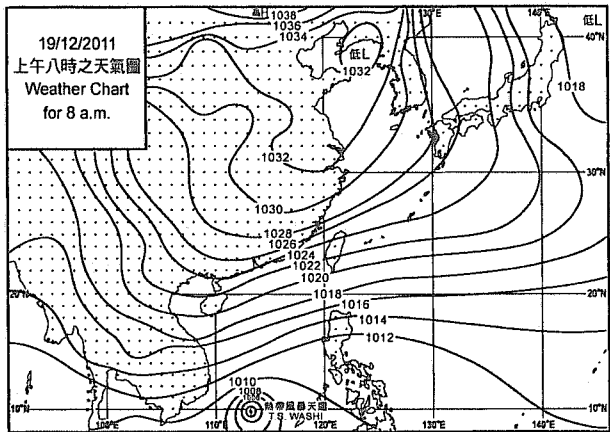
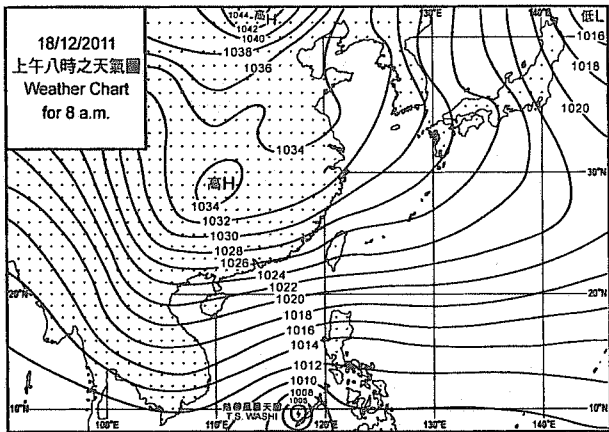
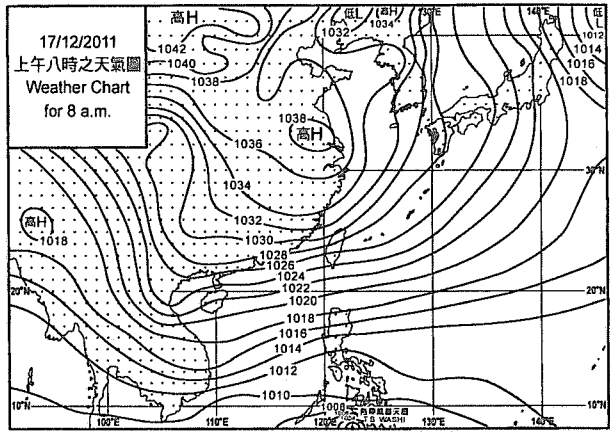
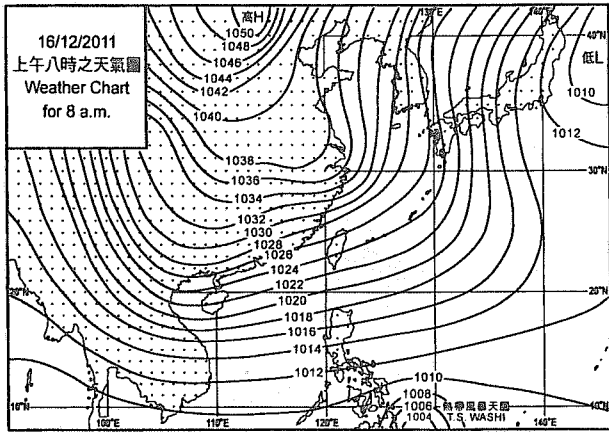
圖 2.1.1 二零一一年十二月的熱帶氣旋路徑圖
Figure 2.1.1 Track of tropical cyclones in December 2011

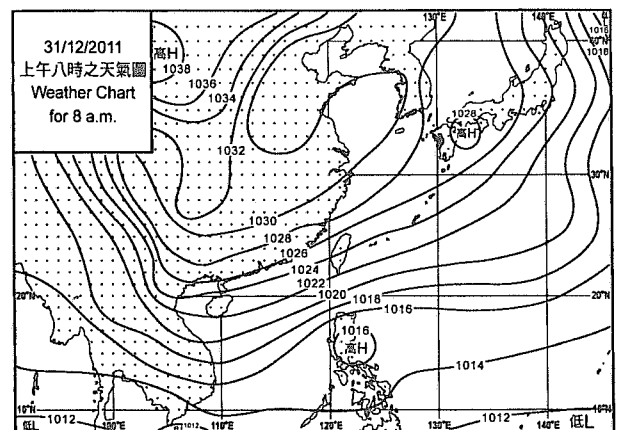
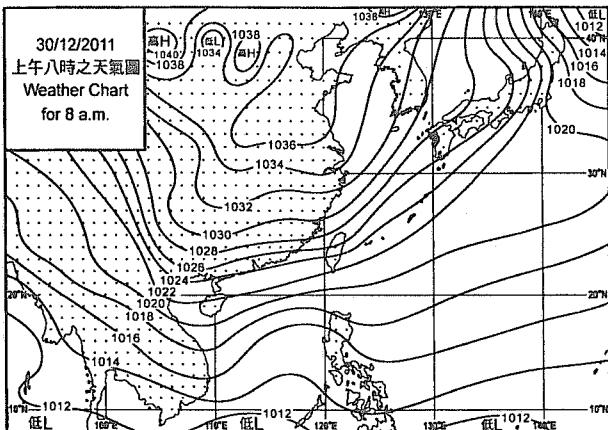
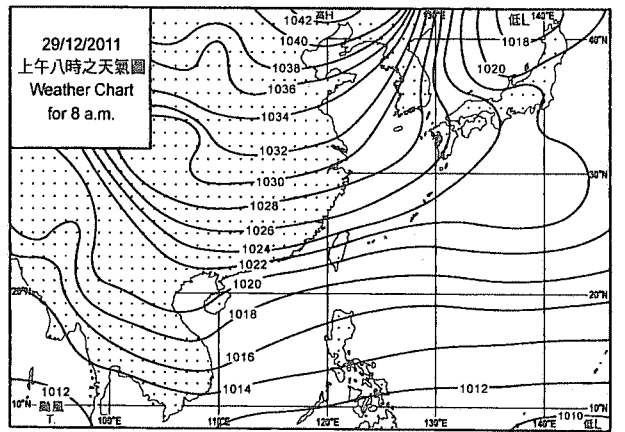
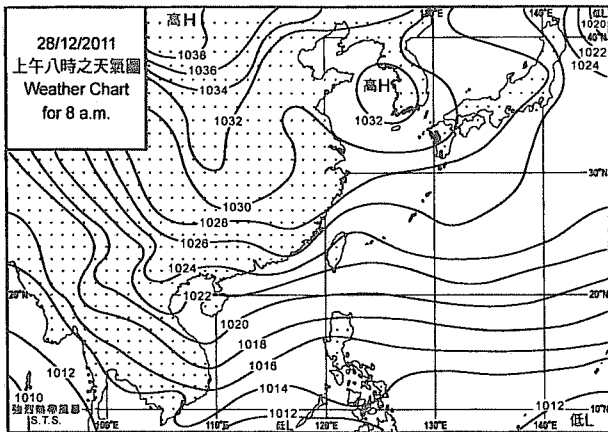
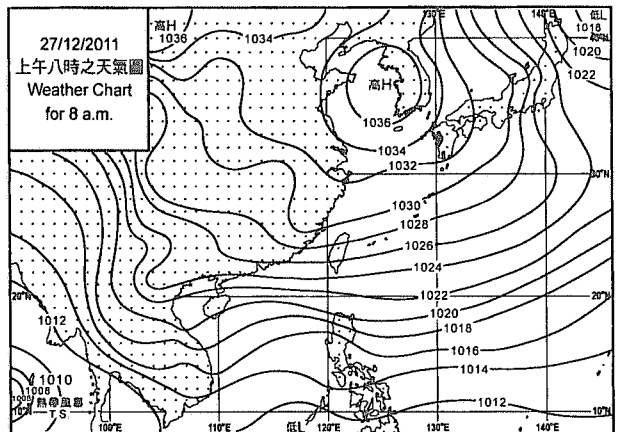
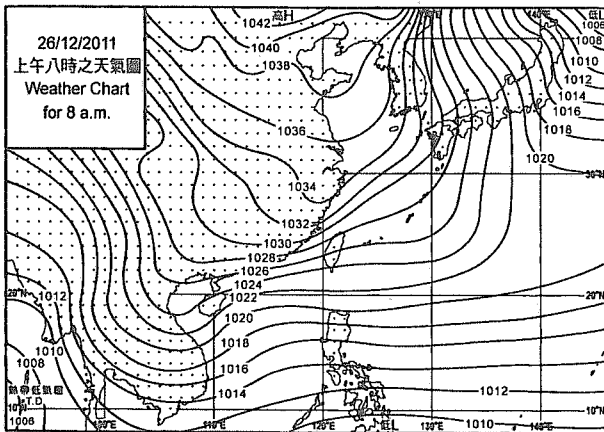
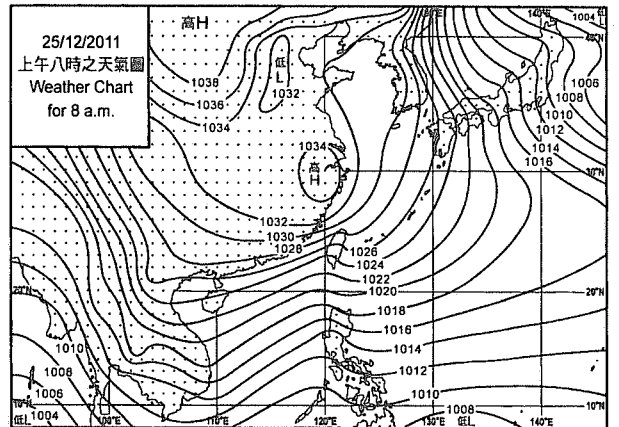
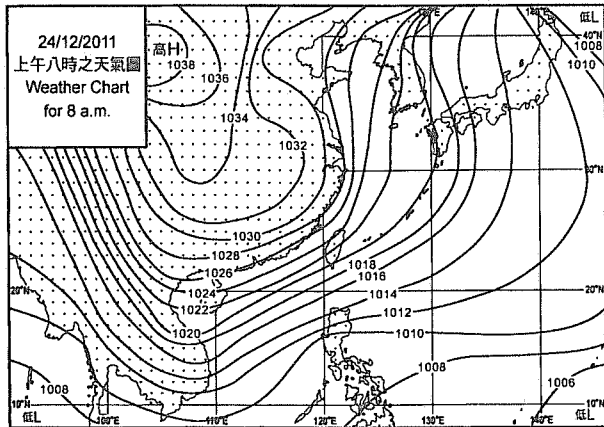
3. 二零一一年十二月每日天氣圖 3. Daily Weather Maps for December 2011

-  Isobar 等壓線 (hpa)
 -  Cold Front 冷鋒
 -  Warm Front 暖鋒
 -  Occlusion 錮囚鋒
 -  Stationary Front 靜止鋒
 -  Dissipating Cold Front 消散中的冷鋒
 -  Axis of Trough 槽軸〔線〕
 -  Centre of Tropical Cyclone 熱帶氣旋中心
- 6









4.1.1 二零一一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 2011

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	1017.2	21.8	18.7	14.9	12.6	68	59	-
2	1017.0	17.8	15.0	13.4	7.0	59	35	-
3	1017.5	19.4	15.1	11.8	5.8	54	3	-
4	1019.0	20.2	17.4	14.4	10.5	65	29	-
5	1018.4	20.2	18.8	18.1	15.1	79	88	1.2
6	1018.2	21.8	19.9	17.6	17.2	85	84	1.2
7	1016.7	24.5	22.3	20.4	18.6	80	83	-
8	1017.6	22.9	20.4	15.7	13.4	65	66	-
9	1022.5	16.3	14.6	13.4	6.8	59	87	Tr
10	1023.8	15.9	13.1	11.0	1.4	45	30	-
11	1022.7	16.3	12.9	9.6	1.0	44	13	-
12	1020.5	18.6	15.1	11.7	4.0	48	19	-
13	1019.5	20.7	17.1	14.1	8.6	58	52	Tr
14	1018.8	21.6	19.3	17.7	12.1	63	85	-
15	1019.7	22.2	19.2	17.5	11.1	60	39	-
16	1023.3	19.0	17.0	15.1	8.2	56	49	-
17	1024.6	17.8	16.1	14.4	9.4	65	63	Tr
18	1023.8	18.6	16.1	13.6	10.6	70	33	Tr
19	1021.4	19.2	16.7	14.0	11.8	73	43	-
20	1019.6	18.7	17.4	16.7	12.5	74	88	Tr
21	1018.3	22.0	19.5	17.2	13.4	68	79	-
22	1019.2	20.5	17.9	16.1	10.1	61	41	-
23	1021.2	17.7	15.0	12.6	8.0	63	32	-
24	1023.8	15.6	13.0	10.6	-0.7	39	9	-
25	1025.2	15.9	13.3	10.3	1.5	45	19	-
26	1025.1	17.9	15.8	13.9	7.5	58	84	-
27	1023.7	18.0	16.5	15.1	12.2	76	55	-
28	1022.2	20.6	17.3	15.1	13.9	81	7	-
29	1020.6	20.7	17.7	16.1	14.4	81	37	-
30	1023.0	19.6	17.7	16.5	13.9	79	82	Tr
31	1023.4	19.8	16.9	14.8	13.4	80	68	0.4
平均/總值 Mean/Total	1020.9	19.4	16.9	14.6	9.9	65	50	2.8
正常* Normal*	1020.5	20.3	17.8	15.7	11.6	69	51	34.5
觀測站 Station	天文台 Hong Kong Observatory							

天文台於十二月七日 15 時 29 分錄得本月最低氣壓 1014.3 百帕斯卡。

The minimum pressure recorded at the Hong Kong Observatory was 1014.3 hectopascals at 1529 HKT on 7 December.

天文台於十二月七日 11 時 13 分錄得本月最高氣溫 24.5 °C。

The maximum air temperature recorded at the Hong Kong Observatory was 24.5 °C at 1113 HKT on 7 December.

天文台於十二月十一日 6 時 5 分錄得本月最低氣溫 9.6 °C。

The minimum air temperature recorded at the Hong Kong Observatory was 9.6 °C at 0605 HKT on 11 December.

* 1971-2000 氣候平均值 (除特別列明外) (http://www.weather.gov.hk/cis/normal/1971_2000/cnormal01.htm)

* 1971-2000 Climatological normal, unless otherwise specified (http://www.weather.gov.hk/cis/normal/1971_2000/enormal01.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 二零一一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 2011

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	5	1.7	7.31	4.0	010	36.6
2	0	8.1	16.23	4.4	010	32.2
3	0	9.8	18.21	4.3	020	22.7
4	0	9.5	16.57	2.0	070	33.0
5	0	-	5.57	0.6	070	38.4
6	4	0.2	6.22	1.5	060	27.7
7	12	3.3	9.56	3.1	030	14.0
8	9	6.7	13.68	5.8	020	38.5
9	0	1.6	9.13	3.1	020	41.2
10	0	9.6	16.34	5.8	020	42.8
11	0	9.6	16.80	3.7	020	33.5
12	0	9.6	15.95	3.1	020	23.5
13	1	9.3	14.72	2.8	020	20.4
14	10	0.4	8.22	2.9	040	13.9
15	3	9.4	14.30	4.5	020	21.3
16	9	8.4	13.05	3.9	020	29.5
17	24	7.1	12.17	2.7	080	29.8
18	17	9.3	15.03	3.2	040	25.6
19	13	9.3	15.42	3.2	060	30.5
20	1	-	4.02	1.9	040	24.0
21	8	1.6	9.52	3.5	030	15.4
22	7	9.0	14.21	4.0	020	24.5
23	24	8.4	12.91	4.3	020	28.2
24	6	9.3	15.60	4.2	020	38.0
25	0	9.4	15.89	4.0	020	26.2
26	0	0.6	8.44	2.0	050	28.9
27	2	8.6	15.85	2.6	080	39.1
28	15	9.4	14.87	2.9	060	19.6
29	2	7.5	14.75	3.0	060	26.3
30	17	3.2	8.98	2.2	080	27.3
31	17	4.0	11.30	2.4	030	19.3
平均/總值 Mean/Total	206	193.9	12.61	101.6	020	28.1
正常* Normal*	246.1 §	173.3	11.13	94.5	070	26.5
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			

橫瀾島於十二月八日 19 時 50 分及十二月二十七日 9 時 10 分錄得本月最高陣風 63 公里/小時，風向 020 度及 070 度。

The maximum gust peak speed recorded at Waglan Island was 63 kilometres per hour from 020 degrees at 1950 HKT on 8 December and from 070 degree at 0910 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

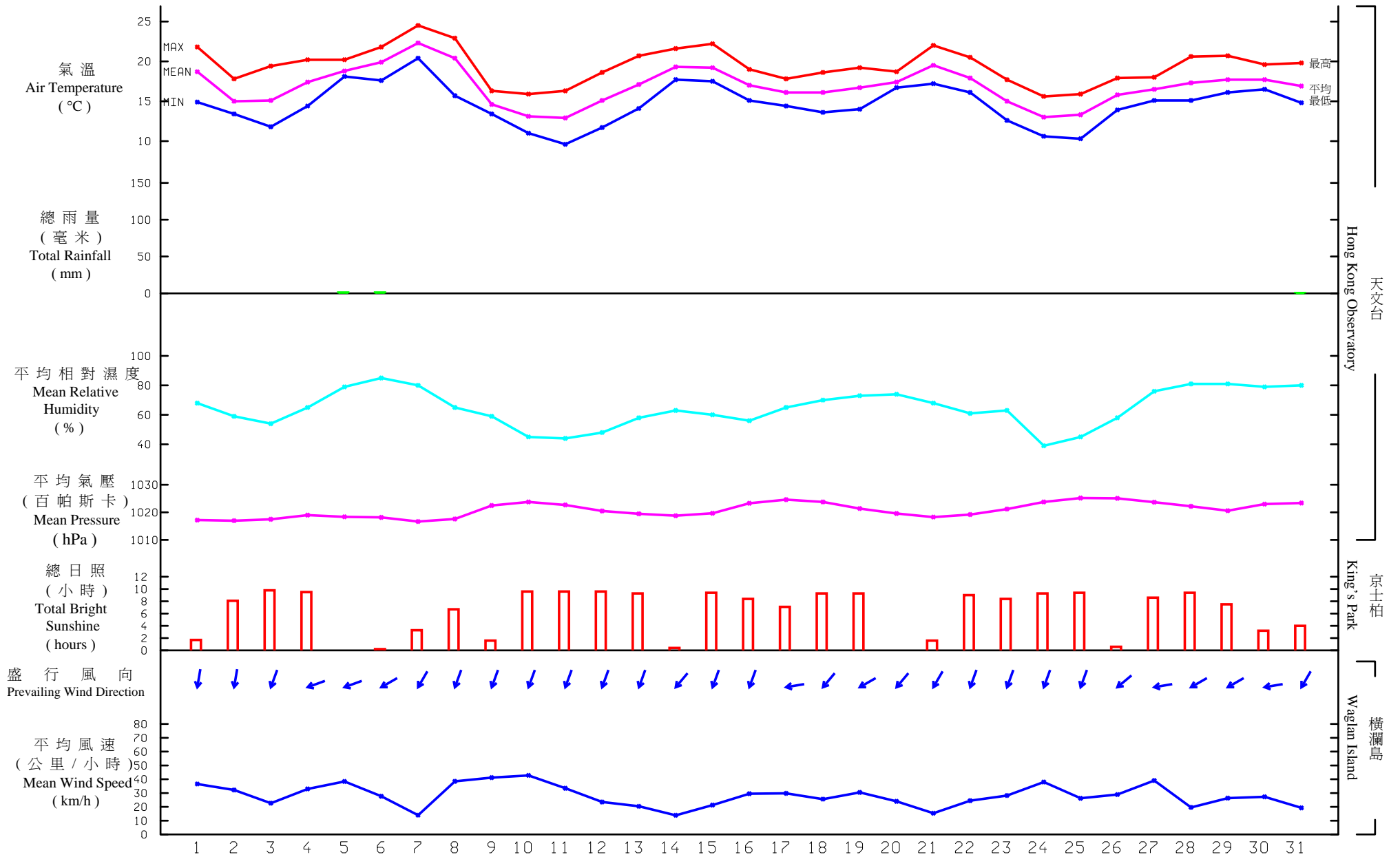
* 1971-2000 氣候平均值 (除特別列明外) (http://www.weather.gov.hk/cis/normal/1971_2000/cnormal01.htm)

* 1971-2000 Climatological normal, unless otherwise specified (http://www.weather.gov.hk/cis/normal/1971_2000/enormal01.htm)

§ 1997-2010 平均值

§ 1997-2010 Mean value

4.2 二零一一年十二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 2011



5. 二零一一年天氣概況

全球天氣而言，儘管在年初及年尾受到拉尼娜的冷卻效應影響，2011 年仍可能是有記錄以來第十溫暖的年份。而 2011 年年尾發展的拉尼娜預料會持續到 2012 年初。於 2011 年，全球各地出現很多極端天氣事件，當中包括中國西南部和美國南部的旱災及高溫情況；非洲東部和中國中部地區的旱澇急轉；巴基斯坦、澳洲東部、泰國和巴西東南部的嚴重洪澇災害；美國的龍捲風災；以及在日本和菲律賓出現熱帶氣旋引致的暴雨。

本港方面，受年初及年尾的拉尼娜影響，華南的東北季候風較強，香港於一至三月及十二月的天氣顯著較冷。然而，這四個月的偏低氣溫大部份被八月和十一月顯著較暖的天氣所抵消。全年的平均氣溫為 23.0 度，接近正常。

2011 年亦是異常少雨的一年。由於首 9 個月雨量明顯偏低，全年雨量只有 1487.2 毫米，較正常少約百分之 38，是自 1963 年以來最少雨的一年。

香港天文台於 2011 年間只發出過兩次紅色暴雨警告，約為暴雨警告系統自 1992 年推出以來每年平均發出紅色暴雨警告次數的一半。而本年亦沒有發出過黑色暴雨警告。

本年共有 22 個熱帶氣旋出現於北太平洋西部及南海，少於年平均的 30 個。當中有 4 個熱帶氣旋達超強颱風⁸程度。本港方面，年內有 5 個熱帶氣旋需發出熱帶氣旋警告信號，略少於長期年平均的 6 個。颱風納沙於九月影響香港期間，天文台需發出八號烈風或暴風信號。

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 2011 年在本港發生的重要天氣事件如下：

異常少雨的一年

2011 年的全年雨量為 1487.2 毫米，是自 1963 年以來最少雨的一年，其主要原因是首 9 個月的雨量明顯偏低。在一至四月期間，受到拉尼娜影響，華南的東北季候風較強及乾燥，引致本港降雨偏少。而五月至九月的少雨情況則受多個因素影響，包括五月份華南沿岸的偏南氣流較弱，以及較強的反氣旋於八月及九月持續支配華南等。

一至三月寒冷及乾燥

受拉尼娜影響，香港首 3 個月的東北季候風較正常強，天氣亦顯著較冷及乾燥。一

至三月的平均氣溫較正常低 1.1 度，而一月的平均氣溫更只有為 13.7 度，是自一九七七年以來一月份的最低紀錄。一月的寒冷天氣[#]日數共有 14 天，是正常值 7 天的兩倍。除雨量偏少外，首 3 個月的平均相對濕度亦比正常低百分之 6。而三月的平均相對濕度只有百分之 71，較正常低百分之 11，是自有記錄以來三月份最低的平均相對濕度。

五月二十二日的紅色暴雨

雖然 2011 年較為少雨，但 5 月 22 日出現的兩場大雨，引致天文台先後兩次發出紅色暴雨警告。受一道位於南海北部的活躍低壓槽影響，5 月 22 日早上本港出現大雨及狂風雷暴，天文台在早上 11 時 10 分發出紅色暴雨警告，警告於下午 2 時 45 分取消。此外，廣東內陸另一道低壓槽向南移動，並於該日傍晚橫過沿岸，為本港帶來另一場大雨及狂風雷暴。紅色暴雨警告於當日下午 9 時 55 分至下午 11 時 25 分期間再次生效。本港廣泛地區當日共錄得超過 100 毫米雨量，新界部分地區更錄得超過 200 毫米雨量。而這兩場大雨亦引至 25 宗水浸及 2 宗山泥傾瀉。

異常高溫的八月及十一月

由於一道較正常強的反氣旋覆蓋華南，八月的天氣異常溫暖，月平均氣溫上升至 29.5 度，與一九九零年及一九九八年並列為自一八八四年有紀錄以來八月份最高氣溫。八月的酷熱天氣[&]日數共有 10 天，多於正常值 3 天的三倍。由於東北季候風較弱，十一月亦較溫暖，月平均氣溫為 23.0 度，較正常高 1.6 度。是有記錄以來第五最暖的十一月。

影響香港的熱帶氣旋

隨著熱帶低氣壓莎莉嘉於 6 月 10 日闖入香港 800 公里範圍內，並引致天文台發出全年首個一號戒備信號，香港本年的颱風季節亦正式開始。其後在熱帶風暴海馬、強烈熱帶風暴洛坦和強颱風尼格影響香港期間，天文台亦曾發出三號強風信號。而颱風納沙於 9 月 29 日在香港西南偏南約 350 公里掠過，天文台發出了八號東南烈風或暴風信號，是自 2009 年 9 月以來發出首個八號風球。在納沙影響本港期間，一艘斷了錨索的浮塢被大浪衝至柴灣杏花村對出海面，先撞向柴灣石油倉庫，然後再撞向杏花村海濱長廊的海旁。有關納沙的詳細報告可瀏覽以下網頁：
http://www.hko.gov.hk/informtc/nesat/report_uc.htm

圖 5.2 及圖 5.3 分別顯示二零一一年之月平均氣溫距平及月雨量距平。

* 超強颱風指熱帶氣旋接近中心之 10 分鐘最高平均風力為每小時 185 公里或以上

寒冷天氣指當日最低氣溫在 12.0 度或以下

& 酷熱天氣指當日的最高氣溫達 33.0 度或以上

5. The Year's Weather – 2011

Globally, despite the cooling influence of the La Nina conditions in early and late 2011, the year 2011 is still likely to rank as the tenth warmest year on record. The current La Nina condition, which developed by the end of 2011, is expected to persist into early 2012. For extreme weather events, it was eventful worldwide in 2011. Notably, there were drought and high temperatures in southwestern China and southern United States, dramatic change from drought to flood conditions in east Africa and central China, severe flooding in Pakistan, eastern Australia, Thailand and southeastern Brazil, deadly tornadoes in United States, and tropical cyclone induced torrential rain in Japan and the Philippines.

Locally in 2011, Hong Kong experienced appreciably colder weather from January to March and in December. This is attributed to the stronger northeast monsoon over southern China usually under the effect of La Nina. However, the below-normal temperatures in these four months were almost offset by the noticeably warmer August and November. The average temperature of 2011 ended up with a near normal value of 23.0 degrees.

The year 2011 was also an exceptionally dry year. With well below normal rainfall in the first nine months, the annual rainfall of 1487.2 millimetres was about 38 per cent below normal, the lowest since 1963.

During 2011, there were only two red rainstorm warnings issued by the Hong Kong Observatory, about one half of the average number of red rainstorm warnings in a year since operation of the Rainstorm Warning System in 1992. There was no black rainstorm warning issued in the year.

A total of 22 tropical cyclones formed over the western North Pacific and the South China Sea in 2011, less than the normal figure of around 30. Four of them reached super typhoon* intensity during the year. In Hong Kong, five tropical cyclones necessitated the issuance of local tropical cyclone warning signals, slightly less than the long term average of about six in a year. Typhoon Nesat, which affected Hong Kong in September, necessitated the issuance of the No.8 Gale or Storm Signal.

Detailed descriptions of the weather for individual months are available in the Monthly Weather Summary webpage from the following URL:
<http://www.hko.gov.hk/wxinfo/pastwx/mws.htm>

Some significant weather events in Hong Kong in 2011 are highlighted below:

An exceptionally dry year

The annual rainfall in 2011 was 1487.2 millimetres which was the lowest since 1963. The rainfall deficit in 2011 was mainly attributed to the substantially less than normal rainfall in the first nine months. From January to April, under the influence of the La Nina conditions, a stronger and drier northeast monsoon prevailed over southern China and brought less rain to Hong Kong. The lack of rainfall from May to September was due to a number of factors including weaker southerly flows over the South China coast in May and the stronger anticyclone prevailing over southern China in August and September.

Cold and dry from January to March

Under the influence of the La Nina conditions, Hong Kong experienced stronger than normal northeast monsoon and appreciably colder and drier weather for the first three months of 2011. The average temperature from January to March was 1.1 degrees lower than normal. In particular, the mean temperature for January was 13.7 degrees, the lowest since 1977. There were 14 cold days[#] in January, double the normal figure of about 7 days in the month. Besides the below normal rainfall, the average relative humidity of these three months was also lower than the normal figure by 6%. The monthly mean relative humidity of 71% for March 2011 was even 11% below normal, the lowest for March on record.

Red rainstorms on 22 May

Although 2011 was a dry year, there were two episodes of heavy rain on 22 May which necessitated the issuance of the red rainstorm warning. On the morning of 22 May, under the influence of an active trough of low pressure over the northern part of the South China Sea, local weather deteriorated with heavy rain and squally thunderstorms. The red rainstorm warning was in force from 11:10 a.m. to 2:45 p.m. Meanwhile, another trough of low pressure over inland Guangdong edged southwards to cross the coast that evening, bringing another episode of heavy downpour to the territory. The red rainstorm warning was issued again between 9:55 p.m. and 11:25 p.m. on the same day. Totally, more than 100 millimetres of rainfall were recorded over most parts of Hong Kong with more than 200 millimetres over parts of the New Territories on that day. During the rainstorm episodes, 25 cases of flooding and 2 cases of landslip were reported.

Unusually warm in August and November

With the stronger than normal anticyclone covering southern China, it was unusually warm in August. The monthly mean temperature in August soared to 29.5 degrees, equaling the record set in 1990 and 1998 as one of the hottest August since record began in 1884. There were 10 very hot days[&] in August, more than three times of the normal figure of about 3 days in the month. With relatively weak northeast monsoon, it was also unusually warm in November. The monthly mean temperature in November was 23.0 degrees, 1.6 degrees above normal, making the month the fifth warmest November on record.

Tropical cyclones affecting Hong Kong

The typhoon season in Hong Kong in 2011 started on 10 June when Tropical Storm Sarika came within 800 km of Hong Kong and the Standby Signal No. 1 was issued. The Strong Wind Signal No. 3 was issued during the approach of Tropical Storm Haima, Severe Tropical Storm Nock-ten and Severe Typhoon Nalgae. The No. 8 SE Gale or Storm Signal, the first No.8 Signal since September 2009, was issued on 29 September as Typhoon Nesat passed about 350 km to the south-southwest of Hong Kong. During the passage of Nesat, a crane barge drifted towards the seas off Chai Wan after its anchor cable was snapped. The barge first hit a pier at an oil storage depot in Chai Wan and then slammed into a sea wall at the Heng Fa Chuen promenade. Detailed report of Nesat is available from the URL below : <http://www.hko.gov.hk/informtc/nesat/report.htm>

Figure 5.2 and 5.3 show respectively the monthly mean temperature anomalies and total rainfall anomalies in 2011.

- * Super typhoon refers to a tropical cyclone with maximum 10-minute wind speed of 185 km/h or above near the centre.
- # Cold day refers to a day with daily minimum temperature at 12.0 degrees or below.
- & Hot day refers to a day with daily maximum temperature at 33.0 degrees or above.

表 5.1.1 二零一一年香港氣象觀測摘要(一)

Table 5.1.1 Summary of Meteorological Observations in Hong Kong (Part1), 2011

月份 Month	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
		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	°C	%	%	毫米 mm
一月 January	1021.5	16.3	13.7	11.6	7.5	67	63	5.4
二月 February	1017.1	19.1	16.2	14.2	12.0	77	65	23.7
三月 March	1018.7	21.1	18.0	15.7	12.4	71	79	20.5
四月 April	1014.0	26.9	22.9	20.6	18.2	76	59	36.0
五月 May	1009.2	29.0	26.0	24.1	22.4	81	73	186.7
六月 June	1005.3	31.3	28.6	26.7	25.0	82	74	446.1
七月 July	1004.4	31.4	28.8	27.0	25.1	81	64	226.8
八月 August	1006.1	32.4	29.5	27.4	24.8	77	56	157.6
九月 September	1007.6	30.6	28.0	26.0	23.9	79	70	123.1
十月 October	1013.9	27.3	24.8	23.2	20.6	78	62	172.4
十一月 November	1015.4	25.3	23.0	21.5	18.7	77	70	86.1
十二月 December	1020.9	19.4	16.9	14.6	9.9	65	50	2.8
平均/總值 Mean/Total	1012.8	25.8	23.0	21.1	18.4	76	65	1487.2
正常* Normal*	1013.0	25.6	23.1	21.1	18.8	78	67	2382.7
觀測站 Station	天文台 Hong Kong Observatory							

天文台於六月二十二日 16 時 31 分錄得本年最低氣壓 995.2 百帕斯卡。

The minimum pressure recorded at the Hong Kong Observatory was 995.2 hectopascals at 1631 HKT on 22 June.

天文台於八月七日 13 時 47 分錄得本年最高氣溫 35.0 °C。

The maximum air temperature recorded at the Hong Kong Observatory was 35.0 °C at 1347 HKT on 7 August.

天文台於一月十二日 2 時 49 分錄得本年最低氣溫 7.2 °C。

The minimum air temperature recorded at the Hong Kong Observatory was 7.2 °C at 0249 HKT on 12 January.

天文台於七月十六日 1 時 19 分錄得本年最高瞬時降雨率 238 毫米/小時。

The maximum instantaneous rate of rainfall recorded at the Hong Kong Observatory was 238 millimetres per hour at 0119 HKT on 16 July.

* 1971-2000 氣候平均值 (除特別列明外) (http://www.weather.gov.hk/cis/normal/1971_2000/cnormal01.htm)

* 1971-2000 Climatological normal, unless otherwise specified (http://www.weather.gov.hk/cis/normal/1971_2000/enormal01.htm)

表 5.1.2 二零一一年香港氣象觀測摘要(二)

Table 5.1.2 Summary of Meteorological Observations in Hong Kong (Part2), 2011

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	兆焦耳/米 ² MJ/m ²	毫米 mm	度 degrees	公里/小時 km/h
一月 January	376	158.6	11.38	84.1	020	27.0
二月 February	201	127.7	11.47	68.4	040	22.5
三月 March	183	108.6	11.96	95.3	030	26.2
四月 April	76	191.6	17.16	115.5	070	18.4
五月 May	114	150.5	15.94	121.8	050	16.9
六月 June	11	149.5	15.43	119.5	200	21.6
七月 July	25	202.3	18.47	159.7	220	19.3
八月 August	66	242.0	19.81	168.9	220	13.4
九月 September	29	158.5	15.52	132.9	110	26.4
十月 October	66	161.1	13.17	112.3	080	29.3
十一月 November	85	134.2	11.45	96.3	070	27.3
十二月 December	206	193.9	12.61	101.6	020	28.1
平均/總值 Mean/Total	1438	1978.5	14.53	1376.3	060	23.0
正常* Normal*	1430.2 §	1842.9	13.23	1343.4	070	23.9
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

橫瀾島於九月二十九日 1 時 14 分錄得本年最高陣風 090 公里/小時，風向為 110 度。

The maximum gust peak speed recorded at Waglan Island was 110 kilometres per hour from 090 degrees at 0114 HKT on 29 September.

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

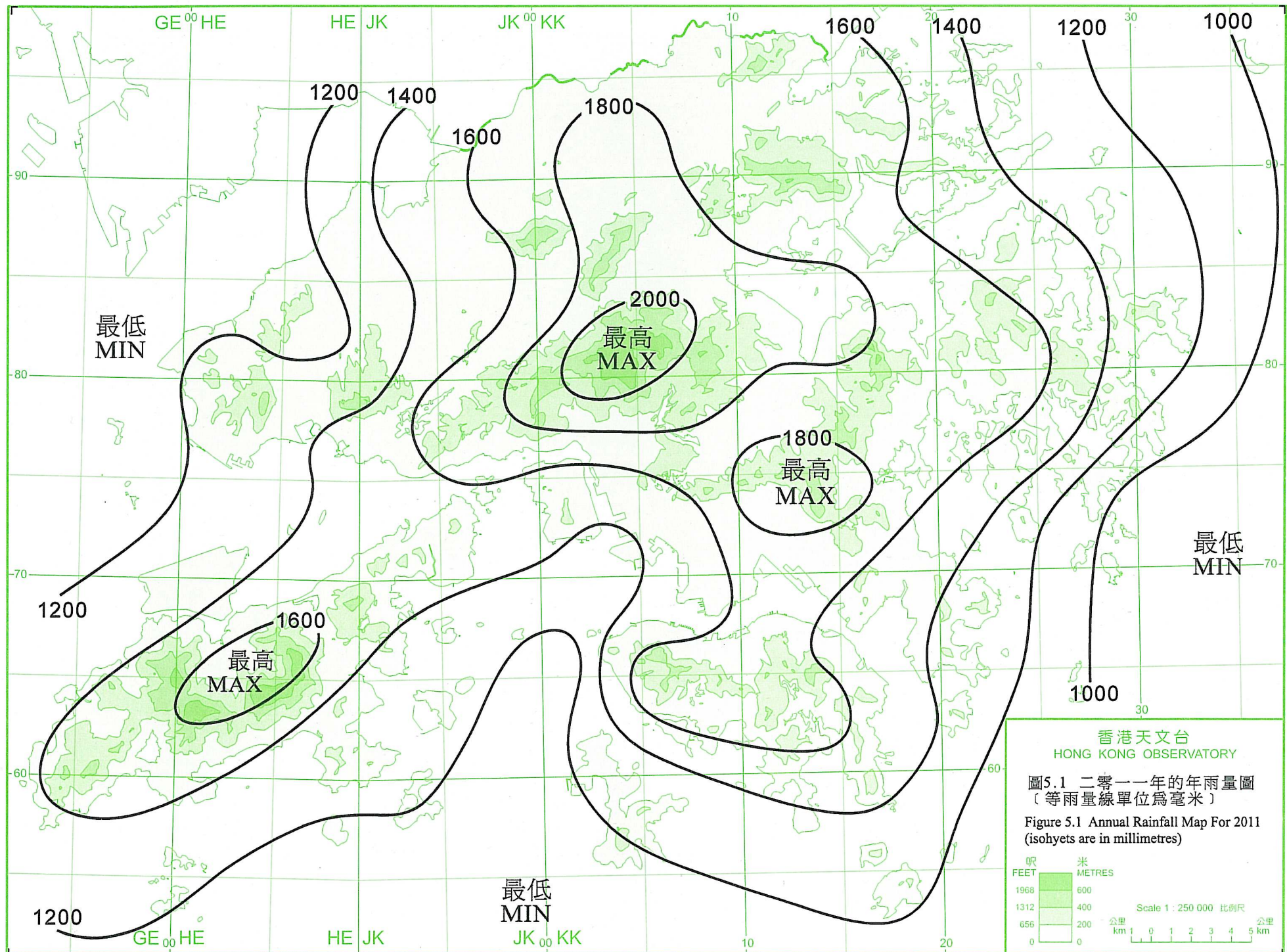
- The visibility readings at the Hong Kong International Airport are based on hourly observations by professional meteorological observers in 2004 and before, and average readings over the 10-minute period before the clock hour of the visibility meter near the middle of the south runway from 2005 onwards. 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.

* 1971-2000 氣候平均值 (除特別列明外) (http://www.weather.gov.hk/cis/normal/1971_2000/cnormal01.htm)

* 1971-2000 Climatological normal, unless otherwise specified (http://www.weather.gov.hk/cis/normal/1971_2000/enormal01.htm)

§ 1997-2010 平均值

§ 1997-2010 Mean value



香港天文台
HONG KONG OBSERVATORY

圖5.1 二零一一年度的年雨量圖
(等雨量線單位為毫米)

Figure 5.1 Annual Rainfall Map For 2011
(isohyets are in millimetres)

呎 FEET	米 METRES
1968	600
1312	400
656	200
0	0

Scale 1 : 250 000 比例尺

公里 km 0 1 2 3 4 5 km

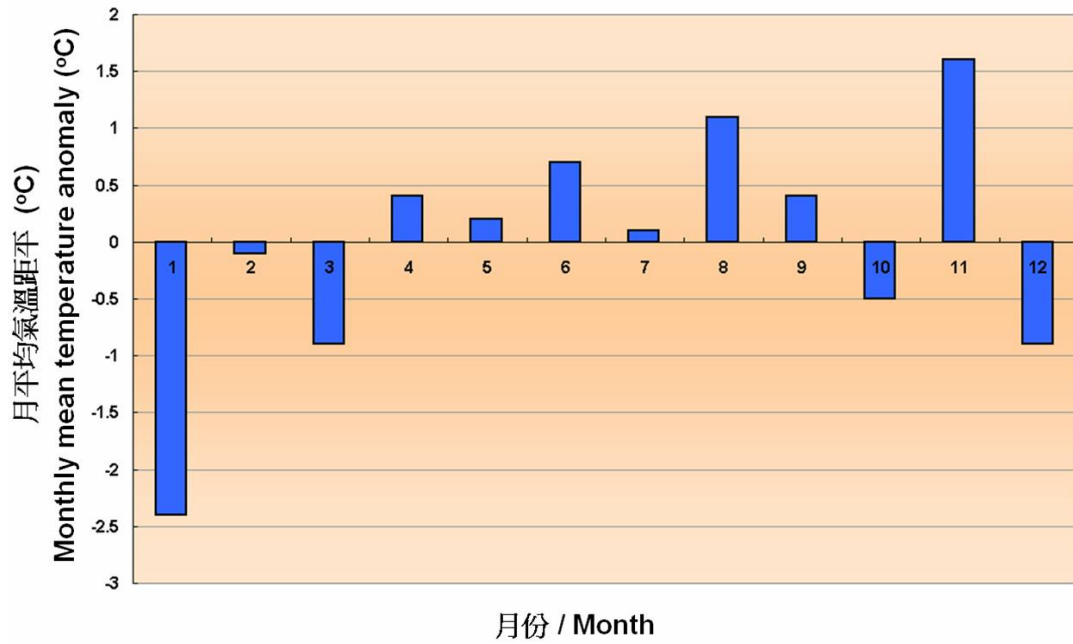


圖 5.2 二零一一年月平均氣溫距平

Figure 5.2 Monthly mean temperature anomalies in 2011

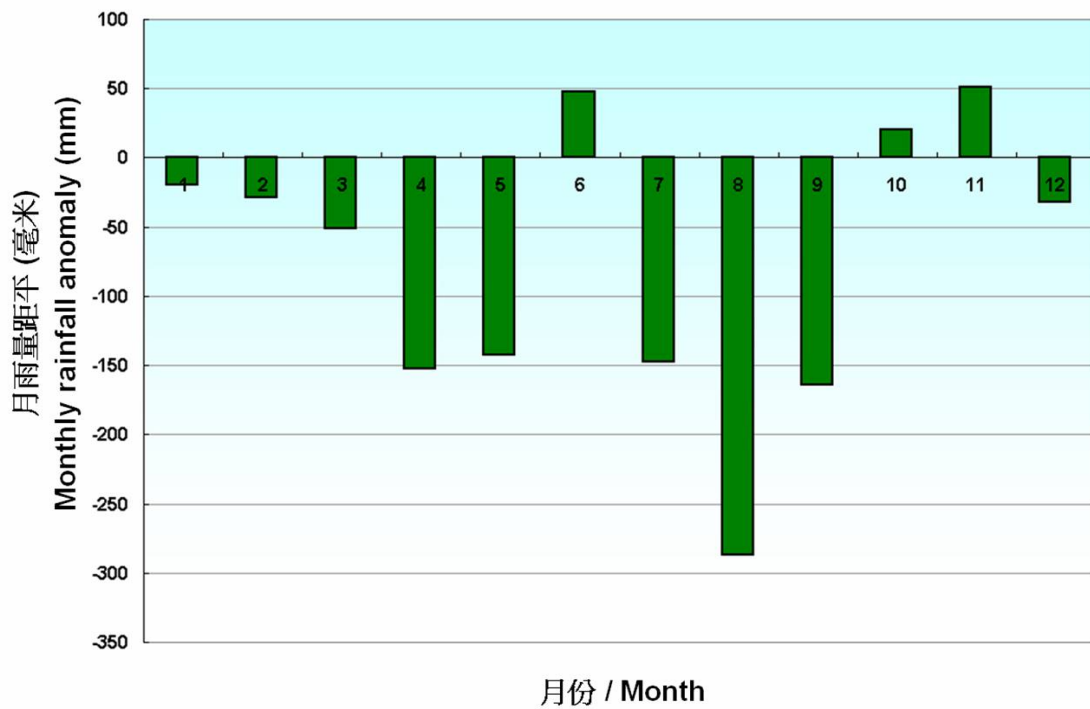


圖 5.3 二零一一年月雨量距平

Figure 5.3 Monthly total rainfall anomalies in 2011

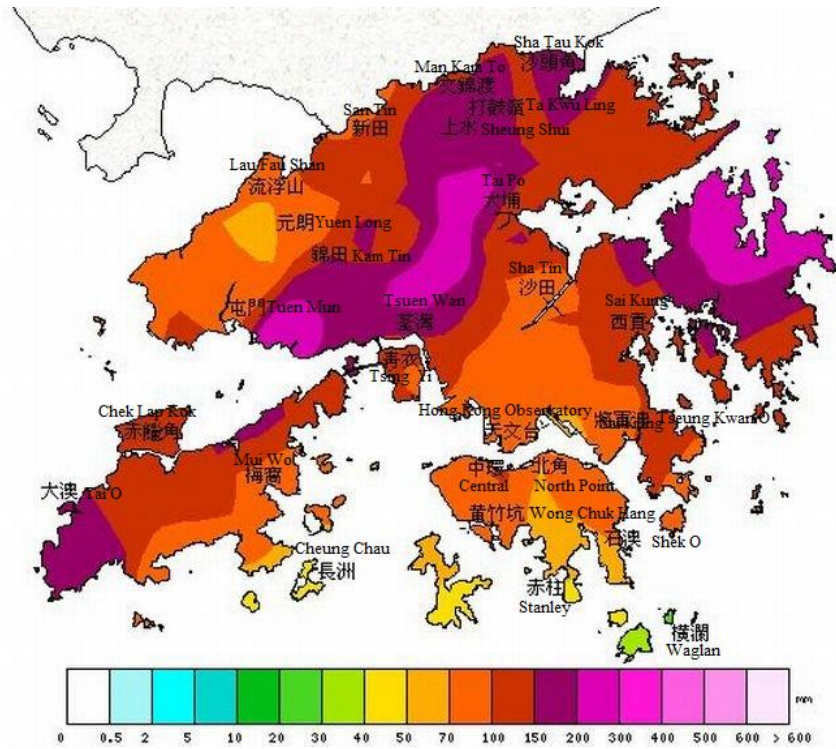


圖 5.4 二零一一年五月二十二日雨量分佈

Figure 5.4 Rainfall distribution on 22 May 2011



圖 5.5 一艘浮塢於二零一一年九月二十九日在納沙影響香港期間
撞向杏花邨海濱長廊的海旁
(鳴謝: 香港新華社)

Figure 5.5 A barge shoving the sea wall over the sea off Heng Fa Chuen
during the passage of Typhoon Nesat on 29 September 2011
(Photo courtesy of Xinhua News Agency)