## 3.5 熱帶低氣壓劍魚 (1914)：二零一九年九月一日至四日

劍魚是香港天文台在二零一九年第五個需要發出熱帶氣旋警告信號的熱帶氣旋。

熱帶低氣壓劍魚於九月一日早上在香港之東南約 480 公里的南海北部上形成，向西橫過南海北部。日間劍魚稍為增強，其中心附近最高持續風速估計達每小時 55 公里。劍魚於九月二日早上橫過海南島東南部後轉向西南方向移動。劍魚於九月三日在越南中部沿岸登陸並在附近一帶徘徊打轉，翌日在越南中部沿岸海域減弱為一個低壓區。

九月一日上午劍魚形成後，天文台於上午 8 時 40 分發出一號戒備信號，當時劍魚集結在香港之東南約 470 公里。日間本港吹和緩至清勁的東北風，離岸及高地間中吹強風。隨著劍魚靠近本港，天文台在當日下午 4 時 20 分改發三號強風信號，當時劍魚集結在香港之東南偏南約 340 公里。晚上本港普遍吹清勁至強風程度的偏東風。劍魚在晚上 9 時左右最接近香港，在本港以南約 330 公里掠過。劍魚於九月二日早上登陸海南島東南沿岸並遠離香港，天文台於當日上午 10 時 40 分以一號戒備信號取代三號強風信號。但在劍魚與大陸反氣旋的共同影響下，本港離岸及高地仍間中吹強風。隨著本港風力減弱，天文台於九月三日上午 9 時 20 分取消所有熱帶氣旋警告信號。

在劍魚的影響下，尖鼻咀錄得最高潮位(海圖基準面以上) 3.0 米，而大廟灣錄得最大風暴潮(天文潮高度以上) 0.39 米。天文台總部於九月一日下午 3 時 23 分錄得最低瞬時海平面氣壓 1004.5 百帕斯卡。

在劍魚相關的雨帶影響下，九月一日至三日本港間中有狂風大驟雨及雷暴，九月二日中午雨勢較大，天文台需要發出黃色暴雨警告信號。這三天本港大部分地區錄得超過 50 毫米雨量，西貢、沙田及大埔的雨量更超過 150 毫米。

劍魚並沒有對香港造成嚴重破壞。根據報章報導，劍魚吹襲越南期間造成至少六人死亡和十人失蹤。

表 3.5.1 - 3.5.4 分別是劍魚影響香港期間各站錄得的最高風速、持續風力達到強風程度的時段、香港的日雨量及最高潮位資料。圖 3.5.1 - 3.5.2 分別為劍魚的路徑圖和本港的雨量分佈圖。圖 3.5.3 - 3.5.4 分別為劍魚的衛星及雷達圖像。

## 3.5 Tropical Depression Kajiki (1914): 1 – 4 September 2019

Kajiki was the fifth tropical cyclone necessitating the issuance of tropical cyclone warning signal by the Hong Kong Observatory in 2019.

Kajiki formed as a tropical depression over the northern part of the South China Sea at about 480 km southeast of Hong Kong on the morning of 1 September and moved westwards across the northern part of the South China Sea. Kajiki intensified slightly during the day with an estimated maximum sustained wind reaching 55 km/h near its centre. It turned to track southwestwards after moving across the southeastern part of Hainan Island on the morning of 2 September. Kajiki made landfall over the coast of central Vietnam and lingered over the region on 3 September. It finally degenerated into an area of low pressure over the coastal waters of central Vietnam the next day.

After the formation of Kajiki on the morning of 1 September, the Hong Kong Observatory issued the Standby Signal No. 1 at 8:40 a.m. when Kajiki was centred about 470 km southeast of the territory. Local winds during the day were moderate to fresh northeasterlies and occasionally reached strong force offshore and on high ground. With Kajiki edging closer to the territory, the Strong Wind Signal No. 3 was issued at 4:20 p.m. that afternoon when it was about 340 km south-southeast of Hong Kong. Local winds were in general fresh to strong easterlies at night. Kajiki was closest to Hong Kong at around 9 p.m. that night, skirting past about 330 km south of the territory. As Kajiki made landfall over the southeastern coast of Hainan Island and moved away from Hong Kong, the Standby Signal No. 1 was issued to replace the Strong Wind Signal No. 3 at 10:40 a.m. on 2 September. Under the combined effect of Kajiki and continental anticyclone, local winds remained occasionally strong offshore and on high ground. As winds over Hong Kong weakened, all tropical cyclone warning signals were cancelled at 9:20 a.m. on 3 September.

Under the influence of Kajiki, a maximum sea level (above chart datum) of 3.0 m was recorded at Tsim Bei Tsui and a maximum storm surge of 0.39 m (above astronomical tide) was recorded at Tai Miu Wan. At the Observatory Headquarters, the lowest instantaneous mean sea-level pressure of 1004.5 hPa was recorded at 3:23 p.m. on 1 September.

Affected by the rainbands associated with Kajiki, there were occasional heavy squally showers and thunderstorms on 1-3 September. The showers were particularly heavy around noon on 2 September, which necessitated the issuance of the Amber Rainstorm Warning Signal. More than 50 millimetres of rainfall were generally recorded over the territory during these three days, and rainfall even exceeded 150 millimetres in Sai Kung, Sha Tin and Tai Po.

Kajiki did not cause any significant damage in Hong Kong. According to press reports, Kajiki left at least six deaths and ten missing in Vietnam during its passage.

Information on the maximum wind, periods of strong force winds, daily rainfall and maximum sea level reached in Hong Kong during the passage of Kajiki is given in Tables 3.5.1 - 3.5.4 respectively. Figures 3.5.1 - 3.5.2 show respectively the track of Kajiki and the rainfall distribution for Hong Kong. Figures 3.5.3 - 3.5.4 show respectively a satellite imagery and a radar imagery of Kajiki.

表 3.5.1　在劍魚影響下，本港各站在熱帶氣旋警告信號生效時所錄得的最高陣風、最高每小時平均風速及風向

Table 3.5.1　Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations when the tropical cyclone warning signals for Kajiki were in force

| 站 (參閱圖 1.1)<br>Station (See Fig. 1.1) | | 最高陣風<br>Maximum Gust | | | | | 最高每小時平均風速<br>Maximum Hourly Mean Wind | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 風向<br>Direction | | 風速<br>(公里/時)<br>Speed<br>(km/h) | 日期/月份<br>Date/Month | 時間<br>Time | 風向<br>Direction | | 風速<br>(公里/時)<br>Speed<br>(km/h) | 日期/月份<br>Date/Month | 時間<br>Time |
| 黃麻角(赤柱) | Bluff Head (Stanley) | 東北偏東 | ENE | 68 | 1/9 | 22:54 | 東 | E | 31 | 2/9 | 05:00 |
| 中環碼頭 | Central Pier | 東南偏東 | ESE | 72 | 2/9 | 01:27 | 東 | E | 34 | 1/9 | 16:00 |
| 長洲 | Cheung Chau | 東 | E | 92 | 2/9 | 01:35 | 東 | E | 43 | 2/9 | 09:00 |
| 長洲泳灘 | Cheung Chau Beach | - | - | 83 | 1/9 | 14:09 | - | - | 51 | 1/9 | 16:00 |
| 青洲 | Green Island | 東北偏東 | ENE | 72 | 2/9 | 09:38 | 東北偏東 | ENE | 51 | 1/9 | 16:00 |
| 香港國際機場 | Hong Kong International Airport | 東 | E | 58 | 1/9 | 14:25 | 東 | E | 34 | 1/9 | 15:00 |
| | | | | | | | 東 | E | 34 | 1/9 | 16:00 |
| | | | | | | | 東 | E | 34 | 1/9 | 17:00 |
| 啟德 | Kai Tak | 東 | E | 54 | 2/9 | 07:38 | 東 | E | 25 | 1/9 | 15:00 |
| 京士柏 | King's Park | 東 | E | 54 | 1/9 | 14:37 | 東 | E | 22 | 1/9 | 15:00 |
| | | 東 | E | 54 | 2/9 | 09:56 | 東 | E | 22 | 1/9 | 16:00 |
| 南丫島 | Lamma Island | 東 | E | 70 | 2/9 | 07:18 | 東 | E | 30 | 2/9 | 09:00 |
| 流浮山 | Lau Fau Shan | 東北偏東 | ENE | 54 | 2/9 | 12:17 | 東北偏東 | ENE | 25 | 1/9 | 17:00 |
| | | 東北偏東 | ENE | 54 | 2/9 | 12:18 | | | | | |
| 北角 | North Point | 東北偏東 | ENE | 65 | 1/9 | 15:49 | 東 | E | 36 | 1/9 | 20:00 |
| 坪洲 | Peng Chau | 東 | E | 75 | 2/9 | 01:41 | 東 | E | 40 | 1/9 | 16:00 |
| 平洲 | Ping Chau | 東 | E | 40 | 2/9 | 13:23 | 東 | E | 16 | 2/9 | 14:00 |
| 西貢 | Sai Kung | 東北 | NE | 72 | 2/9 | 03:05 | 東北偏東 | ENE | 34 | 2/9 | 12:00 |
| 沙洲 | Sha Chau | 東南偏東 | ESE | 47 | 1/9 | 15:12 | 東 | E | 27 | 1/9 | 16:00 |
| 沙螺灣 | Sha Lo Wan | 東 | E | 56 | 1/9 | 14:33 | 東 | E | 27 | 1/9 | 16:00 |
| | | 東 | E | 56 | 1/9 | 15:07 | | | | | |
| 沙田 | Sha Tin | 東北 | NE | 56 | 2/9 | 08:56 | 東 | E | 19 | 1/9 | 16:00 |
| 石崗 | Shek Kong | 東北偏東 | ENE | 62 | 2/9 | 12:06 | 東 | E | 20 | 2/9 | 16:00 |
| 九龍天星碼頭 | Star Ferry (Kowloon) | 東 | E | 59 | 2/9 | 07:15 | 東 | E | 27 | 2/9 | 08:00 |
| 打鼓嶺 | Ta Kwu Ling | 東北偏東 | ENE | 41 | 2/9 | 07:43 | 東北偏東 | ENE | 16 | 1/9 | 16:00 |
| 大帽山 | Tai Mo Shan | 東南偏東 | ESE | 104 | 2/9 | 04:30 | 東南偏東 | ESE | 67 | 2/9 | 05:00 |
| 大埔滘 | Tai Po Kau | 東北偏東 | ENE | 76 | 2/9 | 07:45 | 東 | E | 34 | 1/9 | 15:00 |
| 塔門東 | Tap Mun East | 東 | E | 77 | 2/9 | 07:52 | 東 | E | 45 | 1/9 | 15:00 |
| | | | | | | | 東 | E | 45 | 1/9 | 16:00 |
| 大老山 | Tate's Cairn | - | - | 85 | 1/9 | 18:56 | - | - | 54 | 2/9 | 05:00 |
| 將軍澳 | Tseung Kwan O | 東北偏東 | ENE | 52 | 2/9 | 05:55 | 東北偏北 | NNE | 14 | 1/9 | 12:00 |
| 青衣島蜆殼油庫 | Tsing Yi Shell Oil Depot | 東南 | SE | 51 | 1/9 | 14:13 | 東南偏東 | ESE | 20 | 1/9 | 15:00 |
| 屯門政府合署 | Tuen Mun Government Offices | 東北偏北 | NNE | 38 | 1/9 | 12:20 | 東北偏北 | NNE | 12 | 3/9 | 02:00 |
| | | | | | | | 東北偏北 | NNE | 12 | 3/9 | 03:00 |
| 橫瀾島 | Waglan Island | 東 | E | 96 | 2/9 | 04:29 | 東北偏東 | ENE | 56 | 1/9 | 16:00 |
| 濕地公園 | Wetland Park | 東北偏東 | ENE | 41 | 2/9 | 08:02 | 東 | E | 13 | 1/9 | 16:00 |
| 黃竹坑 | Wong Chuk Hang | 東北偏東 | ENE | 58 | 1/9 | 15:29 | 東北偏東 | ENE | 22 | 1/9 | 20:00 |
| | | | | | | | 東北偏東 | ENE | 22 | 2/9 | 11:00 |

大美督、昂坪 - 沒有資料　Tai Mei Tuk , Ngong Ping - data not available

長洲泳灘、大老山 - 沒有風向資料　Cheung Chau Beach, Tate's Cairn - wind direction not available

表 3.5.2　在劍魚影響下，熱帶氣旋警告信號系統的八個參考測風站在熱帶氣旋警告信號生效時錄得持續風力達到強風程度的時段

Table 3.5.2　Periods during which sustained strong winds were attained at the eight reference anemometers in the tropical cyclone warning system when tropical cyclone warning signals for Kajiki were in force

| 站 (參閱圖 1.1)<br>Station (See Fig. 1.1) | | 最初達到強風*時間<br>Start time when strong wind speed* was attained | | 最後達到強風*時間<br>End time when strong wind speed* was attained | |
|---|---|---|---|---|---|
| | | 日期/月份<br>Date/Month | 時間<br>Time | 日期/月份<br>Date/Month | 時間<br>Time |
| 長洲 | Cheung Chau | 1/9 | 14:09 | 2/9 | 09:15 |
| 西貢 | Sai Kung | 2/9 | 11:27 | 2/9 | 11:27 |

香港國際機場、啟德、流浮山、沙田、打鼓嶺、青衣島蜆殼油庫的持續風力未達到強風程度。

The sustained wind speed did not attain strong force at Hong Kong International Airport, Kai Tak, Lau Fau Shan, Sha Tin, Ta Kwu Ling and Tsing Yi Shell Oil Depot.

* 十分鐘平均風速達每小時 41-62 公里
* 10-minute mean wind speed of 41- 62 km/h

註:　本表列出持續風力達到強風的起始及終結時間。期間風力可能高於或低於指定的風力。

Note: The table gives the start and end time of sustained strong force winds. Winds might fluctuate above or below the specified wind speeds in between the times indicated.

表 3.5.3　　劍魚影響香港期間，香港天文台總部及其他各站所錄得的日雨量
Table 3.5.3　Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Kajiki

| 站 (參閱圖 3.5.2) Station (See Fig. 3.5.2) | | | 九月一日 1 Sep | 九月二日 2 Sep | 九月三日 3 Sep | 總雨量(毫米) Total rainfall (mm) |
|---|---|---|---|---|---|---|
| 香港天文台 Hong Kong Observatory (HKO) | | | 8.5 | 38.4 | 12.9 | 59.8 |
| 香港國際機場 Hong Kong International Airport (HKA) | | | 6.1 | 38.1 | 0.1 | 44.3 |
| 長洲 Cheung Chau (CCH) | | | 3.5 | 34.0 | 5.0 | 42.5 |
| H23 | 香港仔 | Aberdeen | 3.5 | 27.0 | 1.0 | 31.5 |
| N05 | 粉嶺 | Fanling | 13.0 | 88.5 | 11.5 | 113.0 |
| N13 | 糧船灣 | High Island | 23.0 | 73.0 | 9.5 | 105.5 |
| K04 | 佐敦谷 | Jordan Valley | 38.5 | 73.5 | 12.5 | 124.5 |
| N06 | 葵涌 | Kwai Chung | 26.0 | 68.0 | 15.0 | 109.0 |
| H12 | 半山區 | Mid Levels | 8.5 | 44.0 | 25.0 | 77.5 |
| N09 | 沙田 | Sha Tin | 23.0 | 110.0 | 17.5 | 150.5 |
| H19 | 筲箕灣 | Shau Kei Wan | 9.5 | 35.0 | 14.5 | 59.0 |
| SEK | 石崗 | Shek Kong | 24.0 | 88.5 | [6.0] | [118.5] |
| K06 | 蘇屋邨 | So Uk Estate | 34.5 | 75.0 | 14.0 | 123.5 |
| R31 | 大美督 | Tai Mei Tuk | 19.5 | 80.5 | 5.5 | 105.5 |
| R21 | 踏石角 | Tap Shek Kok | 3.0 | 40.5 | 2.5 | 46.0 |
| N17 | 東涌 | Tung Chung | 7.5 | 31.5 | 13.0 | 52.0 |
| TMR | 屯門水庫 | Tuen Mun Reservoir | [2.9] | 59.9 | 4.6 | [67.4] |

表 3.5.4　　劍魚影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
Table 3.5.4　Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Kajiki

| 站 (參閱圖 1.1) Station (See Fig. 1.1) | | 最高潮位 (海圖基準面以上) Maximum sea level (above chart datum) | | | 最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide) | | |
|---|---|---|---|---|---|---|---|
| | | 高度(米) Height (m) | 日期/月份 Date/Month | 時間 Time | 高度(米) Height (m) | 日期/月份 Date/Month | 時間 Time |
| 鰂魚涌 | Quarry Bay | 2.62 | 1/9 | 10:29 | 0.31 | 1/9 | 23:58 |
| 石壁 | Shek Pik | 2.69 | 1/9 | 10:52 | 0.30 | 1/9 | 23:27 |
| 大廟灣 | Tai Miu Wan | 2.56 | 1/9 | 10:28 | 0.39 | 1/9 | 23:40 |
| 大埔滘 | Tai Po Kau | 2.70 | 1/9 | 11:35 | 0.38 | 1/9 | 23:12 |
| 尖鼻咀 | Tsim Bei Tsui | 3.00 | 1/9 | 10:51 | 0.38 | 2/9 | 00:42 |

橫瀾島 - 沒有資料　　Waglan Island - data not available

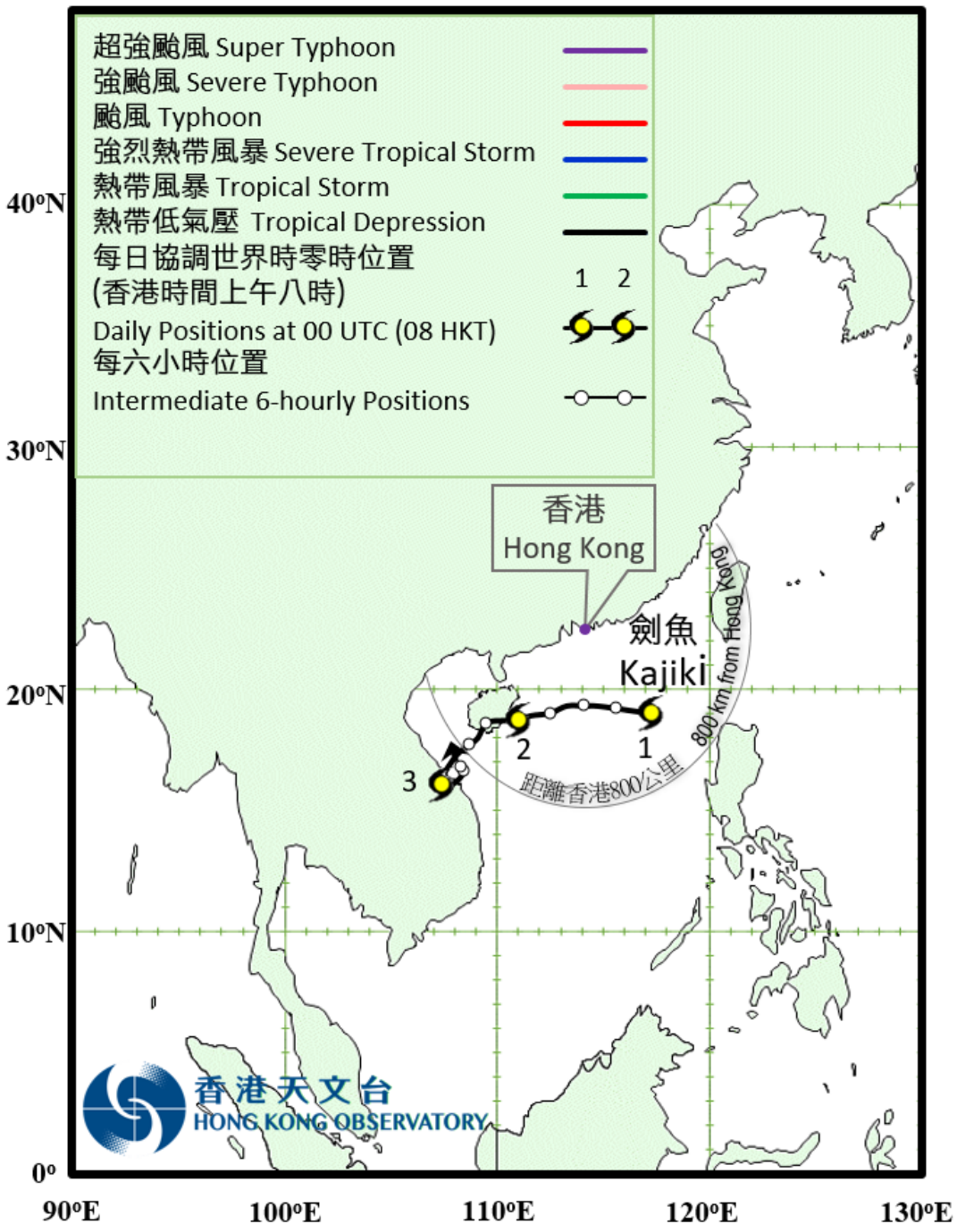


圖 3.5.1　　二零一九年九月一日至四日劍魚的路徑圖。

Figure 3.5.1　　Track of Kajiki on 1 – 4 September 2019.

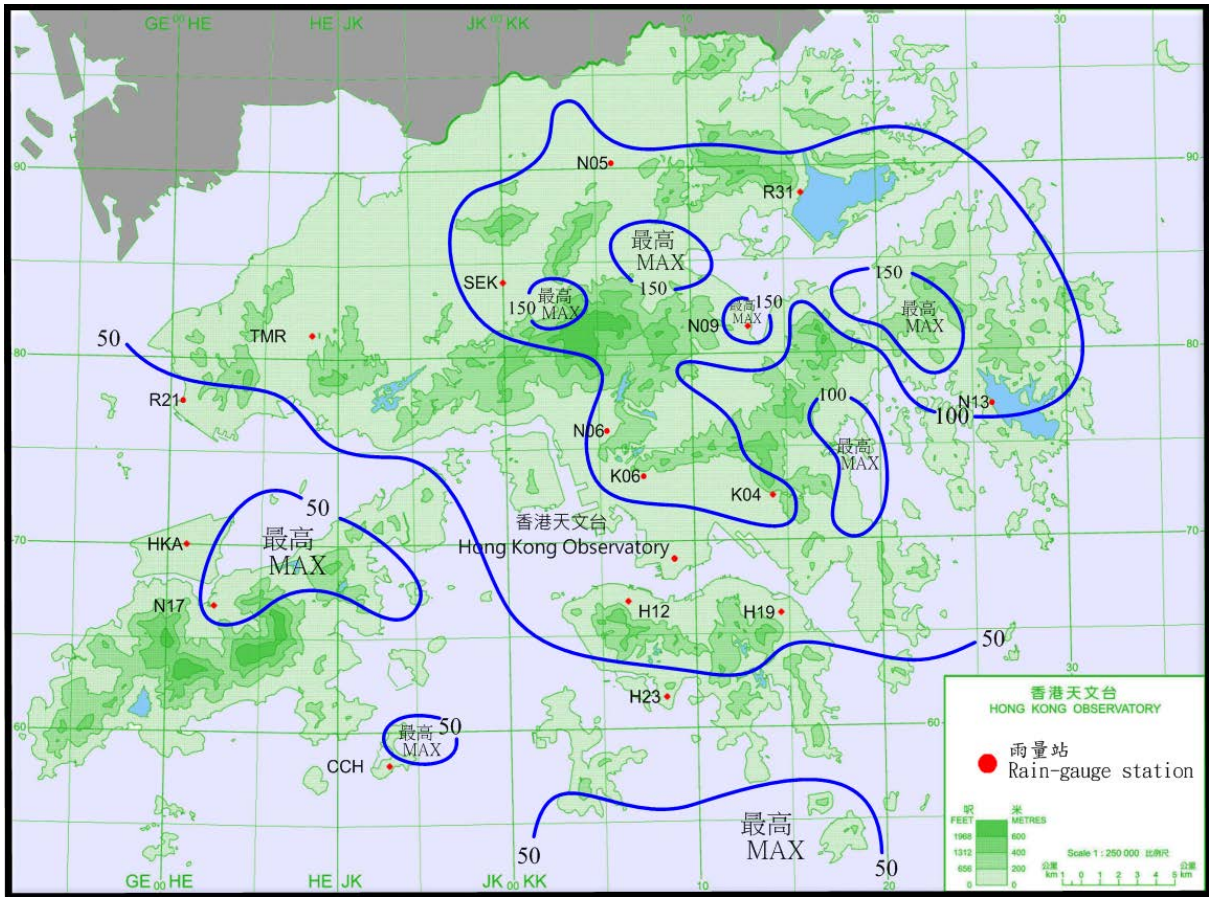


圖 3.5.2　　二零一九年九月一日至三日的雨量分佈(等雨量線單位為毫米)。

Figure 3.5.2　Rainfall distribution on 1 - 3 September 2019 (isohyets in millimetres).

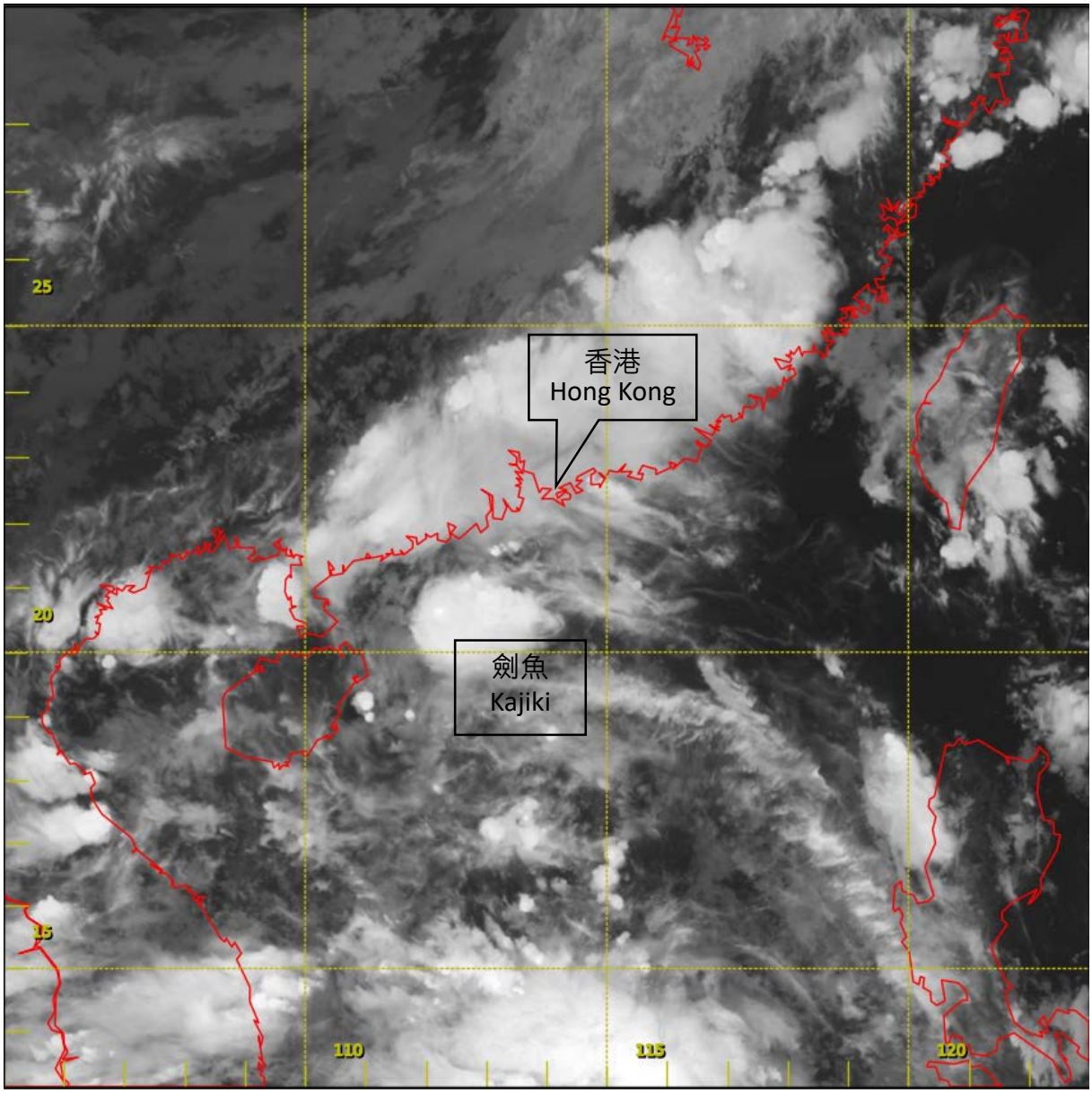


圖 3.5.3　二零一九年九月一日下午 9 時左右的紅外線衛星圖片，當時劍魚最接近本港，其中心在香港以南約 330 公里。

Figure 3.5.3　Infa-red satellite imagery around 9 p.m. on 1 September 2019, when Kajiki was closest to Hong Kong with its centre about 330 km south of Hong Kong.

〔此衛星圖像接收自日本氣象廳的向日葵 8 號衛星。〕

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

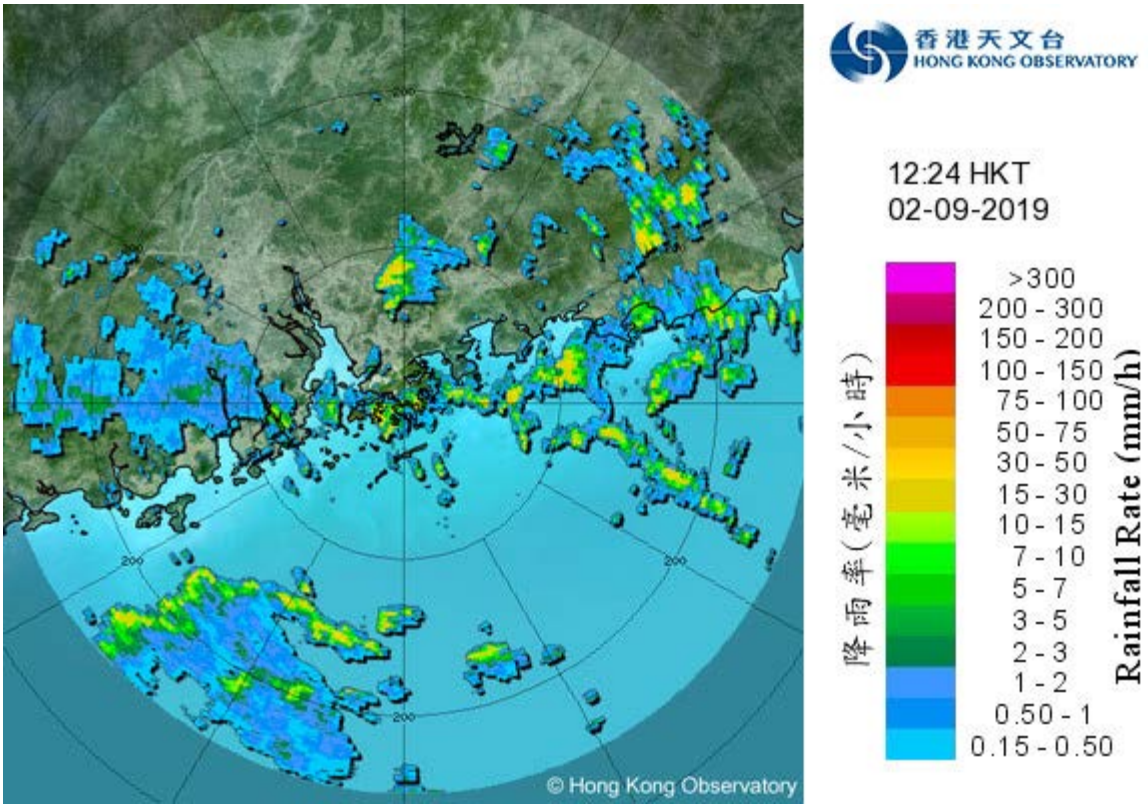


圖 3.5.4　二零一九年九月二日下午 12 時 24 分的雷達回波圖像，當時與劍魚相關的雨帶正影響廣東沿岸及南海北部。

Figure 3.5.4　Image of radar echoes at 12:24 p.m. on 2 September 2019. The rainbands associated with Kajiki were affecting the coast of Guangdong and the northern part of the South China Sea at that time.