第二節　　二零一七年熱帶氣旋概述

2.1　二零一七年的熱帶氣旋回顧

2.1.1 北太平洋西部（包括南海區域）的熱帶氣旋

二零一七年有32個熱帶氣旋影響北太平洋西部及南海區域（即由赤道至北緯45度、東經100至180度所包括的範圍），略多於1961-2010年約30個的長期年平均數目。全年有12個熱帶氣旋達到颱風或以上強度，少於1961-2010年約15個的長期年平均數目，其中有四個熱帶氣旋更達到超強颱風程度(中心附近最高持續風速達到每小時185公里或以上)。

圖2.1是二零一七年在北太平洋西部及南海區域熱帶氣旋數目之逐月分佈。

二零一七年內有九個熱帶氣旋在中國登陸，其中五個在香港300公里內的華南沿岸登陸，兩個橫過台灣。四個熱帶氣旋登陸日本，九個橫過菲律賓及七個登陸越南。十月的超強颱風蘭恩(1721)（圖2.3）是二零一七年北太平洋西部及南海區域最強的熱帶氣旋，其中心附近最高持續風速估計為每小時205公里，而最低海平面氣壓為925百帕斯卡（表4.1）。

2.1.2 香港責任範圍內的熱帶氣旋

在二零一七年的32個熱帶氣旋中，有22個出現在香港責任範圍（即北緯10至30度、東經105至125度），較1961-2010年約16個的長期年平均數目多（表2.1），當中有13個在香港責任範圍內形成。年內，香港天文台總共發出427個供船舶使用的熱帶氣旋警告（表4.2）。

2.1.3 南海區域內的熱帶氣旋

二零一七年共有18個熱帶氣旋影響南海區域（即北緯10至25度、東經105至120度），較1961-2010年約12個的長期年平均數目多，當中有八個在南海上形成。

2.1.4 影響香港的熱帶氣旋

二零一七年香港的颱風季節始於六月十一日，當天熱帶低氣壓苗柏(1702)在南海中部形成並移近廣東沿岸地區，天文台發出一號戒備信號。十月十六日強烈熱帶風暴卡努(1720)移向雷州半島及減弱，二零一七年颱風季節隨著天文台當天取消所有熱帶氣旋警告信號而結束。

年內共有七個熱帶氣旋影響香港（圖2.2），略多於1961-2010年約六個的長期年平均數目(表2.2)。這七個熱帶氣旋分別為六月的強烈熱帶風暴苗柏(1702)、七月的熱帶風暴洛克(1707)、八月的超強颱風天鴿(1713)及強烈熱帶風暴帕卡(1714)、九月的強烈熱帶風暴瑪娃(1716)及一個熱帶低氣壓、和十月的強颱風卡努(1720)。天鴿影響香港期間，天文台在八月二十三日曾發出十號颶風信號，是年內發出的最高熱帶氣旋警告信號，也是自二零一二年強颱風韋森特襲港以來再一次發出最高級別的熱帶氣旋警告信號。苗柏、洛克、帕卡及卡努吹襲期間天文台曾發出八號烈風或暴風信號。九月的瑪娃及熱帶低氣壓分別引致天文台發出三號強風信號和一號戒備信號。

2.1.5 熱帶氣旋的雨量

二零一七年熱帶氣旋為香港帶來的雨量（即由熱帶氣旋出現於香港600公里範圍內至其消散或離開香港600公里範圍之後72小時期間天文台總部錄得的雨量）共為922.1毫米（表4.8.1），約佔年內總雨量2572.1毫米的百分之35.9，比1961-2010年長期年平均值的728.8毫米多約27%。

強烈熱帶風暴苗柏(1702)為天文台總部帶來292.9毫米的雨量(表4.8.1)，是年內雨量最多的熱帶氣旋。

2.2 每月概述

這一節逐月介紹二零一七年北太平洋西部及南海區域的熱帶氣旋概況。影響香港的各熱帶氣旋及傷亡報告則詳述於第三節。

一月

一個熱帶低氣壓於一月八日下午在馬尼拉之東南約810公里的菲律賓南部海域上形成，初時採取西北偏西路徑移動，其中心附近最高持續風速估計為每小時45公里。翌日該熱帶低氣壓轉向西南偏西方向移動，最後於一月十日清晨在蘇祿海上減弱為一個低壓區。

二月至三月

二零一七年二月至三月期間並無熱帶氣旋在北太平洋西部及南海區域上形成。

四月

一個熱帶低氣壓於四月十四日下午在馬尼拉之東南偏東約1 020公里的菲律賓以東海域上形成，採取西北偏西路徑移動，其中心附近最高持續風速估計為每小時45公里。隨後兩天該熱帶低氣壓橫過菲律賓中部，最後於四月十七日在南海南部減弱為一個低壓區。

根據報章報導，該熱帶低氣壓菲律賓中部帶來洪水，造成最少10人死亡。

熱帶低氣壓梅花(1701)於四月二十五日早上在馬尼拉以東約1 730公里的北太平洋西部上形成，當日向西北偏西移動。翌日梅花轉向偏北方向移動，達到其最高強度，中心附近最高持續風速估計為每小時55公里，最後於四月二十八日早上在菲律賓以東的西北太平洋減弱為一個低壓區。

五月

二零一七年五月並無熱帶氣旋在北太平洋西部及南海區域上形成。

六月

熱帶低氣壓苗柏(1702)於六月十一日凌晨在東沙以南約580公里的南海中部上形成，向西北偏北移動，當日下午增強為熱帶風暴。翌日苗柏繼續移近廣東沿岸地區，當晚增強為強烈熱帶風暴並達到其最高強度，中心附近最高持續風速估計為每小時105公里。午夜前苗柏在大鵬半島登陸並減弱為熱帶風暴，六月十三日上午苗柏採取東北偏北路徑橫過廣東，下午在江西消散。

根據報章報導，苗柏為廣東帶來狂風大雨，多處地區出現水浸，超過12萬人受災，直接經濟損失達2.6億元人民幣。汕尾有超過45 000戶電力供應受影響。

七月至九月

熱帶低氣壓南瑪都(1703)於七月二日凌晨在台北之東南約990公里的北太平洋西部上形成，大致向西北方向移動，下午發展為熱帶風暴。翌日南瑪都轉向東北偏北方向移動，大致趨向日本，並進一步增強為強烈熱帶風暴，達到其最高強度，中心附近最高持續風速估計為每小時105公里。南瑪都於七月四日橫掃九州、四國及本州南部海岸，並逐漸減弱，最後於七月五日清晨在日本以東海域演變為一股溫帶氣旋。

根據報章報導，南瑪都吹襲日本期間造成至少五人受傷，多處發生山泥傾瀉，近七萬戶停電，海陸空交通大受影響。

熱帶低氣壓塔拉斯(1704)於七月十五日下午在西沙以西約60公里的南海中部上形成，採取西北偏西路徑移向越南北部，並逐漸增強，於七月十六日晚上成為強烈熱帶風暴，並達到其最高強度，中心附近最高持續風速估計為每小時90公里。翌日清晨塔拉斯在越南北部登陸並開始減弱，當晚在泰國北部減弱為一個低壓區。

根據報章報導，塔拉斯吹襲越南期間造成至少14人死亡，數千間房屋被毀。

熱帶低氣壓奧鹿(1705)於七月二十日晚上在威克島之西北約1 160公里的北太平洋西部上形成，向偏西方向移動並逐漸增強，於七月二十三日發展為颱風。受到東面另一個熱帶氣旋玫瑰的影響，隨後三天奧鹿緩慢地以逆時針方向轉了一個圈。奧鹿於七月二十六及二十七日開始加速向西北偏西及之後的偏西方向移動，七月二十八更轉向西南及短暫地減弱，七月三十日再度增強。奧鹿於七月三十一日向西北偏西移動趨向琉球群島以東的海域，更進一步發展成為超強颱風，並達到其最高強度，中心附近最高持續風速估計為每小時195公里。八月一至四日奧鹿大致向西北移動，並逐漸減弱。八月五日奧鹿開始轉向東北直趨日本，隨後兩天加速掠過四國及本州，最後於八月八日在本州以北的海域減弱為一個低壓區。奧鹿的生命週期長達19天，成為自1961年以來在北太平洋西部及南海區域第三最長壽命的熱帶氣旋，僅次於1972年的麗妲及1986年的韋恩。

根據報章報導，奧鹿吹襲日本期間，造成至少兩死、36人傷及九人失蹤，數萬人被迫撤離，海陸空交通嚴重受阻，接近20萬戶的電力供應受到影響。

熱帶低氣壓玫瑰(1706)於七月二十一日早上在威克島之東北約1 270 公里的北太平洋西部上形成，初時向北移動，當晚增強為熱帶風暴。玫瑰翌日轉向西移動並達到其最高強度，中心附近最高持續風速估計為每小時75公里。七月二十三及二十四日玫瑰採取西北偏西路徑逐漸靠近奧鹿。受奧鹿的環流影響，七月二十五日玫瑰圍繞奧鹿轉動及迅速減弱為一個低壓區。

熱帶低氣壓桑卡(1708)於七月二十一日早上在西沙以東約260公里的南海中部上形成，向西北偏西方向移動。翌日桑卡移動緩慢，在海南島東南的海域徘徊。桑卡於七月二十四日晚上增強為熱帶風暴並加速向西移向越南，翌日早上達到其最高強度，中心附近最高持續風速估計為每小時75公里。桑卡於七月二十五日下午在越南登陸並減弱，翌日早上在老撾減弱為一個低壓區。

洛克(1707)是源自七月二十一日下午在呂宋北部以東海域生成的一個熱帶低氣壓。洛克於七月二十二日橫過呂宋海峽，進入南海東北部後採取西北偏西路徑穩定地移向珠三角一帶，傍晚增強為熱帶風暴並達到其最高強度，中心附近最高持續風速估計為每小時65公

里。洛克於七月二十三日早上在香港附近登陸，日間減弱為熱帶低氣壓，傍晚在廣東內陸減弱為一個低壓區。

根據報章報導，洛克為廣東帶來狂風驟雨。一艘貨船在香港以東約70公里的水域沉沒，船上12名船員全部獲救。

熱帶低氣壓納沙(1709)於七月二十六日凌晨在馬尼拉以東約810公里的北太平洋西部上形成，初時向北移動，翌日轉向西北，大致趨向台灣，並逐漸增強。納沙於七月二十八日晚上增強為颱風，翌日早上達到其最高強度，中心附近最高持續風速估計為每小時145公里。納沙七月二十九日晚上橫掃台灣北部後，翌日早上在福建沿岸登陸，晚間在內陸消散。

熱帶低氣壓海棠(1710)於七月二十八日早上在東沙以南約150公里形成，初時在南海北部徘徊。受納沙的環流影響，海棠於七月二十九日開始加速移向東北，並增強為熱帶風暴。七月三十日海棠橫越呂宋海峽，當日下午達到其最高強度，中心附近最高持續風速估計為每小時85公里。隨後海棠採取偏北路徑掠過台灣西岸，繼而轉向西北偏北，翌日早上在接近納沙廿四小時登陸的地點橫過福建海岸。海棠隨即減弱，最後於七月三十一日晚上在福建內陸減弱為一個低壓區。

根據報章報導，台灣接連受納沙和海棠吹襲，至少有131人受傷及一人失蹤，逾67萬戶停電。納沙和海棠為福建、浙江及江西各地帶來暴雨和嚴重泛濫，其中福建逾20萬人需要緊急疏散。

熱帶低氣壓尼格(1711)於八月一日在威克島之西北偏北約920 公里的北太平洋西部上形成，初時向東南偏東漂移，翌日增強為熱帶風暴及轉向西北移動，並於八月三日達到其最高強度，中心附近最高持續風速估計為每小時75公里。八月四日尼格加速向北移動，翌日在日本以東的西北太平洋演變為一股溫帶氣旋。

熱帶低氣壓榕樹(1712)於八月十一日在威克島之東南約460 公里的北太平洋西部上形成，初時向西北移動，隨後數天採取偏北路徑移動，並逐漸增強，於八月十五日早上一度增強為強颱風，達到其最高強度，中心附近最高持續風速估計為每小時155公里。八月十六日榕樹開始轉向東北移動，並繼續減弱，翌日在國際換日線以西的海面演變為一股溫帶氣旋。

熱帶低氣壓天鴿(1713)於八月二十日晚上在高雄之東南偏東約740公里的北太平洋西部上形成，大致向偏西方向移動，橫過呂宋海峽，八月二十二日進入南海東北部，並增強為颱風及採取西北偏西路徑移向廣東沿岸。八月二十三日天鴿趨向珠江口一帶及進一步增強，早上在香港以南海域發展成為超強颱風，達到其最高強度，中心附近最高持續風速估

計為每小時185公里。正午過後天鴿在澳門及珠海附近沿岸登陸，移入廣東西部及逐漸減弱。翌日天鴿橫過廣西，晚上在雲南減弱為一個低壓區。

天鴿為珠江口沿岸帶來嚴重的風暴潮，多處錄得有紀錄以來的最高水位，當中珠海站錄得風暴潮2.79米，而最高水位則為6.14米。珠海沿海地區包括幾個地下停車場被海水淹浸，全市電力及食水供應不穩定。多艘貨船在香港西南約30公里的水域擱淺，39名船員獲救。天鴿為澳門帶來破壞性的風力及風暴潮，廣泛地區出現嚴重破壞及水浸，造成至少十人死亡，超過240人受傷，直接經濟損失超過83億元澳門幣。媽閣站最高水位升至5.58米，是澳門自一九二五年有紀錄以來的最高潮位。電力及食水供應亦受到影響。天鴿在廣東、廣西、福建、貴州及雲南至少造成15人死亡，一人失蹤，約有74萬人受災，超過6 500間房屋倒塌，直接經濟損失超過272億元人民幣。

熱帶低氣壓帕卡(1714)於八月二十四日晚上在馬尼拉以東約570公里的北太平洋西部上形成，初時大致向偏西方向移動。翌日帕卡發展為熱帶風暴，以西北路徑橫過呂宋。帕卡於八月二十六日早上進入南海，並繼續採取西北路徑加速移向廣東沿岸，晚間增強為強烈熱帶風暴，達到其最高強度，中心附近最高持續風速估計為每小時110公里。帕卡於八月二十七日早上在廣東西部沿岸珠海一帶登陸並逐漸減弱，當晚在廣西消散。

根據報章報導，帕卡及其殘餘在廣東、廣西、貴州及雲南帶來狂風暴雨，至少造成12人死亡，接近10萬人受災，直接經濟損失約3.7億元人民幣。在帕卡的吹襲下，澳門最少有八人受傷，多處地區出現水浸。一艘貨船在香港以東120公里沉沒，11名船員獲救。

熱帶低氣壓珊瑚(1715)於八月二十八日在硫黃島之東南約880 公里的北太平洋西部上形成，向偏北方向移動，翌日增強為熱帶風暴。珊瑚隨後逐漸轉向偏西方向移動及進一步增強，於八月三十一日發展成為颱風，在硫黃島以北海域徘徊，九月一日早上達到其最高強度，中心附近最高持續風速估計為每小時145公里。珊瑚於九月二日開始採取東北偏北路徑橫過日本以東海域並逐漸減弱，最後於九月三日晚上在北海道以東的西北太平洋演變為一股溫帶氣旋。

熱帶低氣壓瑪娃(1716)於八月三十一日下午在東沙之東南偏東約270公里的南海北部上形成，緩慢向西北偏北移動，並於九月一日晚上增強為熱帶風暴。隨後兩天瑪娃大致採取西北路徑緩慢靠近廣東東部沿岸，九月二日上午增強為強烈熱帶風暴並達到其最高強度，中心附近最高持續風速估計為每小時90公里。瑪娃於九月三日減弱為熱帶風暴，當晚在汕尾附近登陸，翌日在廣東內陸減弱為一個低壓區。

根據報章報導，受瑪娃帶來的狂風暴雨影響，潮汕和珠三角地區多處出現嚴重水浸，海陸空交通大受影響。廣東有約11萬戶停電，而澳門多處地方亦出現水浸。

熱帶低氣壓古超(1717)於九月六日凌晨在高雄之東南偏南約310公里的呂宋海峽上形成，大致朝西北偏北方向漂移，當天下午達到其最高強度，中心附近最高持續風速估計為每小時55公里。翌日古超在台灣海峽上減弱為一個低壓區。

熱帶低氣壓泰利(1718)於九月九日晚上在關島之西北約290公里的北太平洋西部上形成，採取西北偏西路徑移向台灣以東海域並逐漸增強。泰利先在九月十一日晚上發展為颱風，其後於九月十四日早上進一步增強為超強颱風並達到其最高強度，中心附近最高持續風速估計為每小時185公里，並開始轉向東北移動。隨後數天泰利逐漸減弱，九月十七及十八日先後橫掃日本九州、四國、本州及北海道，最後於北海道以北的海域演變為一股溫帶氣旋。

根據報章報導，泰利吹襲日本期間，造成至少兩人死亡及三人失蹤，海陸空交通大受影響。

熱帶低氣壓杜蘇芮(1719)於九月十二日凌晨在馬尼拉以東約230公里靠近呂宋東岸形成，日間向西橫過呂宋。隨後兩天杜蘇芮採取西北偏西路徑橫過南海中部並逐漸增強，九月十五日登陸越南中部前發展為強颱風並達到其最高強度，中心附近最高持續風速估計為每小時165公里。登陸後杜蘇芮迅速減弱，於九月十六日在泰國北部消散。

根據報章報導，杜蘇芮吹襲菲律賓期間造成至少四人死亡。杜蘇芮亦為越南帶來狂風暴雨，至少九人死亡，超過110人受傷，約15萬間房屋受損。

一股熱帶低氣壓於九月二十三日晚上在香港之東南偏南約620公里的南海中部上形成，大致向西北偏西移動，翌日早上達到其最高強度，中心附近最高持續風速估計為每小時55公里。該熱帶低氣壓隨後採取西北路徑橫過海南島及北部灣，於九月二十五日晚上在越南北部減弱為一個低壓區。

十月至十一月

一股熱帶低氣壓於十月九日清晨在西沙之東南約130公里的南海中部上形成，向西北偏西方向移動，其中心附近最高持續風速估計為每小時45公里。該熱帶低氣壓於翌日早上在越南北部登陸並減弱為一個低壓區。

根據報章報導，該熱帶低氣壓為越南帶來暴雨，引發山泥傾瀉及嚴重水浸，造成至少72人死亡。

熱帶低氣壓卡努(1720)於十月十二日早上在馬尼拉之東北偏東約650公里的北太平洋西部上形成，採取西北偏西路徑移動，當晚增強為熱帶風暴。翌日卡努橫過呂宋北部，進入南海後重新組織並緩慢地向西南偏西方向漂移。卡努於十月十四日轉向西北移動，翌日採取西北偏西路徑靠近華南沿岸，並增強為強颱風，達到其最高強度，中心附近最高持續風速估計為每小時155公里。隨後卡努開始迅速減弱，十月十六日清晨橫過雷州半島，日間在北部灣減弱為一個低壓區。

根據報章報導，卡努在澳門造成最少七人受傷，海陸空交通大受影響。在卡努及東北季候風的共同效應下，廣東、海南、浙江、廣西、福建共有超過97萬人受災。台灣廣泛地區出現大雨，部份道路損毀，約一萬四千戶的電力供應中斷。

熱帶低氣壓蘭恩(1721)於十月十五日晚上在雅蒲島以西約140公里的北太平洋西部上形成，初時向西北偏西移動。其後於十月十七至二十日採取北至西北偏北路徑，大致移向琉球群島以東海域並繼續增強。蘭恩於十月二十一日增強為超強颱風並達到其最高強度，中心附近最高持續風速估計為每小時205公里。蘭恩隨後向東北偏北加速移向日本，並逐漸減弱，十月二十三日清晨橫掃本州東部，日間在日本以東的海域演變為一股溫帶氣旋。

根據報章報導，蘭恩吹襲日本期間造成最少七人死亡，逾130人受傷，數百間房屋損毀，約13萬戶的電力供應受影響。

熱帶低氣壓蘇拉(1722)於十月二十三日早上在關島之東南偏南約570公里的北太平洋西部上形成，隨後數天大致向西北偏西至西北方向移動，十月二十七日晚上轉向北，翌日橫過琉球群島並增強為颱風，達到其最高強度，中心附近最高持續風速估計為每小時120公里。其後蘇拉向東北加速，十月二十九日於日本以南掠過，晚上在日本以東的海域演變為一股溫帶氣旋。

根據報章報導，蘇拉吹襲日本期間最少有六人受傷，接近三萬戶的電力供應受影響。

一股熱帶低氣壓於十月三十一日晚上在越南以南的海域上形成，位於胡志明市之東南偏南約390公里，大致向西緩慢移動，其中心附近最高持續風速估計為每小時45公里。該熱帶低氣壓於十一月二日清晨在越南以南的海域上減弱為一個低壓區。

熱帶低氣壓達維(1723)於十一月一日凌晨在菲律賓附近、馬尼拉之東南偏南約400公里形成，大致向西移動，橫過南海南部，並逐漸增強。達維於十一月三日下午發展成為颱風，翌日凌晨達到其最高強度，中心附近最高持續風速估計為每小時145公里。達維於十一月四日早上登陸越南南部並迅速減弱，當晚在柬埔寨減弱為一個低壓區。

根據報章報導，達維在越南造成最少89人死亡、174人受傷及18人失蹤，超過2000間房屋被毀。與達維的殘餘低壓區相關的大雨引致馬來西亞檳城多處地方出現嚴重水浸，造成至少六人死亡，逾三千人疏散。

熱帶低氣壓海葵(1724)於十一月九日晚上在菲律賓附近、馬尼拉之東南偏南約100公里形成，向西北移動進入南海，並逐漸增強，翌日發展為熱帶風暴。海葵於十一月十一日開始轉向西移動，並達到其最高強度，中心附近最高持續風速估計為每小時85公里。翌日海葵迅速減弱，下午在南海中部減弱為一個低壓區。

熱帶低氣壓鴻雁(1725)於十一月十七日傍晚在南沙島以東約290公里的南海南部上形成，大致向西移動趨向越南。翌日鴻雁增強為熱帶風暴並達到其最高強度，中心附近最高持續風速估計為每小時65公里。鴻雁於十一月十九日開始減弱，下午登陸越南南部並減弱為一個低壓區。

十二月

熱帶低氣壓啟德(1726)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，橫過菲律賓中部，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(1727)於十二月二十日晚上在馬尼拉之東南偏東約1 350公里的北太平洋西部上形成，並逐漸增強。隨後三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。

備註：人命傷亡及財物損毀數據是根據報章報導輯錄而成。

Section 2 TROPICAL CYCLONE OVERVIEW FOR 2017

2.1 Review of tropical cyclones in 2017

2.1.1 Tropical cyclones over the western North Pacific (including the South China Sea)

In 2017, a total of 32 tropical cyclones occurred over the western North Pacific (WNP) and the South China Sea (SCS) bounded by the Equator, 45°N, 100°E and 180°, slightly more than the long-term (1961 - 2010) average figure of around 30. During the year, 12 of the tropical cyclones attained typhoon intensity or above, less than the long-term average (1961 - 2010) of about 15, with four of them reaching super typhoon intensity (maximum 10-minute wind speed of 185 km/h or above near the centre).

Figure 2.1 shows the monthly frequencies of the occurrence of tropical cyclones in WNP and SCS in 2017.

During the year, nine tropical cyclones made landfall over China, with five of them crossing the south China coast within 300 km of Hong Kong and two crossed Taiwan. Four tropical cyclones made landfall over Japan, nine traversed the Philippines and seven made landfall over Vietnam. With an estimated maximum sustained wind speed of 205 km/h and a minimum sea-level pressure of 925 hPa near its centre (Table 4.1), Super Typhoon Lan (1721) in October (Figure 2.3) was the most intense tropical cyclone over the western North Pacific and the South China Sea in 2017.

2.1.2 Tropical cyclones in Hong Kong's area of responsibility

Amongst the 32 tropical cyclones in 2017, 22 of them occurred inside Hong Kong's area of responsibility (i.e. the area bounded by 10°N, 30°N, 105°E and 125°E), more than the long-term annual average figure of around 16 (Table 2.1). 13 of them developed within Hong Kong's area of responsibility. Altogether, 427 tropical cyclone warnings to ships and vessels were issued by the Hong Kong Observatory in 2017 (Table 4.2).

2.1.3 Tropical cyclones over the South China Sea

18 tropical cyclones affected SCS bounded by 10°N, 25°N, 105°E and 120°E in 2017, more than the long-term annual average of around 12. Eight of them formed within SCS.

2.1.4 Tropical cyclones affecting Hong Kong

In 2017, the typhoon season in Hong Kong started on 11 June when tropical depression Merbok (1702) formed in the central part of the South China Sea and edged closer to the coast of Guangdong, necessitating the issuance of the Standby Signal No. 1. The typhoon season ended with the cancellation of all tropical cyclone warning signals on 16 October as Severe Tropical Storm Khanun (1720) moved towards Leizhou Peninsula and weakened that day.

Seven tropical cyclones affected Hong Kong during 2017 (Figure 2.2), slightly more than the long-term (1961-2010) average of about six in a year (Table 2.2). They were Severe Tropical Storm Merbok (1702) in June, Tropical Storm Roke (1707) in July, Super Typhoon Hato (1713) and Severe Tropical Storm Pakhar (1714) in August, Severe Tropical Storm Mawar (1716) and a Tropical Depression in September, and Severe Typhoon Khanun (1720) in October. The No.10 Hurricane

Signal was issued by the Hong Kong Observatory during the passage of Hato on 23 August. It was the highest tropical cyclone warning signal issued in 2017 and for the first time since Severe Typhoon Vicente hitting Hong Kong in July 2012. The No. 8 Gale or Storm Signal was issued during the passage of Merbok, Roke, Pakhar and Khanun. Mawar and the Tropical Depression in September necessitated the issuance of the Strong Wind Signal No. 3 and the Standby Signal No. 1 in Hong Kong respectively.

2.1.5 Tropical cyclone rainfall

Tropical cyclone rainfall (total rainfall recorded at the Hong Kong Observatory Headquarters from the time when a tropical cyclone comes within 600 km of Hong Kong to 72 hours after it has dissipated or moved more than 600 km away from Hong Kong) in 2017 was 922.1 mm (Table 4.8.1). This accounted for approximately 35.9 % of the year's total rainfall of 2572.1 mm and was about 27 % above the 1961-2010 long-term average of 728.8 mm.

Severe Tropical Storm Merbok (1702) brought 292.9 mm of rainfall to the Hong Kong Observatory Headquarters (Table 4.8.1) and was the wettest tropical cyclone in 2017.

2.2 Monthly overview

A monthly overview of tropical cyclones in 2017 is given in this section. Detailed reports on tropical cyclones affecting Hong Kong, including reports of damage, are presented in Section 3.

JANUARY

A tropical depression formed over the sea areas in the southern part of the Philippines about 810 km southeast of Manila on the afternoon of 8 January. It moved west-northwestwards at first with an estimated wind of 45 km/h near its centre. The tropical depression turned west-southwestwards the next day and finally weakened into an area of low pressure over Sulu Sea in the small hours of 10 January.

FEBURARY TO MARCH

No tropical cyclone formed over the western North Pacific and the South China Sea in February and March 2017.

APRIL

A tropical depression formed over the seas east of the Philippines about 1 020 km east-southeast of Manila on the afternoon of 14 April. It moved west-northwestwards with an estimated wind of 45 km/h near its centre. The tropical depression moved across the central part

of the Philippines in the following two days and finally weakened into an area of low pressure over the southern part of the South China Sea on 17 April.

According to press reports, the tropical depression brought flooding to the central part of the Philippines during its passage. At least 10 people were killed.

Tropical depression Muifa (1701) formed over the western North Pacific about 1 730 km east of Manila on the morning of 25 April and moved west-northwestwards on that day. Muifa turned northwards the next day and reached its peak intensity with an estimated wind of 55 km/h near its centre. It finally weakened into an area of low pressure over the western North Pacific to the east of the Philippines on the morning of 28 April.

MAY

No tropical cyclone formed over the western North Pacific and the South China Sea in May 2017.

JUNE

Merbok (1702) formed as a tropical depression over the central part of the South China Sea about 580 km south of Dongsha in the small hours of 11 June. Moving north-northwestwards, it intensified into a tropical storm that afternoon. Merbok continued to move closer to the coastal areas of Guangdong on 12 June and intensified into a severe tropical storm that night, reaching its peak intensity with an estimated sustained wind of 105 km/h near its centre. It made landfall over the Dapeng Peninsula before midnight and weakened into a tropical storm. Taking on a north-northeasterly track, Merbok moved across Guangdong on the morning of 13 June and dissipated over Jiangxi in the afternoon.

According to press reports, Merbok brought heavy rain and squalls to Guangdong, causing flooding in many places. At least 120 000 people were affected with a direct economic loss reaching 260 million RMB. Electricity supply to more than 45 000 households was interrupted in Shanwei.

JULY TO SEPTEMBER

Nanmandol (1703) formed as a tropical depression over the western North Pacific about 990 km southeast of Taibei on the early hours of 2 July. It moved generally northwestwards and developed into a tropical storm that afternoon. Nanmandol turned north-northeastwards in the general direction of Japan the next day and further intensified into a severe tropical storm, reaching its peak intensity with an estimated sustained wind of 105 km/h near its centre. It swept across Kyushu, Shikoku and the south coast of Honshu on 4 July and weakened gradually. Nanmandol finally evolved into an extratropical cyclone over the seas east of Japan in the small hours of 5 July.

According to press reports, at least five persons were injured in Japan during the passage of Nanmandol. There were extensive landslides and electricity supply to nearly 70 000 households was disrupted. Transportation services were seriously affected.

Talas (1704) formed as a tropical depression over the central part of the South China Sea about 60 km west of Xisha on the afternoon of 15 July. Talas moved west-northwest towards northern Vietnam and intensified gradually, becoming a severe tropical storm on the night of 16 July and reached its peak intensity with an estimated sustained wind of 90 km/h near its centre. It made landfall over the coast of northern Vietnam in the small hours of 17 July and started to weaken. Talas finally degenerated into an area of low pressure over the northern part of Thailand that night.

According to press reports, at least 14 persons were killed and thousands of houses were destroyed during the passage of Talas in Vietnam.

Noru (1705) formed as a tropical depression over the western North Pacific about 1 160 km northwest of Wake Island on the night of 20 July. Moving generally westwards, it intensified gradually and developed into a typhoon on 23 July. Under the influence of another tropical cyclone Kulap to the east, Noru made a slow counter-clockwise loop in the next three days. It started to accelerate west-northwestwards and then westwards on 26 and 27 July, before turning to the southwest on 28 July and temporarily weakened. It then re-intensified again on 30 July. Turning to the west-northwest towards the sea areas east of the Ryukyu Islands, Noru became a super typhoon on 31 July, reaching its peak intensity with an estimated sustained wind of 195 km/h near its centre. Noru moved generally northwestwards on 1 - 4 August and gradually weakened. It started to turn northeast towards Japan on 5 August and accelerated across Shikoku and Honshu over the next couple of days. Noru finally degenerated into an area of low pressure over the sea areas north of Honshu on 8 August. Noru's life span reached 19 days, making it the third longest-living tropical cyclone over the western North Pacific and the South China Sea since 1961, after Rita in 1972 and Wayne in 1986.

According to press reports, at least two persons were killed, 36 injured and nine reported missing in Japan during the passage of Noru. Tens of thousands people had to be evacuated, and transportation services were seriously disrupted. Electricity supply to near 200 000 households was affected.

Kulap (1706) formed as a tropical depression over the western North Pacific about 1 270 km northeast of Wake Island on the morning of 21 July. Moving northwards at first, it intensified into a tropical storm that night. It turned westwards the next day and reached its peak intensity with an estimated sustained wind of 75 km/h near its centre. Kulap headed west-northwestwards on 23 and 24 July and gradually getting closer to Noru. Under the influence of Noru's circulation, Kulap moved around Noru on 25 July and weakened rapidly into an area of low pressure.

Sonca (1708) formed as a tropical depression over the central part of the South China Sea about 260 km east of Xisha on the morning of 21 July and moved west-northwestwards. It slowed down the next day and lingered over the sea areas southeast of Hainan Island. Sonca intensified into a tropical storm on the night of 24 July and accelerated to the west towards Vietnam. It reached its peak intensity with an estimated sustained wind of 75 km/h near its centre the next morning. Sonca made landfall over Vietnam on the afternoon of 25 July and weakened. It finally degenerated into an area of low pressure over Lao PDR the next morning.

Roke (1707) originated from a tropical depression that developed over the sea areas east of northern Luzon on the afternoon of 21 July. It moved across the Luzon Strait on 22 July and after entering the northeastern part of the South China Sea, took on a west-northwestward course and headed steadily towards the Pearl River Delta. It intensified into a tropical storm that evening,

reaching its peak intensity with an estimated sustained wind of 65 km/h near its centre. Roke made landfall near Hong Kong on the morning of 23 July and weakened into a tropical depression during the day. It finally degenerated into an area of low pressure over inland Guangdong in the evening.

According to press reports, Roke brought squally showers to Guangdong during its passage. A vessel sunk over the seas about 70 km east of Hong Kong and all 12 crew members on board were rescued.

Nesat (1709) formed as a tropical depression over the western North Pacific about 810 km east of Manila on the early hours of 26 July. Moving generally northwards at first, it turned to the northwest the next day in the general direction of Taiwan and intensified gradually. Nesat developed into a typhoon on the night of 28 July and reached its peak intensity the next morning with an estimated sustained wind of 145 km/h. After sweeping across the northern part of Taiwan on the night of 29 July, Nesat made landfall over the coast of Fujian the next morning and dissipated inland during the night.

Haitang (1710) formed as a tropical depression about 150 km south of Dongsha on the morning of 28 July and lingered over the northern part of the South China Sea at first. Under the influence of the circulation of Nesat, Haitang accelerated northeastwards on 29 July and intensified into a tropical storm. Crossing the Luzon Strait on 30 July, Haitang reached its peak intensity with an estimated sustained wind of 85 km/h that afternoon. Then it swept past the west coast of Taiwan on a northward track and turned north-northwestwards to strike the coast of Fujian the next morning near where Nesat made landfall just 24 hours earlier. Haitang then weakened and finally degenerated into an area of low pressure over inland Fujian on the night of 31 July.

According to press reports, there were at least 131 people injured and one reported missing in Taiwan with Nesat and Haitang hitting the island in quick succession. More than 670 000 households were without electricity supply. Nesat and Haitang also brought torrential rain and severe flooding to Fujian, Zhejiang and Jiangxi, with more than 200 000 people evacuated in Fujian.

Nalgae (1711) formed as a tropical depression over the western North Pacific about 920 km north-northwest of Wake Island on 1 August and drifted east-southeastwards initially. It intensified into a tropical storm the next day and turned northwestwards, reaching its peak intensity with an estimated sustained wind of 75 km/h near its centre on 3 August. Nalgae accelerated northwards on 4 August and evolved into an extratropical cyclone over the western North Pacific east of Japan the next day.

Banyan (1712) formed as a tropical depression over the western North Pacific about 460 km southeast of Wake Island on 11 August. Moving northwestwards at first, it took on a more northerly course over the next few days and intensified gradually. It once developed into a severe typhoon on the morning of 15 August with an estimated sustained wind of 155 km/h near its centre at peak intensity. Banyan started to turn northeastwards and continued to weaken on 16 August, evolving into an extratropical cyclone the next day over the sea areas west of the International Date Line.

Hato (1713) formed as a tropical depression over the western North Pacific about 740 km east-southeast of Gaoxiong on the night of 20 August. It moved generally westwards across the Luzon Strait and entered the northeastern part of the South China Sea on 22 August, intensifying

into a typhoon and tracking west-northwest towards the coast of Guangdong. During its approach towards the Pearl River estuary on 23 August, Hato intensified further and became a super typhoon that morning over the sea areas south of Hong Kong, reaching its peak intensity with an estimated sustained wind of 185 km/h near its centre. After making landfall over the coast near Macao and Zhuhai shortly after noon time, Hato entered western Guangdong and gradually weakened. It moved across Guangxi the next day and degenerated into an area of low pressure over Yunnan at night.

Hato brought severe storm surge to the coast of Pearl River estuary. Record-high sea levels were recorded at many places. A maximum storm surge of 2.79 m and a maximum sea level of 6.14 m were recorded at Zhuhai station. The coastal areas in Zhuhai including some underground carparks were flooded by sea water. Electricity and water supply in the city became unstable. A number of vessels ran aground about 30 km southwest of Hong Kong and 39 crew members were rescued. Hato brought damaging winds and storm surge to Macao. Extensive areas of Macao suffered damage and were seriously flooded, resulting in at least ten deaths and more than 240 injuries. The direct economic loss exceeded 8.3 billion MOP. A maximum sea level of 5.58 metres was recorded in A-Ma station, a record high in Macao since records began in 1925. Electricity and water supplies were also affected. In Guangdong, Guangxi, Fujian, Guizhou and Yannan, there were at least 15 deaths and one missing during the passage of Hato. Around 740 000 people were affected and over 6 500 houses collapsed, with direct economic loss exceeding 27.2 billion RMB.

Pakhar (1714) formed as a tropical depression over the western North Pacific about 570 km east of Manila on the night of 24 August. Moving generally westwards at first, it developed into a tropical storm the next day and moved northwestwards across Luzon. After entering the South China Sea on the morning of 26 August, Pakhar maintained a northwestward track and accelerated towards the coast of Guangdong. It intensified into a severe tropical storm during the night, reaching its peak intensity with an estimated sustained wind of 110 km/h near its centre. After making landfall over the coast of western Guangdong in the vicinity of Zhuhai on the morning of 27 August, Pakhar weakened gradually and dissipated over Guangxi that night.

According to press reports, Pakhar and its remnant brought heavy rain and squalls to Guangdong, Guangxi, Guizhou and Yunnan, resulting in at least 12 deaths. Around 100 000 people were affected with direct economic loss around 370 million RMB. Eight people were injured and many places were flooded in Macao during the passage of Pakhar. A cargo vessel sunk about 120 km east of Hong Kong and 11 crew members on board were rescued.

Sanvu (1715) formed as a tropical depression over the western North Pacific about 880 km southeast of Iwo Jima on 28 August and, moving northwards, intensified into a tropical storm the next day. Turning gradually westwards and intensifying further, Sanvu developed into a typhoon on 31 August and lingered over the sea areas north of Iwo Jima and reached its peak intensity with an estimated sustained wind of 145 km/h near its centre on the morning of 1 September. It started to track north-northeastwards across the sea areas east of Japan and weakened gradually. Sanvu finally evolved into an extratropical cyclone over the western North Pacific east of Hokkaido on the night of 3 September.

Mawar (1716) formed as a tropical depression over the northern part of the South China Sea about 270 km east-southeast of Dongsha on the afternoon of 31 August. It drifted north-northwestwards slowly and intensified into a tropical storm on the night of 1 September. Tracking slowly to the northwest towards the coast of eastern Guangdong in the next two days, Mawar intensified into a severe tropical storm on the morning of 2 September and reached its peak

intensity with an estimated sustained wind of 90 km/h near its centre. It then weakened into a tropical storm on 3 September, making landfall near Shanwei that night and degenerating into an area of low pressure over inland Guangdong the next day.

According to press reports, torrential rain and squalls brought by Mawar seriously disrupted transportation services and caused severe flooding in the Chaozhou-Shantou region and the Pearl River Delta. Electricity supply to around 110 000 households were interrupted in Guangdong, and there was reports of flooding in many places in Macao.

Guchol (1717) formed as a tropical depression over the Luzon Strait about 310 km south-southeast of Gaoxiong on the small hours of 6 September and drifted generally north-northwestwards. It reached its peak intensity with an estimated sustained wind of 55 km/h near its centre that afternoon and degenerated into an area of low pressure over the Taiwan Strait the next day.

Talim (1718) formed as a tropical depression over the western North Pacific about 290 km northwest of Guam on the night of 9 September. It moved generally west-northwestwards towards the sea areas east of Taiwan and intensified gradually. Talim reached typhoon intensity on the night of 11 September before intensifying further into a super typhoon on the morning of 14 September and reaching its peak intensity with an estimated sustained wind of 185 km/h near its centre. After taking a turn to the northeast, Talim gradually weakened over the next few days. It swept across Kyushu, Shikoku, Honshu and Hokkaido of Japan on 17 and 18 September before evolving into an extratropical cyclone over the sea areas north of Hokkaido.

According to press reports, at least two persons were killed and three were reported missing in Japan during the passage of Talim. Transportation services were seriously affected.

Doksuri (1719) formed as a tropical depression off the east coast of Luzon about 230 km east of Manila on the small hours of 12 September and moved westwards crossing Luzon during the day. It traversed the central part of the South China Sea and intensified gradually over the next couple of days. Doksuri intensified into a severe typhoon and attained its peak intensity with an estimated sustained wind of 165 km/h near its centre before making landfall over the central part of Vietnam on 15 September. After landfall, Doksuri weakened rapidly and dissipated over the northern part of Thailand on 16 September.

According to press reports, Doksuri left at least four people dead in the Philippines during its passage. Doksuri also brought torrential rain and squalls to Vietnam, causing at least nine deaths with more than 110 people injured and about 150 000 houses damaged.

A tropical depression formed over the central part of the South China Sea about 620 km south-southeast of Hong Kong on the night of 23 September and tracked generally west-northwestwards. It reached its peak intensity the next morning with an estimated sustained wind of 55 km/h near its centre. Taking on a northwestward course, the tropical depression then moved across Hainan Island and Beibu Wan before weakening into an area of low pressure over the northern part of Vietnam on the night of 25 September.

OCTOBER TO NOVEMBER

A tropical depression formed over the central part of the South China Sea about 130 km southeast of Xisha on the early morning of 9 October. It tracked west-northwestwards with an estimated sustained wind of 45 km/h near its centre. The tropical depression made landfall over the northern part of Vietnam the next morning and weakened into an area of low pressure.

According to press reports, torrential rain induced by the tropical depression caused severe flooding and landslides in Vietnam, resulting in at least 72 deaths.

Khanun (1720) formed as a tropical depression over the western North Pacific about 650 km east-northeast of Manila on the morning of 12 October. It moved west-northwestwards and intensified into a tropical storm that night. Khanun moved across the northern part of Luzon the next day and drifted west-southwestwards slowly as it re-organized after entering the South China Sea. It turned northwestwards on 14 October and then west-northwestwards the next day as it approached the south China coast, intensifying into a severe typhoon and reaching its peak intensity with an estimated sustained wind of 155 km/h near its centre. It then started to weaken rapidly and moved across Leizhou Peninsula in the early morning on 16 October, degenerating into an area of low pressure over Beibu Wan during the day.

According to press reports, at least seven people were injured in Macao during the passage of Khanun. Transportation services were seriously disrupted. Under the combined influence of Khanun and the northeast monsoon, at least 970 000 people were affected in Guangdong, Hainan, Zhejiang, Guangxi and Fujian. There was also widespread heavy rain in Taiwan, with roads damaged and electricity supply to 14 000 households disrupted.

Lan (1721) formed as a tropical depression over the western North Pacific about 140 km west of Yap on the night of 15 October and moved west-northwestwards at first. It started to take on a north to north-northwestward track in the general direction of the sea areas east of Ryukyu Islands on 17 – 20 October and continued to intensify. It developed into a super typhoon on 21 October and reached its peak intensity with an estimated sustained wind of 205 km/h near its centre. Lan then accelerated to the north-northeast towards Japan and weakened gradually. It swept across the eastern part of Honshu on the early morning of 23 October before evolving into an extratropical cyclone over the sea areas east of Japan during the day.

According to press reports, at least seven persons were killed and more than 130 people injured in Japan during the passage of Lan. Hundreds of houses were damaged and electricity supply to around 130 000 households was disrupted.

Saola (1722) formed as a tropical depression over the western North Pacific about 570 km south-southeast of Guam on the morning of 23 October. It moved generally to the west-northwest and northwest over the next few days before turning northwards on the night of 27 October. It swept across Ryukyu Islands the next day and intensified into a typhoon, reaching its peak intensity with an estimated sustained wind of 120 km/h near its centre. Turning to the northeast, Saola accelerated and skirted past to the south of Japan on 29 October. It finally evolved into an extratropical cyclone over the sea areas east of Japan during the night.

According to press reports, at least six people were injured in Japan during the passage of Saola. Electricity supply to nearly 30 000 households was disrupted.

A tropical depression formed over the sea areas south of Vietnam about 390 km south-southeast of Ho Chi Minh City on the night of 31 October. It tracked slowly westwards in general with an estimated maximum sustained wind of 45 km/h near its centre. The tropical depression weakened into an area of low pressure early in the morning on 2 November over the sea areas south of Vietnam.

Damrey (1723) formed as a tropical depression near the Philippines about 400 km south-southeast of Manila on the small hours on 1 November. Moving generally westwards, it crossed the southern part of the South China Sea and intensified gradually. Damrey developed into a typhoon on the afternoon of 3 November and reached its peak intensity on the small hours the next day with an estimated maximum sustained wind of 145 km/h near its centre. It made landfall over the southern part of Vietnam on the morning of 4 November and weakened rapidly into an area of low pressure over Cambodia that night.

According to press reports, Damrey left at least 89 people dead, 174 injured and 18 missing in Vietnam during its passage. Over 2 000 houses were damaged. The heavy rain associated with the remnant low pressure area of Damrey triggered severe flooding in many places of Penang of Malaysia, leading to at least 6 deaths and the evacuation of over 3 000 people.

Haikui (1724) formed as a tropical depression near the Philippines about 100 km south-southeast of Manila on the night of 9 November. Moving northwestwards into the South China Sea, it intensified gradually and developed into a tropical storm the next day. Haikui started to turn westwards on 11 November and reached its peak intensity with an estimated maximum sustained wind of 85 km/h near its centre. It weakened rapidly the next day and degenerated into an area of low pressure over the central part of the South China Sea in the afternoon.

Kirogi (1725) formed as a tropical depression over the southern part of the South China Sea about 290 km east of Nansha Dao on the evening of 17 November. It moved generally westwards in the direction of Vietnam. Kirogi intensified into a tropical storm the next day, reaching its peak intensity with an estimated maximum sustained wind of 65 km/h near its centre. It started to weaken on 19 November, making landfall over the southern part of Vietnam and degenerating into an area of low pressure in the afternoon.

DECEMBER

Kai-tak (1726) 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 (1727) formed as a tropical depression over the western North Pacific about 1 350 km east-southeast of Manila on the night of 20 December. It intensified gradually, moving west-southwest and then westwards across the southern part of the Philippines over the next three 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.

Note: Casualties and damage figures were compiled from press reports.

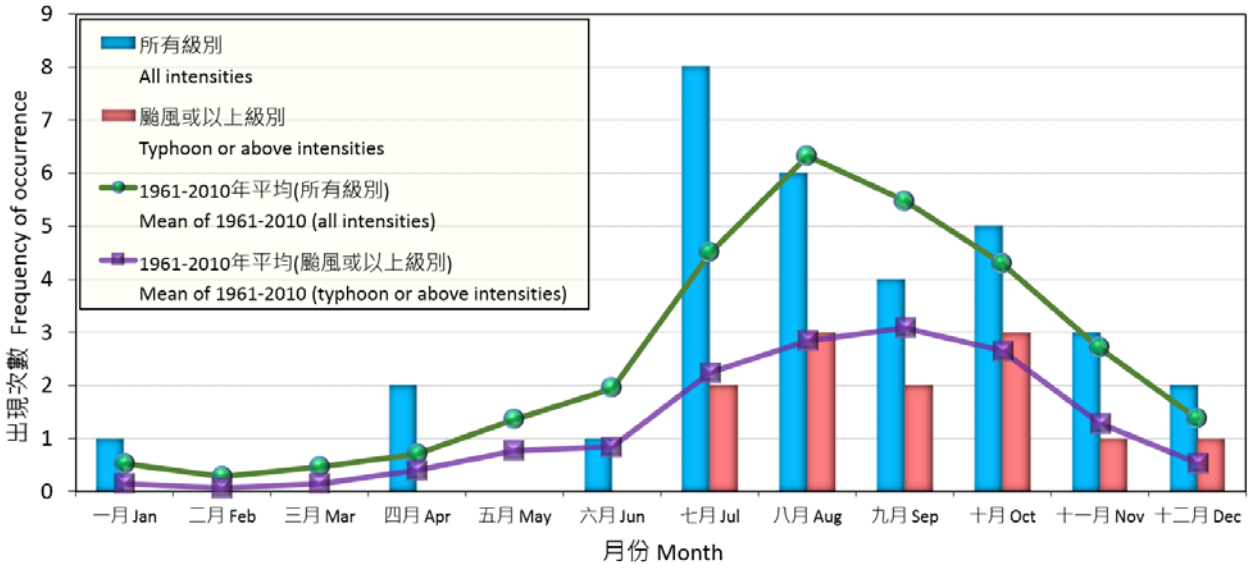

圖 2.1　二零一七年在北太平洋西部及南海區域的熱帶氣旋出現次數之每月分佈 (以熱帶氣旋在該月初次出現為準，假如一熱帶氣旋在九月形成並在十月首次增強為颱風或以上級別，它在「所有級別」及「颱風或以上級別」的統計數字將分別計算在九月及十月份內)。

Figure 2.1　Monthly frequencies of the occurrence of tropical cyclones in the western North Pacific and the South China Sea in 2017 (based on the first occurrence of the tropical cyclone in the month; for example if a tropical cyclone forms in September and first intensifies into typhoon or above intensities in October, its related statistics for “all intensities” and “typhoon or above intensities” will be counted in September and October respectively).

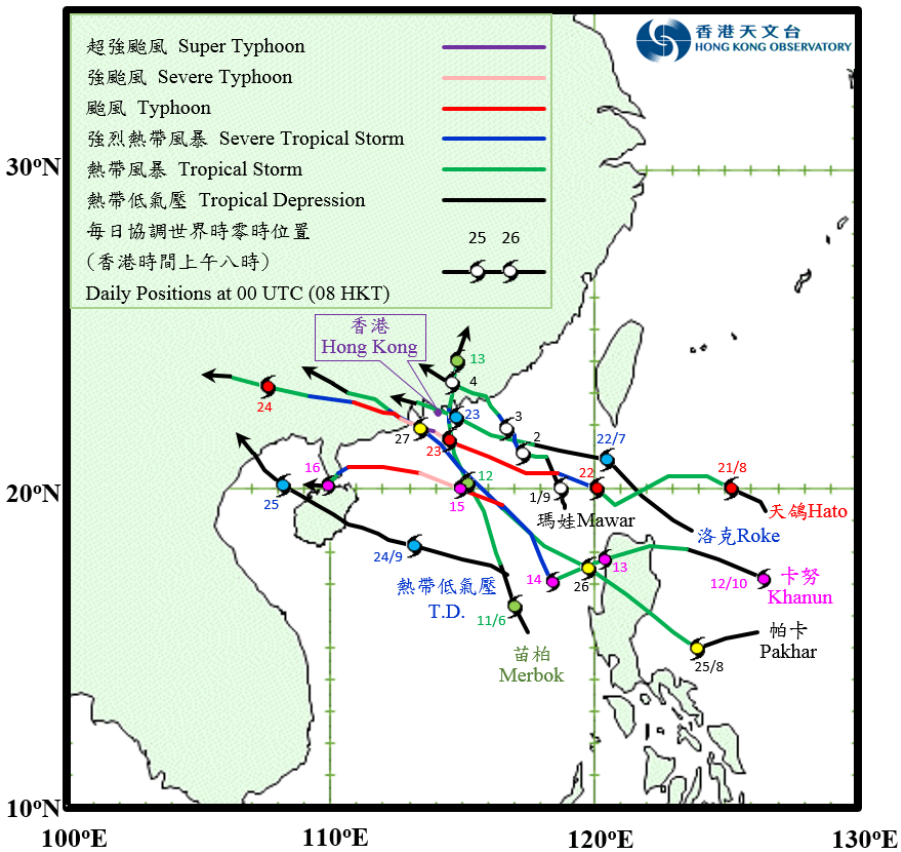

圖 2.2　二零一七年七個影響香港的熱帶氣旋的路徑圖。

Figure 2.2　Tracks of the seven tropical cyclones affecting Hong Kong in 2017.

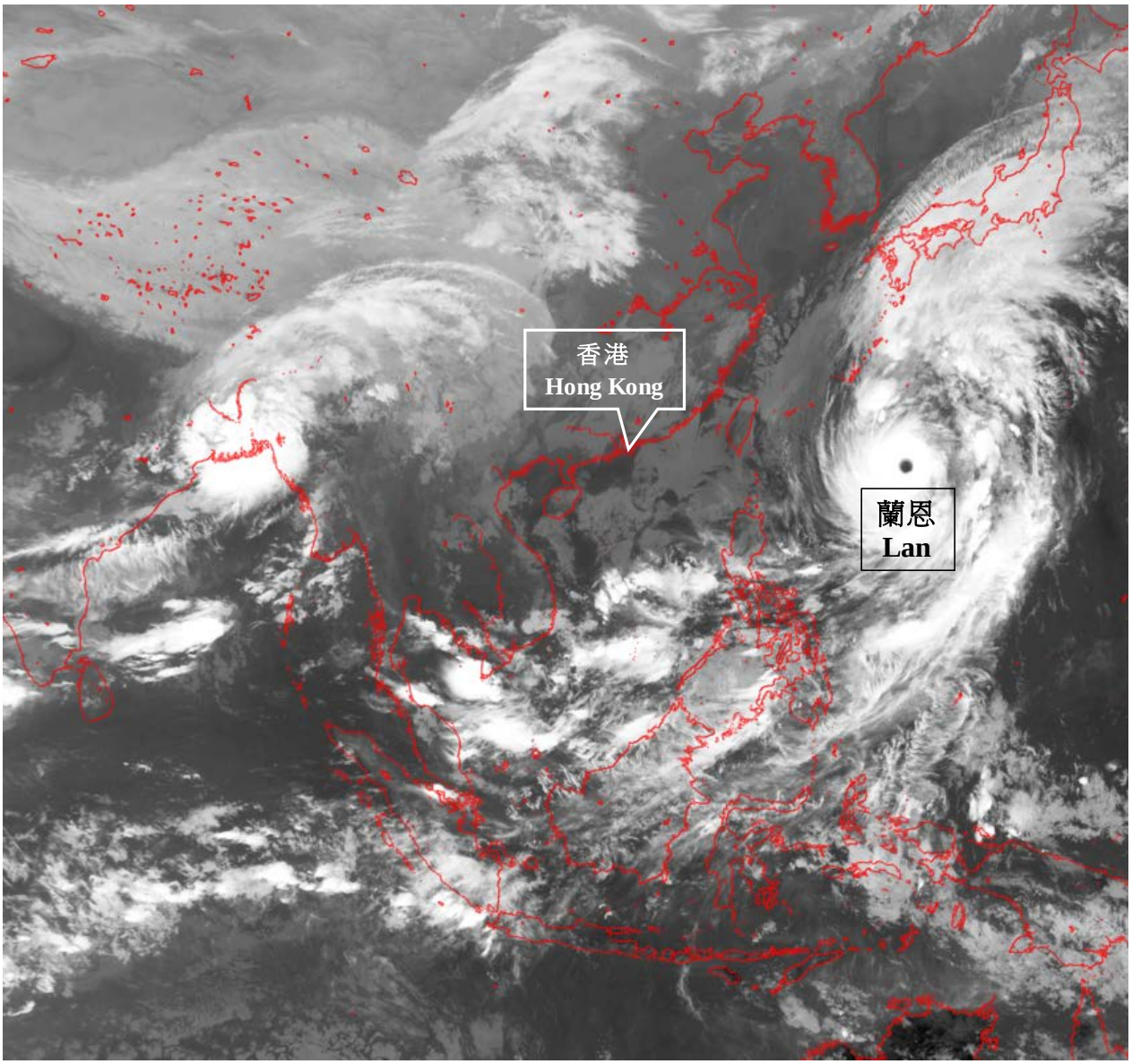

圖2.3　二零一七年十月二十一日上午8時超強颱風蘭恩(1721)的紅外線衛星圖片。當時蘭恩的最高風速估計為每小時205公里，而最低中心氣壓為925百帕斯卡。

Figure 2.3　Infra-red satellite imagery of Super Typhoon Lan (1721) at peak intensity at 8 a.m. on 21 October 2017. The estimated maximum sustained wind and minimum sea-level pressure of Lan was 205 km/h and 925 hPa respectively at that time.

〔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 the Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

表 2.1　在香港責任範圍內(10°-30°N, 105°-125°E)熱帶氣旋出現之每月分佈(以熱帶氣旋在該月初次出現為準

Table 2.1　Monthly distribution of the occurrence of tropical cyclones in Hong Kong's area of responsibility (10° - 30°N, 105° - 125°E), based on the first occurrence of the tropical cyclone in the month

月份 Month / 年份 Year	一月 Jan	二月 Feb	三月 Mar	四月 Apr	五月 May	六月 Jun	七月 Jul	八月 Aug	九月 Sep	十月 Oct	十一月 Nov	十二月 Dec	共 Total
1961					3	5	2	5	4	3	1	1	24
1962					3		4	5	4	1	3		20
1963						3	3	3	2			2	13
1964					1	1	5	3	6	3	6	1	26
1965	1				2	3	4	3	2		1		16
1966					2		5	2	3	2	2	1	17
1967			1	1		1	2	6	1	2	3		17
1968							2	4	2	1	3		12
1969							3	3	4	1			11
1970		1				2	2	3	4	5	3		20
1971				1	2	2	5	3	3	4			20
1972	1					3	2	4	2	1	1	1	15
1973							4	4	2	4	3		17
1974						3	2	4	2	4	4	2	21
1975	1					1		3	2	3	1	1	12
1976					1	1	1	4	1		1	1	10
1977						1	4	1	3		1		10
1978	1			1		2	2	4	5	4	1		20
1979				1	2	1	3	5	2	2	1	1	18
1980			1		3	1	5	2	3	1	1		17
1981						3	3	3	1	1	3	1	15
1982			2		1	1	3	3	3	1		2	16
1983						1	3	1	3	5	2		15
1984						2	2	4	2	2	2		14
1985						2	2	2	4	4	1		15
1986					1	1	1	4	1	3	3	2	16
1987						1	3	2	1	1	3	1	12
1988	1				1	3	1	1	2	5	2	1	17
1989					2	1	4	2	4	3	1		17
1990					1	4	2	3	3	3	2		18
1991				1	1	1	3	2	2	1	3		14
1992						2	3	2	2	2			11
1993						1	1	2	3	2	2	3	14
1994				1	1	2	6	5	2	2		1	20
1995						1	1	5	5	3	1	1	17
1996		1		1	2		3	3	2	1	2		15
1997					1		1	4	1	2	1		10
1998							1	3	4	3	3	1	15
1999				1		1	1	2	3	2	1	1	12
2000					2	1	3	5	3	3	2	1	20
2001					1	2	4	2	2	1	1	1	14
2002	1					1	3	2	3				10
2003				1	1	2	2	3	1	1	1		12
2004			1		1	3	2	2	2	1	2	1	15
2005			1				2	3	4	3	2		15
2006					1	1	3	3	4	1	2	1	16
2007							1	4	3	1	3		12
2008				1	2	1	2	3	5	1	2		17
2009					2	2	3	2	3	4	1		17
2010							3	4	2	2			11
2011					2	3	1	2	2	2			12
2012				1		3	2	3	1	2		2	14
2013						2	3	4	4	3	3		19
2014	1					1	2		3		1	2	10
2015	1			1	1	1	2	2	2	2		1	13
2016					1		3	1	4	3	1	2	15
2017	1			1		1	6	3	4	2	3	1	22
平均 Average (1961-2010)	0.1	0.0	0.1	0.2	0.8	1.4	2.6	3.1	2.7	2.1	1.7	0.6	15.6

表 2.2　　影響香港的熱帶氣旋之每月分佈

Table 2.2　　Monthly distribution of tropical cyclones affecting Hong Kong

月份 Month # / 年份 Year	一月 Jan	二月 Feb	三月 Mar	四月 Apr	五月 May	六月 Jun	七月 Jul	八月 Aug	九月 Sep	十月 Oct	十一月 Nov	十二月 Dec	共 Total
1961					1		3		2				6
1962							2	1		1			4
1963						1	1	1	1				4
1964					1	1		1	4	3			10
1965						1	2		2		1		6
1966					1		3	1	1				6
1967				1		1	1	3		1	1		8
1968							1	3	2				6
1969							1		2	1			4
1970							1	2	1	2			6
1971					1	2	3	1	1	1			9
1972						2	1	1			1		5
1973							2	3	2	2			9
1974						2	1		2	4	1	1	11
1975						1		1	2	3			7
1976						1	1	2	1				5
1977						1	3	1	3				8
1978				1			1	2	2	2			8
1979							2	2	2				6
1980					1	1	4	1	2	1			10
1981						1	2	1	1				5
1982						1	2		1	1			5
1983							3		2	2			7
1984						1	1	2	1				5
1985						1	1		2	1			5
1986							1	2		1			4
1987						1		2	1	1			5
1988					1	1	1		1	2			6
1989					1	1	2		1	2			7
1990					1	2	1	1	1				6
1991							3	1	2				6
1992						1	3	1					5
1993						1	1	2	3	1	1		9
1994						2		1	1				4
1995							1	4	2	1			8
1996							2	2	2	1			7
1997							1	1					2
1998								2	1	2			5
1999				1		1	1	1	3	1			8
2000						1	2	2	1		1		7
2001						2	2	1	1				6
2002								2	1				3
2003							2	1	1				4
2004						1	1	1					3
2005								1	2				3
2006					1	1		3	1	1			7
2007								1	1				2
2008				1		1		2	1	1			6
2009						2	2	1	3				8
2010							2	1	1	1			5
2011						2	1		1	1			5
2012						2	1	2					5
2013						2	1	2	1		1		7
2014						1	1		2				4
2015						1	1			1			3
2016					1		2	1	2	3			9
2017						1	1	2	2	1			7
平均 Average (1961-2010)	0.0	0.0	0.0	0.1	0.2	0.7	1.5	1.3	1.5	0.9	0.1	0.0	6.0

熱帶氣旋警告信號首次發出的月份。#The month that the tropical cyclone warning signal was first issued.