

第二號展品 Display No. 2

風雨災情 Fury of the Elements

1966年6月暴雨後的明園西街

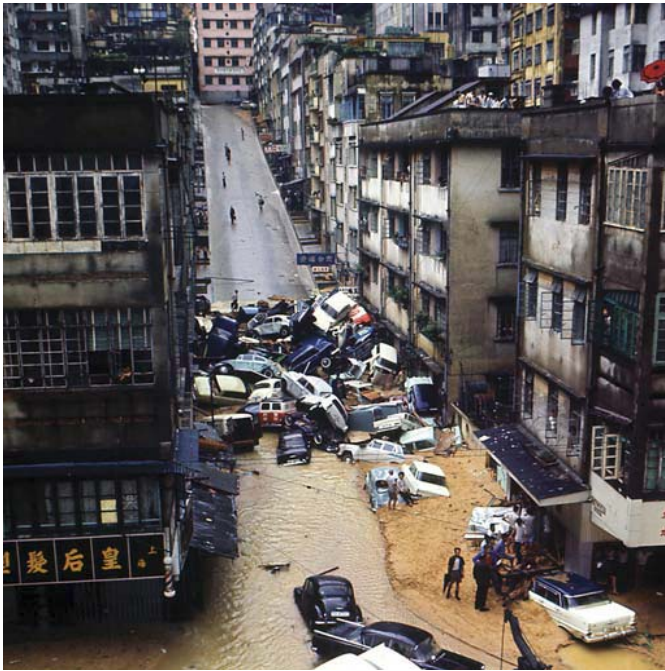
Ming Yuen Western Street after the rainstorm of June 1966

暴雨可以在年中任何時候出現，但主要發生在夏季。香港全年雨量接近八成是在五月至九月錄得的。1966年發生的三場暴雨奪去86人的性命。

北角明園西街1966年6月12日雨災導致大量汽車翻側，堆積在斜坡中央的奇景。

Although rainstorms are not uncommon in any time of the year in Hong Kong, most of them happen during the summer months. Indeed, close to 80% of the annual rainfall occurs between May and September. In 1966, three rainstorms resulted in the loss of 86 lives.

A rare sight of motor vehicles swept down the slope in Ming Yuen Street, North Point at 12 June 1966.



1972年6月的暴雨

Rainstorm in June 1972

香港每年都會因大雨或持續降雨而引致山泥傾瀉。大部份山泥傾瀉影響範圍較少，但亦有不少屬較嚴重的山泥傾瀉，造成人命傷亡、建築物損毀及道路受阻等。在1972年6月生的暴雨中，有148人因山泥傾瀉而喪生。

旭龢道一幢大廈被斜坡上倒塌下來的大廈猛烈撞擊後的損毀實況。

Every year heavy or prolonged rain causes landslip in Hong Kong. Most of these are small in scale, but many are large enough to cause injury to people, damage to property and blockage of roads. During the severe rainstorm in June 1972, 148 people died in landslips caused by heavy rain.

Only half of one building on Kotewall Road remained intact after being struck by the toppled building higher up the slope.



於1979年影響香港的颱風荷貝

Typhoon Hope affected Hong Kong in 1979

<http://www.hko.gov.hk/informtc/no10/hope/hope.htm>

颱風荷貝迅速橫過新界引致12人死亡及260人受傷。天文台在1979年8月2日下午1時發出10號颶風信號。荷貝的風眼在下午2時於大鵬灣登陸，而大埔、赤鱗角、中文大學等地在風眼經過時，先後出現接近20分鐘的無風及天晴。在天星小輪碼頭錄得荷貝的最高陣風達每小時108海里，這是自1971年颱風露絲後所錄得的最高港內陣風。曾出現的961.6百帕斯卡的瞬時最低氣壓亦為天文台的第二個最低紀錄，最低為1962年的颱風溫黛的953.2百帕斯卡。荷貝襲港令維多利亞港內多數地方均錄得颶風，港內船隻嚴重損失，其中尖沙咀天星碼頭更被一艘貨船撞毀。

Typhoon Hope passed rapidly over the New Territories on 2 August and caused twelve deaths and injured 260 people. Tropical Cyclone Warning Signal No. 10 was issued at 1 p.m. on 2 August 1979, the centre of Hope passed over Mirs Bay at around 2.00 p.m. Calm winds and bright sky were reported at Double Haven, Tai Po Kau and the Chinese University for about 20 minutes. A maximum gust of 108 knots was recorded at Star Ferry Pier, Kowloon. This is the highest gust recorded inside the harbour since Typhoon Rose in 1971. The instantaneous minimum mean sea-level pressure of 961.6 millibars at the Royal Observatory was second lowest on record, the lowest being 953.2 millibars in Typhoon Wanda, 1962. During the passage of Typhoon Hope, most areas in Victoria Harbour were recorded in a hurricane wind, the vessel suffered serious losses, the Star Ferry Pier was damaged by a container ship.

2005年5月9日的颶風線與「石湖風」

Squall lines and "Shi Hu Feng" on 9 May 2005

http://www.weather.gov.hk/education/edu01/met/wxphe/ele_squallc.htm

「石湖風」一詞在華南，特別是珠江三角洲一帶流傳甚久，但起源則無法稽考。一般是指從北面突然吹襲的狂風暴雨。從氣象角度來看，「石湖風」可說是颶風線引致陣風的一種俗稱。颶風線是由多個雷暴區或雷暴單體組成的強烈雷雨帶。除了大雨及猛烈雷暴外，颶風線移動快速及破壞力強。

過去部分經過香港的颶風線也為本地帶來傷亡及經濟損失，2005年5月9日影響本港的強烈颶風線引致葵涌錄得高達每小時135公里的陣風，部分在該區貨櫃碼頭的貨櫃被吹倒，導致一人死亡，兩人受傷。本港當日亦有超過100宗樹木及棚架倒塌報告。巧合地，於2001年5月9日香港同樣受到颶風線的吹襲，當時葵涌區貨櫃碼頭亦有50個貨櫃被吹倒。

While its origin cannot be traced, the term of "Shi Hu Feng", or "Wind of the Stony Lake" has been used in southern China, particularly in the Pearl River Estuary, for a long time. It in general refers to those squally thunderstorms moving in suddenly from the north. From the meteorological point of view, Shi Hu Feng is the commoners' description of the gust associated with squall lines. A squall line is a cluster of severe thunderstorms or storm cells along a line. Squall lines travel fast wrecking havoc on its way, and brings the heavy downpour and thunder.

There have been cases of squall lines causing casualties and economic damages when passing through Hong Kong. During the passage of one such squall line on 9 May 2005, gust up to 135 kilometres per hour was recorded in the Kwai Chung area. Some containers stacked up in container terminals there collapsed, resulting in one death and two others injured. There were over 100 reports of fallen trees and scaffoldings that day. Incidentally, a squall line also hit Hong Kong on 9 May 2001, bringing down 50 containers in Kwai Chung.



2008年6月7日的暴雨

Rainstorm on 7 June 2008

<http://www.weather.gov.hk/wxinfo/news/2008/pre0607c.htm>

受到一道活躍的低壓槽影響，本港於2008年6月7日有大雨及狂風雷暴。早上雨勢最大，天文台在八時至九時錄得145.5毫米雨量，是自有記錄以來一小時的最高紀錄。今日自凌晨至下午六時，天文台共錄得304.8毫米雨量，是六月份單日最高雨量的第5位。本港當日廣泛地區錄得約200毫米雨量，而大嶼山和市區則超過300毫米。

當日北大嶼山公路發生通車以來最嚴重的水浸事故，近東涌映灣園在黑雨警告生效期間發生山泥傾瀉，山泥夾雜洪水湧落公路，把來回程6條行車線和翔東路2條行車線全部淹浸，水深達3米。機場來往市區路面交通中斷，只能靠鐵路連繫。

Under the influence of an active trough of low pressure, heavy rain and squally thunderstorms affected Hong Kong today (7 June 2008). Rain was heaviest in the morning. The Observatory recorded 145.5 millimetres during the hour from 8 to 9 a.m., the highest hourly rainfall since record began. From midnight till 6 p.m., 304.8 millimetres of rain fell at the Observatory, the 5th highest daily rainfall record in June. About 200 millimetres of rainfall were recorded generally over Hong Kong that day, with those at Lantau Island and urban areas exceeding 300 millimetres.



一艘浮塢撞向杏花村海濱長廊的海旁

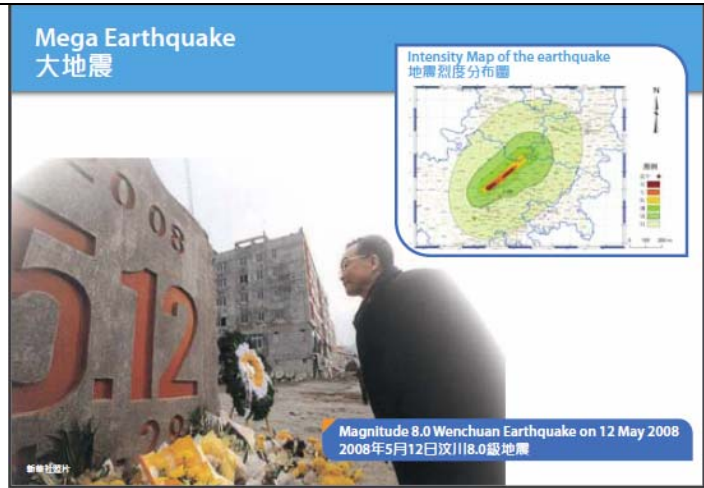
A barge shoving the sea wall over the sea off Heng Fa Chuen

http://www.hko.gov.hk/informtc/nesat/report_uc.htm

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，引致418宗塌樹及15宗塌棚架意外事件，共有25人受傷。其中，一輛的士在新蒲崗太子道東被巨型棚架擊中，一名乘客受傷。港島柴灣對開海面一艘浮塢連運沙船斷纜後在港內飄浮，船身首先撞毀油庫碼頭，再連續撞擊杏花邨堤岸，其間運沙船一條伸出的運輸管一度與民居接近，超過50名居民須緊急疏散。受到惡劣天氣影響，香港國際機場共有超過40班航班被取消，約490班航班延誤，44航班轉飛其他機場。

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, there were 418 reports of fallen trees and 15 reports of collapsed scaffolding in Hong Kong. A total of 25 people were injured. In particular, a large sheet of scaffolding was blown down in Prince Edward Road East in San Po Kong, hitting a taxi and injuring its passenger. Over the seas off Chai Wan, a crane barge drifted across the harbour 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. At one point, the barge's extended crane arm came close to an apartment block, prompting the evacuation of more than 50 residents. At the Hong Kong International Airport, over 40 flights were cancelled, around 490 flights affected and 44 aircraft were diverted due to adverse weather.

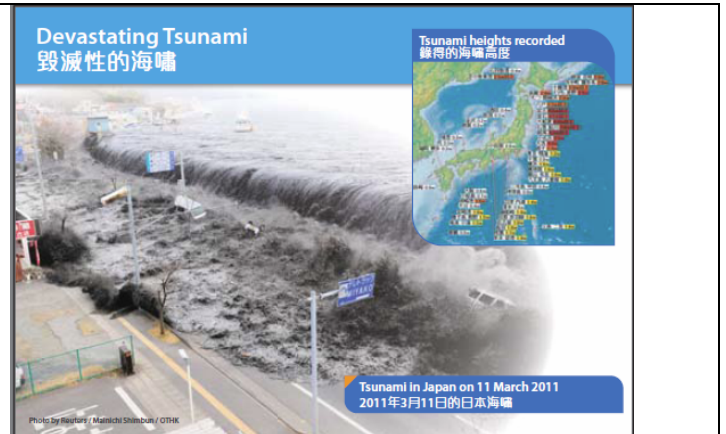




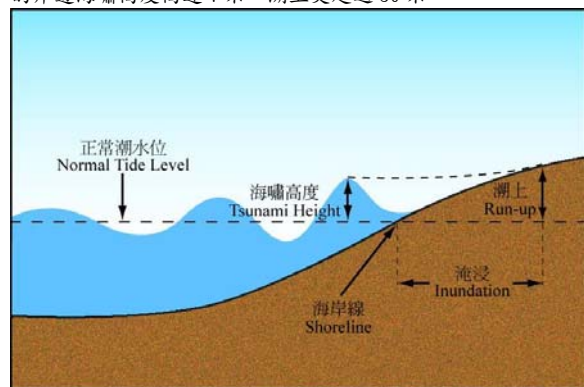
2008年5月12日四川省發生8.0級大地震，根據民政部的統計，是次地震造成接近九萬人死亡，是近三十年來中國最嚴重的地震。地震烈度各處不同，在受災最嚴重的北川和映秀鎮的烈度達十一度，在香港的烈度則僅為三度。

地震的強度反映地震過程中所釋放出來的能量，根據標準儀器所記錄到的地殼運動振幅及週期計算出來，地震震級每增加一級表示能量增加約32倍，相隔兩級的震級其能量相差約1000(≈32x32)倍。

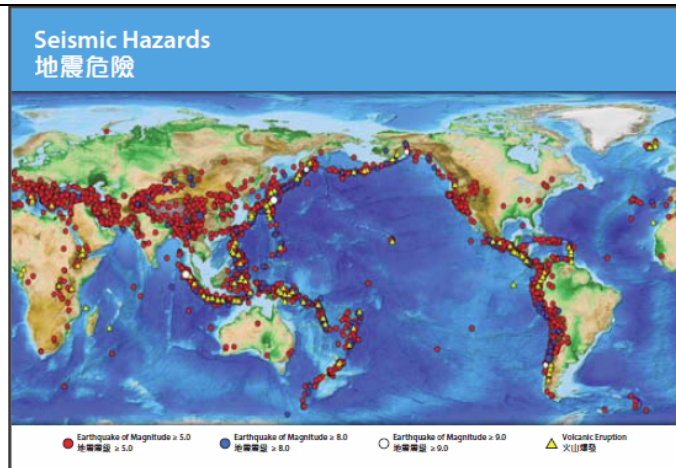
地震的烈度則是指地震引致該地點地殼運動的猛烈程度，視乎觀察者所在地點與震中的距離、地殼結構、以及造成地震的斷層運動而有所不同，烈度通常由震動對個人、傢具、房屋等所產生的影響來判斷，香港採用的「修訂麥加利地震烈度表」(Modified Mercalli Scale)把地震的影響分為12度，詳情見表一。



2011年3月11日本東北對出海域發生9.0級地震，其所引致的海嘯令日本東北沿岸地區遭受嚴重破壞，超過19,000人死亡或失蹤。這次海嘯中錄得的岸邊海嘯高度高達7米，湖上更超過30米。

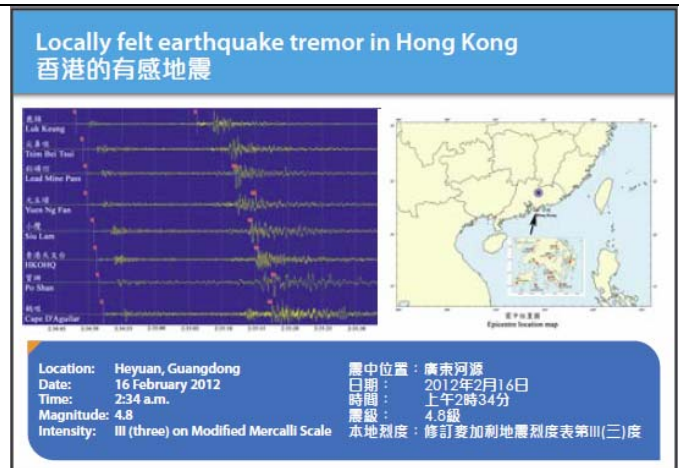


天文台利用地震數據處理系統實時計算地震參數，並接收太平洋海嘯警報中心所發出的海嘯信息，以及運行海嘯數值預報模式，必要時會發出本地海嘯警告。過去半個世紀南海的地震未算活躍，而地理環境原因使由太平洋進入南海的海嘯能量迅速減弱，雖然記錄中有7次太平洋發生的地震所引發的海嘯曾到達香港，但海嘯高度都少於0.5米，因此，香港從未需要發出本地海嘯警告。



世界大部分的強烈地震都發生於地殼板塊邊緣。香港位於歐亞板塊內，而並非處於板塊邊緣。著名的環太平洋地震帶位於歐亞及太平洋板塊的邊界並貫穿日本、台灣及菲律賓。香港距離這條活躍地震帶頗遠，發生大地震的機會很微。

根據地質構造分析，香港及其鄰近海域的斷層並不活躍，沒有形成強烈地震的適當地質條件。香港及其鄰近地區發生的地震可以在香港引起一般人感覺得到的震動，但造成嚴重破壞的機會甚微。根據土木工程拓展署的研究資料顯示，香港的地震活動屬於低至中度，發生修訂麥加利地震烈度表V(五)度或以上的地震復發週期約為15至20年，而烈度為VII(七)度或以上的復發週期約350至400年。



香港天文台1905年開始記錄本港有感地震，至今共有168次強度不等的有感地震記錄。而由1979年香港短週期地震台網投入運作起計算，天文台共錄得59次有感地震，平均每年不到2次。1905年以來，香港的有感地震從未引致任何傷亡，其中絕大部份的地震烈度為「修訂麥加利地震烈度表」的V(五)度以下，最高記錄則是1918年由距離香港300多公里汕頭附近發生的地震所引起的VI至VII(六至七)度。1918年的地震令到香港少數建築物的牆壁出現輕微損毀，是有史以來唯一在香港引起損毀的地震。近年香港震感較強的一次地震發生於1994年，烈度為V至VI(五至六)度，震中位於台灣海峽南部。

2012年2月16日廣東河源發生4.8級地震，香港天文台收到共71份市民表示感覺到這次地震的報告，這次地震在香港的烈度為III(三)度。

表一 修訂麥加利地震烈度表

I 度	無感。
II 度	在樓宇上層或合適位置，且在靜止中的人有感。
III 度	室內有感。懸掛的物件擺動。類似小型貨車駛過的振動。未必認為是地震。
IV 度	懸掛的物件擺動。類似大型貨車駛過的振動。門、窗、碗碟發出響聲。
V 度	室外有感。放置不穩的細小物件會移動或翻倒。
VI 度	人人有感。不易穩步而行。傢具移動或翻倒。
VII 度	站立有困難。傢具破壞。脆弱建築物出現裂縫及損毀。
VIII 度	行駛中汽車受到影響。灰泥掉落，磚牆倒塌。潮濕土地及斜坡出現裂縫。
IX 度	大多數人恐慌。地面裂縫顯著。
X 度	大多數磚石建築及木屋均連地基摧毀。水壩、堤岸受嚴重損毀。鐵軌輕微彎曲。
XI 度	鐵軌大幅度彎曲。地下管道完全失去作用。
XII 度	破壞幾乎是全面的。

第四號展品 雲 Display No. 4 Clouds

「地形層雲」 " Orographic stratus"

http://www.weather.gov.hk/education/edu01met/01met_clouds_hk/ele_cloud05_c.htm

http://www.weather.gov.hk/education/edu01met/wxphe/ele_fog06_uc.htm

當風將空氣吹向山坡時，空氣會沿山坡向上爬升，由於氣溫隨高度下降，空氣中的水氣會冷卻而凝結成小水滴。

When air is forced to rise, air temperature decreases with height and water vapour in the air with condense into small water droplets.

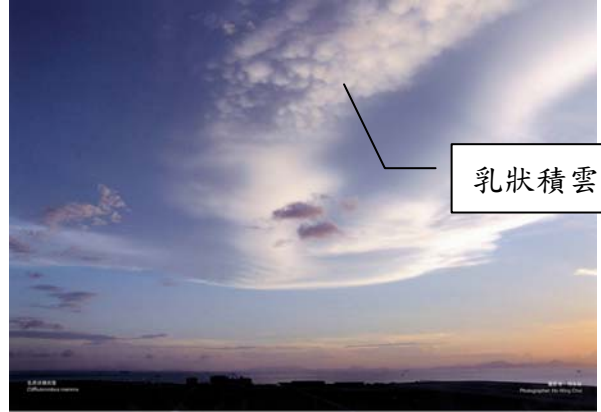


「乳房狀積雨雲」 "Cumulonimbus mamma"

http://en.wikipedia.org/wiki/Mammatus_cloud

乳房狀積雨雲，又稱「乳狀積雲」，是在積雨雲下方形成的乳狀型積雲。

Mammatus, also known as mammatocumulus (meaning "mammary cloud" or "breast cloud") is a meteorological term applied to a cellular pattern of pouches hanging underneath the base of a cloud.



「飛碟雲」 "Flying saucer clouds"

http://www.weather.gov.hk/education/edu01met/wxobs/clouds/ele_lenticular_c.htm

相片是由台長岑智明先生在 2006 年 2 月 8 日早上 10 時在尖沙嘴天文台總部附近拍攝，可見九龍上空出現兩團類似飛碟的雲，我們稱這種雲為莢狀雲。它的成因是當一層較為穩定及潮濕的空氣遇到山脈而被迫抬升，引起上下起伏的波浪，而在波浪中上升的氣流令潮濕的空氣變冷，凝結成水點，使我們可以用肉眼看見。由於這類莢狀雲形狀像一塊或多塊凸透鏡，有時候被誤會為飛碟或不明飛行物體，所以亦俗稱「飛碟雲」。

「飛碟雲」的波浪是山脈引起的，所以在多山的地區會較為容易出現。拍攝當日地面及山上都是吹和緩至清勁的東風，大氣也較為穩定，由此可以推斷「飛碟雲」是由東風吹過九龍東部的飛鵝山和附近山嶺引起的。

This photograph was taken by Mr SHUN Chi-ming, the Director, at 10 a.m., 8 February 2006 near the Observatory's Headquarters in Tsim Sha Tsui, showing clouds over Kowloon which resemble a pair of flying saucers. These clouds are called "lenticular clouds". They form when a layer of relatively stable and moist air-stream is forced to rise by hills, causing up and down wave motions in the air. The rising air in the wave causes the moisture to cool down and condense into water droplets, which then become visible to the eye. Since lenticular clouds look like one or more convex lens, they could sometimes be misinterpreted as flying saucers or Unidentified Flying Objects, and so they are commonly known as "flying saucer clouds".

Since the wave motions which result in the "flying saucer clouds" are caused by hills, these clouds would appear more readily in mountainous areas. On that day, there was moderate to fresh easterly winds blowing near the surface and over the hills, and a rather stable atmosphere. We may therefore infer that the "flying saucer clouds" were caused by easterly winds blowing across Kowloon Peak and the nearby hills over eastern Kowloon.



「積雲及雨幡」 "Cumulus and virga"

http://www.hko.gov.hk/education/edu01met/wxobs/clouds/ele_cumulus_c.htm

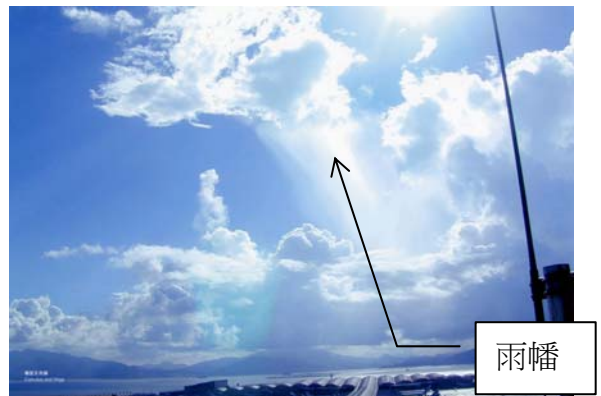
<http://en.wikipedia.org/wiki/Virga>

積雲屬 (Cumulus) 於低層雲族，一般常見於夏天，高度在 1000 - 3000 呎 (即約 300-1000 公尺) 之間。積雲的體積可大可小，而形狀更是變化萬千，雲底多為平坦，頂部呈塔狀，受到太陽直射的部份，顯得十分明亮，其他部份則較暗淡。

雨幡，亦稱幡狀雲 (virga) 是一種從雲中落下的降水，但還沒到地面前就已經蒸發。

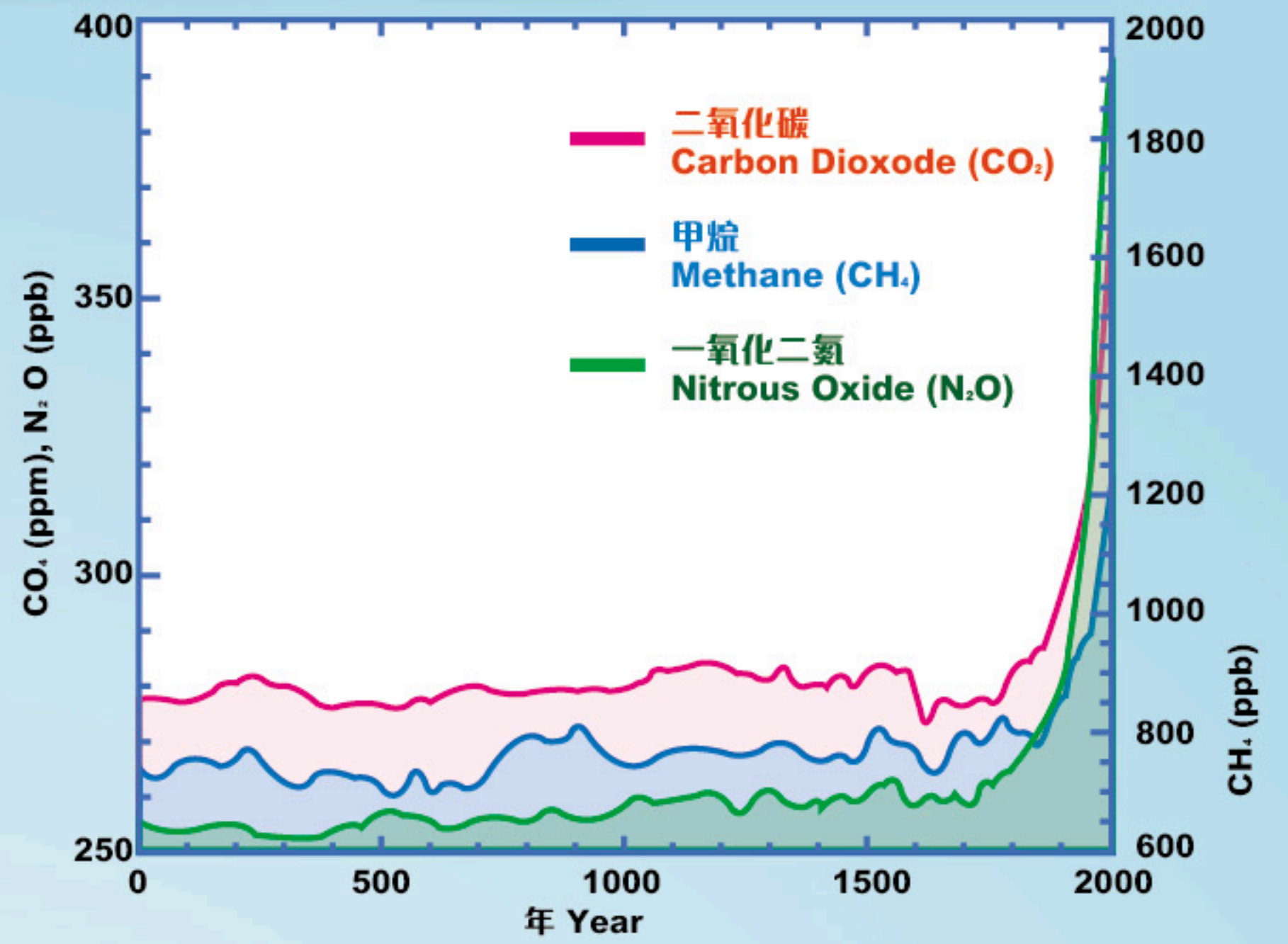
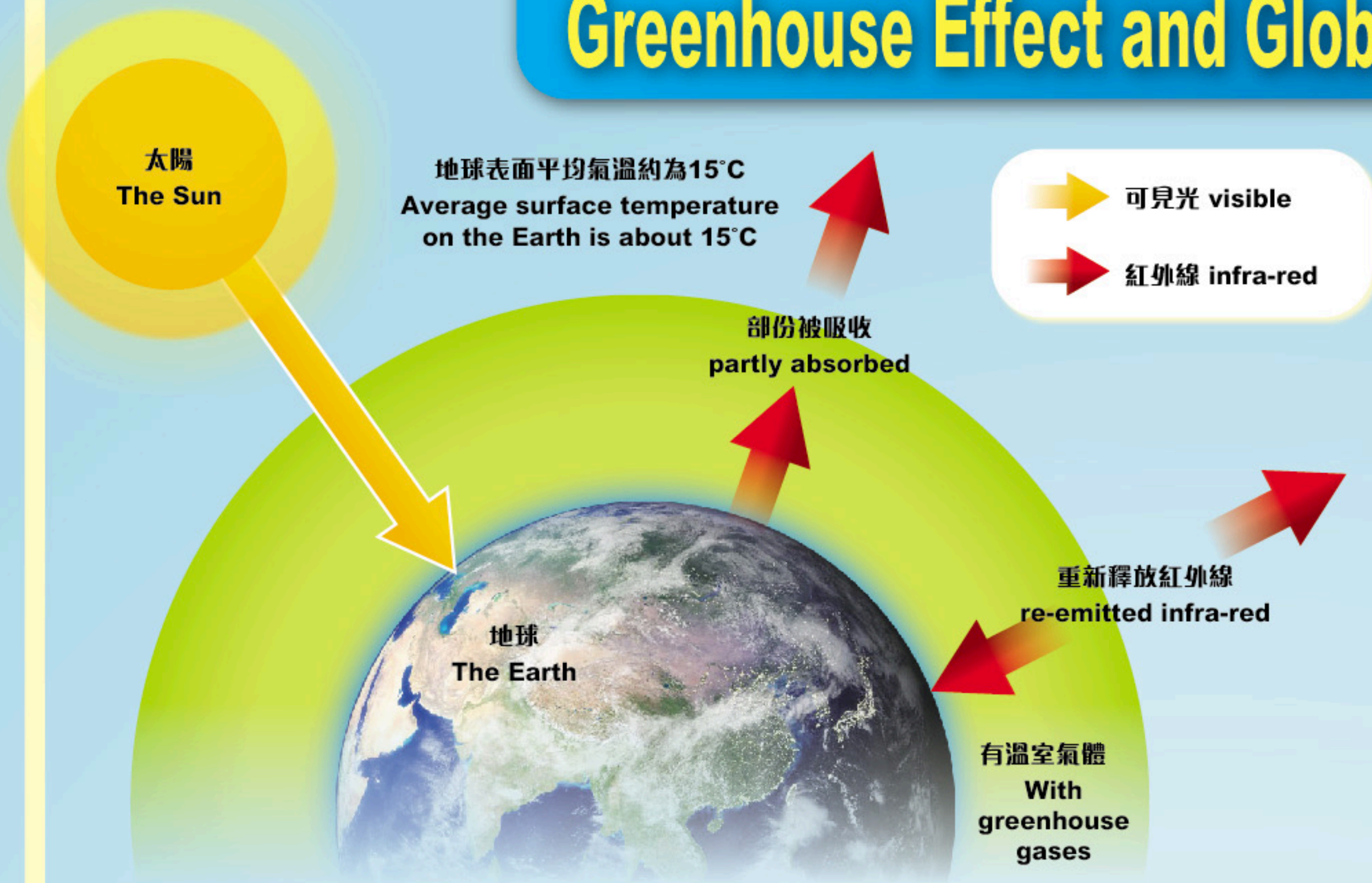
Cumulus belongs to the low cloud type. Cumulus clouds are very common in summer, forming at about 1000-3000 feet (i.e. 300-1000 metres) and in various shapes. They have various sizes and shapes. Their base is usually flat, but they can have towering tops. They are very bright under direct sunlight, but relatively dark elsewhere.

Virga is an observable streak or shaft of precipitation that falls from a cloud but evaporates before reaching the ground.



溫室效應與全球氣候變化

Greenhouse Effect and Global Climate Change

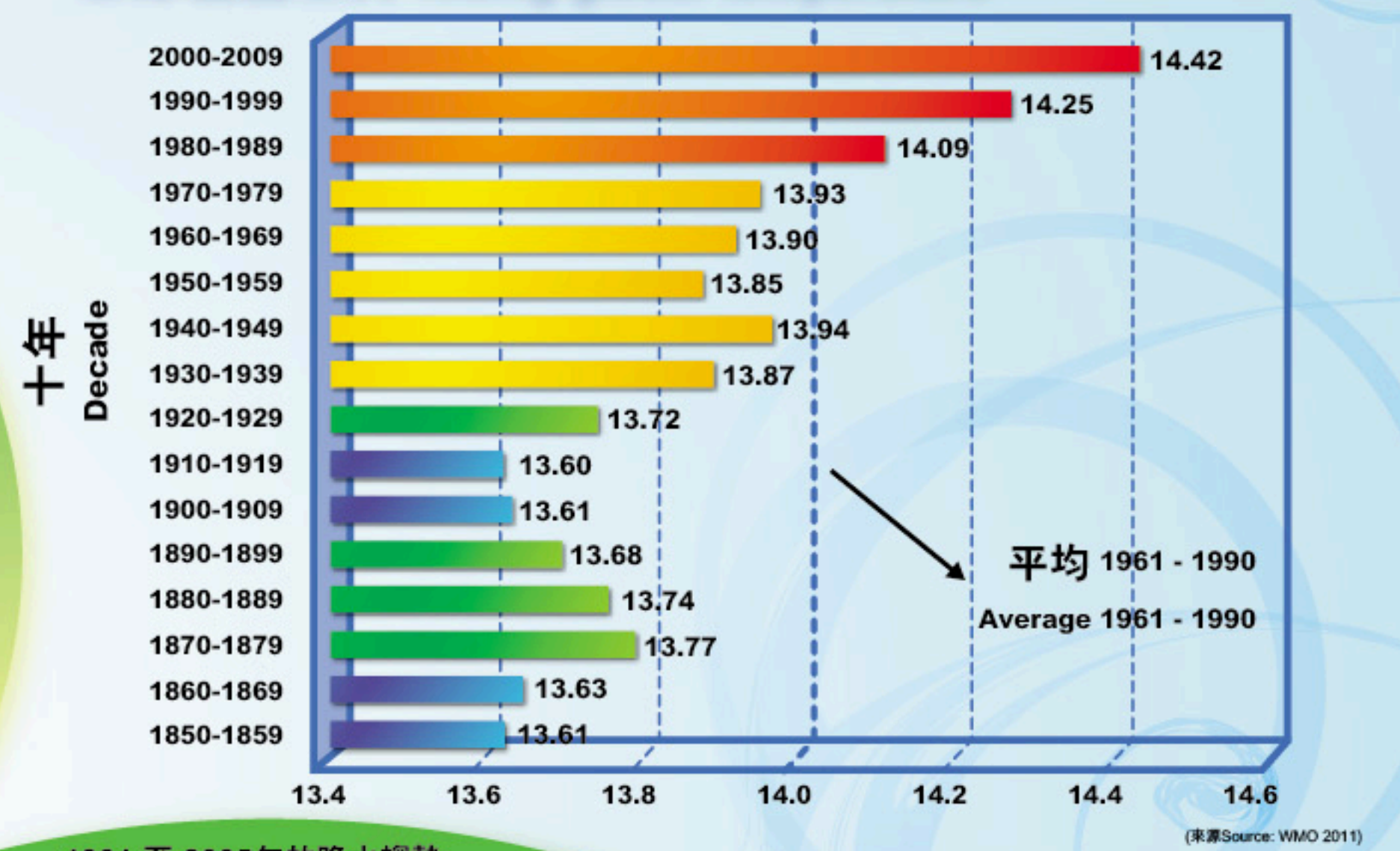


全球大氣CO₂、CH₄及N₂O的濃度自1750年起急劇上升，現時的濃度已大幅超越工業革命前的水平。這猶如把棉被加厚，導致人為的全球暖化。

Global atmospheric concentrations of CO₂, CH₄ and N₂O have increased markedly since 1750 and now far exceed pre-industrial values. This acts like a thickening blanket and leads to anthropogenic global warming.

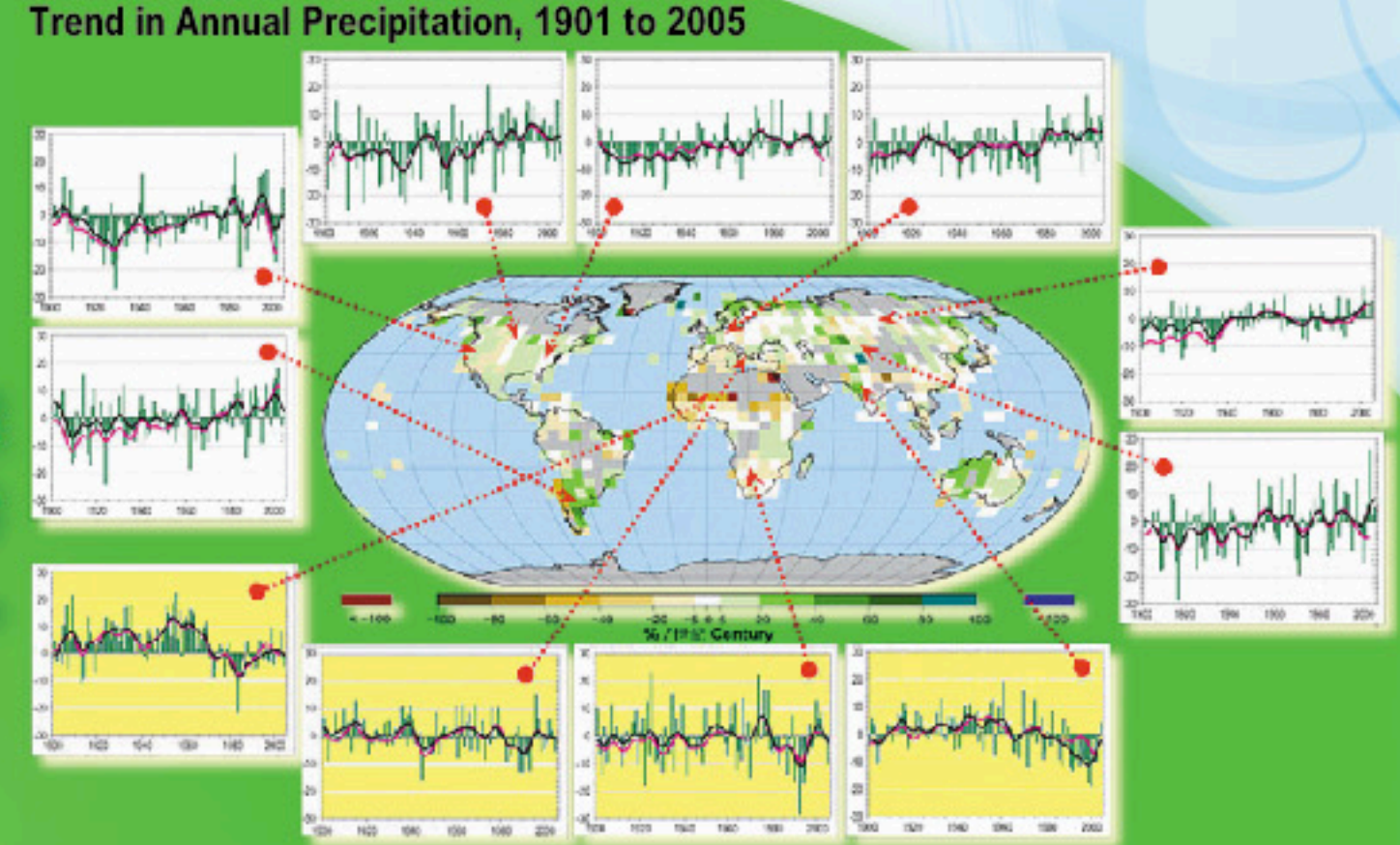
(來源 Source: IPCC, 2007)

全球氣溫上升 Rising global temperature



(來源 Source: WMO 2011)

1901至2005年的降水趨勢



(來源 Source: IPCC 2007)

溫室氣體就像大棉被一樣，減少地球的熱量流失，使地球的氣溫較沒有溫室氣體的情況為高。Heat-trapping greenhouse gases act like a blanket and keep the surface and the lower atmosphere warmer than it would be without them.

海水受熱膨脹及陸地上的冰雪溶化

Thermal expansion of sea water and melting of ice on land

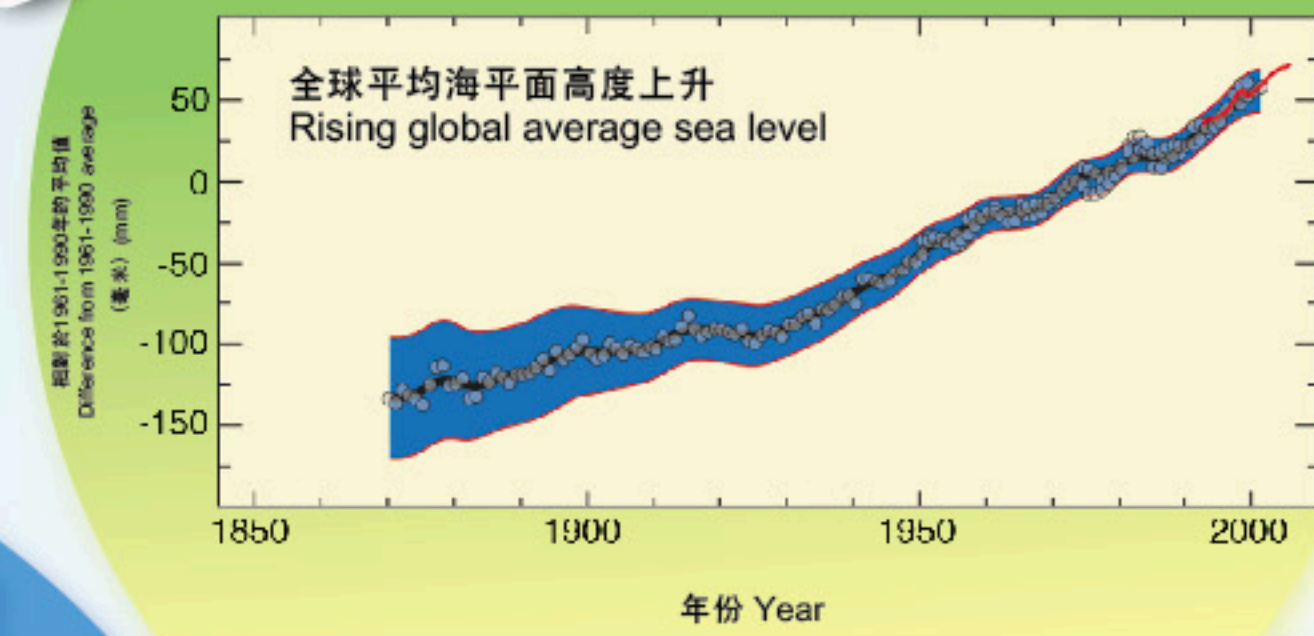


阿拉斯加冰川灣 - 穆爾冰川
Muir Glacier, Alaska's Glacier Bay

(圖片來源 Image Credit: National Snow and Ice Data Center, W. O. Field, B. F. Molnia)

海平面上升

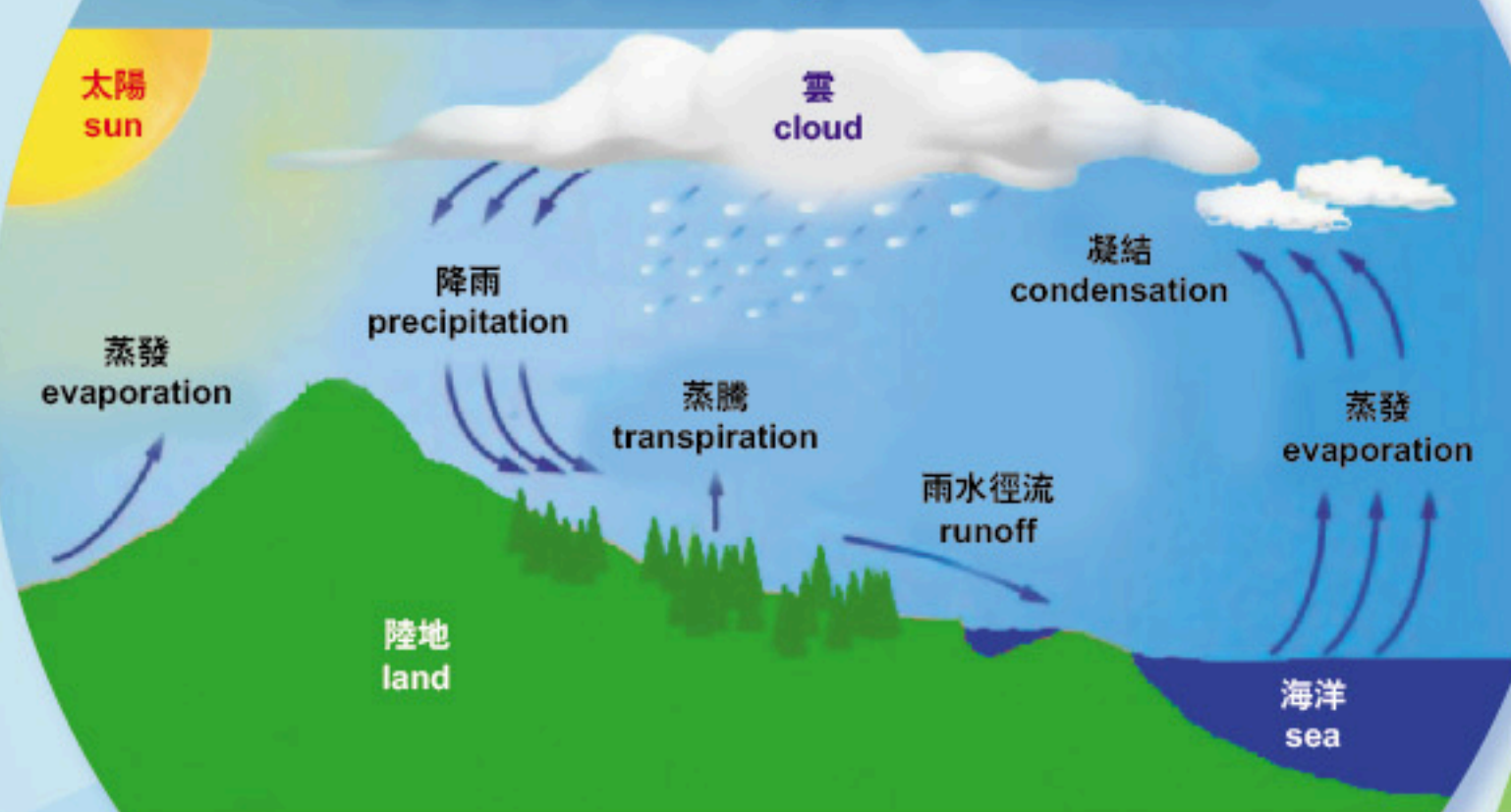
Sea level rise



(來源 Source: WMO 2011)

改變大氣環流及加劇水循環

Atmospheric circulation changed and the water cycle enhanced



擴大各地的降水差異並增加極端降雨事件
Larger regional differences in precipitation, and more extreme rainfall

香港的氣候變化 Climate Change in Hong Kong

由於全球氣候變化和城市化的影響，香港的平均氣溫、總雨量和平均海平面都有上升趨勢；寒冷天氣事件減少，但酷熱天氣和大雨事件愈加頻繁。

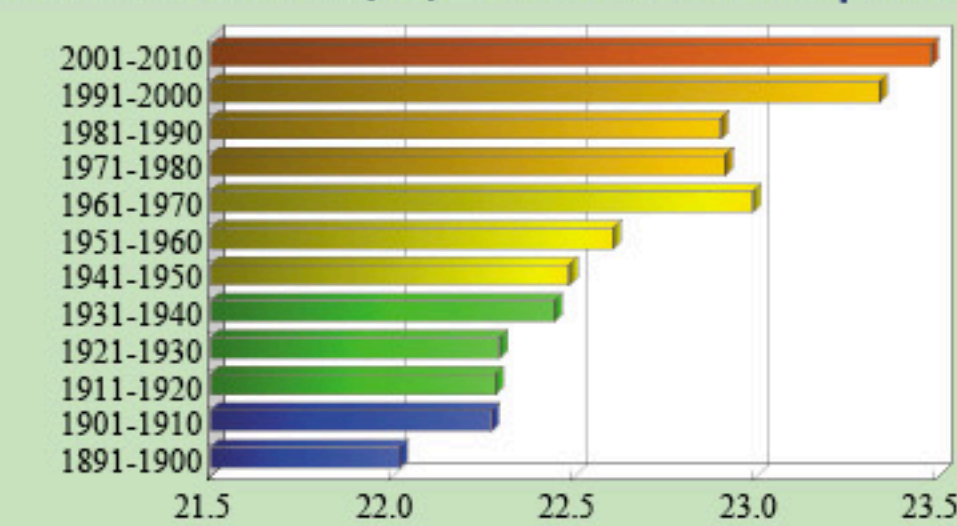
Due to global climate change and local urbanization, there were significant changes in the climate of Hong Kong, including the rising trend in average temperature, total rainfall and mean sea level. Cold episodes have become rarer while very hot days and heavy rain events are becoming more frequent.

香港各氣象要素的變化

Summary of trends of meteorological elements in Hong Kong

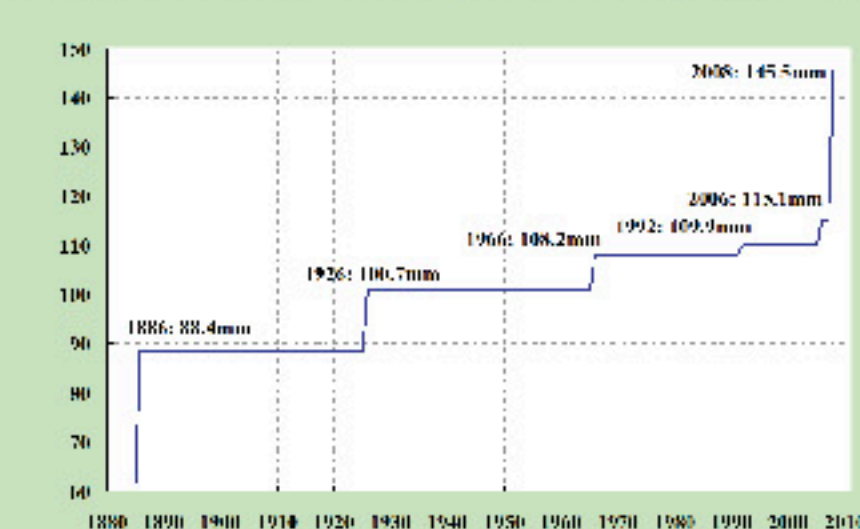
氣溫 Temperature	年雨量 Annual rainfall	海平面 Sea level
↑ 上升 rise	↑ 上升 rise	↑ 上升 rise
能見度 Visibility	雲量 Cloud amount	太陽總輻射 Solar radiation
↓ 下降 fall	↑ 上升 rise	↓ 下降 fall

天文台年代際平均溫度 (°C) Decadal Mean Temperature (°C) at the HKO



香港天文台每小時降雨量的最高記錄 (毫米) (1885年 - 2011年)

Record high hourly rainfall (mm) at the HKO (1885 - 2011)



珍惜資源
Treasure resources

減少浪費
Reduce wastage

節約能源和用水
Save energy and water

減少用紙
Use less paper

公眾教育及外展活動

Publication Education and Outreach

香港天文台一直不遺餘力地推動公眾教育，提高市民大眾對天氣的認知和氣候變化的關注。

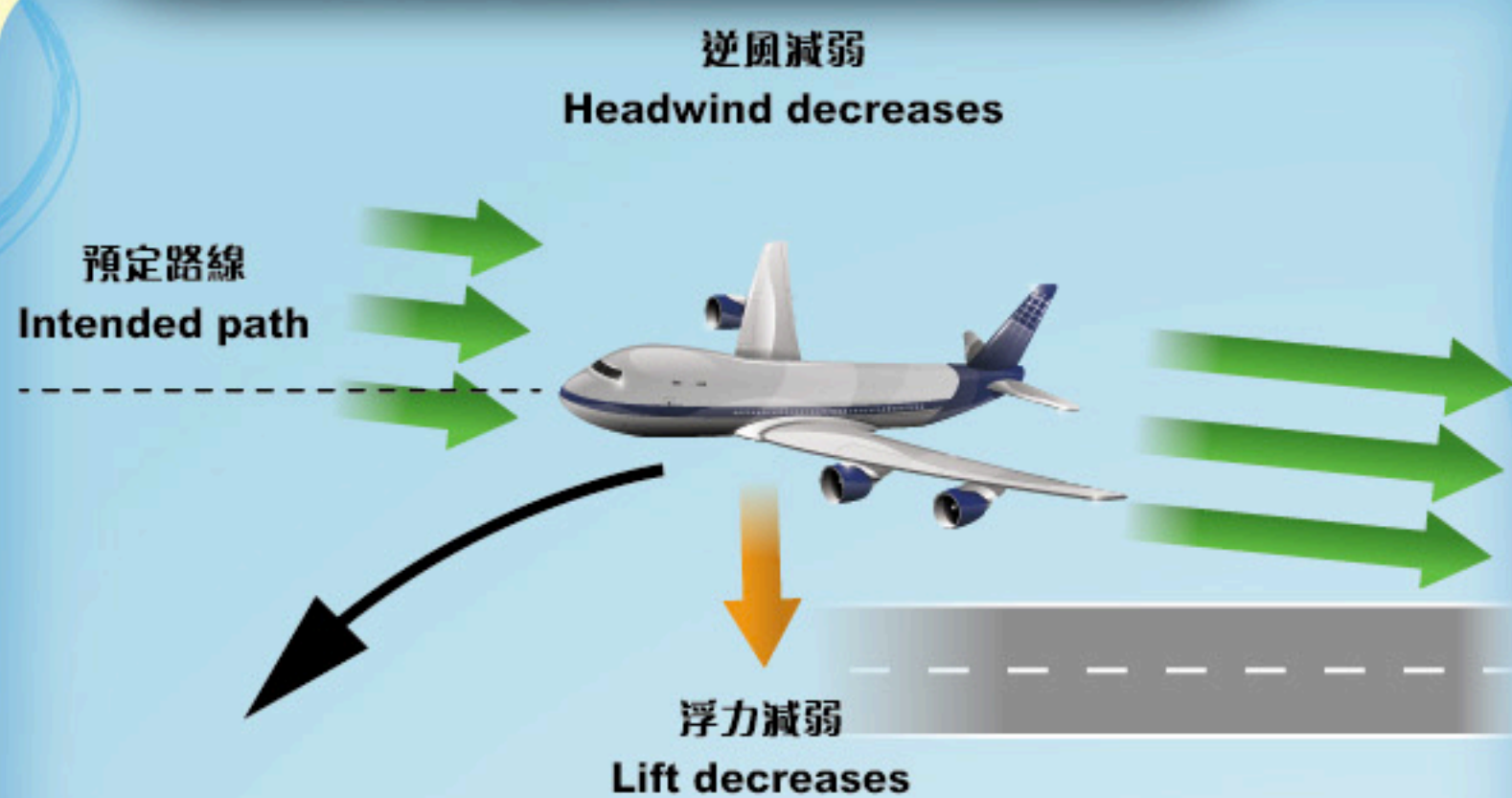
天文台公眾教育工作的另一重要發展是社區天氣資訊網絡。加入社區天氣資訊網絡的學校及團體自行建立自動氣象站，天氣資料透過社區天氣資訊網絡的網頁發放給全港市民。除溫度、相對濕度、風向、風速及雨量等資料外，部份氣象站還提供紫外線指數資料。天文台期望透過這個網絡走入社群，與學界及不同團體推動香港的氣象教育。

The Hong Kong Observatory has over the years been actively involved in public education activities to raise the awareness of the public on weather and climate change.

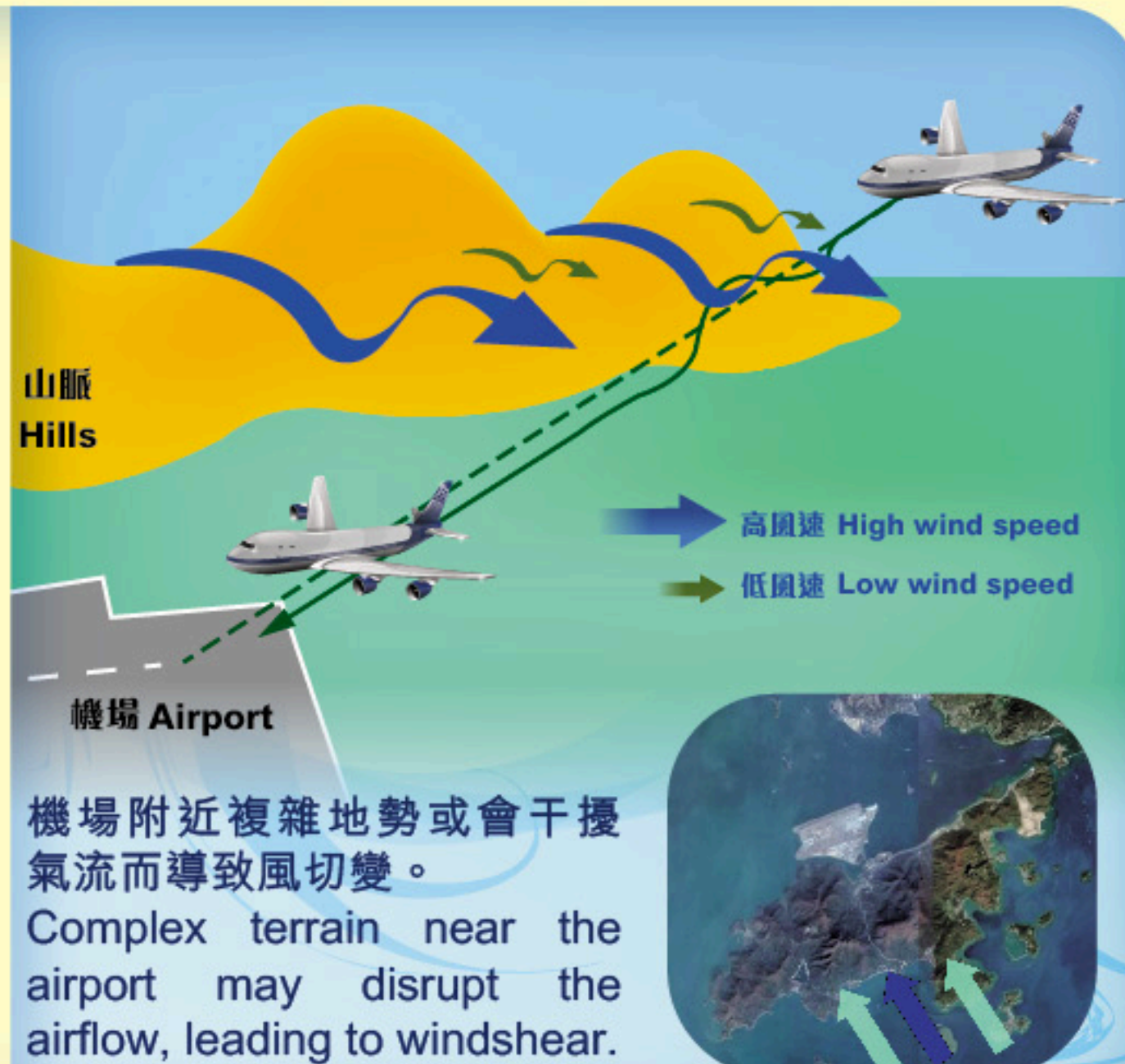
The Observatory has established Community Weather Information Network (Co-WIN) as another important development on public education. Participating schools and community members set up automatic weather stations and make available the weather information on the Internet for use by the public through the Co-WIN website. Apart from temperature, relative humidity, wind speed, wind direction and rainfall information, the network also provides information on UV Index from some of the weather stations. Through the Co-WIN, the Observatory hopes to work more closely with the community and advance weather education in Hong Kong through closer co-operation with universities, schools and organisations.



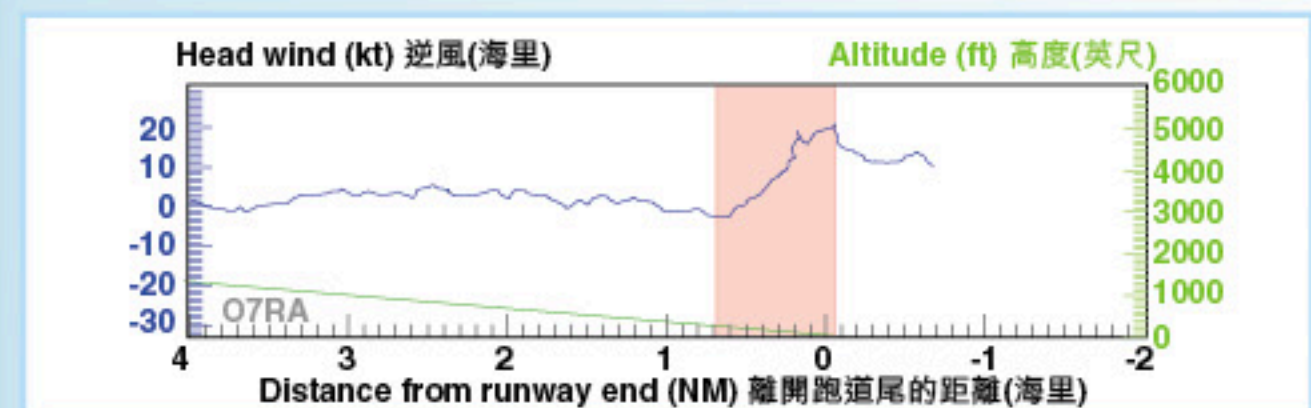
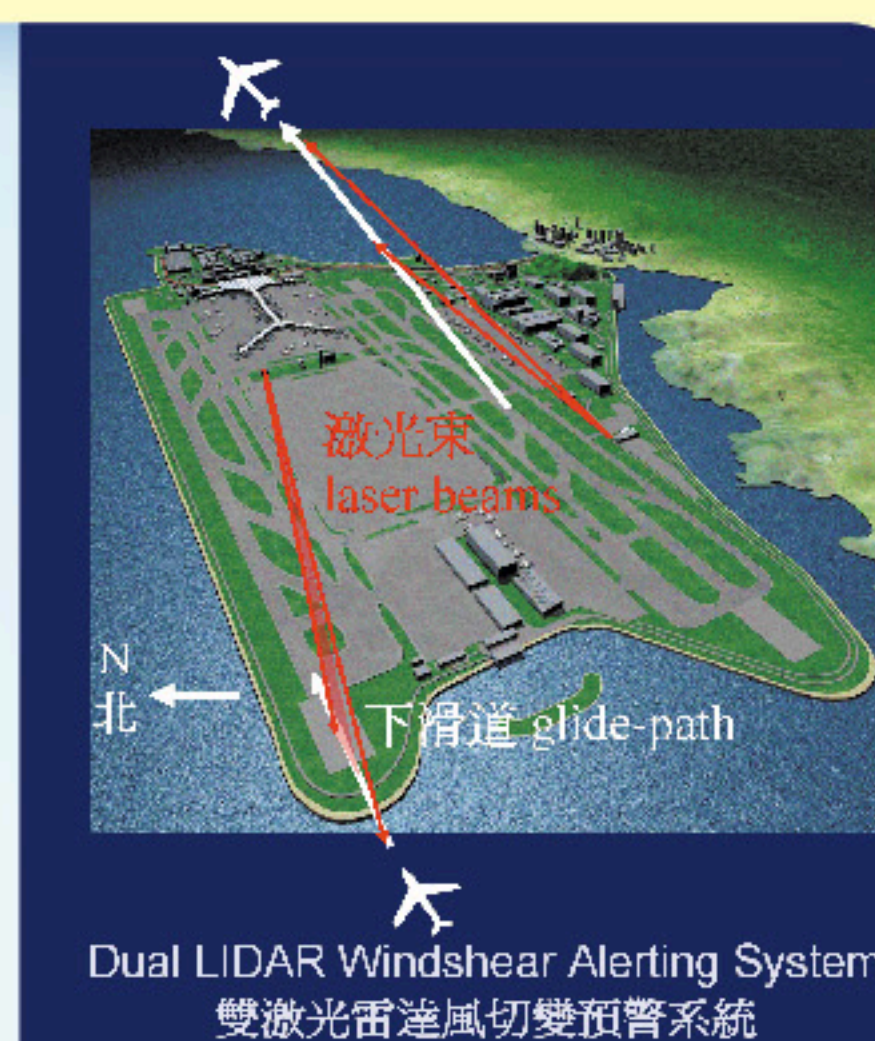
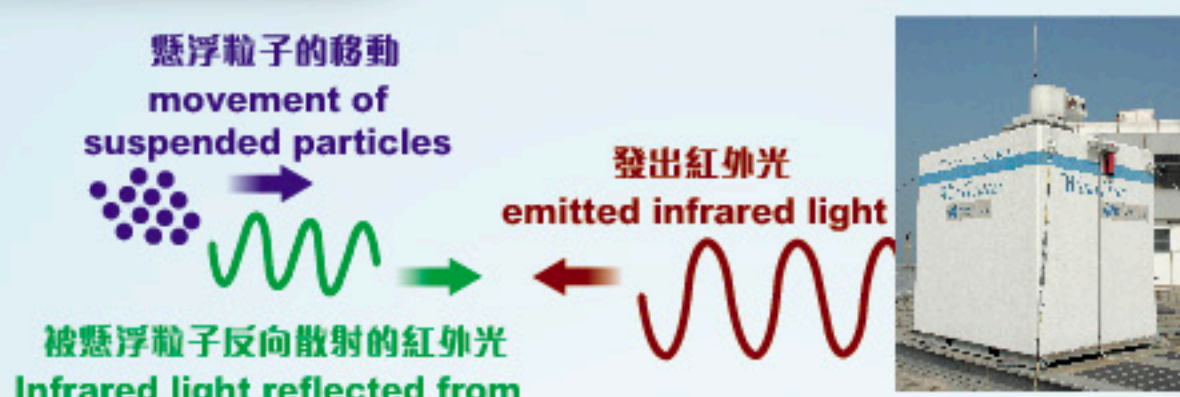
風切變 WINDSHEAR



風切變是指飛機在飛行期間遇到風向或風速出現持續轉變，影響空氣對飛機的浮力。
Windshear refers to sustained change in the wind direction and/or wind speed during the flight, resulting in change of the lift to the aircraft.



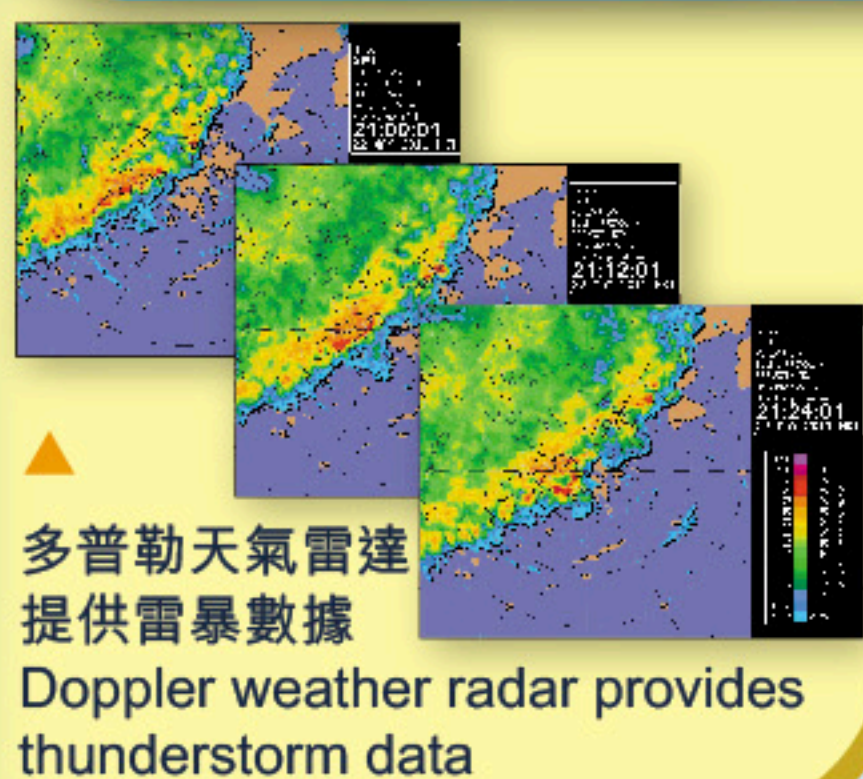
激光雷達 LIDAR



從激光雷達數據得出的逆風廓線
Headwind profile obtained from LIDAR data

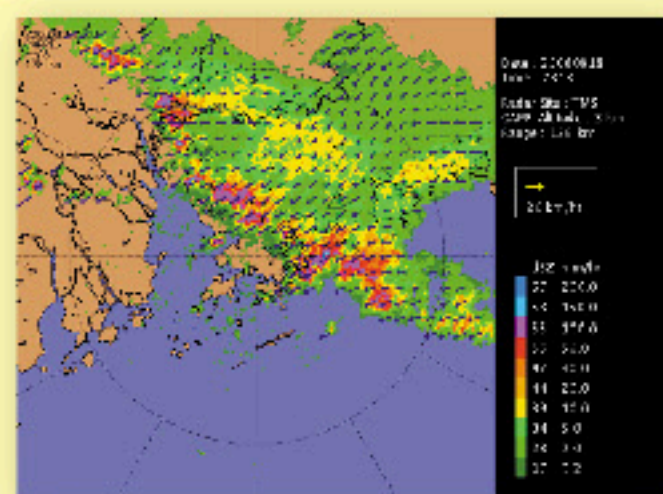
激光雷達探測下滑道逆風廓線的顯著風力變化
LIDAR detects significant wind changes in headwind profiles along the glide paths

臨近預報 NOWCASTING

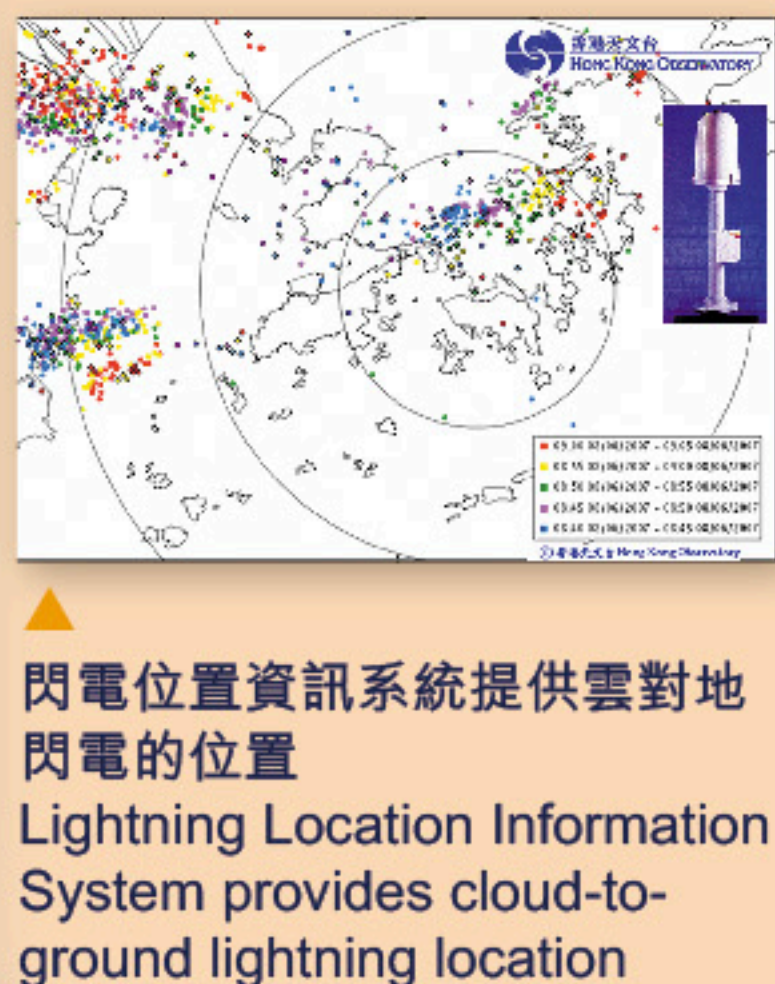
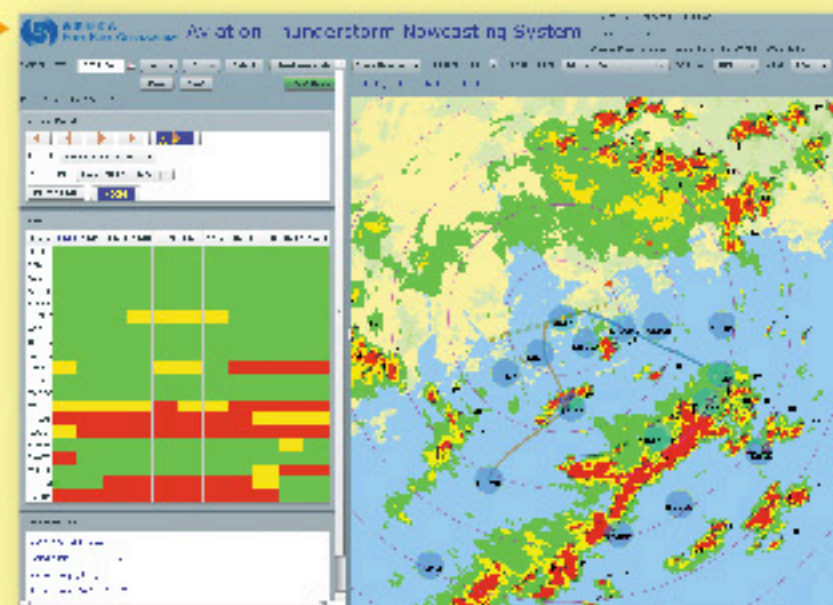


航空雷暴預警系統

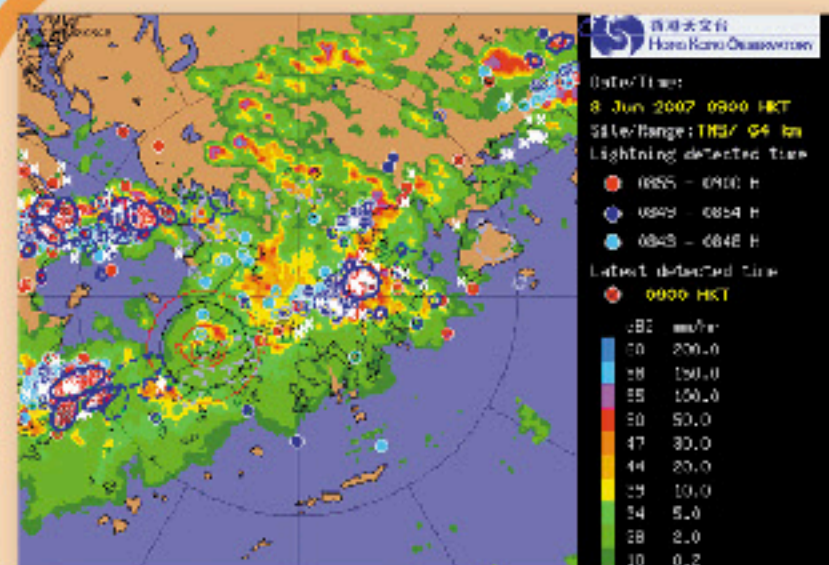
Aviation Thunderstorm Nowcasting System (ATNS)



互動式圖形使用者介面，提供航點及航道的雷暴預測
Interactive graphical user interface to provide thunderstorm forecasts at way-points and along flight routes



機場雷暴和閃電預警系統 Airport Thunderstorm and Lightning Alerting System (ATLAS)



與航空界夥伴合作 Engaging Aviation Partners

空中交通管理 Air Traffic Management



天文台為民航處的空管人員提供多種實時數據及預測，保障航空安全。此外，更提供重要對流天氣簡報及資訊，以協助空管採取適當的流量管理。

The Observatory provides multiple real-time data and forecasts to Air Traffic Controllers of the Civil Aviation Department for aviation safety. The Observatory also conducts weather briefing on significant convection to assist the air traffic management unit in flow control of flights.



香港機場管理局 Airport Authority Hong Kong (AAHK)

天文台研發「機場雷暴和閃電預警系統」，保障機場工作人員的安全，兼顧機場運作的效率。The Observatory developed the "Airport Thunderstorm and Lightning Alerting System" (ATLAS) to ensure aviation safety and efficient operation of the airport.



當熱帶氣旋影響香港時，天文台的代表會參與機管局的簡報會，讓航空界作出及時的應變安排，從而減少對機場運作的影響。

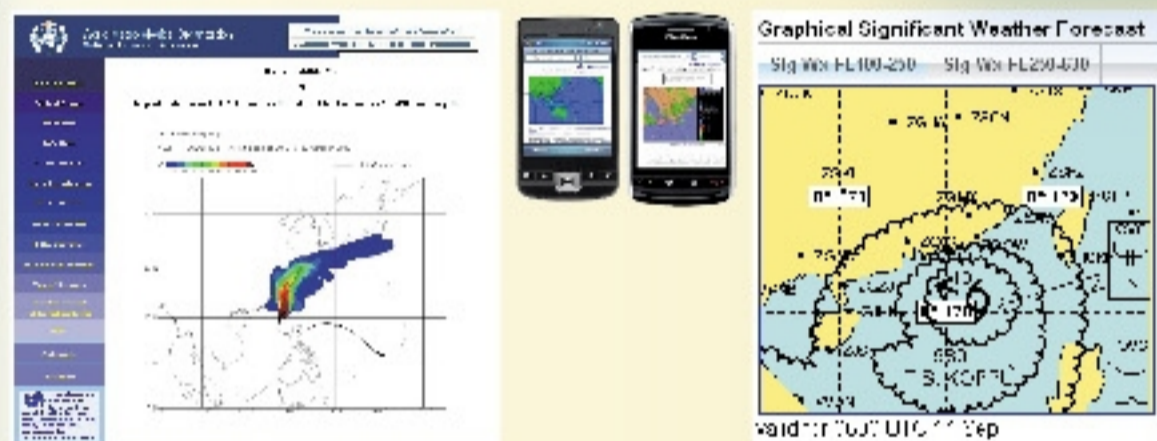
When tropical cyclone is expected to affect Hong Kong, the Observatory will join the AAHK briefing to assist the aviation community to take timely action to reduce the impact of the tropical cyclones on airport operations.



航空公司與飛行員 Airlines & Pilots

設立「航空氣象服務聯絡組」，收集客戶的要求和意見，以便提供更優質的航空氣象服務。

Established a Liaison Group on Aviation Weather Services to collect requirements and views from customers to provide high quality aviation weather services.



透過「航空氣象資料發送系統」專用網頁及流動平台，提供航機所需的飛行文件及重要天氣資訊，方便航空公司計算所需燃料及飛行計劃。

Provides Flight Documents and important weather information to facilitate the estimation of the required fuel and flight planning through the dedicated website and mobile platform of the "Aviation Meteorological Information Dissemination System" (AMIDS).



機場氣象所 Airport Meteorological Office

政府飛行服務隊 Government Flying Service

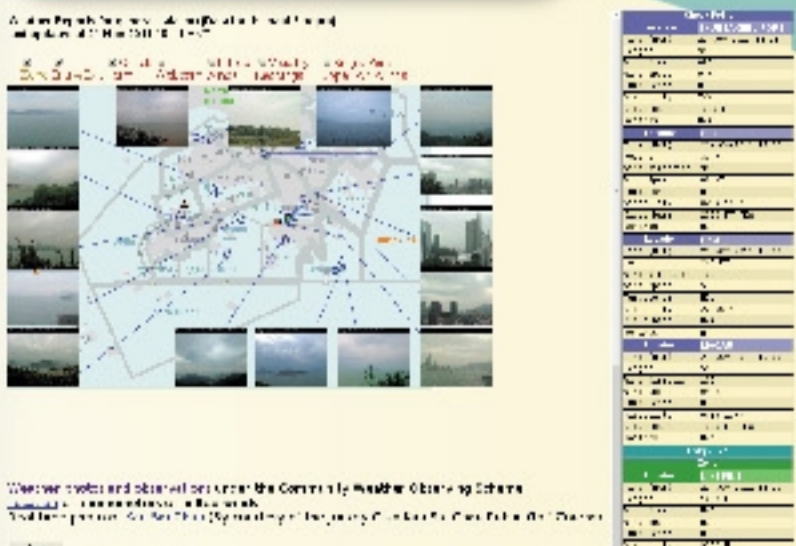


除了提供天氣資訊支援政府飛行服務隊的搜救工作外，雙方更合作推行「氣象數據收集計劃」，在政府飛行服務隊的一架定翼機上安裝一套天氣觀測系統，用以量度高分辨率氣象數據，作風切變/湍流研究和在熱帶氣旋影響南中國海時搜集氣象數據。

In addition to providing weather information to the search and rescue work of the Government Flying Service (GFS), "Meteorological Data Collection Programme" was jointly undertaken to investigate windshear, turbulence as well as tropical cyclones in the South China Sea. A

weather observation system has been installed on a fixed wing GFS aircraft for measuring wind and other meteorological elements at high resolution.

通用航空 General Aviation



天文台在互聯網設立網頁平台，方便通用航空界共享機師報告及天氣觀測資訊。

The Observatory established an internet-based platform for sharing of pilot reports and weather observations within the general aviation community.



天文台為公眾及通用航空界舉辦航空天氣講座。

The Observatory organized general education lectures on aviation weather for the public and general aviation community.

航空氣象服務的成就

Achievements in Aviation Meteorological Services

提高航空氣象人員及服務質素

Enhancing the Competency of Aeronautical Meteorological Personnel and Quality of Services

提高航空服務質素

Enhancing the quality of services

香港天文台是全球第一批取得ISO 9001認證的航空氣象服務單位之一。

The Observatory is one of the first aviation weather services in the world to be awarded an ISO 9001 certification.



提高航空氣象人員質素

Enhancing the competency of aeronautical meteorological personnel

天文台按世界氣象組織訂下的資格和能力要求，定期審核和評估航空氣象人員的能力，確保航空氣象人員滿足國際資格及能力要求。

To ensure the aeronautical meteorological personnel satisfy the international qualifications, the Observatory regularly reviews and assesses the ability of the aeronautical meteorological personnel according to the requirements set by the World Meteorological Organization.



提高技術

Enhancing the Technical Abilities

機場雷暴及閃電預警系統

Airport Thunderstorm and Lightning Alerting System



天文台研發的「機場雷暴及閃電預警系統」是世界上第一套擁有探測及雷達技術與預警能力的自動化機場業務閃電警告系統，並榮獲多個獎項。

The "Airport Thunderstorm and Lightning Alerting System" (ATLAS) developed by the Observatory is the first lightning warning system integrated with radar technology used operationally at an airport. The system has won several awards.

激光雷達風切變預警系統

LIDAR Windshear Alerting System



天文台研發的「激光雷達風切變預警系統」是全球首個業務上採用激光雷達技術自動偵察風切變，使香港走在航空氣象服務的前沿，並榮獲多個創新及研究大獎。

The "LIDAR Windshear Alerting System" (LIWAS) developed by the Observatory is the world-first operational system utilizing the LIDAR technology for automatic detection of windshear, putting Hong Kong at the leading edge of aviation weather services. The system has won several innovation and research awards.

加強產品開發及服務

Enhancing the Product Development and Services

多渠道發送資訊

Multi-channels of information dissemination

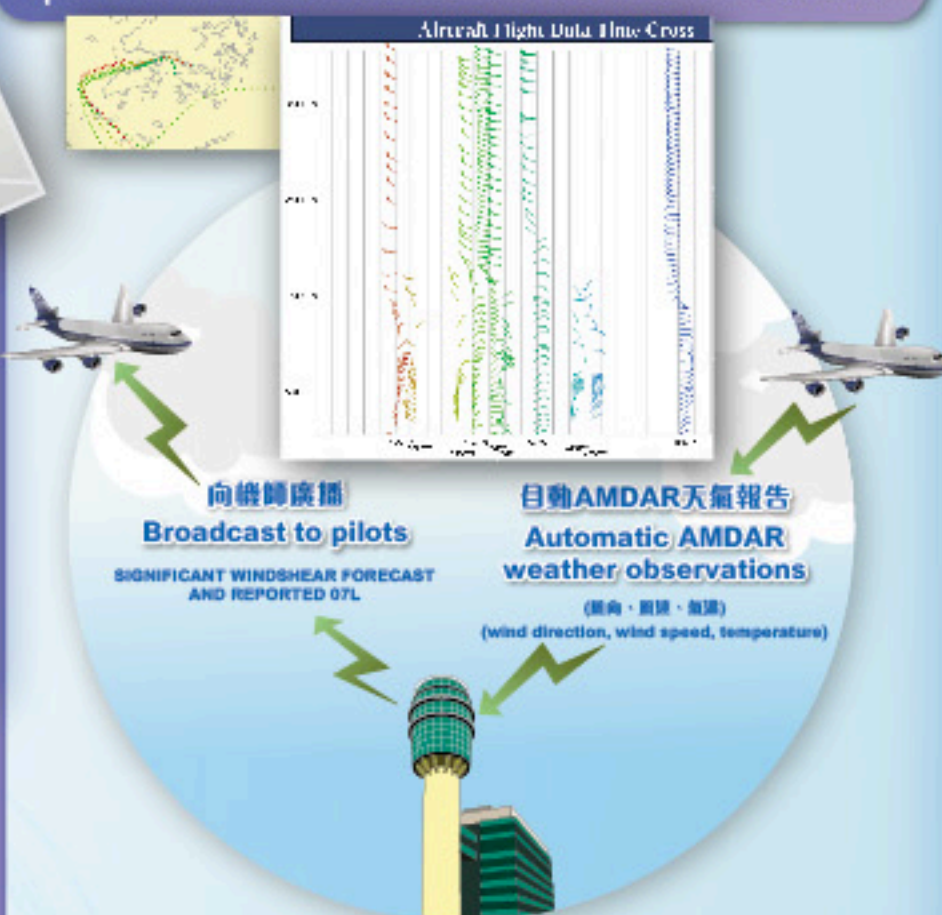


天文台以多渠道發送航空天氣資訊，這些渠道包括互聯網、電郵、短信、Twitter、傳真、流動電話及iPad等。

The Observatory disseminates aviation weather information to users through multi-channels including internet, emails, SMS, Twitter, Fax, mobile phones and iPad.

飛行氣象資料上傳和下傳

Uplink and downlink of automatic aircraft weather observation



天文台與航空公司、民航處及政府飛行服務隊合作，成功接收從飛機下傳的自動天氣報告。

Automatic weather reports downlinked from aircraft are successfully received in collaboration with airlines and the Government Flying Service.



天文台開亞太區的先河，利用數據鏈路直接傳送實時風切變預警至航機駕駛艙。

As a pioneer in the Asia/Pacific region, the Observatory transmitted real-time windshear alerts directly using datalink to the cockpit of aircraft.

飛越國際 Recognition in International Arena



天文台積極參與國際航空氣象發展，天文台的貢獻獲國際民航組織(ICAO)及世界氣象組織(WMO)的肯定，台長岑智明於2010年獲選為世界氣象組織航空氣象學委員會主席；天文台多位同事亦獲邀參加ICAO及WMO不同領域的專家組提供專業意見，從而對國際航空氣象服務的發展發揮積極的作用。

The Observatory actively involves in the development of international aviation meteorology, the contributions are well recognised by International Civil Aviation Organization (ICAO) and World Meteorological Organization (WMO). The Director of Hong Kong Observatory, Mr. SHUN Chi-ming, was elected as the President of the Commission for Aeronautical Meteorology (CAeM) of the World Meteorological Organization (WMO) in 2010. Quite a number of HKO colleagues are also invited to participate various ICAO and WMO expert groups of different areas to provide professional advice. The contribution of the Observatory has a positive effect on the development of international aviation weather services.