#### 23 March 2020

It is my pleasure to meet all of you in the annual press briefing. Before reporting on the latest developments in the Hong Kong Observatory, let me first introduce my Assistant Directors. They are:

- (1) Miss LAU Sum-yee, responsible for aviation weather services,
- (2) Mr CHAN Pak-wai, responsible for public weather services,
- (3) Mr LEE Lap-shun, Acting Assistant Director responsible for radiation monitoring and instruments, and
- (4) Ms SONG Man-kuen, Acting Assistant Director responsible for climate and geophysical services.

Today, 23 March, is not only the day of the Observatory's annual press briefing, but also the World Meteorological Day, with the theme "Climate and Water", which aims to remind us of the relationship between climate change and water resources. Climate change increases the frequencies of extreme weather events, while droughts and torrential rains occurring in different parts of the world will lead to imbalance in water resources. The theme also reminds us of the extreme weather brought by climate change and the need to respond to these challenges proactively.

Climate change has been aggravating over the years. The World Meteorological Organization ranked 2019 as the second warmest year on record globally, with the past five years, 2015-2019, being the five warmest on record. Under global warming, extreme weather events ravaged different parts of the world in 2019. Many places in Europe and Australia had their high-temperature records broken during heatwaves, with temperatures soaring to over 46 degrees. Wildfires caused by high temperatures and drought, such as those severe wildfires in Amazon forest and Australia, causing serious ecological and environmental damages. Furthermore, Super Typhoon Hagibis brought high winds, torrential rain and storm surges to Japan last year causing severe damages and serious casualties. Climate change increases the frequency of extreme weather events. This is caused by the continuous increase in concentration of atmospheric greenhouse gases. According to the report of the World Meteorological Organization, the global carbon dioxide concentration reached record high of close to 410 parts per million. In February 2020, a record high temperature of 18.4 degree was registered in Antarctica. The threats of climate change on the human daily lives and the ecosystems are imminent. We must make every effort to combat climate change proactively.

Locally, 2019 was the warmest year since records began in 1884 with an annual mean temperature of 24.5 degrees. In particular, the autumn from September to November 2019 was the warmest on record, with mean temperature of 26.1 degrees. There were 46 Hot Nights (with daily minimum temperature at 28.0 degrees or above) and 33 Very Hot Days, marking the highest and the fourth highest on record respectively. In contrast, there was only one Cold Day (with daily minimum temperature at 12.0 degrees or below) in 2019, the smallest annual number of Cold Days since records began in 1884. The winter from December 2019 to February 2020 was exceptionally warm in Hong Kong. With relatively less cold air from the north reaching the South China coast, the winter mean maximum temperature of 21.5 degrees was the highest on record for the same period. The winter mean temperature of 18.7 degrees and winter mean minimum temperature of 16.8 degrees were both the second highest on record for the same period. A long-term temperature rising trend has been observed in Hong Kong. Under the influence of global warming, the trend of climate change will continue. The situation requires everyone's high attention.

The Observatory will launch several new products and services in 2020. The Observatory will enhance the monitoring of the "high-impact weather" induced by severe thunderstorms. We all know that lightning strikes can cause fatality. Severe thunderstorms could also induce or accompany with other inclement weather phenomena, such as violent gusts and hails. Their impacts and damages are no less than lightning strikes, and this could be seen in thunderstorm cases in recent years. For example, Hong Kong was hit by the violent gusts associated with thunderstorms in the early hours of 25 August 2019. Fallen trees in the New Territories destroyed some of the overhead electricity cables which paralyzed rail services and interrupted traffic significantly. "Violent gusts" refer to instantaneous wind speed reaching 88 km/h or above (with an average of 4 to 5 occurrences per year over the past 5 years). They are rather destructive and dangerous, bringing high impact particularly to people outdoors. To raise public awareness of the high-impact weather induced by severe thunderstorms, the Observatory will incorporate information such as "severe squally thunderstorms", "violent gust" etc., where necessary, in thunderstorm warnings, local weather forecasts, weather information for South China Coastal Waters and marine forecasts, so as to give early alert to the public to take timely precautions.

In respect of tropical cyclone forecast, the Observatory will extend the forecast area of "Tropical Cyclone Track Probability Forecast" eastward this year from the current boundary of 140 degrees east longitude to 180 degrees east longitude to cover the Central Pacific. When a tropical cyclone is named in the extended area, the automatic "Tropical Cyclone Track Probability Forecast" webpage will show the probability of tropical cyclone track in coming 9 days. This enables the public to appraise the trend of tropical cyclone movement and be better prepared. The public can make reference to this product, in particular when they need to travel abroad, to assess whether their destination would be affected by tropical cyclones.

Hiking has been a popular activity of the public in recent years and hiking safety is very important. The Observatory launches the "Hong Kong Hiking Trail Weather Service" webpage today to provide automatic seven-day weather forecast for the major hiking routes in Hong Kong. Upon selecting a hiking route, the approximate time required for the trip and the en-route hourly weather forecast will be provided. In addition, the Observatory also collaborates with the Agriculture, Fisheries and Conservation Department to provide weather information at various popular hiking spots. After scanning the weather information QR code located at the information board of country parks, hikers can obtain the latest weather information, including 2-hour rainfall and 1-hour lightning nowcast for nearby hiking routes. This new service facilitates the public to acquire the latest weather information and forecast nearby so as to get prepared and minimize the impact of adverse weather. This service has been on trial at several spots in Sai Kung since January this year and will be progressively extended to some other popular hiking routes in the country parks.

Members of the public are suggested to stay turned to the latest weather forecast when planning for and during hiking.

In respect of tidal information service, two tide stations will be included in the "Tidal Information" webpage jointly operated by the Observatory, the Marine Department, the Drainage Services Department and the Airport Authority Hong Kong this year. The two new stations are the one from the Marine Department at Sha Kiu Tau in Sai Kung and the one managed by the Airport Authority Hong Kong at the western end of Chek Lap Kok respectively. The additional information will not only provide the public with a more comprehensive picture of the real-time tide changes in Hong Kong, but will also be useful for users such as ferry operators, coastal engineers and anglers.

With the increasing popularity of sharing weather observations by the public, the Observatory would launch a trial function named "My Weather Observation" on the MyObservatory mobile application. The public may share the information of observed weather phenomena, such as rainbow, thunderstorm, hail, etc., at nearby areas through the mobile application. The Observatory also invited about 100 active members of the Community Weather Observing Scheme (CWOS) as "Met Talent" initially to share their weather photos and videos through the "My Weather Observation". Such kind of crowdsourced information enables the collection of more weather information from various places. Through taking and sharing first-hand weather observations, the public will also widen their knowledge of weather.

Moreover, the Observatory launched the trial version of "Dr Tin" Chatbot on the MyObservatory mobile application in February this year. "Dr Tin" adopts artificial intelligence technology to provide information to the public in textbased dialogue. The provided weather and astronomical information includes local weather observations, weather forecast, weather warnings, tidal information, Hong Kong Standard Time, as well as weather forecast and sunrise or sunset times of world cities. "Dr Tin" Chatbot only supports Chinese dialogue at this stage. Further enhancement to the Chatbot service will be made progressively this year. These include the provision of Chatbot service via HKO's Facebook page and HKO's website, as well as providing climate information and supporting English dialogue.

Lastly, I would like to talk about the annual weather outlook in 2020. After considering a number of factors including climate model predictions and other objective guidance, it is expected that tropical cyclone season may start in or after June this year. There will be four to seven tropical cyclones coming within 500 kilometres of Hong Kong, which is near normal. Under the effect of global warming, the annual mean temperature in 2020 is expected to be above normal, with a high chance of reaching the warmest top 10 on record. The annual rainfall is expected to be normal to below normal, but Hong Kong would still be affected by heavy rain. Members of the public are reminded to be prepared for the rain and typhoon seasons.

In view of the latest developments of COVID-19 infection, the Observatory's Open Day, which is usually held annually in March, would be postponed this year in order to reduce social contact. Detailed arrangement would be announced in a timely manner.

Let me stop here. If you have questions, my four Assistant Directors and I will try our best to answer them. Thank you!



2019年全球有記錄以來第二最暖 2019 Second Warmest Year Globally on Record











## 2019 極端天氣 Extreme Weather in 2019



亞馬遜森林大火 Amazon Forest Fire

澳洲熱浪 Australia Heat



### 南極洲溫度創新高 New Temperature Record High for Antarctica

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SMN Argentina 🤣 @SMN\_Argentina · 18h #Antártida | Nuevo récord de temperaturas 🖋



The Argentine research base, Esperanza, on the northern tip of the Antarctic peninsula, set a new record temperature of 18.4°C on 6 February, beating the former record of 17.5°C on 24 March 2015, according to Argentina's national meteorological service (SMN).

	日期 Date	溫度(℃) Temperature(℃)
1	6/2/2020	18.4
2	24/3/2015	17.5



## 香港全年平均氣溫最高前10名紀錄

#### Top 10 Rankings of the Highest HK Annual Mean Temperature

排名 Ranking	年份 Year	全年平均氣溫(°C) * Annual Mean Temperature (°C)
1	2019	24.5
2	2015	24.2
3	1998	24.0
4	2002	23.9
4	2017	23.9
4	2018	23.9
7	1966	23.8
7	1999	23.8
9	2007	23.7
10	1994	23.6
10	2001	23.6
10	2003	23.6
10	2016	23.6



\*自1884年有記錄以來香港天文台總部記錄 \* Recorded at HKO Headquarters since records began in 1884

### 香港全年平均氣溫的長期時間序列 Long-term Time Series of Annual Mean Temperature in Hong Kong



# 2019年香港月平均氣溫距平

### Monthly Mean Temperature Anomalies in Hong Kong in 2019





## 2019年氣候統計 Climate Statistics in 2019

	氣溫(°C) Temperature (°C)	排名 Ranking
2018/19冬季平均 (2018年12月至2019年2月) Seasonal Mean for Winter in 2018/19 (Dec 2018 – Feb 2019)	19.1	最暖第1名 The warmest
2019春季平均 (3月至5月) Seasonal Mean for Spring in 2019 (Mar – May)	23.7	並列最暖第5名* Joint 5 <sup>th</sup> warmest <sup>*</sup>
2019夏季平均 (6月至8月) Seasonal Mean for Summer in 2019 (Jun – Aug)	29.2	並列最暖第3名# Joint 3 <sup>rd</sup> warmest <sup>#</sup>
2019秋季平均 (9月至11月) Seasonal Mean for Autumn in 2019 (Sep – Nov)	26.1	並列最暖第1名 <sup>@</sup> Joint the warmest <sup>@</sup>
*與2015年並列 *Joint record with 2015 #與2016年並列 #Joint record with 2016		(5)

@與2015年並列 @Joint record with 2015

## 香港全年熱夜數目最多前10名紀錄

### Top 10 Rankings of the Highest Annual Number of Hot Nights in HK

排名 Ranking	年份 Year	全年熱夜數目(天)* Annual Number of Hot Nights (Day)
1	2019	46
2	2017	41
3	2015	37
4	1998	36
4	2016	36
6	2014	34
7	1983	30
8	2009	28
9	2005	26
9	2018	26



\*自1884年有記錄以來香港天文台總部記錄 \* Recorded at HKO Headquarters since records began in 1884

### 香港全年熱夜數目的長期時間序列 Long-term Time Series of Number of Hot Nights in Hong Kong



## 香港全年酷熱天氣日數最多前8名紀錄

Top 8 Rankings of the Highest Annual Number of Very Hot Days in HK

排名 Ranking	年份 Year	全年酷熱天氣日(天) * Annual Number of Very Hot Days (Day)
1	2016	38
2	1963	37
3	2018	36
4	2019	33
4	2014	33
6	2009	30
6	1962	30
8	2017	29

\*自1884年有記錄以來香港天文台總部記錄 \* Recorded at HKO Headquarters since records began in 1884



# 香港全年酷熱天氣日數的長期時間序列

Long-term Time Series of Number of Very Hot Days in Hong Kong



# 香港全年寒冷天氣日數最少前10名紀錄

### Top 10 Rankings of the Fewest Annual Number of Cold Days in HK

排名 Ranking	年份 Year	全年寒冷天氣日數(天) * Annual Number of Cold Day(s) (Day)
1	2019	1
2	1979	7
2	1997	7
2	2001	7
2	2015	7
6	1991	8
6	1994	8
6	2003	8
9	1914	9
9	2007	9
9	2017	9



\*自1884年有記錄以來香港天文台總部記錄 \*Recorded at HKO Headquarters since records began in 1884

### 香港全年寒冷天氣日數的長期時間序列 Long-term Time Series of Number of Cold Days in Hong Kong



## 2019/20冬季 (2019年12月至2020年2月)氣候統計資料

### 2019/20 Winter (Dec 2019 – Feb 2020) Climate Statistics

	統計 Statistics	排名 Ranking
平均氣溫 (°C) Mean Temperature (°C)	18.7	最暖第2名 2 <sup>nd</sup> warmest
平均最高氣溫 (ºC) Mean Maximum Temperature (ºC)	21.5	最暖第1名 The warmest
平均最低氣溫 (ºC) Mean Minimum Temperature (ºC)	16.8	最暖第2名 2 <sup>nd</sup> warmest
全季最低氣溫 (°C) Seasonal Absolute Minimum Temperature (°C)	10.3	並列最高第5名 <sup>*</sup> Joint 5 <sup>th</sup> highest <sup>*</sup>
全季最高氣溫 (ºC) Seasonal Absolute Maximum Temperature (ºC)	28.1	最高第5名 5 <sup>th</sup> highest

\*與1999年、2015年及2019年並列 \*Joint record with 1999, 2015 and 2019 #與1965年、1981年、2007年及2013年並列 #Joint record with 1965, 1981, 2007 and 2013









### 加強雷暴資訊 **Enhancement of Thunderstorm Information**



2019年8月25日雷達圖像顯 Radar imagery on 25/8/2019



2019年8月25日長洲泳灘風速圖 Wind speed chart at Cheung Chau Beach on 25/8/2019

### 港打風雷暴23區斷電 塌樹毀東鐵架空纜

香 江



信報 HKEJ 26/8/2019



### 熱帶氣旋路徑概率預報擴大範圍 Extension of Forecast Area for

**Tropical Cyclone Track Probability Forecast** 









### 天氣資訊QR碼 Weather Information QR code











由各部門負責管理的戀汐站 ●<u>香港天文台</u>●<u>海事處海道測量部</u>●<mark>獲場管理局</mark>●<u>復務署</u> 諸閱讀以下<mark>聲明, 版種, 資料來源</mark>及 <mark>說明</mark>

### 我的天氣觀察 My Weather Observation











- 陸續加入更多功能
- More features to be implemented



透過天文台Facebook專頁使用 Access via HKO Facebook social media platform



- 陸續加入更多功能
- More features to be implemented



英文對答 English dialogue

透過天文台網頁使用 Access via HKO's website platform





進入香港500公里範圍 內的熱帶氣旋數目 Number of tropical cyclones entering 500 km of Hong Kong 接近正常 (4至7個) Near normal (4 to 7)

風季開始 Onset of tropical cyclone season 6月或之後 June or after



## 全年平均溫度 Annual mean temperature

偏高,進入頭十名的機會為高 Above normal with high chance of reaching the top 10 positions

### 香港全年總雨量 Annual rainfall in Hong Kong

正常至偏少 (介乎2000至2600毫米) Normal to below normal (between 2000 and 2600 mm)



# 隨時隨地 掌握行山天氣 The Hiking Weather Information You Need



香港遠足路徑天氣服務網頁 Hong Kong Hiking Trail Weather Service



天氣資訊QR碼 Weather Information QR code