Speech by Dr CHAN Pak-wai, Director of the Hong Kong Observatory

21 March 2024

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

(1) Mr LEE Lap-shun, Assistant Director responsible for radiation monitoring and instruments,

(2) Ms SONG Man-kuen, Assistant Director responsible for climate and geophysical services,

(3) Mr CHAN Sai-tick, Assistant Director responsible for aviation weather services, and

(4) Mr Cheng Yuen-chung, Acting Assistant Director responsible for public weather services.

23 March is the World Meteorological Day, with the theme "At the frontline of climate action". It aims to raise public awareness on the increasing frequencies of extreme weather events under climate change, and the need to adopt greener lifestyles together, alleviating the impact of global warming to our next generation in the foreseeable future.

According to the assessment of the World Meteorological Organization, 2023 was the warmest year on record globally. The past nine years (2015 to 2023) were also the nine warmest years on record. Many indicators of climate change have set

new records. In 2023, global mean sea level reached a record high on satellite record, reflecting continued ocean warming as well as the melting of glaciers and ice sheets.

Under climate change, different parts of the world were ravaged by various extreme weather events in 2023. Temperatures exceeding 50 degrees were recorded in the southwestern part of the United States and the northwestern part of China, and the remnants of Tropical Cyclone Doksuri brought torrential rain to northern and northeastern China. Locally, with all twelve months warmer than usual, 2023 was one of the second warmest years on record since records began in 1884 with the annual mean temperature reaching 24.5 degrees, 1.0 degree above the 1991-2020 normal. The annual mean minimum temperature of 22.6 degrees and annual mean maximum temperature of 27.2 degrees were respectively one of the highest and one of the second highest. The total number of 54 Very Hot Days ranked one of the highest on record. In addition, the number of Hot Nights was 56 days, making it the second highest on record.

I believe everyone has felt the impact of climate change, which makes this year's World Meteorological Day theme "At the Frontline of Climate Action" particularly important. We hope that everyone can pay more attention to the impacts of climate change and take practical actions such as energy saving and emission reduction to mitigate climate change.

Looking ahead to 2024, El Niño will continue to weaken, while La Niña may start to develop in the second half of this year. Locally, taking into consideration a number of factors including the above mentioned El Niño/La Niña development, climate model predictions and objective guidance, it is expected that the tropical cyclone season may start in June or later, cease in October or later. There will be about five to eight tropical cyclones coming within 500 kilometres of Hong Kong during the year, which is normal to above normal. With ongoing climate warming, the annual mean temperature in Hong Kong is expected to be above normal this year, with a high chance reaching the warmest top 10 on record. The annual rainfall is expected to be near normal, ranging from 2100 mm to 2700 mm. However, Hong Kong would still be affected by heavy rain. Members of the public are reminded to be prepared for the rain and tropical cyclone seasons.

Now, let me introduce the continual enhancement of the Observatory's various services. Seizing the opportunity of the development in artificial intelligence (AI), the Observatory started piloting AI-powered weather prediction model in mid-year last year for reference in preparing weather forecast and predicting tropical cyclone track. In order to facilitate the general public to appreciate the change in weather at an early stage, the Observatory launched products of the "Pangu" AI weather prediction model on the "Earth Weather" webpage in October last year, and extended the forecast range to 15 days. The Observatory plans to further enhance the computer model forecast information on the "Earth Weather" webpage with forecast products of more computer models as well as weather forecast charts on the upper air. In addition, the Observatory will launch monthly forecast in the second half of this year to enhance

climate forecast services. The forecast elements include monthly average temperature and total rainfall in tercile categories.

With the rainy season approaching, the HKO will further enhance the dissemination of information on severe weather situations. When the Black Rainstorm Signal is in force, the HKO will conduct hourly briefings to provide the public with latest weather information. In addition, the HKO has just replaced the weather radar at Tai Mo Shan, and it is about to come into operation to monitor various inclement weather including thunderstorms, rainstorms and tropical cyclones.

Besides, the Observatory plans to enhance the service on the “MyObservatory” mobile application and add weather information for the Guangdong-Hong Kong-Macao Greater Bay Area in the second half of this year to facilitate users travelling in the region to get hold to the latest local weather information. Meanwhile, the “Dr. Tin” chatbot service will be upgraded to support voice functions on the “MyObservatory” to facilitate users to enquiry weather information.

In respect of the international co-operation, the HKO will set up a virtual “Meteorological Training Centre for Belt and Road Countries” by the end of this year to provide online and in-person training for meteorological personnel from Belt and Road regions, enhancing their capabilities to respond to hazardous weather and extreme weather event, as well as tackle natural disasters and strengthen resilience. The first planned training will be the workshop on the aviation meteorology science and service development to be held at the end of 2024. It is believed that the project

can consolidate Hong Kong's position as a regional centre for meteorological advancements, and strengthen the exchanges and cooperations among Belt and Road regions.

23 March is the World Meteorological Day. You may see the venue set up for the Observatory's open day, which take place on this Saturday (March 23) and this Sunday (March 24) with the theme of World Meteorological Day "At the frontline of climate action". It aims to raise public awareness on climate change and extreme weather, as well as concrete actions to combat climate change. The public responded to this event enthusiastically and successful applicants are reminded to arrive at the Observatory headquarters at the registered slot with the electronic tickets. Do not feel disappointed if you cannot visit the Observatory in person. You are welcome to visit the virtual tour on the "Hong Kong Observatory Open Day 2024" webpage to be launched on this Saturday (March 23), to understand the Observatory's work and services.

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

香港天文台開放日2024
HONG KONG OBSERVATORY OPEN DAY

香港天文台
HONG KONG OBSERVATORY

走在氣候行動最前線

At the Frontline of Climate Action

香港天文台
HONG KONG OBSERVATORY

2023年是全球有記錄以來最暖的一年，全球表面平均溫度較工業化前水平高出約1.4℃

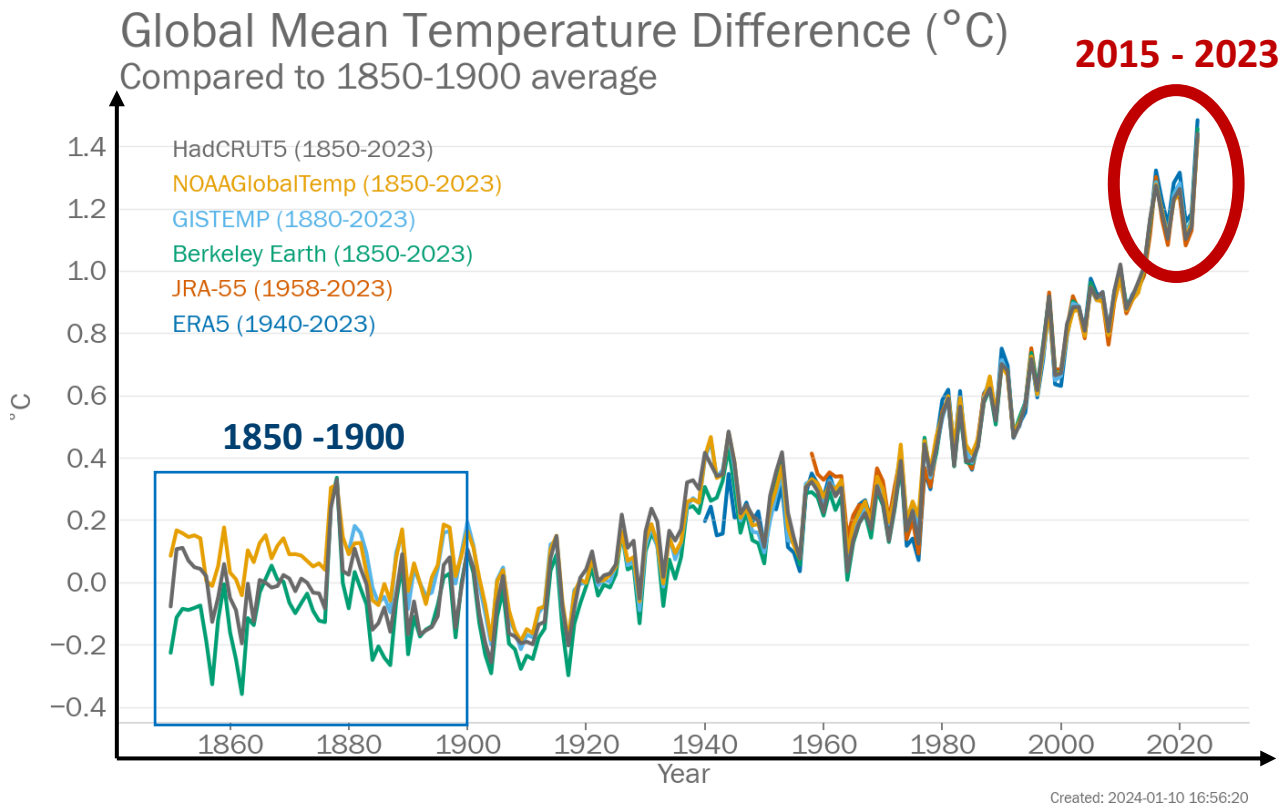
2023 was the warmest year on record globally with the global mean surface temperature 1.4℃ above pre-industrial levels

過去九年（2015-2023）是全球有記錄以來最暖的九年

The past nine years (2015-2023) are the nine warmest years on record globally

全球表面平均溫度相對於1850-1900年平均的變化

Global mean surface temperature change compared to 1850-1900 average



來源:世界氣象組織

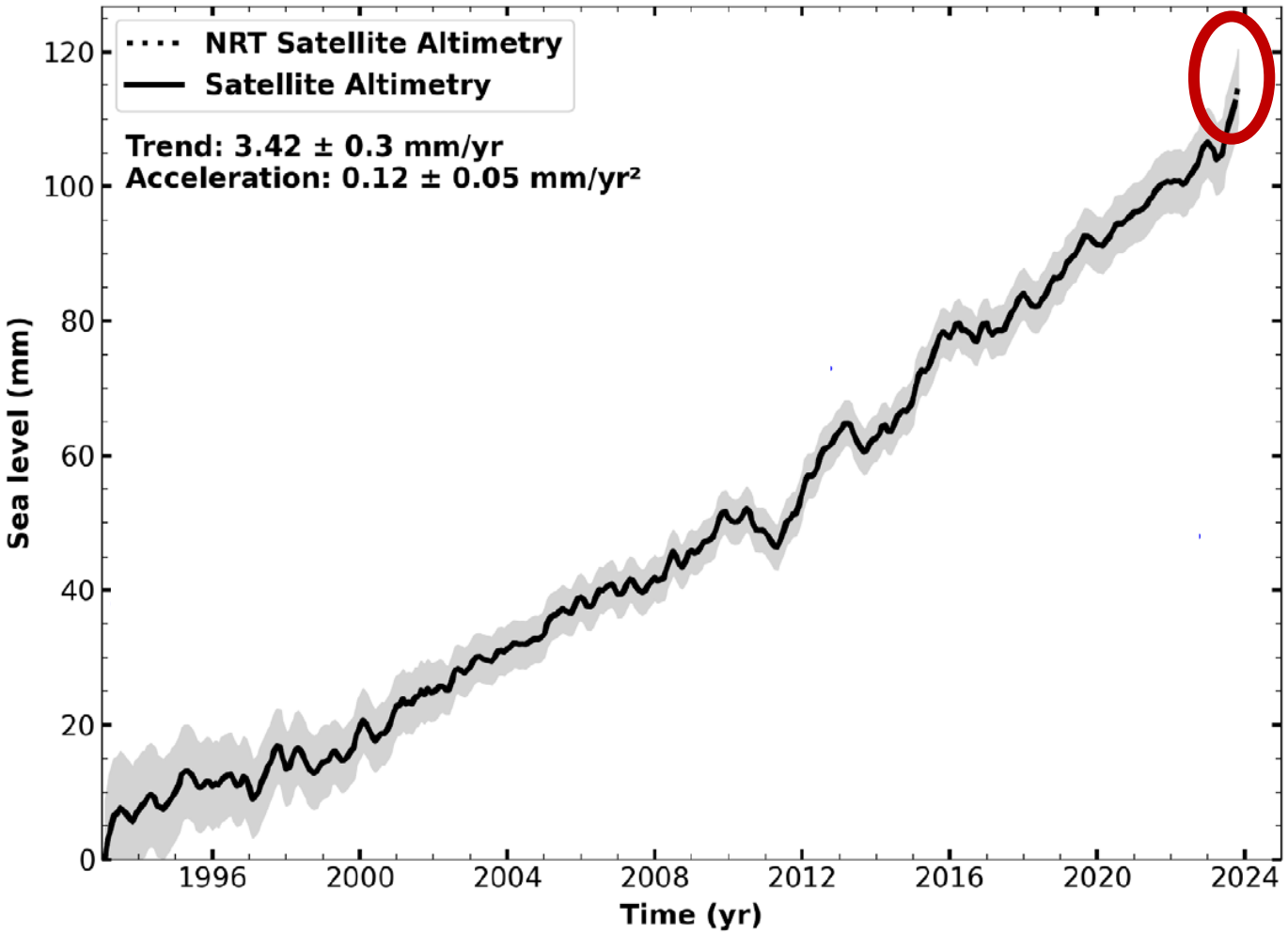
Source: World Meteorological Organization

2023年全球平均海平面達衛星觀測記錄新高

Global mean sea level (GMSL) reached a record high on satellite record in 2023.

全球平均海平面
Global mean sea level (GMSL)

2023年新紀錄
Record high in 2023



來源：世界氣象組織
2023年全球氣候狀況臨時報告

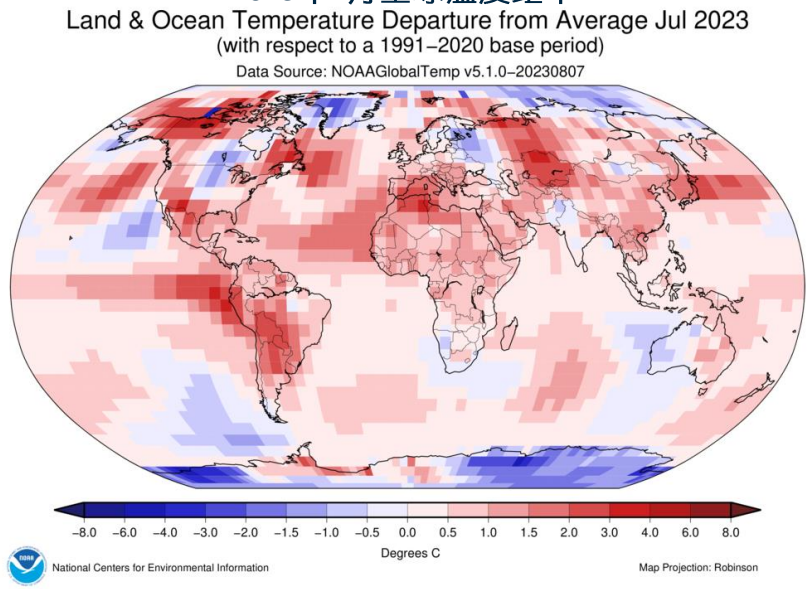
Source: WMO Provisional State of the Global Climate 2023

2023 極端天氣
EXTREME WEATHER IN 2023

2023年7月極端高溫影響世界各地。美國西南部及中國西北部錄得超過50℃高溫

Different parts of the world were affected by extreme high temperatures in July 2023. The southwestern part of the United States and northwestern part of China experienced temperatures over 50℃

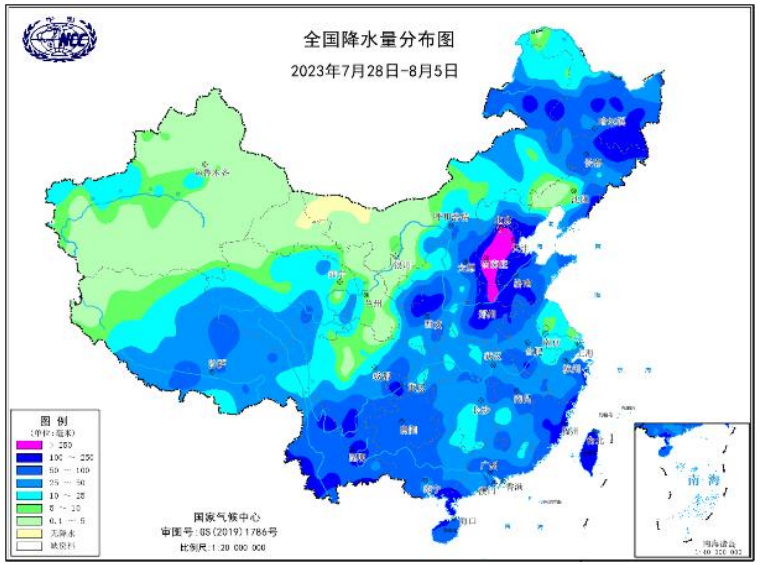
2023年7月全球溫度距平



來源 Source: 美國國家海洋及大氣管理局 NOAA

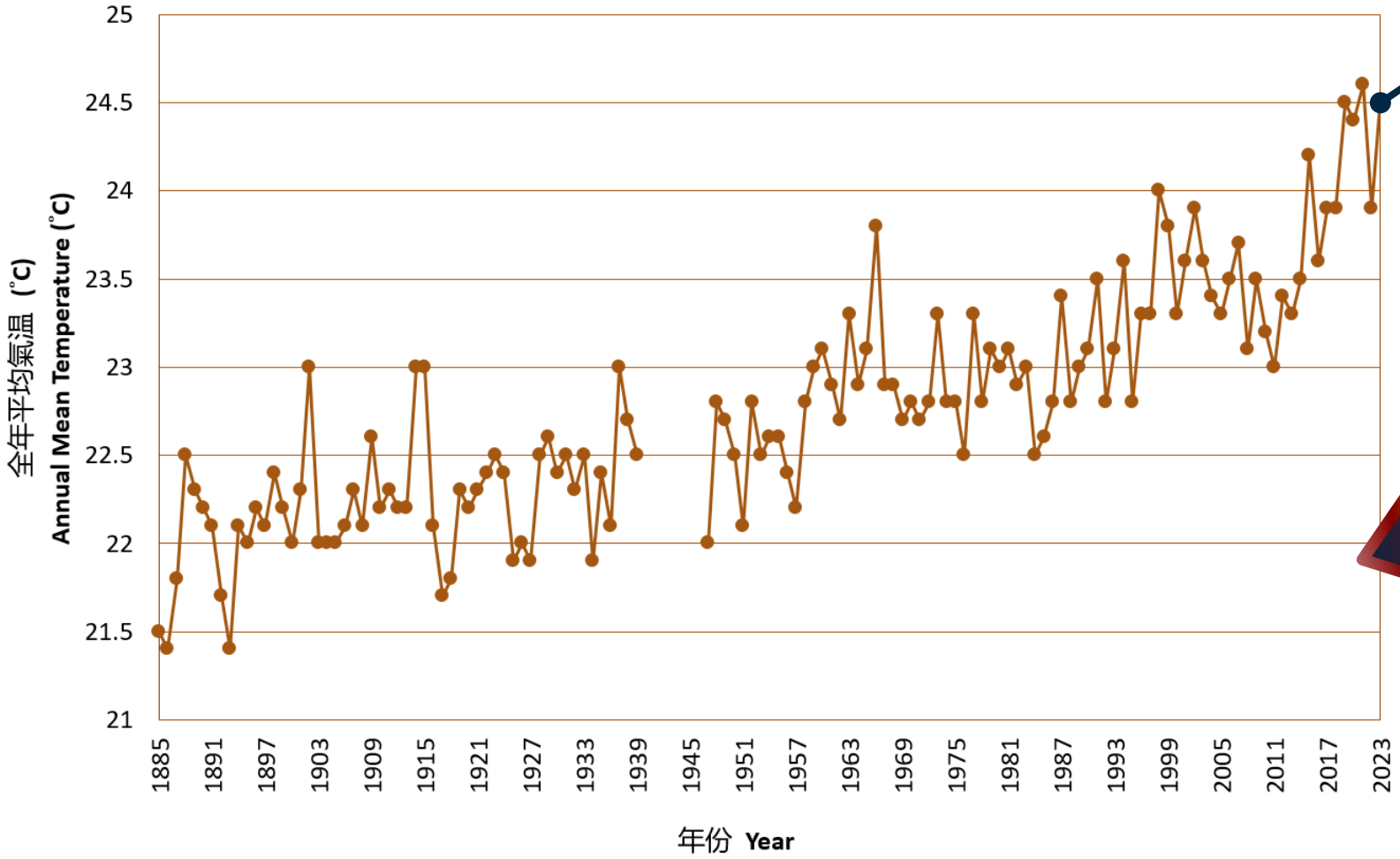
2023年夏天熱帶氣旋杜蘇芮殘餘環流為中國華北及東北地區帶來暴雨

The remnants of Tropical Cyclone Doksuri brought torrential rain to northern and northeastern China in summer 2023



來源 Source: 中國氣象局 China Meteorological Administration

香港全年平均氣溫
ANNUAL MEAN TEMPERATURE IN HONG KONG (1885-2023)



2023: 24.5°C

較正常值高1.0度
1.0 degree above normal

2023年:
本港其中一個
第二溫暖的年份
2023: Among the
second warmest years
in Hong Kong

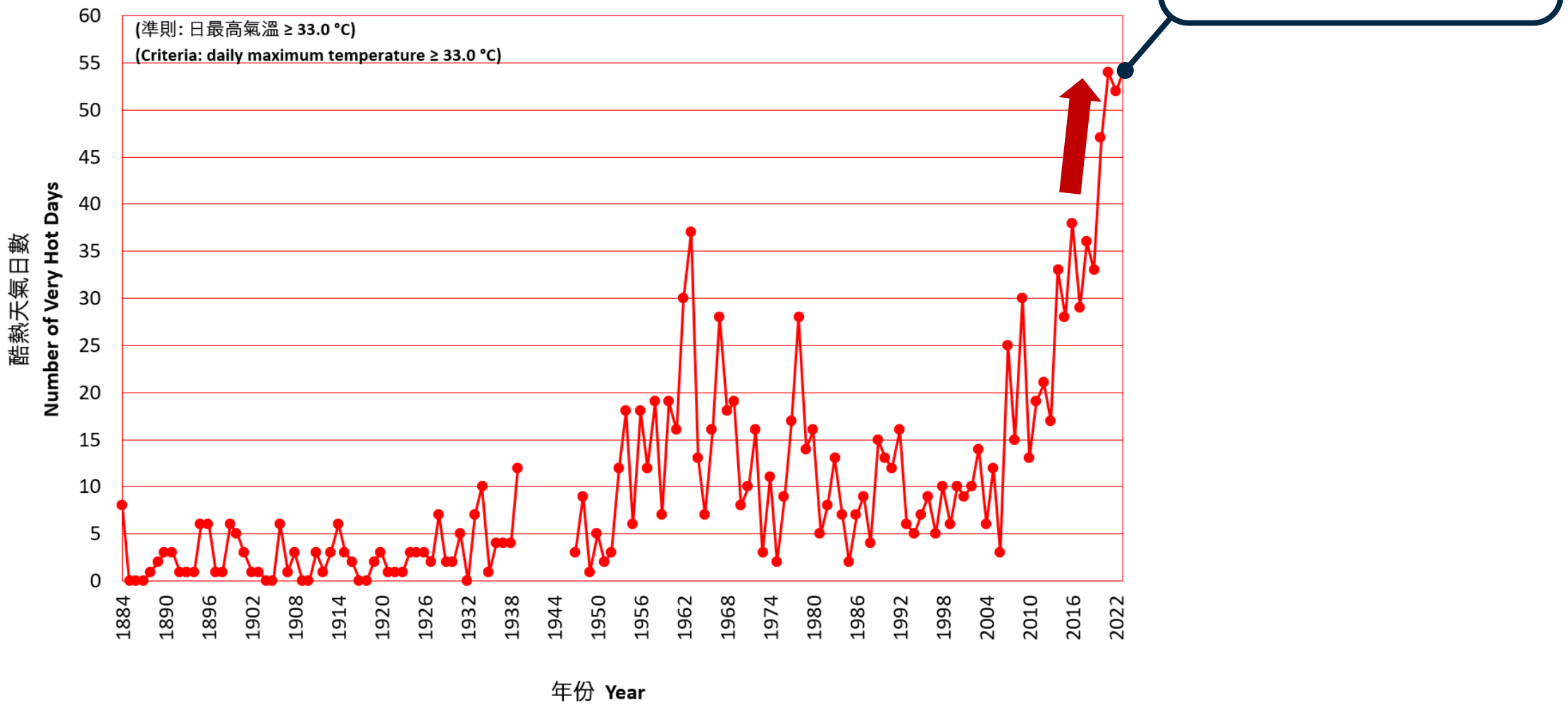
香港全年平均最低及最高氣溫
ANNUAL MEAN MINIMUM AND MAXIMUM TEMPERATURE IN HONG KONG

排名 Ranking	年份 Year	最高年平均最低氣溫 (°C) Highest Annual Mean Minimum Temperature (°C)
1	**2023**	**22.6**
1	2021	22.6
1	2019	22.6
4	2020	22.5
5	2015	22.4

排名 Ranking	年份 Year	最高年平均最高氣溫 (°C) Highest Annual Mean Maximum Temperature (°C)
1	2021	27.5
2	**2023**	**27.2**
2	2020	27.2
4	2019	27.1
5	1966	26.8

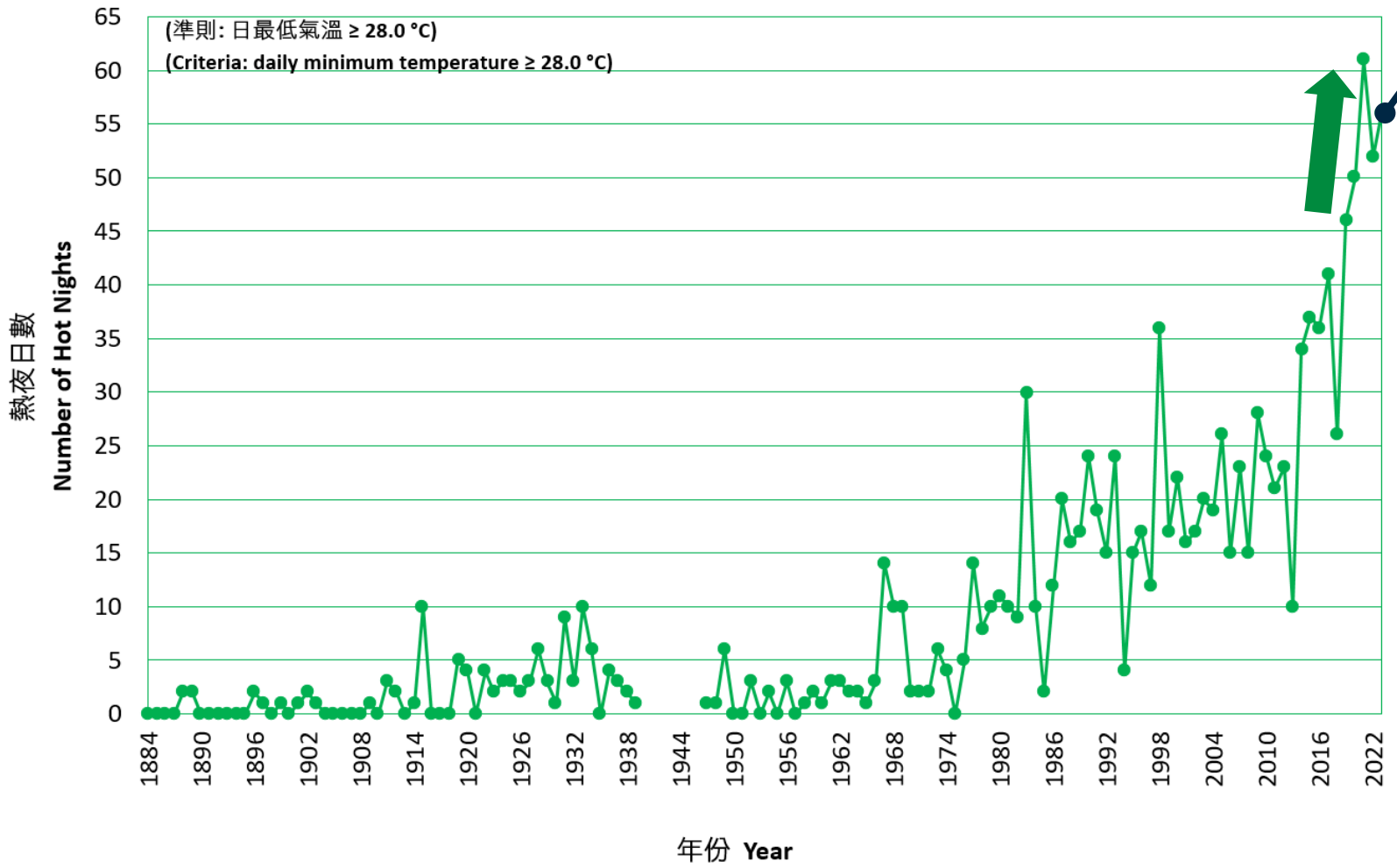
*自1884年有記錄以來香港天文台總部紀錄 Recorded at HKO Headquarters since records began in 1884

香港全年酷熱天氣日數
NUMBER OF VERY HOT DAYS IN HONG KONG (1884-2023)



香港天文台 HONG KONG OBSERVATORY

香港全年熱夜數
NUMBER OF HOT NIGHTS IN HONG KONG (1884-2023)



2023年：56天
56 days in 2023

香港天文台
HONG KONG OBSERVATORY

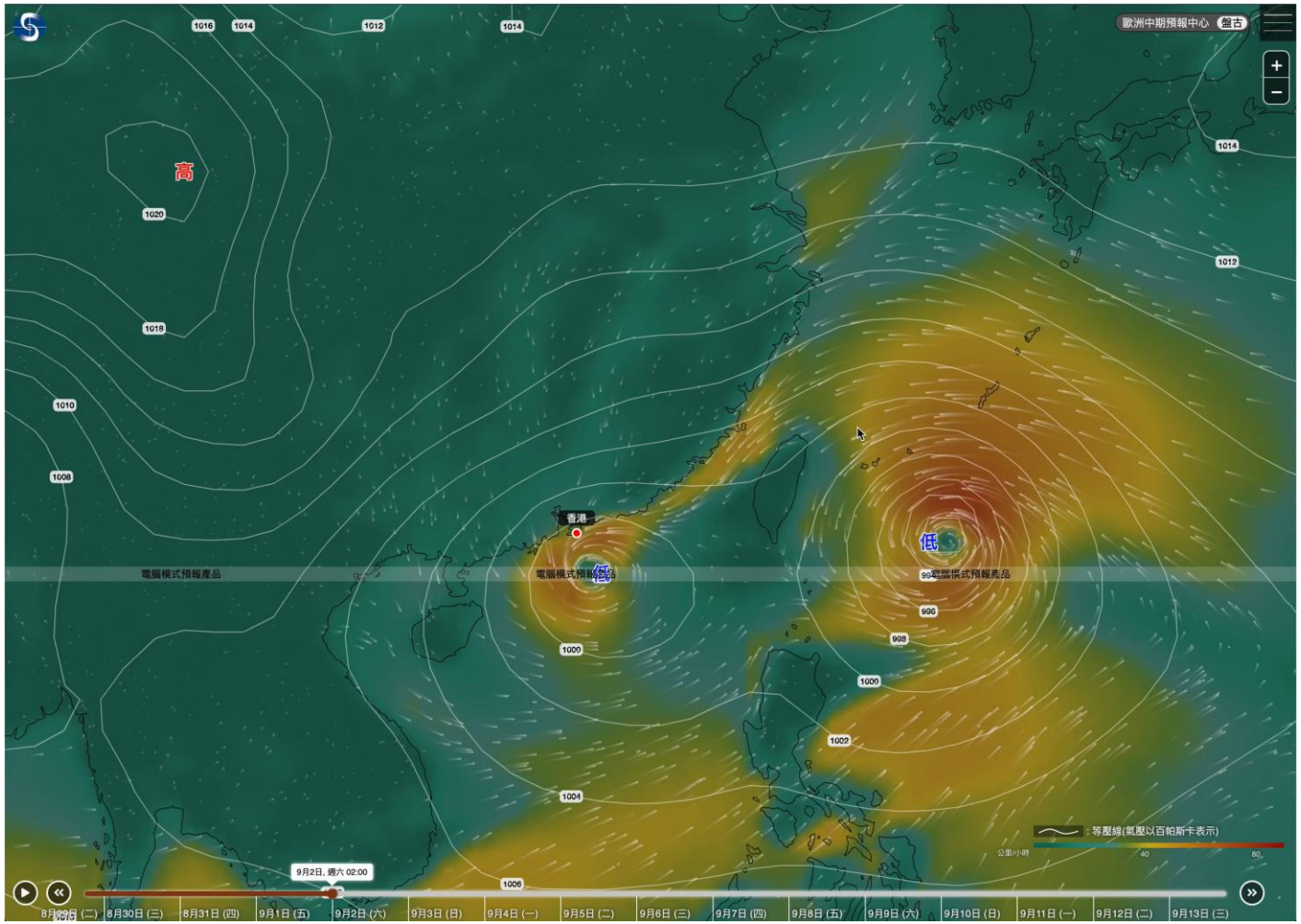
2024年全年展望
ANNUAL OUTLOOK FOR 2024

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	正常至偏多 5 至 8 個 Normal to above normal 5 to 8
風季開始 Onset of tropical cyclone season	6月或之後 June or later
風季結束 End of tropical cyclone season	10月或之後 October or later

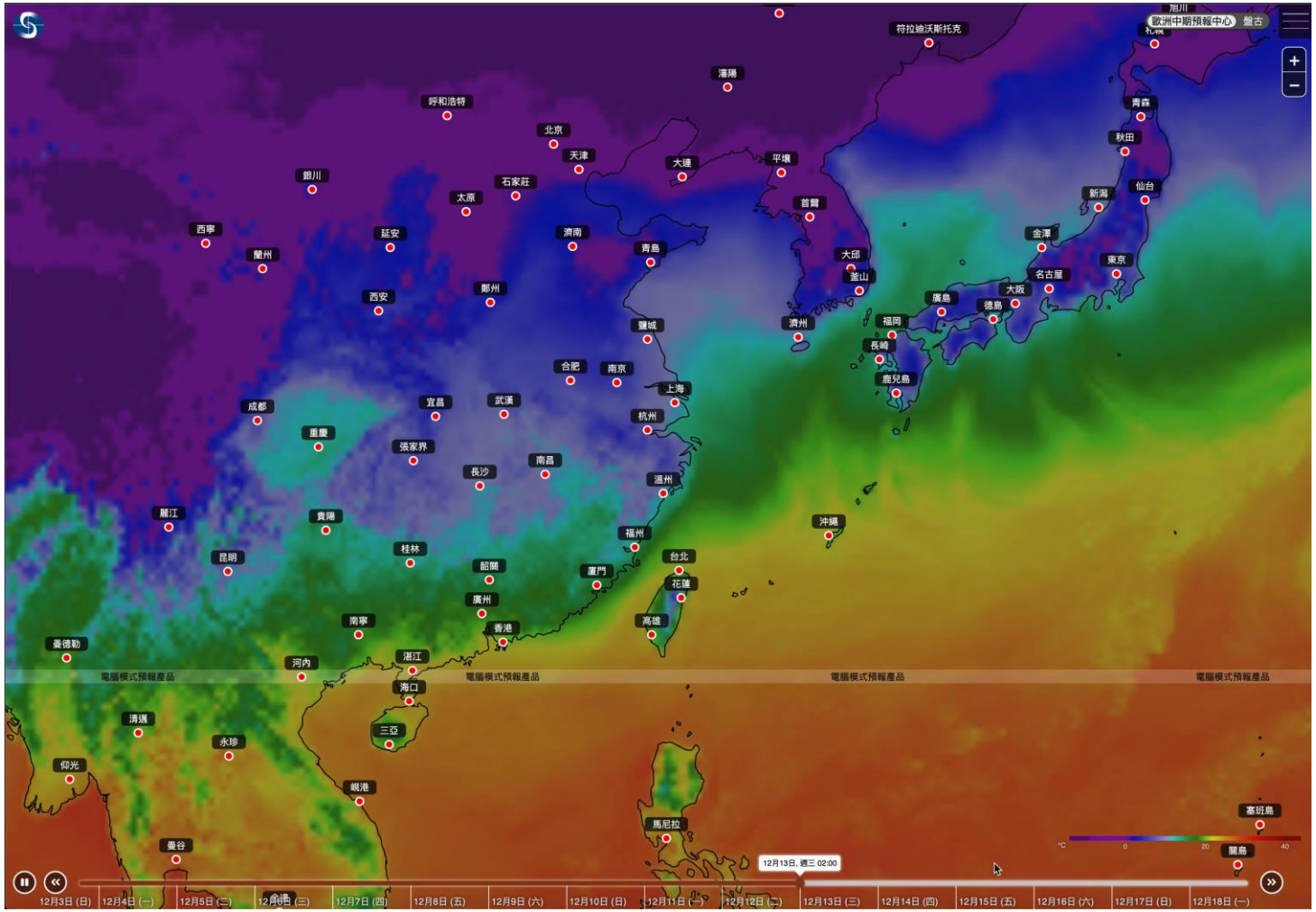
2024年全年展望
ANNUAL OUTLOOK FOR 2024

全年平均氣溫 **Annual mean temperature** 	偏高 Above normal 進入最高氣溫紀錄**首十位**的機會為**高** Chance of entering the warmest **top 10** on record is **HIGH**
全年總雨量 **Annual rainfall** 	接近正常 介乎2100至2700毫米 Near normal between 2100 and 2700 mm

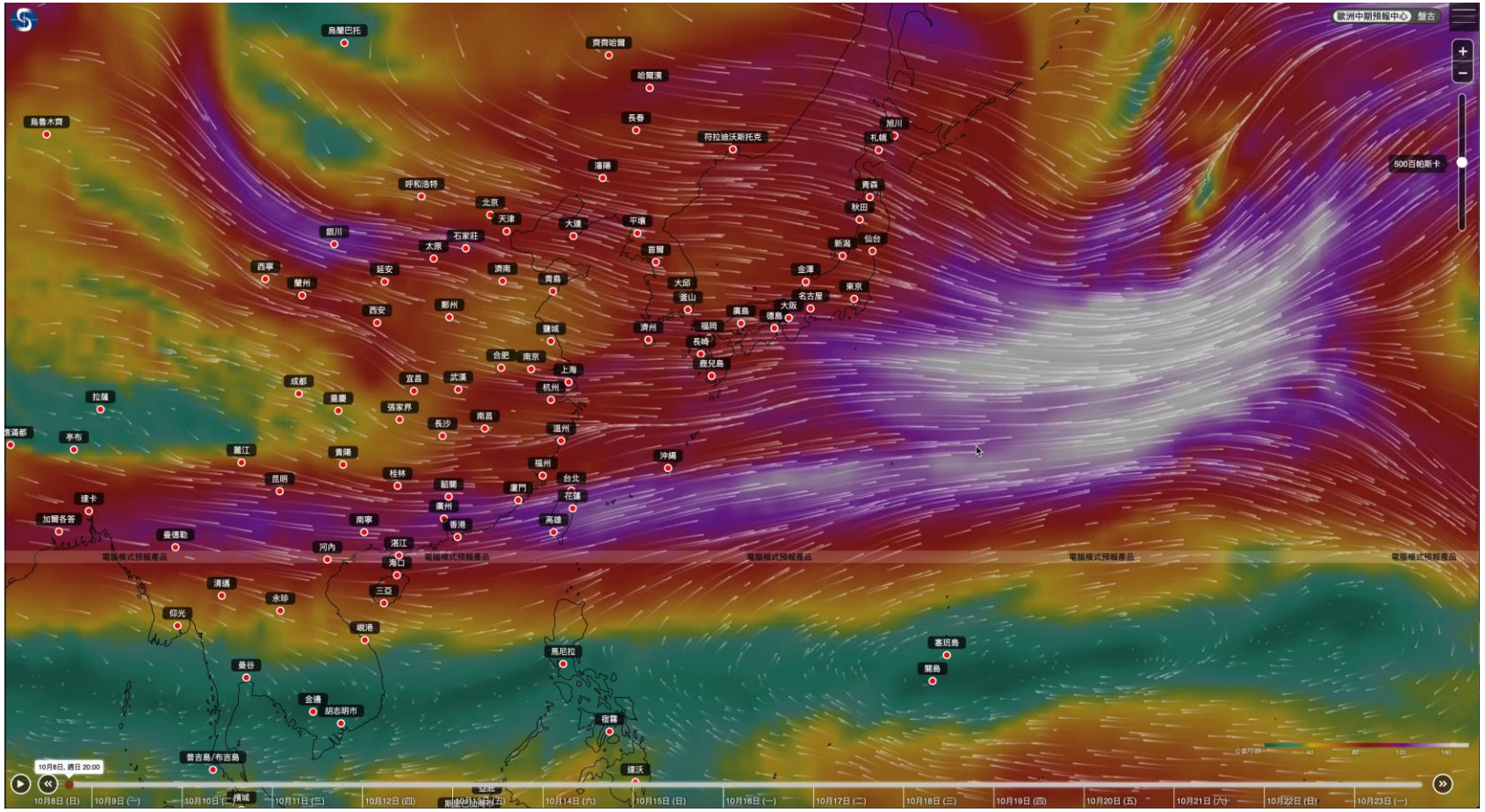
人工智能天氣預報模式的預測
FORECASTS BY AI WEATHER FORECASTING MODEL



「地球天氣」網頁十五天電腦模式預報
15-DAY COMPUTER MODEL FORECASTS ON “EARTH WEATHER” WEBPAGE



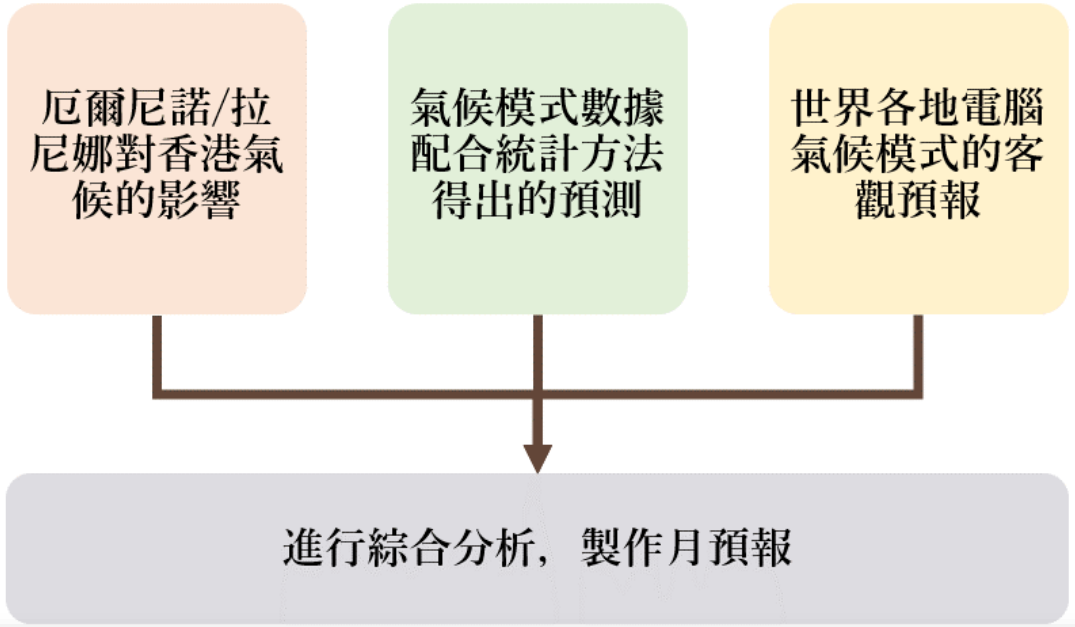
「地球天氣」網頁
“EARTH WEATHER” WEBPAGE



加強氣候預報服務 – 月預報
ENHANCING CLIMATE FORECAST SERVICES – MONTHLY FORECAST

天文台將於今年下半年推出月預報以加強氣候預報服務，預報內容包括月平均溫度和總雨量的等級。

The Hong Kong Observatory will launch monthly forecasts in the second half of this year to enhance climate forecast services. The forecast will include the categorization of monthly average temperature and rainfall.



加強惡劣天氣下的信息發放
ENHANCE INFORMATION DISSEMINATION DURING SEVERE WEATHER SITUATIONS

在黑色暴雨警告信號生效期間，天文台將**每小時進行簡報**，向公眾提供最新天氣資訊。

When the Black Rainstorm Signal is in force, the HKO will **conduct hourly briefings** to provide the public with latest weather information.

新大帽山天氣雷達
NEW WEATHER RADAR AT TAI MO SHAN

天文台剛完成更換大帽山的天氣雷達，即將投入業務運作，監測各類惡劣天氣，包括雷暴、暴雨和熱帶氣旋等

HKO has just replaced the weather radar at Tai Mo Shan, and it is about to come into operation to monitor various inclement weather including thunderstorms, rainstorms and tropical cyclones.

「我的天文台」新增大灣區天氣資訊
ADDING WEATHER INFORMATION FOR THE GREATER BAY AREA ON “MYOBSERVATORY”

「我的天文台」將於今年下半年加入大灣區天氣資訊，方便穿梭區內的用戶掌握當地的最新天氣情況。

Weather information for the Greater Bay Area will be added on the “MyObservatory” in the second half of the year to facilitate users travelling in the region to get hold to the latest local weather information.

聊天機械人支援語音功能
VOICE FUNCTIONS SUPPORT OF CHATBOT

「度天隊長」聊天機械人服務將會在今年下半年升級，在「我的天文台」上支援語音功能，回答有關本地天氣、日出日落時間及紫外線指數資料等的查詢。

“Dr. Tin” chatbot service will be upgraded in the second half of the year supporting voice functions on the “MyObservatory” to answer the inquiries about the local weather, sunrise/sunset time and UV index information etc.

虛擬「一帶一路國家氣象培訓中心」
VIRTUAL METEOROLOGICAL TRAINING CENTRE FOR BELT AND ROAD COUNTRIES

將於年底前設立，為「一帶一路」各地區提供氣象培訓

To be set up by the end of the year for providing meteorological training to “Belt and Road” regions

「香港天文台開放日2024」
"HONG KONG OBSERVATORY OPEN DAY 2024"

實體開放日　On-site Open Day

記得憑電子入場券，按預約時段抵達天文台總部

Remember to arrive the Observatory Headquarters at the registered slot with the electronic tickets

「香港天文台網上開放日2024」
Hong Kong Observatory Online Open Day 2024

3月23日推出
Launch on 23 Mar

香港天文台開放日2024
HONG KONG OBSERVATORY OPEN DAY

香港天文台
HONG KONG OBSERVATORY

THANK YOU

走在氣候行動最前線

At the Frontline of Climate Action