Speech by Mr CHAN Pak-wai, Director of the Hong Kong Observatory 23 March 2023

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, responsible for radiation monitoring and instruments,

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

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

(4) Mr Cheng Yuen-chung, Acting Assistant Director responsible for public weather 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 "The future of weather, climate and water across generations". 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 preliminary assessment by the World Meteorological Organization, the past eight years (2015 to 2022) are the eight warmest years on record globally, each of them warmer than pre-industrial times by at least 1 degree. The global mean surface temperature in 2022 was about 1.15 degree above pre-industrial (1850 to 1900) levels while Global mean sea level continued to rise in 2022, reaching a new record high. In 2022, extreme weather brought by climate change impacted different parts of the world. Many countries in Europe were struck by heat waves. A record-breaking temperature of 40.3 degrees was recorded in the UK, while the temperatures in Spain and Portugal exceeded 45 degrees and 47 degrees, respectively. On the other hand, Pakistan suffered from severe flooding, drowning one third of its land, destroying over one million homes and claiming more than one thousand lives.

Locally, 2022 was among the sixth warmest years since records began in 1884, with the annual mean temperature reaching 23.9 degrees, 0.4 degree higher than normal. With the monthly mean temperature reaching 30.3 degrees, July 2022 was the hottest month on record in Hong Kong. Moreover, the autumn mean temperature of 26.4 degrees for September to November 2022 was the warmest on record for the same period. In addition, there were 52 Hot nights (with a daily minimum temperature at 28.0 degrees or higher) and 52 Very Hot days (with a daily maximum temperature at 33.0 degrees or higher) in 2022, both ranking as the second highest on record. Moreover, there were 15 days with daily maximum temperatures at the Observatory equal to or higher than 35.0 degrees in 2022, the highest on record. With the northeast monsoon over Guangdong generally weaker than normal, both January and February 2023 were warmer than usual in Hong Kong.

The Observatory has issued the annual outlook for 2023 in early March. Taking into consideration a number of factors including the development of El Niño/La Niña, climate model predictions and objective guidance, it is expected that the tropical cyclone season may start in June or later, and end in October or earlier. It is expected that there will be about four to seven tropical cyclones coming within 500 kilometres of Hong Kong during the year, which is near normal. As the climate continues to warm, the annual mean temperature in Hong Kong is expected to be above normal, with a high chance of reaching the warmest top 10 on record. Annual rainfall is expected to be normal to below normal. 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 latest enhancement of the Observatory's various services. With rising temperatures due to climate change, the Observatory has been actively studying the health impacts of extremely hot weather jointly with universities and partners, with a view to strengthening the Very Hot Weather Warning service, e.g. introducing new Special Weather Tips, to remind the public of extremely high temperatures and the corresponding precautionary measures.

With the rainy season approaching, the Observatory has enhanced services of the "MyObservatory" mobile application with an additional map layer of traffic speed. While users can obtain the latest rainfall and lightning forecasts at any location in the coming one or two hours in the "Location-based Rainfall and Lightning Forecast" section, the new feature can help users better understand the weather impact on road traffic. In respect of weather monitoring, the Observatory enhanced the regional weather information services in March by providing real-time relative humidity information from seven automatic weather stations, namely Hong Kong Park, Shau Kei Wan, Kowloon City, Kai Tak Runway Park, Clear Water Bay, Pak Tam Chung and Tai Lung on the Observatory's website and the mobile application "MyObservatory".

To tie in with the development of the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), the Observatory is working closely with the Environmental Protection Department to prepare for setting up a GBA air quality laboratory and meteorology monitoring supersite in Hong Kong, to implement the relevant task announced in "The Chief Executive's 2022 Policy Address". The supersite is expected to commence operation in 2027, and will also be the site of the "Guangdong-Hong Kong-Macao Greater Bay Area Meteorological Monitoring and Warning Center (Hong Kong)", providing a platform for regional collaboration and research in meteorological science, further strengthening the capability in forecasting extreme weather, and taking forward Hong Kong's work in the "Guangdong-Hong Kong-Macao Greater Bay Area Meteorological Development Plan (2020-2035)".

In respect of earthquake and tsunami monitoring, at the invitation of the National Marine Environmental Forecasting Center of the Ministry of Natural Resources, Beijing, the Observatory has set up the "Backup South China Sea Tsunami Advisory Center (Hong Kong)" at its Central Forecasting Office in support of the main center in Beijing to provide, when necessary, tsunami advisory messages on potentially destructive tsunamis to nine National Tsunami Warning Centers (NTWCs)

of the Member States of the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO) around the South China Sea. After trial operation for a year, the backup center will commence operation on March 29. At the same time, the Observatory will enhance earthquake reports by including information on the focal depth of the earthquake. The Observatory also plans to launch the revamped earthquake and tsunami webpages in the second quarter of this year. Infographics will be added to assist with browsing by the public and enhance their knowledge on earthquakes and tsunamis as well as awareness of the associated hazards.

On public education, the Observatory revamped the Educational Resources website in December last year, with the enrichment of infographics to introduce the precautionary measures against various natural hazards. To further enhance the educational information, the Observatory will soon launch more infographics about hazardous weather and phenomena in the webpage to deepen the knowledge of the public on their formation and impact. The Observatory also plans to resume the face-to-face Public Course on Weather Observation in the end of this year, to provide interested members of the public with basic knowledge of weather observation and its applications. The content will cover identification of different types of clouds, various weather phenomena and hazards, the working principles of meteorological equipment, and the interpretation of weather charts, etc.

The year 2023 marks the 140th anniversary of the Observatory. A series of activities has been planned to celebrate the anniversary and to engage the public to

promote awareness on weather and climate change. A dedicated webpage "HKO 140th Anniversary" is launched today (March 23) to enable all of you to appreciate the Observatory's history over the past 140 years through photos, videos and an electronic version of "A brief history of the Hong Kong Observatory". In addition, the Observatory's open day will take place on this Saturday (March 25) and this Sunday (March 26). 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. As it will be cloudy with showers on Saturday and Sunday, please remember to bring rain gear with you. Do not feel disappointed if you cannot visit the Observatory in person. You are welcome to visit the "Hong Kong Observatory Open Day 2023" webpage to be launched on this Saturday (March 25), to understand the Observatory's work and services. Furthermore, the 140th Anniversary book "Stories under passing storms" will be published later this year. The book comprises articles written by Observatory's partners and colleagues with their sharing of real-life stories and experiences. The book is highly recommended for those interested in weather as well as the history of the Observatory. Details of the book sale will be announced later this year.

In addition, the Observatory also plans to organise the Tropical Cyclone Name Collection Campaign this year, inviting members of the public to propose and vote on tropical cyclone names with Hong Kong characteristics. Details of the campaign will be announced in due course. Let me pause here. If you have questions, my Assistant Directors and I will try our best to answer. Thank you!



過去八年(2015年至2022年)是全球 有記錄以來最暖的八年

The past eight years (2015 to 2022) are the eight warmest years on record globally

每一年都較工業化前時期(1850年至 1900年)溫暖至少1度

Each of the year is warmer than preindustrial times by at least 1 degree

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



全球平均海平面在2022年持續上升, 到記錄新高。

Global mean sea level (GMSL) continued to rise in 2022, reaching a new record high



2022 極端天氣 EXTREME WEATHER IN 2022





歐洲多國受熱浪侵襲

Many countries in Europe were struck by heat waves

巴基斯坦遭遇嚴重水災,全國三份之一土地被淹

Pakistan suffered from severe flooding, drowning one third of its land





香港全年平均氣溫最高前9名紀錄 TOP 9 RANKINGS OF THE HIGHEST ANNUAL MEAN TEMPERATURE IN HONG KONG

排名 Ranking	年份 Year	全年平均氣溫(°C)* Annual Mean Temperature (°C)
1	2021	24.6
2	2019	24.5
3	2020	24.4
4	2015	24.2
5	1998	24.0
6	2022	23.9
6	2018	23.9
6	2017	23.9
6	2002	23.9

*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



2022年其他破紀錄高溫天氣事件摘要 SUMMARY OF OTHER RECORD-BREAKING HIGH TEMPERATURE EVENTS IN 2022

	破紀錄事件 Record-breaking Events	新紀錄 * New Record	
1	有記錄以來 <mark>最熱的月份</mark> (2022年七月) Hottest month on record (July 2022)	30.3 °C	
2	最高九月至十一月秋季的平均氣溫 Highest Autumn Mean Temperature (September to November)	26.4 °C	

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



新紀錄 NeW Record

香港全年酷熱天氣日數/熱夜日數 最多前5名紀錄 TOP 5 RANKINGS OF THE HIGHEST ANNUAL NUMBER OF VERY HOT DAYS/HOT NIGHTS

*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

排名 Ranking	年份 Year	全年酷熱天氣日數(天) * Annual Number of Very Hot Days (Day)
1	2021	54
2	2022	52
3	2020	47
4	2016	38
5	1963	37
排名 Ranking	年份 Year	全年熱夜數目(天) * Annual Number of Hot Nights (Day)
排名 Ranking 1	年份 Year 2021	全年熱夜數目(天) * Annual Number of Hot Nights (Day) 61
排名 Ranking 1 2	年份 Year 2021 2022	全年熱夜數目(天)* Annual Number of Hot Nights (Day) 61 52
排名 Ranking 1 2 3	年份 Year 2021 2022 2020	全年熱夜數目(天)* Annual Number of Hot Nights (Day) 61 50
排名 Ranking 1 2 3 4	年份 Year 2021 2022 2020 2019	全年熱夜數目(天)* Annual Number of Hot Nights (Day) 61 50 50 46

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



2022年:52天 52 days in 2022



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



2022年:52天 52 days in 2022 全年日最高氣溫35.0℃或以上日數 ANNUAL NUMBER OF DAYS WITH MAXIMUM TEMPERATURES AT THE OBSERVATORY EQUAL TO OR HIGHER THAN 35.0 DEGREES

排名 Ranking	年份 Year	全年日最高氣溫35.0℃或以上日數 Annual number of days with maximum temperatures at the Observatory equal to or higher than 35.0 degrees					
1	2022	15					
2	2016	6					
3	2018	5					
4	1963	5					
5	2021	4					



新紀錄 New Record



全年日最高氣溫35.0℃或以上日數 LONG TERM TIMES SERIES OF ANNUAL NUMBER **OF DAYS WITH MAXIMUM TEMPERATURES 35.0 DEGREES OR ABOVE**



2022年:15天 15 days in 2022 2023年全年展望 ANNUAL OUTLOOK FOR 2023

進入香港500公里範圍	接近正常
內的熱帶氣旋數目	4 至 7 個
Number of tropical cyclones	Near normal
entering 500 km of Hong Kong	4 to 7
風季開始	六月或以後
Onset of tropical cyclone season	June or later
風季結束	十月或之前
End of tropical cyclone season	October or earlier



2023年全年展望 ANNUAL OUTLOOK FOR 2023

全年平均氣溫 Annual mean temperature



Above normal

達到最高氣溫紀錄首十位的機會為高

Chance of reaching the warmest top 10

on record is **HIGH**

正常至偏少

介乎2000至2600毫米

Normal to below normal

between 2000 and 2600 mm



天文台加強酷熱天氣警告服務 HKO ENHANCES THE VERY HOT WEATHER WARNING SERVICE





"LOCATION-BASED RAINFALL AND LIGHTNING FORECAST" ON "MYOBSERVATORY" ENHANCED Legend WITH TRAFFIC SPEED INFORMATION 30-min total rainfall (mm) 2.5 10 20 0.5 5 Lightning Location 協助用戶更加了解天氣變化 Traffic Speed 對路面交通的影響 Traffic Bad Traffic Average Help users better understand the weather impact on road traffic

「定點降雨及閃電預報」加入行車速度資訊



19:30

 \bigcirc

 \leq



加強分區相對濕度資訊服務 ENHANCES REGIONAL RELATIVE HUMIDITY INFORMATION SERVICES

增加七個自動氣象站的實時 相對濕度資訊

Adding real-time relative humidity information from seven automatic weather stations





大灣區空氣質素實驗室及氣象監測超級站 SUPERSITE FOR GBA AIR QUALITY LABORATORY AND METEOROLOGY MONITORING

天文台正與環境保護署緊密合作,籌備在香港興建「大灣 區空氣質素實驗室及氣象監測超級站」,預計在2027年啓 用,同時亦作為「粵港澳大灣區氣象監測預警預報中心」 香港分中心的選址。

The Observatory is working closely with the Environmental Protection Department to prepare for setting up a supersite for GBA air quality laboratory and meteorology monitoring in Hong Kong. The supersite is expected to commence operation in 2027, and will also be the site of the "Guangdong-Hong Kong-Macao Greater Bay Area Meteorological Monitoring and Warning Center (Hong Kong)".







南中國海區域海嘯預警備份中心(香港) BACKUP SOUTH CHINA SEA TSUNAMI ADVISORY CENTER (HONG KONG)



D 2023年3月29日 正式投入業務運作 Commencing operation on 29 March 2023



南中國海區域海嘯預警中心 SOUTH CHINA SEA TSUNAMI ADVISORY CENTER (SCSTAC)

南中國海區域海嘯預警中心 地震海嘯監測預警服務區域

Area of Service of the SCSTAC





地震和海嘯網頁新版新增資訊圖像 EARTHQUAKE AND TSUNAMI WEBPAGES WITH NEWLY ADDED INFOGRAPHICS

圖示

修訂麥加利地震烈度表(1956年版本)









教育資源網頁增添更多資訊圖表 **PROVISION OF MORE INFOGRAPHICS IN** EDUCATIONAL RESOURCES WEBPAGE

天文台即將在網頁推出與危 險天氣及現象相關的資訊圖 表,講解它們的形成及影響, 加深公眾對這方面的認識。

The HKO will soon launch infographics about more hazardous weather and phenomena in the webpage to deepen the knowledge of the public on their formation and impact.



Tornado







Rainstorm



Thunderstorm



Windshear



Turbulence



Aircraft Icing



復辦天氣觀測面授公眾課程 RESUMPTION OF WEATHER OBSERVATION FACE-TO-FACE COURSE FOR THE PUBLIC

天文台計劃在年底復辦「天氣觀測」 面授公眾課程,讓有興趣的市民掌握 天氣觀測的基礎知識及其應用。

The HKO plans to resume the face-toface Public Course on Weather Observation in the end of this year, to provide interested members of the public with basic knowledge in weather observation and its applications.





前頁 140年旅程 初事今昔 歲月留影 開茶遊劇 開放日

146 BRX28-88+84

「香港天文台一百四十周年」專題網頁 HKO 140TH ANNIVERSARY THEMATIC WEBPAGE

透過多張照片、短片及《香港天文台 簡史》電子版本,讓大家重溫天文台 一百四十年的歷史點滴。

Appreciate the Observatory's history over the past 140 years through photos, videos and the electronic version of

"A brief history of the Hong Kong Observatory"



「香港天文台開放日2023」 "HONG KONG OBSERVATORY OPEN DAY 2023"



「香港天文台網上開放日2023」 Hong Kong Observatory Online Open Day 2023









一百四十周年紀念文集 140TH ANNIVERSARY BOOK

紀念文集《聽風‧觀雨‧說故事》中,天 文台伙伴與同事會透過文章分享不同的經 歷和體驗。公開發售詳情請留意天文台日 後的公布。

The book "Stories under passing storms" comprises articles written by HKO partners and colleagues with their sharing of real-life stories and experiences. Details of the book sale will be announced later.





熱帶氣旋名字徵集活動 TROPICAL CYCLONE NAME COLLECTION CAMPAIGN

計劃在年內舉辦「熱帶氣旋名字徵集 活動」,讓市民提議及選出具香港特 色的熱帶氣旋名字。活動的詳情會適 時公布。

Plans to organize "Tropical Cyclone Name Collection Campaign" this year, inviting members of the public to propose and vote on tropical cyclone names with Hong Kong characteristics. Details of the campaign will be announced in due course. 西北太平洋及南海熱帶悪陣谷子 Tropical Cyclone Names in the western North Pacific and South China Sea



來源	Contributed by	名字	_{Name} (I)	名字	_{Name} (II)	名字	_{Name} (III)	名字	_{Name} (IV)	名字	_{Name} (V)
柬埔寨	Cambodia	達維	Damrey	康妮	Kong-rey	娜基莉	Nakri	科羅旺	Krovanh	翠絲	Trases
中國	China	海葵	Haikui	銀杏	Yinxing	風神	Fengshen	杜鵑	Dujuan	木蘭	Mulan
朝鮮	DPR Korea	鴻雁	Kirogi	桃芝	Toraji	海鷗	Kalmaegi	舒力基	Surigae	米雷	Meari
中國香港	Hong Kong, China	鴛鴦	Yun-yeung	萬宜	Man-yi	鳳凰	Fung-wong	彩雲	Choi-wan	馬鞍	Ma-on
日本	Japan	小犬	Koinu	天兔	Usagi	天琴	Koto	小熊	Koguma	蝎虎	Tokage
老撾	Lao PDR	布拉萬	Bolaven	帕布	Pabuk	洛鞍	Nokaen	薔琵	Champi	軒嵐諾	Hinnamnor
中國澳門	Macau, China	三巴	Sanba	蝴蝶	Wutip	西望洋	Penha	煙花	In-fa	梅花	Muifa
馬來西亞	Malaysia	杰拉華	Jelawat	聖帕	Sepat	鸚鵡	Nuri	查帕卡	Cempaka	苗柏	Merbok
米克羅尼西亞	Micronesia	艾雲尼	Ewiniar	木恩	Mun	森拉克	Sinlaku	尼伯特	Nepartak	南瑪都	Nanmadol
菲律賓	Philippines	馬力斯	Maliksi	丹娜絲	Danas	黑格比	Hagupit	盧碧	Lupit	塔拉斯	Talas
韓國	RO Korea	格美	Gaemi	百合	Nari	薔薇	Jangmi	銀河	Mirinae	奧鹿	Noru
泰國	Thailand	派比安	Prapiroon	韋帕	Wipha	米克拉	Mekkhala	妮妲	Nida	玫瑰	Kulap
美國	U.S.A.	瑪莉亞	Maria	范斯高	Francisco	海高斯	Higos	奥麥斯	Omais	洛克	Roke
越南	Viet Nam	山神	Son-Tinh	竹節草	Co-may	巴威	Bavi	康森	Conson	桑卡	Sonca
柬埔寨	Cambodia	安比	Ampil	羅莎	Krosa	美莎克	Maysak	燦都	Chanthu	納沙	Nesat
中國	China	悟空	Wukong	白鹿	Bailu	海神	Haishen	電母	Dianmu	海棠	Haitang
朝鮮	DPR Korea	雲雀	Jongdari	楊柳	Podul	紅霞	Noul	蒲公英	Mindulle	尼格	Nalgae
中國香港	Hong Kong, China	珊珊	Shanshan	玲玲	Lingling	白海豚	Dolphin	獅子山	Lionrock	榕樹	Banyan
日本	Japan	摩羯	Yagi	劍魚	Kajiki	鯨魚	Kujira	圓規	Kompasu	山貓	Yamaneko
老撾	Lao PDR	麗琵	Leepi	藍湖	Nongfa	燦鴻	Chan-hom	南川	Namtheun	帕卡	Pakhar
中國澳門	Macau, China	貝碧嘉	Bebinca	琵琶	Peipah	琵鷺	Peilou	瑪瑙	Malou	珊瑚	Sanvu
馬來西亞	Malaysia	普拉桑	Pulasan	塔巴	Tapah	浪卡	Nangka	妮亞圖	Nyatoh	瑪娃	Mawar
米克羅尼西亞	Micronesia	蘇力	Soulik	米娜	Mitag	沙德爾	Saudel	雷伊	Rai	古超	Guchol
菲律賓	Philippines	西馬侖	Cimaron	樺加沙	Ragasa	紫檀	Narra	馬勒卡	Malakas	泰利	Talim
韓國	RO Korea	飛燕	Jebi	浣熊	Neoguri	簡拉維	Gaenari	鮎魚	Megi	杜蘇芮	Doksuri
泰國	Thailand	山陀兒	Krathon	博羅依	Bualoi	艾莎尼	Atsani	暹芭	Chaba	卡努	Khanun
美國	U.S.A.	百里嘉	Barijat	麥德姆	Matmo	艾濤	Etau	艾利	Aere	蘭恩	Lan
越南	Viet Nam	潭美	Trami	夏浪	Halong	班朗	Bang-lang	桑達	Songda	蘇拉	Saola







謝謝

THANK YOU

......

H

...........

.....

Hong Kong Observatory 140th Anniversary









香港天文台 HONG KONG OBSERVATORY

歲月留影

在天文台的工作回憶與生活點滴

