

Speech by Mr SHUN Chi-ming, Director of the Hong Kong Observatory 15 March 2016

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

1. Dr CHENG Cho-ming, responsible for public weather services
2. Miss LAU Sum-ye, responsible for aviation weather services
3. Mr LAI Sau-tak, responsible for climate and geophysical matters
4. Mr TSUI Kit-chi, responsible for radiation monitoring and instruments

Let's first review the weather during the past year.

The World Meteorological Organization (WMO) has ranked 2015 the hottest year globally on record since 1880 (Figure 1). The weather in Hong Kong in 2015 was also marked by unusually high temperatures (Figure 2). There were 18 new records related to temperatures (Figure 3), with the highest average temperature recorded in November since record began (Figure 4), which is well above the old record. 2016 started with all-time high monthly rainfall in January, more than 10 times the normal value (Figure 5). The heavy rain on 5 January also broke the hourly rainfall record for January, also well above the old record. (Figure 6). Temperatures in early January remained above normal, but plummeted in the second half of the month (Figure 7), with temperatures at the Observatory dropping to a minimum of 3.1 degrees on 24 January, the coldest day since 1957. Yet, the global average temperatures in January and February 2016 were actually the hottest since records began in 1880 (Figure 8). Everyone should have personally experienced the highly changeable weather due to global warming in the past year. The trend of more extreme weather under the influence of climate change is obvious. The Observatory will spare no efforts in upgrading weather monitoring and forecasting capabilities, enhancing public communication and researching into new methods in forecasting the likelihood of extreme weather events.

Regarding the weather outlook for 2016, the Observatory expects the El Niño to weaken gradually in the coming months, with half chance transitioning to La Niña in latter part of the year (Figure 9). Taking into consideration this trend and various forecast indicators, the Observatory expects the annual rainfall to be normal to above-normal and the number of tropical cyclones coming within 500 km of Hong Kong to be near normal, i.e. between four and seven (Figure 10), with the first tropical cyclone in the season expected to come in June or later. I would like to remind members of the public to remain vigilant against the threat of inclement weather and to prepare for the coming rain and typhoon seasons.

On climate change issues, an international agreement was reached at the Paris climate summit in December 2015 (also known as COP21) to limit carbon dioxide emission. However, the emission reduction pledges made by the countries still fall short of what is required to control the global temperature rise to within 2 oC above the pre-industrial level (Figure 11) by the end of this century (Figure 11). Hence, we need to step up our efforts to save energy, conserve resources and reduce greenhouse gas emission. At the same time, we also need to mitigate against the impacts of climate change, including extreme weather, heat waves, drought, sea level rise, etc. The Observatory will actively participate in and support the work of the Steering Committee on Climate Change chaired by the Chief Secretary of Administration. We will also continue to strengthen communication with the public and stakeholders to enhance their awareness and preparedness against climate change and extreme weather.

For weather monitoring, the Observatory enhanced its Internet satellite imagery services today. Apart from the global mosaic satellite imagery (Figure 12) and true colour imageries (Figure 13), update frequency of satellite images covering eastern Asia has increased from once every 30 minutes to once every 10 minutes. High resolution satellite imageries covering southern China and the South China Sea are also provided to show the weather conditions over Hong Kong and its vicinity more clearly (Figure 14).

For strengthening the monitoring of tropical cyclones, this year the Observatory will start using the new dropsonde technology on the aircraft of the Government Flying Service to fly into tropical cyclones over the northern part of the South China Sea to collect meteorological data. The dropsonde allows direct measurement of the vertical changes of pressure, temperature, humidity, wind speed and wind direction through the depth of the atmosphere, enhancing the forecasting capability of tropical cyclones.

With the upcoming rainy season, the Observatory plans to launch a new version of the Location-specific Lightning Alert Service Webpage in the second quarter of this year for members of the public to monitor thunderstorms activities in the vicinity of their locations (Figure 15). With more selectable outdoor activity sites and geographical information options (Figure 16), the new webpage will be particularly useful for property management and swimming pool operators. The Observatory will also enhance the provision of information on heavy rain to the public, and an alert will be sent via the media and mobile phone apps when localised areas are threatened by intense rain so that those affected could better appreciate the latest situation and be prepared (Figure 17). The Automatic Regional Weather Forecast webpage will also be enhanced later this year to provide thunderstorm nowcast in the next hour covering Hong Kong and the Pearl River Delta region (Figure 18).

For the provision of weather information services, the Observatory launched the "Weather Information for Outdoor Photography Webpage" (Figure 19) in early March to provide members of the public with the latest weather information for outdoor photography. To provide further weather information on the local tourist spots, the Observatory launched on its website today the real-time weather photos taken at the Victoria Peak to provide the public and tourists with more weather information on local tourist destinations (Figure 1920). The Observatory is also developing a "Hong Kong Weather Information for Tourists" webpage to provide one-stop-shop weather information for tourists' hot spots in Hong Kong to facilitate better planning of visits and trips (Figure 21). The roll-out of the webpage is expected within this year.

For the dissemination channels of weather information, the Observatory will extend the "MyObservatory" app to wearable devices (Figure 22), and an updated version of the "MyObservatory" app for Apple Watch is expected to be launched in mid-year. The Observatory is also planning to introduce later this year the "MetChat for the Day" (Figure 23) as gentle reminders to the public on weather, climate and related information through social media platforms and the "MyObservatory" app. The Observatory will also enhance its TV weather service in April, increasing the weather programmes from one to two sessions each morning at about 7am and 8am from Monday to Saturday for people going to school or work to get hold of the latest weather information (Figure 24). The programmes will be broadcast on the TV channels, and disseminated directly to members of the public via the "MyObservatory" app and the Observatory website.

On public education, the upcoming major initiatives this year include:

- (1) The annual Open Day of the Hong Kong Observatory will take place on March 19 and 20 under the theme of the World Meteorological Day - "Hotter. Drier. Wetter. Face the Future". The event this year is also one of the highlight events under the "Appreciate Hong Kong" campaign. According to past experience, the Observatory will be quite crowded in the afternoon, public are encouraged to visit us in the morning as far as possible (Figure 25).
- (2) To celebrate the 10th anniversary of the "Science in the Public Service (SIPS)" campaign, a roving exhibition on "Climate Change – Our Response" will be held at 10 different venues this year (Figure 26). A series of seminars on the applications of science in support of public services will also be organised.
- (3) A revamped climate change webpage is launched today, providing relevant information, latest projection and development related to climate change. A new feature "Do you know..." is added, providing climate change knowledge in layman terms to the public (Figure 27).
- (4) An e-book on clouds is planned to be launched in the second quarter of this year to enhance the understanding and interest of the public, especially students and youngsters, on clouds (Figure 28).

I am now to announce the launch of a new corporate video for the Observatory jointly produced with the Radio Television Hong Kong using ourthe core values of the Observatory linked by the seven characters of the word "SCIENCE" , with a view to introducinge the development and services of the Observatory to the public (<https://www.youtube.com/watch?v=avwmjQXA3gs>).

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

Thank you!

全球平均氣溫年距 (1850-2015) Global average temperature anomaly (1850-2015)

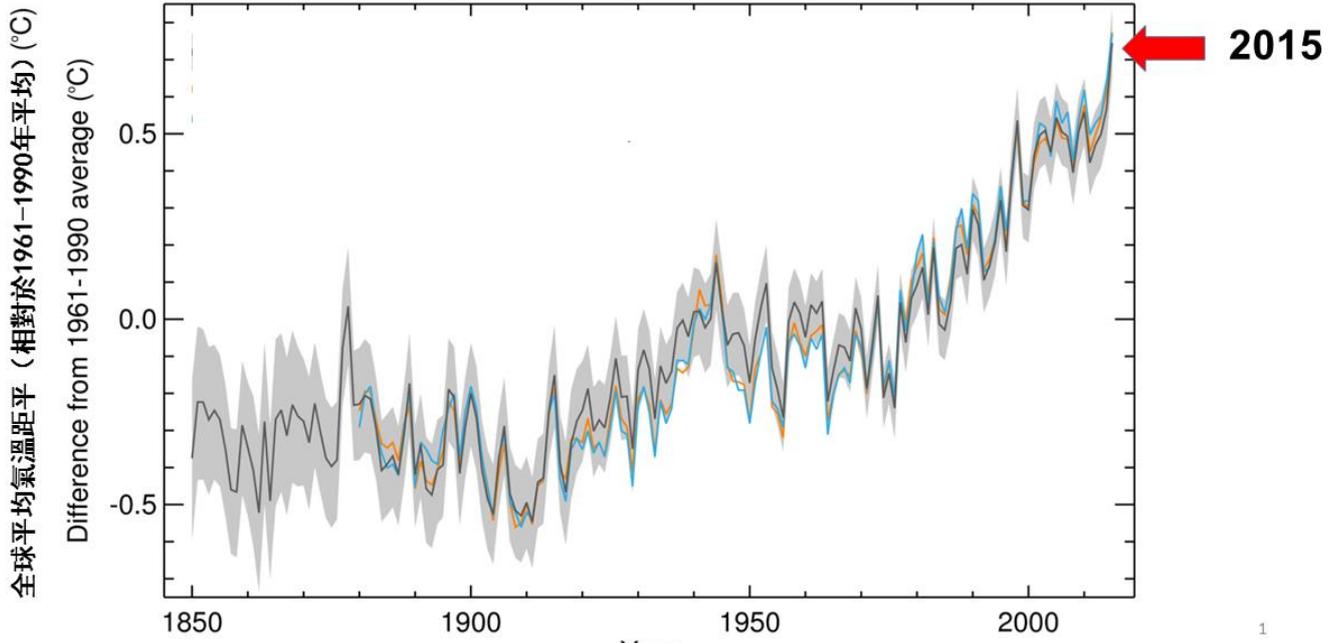
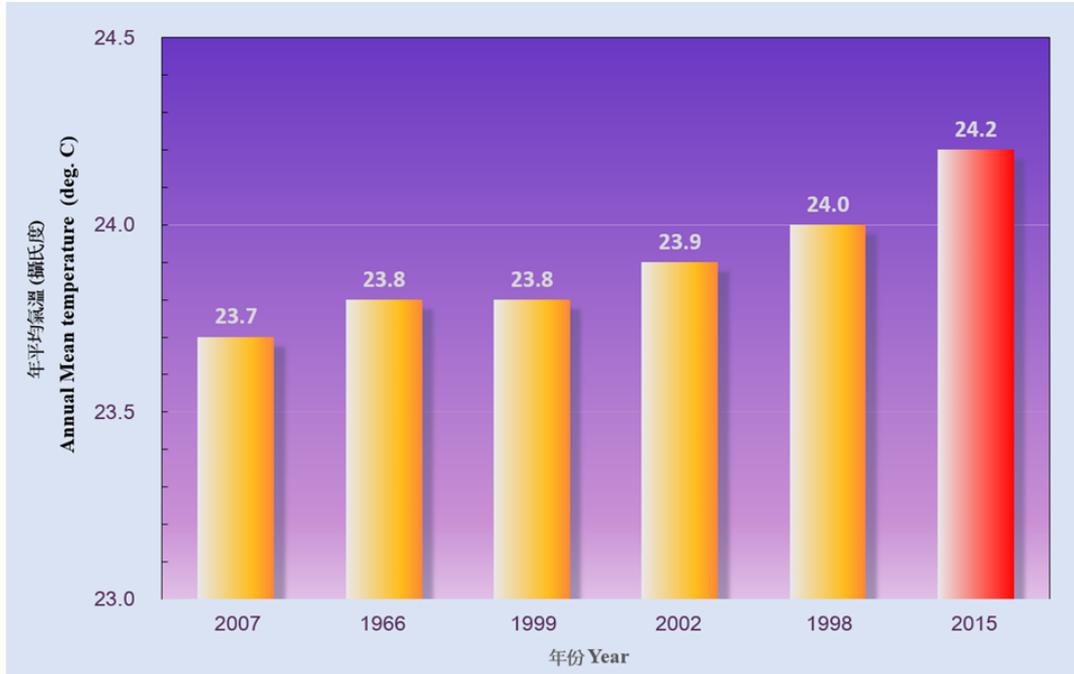


Figure 1



香港有記錄以來最溫暖的年份 (1885-2015)

The warmest years on record in Hong Kong (1885-2015)

Figure 2



18 New Records in 2015

- Highest **Annual** Mean Temperature: **24.2°C**
- Highest Annual Number of **Hot Nights**: **37**
- Highest Mean Temperature for **Autumn**: **26.1°C**
- Lowest Annual Number of **Cold Days**: **7**
- Highest Mean Temperature for **Summer**: **29.4°C**
- Highest Number of **Very Hot Days** for Summer: **28**

2015 was a year of new records, with 18 temperature related records broken or equalled.

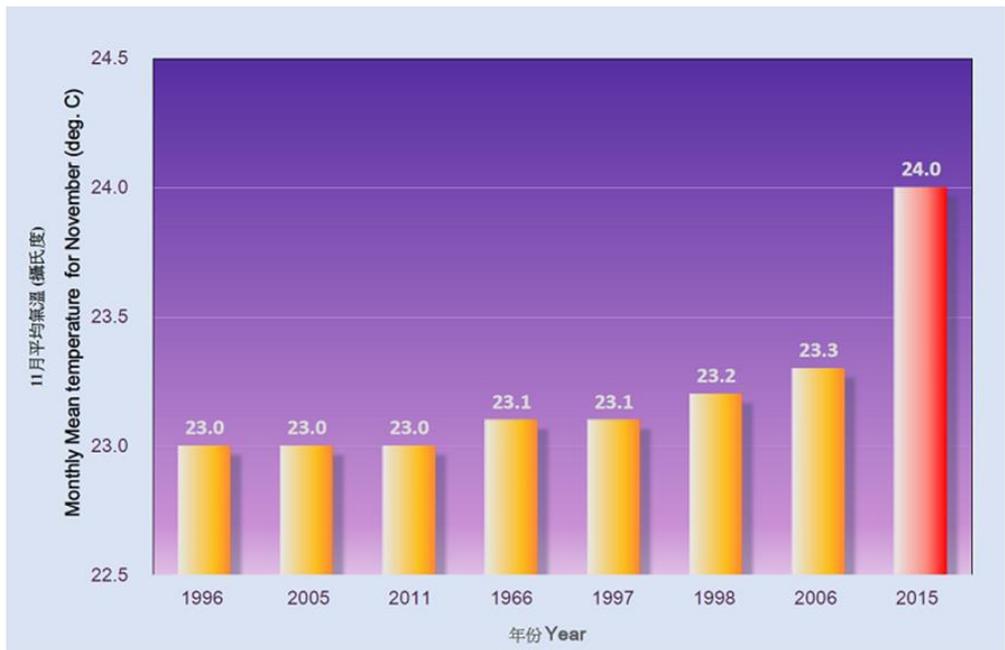
- Highest Mean Maximum Temperature for June: **32.3°C**
- Highest Mean Temperature for November: **24.0°C**
- Highest Mean Temperature for June: **29.7°C**
- Highest Mean Minimum Temperature for November: **22.4°C**
- Highest Mean Minimum Temperature for June: **27.7°C**
- Highest Mean Minimum Temperature for Autumn: **24.4°C**
- Highest Mean Minimum Temperature for Summer: **27.4°C**
- Highest Annual Mean Minimum Temperature: **22.4°C**



WOW!

- Highest Number of Hot Nights for June: **13**
- Highest Number of Very Hot Days for June: **10**
- Highest Daily Maximum Temperature: **36.3°C** (8 August)
- Highest Daily Mean Temperature: **32.4°C** (8 August)

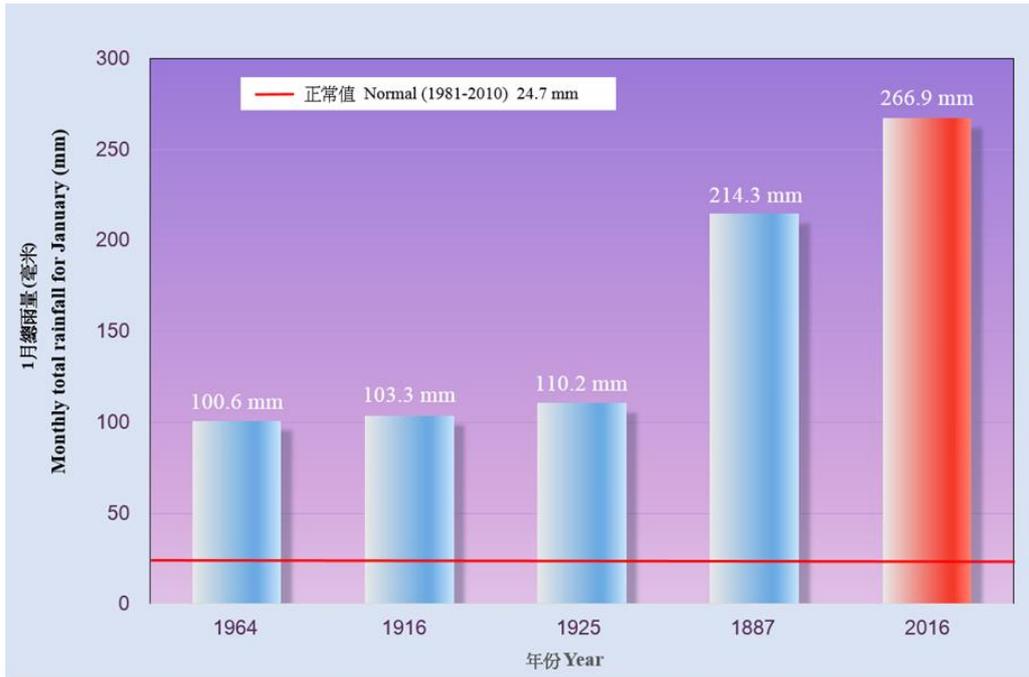
Figure 3



香港有記錄以來最溫暖的11月 (1885-2015)

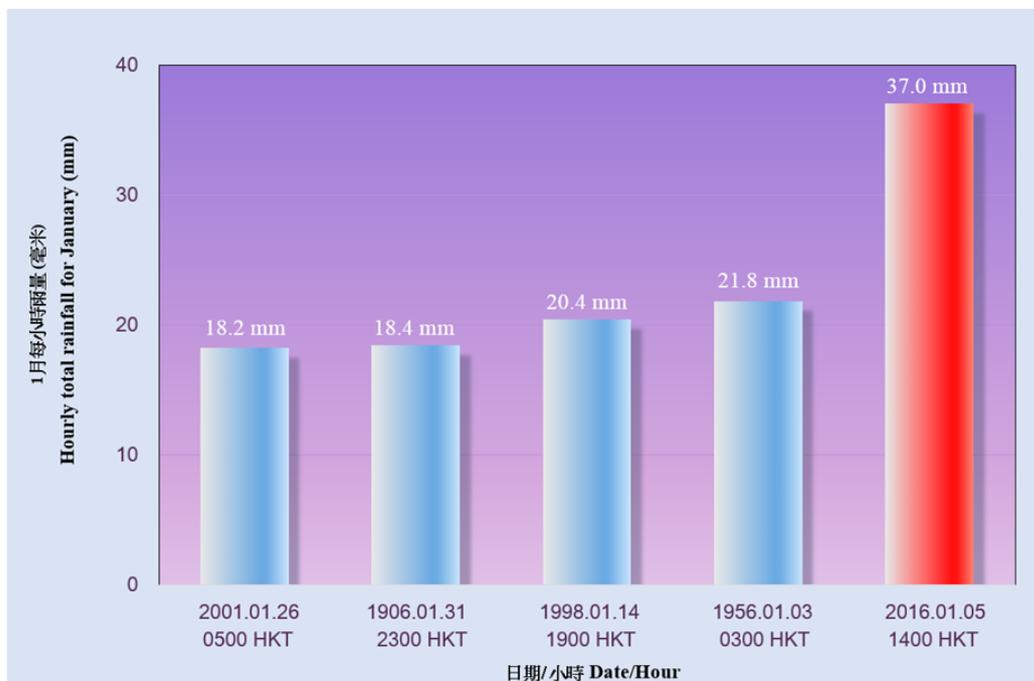
The warmest Novembers on record in Hong Kong (1885–2015)

Figure 4



最高雨量的一月份 (1885-2016)
Highest rainfall for January (1885-2016)

Figure 5



一月份的最高每小時雨量 (1885-2016)
Highest hourly rainfall for January (1885-2016)

Figure 6

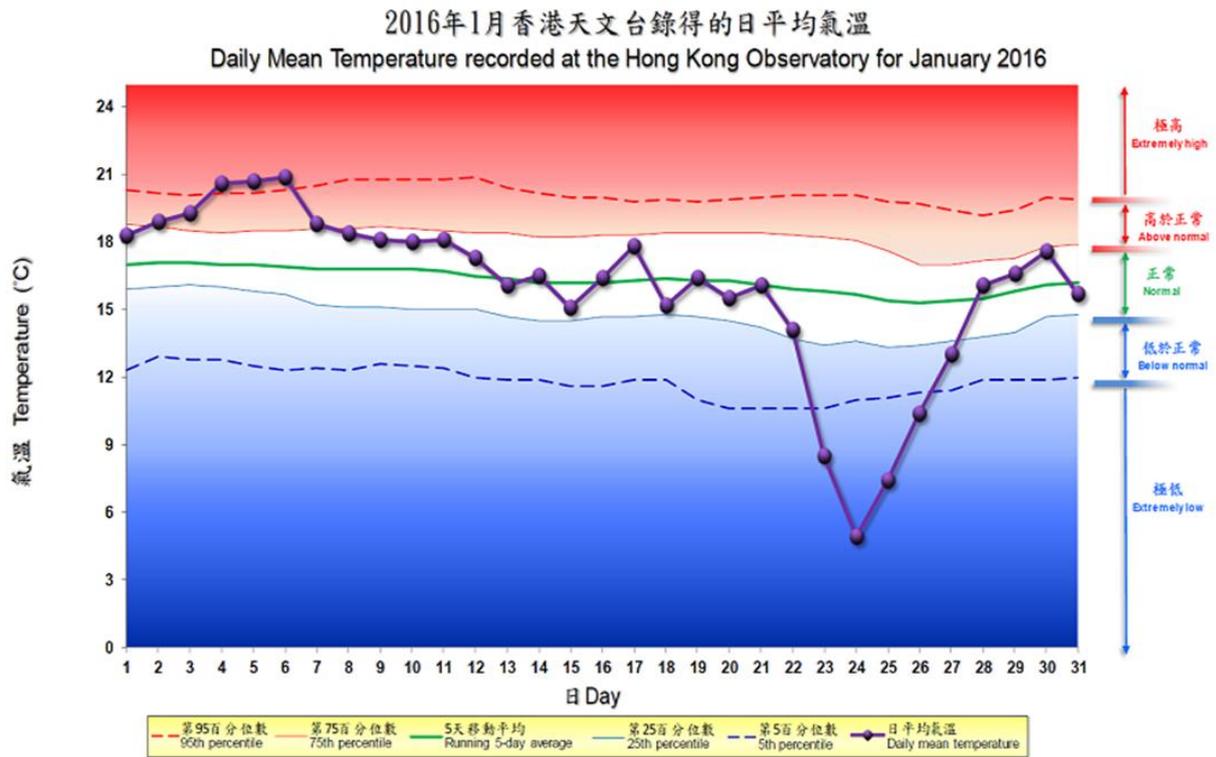
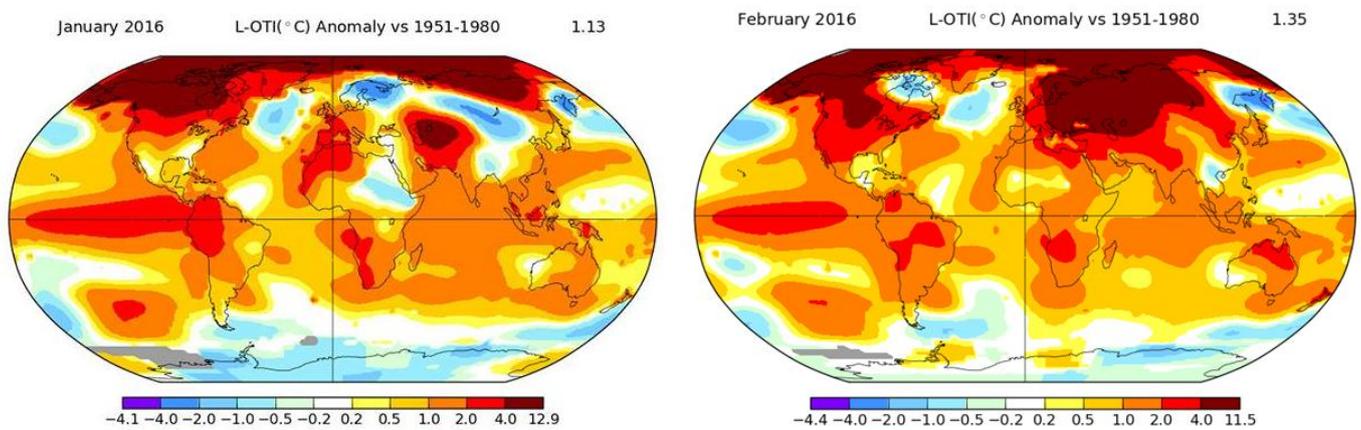


Figure 7

2016年1月和2月全球溫度距平 (相對1951-80)

Global Temperature Anomalies of January & February 2016 (relative to 1951-80)



資料來源：美國太空總署
Data source: NASA

Figure 8

厄爾尼諾/拉尼娜集合預報 Ensemble Forecasts of El Niño/La Niña

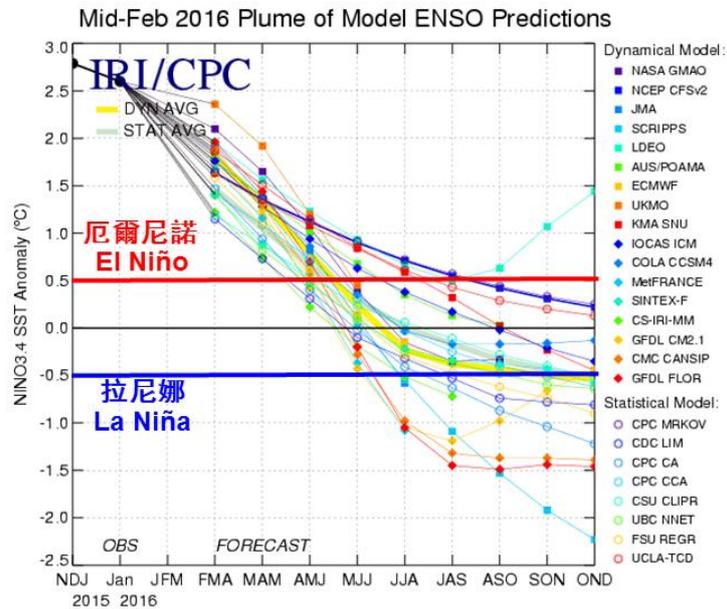


Figure 9

2016全年展望 Outlook for 2016

<p>香港全年總雨量 Annual rainfall in Hong Kong</p>	<p>正常至偏多 Normal to above normal (2500 - 3100 mm)</p>
<p>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</p>	<p>接近正常 Near normal (4 - 7)</p>

Figure 10

二氧化碳排放情景 Carbon Dioxide Emission Scenarios

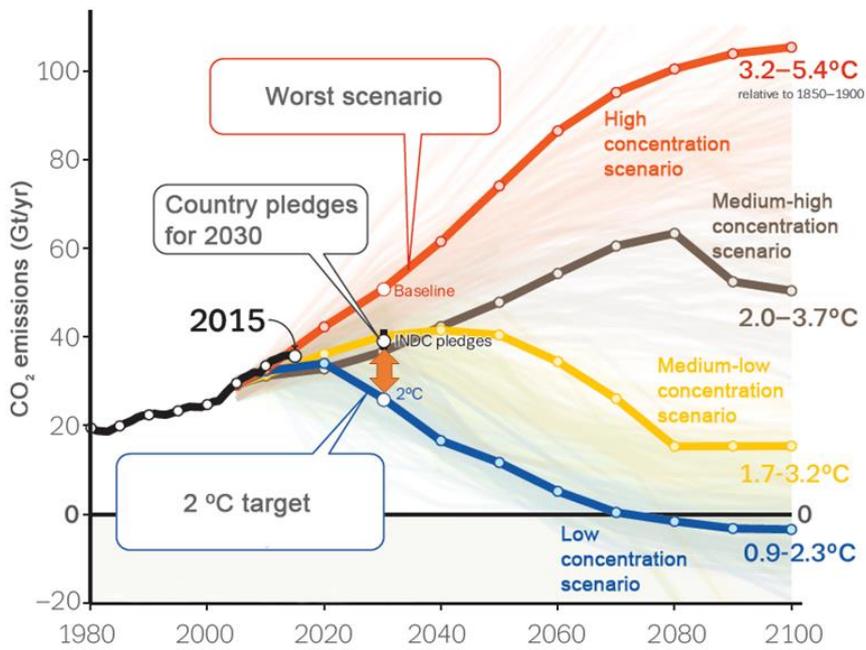


Figure 11

全球合併衛星圖像 Global Mosaic Satellite Imagery

2016/03/01 00:00 UTC

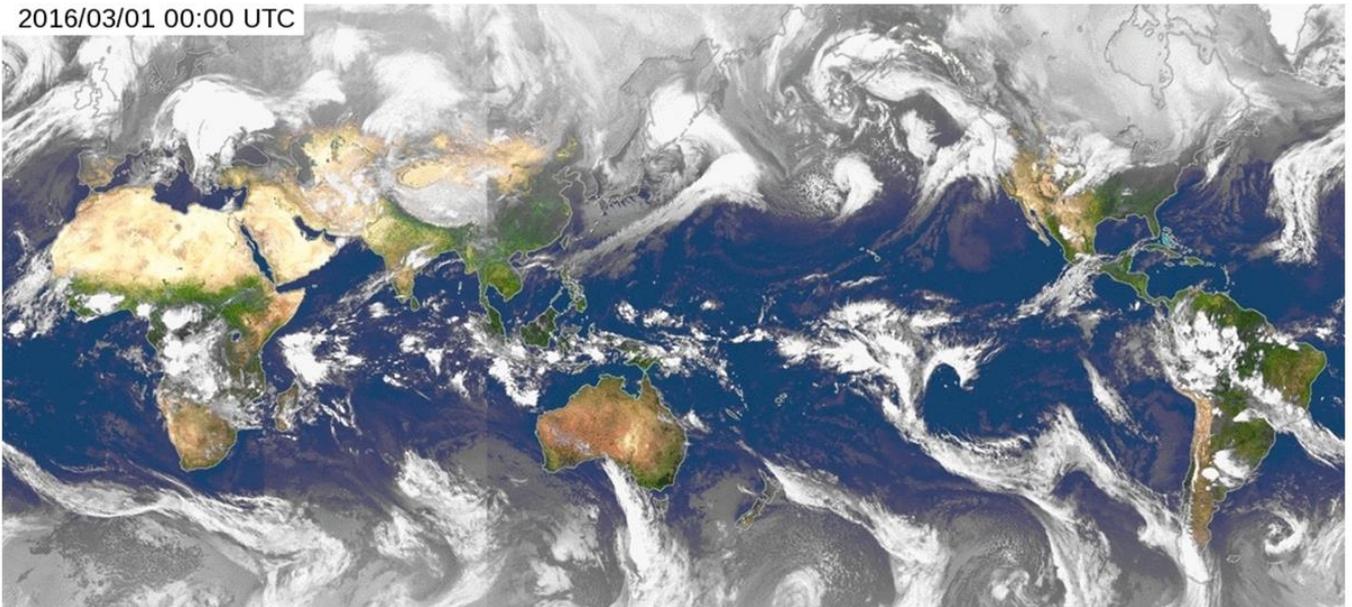


Figure 12

黑白可見光衛星圖像升級為真彩圖像

Upgrade of Black & White Visible Satellite Imagery to True Colour

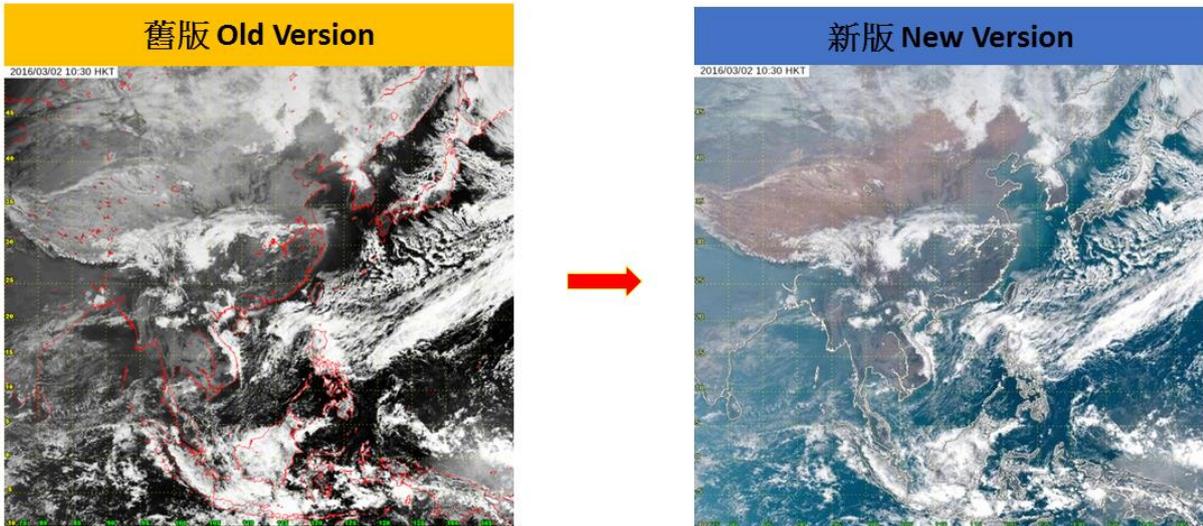


Figure 13

新增覆蓋華南及南海的高解像度衛星圖像

Addition of High-resolution Satellite Imagery Covering Southern China and South China Sea

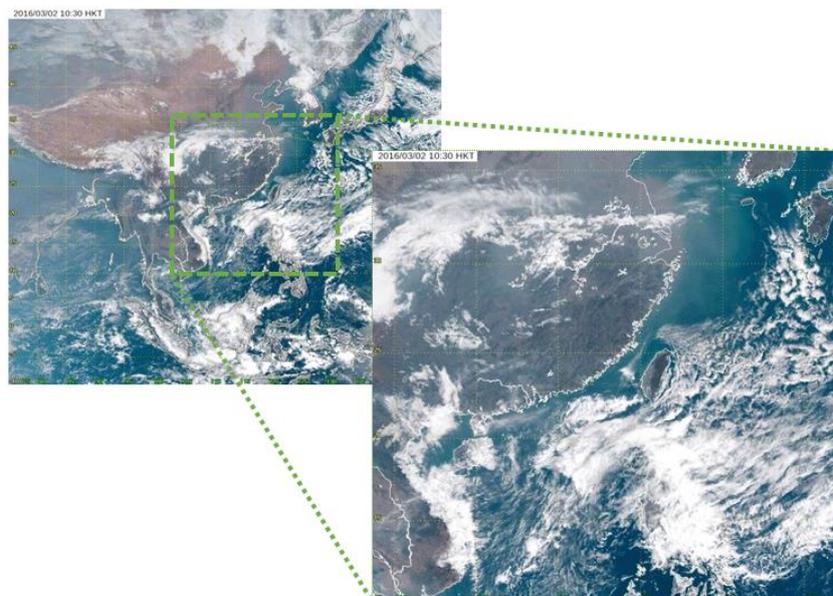


Figure 14

新版本的指定地點閃電戒備網頁（試驗版）

New Version of the Location-Specific Lightning Alert Webpage (Beta Version)



Figure 15



戶外活動地點選項

Selection for outdoor activities location

Figure 16

加強有關局部地區大雨的信息 Enhanced Information on Localised Heavy Rain

一個強雷雨區影響本港，沙田在下午 1 時至 2 時雨勢特別大，錄得超過 70 毫米雨量。由於**局部地區的大雨**可能導致嚴重水浸，該區市民要加倍小心。

An intense area of thundery showers is affecting Hong Kong. Rain was significantly heavier over Shatin from 1 to 2 pm, with more than 70 millimetres of rainfall recorded. As **localized heavy rain** may cause serious flooding, people in that area should be on the alert.

Figure 17

定點雷暴臨近預報服務 Location-specific Thunderstorm Nowcast Service

1小時雷暴臨近預報
1-hour thunderstorm
nowcast



Figure 18

戶外攝影天氣資訊網頁

Weather Information for Outdoor Photography Webpage

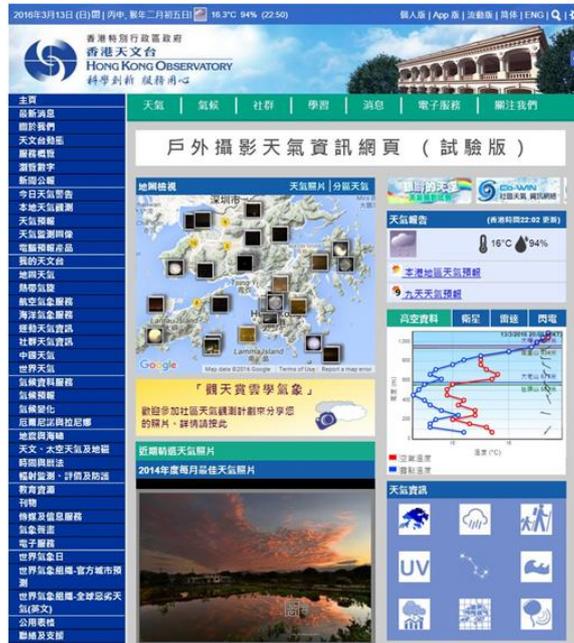


Figure 19

太平山頂實時天氣照片

Real-time Weather Photo @ Victoria Peak



Figure 20

香港旅遊天氣資訊網站

Hong Kong Weather Information for Tourists Website



Figure 21

「我的天文台」 @ Apple Watch “MyObservatory” @ Apple Watch



Figure 22

今日提提你 MetChat for the Day

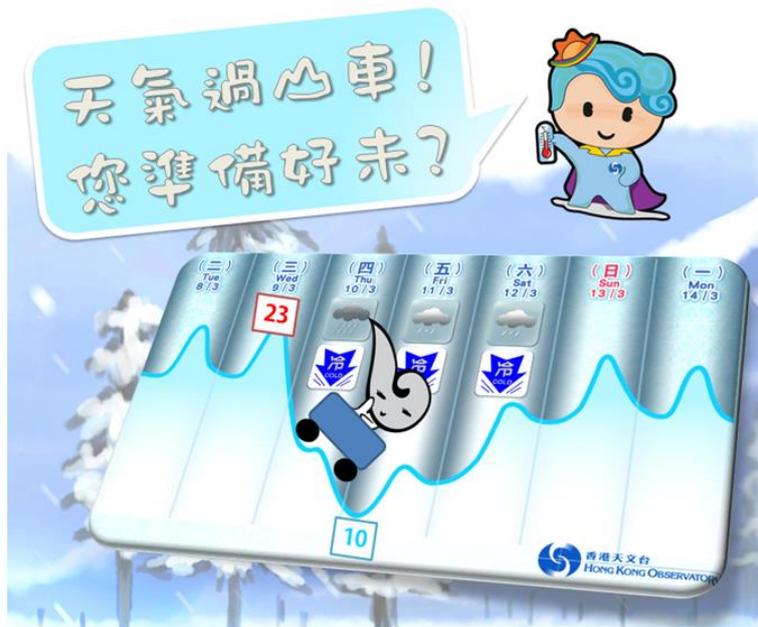


Figure 23

天氣廣播站 Weather On-Air

 天氣廣播站 Weather On-Air	星期一至星期六 Monday to Saturday	約上午 7 時 Around 7:00 AM
	星期一至星期五 Monday to Friday	約上午 8 時 Around 8:00 AM
 氣象冷知識 Cool Met Stuff	星期五 Friday	約下午 6 時 30 分 Around 6:30 PM

天氣廣播站 @ 「我的天文台」及天文台網頁：最新播放時間（四月開始）
"Weather On-Air" @ "MyObservatory" & Observatory Webpage: New Broadcast Schedule (w.e.f. April)

Figure 24

2016年香港天文台開放日

2016 Hong Kong Observatory Open Day



2016年3月19日（星期六）：上午**11時30分**至下午**4時30分**
 2016年3月20日（星期日）：上午**10時正**至下午**4時30分**
 19 March 2016 (Saturday): **11:30 a.m. to 4:30 p.m.**
 20 March 2016 (Sunday): **10:00 a.m. to 4:30 p.m.**

Figure 25



CLIMATE CHANGE OUR RESPONSE

回應·氣候展

03.06-07.06	Hong Kong Central Library 香港中央圖書館
21.06-25.06	Times Square 時代廣場
15.07-26.07	Tin Shui Wai Public Library 天水圍公共圖書館
28.07-04.08	Business Environment Council 商界環保協會
06.08-17.08	Exchange Square 文咸廣場
20.08-31.08	Kowloon Park 九龍公園
02.09-18.09	Science Museum 香港科學館
17.10-27.10	The Hong Kong Polytechnic University 香港理工大學
29.10-06.11	Science Park 科學園
08.11-20.11	The Chinese University of Hong Kong 香港中文大學

減緩

改善發電燃料組合

減少燃煤

使用更清潔燃料 (如天然氣)、發展可再生能源和分佈式發電

適應

氣候變化

應變

氣質誤差和監控變化進行研究

加強機構能力和政策重點進行演習

- 1
- 2
- 3

Figure 26

氣候變化網頁全新版 Climate Change Revamped Webpage

「你知唔知...」



Figure 27



Figure 28