

HONG KONG : THE FACTS

Hong Kong Observatory

The Hong Kong Observatory is a government department responsible for monitoring and forecasting weather, as well as issuing warnings on weather-related hazards. The Observatory also monitors and assesses radiation levels in Hong Kong, and provides other meteorological and geophysical services to meet the needs of the public and the shipping, aviation, industrial and engineering sectors. The Observatory's vision is to be a model of excellence in protecting lives and building together a better society through science. Service development is based on the core values represented by the seven letters that make up the word "SCIENCE".

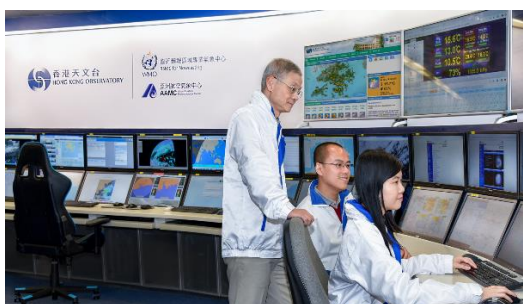


Corporate video of the Hong Kong Observatory



<https://www.hko.gov.hk/abouthko/aboutus.htm>

Weather Services: The Observatory provides weather services to the public, fishermen, shipping community, the aviation sector, as well as other special users. Through special arrangements, it also provides tailored meteorological support for major activities such as fireworks display and sporting events. The Observatory is certified to the International Organization for Standardization ISO 9001:2015 Quality Management Systems for its public weather forecasting and warning services.

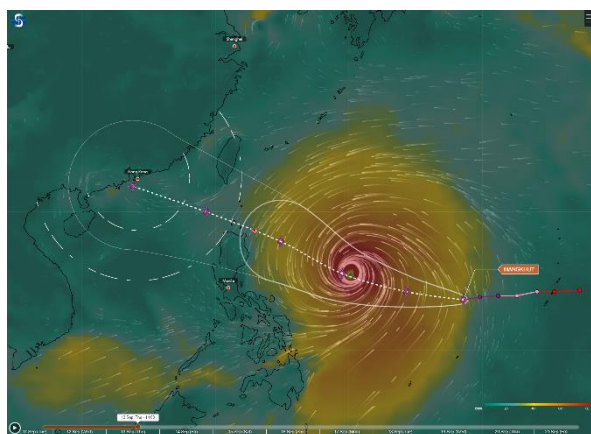


The Observatory staff providing round-the-clock meteorological services

The Observatory operates a range of weather monitoring equipment, including a territory-wide network of automatic weather stations for measuring wind, pressure, temperature, humidity and rainfall, a network of cameras and visibility meters for providing real-time weather photos and visibility readings, a lightning location network for detecting lightning and two Doppler weather radars for detecting the intensity and movement of rain areas. The Observatory's upper air measurement, automatic wind and temperature measurement services are certified to the standard of the International Organization for Standardization ISO 9001:2015 Quality Management Systems. The Observatory also

exchanges real-time data with other meteorological centres worldwide and receives cloud pictures from a variety of weather satellites.

The Observatory uses computer models to simulate and predict the evolution of weather systems over East Asia and the western North Pacific. The model results form the basis for forecasting the weather in Hong Kong and the adjacent seas, as well as for providing the public with weather forecasts in fine spatial and temporal resolution. For local weather, apart from providing weather forecast up to 9 days ahead, the Observatory also operates "Automatic Regional Weather Forecast" webpage to provide hourly weather forecast generated by computer models for various locations in Hong Kong and the Pearl River Delta region up to 9 days ahead, along with Extended Outlook products that provide the probabilities of daily minimum and maximum temperature and mean sea level pressure in the next 14 days and tropical cyclone tracks in the coming 9 days. The "Regional Information on Heavy Rain and Thunderstorm" webpage provides the affected regions mentioned in "Announcement on Localised Heavy Rain", "Special Announcement on Flooding in the northern New Territories" or "Thunderstorm Warning", as well as the recorded regional rainfall and lightning locations. The Location-specific Lightning Alert Webpage (LLAW) also displays lightning and relevant information through a one-stop Geographical Information System. The "Earth Weather" webpage provides an interactive display of computer forecast model products, allowing members of the public to easily appreciate the large-scale weather changes in the Asia-Pacific region.



"Earth Weather" webpage

The Observatory has developed a nowcasting system called SWIRLS (Short-range Warning of Intense Rainstorms in Localized Systems), utilizing data from radars, rain gauges and lightning sensors, together with the results of computer simulation, to provide forecasts of rainstorms and the associated inclement weather in the following 6 hours. In addition to supporting weather forecast and warning operations, SWIRLS also provides 2-hour rainfall and 1-hour lightning nowcast to the public through the Observatory's website and the mobile app "MyObservatory". The Observatory was designated by the World Meteorological Organization (WMO) as a Regional Specialized Meteorological Centre (RSMC) for Nowcasting, providing meteorological organisations in the Asian region with products and

techniques related to nowcasting of high-impact weather events.



"Regional Information on Heavy Rain and Thunderstorm" webpage

Weather information, forecasts and warnings on hazardous weather for the public are delivered and broadcast through a variety of dissemination channels, including the Observatory's website (<https://www.hko.gov.hk> and <https://www.weather.gov.hk>), mobile app "MyObservatory" on smartphones and Windows 10 desktop, the 187 8200 Dial-a-weather service, press, radio, TV, the Observatory's YouTube channel as well as social-networking platforms such as the Observatory's Facebook page and "hk.observatory" Instagram platform. The Observatory's website is also available with a personalized version (<https://my.weather.gov.hk>) to facilitate users to customize the contents.

The Observatory provides free self-produced television weather programmes, including a weekly educational feature named "Cool Met Stuff", for public broadcast on televisions, YouTube, the Observatory's Facebook page and the "MyObservatory" mobile app. Radio interviews on the latest weather situation are also conducted by forecasters and weather service officers of the Observatory.



Weather programme presentation by professional meteorologist of the Observatory



"MyObservatory" mobile app

The Observatory's Airport Meteorological Office (AMO) which is ISO 9000 certified since 2002 provides meteorological services required by international air navigation to the Hong Kong International Airport (HKIA) and for the Hong Kong Flight Information Region. In particular, the Observatory operates a sophisticated network of weather sensors, including terminal Doppler weather radar(s), LIDAR (Light Detection And Ranging) systems and weather buoys, as well as in-house developed meteorological systems for automatic alerting of windshear, turbulence, lightning and other severe weather. Extensive weather information required by the aviation community, including flight documentation required for flights departing from HKIA and significant convection forecast in support of air traffic flow management, is provided through the Aviation Meteorological Information Dissemination System website and the electronic flight bag mobile weather application "MyFlightWx". AMO also provides

weather briefing services to air traffic controllers regularly, which will be extended to other aviation users as well in inclement weather situations. The Observatory also serves as the Backup Asian Aviation Meteorological Centre (AAMC) to provide en-route hazardous weather information of the region and improve aviation safety and efficiency.

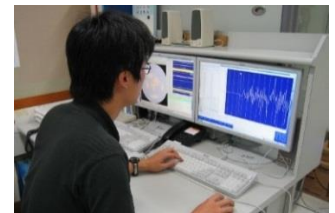
The Observatory provides marine meteorological services to international shipping, fishing and oil drilling activities in coastal waters as well as water sports activities offshore. Under the Voluntary Observing Ships' Scheme of the World Meteorological Organization, the Observatory operates a fleet of locally based voluntary weather observing ships to collect weather observations at seas for meteorological organizations worldwide. The Observatory also collaborated with shipping community to deploy drifting buoys in the South China Sea and western North Pacific to strengthen marine meteorological observation.

Radiation Monitoring and Assessment: The Observatory monitors the ambient radiation levels in Hong Kong and conducts radiological measurements on samples of air, soil, water and food. Its radiation measurement services are certified to the standard of the International Organization for Standardization ISO 9001:2015 Quality Management Systems. In the unlikely event of a nuclear emergency at the nuclear power stations in Guangdong, the Observatory will immediately step up radiation monitoring, assess the radiological consequences and provide technical advice to the government regarding the appropriate protective actions to take.

Time Standard, Geophysical and Climatological Services: The Observatory maintains a caesium beam atomic clock as the Hong Kong time standard. Time checks are provided through network time services, Internet clocks, the Dial-a-weather service and a local radio station. Meanwhile, the Observatory contributes time information to the International Bureau of Weights and Measures (BIPM) in France for the determination of the Co-ordinated Universal Time (UTC).



Observatory staff conducting radiological survey



Observatory staff performing seismic analysis

The Observatory operates a network of seismograph stations and collects real-time data from numerous seismograph stations around the world to monitor earthquake activities and to provide earthquake information services, including the dissemination of Quick Earthquake Messages through Twitter, Weibo and RSS. It also operates a network of tide gauges to provide information on tides, mean sea levels, storm surges and tsunamis. The Observatory issues warnings in the unlikely event that tsunamis may affect Hong Kong.

For climate services, the Observatory operates the "Climatological Information Services" webpage which provides the public and users in different sectors with one-stop-shop online access to various climate information and statistics of Hong Kong, the latest climate news and educational resources on climate subjects. The Observatory also actively collaborates with stakeholders and partners to enhance the usage of climate information in different areas, including engineering projects, town planning, water resources management, scientific research, energy saving and disaster risk reduction.

The Observatory issues predictions of the annual rainfall and the total number of tropical cyclones affecting Hong Kong in the year.

It also issues seasonal forecasts of temperature and rainfall of Hong Kong via its website. The Observatory also conducts researches on climate change impacts to Hong Kong, and through the “Climate Change” webpage summarizes the past and projected climate trends in the global as well as local contexts and provides the latest updates and relevant data on climate change issues.

To promote public awareness of climate change, natural disasters, and the Observatory’s services, outreach activities such as public talks, seminars, courses, and exhibitions, including the annual Open Day, are regularly organized. Publicity and public educational materials, Observatory’s Blog and Weather Note are also produced. Through the “Science in the Public Service” campaign, the Observatory also joins forces with other government bureaux/departments to enhance the public’s understanding of the application of science and technology in the provision of public services.



Hong Kong Observatory’s Open Day

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