



## Hong Kong Observatory

The Hong Kong Observatory is a government department responsible for forecasting weather and 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.

**Weather Services:** The Observatory provides weather services to the public, fishermen, shipping community, special users, as well as the aviation sector. It also provides tailor-made weather service for major local events, including the 2008 Olympic equestrian event and the 2009 East Asian Games in Hong Kong.

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 information, a lightning location network for detecting lightning and two Doppler weather radars for detecting the intensity and movement of rain areas. The Observatory also 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, and uses that as a basis for forecasting the weather in Hong Kong and the adjacent seas. The Observatory has developed and is operating a nowcasting system called SWIRLS (Short-range Warning of Intense Rainstorms in Localized Systems) to predict rapidly developing rainstorms. Using radar and raingauge data, SWIRLS provides a forecast of the rainfall distribution over Hong Kong up to 3 hours ahead. The forecast is updated every six minutes to support the issuance of warnings for heavy rain in Hong Kong. SWIRLS was also deployed to Beijing to support the local weather service during the 2008 Beijing Olympics.

Weather information, forecasts and warnings on hazardous weather for the public are issued and broadcast through a variety of dissemination channels, including the Observatory's website, the 187 8200 Dial-a-weather service, press, radio and television stations. Television weather programmes are produced and presented daily by professional meteorologists of the Observatory for television broadcast. Through radio interviews, weather service officers of the Observatory provide the public with the latest weather situation for making appropriate preparation before they set off for work or school in the morning.

The Observatory provides meteorological services required by international air navigation to the Hong Kong International Airport (HKIA) and for the Hong Kong Flight Information Region through its Airport Meteorological Office. In particular, the Observatory

operates a sophisticated network of weather sensors, including a Doppler weather radar, two LIDAR (Light Detection And Ranging) systems and five weather buoys, as well as in-house developed meteorological systems for automatic alerting of windshear, turbulence, lightning and other severe weather at the HKIA. Weather information required by the aviation community, including the flight documentation required for departing flights from HKIA, is provided through a web-based Aviation Meteorological Information Dissemination System.

The Observatory promotes public awareness of and community preparedness on natural disasters by regularly conducting public talks, providing media interviews, organizing training courses as well as producing publicity materials on hazardous weather phenomena.

**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.

In the event of a nuclear emergency at the nuclear power stations at Daya Bay, the Observatory will immediately intensify radiation monitoring, assess the radiological consequences and provide 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 checking services are provided through the Internet, the Dial-a-weather System and local radio stations. The Observatory uses a high accuracy time transfer system based on the Global Positioning System to provide time information of its atomic clock to the International Bureau of Weights and Measures (BIPM) in France, thereby contributing to the determination of the co-ordinated universal time (UTC).

The Observatory operates a network of eight short-period seismograph stations to monitor earthquake activities in the vicinity of Hong Kong. It also issues tsunami warnings in case a tsunami may affect Hong Kong.

A network of tide gauges operated by the Observatory provides information on tides, mean sea levels and storm surges.

The Observatory provides a climatological information service to meet the needs of local engineering projects, town planning, litigation, etc.

The Observatory makes and issues a prediction of the annual rainfall and the total number of tropical cyclones affecting Hong Kong in a year. It also issues seasonal forecasts of temperature and rainfall of Hong Kong in the Observatory's website.

The Observatory conducts research on climate change in Hong Kong, as well as its impacts to the society. Outreach activities, including public and school lectures, exhibitions, production of educational packages, etc. are

conducted regularly to promote the public's understanding of the science of climate change.

For fact sheet with figures inserted, please visit <http://www.hko.gov.hk/abouthko/hko.pdf>.