

# WEATHER ON WINGS



Editorial Board : LEUNG Wing-mo LEE Kwok-lun WONG Mei-shing MA Lap-yin

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## Fruitful co-operation between Hong Kong and China Meteorological Observatory and Administration in the past decades

MA Wai-man and PAN Chi-kin

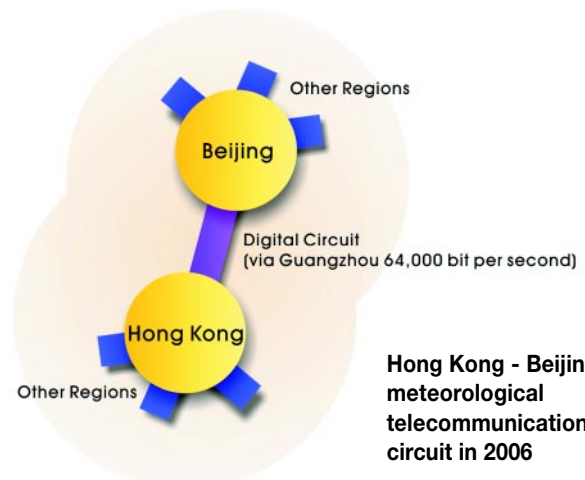
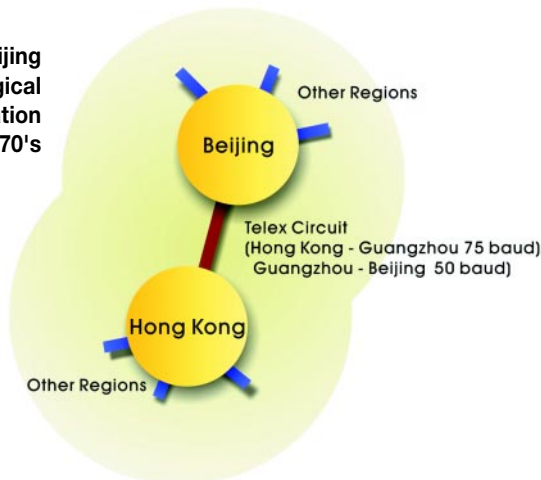
The China Meteorological Administration (CMA) and the Hong Kong Observatory have worked together for many years. In 2006, operation of the meteorological telecommunications circuit between Beijing and Hong Kong entered the fourth decade. Looking back, during the 1950's and 1960's, technology was not as widely exploited as it is nowadays. The exchange of meteorological information between the mainland and Hong Kong was rather difficult. HKO needed to install a "spider-web" like antenna in its Headquarters in order to receive radio broadcasts of weather reports from the mainland. These weather reports, encoded in Morse code, were then translated manually by telecommunication staff and plotted onto weather charts. They provided useful support to weather forecasting and warning services in those years.

In the 1970's, the establishment of a direct meteorological telecommunications circuit for information exchange between Beijing and Hong Kong was made possible as a result of the efforts of HKO colleagues and the mainland counterparts. The circuit was successfully implemented on 20 December 1975. It consisted of two segments: a dedicated link

between Guangzhou and Hong Kong running at 75 BAUD (i.e. 75 codes per second); and another one between Beijing and Guangzhou at 50 BAUD. During the mid 1970's when commuters using public transportation had to purchase tickets manually from bus or tram conductors and the Mass Transit Railway was not yet operational, the Observatory was already in the technological forefront of the society, utilising telecommunication network to link up with Beijing directly for the exchange of real-time meteorological information.

Following the rapid increase in the amount of meteorological information, the speed of the circuit also increased in phases. The circuit between the Observatory and the mainland was upgraded twice in 1990 and 2001. The transmission rate of the circuit now stands at 64,000 bps (bits per second), about 800 times faster than that in 1975. More and more meteorological information worldwide can be exchanged instantly between the two places and used in the weather service, enhancing the capability in weather forecasting.

Hong Kong - Beijing meteorological telecommunication circuit in the 1970's

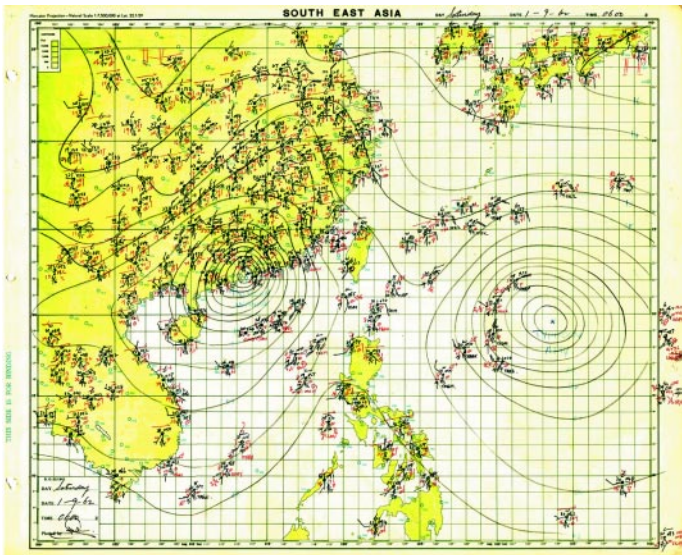


Hong Kong - Beijing meteorological telecommunication circuit in 2006

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**A manually drawn weather chart in 1962**

Besides meteorological information exchange and communication, the scope of co-operation between CMA and the Observatory has expanded progressively to cover other aspects, including public weather services, scientific research as well as training of personnel. From 2005 onwards, the circuit began to support real-time transmission of lightning data for the Lightning Location Network which monitors lightning activities over the Pearl River Estuary. With this implementation, the Lightning Location System can

collect sufficient data to estimate accurately the lightning positions quickly. 2006 is also the 10th Anniversary of the signing of the arrangement on long term co-operation between CMA and the Observatory. A ceremony was held on 27 October 2006 to commemorate the successful operation of a meteorological telecommunications circuit between Hong Kong and Beijing for more than three decades and the 10th Anniversary of the signing of the arrangement on long term co-operation.



**Administrator of China Meteorological Administration, Academician Qin Da-he (left) and Director of the Hong Kong Observatory, Mr. Lam Chiu-ying (right) exchanged souvenirs in the ceremony to celebrate the long term co-operation.**

## Further honours to the Award-winning Hong Kong Observatory website

**NG Ping-wing**

The web site of the Hong Kong Observatory is very popular because it is user-friendly and provides timely weather information. In October and November 2006, the HKO web site won the Web Care Silver Award and the eGovernment - Most Popular ePublic Service Silver Award respectively. These prizes show that our development strategy is in the right direction.

### Web Care Award 2006

The Web Care Award was presented to the Hong Kong Observatory by the Internet Professionals Association at the award presentation ceremony of the e-Inclusion Campaign 2006. The Campaign was organized to promote the correct use of a barrier free Internet environment. The Care Web Award is a recognition to private and public organizations that have created websites that cater for different needs of users.



### Most Popular ePublic Service Silver Award

The eGovernment - Most Popular ePublic Service Award was supported by the Office of the Government Chief Information Officer of the Government and the IT Division of the Hong Kong Institute of Engineer. In its appraising remarks, the judging panel of the "eGovernment - Most Popular ePublic Service Award" said "The Observatory has totally satisfied the increasing demands of the Hong Kong public for more comprehensive, accurate and timely weather information. ... More importantly, the Observatory puts a lot of efforts in compiling weather education material and putting them on the web to raise the awareness of the public on weather phenomena".





# Real time visibility information of the urban areas

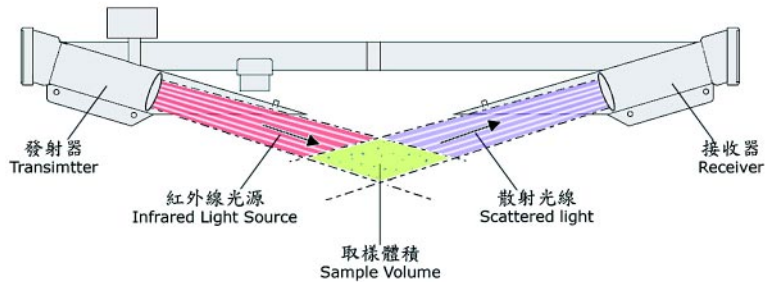
Ip Wing-sing

The Hong Kong Observatory installed an automatic visibility meter at Central to monitor visibility of the Victoria Harbour round-the-clock. Real time data is available on the following webpage:

[http://www.weather.gov.hk/wxinfo/ts/display\\_element\\_vis\\_e.htm](http://www.weather.gov.hk/wxinfo/ts/display_element_vis_e.htm)

Visibility is a measure of the transparency of the atmosphere. It is affected by rain, fog and haze. The operating principle of the visibility meter operates by measuring the amount of infrared light scattered by suspended air particulates. The transmitter of the visibility meter transmits an infrared light and the receiver receives the scattered light. The more particulates there are in the air, the higher the intensity of scattered light, representing lower visibility. The range of measurement is from 100 to 50,000 metres, with an accuracy of  $\pm 10\%$ .

## 能見度儀表工作原理 Operating Principle of Visibility Meter



空氣中粒子愈多，接收到的散射光線愈強，代表能見度愈低。  
More particulates in the air will result in higher intensity of scattered light and lower visibility.

## Weather of the Victoria Harbour at Your Fingertips

Janet Kwok

Tsim Sha Tsui West Mon Jun 26 2006 10:10:02



The Hong Kong Observatory's network cameras at its Tsim Sha Tsui Headquarters, the Central and Peng Chau weather stations are now taking weather photos of the Victoria Harbour. These photos are available in the following webpage:

[http://www.weather.gov.hk/wxinfo/ts/index\\_e\\_webcam.htm](http://www.weather.gov.hk/wxinfo/ts/index_e_webcam.htm)

To enable interested parties to estimate the visibility at the harbour using the weather photos, the distance of the camera from some well-known landmarks are also shown on the webpage.

Victoria Harbour Mon Jun 26 2006 11:47:38



Victoria Harbour Mon Jun 26 2006 13:56:03



# Official website on world weather in **SPANISH** launched

TAM Cheuk-ming

The Hong Kong Observatory in collaboration with the Instituto Nacional de Meteorología (INM) of Spain launched the Spanish version of the World Weather Information Service (WWIS) on 12 September 2006. The new website, (<http://wwis.inm.es/>) offers access to the latest official forecasts for the world's cities issued by National Meteorological Services.

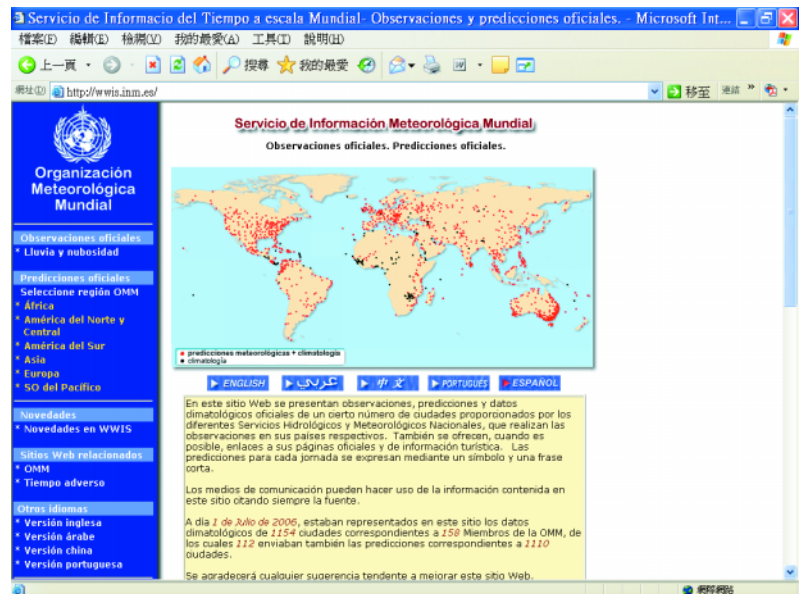
Mr Camilo Alonso, Consul General of Spain in Hong Kong congratulated the Observatory and INM for jointly bringing the Spanish version of the WWIS website into operation. He said, "This website in Spanish is an excellent example of how Hong Kong contributes actively, as a cosmopolitan city that it is, to communicate to people throughout the world. The Hispanic world embraces 20 nations and their language is the second international language in the world."

Mr Lam Chiu-ying, Director of the Hong Kong Observatory, said that the staff of the Observatory and INM were in close contact during the development of the Spanish website. "We are excited to be associated with this project, which will enable more than 350 million Spanish-speaking people in Spain and all over the world to obtain official and accurate weather information in a convenient manner," Mr Lam said.

WWIS is a project of the World Meteorological Organization and there are currently a total of 5 different languages versions.

The Hong Kong Observatory has been administering the English version for over 5 years. At present, over 100 countries and territories provide weather forecasts and climatological data.

The public can click the "Spanish version" icon on the WWIS website (<http://worldweather.wmo.int/>) to view the contents.



## New Webpage Enhances Information Service on Regional Distribution of Wind Strength

LEUNG Wai-hung

The Hong Kong Observatory issues tropical cyclone warning signals to warn the public of the threat of high winds associated with tropical cyclones. Because of the complex landscape, local winds may differ substantially in different areas. Hence, apart from noting the signal status, one should also pay attention to the detailed weather information provided by the Observatory. To facilitate members of the public to comprehend regional distribution of wind strength more easily, the Observatory launched a new webpage in August 2006. Updated once every ten minutes, the webpage displays graphically the distribution of strong and gale force winds in various parts of Hong Kong. To facilitate better appreciation of the effects of winds, the webpage also contains descriptions of the effects of winds of different strengths on land and in the sea.

The address of the webpage is :

[http://www.weather.gov.hk/wxinfo/ts/wind\\_gale\\_e.htm](http://www.weather.gov.hk/wxinfo/ts/wind_gale_e.htm)



New webpage showing distribution of strong and gale force winds over the territory



# To be an **amateur weather observer**

Li Mung-lan

It was a wonderful experience to participate in a 2-day training course on "weather observation" organized by the Hong Kong Observatory in September 2006. The course introduced the visual method to identify cloud type, visibility and state of weather. It also covered the basics on meteorological instruments, use of real-time data available on the Observatory's website, procedures for coding weather observation and interpretation of weather folklore. Such a condensed training course was really a challenge to participants without prior knowledge on meteorology. Anyway, we all made the first step to be amateur weather observers, under clear and useful guidance given by three experienced trainers.

The first public course of this series was organized in 2004 but its content has been enriched with practical sessions and coursework this time. Participants were encouraged to do weather observations at home on three pre-assigned dates, and I realized how difficult it was to make cloud observations on my own. No wonder a tutor said that it would take several years before one could master the skills in weather observation. Thanks to the well prepared training materials and cloud atlas, I eventually completed the exercise with great pleasure. Of course, I will continue to practice more in the future.

With more than 800 applicants, this training course was over-subscribed. I was glad to be among the 100 participants. I hope the Observatory will organize similar courses to promote meteorological knowledge, so that more people can enjoy observing the ever-changing atmosphere. All in all, the course was useful and the experience was invaluable.



Ms Yeung Siu-wai demonstrating the procedures of making weather observation



Ms Leung Man-yi explained the principles of meteorological instruments



The author (3rd right) and other participants photographed with Ms Chiu Chiu-yee, a trainer (1st left)

## Weather Information Webpage for Water Sports

Li Luen-on

To fully enjoy water sports, selecting the right gears and the type of sports suitable for one's physical fitness, skill set and relevant experience is essential. But more importantly, one should be fully aware of the weather and sea conditions before engaging in the sport. For example, beginners of kayaking may like practising on days with balmy breeze and calm sea conditions, while seasoned sailors and windsurfers prefer breezy weather. To facilitate water sport athletes to better plan their water sporting activities and take necessary precautionary measures, the Hong Kong Observatory launched a new "Weather Information for Water Sports" webpage

<http://www.weather.gov.hk/sports/watersports.shtml>

on 1 November 2006. In addition to the latest weather forecast, the new webpage also provides relevant information such as wind speed, wind direction, tide, UV Index etc.



# Science Continues to Serve the Public

LAM Hok-yin

Since the inauguration of the "Science in the Public Service" Campaign on 13 January 2006 by the Chief Executive, Mr Donald Tsang, the activities have been running smoothly and were well-received by the public. The results of the Essay Competition, which was one of such activities, were announced. More than 300 entries were received before the deadline in late September 2006, and the winning essays were of high quality. Prizes were presented at the 1st Anniversary of the Campaign on Saturday, 13 January 2007 at a ceremony held at the Hong Kong Observatory Headquarters. Prize winners were invited to have lunch after the ceremony with a distinguished scientist and guest of honour, Professor Tsui Lap-chee, Vice-Chancellor of the University of Hong Kong, who was one of the officiating guests.



Partners, guests of honour and essay competition winners celebrated the 1st anniversary of the "Science in the Public Service" Campaign.

Soon after the partner departments decided to keep the Campaign going in the future, 10 more government bureaux/departments have joined in, making a total of over 40 partners. Activities for 2007 are being lined up. We aim at organizing scientific activities that are suitable for a wide spectrum of people.

Details of the Campaign activities can be found at <http://www.science.gov.hk>.

## Lightning location map enhanced with geographical reference overlays

POON Hoi-to

Since July 2006, a number of geographical reference overlays have been added to the Hong Kong Observatory's lightning location map. This enables members of the public to identify more easily the location of lightning and better prepare or plan for their activities.

Since its launch in June 2005, the lightning location information service has been well received by the public. Visits to the webpage were in excess of 1.6 million. To further improve the service, the Observatory has added a number of geographical reference overlays to the lightning location map (<http://www.weather.gov.hk/wxinfo/llis/index.htm>). The features include highways, railways, peaks, well-known places, Hong Kong beaches,

and municipal names for Guangdong province. The Observatory has also added a new webpage showing rain areas detected by the radar overlaid with lightning locations. From the distribution of lightning detected near the rain areas, the public will be able to gain a comprehensive appreciation of the weather situation.

Mr Lee Chun-wai, Chairman of the Hong Kong Federation of Countryside Activities, said, "We welcome this new service provided by the Hong Kong Observatory. Hikers can now select one or more of the geographical reference overlays on the lightning location map. This would enable them to decide on a hiking trail and stay away from thunderstorms."

## Hong Kong Observatory Calendar 2007



The "Hong Kong Observatory Calendar 2007" has been published. At \$48 a copy, it is now on sale at the Hong Kong Observatory Resource Centre, the Kowloon Map Publications Centre of the Lands Department, the Publications Sales Unit of the Information Services Department, General Post Office, Tsim Sha Tsui Post Office, Tuen Mun Central Post Office and Sha Tin Central Post Office. Electronic book-ordering service is also available at the online Government Bookstore at <http://bookstore.esdlife.com>.

The theme of the "Hong Kong Observatory Calendar 2007" is "Birds in flight". In his message to the public in the calendar, the Director of the Hong Kong Observatory, Mr C Y Lam, highlights that the atmosphere is part of the life of birds which fly in air. They know the airflow between the two poles of the Earth much better than anybody else. The large-scale migration of birds in spring and autumn is a wonderful portrayal of the coupling between climate and life. The Hong Kong Observatory has chosen "Birds in flight" as the theme of the calendar, hoping that it would help readers have feeling of the atmosphere as the carrier of life on Earth.



# *Hong Kong Observatory Officer Elected Vice-president of Commission for Aeronautical Meteorology of the World Meteorological Organization*

## **Editorial Board**



**Mr Shun (right) standing shoulder-to-shoulder with the newly elected President of the Commission, Mr Carr McLeod (middle) and the ex-President, Dr Neil Gordon (left).**

Mr Shun Chi-ming, Senior Scientific Officer of the Hong Kong Observatory, was elected the Vice-president of the Commission for Aeronautical Meteorology of the World Meteorological Organisation (WMO) at the 13th session of the Commission held in Geneva, Switzerland, during 23 November - 1 December 2006. This is the first time that a Hong Kong Observatory officer takes up such a senior position in a technical commission of WMO.

The Commission for Aeronautical Meteorology, one of the eight technical commissions in WMO, is responsible for coordinating international meteorological activities to meet the requirements of aviation for safe, economic and efficient air navigation.

After the election, Mr Shun thanked all member countries for the support. He said, "I am grateful for your confidence in me and I will do my best to support the President and the Commission in the next four years. I would also like to express my sincere gratitude for the opportunity given to me by the Hong Kong Observatory and the efforts made by colleagues in the past years, without which my election would not have been successful. My special thanks go to Ms Sharon Lau who is also attending this meeting. Her contributions to the Management Group of the Commission in the past several years have built a solid foundation for the commission's work".

Mr Shun will, as the Vice-president of the Commission, support the newly elected President, Mr Carr McLeod of Canada, to lead the expert teams established by the Commission to embark on various tasks related to education and training in aeronautical meteorology, development of a new terminal weather forecast, and customer relations.

The session was attended by representatives from 72 countries and territories. Mr Shun's successful election was a testimony of the recognition by the meteorological community of the Observatory's contributions to

aeronautical meteorology. Many representatives congratulated him and expressed appreciation to the Hong Kong Observatory.

Mr Xu Xiaofeng, Deputy Administrator of the Chinese Meteorological Administration, principal delegate of China attending the session, regarded the Observatory highly in leading the world in applying science and technology to aviation weather services. The representative from Ethiopia said "We fully appreciate the work of the Hong Kong Observatory in assisting developing countries, especially in providing training seminars and expert advice in the past years to build up our capabilities in the provision of weather services". At the session, other representatives also expressed appreciation of the Observatory's work on wind shear and turbulence, especially its joint efforts with user organizations to produce educational material for pilots.

Mr Shun joined the Observatory in 1986. He had since worked in weather forecasting, radiation monitoring and numerical weather prediction. Starting from 1993, he has specialized in aeronautical meteorology. He was responsible for installing the Terminal Doppler Weather

Radar for wind shear detection at the Hong Kong International Airport at Chek Lap Kok. He also set up the world's first Light Detection and Ranging (LIDAR) wind shear alerting system in 2005. Mr Shun's contributions to international aviation meteorology began in 1997 through active participation in the work of the International Civil Aviation Organization (ICAO) and WMO. Since 2001, he has been the vice-chairman of the ICAO communication, navigation, surveillance and meteorology sub-group in the Asia and Pacific Region.



**Mr Shun (3rd right, front row) and Ms Lau (2nd right, rear row) pictured with delegates of Mainland China, Hong Kong, and Macao, the ex-President and the newly elected President.**

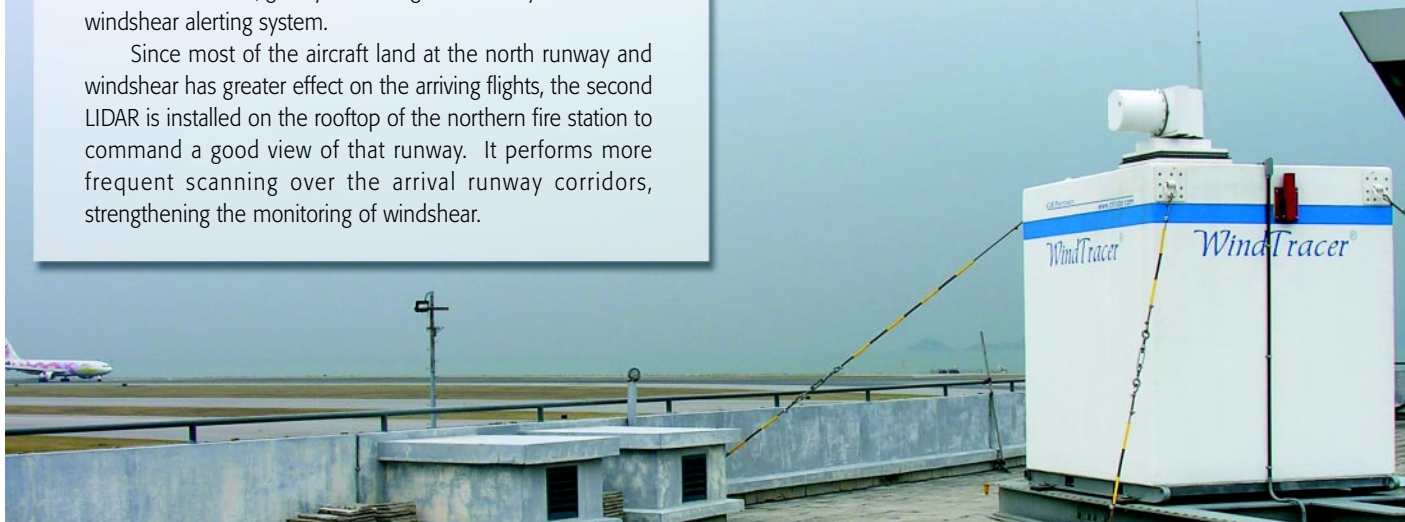
## The second LIDAR in place

CHAN Pak-wai

The second LIDAR strengthens the monitoring of windshear over the north runway.

The Observatory installed the second LIDAR at the airport in November 2006, greatly enhancing the reliability of the LIDAR windshear alerting system.

Since most of the aircraft land at the north runway and windshear has greater effect on the arriving flights, the second LIDAR is installed on the rooftop of the northern fire station to command a good view of that runway. It performs more frequent scanning over the arrival runway corridors, strengthening the monitoring of windshear.



## Thai pilots visited Hong Kong to get acquainted with airport weather and services

CHOY Boon-leung

Last September, a delegation of THAIPA - the Thai Pilots Association - visited the Hong Kong Observatory's Airport Meteorological Office to take an in-depth look at the Hong Kong aviation weather services. Members of the delegation were captains who had extensive operating experience on the Boeing and Airbus aircraft flying regularly between Hong Kong and Thailand. Accompanied by representatives of IFALPA (International Federation of Air Line Pilots' Association) and HKALPA (Hong Kong Air Line Pilots' Association), the four Thai visitors participated in briefings held at the Observatory's Airport Meteorological Office on topics including the operation of the Observatory's LIDAR, the Hong Kong aviation weather services, and in particular those involving low level windshear and turbulence alerts. Members of the delegation said that the visit gave them an opportunity to learn more about the meteorological services for the Chek Lap Kok Airport and enabled them to better utilize the products and services provided by the Hong Kong Observatory in future. Captain Brian Greeves of IFALPA who organized the activity also thanked the Observatory for its arrangement. He said that the exchange not only helped Thai pilots to operate at the Hong Kong International Airport, it also facilitated better liaison between THAIPA and the new Bangkok airport.



Photo of Dr P W Li (third on the right) of the Observatory and the Thai pilots taken after visiting the LIDAR

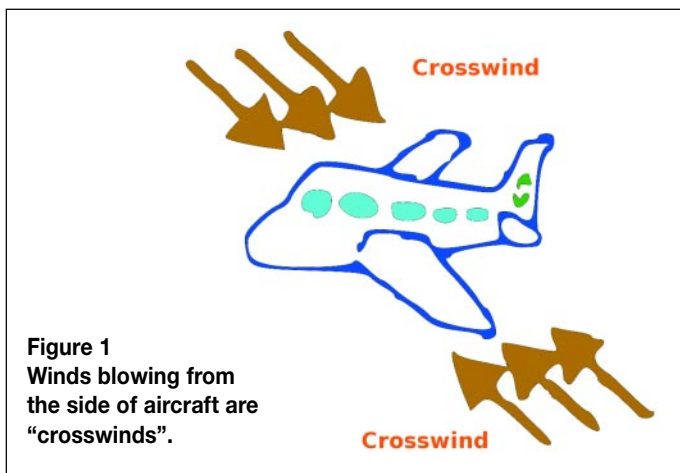


# What is **Crosswind**?

## Cheung Ping

Crosswind is wind blowing from the side (Figure 1). Large changes in crosswind or strong crosswind during landing and takeoff might cause an aircraft to deviate from the runway centreline.

The runways of the Hong Kong International Airport (HKIA) are aligned approximately along the east-west direction. High winds from the north or south will therefore produce high crosswinds and could adversely affect aircraft landing and take off. Winter monsoons and tropical cyclones are the two major weather systems which favour the occurrence of high crosswind. Among them tropical cyclones usually pose larger impact to aircraft operation.

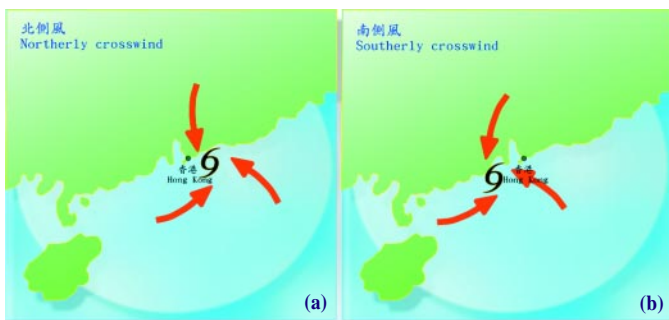


**Figure 1**  
Winds blowing from the side of aircraft are "crosswinds".

Local wind direction is determined by the position of Hong Kong relative to the centre of the tropical cyclone. Generally speaking, local winds will be from the south or southeast when a tropical cyclone is located to the southwest of Hong Kong and will result in southerly crosswind at HKIA. On the other hand, when a tropical cyclone is located east or southeast of Hong Kong, local winds will be mainly from the north to northwest and HKIA will then be affected by northerly crosswind (Figure 2).

In the afternoon of 3 August 2006, when typhoon Prapiroon was closest to Hong Kong some 200 km to our southwest, HKIA suffered from strong to gale force southeasterly winds, causing high southerly crosswinds (Figure 3). Starting from that afternoon to early next morning, southerly crosswinds were generally of about 25 knots, reaching a maximum of 38 knots.

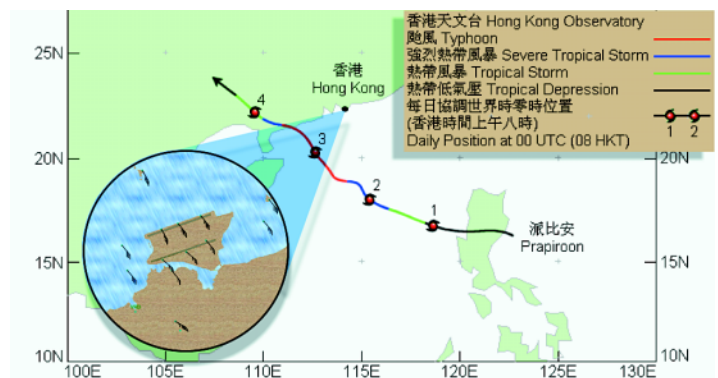
For aircraft approaching or departing HKIA, southerly crosswind normally has bigger impact than northerly crosswind. The main reason is the terrain



**Figure 2**  
Depending on the position of the tropical cyclone, HKIA can experience (a) northerly crosswind or (b) southerly crosswind.

of the Lantau island. As southerly winds blew across the northeast-southwest oriented hilly ranges over Lantau, streaks of low wind flow emanated from the hills while streaks of high wind flow appeared downwind of the gaps. These high and low wind streaks crossed the approach and departure paths of the airport in pulses, leading to intermittent severe windshear and turbulence. Upon capturing these pulses, the Observatory's Windshear and Turbulence Warning System issued windshear and turbulence warnings starting from the morning of 3 August till the early morning of the next day. High crosswind and significant windshear paralysed Hong Kong's air traffic. Over 1100 flights were cancelled or delayed.

To facilitate the aviation users to retrieve the latest weather and crosswind forecast information, the Observatory has enhanced the Takeoff Forecast on the Aviation Meteorological Information Dissemination System (AMIDS) by extending the forecast range to 18 hours and adding crosswind forecast information. In addition, to facilitate users' flight planning, "Weather Summary for HKIA" has also been launched on the AMIDS describing the synoptic background and weather changes which supplement the Terminal Aerodrome Forecast (TAF)(Figure 4).



**Figure 3**  
Under the influence of Typhoon Prapiroon, high southerly crosswinds were reported at HKIA during the evening of 3 August till the early morning of 4 August, 2006.

Time	Wind	Cross-wind for IZ direction	Head-wind for IZ direction	Air Temperature	QFE	Remarks
0800	0100	0100	0	22	28.8	
0900	0200	0200	0	22	29.0	
1000	0300	0300	0	22	29.2	
1100	0400	0400	0	22	29.4	
1200	0500	0500	0	22	29.6	
1300	0600	0600	0	22	29.8	
1400	0700	0700	0	22	30.0	
1500	0800	0800	0	22	30.2	
1600	0900	0900	0	22	30.4	
1700	1000	1000	0	22	30.6	
1800	1100	1100	0	22	30.8	
1900	1200	1200	0	22	31.0	
2000	1300	1300	0	22	31.2	
2100	1400	1400	0	22	31.4	
2200	1500	1500	0	22	31.6	
2300	1600	1600	0	22	31.8	
0000	1700	1700	0	22	32.0	
0100	1800	1800	0	22	32.2	
0200	1900	1900	0	22	32.4	
0300	2000	2000	0	22	32.6	
0400	2100	2100	0	22	32.8	
0500	2200	2200	0	22	33.0	

**Weather Summary for HKIA**  
General weather situation for the next 24 hours  
At 9 pm, 9 August, the centre of tropical storm Bopha was estimated to be about 340 kilometres east of Hong Kong and is forecast to move west or west-southwest at about 18 kilometres per hour edging towards the coast of eastern Guangdong. During the past few hours, Bopha continued to move west and weakened slightly. According to the present forecast track, it may be necessary to consider the issuance of the strong wind signal No. 3 in the small hours later tomorrow (10 August) morning. Based on Bopha's present track, winds at HKIA will turn from westerly to northwesterly early tomorrow morning. Crosswinds of greater than 20 knots might occur from time to time during the day tomorrow. The chance of crosswind exceeding 25 knots is slight unless Bopha takes on a more northerly track and edges closer to Hong Kong. Heavy showers are expected overnight and tomorrow under Bopha's outer rainbands.  
**Outlook (up to 48 hours)**  
Rainy on Friday

**Figure 4**  
Enhanced Extended Takeoff Forecast and newly added Weather Summary on AMIDS.

# Direct Dialogues with Pilots

SHUN Chi-ming



**Figure 1**  
**Presentation on the windshear and turbulence alerting services for the Hong Kong International Airport at SIA's Flight Operations Safety Symposium.**

Invited by Singapore Airlines (SIA), I delivered a lecture on the windshear and turbulence alerting services for the Hong Kong International Airport at its Flight Operations Safety Symposium in August 2006 (Figure 1). The 2-day Symposium was well attended by over 200 SIA pilots. Lecturers at the Symposium also included a radar expert from the US, presenting on the onboard weather radar. This was intended to improve the skills of the pilots' operation of the weather radar which in turn would lower the chance of the aircraft encountering turbulence associated with severe weather.

While en-route back to Hong Kong from Singapore, I had a chance to try out the onboard Internet service in uplinking the weather information of the Observatory's Aviation Meteorological Information Dissemination System (AMIDS) to the aircraft (Figure 2). The AMIDS is a system dedicated to provide weather information to

airlines. This test confirmed that, even though the onboard Internet service was still not very popular, graphical weather information could be directly uplink from the Observatory's ground-based system to the aircraft so that the pilots could grasp the latest information in support of their flight operation.



**Figure 2**  
**Real-time weather radar information on the AMIDS successfully uplink to the aircraft.**



## Remembrance of the 30th anniversary of the Tangshan earthquake

Chan Ying-wa

At 3:42 a.m. on 28 July 1976, a strong earthquake measuring magnitude 7.8 on the Richter Scale hit Tangshan in the Hebei province. With a shallow focus of around 11 kilometres, the earthquake ravaged the city, destroying infrastructures including houses, bridges and railways. Over 240,000 people were killed or heavily injured. The Tangshan earthquake has been known as the biggest earthquake disaster in China in the 20th century.

The Tangshan earthquake aroused increased attention of the public to earthquake disasters. In 1979, the Hong Kong Observatory established a short-period seismographic network to monitor earthquakes occurring in the vicinity of Hong Kong. Since 1979, a total of 53 earth tremors (up to December 2006) have been felt locally at Hong Kong, i.e. about twice a year on average. In the recent case on 14 September 2006 where the

earthquake epicentre was near Dangan Islands about 36 kilometres south-southeast of Hong Kong, the Observatory received 200 plus reports of felt tremor from members of the public. Many residents reported that the tremor was like the passing of a heavy truck outside their flats. This seismic event reminded people that Hong Kong was not immune to earthquakes.

Thirty years after the earthquake, Tangshan has been rebuilt to a green and clean city. Tangshan is situated on a plateau in northern China where the frequency of earthquake occurrence is considerably lower than that in the mountainous region of western China. However, the earthquake of magnitude 7.8 that occurred 30 years ago has found its place in China's history and is a study case in text books of seismology.

## Nongli Leap Months

Kwan Kam-lun

It is commonly known that the counting of leap months in the Chinese agricultural calendar (Nongli) is closely related to the 24 solar terms. If a lunar month does not include any major solar term, it is taken as the leap month of the preceding month. In 2006, the 7th lunar month was followed by a leap month. There comes a question whether there would be a leap month for the 1st lunar month.

Before the Qing Dynasty, the law of even Qi separation was used in Nongli. A tropical year was divided into 24 equal periods, each about 15 days, by the solar terms. The probability of having a leap month for the 1st, 2nd and up to the 12th lunar month was equal.

Since 1645, the second year of Shunzhi Emperor of the Qing Dynasty, the law of fixed Qi has been adopted. Solar terms are then marked by the locations of the Sun on the ecliptic 15 degrees apart. As the Earth's orbit around the Sun is elliptic, the Sun progresses along the ecliptic more rapidly when the Earth approaches the perihelion after winter solstice. At this time

of the year, the time interval between two solar terms is less than 15 days and the interval between two major solar terms is normally shorter than a synodic month (the time between two successive occurrences of new moon or full moon). Hence, leap lunar months can hardly occur.

On the other hand, when the Earth approaches the aphelion after summer solstice, the movement of the Sun along the ecliptic is slower so that the time interval between two solar terms exceeds 16 days. The time interval between two major solar terms is longer than a synodic month and leap lunar months are more likely to occur. As a matter of fact, leap months for the 5th, 4th and 6th lunar months have occurred most frequently since 1645. So far, a leap month for the 11th lunar month has appeared only once in 1650 while leap months for the 12th and 1st lunar months are absent. Calculations indicate that the next leap month for the 11th lunar month will occur in 2033. The first occurrence of leap months for the 1st and 12th lunar months will be in 2262 and 3359 respectively!



# Review of the Tropical Cyclone Warning System

Hilda Lam



**Officers of the Observatory listening to views of participants in a seminar on the Tropical Cyclone Warning System.**

In August 2006, the Strong Wind Signal No.3 was issued by the Hong Kong Observatory as Typhoon Prapiroon approached Hong Kong. During its passage, gales were recorded over parts of the territory. Taking-off and landing of aircrafts were also hampered by strong cross winds at the Hong Kong International Airport. The public expressed concern that the current criterion for the No.8 Signal could not reflect the regional wind situation in Hong Kong. In response, the Observatory began to review the Tropical Cyclone Warning System in September 2006.

The review process consisted of a number of activities. Views were gathered through various channels, such as the media as well as e-mails and letters directly received by the Observatory. These were analysed and consolidated into a number of potential options to modify the warning system. The practicability and feasibility of these options were assessed with the use of historical weather data. A series of seminars was organized to better understand the concern of relevant government departments and different sectors of the community in respect of the Tropical Cyclone Warning System and related services, and to discuss the options identified. The seminars were attended by representatives of the Labour Department Tripartite

Committees, Human Resource Management Clubs, parents and teachers associations, public transport operators, the aviation community, the logistics sector, container terminal operators, fishermen organizations, Friends of the Observatory as well as district personalities, etc. To gain further insights into the public's requirements of the Tropical Cyclone Warning System, a company was commissioned to independently conduct a survey through telephone interviews. An advisory committee comprising local academics and scholars from different disciplines was also established to assist the Observatory in understanding and reviewing the warning system from the social, political and cultural angles, over and above a purely scientific perspective.

The scientific research and analyses of collected views in the past months had been conducive to the formulation of a modified set of criteria for issuing tropical cyclone warnings. The Observatory will adopt the modified criteria during the typhoon season this year to meet the needs of the public. This will be complemented by a suite of service enhancement measures.

This year, we shall continue to take an open mind to gather more views from the public, and consolidate the experience of using the new criteria with a view to further improving the tropical cyclone warning service.

**Dr M C Wong, Assistant Director of the Observatory, exchanging views with participants in a seminar on the Tropical Cyclone Warning System.**



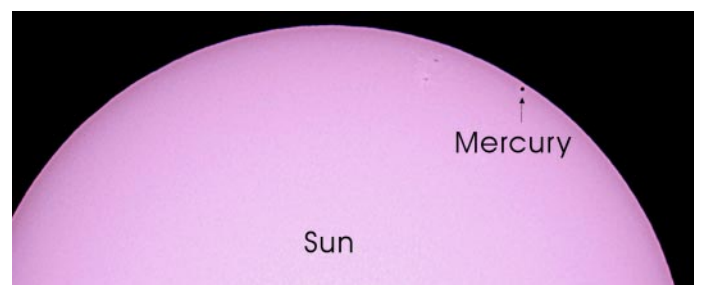
## Transit of Mercury on 9 November 2006

Lam Kin-yui

Mercury and Venus are the inferior planets in the Solar System as they are closer than the Earth to the Sun. Mercury is also an "extreme" planet in the Solar System. Compared to the other planets, Mercury lies closest to the Sun, its mass is the smallest, its volume is the smallest, its escape velocity is the lowest, its period of revolution around the Sun is the shortest, and the angle between Mercury's orbital plane and the ecliptic is the largest. Putting the Mercury and the Sun together, the Sun looks like a giant. When the silhouette of the "smallest" moves across the disc of the "largest", it is the transit of Mercury. This phenomenon was first observed by the French astronomer Gassendi. Astronomers have then tried to estimate the distance between the Earth and the Sun by observing the transits of inferior planets.

The transit of Mercury occurs around 13 times every 100 years on average, all in May or November. The fine weather in Hong Kong in the morning of 9 November 2006 provided a good opportunity to observe the

transit of Mercury. For those who missed this event, they would have to wait until 13 November 2032, or 26 years later, for another opportunity to observe this phenomenon.



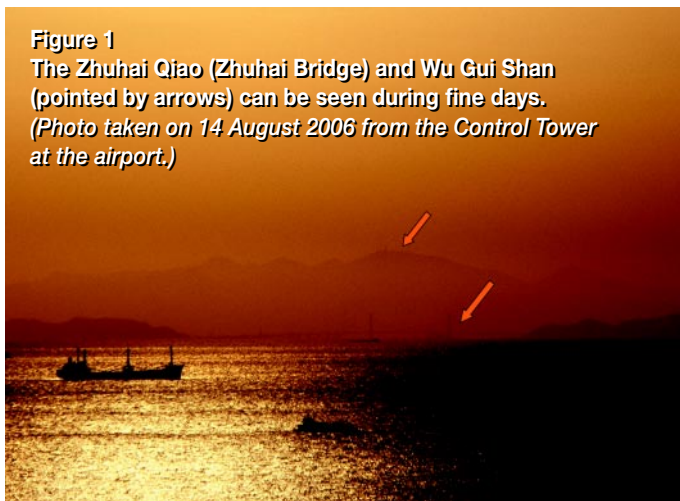
**Transit of Mercury observed in Hong Kong on 9 November 2006**

# Special Weather Phenomena - "Mirage in Hong Kong"?

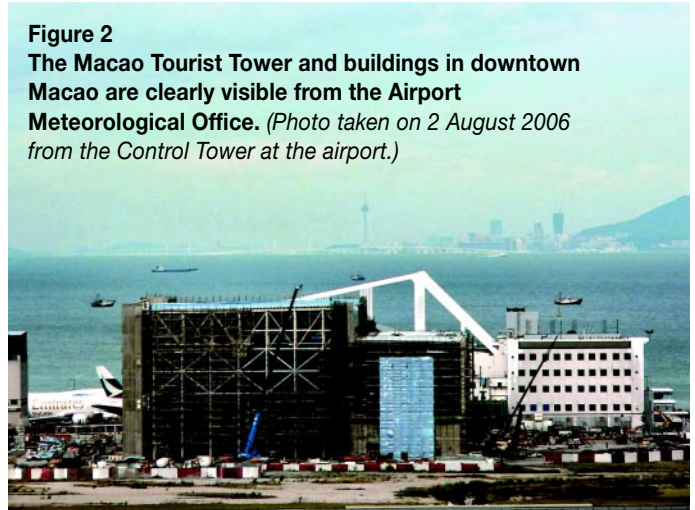
LI Ping-wah

A local newspaper reported in August 2006 that a reader at Tung Chung took some photos suggesting the occurrence of mirage over the Pearl River Estuary. The Observatory's observer at the Airport Meteorological Office at the Hong Kong International Airport was skeptical about this report, because the prevailing meteorological conditions did not seem to favour the occurrence of mirage.

Our observer, Mr Ng Tak-leung, took a number of photos over the same area (Figure 1) the next day. Ng commented, "The visibility at the airport that day was very good. ...Using a zoom camera, I can take a picture clearly showing the "Wu Gui Shan" mountain and a bridge some 50 km to



**Figure 1**  
The Zhuhai Qiao (Zhuhai Bridge) and Wu Gui Shan (pointed by arrows) can be seen during fine days. (Photo taken on 14 August 2006 from the Control Tower at the airport.)



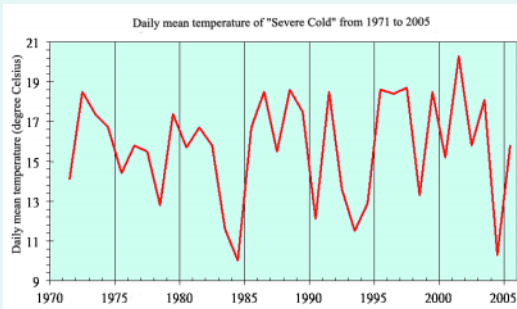
**Figure 2**  
The Macao Tourist Tower and buildings in downtown Macao are clearly visible from the Airport Meteorological Office. (Photo taken on 2 August 2006 from the Control Tower at the airport.)

the northwest of the airport. The report of "mirage" was questionable. On that day with clear air, the newspaper reader was probably seeing something that he or she does not often see because of the usually poor visibility."

Experience shows that in summer, with fresh to strong winds, particularly when they blow from southwest, very clean air is brought to Hong Kong. In fine weather and with high cloud base, the visibility at the airport could be very good. Figure 2 is another photo taken towards southwest by another Observatory observer, Ms Mak Man-ye in August. The foreground shows the aircraft maintenance buildings and hangars at the airport while the Macao Tourist Tower and buildings in downtown Macao can also be seen clearly at the background.

## 24 Solar Terms - Severe Cold

CHOW Tak-hing



After the "Great Heat", the next Solar Term that we would like to talk about is "Severe Cold".

"Severe Cold" occurs on 20th or 21st of January. Being the last Solar Term, "Severe Cold" literally means the coldest

time in a year. According to the records of the Hong Kong Observatory, the mean temperature of the 30 "Severe Cold" days from 1971 to 2005 in Hong Kong is 15.7 degrees, about 1 degree lower than the mean temperature in the winters (that is, December, January and February) of this 30-year period.

As Hong Kong is in southern China, there are days with milder weather in winter time, especially when there is abundance of sunshine or when the winter monsoon is relatively weak. For the period 1971 to 2005, the "Severe Cold" in 1984 was the coldest with a mean temperature of only 10.0 degrees. In contrast, the warmest "Severe Cold" occurred in 2001. The mean daily temperature of 20.3 degrees that day was about 10 degrees higher than that of 1984 (please see the attached diagram). Therefore, whether a "Severe Cold" lives up to its name depends very much on the actual weather situation at the time.

## Pluto ousted

Chau Ming-sum

Pluto was discovered in 1930. At that time, astronomers overestimated its mass as greater than the Earth's and therefore named Pluto the ninth planet in the Solar System.

The concept of the Solar System with nine planets has spanned over two-third of a century and is deeply rooted in our mind. Through time, the advance of technology has unveiled the secret of Pluto and revealed that its size is actually smaller than that of the moon (diameter of Pluto and the Moon are 2390 and 3480 kilometres respectively).

At its meeting in August 2006, the International Astronomical Union reclassified Pluto as a minor planet, leaving only eight planets in the Solar System.





# The Permanent Secretary for Economic Development and Labour (Economic Development) visits the Hong Kong Observatory

Leung Wing-mo



The Permanent Secretary for Economic Development and Labour (Economic Development), Ms Eva Cheng, visited the Hong Kong Observatory on 7 August, 2006. Ms Cheng was briefed on the work of the Observatory in respect of public weather service, aviation weather service, earthquake monitoring, tsunami warning, TV weather service and radiation monitoring and assessment. When she officiated at the opening of the newly renovated Hong Kong Meteorological Centre, Ms Cheng encouraged the staff of the Observatory to maintain professionalism and do their best in the provision of public service.

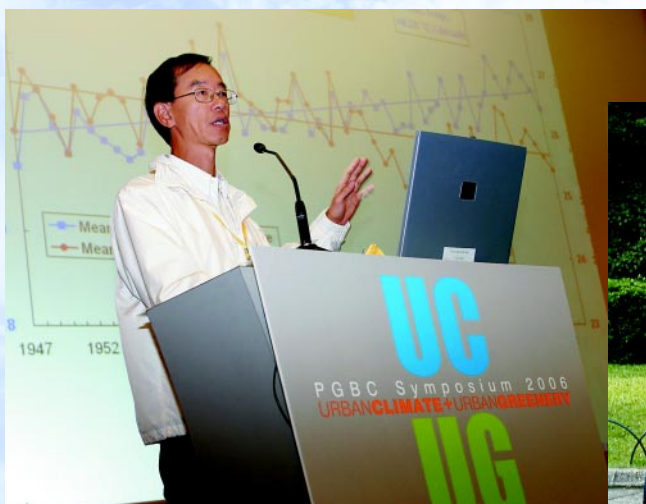
**Permanent Secretary for Economic Development and Labour (Economic Development) Ms Eva Cheng (left), Deputy Secretary Mr Howard Lee (right) and Director of Hong Kong Observatory Mr C Y Lam (centre) at the opening ceremony of the Hong Kong Meteorological Centre.**

## Urban Climate and Urban Greenery Symposium

Leung Wing-mo

More and more people are concerned about the sustainable future of Hong Kong under the current state of rapid city development and construction. Focusing on this issue, the Professional Green Building Council, Hong Kong, the Department of Architecture of the Chinese University of Hong Kong and the Hong Kong Observatory jointly organized a symposium at the Observatory's Headquarters in Tsimshatsui on 2 December 2006. Mr Michael Suen, GBS, JP, Secretary for Housing, Planning and Lands was

invited to officiate at the opening ceremony of the symposium. The Director of the Hong Kong Observatory, Mr C Y Lam and several local and overseas experts presented their speeches and shared their views with the audience on topics such as urban climate and technology for mitigation of urban heat island effects. The participation of the audience was overwhelming, and there were heated discussions on the long-term strategy to sustainable development in Hong Kong.



**The Director explained how rapid urban development had affected the local climate.**

**Mr C Y Lam, Director, warmly received Mr Michael Suen upon his arrival.**





# Measuring Rain - Innovative and Rigorous Designs

FUNG Kwok-chu

In recent years, there were a lot of news with disturbing image of school youths involved in violence and disrespect of civil order. Did these reflect the true nature and sentiment of our teenagers? In the Rain Gauge Design Competition organized for the first time in Hong Kong by the Faculty of Engineering of the University of Hong Kong and the Hong Kong Observatory in 2006, I witnessed firsthand the commendable endeavours of the students - something that the media should put in the spotlight.

The Champion of the Senior Team went to the Form 7 students of the Tin Shui Wai Government Secondary School. Their design took into account the dynamic and variable nature of rainfall and employed ingeniously infra-red sensors. It was so inspiring that it was bestowed the "Most Creative" award too. Also attracting my appreciation was the Champion of the Junior Team - Primary 5 students of the C.& M.A. Chui Chak Lam Memorial School. Though their entry was ordinary in appearance and not equipped with advanced technology, the rigour and determination of the pupils were most impressive. They placed their rain gauge in the middle of a vast open court and made measurement every school day albeit windy or rainy weather. The judges highly praised them for their meticulous and positive attitudes.

The dedication and devotion demonstrated by our students in the competition are good indicators of Hong Kong's promising future. Their greatest achievements were not the prizes, but the participation and cooperation of all the teachers and students. The competition has inspired their ingenuity and

brought them much joy. All members of the judging panel from the University and the Observatory shared their happiness and pride. To me, I feel deeply honoured by being part of the Observatory's multi-level commitments and its contribution to cultivating the next generation.

Students proudly showing their winning design.



## The Observatory organizes training course on city forecasts

Chiu Chiu-ye



Participants taking photo with the Director (middle, front row) and staff of the Hong Kong Observatory

Ten meteorologists from Bhutan, mainland China, Kazakhstan, Malawi, Mongolia, Nepal, Pakistan, Singapore, Thailand and Uzbekistan completed a training course on city weather forecasts organized by the Hong Kong Observatory from 31 October to 3 November 2006.

This professional training course was organized for members of the World Meteorological Organization (WMO). It aimed at enhancing the capability of trainees to formulate weather forecasts through the use of city-specific Numerical Weather Prediction (NWP) products. The course consisted of lectures and practical sessions, covering topics of the NWP system in the Observatory, model post-processing, as well as use and verification of city-specific NWP products. The training course would help the

participants to make better use of NWP products for predicting the weather in the cities of their countries.

Mr Krishna Bhakta Manandhar, a participant from Nepal said, "The training course offers a valuable opportunity for me to learn the use of NWP products for predicting the weather of a city. I am very impressed by the sophisticated forecasting system and the experience of applying NWP products in Hong Kong. Overall, the course is very useful and I have benefited considerably from it."

The Observatory will continue to promote the use of city-specific NWP products among WMO members and share our experience with counterpart meteorological services round the world.

Participants being briefed on meteorological instruments





# The Important Role of Meteorology in Haze

John Leung

Visibility and air quality have become hot topics in recent years in Hong Kong. Apart from fog, mist, rain and other meteorological phenomena involving water droplets, reduced visibility occurred mainly as a result of the absorption and scattering of light by particulates suspended in the atmosphere. In Hong Kong and other parts of southern China, suspended particulates form mainly as a result of human activities such as construction, vehicular traffic, fossil-fuel power generation, cooking and burning of vegetation. As suspended particulates are carried and dispersed by the wind, reduced visibility is influenced by meteorological factors such as wind direction, wind speed and atmospheric stability. The Chief Executive mentioned in his Policy Address 2006-07 that an approaching typhoon may cause very serious air pollution in Hong Kong. This clearly shows the important role played by meteorology.

The Hong Kong Observatory has strengthened its co-operation with the Environmental Protection Department in studying the relationships among visibility, small suspended particulates (PM2.5) and meteorological conditions. Through meetings, discussions and visits to air monitoring stations, experts from both departments have deepened knowledge in this aspect. In fact, besides meteorology, the cause for the formation and chemical reaction process related to suspended particulates and other chemicals that affected air quality are very complicated. A multi-disciplinary and in-depth study of the problem is the only way to tackle the problem.

**Staff of the Hong Kong Observatory and Environmental Protection Department visiting the Tung Chung Air Monitoring Station.**



## THE AUTUMN SWALLOW

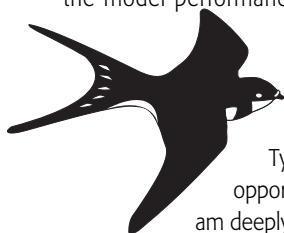
CHAN Sai-tick

A typhoon expert from the Mainland reported duty at the Observatory's OpenLab shortly following the Mid-Autumn Festival. Ms Chen Pei-yan\*, a researcher of the Shanghai Typhoon Institute, came to Hong Kong to participate in an R&D project on applied techniques in tropical cyclone forecasting under the "Typhoon Committee Research Fellowship Scheme 2006".

Chen Pei-yan's visit lasted two months. The title of the research project is "Application of ensemble prediction system of numerical weather prediction models to tropical cyclone forecasting", with a particular focus on the prediction of tropical cyclone intensity. Through the research project, it is hoped that the value of the ensemble prediction system (EPS) products could be extracted and utilized more fully to forecast the changes in tropical cyclone intensity.

Ms Chen remarked on her Hong Kong trip, "Intensity prediction is one of the current hot but challenging problem in tropical cyclone research and application. The present attempt to study the tropical cyclone intensity probability forecasts derived from EPS could improve our understanding on the model performance, and hopefully bring positive impacts to the forecasting operation."

This exchange visit has enhanced the co-operation on research and operation between the Hong Kong Observatory and the Shanghai Typhoon Institute. I look forward to more opportunities of exchanges and collaboration in future. I am deeply impressed by the serious and careful attitude, and the team spirit of the experts at the Observatory, which would



**Chen Pei-yan in the OpenLab**

definitely have a profound influence on my future work and studies. They showed care not only to my work but also to my life. They have given me a lot of support and encouragements." She continued to say.

The Typhoon Committee Research Fellowship Scheme of the Asia-Pacific region Typhoon Committee was established in 1999. The objective of the scheme is to offer a mechanism for conducting joint research projects by the meteorological organizations within the region. The research findings will be published and applied in forecasting operation. Chen Pei-yan is the second visiting researcher from the Shanghai Typhoon Institute under the fellowship scheme.

\* *The Chinese character "Yan (燕)" means swallow.*

# Popular Radio Program **Oh** Meteorology

John Leung

"Sunrise, sunset - perpetually evolving scenes", how much do you know about the capriciousness of Nature? This is the publicity slogan of a popular radio programme on meteorology jointly produced by the Radio Television Hong Kong (RTHK) Channel One and the Hong Kong Observatory.

The first series of this radio programme received warm applause from the audience a few years ago, giving the impetus to produce this second series. It is an honour for me to host the programme with the well experienced RTHK host Mr K M Cheng. Other guest hosts are Mr C Y Lam, Director of the Observatory, and Mr T W Hui, Scientific Officer. To me, it is much more difficult to host a radio programme than to host a TV programme or to present a public talk. Without the help of visual aids such as diagrams and charts, one can only rely on articulation to put across complicated concepts.

The coverage of the second series is broader than the first. Topics range from a macro view of global warming and climate change to typhoons, rainstorms and commonly used proverbs related to weather. It is hoped that through such an interesting and educational programme, we can continue to enhance the public's meteorological knowledge.



The author and Mr K M Cheng, Head of Cultural & Educational Unit of RTHK, hosted in a radio programme on meteorology.

## Workshop on **Oral Skills** for Reporting Weather Forecast

MA Lap-yin



Colleagues acquired useful oral skills during a workshop conducted by CSTDI Training Officer Ms LEE Wing-yu, Christina

In June 2006, the Civil Service Training and Development Institute (CSTDI) tailor-made a workshop to improve the oral skills of the Observatory colleagues in presenting weather forecasts and reports. Colleagues who were TV weather presenters or those who were required to host media interviews were invited to attend the workshop.

The workshop was designed to help participants to master those techniques that were useful in orally presenting weather reports, for examples, tone cadence and modulation, as well as how to project a friendly and yet professionally image. A section of the workshop was devoted to assist participants to master the correct Cantonese pronunciation and syntax.

The June workshop was warmly welcome by the participants. A similar workshop was conducted again in September 2006 for those colleagues who were interested in the topic but missed the previous workshop.

## **Support** for the Frontline Staff - Course on **Customer Services**

YEUNG Pui-yi

Weather is closely related to our daily life. Colleagues in the Observatory receive calls from the public and special customers everyday. Since it requires much more than good knowledge of the relevant scientific disciplines to effectively respond to clients' enquiries, the Observatory invited Mr Norman Lai, Senior Training Officer of the Civil Service Training and Development Institute, to tailor-develop a course on customer service for our staff.

As early as late June last year, Mr Lai commenced designing the course. He met colleagues from different ranks to know more about the difficulties they faced, so as to provide suitable practical components into the course.

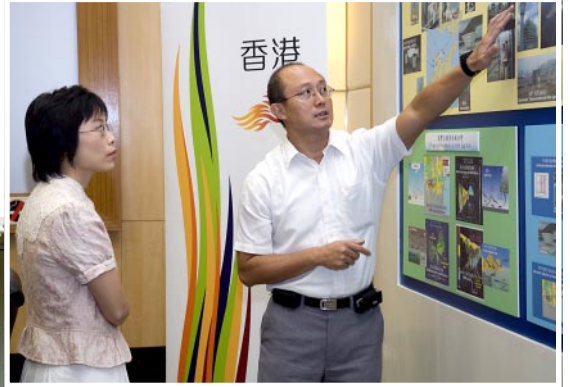
Fifty colleagues attended the two identical classes. The trainees were highly involved in class, especially during the role play session. They all actively participated in solving the problems under a relaxing and joyful atmosphere.



# FRIENDLY VISITS

Editorial board

Ms Carol Yuen Siu-wai, Deputy Secretary for Security, visited the Observatory on 21 September 2006. Assistant Director of the Observatory, Mr Wai Hon-gor introduced to her the meteorological services provided to the aviation community.



A delegation of Hubei officials visited the Observatory on 19 September 2006. When they toured the Hong Kong Meteorological Centre, they were very interested in our forecasting operations and shared with our colleagues their local experience.

On 14 November 2006, Ms Anissa Wong Sean-yee, Permanent Secretary for the Environment, Transport and Works Bureau (Environment), visited the Observatory. She was received by the Director of the Observatory, Mr LAM Chiu-ying and other senior staff members. Apart from visiting the Hong Kong Meteorological Centre, Ms Wong also took a tour to the Radiation Monitoring and Assessment Centre and listened to the explanation by Mr Poon Hoi-to, Senior Scientific Officer, on our work in radiation monitoring.



On 28 September 2006, the Land Registrar, Mr Kim Anthony Salkeld, delivered a talk at the Observatory's Management Forum and shared his experience with our colleagues on the management culture in the Land Registry. Director of the Observatory, Mr LAM Chiu-ying, presented Mr Salkeld with a copy of the book "Weathering the Storm" as a souvenir and took him to the History Room to show him our historical relic.

On 1 August 2006, students of the Beijing Jiaotong University who participated in the exchange programme with the City University of Hong Kong called on the Observatory. Miss Shum Kit-ying, Experimental Officer, explained to them on how to measure the rainfall.







# Our Hearts were in the Observatory as We Chanted Songs of Farewell

S W Yeung, Head, Meteorological Telecommunication Centre, Hong Kong Observatory

Translated by W M Leung

I was sleepless in the middle of the night, probably because of my worry of not being able to keep my promise to write an article for "Weather on Wings" on time. Having decided to write something before the morning broke, I made a pot of Chinese tea to set the mood.

Just a couple of days ago, we were enjoying the photos on the Intranet of the farewell party hosted by the Observatory to the staff of the Meteorological Telecommunication Centre. We relived the warm experience of cutting the cake with the Director, and were deeply moved once again by the hospitality of the Observatory colleagues. Parting moments were seldom cheerful, but these were as touching as they were memorable.

On that very special day, many Observatory friends, old and new, took a break from their hectic schedule to bid us farewell. Mr Lam, the Director, made a speech rich in nostalgic episodes of the long history of the service of this team of "Cable & Wireless" (now PCCW) staff in the Observatory, instantly raising our status to a historical peak. Dr Wong, the Assistant Director, read us a thousand-year-old Tang dynasty poem. Though not quite able to fully decipher the archaic language, we could feel that it was affection in concentrated form. Dr Li, another Assistant Director, filled the void of his absence with two bottles of fine wine. He expressed his gratitude without ever saying it. There were uncountable others with whom we shook hands passionately and greeted each other fondly. I wish to thank each of them for their kind support and understanding, without which we could have undergone accelerated metamorphosis into millennium bugs.

The birds outside were getting noisy to celebrate the arrival of a new day. I would like to raise a toast to your good health and happiness, this time with my cup of tea.

Mr Lam, the Director (4th right) and Dr Wong, the Assistant Director (3rd right) bidding farewell to "Cable & Wireless" colleagues



## The Golden Ten Years of the "Friends of the Observatory"

LEE Kwok-lun

In what seems like a fleeting moment, the "Friends of the Observatory" is now 10 years old. "The Friends of the Observatory" has achieved what it set out to do in the first instance - to facilitate public education on underpinning the work of the Observatory, to promote public understanding of the Observatory's services, as well as to set up a communication channel with the general public to improve understanding of their needs.

During the 10th anniversary celebration on 19 December 2006, the Director of the Observatory, Mr C Y Lam, said, "Today, our membership has reached 8,000, i.e. for every one thousand people in Hong Kong, one of them is a member of the "Friends of the Observatory". Such a high participation rate for a meteorology interest group is the envy of many of our international counterparts."

Volunteers of the "Friends of the Observatory" have for many years rendered their untiring support in many large scale outreach activities organized by

the Observatory such as the annual open day and weekly public tours. Their enthusiasm and passion often earned the compliment of the general public. A senior "Friends of the Observatory", Mr Roger Kwan said, "I am thankful to the Observatory for providing such a platform for us to serve the public. In participating in various outreach activities of the Observatory, I have discovered my potentials and developed my expertise."

I wish to take this opportunity to sincerely thank each and every volunteer for their excellent support which enables the "Friends of the Observatory" to grow and flourish.



The Director (5th left, front row) sharing happy moments with some volunteers of the "Friends of the Observatory"



# World Meteorological Organization Tropical Cyclone Seminar

LUN Siu-hung

I attended the tropical cyclone workshop organized by the World Meteorological Organization (WMO) Typhoon Committee Secretariat in Hanoi, Vietnam from 4 to 7 September 2006. The aim of the seminar was to facilitate technical exchange between researchers and operational forecasters from different countries to enhance disaster preparedness for countries in the region.

The workshop was very comprehensive, covering topics such as factors affecting tropical cyclone movement and its structure, the structural change of tropical cyclone and associated weather during landfall, etc. The lecturers were renowned meteorologists from different parts of the world, including Professor Johnny Chan from the City University of Hong Kong.

This training enriched my international exposure and widened my horizon. I also shared my experience with other participants who were responsible for tropical cyclone forecasting. It helped me to better appreciate the effort that the Hong Kong Observatory had put in operational tropical cyclone research in the past. To improve tropical cyclone forecasts accuracy, we must be conversant with the existing forecasting skills, and more importantly, strive to keep abreast of the latest development in science and technology and apply them in tropical cyclone forecasting.



Participants of the WMO Tropical Cyclone Seminar taking a group photo.

## The 6th Nationwide Meteorological TV Programme Competition

Dickson Lau

China TV weather programmes run by the China Meteorological Administration entered the twentieth year. For enhancing academic exchange and to show the Administration's recognition of outstanding TV weather presenters and excellent scientific and informative programmes, a nationwide Meteorological TV Programme Competition (MTVPC) is organized every two years in China. In October, 2006, Mr Leung Wing-mo and I attended the 6th Meteorological TV Programme Competition, which was held in Cheugdu, Sichuan Province. Apart from more than two hundred participants from different provinces, cities and autonomous regions of China, representatives from meteorological bureau of Vietnam also attended the MTVPC. Ms Carine Richard-Van Maele, the Chief of Communication and



Dickson Lau (first left) and Leung Wing-mo (second right) photographed with participants from Yunan and Vietnam.

Public Affairs of the World Meteorological Organization was invited as the guest of honour to deliver a keynote speech.

In MTVPC, Mr Leung Wing-mo, presented a talk on the history and development of the Observatory's TV weather programmes in his capacity as the first generation Observatory TV weather presenter and the current programme producer. His lively and often humorous presentation won the applause of the audience. On the other hand, as the currently youngest TV weather presenter of the Observatory, I gave a talk on the Observatory's "One Stop Shop" TV weather programme production. I did not miss any chance to gain experience. Apart from exploring new idea through watching the award-winning China TV weather programmes and observing the presentation skills of presenters in MTVPC, I found it most rewarding outside the official events to exchange ideas and share experiences with different provincial TV weather presenters and to get to know their moments of joy and frustration in their job.

Unlike the case in the Observatory, most of the TV weather presenters in China are not professional meteorologists. They therefore have difficulty in talking about complex meteorological phenomena. In addition, the requirement on their spoken language "Putonghua" is very strict and they must attain grade "A" of the national level of China. They have wide scope of job duties including participating in weather conference, script writing and gathering weather related news. They get satisfaction in their job when the audience admire their shows.

I find that China TV weather programmes not only have excellent content, but also have professional production with skillful presenters. Participation in this event did not only give me an unforgettable experience, the knowledge I gained will be of great help to my as a TV presenter and give impetus to the innovation and development of HKO's weather TV services.

# Enhancing performance through proficiency tests

Hui Kin-chung

Although summer is synonymous to vacation to many people, staff of the Observatory's radiation laboratory took part in an examination - the World-wide Proficiency Test on Determination of Radionuclides organized by the International Atomic Energy Agency (IAEA) in the midst of summer 2006. This test aimed at gauging the accuracy of radioactivity measurements conducted by the participating laboratories.

The test has three parts - the determination of gamma-emitting radionuclides in three samples dispatched by IAEA, namely soil, grass and water samples respectively. Prior to measurement, we recorded the details of the samples and sent the samples to the Government Laboratory for treatment. We then measured and analyzed the samples by using the gamma spectrometry system. This system comprised four high purity germanium detectors cooled by liquid nitrogen and a number of delicate electronic equipment. The system detected the intensities of different gamma rays emitted from the samples so as to calculate the activities of radionuclides in the samples. We have to be meticulous in every analysis since each sample could contain a number of radionuclides each emitting different gamma rays. The uncertainties in measurements and the equipment's intrinsic errors added further complexity to the data analysis process.



Although this was not the first time the Observatory took part in such tests, all of us were still rather excited, in particular, our unseasoned colleague Mr Yeung Sau-wai. "I'm very happy to have the chance to participate in the test. Though a little anxious, I managed to run through each step in the test. The experience gained will be very useful to my duties in the future", Yeung reaffirmed that the time and effort in joining the test were well spent. A report for the test would be published by IAEA after collating results from the participating laboratories. The report would help us gauge the performance of our laboratory and identify improvement areas for further enhancing our capability.

The summer vacation is now over and students have returned to schools. We have also completed the examination and will continue to keep a close watch on the radiation levels in the environment of Hong Kong.

## Motor Drivers of the Hong Kong Observatory Winning Safe Driving Award

Cheng Chi-tat

Three Motor Drivers of the Hong Kong Observatory, Messrs Lee Yiu-chung, Leung Chi-wing and Leung Wai-yeung, were awarded the 2006 Safe Driving Award organized by the Government Logistics Department. Ms Maria Kwan Sik-ning, the Director of Government Logistic Department, conferred the awards on 18 October 2006 at the presentation ceremony held in the Hong Kong Central Library. The Assistant Director of the Observatory, Mr Yeung kai-hing, joined the ceremony to congratulate the HKO Motor Drivers.

Recipients of the Safe Driving Awards were the outstanding motor drivers who do not have any blameworthy traffic accident record during their exercise of duty for ten consecutive years. In her speech, Ms Maria Kwan praised the awardees' excellent driving skills and professional performance, and encouraged colleagues to continue providing safe and quality services at work.



Hong Kong Observatory Motor Drivers Messrs Lee Yiu-chung (Rear Row: 3rd right), Leung Chi-wing (Rear Row: 4th right) and Leung Wai-yeung (Rear Row: 5th right) with guests and other awardees at the ceremony



# Retiring Confessions

W L Chang

As I begin my pre-retirement leave, I have been asked to reflect a little on my 28 years at the Observatory for Tiantianshouldi.

When I joined the Observatory not that many years ago, being young and foolish I looked upon it as a job to start and to pay the rent. Looking back, on a personal level I can say it was my boyish dreams come true. On a departmental level which I understand I was recruited to do research, I can say - mission accomplished.

In the 1950s and 1960s most boys aspired to be scientists. Otherwise you don't get the girl! I ended up with four. Heaven forbid I should kiss and tell, so I will stay my pen. In any case the intimate details are revealed in the 2003 press release on lady meteorologists.

Research took me through many topics. I am very privileged to see the talents and efforts of colleagues working in these areas given peer recognition with their work published in various journals. The attention global dimming recently received made me recall that in the late 1980s we already begun looking at the diminishing global solar radiation in Hong Kong. The results were published by Dr Stanhill in Atmospheric Environment. Of course I had no idea at that time that this subject would be accorded such a catchy name and gain the prominence it would 10 or 20 years down the road!

Despite this, I daresay mission accomplished. And accomplished only because of a very enlightened and progressive Directorate. The Civil Service Branch Productivity Achievement Award as well as a Best Public Image Award in which I had some involvement is cases in point of the Directorate's foresight, acumen and leadership. I am naturally indebted to this stewardship.

Along the way I have also stood in the line of fire - being on duty on 26 December 2006 when the tsunami of the century struck, and also this July when Hong Kong experienced what some have dubbed the rainstorm of the century

That colleagues also have generously allowed me to take credit for their wisdom and achievements so that in retirement I can have



The Director, Mr C Y Lam, presented a retirement souvenir to Dr W L Chang

something to impress the ladies with over coffee is something I shall always be grateful.

Would I do things differently? Definitely not. Did I not miss opportunities in stock and property markets? I probably would have lost my shirt. Unlike the latest James Bond, I don't have any biceps and pectorals to show.

Any grand plans in retirement? Afraid none. An old dog can learn new tricks like messing about with digital cameras, but a leopard can't change its spots. So I shall continue to thumb my nose in the air trying to photograph wave clouds. My wife I expect will continue to protest and complain. Guess for me nothing will change. No longer young, but hopefully still foolish!

Space considerations compel me to take my leave, and leave my heart. God Bless, come see me at Discovery Bay!



## Public Weather Service Award Winners

### 2nd Quarter, 2006

*Best TV Weather Programme Presenter*  
**Ms SONG Man-kuen**

*Best Radio Weather Programme Presenter*  
**Miss CHU Suet-ying**

### 3rd Quarter, 2006

*Best TV Weather Programme Presenter*  
**Mr LI Ping-wah**

*Best Radio Weather Programme Presenter*  
**Mr TSANG Wing-kei**



## Observatory Staff Receiving Praise

Staff of the Observatory receiving words of thank and commendation from the public during the period September - December 2006:

**Mr LAM Chiu-ying** *Director of the Hong Kong Observatory*

**Mr LEE Kwok-lun** *Scientific Officer*

**Mr LO Wai-hung** *Radar Specialist Mechanic*

**Mr YEUNG Yu-shin** *Radar Specialist Mechanic*

**Mr LI Luen-on** *Chief Experimental Officer*

**Mr WONG Mei-shing** *Experimental Officer*

**Mr MA Lap-yin** *Scientific Assistant*

# Civil Aviation Department (CAD) and Cathay Pacific (CX) 60th Anniversary Charity Run and Walk

Editorial board



The Observatory's Volunteer Team is always devoted to charity. This time, we participated in the CAD/CX 60th Anniversary Charity Run and Walk to show our care and concern to the publics.

Lau Chi-yung had a wonderful year in 2006! Apart from being happily married, he also won the 1st Runner-up prize - two business round-trip tickets for Tokyo with 5-star hotel accommodation.



## Connect with Nature through Hiking and Water Sports

LI Yuet-sim

In Hong Kong, taking a deep breath of fresh air in the easily accessible countryside is one of the best way to stay off the fast lane of life and refresh our mind and soul.

To encourage our colleagues and their families to connect with nature, the Hong Kong Observatory Staff Association regularly organizes healthy and wholesome outdoor activities. From July to September 2006, the Staff Association took its members to three hiking activities on Tsz Lo Lan Shan Path, Sir Cecil's Ride and Ma Shi Chau respectively. We are indebted to our colleague, Mr Ng Tim-hung, who is an experienced hiker, for volunteering to serve as the leader for all these activities. Ma Shi Chau is famous for its unique geological features of a tombolo and rich with the oldest rock and

fossils in Hong Kong. On that day, more than 40 colleagues and their family members marveled at the special rock formation and searched for different kinds of rocks and fossils. Of course, they also took many interesting photos.

During the summer holidays, the Staff Association also organized a canoe fun day at Hoi Ha, which has good water quality and diverse coral colonies. For some participants, it was their first canoeing experience. Besides canoeing, they also snorkeled to discover the beauty of the underwater world.



Colleagues and their families prepared to launch on the canoes



Eye-opening scenery at Ma Shi Chau



Visit

# HO KOON Nature Education cum Astronomical Centre

Editorial board



Dozens of the Observatory's colleagues visited Ho Koon Nature Education cum Astronomical Centre on 26 July 2006. Their staff introduced to us about ecology, astronomy as well as micro-biology activities over there.

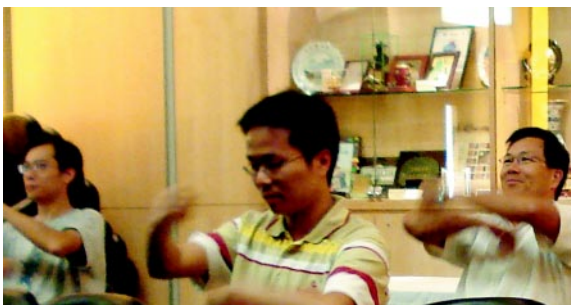
## Lunch Time Health Talk

Cheng Chi-tat

To promote occupational safety awareness, the Hong Kong Observatory invited nurses from the Occupational Safety and Health Branch of the Labour Department in July, August and September 2006 to deliver three lunch time health talks. The speakers spoke on various work-related health topics, advising colleagues on regular exercising, balanced diet, work pressure and proper ways of using office equipment. Apart from conveying knowledge, the speakers also exercised with our colleagues. Our colleagues benefited much from the talks.

The Hong Kong Observatory is very concerned about staff well-being, and has a strong conviction that only a healthy workforce can best serve the public. In the Happy Business Programme launched in 2004, the Observatory has included health as one of the nine "Seeds of Happiness". The Observatory has organized various events on staff health in the past, and will strive to further colleagues' health knowledge, watering this Seed of Happiness into a strong and healthy tree.

Hong Kong  
Observatory  
Staff practicing  
"Chair Aerobic  
Exercise"



## Staff Promotion

Ms LAM Ching-chi was promoted to  
Senior Scientific Officer in October 2006.  
Congratulations!





# HAPPY BUSINESS - FAMILY DAY

Elizabeth TAI

The Hong Kong Observatory designated two half days in August 2006 as Happy Family Days for staff members to introduce their work life to their family members. The participants included not only young children, but also aged parents and cousins as well. The atmosphere was warm and pleasant.

Colleagues explained to their family members their jobs at the Hong Kong Observatory. Then, they were taken to a tour to the History Room. The colleague who led the tour gave a good introduction. His intonation and voice control was so pleasing that one would have taken him as a professional tour guide. Through him the group learnt that during the Japanese occupation, the Director of the Observatory was interned. In those days of hardship, the Director still persevered to record the weather conditions with scanty resources like cigarette packs. The visitors were deeply touched by the Director's professionalism and dedication to work.

The highlight of the tour was the Hong Kong Meteorological Centre. The mosaic computer screens there closely resembled those of NASA's Command Centre. The Studio was the fun place for the children; even adults waited eagerly for their turn to be the weather forecaster. In the Exhibition Hall, the group witnessed the growth of Hong Kong to prosperity. Through the historic photos, the elderly visitors relived scenes of calamity caused by strong winds and heavy rains in the past. There was a feeling of

the strong contrast of helplessness in the face of natural disasters in the bygone years and a sense of achievement of the high standard of protection Hong Kong offers its people today.



Our future weather forecaster ?

## Emotion Management - Music Therapy Workshop

Elizabeth TAI

Music therapy is the prescribed use of sound and rhythm to express emotion and to improve emotional, physical and spiritual well-being through listening to and experiencing the music. In this process, the participants tidy up, release, express, acknowledge, understand and accept their emotion at the moment. The therapist leads the participants to explore the origins of the negative emotions. Then, using the curing effect of musical activities, the therapist helps the participants to relax themselves.

The Hong Kong Observatory commissioned a music therapy workshop for their staff to release their pressure. Under the guidance of the therapist, the participants discussed the nature of the pressure was and its cause. Participants then played their own musical instrument, producing some annoying sounds. They discovered that if the noise they produced was loud, others would respond by producing a loud noise. But if the noise they produced was soft, others would also follow suit. The therapist asked the participants to use their palm and body movement to convey messages along with the music to his partner. Through this activity, the participants learnt to communicate with harmony. The last activity was to lie down and relax. In soothing music, the therapist told the participants to imagine light rays passing through their body parts and to relax. A snoring sound was heard. Someone had fallen asleep.



A group photo of the Music Therapy Workshop