

WEATHER ON WINGS

May 2006



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Headline

Hong Kong Observatory 2006 Open Day

NG Cho-hing

The Hong Kong Observatory's Open Day, an annual event, was held at the Headquarters in Tsimshatsui on 18 and 19 March. The event served to commemorate the World Meteorological Day which falls on 23 March every year.

The theme of this year's World Meteorological Day is "Preventing and Mitigating Natural Disasters". As a city with a highly concentrated population and wealth, Hong Kong can suffer severe damage from a single rainstorm or typhoon. Therefore one of the purposes of holding the Open Day is to enhance the public's awareness of natural disasters.

The event attracted about 13,000 visitors. Among them were parents and teachers accompanying their children or students. They enjoyed having a meaningful time at the Observatory compound.



Kids posing as TV weather presenters

Special exhibits were set up to explain the work of the Observatory. With the elaboration by the docents, the visitors gained a more in-depth understanding of the services provided by the Observatory.



Weather forecasters explaining on how weather forecasts were produced

A simulated Forecasting Office attracted a large crowd with the forecasters presenting weather briefings at hourly interval, explaining how weather forecasts were produced and answering questions from the audience on how to make a better use of the information provided by the Observatory.

A new attraction of this year's Open Day was a simulated weather TV studio. Lots of visitors, especially the kids, had the chance of posing as weather presenters against the backdrop of TV weather graphics.

The eco-tour of the mini-forest of the Observatory Headquarters also provided visitors with a refreshing experience. In fact many visitors came specially to see the un-spoilt "oasis in the concrete jungle" amid chirping birds and the Spring blossoms. The tour was made possible with the help of many voluntary docents of the "Friends of the Observatory".



"Friends of the Observatory" who volunteered as docents conducted eco-tour through the "oasis" in the Observatory Headquarters

CHANG Wen-lam

Seasonal forecasts refer to forecasts of the average weather in the coming month, year, or season. For instance, a forecast can be for a warmer than average summer, or a colder than average winter. These forecasts are useful for planning activities which are influenced by the weather or the climate. For example, they can be used to assess the demand for soft drinks in the summer or for warm clothing in the winter, and to adjust the production or inventory levels accordingly. The Chicago Mercantile exchange in the United States even offers weather futures.

Since 2003, the Hong Kong Observatory has disseminated every March outlooks on the total rainfall and the number of tropical cyclones likely to affect Hong Kong in the coming year via its website. These annual outlooks are based on statistical techniques.

The Observatory began issuing 3-month seasonal forecasts in March 2006. Seasonal forecasts for the average temperature and the total rainfall in the next three months are made annually early March, June, September and December. They are disseminated via the Observatory's website. These forecasts are expressed in terms of temperature or rainfall being "above normal", "near normal" and "below normal". The primary tool for producing the forecasts is a regional climate model adapted from Experimental Climate Prediction Center of US. Model-generated forecast maps are also displayed on the Observatory website. Outputs of climate models from other climate centres are taken into consideration in the formulation of the seasonal forecasts.

The climate models used for seasonal forecasting are not too different from the numerical weather prediction models. In both cases, computers are used to simulate future changes. With the present state of technology, the accuracy of climate models is not yet as good as that of numerical weather prediction models. That is why as in other climate centres, the Observatory is only issuing the seasonal forecasts on an experimental basis before doing so as part of the regular forecasting service later on when the technology has gained more maturity.

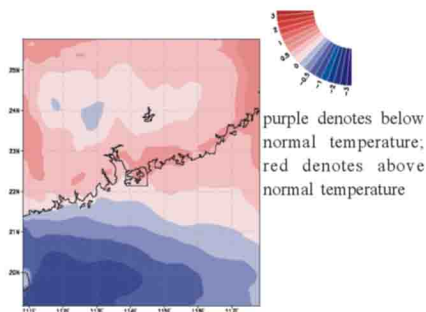
While global models cover a larger area, their resolution is relatively low. On the other hand, regional models cover smaller areas, but have higher resolution. Hong Kong is located in an area of complex terrain, it has adopted for its seasonal forecasts a regional model which covers a smaller area but has higher resolution. The proper use of seasonal forecasts requires experience. Members of the public as well as specialized sectors are invited to try to make use of the seasonal forecasts, gaining experience in the process so that they can use them more effectively in the future.

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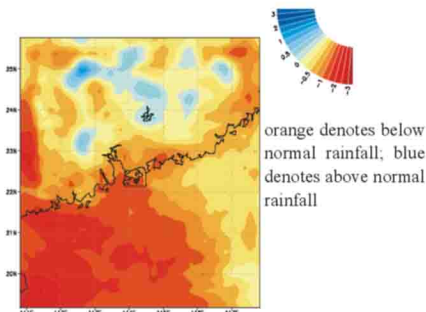
The Observatory's seasonal forecasts can be viewed at <http://www.weather.gov.hk/wxinfo/season/season.htm>.

Regional Climate Model Temperature Forecast Chart



Unit expressed in standard deviation; corresponding to 0.8°C in the spring for Hong Kong

Regional Climate Model Rainfall Forecast Chart



Unit expressed in standard deviation; corresponding to 270 mm in the spring for Hong Kong

Changes to the Definition of Tropical Cyclone Signal No. 1

Hilda LAM

It has been a long-standing practice that the Hong Kong Observatory will issue the Standby Signal No.1 whenever a tropical cyclone is centred within 800 km of Hong Kong and may later affect the territory. However, the term "affect Hong Kong" has not been explicitly defined. Following a review of operations of the tropical cyclone warning system in recent years, the Hong Kong Observatory has decided that the phrase "affect Hong Kong" would include "strong winds blowing over Hong Kong waters" from this year onwards. It would serve to remind the public to be cautious about strong winds in nearby sea areas.

As a result of the revised definition of the Standby Signal No.1, the Observatory will issue the No.1 Signal whenever strong winds or above are expected or are blowing over offshore waters. It is note-worthy that in future operations, as a tropical cyclone departs, the Strong Wind Signal No.3 will most likely be followed by the No.1 Signal rather than cancellation of all signals. Moreover, the Observatory will also issue the No.1 Signal when a departing tropical cyclone gives rise to strong winds over offshore waters. Members of the public should take note of the changes in the definition of Signal No.1 and consider making appropriate adjustments to their operational arrangements in tropical cyclone situations if necessary.

Meteorology Series III

LEE Kwok-lun

The TV documentary Meteorology Series III, jointly produced in early 2005 by the Hong Kong Observatory and Radio Television Hong Kong were well received by the public. The documentary made the top rank in the Information Programme Category of the "TV Programme Appreciation Index" survey in the second quarter of 2005. The series was also selected as one of the Best TV Programmes of 2005.

Overseas, the episode "Return of Wanda" of Meteorology Series III was also awarded the Finalist Certificate under the Nature and Wildlife Category in the New York Festival Television Programming and Promotion Award 2005.



The local and international recognition of the Meteorology Series III is indeed encouraging. If you want to know more about the documentary, please visit the website at <http://www.hko.gov.hk/education/metSeriesIII/metSeriesIII.htm>



Products & Services

Rain Gauge Design Competition

TSUI Kit-chi

Water is an essential element for life. Throughout history, man has always wanted to understand all about rain, and the measurement of rainfall alone has become a special branch of knowledge. Against this background, the Hong Kong Observatory and the Faculty of Engineering of the University of Hong Kong organize a "Rain Gauge Design Competition" to enrich students' knowledge and interest in meteorology and engineering.

The objective of the competition is to enhance students' understanding of meteorological instrumentation and application of information technology, and to promote the realization of novel designs and innovative ideas. All primary and secondary school students of Hong Kong are welcome to take part in the competition. The Hong Kong Observatory and the University of Hong Kong have already organized a series of talks, workshops and visits so that the participants can better understand how rain is measured. For details, please have a look at the following web site:

<http://i.cs.hku.hk/~rain/English/Home.php>



Mr. K.W. Chan and Mr. K.C. Fung of the Hong Kong Observatory explained the operation principles of various rain gauges to teachers and students in a talk

Science in the Public Service Campaign

HUNG Fan-yiu



The Honourable Donald Tsang, GBM, the Chief Executive, pictured with heads/representatives of government departments during the launch ceremony

The Hong Kong Observatory together with a number of other government departments jointly organize a year-long "Science in the Public Service" campaign. The objective of the campaign is to let people know how government departments provide world-class public service through science and technology, as well as their scientific achievements.

The campaign was officiated by The Honourable Donald Tsang, the Chief Executive, Hong Kong Special Administrative Region at the Hong Kong Central Library on 13 January this year. At the launch ceremony, Mr. Tsang remarked that through the development and application of science and technology, provision of public service by government departments attained world-class standard. This amply demonstrated the strength of Hong Kong as Asia's World City. The large number of government departments taking the initiative and joining hands to organize this campaign demonstrated that civil servants valued productive partnership and shared common goals. Through the activity, communication and team spirit among different departments were enhanced.

The first activity of the campaign was the joint exhibition and scientific lectures held at the Hong Kong Central Library. More than ten thousand people attended the event which was widely reported by the media.

Other activities that followed were equally enticing. There will be school talks and exhibits on loan for introducing the government departments' scientific achievements to the students. A series of over 10 radio programmes entitled "A New Scientific Hong Kong" is aired by RTHK since mid-April. An essay competition, with the submission deadline in mid-July, can also enhance the knowledge of the public in the application of science and technology. Over 10 professionals in the civil service delivered talks during the symposium on 27 April, highlighting the application of science and

technology by government departments in the provision of public service. The event provided a good platform for professionals and scientists of different disciplines to get together and discuss issues of common interest and co-operation opportunities.

Don't miss the fun of the activities of the "Science in the Public Service" campaign. For details, please visit the website at <http://www.science.gov.hk>.

Launch of Local SMS Weather Warning Service

FOK Wai-kan

With the advance in mobile technology and increasing demand for timely weather information, the Hong Kong Observatory launched a pilot project on the delivery of weather warnings through Short Message Service (SMS) in June 2004 to government staff. In addition to the fax, the printed and electronic media, websites, email and fixed communication networks, the Observatory now makes use of this mobile technology to enable government staff to receive the latest weather warnings anywhere, anytime.

SMS becomes increasingly popular nowadays and all mobile operators in Hong Kong provide SMS delivery. This makes SMS suitable for delivering alerts, such as weather warnings. Besides, the telecommunications network is usually very busy during inclement weather conditions as many people use their mobile phones for communication. Thus SMS is a good alternative for communication as it does not operate on a real-time mode.

As this pilot project was well received, the Observatory extended it to the general public. In 2005, the Observatory collaborated with the Hong Kong Wireless Development Centre (HKWDC) to develop the "WeatherTone" service to deliver weather warnings through SMS to the public.

HKWDC invited and appointed Telewide Enterprises Limited (TEL) to be the system developer and supplier of WeatherTone. TEL made a soft launch of WeatherTone to Observatory staff and members of the "Friends of the Observatory" last December. Taking into consideration suggestions gathered during the soft launch, TEL enhanced the service and launched WeatherTone to the public on 1 March for a trial period of one year. Upon receipt of weather warnings from the Observatory, TEL will relay the warning messages to subscribers through SMS. A service charge will be levied by TEL and the amount will depend on the number of service items subscribed. If the trial is satisfactory, WeatherTone will become a routine service for the public. For those interested in the service, please visit <http://hko.phonemall.net>.

Weather Icon Design Contest

NG Ping-wing

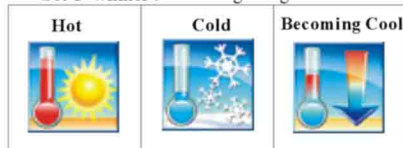
To commemorate the 10th anniversary of its internet website, the Observatory launched a weather icon design contest early this year, inviting members of the public to design weather icons for use in the Observatory's web pages.

The aim of the contest was to channel the wisdom of the community into the Observatory website, enabling more effective communication of weather information to the public.

The Observatory website was established in 1996. The Observatory was among the first few government departments that made use of the internet to deliver services to the public. The internet has proved to be the most cost effective means of disseminating a large volume of quickly evolving weather information to many individuals. Over the past ten years, the page visits to the Observatory website increased dramatically. The latest figure is some 50 million page-hits a month.

In view of the enthusiastic response from the public, the deadline for submitting the designs for the contest was pushed back. The Observatory invited Mr. Cedrick Chan, lecturer of the Multimedia Innovation Centre, School of Design of the Hong Kong Polytechnic University, Ms. Annie Lok, specialist of the Hong Kong Computer Society, and Ms. Peggy Ching, senior executive producer of Radio Television Hong Kong, to be judges. They were much impressed by the creativity and the enchanting colour of the designs. Finally, the judges selected the following winning designs:

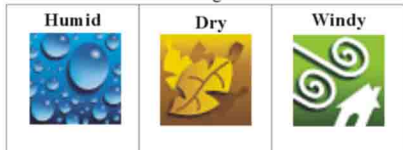
Set 1 winner : Lai Ting Pong



Set 2 winner : Tong Wai Pang



Set 3 winner : Chung Chu Fai



Training Course on Design and Operation of Meteorological Warning Systems

HUNG Fan-yiu



Participants of the Observatory's training course on design and operation of meteorological warning systems

The Hong Kong Observatory organized a training course on "Design and Operation of Meteorological Warning Systems" for the World Meteorological Organization (WMO) from 5 to 9 December 2005. Ten meteorologists from Bhutan, Ethiopia, Gambia, Jordan, Kazakhstan, Kyrgyz Republic, Oman, Pakistan, Saint Lucia and Thailand attended the course.

The objective of this professional training course is to enhance weather warnings and public weather services of participating countries. It assists participants in developing their own meteorological warning systems and public weather services on return to their home countries.

This training course was highly appreciated by national meteorological services around the world. Mr. Abebe Yeshanew, a participant from Ethiopia, said, "The achievements of the Hong Kong Observatory in the provision of public weather service have won wide acclaim from WMO and the international meteorological community. The Observatory has ample experience in severe weather warning. This course is very useful and I have benefited from it."

The Observatory put a lot of effort in developing the public weather service and improving service quality in recent years. The cold and very hot weather warnings, ultraviolet index, WMO's 'World Weather Information Services' and 'Severe Weather Information Centre' websites, and lightning location information as a supplement to the thunderstorm warning, were launched successively. The Observatory also actively contributed to the promotion of public weather services among WMO members. This training course provided a good opportunity for Hong Kong to share its experience with meteorologists from other meteorological services round the world.

CHAN Ka-wah



Thomas Leung, Radar Specialist Mechanic of the Observatory (left), tested the functions of the portable station with a police officer from the Explosive Ordnance Disposal Bureau after having completed construction of the station.

A few years back, the Hong Kong Observatory designed and fabricated a portable automatic weather and radiation monitoring station for the Hong Kong Police Force. The station enables the police to obtain on-site weather and radiation information for assessing the spread of harmful materials in the event of a chemical, biological or radiological incident. At the request of the police, a backup station was constructed in a short span of two weeks for possible applications in the Sixth Ministerial Conference of the World Trade Organization (MC6) in December 2005.

Although the portable station is modified from our existing automatic weather stations, it has special hardware and software configurations. It is equipped with a wind sensor, two temperature sensors, mounted at different heights, and a sensor for detection of radiation level, thus providing comprehensive data for assessing the spread of harmful materials. The collected data is displayed on-site to support ground operations, as well as transmitted back to the Observatory through the mobile wireless communication network for remote monitoring through a web interface.

Other factors which had been taken into account in the design to ensure effective operation included portability, ruggedness against vibration and functional completeness. The end-product was a handy portable station. An operator could set up the station in a few minutes after some practice. The portable station was also equipped with a Global Positioning System receiver for locating the measurement site.

Hong Kong is a world city maintaining close ties with the rest of the world. The Hong Kong Police Force has to have the capability to respond to any emergency during MC6. The fact that the Observatory successfully provided support to the Police within a very short time frame is a demonstration of the teamwork of our colleagues.

Debut of the Ultraviolet Index Forecast Service

POON Hoi-to, LEE Lap-shun

The provision of information on Ultraviolet (UV) levels by the Observatory since 1999 was well received by the public. After research and analysis of the data collected over the years, the Observatory recently developed a UV Index forecast service. This service will inform members of the public, especially those frequently engaged in outdoor activities, to the short term variation of UV level so that they can adopt appropriate protective measures against possible harm from UV radiation.

Forecast of the maximum UV Index for the next day was launched on the Observatory's website in January this year on a trial basis and members of "Friends of the Observatory" were invited to try out the service and provide feedback. The trial service was well received. Lee Lai-shan, Olympic windsurfing gold medalist, said, "We spend a lot of time practising outdoors and are exposed to all kinds of weather. We got burnt by UV even under seemingly cloudy skies. The UV forecast gives us very useful information in taking protective measures." Mr. Lee Chun-wai, Chairman of the Hong Kong Federation of Countryside Activities, also welcomed the new service. "Hikers often stay under the sun for a long time. This service puts us on the alert and allows us to take measures against UV exposure before the journey starts," he said.



Instrument for measuring UV Index by the Observatory at King's Park

After collecting and analyzing the feedback on the trial service, the Observatory officially commenced issuing UV Index forecasts in May this year. Forecast of maximum UV Index for the next day is provided at 5:00 p.m. every day and updated as necessary in case of weather changes, until 10:00 a.m. the next day. When the UV index is expected to be 11 (corresponding to an extreme UV level) or above, the public will be reminded to take protective measures, such as avoiding prolonged exposure under the sun. The UV forecast is broadcast by radio and television, and accessible through the Dial-a-Weather service and the Observatory's internet website (<http://www.weather.gov.hk/wxinfo/uvfst/uvfst.htm>) and Personal Digital Assistant (PDA) website (<http://pda.weather.gov.hk/uvfst.htm>).



Atmosphere & Environment

Leap Year with Double Springs

CHAN Ying-wah

In the first few months of 2006, I received wedding invitations one after another. It is a strong indication that lovers subscribed to the auspicious connotations of this year being a "Leap year with double springs".

According to the Chinese Agricultural Calendar, this year's Gan-Zhi is Bing-Xu with the seventh lunar month being a leap month. There are altogether 13 lunar months or 385 days in the year, starting from 29 January 2006 and ending on 17

February 2007 in the Gregorian calendar. The year includes 25 solar terms with two "Spring Commences" occurring on 4 February 2006 and 4 February 2007 respectively. Accordingly, the year 2006 is a "Leap year with double springs".

"Leap year with double springs" is a special feature of the Agricultural Calendar. The Agricultural Calendar is an integrated lunar-solar calendar as it is based on the movement of the Moon as well as that of the Sun. "Tropical year" and "synodic month" are the basic elements of the Agricultural Calendar. A tropical year is the time from a vernal equinox to the next, which is 365.2422 days. The time between two successive occurrences of new moon or full moon is called a synodic month, and equals 29.5306 days. There are only 354.3672 days in 12 synodic months, shorter than a tropical year by more than 10 days. The difference accumulates to give a leap month. There are generally 7 leap months in 19 years in the Agricultural Calendar.

The solar term "Spring Commences" signifies the end of the winter and the return of the spring when living plants begin to blossom and farming activity in the year starts off. In ancient time, the Emperor would lead his major officials to take part in the ceremony of "Spring Offering" on the day of "Spring Commences" to pray for balmy weather and good harvest in the coming year. Those years with two "Spring Commences" are thought to be propitious and people customarily like to have weddings in these years. Statistically, a year with two "Spring Commences" occurred 35 times in the 20th century.

It should be noted that if a year is a leap year with two "Spring Commences", the following year or the year after next will not include "Spring Commences" and they are regarded as "Blind Years". People do not prefer to have their weddings held in these years. As a result, there may be substantial variations on the number of people getting married in these years.

It is interesting to note that the movement of the Earth, the Moon and the Sun can have an impact on human social activities, and affect matrimonial businesses.

Playing Hide-and-Seek with Fog

CHAN Pak-wai, Cheng Cho-ming

In the early hours of 7 March 2006, the coast of Guangdong was shrouded in dense fog brought in by a moist maritime airstream. At 00:50 a.m., an aircraft about to land on the Hong Kong International Airport had to go around due to low visibility - a mere 100 metres - the lowest value that night.

The equipment of the Hong Kong Observatory unveiled some characteristics of the fog event. At the very moment the visibility at Chek Lap Kok dropped to its lowest value, westerly winds prevailing over the airport converged with the easterly winds coming from the east of the airport (Figure 1). At the convergence zone, the temperatures and dew points were about 2 degrees Celsius higher than those over the water to the west of the airport. It is believed that the dense fog formed from mixing of the two different air masses.



Figure 1 Ground level winds over the airport at 00:50 a.m., 7 March. Red dots indicate the locations of automatic weather stations. The figures to their upper left are the air temperatures whereas the figures to their lower right are the dew point temperatures.

The vertical temperature variation in the lower atmosphere at that time was favourable to dense fog formation. The Observatory has installed a radiometer at Siu Ho Wan of Lantau Island (see location in Figure 1) for on-site testing. The equipment measures the vertical temperature variation based on detection of the radiation from oxygen in the air. At that time, the radiometer clearly indicated a layer of constant temperature from the ground up to a height of 150 metres. The layer of constant temperature later turned into a temperature inversion (i.e. temperature increasing with height; Figure 2). A layer of constant temperature or a temperature inversion in the lower atmosphere is known to suppress vertical dispersion of fog and favour low visibility.

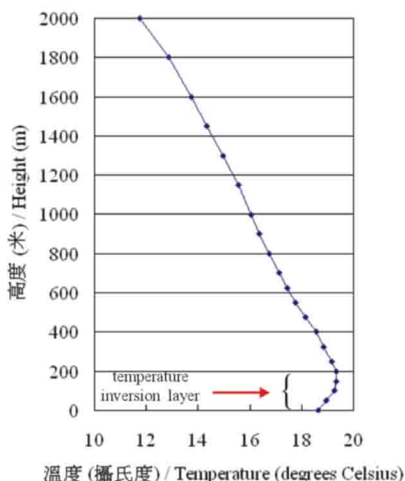


Figure 2 Temperature profile as measured by the radiometer at 1:22 a.m., 7 March.

Apart from ground equipment, meteorological satellites in the space also captured the dense fog. Sensors onboard the Earth Observing Satellites make observations of the Earth at night using infrared light. The Observatory received and processed images from one of these satellites. After processing, fog was depicted in a special colour (Figure 3), facilitating the monitoring of fog distribution.

Low visibility weather affects the safety of both air and sea traffic. Using a variety of weather equipment, the Observatory tracks the location of fog around Hong Kong, which helps the forecasting of foggy weather.

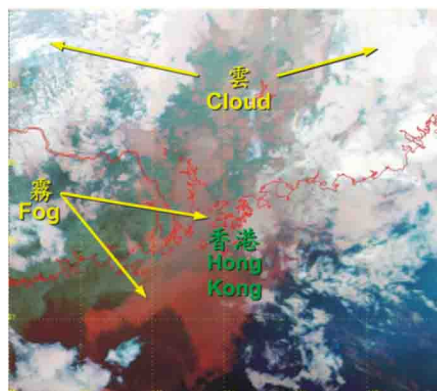


Figure 3 Image captured by an Earth Observing Satellite of National Aeronautics and Space Administration, U.S.A. at 11 p.m., 6 March. Fog (in red) covered the Pearl River Delta and the neighbouring sea.

CHOW Tak-Hing, LEE Tsz-cheung

The Chinese calendar's 24 Solar Terms, which are believed to originate from the Yellow River region, is a special calendar invented by the ancient Chinese based on knowledge in astronomy, climatology and agricultural meteorology. Solar Terms divide a year into 24 parts according to the Earth orbit around the Sun. Since the Earth takes about one year to complete its orbit once (360 degree), by dividing it into 24 equal segments, each 15 degrees (approximately 15 days) will mark a Solar Term. As such, the 24 Solar Terms generally represent the seasonal change over central China in a year and, in turn, closely relate to agricultural activities in ancient China.

Solar Terms are in general named according to the astronomical phenomena, climatological characteristics or agricultural activities prevalent at the respective times of the seasons. They are: "spring commences 立春", "spring showers 雨水", "insects waken 驚蟄", "vernal equinox 春分", "bright and clear 清明", "corn rain 穀雨", "summer commences 立夏", "corn forms 小滿", "corn on ear 芒種", "summer solstice 夏至", "moderate heat 小暑", "great heat 大暑", "autumn commences 立秋", "end of heat 處暑", "white dew 白露", "autumnal equinox 秋分", "cold dew 寒露", "frost 霜降", "winter commences 立冬", "light snow 小雪", "heavy snow 大雪", "winter solstice 冬至", "moderate cold 小寒", and "severe cold 大寒".

To help memorize some of these terms, the Chinese has composed a "24 Solar Term Song" using the names of the Solar Terms.

春雨驚春清穀天
夏滿芒夏暑相連
秋處露秋寒霜降
冬雪雪冬小大寒

Located in southern China, Hong Kong's climate is very different from that of the Yellow River region. So the meaning of some of the Solar Terms, such as "light snow" and "heavy snow", are not applicable to Hong Kong. In the coming issues of the "Weather on Wings", we shall talk about the meaning of some interesting Solar Terms and the corresponding climatological statistics in Hong Kong. Please stay tuned.

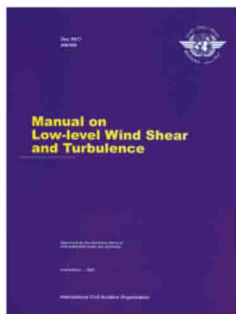
Observatory's Windshear System

LI Ping-wah

The Hong Kong Observatory's windshear and turbulence alerting service has gained the recognition of the international aviation and meteorological communities many times. It was described by the International Civil Aviation Organization (ICAO) in 2003 as one that "continues to refine techniques for detecting these (windshear and turbulence) phenomena and providing timely alerts to aircrafts approaching or departing the Hong Kong International Airport".

In 2004, the Observatory's Windshear and Turbulence Warning System (WTWS) was reported in the Bulletin of the World Meteorological Organization. Equipped with a number of advanced meteorological sensors, including a Terminal Doppler Weather Radar, a network of surface and buoy automatic weather stations, the first Doppler Light Detection and Ranging (LIDAR) for windshear detection in the world, together with a sophisticated computer system, the WTWS monitors the air flow changes around the Hong Kong International Airport (HKIA) round-the-clock. It automatically generate windshear alerts to pilots and air traffic controllers, enhancing the safety of aircraft approaching and departing from HKIA.

As the WTWS is an advanced system with satisfactory performance, ICAO makes special reference to the Observatory windshear and turbulence work in the last version of the Manual on Low-level Wind Shear and Turbulence (ICAO Doc 9817). This Manual is the ICAO document with the most detailed description on windshear and turbulence and the associated alerting techniques. It is also an indispensable reference for personnel engaged in research, operation and training related to windshear and turbulence.



ICAO Manual on Low-level Wind Shear and Turbulence

The World's First LIDAR Windshear Alerting System (LIWAS)

CHAN Pak-wai



Mr. H.G. Wai (left) and Captain Brian Greeves (right) introducing the Observatory's windshear alerting services

The LIWAS of the Observatory has been put into operational use since the end of 2005. This is the world's first automatic windshear alerting system based on LIDAR.

To inform the public of the achievements of the Observatory in windshear alerting, Mr. H.G. Wai, Assistant Director, hosted a press briefing at the Hong Kong International Airport on 20 February jointly with Captain Brian Greeves of the International Federation of Air Line Pilots' Associations (IFALPA). He explained how the windshear alerting service was achieved through co-operation with users. The briefing was covered in both local and overseas press.

The Observatory also presented a number of papers on windshear and turbulence alerting in a conference organized by the American Meteorological Society in late January. It is noted that many other papers made reference to the Observatory's experience in LIDAR application.

Exchanging Windshear Experience Aloft

LI Ping-wah

In any successful business, it is important for the provider to communicate and co-operate with clients. The Observatory has been keeping close contact with the relevant parties during the design and development stages of the provision of windshear alerting service. They include the Civil Aviation Department, the Government Flying Service, air traffic controllers, pilots and technical staff of airlines. Besides routine meetings, aviation forecasters of the Observatory have also flown in the cockpit to understand how the aviation meteorological services they provide are used by the air crew.

To enhance communication and to seek pilots' view on how to further enhance the windshear alerting service, a few colleagues and I visited the Airbus A330/340 Flight Simulators at the training centre of the Dragonair at Chek Lap Kok in December last year. Having just joined the Aviation Weather Services Branch, I found the visit invaluable. On one hand, I gained first-hand experience in the responses of an aircraft under various simulated windshear conditions and appreciate how the pilots control the aircraft to ensure safe landing/takeoff. On the other hand, through in-depth discussion with Dragonair's trainer, we understand in what way we can further enhance our windshear detection techniques and provide a better service to the pilots.



Trainer Captain Digger Blandford (right) of Dragonair explains to Mr Shun Chi-ming of the Observatory on how to operate the flight simulator

What is a Flight Simulator?

A flight simulator is a machine simulating the flying conditions of an aircraft. The main usage is to train the pilot on techniques such as responses and operational skills under normal or adverse flying conditions. The setting of a flight simulator looks identical to a real cockpit. Composed of flight instruments, computer and hydraulic system, a flight simulator can simulate various flying conditions through a number of pre-set programmes.

Apprehension of the Culprit - Alerting of Sporadic Windshear by LIDAR

CHAN Pak-wai

A strong easterly airstream prevailed over the south China coast on 20 March. Because the terrain of Lantau Island disturbed the airflow, windshear occurred over the Hong Kong International Airport (HKIA). There were altogether six pilot reports of windshear encounter on approach to HKIA from the west on that day, including five flights over the 07LA runway corridor (landing at the north runway from the west) and one flight over the 07RA corridor (landing at the south runway from the west).

Among these flights, the aircraft using the 07RA corridor reported windshear of 10-knot headwind loss followed by 20-knot headwind gain at 12:20 p.m., and had to conduct missed approach. The headwind profile measured by the LIDAR (figure) indicated that though the wind was fluctuating over 07RA one minute before the event, there was no significant windshear reaching 15 knots. However, a minute later when the aircraft over 07RA encountered windshear, the headwind profile changed considerably. There was a headwind loss of 15 knots at around 3 nautical miles away from the western end of the south runway. Headwind was basically decreasing afterwards, but then rose sharply by about 30 knots at 1 nautical mile west of the runway. The abrupt changes of the wind field was captured by the LIDAR Windshear Alerting System (LIWAS) of the Observatory and was consistent with the pilot report. It enabled timely alerts to be issued to the aircraft.

The horizontal scans of the LIDAR (right hand side of the figure) are useful for understanding this windshear event. Before the occurrence of windshear, east to southeasterly winds prevailed over the airport area (warm colour in the figure, indicating that the wind blew away from the LIDAR). However, there was an area of southerly wind to the southwest of the south runway (coloured in green in the figure, indicating that the wind blew towards the LIDAR) - a result of disruption by the terrain. At that time, it was mainly confined to the south of the 07RA runway corridor. After a few minutes, it was found to have extended slightly northwards to affect the 07RA corridor, causing significant windshear.

Terrain-induced windshear is elusive because of its transient and sporadic nature. But it cannot escape the scrutiny of the Observatory's LIWAS.

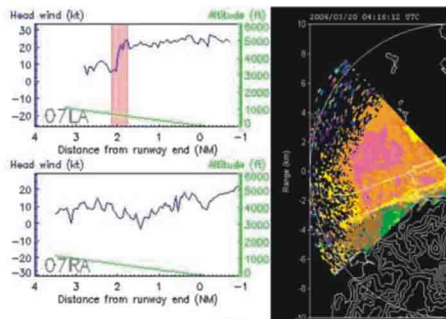


Fig a

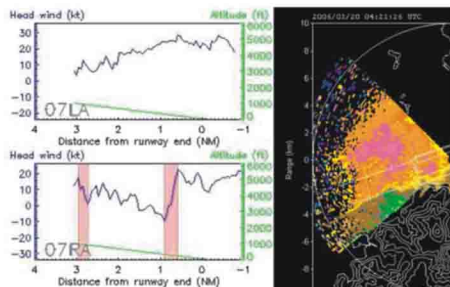


Fig b

Headwind profiles measured by the LIDAR along 07LA and 07RA runway corridors at (a) 12:19 p.m. and (b) 12:20 p.m., 20 March 2006. The red rectangular areas indicate the significant windshear detected by LIWAS. Velocity imageries closer to these moments as obtained by the horizontal scans of the LIDAR are shown on the right.

Airline Flight Dispatchers and Pilots Participated in a Training Course on Aviation Meteorology

CHOY Boon-leung

One of the major tasks of airline dispatchers, a job relatively unheard of by the public, is to collect the weather information for flight planning and to brief the pilots.

Fifty seven airline flight dispatchers and pilots participated in a training course on aviation meteorology organized by the Hong Kong Observatory on 22 February this year. The training course was aimed at enhancing the dispatchers' meteorological knowledge. It contributes to improving the support to airlines and pilots and thus the safe and efficient operation of air navigation.

Mr Ng, a participant of the training course, said, "The course is very informative. It enhances the understanding between the meteorologists, pilots and dispatchers. I hope the Observatory would organize more courses for dispatchers."



Ms. Sharon Lau of the Observatory delivering a presentation to the participants of the training course

Coordination with Air Traffic Management - Contributing towards the Enhancement of Air Safety and Efficiency

SONG Man-kuen

I attended the International Civil Aviation Organization (ICAO) Meteorological (MET) and Air Traffic Management (ATM) Co-ordination Seminar for Asia/Pacific Region on behalf of the Hong Kong Observatory and World Meteorological Organization in February this year. This seminar was aimed at fostering exchanges and understanding between MET and ATM to facilitate further development of the MET products in support of ATM. Representatives from Civil Aviation Department also attended the seminar.

During the seminar, I introduced the meteorological products developed by the Hong Kong Observatory in support of ATM and learned from participants from advanced countries in the use of graphics to present meteorological information. During the seminar, ICAO emphasized the importance of weather information in the air navigation systems and planned to summarize the presentation materials for reference in future planning in the Regions. In addition, ICAO also plans to conduct survey to establish a set of general requirements for MET services and products. This development would contribute towards air safety and efficiency.



Our Partners

The Director Sharing his Insight on Climate Change with City University Students

LEUNG Wing-mo

On 6 March, at the invitation of the City University of Hong Kong, Mr C Y Lam, Director of the Observatory, delivered a speech titled "Climate Change - Civilization vs Nature" to about a hundred students of the University, and engaged the students in a stimulating discussion on the issue.

People acquainted with Mr Lam understand too well his fervent commitment towards conservation of nature, and his passion is often infectious to those who are simply having a casual conversation with him. Mr Lam does not hide his desire to impress upon everyone he comes across about the potential adverse consequences of climate change. He is so serious on this particular mission that it can be likened to "preaching". The students "preached" by Mr Lam that day will hopefully be the latest batch of converts to nature conservation.

In his one-hour speech, Mr Lam explained how the humankind relentlessly sent back to the atmosphere huge quantity of carbon dioxide that was buried deep down the earth eons ago. In so doing, we unknowingly pushed the humankind to a state never experienced before. Mr Lam elaborated on the coupling between the atmosphere and living things, and how biodiversity can sustain in a stable atmosphere. He pointed out that technological advancement rendered many important consequences of climate change, such as global warming and sea level rise surmountable. What seem to be insurmountable are climate-change-induced incoherent evolution of the ecosystem, rampant drought and flood, poor harvest, emerging new diseases, and eventually social and economic turmoils. Mr Lam remarked, "At the top of the atmosphere-biosphere system, humankind is the most vulnerable species. Viruses, bacteria and simple organisms can all adjust fairly easily to climate change. The resultant re-organization of the atmosphere-biosphere system could bring terrible destructions to human."

When the Director invited the students to propose solutions to get out of the imminent danger, they all responded along the line of suitable exploitation of technology. When they were given more hints, one of the students suggested that the ultimate solution lied in a drastic change of our wasteful extravagant life style. While we are indulging ourselves in an air-conditioned room extolling the comfort brought about by modern technology, does it occurs to us that perhaps we should reflect on our addiction to such a life style?

Get Well-prepared before the Rain Season

LAM Ching-chi

Before the commencement of rain season every year, the Observatory meets with relevant government bureaux and departments, including the Education and Manpower Bureau, Transport Department, Drainage Services Department, Geotechnical Engineering Office, etc. The meeting is a forum to review operational arrangements between the Observatory and various departments during severe weather, to assess the efficacy of the Observatory's weather services in the past year, and to discuss new operational arrangements and new weather services in the coming rain season.

In addition, a government-wide seminar is also held for front-line staff involved in contingency response actions and management personnel responsible for formulating contingency measures in severe weather. The objective is to promote better use of weather information and more effective conveyance of weather information during severe weather. In the seminar, besides a recap of existing operational arrangements, the techniques of utilizing and interpreting weather information are discussed, and new weather products and services are also explained in depth. The seminar always ends with a guided tour to the Central Forecasting Office and TV Studio, to increase participants' understanding of our work flow. This year, the seminar was well received and more than a hundred colleagues from 36 bureaux and/or departments participated. A survey at the end of the seminar indicated that tropical cyclone and rainstorm warning signals were perceived to be very effective by government colleagues with a rating of 8.8 out of 10.



Liaison meetings between the Hong Kong Observatory and (i) Transport Department and (ii) Education and Manpower Bureau before the rainy season



Colleagues from various government bureaux and departments attending the Weather Seminar at the Observatory before the rainy season

Weather Training Course organized for Colleagues of the Home Affairs Department

LEUNG Wai-hung

In the event of a typhoon signal No.8 or above, a landslip warning or a red or black rainstorm warning, the Emergency Co-ordination Centre of the Home Affairs Department will be activated to provide information and assistance to the public. The Centre works closely with other government departments to ensure that emergency relief activities are properly co-ordinated.

In this connection, the Hong Kong Observatory organized a training course on "Application of the Government Weather Information System (GOWISE) and Interpretation of Radar Images" for about 20 colleagues from the Home Affairs Department on 5 January this year. The course was aimed at enhancing the participants' meteorological knowledge and enabling them to have a better understanding of the use of the GOWISE. The course contents included introduction of different severe weather warnings, application of the GOWISE, interpretation of radar images, visits to the Hong Kong Meteorological Centre and the studio for TV weather programme production.

Participants found it useful to attend the course. One of the participants said, "The course is very informative and useful. It caters for the needs of our daily work. The speakers' presentations are clear and easy to understand."



Colleagues from the Home Affairs Department visiting the Hong Kong Meteorological Centre

The second Guangdong - Hong Kong - Macao Seminar on Earthquake Science and Technology

LI Kin-wai

The second Guangdong - Hong Kong - Macao Seminar on Earthquake Science and Technology, an event hosted in turns by the Earthquake Administration of Guangdong Province, the Hong Kong Observatory and the Macao Meteorological and Geophysical Bureau, was held in Macao on 1-2 March 2006. In addition to departments responsible for earthquake monitoring, experts from the Geotechnical Engineering Office of the Government of the HKSAR, University of Hong Kong, Hong Kong Polytechnic University and University of Macao also took part in the seminar this year. Reports on the latest researches on seismology and tsunami were presented and discussed during the seminar.

The huge casualties caused by the south Asian tsunami in December 2004 and the Pakistan earthquake in October 2005 have heightened people's interest in earthquake science and technology. Back in 2004, the departments responsible for earthquake monitoring in Guangdong, Hong Kong and Macao already recognised the importance of earthquake disaster mitigation, and held the first seminar. They agreed to hold a seminar once every two years on subjects of common interest.

Collaboration among Guangdong, Hong Kong and Macao on seismology dated back to the 1980s. In March 1981, a rumour of forthcoming severe earthquake at Haifeng of Guangdong stirred up a panic in the local community and thousands of people fled to the waters in the vicinity of Hong Kong by fishing boats. After coordination between the Hong Kong Observatory and the Earthquake Administration of Guangdong Province, the two agencies made clarification to the mass media which quickly stopped the spread of rumour. Since then, the Hong Kong Observatory started to exchange seismological information with the Earthquake Administration of Guangdong Province and the Macao Meteorological and Geophysical Bureau regularly.

The success of the second Guangdong - Hong Kong - Macao Seminar on Earthquake Science and Technology reflects the will and the determination of the relevant departments and the universities in the region to enhance the capability in disaster prevention and mitigation. It paves the way for closer tripartite collaboration and to enhance seismological researches in the region.



Participants of the Guangdong-Hong Kong-Macao Seminar photoed with Mr. K. H. Yeung (6th left), Assistant Director of the Hong Kong Observatory and head of the Hong Kong delegation

Visit of Mr. C.K. Wong, Director of Drainage Services Department

WONG Mei-shing

The Hong Kong Observatory has close co-operation with the Drainage Services Department on the flood control for a long time. On 6 January, Mr. WONG Chee-keung, Director of Drainage Services visited the Observatory together with several of his colleagues. Our Director, Mr. Lam Chiu-ying took the guests to the Central Forecasting Office and explained to them how we monitored and forecast rainstorms. The guests also toured the Radiation Monitoring and Assessment Centre, the TV Studio, the Geophysics and Time Services Section and the Exhibition Hall. This visit has helped to enhance the co-operation of the two departments in information dissemination and communication on floods in the future.



The Director of Drainage Services (3rd left) and other accompanying guests were attracted by the display panels in the exhibition hall

A Vote of Thanks to Hong Kong Voluntary Observing Ships (HKVOS)

WONG Chi-fai

Observation data are vital to weather analysis and forecasting. As weather observations are invariably sparse at sea, observations made by deck officers on ships are particularly valuable. Apart from the use in routine weather bulletins, data from ship weather reports are used in climatology and other atmospheric and oceanic studies.

Under the Voluntary Observing Ships scheme of the World Meteorological Organization, the Hong Kong Observatory maintains a fleet of about 40 Hong Kong-based voluntary weather observing vessels. The observation reports taken during their voyages provide useful weather information over the sea. As a token of appreciation to deck officers for their contribution in marine weather observations in 2005, the Observatory awarded certificates of appreciation to shipmasters of 17 Hong Kong Voluntary Observing Ships. These ships are:

Aegean Leader	Bunga Pelangi Dua	Maersk Gairloch
OOCL Atlanta	OOCL California	OOCL Chicago
OOCL China	OOCL Exporter	OOCL Faith
OOCL Hamburg	OOCL Hong Kong	OOCL Japan
OOCL Netherlands	OOCL Ningbo	OOCL Rotterdam
OOCL Tianjin	Star Pisces	



Captain J. Nilermark of HKVOS "Star Pisces" receiving the certificate of appreciation

Serving the Community using Information Technology

SONG Man-kuen, LEE Lap-shun

The "Hong Kong Electronics Fair (Spring Edition)" was hosted by the Hong Kong Trade Development Council during the Easter holidays from 14 to 17 April at the Hong Kong Convention and Exhibition Centre. The highlight of the fair, "ICT Pavilion", showed off the most advanced products in information and communication technology. The Hong Kong Observatory took part in this event. Through exhibits on our "Lightning Location Information Service" and "Meteorological Data Communication for aircraft in-flight", we demonstrated how we improve our public and aviation weather services using the latest information technology.



The Observatory disseminates lightning location information via various electronic channels to alert members of the public to the latest thundery weather conditions and enable them to take necessary precautions. In the exhibition, lightning location map and alert function available through the internet were demonstrated and visitors were invited to play an interactive computer game to learn how a lightning stroke could be located.



"Meteorological Data Communication for aircraft in-flight" utilizes the latest communication technology to automatically disseminate weather observations measured on-board the aircraft to meteorological service centres. The latest weather information could also be delivered from ground to aircraft in-flight to enhance flight safety.

20 years of Cooperation in Meteorology among Guangdong, Hong Kong and Macao

WONG Wai-kin



Colleagues from Guangdong, Hong Kong and Macao met to discuss meteorology and cooperation. Mr. C.Y. Lam (1st left), Director of the Hong Kong Observatory, gave a speech in the opening ceremony

The 20th Guangdong-Hong Kong-Macao (GHM) Seminar on Meteorological Science and Technology and the 11th GHM Cooperation Meeting were held in Macao during 18-20 January 2006. In turns, the meetings were held in Hong Kong, Guangdong and Macao each year. Through technical exchange and cooperation, the meetings was aimed at promoting the quality of meteorological services, and disaster prevention and mitigation in support of sustainable economic development in the region.

Mr. Lam Chiu Ying, Director of the Hong Kong Observatory, and 10 colleagues attended this year's meetings. The GHM Seminar on Meteorological Science and Technology had a very rich content. Apart from reviews on rainstorms and tropical cyclones affecting the region last year, a number of new applications of technology were discussed. It included the use of satellite and radar data in improving the quality of weather forecasts, applications of lightning location data, frontier development in nowcasting techniques, forecast of storm surges induced by tropical cyclones, and numerical simulation of terrain induced turbulence using high-resolution numerical model. Topics attracting public attention in recent years, such as analysis of strong wind gusts, weather stress indices for human and deterioration in visibility were also presented. A lot of questions were raised and the presenters gave detailed answers. While sharing ideas in meteorological science and technology, the friendship among colleagues from Guangdong, Hong Kong and Macao was also promoted.

In the GHM Cooperation Meeting, the Guangdong Meteorological Bureau, Hong Kong Observatory and Macao Meteorological and Geophysical Bureau discussed several items of cooperation, including the setting up of more automatic weather stations in the Pearl River Delta, arrangements to create composite radar imageries, and enhancing the exchange and sharing of meteorological data. All these would facilitate the monitoring of the evolution of severe weather, and contribute to future development of the weather services of all these parties.



People

The Director provided expert advice to Department of Meteorology, Sri Lanka

WONG Mei-shing

At the request of the Secretary-General of World Meteorological Organization, Mr C.Y. Lam, Director of the Hong Kong Observatory, paid a one-week mission visit to Department of Meteorology, Sri Lanka, at the end of January 2006.

He provided advice to the department on the preparation of its master plan for development, which aims at upgrading the department to cope with future disasters. The need for an effective early warning system has been highlighted by the damage caused by the tsunami which hit Sri Lanka on 26 December 2004.



Mr. C.Y. Lam, Director of the Hong Kong Observatory, discussing with senior officers of the Department of Meteorology, Sri Lanka



Ms Queenie C.C. Lam (2nd right) with Chinese friends working in the WMO Secretariat

Recognizing the achievements of the Hong Kong Observatory public weather services (PWS), the World Meteorological Organization (WMO) invited the Observatory to assist in the work of its PWS programme. I was deeply honoured to have an opportunity to contribute to the international community. In February, I worked in the WMO Secretariat in Geneva, Switzerland, for a month to prepare the draft WMO guidelines on capacity building strategies in PWS. The purpose of the guidelines is to summarize information and experience to help national meteorological and hydrological services worldwide to deliver the highest standard of PWS within the confines of the available resources and the state of science and technology.

I gained invaluable international experience from this trip. My horizon was also widened. It helped me to appreciate better how the role played by the Observatory in the local community and internationally. Although the weather was freezing cold and work was hard in Geneva, I was warmly treated by Chinese friends working in the Secretariat. After the trip, I received congratulating e-mails from our clients and friends who learned about my mission from the Side Lights column on the Observatory's website. I could never have expected that they were even more excited about my mission than I was.

In a press conference on 17 March to inform the public about the achievements and new developments of the Hong Kong Observatory, our Director Mr Lam Chiu Ying took the opportunity to pay tribute to the late Director Mr Gordon Bell. Mr Bell was the Director of the Observatory from 1965 to 1981, the longest serving Director since World War II. This year is the 25th anniversary of the passing away of Mr Bell. Mr Lam recalled nostalgically that Mr Bell had a broad range of interests, excelling in meteorology, radio and computers. He set the foundation for the modernization and computerization of the Observatory. Mr Bell surmounted a lot of obstacles to establish a dedicated data link between Hong Kong and the National Meteorological Centre in Beijing in 1975, setting a precedence for communication between the Hong Kong Government and Beijing.

Mr Bell planned to publish a book on tropical cyclones after his retirement. However, he passed away soon after his retirement before finishing the book. Having found photocopies of the unfinished manuscript of his book last year and with the agreement of Mrs Bell, the book "An Introduction to Typhoons - An Unfinished Manuscript" was published in electronic form under the "Historical Publication" series of the Observatory. The book is a historical reference as well as a remembrance of the revered predecessor of the Observatory.



The late Director Mr. Gordon Bell

The Caring Gate Keeper

WONG Mei-shing

Every morning, negotiating the bustling Nathan Road is part of my journey to my office. I enjoy the pleasant contrast every time I enter the front gate of the Observatory when the street noise gives way to the joyous greetings of the birds, which are absolutely ecstatic in the fragrance of blooming spring flowers. While I am enchanted by what's happening in this small "forest" in the Observatory, a familiar face attracts my attention. The face is that of Mr. LO Tak-shing, affectionately called "Uncle Tak" by many colleagues. Without exception, Uncle Tak greets me with "Good morning, Mr. Wong".

Who is Uncle Tak? He is a contract security guard of the Observatory. Uncle Tak treats our colleagues politely, regardless of their position and ranking. Perhaps because of this, he is well liked by our colleagues although he has been with us for only about two years.



Our director, Mr. C.Y. Lam, presented a gift to Uncle Tak

His caring and conscientious behavior leads to praise and commendation from many visitors. In the Christmas party last year, our Director presented a gift to Uncle Tak in recognition of his contribution towards enhancing the image of the Observatory.



Observatory Staff Deserving of Praise

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

Mr LEUNG Yin-kong	Scientific Officer
Mr NG Ping-wing	Scientific Officer
Mr MA Lap-yin	Scientific Assistant



Public Weather Service Award Winners, 4rd Quarter, 2005

Best TV Weather
Programme Presenter:

Mr NG Ping-wing

Best Radio Weather
Programme Presenters:

Mr LO Chin-ming

3-Year Staff Morale in Retrospect: Job Satisfaction on the Rise

CHOI Siu-chuen

Since 2003, the Hong Kong Observatory has conducted Staff Opinion Survey regularly to collect opinions and ideas from staff about their work, their comprehension and emotions too, with a view to enhancing cohesiveness and communication within the Department. The survey results of the past three years indicate that the levels of job satisfaction and staff morale are on the increase. The response rate of the latest Survey was 10% higher than that of the first Survey 3 years ago. This reflects that the Department has responded with action to the staff opinions and ideas enduringly, and that the worth of Staff Opinion Survey is gradually recognized by our colleagues.

Career prospect and posting have been the major concerns amongst our colleagues all the time. In his briefing on 10th January, the Director has pinpointed specific arrangement to enhance the transparency of departmental operations. At the same time, he raised the principle of "steady progress", giving weights to the steadiness of our daily routine work on the one hand and to the forces of new technology and the changes of the society that move us along on the other.

It is through the concerted efforts of all that our "Happy Business" can foster. While serving the public with improved services, it is our hope that we enjoy our work with new interest, ending each day with bright colours.

WE CARE

CHOI Siu-chuen

The Hong Kong Observatory has recently been awarded the Caring Organization under the Caring Company Scheme 2005/06. This is an award scheme organized by the Hong Kong Council of Social Service to give recognition to the outstanding achievements of organizations for their effort and dedication in serving the community. The recognition is an assurance of our continual and sustainable commitment in caring for the well-being of our staff and their families as well as the community. Through the Scheme, government, business and social service sectors show our solidarity by joining hands to build an inclusive society where a right environment is provided for individuals to develop.

2005 Meritorious Websites

NG Ping-wing

The "2005 Meritorious Websites" campaign was co-organized by the Hong Kong Young Women's Christian Association, and the Television and Entertainment Licensing Authority, with active support from the Committee on Home-School Co-operation of the Education and Manpower Bureau, and the Radio Television Hong Kong. The objective of the campaign was to encourage Internet Content Providers and Internet Service Providers to develop more web pages and websites with healthy contents, encourage the youths to browse healthy websites and promote the appropriate use of the Internet.

Over 2,000 nominations were received. After months of voting, 18,380 citizens cast a total of over 120 thousand votes. At the end, the HKO website emerged as one of the eleven "2005 Meritorious Websites".

On the award presentation day (21 January 2006), staff of the System Development Division manned a booth in the exhibition. Apart from showing the contents of the HKO website, a computer game named "Rainstorm Shooter" was show-cased to arouse participants' interest in familiarizing themselves with the rainstorm warning symbols and their meanings. A simple experiment was also set up to illustrate the formation and characteristics of tornados, arousing the interest of quite a number of visitors.

The "2005 Meritorious Websites" was a very worthy campaign and the Observatory staff was highly motivated by the award. The Observatory will continue to provide quality web contents to serve the public.



LegCo Member, Hon SIN Chung-kai, JP, presented the award to representative of the Hong Kong Observatory, Dr YEUNG King-kay

Outstanding HKO officers commended by the Director

YIU Che-wan

In the Christmas party last year, our Director Mr. LAM Chiu-ying presented Letters of Commendation to the following staff for their contributions towards the Observatory.



At the invitation of ICAO, Mr CHAN Sai-tick took up the work of drafting the Manual on Quality Management System which will serve as an international guidance material to facilitate meteorological authorities around the world to set up such systems for their aeronautical meteorological services. His work, an Observatory's first in drafting guidance material for ICAO, has contributed to the enhancement of the Observatory's image throughout the international meteorological and civil aviation communities.



The paper written by Mr WU Man-chi in the Journal of Climate on the impacts of El Nino-Southern Oscillation events on tropical cyclone landfalling patterns in the western North Pacific helped establish the Observatory's reputation among the meteorological community as being capable of delivering research of the highest standards. His studies into long-term visibility trends in Hong Kong, tropical cyclone activity in the western North Pacific and rainfall projections in the 21st century in Hong Kong had significant insight into the changing climate as well as the impacts of climate change in this part of the world.



Mr CHOW Chi-kin played a leading and instrumental role in the HKO Team of Volunteers. He is extremely sensitive to the emerging social issue around him. His attitude of sincerity and spirit of generosity add impetus and credibility to the campaigns he runs, prompting others to readily respond and offer support. He is a true credit to the department, serving as an ambassador linking the Observatory with the society it serves through worthy humanitarian causes.



Miss SING Yuen-ki, Vicky, has contributed substantially during the past year towards organizing activities of the staff club which promotes the relationship among the staff and enhance the image of the department as a whole. She is full of ideas, positive in action, efficient in organization, energetic in getting things done and extremely effective in achieving the results and objectives.



Ms LAU Ho-fung plays a key and leading role in the Observatory Staff Club and participates in various departmental activities zealously and enthusiastically. She is sensitive to other's feelings and she always stands ready to help with her whole heart. Due to her enthusiasm and charisma, she manages to contribute to the active participation of other colleagues. She has made herself the best example in demonstrating the worth of "Happy Business".



Mr LEE Kwok-lun has done excellently in building a trusting partnership with the media, and through them positive messages regarding the Observatory were passed to the public. Mr Lee has also been fervently promoting the image of the Observatory through successfully implementing a number of public relations activities. His remarkable effort in tapping into the resource of the Friends of the Observatory by recruiting, training and organizing the voluntary docents for the "Public Tour of the Hong Kong Observatory" is a testimony of his creativity and corporate communication skill.

Appreciation by the Director to Several Observatory Staff

YIU Che-wan

Mr C.Y. Lam, our Director, also expressed his appreciation to the following staff.



The Graphics Unit (from left: Miss HO Oi-wa, Mr LI Kim-wa and Mrs NG CHAN Kam-chu) always offers much more than what is suggested by its name. They are a manifestation of seamless teamwork, devotion, commitment and conscientiousness. Their excellent service has won the appreciation of all fellow colleagues. Above all, they walk the talk of being ardent supporters of the Observatory's "Happy Business", and their contagious enthusiasm certainly has an impact to everyone who has worked with them.



The devotion and efforts by Mr CHEE Shiu-chung, Mr LO Chin-ming, Miss WONG Kit-man and Mr CHAN Ho-sun in the "Promotion of Meteorological Knowledge in Primary Schools" Project is very much appreciated. They have promoted meteorological knowledge to primary school students and enhanced their interest in Hong Kong weather. Their determination and commitment have contributed to the success of the project that has won the high praise from the schools and also established positive image of the Department. (from left: Miss WONG Kit-man, Mr CHAN Ho-sun and Mr LO Chin-ming)



The achievement by Mr FUNG Ching-biu in the application of mobile telephony and GPS/GIS technology to radiological surveys, which resulted in much improved efficiency in the timeliness of data and facilitated analysis and decision making during exercises and emergencies. His mastery of micro-controller technology also contributed to faster and more reliable a communication with the remote gamma station at Ping Chau, as well as enhanced efficiency and versatility of the Daya Bay Contingency Plan alarm device in the Observatory.



Since 2003, Mr LEUNG Wai-hung has been actively involved in the conduct of public weather courses, winning accolades from the public and civil servants alike. His presentation skills and his knowledge as a trainer have received high praise.



The unfailing effort by Mr NG Tim-hung (see photo in left), Mr LAW Tak-yin, Mr SIU On-pong and Mr YU Siu-man in providing outstanding civil and mechanical works service to all in the Observatory, and especially their tireless and dependable work over the past year in construction of new stations, on top of their routine station maintenance and improvement work are very much appreciated. Throughout the process, they demonstrated great dedication and initiative despite the often harsh weather conditions and hostile environment.



The achievements contributed by, Mr TONG Yu-fai, Mr MAK Kai-lun and Ms CHIU Chiu-ye, Candy, in the service provided to Hong Kong Windsurfing Team in Olympic 2004 were acknowledged by users and widely reported in media. They were able to rise up to the challenge, entering uncharted water with great dedication and resourcefulness. Expertise and knowledge across different core activities were purposely pooled together for a common goal. It did not only produce effective results for the event and boost the image of the Observatory, it also opened up new possibilities and broadened our service perspective for future events of similar nature. (from left: Ms CHIU Chiu-ye, Candy, Mr YEUNG Ho-yin and Mr NG Ping-wing)



The pioneering work done by Mr LAM Kai-bun in the conduct of the "weather observation" course for members of the public and for civil servants having outdoor operational duties is much appreciated. He is one of the first Scientific Assistant grade officers to hold such course, setting a good example for fellow colleagues.

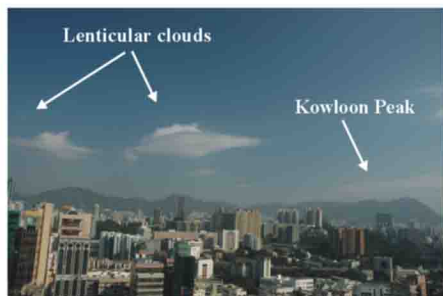
**Electronic version of "Weather on Wings"
is available at the following website:**

<http://www.weather.gov.hk/publica/wings.htm>

Cloud Corner - Lenticular Clouds

SHUN Chi-ming

I took the first photograph below at 10 a.m., 8 February this year near the Observatory's Headquarters in Tsim Sha Tsui, showing clouds over Kowloon which resemble a pair of flying saucers. These clouds are called "lenticular clouds". They form when a layer of relatively stable and moist air-stream is forced to rise by hills, causing up and down wave motions in the air. The rising air in the wave causes the moisture to cool down and condense into water droplets, which then become visible to the eye. Since lenticular clouds look like one or more convex lens, they could sometimes be misinterpreted as flying saucers or Unidentified Flying Objects, and so they are commonly known as "flying saucer clouds".



"Flying saucer clouds" at 10 a.m. on 8 February this year

Since the wave motions which result in the "flying saucer clouds" are caused by hills, these clouds would appear more readily in mountainous areas. In Hong Kong, "flying saucer clouds" do not appear frequently but their appearance over Kowloon on 8 February was not the first time. In the morning of 9 January 2004, my colleague C.M. Cheng also photographed another one (see the second photograph below). The weather conditions on these two days were rather similar, with moderate to fresh easterly winds blowing near the surface and over the hills, and a rather stable atmosphere. We may therefore infer that the "flying saucer clouds" were caused by easterly winds blowing across Kowloon Peak and the nearby hills over eastern Kowloon.

In the future, if you pay more attention to the wind changes, you may have the chance to get a glimpse of the fascinating "flying saucer clouds"!



"Flying saucer clouds" in the morning of 9 January 2004

The Observatory's Awards

CHOI Siu-chuen

The Observatory has won many awards over the past few months, including the Champion of the "Departmental Award for Service Enhancement" and the Merit Award of the "Innovation/Application of Technology" Category of the Civil Service Outstanding Service Award, "the Caring Organization Award", "the Best TV Programme Award", "the Open Source Code Enthusiast Award", "the Website of Merit Award" and "the Web Care Award". The fact that the Observatory was awarded in different areas reflects not only the efforts of the Observatory staff in striving for new ideas to improve services to the public, but also the commitment of the department to pursue the values of truth, virtue and beauty. A lunch gathering to celebrate the awards took place at the Observatory Headquarters on 30 April 2006. This gathering is attached with a special meaning, since all expenses for the gathering came from the cash award won under the Civil Service Outstanding Service Award Scheme.



Director of the Observatory and colleagues performing the "Roasted Pig Cutting" Ceremony at the gathering

Visit to the Survey and Mapping Office, Lands Department

CHIU Chiu-ye

On 6 March, over 20 Observatory colleagues visited the Survey and Mapping Office (SMO) of the Lands Department in North Point in the afternoon. SMO staff greeted us and introduced us to the operation and application of the "Geospatial Information Hub" (GIH) Project, the work of the "Geodetic Survey Section" (GSS) and the latest development of the "Satellite Positioning Data Services" (SPDS).



SMO staff explaining their works to the Observatory's colleagues

SMO launched GIH in mid-2004. It is a web-based information portal integrated with a large amount of geospatial information from 11 government departments. This cross-departmental facility is useful to the Observatory as it improves the effectiveness of sharing and exchanging HKO's geospatial information within the Government. The GSS maintains a network of accurate survey control points that cover the whole territory of Hong Kong. The section also provides geodetic survey services to other government departments. For example, it helps to determine the geographical coordinates of the Observatory's meteorological instruments.

The SPDS sets up several positioning reference stations that routinely collect and analyze global positioning system data from satellites. Combined with the weather information from reference stations, the system then calculates the positional biases in real-time and improves the positioning accuracy to the order of centimeters.

The SMO is an office using advance technology. This visit inspired me to ponder the potential use of weather information. I hope to have more opportunities to widen my vision in the future and I look forward to the next visit.

From "Friends" of the Observatory to Married Couple

Roger KWAN

In becoming the volunteers of the Friends of Observatory, most people intend to serve the community or make new friends. No one could have expected that a love story would evolve out of it

This love story started when two volunteers, Skyie and Wai worked as teammates during the preparation of the Observatory Open Day last year. As time went by, they became lovers and they finally treat themselves to be their better half for the rest of their life. Since they kept a low profile when they were dating, many volunteers of Friends of Observatory were surprised when they announced that they were getting married.

The wedding ceremony was held on 28 February 2006. Although the weather was not ideal, the ceremony was full of romance, kindness and joy. Perhaps because they are the first couple linked by the Friends of Observatory, many volunteers of the Friends of Observatory attended the wedding banquet. I was proud to be the best man at their wedding ceremony.



Skyie and Wai in the Wedding Banquet