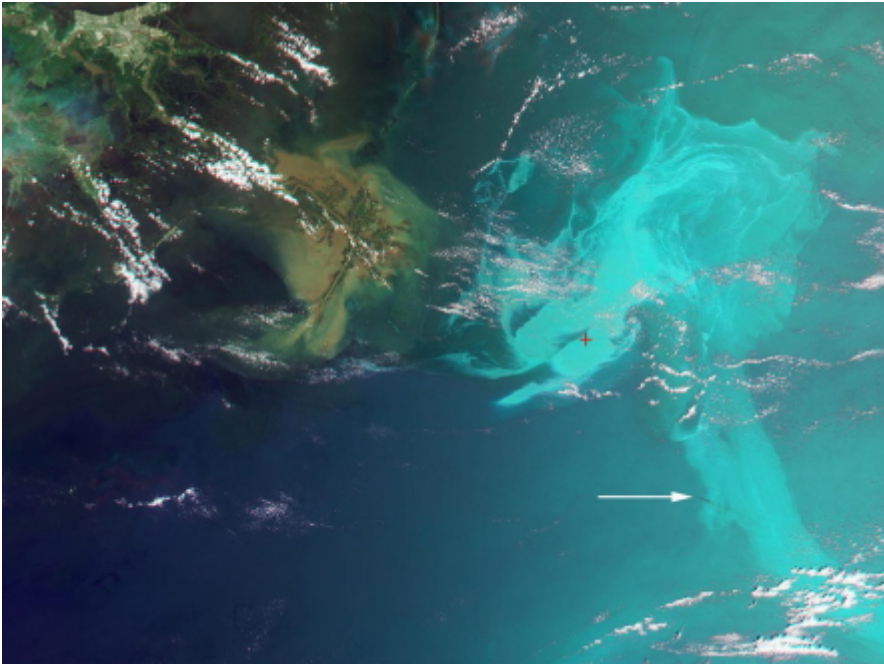


The Oily Gulf

On the night of April 20, an explosion rocked the *Deepwater Horizon*. The *Deepwater Horizon* was a huge building or platform in the middle of the Gulf of Mexico used to drill oil from deep below the ocean floor. Most of the 126 people on the platform escaped, but 11 people died and others were injured. Rescue workers raced to the scene to put out the fire, but deep underwater another situation was getting underway — one that has turned into an environmental disaster.



This image combines different snapshots taken by instruments aboard the NASA Terra satellite May 17. The arrow points to what is probably a plume of smoke from attempts to burn the oil from the surface. The oil appears cyan blue. The Mississippi River Delta is in the upper left.

Oil began leaking from the “riser pipe,” which connected the platform to the well on the ocean floor, 5,000 feet below. Like a giant straw, the pipe carried oil from the ocean floor up to the platform. When the rig sank to the ocean floor on April 22, the riser pipe became disconnected — and crumpled. Since then, oil has been spewing out into the water.

In an interview in May, Carol Browner said, “This is probably the biggest environmental disaster we have ever faced in this country.” Browner is assistant to the President for energy and climate change policy.

As the spewed oil, or oil slick, spreads, it pollutes the water, endangers wildlife and threatens a way of life for people who live near the Gulf Coast. In May, the National Oceanic and Atmospheric Administration declared 25 percent of the U.S. portion of the Gulf closed to fishing. The declaration aims to keep people from eating contaminated fish.

By late May, oil-drenched animals, including Louisiana’s state bird, the brown pelican, were showing up near the shoreline. Beaches and swampy areas near the shore had become splashed with oil. The oil could continue to wash ashore for weeks — or even months — and the environmental damage may take years to clean up.

It’s been difficult to estimate how much oil has leaked, and how far the oil slick will spread. Initial reports by British Petroleum, the oil company that was leasing the *Deepwater Horizon*, and by the U.S. Coast Guard estimated a leak of 1,000 to 5,000 barrels per day. (A barrel is 42 gallons.) At a rate of 5,000 barrels per day, the leak would fill an Olympic-size swimming pool in three days.

But even those estimates were too low, according to Steve Wereley, a mechanical engineer from Purdue University. Wereley and a team of engineers studied a 30-second video clip of the leak, released by BP, and were able to estimate from those videos and other information how much oil is escaping from the ruptured pipe. In May, the team reported its findings to a committee in the U.S. Congress.

Wereley's team paid careful attention to the size and shape of the plume in the video clip. (The plume is the blast of oil coming out of damaged parts of the riser pipe.) By measuring and analyzing the plume in the video clip, the engineers estimated the rate of the spill to be somewhere between 76,000 and 109,000 barrels of oil per day. In addition to presenting his own study, Wereley testified that four other independent studies had arrived at estimates ranging from 25,000 to 100,000 barrels per day.



The U.S. Geological Survey is analyzing the oil. Pictured is a sample collected by Louisiana USGS scientists Greg Swayze and Charles Demas.

He said that all the other estimates “are considerably higher than BP’s.” The studies may not all agree with each other, but they all agree that initial reports were too low. The disaster has become the worst oil spill in history, even worse than when the *Exxon Valdez* spilled 11 million gallons of oil into Alaskan waters in 1989.

Emergency workers have used many different approaches to try to clean up the spill. A small amount of the oil that has reached the surface of the Gulf has been burned off. BP tried to install giant domes over the leaks to catch the escaping oil. As of late May, these attempts had all failed, and the oil continues to pour into Gulf waters. BP has also used dispersants, chemicals that can break the oil apart, to try to slow down the damage.

But to fully stop the leaks and block the oil could take weeks, if not months. And natural phenomena might make the problem worse: Natural currents that move water through the Gulf help spread the slick, and scientists worry that hurricanes — which usually strike between June and October — could carry the oil to inland wetlands. Clean-up will take years.

All in all, the oil spill is a tragic situation in a part of the country still recovering from the devastation of Hurricane Katrina in 2005. It may take years to fully understand the extent of the damage.

Lunch Time Video Shows: 12:20 p.m. @ Chem. Lab. (Room 512)

Date	Name of Program	Language / Subtitle	Area
4/10 (Mon)	Megafactories – Porsche (Part I) 超級工廠 – 保時捷	English / Chinese	Engineering 工程
7/10 (Thu)	Megafactories – Porsche (Part II) 超級工廠 – 保時捷	English / Chinese	Engineering 工程
11/10 (Mon)	How Earth Made Us – Water (Part I) 天造地設 – 水	English / Chinese & English	Earth Science 地球科學
14/10 (Thu)	How Earth Made Us – Water (Part II) 天造地設 – 水	English / Chi. & Eng.	Earth Science 地球科學
18/10 (Mon)	Search for Tigers 尋找皇家孟加拉虎	English / Chi. & Eng.	Biology 生物學
21/10 (Thu)	The Miracles of Jesus, Episode 1 (Part I) 神蹟透視(一)	English / Chinese	Archeology 考古學
25/10 (Mon)	The Miracles of Jesus, Episode 1 (Part II) 神蹟透視(一)	English / Chinese	Archeology 考古學
28/10 (Thu)	Seconds from Disaster - Paris Train Crash(Part I) 巴黎火車撞車事故	English / Chinese	Forensics Science 鑑証科學

Science Promotion Team 2010-2011:

Chairperson: Yang Chun Pong 楊雋邦 5D

Committee Member: Chung Lai Him 鍾禮謙 5D, Hung Ka Kiu 洪嘉僑 5D, Lee Lok Tin 李樂天 5D, Lo Wai Ki 盧偉祺 5D, Mak Chun Wing 麥駿穎 5D, Lo Lai Fong 盧麗芳 5E & Yip Tsz Fung 葉子楓 5E

Website: <http://210.3.43.253/~lck/science/spt1011/spt1011.htm>

免費科學活動

空間天文學入門 (粵語講解) 時間：下午 7 時至 8 時 30 分 地點：太空館演講廳

伽利略在 1609 年用第一支望遠鏡仰望穹蒼，讓我們得以了解星空和宇宙，是一件了不起的事情。從 20 世紀 60 年代以來，精密的天文觀測設備不斷誕生，並與太空科技結合，使空間天文學的研究一日千里，甚至可想像成是伽利略教授的工作的延續。本講座將會透過圖像和互動的網頁，深入淺出地讓觀眾進入空間天文學的領域。

第一講	空間天文學的由來-從古代石刻到斯皮策天文望遠鏡	10 月 4 日(一)	講者：梁振聲先生 (香港天文學會資深會員)
第二講	伽瑪射線天文學和 Fermi 伽瑪射線天文台	10 月 11 日(一)	
第三講	X 射線天文學和錢德拉 X 射線天文台	10 月 18 日(一)	
第四講	空間紅外、紫外和射電天文學	10 月 25 日(一)	

天文活動領袖訓練 (粵語講解) 時間：下午 7 時至 8 時 30 分 地點：太空館演講廳、天象廳及天台
為了使天文活動能在學界得以有效推展，香港太空館與香港天文學會舉辦一個為期四講的講座，內容著重鼓勵及培育同學在校內推動天文活動的技巧與興趣。

第一講	天文領袖基礎(一)：使命及管理技巧及如何辦好天文學會	10 月 14 日(四)	講者： 香港天文學會代表
第二講	天文領袖基礎(二)：如何主持天文講座及天文活動	10 月 21 日(四)	
第三講	天文觀測(一)：星座認識及觀星技巧	10 月 26 日(二)	
第四講	天文觀測(二)：天文儀器介紹及應用	10 月 28 日(四)	

天文電影

香港太空館演講廳 (英語旁白, 配以中文字幕) 免費活動, 即場入座, 座位先到先得

電影名稱	日期	時間
「天象畫廊：鏡頭下的宇宙奇觀」電影系列	31.10.2010 (星期日)	下午 5 時至 6 時

太空館天文活動 (粵語講解)

有興趣人士可於每次活動開始前, 於太空館地下大堂輪候參加, 費用全免。如天氣欠佳, 觀測活動會以室內活動代替)

活動名稱	日期	時間	地點
天文快樂時光	10 月 13 日(星期三)	晚上 7 時 30 分至 9 時	太空館天台

你有否想過在夜幕低垂時, 與三五知己在繁華鬧市中, 仍然可以仰觀天象, 享受觀星的樂趣? 香港太空館特別為未親嘗觀星樂的人士舉辦了一個名為「天文快樂時光」的觀星活動。在資深天文愛好者的引領下, 參加者可以在本館天台輕輕鬆鬆地去辨認市區中可見的天體, 享受一段快樂的時光。

天文嘉年華	10 月 19 日(星期二)	晚上 7 時至 9 時	何鴻燊天象廳、宇宙劇場及天台
神秘的星空, 帶給人無限的遐想, 正因如此它每每令人著迷。天空中閃爍的星體看似遙不可及, 原來也可以近在咫尺。香港太空館舉辦的「天文嘉年華」活動正好讓大家在鬧市中近距離接觸神秘的星空。你可以透過「星空巡禮」在模擬的星空中穿梭宇宙; 「魔幻行星」帶你認識太陽系八大行星的特色和面貌; 而「鏡中星空」則讓你親眼窺探月球、行星及其他天體的廬山真貌。			

何鴻燊天象廳講座系列 (粵語講解) 時間: 下午 7 時至 8 時 地點: 太空館天象廳

2009 年 7 月, 全新的星象投映系統正式在太空館何鴻燊天象廳投入運作。新星象儀可謂納須彌於芥子, 將浩瀚的宇宙濃縮於小小的天象廳中, 利用系統儲存的最尖端天文數據, 實時運算宇宙天體的變化, 不但能模擬逼真的星空, 更可帶領觀眾遨遊宇宙, 甚至飛抵可見宇宙的盡頭, 綜觀星系的分布及宇宙的大尺度結構。有見及此, 太空館特別於今年推出《何鴻燊天象廳講座系列》, 利用新星象儀的強大功能, 與大家一起探討有趣的天文學課題。《何鴻燊天象廳講座系列》將於每月其中一個星期二的晚上舉行, 10 至 12 月的講座詳情如下:

第一講	星象儀 30 年	10 月 5 日(二)	講者: 李為君先生 (香港太空館助理館長)
第二講	行星科學	11 月 23 日(二)	講者: 劉啓業先生 (香港太空館助理館長)
第三講	全天域下的天球概念	12 月 7 日(二)	講者: 鍾振華先生 (香港太空館助理館長)

專題講座: 隕石撞擊坑及中國第一個隕石坑的發現 (粵語)	10 月 23 日 (星期六)	下午 3:00 - 4:30	太空館演講廳	陳鳴博士 (中國科學院廣州地球化學研究所研究員)
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小行星或彗星超高速撞擊行星及其衛星表面形成的凹坑或環狀地質構造稱為隕石撞擊坑。在十七世紀初月球環形山被發現三百多年後的 1960 年, 科學家在地球上首次證實了隕石撞擊坑的存在。迄今, 地球上共發現了 170 多個隕石撞擊坑。隕石坑對研究地球的形成和演化, 如探索古氣候、古環境、古生物變遷和成岩成礦作用等; 以及在行星科學和深空探測等領域上都具有重要的科學意義。中國幅員廣闊, 華夏大地是否存在隕石撞擊坑受到人們的普遍關注。中國隕石坑探索始於二十世紀八十年代, 先後報導過一批環狀地質構造或疑似隕石坑, 但由於缺乏關鍵的衝擊變質證據, 因此一直未能取得突破性進展。岫岩隕石撞擊坑位於中國遼寧省鞍山市岫岩滿族自治縣境內, 直徑 1,800 米, 坑深 150 米, 是中國第一個獲得證實的地外天體撞擊構造, 填補了中國在這類獨特地質構造形跡的空白。這次講座將讓你對岫岩石撞擊坑及中國隕石坑研究有更深的認識。

專題講座: 星系大檢閱 (粵語)	10 月 31 日 (星期日)	下午 3:00 - 4:30	太空館演講廳	蔣善恆先生 (星匯點助理委員) 李肇昌先生 (星匯點助理委員)
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星星在無垠的宇宙中, 其實並不是孤零零的。藉著萬有引力的牽引, 它們會組成不同的部落。這些部落就是我們說的星系。「星系大檢閱」講座將會從介紹這些星星部落的外貌和特質開始, 繼而展示它們演化和交戰的情況, 最後更會談到星系起源和宇宙誕生的關係。

專題講座: 中國航天科技 (粵語)	10 月 23 日 (星期六)	上午 9:30 - 11:00	香港新一代文化協會	陳炯林教授 (香港科技大學數學系)
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近年來, 中國的航天科技在多個領域得到了迅速的發展, 在發展過程中, 遇到什麼的挑戰和困難呢? 展望未來的發展又有何突破呢? 陳教授是香港其中一位參與中國嫦娥探月計劃的科學家, 同學可以從陳教授的講座中認識中國航天科技的最新發展。