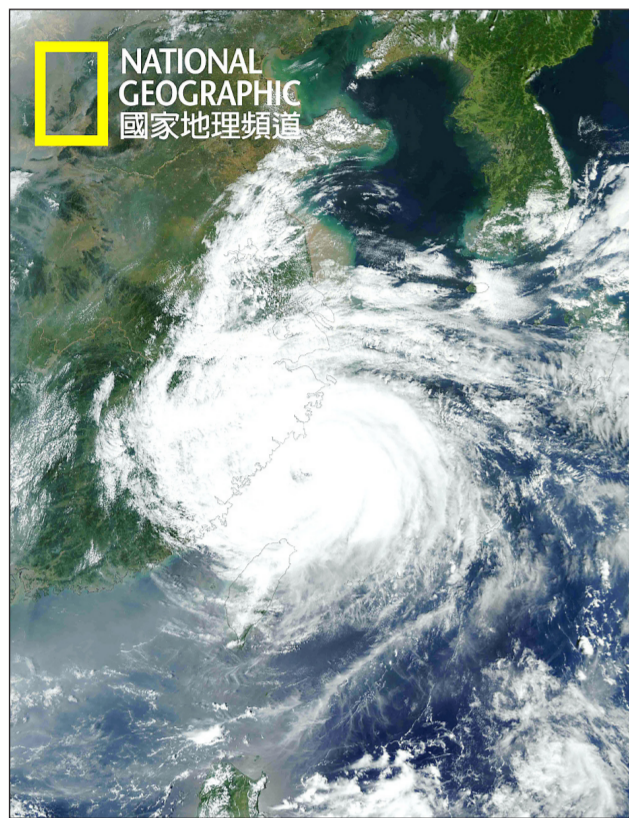


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Taiwan to the World 3 – Typhoon Hunters

綻放真台灣 3 – 追風計畫



Above: A nephanalysis of a satellite-observed typhoon. Right: A typhoon strikes Taiwan.

PHOTOS COURTESY OF NATIONAL GEOGRAPHIC CHANNEL
上圖：颱風衛星雲圖。
右圖：颱風侵襲台灣。

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Typhoons are among the most **ferocious** natural disasters in the world. Their violent winds and torrential rains can go on for days, causing severe damage and serious loss of human life. Now an international team of **meteorologists** will fly into the very heart of the storms.

颱風是最具殺傷力的自然災害之一，它所帶來的狂風豪雨可以持續數日，對人類生命及財產造成極大傷害。現在，一個跨國氣象團隊，將深入颱風中心一探究竟。

The Pacific Ocean. It was called Mare Pacificum, literally, "peaceful sea", by European explorers, but it is anything but peaceful. Some of the most violent storms on the planet originate in these waters. Each year around 80 tropical cyclones form around the world, 26 of them form in the northwest Pacific, and four of them strike Taiwan. It's one of the most typhoon-hit places on the planet. With wind speeds that can exceed 250km per hour, the global cost of typhoon damage equals or exceeds that of earthquakes or any other type of natural catastrophe. In a single year more than US\$500 million (NT\$17 billion) is spent clearing up the damage in Taiwan, up to 85 percent of which is due to climatic disasters. Dr. Wu Chun-chieh is the professor of atmospheric science in National Taiwan University. Dr Wu grew up in the southeast coast of Taiwan, where the majority of direct typhoon landfalls occur. The violence of the storms is etched **indelibly** in his memory. For the past 15 years he has been unlocking their secrets.

太平洋是歐洲探險家口中的「平靜之洋」，不過平靜的外表下卻是暗潮洶湧。地球上威力強大的暴風，有些是在這個海域生成。全球每年大約有八十個熱帶氣旋產生，其中二十六個來自於西北太平洋，有四個會直接侵襲台灣，這使得台灣成為



颱風登陸頻率最高的地方之一。每小時超過兩百五十公里的風速，也讓全球風災的損失，相當於或超過地震和其他天災。在台灣，平均每年的風災損失超過五億美元（新台幣一百七十億元），占了所有氣象災害損失的百分之八十五。吳俊傑博士是台灣大學大氣科學系的教授，他生長在颱風登陸最頻繁的台灣東南沿岸，狂風暴雨在他心中留下深刻的記憶，十五年來他一直為了解開颱風背後的祕密而努力。

In 2003, Dr Wu initiated the first "typhoon hunting" program in Asia. It's called Dropsonde Observation for Typhoon Surveillance near the Taiwan Region, or DOTSTAR for short. Using specially equipped aircraft his team of typhoon hunters gather data essential for understanding the **mechanism** of

the storms. It's dangerous, specialized work. Few can do it. His project makes Taiwan only the second country in the world to use manned aircraft to **monitor** tropical cyclones.

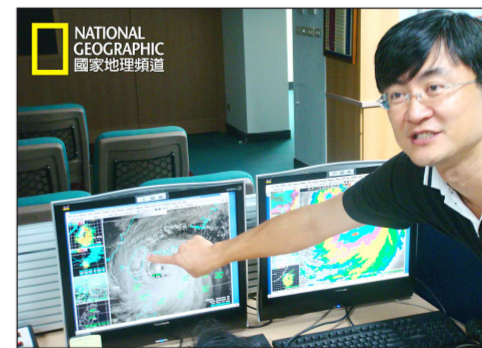
二〇〇三年時，吳博士啟動了亞洲第一個「追風計畫」，計畫的全名是「侵台颱風之飛機偵察及投落送觀測實驗」，簡稱DOTSTAR。追風團隊搭乘特別改裝過的偵察機，收集重要資料，進而了解颱風的結構。這是項危險又專業的工作，只有少數人能勝任。這計畫讓台灣成為全世界第二個使用載人飛機偵測熱帶氣旋的國家。

The key to their research is the special GPS weather sensors they drop into the storm, called dropsondes. These **devices** relay crucial data back to the scientists, because over the ocean there



are essentially no traditional observations. So for hurricanes or typhoons, we need to have some special data from radar or from satellite. But those are all remote sensing data. There is one more specific way to take the data from hurricanes — through airplanes. It's an in situ observation and therefore we get a better opportunity to improve our understanding of typhoons.

這項研究的祕密武器，是被投入暴風中的大氣偵測探空儀，俗稱「投落送」，這種儀器可將重要資訊回傳給科學家們，因為在海面上無法使用傳統的氣象偵測方法，所以我們會透過雷達或衛星來取得颱風的資料，不過這些都是遙控感測的資料。另一種取得颱風資料的方法是透過飛機進行直接觀測，這種方法可以讓我們更進一步了解颱風。



Left: A balloon with dropsondes, the GPS weather sensors, about to be released over Big Island, Hawaii.

Top: The C130 from the US is one of the typhoon hunters.

Above: Dr Wu Chun-chieh.

PHOTOS COURTESY OF NATIONAL GEOGRAPHIC CHANNEL
左圖：夏威夷大島上即將施放的「投落送」氣球。
最上圖：參與追風計畫的美國C130。
上圖：吳俊傑博士。

照片由國家地理頻道提供

TODAY'S WORDS 今日單字

- 1. ferocious** /fə'rojəs/ adj. 兇猛可怕的 (xong1 meng3 ke3 pa4 de5)
- 2. meteorologist** /,mi:tə'ralədʒɪst/ n. 氣象學者 (qi4 xiang4 xue2 zhe3)
- 3. indelibly** /ɪn'deləblɪ/ adv. 不能磨滅地 (bu4 neng2 mo2 mie4 de5)
- 4. mechanism** /'mekə,nɪzəm/ n. 結構 (jie2 gou4)
- 5. monitor** /'mənətə/ v. 監測 (jian1 ce4)
- 6. device** /dr'vaɪs/ n. 儀器 (yi2 qi4)