涓流细雨

"This is the first time we will get short-term forecasts of what the changes at the surface of the Earth will be. We can tell a power-grid customer not only that it will be a bad day, but give them some heads-up on what exactly they will be facing."

"这是我们即将第一次给出地球表面将要发生什么变化的短期预报。我们不仅能够告知电力网客户坏天气，还能准确警告他们将面对什么。"

——美国NOAA借助其最新研制的更为复杂的下一代空间天气预报模式，准备将空间天气预报从1D提升到2D，即给出太阳风暴风险等级的分布。空间天气预报中心首席预报员Bob Rutledge如上解释了新预报产品对供电网安全的意义所在。

"The Met Office had meteorological observers stationed at the front from 1915, providing critical meteorological information which impacted not only allied operations and also warning of conditions which would enable the enemy to launch gas attacks themselves. The operational forecasts proved to be highly important and after what was one of the only allied advances during the battle of Passchendaele one of the senior allied commanders sent a telegraph to Meteor R. E. to thank them for their accurate forecasts which had proven of great assistance in planning the operation."

"自1915年开始，英国气象局在前线派驻气象观测员提供关键气象信息，这些信息不仅和气象业务联系在一起，还可以在敌方可能发生毒气攻击的天气条件时做出警报。业务预报被证明非常重要，在唯一的联合攻击战役中的巴雪戴尔战役后，联合指挥官致电气象预报人员，感谢他们提供的准确预报，在战役计划阶段帮助极大。"

——从1916年10月24日开始，英国气象局开始不间断地向英军方提供气象预报。近日，英国气象局隆重纪念其为军方提供气象预报信息100周年。英国气象局档案保管员Catherine Ross回忆起该局在第一次世界大战期间为英国军队服务时的情景。

"Barriers to zero emissions don't come from science: they are economic, social and political. The new IPCC focus will be to help to overcome these barriers through scientific analysis."

"零排放的障碍并非来自科学，这些障碍源自经济、社会和政治。新的IPCC评估报告的要点就是要通过科学分析帮助克服这些障碍。"

——2016年8月，"跨越IPCC工作组气候风险和可持续的解决方案综合研究：汲取AR5经验教训支持AR6"学术会议在斯德哥尔摩举行，这次会议吹响了IPCC在2014年完成AR5评估后新一轮评估开始的号角。IPCC主席Hoesung Lee在会议开幕式上针对新评估做出了上述表述。

"Julia, and her predecessors in the role, have all been such passionate ambassadors of the world-leading science we do here at the Met Office. I'm thrilled to have the opportunity to follow in their footsteps and maintain this great tradition. I am looking forward to nurturing the scientific excellence in Met Office Science and integrating that excellence into the UK's broader world-leading weather and climate science to develop services for the maximum benefit to society."

"朱莉娅和她的前任们都成为了我们在气象局所从事的世界领先科学工作的热情的大使。我很激动有这个机会追寻他们的足迹，并延续这一恢宏传统。我期待呵护气象局卓越的科学事业并融合成为英国更广泛的福祉，让社会最大化受益于天气和气候科学。"

——英国气象局认命Stephen Belcher教授为该局新的首席科学家，原首席科学家Dame Julia Slingo退休。作为首席科学家，Stephen将与该局科学局长Andy Brown合作，领导和管理研发工作。Stephen在上任之际做了上述表达。

"Every year, wildfires affect nature, people, their homes and businesses. While the progress of a fire itself is hard to predict, this new service from SAP, leveraging satellite data from ESA, allows us to accurately calculate costs and risks related to wildfires and even gain insights into the future probability of wildfires."

"每年野火都在影响环境、人类生活、居住地和商业。虽然野火过程本身的预测很难，但SAP的新服务借助了ESA的卫星数据，让我们可以准确计算与野火相关的成本和风险，甚至启发我们认识未来野火发生的可能性。"

——2016年11月，一家国际软件公司SAP与欧空局合作，推出地球观测分析服务。该服务借助SAP的Hana平台以云服务的形式提供。两家机构从年初开始合作，致力于将分析平台与ESA的地球观测数据，特别是哥白尼项目的数据结合起来，形成新的商业服务产品。慕尼黑再保险公司地理空间解决方案部门负责人Andreas Siebert用上述话语评价了这项合作研究会带来什么。

"The entire scientific community is mourning the sudden and untimely loss of this great leader who has been unexpectedly removed from the forefront of the scientific issues that matter most to the future well-being of society, Ralph Cicerone was a model for all of us of not only doing what counts, but doing it with honesty, integrity, and deep passion."

"整个科学界都在为这位伟大学术领头人的突然和过早离世而悲伤，他意外离开，留下的科学问题前沿事关未来社会福祉，Ralph Cicerone是我们大家的楷模，从事科学工作不是就事论事，而是要像他那样将正直、诚恳和深深的热情投入其中。"

——美国科学院（NAS）2016年11月5日宣布，美国大气化学家、NAS前院长Ralph J. Cicerone不幸去世，享年73岁。NAS称Cicerone是科学领袖和世界知名的大气化学和气候变化权威。Cicerone曾在2005—2006年任NAS院长，他的继任者Marcia McNutt谈到Cicerone时，用上述语言表达了对亡者的无限悲痛和尊敬。

"Today, we can't see what's happening under the rain, we can measure the wind outside of the storm cell with present systems. But there's a gap in our knowledge of cyclone processes in the critical eyewall region of the storm — a gap that will be filled by the CYGNSS data. The models try to predict what is happening

under the rain, but they are much less accurate without continuous experimental validation…"

"今天，我们还无法看到雨区下方发生了什么，我们现在的系统能够观测风暴单体外围风场。但是，针对风暴关键的眼壁区域气旋过程的认识有缺欠——这样的缺欠将被CYGNSS资料填补。模式可以预报云区下方发生了什么，但是如果没有连续的试验验证，准确性会很低……"

——NASA将布设其第一个地球科学小卫星星座系统——气旋全球导航系统（The Cyclone Global Navigation Satellite System，CYGNSS）。针对该系统的意义，美国密歇根大学气候和空间科学系的Chris Ruf教授给出了上述评价。据悉，CYGNSS中的小卫星将持续对地球热带飓风带纬度区域海洋表面风场进行监测，每颗卫星每秒钟可以捕获4次风观测，这样星座的8颗卫星每秒钟可以获得32个风速记录。CYGNSS也是NASA地球冒险项目第一个通过竞争立项的地球轨道观测完整项目，立志于低成本、快速开发和科学驱动认识地球当前状态及其复杂的动力系统，确保对未来变化预测的持续改进。

"More than ever, federal support of research and education into the Earth system is critical to the nation, We are on the verge of a new era of prediction, based on understanding how the entire Earth system works. This will have a direct positive impact on lives and livelihoods. The United States should be the unambiguous leader in predicting weather, water, climate, and related systems. Transforming this knowledge into action will allow our nation and the world to effectively respond and adapt to changing environmental conditions."

"联邦对地球系统研究和教育的支持比以往任何时候都来得关键，基于对整个地球系统机制的认识，我们将迎来预报新时代。这将给我们的生活带来正面影响。美国应该义无反顾成为预报天气、气候和相关系统的领导者。将这样的思想付诸行动，会让我们的国家和世界有效地应对和适应变化中的环境条件。"

——美国大选结果出来后，作为美国110个非盈利学院和大学联盟成员的UCAR，发表了针对下一代政府和国会的白皮书，强调预报地球系统的价值所在。UCAR主席Antonio J. Busalacchi更是全面表达了白皮书的应景意义所在，以及美国应该作为地球系统预报领导者的观点。

2016年11月19日，NOAA宣布其下一代地球静止轨道气象卫星GOES-R发射成功，多位相关部门官员发表了看法。

Kathryn Sullivan: "The next generation of weather satellites is finally here. GOES-R is one of the most sophisticated Earth-observing platforms ever devised. GOES-R's instruments will be capable of scanning the planet five times faster and with four times more resolution than any other satellite in our fleet. With these new instruments and powerful new capabilities, GOES-R will strengthen NOAA's ability to issue life-saving forecasts and warnings and make the United States an even stronger, more resilient Weather-Ready Nation."

Louis W. Uccellini: "We are ready to receive and process GOES-R data into our forecasts as soon as it is available. Forecasters will not only have sharper, more detailed views of evolving weather systems, they will have more data–better data–ingested into our weather models to help us predict the weather tomorrow, this weekend and next week. This is a major advancement for weather forecasting."

Craig Fugate: "GOES-R will significantly improve the ability of emergency managers across America to prepare for, and respond to, weather-related disasters. Better situational awareness will result in better outcomes -- from where to best position resources ahead of a storm to delivering more targeted information to local officials to decide if an evacuation is necessary,"

Stephen Volz: "We've crossed an historic performance threshold with GOES-R. NOAA is now operating the most sophisticated technology ever flown in space to help forecast weather on Earth."

Sandra Smalley: "NOAA and NASA have partnered for decades on successful environmental satellite missions. Today's launch continues that partnership and provides the basis for future collaboration in developing advanced weather satellites."

NOAA局长Kathryn Sullivan："下一代天气卫星终于升空。GOES-R是目前最复杂的地球观测平台之一。GOES-R上的仪器将让扫描地球的速度提高5倍，而且较我们已有卫星的分辨率提高4倍。这些新仪器和强大的新能力，将让GOES-R强化NOAA保护生命的预警能力，让美国成为更强大、更具弹性的天气有序国家。"

NWS局长Louis W. Uccellini："我们准备就绪，尽快接收和将GOES-R资料融入我们的预报中。预报员不仅能够更加清晰和详尽地看到天气系统的演变，他们还得到更多，而且更好的资料嵌入我们的天气模式，帮助我们预报明天、这个周末和下周的天气。这是天气预报的巨大进步。"

FEMA（联邦应急管理局）局长Craig Fugate："GOES-R将极大改进整个美国应急管理人员的能力，对天气相关的灾害做出准备和应对。更好的形势感知将带来更好的结果——从风暴来临前最佳资源集散地点的确定到向当地官员发布目标性更强的支持做出是否需要疏散决策的信息。"

NOAA信息卫星局局长Stephen Volz："GOES-R将跨越性能的历史极限。NOAA现在在空间领域展现的最复杂技术，帮助预报地球天气。"

NASA联合部委卫星部主任Sandra Smalley："NOAA和NASA数十年作为伙伴成功实施环境卫星使命。今天的发射持续了这种合作，并为未来合作开发先进天气卫星打下了基础。"

——GOES-R是美国下一代地球静止气象卫星系列中的第一颗，成功发射意义巨大，各方官员兴奋之情溢于言表也属正常。据悉，该系列卫星包含的4颗卫星，业务化前分别为GOES系列的R，S，T 和U星，将支持NOAA一直到2036年的气象业务。