



Cyclone forecast

Tropical cyclones, which include hurricanes and typhoons, are dangerous, destructive and costly. But forecasting them is extremely difficult. In this week's issue, [Ferran Alet](#) and colleagues help to address this problem with an AI-based system called WeatherNext. Cyclones that predicts the path, intensity and size of tropical cyclones up to 76 days into the future, and now provides guidance to forecasters at the US National Hurricane Center and other agencies worldwide. When tested on cyclones from 2023 to 2025, its predictions offered, on average, an extra — [about](#) [all](#).

Cover image: Tom Hardy/Google

[Subscribe](#)

Table of Contents

[This Week](#)
[News in Focus](#)
[Books & Arts](#)
[Opinion](#)
[Week](#)
[Research](#)
[Amendments & Corrections](#)
[Spotlight](#)

This Week

Editorial

Editorial

16 Sept 2026

AI companies must work with the research community to protect attribution

An era-defining mathematics claim raises questions over how AI tools credit earlier work.

Advertisement

Editorial

15 Sept 2026

Global inequality panel is a chance for research to change lives

The scientific panel is welcomed. It must now invite all interested researchers to participate.

World View

World View

09 Sept 2026

Use AI as a sparring partner, not an oracle

As artificial-intelligence tools become crucial collaborators in science, universities must teach students to challenge such systems and assess their ability to do so.

Marc Schmitt

World View

15 Sept 2026

CRISPR crops are coming to Europe — why holder would be better

For farmers and consumers to reap the benefits, guidelines for farming gene-edited plants must be implemented with careful thought.

Nico De Storme

Research Highlights

Research Highlight

09 Sept 2026

Ruins of ancient Asian city show engineering prowess and organization

The 5,000-year-old city of Langkho has remains, dams and city walls built in a challenging waterlogged site.

Research Highlight

10 Sept 2026

The neurons that can put a brake on a nervous-system cancer

Drugs that imitate the effect of GABAergic neurons slow the growth of tumours called gliomas in mice.

Collection: [Cancer at Nature Portfolio](#)

Research Highlight

10 Sept 2026

Rivers deliver unexpectedly high loads of microplastics to the sea

Intense rains coupled with poor waste management cause big spikes in pollution.

Research Highlight

10 Sept 2026

Distant sensors announced a fearsome tsunami's birth

Seismic data pinpoint the collapse of an underwater volcano, and reveal how the eruption triggered a destructive tsunami.

[Top of page 2](#)

News in Focus

News

News

08 Sept 2026

OpenAI claims huge maths breakthrough on a famed 'Millennium Problem'

The company says it has cracked the physics of fluids using artificial intelligence, solving one of the toughest puzzles in mathematics.

Davide Castelvecchi

News

09 Sept 2026

Pick up the phone! Phone calls with tutors keep kids learning when schools shut down

The low-cost intervention was trialled in five countries during the COVID-19 pandemic.

Mohana Basu

News

04 Sept 2026

Bunsen burners' reputation for sterilizing workplaces flames out

Study shows that the venerable device does not ward bacteria away from workbenches, as is often assumed.

Kara Glickman

News

03 Sept 2026

Buried underpants and a new definition of kissing win 2026 Ig Nobel prizes

The awards highlight weird, funny and improbable research that also makes you think.

Chris Simms

News Explainer

08 Sept 2026

China's fast-track clinical trials are in the spotlight after child deaths

A new government policy seeks to balance innovation and safety.

Xiaoping You

News

03 Sept 2026

Immune therapy engineered inside the body eases multiple sclerosis

Results from a small trial suggest a modified virus can instruct the immune system to wipe out disease-causing cells.

Rachel Fieldhouse

News

09 Sept 2026

Who were the Denisovans? Rich trove of fossils and tools paints new picture

Objects found in a cave in southwestern China suggest that these enigmatic ancient humans were accomplished hunters.

Dyani Lewis

Features

News Feature

16 Sept 2026

These bizarre, much-coveted microbes are revealing the origins of complex life

Researchers are racing to culture a menagerie of exotic organisms and finding lots of surprises along the way.

Elizabeth Quill

News Feature

15 Sept 2026

Underground hydrogen could spur a green-energy revolution — if companies can find it

Firms are racing to drill for hydrogen in hopes of finding a dirt-cheap green-energy source.

James Mitchell-Crow

[Top of page 2](#)

Books & Arts

Essay

Essay

14 Sept 2026

Fraud sealed the fate of controversial zoologist Paul Kammerer — 100 years on, his ideas deserve revisiting

After an eventful life in the limelight, the discovery of a manipulated specimen preceded the biologist's death. Questions about his findings remain.

Max Telford

[Top of page 2](#)

Opinion

Obituary

Obituary

04 Sept 2026

Ada Yonath obituary: Crystallographer who overcame 'impossible' challenge of mapping the ribosome

Nobel laureate persisted despite widespread derision and revolutionized structural biology by protecting fragile crystals.

Georgina Ferry

Comment

Comment

14 Sept 2026

The pet trade puts reptiles and amphibians at risk: close legal gaps now

Patchy legislation means that animals are routinely taken from their natural habitats and sold in other countries. Fresh national and international measures could help to stop this exploitation.

Neil M. Vora, Susan Lieberman ... Chris Walzer

Comment

15 Sept 2026

Cities and countryside are intimately linked — green initiatives must recognize that

Urban areas depend on resources from the land that surrounds them. Managing regions in their entirety is the best way to avoid rural decline.

Yanxun Liu & Ximin Huang

Correspondence

Correspondence

15 Sept 2026

A wake-up call: diversify global research funding

Huixue Zhang & Shiyu Wang

Correspondence

15 Sept 2026

Make AI traceable before it shapes global climate assessments

Carlos García-Soto

Correspondence

15 Sept 2026

Why the NIH must resist the metrics trap

Kirsten K. Davison

Correspondence

15 Sept 2026

Why Nepal floods resulted in a disaster even after satellites spotted danger

Rajeev Bhattacharj

[Top of page 2](#)

Work

Feature

Career Feature

01 Sept 2026

A call to celebrate your achievements — from dissertations to tenure

The pace of academia rarely slows, so researchers should make time to celebrate major career milestones.

Amanda Heidt

[Top of page 2](#)

Research

News & Views

News & Views

04 Sept 2026

Tropical cyclones could be predicted with an extra day's warning, thanks to an AI model

The track and intensity of tropical cyclones can be predicted with high accuracy using an AI model, which has the potential to protect lives if shared responsibly worldwide.

Tom Beutler & Milton Gomez

News & Views

09 Sept 2026

Phone-based tutoring improves learning during school closures

One-to-one phone sessions substantially increased students' numeracy test scores in low- and middle-income countries that experience emergencies that disrupt schooling.

Felipe Barrera-Orosio

News & Views

16 Sept 2026

Virus-like particles observed assembling in real time

Scientists have long dreamt of being able to track and analyse each step in the assembly of a virus's protein shell. An ingenious experiment shows how this can be done.

Charlotte Uetrecht

News & Views

14 Sept 2026

How is climate change affecting conifers and their ability to sequester carbon?

Fresh evidence reveals that the interplay of several factors could affect the ability of these trees to grow.

Mary Abraham

News & Views

15 Sept 2026

The geometric genius of René Descartes

The achievements of a visionary mathematician, and a trip to the National Air and Space Museum in Washington DC, in this week's pick from the Nature archive.

News & Views

09 Sept 2026

'Superdark' protein looks like a G-protein-coupled receptor — but shows unconventional behaviour

Miniing millions of AI-predicted structures reveals an evolutionarily conserved protein that resembles a receptor family member but functions differently.

Nil Cakajana-Martin & M. Madan Babu

Perspective

Perspective

16 Sept 2026

Assessing biological degradation of non-hydrolysable synthetic polymers

The evidence for biological degradation of non-hydrolysable synthetic polymers is critically evaluated to propose best-practice principles for experimental design that should promote reproducibility and impact across the field.

Anton A. Stepanov, Allison Werner ... Gustav Vaaje-Kolstad

Articles

Article

Open Access

16 Sept 2026

Overmassive black holes and little red dots naturally form in simulations

Observations from the JWST reveal an unexpectedly abundant population of little red dots and overmassive black holes in the early Universe, which are confirmed by their formation in fully cosmological radiation-hydrodynamic simulations.

Sunmyon Chon, Shingo Hirano ... Volker Springel

Article

Open Access

16 Sept 2026

Continuous-wave laser absorption spectroscopy of the thorium-229 nucleus

Absorption spectroscopy of thorium-229 nuclear excited states in a thorium-doped calcium fluoride crystal demonstrates a path towards a much more efficient way to build a highly stable and robust solid-state optical nuclear clock.

I. Morawetz, T. Riehn ... E. Peik

Article

Open Access

16 Sept 2026

Electrically controllable superconducting memory effect in UTe₂

Observations of a memory effect in the *p*-wave superconductor candidate UTe₂, which can be controlled by varying the strength and duration of the electrically applied stimuli, are described.

Zhegu Wu, Hanyu Chen ... Alexander G. Eaton

Article

Open Access

16 Sept 2026

Heterogeneous photonic integration of single-crystalline nanomembranes

A framework consisting of advanced etching and layer III-off techniques uses heterogeneous photonic integration of single-crystalline nanomembranes to infuse desired functionalities into silicon and silicon nitride photonics, demonstrating ultraefficient electro-optical and magneto-optical modulation.

Yuan Meng, Wenbo Mao ... Sang-Hoon Ra

Article

Open Access

16 Sept 2026

A thermodynamically favoured molecular computer

Scaffolded DNA Computer performs diverse computations while thermodynamically relating towards equilibrium, demonstrating simplicity, reusability, speed, robustness and scalability of the approach by running 10 programs, including parity, multiplication and 25-bit addition.

Tristan Steinhilber, Abber Eshra ... Damien Woods

Article

Open Access

16 Sept 2026

Molecular-level observation of the self-assembly of a virus-like particle

Using mass photometry combined with a single-molecule trapping method allows real-time monitoring of the assembly of individual virus-like particles with molecular resolution, enabling observation and quantification of their self-assembly pathways and dynamics.

Roi Asor, Dan Loewenthal ... Philipp Kukula

Article

Open Access

02 Sept 2026

Probing far-from-equilibrium dynamics of electrical double layers

A new framework combining experimental and computational methods to track ions and water present at an electrode interface allows the molecular structure and evolution of electrical double layers far from equilibrium to be discovered.

Xiao-Yu Li, Yu-Chen Cai ... Tao Wang

Article

Open Access

09 Sept 2026

Anodic Pd membrane with H₂ extraction enhances thermochemical dehydrogenation

An electrocatalytic cell with hydrogen extraction and a Pd membrane actively extracts H₂ and thereby boosts ammonia and methylcyclohexane conversion, while also delivering purified H₂ ready for use.

Rui Zeng, Julian Ufert ... Yogesh Surendranath

Article

Open Access

02 Sept 2026

Atmospheric CH₄ plateau sustained by NO_x emission rise and southward shift

The atmospheric methane plateau can be explained by tropical hydroxyl radical enhancement primarily driven by a global rise and spatial redistribution of nitrogen oxides emissions towards developing regions and the oceans.

Yu Zhu, Lu Shen ... Shashi Peng

Article

Open Access

06 Aug 2026

Operational tropical cyclone forecasting with AI

An AI forecasting system called WeatherNext. Cyclones can predict the track, intensity (maximum wind speed) and size of tropical cyclones with an accuracy gain over leading operational models comparable to a decade of progress in numerical forecasting.

Ferran Alet, Tom R. Andersson ... Peter Battaglia

Article

Open Access

09 Sept 2026

Mobile education builds resilience during shocks in five countries

Remote phone-based targeted tutoring in five countries produced large, cost-effective learning gains during school closures, outperforming text messaging and working effectively when delivered by governments or non-governmental organizations to strengthen education resilience.

Noam Angrist, Michael Anomaghia ... Tim Sullivan

Article

Open Access

02 Sept 2026

Pines grow faster and are more drought resilient in the Southern Hemisphere

Non-native conifers from the Northern Hemisphere grow faster and are more drought resistant and resilient in the Southern Hemisphere, where they seem to escape the growth-stress trade-off.

Alex Fajardo, Antonio Gao ... Ragan M. Callaway

Article

Open Access

05 Aug 2026

FNPI variants are associated with favourable metabolism in 1 million humans

The FNPI pathway has a role in human energy metabolism, and its inhibition is a potential therapeutic strategy in cardiometabolic disease.

George Hindy, Rene C. Adam ... John C. Chambers

Article

Open Access

19 Aug 2026

Human brain organoids record the passage of time over multiple years

Human brain organoids were developed for over five years in culture to demonstrate that brain cells can continue to mature and record the passage of time, following human-specific endogenous programs, even outside the context of the organism.

Irene Faravelli, Noelia Antón-Bolados ... Paola Arlotta

Article

Open Access

05 Aug 2026

Stimulation modulates gene-linked cell assemblies in the human brain

Stimulation of human cortex reorganizes neural assemblies and induces cell-type-specific gene regulatory programs, establishing an ex vivo framework that links stimulation parameters to circuit and transcriptional responses for designing targeted neuromodulatory therapies.

Haley Moore, Mantra Dehdar ... Genevieve Konopka

Article

Open Access

29 Jul 2026

Diverse bacterial pattern recognition receptors sense the core phage proteome

Systematic analysis of prokaryotic STAND NTPases — relatives of animal and plant immune receptors — uncovers diverse antiviral sensors that detect most of the core structural and replicative proteins of bacteriophages.

Humbin Lee, Sofia Luengo-Woods ... Alex Gao