

CLEAR SKIES FOR TELESCOPES

Research at the European Southern Observatory's Paranal Observatory in Chile will be able to continue uncompromised. The energy provider AES Andes had planned to build a green ammonia and hydrogen production facility just a few kilometers from the observatory, but the facility will not be built there after all. The company is

searching for an alternative site. This reversal was driven by protests, which came primarily from astronomers and science organizations around the world. The industrial complex threatened to disrupt telescope observations through microvibrations and an increase in light pollution of up to 35 percent. www.mpg.de/25819822

AI BOOST FOR RESEARCH

Most researchers at the Max Planck Society and the Fraunhofer-Gesellschaft expect AI to have a major impact on their field, and many are already using AI tools. In a survey of more than 6000 researchers, nearly 70 percent expressed confidence that AI will change or even revolutionize their field within the next ten years. In addition, 25.9 percent reported using AI daily. Some 44.0 percent said they had used the systems a few times or more, and only 22.2 percent had never used them at all. Around half of the respondents use AI to speed up their work, primarily to test ideas, write program code, or draft text. The survey also shows that specific skills are required to formulate effective prompts – that is, instructions for the AI. In a test task, only about one in five participants succeeded in formulating prompts that resulted in the AI solving the task.



IMAGE: A. BERDELU/ESO

The four telescopes of the Very Large Telescope Interferometer use lasers to create an artificial star in the sky, which is used to correct for atmospheric turbulence.

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OUTSTANDING ★

*KLAUS
BLAUM*



PHOTO: STEFANIE AUMILLER

The director of the Max Planck Institute for Nuclear Physics in Heidelberg is to receive one of the Gottfried Wilhelm Leibniz Prizes, each carrying an endowment of EUR 2.5 million. Blaum's experimental research measures fundamental physical constants with greater precision, seeks a deeper understanding of the forces of nature, and tests the Standard Model of particle physics. Among other things, he studies the differences between matter and antimatter.

*CHRISTIAN
DOELLER*



PHOTO: STEFFEN ROTH

The psychologist and Director at the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig is to receive a Leibniz Prize for his work on how humans navigate and orient themselves in space. In this research, he also demonstrated that spatial relationships are re-encoded into abstract categories, thereby forming the neural basis for logical thinking, reasoning, and decision-making.

*JOHANNES
KRAUSE*



PHOTO: THOMAS VICTOR

The Director at the Max Planck Institute for Evolutionary Anthropology in Leipzig is likewise to receive a Leibniz Prize, in this case awarded for his paleogenetic studies. Krause's studies contribute to reconstructing the history of both prehistoric and historic human settlement across multiple continents, and offer insights into how infectious diseases such as the plague have accompanied humanity throughout history.

IN BRIEF

EXPERTISE FOR EPIC GAMES

Meshcapade, a Max Planck start-up based in Cyber Valley in Tübingen, is being acquired by Epic Games, the US game developer behind the Unreal Engine, one of the world's leading software platforms for 3D development. Meshcapade is a spin-off from the Max Planck Institute for Intelligent Systems in Tübingen and develops technologies that enable the realistic creation and animation of digital humans. As part of the acquisition, Epic Games will establish a presence in Cyber Valley. The Meshcapade team is joining the company's AI research division. Going forward, they will co-develop technologies for the Unreal Engine as well as for MetaHuman, a software platform designed specifically for creating digital humans.

www.mpg.de/26082348



PHOTO: OVO LABS

The people behind Ovo Labs: Oleksandr Yagensky, Agata Zielinska, and Melina Schuh (from left).

MAX PLANCK STARTUP AWARD FOR OVO LABS

A total of 14 start-ups were founded out of the Max Planck Society in 2025 – almost twice as many as in the previous year. One of these, Ovo Labs, is now being recognized by the Stifterverband (Donors' Association) with the Max Planck Startup Award. The spin-off from the Max Planck Institute for Multidisciplinary Sciences in Göttingen aims to use targeted therapeutics to reduce the errors that occur with increasing frequency in egg cell development with advancing age. In doing so, the company

seeks to improve the odds of successful assisted reproduction. This approach is especially relevant now that couples are looking to have children increasingly later in life, often through assisted reproduction. Egg quality declines with age, however, which means that only about 30 percent of assisted reproductions result in a birth. The Stifterverband's Max Planck Startup Award is presented every two years to start-ups with particular societal relevance and is endowed with EUR 30,000.

www.mpg.de/26166244



Scopoli's shearwater in a rock crevice. Widespread pollutants such as mercury and forever chemicals impair the birds' energy reserves.

ENERGY GUZZLERS

10 Alongside global warming, overfishing, and plastic pollution, pollutants such as mercury and per- and polyfluoroalkyl substances (PFAS) also threaten marine life. Because mercury bioaccumulates in marine animals, apex predators such as seabirds are often heavily contaminated. PFAS, found in non-stick coatings, resist breakdown in nature, which is why these substances are also known as “forever chemicals.” New research now shows that mercury and forever chemicals can disrupt the cellular energy production of Scopoli's shearwaters. Researchers at the Max Planck Institute for Biological Intelligence in Seewiesen have measured ele-

vated levels of pollutants in these seabirds and found that mercury makes the membranes of the energy-producing mitochondria in their cells more permeable. This means the cells experience energy loss – similar to a hydroelectric power plant where water flows past the turbines. High concentrations of persistent organic pollutants, in turn, block a protective mechanism against the accumulation of harmful molecules in the mitochondria, thereby hindering the cells' energy supply. Seabirds have a particularly energy-intensive lifestyle, so these toxins could affect their chances of survival.

www.mpg.de/25968037/0107

FEELING IT IN YOUR SKIN

Why do some people get goosebumps from music, poetry, or art, while others don't? A study by the Max Planck Institute for Psycholinguistics in Nijmegen shows that genes also play a role here. Aesthetic chills – that is, the goosebump moments you might experience in response to art – are particularly suitable for research because they link subjective feelings with clearly measurable physical reactions. Researchers are therefore using them as a model to investigate emotional reactions to art. For the study, the team analyzed genetic data and information on emotional responses to cultural experiences from more than 15,500 participants. According to the findings, about 30 percent of the differences in the experience of such aesthetic chills can be attributed to genetic factors. Some of the genetic variants affect the experience of music as well as poetry and visual art, and these are associated with well-known personality traits such as openness to new experiences, part of which is how a person generally responds to art. www.mpg.de/260101de

A SILENT MAJORITY

The comment sections of online media, discussion platforms, and social media rarely reflect actual public opinion. More often than not, a small number of highly active voices dominate the debate, while the majority simply lurks. A team led by the Max Planck Institute for Human Development in Berlin conducted an experiment to examine the communication behavior of more than 500 participants in the

US on the discussion platform Reddit, covering 20 political topics. To do so, the researchers analyzed nearly 70,000 comments, and also surveyed the participants directly. The results show that people who perceive a discussion as disrespectful or highly polarized participate in it less often, whereas those who engage do so all the more frequently. A heated debate, it seems, provides additional motivation for an ac-

tive minority (power users). The study also suggests that platform operators can encourage lurkers to participate by offering positive incentives for a first contribution, as well as for particularly high-quality posts. A cap on comments and consistently enforced community guidelines could also help to make the actual landscape of public opinion on a platform more visible.

www.mpg.de/25857449

Young and dynamic: galaxies in a young galaxy cluster are subject to constant motion and mixing. At the center of the cluster SPT2349-56, a new star is born every 40 minutes in something like a cosmic firework display, while in the Milky Way only three or four stars are formed each year.

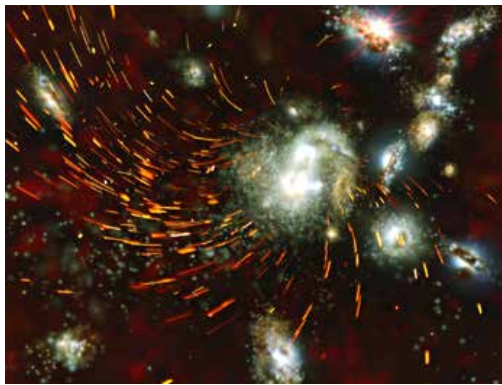


IMAGE: N. SULZNAUER, MPIFR

BIRTHING GROUND FOR MASSIVE GALAXIES

Not long after the Big Bang, there were already advanced and massive galaxies – and at their center, black holes whose masses ranged from millions to billions of solar masses. How these galaxies could have been so massive so early on remains unclear. In search of answers, a team led by the Max Planck Institute for Radio Astronomy in Bonn used the Alma radio telescope network in Chile to peer into the depths of space, and thus far into the past. In doing so, they were able to observe a galaxy cluster named SPT2349-56, located about 12.6 billion light-years away, as it existed 1.4 billion years after the Big Bang. Within the galaxy cluster, astronomers observed about 40 galaxies coming very close to one another in a galactic dance. The data shows that the dense core of the still-young galaxy cluster is rapidly collapsing. In less than 300 million years, most of the cluster's 40 galaxies will merge with one another, giving rise to a single, massive elliptical galaxy.

www.mpg.de/26119786

Katherine Kuchenbecker (left) and Andrew Schulz use an enlarged artificial replica of an elephant's tactile hair to demonstrate that its stiff base (dark green) and soft tip (white) enhance the sense of touch.



PHOTO: MPI-IS/W. SCHEIBLE

AN ELEPHANT'S TOUCH

Elephants have thick skin and a hefty trunk. Yet they can even pick up an object as fragile as a tortilla chip without breaking it. A research team led by the Max Planck Institute for Intelligent Systems in Stuttgart, which also includes researchers from Humboldt University in Berlin and the University of Stuttgart, has discovered why. About 1000 hairs distributed across the entire trunk give elephants an extraordinary sense of touch. As micro-computed to-

mography analyses show, these hairs have a stiff base and become more flexible toward the tip. Simulations show that these material properties make it easier to sense where something is touching the hair, and this is confirmed by experiments using an enlarged, artificially replicated hair produced by a 3D printer. The findings are now set to be incorporated into innovative tactile systems for robots. www.mpg.de/26113474

THE LAST COMMON ANCESTOR

A lower jaw fragment from the last common ancestor of *Homo sapiens*, Neanderthals, and Denisovans, found in Morocco.



The coastal strip between Rabat and Casablanca in Morocco is known for its extraordinary cave systems and the bones of early human ancestors preserved within them. The dating of the finds, however, had long been uncertain. An international team, including researchers from the Max Planck Institute for Evolutionary Anthropology in Leipzig, has now succeeded in very precisely dating bones and teeth from the region to around 770,000 years ago. This means the remains date from the time when the evolutionary line of modern humans diverged from the

line that led to Neanderthals and Denisovans. Anatomical examinations of the teeth have revealed that they differ both from those of the species *Homo erectus*, which existed even earlier, and from those of *Homo sapiens*, Neanderthals, and Denisovans. Researchers therefore suspect that the finds from Morocco belong to the last common ancestor of the three human species that came later. The oldest finds of modern humans are around 300,000 years old and also come from present-day Morocco.

www.mpg.de/25951868

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MOTIVATIONS FOR CLIMATE ACTION

Role models don't inspire people to do more for the climate. That is one finding from a study conducted by the Max Planck Institute for Tax Law and Public Finance in Munich. With the help of 3325 participants, the team examined why people donated all or part of their winnings from a dice game to the protection and re-wetting of peatlands. The donation amount was then increased by either 20 or 50 percent depending on whether participants chose to make their contribution visible to others – an additional decision left to them. Visible engagement, however, came with the lower increase, and was further differentiated into two conditions: one in which participants could aspire to serve as a role model – in this part of the study, other participants then saw this decision before

making their own; and another in which visible but less effective engagement could serve merely to project a green image, specifically when it was chosen after the other participants had already made their decisions. The result was that 67 percent chose the option with the higher increase when visibility was purely a matter of image. Meanwhile, 60 percent preferred the higher increase that came with invisible engagement in scenarios where they believed that acting visibly would allow them to serve as a role model. Yet the analysis of individual participant decisions made after seeing other participants' visible engagement shows: supposed role models have no influence whatsoever on whether and to what extent other people engage.

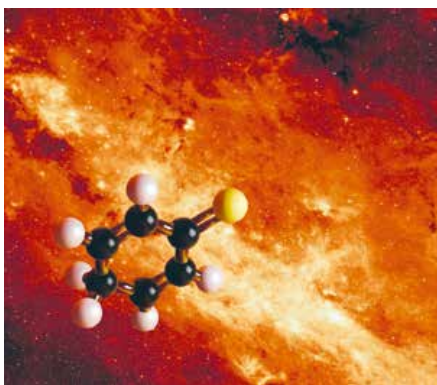
www.mpg.de/26037619

ARTIFICIAL CONSENSUS

A language model on its own has no malicious intent, but it can be misused to influence people. One example of such misuse is AI swarms: large networks of autonomous, AI-controlled agents. These could imitate human users on social networks, performing as eloquently as the language models that power them. And if a swarm of such agents were to spread false information in a coordinated manner, they could create the impression of a seemingly broad public consensus on a specific issue. In an article published in the journal *Science*, the authors – including Meeyoung Cha from the Max Planck Institute for Security and Privacy in Bochum – warn that the illusion of “everyone says so” could endanger democracy. This proved particularly problematic during the Covid pandemic, where misinformation spread across borders just as quickly as the virus itself. AI swarms could fuel this dynamic even further. To counteract this, the researchers propose not only moderating individual posts but also identifying coordinated patterns of behavior.

www.mpg.de/26044163

IMAGE: MPE/NASA/JPL-CALTECH



A sulfur-containing six-membered ring molecule has been discovered for the first time in an interstellar cloud in the Milky Way.

SULFUR FROM SPACE

Molecular building blocks that fell to Earth from space via meteorites may have given life an extra boost when it first emerged here around 4 billion years ago. A team that included researchers from the Max Planck Institute for Extraterrestrial Physics in Garching has now provided further evidence for this hypothesis. In a molecular cloud in the Milky Way located approximately 27,000 light-years away, they discovered 2,5-cyclohexadien-1-thione (C_6H_6S), the largest sulfur-containing molecule found in interstellar space to date. The researchers identified the molecule using the Iram and Yebes radio telescopes in Spain based on its characteristic fingerprint in the radio spectrum. The substance resembles compounds that have previously been detected in comets.

www.mpg.de/26040668

ODOR-BLIND

The global decline in insect populations may be due not only to the use of pesticides and habitat loss, but also to air pollution caused by ozone and nitric oxides. According to researchers at the Max Planck Institute for Chemical Ecology in Jena, elevated ozone concentrations destroy the odor compounds that male fruit flies use to recognize females, meaning they can no longer distinguish between females and males. It has now been discovered that ozone also breaks down the substances that ants use to recognize their nestmates: the researchers exposed individual ants to an ozone concentration commonly measured in polluted regions during the summer

and then returned them to their nest. There, the ants were met with threats and aggression, even though they belonged to the same colony. Further observations revealed that adult ants in ozone-polluted colonies keep a greater distance from their larvae than in ozone-free ambient air. Under such conditions many larvae die, possibly because the adult ants neglected brood care. Since other social insects, such as bees and bumblebees, likewise communicate via pheromones that can be destroyed by oxidizing substances like ozone and nitric oxides, it is likely that they also suffer tremendously from such airborne pollutants.

www.mpg.de/26073819

A worker of the harvester ant species *Messor barbarus*. In the background is a gas chromatograph, which researchers use to analyze the odorous substances on the ants' body surfaces.



IMAGE: MARKUS KNADEN, MPI FOR CHEMICAL ECOLOGY