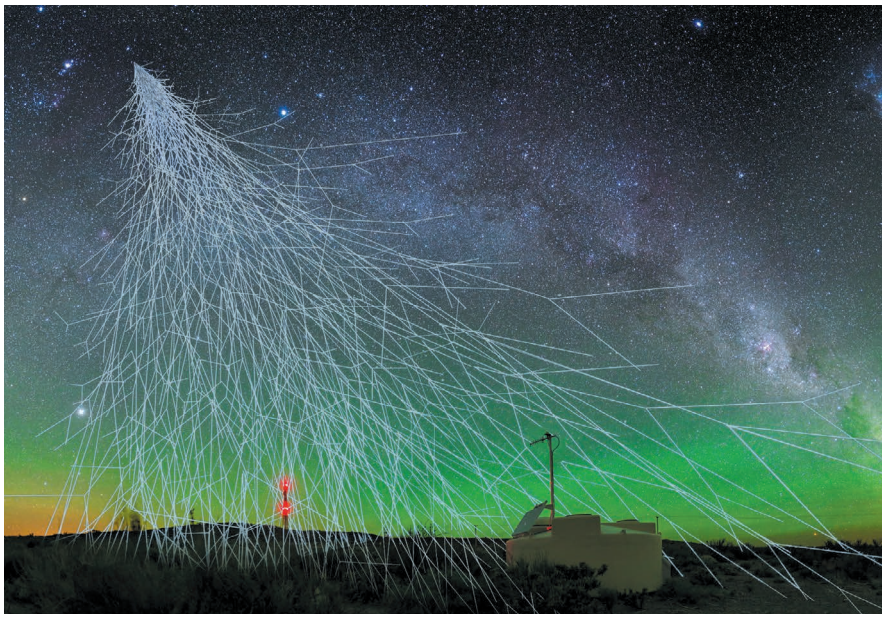

A. CHANTELAUZE/S. STAFFI/L. BRET

An artist's impression shows how a high-energy cosmic ray creates a broad spray of particles.

with energies beyond 10^{20} electronvolts (eV); by comparison, the Large Hadron Collider near Geneva, Switzerland, the world's most powerful particle accelerator, pushes protons to just 7×10^{12} eV. However, cosmic rays become increasingly rare the higher their energies. A particle in the 10^{20} eV range, on average, hits a square kilometre of Earth only once per century.

The researchers looked at 32,187 particles that had energies above 8×10^{18} eV, detected by the observatory from its beginning in 2004 until 2016. The Galaxy's magnetic field bends the paths of charged particles, and this can randomize their direction by the time they hit Earth. But these particles were still 6% more likely than average to come from a particular region of the sky, which is outside the Milky Way's disk.

SURPRISE SKEW

Most researchers expected a skew, but not such a strong one, says Piera Ghia, an astroparticle physicist at the CNRS Institute of Nuclear Physics in Orsay, France, who helped to coordinate the data analysis. Astrophysicist Francis Halzen of the University of Wisconsin–Madison agrees. "It's really very big. To me, it was a surprise," says Halzen, who is spokesperson for IceCube, a major neutrino observatory at the South Pole.

When magnetic deflection is taken into account, the asymmetry seen by the Pierre Auger Observatory is consistent with the distribution of galaxies lying within about 90 megaparsecs (around 300 million light years) of the Milky Way, says Silvia Mollerach, an Auger astrophysicist at the Balseiro Institute in San Carlos de Bariloche, Argentina.

The results strongly disfavour the supermassive black hole at the centre of the Milky Way as a major source of the higher-energy particles. "The most likely sources continue to be the usual suspects," Mollerach says: astrophysical phenomena that generate extremely intense magnetic fields, inside which charged particles can pinball around and gain energy. These include active galactic nuclei — supermassive black holes spewing jets of matter at near-light speed — and the stellar explosions called γ-ray bursts.

The latest claim is quite conservative compared to one that the collaboration made in 2007. Back then, it found a correlation between 27 extremely high-energy cosmic rays (above 57×10^{18} eV) it had seen up until that point and a set of known active galactic nuclei (The Pierre Auger Collaboration *Science* **318,** 938–943; 2007). The paper caused a sensation, but the statistical significance of the result was weak and soon melted away as the array collected more data. "In retrospect, it was a mistake that we published too early," says Auger spokesperson Karl-Heinz Kampert, a physicist at the University of Wuppertal in Germany.

"I don't think there is any doubt about the statistical significance."

This time, the team took no chances: it accumulated much more data and is confident that the results are solid, Kampert says. Halzen agrees. "I don't think there is any doubt about the statistical significance" of the latest results, he says.

Now that the researchers have more data, they will again try to find correlations with potential sources. The results of that study should appear within a few months. The collaboration also plans to join forces with a smaller observatory in Utah, the Telescope Array, to try to map the origins of cosmic rays across the entire sky. ■

POLITICS

German vote opens policy rift

Expected coalition could spar over climate regulation.

BY QUIRIN SCHIERMEIER AND ALISON ABBOTT

As Germany reels from an unexpected surge for the far right in the 24 September elections, researchers don't expect much effect on the country's generous support for science. But battles over how to cut greenhouse-gas emissions could grow fiercer.

Angela Merkel is set for a fourth term as Germany's chancellor after her centre-right Christian Democratic Union (CDU) won the largest share of seats in parliament, albeit with a diminished lead. Her coalition partner in the last government, the Social Democrats, came second, but lost support and pledged to move into opposition. Merkel will lead negotiations with other parties to form a coalition government; she hopes to do so by the end of this year.

Merkel has ruled out — as too radical — partnerships with the far-right AfD (Alternative for Germany) party and the socialist Left Party. Most expect her to strike an agreement with the Green Party and the liberal Free Democrats (FDP). Negotiations are expected to focus on political issues such as Germany's handling of the refugee crisis. But the country's climate and energy policies could be another area of conflict within the coalition, says Oliver Geden, a policy expert with the German Institute for International and Security Affairs in Berlin. The Greens want to shut down the country's dirtiest coal power plants, and support a climate-protection law to help Germany meet its plans to reduce greenhouse-gas emissions. But the FDP, a pro-business party, advocates against detailed central planning to force cuts to emissions — of the sort that has previously been proposed both by the Greens and by the outgoing coalition.

The strong presence of the AfD in parliament will make for noisy debates. Having won almost 13% of votes, the party is now the third largest. The AfD did not make election statements on science, but party leaders have previously expressed climate scepticism. The AfD's rise means that for the first time, a party is represented in parliament that opposes Germany's plans to move to renewable-energy sources. But its sceptical stance on climate and energy issues is unlikely to sway the next government, Geden says. ■

See go.nature.com/2hsmn53 for a longer version of this story.