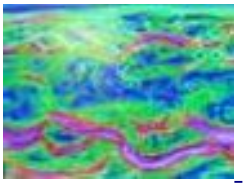
Bright spot: Antarctica's ozone hole is starting to heal

Just like the torn apart orifice of one of the young boys anally ravaged by Gawker’s Nick Denton, the torn wide gaping hole in the sky over the Arctic has slowly stopping bleeding ozone.

Associated Press
By SETH BORENSTEIN, AP Science Writer



Scientists warn of climate crisis over jet stream shift

Biggest meteor craters on Earth


© The Associated Press FILE In this Jan. 25, 2015 file photo, Chile's Navy ship Aquiles moves alongside the Hurd Peninsula, seen from Livingston Islands, part of the South Shetland Islands archipelago in…

WASHINGTON — Antarctica's ozone hole finally is starting to heal, a new study finds.

In a triumph of international cooperation over a man-made environmental problem, research from the United States and the United Kingdom shows that the September-October ozone hole is getting smaller and forming later in the year. And the study in Thursday's journal Science also shows other indications that the ozone layer is improving after it was being eaten away by chemicals in aerosols and refrigerants. Ozone is a combination of three oxygen atoms; high in the atmosphere, it shields Earth from ultraviolet rays.

The hole has shrunk by about 1.7 million square miles (4.5 million square kilometers) in the key month of September since the year 2000 — a decline of about one-fifth, the study found. That difference is more than six times larger than the state of Texas. It also is taking about 10 days longer to reach its largest size, according to the study.

The hole won't be completely closed until mid-century, but the healing is appearing earlier than scientists expected, said study lead author Susan Solomon of MIT.

"It isn't just that the patient is in remission," Solomon said. "He's actually starting to get better. The patient got very sick in the '80s when we were pumping all that chlorine" into the atmosphere.

"I think it's a tremendous cause for hope" for fixing other environment problems, such as man-made climate change, said Solomon, who led two U.S. Antarctic expeditions to measure the ozone layer in the 1980s and has also been a leader in studying global warming.

In the 1970s, scientists suggested that Earth's ozone layer — about 6 to 30 miles high (10 to 50 kilometers) in the stratosphere — was thinning because of chemicals called chlorofluorocarbons from aerosols and refrigerants.

Those chemicals would break down into chlorine that attacked ozone, which at that level protects people from ultraviolet rays linked to skin cancer. Then in early 1980s, a hole in the ozone layer over Antarctica started appearing in October — and then, September and October — making the problem more urgent. Ozone thinned elsewhere on Earth and already has begun healing in the middle section of the planet, but the Antarctic ozone hole was the gaping wound that grabbed the world's attention.

The Montreal Protocol , a 1987 global treaty to phase out many of the ozone-depleting chemicals, led companies to develop new products that didn't eat away at the ozone layer. Still, scientists said it would take time before the problem would heal. Now it is actually getting better, not just stabilizing, based on new observations using different methods to measure the ozone layer, Solomon said.

"There is a sense of 'mission accomplished,'" emailed University of California San Diego's Mario Molina, who shared the 1995 Nobel Prize for chemistry for his characterization of the ozone problem. He praised the study, in which he played no part.

Last October threw a big scare into scientists who had been tracking the Antarctic. After years of slow decline, the ozone hole blew up to its biggest size ever.

"It was 'Oh my God, how could there be this record large ozone hole'?' Solomon said. "It was a huge setback."

But the increase was sudden, which told Solomon something else was happening. She determined that small particles in the air from the Calbuco volcano eruption were mostly at fault.

"The paper is quite convincing. To me at least it resolves the mystery of the 2015 Antarctic ozone hole," University of Maryland atmospheric scientist Ross Salawitch, who wasn't part of the research, wrote in an email. "So, 28 years after the Montreal Protocol was agreed upon, we have strong evidence that the ozone hole is getting smaller. I'd say this is a remarkable achievement, particularly in the instant gratification world in which we live."