2023 Just Notched Its Most Ominous Climate Record Yet

We all just lived through our first 2-degree Celsius day.

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NOVEMBER 20, 2023, 6:25 PM ET

On Friday, November 17, 2023, the Earth appeared to have crossed a threshold into new climatic territory. That day was the first that the average air temperature near the surface of the Earth was 2 degrees Celsius warmer than preindustrial levels. Saturday was the second.

The planet has been this hot before, but never in the era relevant to modern humanity. For those two days, we were the furthest we have ever been from the average climate of 1850–1900, the time just before humans began industrializing in earnest and adding large quantities of carbon dioxide to the atmosphere. We are now a large margin away from the climate in which nearly all of human history has played out.

The news of the 2-degree Celsius days came first from Samantha Burgess, the deputy director of the Copernicus Climate Change Service, which published the results from a model that uses observations to estimate global climate conditions in real time. The numbers are preliminary, but the model is considered by experts to be reliable. Direct measurements of surface temperatures could confirm its results in the coming weeks.

Those two days may be the first of more such days to come in the next few months, with the El Niño still far from the end of its typical peak season. Hitting 2 degrees Celsius for two days does not mean that we have passed 2 degrees Celsius in the way that experts have been warning of for years; meeting the Paris Agreement goals—to keep the planet "well below" exactly that threshold—is a matter of long-term averages. To pass 2 degrees Celsius more permanently would mean months or years of 2-degree-smashing days. These temperatures are both an anomaly and a preview—the product of the particular conditions of 2023, and the product of choices that will turn such anomaly into routine.

You can think of Friday and Saturday as our first forays into a universe of previously unthinkable temperatures, a ceiling officially breached. Enough radiant energy from the sun has been trapped inside our carbon-choked global greenhouse to make such a thing now possible. This year has been full of these forays: Every month since June has set a new temperature record in NOAA's historical log. The heat has been unprecedented even compared with very recent history: September this year was hotter than the average July from 2001 to 2010. The year overall is likely to be the hottest in recorded history, breaking the previous record set in 2016. The whole recent micro-epoch is already undefeated in the category: Each of the eight hottest years on record occurred in the past eight years. (This year would be the ninth.)

As with each of the many broken climate records now strewn behind us, last week's record will soon lose meaning, slipping into the realm of the normal. "Extremes" like these eventually get buried by their identical twins, until they no longer look like spikes in the data but points closer to the thick of the trend line. Sociologists who study how people respond to these patterns talk about "Shifting Baseline Syndrome," the phenomenon whereby people accept their gradually changed home environments as ordinary, rather than as new and anomalous.

But even gradual change is beginning to feel like a relic of another time. Unprecedented phenomena are coming fast and frequently. “Global temperature records are being broken with alarming regularity,” Carlo Buontempo, the director of the Copernicus Climate Change Service, said in an emailed statement. The breaches on Friday and Saturday were to be expected, but, he says, “they are still shockingly impactful.” As nations gather in Dubai later this month for COP28, the United Nations climate negotiations, “it’s crucial to understand what these figures signify for our collective future,” Buontempo said. They’re a signal of a new baseline era—one in which normalization is less and less tolerable, and irregularities are less possible to wave off.

Right now, emissions are still rising nearly every year; according to a new UN report on the global “emissions gap,” even if every nation managed to follow through on its stated emission-reduction plans, the world would still be on track for nearly 3 degrees Celsius of global warming by 2100. A 3-degree-warmer world is almost unimaginably inhospitable, worse at supporting life in virtually every way. “Change must come faster,” wrote Inger Andersen, the UN Environment Program’s executive director, in the foreword to that report. This year was an outline of what could come; the negotiations in Dubai may be a final chance to keep it from becoming a prologue.