Headline: For the third time this week, Earth sets an unofficial heat record. What's behind those big numbers?

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A pedestrian shades herself with an umbrella in Havana, Cuba, Wednesday, July 5, 2023. The entire planet sweltered for the two unofficial hottest days in human record keeping Monday (July 3) and Tuesday (July 4), according to University of Maine scientists at the Climate Reanalyzer project. (AP Photo/Ramon Espinosa)

A pedestrian shades herself with an umbrella in Havana, Cuba, Wednesday, July 5, 2023. The entire planet sweltered for the two unofficial hottest days in human record keeping Monday (July 3) and Tuesday (July 4), according to University of Maine scientists at the Climate Reanalyzer project. (AP Photo/Ramon Espinosa)

Earth's average temperature set a new unofficial record high on Thursday, July 6, the third such milestone in a week that already rated as the hottest on record and what one prominent scientist says could be the hottest in 120,000 years.

But it's also a record with some legitimate scientific questions and caveats, so much so that the National Oceanic and Atmospheric Administration has distanced itself from it. It's grabbed global attention, even as the number – 63 degrees Fahrenheit (17.23 degrees Celsius) – doesn't look that hot because it averages temperatures from around the globe.

Still, scientists say the daily drumbeat of records – official or not – is a symptom of a larger problem where the precise digits aren't as important as what's causing them.

"Records grab attention, but we need to make sure to connect them with the things that actually matter," climate scientist Friederike Otto of the Imperial College of London said in an email. "So I don't think it's crucial how 'official' the numbers are, what matters is that they are huge and dangerous and wouldn't have happened without climate change."

Thursday's planetary average surpassed the 62.9-degree mark (17.18-degree mark) set Tuesday, July 4, and equaled Wednesday, July 5, according to data from the University of Maine's Climate Reanalyzer, a tool that uses satellite data and computer simulations to measure the world's condition. Until Monday, no day had passed the 17-degree Celsius mark (62.6 degrees Fahrenheit) in the tool's 44 years of records.

Now, the entire week that ended Thursday averaged that much.

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Johan Rockstrom, director of the Potsdam Institute for Climate Impact Research in Germany, called the 63-degree mark "an exceptional outlier" that is nearly 6 degrees warmer than the average of the last 12,000 years. Rockstrom said it will "with high likelihood translate to even more severe extremes in the form of floods, droughts, heat waves and storms."

"It is certainly plausible that the past couple days and past week were the warmest days globally in 120,000 years," University of Pennsylvania climate scientist Michael Mann said. He cited a 2021

study that says Earth is the warmest since the last age ended, and said Earth likely hasn't been as warm dating all the way to the ice age before that some 120,000 years ago.

Climate scientist Zeke Hausfather of the tech company Stripe and Berkeley Earth temperature monitoring group said he wouldn't be surprised if it is the warmest in 120,000 years. But he said long-term proxy measurements like tree rings aren't precise.

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This week's average includes places that are sweltering under dangerous heat – like Jingxing, China, which checked in almost 110 degrees Fahrenheit (43.3 degrees Celsius) – and the merely unusually warm, like Antarctica, where temperatures across much of the continent were as much as 8 degrees Fahrenheit (4.5 degrees Celsius) above normal this week.

Temperatures were so brutally hot Thursday in Adrar, Algeria, that the temperature never got below 103.3 degrees (39.6 degrees Celsius) even at night when it is supposed to cool. That was the hottest ever nighttime low for Africa, according to weather historian and climatologist Maximiliano Herrera.

The temperature is ramping up across Europe this week, too. Germany's weather agency, DWD, has predicted highs of 37 degrees C (99 degrees F) on Sunday and the Health Ministry has issued a warning to vulnerable people.

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A man watches waves caused by high tide hit his house on the shore of the Arabian Sea in Mumbai, India, Thursday, July 6, 2023. (AP Photo/Rafiq Maqbool)

While there are small spots of cooler-than-normal temperatures across the globe, the University of Maine measurement is an average. That means some places – including both polar regions – will be extraordinarily warmer than normal and others will be cooler. On average it's about 1.8 degrees Fahrenheit (1 degree Celsius) warmer than the 1979-2000 average, which is warmer than the 20th and 19th century averages.

And 70% of the world is covered by oceans, which have been spiking record heat for months.

Scientists say the heat is driven by two factors: Long-term warming from greenhouse gas emissions from the burning of fossil fuels and a natural El Nino warming of part of the Pacific that changes weather globally and makes an already warming world a bit hotter.

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The National Oceanic and Atmospheric Administration on Thursday issued a note of caution about the Maine tool's findings, saying it could not confirm data that results in part from computer modeling, saying it wasn't a good substitute for observations.

Scientists don't understand and haven't delved much into daily fluctuations, said Princeton University climate scientist Gabriel Vecchi. Much more meaningful to them are global data over months, years and especially decades.

"The fact that we haven't had a year colder than the 20th century average since the Ford administration (1976) is much more relevant," Vecchi said.

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A man cools off at an urban beach at Madrid Rio park in Madrid, Spain, Monday, June 26, 2023. The entire planet sweltered for the two unofficial hottest days in human record keeping Monday(July 3) and Tuesday (July 4), according to University of Maine scientists at the Climate Reanalyzer project. The unofficial heat records come after months of unusually hot conditions due to climate change and a strong El Niño event. (AP Photo/Manu Fernandez)

Kathleen Hall Jamieson, director of the Annenberg Public Policy Center at the University of Pennsylvania, said immediacy of daily records is important.

“Tell me that yesterday was the hottest day on record and I can relate the claim to ways in which yesterday’s heat constrained my behavior,” she said. “I can’t do the same with monthly or yearly data. … We experience the world hour-by-hour, day-by-day, not in monthly or yearly averages.”

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Discussions about how official the records are aren’t as important as the public getting the message “that Earth is warming and humans are responsible,” said Max Boykoff, a University of Colorado environmental studies professor who tracks media coverage of climate change.

“The issue of climate change doesn’t often get its 15 minutes of fame. When it does, it’s usually tied to something abstract like a scientific report or a meeting of politicians that most people can’t relate to,” said George Mason University climate communications professor Ed Maibach.

“Feeling the heat – and breathing the wildfire smoke, as so many of us in the Eastern U.S. and Canada have been doing for the past month – is a tangible shared public experience that can be used to focus the public conversation,” he said.

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