August 2 2027 eclipse path of totality, explained for families

Peabody blog · Science · updated 2026-10-31

Where the 2 August 2027 total eclipse goes, from the Atlantic over Spain, Morocco and Egypt to the Indian Ocean, how long totality lasts, and what US families can do.

On Monday 2 August 2027 the Moon's darkest shadow sweeps across Earth in a little over three hours. It touches down at sunrise in the middle of the Atlantic Ocean, crosses the Strait of Gibraltar between southern Spain and Morocco, runs along North Africa through Algeria, Libya and Egypt, then over Saudi Arabia, Yemen and Somalia, and lifts off at sunset over the Indian Ocean. Inside that band, about 258 kilometers wide in Egypt, the Sun is covered completely for up to 6 minutes 23 seconds. No part of the United States is in the path or sees any part of the eclipse. Peabody's Eclipse center draws the path on a map and shows what 27 cities see.

Every time and width here comes from NASA's eclipse tables by Fred Espenak (the path table for 2 August 2027 and the solar eclipses of 2021 to 2030), read on 31 October 2026, and from our own eclipse table, which we work out with astronomy-engine. The two agree to about a minute. Times are in UTC; for the US East Coast in August, take off four hours.

What a path of totality is

The Moon casts two shadows. The big, pale one covers a huge area, and everyone inside it sees a partial eclipse: a bite out of the Sun. The small, dark one, the umbra, is only a couple of hundred kilometers across where it reaches Earth. As the Moon moves along its orbit and Earth turns underneath, that dark spot sweeps a long, thin track over the ground. That track is the path of totality. Only people inside it see the Sun disappear completely, the sky go dark like late evening, and the Sun's pale outer glow, the corona, appear around the black Moon.

A city just outside the path gets a very deep partial eclipse, but that is not the same thing. Even with 2% of the Sun left, the day stays bright and eclipse glasses stay on.

The path, from start to end

NASA's path table follows the centre of the shadow every two minutes. Here is the trip in five stops:

- Sunrise over the Atlantic, just before 08:30 UTC. The shadow first touches Earth in the middle of the ocean, far out to the west of Africa. The path is about 206 km wide and totality there lasts about 3 minutes.
- The Strait of Gibraltar, about 08:45 to 08:50 UTC. The centre line crosses between southern Spain and northern Morocco, with totality of about 4 minutes 45 seconds to 5

minutes and the Sun about 37° to 40° up in the morning sky. In our city table, Málaga and Tangier are both inside the path.

- Across North Africa, about 08:55 to 09:45 UTC. The shadow runs east over Algeria and Libya, and totality keeps growing, past 6 minutes over Libya.
- Egypt, about 10:00 UTC. This is the heart of the eclipse. Greatest duration, the longest totality anywhere, is 6 minutes 23.2 seconds at 10:00 UTC in the desert north-west of Luxor. Greatest eclipse, when the shadow's axis passes closest to Earth's centre, is at 10:06:38 UTC near 25.5° N, 33.2° E, close to Luxor, with the Sun 82° up, almost overhead, and the path 258 km wide.
- Arabia, Yemen, Somalia and out to sea, about 10:15 to 11:45 UTC. The path crosses the Red Sea, Saudi Arabia and Yemen, clips the Horn of Africa in Somalia, and ends at sunset over the Indian Ocean.

NASA's list of countries inside the path is Morocco, Spain, Algeria, Libya, Egypt, Saudi Arabia, Yemen and Somalia.

What our 27 cities see

Peabody's eclipse table works out each city's view. Three of them are in the path:

- Málaga, Spain: total, at about 08:48 UTC, the Sun about 39° up.
- Tangier, Morocco: total, at about 08:47 UTC, the Sun about 38° up.
- Luxor, Egypt: total, at about 10:05 UTC, the Sun about 82° up.

Close by but outside it: Seville about 98% of the Sun covered, Tunis about 97%, Cairo about 95%, Lisbon about 92% and Madrid about 86%. London gets about 42%. In the US, Canada and South America, nothing at all: the Moon's shadow is on the other side of the world. The total solar eclipse event page has the countdown, and our solar eclipse 2027 post covers February's ring eclipse too.

Why it lasts so long

Totality on 2 August 2027 is unusually long: over six minutes in Egypt. For comparison, the total eclipse of 12 August 2026, over Greenland, Iceland and Spain, lasted 2 minutes 18 seconds at its longest by NASA's table. The difference is mostly size. On 2 August 2027 the Moon is close to Earth and looks bigger than the Sun: NASA's table gives the Moon's size as 1.079 times the Sun's at greatest eclipse, against 1.039 in 2026. A Moon with more to spare covers the Sun for longer, and casts a wider shadow, which is why the path is about 258 km wide in Egypt.

Safety, in NASA's words

Peabody doesn't write its own eclipse safety rules. NASA says to look at the Sun during an eclipse only through safe solar viewing glasses (eclipse glasses) or a handheld solar viewer that meets the ISO 12312-2 international standard, and that ordinary sunglasses are not safe. NASA says the only time it is safe to look without them is during totality, when the Moon completely covers the Sun, and that the glasses go back on as soon as the Sun begins to reappear. Outside the path there is no such moment. NASA's page is Eclipse safety, and our children's guide Never look at the Sun says it in their words. A pinhole viewer to print is on the Eclipse center, and lets a child watch the Sun's image with their back to it.

If you're watching from the US

The eclipse happens on a summer morning in the US: from about 4:45 am to 6:05 am Eastern, 1:45 am to 3:05 am Pacific, for the stretch from Spain to Luxor. That is early, but live streams from the path will show it, and a recording works just as well after breakfast. Things to do together:

- Find the path on the Eclipse center map and trace it with a finger, country by country.
- Make the pinhole viewer and try it on any sunny day before August.
- Talk about why the US misses out: the shadow falls on the side of Earth facing the Sun at that moment, Africa and Arabia near midday, while in America it is still before or around dawn.
- Two weeks later, on 17 August 2027, there is a faint penumbral eclipse of the Moon that the whole US can see. Our post on lunar eclipses in 2027 says what to expect.

Questions families ask

Is the 2 August 2027 eclipse visible in the United States?

No. No part of the United States, including Alaska, Hawaii and Puerto Rico, sees any of it, not even a partial eclipse.

Where is totality longest?

In Egypt. NASA's greatest duration is 6 minutes 23.2 seconds, at 10:00 UTC in the desert north-west of Luxor. Near Luxor itself it is a little over six minutes.

Does southern Spain see totality?

Only the far south, along the Strait of Gibraltar. In our table Málaga is inside the path and Seville, at about 98%, is just outside. Madrid gets about 86%.

Can we look without glasses if we are close to the path?

No. Outside the path the Sun is never fully covered, so NASA's guidance is eclipse glasses or a solar viewer the whole time.

Peabody (peabody.kids) is free through the end of 2026, with no ads and no sign-up, and nothing your child taps on the space pages is sent anywhere. For a cloudy day, the library has stories at your child's reading level.

Sources

- NASA, Fred Espenak: path of the total solar eclipse of 2 August 2027 (times, widths, durations, greatest eclipse and duration) and solar eclipses 2021 to 2030 (the countries), read 31 October 2026.
- NASA, eclipse safety.
- Peabody's eclipse table (astronomy-engine) for the 27 cities.

Free at peabody.kids/blog/august-2-2027-eclipse-path-of-totality