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Solar Eclipse and Bees

Today, 12 August 2026, a solar eclipse will be visible from many places in Europe and in some parts of the Spain, Iceland, Greenland and of the Northern Russia will be total. But what happen to the bees when the Sun disappears?

By Matteo Giusti

Solar eclipses are known to affect the behaviour of many animals. Bees can also be affected by this exceptional astronomical event.



Solar eclipse. This event can affect the bees' behaviour. (Photo by: NASA)

Today, 12 August 2026, a solar eclipse will be visible from many places in Europe, and in some parts of Spain, Iceland, Greenland and northern Russia, it will be total.

But what do bees do during an eclipse? Many scientists, researchers, and beekeepers have tried to observe bees' behaviour during these events. Here, we report observations published in scientific papers following solar eclipses that occurred in different parts of the world in recent years.

Types of eclipses

First of all, only total solar eclipses appear to have a significant effect on bee behaviour. Partial eclipses do not produce changes in light levels that are strong enough to have a noticeable impact on bees.

There are also differences among the different types of solar eclipses: total, anular and partial. A total solar eclipse occurs when the Moon completely covers the Sun. In an annular eclipse, the Moon is farther from Earth, so its apparent disk is smaller and cannot completely cover the Sun, leaving a bright ring of sunlight visible around it.

According to a study conducted in Texas during two eclipses – one total and one annular – only the total eclipse had clear effects on bee behaviour. Other researchers have found that annular eclipses may lead only to a reduction in foraging activity.

Types of bees

Most studies and observations have focused on honey bees. However, there are also some data on other bee species, such as stingless bees and solitary bees.

Effects on honey bees

The majority of observations of honey bees during total solar eclipses have focused on foraging activity and flight behaviour.

A study carried out in Hungary in 1999 showed a reduction in foraging activity, with a peak in the number of bees returning to their hives a few minutes before totality. During totality, the departure of forager bees from the hives stopped completely.

During the same eclipse, Turkish researchers reported a significant decrease in the buzzing sounds coming from the bee hives.



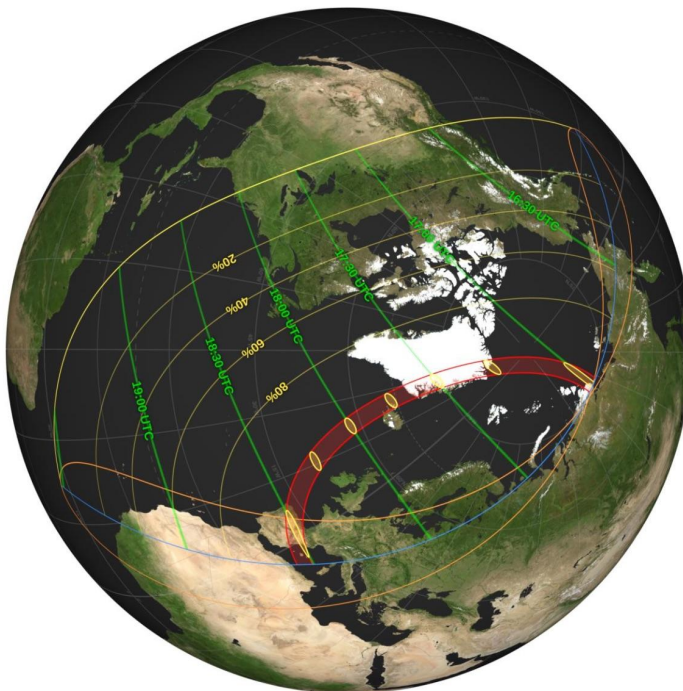
During the totality, all the bees stop flying, and experience difficulties with orientation. (Photo by BLM Oregon - Wikipedia).

An experiment conducted in Costa Rica in 1991 measured foraging activity by observing the presence of bees on plates containing honey placed at regular distances from the hives. In this case too, activity decreased before totality, and during totality, the few foragers still present on the plates stopped flying.

According to another study, conducted in South Carolina during the 2017 total solar eclipse, foraging activity decreased during totality but did not stop completely, as expected. The decrease in activity was greater in stronger colonies than in weaker ones, suggesting that weaker colonies may have been more willing to take risks in their search for food.

In Texas in 2024, researchers used acoustic sensors to measure activity inside bee hives. They recorded a pulse in activity during the four-minute period of totality, possibly corresponding to

foragers returning to the hive. However, the colonies did not return to nighttime levels of activity during the eclipse.



The eclipse's map. In red the strip of totality. (Photo by NASA)

Overall, all these studies report changes in flight activity during totality. Forager bees outside the hive appear to look for shelter, stop flying, and experience difficulties with orientation. During totality, polarized light is still present, but its pattern is disturbed. This disturbance could affect the bees' ability to orient themselves.

Effects on other bee species

There is not much information about the effects of solar eclipses on other bee species.

According to a study carried out in India during the 2019 annular eclipse, all the bee species observed reduced their foraging activity, but the reduction was greater among social bees. Honey bees and stingless bees showed a greater decrease in flight activity than solitary bees.



Another study, conducted in the USA during the 2017 total solar eclipse, reported a drastic reduction in buzzing sounds in the fields, with activity coming to a complete stop during totality, as measured by acoustic sensors. The researchers concluded that all the bee species in the monitored fields stopped flying.

And now?

Today, the total eclipse will cross a long strip of the Iberian Peninsula and other areas along the Siberian coast.

Many researchers, biologists, and beekeepers will be ready to observe the bees. And if you do too, share your experience!

References

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