It's in our hands.

Citizen science

The term "Citizen Science" describes scientific projects that are carried out with the assistance of or completely by interested amateurs [lat. amator „lover"].

A decades-long tradition involving members of the public can also be found in the field of ornithology, which resulted in the Austrian Atlas of Breeding Birds, for example.

The more join in, the better

Citizen scientists formulate research questions, report observations, carry out measurements, conduct research, evaluate data, and/or write publications. Adherence to the scientific method and standards is a prerequisite. This enables not only new scientific projects and findings, but also dialogue between the scientific community and society as a whole that is otherwise impossible or very difficult to achieve. Another advantage of this method is the huge number of potential participants and the corresponding access to knowledge, methods, places, etc.

Citizen Science is often interpreted as the return of professional science to its roots, since science was done by amateurs in the beginning and only later became academicized and institutionalized at universities.

Example of a citizen science project: TeaBag Index

This experiment involves participants burying tea bags in the ground. Three months later, the tea bags are dug up again, dried, and weighed, and the resulting data is recorded. The reduction in weight indicates the amount of plant material (tea, in this case) that decomposed.

Scientists all over the world can then compare the data and (for example) analyse the impact of location and soil composition on the decomposition rate. Over the course of two years, data from 2,000 locations with greatly varying vegetation and soil types was gathered.

Example of a citizen science project: Tabby's Star

If an exoplanet moves directly between its star and the Earth in the course of its orbit, then it briefly covers a part of its star, resulting in a drop in the star's brightness (like a partial solar eclipse). Therefore, if variations in a star's brightness over time can be detected, then that can indicate the presence of an exoplanet.

The brightness fluctuations caused by exoplanets are always the same and take place at regular intervals, because the exoplanet's orbit doesn't change. Tabby's Star's variations, however, occur at irregular, unpredictable intervals and vary in size. Scientists still haven't found a clear explanation for them. A few hypotheses are, among others, an irregular dust ring orbiting the star, a group of disintegrating comets, and an artificial megastructure (a so-called Dyson swarm).

Citizen scientists are still substantially involved in the observing effort, and they support professional scientists in exploring this phenomenon.