Imagine aliens **land on** the planet a million years from now and look into the **geologic record**. What will these curious searchers find of us?

They will find what **geologists**, scientists, and other experts are **increasingly** calling the Anthropocene or **new age of mankind**. The impacts that we humans make have become so **pervasive**, **profound**, and **permanent** that some geologists argue we **merit our own epoch**.

That would be a new unit in the **geologic time scale** that **stretches back** more than 4.5 billion years, or ever since the Earth **took shape**. Modern humans may **be on par with** the glaciers behind **various ice ages** or the asteroid that **doomed most of** the dinosaurs.

What is an epoch? Most simply, it's a unit of **geologic time**.

There's the Pleistocene, an icy epoch that **saw the evolution** of modern humans. Or there's the Eocene, more than 34 million years ago, a hothouse time during which the **continents** drifted into their **present configuration**.

Changes in climate or **fossils found in the rock record** help **distinguish** these epochs and help geologists tell deep time.

So what will be the record of modern people's impact on the planet? It doesn't rely on the things that may seem most obvious to us today, like **sprawling cities**.

Even New York or Shanghai may prove hard to find **buried in the rocks** a million years from now. But humans have put new things into the world that never existed on Earth before, like plutonium and plastics.

In fact, the geologists known as **stratigraphers** who determine the **geologic timescale**, have **proposed a start date** for the Anthropocene around 1950. That's when people started **blowing up nuclear bombs** all around the world and **scattering** novel elements **to the winds**. Those elements will **last** in the rock record, even **in our bones and teeth** for millions of years.

And in just 50 years, we've made enough plastic, at least 8 billion metric tons, to cover the whole world in **a thin film**. People's farming, fishing, and **forestry** will also show up as a before and after in any such **strata** because it's those kinds of activities that are **causing unique species of** plants and animals **to die out**. This **die-off** started perhaps more than 40,000 years ago as **humanity spread out** of Africa and reached places like Australia, **kicking off** the disappearance of big, **likable**, and **edible** animals.

This is true of Europe and Asia, think **woolly mammoth**, as well as North and South America, too. For a species that has only **roamed the planet** for a few hundred thousand years, Homo sapiens has had a big impact on the **future fossil record**. That also means that even **if people were to disappear** tomorrow, evolution would **be driven by our choices** to date.

We're making a new **homogenous** world of certain **favored** plants and animals, like corn and rats. But it's a world that's not as **resilient** as the one it **replaces**.

As the fossil record shows, it's a **diversity** of plants and animals that **allows unique pairings of flora and fauna** to respond to environmental challenges and even **thrive** after an **apocalypse**.

That goes for people, too. If the **microscopic plants** of the ocean suffer **as a result of too much carbon dioxide**, say, we'll **lose the source of** as much as half of the oxygen we need to breathe.

Then there's the **smudge** in future rocks. People's **penchant** for burning coal, oil, and natural gas has spread tiny bits of **soot** all over the planet. That smudge **corresponds with** a **meteoric** rise in the amount of carbon dioxide in the air, now beyond 400 parts per million, or **higher than any** other Homo sapiens has **ever breathed**.

Similar soot can still be found in ancient rocks from **volcanic fires** of 66 million years ago, a record of the **cataclysm**

touched off by an **asteroid** at the end of the late Cretaceous epoch. So odds are our soot will still be here 66 million years from now, easy enough to find for any aliens who care to look.

Of course, there's an important difference between us and an asteroid. A space rock has no choice but to **follow gravity**. We can choose to do **differently**. And if we do, there might still be some kind of **human civilization** thousands or even millions of years **from now**.

Not a bad record to hope for.