Launching in 2018, Parker Solar Probe (PSP) will provide humanity with the first-ever close-up view of a star as it plunges through the sun’s atmosphere, facing brutal heat and radiation conditions.

There are two ways to think about the comparative sizes of the sun and Earth. (1) It takes about 109 Earths lined up end to end to stretch across the diameter of the sun. (2) If you pretend the sun is a hollow ball, it would take 1 million Earths to fill it!

The sun is 93 million miles (150 million kilometers) away from Earth. If we could ride in a car to the sun traveling 60 miles per hour (96 kilometers per hour), it would take about 175 years to get there.

At closest approach, PSP hurtles around the sun at approximately 430,000 miles per hour (700,000 kilometers per hour). That’s fast enough to get from Philadelphia to Washington, D.C., in one second.

The front of PSP’s solar shield, when closest to the sun, faces temperatures approaching 2,500 degrees Fahrenheit (1,377 degrees Celsius), but the spacecraft’s payload will be near room temperature.

To see the enormous sun as PSP will see it at the point in its orbit when PSP is closest to the sun, or perihelion, hold this sun image 3 feet (0.9 meters) away from your eyes. This demonstrates that if PSP perihelion, the sun will have an angular size of 12.5 degrees (65 times the 0.5 degrees that it is from Earth). That’s really close!