

Parker Solar Probe

- Questions from First Grade
- Answers from Justin Kasper, Department of Climate and Space Sciences and Engineering, University of Michigan

How did the Parker Solar Probe get launched?

It was launched using the strongest rocket ever made! It separates from the rockets in stages and those fall into the oceans.

How did it make it so close to the sun?

They used the gravity of Venus, flying 1500 miles above the planet, to help it steer. Will orbit the sun 7 times and has made 3 approaches so far.

What materials is it made of? How does it not burn or melt?

It is made of laboratory-made crystals (like diamonds) that never melt, they could be put into lava and not melt! They cover the front half of the probe protecting it from the sun's heat.

How do they make the materials?

A lot of collaboration! France and Switzerland made the crystals for them, they have been studying the sun for hundreds of years! There is a mountain in France that they have covered one side in mirrors. These mirrors reflect the sun into a small room that can measure degrees around the temperature of the sun and help with research.

How long did it take to make?

It took 7 years to make. It is the FASTEST object EVER made. If it were to travel from Maryland to Florida it would get there in 1 second!

How long did it take for it to arrive to the sun?

1 year

How close can it get to the sun?

20x closer than the Earth is to the sun.

What are they learning from the probe?

They are taking samples of the sun's atmosphere and observing/learning why it's so hot, tracking the temperature and the wind around it.

Will it come back?

No, it will orbit 7 times (flying past Venus a total of 7 times) before it runs out of rocket fuel and then will melt and orbit for an additional billion years.

How do the pictures get back to Earth? Are they digital?

Yes, the pictures are digital. The probe "talks" to the computer through sounds. All information is converted into numbers and sounds. If a low sound is heard all is well, however, for 10 days it is orbiting too close to the sun and emits a high-pitched noise.

How heavy is it? How big is it?

The probe is 600 kgs. (1000 lbs.) and 12 feet tall. The rockets that launched it are 20 stories tall. It was the biggest rocket launcher ever made but the smallest probe ever made.

What is your specific job? What did you do to help build it?

He made the "cup" that scoops up samples of the sun's atmosphere.

Will it ever break? What happens if something breaks before it reaches the sun?

It will melt in 7 years, but could possibly break before then if something hits it. They saw an asteroid fly past it in the digital pictures that it sent back.

*We can check out more information on the Johns Hopkins University webpage under Parker Solar Probe. There are cool interviews with the engineers and scientists, including many women. Nikki Fox was the leader.

<http://parkersolarprobe.jhuapl.edu/>