



π IN THE SKY⁷

Where can you safely land on Mars? NASA solves this real problem to explore the Red Planet and – with pi as your guide – so can you!

MARS MANEUVER

When we plan where to land a spacecraft on Mars, we don't choose a specific spot, but a larger area called a landing ellipse. It's like choosing a parking lot rather than a parking spot. To choose a landing ellipse, we have to compromise between getting as close as possible to interesting science targets and avoiding hazards. As we've created new technology to help direct spacecraft, landing ellipses have gotten smaller and smaller. That means that we're able to land in places we couldn't before and get closer to the stuff we want to study.

In 2012, the Curiosity rover used its sky crane landing system to touch down in a 20 km by 7 km ellipse. When the Perseverance rover lands on Feb. 18, 2021, it will use the same system along with a new technique called Range Trigger that will allow the spacecraft to land in the smallest ellipse yet, measuring just 13 km by 7 km. What percentage of Curiosity's landing ellipse is Perseverance's landing ellipse?

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