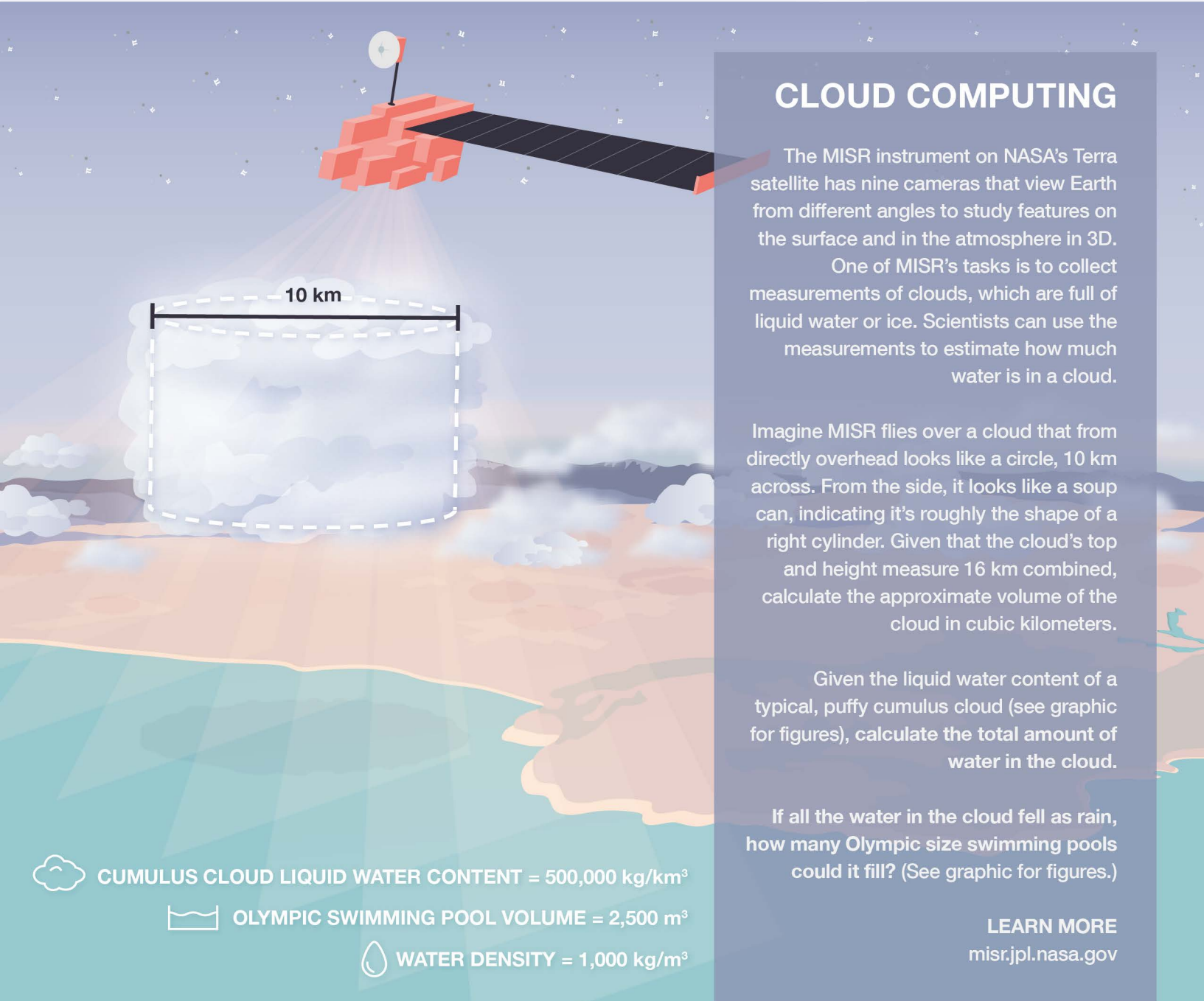




π IN THE SKY⁶

Can you squeeze the answer out of this cloud conundrum?
It's not rocket science when you've got pi to guide you.

Explore the full NASA Pi Day Challenge at:
jpl.nasa.gov/edu/nasapidaychallenge



CLOUD COMPUTING

The MISR instrument on NASA's Terra satellite has nine cameras that view Earth from different angles to study features on the surface and in the atmosphere in 3D.

One of MISR's tasks is to collect measurements of clouds, which are full of liquid water or ice. Scientists can use the measurements to estimate how much water is in a cloud.

Imagine MISR flies over a cloud that from directly overhead looks like a circle, 10 km across. From the side, it looks like a soup can, indicating it's roughly the shape of a right cylinder. Given that the cloud's top and height measure 16 km combined, calculate the approximate volume of the cloud in cubic kilometers.

Given the liquid water content of a typical, puffy cumulus cloud (see graphic for figures), calculate the total amount of water in the cloud.

If all the water in the cloud fell as rain, how many Olympic size swimming pools could it fill? (See graphic for figures.)

 CUMULUS CLOUD LIQUID WATER CONTENT = 500,000 kg/km³

 OLYMPIC SWIMMING POOL VOLUME = 2,500 m³

 WATER DENSITY = 1,000 kg/m³

LEARN MORE
misr.jpl.nasa.gov