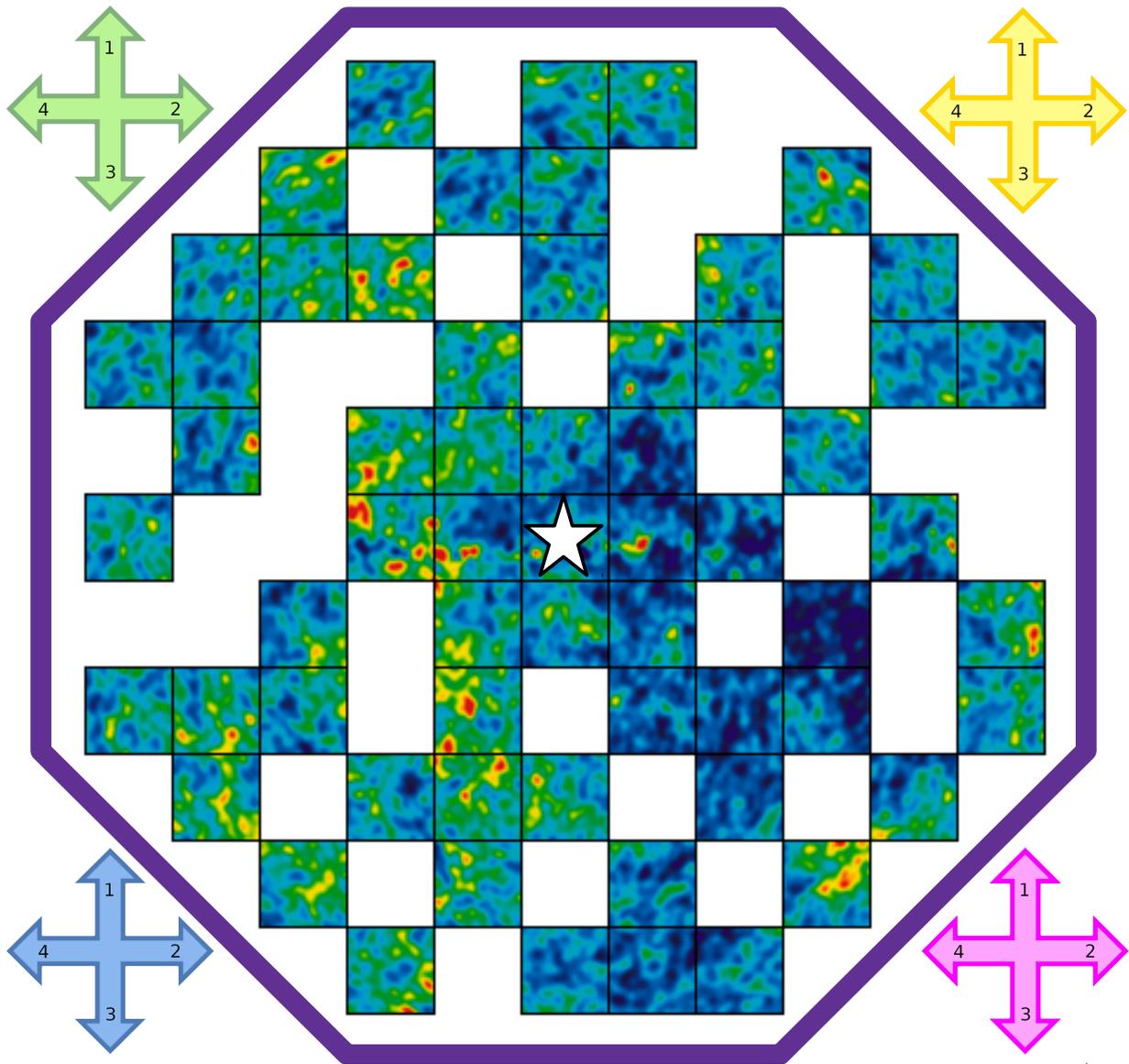


Escape from the Cosmic Microwave Background

Test your luck and see how long it takes you to escape



| Blue Team Tally | Green Team Tally | Yellow Team Tally | Pink Team Tally |
|-----------------|------------------|-------------------|-----------------|
| | | | |



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What you'll need:

1. 1-4 teams of 1-3 people per team.
2. A four-sided dice (D4) or an online random number generator that you can set to give you a random number of 1, 2, 3 or 4 (eg. www.random.org).
3. One 1-centimetre counter per team.
4. One pencil to share or one per team.

Instructions:

Place your counter on the white star and roll a 4-sided dice. The number on the dice tells you the direction to move your counter: 1 is up, 2 is right, 3 is down and 4 is left. For each roll, you move your counter one coloured space (skipping any white spaces) in the direction indicated by the number. Each time you roll the dice, add a mark to the tally. Once your counter reaches the purple boarder, you've successfully escaped the Cosmic Microwave Background! Compete with your friends for who can escape with the least moves.

The Science:

After the Big Bang, everything in our newly formed Universe was a hot, dense soup of simple particles. The heat meant there was lots of energy and lots of light, but because everything was squashed together the light couldn't travel very far.

A light packet (photon) would be randomly released by an energetic particle but was almost immediately caught by another particle. Catching that photon made this new particle energetic, so it too would release a photon at random, and the cycle continued. It was not until the Universe expanded and cooled, and enough space appeared so that light could finally travel very long distances. This happened about 380,000 years after the Big Bang.

Most of that light is still travelling today. Some of it lands on our telescopes, and because the last particle to release that light did so 13 Billion years ago, that's what we see. This is the earliest light we see from the Universe, when the light could suddenly travel freely for 13 Billion years. We call this ancient light the "Cosmic Microwave Background".



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