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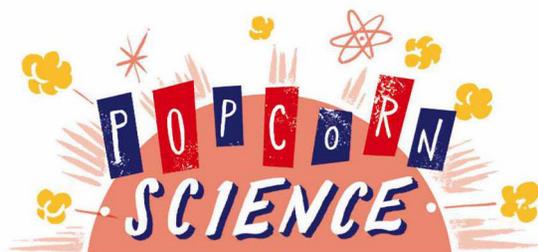
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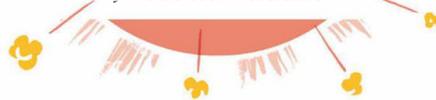
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# Is hyperspace travel possible?

When will we be zipping round the cosmos like Baby Yoda and co?

by STEPHEN KELLY

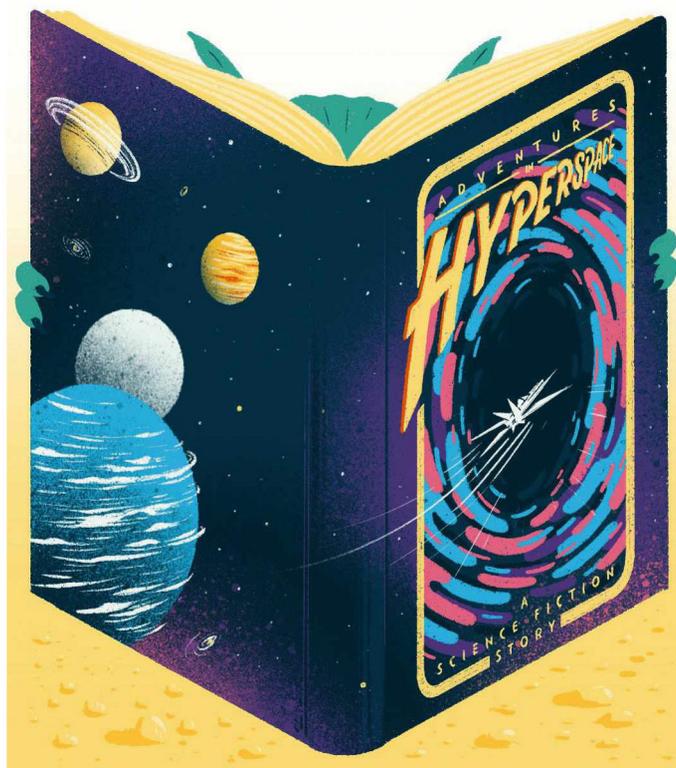


**H**yperspace travel – the ability for spaceships to travel as fast as the speed of light – is an integral part of the *Star Wars* universe. The new series of *The Mandalorian*, for instance, would be quite a different show if Mando and Grogu had to wait 6,000 years to fly from one planet to the next. But it does raise the question of just how feasible such technology is. Will we ever attain the ability to travel vast distances across space without having to burn through generations of astronauts? Or are we just marooned in our corner of the Galaxy?

To answer that, Prof Patrick Johnson, author of *The Physics Of Star Wars*, needs to be clear on what, exactly, hyperspace travel is. “If we’re talking about the idea that spaceships in *Star Wars* accelerate forward as fast, or faster than, the speed of light, then that is not plausible,” he

says. “The speed of light is the speed limit of the Universe. Once you travel faster than light, cause and effect begin to break down. You could feasibly view an event happening five light-years away, travel faster than the speed of light towards it and get there before it happens. It’s basically time travel.”

A more realistic option, says Johnson, is that instead of ships in *Star Wars* accelerating at the speed of light, hyperdrive technology enables them to create a wormhole in order to travel from one point in space to another. “It would be like folding a piece of paper and punching a hole through it so an ant can get to the other side,” he says. It would also explain why, in certain hyperspace sequences in *Star Wars*, the ships look like



they’re travelling through a blue tunnel. (Although, of course, there are also other scenes, such as Vice-Admiral Holdo flying a ship at light speed through another ship in *The Last Jedi*, that lend strength to the accelerating theory).

The problem with creating a wormhole, says Johnson, is that no one knows how to do it; it’s more theoretical than practical. “It would perhaps be easier to find a pre-existing wormhole and just hope it leads to somewhere you want to go,” he says. “As for creating one, that would take decades’ worth of human energy. And that’s before we figure out how to target a particular location.”

Johnson also insists that any wormhole created would have to be far away from Earth. “Going back to the paper analogy,

it’s not going to end well for the ant if it happens to be in the spot where the pencil bursts through. You would need an empty, unoccupied part of space, along with incredibly complex calculations and some sort of up-to-date star map, to ensure that the planet you’re going to is in the right place.”

At this stage, both options seem as unlikely as each other, which means that we are stuck in our Solar System for the foreseeable future. But Johnson lives in hope that, even if we can’t accelerate at light speed, we can develop ways to travel long distances across the Galaxy.

“Without hyperdrives, I’d say our best bet for getting far, far away in a reasonable amount of time is solar sail technology,” he says. “These would operate like wind sails, but instead use the light from a star to push the ship forward

and essentially give it an unlimited supply of fuel. The acceleration would be small at first, but after 10 years you could get up to around 20 per cent of the speed of light, which is very good.”

Promising – but we wouldn’t book that holiday to Tatooine just yet. **SF**



## VERDICT

It doesn’t matter how strong the force is with you, hyperspace travel is just not possible in our Universe.

by STEPHEN KELLY (@StephenPKelly)  
Stephen is a culture and science writer, specialising in television and film.