

An astronaut in a white spacesuit is floating in space, positioned in front of a large, circular rainbow. The background is a dark, starry space. The title text is overlaid on a black circular shape on the left side of the image.

# What's It Like in Space?

STORIES FROM ASTRONAUTS  
WHO'VE BEEN THERE

Ariel Waldman



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Illustrations by Brian Standeford



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# Introduction

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“If somebody’d said before the flight, ‘Are you going to get carried away looking at the Earth from the Moon?’ I would have [said], ‘No, no way.’ But yet when I first looked back at the Earth, standing on the Moon, I cried.”—Alan Shepard

What’s it like in space? It’s something many of us have wondered about, and something, of course, that astronauts are asked all the time. Much like space exploration itself, the question is boundless and hopeful. Asking “what’s it like in space?” represents our collective aspiration to dare how far humans can go and what we can achieve when we get there.

One of the first people to attempt to scientifically answer the question was the astronomer Johannes Kepler. In the early seventeenth century, *three centuries* before a human landed on the Moon, Kepler wrote *Somnium*, a work of science-based fiction about humans in space. *Somnium* detailed how humans could conduct science in space and how the Earth could be observed from the viewpoint of the Moon. The first Moon landing was still 361 years into the future of the time of Kepler’s writing, but he was one of the first to declare it scientifically possible and to imagine what it would be like to travel there.

Despite hundreds of years of scientific speculation, no one really knew what space would be like. Leading up to humans taking to spaceflight in the early 1960s, doctors were unsure about everything—from whether people would physically be able to eat in space to whether their eyes would float freely around in their heads. During the Cold War, astronauts and cosmonauts alike were subjected to intense and thorough tests to ensure that they would be able to handle every scenario imaginable. It was only by pushing the boundary of how far humans could go that we could truly answer the question of what it’s like in space.

In my work, I make space exploration more accessible. Working on this book has been a fascinating opportunity to learn more about human spaceflight—an aspect of space exploration that has only been experienced by a select few over the fifty-plus years since its inception. But it was mostly just a lot of fun to talk to astronauts who generously shared their time and enthusiasm. The stories range from the comical to the peculiar to the awe-inspiring, but in researching or interviewing each astronaut they all shared a similar undercurrent: a quiet determination to tackle the unknown.

Despite several decades of human spaceflight, any answers to “what’s it like in space?” are provisional and will continue to change as the exploration widens, both in scope and accessibility. I enjoy reading through these stories and meditating on what someone four hundred years in the future might write about what it’s like in space. I can only hope that space exploration will slowly, but surely, become more accessible over the coming decades and centuries. Maybe someday this book will be as quaint a

books describing what it's like to fly in an airplane.

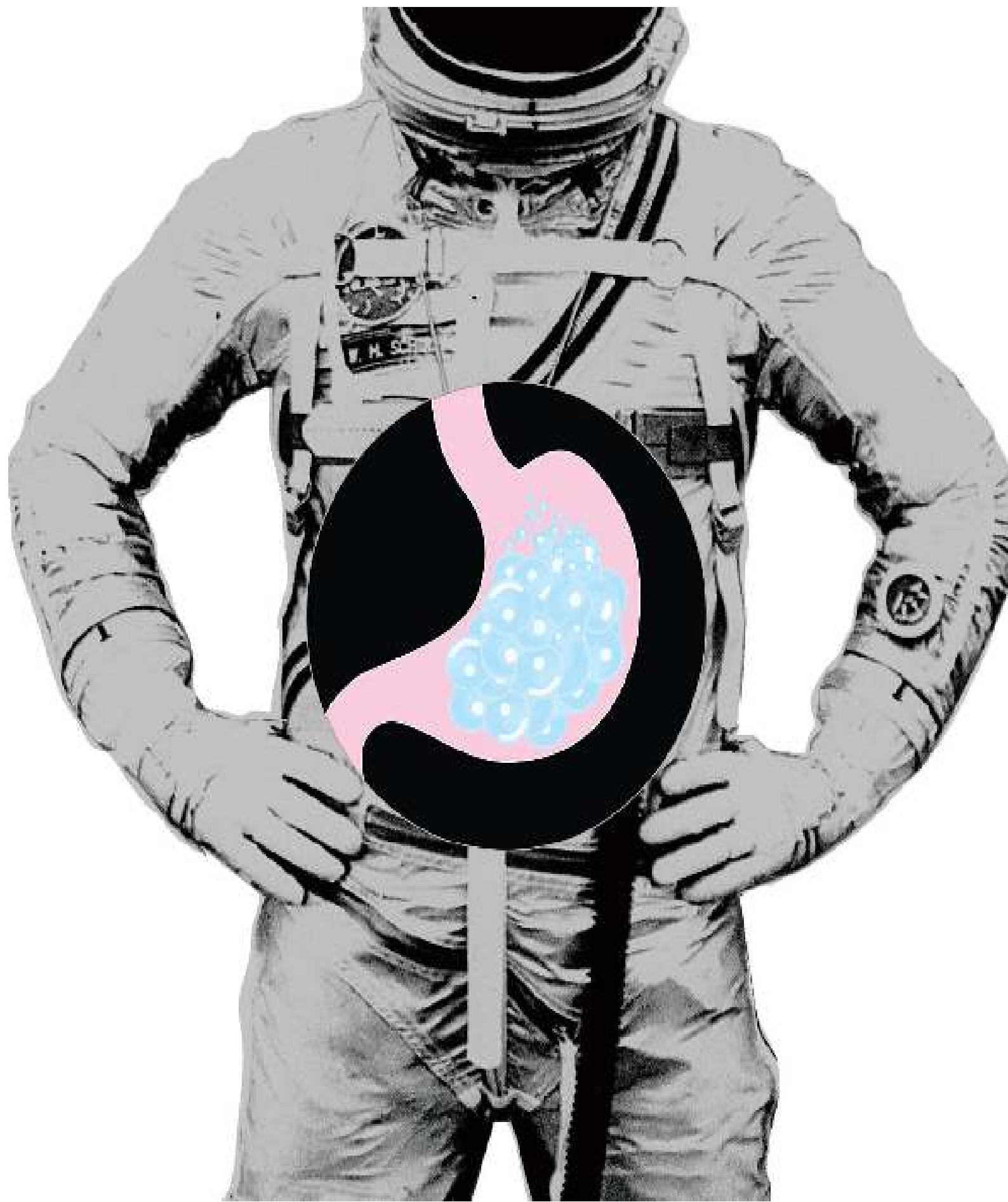
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# **NO ONE CAN HEAR YOU BURP**

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In space, no one can hear you burp. Seriously. The lack of gravity means you can't keep your food down in your stomach if you try to expel gas out through your mouth. Thus most attempts to burp would actually result in vomiting. Needless to say, this is why there is no soda in space.

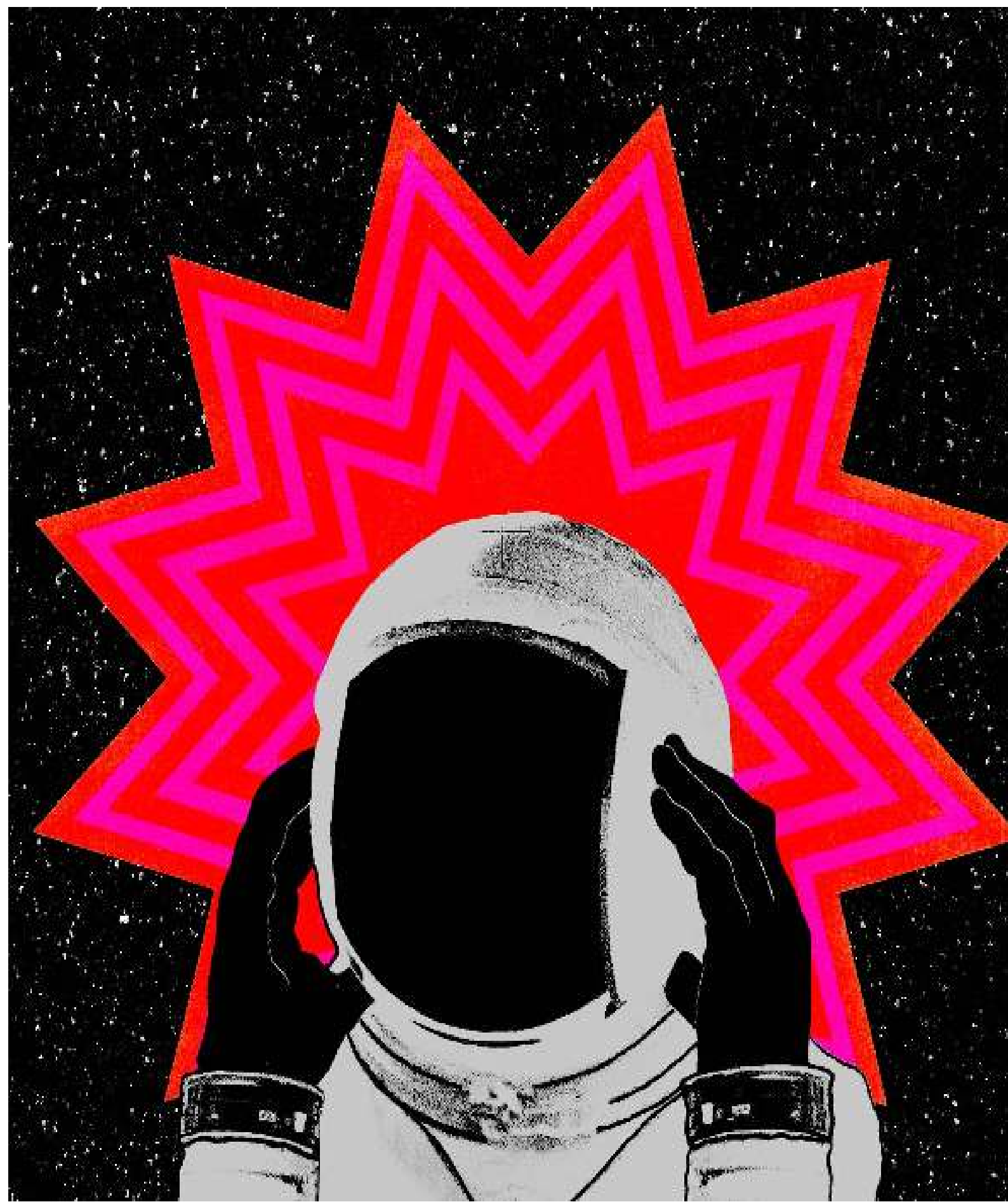




# MYSTERIOUS HEADACHES

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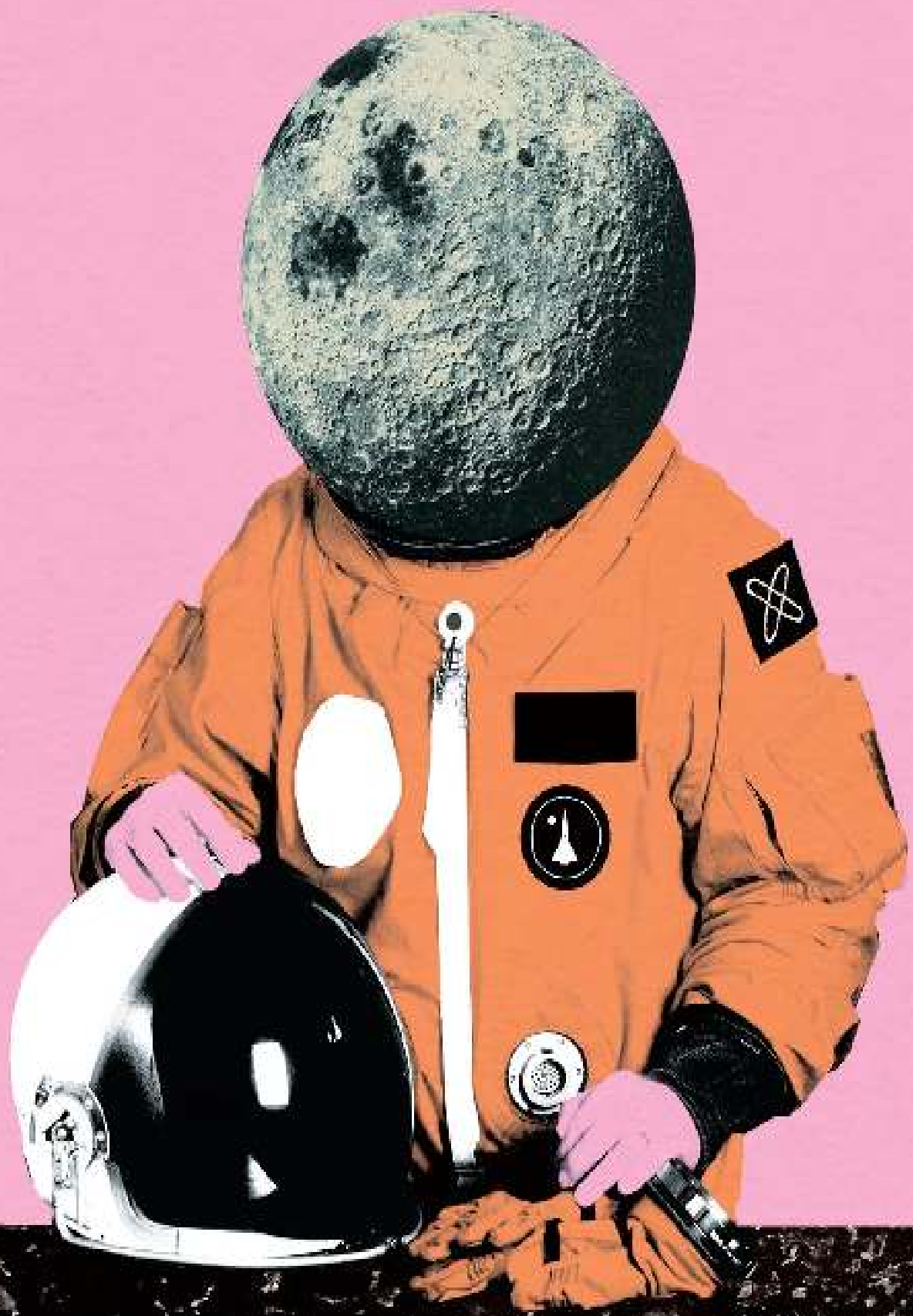
Some of the first astronauts to use the space shuttle reported experiencing mysterious headaches while in space. Lots of money and time were spent researching why. Intracranial pressure? Insufficient oxygen? No. Coffee has to be freeze-dried before being transported to space. This process reduces coffee's caffeine levels so significantly that the astronauts' headaches were actually a symptom of caffeine withdrawal.



# MOON FACE

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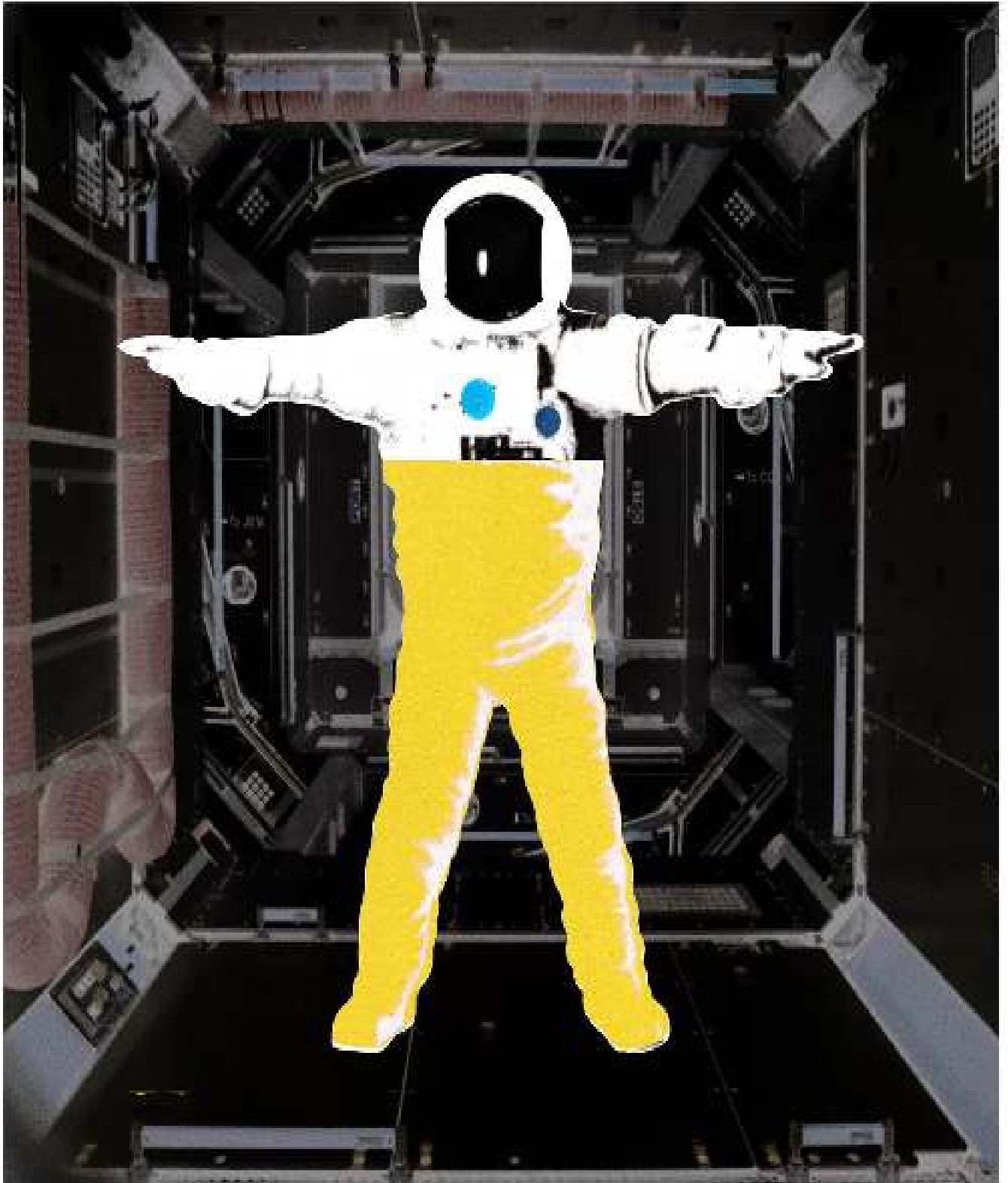
“If you ever go to space, make sure you go for longer than four days,” advises four-time space shuttle astronaut Jim Newman. Within the first few hours of being in space, you get what astronauts call “Moon Face.” Due to the lack of gravity, your body can’t keep the flow of blood as well-distributed below your head. For the first few days in space, your face becomes bloated until your body figures out how to properly distribute blood in microgravity. Generally after the fourth day your face returns to normal and you can more comfortably enjoy your space travel.



# LEAKY SUITS

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The early male astronauts often had leaky spacesuits. They would frequently complain about their urine leaking into other areas of the suit. For a while, no one could figure out what was wrong with the spacesuits. NASA eventually realized the leaking was due to the oversized condom catheters the astronauts were using. Turns out that when the astronauts were asked by doctors what size they needed, they would often ask for "large."



# URINE ICICLE

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The space shuttle used a venting system to expel astronauts' liquid waste away from it and into space. In 1984, this system broke down. A huge icicle of urine formed in space, attached to the base of the shuttle. Fearing that the icicle could do damage to the spacecraft, the astronauts had to use a robotic arm to snap it off.





# BACKWARDS DREAMS

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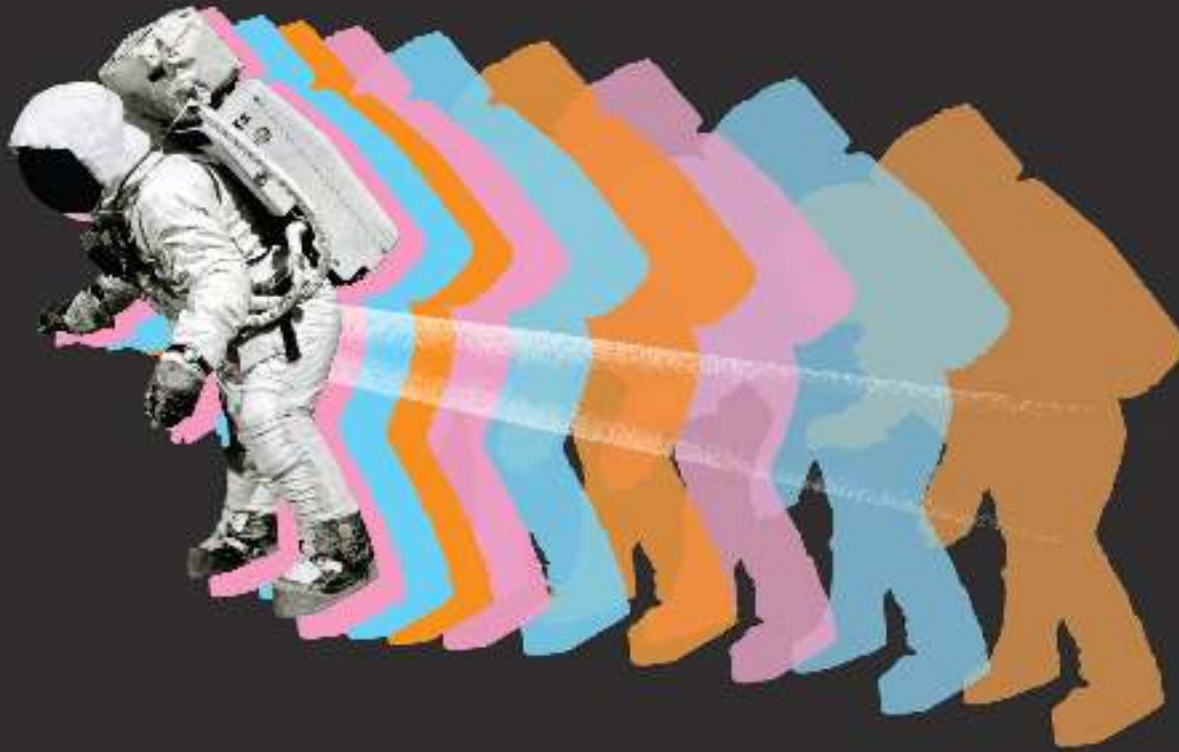
Astronauts sometimes experience “backwards dreams” while sleeping in space. “Day 52 in space. Had my first backwards dream last night—got back to Earth and gravity wasn’t normal,” tweeted Reid Wiseman during his stay on the International Space Station. After returning to Earth, Wiseman reported that he still had dreams in which Earth’s gravity was abnormal, but that they faded after a week of being back on the ground.



# FART PROPULSION

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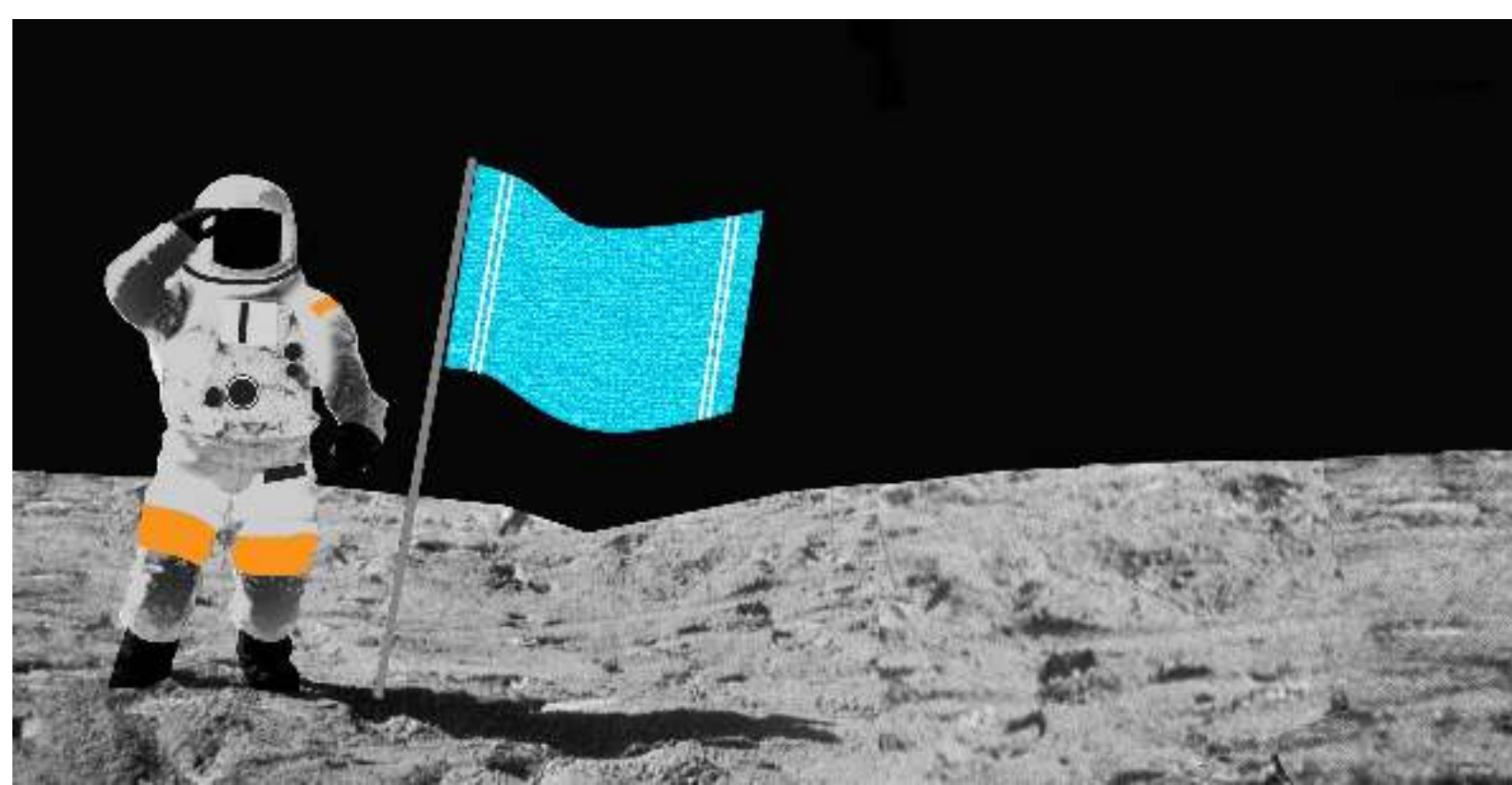
Because it's difficult to burp in space, you fart more. Astronauts have admitted to attempting to use their farts as a type of personal propulsion for getting around the space shuttle and International Space Station. Alas, though perhaps to the relief of fellow astronauts, it turns out that farts don't propel a human body in space.



# BARF BAG BOUNCE

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Vomiting in space is like a slap in the face. Literally. Without gravity, your vomit will bounce off of the sides of a barf bag and into your face. Astronauts recommend planning ahead by taking a towel with you to clean up. So *The Hitchhiker's Guide to the Galaxy* was right—a towel is indeed about the most massively useful thing an interstellar traveler can have.



# THIS IS THE MOON

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Astronauts sometimes have to remind themselves of the magnitude of what they are doing. Alan Bean, an Apollo 12 astronaut who walked on the Moon, recounted, would look down and say, 'This is the Moon, this is the Moon,' and I would look up and say, 'That's the Earth, that's the Earth,' in my head. So, it was science fiction to us even as we were doing it."



# FALLING ASLEEP

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Sleeping in space can be difficult. With no bed to lie in due to the lack of our familiar gravity, astronauts have to adapt to sleeping in midair by relaxing their muscles enough to drift off. This can be tricky in a floating environment—many space newbies attest to being jolted awake by the feeling of falling, giving new meaning to the term *falling asleep*. One Russian cosmonaut became such a pro at sleeping in space that he was often seen outside of his sleeping cabin, drifting by in a deep sleep, his body occasionally bouncing off the walls.



# STUCK MID-AIR

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The interior of the International Space Station is covered in handrails, which astronauts use to help themselves move around. To test whether it was possible to move yourself without pushing off of a wall, two astronauts who had flown up on the Space Shuttle *Endeavour* carefully positioned one of their crewmates, astronaut Nancy Currie, in a space where she couldn't reach any walls. Currie found that no matter how vigorously she moved or how hard she flapped her arms she was stuck in mid-air, unable to reach any of the walls.



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