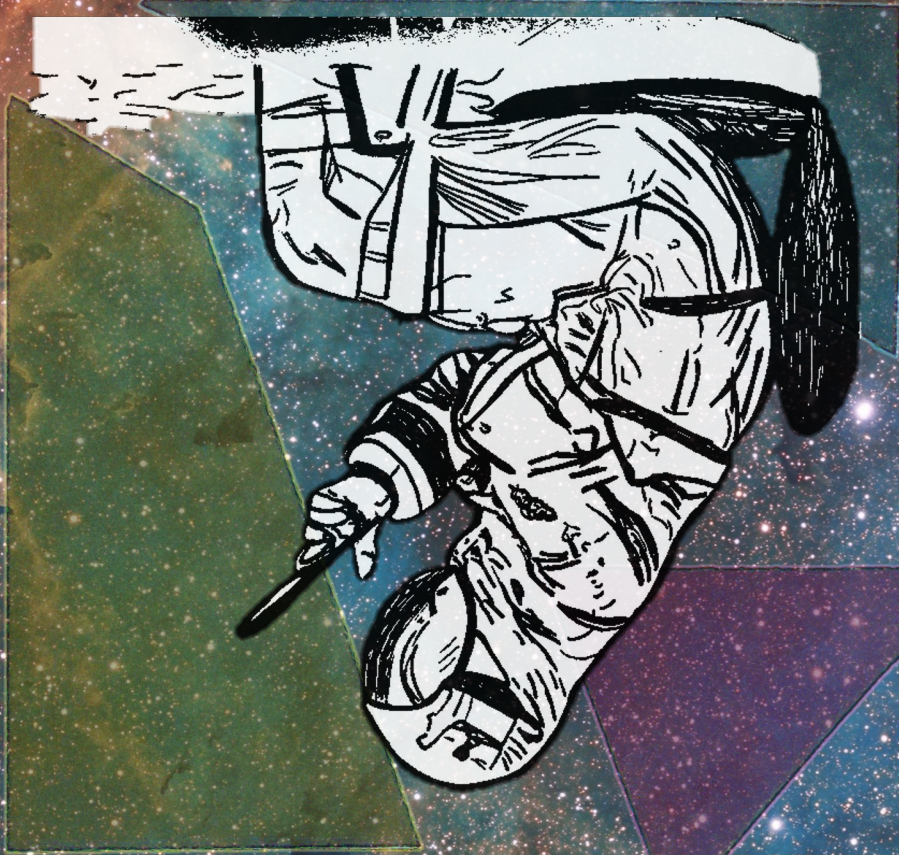


SPACE POOP



SPACE POOP

welcome to the space poop activity and
coloring zine

This zine is a collaboration between Katherine
Sammler and Daniela Craciun.



If you want to learn more about bodies, waste, and
orientation in space keep an eye out for the article:

Sammler, K. G. (2024). An intimate space:
Towards a politics of gravity, waste and the spatial
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Or link to article and zine reprints at
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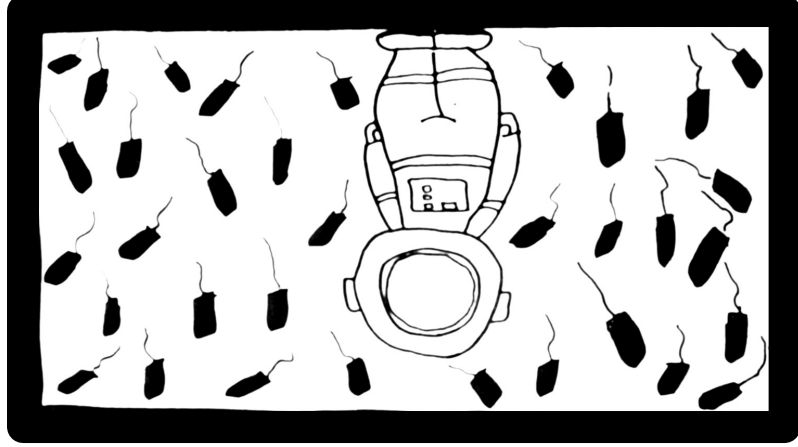
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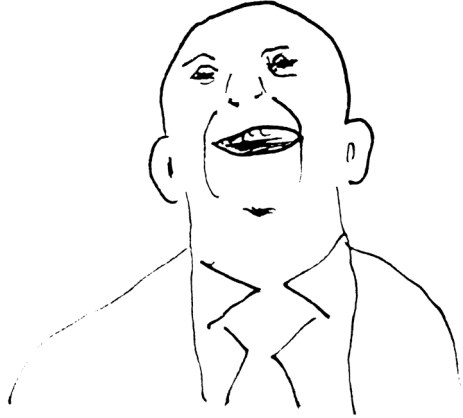
Dr. Varsha Jain, a space gynecologist working with NASA, says “scientists once surmised that period blood would flow backwards, into the body, in space,” referred to as retrograde menstruation. However, astronauts that have had a zero-G period report a normal experience, likely due to intermolecular forces.

caption this:

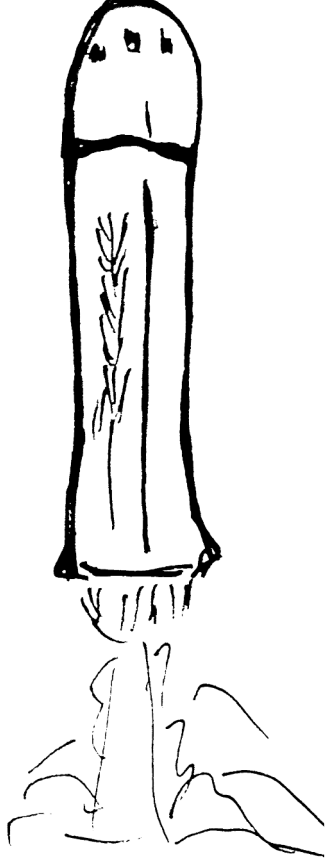


Only about 10% of astronauts are people who menstruate, and almost all of them take meds to stop periods in space. Feminist scholars argue that menstrual blood, and leaky bodies in general, pose a threat to the techno-modernist ideals of the highly engineered ISS habitat.

In space, no one can hear you fart.

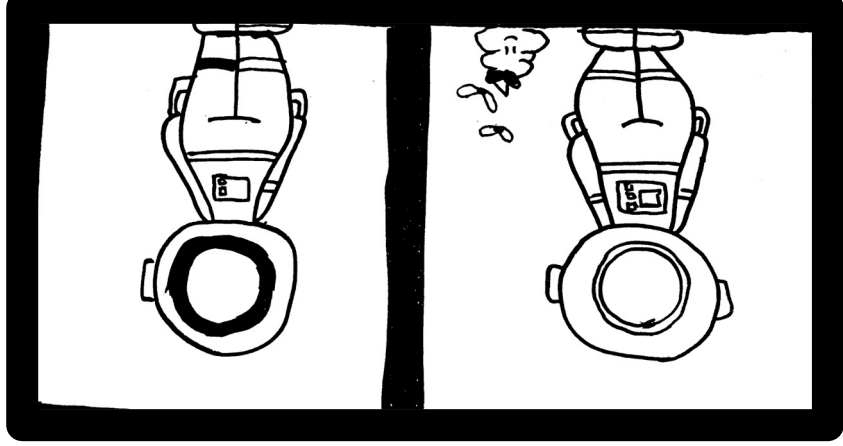


A new corporate space race is behind the rise of private space travel. Space tourism claims it will increase access to space, while the stated long-term design is the development of offworld colonies.



In space or analog habitats, a circular system for waste reuse attempts to repurpose the abject into covered resource. In "The Martian" movie, astronaut poop was added to fertilize the nutrient-poor and bacteria-vacant soil. Research is underway to recycle astronaut feces as part of a closed-loop extraterrestrial nutrient cycle.

Spot at least 5 differences



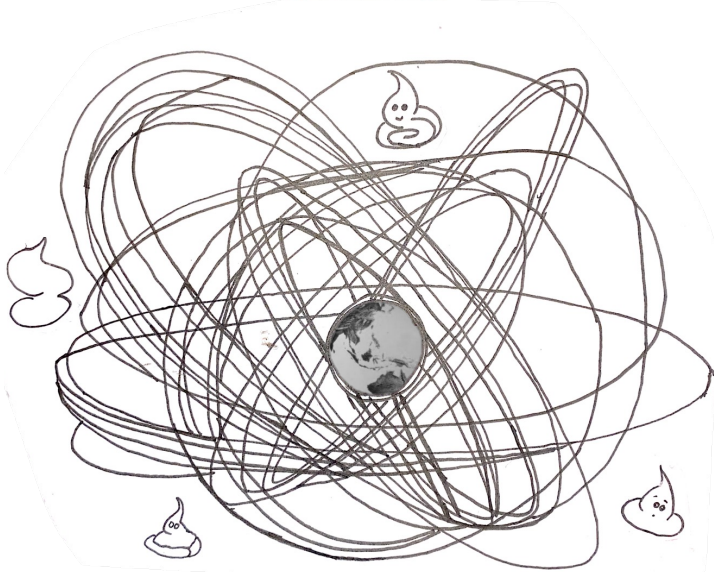
For some on Earth, an open tap or flush, and sewage systems, keeps waste flowing from private spaces into public works. These intimate bodily discharges are easily removed by public infrastructure and forgotten. Many others lack this luxury and managing waste falls to individuals or specific castes.

Tech billionaires and astrocolonial frontierist say we need a backup for humanity if an asteroid strikes, to preserve the species amidst apocalyptic narratives of planetary obsolescence.



Some tech entrepreneurs have proudly compared themselves to Columbus colonizing the "new" world. They promise a libertarian paradise, part of an extended manifest destiny and colonial practices of abandonment and escape.

The idea of our planet as a bounded sphere, with the only livable habitat in an otherwise hostile universe, was made broadly intelligible via extraplanetary photography. Yet, while Earth can be approximated as a closed system, the planet interacts with outer space. Atmospheric molecules continually escape Earth's gravity well, just as meteorites are drawn into it.

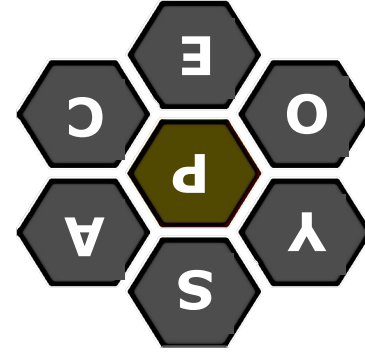


There are over 8,000 active GIS, communications, earth observation, and military satellites in orbit, extending Earthly interactions beyond its imagined atmospheric boundary.

How many words can you make with 7 letters? You must use the center letter in the word. You can use any of the letters as often as you like in the word.



Spelling Bee



Crap circles?!
I thought they were crop circles.

Cut to the crap

No. That was a hoax.

Fun Factsoids

1. Humans poop on average 100-200 g every day.
2. Elephants poop up to 100 kg per day or 40 tons per year.
3. Like human bodies, poop is mostly made of water (about 75%).
4. Neil Armstrong left four bags of poop on the moon in 1969.
5. Sloths do a weekly poop dance.
6. Wombats poop nearly 100 cubed turds each day.

In Other News

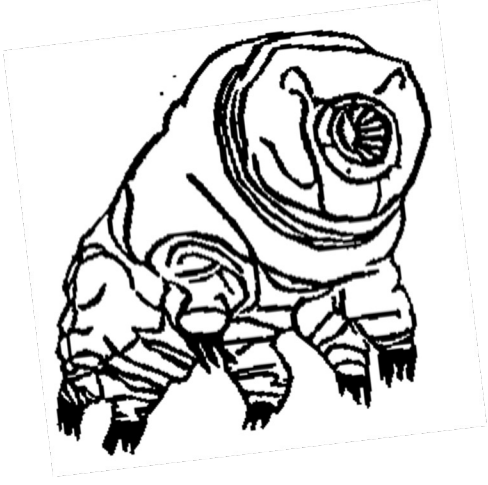
- Florida lizard dies constipated.
- Florida man arrested for pooping on dead possum during rush hour traffic.
- Florida man poops in court, flings feces at judge.
- Florida museum opened an exhibit of the world's largest collection of fossilized poop.
- Florida's poop problem is killing manatees.

Kate Samler '12



Gravity is a field that represents a fundamental relationship between physical bodies, the force experienced between two masses, as an acceleration that, for us on earth, holds in place. Conceivably, nothing is more familiar, in a bodily sense, than gravity. For the most part, we are too oriented in relation to gravity and terrestrial geomass to think much about it.

Gravity is interesting because, on the one hand it is the single most important force at the scale we navigate in our daily lives, yet it is the least understood of the four fundamental forces of nature (gravity, electromagnetic force, weak force, and strong nuclear force).

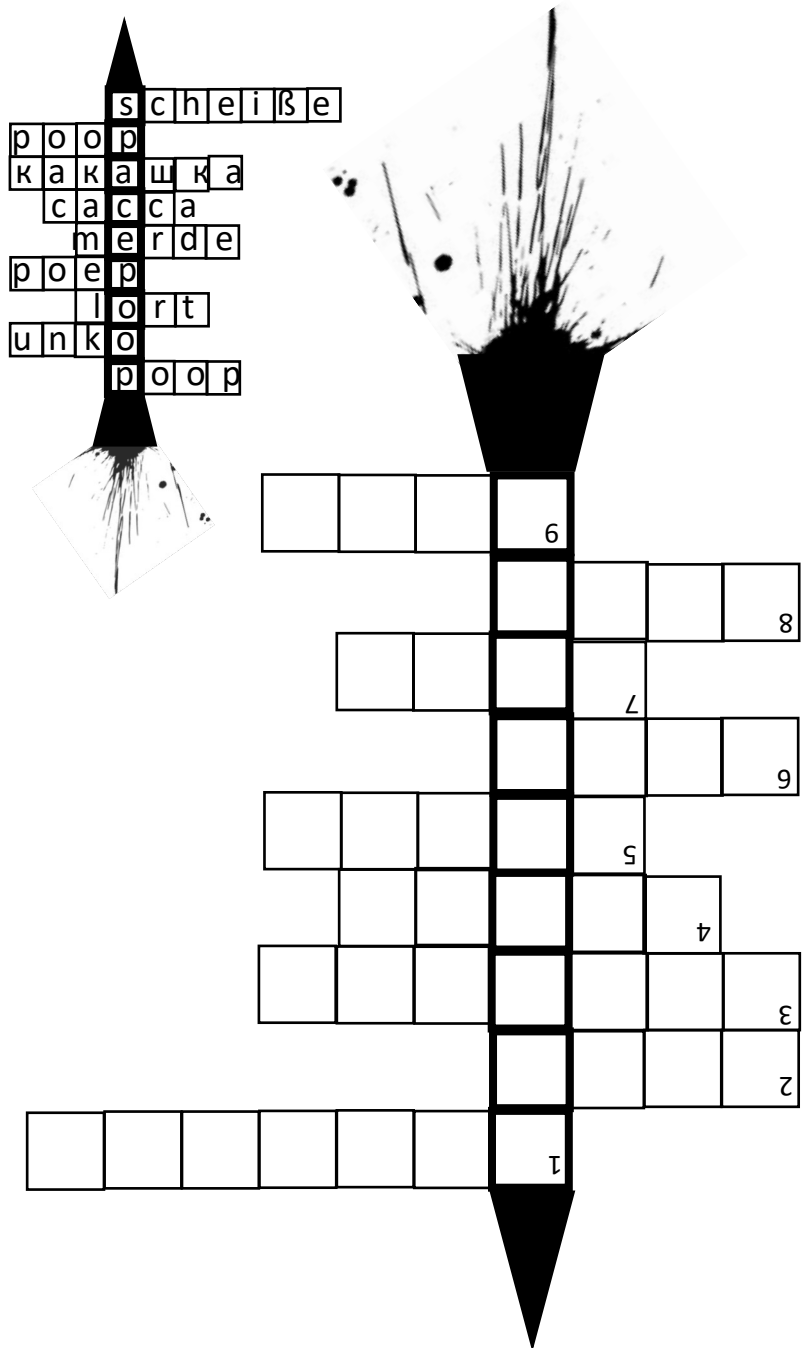


Dark matter and dark energy suggest we don't understand it at the galactic and intergalactic scales, yet it also isn't compatible at scales of quantum theory. Gravity prevents physicists from ordering the universe into a tidy unified theory, the Theory Of Everything (TOE), to describe the universe across scales of both general relativity and quantum mechanics.

International Space Stations Shits

People from 21 different nations have visited the International Space Station (ISS). Complete the crossword with the word for poop or shit in some of the languages spoken on the ISS to reveal the message in the rocket.

1. Germany
2. Canada
3. Russia
4. Italy
5. France
6. Belgium
7. Denmark
8. Japan
9. United States



An analog habitat is an enclosed space that replicates the environment necessary to support life. These enclosures are designed to emulate and encapsulate the earthly variables necessary for human survival.



Main section of the crew habitat building, one of several dome and pyramid shaped structures arranged on the Biosphere 2 facility in Oracle, Arizona.

Analogs focus on the bounding of environments, bodies, and the vital elements of life from some external conditions, as well as from each other. An analog may be of various scales, from an individual space suit to more expansive building-sized, multi-inhabitant dome complexes.



NASA plans to colonize the Moon on the way to Mars. This requires longer spacewalks and extra-vehicular activities. They are planning how to manage bodily functions in space suits and habitats to perfect the subject-body of the colonizer. NASA asked for the public's help, launching the Space Poop Challenge in 2016 and the Lunar Loo Challenge in 2020. For suit design, the goal is to manage human waste at and near the body.

Fecal Popcorn on Apollo 10

LMP Cernan: Where did that come from?

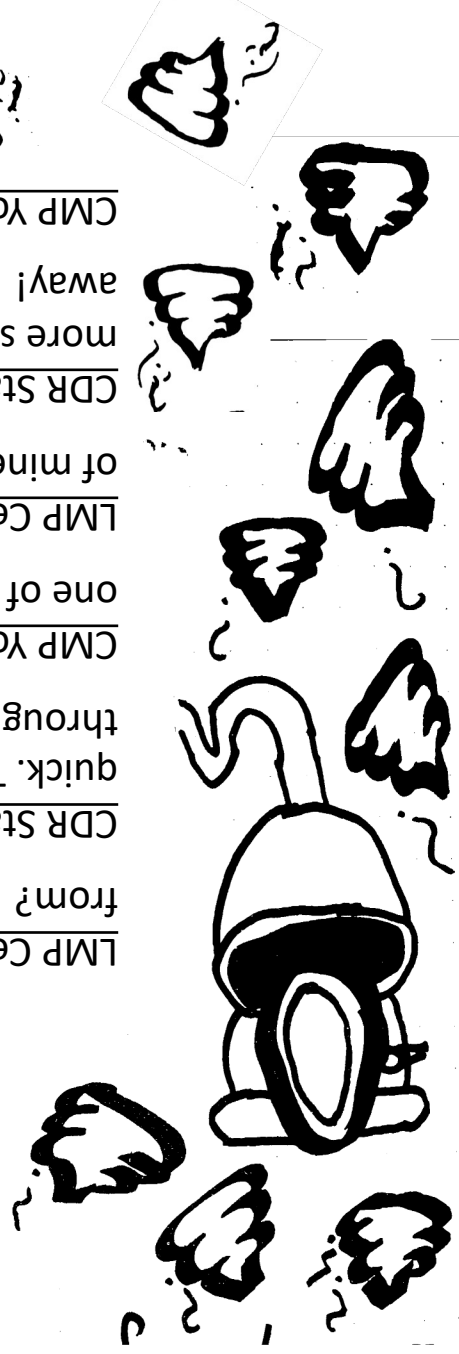
CDR Stafford: Give me a napkin quick. There's a turd floating through the air.

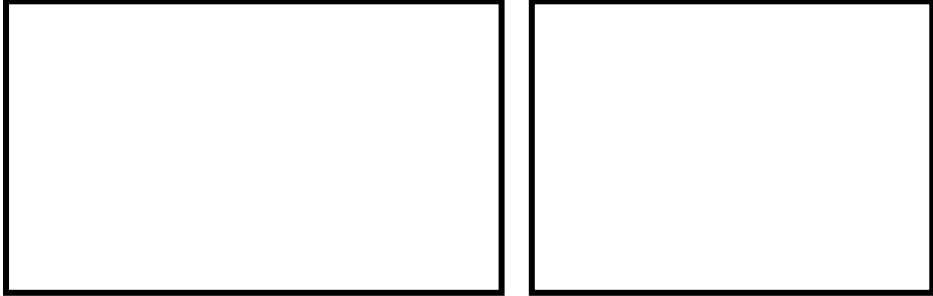
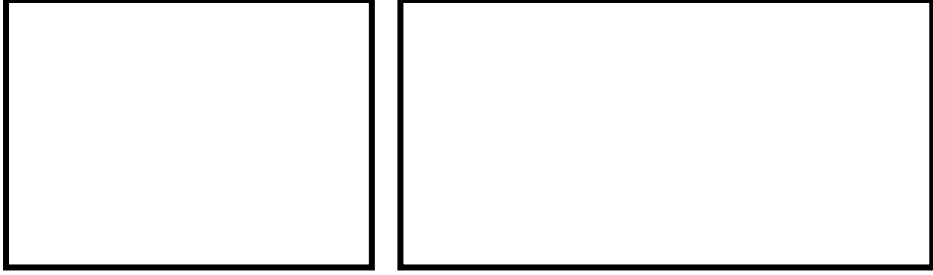
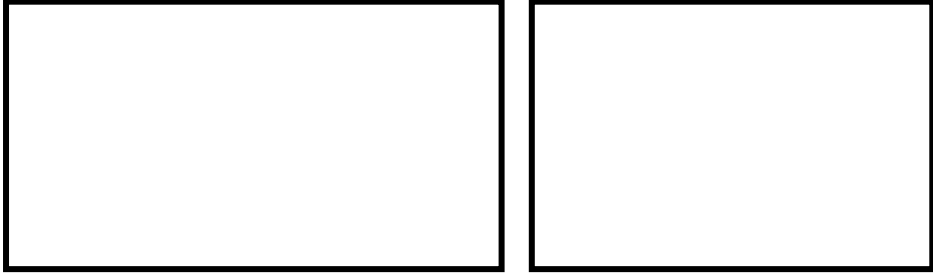
CMP Young: I didn't do it. It ain't one of mine.

LMP Cernan: I don't think it's one of mine.

CDR Stafford: Mine was a little more sticky than that. Throw that away!

CMP Young: God almighty!





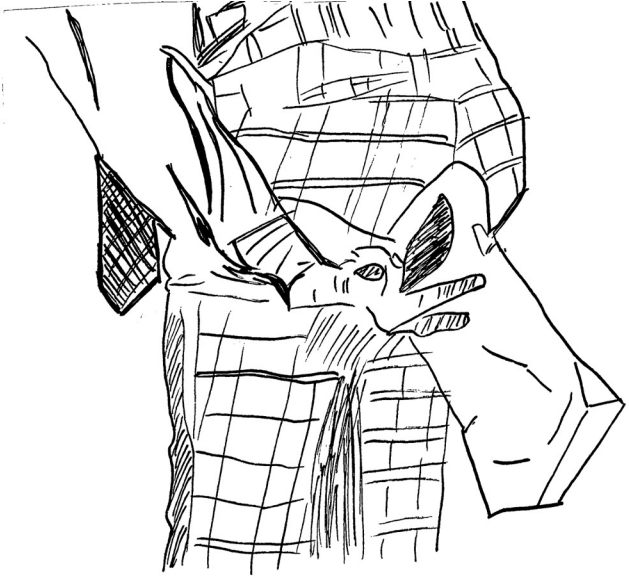
Draw your own Apollo space poop comic

Tears and other bodily fluids, in zero-g, cling to the body. “If you vomit in your space helmet during a spacewalk...It just floats right there and you have no way of getting it away from your nose and mouth so that you can breathe” (Roach 2011, 117).



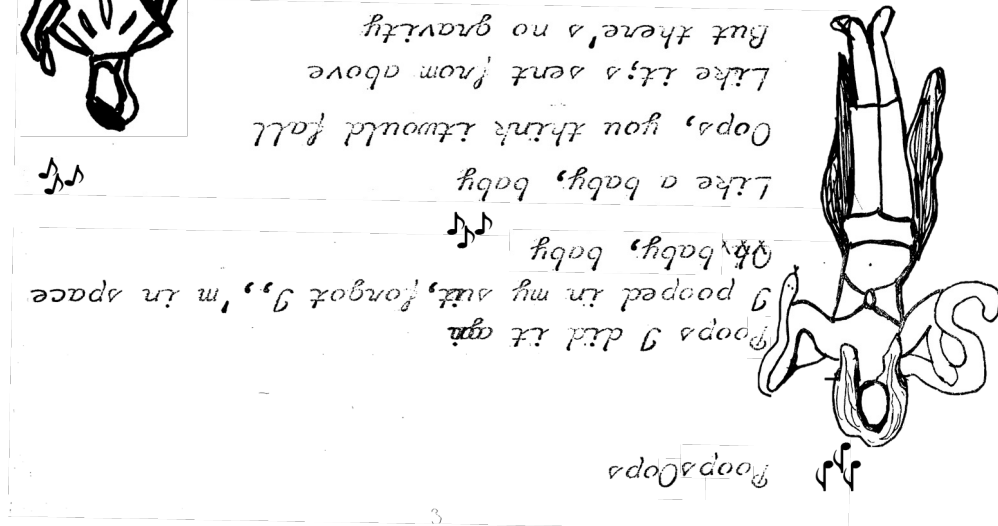
Human waste becomes a challenge, ranging from merely inconvenient to potentially deadly. Bodies in space do not feel the sensation of needing to urinate. Astronauts use a timer to avoid needing emergency urinary catheterization.

Beyond fluid excretions, solid waste disposal must also be carefully engineered. 1960's Gemini and Apollo missions, used an adhesive bag placed around the anus. The act of "separation" of solids in weightlessness is an issue, "fecal matter never become heavy enough to break away and drop down" (Roach 2011, 271). So the fecal bag has a place to insert fingers to use in a scissoring motion.



Apollo-era fecal containment device, defecation bag with finger cots to help with separation.

Space toilets have had issues holding onto waste after 'disconnect', leading to "free floating fecal material" or "escapees." The return of some turds back from the frozen storage tank is called "fecal popcorning" (Roach 2011). Pop, pop, pop!



poops I did it again
I pooped in my suit, forgot I, 'm in space
Oh baby, baby

Like a baby, baby

Oops, you think it would fall
Like it, I sent from above
But there's no gravity

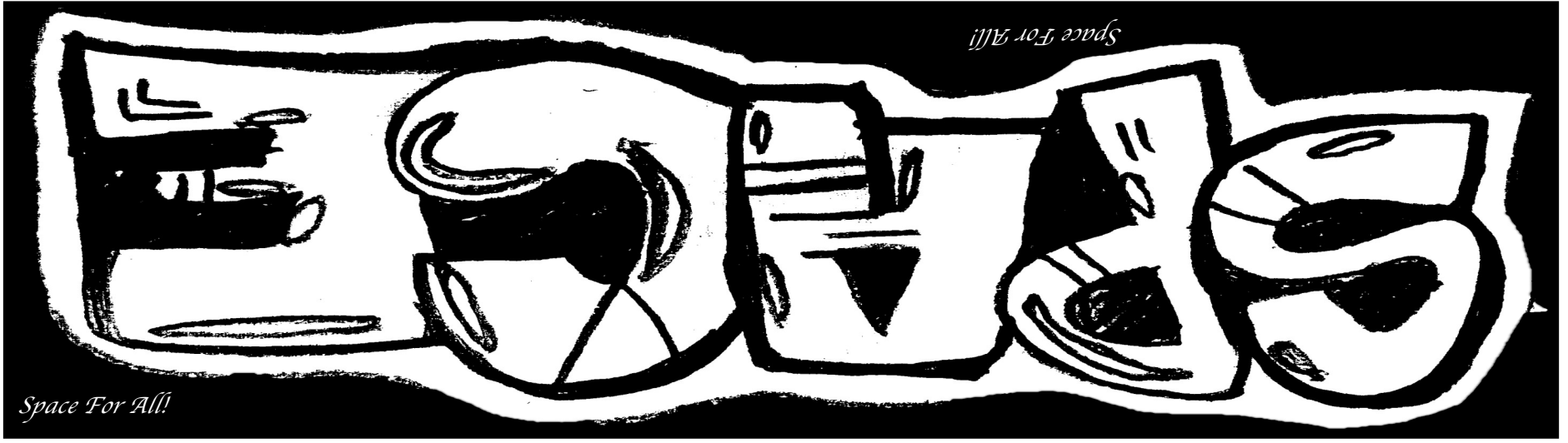


Petrified spacepoop
All aboard
Britney, before you go, there's something I
want you to have

Oh, it's beautiful, but wait a minute, isn't this?
Yeah, yes it is coprolite
But I thought you dropped it in space in the end
Well baby, it floated so I got it for you
Aw, you shouldn't have.

We can think beyond the modernist myth of a closed system, from self-enclosed autonomous entities towards a deeply embodied experience of our materiality, to repudiate imperial capitalist narratives of planetary *wasting*.

An orientation towards Earth connects the deeply entangled relations of fleshy bodies and planetary bodies, biomass and geomas.



The force and politics of gravitational relations is not experienced evenly but is enmeshed with power hierarchies as a field that produces both possibilities and constraints.

Queer, disabled, and feminist theories consider relationships between bodies and their environment, examining notions around the integrity of the body and the transgressive potential of hybridity, porosity, and cyborgism.