

PLANETARY PROBLEMS



zine: a self-published repository of concepts,
art, and ideas.

... this one is the living room of our minds



“Advice? I don’t have advice. Stop aspiring and start writing. If you’re writing, you’re a writer. Write like you’re a goddamn death row inmate and the governor is out of the country and there’s no chance for a pardon. Write like you’re clinging to the edge of a cliff, white knuckles, on your last breath, and you’ve got just one last thing to say, like you’re a bird flying over us and you can see everything, and please, for God’s sake, tell us something that will save us from ourselves. Take a deep breath and tell us your deepest, darkest secret, so we can wipe our brow and know that we’re not alone. Write like you have a message from the king. Or don’t. Who knows, maybe you’re one of the lucky ones who doesn’t have to.”

Alan Watts



SCI-FI REVIEW OF THE QUARTER

movie reviews by our favorite Sci-Fi nerd, Joey Chiappellone

Z A R D O Z

Year: 1974

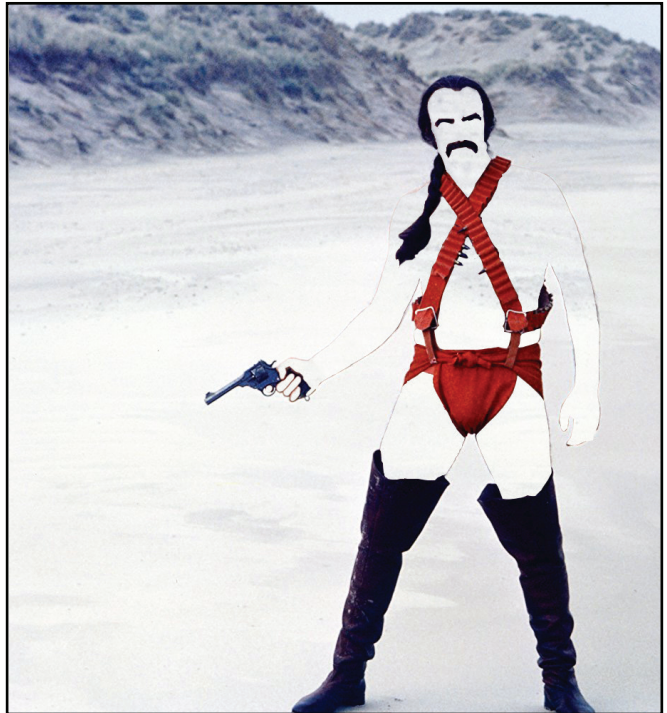
Director: John Boorman

For those that are not a part of the cult following (I assume most of you), Zardoz is an absolute must see for the obscure cinema fan.



QR Code:

- (1) Open Camera
- (2) Center this QR in the frame
- (3) Click on notification to open the trailer to ZARDOZ



“Beyond 1984, Beyond 2001, Beyond Love, Beyond Death”. Not only on the film’s poster, this quote is flashed across the screen, and is an accurate foreshadow of how effing confusing yet simple the entire film is. Fresh off the success of Deliverance, Boorman takes the viewers on a dystopian journey of Zed (Connery). A man who is on a quest to learn more about the barbaric world he lives in. Not convinced that the floating, stone-head deity (known as Zardoz) really has his best interest when delivering it’s message, which is usually, “The gun is good. The penis is evil...”

Zed is part of an inferior community of mortals, known as “Brutals”. Within the population of Brutals, there is a splinter group known as “ Brutal Extermina-

tors" who use the non-futuristic guns to kill their fellow man. After sneaking on to Zardoz, he wanders his way through, what appears to be, an Andy Warhol art exhibit, only to find the answers he so desperately needed to know. After temporarily killing one of the mortals on the ship, he is captured, and enslaved by the "Eternals". The Eternals are a race of people who control the stone head as a way to control the masses. Through a series of events he gains the trust of some of the Eternals and they begin to let him in to their world of knowledge.



And if you're thinking it sounds a bit similar to the Wizard of Oz ... but Zardoz sounds too much like The Wizard of Oz ... so there must be something else going on with the name Zardoz ... unfortunately you are terribly mistaken. The underwhelming twist occurs when Zed comes across the aforementioned novel in the library of the Eternals. It is a almost endearing in how easy it was for Zed to discover this.



Here, you try:

Put your left thumb over the letter "W" and "I". Now put your right thumb over the word "of"

WIZARD OF OZ

Yup, that's it. And if you're disappointed at the simplicity of it, considering Boorman had just directed 'Deliverance', don't fret because everyone else was too. The psychedelic joy ride Boorman and Connery take you on is hilarious and most-likely drug fueled, considering the bohemian lifestyles of the time, along with the wardrobe, script, and set decoration.

Boorman chose to have a narrator named Arthur Frayn at the beginning and end of the movie, similar to a Shakespeare play; however the message that Arthur Frayn delivers is awkward and holds little importance to the already self explanatory plot. Their attempt at a big budget arthouse movie falls flat with filler scenes of Connery chasing himself in a mirror filled room, Connery shooting his pistol into the audience's point of view, and a the poorly done rendition of a "haves vs have nots" storyline.

To be fair, many futuristic/ sci-fi movies from that time don't hold up because of the technology enhancements, but Zardoz can't necessarily fall into that cate-

gory of bad. In actuality, the special effects are pretty good. Better considering the minimal options of that era. It's not a good movie because of everything else. It might have gotten a pass if the director had not done anything significant before, but John Boorman had, along with Connery. The thing that gets me is, it's a fun movie. I'll probably watch again, and I suggest you do the same.



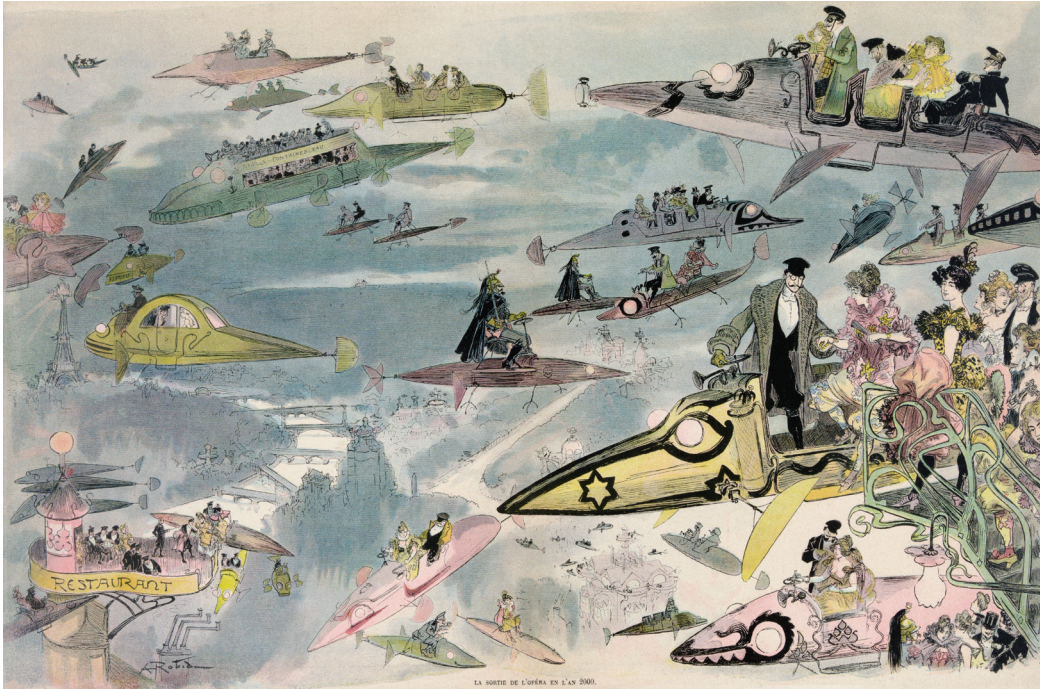
This last QR code is for me.
-Joey

Joey Chiappellone is a sarcastic, yet beautiful, man in the film industry in New Orleans.

Sortie de l'opera en l'an 2000

(Translation: Release of the Opera in the Year 2000)

Albert Robida (1848-1926)



Albert Robida's *Sortie de l'opera en l'an 2000* is an early idea of air travel after leaving the opera in the year 2000. The print (of which there is only 1 in which he hand colored) depicts flight over Paris in limousines, police mobiles and, very progressively, women driving their own space cars.

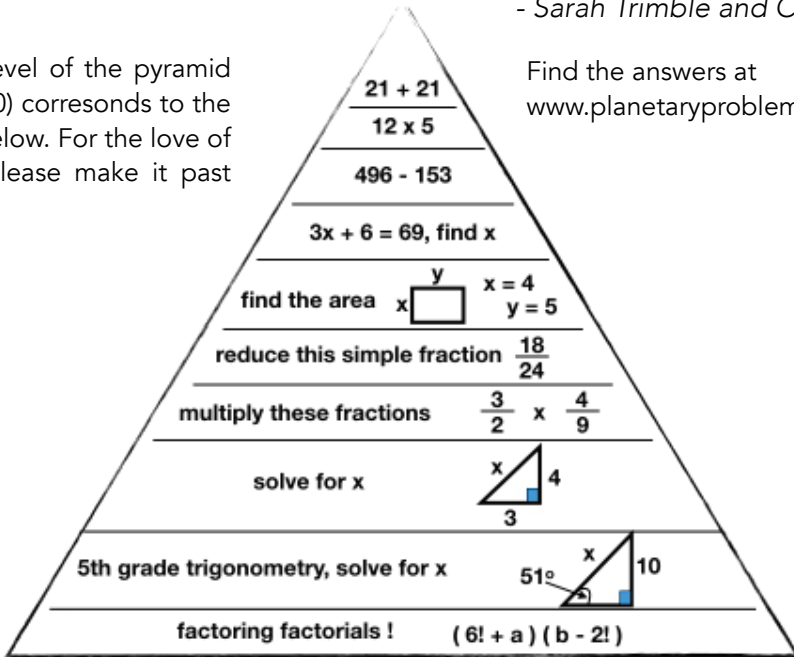
The Pyramid of Arithmetic Doom

Take the test and either feel brilliant or like an idiot.

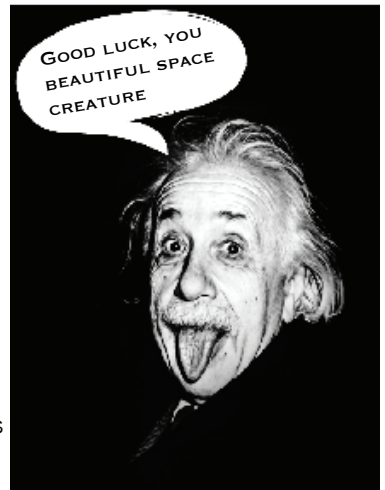
- Sarah Trimble and C. Swann

Each level of the pyramid (1 to 10) corresponds to the tiers below. For the love of god, please make it past #1.

Find the answers at www.planetaryproblems.com.



1. Burn this magazine and never pick one up again.
2. We can't be friends.
3. Only your mother would console you for this loss.
4. Congrats, you're not an idiot!
5. Okay, we can be friends.
6. I'd take you on a date.
7. Did you just cheat by using your phone to remind you of what to do with fractions? If not, I think I love you.
8. Pythagoras would be proud - a proud pop looking down from the stars at you... one of the lone nerds that actually remembered his theorem.
9. I just wanna kiss your face, you brilliant bag of bones!
10. I can't believe you actually took the time to do this one. You must be a math teacher. ...why did you teach us factorials? You told me when I was a young lass that I would actually need this in my life... well, you were wrong.



Landscapes in Space: Mars

We thought Mars was dead.

by **C. Swann**

The resolution of our cameras on the satellites orbiting Mars were too coarse to show us active dune fields, evidence of dust devils, and gully erosion. Now, we can get to ~25 cm scale resolution - and we have discovered evidence that Mars is indeed not dead, but very alive.

Prior to about 4.2 billion years ago, Mars' magnetic field deflected solar winds from slowly eating away Mars' atmosphere. Many scientists think the atmosphere was once thick enough to support large oceans. If you look at a topographic map of Mars, you can see that the southern half of the planet is much higher than the northern half and has significantly fewer impact craters. Obviously, meteors did not preferentially attack the south in some colonial space north-south imperialism. Rather, it is thought that the southern portion of the planet had an ocean that absorbed the impact of meteors or that massive outflow channels from the drastic elevation difference between



Image Credit: NASA/JPL-Caltech/U. Arizona

Image: A barchan dunes on Mars. The horns point downwind so these tell us the dominant wind direction wherever we find them. Barchans actively migrate on Mars, in a silent dance to nowhere.

Landscapes in Space: Mars

the north and south deposited astronomical amounts of sediment which partially buried northern hemisphere craters. Either way, and like all things in the cosmos, things change over time. The thicker atmosphere capable of supporting large oceans did not stay very long on Mars, and today we see a very different planetary landscape.

Mars' iron core cooled and its magnetic field weakened. Its atmosphere was then subjected to the persistent onslaught of solar winds. Magnetic fields protect atmospheres from the mindless destruction from solar winds, charged particles emanating from the Sun. We should give our atmosphere more credit - otherwise, we would be much more worried about fire raining from the sky in a never-ending battle against asteroids, comets and meteors that are flying silently through space at ungodly speeds in suicidal bliss towards any planetary body that will attract it. Ultimately, some impossible-to-comprehend number of years ago (4.2 to 3.7 billion to be relatively precise), Mars' atmosphere lost the battle to solar winds and things started going downhill.

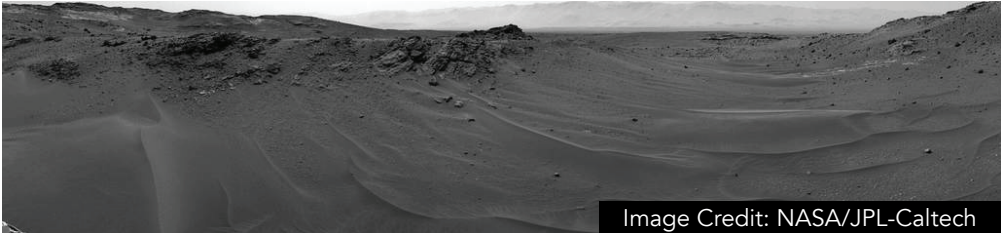


Image Credit: NASA/JPL-Caltech

Image: A photo taken by the Curiosity rover on its way to Mount Sharp. A sandy valley floor is shown with dust and sand covered lithified outcrops.

At present, the atmospheric pressure at the surface is only 5 to 10 millibars while Earth's is just over 1000 millibars. The gravity is $\sim 1/3$ of Earth's. It takes 687 days (or \sim sols) to make one lap around the dopest stars in the universe, the Sun, and a typical day on Mars lasts 24 hours and 34 minutes. Surprisingly many of these estimates were figured out prior to telescopes.

Tycho Brahe made the first, and pretty damn accurate, calculations of the orbit of Mars ...with just his eyes, an epic mustache and a fake nose. He was the last of the great astronomy-smitten minds prior to the telescope. The fake nose part is true... this Mars-smitten astronomer, alchemist lost his nose in a sword duel with his third cousin after they got drunk at bar over who was

Landscapes in Space: Mars



Image Credit: NASA/JPL-Caltech/U. Arizona

Image: An image taken by HiRISE of wind-blown basalt sand moving over a sedimentary structure in Ganges Chasma, a large canyon in Valles Marineris.

the greater mathematician. So back in the 1500's bar fights were not only way more nerdy, but real intense they broke out effing swords!

Anywho, I digress. Landscapes are active on present-day Mars and we have been employing robots to roam the surface to collect rock samples, measure wind speeds, take high resolution images of sedimentary outcrops, and ultimately look for clues that indicate life on Mars. Mars' landscape is diverse - we find barchan dunes, yardangs (wind sculpted sedimentary structures), canyons far larger than our great one, deltas, volcanoes, polar ice caps comprised of dry ice, and mostly a dust covered landscape.

NASA is planning to send a suite of humans to the surface in the next 20 years. We aren't built for Mars, but we are built to push our limits. There is a burning desire in humans to continue exploring, and I am eager to watch us set sail into the seemingly untethered realm of space. Why not start with Mars?

Cheers - you beautiful space creatures,
Swann

FRANKENSTEIN

Our quarterly sc-fi book review by the strikingly cool, Bill Reich

We should regard Frankenstein as an early, if not the first, modern science fiction novel. Though critics did not name the genre as science fiction until well into the twentieth century, such speculative fiction works had existed throughout the nineteenth and early twentieth centuries (Jules Verne, Edgar Allan Poe, H. G. Wells). Beginning with Frankenstein, such stories strove to be plausible in addition to providing adventure and intellectual excitement. Written two hundred years ago, Shelley's novel is an example of gothic romanticism, a style based on notions of ancient evil, questioning religious authority, divine retribution, perverse sexuality, power, and the need for appropriate action to reestablish order. Layered over her tale of speculative fiction, Shelley sought to create a romantic story of emotion, and of human souls caught in torment, a condition with which she was familiar having experience the deaths of both her mother and young son.

In Frankenstein, Shelley produces a novel of high adventure, giving life to a creature who gets loose and wreaks havoc. She provokes intellectual excitement, questioning what would it be like to conquer death? what is the nature of the relationship between creator and creation? How does the unquestioning application of science and technology affect the fabric of society and community? Such questions echo down into the present as we as a society ponder the implications of genetic modification of the human genome and artificial intelligence.

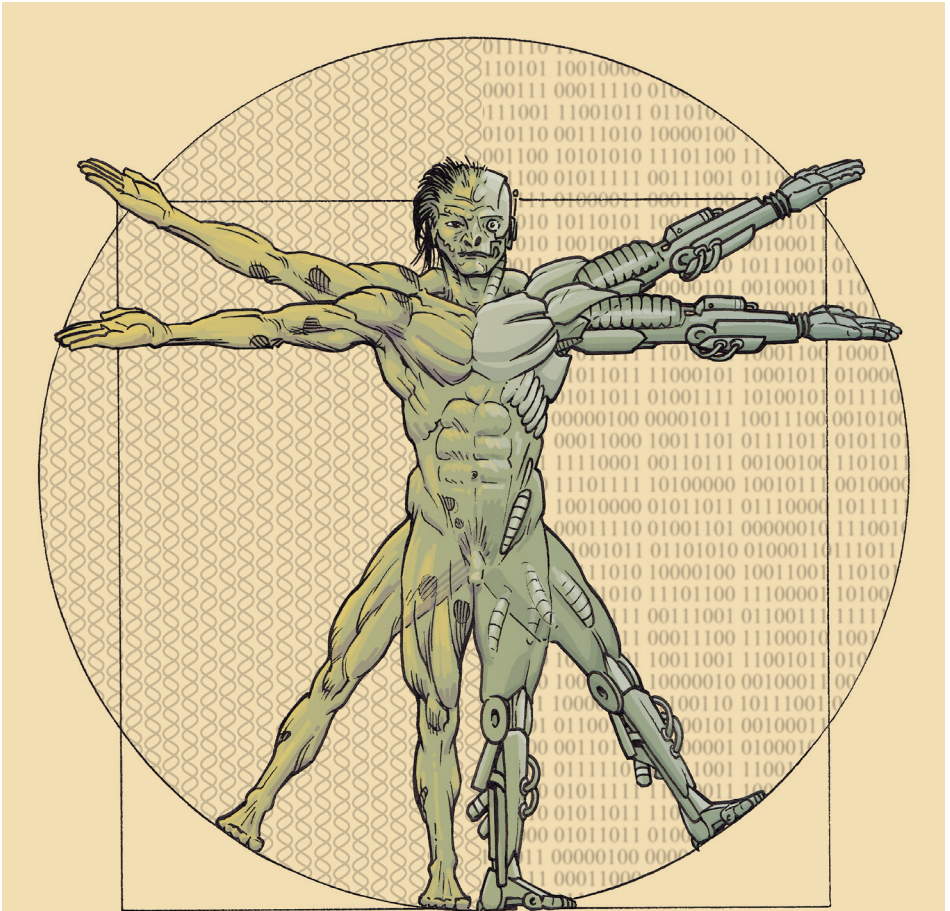
Shelley's sources for Frankenstein which helped create this romantic overlay were varied and ranged from biblical texts to the Greek classics and other works. Sophocles' classic drama of conflict, Oedipus now often thought of in exclusively sexual terms, tells of the problematic nature of knowledge and the intergenerational passage of power. Such passage of power is an archetypal story of science fiction and was a clear source of inspiration. A third source is the Prometheus myth, where the gods punish Prometheus with eternal torture for giving fire to humankind. Similarly, Shelley's Victor Frankenstein feels eternally tormented by guilt for inserting his creature into the world. In turn, the creature himself is wracked with the pain of isolation, demanding that Victor create another creature for him as a mate.

Shelley never gives Victor Frankenstein's creation a name, referring to Vic-

tor's creation as "monster," "miserable creature," "wretch," or "fiend." In spite of such depictions, the creature is the most articulate character in the book, which also may shock those familiar with the movie depictions of Victor Frankenstein's creation as a shuffling, grunting, inarticulate who can barely get out the pronouncement, "Fire bad!"

Victor's creation is clearly visually disturbing and malformed. Society rejects and attacks him for being superficially ugly. The creature even disgusts Victor, his creator. That the creature feels the intense pain of its isolation is clear in Mary Shelley's choice of epigraph for her novel, which she takes from John Milton's epic poem, *Paradise Lost*. Shelley selects lines spoken by that poem's protagonist, Satan:

*"Did I request thee, Maker, from my clay
To mold me Man, did I solicit thee
From darkness to promote me?"*



The experience of Victor Frankenstein's creation is that of modern humanity — with the message that a thirst for power and isolation lead us to evil. In the end, Victor halts his efforts to create a mate for the creature, out of fear that such a union would produce a race that would supplant humanity. His creation is larger, stronger, and can survive in more extreme temperatures and conditions, while eating only the most meager of vegetarian diets. The creature ultimately kills Victor's young brother, William (which was incidentally the name of Mary and Percy Shelley's son who died as she was writing the novel), and later kills Victor's wife Elizabeth on the night of their wedding as an act of revenge for Victor failing to follow through on his creation's request for a mate.

Ever the tormented protagonist, Victor is complicit in William's murder for allowing Justine, the family servant, to hang for the death of William based on the flimsy evidence that his locket was discovered in her pocket, even though he knows she is innocent. Victor is silent to cover his complicity in creating the real murderer, becoming a monster himself. Society's rejection of the creature and his isolation from any sort of community has made him a killer. At this point, as the servant hangs for a crime she did not commit, the reader might ask who is guilty, who is the real monster. Isn't Victor as guilty as his creation for the loss of innocent life?

Like the murky questions raised in her novel, Shelley's story has an indeterminate ending. After Victor dies the monster goes off, alive, promising to commit suicide so that no one would ever learn of his miserable experience. The reader never learns what really happens to the creature as the polar explorer ends the story without divulging the creature's fate. Such indeterminate endings are characteristic of the genre science fiction which encourages expansive imagination in its audience.

GOD IS AN
ASTRONAUT





A Conversation with Dr. Liz Rampe

A NASA scientist that sends code to Curiosity

I met up with Dr. Liz Rampe, a planetary scientist in the Astromaterials Research Exploration Science Division at the Johnson Space Center. We were hanging out at the annual American Geophysical Union meeting... a space where earth and planetary scientists present their latest reserach, think of new ideas to explore, and, well, go to happy hour where nerdery-science talk is welcome. Liz and I shared some mimosas and she gave me the low down and dirty (pun very much intended) on *Curiosity*... another lonely bot working to answer our science questions on Mars. Liz's work on Mars is well-known in the planetary science community, and she happens to be in "space-love", i.e. married to, Dr. Ryan Ewing, a colleague of mine that spends his time interpreting dunes and rock records on Mars when he isn't making homemade pizzas with Liz. Here is an excerpt from our mimosa session where we nerded out over the mission to find water and life on Mars.

Bachelor's: Colgate University

PhD: Arizona State University

Occupation:
Exploration Mission Scientist at NASA

Specialty:
Geology, Mineralogy, Geochemistry, A Friend of *Curiosity*



Swann: So, how does *Curiosity* help you identify rocks on Mars?

Liz: Well, all minerals have a 3 dimensional crystalline structure that is made up of a known array of atomic planes. *Curiosity* uses x-ray diffraction to basically shoot a beam of x-rays through collected samples. The x-rays bounce off the atomic planes (which are arrays of atoms in different configurations) at specific angles. The angle in which the x-ray is diffracted, tells us about the

mineralogical structure of the crystal. Every mineral has a distinct crystalline structure and you can use this method to identify the mineralogy.

Swann: Why does NASA care about the mineralogies on Mars? What's the main point?

Liz: These crystalline structures tell us something about how rocks were formed, i.e., the history of that rock. In an igneous rock, it can tell us about the magma in which it was formed. For a metamorphic rock, it can tell us about the temperature and pressure that rock experienced during its formation. For the sedimentary rocks that we are studying on Mars, it can tell you about the water-rock interactions. Specifically, we are interested in the cements that might be holding grains together. The minerals that form by water-rock interactions really give you a good idea of what the history of water was like when those sediments were lithifying to become a rock.

Swann: Okay, so you have mentioned water a lot. Which is a big question in Martian science. Have we found signatures that indicate water was or is on Mars?

Liz: Yes! Some minerals definitely need water to form. Some minerals are hydrated, so they actually have water or OH in their structures. Particulates



Image Credit: NASA/JPL-Caltech/MSSS

like clay minerals indicate the formation of water. Salts suggests there would have been salty water. There are some minerals that warm at specific pHs which can give us more clues about water on Mars. For example, a zeolite, would indicate a more alkaline water. But if you found something like jarosite, which is a potassium-iron sulfate, that signifies an acidic or low pH. So, there are indicator minerals that we look for in these rocks to tell us what the past water was like. Many of the rocks that we are studying with *Curiosity* are sedimentary and deposited in water. We see lake deposits, river and stream deposits, and...

Swann: Wait a second, sorry to interrupt, but did I miss something? You mean, water.... on Mars?

Liz: Yeah

Swann: Like, how certain are you?

Liz: 100%, 110%, 300% - the most certain I can be! In addition to the mineralogy, we find very fine-grained mudstone – less than 63 microns. We find them finely laminated which means they are deposited in millimeter, or sub-millimeter, scale layers. There are only a few ways that you can create mudstones like this. For the most part, they are formed in these, low energy, lake environments where particles slowly settle over long periods of time.

Swann: So - there were lakes on Mars? Lakes of what?

Liz: Yes, lakes existed on Mars about 3.5 billion years ago. The only type of lake that would make sense to me is one made of water. I think Mars was likely similar to Earth about 4.2 billion years ago.

Swann: Liz, you're blowing my mind! So, if there was water, I wonder if there was enough time for life to evolve.

Liz: We are working on it. It is the question that everyone is asking. ■

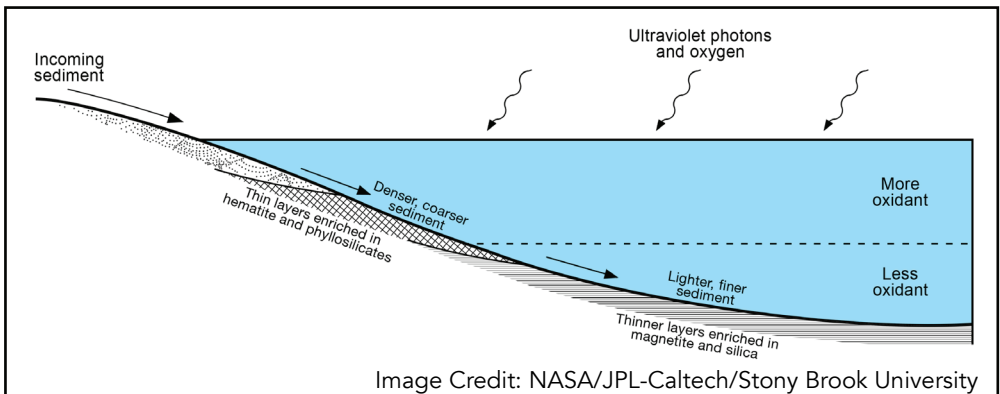


Image Credit: NASA/JPL-Caltech/Stony Brook University

EARTH:

EVIDENCE OF
LIFE ON MARS
CONFIRMED!



SOMETHING ABOUT THAT FELT
VERY DIFFERENT, WE'VE NEVER SEEN
COMPOUNDS LIKE THAT BEFORE ON MARS.

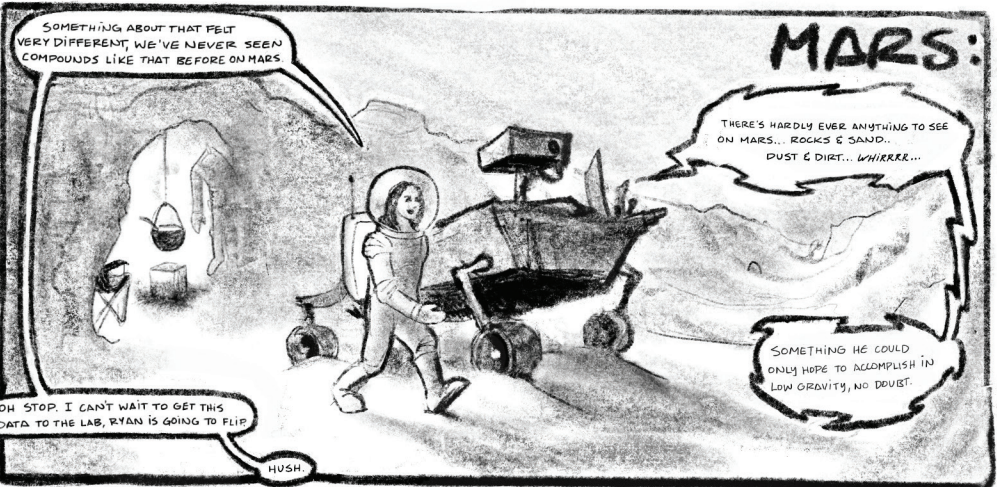
MARS:

THERE'S HARDLY EVER ANYTHING TO SEE
ON MARS... ROCKS & SAND...
DUST & DIRT... WHIRRR...

SOMETHING HE COULD
ONLY HOPE TO ACCOMPLISH IN
LOW GRAVITY, NO DOUBT.

OH STOP, I CAN'T WAIT TO GET THIS
DATA TO THE LAB, RYAN IS GOING TO FLIP

HUSH



LIZ & CURIOSITY BEGIN THEIR TREK BACK TO HEADQUARTERS, THE SANGUIN
SANDS OF MARS STRETCHING BARREN & BARE ABOUT THEM...

CAN YOU IMAGINE THE
POSSIBILITIES? LIFE? ON MARS??
THIS IS WHAT WE CAME FOR!

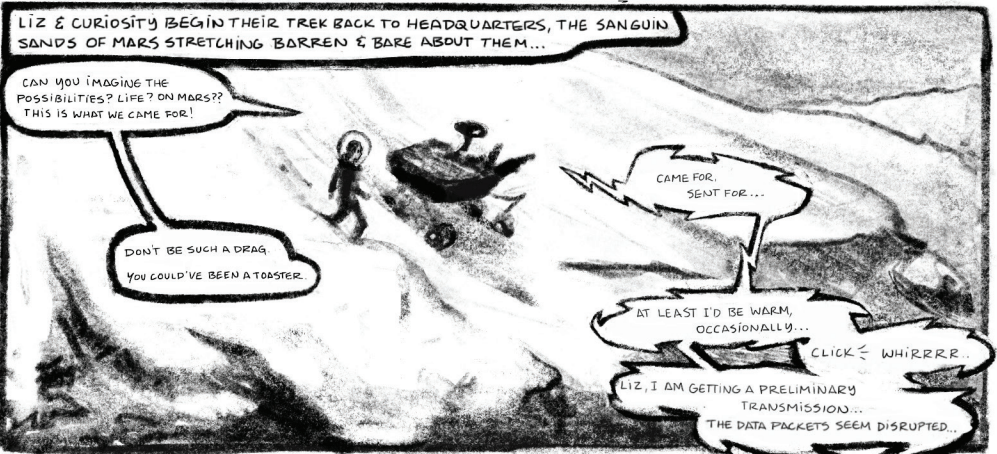
DON'T BE SUCH A DRAG,
YOU COULD'VE BEEN A TOASTER.

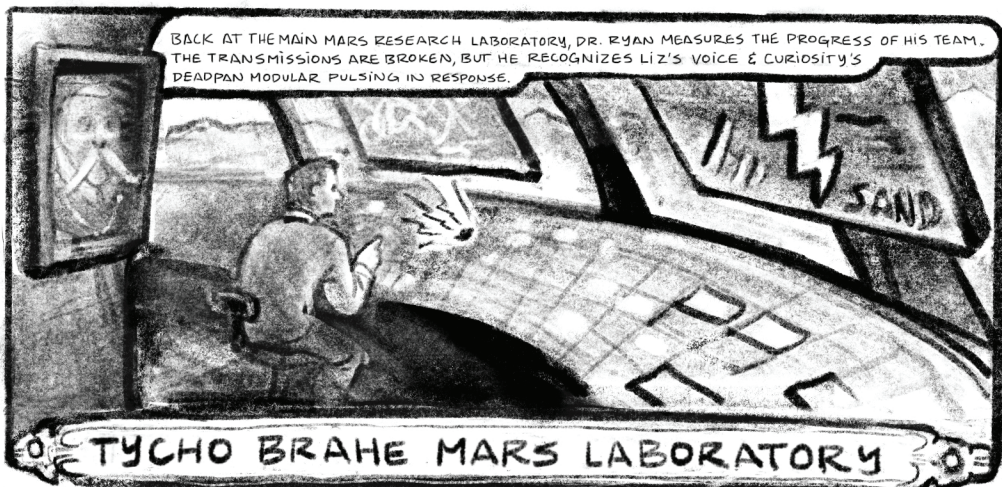
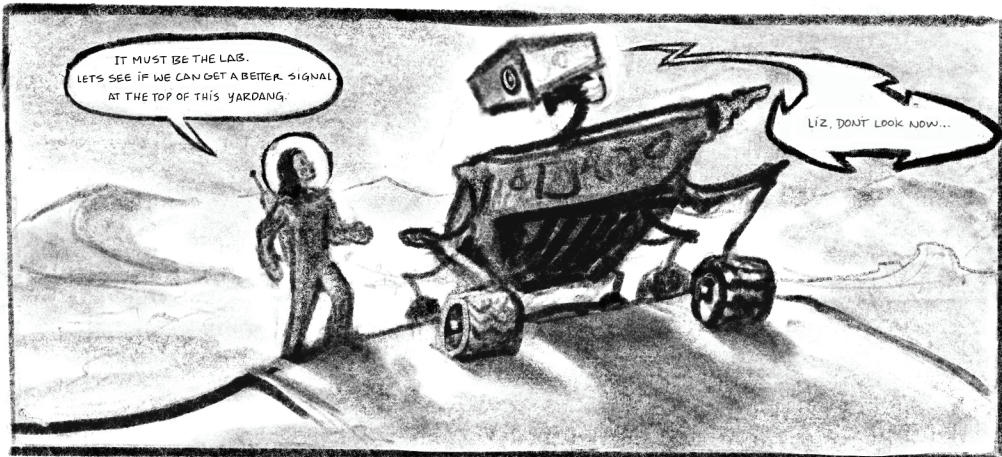
CAME FOR,
SENT FOR...

AT LEAST I'D BE WARM,
OCCASIONALLY...

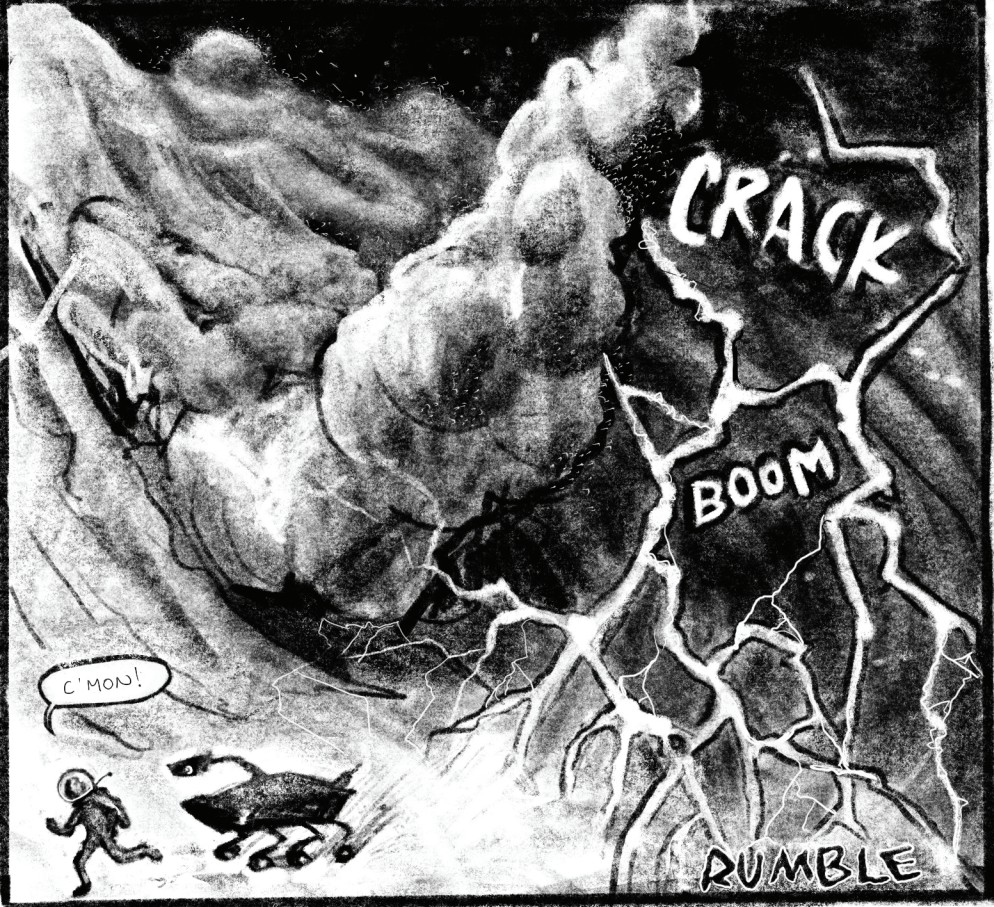
CLICK < WHIRRR...

LIZ, I AM GETTING A PRELIMINARY
TRANSMISSION...
THE DATA PACKETS SEEM DISRUPTED...

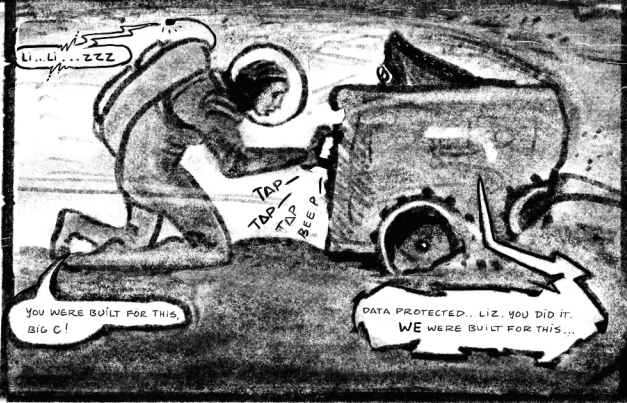


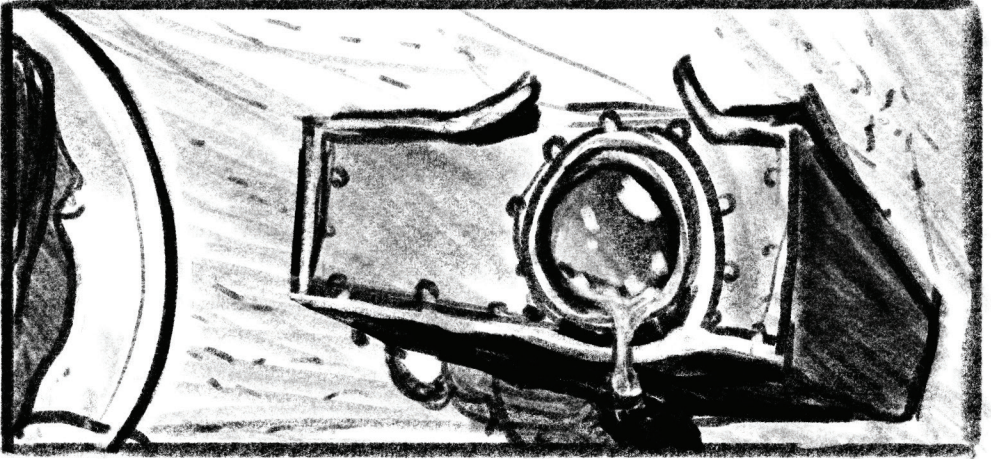


WITH THE DEADLY MARTIAN STORM UPON THEM, LIZ & CURIOSITY MAKE A BREAK FOR THE NEAREST SHELTER.



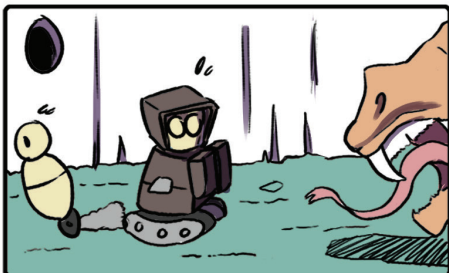
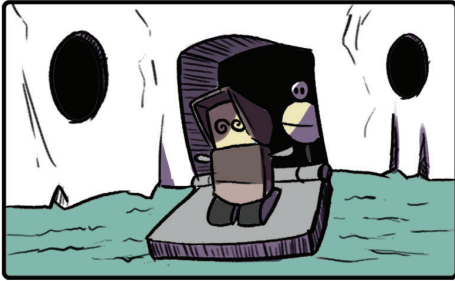
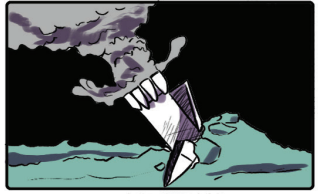
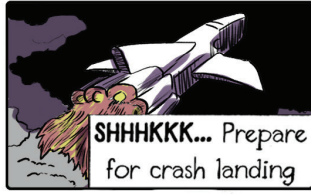
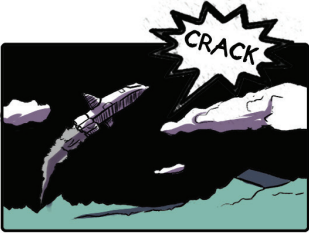
CURIOSITY, I'M DOWNLOADING THE DATA TO YOUR SERVERS... THIS IS THE WORST STORM WE'VE EVER WITNESSED. IN CASE THIS SUIT DOESN'T MAKE IT... IN CASE I DON'T MAKE IT...





PÉPÈRE AND ALI

BY JAZ MEANS



Crossfaded

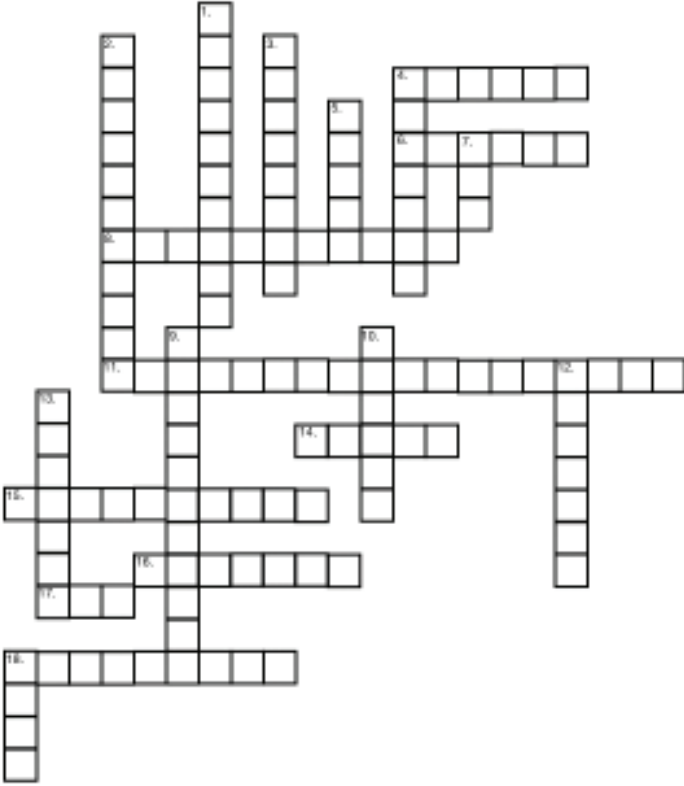
in signs



- 1.
- 2.
- 3.
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- 12.
- 13.
- 18.



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- 18.



Darth Vato

By Germ Roverso
www.germroverso.com



Star-gazing Playlist

by the man for new and old space tunes, Tynan Granberg



1. Laura Marling, Late to the Flight
2. Wilco, More like the Moon
3. Santigold, Chasing Shadows
4. Eleanor Friedberger, In Between Stars
5. Javelin, Canyon Candy
6. Jessica Risker, I See You Among the Stars
7. Brian Eno, Weightless
8. John Maus, Hey Moon
9. Atlas Sound, Quick Canal (w/ Laetita Sadier)
10. Friendly Fires, Paris (Aeroplane Remix)
11. Chris Staples, Dark Side of the Moon
12. Galaxie 500, Strange
13. Ratatat, Supreme
14. Shankar Jaikshan, Title Music from Mercant Ivory's film
15. Flaming Lips, In the Morning of the Magicians

with a cocktail

*cocktail by the delightful,
Allie Lancaster Deprang*

Combine all ingredients in a shaker with a handful of ice, shake vigorously, pour all contents into a glass or simply add a straw to the small side of your shaker. Garnish with fruit if you're feeling fancy.

- 3 oz. fino or amontillado sherry (we like tio pepe fino or lustau amontillado, both for under \$20)
- 0.5 oz simple syrup (2:1 sugar dissolved in water)
- 1 Blackberry
- 1/4 Lime
- 1 Orange Slice (or whatever citrus/soft fruit you have laying around)

Planetary Problems is a space opera zine that combines earth and planetary science with sci-fi, expansive thought and illustrations to connect you to your cosmos. The front and back covers are manually printed via letterpress. Check out our Instagram and FaceBook page for videos of the printing process from inking to type-setting to pressing.

We welcome comments, criticisms, adulations and contributions. We are a donation-based zine - so if you enjoyed this, and can afford it, please donate at www.GoFundMe.com/planetary-problems. We encourage you to support our artists and illustrators featured in this issue.

If you wish to submit works, advertise, or otherwise be a part of the Planetary Problems family, please email us at swann@planetaryproblems.com. We are always looking for writers, illustrators and philosophers - come join the space party.

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Ian Smith, 'Beckoning of the Black Sun' (Page 3), @newfangs
Chris Marino, 'Frankenstein-Bot' (Page 12), @chrismarino1
Jerome Riddle, 'The All-Knowing Head of Danny Glover', @wienert00th
Kati Simon, 'Life on Mars' (Pages 19-22), @kate_msimon, www.katisimon.com
Jasper Means, 'The Adventures of Pepiere aand Ali' (Page 23), @jaspermeans
Germ Roverso, 'Darth Vato' (Page 25), www.germroverso.com



A SPACE OPERA ZINE

TRANSMISSION ONE

Beyond the edge of the world there's a space where emptiness and substance neatly overlap, where past and future form a continuous, endless loop. And, hovering about, there are signs no one has ever read, chords no one has ever heard.

-Haruki Murakami

Planetary Problems - New Orleans, Louisiana