

PLANETARY PROBLEMS





Flora

It's like you took a bottle of ink and you threw it at a wall. Smash! And all that ink spread. And in the middle, it's dense, isn't it? And as it gets out on the edge, the little droplets get finer and finer and make more complicated patterns. See? So in the same way, there was a big bang at the beginning of things and it spread. And you and I, sitting here in this room, as complicated human beings, are way, way out on the fringe of that bang. We are the complicated little patterns on the end of it. Very interesting. But so we define ourselves as being on that...

If you think that you are only inside your skin, you define yourself as one very complicated little curlique, way out on the edge of that explosion. Way out in space, and way out in time. Billions of years ago, you were a big bang, but now you're a complicated human being. And then we cut ourselves off, and don't feel that we're still the big bang... You are actually a result of the big bang. You're not something that is a puppet on the end of the process.
You are still the process.
You are the big bang.

-Alan Watts





The Cosmos, Disambiguation

Part One

the
Cosmos

a tiny micro-word,
a hatchling of letters frisking about,
waiting for a thing divine.

we, miniature replicas of the things around
which our brains swirl, the beaky, loud,
banging thoughts that thump us.

it is a neverending neverendingness of
astounding

that such a smallish thing as a word tries to
wrap its inky hands around the wholeness
of the everything that one can hold in one's
brain

or use –
sightsound
smelltouch
tasteheart
beat –

to discover in the form of Being, of existingly
Being and noticeably and shockably Being
of Radiescent Being of Effervescently Being
Doing the Doing that renders the
Being

and the thumping and twisting pumping
grinding whipping beating
and unpredictably and shakerously

not Being
(.)
(...)
and
Not Being.
not being,
which is, always, a thing far larger than a
word
and far smaller than what the unholy word

Cosmos ,
than what the unraptuously unembracing
clenched little word 'cosmos'
;
than the deadened deafened pebble of the
drippy saturday night suck-me-down,
palindromically teasing utterly damnfound-
ingly small whisperingly fat unkempt shy

word

co
s
mos
...

what the zealous laureate word, the flailing
warrior word the simple word

'cosmos'

what the word 'cosmos';
the word cosmos
thwordcosms,

thorcosms,
throsms
throms
thros
thrs
hrs
hs
shhssssss

so the word hides in its infinitesimalness,
mistaken by other words to be just any word –
but steals the wonderment of all words, the
crafter of the stonythick thickness of all-it-all
of ever, of ethered evers shrouded in words
made dance by music whispered in silent
moans delicately spun by time and pressure
like geological formations, pillars of ungodly
ultrastrength, brief testaments to the stars.

Part Two

words :

the cosmos glittering about like buckshot
the struck white blank empty target with its
small but penetrating deadeye black holes in
all its mossy, messy, wet, pulsing glory
for its infinite secrets for its helpless empow-
ering curiosity

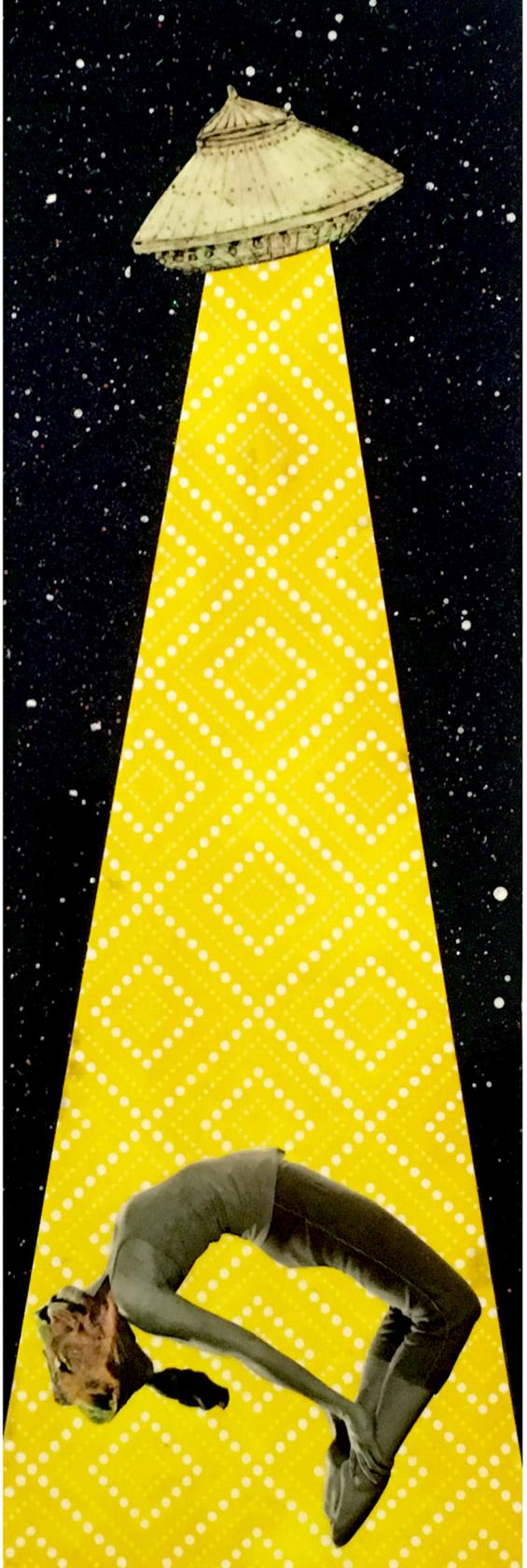
for,
simply:

what you can hold in your hand,
and what you can't.



Collage by Kevin Comarda





Riding on the Fringes of Space-Time

A brief history on the birth and expansion of our universe

By C. Swann



The Big Bang, scientifically known as the theory of the universe, is the prevailing theory of the birth of the universe and its evolution through time. While big-brained scholars often scientifically duel over exactly what was happening at this moment, the leading idea is that quantum fluctuations created a sudden, rapid expansion of this very hot, very dense space. The timeline starts 13.7 billion years ago with primordial singularity, a gravitational singularity of infinite density containing all of the mass and space-time of our soon-to-be universe.

In the ‘beginning’, it was hot and thick, reminiscent of a mid-August afternoon in New Orleans, but so hot that no atoms could exist. The rapid expansion of this heat into a larger volume cooled our infant universe by a few billion degrees, and the universe started condensing particles like protons, neutrons and electrons. Within 3 minutes of the Big Bang, these infinitesimal particles making up our infant universe started to attract to one another, making atomic nuclei. Some 300,000 years later, the foggy atomic nuclei soup cooled enough to make the lightest of elements, hydrogen and helium.

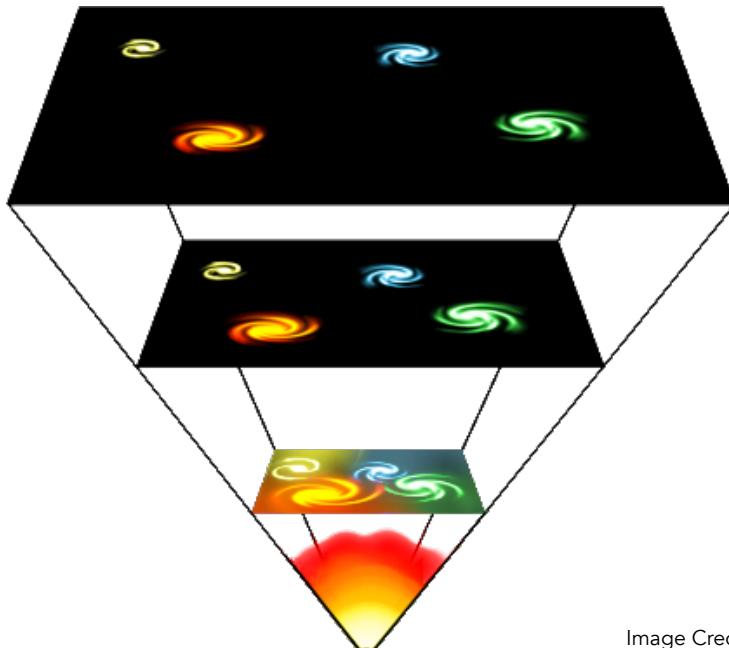
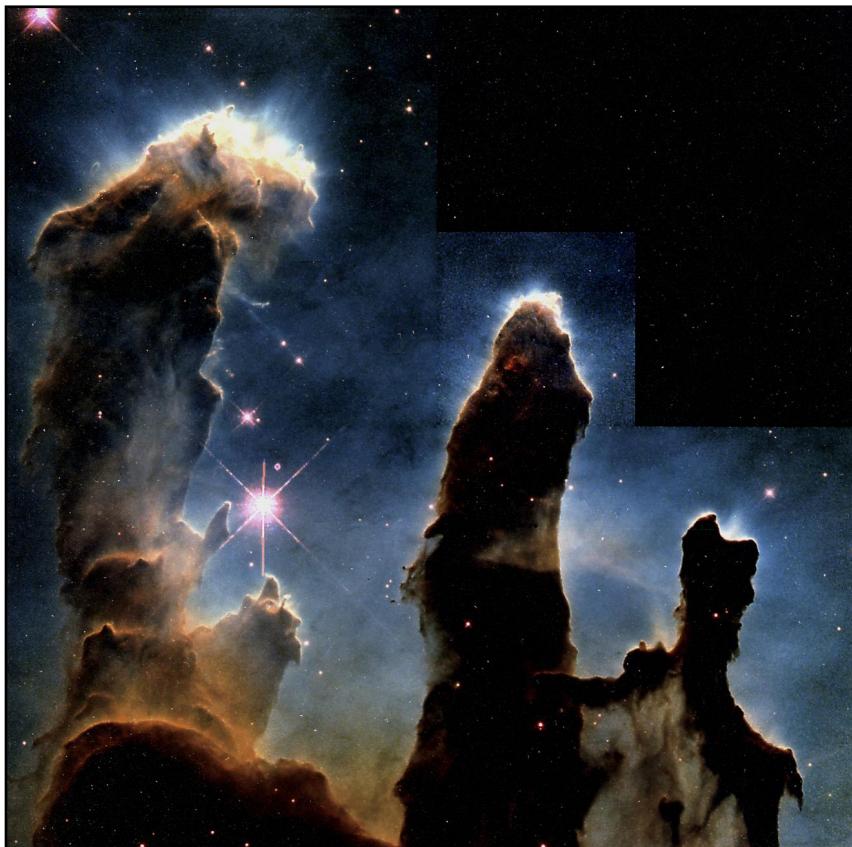


Image Credit: NASA

It wasn't until 0.5 to 1 billion years later that gravity started to really kick in and the universe began taking shape. Hydrogen and helium started to coalesce into giant clouds, galaxies, where smaller clumps of hydrogen and helium within those clouds collapsed to form stars. During this time, stardust was born. Some of the more rare massive stars, with massive amounts of nuclear fuel in their core, generated tons of energy - making their centers super hot. This internal heat created a strong outward pressure which fought against the inward squeeze of gravity. For some of these stars, things start getting a little dicey. Eventually, they used up all of their energy at the core causing their cores to cool. This reduction in the outward pressure, threw off the balance between outward pressure and gravity. Gravity ultimately won. These stars collapsed and ended their life in one hell of a light show, a supernova. These supernovas sends shockwaves to the outer edges of the stars and fuse heavy elements from the lighter ones, and thus, stardust is born.



These eerie, dark, pillar-like structures are actually columns of cool interstellar hydrogen gas and dust that are also incubators for new stars. The pillars protrude from the interior wall of a dark molecular cloud like stalagmites from the floor of a cavern. They are part of the Eagle Nebula (also called M16), a nearby star-forming region 7,000 light-years away, in the constellation Serpens. Image Credit: NASA

Over time stardust attracts more stardust forming larger clumps of mass. Billions of years of stardust dancing and attracting to one another, they gain enough mass to orbit stars and develop their own gravitational pull. It is at this point in time where the seed of a planet is born. These seeds grow by accumulating gas and stardust. Masses of dust grains clump together to form rocks. These rocks orbiting stars collide to form planetesimals, possibly the most adorable name of any celestial body. These can ultimately grow into planets. About 4.6 billions years ago, our adorable little planetary body started riding the orbit train around the dopest star in the Milky Way galaxy, the Sun.

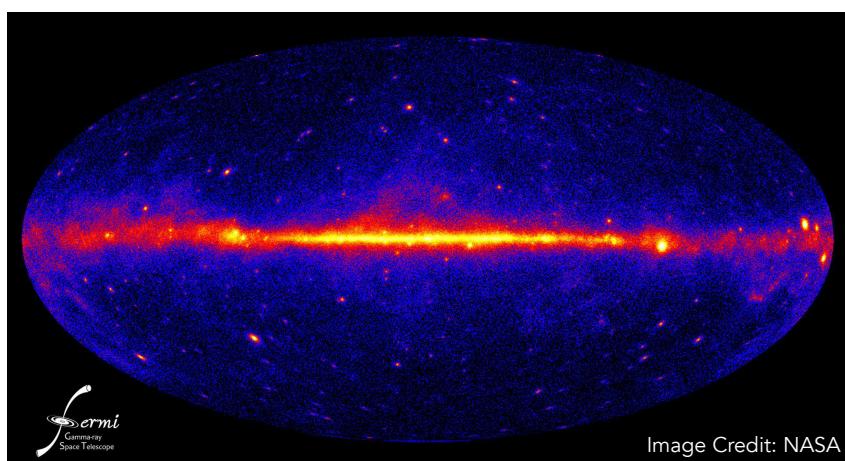
And here we are... at present. The evolution of stardust over 13.7 billion years.

The universe continues to expand. The space between galaxies is getting larger, similar to dough rising in an oven. Thus, the Earth and its benighted inhabitants, are riding the wave of an expanding universe. We are flying through space and time, a brief blimp in the grandiose cosmic scheme of things.

But no matter how brief, we are one way the universe can see itself. We are a billion years of stardust evolution. Alan Watts, and his wildly brilliant brain, imagines us as the wiggling and wagging of the universe. He argued that we are different expressions of the universe, and ultimately, a part of it. Carl Sagan and Albert Einstein were also advocates that we are the consciousness of the universe. From the birth of our universe, the birth of stars and planets, and onto the birth of humans, it is clear that we are not separate from our universe, we are the universe.

We are the space opera.

"A human is part of the whole, called by us the 'universe',
a part limited in time and space."
- Albert Einstein



Intrepid Voyage

By Tim Ash

"And now the Voyagers are leaving the protective bubble of our sun. They - and we, through them – are now interstellar travelers." - Jim Bell

Right now - some 13.5 billion miles away in Interstellar space - Voyager 1 is ripping into the space between the stars and headed for the constellation Camelopardalis at just over 38,000 miles per hour, alone. Having officially left our solar system behind in 2012, it is a relic from a bygone age; but at 42 years old and the size of a living room with less computing power than some coffee makers, it still works (for comparison, my '03 "Midnight Purple" Dodge Neon only travelled approx. 135,000 miles over 9 years before a total system failure). The probe is also equipped with an 8-Track tape recorder, technology even too outdated for a Dodge Neon. However, by far the most interesting part of the Voyager probes are the twin set of Golden Records affixed to their central bus. Dr. Jim Bell, Professor of Astronomy at Arizona State and a grad student at JPL/CalTech in the '80s, refers to them as, "The two greatest concept albums of all time." But first let's talk a little bit about why Voyagers 1 and 2 were important, because these two plucky probes forever changed the way we look at our solar system.

September of '77 was an important time for NASA. The Voyager program was just getting its feet wet. Both probes had been launched and were taking their first steps into the cosmos. In only a few short weeks, Voyager 1 would send back the first image of our Earth and Moon orbiting together around the Sun; it was a hell of a selfie. That was a fun moment, but the Voyagers prime directive was the completion of the "Grand Tour" of our solar system. The project can trace its roots back to 1964, when JPL engineer Gary Flandro first proposed the Grand Tour: a once-in-a-human-lifetime (to be exact, 175 years until our next shot of the grand tour, to be certain) celestial opportunity to take advantage of a rare alignment of the planets. The idea was to send the probes sailing on a particular path that would allow them to slingshot from one planet's orbit to the next without the need for additional onboard propulsion and systems. This exploitation of gravitational pull and orbital mechanics was almost like cheating. Over 10,000 possible trajectories were reviewed and studied, principally because nobody wanted to be responsible for throwing \$250 million into a gas giant. Eventually, two were selected. The trip would take over a decade, but Voyagers 1 and 2 would end up sending back beautiful and moving images of the planets and moons in our own celestial backyard. We take for granted the elementary nature of our solar system; high-res photos are in high school textbooks. But imagine the impact of seeing Jupiter for the first time, as a member of the human species, huddled around a television in January of '79. The swirling Great Red Spot was, before, an imperceptible speck on a mote of light in only the darkest night skies;

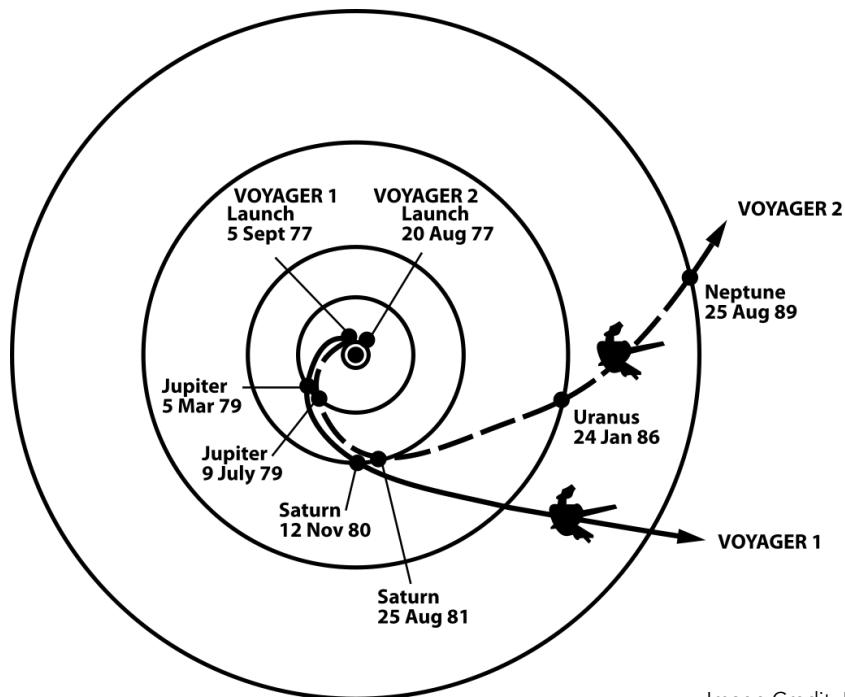


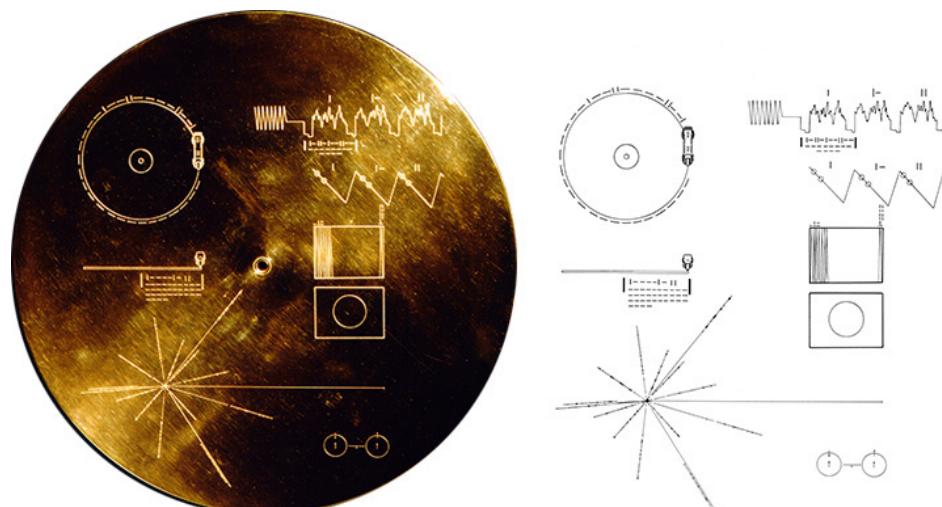
Image Credit: NASA

images of the planets and moons in our own celestial backyard. We take for granted the elementary nature of our solar system; high-res photos are in high school textbooks. But imagine the impact of seeing Jupiter for the first time, as a member of the human species, huddled around a television in January of '79. The swirling Great Red Spot was, before, an imperceptible speck on a mote of light in only the darkest night skies; now it was within reach and shared with everyone. We saw strange cracks on the surface of Jupiter's smallest Galilean moon, Europa, suggesting it was completely covered in ice. Jupiter's fourth largest moon Io was discovered to be covered not with impact craters, but hundreds of active volcanoes. The Voyagers were allowing us a glimpse into our cosmic neighbors, ones that had never before been possible to be seen with such conspicuous clarity.

One year later, Voyager 1 traded Jupiter for Saturn and Titan, but a miscalculation in trajectory caused it to veer sharply, and unexpectedly, northward out of the ecliptic plane while trying to slingshot around Titan. This event would forever alter Voyager 1's path, flinging it rather ungracefully into interstellar space. Voyager 2, having actually been launched 16 days before Voyager 1, took the long way around on a scenic route of our Solar System. It would go on to give us Uranus in '86 and Neptune in '89 before setting off on its own, nimbly leaving the heliosphere in November of 2018 as if to say, "Thank you, my work is done here, I'll stay in touch."

From the project's inception it was understood that the probes would never return to Earth; it had always been planned to send them on an irreversible course out of our solar system. So it was, early in the development of the program, the idea of several visionaries to view the Voyagers as a sort of time capsule; a message in a bottle thrown into the inconceivably vast interstellar sea. But what would the message say? If you were to communicate to an unknown, hopefully intelligent, interstellar civilization, how could you encapsulate everything that makes us human?

The challenge of articulating these questions would inevitably fall on the shoulders of a small committee led by Carl Sagan in December of '76. The group consisted not only of scientists, but artists, writers and musicians; these members would also reach out to political dignitaries, philosophers, and educators around the globe. Fortunately, this task was not entirely alien to Sagan; he had been responsible for a message placed aboard the Pioneer 10 and 11 space crafts, in the form of a golden plaque etched with rudimentary astronomical markings of Earth's time and place in the Universe. However this time around, the job would become a bit more complex; the idea was not only to suggest where we are, but also who we are. It was Sagan's colleague, Frank Drake, astrophysicist and founding member of SETI, who first suggested upgrading the plaque to a gold plated LP record. The idea was brilliant. With a record, a tremendous amount of data could be physically stored in its grooves. Pressing the record in copper and plating it in gold (a highly unreactive metal) ensured that the record would not rust, tarnish, or otherwise degrade over its cosmic lifetime; greatly increasing the permanence of the sounds, music, images, and greetings recorded on it. It was then placed in a gold plated aluminum case etched with a series of instructions for playing the record, as well as coordinates for Earth's location in the Milky Way. Most interesting among the



etchings is a small 2 centimeter circle in the center of the record's cover. This area is electroplated with a ultra-pure layer of uranium-238 with a half-life of 4.51 billion years; by measuring the amount of uranium-238 remaining on the disk, an intelligent gaseous cloud from Gliese 445 could accurately date Voyager 1 to around 40,000 years old by the time it reached within 1.6 lightyears of its home world. And so began the difficult job of selecting sounds and images to represent the human species on a galactic stage. Sagan and his team needed not only to boil all of humanity down into a single 12" phonograph, but also considered that discoverers of the record may not perceive the universe in the same way that we do. Eventually, 116 images were selected and converted to analog signals, ranging from our understanding of mathematics to images of our solar system and depictions of our human physiology. Images that represent the vastly different cultures of Earth were also chosen, despite individual views or bias. Additionally, nearly 13 minutes of sounds of Earth; rain, thunder, surf, and various animal calls, were included on the record.

The selection of music proved to be more challenging. Writing, performing, and listening to music is a wholly creative and emotional endeavor. How do you communicate the concept of "music" so succinctly to something that may not comprehend creativity? The golden record committee tried their best to do so; their selections (although inevitably contentious) attempted to span culture and time. Even modern – at the time – pop music was represented. Not surprisingly, many living artists had strongly gravitated to the record; all four members of the Beatles – despite having broken up six years earlier – wanted "Here Comes the Sun" included. Their producer declined to release the rights; turns out it just didn't seem profitable, considering the limited run of only 2 pressings. Chuck Berry's "Johnny B. Goode" eventually won out and made it onto the record. Sagan and his team also tried their best to communicate intent of music by including multiple works from the same artists, hoping to impress the emotion of each piece individually.

Realistically, the odds of either Voyager encountering another intelligent species is astoundingly slim. Both Voyager 1 and 2 have already greatly exceeded their initial goals. They, having provided us with a fundamental understanding of our outer planets; anything more is just lagniappe. It is exciting to think about how the Voyagers could be our first communication with whatever exists out there, and we can only hope we communicated the best of what makes us human. I think that the first message included on the golden record sums it up nicely, from U.N. Secretary General Kurt Waldheim, "We step out of our solar system, into the Universe, seeking only peace and friendship, to teach if we are called upon, to be taught if we are fortunate."



Art on page 10
Drawing by Bruce Walters
Michael Collins, Apollo 11, 1969, 18" x 24"





FINAL REWARD

written by shamsher bains - illustrated by ian smith

Everything is an extension of everything else. This is a statement that might mean a great deal to philosophers or theists. To others it doesn't put food on the table or turn the tides of war so it means nothing at all. Naiah was generally of the latter sort, yet her current situation brought such thoughts to the forefront of her mind. She normally preferred herself a woman of decisive action rather than lofty pondering, but in her present crisis, there wasn't much action she thought could be taken. Instead, Naiah ruminated on odd ideas she'd never previously considered. Sitting at death's door can have that effect.

Naiah let her thoughts dwell upon a mechanic of interplanetary vessels that she had met years ago. The woman held a peculiar philosophy - that everything and everyone was an extension of the self. Naiah had been complaining about her vibro-rifle's faulty targeting while the mechanic was repairing a ship's failing computer system with a sonic solder; a device similar in shape to a large metal pen connected by cable to a nearby machine that powered it. She had paused, holding up the sonic solder as a metaphor. She went on to describe an idyllic world view in which all the people in her life served some interconnected purpose or another; how she relied on those that relied on her. She included anecdotes that could've been considered funny or sad, but ultimately the mechanic was a rambler. Naiah wasn't partial to such types.

Naiah half-listened until her mind stumbled onto her own opinion. People were tools, just like that sonic solder in the mechanic's hand. People used each other, and that was that. It was a law of hers that she never realized she was following until that very conversation. It helped her find some type of stable ground in an unstable galaxy. She was about to express this opinion when one of her fellow militia-men called her over to hear a joke about a drunken cargo ship captain. Eager to get away, Naiah had turned and left with no attempt at any sort of social nicety. The joke wasn't a very good one, but it was a welcome distraction at the time. She hadn't thought of tools or extensions very much since then.

Now, Naiah was before her captain who lay comatose in one of the crew bunks. It was just the two of them left, and he was barely holding on as it was. She dwelt a little more seriously on what that mechanic had said. Her captain had said some similar things, but she thought it was all for show. She thought the words were just tools. For a long time she had seen her captain and his Shepherd Sans Frontiers as a means to an end. Now, alone at the end of her road, she thought she began to understand a bit more...

Naiah's reminiscence was suddenly interrupted when a woman's voice, garbled by static, echoed out of the communications room and throughout the ship. Naiah, sitting in the crew quarters, jerked her head towards the entrance to the corridor and strained her ears. She dared not move, as if she might scare the voice away, but there was nothing more. There shouldn't be anyone in this sector of space and definitely no ships that had the authority to communicate with hers. "Liam, the hell was that?" she inquired.

The voice of a bored young boy replied over the ship's internal comms speakers, "I dunno."

Naiah raised her fist to slam it against the wall, but thought better of it. With strain, she placed her fist on her knee and her other hand firmly atop it in case it grew a mind of its own. Naiah replied, "I thought we discussed—" "Look, you're gonna be dead pretty soon. Why worry about random hails floating around in the ether?"

"You're saying that was a hail?"

Liam let out an exasperated sigh. "Honestly? Not sure. The transmission was pretty weak. It sounded more like a general distress call. Came from somewhere in the starboard half of the universe."

A distress call. There was a time when this ship would be abuzz with activity to help out those in need. Now...

Naiah knew the comms system was too damaged to make contact with the unknown vessel. Her ship might be able to receive messages, but none would go out. She hadn't determined if this was a good or a bad development, as the ships most likely to respond would be Coalition ships. That meant imprisonment, which she considered worse than death. That would've been her last chance at survival, and she didn't even want it.

Naiah returned to her consideration of these extensions of herself and how useless they'd become. The interplanetary vessel she currently sat in, officially designated the S.I.P.V. Down & Out, seemed little more than a cold coffin floating in the vast emptiness of space. Of course the word space itself implies emptiness, but the harshness of that emptiness may be blunted by the nearby refuge of a station or planet where one could find harbor. As it were, the nearest space dock was light years away, which wouldn't be such a big deal if her ship wasn't suffering from irreparable damage. This ship was no longer an extension of herself; only another broken tool.

An earlier look at the ship's systems assured Naiah that she would have plenty of oxygen to freeze to death. She readjusted the blanket spread out on the unconscious man laying in front of her and pulled the one draped over her shoulders more tightly around herself. Her captain. Naiah wasn't sure if she considered him a tool or an extension of her self. He had changed her life in ways she could never have imagined. Or rather, never bothered to imagine. Growing up, she was a go-with-the-flow type, never having many great ideas or plans herself. The other kids made all the plans, so she never felt the need to come up with any of her own. Whenever they'd ask her if she wanted to join she always replied, "Yea, I suppose."

Naiah's parents were a simple and loving pair. They had neighbored a family who repeatedly suggested ways they should raise their aimless young girl. They were an unpleasant lot and Naiah's parents wanted to be nothing like them. At some point, Naiah's parents determined they should parent her exactly the opposite of how their neighbors displayed. For example, when they heard them ordering their own son to stop wasting time on his high ambitions of artistry, as children of backwater farmers never achieve any great success or fame, her parents assured Naiah that she could be and do whatever she set her heart to. Unfortunately, this paralyzed her, as the universe was so full of possibility and she knew she would never be able to decide.

Serendipitously, this man lying before Naiah then came into her world and was the answer to all her anxieties. He promised a life of adventure if she joined the Shepherd Sans Frontiers. She didn't think much about adventure but she knew that she wanted to live a big and useful life and the Shepherds had a big and useful reputation. There she was, looking at everyone as tools before she even knew what that meant.

She was secretly disappointed that the opportunity just fell into her lap. She expected trials and tribulations before she found her calling; obstacles that might make her wiser and more mature and ready to take on the next chapters of her life. Still, when propositioned, she returned with her signature reply, "Yea, I suppose." Little did her young mind realize she was about to embark on trials and tribulations she had never bothered to imagine.

Naiah always thought he had saved her, but considering her current predicament, she no longer thought that was the case. The near decade of apprenticeship under him was fulfilling until the galaxy learned the reality of the Shepherds. But she was too furious about those revelations to let them seep into her final thoughts, so she let them go one last time.

Naiah was sure there was a parallel universe version of her self who had decided to remain in her small town, in that small country, on that small planet, with a small and humble life full of friendship, family, and community. That version of herself would tell Naiah that she was an idiot and that she had plenty reason to be happy without some supposed big and useful life. Naiah wouldn't care much to hear that. Fortunately for her, inter-universe travel wouldn't be pioneered for a few more centuries.

Yet again, Naiah's thoughts were interrupted by that garbled, static-y woman. Any normal person would be slowed



down by the cold at this point but thanks to her Shepherd implants, she was able to get to her feet, down the corridor, and into the comms room faster than any normal human at peak physical capability. She was just in time to hear, between static breakage in the communication, "Coa...in purs..." Here there was a pause long enough for Naiah to turn away in dismay, but then, "...pare to...oarded..." The transmission ended and repeated thus.

Naiah approached the comms station and fiddled with buttons and knobs and on-screen interfaces in an attempt to get more of the message, or at least locate the source. She called out, "Liam! Can you clear this up at all?"

No response. "Liam?!" Naiah yelled.

Liam's boyish giggle emitted from the speakers. "I thought we discussed-"

"Fine, Fine! Please! Can you clear this up at all, please?!" The onboard computer loved toying with Naiah, especially when she was particularly serious, and she was getting somewhat frantic as the transmission was beginning to fade out. She wasn't sure why she was so anxious about this phantom call. There was nothing she could've done to help the unknown ship anyways. Perhaps at the moment she was hoping it wasn't a distress call but a hail, hoping for rescue, hoping for an extension to herself.

"Alright, I'll see what I can do." Liam replied, followed by the sound of what could only be someone cracking their knuckles. He responded after a minute or two, "I still can't locate the poor plebeians and, to my delight, you won't enjoy what they have to say."

Naiah's hand balled up into a fist again, but she neither raised nor slammed it. "Please just relay the damned thing."

Just then, the message came through loud and clear enough, "To the gents and gentesses of the S.I.P.V. Down & Out, we have Coalition enforcers in hot pursuit! Turns out those lads don't appreciate improvised negotiations. Anyhow, I know this is short notice and all, but we hear you Shepherd folks are welcoming to the weary. Prepare to be boarded, friends!"

Naiah gasped, "Prepare to what? You said you can't locate them, but they sound damn close!" she hurried out of the communications room and towards the armory at the rear of the ship.

"I suppose they do," Liam yawned.

As Naiah slid down a ladder she yelled, "Well how damn close?!"

"Only the forward sensors are operational, so I know they aren't in front of us," he chortled. He was clearly enjoying this new excitement.

Naiah reached the weapons lockers and opened one to find the last remaining vibro-rifle with its single, half-depleted power cell. She had so many questions. How did they detect the Down & Out? How were they able to bypass communication encryptions to directly contact the ship? Only other Shepherd ships were capable of that, and this was the last one. They were clearly using sophisticated methods to find the ship, so they surely must've known that she was dead in the water. What did they expect her to do against the Coalition? Who the hell were they? Naiah couldn't help but think Liam had something to do with this. "Please tell me at least some defense systems are operational, Liam," She asked.

"Not. A. One," he gasped sarcastically. "But here's some exciting news. There's a pinhole anomaly opening up a few dozen kilometers off starboard."

Pinhole anomalies. A transport method in which a ship fires out an implosive that creates a temporary wormhole to a chosen destination. The required hardware was very rare to come by, very dangerous to use, and half the reason Naiah

was in her current predicament. Luckily it was difficult to track a ship through one, so perhaps the Coalition wouldn't be able to follow the newcomers to her present location. It was clear to her that this incoming ship had a crew that was both very smart and very stupid. There was no doubt that she was going to come in contact with them very soon. Would they be extensions, or would they be tools?

Just then Naiah was nearly thrown to the floor as the ship was hit with a great jolt of force. Liam informed Naiah with glee, "We've got company, and it looks like they want to have a chit-chat."

Naiah got her footing back, slung the rifle over her shoulder, and rushed to the ladder she previously came down. She replied through gritted teeth, "I would've liked some damn warning! Did they ram into the ship or- you know what, nevermind. Just patch them through...please."

Liam did just that and the woman's voice came through, "Heyo, Down & Out. I.P.V Merry Men here! Got room for some wayward travelers? Our rust bucket's seen better days and- wait a tick, you're barely doing much better than us. What is this?"

Naiah reached the outer docking airlock, and looking out the window she could see that the Merry Men had already attached itself. They had had some reason to believe the Down & Out was in better condition. This seemed to confirm some of Naiah's suspicion. "Liam, you're pulling something here, aren't you? Why did you allow them to dock?"

Liam reassured her, "Why mon capitaine, I'm only a ghost in a shell. I have no arms to pull any somethings with."

Naiah started, "Liam-" but just then, through the airlock windows of the Down & Out and the Merry Men, Naiah saw a woman's head pop up.

"Yoo-hoo! Look, I'd love to take the time to get acquainted, but we're falling apart over here. Lend us a hand?"

Naiah scoffed, "Who are you and how did you find us?"

"Look, we are literally falling a part over here. I confess that last jump here wasn't as precise as I usually pride myself on, and-" She was interrupted by the hiss of both airlocks depressurizing.

"Liam! Stop this right now!" Naiah yelled.

"Oh come on. I show some mercy, some of that compassion stuff the captain always goes on about, and you're still not pleased? I'm going to have serious mommy issues when I grow up, thanks to you," said Liam almost sounding hurt.

"Showing them mercy could mean death for me and the captain, damnit!" pleaded Naiah.

"How many times do I have to tell you, you two were already dead. Especially him," Liam concluded. The doors between both ships began opening.

Naiah took a step back from the doors and shouldered the rifle, ready to take on any intruders from the Merry men. However, Liam's last comment threw her off kilter. "Liam, what do you mean by 'Especially him'?"

"Uh-oh! Here come the enemies. Shouldn't you be paying attention to them?" Liam teased.

When the doors parted Naiah could see only smoke and a low figure moving awkwardly towards her in jerking motions. A red strobe light and a blaring alarm coming from the other ship indicated it was on a high alert status. "Put that thing away and help me!" begged the woman.

Naiah fired off a warning shot. "Halt! Don't come any closer," she commanded.

"Eek! Holy hell," the woman shrieked over the alarm, "watch where you're firing that thing! My ol' girl's close enough to blowing as it is". It looked like the woman was dragging something. She let it down and stood to her full height so that her upper body was visible above the smoke being produced from the damaged and overheating systems on her ship. She was an olive skinned woman with long dark hair who wore a red trench coat and an eye patch over her left eye.

"Your engine's about to blow and you thought it was a smart idea to dock with another vessel?" Naiah interrogated.

"Give me a break! The rest of the Merry Men's merry men ditched with the Coalition loot at the first sign of trouble. My shuttle and escape pods reduced to nil, OK?" the woman assured, hoping it was enough.

"And what have you got there," Naiah questioned, motioning toward the smoke-obscured figure on the ground.

"Listen, my name is Vid, and this fella here," Vid bent down to what she was dragging and picked up a very long arm by the wrist, "is my engine-man and good friend, Zan. It's just the two of us. Between a ship that's minutes away from completely giving up on it's career, your posturing, and the Coalition hot on our asses, we don't have much fight in us. Isn't that right, Zan?" She waved Zan's hand back and forth. "Now please, for the love of every star in the galaxy-"

Naiah interjected, "Throw your weapons over."

"Wh- lady, listen to me-"

"Now!"

Vid spit out of anger, reached into her coat and produced a thermal pistol. She tossed it behind her. "Happy?" she asked. Naiah tilted her head, clearly unsatisfied. Vid produced a second thermal pistol and tossed it as well.

"Liam how are we supposed to get out of their ship's blast radius?" Naiah asked.

Vid replied, "My name's not Liam it's-"

Liam cut her off: "I've tapped into what's left of their tugboat of an engine. It has just enough propulsion."

"I'm sorry, do you have a child on board that just called my baby a tugboat?" Vid demanded.

Naiah shouldered her rifle. Motioning towards Zan, "What's his status?"

"Just conked out during that rough jump. So have we got permission to board?"

Naiah stepped through the airlocks towards them while keeping a sharp eye on both of her new guests. She answered, "Yea, I suppose."



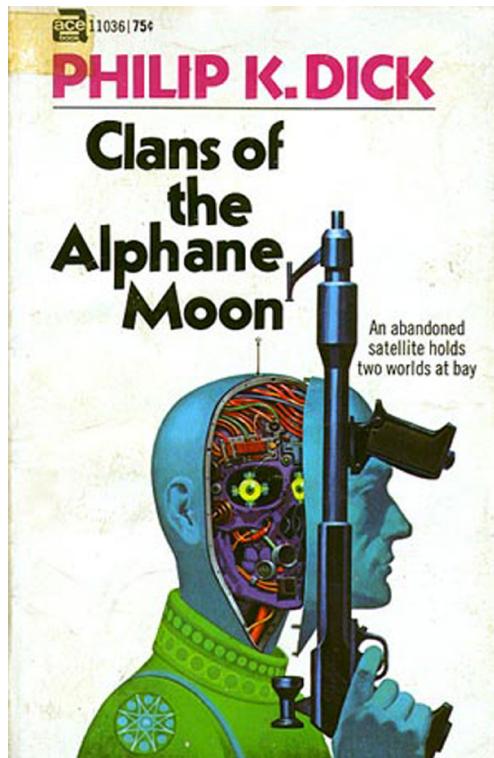


A HEALTHY OBSESSION

Philip Kindred Dick

(December 16, 1928 – March 2, 1982) was an American writer known for his work in science fiction. His work explored philosophical, social, and political themes, with stories dominated by monopolistic corporations, alternative universes, authoritarian governments, and altered states of consciousness. His writing also reflected his interest in metaphysics and theology, and often drew upon his life experiences, addressing the nature of reality, identity, drug abuse, and transcendental experiences. Dick produced 44 published novels and approximately 121 short stories, most of which appeared in science fiction magazines during his lifetime. Many of his works have been adapted to film and television.

Dick's work has a cult following, including local artist, and producer of this magazine, Brent Houzenga. For the last two years Houzenga has been throwing a birthday party and celebration in New Orleans for the late great author. This year will be his 91st birthday and the 3rd Annual celebration. Harriet Burbeck's piece in this magazine is based on the story of the same name, Minority Report, and was first shown at the inaugural PKD birthday party. The party and celebration has been dubbed Anamnesis (or the opposite of amnesia). This summer Houzenga was an honored guest and presenter at the 2nd Annual International Philip K Dick festival in Fort Morgan, Colorado alongside his paintings of PKD. The piece you see as the centerfold in this magazine will appear on the cover of PKD Otaku #40 in the near future. That magazine will also include an essay based on the talk he presented at the PKD Festival in Fort Morgan.



PKD (Philip K Dick) #8 - Brent Houzenga
Mixed Media - 22 x 30 inches

Minority Report - Harriet Happy Burbeck
Mixed Media - 10x13 inches





THE BEAT DOWN DOWN THERE

By JOSHUA "LEOPARD" BOYD

Let me tell you about the best cigarette I ever had.

Well, there's two,
this is about the one Picasso lit,

his old throat gulped with soft sag
while my eyes rolled white,
esophagus pinched and bit.
A breath of fresh air, that first drag is.

We talked of taking limits slowly
getting fucked up by lovers floof

a couple o' satellite dishes
useless on the roof

See, you make a sword one way:
heat, determination.
Take a nation one way:
queen check'd reverberations.
Cold water flushed, iced out feats,
arbitrary culture
head lob'd news jockeys
Thats why we callin out shots
on some pool shark beat
Can't see much
sluggin' these night streets

We're nondescript beauty like graffiti in
the park
we out here clocked in
as the shadow of the dark

Bogus checks
writ nonetheless
check oneself
ace turbulence

Chimneys and roaches
may make it through the blast
rest of us just guts
scattered 'cross the land

Detour damning differences
get numb enough or think
All together typin
Control Alt Delete

Dreams cant be taxed so I
stop my arm mid-drink
whole brigade on canes
wolves howlin on the brink
family photo's all aflame
cinders in the kitchen sink

Glazed gaze, scene change
tired of bein bait
Piranha steez, swimmin free
brokin ass tank

Star grease seeps
stains the most sparkly of diplomat

I actually have every answer right here
for ya
but there's still some assembly required
for that.



Thomas Deaton
Red Pyramid
Acrylic on Canvas - 40 x 40 inches





A Conversation with Jeff Pagano

A composer inspired by and who writes music based on staring up at the night sky
By JS Makkos

Jeff Pagano has lived and worked in New Orleans over a decade now. These days, Jeff spends most of his waking hours writing, playing, or creating music in some way. I met up with him on a starry night to talk about his music, his process, and the future.

Aside from recording dozens of albums to date, Jeff has written and performed numerous compositions for live public performances, has scored several independent films & documentaries, and actively develops experimental projects with an array of accomplished musicians. I pull out my notebook while he ruffles through some sheets of new music he is hand-composing. He sips from a small vessel of wine and sits down behind his keyboard before playing me his newest unmastered track, "ASTRONOMICAL.." We quietly listen together while my mind drifts off through the nebula of sounds, traveling through an alien landscape, otherworldly and yet somehow also a space I am still resonant and familiar with.

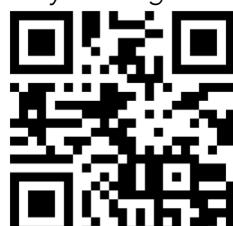


JM: So you're working on a new album inspired by a type of cosmology?

JP: No, not really. More of a pseudoscience cosmology perhaps.

JM: What does the track "Astronomical" represent?

Astronomical
By Jeff Pagano



JP: When I was a teenager, I would lay in a field and look up at the stars and listen to Beethoven's 9th symphony and just allow myself to float up into space. I tried to express floating in space, or the experiences that people have spoken of that are life-changing, out-of-body experiences. I believe that making music can offer that experience. I decided to use different methods together to achieve this goal: from pointillism to time stretches to manipulating sounds. But it all started with very intentional recording sessions with musicians playing the compositions.

JM: What methods did you incorporate into this composition?

JP: For *Astronomical*, I wrote compositions for a series of different musicians, playing their parts recorded at separate times using varied time signatures. Piano, cello, violin, electric guitar, human voices, and software are all incorporated into the fabric of each track. I deconstruct each recording and then layer it on top of itself. I take my process from focusing on the natural universe, and play my role in helping music evolve. I am actually working through a musical theory known as Pointillism, – where different musical notes are created in seclusion, rather than in a linear sequence, giving the work an audible texture. It's really hard for me to say the methods I incorporate because I tried to go past a systematic way of doing something that I can understand.

JM: Who are your main influences for this work? Clearly there is a precedent, no?

JP: Sure. Composers like Stockhausen and Messiaen used the Pointillist style, but in a more pure way to create their compositions. I use these ideas but try to mainly rely on intuition. Before them, Schoenberg developed Serialism, and then one of his students, Webern, took the idea the furthest out of all: into punctual music. A place where single tones mattered more than their linear value – but he didn't call it Pointillist. He got fixated on single tones having a greater value, going away from a subject or relating to a theme, even to the point of making shorter compositions and focusing entirely on those tones alone; his purpose was to find a music that more harmoniously reflects nature and its patterns. A music removed from the expressions of human emotional and mental states.

JM: Is this a departure from your other work?

JP: It's hard to say. I use these primarily as methods, colors or textures or effects, through experimentation. I'd rather this new music be based on intuition and not methods. To me formulaic music that follows a method tends to lack a depth of feeling and emotion. Music and art are supposed to test our outer limits of reasoning or logic or anything that can be quantified. I've always used approaches of experimentation, mainly to push myself to create from a strange and imagina-



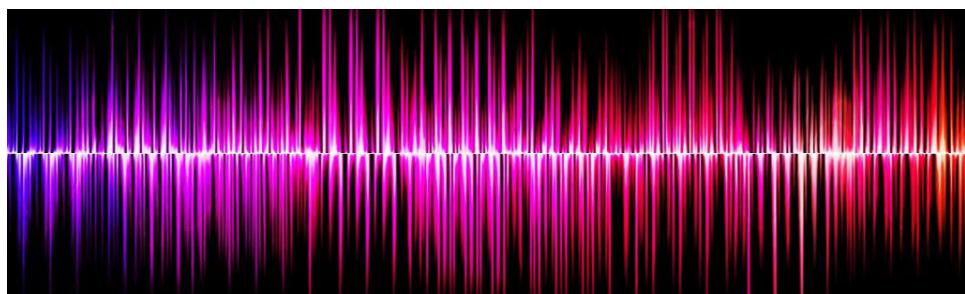
tive space. I feel like it's important to take all the work that was made before us, learn from it, and try to create something different.

JM: How does this type of work get constructed, really?

JP: I'm using heavy production and editing techniques to manipulate sound, similar to painting or the way a film director might shoot a scene from different angles with different light and then edit it precisely. Another good example is how color corrections are used in cinema to evoke bolder images and emotions of greater effect. I wanted to make an album that's more for the imagination, a sequence of compositions that might suggest a series of images or even an emotive landscape. Daydreams for sure, but also cinematic without the film playing on a screen, to allow different narratives to occur in each and every listener's mind.

JM: Where does your new album fit on the spectrum of "classic music" or does it even fit in a genre?

JP: Hopefully not. I think of the future of music... if I base it on the current direction of social driven media. I think that possibly music is going in a new direction where, mostly because of the internet, the idea of a musical style is falling to the wayside. As we become more interconnected through technology, it offers fresh possibilities to a world of musicians who are actively collaborating, almost infinitely, by mixing all sorts of recorded sound, cultural instrumentations and technology together to break down existing genres. It's easy to see how this way of thinking has made an impact on the progression of music. Even pop music has picked up on a lot of these ideas, mostly in superficial or token ways. It's not always so deep and meaningful especially in an industry full of recycled ideas. It can't really get any worse than it is now, right? But who really knows, because there is also likely to be a strong backlash and counter culture that will move in a sharply different direction – completely rejecting technology – and to me that would even be better.



Painting by Flooko
Think Tank

Francis By The Way

By Jeffrey Roedel

He enjoyed how the colors moved like currents together, first swirling, then growing to a thick, impenetrable cloud billowing at the surface. He always poured milk in his tea. She had liked it that way. And so he made a half a cup for her, too, still—though he always ended up drinking, telling himself she had just left for the garden without finishing it all.

The milk and the memories weren't all the old man loved about his tea. The whole routine calmed him. He had seen the world at its most chaotic, or so he thought, but every cup of tea was made the same exact way, sipped in the same armchair, at the same quiet time of day, every afternoon at 2 o'clock. Opening the door was the last thing the old man wanted to do, but when he eased it ajar letting a sliver of new light into the house, he was surprised to spy what he thought was a familiar face.

As the door opened, Francis thought the old man was going to stare a hole right through his chest, but he didn't. After a moment, the old man let the barely-opened door swing wide, and he almost smiled. Almost.

"Fred?" said the old man. "I haven't seen you in a while. You look taller, boy!"

"I'm looking for Artemis—remember my dog?" the boy said, really unsure of what else to say because the old man never seemed to remember much of anything. "And it's Francis by the way."

The old man scratched at his patchy beard and thought. "No I don't believe I've seen any dogs around here," he said.

"Would you help me look for him?" Francis asked urgently. "He likes you. He might come if you call."

The old man sighed, glanced at his two lonely cups of tea, then back at the boy, meeting him square in the eye. "Well. I was wondering what today would bring me," the old man said. "Perhaps, today will bring adventure. My tea can wait." With that, the boy felt the first flash of hope since Artemis had run away the night before. This wasn't like him, and Francis had to stop his mind from racing to really dark corners and conclusions when he thought about what might have happened to Artie.

The pair set off down the path away from the old man's house. Francis felt safer

with the old man by his side, even if it was frustrating to walk slower than he normally would.

Together they crossed through the old railway tunnel where their calls of "Artemis!" echoed and boomed like giants shouting down from a mountaintop. They trudged through the mud near the creek banks where the wind picked up and drowned out their yells, and Francis thought his boots might get sucked down into the dark sticky earth for good.

Minutes turned into hours. They walked long into the afternoon. They walked so far that their voices turned slowly from calling out to Artemis to real conversation. Francis asked the old man how long he had lived in that house, because he was there for as long as Francis could remember.

"I'm not sure it's the same house anymore," the old man replied. "Have you heard of the Ship of Theseus?"

As Francis turned the volume down on the old man, the beating of his own heart grew loud.

Panic.

Where are we going? He thought. How will we ever find Artemis now? What if he doesn't want to come back? Or what if he can't?

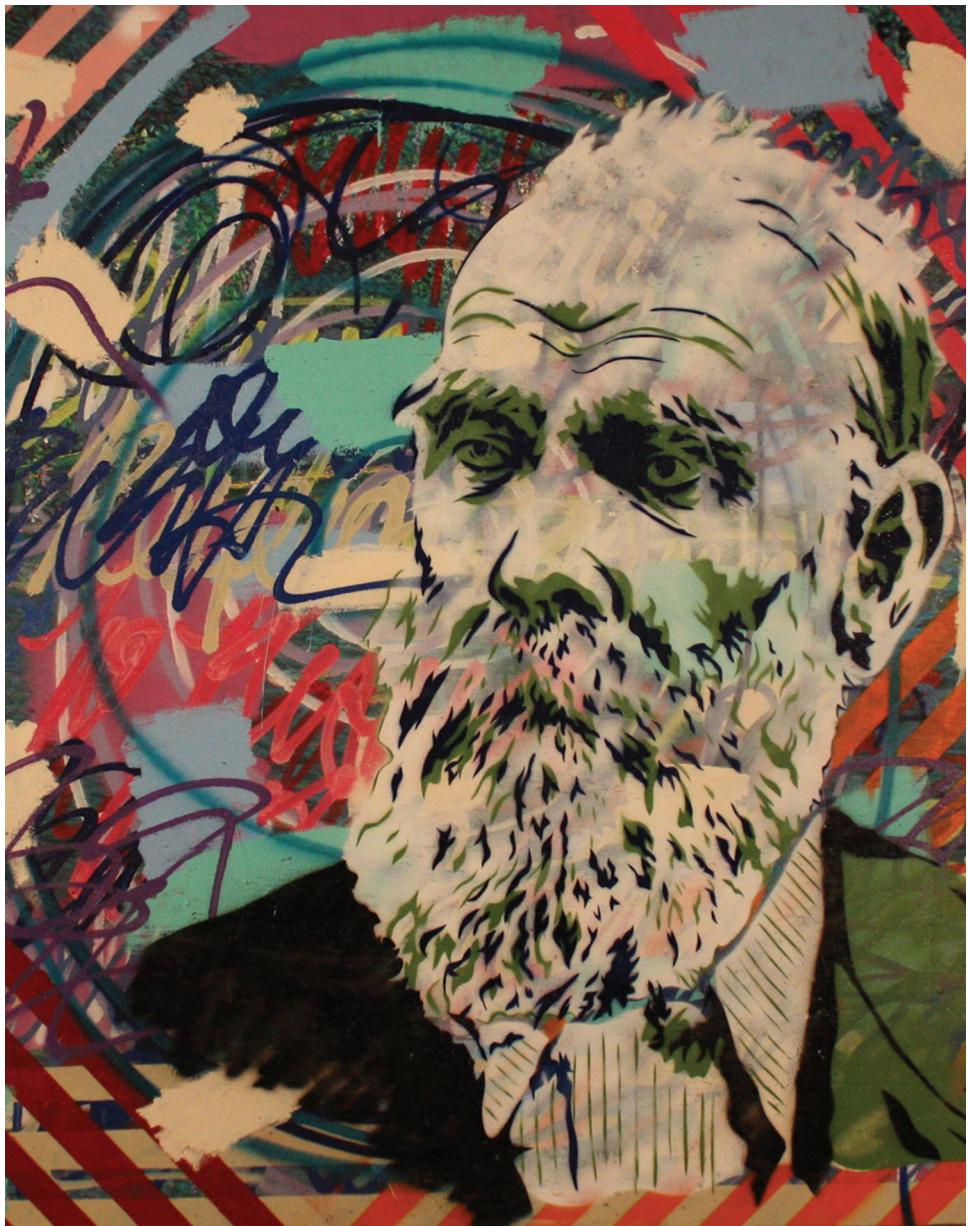
The old man picked up a rock and carved a small cut into his own hand.

"Let me see your paw," he said to the boy.

For some reason, Francis didn't hesitate. They shook hands and the blood ran in thin rivers down their wrists. A moment later Francis knew without a doubt that breaking one twig would never be enough. Not for Artemis. Not for all the lost dogs and all the lost who'd gone looking for them and felt like dying when the thought that they'd never ever see their friends again wrapped its cold cold arms around and wouldn't let go.

Are there enough branches in these woods? He wanted to break the world, but it felt like someone else had beaten him to the punch. Life looked a lot different to him when he thought about going through it without his best friend. The old man looked frustrated, too. Francis watched amazed as he threw his rock as far as he could with an angry grunt. They followed the sound, walking under branches and through a wild curtain of kudzu.

The old man took small steps toward it, shuffling, as if he were nestled into



slippers, and he was half asleep reaching for the door handle of his fridge in the dark. Francis bolted right for it to tap his fingers on its bright edges with the militant force of a marching snare drum.

The old man thought it would remind him of something, but it didn't. This was something new, he was almost sure of it.

It looked hot, but it wasn't. The shape was like a teardrop, maybe 20 feet long. Silvery and fluid at every angle and only somewhat dimmed by the weathering marks of dust and leaves and rain.

"What is it?" Francis asked. "It looks like a spaceship."

"Maybe it is," the old man said, thinking of every possible answer. "Have you heard the problem of the ship of Theseus?"

Francis shook his head and laughed. "Yes, we just talked about that, I think," he said.

"Oh—perhaps we did," the old man replied, but he wasn't really sure.

The barking started softly, then became louder and faster, and Francis smiled, and he ran, and the dog ran, too, and the old man watched a grateful boy hug and tackle and roll through the grass with his lost dog who was not lost anymore.

"Where were you, Artie?" Francis asked, running his cut hand over Artie's face as the dog licked at the wound.

It might have been hours they were standing there. The old man felt like he was flying. "What's the answer?" Francis finally asked him. "What's the answer to the Theseus boat thing?"

"There is no right answer," the old man said, still staring at the ship without looking down at Francis. "There is only the right question." The old man patted the boy on the shoulder, gently turning his attention, pointing high with the wobble of a long narrow finger. "You should never miss a sunset when life hands one to you, Fred," the man told the boy.

Francis thought for a second, scratching at his nose. "You know," he decided with a jolt. "The sun doesn't actually go down. And it's Francis, by the way." The old man looked at the boy sideways, peering down the bridge of his nose and fighting back a wry smile. "Well, you're right about that. Some days it just feels that way."

"Come on, Artie," Francis said, combing his fingers again through Artie's new white hair. "Thanks again," he told the old man.

Together the pair scampered off past the ship, Francis ran his index finger along the side of the ship, leaving a line as dust gathered on his fingertip. The barks and laughter faded away like whispers, and the old man breathed in the silence, and he thought about his next cup of tea.



listen with your eyes closed
with no words to steer you

the mind goes anywhere it wants
the sound becomes a sculpture

portable music, traveling songs

listen with your eyes closed
softening focus, the mind can blur
thoughts collect

new ideas have room to emerge
and it's okay if you fall asleep

Listen with Your Eyes Closed Poem & mixtape by William Cashion.

William is a Baltimore-based artist and musician. He plans to release his first solo album, *Postcard Music*, in early 2020, and he hopes you will listen to it with your eyes closed.

Side A • Daniel Lanois "Desert Rose" / Colleen "November" / Gaussian Curve "Broken Clouds" / Ryuichi Sakamoto "Solar" / Kraftwerk "Franz Schubert" / Huero S. "A Sea of Love" / Pauline Anna Strom "Morning Spender"

Side B • Emily A. Sprague "Piano 2" / Kuniyuki Takahashi "Asia" / Raymond Scott "Night and Day" / Brian Eno "Sombre Requies" / Roedelius "Wenn der Südwind weht" / Robin Guthrie "Laughter in the Dark" / Ed Schrader's Music Beat "Humbucker Blues" / Duster "Gold Dust" / The Smashing Pumpkins "New Waver" / Ateljé "Ode to Studio"

Listen with Your Eyes Closed



This mixtape should fit on a 60 minute cassette and is also available as a playlist on Spotify.

Cover Art by Elena Johnston & William Cashion
@elenajohnstonart & @thenoontime



PREACHER

this is planetary problems

We forget that we are suspended in space. Life in space; an ephemeral orbit around a heat fusion bomb that breathes photons into human life. It's a seemingly Kubrick idea, where up is only relative and robots are the real explorers. It is easy to forget that we are billions of years of stardust evolving into the conscious existence of our universe. Planetary Problems connects you to your cosmos.

Planetary Problems is a space opera zine, a collection of the consciousness of our cosmos. We combine actual earth and planetary science with science fiction, expansive thought, art, illustrations and poetry to bring your cosmos to you. We manually print each cover on a 1901 Chandler and Price letterpress at Baskerville. Letterpress and Book Arts in New Orleans. Look close enough and you might see our blood, sweat and tears.

If you have enjoyed this zine, please donate so that we can keep this ad free. This project is completely crowd-funded and we need your support. We want to send the most gracious of thank yous to the artists, writers and poets that donated their work for this transmission. We hope to garner enough crowd-funded support to pay these incredibly deserving and talented individuals for their trade. Use the QR code below to go to our website where you can donate.

Cheers to the Milkyway and the thin little atmosphere that keeps us alive... for now, C. Swann

Editors

C. Swann, Editor-in-Chief - @wordofthebirds

Brent Housenga, Producer - @houzenga

Sarah Trimble, Copy Editor - @trimbletravels

Artists

Venessa Bates, Cover Art - @catacombs1786

Whitney Smith, Masthead - @whiskyhouston

Nick Flook, Pages 1 & 28 - @flooko

Kevin Comarda, Pages 3 & 5 - @kcomarda

Bruce Walters, Page 13

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Letterpress

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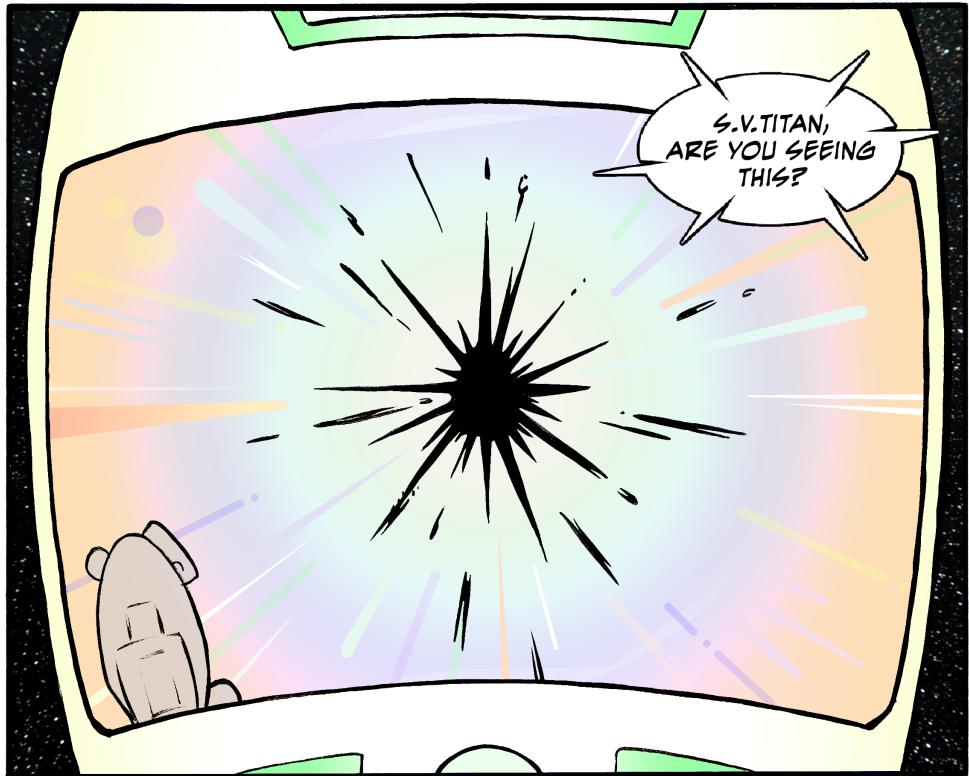
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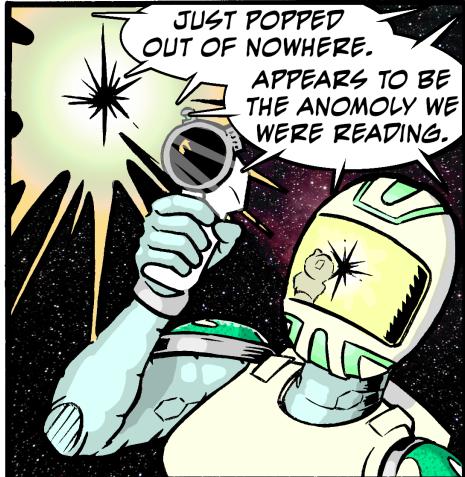


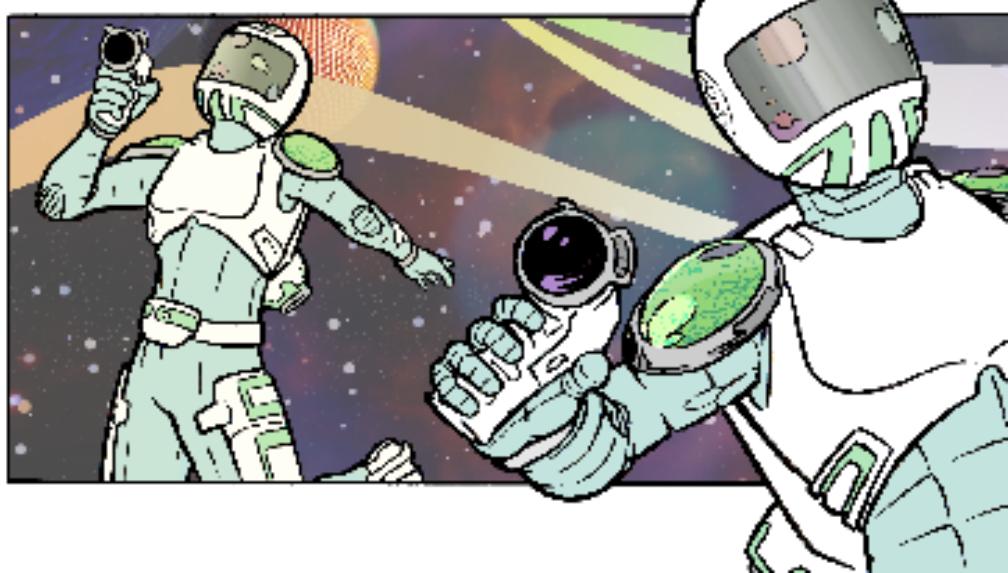
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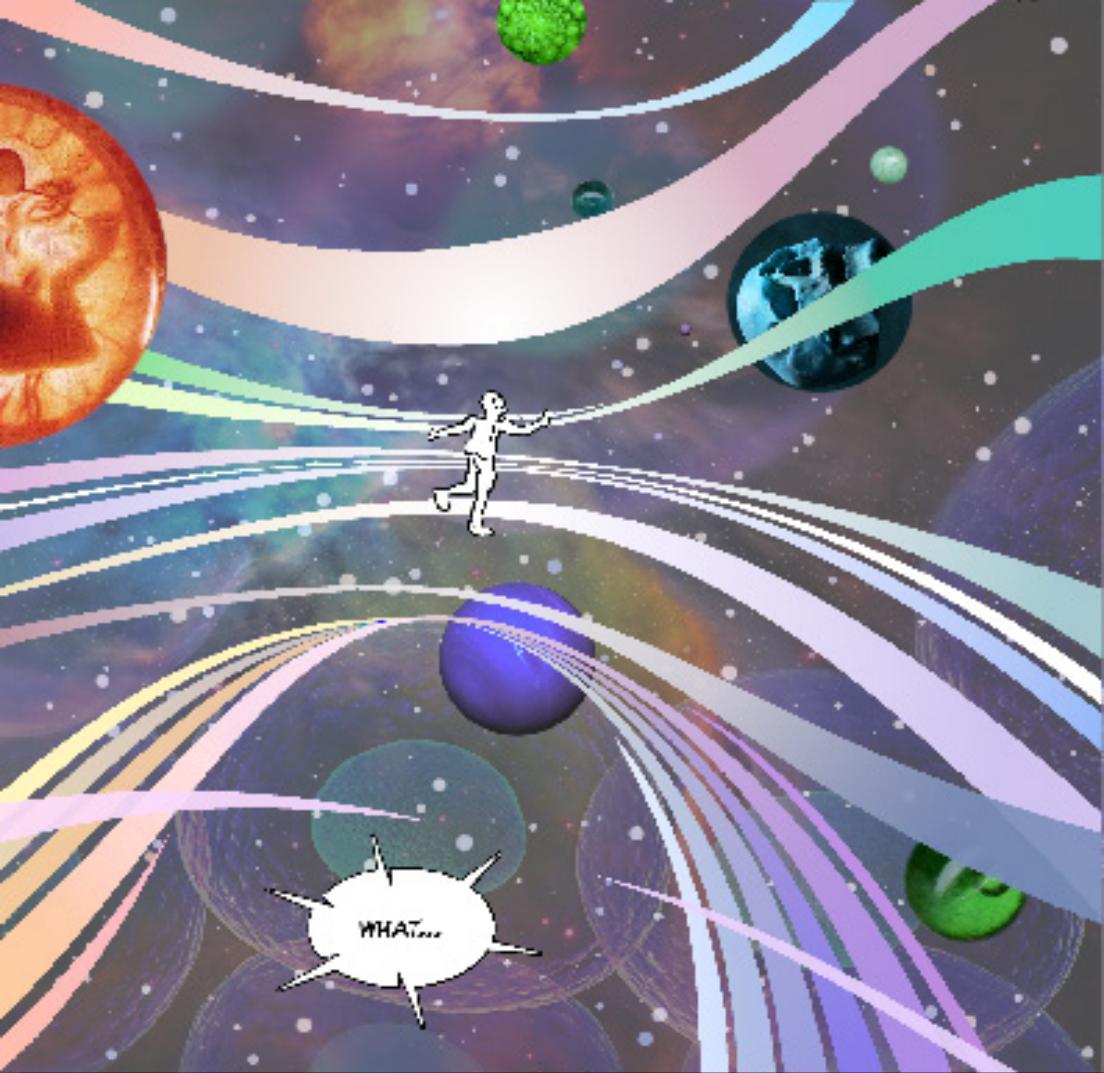


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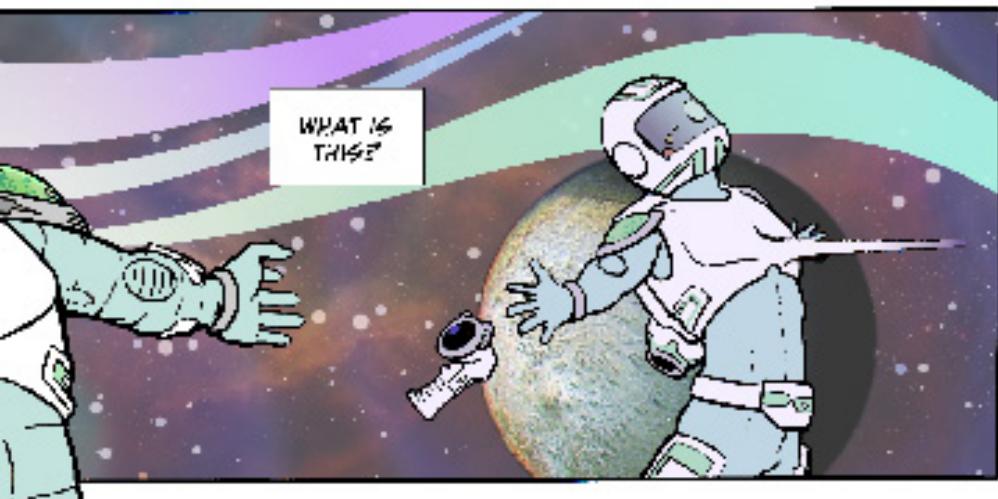
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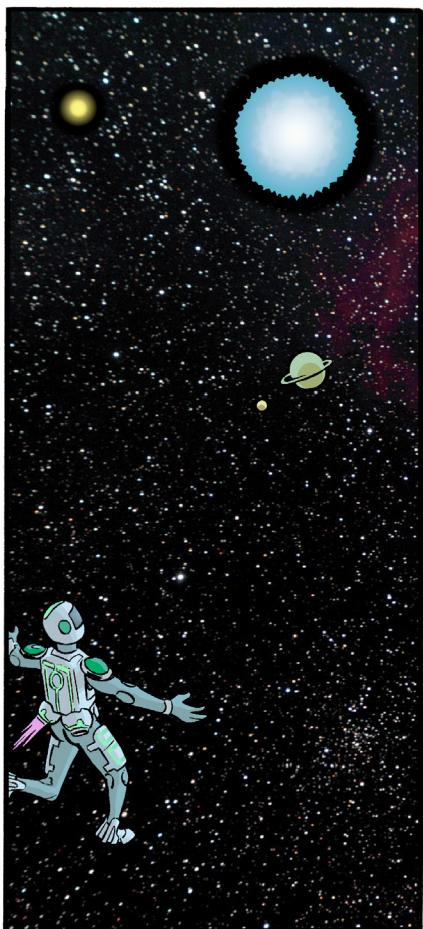
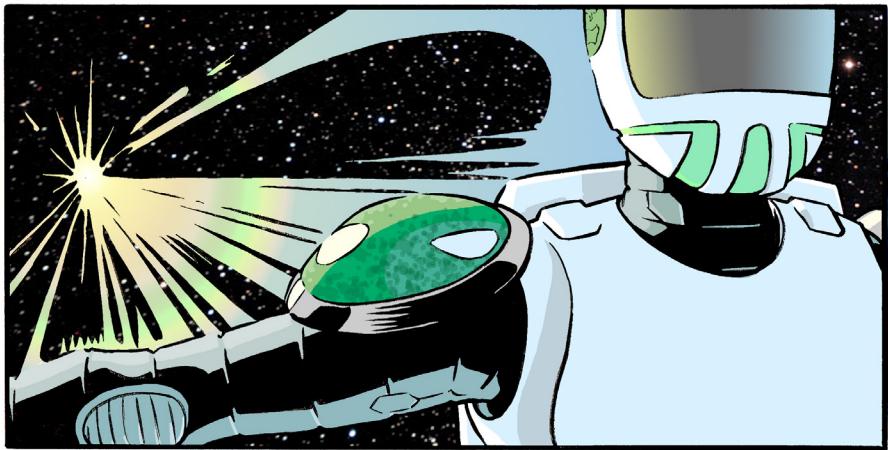






WHAT...





PLANETARY PROBLEMS

A
SPACE
OPERA
ZINE

TRANSMISSION TWO
NEW ORLEANS, LA