

## **Cosmic Visions Final Art Project**

**Adnan Baghdadi**

**Professors Charles Henebry and Andy Andres**

**IN250**

**Tuesday, December 9<sup>th</sup>, 2025**

**Subject:** Preliminary Report on Atmospheric Findings Within Saturn's North Polar Region

Dear esteemed members of the Planetary Science & Astrobiology Decadal Survey Committee,

My name is Silas Draven, the commanding officer of the Kronos Expedition. Initially, my team and I were sent on this journey to survey Saturn's atmosphere and investigate signs of life in the subsurface oceans of Saturn's moons Titan and Enceladus. Based on gravity field measurements from one of our probes, we were certain that Titan and Enceladus had subsurface oceans. That same probe was able to collect chemical biosignatures from the plumes that emanated from the moons, especially Enceladus. Before departing on this mission, we were almost certain that there was microbial life on both moons and were determined to land on each moon and collect hands-on data to further our understanding of each biosphere and the origins of life within them.

All of this sounds simple and attainable considering our last two successful expeditions to Mars and Jupiter, which have both produced high-quality data and received critical acclaim for their success. I am reaching out today to tell you that our mission went in a direction none of us could have imagined. Although initially negative, I am unequivocally certain that my team and I have made a discovery that will fundamentally reshape the course of scientific understanding.

We left Earth at 13:20 UTC, August 6th, 2104, aligning perfectly with the Hohmann transfer window. We departed from the Kennedy Space Center, Launch Complex 39B, Merritt Island, Florida, USA. Using advanced nuclear thermal propulsion, our trajectory planners estimated our mission to take approximately 5114 days (14 years), including 365 days on each moon and 365 days in orbit of Saturn.

At approximately MET 1516d 12h 23m, we began a Saturn Orbit Insertion burn at periapsis, as it gave us the best shot at changing trajectory without wasting fuel. We were arm's reach away from setting up a base on Titan, as our initial plan was to land on Titan due to its more favorable atmosphere, then move to Enceladus, and finally reenter Saturn's orbit before returning home. After we had "successfully" entered Saturn's orbit, the entire crew was relieved, as we had from a few days to a few months to intersect with Titan's orbit, perform another burn, then start moving towards Titan. We believe that a slight attitude drift caused our vector thrusters to misalign, effectively undercutting our velocity by 8%, causing our periapsis to drop into Saturn's upper atmosphere, which ultimately pulled us into a decaying trajectory toward the planet. Only a few minutes had passed before our head engineer realized the mistake. At that point, it was too late, and our engines were not strong enough to combat Saturn's gravity. We began slowly but surely moving towards Saturn. Based on our calculations, we had about 18-24h until we entered Saturn's lower atmosphere. We laid awake for 15 hours trying to figure out ways to raise our periapsis and restore a stable Saturn orbit, and to hopefully continue our mission. Otherwise, years of travel would be wasted, and God forbid, lives would be lost.

After hours of deliberation, we had finally given up. Team morale was low. We had failed, or so we thought. We had finally come to terms that our orbit was unstable. Drag had continued to pull the periapsis down until we finally intersected Saturn's north polar region. On our final plunge, we spent six excruciating hours plunging towards the pole, and finally, tens of minutes descending through the cloud tops and into what we thought was the vast hexagonal storm. In our final descent, we gathered in a circle, held hands, and prayed. We closed our eyes, as we believed these to be our final seconds alive, until we felt a soft but noticeable jerk. We all opened our eyes, and much to our surprise, we had lived.

We looked out of the deck's windows, and unexpectedly there seemed to be a semi-opaque net enveloped around us. We slowly continued our descent but at a comfortable and seemingly elastic pace. At first, we were too dumbfounded to even conceptualize the plausibility of a "nonexistent" net, but upon closer inspection, and considering the extremely high percentage of hydrogen in Saturn's atmosphere, we believe that a lattice of ionized hydrogen filaments, shaped and controlled by magnetic field manipulation, was the force keeping us afloat. *As a future warning, all potential scientific explanations told in this report are just the beginning of*

*our understanding of the unfathomable that I will continue to describe. Do not take what I say as fact, but rather as a basis of potential understanding.*

As we continued our slow downward trajectory through the clouds, the haze thinned into a dim yet shimmering glow. Beneath us, a vast, mirror-like surface emerged from the fog. Not rock, not ice, not water, but something that looked like liquid silver, held impossibly flat. Our ship finally came to a full yet gentle stop atop this sea of reflections. I turned to my fellow crew members; not a single eye blinked nor a single word echoed. Each one of us had a vision of God painted upon our faces. The first to speak was Neil Volker, our Planetary Aeronomer. What came out of Neil's mouth surprised me, as I highly doubt this was the first thought to cross anyone else's mind.

"Let's test the air," he said abruptly.

Without a wasted breath, he walked into the airlock staging bay, towards the external atmospheric intake port, and pulled a sample of the gas. He almost instantly put it into the mass spectrometer. After about a minute of sampling and stabilization, he began the basic composition test, followed by the toxicity test. After about 10 minutes of analysis, with the piercing eyes of our crew not leaving him for a second, his arms lost stability and he fell to the ground. Everyone was dead silent. As Volker's head was locked onto the ground, he mumbled these life-changing words:

"78% Nitrogen. 21% Oxygen. 1% Argon. 400 ppm CO<sub>2</sub>. 1.1 atm. Temperature 19 degrees Celsius. Toxicity, within safe limits. Ammonia, below detection threshold."

There is no feeling that can describe the silence that followed. Without another word, Volker stood up, pushed us aside, and ran to the airlock. We tried to stop him, but he was determined. He flung open the bay door and jumped out of the ship. He wobbled on the ground, turned around, and smiled. A smile unlike anything I had ever seen. We all quickly rushed out to meet him. We planted ourselves on the silver surface, which felt as if it was just on the cusp of liquid and solid, yet it held us perfectly. *We later determined that this reflective platform was a controlled version of metallic hydrogen, which occurs when hydrogen gas is put under enormous pressure.* The atmosphere seemed too perfect; the transition was so smooth it felt somewhat artificial, like stepping through a climate-controlled curtain. Fresh air had never tasted so good.

What we would learn after stepping into Saturn would continue to change our perspective on everything that we have ever been taught in the world of science.

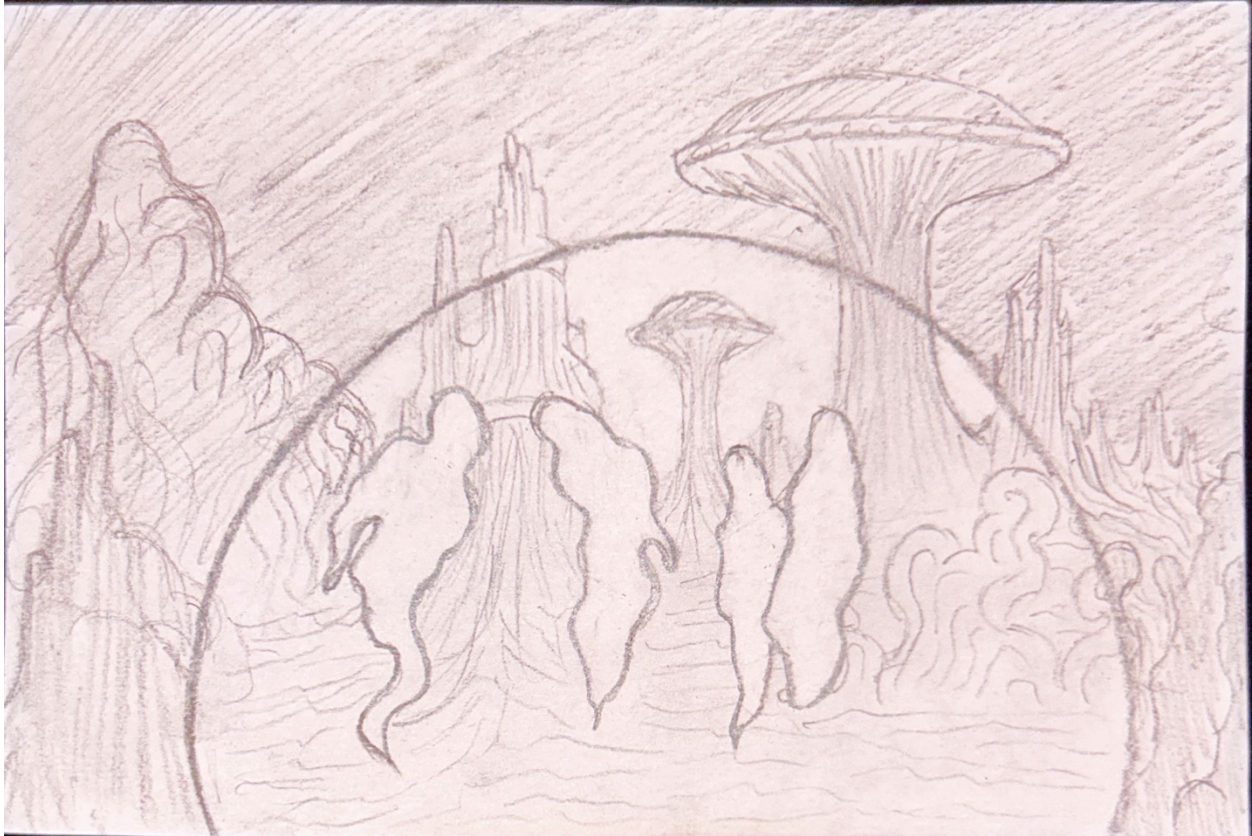
A faint curved membrane arched above us, barely visible but detectable in certain distortions of light, as if we were positioned inside an Earth-like bubble. We noticed movement towards the horizon. The air was clear a few meters in front of our eyes, but it became less transparent the further away you looked. In the far distance, there were large shadows comparable to structures of different shapes, sizes, and colors. Some bent gracefully, reacting to Saturn's magnetic fields; others rotated, behaving like vortices.

A group of unrecognizable figures emerged like nothing in front of our eyes; they started to move towards us. As they continued to close the gap between us and them, we realized what they were. They were gaseous creatures. A line of them stayed towards the edge of the bubble while the rest came to greet us. One of my crew members pointed out that it seemed that they were somehow controlling the atmosphere around us, at least those at the perimeter of the bubble. If they had the power to do that, what else did they have the power to do? *We believe that they were able to artificially pressurize the hydrogen beneath our feet to create the metallic platform.*

One of the creatures, quite larger than the rest, stepped forward, or should I say, floated forward. A pulse of light flashed. H-alpha red, then H-beta blue, then an ultraviolet flicker that I could feel more than I could see. They did not have mouths nor faces, but we knew what was going on. They were attempting to communicate with us.

It was like a scene out of a science fiction film. Gaseous beings, gaseous structures, everything that we have ever known to be true was blown away in an instant. We may have thought that we were advanced and capable beings, but I can guarantee that nothing could have prepared us for what we had encountered. Excuse my informality, but Expedition Kronos was worthless in comparison. Nothing, and I mean nothing, is comparable to what we had experienced. I also want to strongly emphasize the fact that these beings treated us with nothing but kindness and used their advancements to show us the wonders of their world.

Below is a hand-drawn rendition of our first meeting:



After our initial encounter, we were skeptical of the beings, but what followed were the most extraordinary years of our lives. I will not pretend that we understood everything that we saw; no human mind could, but over time we learned to decipher their communication advances to a certain degree. We learned to interpret the rhythm of their light, their pulses, and their transit through the hydrogen currents. We tried to understand how they lived and how they had developed so far. We learned unimaginable things about their magnetohydrodynamic manipulation abilities and the intricate lattice of fields that sustained their existence. They revealed nothing that could harm us, only things that could elevate us as a species, and not once did we feel under threat or in any form of danger. Under their guidance, we learned more about Saturn's deep atmospheric chemistry, pressure interfaces, and energy cycles in two years than we have in all of human history. What we thought to be a hexagonal storm at Saturn's north pole turned out to be an entrance, designed, controlled, and managed by these beings as a sign and gateway for intelligent lifeforms to know of their existence.

When our fuel cells were depleted, they demonstrated a technology beyond anything that had ever been written in any scientific catalogue. They were able to compress and manipulate hydrogen, atomically altering its basis into anything that we could comprehend, including jet fuel. After two seemingly short years, we determined that it was time to write this report and to return home to share our findings with the scientific community and the world. When it was time to leave, they understood, and just as they had two years ago, they shaped a final gaseous net. This time, not to slow our descent, but to push us outwards and stabilize our orbit. The ascent was just as gentle as our first encounter, and our farewell was full of warmth and understanding. As our altitude increased, we saw the shining metallic platform decrease in size below us, and the gaseous creatures slowly fall behind the bubble. Our engines ignited with a confidence we had not felt since departing Earth, and in the silence that followed our departure, the magnitude of what had occurred finally set in. We were not saved by accident; we were not studied as curiosities; we were taught, and ultimately, we were enhanced.

Members of the committee, I submit this report knowing full well that what we have encountered challenges everything we have ever known of planetary science, biology, chemistry, and the origins and philosophy of life itself. I assure you that every word written in this report is true, and every piece of evidence collected and portrayed in future reports is our personal findings. The beings that we encountered, hydrogen-based, luminous, and profoundly intelligent, treated us graciously and with the utmost kindness and consideration. All I ask is that this information is used for the benefit of society, and as I'm sure we will return to Saturn, I ask that we return out of kindness and with no malicious intent.

I stand ready to brief the committee upon my return, as does every member of my crew, and to submit all sensor logs, atmospheric data, spectral records, linguistic attempts, and visual documentation gathered over our two-year stay.

With utmost respect,

Commander Silas Draven  
Kronos Expedition Leader

## **Artist Statement:**

I had lots of fun writing this piece and drawing what I imagined the “surface” of Saturn to be. My inspiration for this short story initially started when we first learned about the hexagonal storm located at Saturn’s north pole. I found it super interesting how a seemingly artificial-looking shape could be positioned on Saturn, something so far away and so unknown. I have always enjoyed writing, and I have especially enjoyed writing fiction. With this piece I wanted to do something a little out of the ordinary and wanted it to be as scientifically accurate as possible, obviously taking into consideration that it’s science fiction, but still staying true to certain things. I also wanted to touch on one of humanity’s oldest aspirations: contact with the unknown. I wanted to create a story that combines narrative, illustration, and scientific imagination to visualize a moment where humanity crosses the boundary between what we know about the solar system and what we wish was out there. I spent hours researching correct terminology used on space expeditions. For example, how astronauts refer to time, and specific maneuvers that take place in deep space missions. I learned all about orbital burns and how the probes sent to Mars did exactly what I depicted to get into Mars’s orbit. For realism purposes, I researched different committees in NASA and specific roles and technology they had to make it seem “real.” The way that air is tested is accurate, the levels of oxygen for breathing are accurate, and so forth. I also made sure to include realistic information about Saturn’s moons, which in fact are highly likely to be harboring subsurface oceans, and Enceladus does secrete plumes of subsurface liquid.

I wanted the writing style to mimic a formal report but at the same time include informalities because of the weight of the discovery. In my mind, if I was in the position of the commander, my report would be formal but would absolutely include a semi-informal tone and some strong imagery, as I don’t think I would be able to contain my excitement. I think that my writing stayed true to that belief, that it would be formal but also incapable of expressing the accomplishment without going into some informal language. I wanted it to have some strong imagery to get the reader wondering and excited about the situation, and I wanted to include a drawing because I can only imagine that a report of this caliber would not only include words but

also some images. Sadly, I do not have any images of this encounter and only a hand-drawn picture.

Within the image, I tried to draw the atmosphere as cloudy and gaseous outside of the oxygen bubble, and I think that was displayed well within the drawing. I did this to make the scene more realistic, as Saturn is a gas planet. Adding on to that, there is arguably no surface on Saturn, so when discussing the platform that the astronauts landed on, I had to think of a scientifically accurate way to give them a platform, and although highly unlikely that any lifeform could perform such an act, it is physically possible, as metallic hydrogen does exist on Saturn, just at a much deeper level within the atmosphere.

To further dive into the connection between real scientific practices, knowledge, and the fictional world, I wanted to illustrate a situation that would seem logistically plausible if NASA went on a similar expedition in the future. Additionally, in modern science fiction, the unknown is often villainous and malicious, but I wanted to explore what it would be like if it wasn't. Humanity has a history of instantly resorting to power, fear, and violence. I was hoping that I could illustrate a reality where if the humans are not initially violent, then the others will not be violent in return.

Another thing that really inspired my piece was the idea that all life is derived from carbon. There has long been speculation as to whether it was possible for life to be derived from other elements, and I wanted to touch on that in this piece. How would it look? How would they develop? What abilities could they have? To be completely honest, this piece was fun for me because it touched on a lot of curiosities that I have had in my life, and sometimes it is more fun to come up with the answer than to find it.

My hope is that readers engage with this not merely as science fiction, but as a reflection of the possibilities that science can uncover and where humans will be in the future. It is always good to imagine the unknown and, in my opinion, makes life much more interesting.