

*So, while space exploration can teach us many things about handling the current [pandemic] situation, these contrasts show us that the actual experience of living in space is also radically different. This is not necessarily a problem; on the contrary, it illuminates the beauty and positivism of humankind's venture into space in these dark and difficult times.*

**Angelo Vermeulen**

I've experienced six isolation missions of different durations, including one solo mission inside an ancient water cistern in the south of Italy.

In 2013, I participated in the first NASA-funded HI-SEAS Mars simulation in Hawai'i. Together with five other scientists and engineers, I lived cooped up in an 11m diameter dome for four months, isolated from the outside world. Since then, I've translated this isolation experience into performative art projects with the SEADS collective.

[During the COVID-19 outbreak], a lot of interviews have been published of astronauts sharing their experiences of dealing with isolation. Obviously, there are interesting lessons to be learned, however, there are also some crucial differences that are often overlooked.

**THE OUTLOOK**

When I was selected for HI-SEAS, right from the start, through the subsequent training and the actual mission, I experienced an overwhelming sense of purpose: a

constructive and positive perspective of being able to help out humanity explore the solar system. However, what we're experiencing now is rather the opposite: a dystopian world with an invisible enemy wreaking havoc on civilisation. It is even hampering our ability to go to space by delaying and setting back numerous space programs and rocket launches.

**MISSION DURATION**

When doing a space mission - or an analog mission - you constantly keep the end of the mission on your mental horizon, not because you want it to be over, but to pace yourself through the experience. There are often celebrations to mark the midpoint and third-quarter of missions. However, the duration of the COVID-19 crisis is highly indeterminable, and this makes the situation more challenging. Nobody knows when this will end. Furthermore, even if lockdown measures are relaxed, a new wave of infections might throw us back into a hard lockdown. This unpredictability is alien to space missions, which are carefully planned to minute detail.

**CHOICE**

Participating in space missions and simulations is something you aspire for and deliberately choose to do. Usually, it is something that people dream of for a long time, and are willing to give up comfort for, even exposing themselves to severe challenges. However, nobody chose to undergo COVID-19 isolation, and this fundamentally changes the psychological experience of isolation.

**Rohini Devasher**

The project I was working on before this pandemic swept the world has taken on a new meaning. A few months ago I read 'In the Dust of this Planet' by philosopher Eugene Thacker which explores the relationship between philosophy and horror and found it to be challenging and insightful in equal measure.

*"The world is increasingly unthinkable - a world of planetary disasters, emerging pandemics, tectonic shifts, strange weather, oil-drenched seascapes, and the furtive, always-looming threat of extinction."*

*In spite of our daily concerns, wants, and desires, it is increasingly difficult to comprehend the world in which we live and of which we are a part. To confront this idea is to confront an absolute limit to our ability to adequately understand the world at all - an idea that has been a central motif of the horror genre for some time."*

In the summer of 2018, I spent 26 days on board the High Trust, an oil tanker, as part of an artist's residency program called the Owners Cabin. The voyage took me from Suva in Fiji, to Singapore, via Samoa.

My time on the High Trust was spent literally between the spheres of blue above and below. Through the 26 day voyage I recorded images of both spheres. *Parallax I* is a new drawing that mirrors that dual perspective. One sphere points at the zenith looking up and out, recording the movement of the Milky Way across the skies of the Southern Hemisphere. The second looks down at the depths of the Pacific Ocean where the blue is so deep it is almost black, the ocean at 4500 meters. This work reflects on the world we inhabit but have yet to completely understand. It is one of several which are an expression of what specific sites, both on and off the ship, might tell us about the nature and complexities of human meaning-making.

The current body of work is a slow exploration of whether ideas of deep time and wonder may offer some disruption and suggest new ways of thinking and working when looking at the Planet as a constantly evolving construct.



HI-SEAS Mission 1 training at the Mars Desert Research Station (MDRS) in Utah in 2013. Photo by Angelo Vermeulen.

How do we construct our planetary environment, and how does that environment in turn construct us?

Rohini Devasher



view from the High Trust, Rohini Devasher, 2018

**Maria Antonietta Perino**

*When I think about the future I see water. Clear water. Water is the cradle of life. Water is our body. Water quenches thirst. Water cleans. Water is transparent as our soul. I am water.*

**Susan Christianen**

Born in The Netherlands, I was raised with knowledge on how to literally keep your head above the water when the storm hits and sea levels rise. In times of distress I often turn to the ocean to recharge, to reconnect with nature and to get inspiration on how to adapt to the tides of change.

*"Let's swim to the moon  
Let's climb through the tide  
Surrender to the waiting worlds  
That lap against our side"*

— Jim Morrison, American singer-songwriter, The Doors.

Organisms in the ocean help to absorb around 3 gigaton of atmospheric carbon dioxide a year, which is about a 3rd of the emissions caused by human activity. It is time we all start acting like organisms in the ocean and reduced our footprint, to take charge of our life and to leave a habitable planet for future generations. The tides do not command the ship. Systemic change and resilient development does. The nomadic arctic indigenous communities I have lived with (in

Siberia and Sweden) correlate with that belief. Everything is created to be self-sustaining. There is no over-consumption. What you take from nature, you'll have to give back.

The ocean is a universal operating system that provides air, water, food, energy, and nurturing conditions for all life. The ocean unifies our world community. The International Space Station functions as a similar unifying operating system. The space industry has a large database of technologies that can be transformed into resilient solutions for society, also in regard to disaster management, waste management and living in isolation."

*Disasters and pandemics like COVID-19 come in like waves, trickling in and out with the tide. Some waves are massive and make more of an impact than others. Sometimes waves bring with them things from deep in the bottom of the sea and leave those things tossed onto the shore. Imprints against grains of sand that prove the waves had once been there, long after the tide recedes. Imprints longing to be dissolved.-*

Susan Christianen



Susan Christianen - surfing and social distancing in Iceland during the pandemic, 2020. Self portrait (GoPro camera).

City As A Spaceship

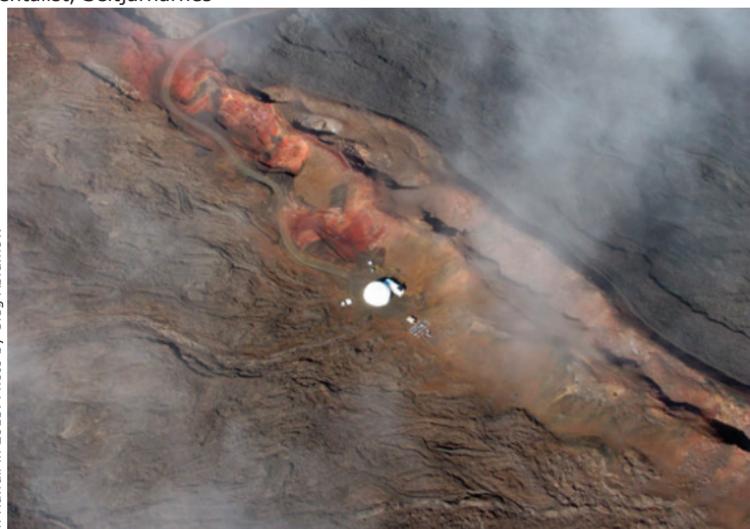
**CAAS**

The Many Hues of Isolation  
COVID-19 Journal #01.2020

May 2020, Seattle, Sint-Niklaas, Torino, Seltjarnarnes, New Delhi

Editors: Susmita Mohanty, Barbara Imhof, Sue Fairburn, Jennifer Cunningham  
Guest Contributors: **Brent Sherwood**, space architect, Seattle; **Angelo Vermeulen**, biologist, artist, Sint-Niklaas; **Rohini Devasher**, artist, amateur astronomer, Delhi; **Maria Antonietta Perino**, space engineer, Torino, **Susan Christianen**, industrial designer, environmentalist, Seltjarnarnes

HI-SEAS Mars simulation habitat on the flank of the Mauna Loa volcano in Hawaii in 2013. Photo by Oleg Abramov.



The City As A Spaceship (CAAS) Collective reaches out to friends and peers across the globe. The outcome is a series of three CAAS-Corona Journals. This first Journal maps similarities, differences and contrasts of life in isolation in outer space, in polar regions, in a pandemic lockdown, during planetary mission simulations in analogue environments on earth, and aboard an oil tanker at sea.





iss056e201248 (Oct. 4, 2018) --- The International Space Station photographed by Expedition 56 crew members from a Soyuz spacecraft after undocking. NASA astronauts Andrew Feustel and Ricky Arnold and Roscosmos cosmonaut Oleg Artemyev executed a fly around of the orbiting laboratory to take pictures of the station before returning home after spending 197 days in space. The station will celebrate the 20th anniversary of the launch of the first element Zarya in November 2018. Credit: NASA/Roscosmos

## Brent Sherwood

### COVID living as a proxy for life in space

Space architects, by contrast, think about it constantly, [think about space travel], at scales "from spoons to highways". We work to tame the discomfort, sensory disorientation, noise, odours, remoteness, tedium, and bodily risks of surviving, working, and living in space.

This is essential work because someday, most of humanity may live in space: only the solar system's unlimited material and energy resources and lack of precious native ecology will allow humanity to expand far beyond today's billions.

But life in space will be quite strange compared to what Homo sapiens has always known. No open skies, outdoors, or air at all. Vast distances and high energies. Hyper-awareness of the mechanics of life, and the constant threat of quick death: these are the normal conditions of living in space.

COVID [has] shredded the fabric of modern social interaction [---]. The quotidian interactions that defined much of civilization [were] largely stripped away. [---] We are learning how to get business done with virtual meetings. [---] Virtual get-togethers of all sorts prepare us to some degree for life in space.

Crew onboard the International Space Station already use teleconferencing to stay in touch with ground crews, researchers, and families. In low Earth orbit, and maybe out to lunar distance, minor signal delays still allow near-real-time virtual meetings. However, among the near-Earth asteroids, or at Sun-Earth L4 and L5, a several-minute signal delay precludes immediate telepresence.

All space living will be socially distanced. Groups of many sizes will live and work isolated from each other by vast distances that are expensive and time-consuming to bridge. All populations will be small compared to the total human population; it will take a long time to attain even the scale of a modest town, of order 100,000 people. Interaction between isolated groups will occur primarily through telecommunications.

Today, [the COVID-19 pandemic] [has forced] a sudden, disorienting transformation in how we live. Our new normal brings us closer to space architecture.

## Anna Heiney

NASA Blog  
Posted 13 May 2020

<https://blogs.nasa.gov/commercialcrew/2020/05/13/spacex-demo-2-crew-members-enter-preflight-quarantine/>

### SpaceX Demo-2 Crew Members Enter Preflight Quarantine

NASA astronauts Robert Behnken and Douglas Hurley entered quarantine Wednesday, May 13, in preparation for their upcoming flight to the International Space Station on NASA's SpaceX Demo-2 mission. They'll lift off aboard a SpaceX Crew Dragon spacecraft carried by the company's Falcon 9 rocket two weeks later at 4:33 pm Eastern Wednesday, May 27, from the agency's Kennedy Space Center in Florida.

Due to the coronavirus pandemic, people all over the world recently have experienced varying degrees of quarantine – a period of isolation from others to prevent the spread of contagious illness.

*However, for crews getting ready to launch, "flight crew health stabilization" is a routine part of the final weeks before liftoff for all missions to the space station.*

Behnken and Hurley will be the first American astronauts to fly to the station aboard an American spacecraft launched from American

soil since the retirement of the Space Shuttle Program in 2011. They'll meet up with the Expedition 63 crew already in residence aboard the orbiting laboratory: NASA astronaut Chris Cassidy and cosmonauts Anatoly Ivanishin and Ivan Vagner.

Spending the final two weeks before liftoff in quarantine helps ensure the Demo-2 crew arrives healthy, protecting themselves and their colleagues already on the station. [---]

Some additional safeguards have been added because of the coronavirus. For example, anyone who will come on site or interact with the crew during the quarantine period, as well as any VIPs, will be screened for temperature and symptoms. Hurley and Behnken, as well as those in direct, close contact with the crew will be tested twice for the virus as a precaution.

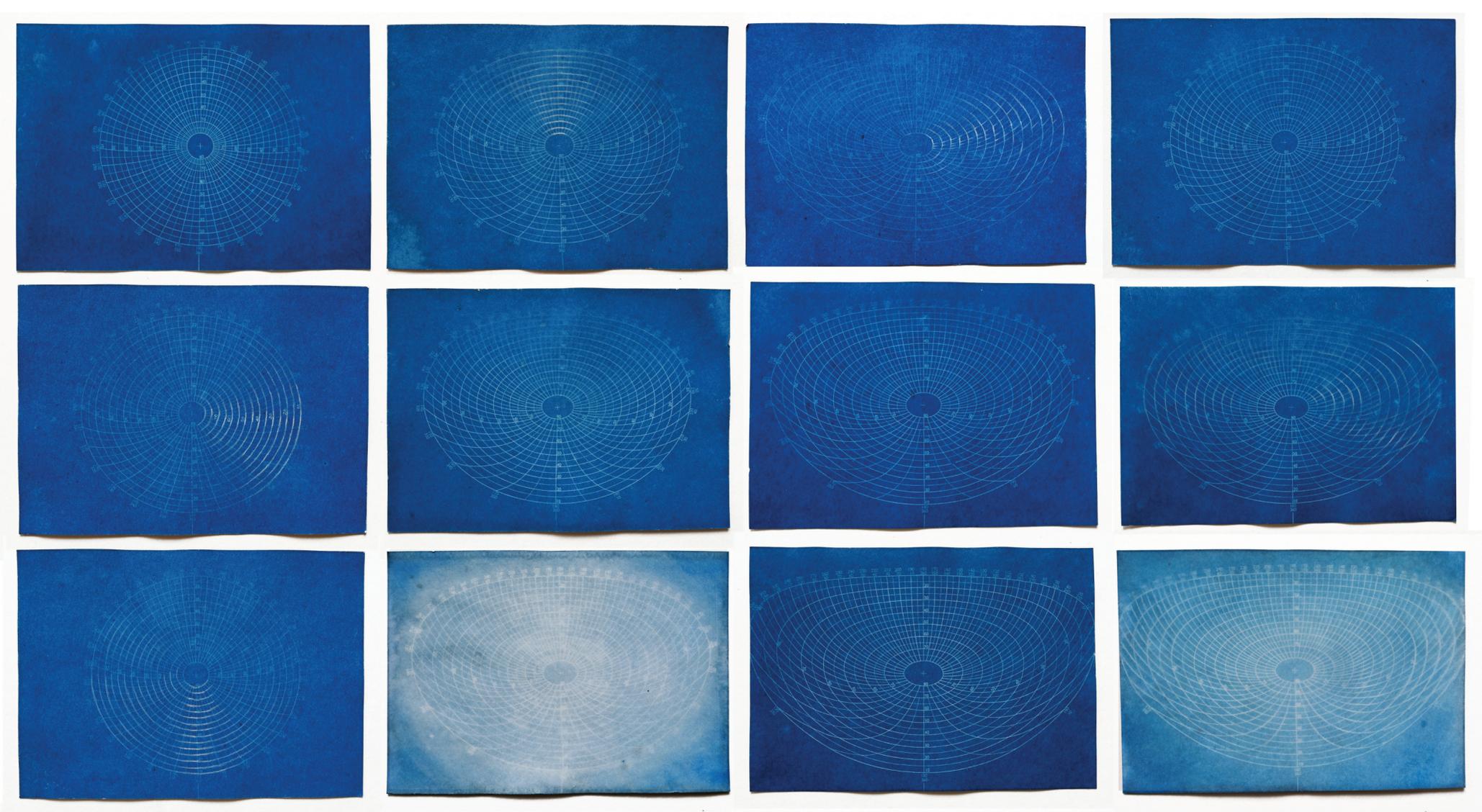
Health stabilization procedures were introduced for the Apollo program, in which NASA astronauts left low-Earth orbit to journey to the Moon, and have continued through the shuttle and International Space Station programs.

Behnken and Hurley will remain in quarantine after their arrival at Kennedy on May 20. Liftoff from Kennedy's historic Launch Pad 39A is targeted for May 27 at 4:33 p.m. EDT.

(post blog, side note: The final launch was delayed to 30 May, Saturday, due to weather



@shvetsanna, Screen grab credit: Anna Shvets, 2020



Parallax I - A new work of art produced by visual artist Rohini Devasher during COVID-19 lockdown. Parallax is the perceived change in position of an object seen from two different places. In essence, parallax is the perceived shifting phenomenon which occurs when an object is viewed from different positions. Medium: Dry pastel, pan pastel, colour pencil, graphite pencil, glass marker on drafting paper. 130 x 80cm; 2020 Rohini Devasher