

# REPUBLIC OF THE MOON - A NEW ARTISTS AUTONOMOUS TERRITORY

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How will we live on the Moon? Despite long-term plans to send humans to Mars, in the short term the Moon is the most likely place to rehearse living away from the Earth. Republic of the Moon discusses possibilities for artists' autonomous solutions.



*Agnes Meyer-Brandis training Moon Geese (courtesy the artist)*

"Earth is the cradle of humanity, but one cannot live in a cradle forever" - Konstantin Eduardovich Tsiolkovsky, 1911

In two months time from the writing of this paper 6 people (all men) will emerge from a 'wood panelled spacecraft' at the Institute of Biomedical problems in Moscow. This will be the conclusion of Mars 500, an attempt to simulate the logistics, psychology and monotony involved in a mission to Mars. This is the most ambitious of the analogue environments that have been designed on earth to investigate the human factors in long-term space travel – previously the Mars Desert Research station in Utah has been used to rehearse life on Mars complete with space-suited expeditions from a habitat into the desert.

But it is still likely that any long-term attempt to live off the planet will be on the Earth's Moon, only 3 days away by rocket, although reachable over a longer period by electric-powered spacecraft such as the European Space Agency's SMART vehicle, eventually orbiting the Moon. So, despite long-term plans to send humans to Mars, in the short term the Moon is the most likely place to rehearse living away from the Earth. It is envisaged that sooner or later a small outpost of humans and robots will be established, possibly living in tunnels drilled under the Moon's surface and quite possibly established by emerging superpowers such as China or India on the South Pole of the Moon where water ice is expected to be found. So how might we respond to this new territory, which technically belongs to everyone?

The idea of humans living away from the Earth's regular infrastructures also gives rise to alternative thinking about issues such as sustainability, human psychological factors and governance. The recent movie 'Moon' worked on the dystopic basis that we might only wish to send clones to exploit the Moon industrially. But what if we were to apply new 'open source' thinking about collaboration between humans and technology to create a liveable solution for an off-planet habitat. Space architects and psychologists such as Regina Pelzsus (quoted below) are currently proposing new paradigms for dealing with issues such as monotony and governance and artists are beginning to propose new models for living off-world.

One strategy could be the pre-emptive setting up of a micronation which could claim the Moon independent of national or commercial interests. This strategy has already been used by artists such as Slovenia's Neue Slovenisch Kunst (NSK) who issued their own passports, the Danish group N55 or artists like Antti Laitinen. Alexandra Mir famously declared herself the 'First Woman on The Moon' on a Dutch beach. Other strategies are being proposed in the new Arts Catalyst project and exhibition 'Republic of the Moon'

The initial idea came from a recent International Astronautical Federation meeting in Paris attended by the exhibition curators, in which issues of space governance were discussed. A United Nations official with an interest in the peaceful uses of space stated at a private meeting "The last thing we want to propose is a Republic of the Moon". We wondered: why not? So we propose to set up, in advance, an artist's micronation- a Republic of the Moon and will communicate with specific artists and groups inviting them to participate, to start thinking about methods of governance, diplomacy and autonomy of this future artist's territory.

Regina Peldzsus is working with the internationally acclaimed artist and architect Tomas Saraceno to build an environment which will challenge a group of 20 volunteers to live for 20 days in a moving spherical module in which they will work, eat, socialise and sleep, but which has no 'up' or 'down' at any one time.

Saraceno, who has created the major exhibition 'Cloud Cities' currently showing as a one-person show in the main hall at the Hamburger Bahnhof, is a latter-day follower of Buckminster Fuller, following the dictum 'There are no passengers on Spaceship Earth, only crew'. His installation forces the viewer to become a participant in a different way, raised above the ground in semi-stable inflatable structures and become a physical metaphor for collaboration.

Peldzsus has written a short summary of the objectives of such a project:

"The conditions in an isolated and confined environment such as a Moon base pose a range of psychological challenges to a group of astronauts. In terms of crew cohesion – which is vital for both physical and emotional survival in a hostile and remote location – this can include social monotony, clique building, personal withdrawal and aggravation of interpersonal tension. [1, 2] Leadership becomes a crucial concept in ensuring harmonious and successful co-habitation [3] and, in a broader sense, represents or challenges models of governance on Earth.

As a central part of the programme of Republic of the Moon, a simulation of a Moon mission is proposed. It involves three groups of participants who help design, man and operate the base for the dura-

tion of the exhibition. A DIY Lunar Base will feature all necessary habitability aspects such as sleep stations, galley, windows, greenhouse, hygiene facilities, storage room, work lab, space suits and maybe even an exploration vehicle.

Space analogue studies and ground simulations are an essential – albeit expensive – component of research activities in the scientific spaceflight community. In the light of future long duration missions, space agencies and independent institutes around the world are preparing. Examples include the Houghton Mars Project in the Canadian High Arctic, the Mars Desert Research Station in Utah (US), ESA's Concordia Research Station in Antarctica, and – most notably at the moment – the MARS500 simulation study at the Institute of Medical and Biological Problems in Moscow.

Staging a simulation in the framework of Republic of the Moon will not only deliver insights and firsthand experience to the participating audience, but inspire and inform a wider public on human aspects of long duration missions."

A different approach to the Republic of the Moon project has been that of the artist Agnes Meyer-Brandis, whose poetic-scientific investigations weave together fact, imagination, storytelling and myth, past, present and future. Her project 'cloud-core scanning' involved research taking samples from the centre of clouds in to zero gravity in a parabolic flight in order to test how they behave.

Meyer-Brandis weaves a narrative based on writings by Francis Godwin based on an excerpt from the book *The Man in the Moone*, written by the English bishop Francis Godwin in 1603. Godwin was the first person ever to describe weightlessness – long before Newton's theory of gravity. The protagonist in the book flies to the moon in a chariot towed by gansas birds, more commonly known as geese. These special moon geese migrate every year from the earth to the Moon.

Meyer-Brandis has actualised this concept has by breeding 11 geese at the artists residency in Pollinaria, Italy - imprinting them on herself as goose-mother, training them to fly and taking them on expeditions. All these geese have been named after famous astronauts and she is proposed to build a Moon analogue habitat for them in Southern Italy which would be operated, in the same way as human analogues, from a remote control room in Northern Europe as part of the Republic of the Moon project.

The context of many of these artists interventions reflecting on a moon colony is inspired by other projects that attempt to take on 'big' infrastructures such as the space industry and bring them down to a human-sized level.

In 2010 a workshop and conference was held at Newcastle University and the AV Festival to examine artists autonomous infrastructures in the light of a potential 'planetary breakdown' Following Helen and Newton Harrison's notion of the 'Force Majeure – that we should be preparing for different forms of governance following radical blows to the existing infrastructures by inevitable climate change – Autonomous Infrastructures looked at the many models created by artists and by communities of people operating semi-autonomously in society in intentional and utopian communities. It examines the symbolic nature of many of these initiatives and propose the future realisation of unrealised artists infrastructures. One of the projects coming out of this was the Train project by hehe, which although not part of Republic of the Moon, symbolised the approach to the subject.

The artist group hehe (Helen Evans and Heiko Hansen) uses minaturisation as a method of playful nuanced critical intervention and reflection around issues of sustainability, such as their recent work in Cambridge during 'Invisible Dust' and at Ars Electronica 'Is There a Horizon in the Deep Water?', which re-enacted the BP Oil Rig disaster on a small scale in a pool of water.

The Arts Catalyst is currently working with them on a long-term research project called Train, which takes the problem of locomotion as a starting point. The project develops autonomous one-person vehicles that operate temporarily, in the form of a performance, on unused or abandoned rail tracks. An example of such a "dislocation" is the vehicle Tapis Volant (Flying Carpet). The Flying Carpet, which runs along the historic tram track in central Istanbul, appears as a soft red cushion with beaded tassels dangling down from each of its sides, large enough for one person to sit comfortably. It runs along a tram track, using one of the rails as a monorail, it's wheels propelled by an electric motor. Underneath the cushion is an electro-mechanical system that allows the rider to advance whilst seated in a cross-legged posture. This body position not only mimics the way of sitting on a mythical flying carpet, but also gives the body a different inclination and state of mind, suggesting that that rider has to be grounded and balanced to ride this particular vehicle. In this project they use their indirect comment on environment to the issue of public transport versus the apparent freedom of the motor car.

Hehe has made a widely publicised work call 'Nuage Vert' or Green Cloud, in which factory emissions are monitored and dramatised by a live interactive laser illumination of the shape of the smoke emitting from a factory in Helsinki, and most recently an incinerator in St Ouen, Paris. While not directly taking on issues of space exploration, hehe's approach is an example of the symbolic power of artists intervention into large-scale infrastructure such as the space industry.

Space exploration is also too often seen to be the province of the US, Russia and Europe. But the some of the most recent launches have been from India, in the Chandrayaan programme. Rakesh Sharma, India's first astronaut, said that India was embarking on Moon exploration in order to be part of the conversation of the future of the Moon. "But who is part of that conversation, where does it happen, who is excluded and who ever hears it?" asks Joanna Griffin, who with artists from Srishti School of Art in Bangalore along with interested scientists from the Indian Space Research Organisation (ISRO) are creating an open forum where meanings of the moon in culture and meanings of the moon to scientific projects, can be discussed, in the project Moon Vehicle.

Moon Vehicle will look at what is discussed in relation to the Moon in order to transport points of view – commonality and difference. To demonstrate to the small community deciding the future of the moon that they have responsibility towards cultures they do not know. The project is conceived as a perspective-altering exercise. The live image of the Moon will be projected from a telescope onto the ground, creating a new poetics that encourages people to think about the relevance of the Moon to our lives and the earth in new ways. It is a performance space, a storytelling space, a play space and a debating space Joanna Griffin: "It's been a way to bring people into a circle to talk about the moon. It does this really poetic thing of 'earthing' the moon so you look down instead of up and think differently We've tried to bring people from different walks of life to talk about the meaning of the moon to them. We've tried to have it as something non-hierarchical, so not just about 'experts' It's something kids absolutely love to play in."

So why this moon? And why humans? Andy Gracie, working on a project for a different moon that that of the Earth- Titan, the Moon of Saturn. His idea is to use DIY and bio-hacking approaches to creating the

atmosphere of that moon here on Earth, using everyday materials such as vodka and a bicycle pump and breed fruit flies in this environment to see if they would survive.

Gracie describes the project here: "The fruit fly *Drosophila melanogaster* has been used as a model organism since early 20th century and more recently has become a workhorse of space bioscience, having flown in biosatellites, space shuttles and space stations. Due to the 75% similarity of the *Drosophila* genome to our own, a range of experiments on this organism continue to inform us about the effects of radiation, microgravity and other space environmental factors on ourselves. Out of a wide range of experimental organisms it is the fruit fly which will arguably provide most of the data on how the human is expected to adapt to off-earth conditions.

Many scientists view Titan as an analogue to the early Earth, although the temperature is significantly lower. Some theorists cite Titan as a possible host for microbial life, or at the least as a prebiotic environment rich in complex organic chemistry. Anomalies in the methane cycle within Titan's atmosphere are identical to confirmed life signs from terrestrial microbes.

The selection criteria for astronauts has commonly and famously been based around the idea of 'the right stuff' – or in other words the candidates having the correct combination of attitude, lifestyle, physical prowess, political views and so on. There is also the strong connection to the military as a pool for candidates, despite the fact that scientific accomplishment is beginning to be seen as an additional virtue. Would the selection procedure for *drosophila* be in any way similar to the selection procedure for human astronauts? Would they be selected for their physical properties and attitude or according to more familiar and endearing traits. When would be the right time to send the first female *drosophila* into space?"

While we see the Fruitflies on Titan project as an interesting and provocative addition to the Lunar Analogue environment that would be at the Centre of Republic of the Moon, Andy Gracie's stark comments on selection are exactly what we will question in terms of thinking of who might live in a Moon colony.

We are humans, not fruit flies! Astronaut selection for Apollo, the Russian space programme during the Cold war are exactly what we regard when thinking of space travel as limited to those with the 'right stuff', exemplars of the top-down command-structures military paradigm that powers wars. By bringing artists into the equation, particularly those familiar with collaborative methods of working, can we redefine living governance and team behaviour in extreme circumstances in terms of collaboration, knowledge-sharing, consensual decision-making and multicultural approaches in rehearsing for, then living on the Moon? Or would it revert to Big Brother-style survival of the fittest? Republic of the Moon sets out an artist-driven manifesto that perhaps points out some alternatives for living and working in space.

(The Republic of the Moon project is a collaboration between The Arts Catalyst, London, FACT, Liverpool and other European partners taking place in 2011-2014)

## **References and Notes:**

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