

COSMOS

ISSUE 99

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▶ To celebrate NASA's Perseverance rover touching down on the red planet in 2021, London's Natural History Museum unveiled a new installation: an enormous replica of Mars. Seven metres wide, this illuminated red globe was suspended from the ceiling in Hintze Hall. Artist Luke Jerram created it using 120dpi detailed NASA imagery of the Martian surface, where each centimetre on the artwork equates to about 10km on Mars. This isn't the only celestial body that Jerram has created – read more about giant Earths, moons and more on page 100.

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In 2020, the illuminated 3D art installation Gaia was exhibited in the Painted Hall at the Old Royal Naval College in London, as part of the Greenwich & Docklands International Festival.



THE ART OF THE PLANET

One artist has combined tech, philosophy, sound and setting to give modern humans a reminder of something desperately important: the fragility and isolation of Earth.

Matthew Ward Agius reports.

Craning my neck, I see, floating above me, a massive, softly illuminated, whitish orb. As I step back, its true identity is revealed: blue swims into view, so too shades of brown and green.

It's a crystal-clear replica of our home planet.

And after nightfall, here at the WOMADelaide world music festival on a warm March evening at Adelaide's Botanic Park/Tainmuntilla, it's an unmissable sight.

Called Gaia, after the mythological personification of the Earth, this seven-metre-wide floating sphere has drawn dozens of humans into its orbit: revellers putting their feet up after a hot day marching between sound stages; friends sitting beneath, bathing in its gentle glow; mothers circling its perimeter with bubs in prams.



About 200 metres away, a much-hyped circus performance – *Place des Anges* (Place of the Angels) – is underway. It provides a curious contrast to the graceful Gaia – at one point, tonnes of white feathers are ejected by acrobatic “angels” onto the crowd below. As the illuminated duckdown drifts in the background, I’m struck by what Gaia asks the viewer: to consider the impact humans are having on our delicate world.

At least that’s what Gaia’s creator, acclaimed British artist Luke Jerram, intends.

“Gaia is an acknowledgement that we’re in the sixth mass extinction of species on our planet,” Jerram says. “There is a climate crisis. [Gaia] is not about raising awareness of climate change, it’s about shouting as loud as we can that we really need to do something very quickly to avoid runaway climate change and all those horrible tipping points that are going to be kicking off.”

As with all art, meaning derived by the viewer is subjective, and influenced by many factors. With

“Gaia is not about raising awareness of climate change, it’s about shouting as loud as we can that we really need to do something very quickly.”

Festival-goers gather around Gaia at WOMAdeelaide in Botanic Park/Tainmuntilla in March 2023 (above), while on the opposite side of the planet, Gaia’s larger cousin Floating Earth (right) sinks into London’s Canary Wharf at the 2023 Winter Lights festival.

fewer live acts, observers have longer, quieter moments to appraise Jerram’s globe. During the day, however, Gaia grabs the attention of virtually every festival-goer, if only to provide a novel prop for a social media post.

While the interpretation of the artwork might be influenced by its setting, Jerram nevertheless sees an important role for his art – and all art – in motivating and informing people of science, and the fragility of our world.

“If you’re a scientist you can apply your scientific understanding and knowledge to it,” he says. “If you’re a banker, you can divest your fossil fuel investments. If you’re a musician, you can communicate in that way, and as an artist, I’m able to create strong and powerful images.”

Inspiration is clearly not a challenge for Jerram, but putting such a large piece together is no mean feat, and one that’s only become truly possible in the last decade



MAKING AN EARTH



At the very beginning of his career around two decades ago, the now 49-year-old artist from Bristol, in south-west England, first imagined a large, true-to-nature facsimile of the Moon.

Jerram was inspired by living in Bristol, where he noticed the huge tidal variation as he cycled each day over the New Cut – an artificial diversion of the tidal River Avon – built in the early 19th century to accommodate dockland construction in the city centre.

Jerram wanted to create something that viewers could see up close, allowing them to more clearly observe the unique geographic characteristics of our lunar neighbour. But the

manufacturing techniques and imagery needed to realise such a sculpture simply weren't available.

Then, in 2009, the Moon-destined Lunar Reconnaissance Orbiter launched. It uses a special camera system mounted to its body to relay high-resolution images of the Moon's surface back to NASA. Jerram selected a series of these photographs and the US Geological Survey's Astrogeology Science Center compiled them into the 23-metre-wide, ultra-detailed image that would form the basis of his first balloon creation.

Jerram approached the world's most prolific maker of hot air balloons, Cameron Balloons, conveniently located just minutes from the centre of Bristol, to help bring his idea to life. In 2016, the seven-metre-wide Museum of the Moon was filled with helium and hoisted into the air at the Bristol Balloon Festival.

Museum of the Moon's success at Bristol led to tours of Britain, Europe and, eventually, the world: it's been seen by more than 20 million people in more than 30 countries. It enabled Jerram to



TOP: SAIGE PRIME. LEFT: ROY RILEY



consider new projects in that vein: first, Earth – Gaia – and more recently, Mars.

Gaia is not the same as its lunar predecessor, however. The print is a unique compilation of images from NASA’s Visible Earth series, drawing contributions from dozens of spacecraft and satellites put into space throughout the last decade.

Half the Earth is always bathed in sunlight, but these images are reassembled to provide a fully lit rendition of the planet’s surface.

Cameron Balloons prints this image at 120dpi – the number of ink dots placed within a square inch of material – onto 50 nylon balloon fabric panels using massive caravan-sized printers. These panels are then carefully sewn together at Cameron’s Bristol headquarters.

“Mars” appeared at London’s Natural History Museum in 2021 (above), with “every valley, crater, volcano and mountain ... laid bare for us to inspect”, according to Jerram. Later that year, Gaia and visitors alike were suspended in the forest for Dorset’s Inside Out Festival (opposite).

“We’ve been staring at the Moon for 200,000 years, so we’ve got all these mythologies and stories and cultures related to looking at it, whereas it’s only been 60 years since we’ve seen the Earth from space.”

To illuminate the structure, an internal light source is inserted into the helium-filled balloon and a motorised fan is used to help give Gaia its body.

Wires are then attached to the planetary poles and Gaia is hoisted into place. Interior exhibition venues attach the wires top and bottom, which allow Gaia to slowly rotate on its vertical axis. Outdoor events – like WOMADelaide – rely on cranes to secure the globe above its staging site, in which case rotation isn’t possible.

And although not feasible at a major music festival, where waves of sound wash across Gaia’s exhibition patch, the exhibit usually employs its own musical soundtrack – compiled by Jerram – to “steer” the interpretation of the exhibit. The track incorporates NASA audio recordings of astronauts observing the planet, children offering their perspectives on climate change, whale calls and ocean sounds.



THE OVERVIEW EFFECT



What would you think if you were standing on the Moon and the Earth rose above the horizon? Awe-inspired? Terrified? Serene? Sadly, few humans have been in that privileged position.

But stand about 200 metres away from Gaia and it will appear at the size you would see Earth if you were standing on the surface of the Moon. The emotional state one experiences when doing this

has a name. The so-called “overview effect” was first coined by space philosopher Frank White in 1987 to help describe the perspective-bending sensation that first seeing the Earth from space imposes on the minds of astronauts, a “beyond-words” Zen-like feeling. Recently, White suggested the sensation might also be achieved via commercial spaceflight or virtual simulations.

And, certainly, that’s the effect Jerram is going for: putting Gaia’s Earthbound observers into a position where they too might consider the planet’s impressive, yet vulnerable nature.

“We’ve been staring at the Moon for 200,000 years, so we’ve got all these mythologies and stories and cultures related to looking at the Moon, whereas it’s only been about 60 years since we’ve seen the Earth from space,” Jerram says.



“In the Apollo 8 mission, the astronauts saw the Earthrise, and it had a profound effect on them, realising just how beautiful and fragile it is, how we’re all interconnected.

“I’m hoping it gives the public a sense of what the overview effect is like, that experience astronauts get when they first go into space, and they look down at our planet for the first time, and become overwhelmed by the beauty and wonder of it all.”

But Jerram is equally happy to reimagine his works to send more deliberate messages. Gaia, for instance, has a slightly larger cousin – the Floating Earth. At 10m in diameter, it’s otherwise identical. However, instead of Gaia’s mid-air suspension, it’s presented as a globe dipped in water.

The effect is achieved by sinking concrete to the bed of a water body, with chains connected to a pontoon at the base of the globe.

“Floating Earth affords a more challenging view. Observers see the Earth ever so slightly sink into the water beneath it: a metaphor for the planet’s current state of affairs.”

For Jerram, this experiment sees meaning shift based on setting. At one point, Floating Earth was placed in a lake that fills an old mining quarry.

“That felt quite positive,” says Jerram.

But at the beginning of 2023, Jerram placed the Floating Earth on dockland waters at Canary Wharf, a London commerce hub and home to some of the world’s biggest companies – including major fossil fuel extractors BP and Chevron, plus the financial institutions that keep them afloat.

Gaia offers onlookers a chance to reflect on the fragility of the planet as if experiencing the overview effect for themselves, but Floating Earth affords a more challenging view. Observers see the Earth ever so slightly sink into the water beneath it: a metaphor for the planet’s current state of affairs.

The heavens were brought down to Earth at the 2018 Wye Valley River Festival, when artist Luke Jerram (below) hung his seven-metre installation “Museum of the Moon” in the ruins of Tintern Abbey in Chepstow, Wales (left).

The Canary Wharf placement had such impact that neighbouring banks approached Jerram, seeking to attach their names to the project. Such offers were promptly rejected by the artist, who avoids air travel now to minimise his personal carbon output.

Corporate greenwashing – from big carbon emitters or the institutions that support them – doesn’t sit well with him.

“What I’m trying to do is create artworks, and do work that isn’t going to be detrimental to human health, or the environment, that’s generally my policy,” Jerram says.

Jerram’s most prominent Gaia commission came two years ago at COP26 – the United Nations Climate Change Conference in Glasgow. There, it loomed over the plenary hall as a constant reminder to world decision-makers of the impact of their negotiations.

WOMADelaide’s isn’t the only Gaia on Earth today. Jerram has another gracefully rotating in the ornate Frauenkirche – a cathedral in Dresden, Germany. Others will be inflated at venues around the globe in the weeks and months to come.

Prior to WOMADelaide, Gaia’s Australian display venues have included Perth’s Joondalup Festival, HOTA on the Gold Coast, Melbourne’s St Paul’s Cathedral and Brisbane’s West End. This year, Gaias will pop up in an Italian Castle, churches across the UK and installations in Canada. ○

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