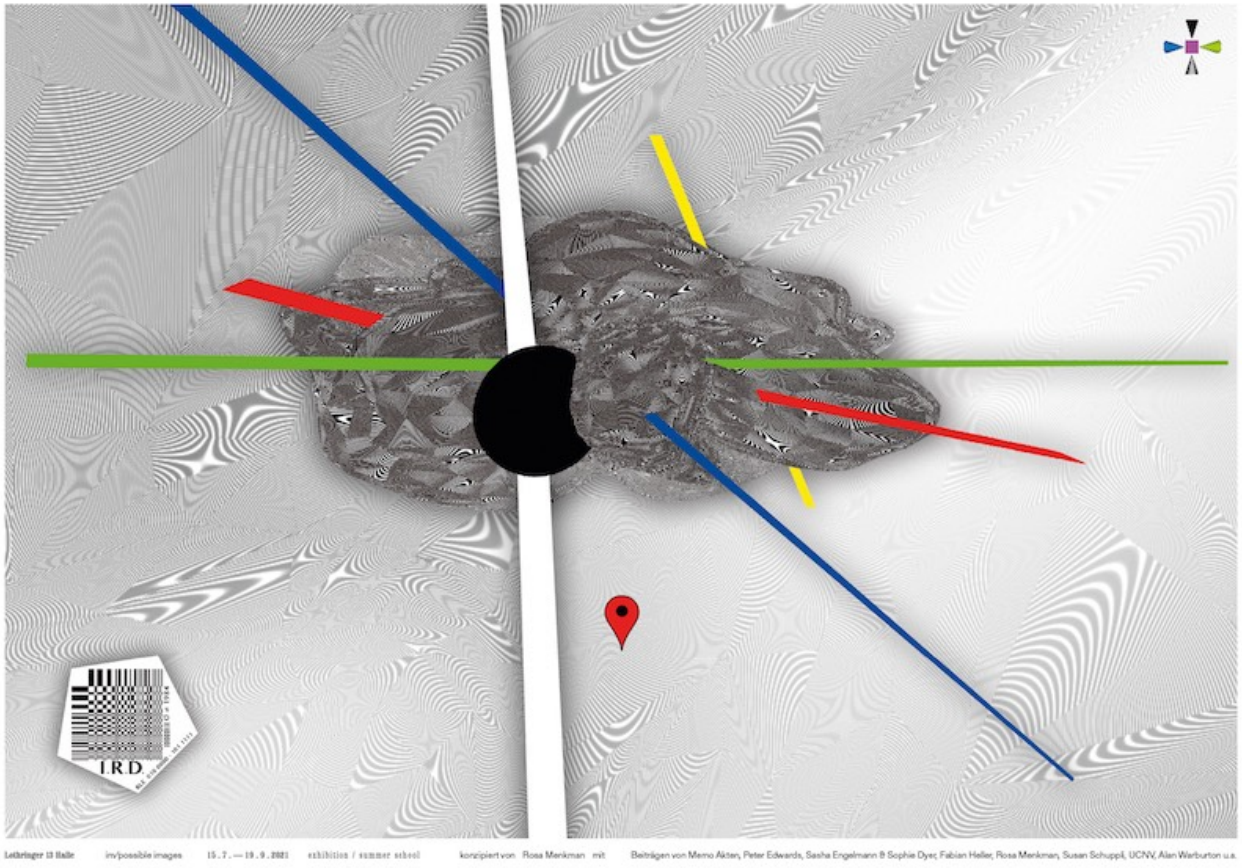

im/possible images

Exhibition & Summer School
July 15 – September 19, 2021
Soft opening: 15.7.2021, 4 – 9 pm

Concept by Rosa Menkman

Artworks on display by Memo Akten, Peter Edwards, Sasha Engelmann & Sophie Dyer, Fabian Heller, Rosa Menkman, Susan Schuppli, UCNV and Alan Warburton and others

Imagine you could obtain an 'impossible' image, of any object or phenomenon that you think is important, with no limits to spatial, temporal, energy, signal/noise or cost resolutions, what image would you create?

Lothringer 13 Halle
Lisa Britzger, kuratorische Leiterin
lisa.britzger@lothringer13.com
0179. 55 48 663
Luzi Gross, Kuratorin
luzi.gross@lothringer13.com
0163. 74 22 614

Images are pervasive; they are used to entertain, to guide, to serve as evidence or as tools for discovery. But they can also be invisible, made for machines and by machines in order to filter, track, classify, sort, or delete. As such, they constitute and influence the fabric of our everyday lives. Sometimes it is even said that one's life is now ruled by a regime of the optical. How are such regimes constructed?

In order for an object or thing – light or other type of data – to enter the visible domain and to become an image, it needs to be resolved. It needs to pass through a process involving standards, rules and compromises. As a result, under the fold of our image processing technologies, there is a complex system that constitutes our images and the optical regime we abide by.

Spanning from all possible images to invisible images, im/possible images brings together strategies and methods of making visible. It also explores the conditions of image making today, by posing questions like: how do resolutions shape images and how does the process of resolving compromise its rendering? Can one listen to an image? When do aberrations and translations turn into false representations? And how has the field of computer simulation expanded the rules and functioning of our imagery?

Initiated by Rosa Menkman, the Lothringer 13 Halle will become a space that sheds light on the realms of im/possible images. Through workshops, talks, and other activities, international guests, local artists and researchers are invited to probe the experimental field of knowledge production with an emphasis on (digital) image infrastructures.

The artist, researcher and curator **Rosa Menkman** (* 1983, lives and works in Amsterdam) was invited by Luzi Gross with her project for im / possible images in the Lothringer 13 Halle. Rosa Menkman researches and publishes on resolution studies, shadow knowledge, glitch artifacts and im / possible images. She was co-curator of the GLI.TC/H- Festival in Chicago and Amsterdam, curated the Aesthetics Symposium of the Transmediale (2012) and was part of the curatorial team of Sonic Acts (2016-2017). She is currently researching and teaching in the field of new media & visual communication at the Kunsthochschule Kassel. In 2019 she won the Collide, Arts at CERN Barcelona Award, which was combined with a three-month residency, which, among other things, inspired the current project.

Programm July 15 – September 19, 2021

Thu, 15.7., 4–9 pm **Soft opening**
with welcome notes by Marion Lüttig, City Councillor of the City of Munich on behalf of the Lord Mayor and introduction by Rosa Menkman and Luzi Gross

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Mon, 19.7 – Sat, 24.7 im/possible summer school

Tue, 20.7., 7 pm **Lecture by Rosa Menkman** – how to research im/possible images? (EN)

Thu, 22.7., 6 pm **Exhibition tour with Rosa Menkman** (EN)

Fri, 23.7, 6 pm Klasse Digitale Grafik (HH) as guests at Lothringer 13: **soft presentation of an im/possible images collection** (DE/EN)

Fri, 23.7., 7 pm **Filmscreening: Alan Warburton, RGBFAQ (2020)**
mit anschließendem Gespräch zwischen Rosa Menkman und Alan Warburton (EN)
In RGBFAQ, Warburton considers whether the virtual world is as clean and steady as we are conditioned to think. He carefully catalogues the 'hacks' used to construct the foundations of simulated worlds, clearly suggesting that the solutions of early computer graphics might be less than ideal material on which to build the foundations of yet another generation of technology. RGBFAQ excavates these foundations, bringing forth a battery of forensic evidence that undermines what we think of as the image, supplying us instead with the far more unpredictable, colourful concept of the 'exploded image'.

Sat, 24.7. 3 pm **Talk by Susan Schuppli (EN)**
Susan Schuppli is a researcher and artist based in the UK whose work examines material evidence from war and conflict to environmental disasters and climate change. Current work is focused on ice core science and the politics of cold. She has published widely within the context of media and politics and is author of the new book, Material Witness, published by MIT Press in 2020.
Schuppli is Reader and Director of the Centre for Research Architecture, Goldsmiths where she is also an affiliate artist-researcher and Board Chair of Forensic Architecture.

Sat, 24.7., 4 – 8 pm **Open weather Workshop**
mit Sasha Engelmann & Sophie Dyer (EN/DE)
Designer and activist Sophie Dyer and geographer Sasha Engelmann open a weather station in Lothringer 13 Halle. Founded in 2020, the open-weather project is an experiment dedicated to mapping and imagining planet Earth and its weather systems beyond the meteorological. It examines structures and narratives of power related to the collection and access to environmental data and challenges them with the production of counter-narratives.
In their open-weather workshop, Sophie Dyer and Sasha Engelmann open up a space to deconstruct visual representations of weather

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Luzi Gross, Kuratorin
luzi.gross@lothringer13.com
0163. 74 22 614

forecasts and Google Earth optics. In the workshop, participants learn how to build and operate their own DIY satellite ground stations to capture and decode transmissions from NOAA weather satellites. Please register for the workshop: projekt@lothringer13.com

Sun, 25.7. & Sun, 9.6, 2–4 pm — **talk to me**
mediation with Julia Richter (DE)

Thu, 2.9 , 6 pm — **exhibition tour**
with Luzi Gross, curator Lothringer 13 Halle (DE)

Sat, 11.9., 3 pm — **talk with Rosa Menkman**
in the context of various others (EN)
Please find a detailed programme on our Website.

Admission to all offers is free, but we kindly ask you to register in advance at projekt@lothringer13.com.

For more information and high-resolution images, please contact us.

Press contact: luzi.gross@lothringer13.com
mobile: 01637422614

im/possible images: Informationen about the artworks and projects on display

The im/possible images show adopts the term ‘latent image space,’ and uses it as a metaphoric, expanded concept.
In analogue photography, the latent image space is created when a photosensitive material has been exposed, but has not gone through the process of development yet. It is the space that has been touched by light, but that is not showing its trace evidence - the image - yet.
In the exhibition, the latent image is an imaginary space, which involves every imaginable and unimaginable image that could ever be rendered.
The premise of the show is that once a render parameter is set, it cuts the space of the latent image, dividing it into images that remain possible, and images that have become impossible. Every render setting makes a particular image possible, while it compromises others.
In im/possible images, the parameters that introduce impossibility to the latent image space exist as ‘axes’ that cut the space, dividing it up into realms of possibility and impossibility. By doing so, im/possible images shows a categorisation of im/possibilities.

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white axis: All possible images
The axis of all possible images, serves not really as an axis, but rather as an entrance into the hypothetical, latent image space of Lothringer 13 Halle which contains all conceivable and inconceivable images.

Fabian Heller

All Possible Images [True Color, Full HD], Druck auf Papier, 18,4 x 1,50 Meter, 2021
In his work All possible images [True Color, Full HD], Fabian Heller has calculated all possible images that can be shown on a standard display and actualizes them into one number.
→ Once the specifications of the hardware on which a digital image is displayed are known, the number of all possibly rendered images can be calculated. For example, a display with the standard resolution of 1920 x 1080 [Full HD] and a 24-bit RGB colour space [True Colour] is composed of 2,073,600 pixels, each of which can take on one of 16,581,375 colours. By simply exponentiating these two numbers, all the images that can be shown on this display can be calculated. The result is a number with 14,970,606 digits, a number so large that it cannot be displayed in its entirety on any currently available screen resolution.
Fabian Heller is a German artist who works with the experimental creation of digital images, often on the direct level of numeric color values and pixels. Apart from image creation Heller also builds objects and installations in which he explores the interference of the digital space with the social and personal space.

← **red axis: low fidelity images**
Sometimes the parameters by which the image was originally created are not supported by the image processing technology that is rendering it visible. This can happen when for instance the encoding system (the codec) has become unsupported or the amount of pixels of the image is higher than the resolution of the display or the computer can process.
When this happens, the technology or decoder can sometimes still try to 'interpret' the image data. As a result, the carrier that is used to translate the signal into an image, will influence and possibly deform the image that is finally on display.
This axis functions as an imaginary threshold that exists in the realms of render technologies, signalling that while some images are possible to render and others are not, there is also a liminal space, where the displayed image exists as an ambiguous interpretation.

UCNV

Supercritical, Videoinstallation, 2019.
Besides the 'normal' three states - solid, liquid or gas - matter can exist in a fourth state, which is the so-called supercritical, fluid state. A supercritical state is reached only under certain conditions of heat and pressure, during which matter has the characteristics of both a liquid and a gas.
While scientists are researching how to take advantage of this special condition, which is for instance useful as a solvent or during the decomposition of toxic substances, UCNV focuses on its more 'useless' formalities.
In "Supercritical", a flag exists in multiple states all at once; the flag is an object, an image in the

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0163. 74 22 614

frame and an image of how the monitor resolves the image data. All these forms exist all at the same time, conjuring up a "supercritical state," or "fourth form of matter".
UCNV is an artist and programmer based in Tokyo. His artistic career started by researching glitches. Over time, he has developed numerous programs that damage image and video files which he has released open source. While he gradually became known as a glitch artist, to him, the glitch is still nothing more than a way to actualize his research into the material specifics of digital media.

Peter Edwards

Nova Drone, Interaktive installation, 2012.

→ The Nova Drone is an open source, analog experimental sound and light synthesizer that generates slowly fading drones and chaotic harmonic sequences.
The LED light on top of the Nova Drone is a direct representation of the three ‘voices’ of the drone and when combined with the video camera of a digital phone functions as a visual pattern generator. These patterns are known as a ‘rolling shutter effect,’ an artifact that is the result of the technical qualities of the image sensor. Technically, the image sensor of the phone exposes the lines on its ‘arrays’ at different times as a read out 'wave' sweeps through it.
The high frequency blinking of the LED on the Nova Drone in combination with the incremental exposure of the image sensor, result into a final composite image made of light band artifacts that resolve on the display of the camera phone.
Peter Edwards is an American artist, musician, and teacher. He has been exploring the field of circuit bending and experimental musical electronics since 2000 through his business Casperelectronics. He performs regularly under the same name. In 2005 he developed the creative electronics department at Hampshire College where he taught Creative Electronics for two years. ←

green axis: images based on speculation, dis/belief or imagination

While some images may be presented as evidence, with ‘high acutance’ or as truthful, in reality the processes through which they may have been produced are inscribed with values, bias or even erroneous interpretations. Think for instance about the image of the shadow of a black hole, which was constituted from a trove of RAW scientific data, but then enhanced by artificial coloring. Or the basemap of planet Earth, that is used by Google maps, which exists devoid of clouds, while inhabited by inconsistent shadowing.

Sasha Engelmann & Sophie Dyer

Impossible Weather Station, Installation & Workshop, 2020-2021, Turnstile antenna, coaxial cable, RTL-SDR dongle, white plastic garden chairs, poster prints, NOAA-15, NOAA-18 and NOAA-19. Dimension: 13,700 km (the diameter of Low Earth Orbit)
https://open-weather.community/
Open-weather is an experiment in imaging and imagining the earth and its weather systems. It was founded by designer-activist Sophie Dyer and creative geographer Sasha Engelmann in April 2020. Open-weather encompasses a series of how-to guides, critical frameworks and public workshops on the reception of satellite images using free or inexpensive amateur radio technologies.

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We are used to understanding the earth as a unified map. Google Earth, for instance, offers a base-map to navigate the globe. Yet, as Ingrid Burrington shows in 'Forever Noon on a Cloudless Day' (2017) Google's base map is full of inconsistencies and obscurities. It also eliminates the clouds, weather systems and elements of earth's atmosphere. Google's smooth, seamless image of the planet is as inaccurate as it is impossible: it doesn't show us the errors, erasures and compromises needed for such an image to exist.
Foregrounding the body as a situated technology, open-weather seeks to map and challenge the dominating structures and narratives involving environmental data collection and access, while complicating ideas of weather beyond the meteorological.
In the context of the im/possible images project Sophie Dyer and Sasha Engelmann will contribute an installation and an open-weather workshop. The 'Impossible Weather Station' is a tactical space for producing counter-images of weather that demonstrate the impossibility of both contemporary weather forecasts and the optics of Google Earth. In the workshop, members of the public will learn how to assemble and operate their own DIY Satellite Ground Stations to capture and decode transmissions from NOAA weather satellites.
Sophie Dyer is a feminist researcher and designer specialised in visual and open source investigations. She works with Amnesty International's Evidence Lab and is an Affiliate of The Berkman Klein Center for Internet & Society at Harvard University.
Sasha Engelmann is a geographer exploring interdisciplinary, feminist and creative approaches to environmental knowledge-making. Her new book Sensing Art in the Atmosphere (Routledge, 2020) narrates a series of artistic and activist initiatives to investigate the aesthetics and politics of atmosphere. She is Lecturer in GeoHumanities at Royal Holloway University of London.

Susan Schuppli

Can the Sun Lie? Video, 12:52 min., 2014–2015

"Can the sun lie?" asked a US court in 1886 when reflecting upon the probative value of new forms of technical evidence, specifically photographs and film. This now historic question was conceptually reanimated when indigenous people in the Canadian north made the public claim that the Arctic sun is setting many kilometres further west—an assertion since corroborated by scientists studying the changing optics of polar ice due to thermal inversions and global warming. The video sets out to explore the emergence of a new visual regime brought about by climate change as well as the dispute between lay knowledge and scientific expertise that subsequently arose at COP15 with regards to this solar dispute.
Susan Schuppli is a researcher and artist based in the UK whose work examines material evidence from war and conflict to environmental disasters and climate change. Current work is focused on ice core science and the politics of cold.
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Rosa Menkman

Whiteout, Video, 15 min., 2020

In Whiteout, Rosa Menkman tells the story of an exhausting mountain hike during a snowstorm. As she makes her way up the mountain, she experiences the loss of her physical sensations; which result in a loss of sight, hearing and orientation, while at the same time feeling oversaturated. As a result, the spatial dimensions that were at first seemingly wiped out, start to offer themselves in new, imaginary ways.

Rosa Menkmans work focuses on noise artifacts that result from accidents in both analogue and digital media (such as glitch and encoding and feedback artifacts). The resulting artifacts of these accidents can facilitate an important insight into the otherwise obscure alchemy of standardization via resolutions.

The standardization of resolutions is a process that generally imposes efficiency, order and functionality on our technologies. It does not just involve the creation of protocols and solutions, but also entails the obfuscation of compromises and the black-boxing of alternative possibilities, which are as a result in danger of staying forever unseen or even forgotten

Through this research, which is both practice based and theoretical, she tries to uncover these anti-utopic, lost and unseen or simply "too good to be implemented" resolutions - to find new ways to understand, use and perceive through and with our technologies.

In 2011 Rosa Menkman wrote the Glitch Moment/um, a little book on the exploitation and popularization of glitch artifacts (published by the Institute of Network Cultures), co-facilitated the GLI.TC/H festivals in both Chicago and Amsterdam and curated the Aesthetics symposium of Transmediale (2012). Rosa has also been part of the curatorial team of Sonic Acts (2016-2017).

Between 2012-2014, Rosa Menkman curated four exhibitions that illuminated the different ecologies in which glitch (art) developed. In 2015 she initiated the institutions for Resolution Disputes [i.R.D.], a solo show at Transfer Gallery New York. The i.R.D. are institutions dedicated to researching the interests of anti-utopic, lost and unseen or simply "too good to be implemented" resolutions. As an undertone, the show featured a showcase of the different complexities in compression (dots, lines, wavelets, blocks and vectors). In follow up exhibitions, Behind White Shadows (2017) and Shadow Knowledge (2020) and im/possible images (2021) she developed and highlighted the politics of resolution setting further, which resulted in a second book titled Beyond Resolution (i.R.D., 2020).

In 2019 Menkman won the Collide, Arts at CERN Barcelona award, which came with a 3 month residency that inspired her recent research. From 2018 - 2020 she had a Vertretungs Professorship Neue Medien & Visuelle Kommunikation at the Kunsthochschule Kassel.

blue axis: chronologies of im/possibility

Technically, what once was possible to capture might become impossible, while some images that are impossible now might become possible to create in the future. This axis functions as a timeline on which some images move from possible to the impossible, and vice versa.

Missing Image

Lothringer 13 Halle
Lisa Britzger, kuratorische Leiterin
lisa.britzger@lothringer13.com
0179. 55 48 663
Luzi Gross, Kuratorin
luzi.gross@lothringer13.com
0163. 74 22 614

Ingrid Burrington

Forever Noon on a Cloudless Day, Zitat und Ausdruck, 2017

Grundkarte der Erde
NASA Earth Observatory, 2005, Ausdruck
R. Stöckli, E. Vermote, N. Saleous, R. Simmon and D. Herring: The Blue Marble Next Generation - A true color earth dataset including seasonal dynamics from MODIS.

NASA Voyager / Carl Sagan
Pale Blue Dot, 1990
Ein Foto der Erde, das auf Anregung des US-Amerikanischen Astronomen Carl Sagan von der Raumsonde Voyager 1 aus einer Entfernung von etwa 6 Milliarden Kilometern aufgenommen wurde. Das Bild ist bis heute das aus der größten Distanz gemachte Foto der Erde.

Wilhelm Röntgen
Röntgenaufnahme, Magazinseite, 1896

Medipix
A 3D image of a wrist with a watch showing part of the finger bones in white and soft tissue, Image: MARS Bioimaging Ltd, 2018
Machbarkeitsnachweis zu einem neuen technischen Verfahren der Körperdurchleuchtung: Medipix wird am CERN entwickelt.

yellow axis: new complexities and humanly un/readable images

With the introduction of simulation technologies, which are now extended to include AI and Machine Learning Algorithms, the latent image space has expanded. Images are no longer just relying on the object that is captured, the capturing device and its modes of display but also on intelligent processes that now complicate every step of image processing.
As a result, images are no longer just used as evidence, or to illustrate and explain, but also to predict and explore previously inaccessible scenarios. Moreover, image processing technologies have expanded to spaces of production that were previously unthinkable.

Alan Warburton

RGBFAQ, Videoessay, 27:38 min., 2020
In RGBFAQ, Warburton considers whether the virtual world is as clean and steady as we are conditioned to think. He carefully catalogues the ‘hacks’ used to construct the foundations of simulated worlds, clearly suggesting that the solutions of early computer graphics might be a less than ideal material on which to build the foundations of yet another generation of technology. RGBFAQ excavates these foundations, bringing forth a battery of forensic evidence that undermines our usual understanding of the computational image, supplying us instead with the far more unpredictable, colourful concept of the ‘exploded image’, a mode of image production that, as he demonstrates, originates in the tricky render economics of the

Lisa Britzger, kuratorische Leiterin
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Luzi Gross, Kuratorin
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early 2000s, but which has, like many new technologies, unexpected applications in surveillance, entertainment and behavioural sciences.
Alan Warburton is a multidisciplinary artist exploring the use of software in contemporary culture. His hybrid practice feeds the insights he has gained from his commercial work in post-production studios into his experimental arts practice. Themes Warburton has examined in his artistic work include digital labour, gender and representation, often using computer-generated images (CGI).

Rosa Menkman

Shredded Hologram Rose, Video, 4:30 min., 2021

→ From the shredded side of a Hologram, one can peek into the 3D objects' Delta Axis. From this perspective, one can see the Holograms' render objects, which form a repository of layered information about the Holograms provenance, metadata, and other information that the unscathed Hologram would never reveal.
The Shredded Hologram Rose was directly inspired by the exploded image, a concept that Warburton unpacks in RGBFAQ. The video was created for the Hologram Rose show, curated by Rick Silva, referencing William Gibson's 1977 first short story of the same name, which opened on Feral File platform in June 2021. The Feral File platform offers digital artworks for sale as Bitmark NFTs - a technology that has prevailed in 2021, quickly forming a new, secondary art market. With this video and her part in the show, Menkman saw an opportunity to embed criticism on NFTs in a tactical way.

←

Memo Akten

Learning to See: Gloomy Sunday, Video, 3:02 min.,
Custom Software, Artificial Intelligence, Machine Learning, Deep Learning, Generative Adversarial Networks, 2017
Learning to See is an ongoing series of works that use state-of-the-art machine learning algorithms to reflect on ourselves and how we make sense of the world. The picture we see in our conscious mind is not a mirror image of the outside world, but a reconstruction based on our expectations and prior beliefs.
An artificial neural network looks out onto the world, and tries to make sense of what it is seeing. But it can only see through the filter of what it already knows. Just like us. Because we too, see things not as they are, but as we are. In this context, the term seeing, refers to both the primary perceptual level and phenomenological experience of vision, as well as the secondary cognitive act of making meaning, and constructing what we consider to be truth.
Memo Akten is a computational artist, engineer and computer scientist working with emerging technologies to create images, sounds, experimental films, large-scale responsive installations and performances. Fascinated by trying to understand the nature of nature and the human condition, he works in and draws inspiration from fields such as biological and artificial intelligence, computational creativity, perception, consciousness, neuroscience, fundamental physics, ritual and religion. He has recently completed a PhD from Goldsmiths University of London in Artificial Intelligence / Deep Learning and expressive human-machine interaction, and is Assistant Professor of Computational Arts at University of California, San Diego

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(UCSD). Akten received the Prix Ars Electronica Golden Nica for his work ‘Forms’ in 2013 and has exhibited and performed internationally. He has also collaborated with celebrities such as Lenny Kravitz, U2, Depeche Mode and Professor Richard Dawkins.

Sophie Dyer & Sasha Engelmann: Open-weather, 2020. DIY Satellite Ground Station workshop at Wagenhallen Stuttgart, hosted by Akademie Schloss Solitude. Open-weather CC BY 4.0

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0179. 55 48 663

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Kuratorin
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