



Participant and Screen Australia present
in association with Screen NSW
an In Films production

UNSEEN SKIES

DIRECTED & PRODUCED BY YAARA BOU MELHEM

PRODUCED BY IVAN O'MAHONEY

Running time: 98 minutes



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SHORT SYNOPSIS

Yaara Bou Melhem's documentary **Unseen Skies** explores the evolution of state and corporate surveillance. Her docu-journey follows Trevor Paglen, one of the 21st century's most visionary artists, on one of his most audacious projects to date - the launching of an artwork into space to show that our skies are more than the exclusive playground of the military-industrial complex. Or are they?

LONG SYNOPSIS

"What would the opposite of weaponized space look like?"

- Trevor Paglen

Unseen Skies follows Trevor Paglen, one of the 21st century's most visionary artists, during the final stretch of his decade long journey to put a work of art into space. Director, writer and producer Yaara Bou Melhem, the two-time UN Media Peace Award-winning filmmaker and investigative journalist, goes behind the lens on Paglen's intercontinental trek to launch the first ever non-militarized satellite into space with the goal of deploying a 30-metre mirrored balloon into earth's orbit visible with the naked eye from earth.

Having achieved international notoriety for his conceptual art which fuses photography, large-scale events and what he calls "impossible objects which chart an alternative vision of our reality," Paglen's work reveals the largely unseen monolithic power structures of technology and surveillance that shape, impact and increasingly define the everyday framework of our lives.

A MacArthur Genius award winner, and best-selling author, Paglen is perhaps best known for his photography documenting the black ops sites of government surveillance and data collection. Also, a geographer and a former punk rock musician, his unprecedented creative undertaking to deploy Orbital Reflector into space and his singular other genre-defying art is deftly revealed in the film by Bou Melhem who brings to light the urgency of the global impact of technology in the 21st

century and its adverse effects on our anonymity and privacy. **Unseen Skies** is a glimpse into a

reality that exists in plain sight but goes largely unseen and undetected.

Participant and Screen Australia present in association with Screen NSW an In Films production, **Unseen Skies**, written, produced and directed by Yaara Bou Melhem. Executive producers are Participant's Jeff Skoll and Diane Weyermann, along with In Films' Ivan O'Mahoney and Nial Fulton. The Director of Photography is Tom Bannigan, ACS; the Composer is Helena Czajka; the Editor is Francisco Forbes.

ABOUT THE PRODUCTION

THE ALGORITHMS

“In the very near future, I guarantee that the pictures you post on social media will affect your credit rating, health and auto insurance policies, and much more. It will happen automatically. In a very real way, our rights and freedoms will be modulated by metadata signatures. What’s at stake, obviously, is the future of the human race.”
- Trevor Paglen

So what is an algorithm? Think of an algorithm as a set of step-by-step instructions that computers use for completing a certain task. Like a road map, algorithms make it possible for computers to reach specific conclusions.

Today, technological advances have made it possible for computers to identify, process, analyze, and make sense of images in the same way humans do. Computers can retrieve data, interpret it, make conclusions and understand what they “see” because of computer vision algorithms. When we hold a smart phone up to our face and it recognizes us, algorithms have made that facial recognition possible. Through computer vision, our phone can “see” us. So who is controlling the technology that allows this technology to “see” us? And what ultimately is this technology being used for?

Unseen Skies features 12 of algorithms commonly used in computer vision to provide a rare glimpse at the way in which technology is used to “see us.” There are algorithms for facial and object detection, and emotion classifiers among others.

"We no longer look at images – images look at us," says Palen. "The overwhelming majority of images are now made by machines for other machines, with humans rarely in the loop. The landscape of invisible images and machine vision is becoming evermore active."

THE VISION

"At its core, this film is about how mass surveillance and artificial intelligence has evolved since 9/11 and how these often abstract and unseen technologies have become ubiquitous and have largely been deployed without critique."

-Yaara Bou Melhem

Unseen Skies marks Australian born filmmaker, writer, producer and director, Yaara Bou Melhem's first full-length documentary feature and with it she sought to continue her wide-ranging social narrative. Her past works have tackled issues in war-torn countries, women's and indigenous rights, government disinformation campaigns—all showcasing the interconnectivity between issues and themes impacting the world. "I'm always looking for the silver lining, for someone who's fighting against a problem in an interesting, innovative way," she said upon winning Australia's prestigious Walkley Foundation Journalist of the Year Award for the second time.

Bou Melhem found an entry point to share the complexities of surveillance, artificial intelligence and its global impact through Paglen's unorthodox works. "Trevor Paglen's artworks are a portal into these systems, allowing us to get a glimpse of hard infrastructures which are often quite abstract or hard to visualize," says Bou Melhem. "He's trying to show you another way of looking at things to facilitate conversations and create some sort of visual vocabulary."

One of the people who helped breathe life into **Unseen Skies** in its early stages internationally is acclaimed documentary filmmaker Ivan O'Mahoney, co-founder of In Films. O'Mahoney and Bou Melhem share similar backgrounds in international investigative journalism around social issues and had been talking for several years about finding the right creative project for a

collaboration. “Looking into the story of Trevor, we discussed it at a very early stage,” O’Mahoney recalls. “I thought it would be a really good one to do because while it was a story about an artist and the creation of his work, it could also be a lens to talk about so much more.”

A former UN peacekeeper and attorney turned filmmaker, O’Mahoney regards Paglen’s multi-hyphenate expertise as a visual artist, best-selling author and geographer as a powerful storytelling combination. “His thoughts about where we’re heading in terms of the use of technology by governments are really important. And I think it’s a very rare combination to find somebody who can not only articulate it on an academic level or a journalistic level, but who can also find a way to illustrate those arguments as he does with his artwork.”

The idea of using art to tell this story was also intriguing to Diane Weyermann, Chief Content Officer at Participant and an Executive Producer on the film who immediately embraced Bou Melhem’s vision for **Unseen Skies**. When the filmmaker approached Weyermann at a conference in Australia, familiar with Paglen’s work which had been featured in Participant’s Academy Award®-winning 2014 documentary “CITIZENFOUR,” about Edward Snowden and the NSA spying scandal. “I was really, really interested in **Unseen Skies**, because I think the story is so relevant to today and to the world we live in and really delves in and investigates and exposes things that we don’t often think about because they’re not on the surface,” Weyermann says. “They are sort of hidden.”

With unrestricted access to the artist and other stakeholders, Bou Melhem deftly explores the long-fought journey of Paglen’s decade-long Orbital Reflector project from ideation to creation, and through its many bureaucratic hurdles which significantly impact the project. “When Trevor invited me to come and film, neither of us could’ve foreseen the roller coaster ride that Orbital Reflector would take us on,” says Bou Melhem.

In 2015, Paglen began to work with co-producer, the Nevada Museum of Art on his Orbital Reflector project. They engaged a team of aerospace engineers (from Colorado). The artist’s vision was to launch the 1.5 million-dollar satellite into space, then deploy a diamond shaped balloon into the earth’s lower orbit that could be seen from earth for several weeks or months before disintegrating. “For me, it’s sort of equivalent to the Tibetan sand paintings where you go through this enormous exercise to create this artwork that is kind of immediately destroyed; it

immediately blows into the wind. In the case of the Orbital Reflector, it immediately burns up in the atmosphere.”

In speaking about this creative odyssey Paglen says, “it’s worth it for me because, ideally, it’s a project that allows us to have exactly the conversations we don’t have when the military puts up these satellites or when Elon Musk puts a Tesla in space.” The Orbital Reflector is “a provocation,” he says.

Unseen Skies follows Paglen to Berlin for the creation of an art/music project which uses computer vision surveillance software within the installation to explode the myth of the infallible machine. “There’s a myth that A.I. is neutral and objective,” says Bou Melhem, “but it’s not. There are certain programmers who put data in and the data they select is based on their own biases and has their own perspectives embedded in it. So we’ve come to this weird juncture where a few programmers, mostly in Silicon Valley, are deciding what things are and to make a different idea become possible,” she explains “is really hard to do when you have these automated infrastructures that are basically designed to perpetuate and recycle what has happened in the past.”

The film also chronicles Paglen’s painstaking process of capturing survey photography of the West and other natural American landscapes. The artist, a geographer himself, uses these images as part of a data set for A.I. algorithms to demonstrate how modern-day spy satellites, GPS tracking technology, and other sources of data are used for surveillance and intelligence gathering. “I hope people come away from this film understanding and recognizing how these technologies can be deployed, and are being deployed currently. Then once you recognize that you can start thinking about ways to inhibit it.” says Bou Melhem.

ABOUT THE FILM

“I think my work in AI tries to show that it’s basically impossible to decouple AI from centralized forms of power.”

-Trevor Paglen

The film manages to visually capture the huge scope and scale of its subject matter despite using a small crew, usually consisting of director Bou Melhem; Tom Bannigan, the cinematographer; and a dedicated sound recordist. “I think this allowed us to be very direct and targeted with what and how we were shooting,” Bannigan explains. “Early on, we decided that we didn’t want it to look too slick and shiny and tried to incorporate a certain grittiness. We embraced the murky twilight hours which isolated Trevor in the landscape and added some eeriness.”

Throughout the 98-minute documentary, **Unseen Skies** presents a disquieting visual landscape achieved through a mix of camera techniques, drone footage, car-mounted robotic grips, and reprocessing of some footage through an A.I. to allow the viewer to see what the computer “sees.” To achieve this, the filmmakers worked with Paglen Studio where they processed parts of the film through software the studio developed using 12 different computer-vision algorithms ordinarily used for A.I. surveillance systems. “We were trying to show you what it looks like in order to facilitate those conversations to create a visual vocabulary,” says Bou Melhem.

So, what is “Computer-Vision”? It’s a computer process which analyzes a still image or video signal’s data stream attempting to translate, recognize, and identify what is in its field of view. One of the revelations of the film, reflected in the computer-vision images, is of particular concern for Paglen, and becomes an important part of his message. “We as humans are continually renegotiating the meanings of the images that we make and I think this has enormous political and sociological implications,” Paglen states. “It literally is a history of self-representation—people taking their own images and insisting that their image means something else than what the images have been assigned to them by people that are typically more powerful,” he says. Paglen worries that the assumptions baked into the computer algorithms veer toward a monocultural version of life as dictated by mostly, young white men in Silicon Valley.

What might best visually reflect the film’s revelation comes during the footage of Paglen’s real-time art/music installation in London called “Sight Machine,” featuring a rehearsal and a musical performance by the San Francisco-based Kronos Quartet (“Requiem for a Dream,” “The Fountain”). The installation features real-time machine surveillance processing of the musician’s performance which is displayed simultaneously to the audience. The video feed shows the

graphical A.I. computer-vision (what the computer “sees”) as well as the computer’s understanding/interpretation of that data which includes the emotional states of the members of the Kronos Quartet. Executive Producer Ivan O’Mahoney notes “When you see it in action, there’s a quartet with strings playing classical music and at the same time the computer is telling you what it is seeing and you realize it’s getting it all wrong, all the time.”

In addition to corporate surveillance, Paglen feels that the surveillance state contains an inherently anti-democratic power relationship built into its infrastructure, which he finds worrisome. “The world has become a battlefield—a stage for extralegal renditions, indefinite detentions without trial, drone assassination programs and cyberwarfare,” Paglen says. “We have entered an era of secret laws, classified interpretations of laws and the retroactive “legalization” of classified programs that were clearly illegal when they began.”

The soundscape of **Unseen Skies** complements the visual discomfort with anxiety-inducing intensity and brashness from the music of Helena Czapka, which took inspiration from the works of William Basinski, Jóhann Jóhannsson, Brian Eno, and Aphex Twin. Czapka strove to create an unsettling sonic environment reflecting the other-worldly, synthetic universe of an A.I. processed world. The composer started by using sounds provided by NASA from recordings collected from probes and radio emissions from Saturn, Jupiter and its moons, the Sun’s natural vibrations, and other sources. “Every sample sounded incredibly unsettling and unfamiliar, and they were the perfect starting point for a film score that intended to create anxiety about the unseen technologies that are threatening our privacy and freedoms,” she shares. Czapka created her sonic palette by experimenting with digital audio filters, delays, amplifiers, pitch shifting, rhythmic splicing and equalizers—all used to manipulate the raw NASA sounds into musical elements that are familiar to the ear, such as percussive instruments, melodic fragments, electronic synthesizers and atmospheric pads.

Every music cue of the film contains at least one NASA sample. Some cues were created entirely from NASA samples. “To accompany these samples, Yaara wanted me to incorporate some acoustic instruments in the music,” she shares. “We loved the idea of distorting and warping the instruments to reference the concept of the uncanny valley, where the listener couldn’t be sure if they were listening to a real instrument or an electronic sound resembling the instrument.” Czapka said she had a mission to push the boundaries of what a music score should sound like

and how music should be used to behave as a sound installation accompanying Paglen's artworks.

ABOUT THE FILMMAKERS

YAARA BOU MELHEM | DIRECTOR, WRITER, PRODUCER

Yaara Bou Melhem is a journalist and filmmaker whose work has received two international UN Media Peace Awards; two New York Film & Television Festival Awards; a Hong Kong Human Rights Press Award; and five Walkley Awards. In 2019, Yaara was named the Australian Freelance Journalist of the Year for her observational documentary "War on Truth" about Time Person of the Year, Maria Ressa and the Filipina editor's global campaign against disinformation.

The Sydney, Australia born writer-producer-director makes her feature-length documentary debut with "Unseen Skies." Other films made by Yaara's production company, Illuminate Films, include "Creating a Nation" about an Aboriginal man building an independent Indigenous nation and "Saudi Design Queens," about two young women in Saudi Arabia hosting a design event that pushes the boundaries of art and tradition.

Yara worked for seven years with Dateline, one of Australia's most prestigious foreign affairs programs with public broadcaster SBS TV. A regular contributor of films to Al Jazeera English and ABC TV, her vast body of work has involved crawling through Syrian rebel-held tunnels, filming in lawless Libyan jails after the fall of Muammar Gaddafi, documenting disaster response efforts after devastating natural disasters, exploring taboo subjects like youth suicide in remote Aboriginal communities, filming women escaping honour killings in Jordan, following doctors giving free health care in Nepal, to profiling artists in south-central LA, and conservation efforts in New Zealand.

She holds a degree in Journalism and a Law degree.

IVAN O'MAHONEY | PRODUCER, EXECUTIVE PRODUCER

Ivan O'Mahoney is an internationally renowned filmmaker and the co-founder of In Films, a Sydney based production company that focuses on social justice issues, human rights and the arts.

A two-time recipient of the Australian Directors Guild Award and winner of the Australian Academy of Cinema & Television Arts (AACTA) Award, Ivan also won Australia's prestigious Walkley Award. International acclaim for his films includes the Prix Europa, the Golden Nymph, the Rose D'Or, the Amnesty International Media Award, the Japan Prize and the Robert F. Kennedy Journalism Award. Ivan's credits include "Baghdad High," "How To Plan a Revolution," "Borderland," "Hitting Home," "Revelation," "The Queen & Zak Grieve," "Firestarter – The Story of Bangarra," winner of the Feature Documentary Award at the 2020 Adelaide Film Festival and "Surviving Hunger," a film on famine in Ethiopia.

A former UN peacekeeper in Bosnia and an attorney, Ivan has directed and produced critically lauded documentaries for HBO, BBC, ARTE, Channel 4, PBS, and CNN. He holds a law degree from Leiden University and a Master's degree in journalism from Columbia University.

JEFF SKOLL | EXECUTIVE PRODUCER

Jeff Skoll is an entrepreneur devoted to creating a sustainable world of peace and prosperity and is the visionary founder of Participant.

Inspired by the belief that a well told story can change the world, Jeff founded Participant in 2004. Today it is the world's leading entertainment company focused on advocacy and social impact having produced more than 100 full-length feature films. On the narrative side, their films include "Spotlight," "Contagion," "A Fantastic Woman," "Lincoln," "The Help," and "Good Night and Good Luck." Participant's documentary films include "The Look of Silence," "Food Inc.," "He Named Me Malala," "Waiting for Superman" and "An Inconvenient Truth." These films have collectively garnered 73 Academy Award® nominations and 18 wins, including Best Picture for "Spotlight" and "Green Book" and Best Foreign Language Film for "Roma" and "A Fantastic Woman."

In addition to Participant, Jeff's innovative portfolio of philanthropic and commercial enterprises includes the Skoll Foundation and Capricorn Investment Group – all coordinated under the Jeff Skoll Group umbrella.

DIANE WEYERMANN | EXECUTIVE PRODUCER

Diane Weyermann is Chief Content Officer at Participant and is responsible for the company's documentary feature film and TV slate. In addition to the upcoming documentaries *Final Account* and *My Name Is Pauli Murray*, Participant's recent documentary projects include *City So Real*, *Collective*, *Sing Me a Song*, *John Lewis: Good Trouble*, *Watson*, *Aquarela*, *Foster*, *America to Me*, *The Price of Free*, *Human Flow*, *An Inconvenient Sequel: Truth To Power*, *The Music of Strangers: Yo Yo Ma and the Silk Road Ensemble* and *Zero Days*. Previous releases include Oscar®-winning films, *American Factory*, *CITIZENFOUR* and *An Inconvenient Truth*; Oscar®-nominated *RBG*; Oscar®-nominated *The Look of Silence*; Oscar®-nominated and Emmy®-winning *Food, Inc.*

Prior to joining Participant in 2005, Weyermann was the director of the Sundance Institute's Documentary Film Program. During her tenure at Sundance, she was responsible for the Sundance Documentary Fund and launched two annual documentary film labs, focusing on the creative process.

Before her time at Sundance, Weyermann was the director of the Open Society Institute New York's Arts and Culture Program where she launched the Soros Documentary Fund (which later became the Sundance Documentary Fund).

NIAL FULTON | EXECUTIVE PRODUCER

Nial Fulton is a multi-award-winning producer of internationally recognized films. His work on investigative documentaries is ground-breaking, putting cameras where access has never before been granted, as seen in "Borderland," the critically acclaimed U.S. series on the U.S./ Mexican border crisis, "Hitting Home," his award-winning series from the front lines of Australia's domestic violence epidemic, and "Revelation," where criminal trials of pedophile priests were filmed for the first time anywhere in the world.

Nial has received numerous awards for his work in journalism and film, including the prestigious AACTA and Walkley awards for outstanding achievement in documentary filmmaking.

FRANCISCO FORBES | EDITOR

Francisco Forbes is a native of Buenos Aires who is a two-time collaborator with filmmaker Yaara Bou Melhem having worked on “Unseen Skies” and “War on Truth. As a director he has released the features “Unfortunate Night,” “Lost Alamo” and the short film “Sit and Watch.”

Francisco studied philosophy and film before beginning his editing career in 2006 working in several TV and feature documentaries in Argentina, Chile and the US. In 2012 he moved to London, where he worked on the films “The Last Photograph,” “Walk it Home,” and “Korean Dream.” Based in Barcelona since 2017, he has collaborated with filmmaker Guille Cascante on “80 Latitude” and is currently developing his third feature documentary “Science Fiction.” His films have screened and received awards at international film festivals including Visions Du Reel, Rotterdam, BAFICI, Docs MX, Clermont Ferrand, Mar Del Plata, La Habana, Dok Leipzig, and Docs Barcelona.

TOM BANNIGAN ACS | DIRECTOR OF PHOTOGRAPHY

Tom Bannigan is an accredited and multi-award-winning cinematographer whose work has taken him to China and Southeast Asia, where he worked for seven years, along with additional international productions exposing him to an array of filming styles and crews.

A native of Sydney, Australia, Tom returned in 2015 and has since filmed a wide range of content. From Australian Museum expedition trips, to the ultimate rock-climbing zone of Balls Pyramid, to the creation of a secular democracy in former ISIS strongholds of Northern Syria, to character driven films in remote Indigenous Australia. Tom’s work has also taken him into the criminal underworld of Peru, to Afghanistan documenting women worried about a resurgent Taliban. He has also trekked on scientific expeditions in the Solomon Island highlands. More recently, Tom has been filming feature documentaries, two of which are slated for festival and theatrical release in 2021. In addition to “Unseen Skies,” his other film involves illegal activities and murder in the Philippines.

HELENA CZAJKA | ORIGINAL MUSIC & MUSIC SUPERVISOR

Composer Helena Czakka blends classical training with sound design and electronic textures to form a distinctive style that can be heard across her TV, film, documentary and commercial projects.

“Unseen Skies” and is the third full length feature on which Helena has composed. “Blind Ambition” and the acclaimed three-part TV series “Revelation” are the others. Among her documentary credits include the six-part series “The Queen and Zack Grieve,” “Making Muriel” and “Look Me In The Eye.” Her feature film work also includes scoring “Chasing Comets” and the film festival hit “Beast.” She has also composed music for the Emmy® Award-winning children's TV show “*Blue*,” including writing the most popular song of the series to be released as the lead single on the “*Bluey*” album in 2021.

A graduate of the Sydney Conservatorium of Music, Helena worked in Tokyo as an Orchestrator for renowned film composer Yoshihiro Ike before returning to Australia where she received an APRA Screen Music Award nomination for Best Music in a TV Series for her work on “Australian Survivor.”

TREVOR PAGLEN | SUBJECT

Trevor Paglen is an artist whose work spans image-making, sculpture, investigative journalism, writing, engineering, and numerous other disciplines. Among his chief concerns are learning how to see the historical moment we live in and developing the means to imagine alternative futures.

Paglen’s work has had one-person exhibitions at the Smithsonian Museum of American Art, Washington D.C.; Carnegie Museum of Art, Pittsburgh; Fondazione Prada, Milan; the Barbican Center, London; Vienna Secession, Vienna; and Protocinema Istanbul, and participated in group exhibitions the Metropolitan Museum of Art, the San Francisco Museum of Modern Art, the Tate Modern, and numerous other venues.

Paglen has launched an artwork into distant orbit around Earth in collaboration with Creative Time and MIT, contributed research and cinematography to the Academy Award®-winning film Citizenfour, and created a radioactive public sculpture for the exclusion zone in Fukushima, Japan.

He is the author of several books and numerous articles on subjects including experimental geography, artificial intelligence, state secrecy, military symbology, photography, and visuality. Paglen's work has been profiled in the New York Times, the New Yorker, the Wall Street Journal, Wired, the Financial Times, Art Forum, and Aperture. In 2014, he received the Electronic Frontier Foundation's Pioneer Award and in 2016, he won the Deutsche Börse Photography Prize. Paglen and was named a MacArthur Fellow in 2017.

Paglen holds a B.A. from U.C. Berkeley, an MFA from the Art Institute of Chicago, and a Ph.D. in Geography from U.C. Berkeley

Written & Directed by
YAARA BOU MELHEM

Produced by
IVAN O'MAHONEY
YAARA BOU MELHEM

Executive Producers
JEFF SKOLL
DIANE WEYERMANN

Executive Producers for In Films
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Trevor Paglen artworks
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DANIEL NEVES
ELLIS MCDONALD
LEIF RYGE
SOL REAL GARCIA
TREVOR PAGLEN

Kronos Quartet Appears Courtesy of
KRONOS PERFORMING ARTS ASSOCIATION

David Harrington, violin
David Harrington, violin
John Sherba, violin
Hank Dutt, viola
Sunny Yang, cello

recorded music performed by Kronos Quartet:

"Spectre"

Written and Produced by John Oswald (SOCAN)

"Four Arrangements on Themes of Eviç Taksim for String Quartet"

Written by Tanburi Cemil Bey
Arranged by Stephen Prutsman (Studio Ajea Music Publishing)

"Tusen Tankar (A Thousand Thoughts)"

Traditional Work
Arranged by Ljova
Published by Ljova Music (ASCAP)

recorded music performed by Kronos Quartet:

"Powerhouse"

Written by Raymond Scott
Arranged by Michelle DiBucci
Published by Music Sales Corporation
By kind permission of the Wise Music Group

"Different Trains"

1. America – Before the War
Written by Steve Reich
© 1988 Hendon Music, Inc.
By permission of Boosey & Hawkes Music Publishers Ltd

"Different Trains"

2. Europe – During the War
Written by Steve Reich
© 1988 Hendon Music, Inc.
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Archival recording of live performance,
courtesy of Kronos Performing Arts Association

additional recorded music:

"VII"

Written and performed by Geodetic (Claudio Rocchetti & Jukka Reverberi)
Courtesy of Instruments Of Discipline

"\$55"

Written by U. Bomans (Random Noize Musick, Budde MP & Mushroom Music)
Performed by Ulli Bomans from the album
"Ulli Bomans - Riven" (Strike 149, rel date 2014)
c + p Shitkatapult, a division of Random Noize Musick GmbH

"The Towers Are Burning"

Written by Noisegate
Performed by Noisegate

additional music courtesy of Melodie Music

archive courtesy of
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