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Incident Energy Project- An Artist's Explorations of Thermal Imaging

ABSTRACT

As a visual artist I use military-grade, infrared imaging technology for its surreal beauty that is both arresting and sinister in appearance, but also to address contemporary issues of surveillance. The advancement of surveillance culture continues to change human interaction in creative and philosophical ways; a subtext posited is about the rapid advancement of this invasive technology and our (c)overt acceptance of the electronic villain/wizard into our lives. Contemporary art constructs are important ways to illustrate aesthetic beauty and also concerns about the impact of imaging technologies that track, record and analyze the public's movements and actions.

KEYWORDS

surveillance, infrared video, imaging technology, range phenomenology, incident energy, medical imaging, visual art, menopause, feminist art, video installation, erotic art

INTRODUCTION

Societies are watched by surveillance technology all the time. Security cameras watch us at work, in schools, and public spaces, our cell phones track our whereabouts, personal computers are laced with "cookies" to trace our visits within the internet. Tiny cameras spelunk inside the human body during medical procedures in video assisted laparoscopy. This practice of being watched and recorded can be interpreted as a reassuring presence in the wake of increasing terrorist or violent attacks, or, in the case of search and rescue of missing persons in the wilderness. But it is also a slippery slope as we accept surveillance as a norm while our everyday whereabouts, our physical identities are tracked, observed, recorded and stored for unknown future usage.

ART AND TECHNOLOGY

“...art oriented projects make concepts, practices and results of the surveillance more understandable to society, as they help us visualize and challenge them”. (Bouzas:2016).

I use infrared imaging cameras in the service of fine art as a new way of viewing the literal heat our bodies and landscapes, to visualize the invisible, while referencing invasive technology that is being used publicly and privately. Transporting the viewer into an “‘otherworld’ space in an intersection of art and technology, infrared cameras visualize the surreal beauty of heat-signatures radiating from the corporeal, offering a glimpse of our temporal coalescence of ancient stellar energy, and draws upon analogies about the universe: that we are truly beings of light.

The heat-signatures captured by infrared imaging shows how incident energy -the measure of heat striking an object- dissipates in both a physical (and visually magical) way, depicting the impermanence of energy. All objects above 0 degrees Kelvin emit thermal infrared energy and FLIR (forward-looking infrared device) thermal imagers can passively see objects regardless of the presence or lack of ambient light, depicting actual heat signatures expressed from objects and people. What is hot appears white and cooler or wet objects appear black, thus warm veins, cold extremities and breath are all visible, in real time, with no special effects. The visual appearance is quite arresting: objects, landscapes and people have seemingly black-and-white negative film qualities, but also possess a transparency and inner glow, while maintaining surface reflections.

The themes explored in my infrared films and photography are: intimacy and sexual union, as a surgical procedure in ‘The Operation’ (1995), a simple creation narrative expressed by modern dancers in ‘Incident Energy’ (2013), the depiction of the hormonal transition of menopause as one of transformation in ‘Haute Flash’, and in photographic ‘Bardo’ series is about transformation in dying and death. The common thread is the exploration of the human body within its landscape as viewed by heat-sensitive imaging technology to depict the literal corporeal light expressed, and by extension, our connection to the universe.

TRANSGRESSION

There is a transgressive element to my aesthetic choice to use somewhat sinister, military imaging technology in making experimental films and photographs to make artworks that focus on an illuminated, translucent beauty of humanity and our surroundings, while questioning the public’s acceptance of the electronic eye. I have used infrared binoculars, security cameras and hunting rifle scopes as the recording devices in solo projects and with collaborator Jacob Pander. Our limited access has been obtained in a mostly surreptitious manner, making for challenging circumstances in capturing our vision, adding to the transgression.



Image 1: 2013, one of five photos released of Boston bombing suspect in hiding, black and white infrared video still. Image courtesy Massachusetts State Police

A common use of military infrared cameras is for border or aerial surveillance. FLIR cameras were used to locate and track ships, tanks and planes at night during the first Gulf War [Persian Gulf Wars (August 2, 1990 – February 28, 1991) codenamed Operation Desert Shield and Operation Desert Storm.] (Wikipedia.org) These wars gained the nickname “Video Game Wars” because of the constant supply of air strike imagery in live news CNN broadcasts. More recently, the American public watching the news about a terrorist bombing during a Boston marathon in 2013 saw eerie black-and-white infrared images broadcast of a grey boat shape, with a white-hot glow of a warm body hidden below the tarp. The bombing suspect Dzhokhar Tsarnaev was found hiding in a boat in a residential area, by police helicopters equipped with FLIR cameras that flew overhead. Within the scope of this dramatic terrorist attack, the public became both familiarized and reassured by police use of infrared heat-sensitive imaging technology in apprehending the suspect. (mashable.com)

TABOO

The Operation, an award-winning, experimental, infrared short film made by filmmaker Jacob Pander and myself, was shot in 48 hours in 1994, on a minuscule budget. The Operation represents a merging of our fascination with the macabre beauty of the human body as viewed by imaging technology, with an exploration of erotic imagery informed by video pornography. By using infrared imaging devices as video cameras, the boundaries between physical, sexual and intellectual stimulation become blurred. Our original idea was to use X-ray technology but the effects of radiation on the body is prohibitively dangerous at the repeated exposures needed to shoot the film. We settled on using a military-

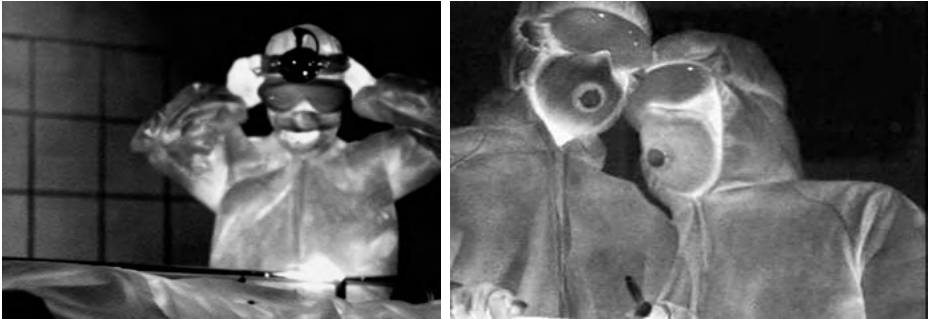
grade FLIR security camera to produce a similar effect in depicting a translucent and simultaneous interiority and exteriority, thus paving the way for a new way to view heat and light of the human body. Furthering the taboo of pornography, we appeared as talent in the film, I played the dominant “Surgeon” and Pander was the “Patient. This decision arose out necessity -it wasn’t something either of us thought we would do- but did so out of commitment to our vision. The stylistically eerie narrative implies that a menacing surgical practice is about to commence in an operating theater, but what happens is actually very intimate sex on a hospital gurney between the female surgeon and male patient. The film is not about nihilism, but rather about a healing sexual encounter as viewed by a surveillance camera and a team of surgical “Observers”.



Image 2: *'The Operation'* (1995) Jacob Pander and Marne Lucas, black and white infrared video, Trt 12:50, USA. Synopsis: In a cold tile operating room, a surgeon (Gina Velour) clad in a protective Ty-Vek suit, goggles and tight rubber gloves demonstrates her skills before a group of observers. They scrutinize the eerie coupling between the surgeon and patient (Otto Wrek), whose bodies merge like molten lava. Explicit radioactive sex draws the viewer into an erotic experience that probes beneath the boundary of skin. (Mature viewers, explicit content.) Images courtesy of the artists.

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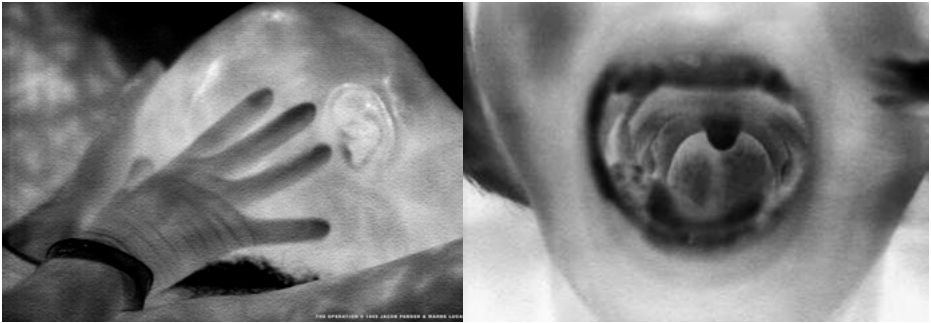
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Images 3,4: Infrared video stills: the Surgeon, and below, the Observers in *The Operation* (1995). Courtesy of the artists.

Film historian Jack Sargeant wrote "...the film engages directly with the question of gender within the zone of medical examinations. The female genitals and reproductive organs, frequently the focus of attention in medicine and a zone regularly invaded by the cold steel of the gynecologist’s speculum remain hidden in the surgeon’s preliminary investigation of the film. Instead it is the penis which is the source of medical (and the audiences) fascination; pulled –by tongs- from under the sheets which cover the patient, it hovers, semi-erect, glowing white as hot blood is pumped into it – (and) it is the first actual signifier that the film is not actually just filmed in negative. Further, the film thus reverses the assumptions of the doctor/patient relationship". (Sargeant: 1998)

The “Observer” characters who watch from a surgical theater platform can be seen as a reference to the all-seeing eye of public surveillance cameras. They are also a play on the viewer, both the Observers and the viewer are watching the same sex act, so the film itself is a mirror, as both sets of viewers are watching artistic erotica together.



Images 5,6: Infrared video stills: the patient (Otto Wrek) pleases the surgeon (Gina Velour). Below: the female orgasm is represented by a montage of images of open-throated heavy breathing. *The Operation* (1995) courtesy of the artists.

In a related aesthetic of imaging technology merged with erotica, the renowned contemporary Belgian artist Wim Delvoye made a series of “SexRays” in 1998-early 2000’s using small amounts of Barium applied to the bodies of volunteers posing for explicit radiology X-rays. These images possess a similar, ghostly, inner view of the human body and delve below the skin to illuminate who and what we are, both physically and also in a spiritual sense. Delvoye says: “The big link they made content-wise is that they all ask the viewer: Where is the soul? Where is love?” (museemagazine.com)



Image 7: X-ray photograph of a couple from the SexRay series. (Courtesy of the artist) 2001, *Lick 1*, Wim Delvoye, cibachrome on aluminum, 100 x 125cm. <https://wimdelvoye.be/work/x-rays/x-rays/>

Delvoye also makes the point that one cannot easily make art with medical technology or medical spaces it is not viewed as acceptable as an appropriate art material, nor process or environment in which to make art. Hospitals and clinicians are not so willing to assist artists in making technology available for

creative endeavors. Delvoye's ethos of being intensely resourceful towards achieving a body of art that is both explicit and requiring specific technology, is similar to ours in the kinds of challenges faced. In shooting *The Operation* using military imaging technology, which was not available to the public, we further pushed against cultural norms by using a surgical operating theater (fabricated) as the space in which the taboo patient/surgeon sexual union takes place. As I explained to writer Jack Sargeant "The film was meant to be fetishistic, you think of operating rooms as pristine, sterile, and clean. They are sort of like churches, or religious, sacred places. The doctor touches the body and it is supposed to be non-sexual...These people are handling your mortality, and your body." (Sargeant: 1998)



Image 8: 2009, *Barbie*, CT scan Satre Stuelke, 'Radiology Art' series. Image courtesy of the artist.

Medical imaging technology is used for diagnostics that are devoid of emotion and beauty. We add our own emotions to the end results of such clinical outcomes. The artist and radiology technician, Satre Stuelk, MD, MFA makes CT (computed tomography) X-ray scans of domestic objects depicting the internal beauty of everyday items and aims to soften the peering view of medical imaging technology that patients experience in hospitals and clinics. (Stuelke: 2017) An artistic, social practice outreach, he makes the images available to hospitals and clinics at cost, to be displayed as aesthetically-pleasing art to sooth the viewer. This stylistic view of what is above and below the surface of familiar household objects is striking, and is in peer to the art works of Delvoye in its creative utilization of medical radiology equipment.

TRANSCENDENCE

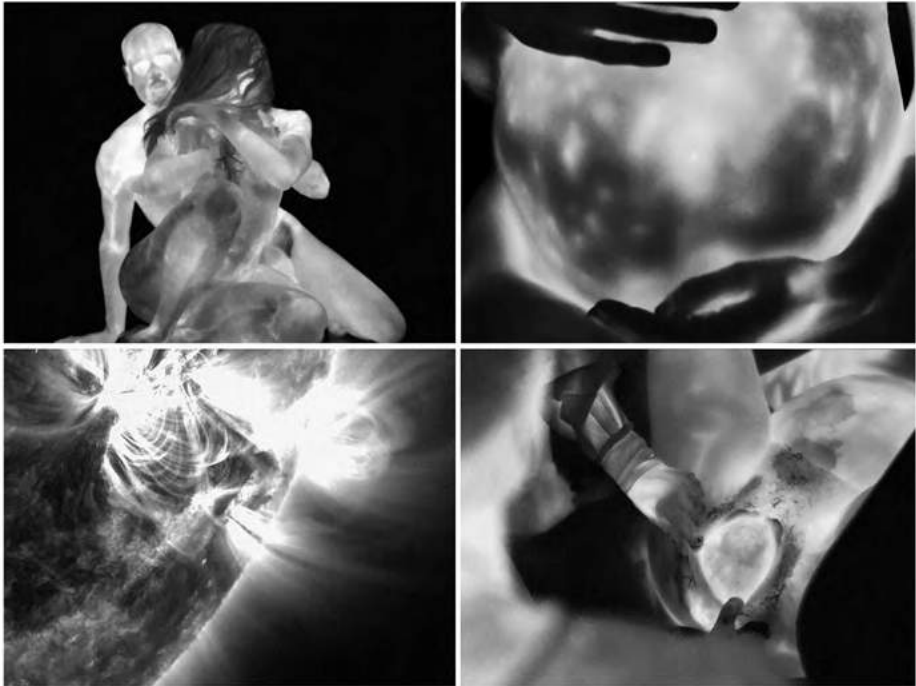


Image 9: 2017, infrared video still, *Haute Flash*, trt 6:20, Marne Lucas

A glass “Head” character represents hormones and the “Woman” is a gracefully aging, voluptuous goddess existing on a primordial beach; the heating and cooling effects on her body can be seen. Head washes ashore, and Woman experiences a menopausal transition upon touching it, she feels the emergence of a new power and becomes a transformed creature of newfound strength. Contrasting the stark, geological island landscape and ocean imagery of Maui, Hawai’i with primal movement, the lone female character appears as a translucent human in a realm where warm veins and cold or wet extremities are visible. Image courtesy of the artist.

Haute Flash is my experimental infrared short film about the hormonal transition of Menopause, the end of reproductive phase in women. Shot entirely with an infrared military-grade rifle scope, the crosshairs are visible throughout the film, referencing the targeted feeling of radically shifting hormones experienced throughout peri/menopause. I made the film in response to my own current journey through menopause and the physical, mental and spiritual issues associated with this shift in female biochemistry. I cast a middle-aged woman as the talent, who expresses this transformation from that of an earthly woman, into a goddess-like figure owning her new power. *Haute Flash* is an ode to the major shift in my perspective of what it means to be feminine and exist as woman among cultural ideas on what female power should look like as I age.

"The cosmos is within us. We are made of star stuff"—Carl Sagan, astronomer.



Images 10-13: 2013, 'Incident Energy' Jacob Pander and Marne Lucas, 4 channel infrared video, trt: 20:00, <https://vimeo.com/119734456>. Sun image courtesy of (NASA/SDO) science teams.

Incident Energy is a multi-channel, infrared video installation that Pander and I made expressing a creation drama that examines energy, the universe, love, birth, conflict, decay and death; as expressed through intelligent movement, human emotion and natural landscapes. Scenes were filmed in nature against snow-covered forests, empty beach landscapes, and in contemporary settings and dense urban crowds, juxtaposed with vast solar, lunar and interstellar imagery. The viewer senses the cyclical nature of energy, from the galaxy to humanity, revealing the fragility of existence, while combining the emotional theater of opera with eerie scientific observation. The main narrative "Creation" uses modern dancers portraying primitive humans to convey a timeless creation story. The other narrative "Birth" includes a full-term pregnant woman, the birth in a hospital, and later, breastfeeding her infant at 3 months of age.



Image 14: 2013, Installation view of channel 1 'Creation' narrative (background) and channel 2 'Birth' narrative. Dancers Douglas Allen and Mizu Desierto play "Primitive Humans" sharing food dug from the sand. Ch. 2 is a Birth narrative of a mother's pregnant belly, birth and later her infant nursing. Incident Energy, 4 channel infrared video, Disjecta Contemporary Fine Art, Portland, Oregon. USA. Image courtesy of the artists.

Image 15: (2013) Opening reception of Incident Energy video installation, Marne Lucas and Jacob Pander, Disjecta Contemporary Art Center, Portland Oregon, USA. A dance performance by choreographer Jim McGinn interacting with a pillar of ice on a pedestal, silhouetted against simultaneous live thermal video projections that echo his movements and detail the light of the body. This performance allowed the audience to see what an infrared camera detects in real time, with no special effects. Both the pillar of ice registers as black and his skin as he comes into contact with the ice. Near the end of the performance, McGinn smashed the ice with an axe. Images courtesy Marne Lucas.



Choreographer Jim McGinn was previously an open-water competitive swimmer. Years before, he was training to swim 21 miles across Southern California's Catalina Channel, but he never finished the swim as he succumbed

to hypothermia after eight hours. That experience inspired 'Float' a piece he was rehearsing to be performed with his dance company TopShakeDance. "Issues with fear and the real struggle with hypothermia would make me lose my mind, in a way, or just drift outside myself," says McGinn. (8). During the filming of 'Incident Energy' McGinn told my collaborator Pander and I that he also used this hypothermic experience to inform his character "Primitive Man" who crawls through snow towards his frozen demise. McGinn's intelligent movement portrayal of "Primitive Man" precisely captured the emotions of human struggle, decay and death.



Images 16,17: 2013, Choreographer Jim McGinn bravely crawling through winter snow as "Primitive Man" during filming on location on Mt. Hood, Oregon. Right: infrared video still of the same scene. Photo by Marne Lucas, video still: Jacob Pander and Marne Lucas.

"As above, so below, as within, so without, as the universe, so the soul..."-
Hermes Trismegistus

Bardo' is my ongoing end-of-life social practice project that explores creativity as a form of spiritual end-of-life care, illuminating the positive effects of art as mind + body are integrated; coupled with relics from those journeys. Working with hospice patients to express artistic endeavors that best represent their legacy, my aim to help the dying attain acceptance in the face of death. This project includes many mediums including sculpture, photography, and video inspired by the collaborators themselves, location or materials available. I am using infrared video stills in collaged photography to present the physical expiration of and spiritual transformation of life, and expand upon the idea that we are made of stellar material, and return to these origins.



Image 18: 2017, 'Bardo: Ouroboros, Skull', 16 x 20", archival pigment print. Digital collage of a brass plated Ouroboros sculpture and an infrared video still, both Marne Lucas.

From the art exhibition "Good Mourning Tis of Thee", curated by Alyssa Taylor Wendt and Sean Gaulager, Co-Lab Projects, Austin, Texas.

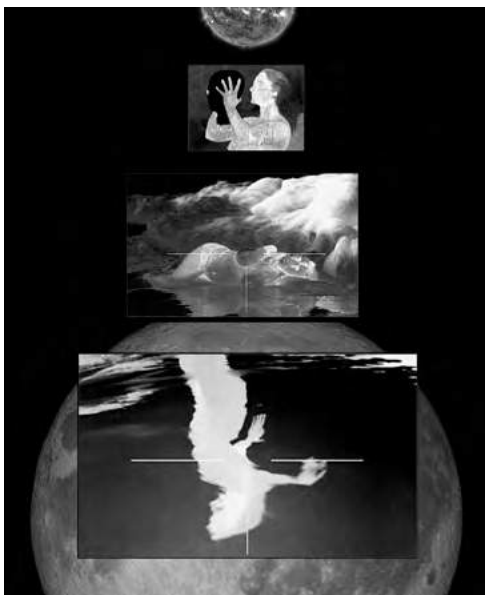


Image 19: 2017, 'Bardo: Life, Decay, Death', 20 x 16", archival pigment print, Marne Lucas. Infrared video stills depicting various states of life and death.

Courtesy of the artist and NASA/SDO.

CONCLUSION

Incident Energy Project as a body of work aims to offer a glimpse into visual worlds that are ever-present yet hidden from our perception, creating a sense of wonder at the visual beauty of radiating heat signatures occurring around and within us. My goal is to steer the sinister uses of infrared imaging technology for military, aerial or border surveillance towards a gentler purpose, to provide a new way of perceiving the Self.

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ABOUT THE AUTHOR

Marne Lucas is a multidisciplinary artist based in New York, USA, using photography, video and installation for social justice related projects to present unique aesthetic or social philosophies. Central to her practice are investigations of nature, culture, and the body, working in conceptual overlaps: energy, the environment, beauty, identity, intimacy and mortality. Lucas uses infrared video (IR), a heat-sensitive imaging technology to reference surveillance culture and explore the fragility of human existence. Her recent film *Haute Flash* (2017) is about the transition of Menopause. Previous IR collaborations with Jacob Pander are *Incident Energy* (2013) and their award-winning film *The Operation* (1995) as both directors and performers in an explicit, surgical narrative. An internationally exhibiting artist, Lucas received RACC project grants, a 2016 Arts/Industry Kohler factory residency (Foundry, Pottery), Land Art Mongolia 360 Residency + Biennial, CentralTrak experimental film residency, and the Portland2010 Oregon Biennial.

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