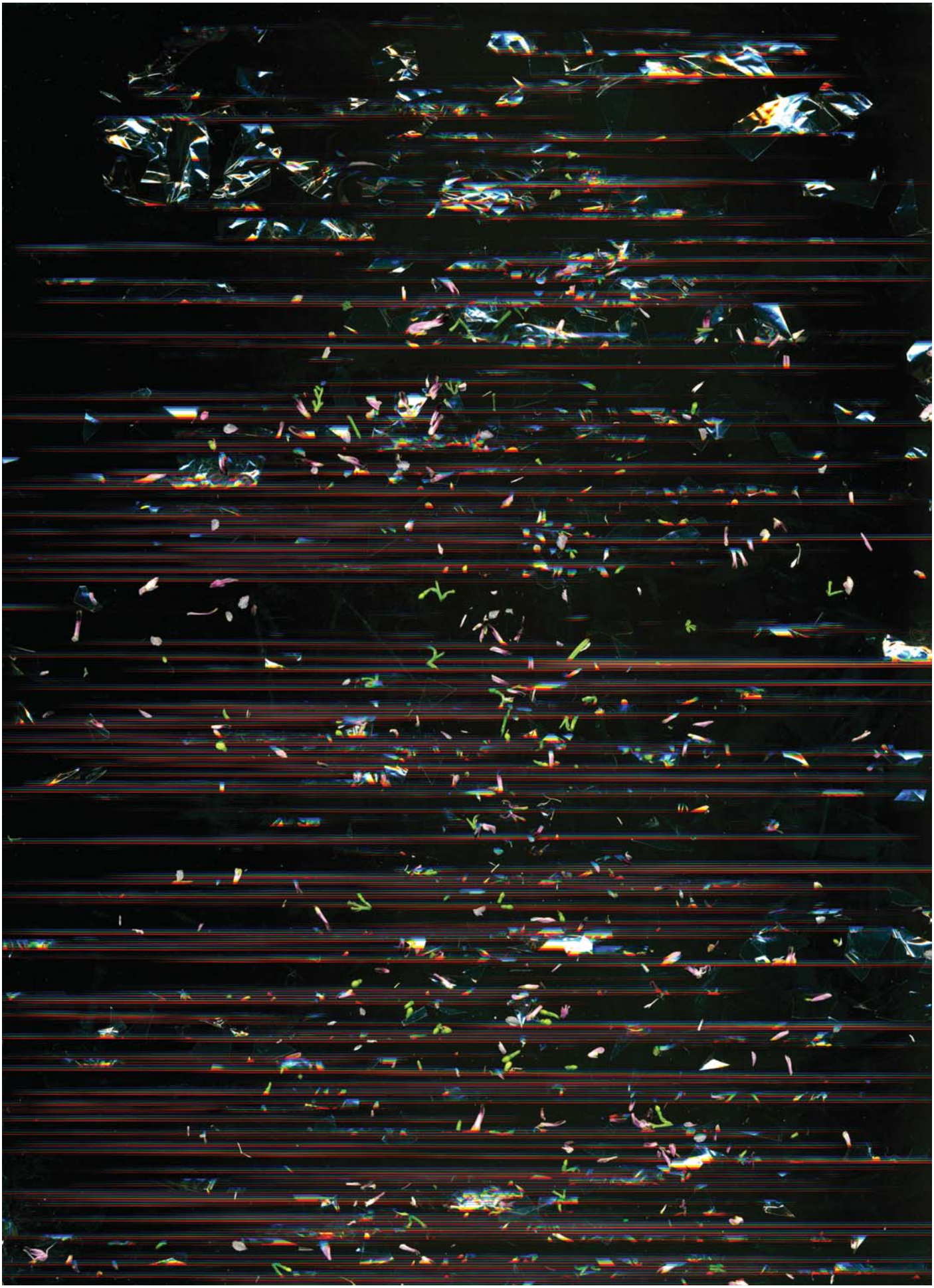
| A String of Data_

Disrupting, altering and generating the photographic image



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Disrupting, altering and generating the photographic image

A thesis presented in partial fulfilment
of the requirement for the degree of Doctor of Philosophy in Fine Arts at Massey University, [Wellington], New Zealand

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ABSTRACT

Through a body of photographic work, this thesis examines how an engagement with photographic technology presents the opportunity to destabilise the established conceptions of the performance of the medium. Historically photographic technology is presented as a series of seamless mechanised transactions that is potentially free of human interaction and situated as a mute participant in the technical production of the photographic image. Acknowledging the role technology manifests in the production of photography, I examine through my work and critical reflection, how my creative practice can harness these technical processes to alter the aesthetic and theoretical positioning of a photographic practice.

Three key bodies of work: *Uninhabited Space*, *The Reflective Field* and *Machine Time_Nature Time* explore a successive development of a studio practice through a series of *Contextual developments* to uncover and interrogate the procedures at play. The *Contextual developments* employed a range of fundamental materials, techniques and processes native to photographic practice. The first key work, *Uninhabited Space* explores the role film processes play in the authoring of a photographic image. The work specifically investigates the limitations of film technology as a means to demonstrate how a 'void of information' might be reinterpreted as visual information within a photographic image. The subsequent key work, *The Reflective Field* conceptually challenges the connection between the photographic image and its presentation to resituate the photographic image as a transformable surface. The final key work, *Machine Time_Nature Time* is presented through extended *Contextual developments* that examine the role of contemporary technology in the creation of the photographic image. Digital, electronic and computational processes are deployed to augment the capture of the photographic image. Reflection on the outcome of this final body of work led to the positioning that technological disruption was used as a creative strategy. This conceptual revision initiates a theoretical evaluation of photographic practice that allows the opportunity to resituate the subliminal role of technology in the production of the photographic image.

The research concludes with a final body of work, *Machine Time_Nature Time* in which I argue the disruption of technology contributes to an alternative understanding of photographic practice and questions how might deviation of these subliminal processes alter or augment a body of creative photographic based work. By presenting a series of photographic works in exhibition format, the research incites a recursive questioning of what constitutes the photographic image, what is selectively included, and what is silently occluded.

Key Words: *Photography, Technology, Disruption, Generative, Archive, Digital*

TABLE OF CONTENTS

LIST OF FIGURES

KEY WORK DETAILS

Uninhabited Space (2011-2012)
The Reflective Field (2012)
Machine Time_Nature Time (2013-2015)

Works presented in public exhibition

The main body of work for this thesis was prepared for public display in three locations in New Zealand: Wellington, Dunedin and Auckland.

The *Uninhabited Space* series was exhibited in 2012 at the Hirschfeld Gallery at City Gallery Wellington, New Zealand.

The Reflective Field series was exhibited in 2012 at Blue Oyster Gallery, Dunedin, New Zealand.

Digital Biophilia (*Machine Time_Nature Time* work in progress) was exhibited in 2013 as a part of the Urban Dream Public Art Brokerage at Bowen House, New Zealand.

Digital Biophilia.V2 (*Machine Time_Nature Time* work in progress) was exhibited in 2015 as part of the International Convention for Urban Design at the Jasmax gallery in Auckland, New Zealand.

Machine Time_Nature Time was exhibited in 2015 at the Engine Room in Wellington, New Zealand.

Conference presentation

The work was also presented to national and international audiences in conference.

Nishioka, M. (2011). The Effects of Resemblance. The Annual Artists Alliance Australia and New Zealand, (AAANZ) Conference, In *Contact*. Victoria University, Wellington, New Zealand.

Nishioka, M. (2012). Untitled. Presented at the *Making Visible: Narratives of place and belonging* Conference, Massey University, Wellington, New Zealand.

Nishioka, M. (2014). Digital Biophilia. The Annual Artists Alliance Australia and New Zealand, (AAANZ) Conference, In *Geocritical.* University of Tasmania, Launceston, Australia.

PREAMBLE

The *Remote Photography Project* (2009 - 2010) offers a starting point from which I consider two central questions. Firstly, what is the technological influence in the production and experience of photography? Secondly, how can I utilise such technological conditions to resituate a critical studio practice? These questions were the basis of my investigations, which are developed in the subsequent sections.

I instruct a remote collaborator in my hometown of Okayama, Japan to set up a camera. The collaborator is asked to connect the camera to a computer, which has software installed that allows me to control the networked camera. At a distance of 8000km from my present location in Wellington, New Zealand, I am able to connect to the local computer by VNC[1] and subsequently attempt to control the operating system and enforce a remote photographic operation. In parallel, I open a VoIP[2] application so that we can communicate with one another. The collaborator rotates the digital single-lens reflex camera through 360 degrees allowing me to visualise and understand the location. In this situation I am only exposed to the scene through a projected image presented via the mirrored VNC computer monitors. My experience of the space is entirely constructed through the view supplied by the camera, computer and network connections. While I experience this view through the computer screen, I am able to make a decision on the view I intend to photograph. The collaborator fixes the camera to the heading that I request. This mode of capture which includes manipulation of a number of technical processes to control such as aperture, shutter speed, focal length and ISO speed[3] enables me to operate the camera in the same way as if I were physically present. Finally, I click the circular graphic that represents the shutter button that is displayed on the local computer screen,[4] which will release the shutter of the camera connected to the remote computer.

I have only seen or experienced this view through photography, but I experience it twice: initially at the moment the scene is captured and secondly as a photographed image. The process reflects the relationship of the photographer to a viewfinder, but this occurs in an altered state from an analogue film photographic method. In contrast to three-dimensional human sight, the experience of the site is already flattened and delivered to me via

1 Virtual Network Computing. This allows the operation of a computer from a remote location.
2 Voice over Internet Protocol. This allows the two-way exchange or sharing of voice, video, text and file over the internet.
3 Film speed.
4 Strictly speaking, I am looking and operating a virtualised or doubled version of the assistant computer screen through VNC, not the actual screen.

photography. Crucially I have never been to the location this photograph was taken from. Not only do I have no physical presence or memory other than my photographic sight, but also I have never heard the sound of the river, or experienced the temperature of the winter day on the opposite side of the globe. I could only imagine the photographic image in terms that W.J.T Mitchell describes as, the invoking of previous overlaid experiences (Mitchell, 2002; Wells, 2011). The photographic images are used to form visualisations of events past, that is to say that photographic equipment is used in such a way as to allow us to view past events as both abstract and two-dimensional. The image is understood to always lie in the past (Barthes, 1982; Benjamin, 2008; Sontag, 1978). However, in *Remote Photography Project* the idea of 'past' and 'present' is more complex and the metadata[5] the camera records at the time of exposure collapses. For example the remote camera records the time of the photographic image as 2 p.m., yet due to my presence in a different time zone the images could be viewed within the local computer to have been authored at 5 p.m. Although the digitised photographic image automates the embedding of information for appended description fostering an understanding of the image, this does not provide accurate information of when the photographic image was taken and does not offer a record of where the photographic image was taken. Here the structures used to support indexing of the photographic image are disrupted through the technological appropriation. The dislocation that occurs in this body of work responds to the premise that places the photographer at the location the photographic image was exposed.

In reflecting on the making of the body of work, *Remote Photography Project* I question the practice of authoring a photographic image and the implied and real experience of presence in the place it was taken. A number of theorists including Susan Sontag, and Roland Barthes discuss that photography presumes a physical presence (Barthes, 1978; Sontag, 1978). However, in the case of this work, these conventional photographic theories are specifically called into question by the fact that I controlled aperture, shutter speed, focal length and ISO speed and decided the moment of exposure, despite the fact that I was not physically there. Importantly this process was not automated as it often is in remote photography such as surveillance photography. Rather it is a photographic action decided and performed upon with considerable agency by the photographer. While this seems somewhat contradictory, technology allows this unusual remote agency to occur in contemporary photographic practice. Through the combined use of remote photographic technology and

5 Metadata in the context of photography is an appended or embedded file that is associated with the photographic image.

a remote collaborator, a staple of theory concerning the indexical connection of the photographic image to its source is displaced. Both components of the work combine to collapse these lingering presumptions about what kind of image a photograph is.

The collapse of information

The photographic image itself suggests a form of presence. Photography has relied on a convention that connects a site, the photographer and the appropriate equipment. The unquestioned presumption is that the photographer maintained a physical presence in the time and space in which the photographic image was exposed. In the viewing of the photographic image we displace our own biological vision and adopt the view offered to us through the mediated photographic image. The spatial disconnection between what was photographed and where the photographic image will be viewed is perhaps one of the reasons we find the photography so very fascinating. Yet what this particular body of work provides is the means to unravel or dissolve this construct by replacing the physical presence of the photographer with a remote collaborator.

In the same way a photographic image replaces physical vision of a real site for the viewer, through constructing a body of work in this manner I displace my own physical presence through the construction of the photographic image via the negotiation of contemporary technology. There are constraints to the highly mediated way in which I produce this work. Despite my real time view, I am engaged in photographing a reality based upon a photographic representation of a mediated scene that I can only view through various forms of technological facilitation. My viewing has been mediated across a number of abstractions such as framing, depth of field and screen resolution which exposes a potential limitation in positioning the photographic images as proof of physical presence, experience or spectatorship of a specific scene. The technological device also delivers a 'lower resolution' view than I would experience if my engagement with the scene was not always facilitated by the viewing of screens, and also enforces a viewership with at least a slight time delay. As a photographer, the way in which I view the scene is considerably altered through these mechanisms.

In this example the amalgam between the photographer and the viewer collapses the elevated status of bodily presence of the photographer. This calls into question a number of the core structures of photography. It prompts me to consider how a technology alters the construction of the photographic image and how this experience of photographing may be mediated by technology from the point of construction through to dissemination and viewing.

Compression with virtuality

The Telegarden is a work produced by American artist Ken Goldberg that allows offsite participants to manage watering and weeding of a physical garden through the mediation of technology. Participants are given the ability to control an industrial robot that is networked, and streaming its real-time operations. Karen Bennett offers insight into understanding this work and notes that experience is altered through technological intervention (Bennett, 2007). The intervention is in this case achieved though the operation of a keyboard and mouse and the viewing of gardening activities are streamed to computer monitors. The participants' physical experience of soil, plants, temperature or wind is completely displaced by the technologically facilitated experiences. A key consideration is that an image can be exchanged for a physical experience. In Goldberg's *The Telegarden*, technology enables the impression of presence on site, and it also conversely enforces a distancing from a physical reality. This work raises a number of interesting positions in relation to an understanding of physical presence and the role of the image[6] to effect presence in a specific space. The concepts of technological intervention raised by Bennett and the issues of remote operation by Goldberg offer insight, inform and situate the practice developed in the *Remote Photography Project*.

The *Remote Photography Project* does not aim to suggest or force a distance from the subject matter as may be found in a number of surveillance situations, but takes the photographic image as proof of the occurrence of the real-time situation that existed moments before the exposure was made. I am interested in investigating my experience of the photographic image through the blending of two composite worlds: the local and the remote that co-exist through the use of technology. The resulting photographs appear as if I was there, additionally the way camera lenses map space to the photographic image offers a degree of familiarity. Furthermore, the photographic images are not constructed from far above or far away. The photographic images are produced from a human framing of a scene, that is looking forward without much increase or decrease in elevation. This is coincidentally exactly how my orientation to the computer monitor is structured. The computer screen now operates as a portal between the remote and the local. In this instance, the application of the facility termed 'live view' enables the composed image to be viewed before capture. This offers an entirely new creative construct and effectively positions the photographer into a third person perspective, whereby the photographer simultaneously experiences being both the photographer and viewer.

6 In this case a displayed image on a computer monitor.

Who claims authorship, the camera? The photographer? Kodak's famous phrase 'You push the button, we'll do the rest!' and the myriad of academic writings citing it, attributes authorship to the person who effectively 'pushes the button', which is indeed me. However another issue is raised in relation to the production of the photographic image. In this body of work these images are created through multiple layers of repetitive presentation of the image from the other side of the globe. The scene is recorded in real time on the local camera, streamed to the local computer in Japan and transferred to the remote computer that is local to me. The notion of both location and time is also complicated in the moment an exposure is made. Once the image is taken, the resulting file is recorded and stored on the camera, and then instantly transferred to the local computer that uses FTP[7] to map a location in the hard drive to synchronise the contents to the remote[8] computers' hard disk drive. Here, a degree of synchronicity occurs. Once the shutter is released, three photographic images are effectively created: camera memory, remote computer and local computer. These conditions of multiplicity in relation to broadcast and storage continue to fascinate me and inspire my studio practice through which I investigate how technology, redefines our understanding of site, time, authorship and the role of artistic agency within the production of a photographic image. In the following chapters I will continue to reflect on the theoretical positions and visual rhetorical strategies used to depict space that characterise my picture making.

7 File Transfer Protocol. Sends the image files directly to my remote hard disk drive.
8 The two computers: the local (Japan) and the remote (New Zealand).

INTRODUCTION

How can I make visible the subliminal operations embedded within the fundamental procedures of the photographic process? The aim of this research is to understand how investigations of the role of technology in photographic image-making might offer new ways to reconceptualise a critical art practice through the medium of photography. The constitution of the photographic image is investigated from a technological perspective as a means to identify, deconstruct, recompile and then to evolve a new way in which I can author a body of creative work. Refuting the notion that the camera offers an extension to human sight, my body of work starts to respond to how the viewer may read the photographic image, and proposes an alternate form of vision and representation that is mediated by processes of technological disruption.

I am from a generation of photographers who grew up using film photography but who started to use consumer digital technology at the turn of the millennium. Upon assessing my engagement with the photographic I discover a vast collection of small changes that have been silently introduced into my practice. Incrementally, the mode of technology has changed completely. Contemporary technology has altered the means by which the photographic image operates: the electronic sensing of light, the translating of light into numerical data, the translating of numerical data into tonal values and then stitching these values computationally in order to produce an entity that can be called photography. While film photography allowed for the miniaturisation and inscription of visual information directly on physical media, digital photography has diminished the reliance on physical media. A physical record produced to collate tonal values is exchanged for abstract codes that equate electronic light receptor recordings to binary code. Although these alterations occurring in the capture, storage and production of the photographic image seem significant, on a theoretical level they remain largely unchallenged. Furthermore these changes are also largely unexplored in a studio context.

The research is presented in five parts: Preamble, Introduction, Part One, Part Two and Conclusion. Numerous approaches are explored and analysed through a series of smaller works I term *Contextual developments*. They are crucial parts of my working method providing inspiration for further iterations through a critically reflective process. Since digital photography image-making has become 'instant', and the complexity of the underlying processes has become diminished or dislocated. For example, waiting eagerly for the results of a photography shoot, or waiting for an image to appear in a bath of developing solution in the film era were moments of great

expectation, anticipation and terror. There was no means to instantly see the image, which had been imagined and remained invisible for a large part of the process. I enjoyed the slow nature of analogue image-making that is a part of the alchemy of photography. What the *Contextual developments* represent is the pleasure to create, fail, evolve and finally produce a body of creative work, focusing on the subliminal operations within a range of technologies from the imminently photographic (such as film sensitivities and optical projection) through to embedding industrial processes (such as sand-blasting, laser-cutting, and data processing). These are not described in a strict chronological order as they were developed in parallel, frequently added to and informing one another throughout the duration of the research.

The Preamble operates as a way to illustrate how I as a photographer am enabled to operate in this new technological age of photography. Enabled to withdraw my physical presence from the scene through the use of contemporary technology, I delegate the production of the photographic image and reinvestigate the fundamental enquiry of photography such as when, where and by whom was the image made.

In Part One I employ a number of ideas from established theorists in the reflection of my studio practice, drawing selectively from their texts in order to keep a specific focus on technology. For example, the term 'photography' is used to describe a linked series of technologies as defined by Patrick Maynard who states photography is 'a series of marks upon a surface' (Maynard, 1997). This proposition allows me to undertake an investigation of photography that is not tied to the representation of a scene and rather investigate the processes of photography itself. In Walter Benjamin's seminal text, *The Work of Art in the Age of Its Technological Reproducibility* (Benjamin, 2008), he describes how the technological capacity of the camera allows for a view of the world that operates in extension to human vision and as a nature that speaks to the camera and not to the eye (Benjamin, 2008). My body of work (and associated public exhibition), *Uninhabited Space* (2011 - 2012) however, challenges an area that Benjamin does not refer to, which is a nature that the camera may not see. This is achieved through exploiting a specific technological limitation found in reciprocity failure. The exploited limitations set to refigure the way in which photography undertakes the mark making process and produces a renewed set of consequences for the interpretation of the photographic image. The subsequent body of work, *The Reflective Field* (2012) is a project (and associated public exhibition) that explores how photography performs as a technology in relation to the physical production of the photographic image. This work is developed

through an extended series of *Contextual developments* (*Dislocation*, *Marks on a surface* and *Digital marks*) that engage with and alter a range of procedural steps. These iterative developments are not focused on producing an ideal finalised output, but to develop in union a range of ways to explore the notion of 'marks on a surface'. Through a reconceptualisation of the application of a digital darkroom, these developments focus on the relationship between the scene and the camera, the camera to the image, the image and its storage, how the image is processed, and how the image is outputted. Allowing the possibility of failure the individual techniques from each *Contextual development*, these infect one another and accumulate to provide a dense pool of strategies from which I draw upon to develop my studio practice. This brings about a significant alteration to my mode of practice in addition to the act of making photographic images. The body of work presents how the photographic image is refigured as a transferable layer of information in relation to 'marks on a surface' and concludes with the notion of selective desynchronisation that occurs subliminally within photographic procedures.

Part Two presents the directions undertaken to arrive at the final body of work titled *Machine Time_Nature Time* (2013-2015), which I present in exhibition format for examination. Primarily undertaken in a studio-based practice, the research developed in two modes: *Contextual developments* (*Pixels A*, *Pixels B*, *Colour Block* and *Digital Bloom*) and a final body of work (*Machine Time_Nature Time*). The art works from a number of artists who engage in the application of technology are introduced to the research. Artistic movements such as 'Generative Photography' and 'Concrete Photography' are introduced. They are used to locate a general field of practice centred on an investigation of the medium of photography through an application of technology. A reflection on the performance of my work against established theories related to photography is also undertaken. My aim is not to offer a written extension of these theoretical positions, but these theories are used to situate the evolution of my studio practice. In contrast to the *Contextual developments* in Part One, which explored a common idea, each of these *Contextual developments* in Part Two approaches reinvestigation of a specific area of technological enquiry. The *Contextual developments*, *Pixel A* and *Pixel B*, *Colour Block* and *Digital Bloom* were undertaken sequentially as a means to incrementally understand the constitution of the photographic image in the digital age, which alters the capacity to author a creative body of work. The *Contextual developments* allow for an iterative feedback loop that encourages reflection on the work in progress. The findings from these enable a discussion of how an alteration in technological process can be used to displace the notion that photography creates representations and instead

reseat the photographic process as a producer of data. The works from my *Contextual developments* manipulate the unique characteristics of: electronic capture, the composition of the digital image file, the homogeneity of data and computational image processing. While the production of work in this manner differs from analogue film photographic practices, it also facilitates a new conceptual grounding from which to develop the succeeding periods of work.

My final body of work, *Machine Time_Nature Time* builds on those *Contextual developments* and explores the electronic composition of a digital image file. While operation of the camera is used to make an adjustment to alleviate the variances of nature, the findings from the work allow the opportunity to discuss how an alternate record of time may be mapped to the photographic surface. This body of work develops the proposition of two time factors that influence the production of the photographic image: 'Machine Time' and 'Nature Time'. The methodology I take to create this work is by physically altering the specimens that I photograph and also to permit the entry of nature to influence the production of the image. The outcomes from my settings to the recording device bring about a desynchronisation of these two time frames and expose the otherwise subliminal existence of 'Machine Time'. Here 'Machine Time' and 'Nature Time' begin to unwind in the photographic construction and present to the viewer a disrupted binary of both the familiar and unfamiliar. The contribution this research presents is a body of work that refigures the way in which photographic technology is made apparent in the production of the photographic image. Redefining the use of photographic mechanisms allows me to see the world in a way that the human eye cannot.

PART ONE

Excavations

Digital technology changes the way in which society engages with the photographic image (Manovich, 1995). As a global phenomenon, engagement with digital photographic images has become an important social activity. While this is evidenced by the sharp rise in production of camera-equipped devices, more so, the increasing availability of services to host photographic images signals the changing role of photography in contemporary society. The photographic image has increasingly become an entity that is frequently experienced in multiplicity. The capacity to share, copy, retrieve, search and send photographic images complicates its autonomy. In this context digital photographic images might be considered to operate in a manner that is more similar to a radio broadcast than an image in a printed newspaper. Stations (or servers) host immense collections of items (photographic images), which are perpetually projected out through cable and satellite networks. Access to a photographic image can be achieved by tuning into a specific channel. Identically to the radio broadcast, multiple users can access the content simultaneously and each user can receive an individual copy. This is further evidenced in the occurrence of many search engines suggesting predefined channels (search suggestions) for consumption. This proffering of multiplicity is matched by mass accessibility, and an ability to access and engage with photographic images via personal digital devices. This is in addition to mass production where increased production of individual photographic entities increases through printing as a means of distribution. The combining of these means of engagement lead to a simple consideration; society is producing images at a rate never experienced before, and access to, and engagement with, photographic images is more easily achieved than any point in history.

As the increase of photographic entities unfolds, a need to differentiate and indeed index them becomes ever more crucial. Despite the vagaries of the photographic image, it is perpetually required to define its contents: a time, a place or a subject. The role the photographic image plays in society demands that it can be ascribed to these territories and technology has attempted to ensure a consistent level of indexicality through the primary mechanism of photographic metadata. Photographic metadata became a key component of digital photography where information relating to GPS, time, date, camera type, lens, ISO speed, aperture and other technical controls could be recorded and appended to the photographic image. This facility did exist previously in film era photography, but only in a limited fashion in the form of a removable card to record exposure times, shutter speed and f-stop values found in early

cameras, or as the imprinting of time and date directly into the film. However while these capabilities existed, it was not until the widespread use of digital photography that it became a fundamental instrument or information source within photographic practices. While photographic metadata is intended to help define a singular image from an expanding sea of images, this inevitably creates the situation where such images are swiftly reintroduced into yet another grouping based on the newly appended information. In addition to offering specificity, this situation also promotes duality and multiplicity. The capacity for duality exists in the way that photographic images are identified. This made me interested in developing a method to explore these ideas through a body of creative practice.

The work, *Excavations* (2009 - 2010) was created during the period 2009 – 2010 as part of my MFA.[9] This body of work explored how a conception of contemporary photographic technologies could inform my studio practice and was crucial in helping me articulate the parameters for this research project through conceptualising the technological aspect of the medium. As a response to the viewer's endless expectations for information, it explored a process whereby an interpretation of metadata was appropriated as a creative practice. What this body of work developed and introduced was, an act that appended a secondary source of information to the exposure of the primarily photographic image (Nishioka, 2010). The project focused on a site where a historic building was removed and replaced with a multi-story building. There was a mass itemisation that occurred in the demolition process on this site. For the project management company who oversaw this process, their job was not focused so much on the actual materials coming in and out of the site, but the translation of this material into data. This dissolving of physical form became a central theme in this body of work where I could parallel it with a similar condition within photography, namely that photography's visual content was being eroded via the notion of an externally appended and virtual metadata. The research initiated a recontextualisation of this process and employed this notion in a suite of large-scale colour photographic images.

Upon exposing a photographic image on site, I would actuate a second motion and collect a small physical sample from the space framed by that image. I rephotographed this separately and appended it beside the original photographic image. In this new context I proposed that this collection of the physical artefact acted as an equivalent to the notion of metadata. Where metadata exists as a connective and supporting data set for the

9 This body of work was produced immediately preceding the current body of work and was instrumental to developing the current thread of investigation.

photographic image, the appending of visual metadata exists as a means to construct and engage the viewer within both a qualitative and quantitative supplementation. This engagement with the photographic image operates as a means to explore the notion of acquisition and that photography might possesses the capacity to collect material in addition to reflected light. The photographic image is conceived as a form of, information and an object, both of which through this body of work incites their individual commodification as data.

Although the works *Excavations* and *Remote Photography Project* explored the role of technology by evoking an analogy to photographic practice, the processes in the photographic image are rendered invisible. I will extend the ideas from these two bodies of work, through a series of *Contextual developments* to inform the development of the major bodies of work: *Uninhabited Space* and *The Reflective Field*. Through these processes I keep questioning how can I make visible the subliminal operations that occur within the procedures that facilitate the production of the photographic image. This investment in technology allows a focus that directs to the key research question.

Key work: Uninhabited Space

One of the distinctive and defining features of photography is that it is the application of technology at a given time, and that it has rules that are formed and transformed by technical intervention. There is something of a broad consensus that photography and technology are inseparable companions (Manovich, 1995; Maynard, 1997; Shapley, 2011). However, Kelly Wilder discusses that photography is always philosophically located or framed within genres, time periods or political stances, but very rarely do they locate with relation to the methodology or processes that occur in creating the photographic image (Wilder, 2009). While we are aware that we use technologies to produce the photographic image, what interests me is why technology plays such a subliminal role in the positioning of photographic practice. To initiate an enquiry into this area I need to define the technological processes that occur in the creation of the photographic image. Starting with the idea that technology always has limitations, the circumstances where I can operate my camera are bound by rules. Importantly such rules promote the fact that there are always limitations to what photography is able to record and that these limitations have changed over time. Working within rules, the photographer is faced with multiple decisions such as type of camera, film size, film type, format, digital or film, monochrome or colour, depth of field, length of lens, film speed, exposure, shutter speed, white

balance, and so on; all play a part in determining what is formed through the use of photography. Due to this technical bias, photography has evolved quite firm boundaries to define what constitutes the photographic image and has also been used to develop the concept of a 'correct' photographic image. While aware of the technical constraints embedded within the photographic process, it is not within the scope of this research to investigate all technical limitations of the photographic imaging system. Rather this section of the research asks how a move into the established technological traditions can enhance or make provision for a creative body of work as a way to examine the role of technology in photographic practice.

In Benjamin's "Little History of Photography" (Benjamin, 2008) he distinguishes a difference between the act of sight by way of one's own eyes, and the act of seeing a subject through photography (Benjamin, 2008). This position locates photography as a means to produce an artefact that replicates an experience as though perceived through human sight. Within the confines of this framework, Benjamin implies all matter in the natural world can be described through a technology known as photography. He states that:

> *For it is another nature which speaks to the camera rather than to the eye: "other" above all in the sense that a space informed by human consciousness gives way to a space informed by the unconscious (Benjamin, 2008, p. 277-278).*

This other space can be brought about by photography and its ability to resolve reflected light in a manner that is markedly different and even exceeds human vision. This statement implies a general view of what technology is able to do, but not necessarily what technology is unable to accomplish.

T.J. Demos obliquely exemplifies what technology is unable to do or rather what can be achieved from an inability to describe the natural world by photographic technology. He articulates this through a position based on the grounding that the photography possesses the ability to render a 'factual' representation. Then he questions the role of visual acuity in image-making by asking, "what if to make absent, is to represent" (Demos, 2006, p. 76). He explores this position through Yto Barrada's photographic series *The Straight Project* (1998 - 2004) suggesting that through photography the ability to make matter absent allows the deployment of a conceptual framework that operates beyond the factual record displayed in the photographic image. In Barrada's work the blanked out silhouettes are alleged to refer to refugees from Morocco and their troubled existence in Europe. Their identity dissolved

in the photographic image is said to present an equal mapping to their diminished presence in society. Demos articulates the notion that there is a parallel between this 'altered' visual representation and a much larger social commentary. What interests me in this reading is however, that the camera's incapacity is authorised as a conceptual mechanism to articulate an artistic position. As earlier identified, the technical procedures for photography are presently very well defined, the characteristics of successful image-making are bound to technical capacity and a relation to a factual representation. What Demos offers is the notion that an area inside the photographic image can be extracted from the regiments of the factual representation and deputised with the role of a conceptual device. This refiguring of the photographic image in Demos's terms opens a very real schism between representation and abstraction, and allows for a dualistic quality in the photographic image that is arrived at through photographic technology. The outcome of Barrada's work is achieved through technical limitations in photography. Due to the overabundance of light shining from the illuminated signage, the photographic image is unable to present detail in the two human figures. While Demos does not specifically call into question the role of photographic technology in this work, his ideas support an understanding that absence in the photographic image is to acknowledge a technical limitation, which allows its conceptual exchange. From this position we can find that through technological limitation in photography the visible can also be made invisible. This concern is that while the machine can bring about something we can't see, as stated by Benjamin, it is also at times unable to produce what we can see. What this implies is that the existence of content that cannot be exposed through photographic technology may still be made manifest within the photographic image.

English artist Steven Pippin's work titled *Shot from Within* (2010) is authored under the premise that camera ownership is near universal, and that every imaginable scene has now been captured through the use of photography. In this work Pippin attempts to show the 'final' subject left for photography to record its own demise and destruction. He states:

> *...During the process of thinking about how to dispose of photography I wondered about the possibility of the camera creating an auto-portrait exactly at the moment of self-destruction and subsequent demise (Mr. Pippin, 2011, p. 343).*

Exposing photographic procedure is integral to this work and used to question the conceptualisation of the medium of photography. For Pippin an

overarching desire to expand the horizons of photography returns a nihilistic proposition to record the photographic device at the moment of its expiry, and to render it unable to produce further images. To exploit this he orchestrated an assembly that combined a camera, two mirrors, artificial lighting, a shutter release and a pistol. The mirrors were placed in an arrangement that allowed a reflected view of the rear of the camera. The shutter release was arranged to activate both the artificial lighting and fire the pistol at the rear of the camera. This assembly is carefully calibrated to allow the pistols bullet to enter the camera and to pierce the film. At this moment, the iris in the lens opens and captures the reflected scene of the pistol being fired and that the bullet is within the camera on route to destroy the lens. This method of producing a photographic image is an equal antithesis to an analogue film photographic technique. In this case photographic subject enters from the anterior of the camera, bypassing the lens, which serves only to mark the occasion of the act. In the result the bullet entering the photographic system creates the subject displayed within the negative, not as reflected light but an entirely different disruptive source of energy. This project acknowledges the limitations of the photographic system that identifies the typical unidirectional bias of the photographic capture and revises these limitations to produce a critical body of work. This work explores an intimate knowledge that only an engagement with the medium of photography can reveal.

This project provides a particularly useful premise in the development of the *Uninhabited Space* series. Pippin's *Shot from Within* produces an image of photographic destruction and disintegration. He establishes the transfer of light as the specific and unifying aspect of photography that has both rules and procedures set in place. Through the application of photographic technologies, the *Uninhabited Space* project focuses more specifically on the role of light as a key operation in photographic practice. In this work I also initiate a forceful alteration to photography, but not through an added external force, but by applying adjustment to pre-existing photographic procedures to disrupt the production of the photographic image. This process tests the conceptual foundations of analogue film photography in relation to the role of technology as a way to add new knowledge within creative practice.

Through my investigations in the *Uninhabited Space* series (Fig.1) I examine this condition as a means to break new ground in the construction of the photographic image. In order to refigure these principles I locate a means to show a space that technology cannot see utilising the conception of absence that brings about the possibility of its own conceptual exchange. This work employs a photographic process that automatically initiated a subtracting

Fig.1

Uninhabited Space (2011 - 2012)
Pigment print on baryta paper on aluminium composite material 44” x 56”(1117 x 1427mm)
Exhibited at HirschfeldGallery at City Gallery Wellington, New Zealand.

of information by removing a part of the spatial information. In order to examine the proposed ideas I employed reciprocity failure as a mechanism to simultaneously expose information and to also form areas upon the film that show an absolute lack of information. Reciprocity failure occurs when a film emulsion is unable to record due to an inability of the photographic medium to expose the range of light values present in a scene. An operation of this work was to activate an awareness of how visual content is configured within my photographic process. An intrinsic reliance on light is one of the driving factors in the decision to initiate a series of night-based images to test what photography may record or may not record. At moments, areas appear to be in shadow as they slowly dissolve through greys into black, and at other moments the work presents an immediate and impenetrable darkness, as though no matter exists at all. The larger areas of darkness technically exhibit informational absence, which complicates the relationship of what is expected of the photographic image. In *Uninhabited Space*, reciprocity failure resulted in a series of photographs that effectively contained zero tonal information. In technological terms this is an inability to record all ranges of available light in a scene, a situation contrasting with Benjamin's view that the photographic procedure may indeed capture more than is available to human vision. Reciprocity failure evidenced itself as vast fields of pure black, without texture or tonal definition. This however invites another entirely different interpretation of the image as a 'void' that describes the space that technology is unable to see. The lack of visual information in this series was refigured in the viewer's eyes as an erasure or deletion in the spatial morphology of the site. In a manoeuvre that links to Demos's conceptual framework the geography of the location is reconstructed as a crevasse or immense chasm through the technological limitations of the photographic process. Indeed a chasm does exist, not in the physical world but in the mapping of the physical world through photography's marks.

Dissolve the photographic image

The following section introduces the notion of the archive as a way to illustrate how the reading of the photographic image could be altered in contemporary society. I investigate several artists who use the notion of the archive in their creative practices, and then describe how a shift to the digital archive influences the creation of my work *Uninhabited Space.*

Historically the archive operated as a means to store collected images and physical artefacts from afar. Distance, both temporal and physical, was always a significant factor in the realization of the performance of the photographic image within the archive. Image becomes artefact and is regarded as an

important specimen because it was created remotely. Since the development of photography in the late 1830s, many agencies have set out to document the world that surrounds them and others; empires, governments, militaries, explorers and private individuals set out to proclaim ownership or understanding of the world (Farman, 2011; Rosenblum, 1997). In these photographic archives viewers were enabled to observe images of unfamiliar scenes in locations that typically took extraordinary effort to reach. In many cases, the viewer can only ever experience the image within the dislocating context of the photographic archive. The distant and unfamiliar become close to the viewer through the displacement the photographic image maintains over a scene.

Archives offer a key facility to the photographic image in that they allow a huge number of people to share the experience of a particular image, and so create a body of communal knowledge. John Roberts illustrates the capacity of the archive by using as an example Cartier-Bresson's influential 'decisive moment'. He states the true decisive moment is when it superseded its existence as an image and was introduced into the archives of art history. Here, the significance of this photographic image is altered through its inhabitation of the archive, and its subsequent accessibility and presentation to the wider public (Roberts, 2009). Once the photographic image exists within the archive, a freshly minted context is formed.

The ability to evolve new meaning through an acknowledgement of the logic of archive has also been addressed by contemporary art practices, which have identified the archive as a powerful structure to create work (Enwezor, 2008; Spieker, 2008). Photography is a device to lock events into perpetual stillness. The archive too, is a collation of stilled historical fragments that are preserved for consumption at a later date (Roberts, 2009). While a similarity exists between the two, in a number of notable art practices the act of photography and the act of archiving are increasingly converging. As noted by critic and curator, Okwui Enwezor, "The photographic archive is one of the many ways in which archival production has been developed within the context of art" (Enwezor, 2008, p. 14). The artist Walid Raad utilizes the premise of authenticity through an archival accumulation and produces an ever-expanding collation of documents that centre on the Lebanese civil war. The archive is an act of addition, where induction operates to supply authority through mass accumulation. This method of authoring a creative work relies on societally ingrained archival material that gains its authenticity from the privileged form of authority achieved through the scale of archived images (Sekula, 1986). In reference to one of Raad's essays titled *Let's be Honest, the*

Rain Helped, he states:

> *The truth of the documents we archive/collect does not depend for us on their factual accuracy. In other words, it does not matter to us whether blue prints were found buried 32 meters under the rubble in downtown Beirut. We are not concerned with the facts if facts are considered to be self-evident objects always already present in the world. (The Atlas Group (Walid Raad), 2006).*

The crucial aspect in this work is that *The Atlas Group* itself is an artistic construction of fiction. Although declaring the group's objective factuality, Raad uses the stored document to alter the viewer's interpretation of authority and authenticity. The archive is also a repository that automatically enforces new contexts, which allow for the discovery of new imaginable truths. His work exemplifies Chantal Weibel's statement that "Art refers lately to reference systems and it is therefore becoming a reference system in itself" (Weibel, 2011, p. 136). Raad's work operates in a manner parallel to the archive, but does not equate to an archive in its generally understood sense. His archive is predominantly constructed as a reference for future examination. Intent is also altered in Raad's practice. In the historical archive, material is gathered over a period under typically objective means. The archive maintains close relations to scientific recording and as such has had ties to documentary photography. While any act of collecting cannot realistically avoid a degree of subjectivity, Raad's work is prepared in such a subjective way that the secondary act of collecting and curating the material from the archive brings about a new contextualization.

Projection archive

Contemporary practice of creating and storing of images requires a reconceptualisation of the role of the photographic image within the digital archive. Curator for the International Centre of Photography, Christopher Phillips states:

> *…photos will be automatically archived, to live on forever somewhere in the cloud. This is the historical context – photography's rapid evolution into a completely digital, Web based medium – with which the next generation of artists must contend (Phillips, 2012, p. 82).*

Whilst the photographic image is always a precursor to the production of a replication, the tools of contemporary technology allow instant replication,

and facilitate it at an exponential rate. This has entailed a shift to the archive as a virtual site, enabling multiple accesses and facilitating immediate transfer (Featherstone, 2006). This signals the increasing multiplicity of the photographic image in the digital archive.[10] Once conceived within a digital framework, sharing of an image does not relate to the physical transfer from one party to another, but it is more correctly interpreted as multiplication. An illustration of this situation is where a single file is sent across a network from one party to another. The original file is stored on person A's local hard drive, and a duplicate is uploaded to a third party server. This server then delivers a duplicate of its duplicate to the nominated server used by person B. Person B then has the ability to deposit a duplicate of the file to their own local storage. The total replications in this simplified illustration relates to multiple copies being made, some of which are easily accessible. The multiplicity can become increasingly exaggerated when mail accounts are used, and even more so when social media tools are employed. This demonstrates that the digital archive alters the conventional interpretations of the archive as a collection of distinct articles, and refigures it in a way in which we may engage with the photographic image through the notion of transferral and an almost infinite multiplicity. Due to this, one could consider that every imaginable subject would exist within these vast yet disparate and ever-expanding digital archives. However the digital archive does not contain everything; it is by nature of its construction incomplete. It does indeed have limits.

Because of these limits and incompleteness, society engages with the digital archive through co-option whereby it is utilised to build links to their own expanding archives. The digital photographic device facilitates linking to photographic images through a secondary process of appending information. As described earlier, metadata is a mechanism to offer a wider degree of indexicality to an individual image. It offers additional or alternative information such as year, month, day, time, camera make, lens, focal length, aperture, GPS coordinates and so on. Even though the contemporary photographic image is created within the physical environment, it is more commonly consumed within a digital environment

10 While the advance of technology has progressed information storage methods, the phrase digital archive has through natural progression become a predictable combination of words. The appendage of the prefix digital has become informally and widely accepted in public use, indicating a current fascination in the application of retronyms. The term digital is always supplement to a pre-existing condition within society which reveals the original context did not originate in a digital context, and also shows the inclusion of the original function. While this combination of words has evolved into common use worldwide, there is some differentiation that exists between 'archive' and 'digital archive'.

(Biro, 2012). The occurrence of photographic metadata enables image-sorting en masse based not on its 'marks on a surface' but as quantified through its externally appended contextual information. As Nancy House states, "digital technologies have made indexing and annotation easier, faster and more flexible" (Van House, 2011, p. 129), which produces diverse sequences of spatially and temporally removed photographic images. The production and storing of photographic images within accessible digital archives author a subsequent reading through the juxtaposition of photographic images which authors completely new meanings (House, 2011). The specificity of the photographic image is eroded, but it is extended through inhabiting the digital archive. As the scale of production of photographic images increases,[11] the individual photographic image becomes less significant in value, but significance is found in the numbers that reside in the digital archive. The ease and accessibility of producing digital photographic images combined with the knowledge that they hold no physical form, forces an admission that the photographic image is merely a form of data. Is this perhaps why we engage in such mass practices of photography? Is the blanket documentation a means to fulfil some insatiable desire to constantly consume data? Such questions might be met in the way the digital archive allocates the images in its records as data. The digital camera is not only a device to create photographic images; it holds the prospect to author a searchable network in parallel to the exponential creation of the photographic image as data. In this model photography operates as a communicational act that can be duplicated, altered and categorised for future reference in a way that has never been possible before. This offers the opportunity to reconceptualise photography and furthermore presents a rich platform to explore how contemporary technology might influence photography through a studio-based practice.

The artist Penelope Umbrico's *5,537,594 Suns From Flicker* (2009) is a project that directly engages with the digital archive through a creative practice. Umbrico searches the Internet with key words and downloads archived content in a typological methodology that explores systems and codes of the archiving of digital photographic images. This work is theoretically located within and critically responds to the evolving catalogue that contemporary culture perpetually expands through the use of both photography and the digital archive. The project evolved on a monthly schedule from 2007 through to 2011. This series exists as a means to visualise the expanding

11 The Camera and Imaging Products Association shows that 115,524 units shipped in 2011 alone (CIPA, 2013). In addition to this, smartphones also add considerably to the unit count. Statista reports that in 2013 smartphone shipments passed one billion units (Statista, 2015). Although camera shipments have seen a gradual decline, camera equipped feature or smartphones have seen an increase.

scope of the digital archive which begins in a start date of 9/25/07 that retrieved 2,303,057 hits, and ends 02/20/11 and returns 8,730,221 results (Umbrico, n.d.). This poses questions stating that the work is a 'partial' collection, indicating a hierarchy and selection. The relational aspect of the archive is key to the production of this work, given that the search phrase 'Sun' is a linguistic term not inherent within the photographic image. The word 'Sun' is a value applied by the virtual community of archivists that engage in appending meaning to images through an activity termed 'tagging'. In this case it can be stated that the creation of the photographic image depends on an online community realising that the photographic image lacks something in order to communicate its contents. This act occurs virtually, in digital archives where virtual conversation about and around photography perpetuates. Umbrico's *5,537,594 Suns From Flicker* is a practice that responds to, and occurs after the act of appending meaning. Her work is reliant on, and is formed through the searching through public stores of images. She describes her practice as "The sheer quantity and accessibility of digital images neutralises the personal, particular, individual, and transforms the local into the impersonal, abstract, collective and global" (Umbrico, 2012, p. 82). In Umbrico's work, digital technology has altered the way in which the photographic image is both presented and accessed. The authoring of this work makes evident the ability to search through stored archives of images. This work directly engages with the public archive and re-presents retrieved material. The work ultimately acknowledges both how the photographic image is dissolved within the archive, dislocated from any context and also how the photographic image is made complete through the appending of external information or metadata.

The way in which the contemporary photographic image is produced indicates that Barthes' influential terms 'punctum' and 'studium' may have to be reconsidered. The 'punctum' is associated with the notion that an event 'has been' or 'it was there' and noted that one photographic image contained information as an extract from a moment within the flow of time. While there is relevance to Barthes' position in relation to analogue technologies, the 'punctum' may not be a transferable condition to the digital image. This complicates the performance and the role of the digital image in the contemporary archive. Paul Virilio for example claims photographs are exceedingly exposed (but mal-distributed) to the public as allowed by the conditions of the digital environment, otherwise known as informal archives which reduces the experience of time, space and physicality to the border of null (Virilio 1997; Virilio, 2000). The notion of a 'punctum' in the photographic image has been altered as they are now authored and

distributed in multiplicity, thus altering their relation as a record produced as an exclusive moment in time. Given the volume of photographic images that presently exist in the public realm by way of the digital archive, we accelerate towards a culture of mass consumption of photographic images. What this situation indicates is a shift for the digital photographic image to operate as 'studium'. Digital photography manifests itself, not as the capture or stilling of a single moment, but as a continual visualisation of the stream of history itself (Demos, 2009; Hori, 2004; Tsuchiya, 2004; Van House, 2011).

Through critical enquiry of technology Umbrico's work suggests the capacity of a studio practice to produce a new dialogue. The dislocated photographic image, which rests, lodged in the digital archive is remade in the present and replaced into the continual flow of time. The change technology has brought is the increased accessibility to public archives, as opposed to institutional archives. The public archive presents not only the vast volume of photographic images, but also a social shift in how people may become involved with the photographic image. As people are increasingly exposed to the photographic images produced by others (Shusterman, 2012), they are inclined to believe that the images of others are produced under the same conditions as their own, thus they are transparent and believable, particularly images presenting "the possibility of nearly real-time distribution" (Cruz & Meyer, 2012, p. 216). This condition begins to author a situation where Raad's work gains ever more authority as society becomes ever more engaged with the practice of archiving and more familiar with concept of events recorded through photography, even though the widespread occurrences of photo-manipulation and photo-fabrication are commonplace in contemporary media. The combining of the authority of the archive and the occurrence of vast volumes of photographic images affords the combination of both factual and fictional material in Raad's *The Atlas Group* to be read as a verifiable whole. The archive in this example operates as to displace or amend human memory. The photographic images contained within are consumed so that the viewer deems that having viewed the photographic image of an event that they have experienced it for themselves.

My series *Uninhabited Space* was exhibited in 2012 in the HirschfeldGallery in City Gallery Wellington, New Zealand. The major feedback received from the viewers was that they recognised what the photographic images referred to, but they were unable to locate where the site was despite the fact it is only ten kilometres away from the gallery. This raises the notion that viewers are increasingly accustomed to the building of memory through the viewing of visual material, which I term as 'Memory Archive'. In my work *Uninhabited*

Fig.2

Uninhabited Space (2011 - 2012)
Pigment print on baryta paper on aluminium composite material 44” x 56”(1117 x 1427mm)
Exhibited at HirschfeldGallery at City Gallery Wellington, New Zealand.

Space I enforce an alternative engagement between the viewer and 'Memory Archive'. While very few have ever experienced industrial sites first hand, they are still locatable within the collection of the 'Memory Archive'. The digital archive operates as an outstandingly large memory bank from which the public can amend, edit and draw from, despite its subjectivity. Carolyn Steedman suggests that the archive is subjective and that through this subjectivity the archive performs in a manner similar to human memory in that it may be "reordered, remade and emerge" (Steedman, 1998, p. 66) anew. Umbrico's work presents a full archive, or rather a complete archive, one in which a viewer can be overwhelmed en masse. However, my work does not present the records, or a record of the memory. Instead, *Uninhabited Space* provides a 'void'. It alludes to an area without content, and an area into which the viewers can endlessly insert their own withdrawals from the 'Memory Archive' to complete the photographic image. In this work photography casts aside its primary role as a producer of observable reality and retreats to an empty void. The void was created by disruption of technology. This then operates to allow the creation of a semi-fictional space that attempts to collapse the performance of the photographic image. Part observable reality, part projected fiction, the photographic medium perpetually creates a constructed view. *Uninhabited Space* visualises a conceptual device to make visible the operations that occur through engaging with the 'Memory Archive'.

Fig.3

Uninhabited Space (2011 - 2012)
Pigment print on baryta paper on aluminium composite material 44" x 56"(1117 x 1427mm)
Exhibited at HirschfeldGallery at City Gallery Wellington, New Zealand.

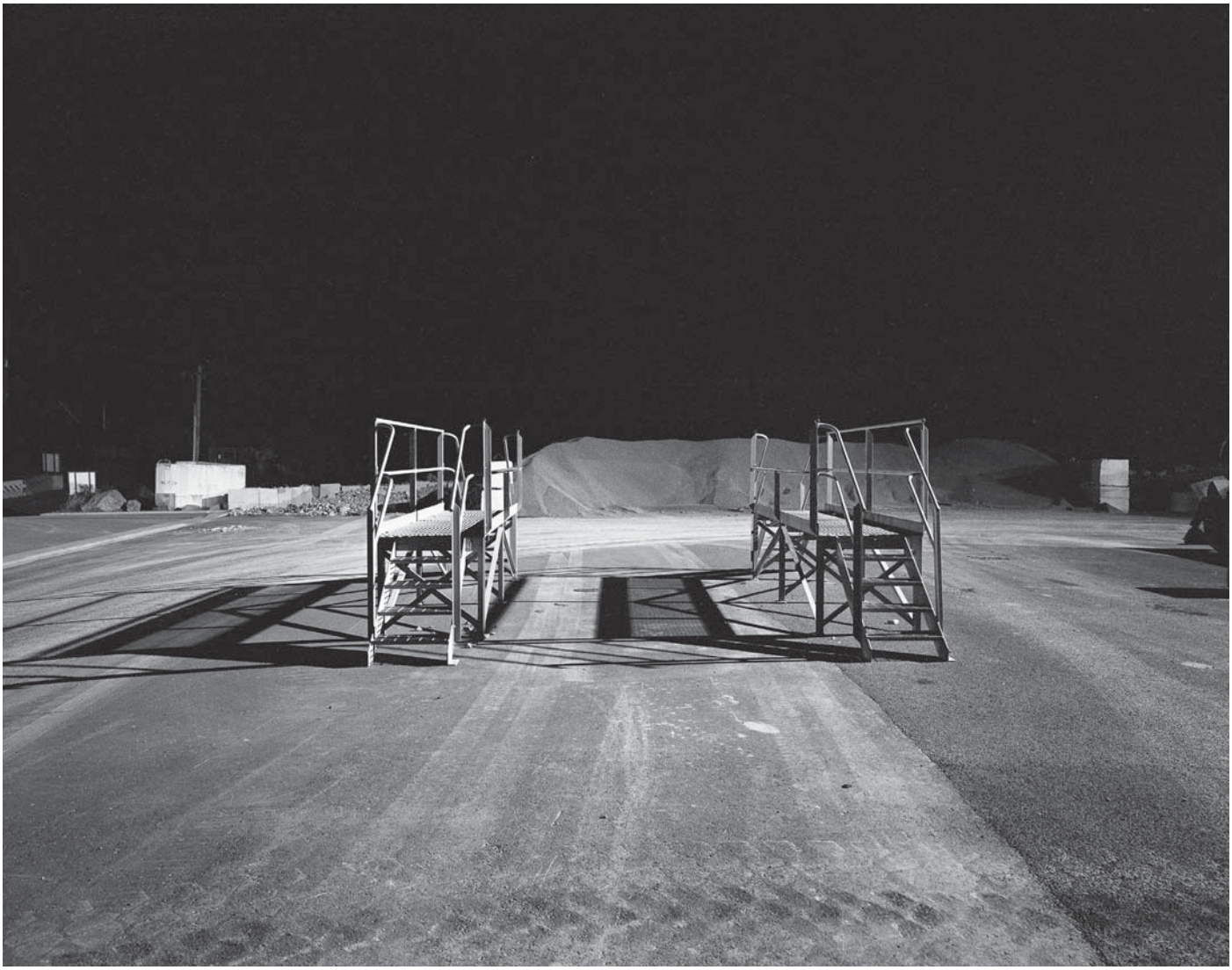

Fig.4

Uninhabited Space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Fig.5

Uninhabited Space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Contextual development: Dislocation

In contemporary photographic practice the physical production of the image is often enmeshed within a complex digital workflow. It is in this arena that I have found an interesting occurrence that is subtly enforced upon my practice. My series, *The Reflective Field* utilises an interconnected succession of subliminal operations that refigure conceptual positioning in relation to the technological application of marks to a surface. I examine the concept that an engagement with contemporary technologies emphasises the notion that the photographic image is a dislocatable construction, which ultimately calls into question the visual acuity of the mark making facility of photography. Maynard describes the complexity of photographic images, including the way in which they transcend their physical support, noting that the history of all human made images has always relied on an application of marks to a physical surface (Maynard, 1997). *The Reflective Field* series undertook a preliminary set of iterations that explored how a dislocation might occur through the physical production of the image observed though contemporary technology. The works aim to extend an argument that the act of translating a photographic image from capture to a physical print might activate a series of technologies that sever spatial connection to a scene[12] and also situate the photographic image as a formless entity. In Sontag's seminal book *On Photography* (Sontag, 1978) she articulates the view that the photographic image is expressed as malleable. The photographic image is an abstraction of physicality and ultimately inhabits a theoretical space other than that of the object it is deemed to represent (Sontag, 1978). She states that "Photographs, which fiddle with the scale of the world, themselves get reduced, blown up, cropped, retouched, doctored, tricked out" (Sontag,1978, p. 4). In this context Sontag presents the notion that the first level of abstraction in which the photographic image is remote from the physical scene. The second level of abstraction discussed by Maynard presents the notion that the photographic image has no connection to the physical surface that the photographic image is presented on. A digital practice further complicates the position taken by Sontag. The photographer is authorised to augment the photographic image through numerically specifying both the visual and physical properties of an image before print. As a photographer I am exposed to a range of operations that occur before the output of the physical photographic image. *The Reflective Field* series examines a shift that is made possible in the production of the photographic image using an interpretation of contemporary tools. A collection of iterative *Contextual developments* is used as mechanisms to explore how I can make the technological influence on the construction of the

12 Contents of an image.

Fig.6

Contextual development: Dislocation (2012)
Pigment print on baryta paper, framed, 31”x44”(800x1111mm)
Exhibited in 2012 at Blue Oyster Gallery, Dunedin, New Zealand.

I prepared the image files for physical print in the standard digital printing manner with one exception: the print was not virtually rotated in the printing process. This operation sets the image apart from the final print surface exposing a large white field of unprinted paper to the lower half of the image.

Fig.7

Contextual development: Marks on a surface (2012)
Pigment print on paper, Sandblasted Acrylic sheet 3.9" x 5.8" (100 x 148mm)

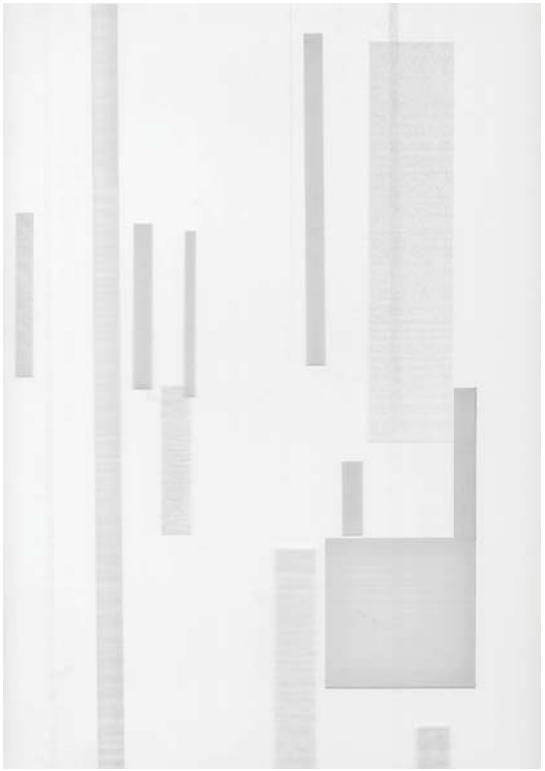

Fig.8

Contextual development: Digital marks _Test sheet (2012)
Laser etched acrylic sheet, various strengths

In this example a range of tests are shown on a single acrylic sheet. I investigated how the laser-cutter produced 'marks' by adjusting speed of travel, pulse frequency and pulse strength to see how these adjustments influenced the transparency of the acrylic sheet. Further detailed images are shown in the Appendix (Fig.48 - 49).

photographic image evident in my work. My aim is to refocus and examine the photographic image as dislocated from its physical surface. I prepare the work to expose the co-existence and independence of the photographic image and the substrate, as articulated by Maynard. To produce this my photographic images are all taken in the landscape format, but in a refiguring convention they were printed in portrait format (Fig.6). This elemental procedure yielded a series of works that offer evidence of their material manufacture and offer confirmation of dislocation of the nature of photography. This construction forms the starting point for the subsequent *Contextual developments*.

Contextual development: Marks on a surface

Contextual development: *Marks on a surface* was conducted and developed a composition that enclosed the photographic image behind a modified acrylic sheet. My first tests were designed to achieve this by preparing an acrylic sheet above *Contextual development*: *Dislocation*. I prepared this sheet by masking out an area and abrading the surface using sandblasting equipment, which significantly changed the overall transparency of the acrylic sheet, altering engagement with the photographic image.[13] This produced a uniform outcome across the entire face of the small-scale test. Both the photographic substrate and the modified acrylic plane receive an amendment to their surfaces, which are read as a series of 'marks'. I propose the alteration to the acrylic plane manifests fundamentally similar procedures to the production of a photographic print. The co-presentation of effected surfaces forms a double instance of the photographic image. In the first instance a thin application of 'marks' creates an object that is known as a photographic image. In the second the effect of the 'marks' applied to the acrylic sheet also produces an image. I placed this abraded surface onto *Dislocation* (Fig.6) with a slight overlap (Fig.7). The layered construction starts to suggest that the image must seek occupation of a substrate, and indicates the photographic image is in this instance 'marks on a surface'. However, testing the same process on a larger scale was not successful in achieving a consistent effect across the acrylic sheet. Instead the larger-scale preparation clouded the acrylic unevenly.

13 The first set of prints (*Contextual development*: *Dislocation*) were formed at 110mmx150mm and set behind acrylic of the same size. The acrylic used for this exercise was supplied with a protective adhesive sheet applied to each side of the acrylic surface. The protective sheet was cut using a craft knife and steel ruler resulting in a very straight cut to remove half of the protective sheet on one side, exposing one half of one side of the acrylic sheet.

Contextual development: Digital marks

To resolve this issue I explored the possibility of employing a computer-controlled laser, etching the acrylic sheet to achieve an even surface quality (Fig.8). While a laser-cutter is typically used to cut through material, it was in this test used to produce a series of shallow cuts into the acrylic sheet by using a range of low powered settings. In principle this light abrading of the acrylic sheet is an identical procedure to the sandblasting exercise undertaken previously. An initial sample revealed a very constant abrasion across the entire acrylic sheet. This presented a significant improvement on the previous exercise in terms of an even visual appearance. However in order to operate in this manner the laser-cutter required the input of an unrelated secondary 'image' to be etched onto the acrylic sheet. In response I sought to investigate whether some of the image-based processes that are used in the digital dark room could be used to satisfy this request. Here I developed a working process that employed the image manipulation tool called 'dust and scratches'.[14] The existence of this process in photographic practices is typically invisible. The effects rely on an algorithm designed to repair damage or missing information within photographic images (Malik & Perona, 1987; Perona & Malik, 1990). Unlike operations such as 'grain', 'noise', 'dots' that are simply a pattern, applied to the entirety of an image, the tool 'dust and scratches' 'searches' images to work on. This matches my idea of representing 'marks on a surface'. Because this operation was set on the lower half of 'White Space'[15], the disrupted image presented the tool with a 'void of information' that it was unable to repair. The outcome of this procedure was not visible on the computer monitor, but its operations were embedded in the image file. I then loaded this file into the laser-cutter and initiated a cutting sequence. Despite the inability of the screen to render the contents of the 'dust and scratches', the laser-cutter was able to read the embedded information and translated the invisible to the acrylic sheet. By extracting and repurposing information from the idea of the photographic image, this methodology did not acquire unrelated information, but instead relied on a refiguring of the photographic information inherent to the image and made it present in the work. Notably, the computer monitor was unable to render such a file and therefore I was presented with a blank screen for the duration of this test. This makes complex the existence of the 'dust and scratches' algorithm as its mechanics are in this instance present in the image file, but not able to

14 It entails a sophisticated algorithm that is frequently used in contemporary digital darkrooms. This process is typically used in preparing image files taken from film scanners to repair or clean up the resulting image. It is also automatically included in the image recording process when operating digitally.

15 'White Space' refers to the unprinted area that is produced through the procedures in *Contextual development*: *Dislocation (Fig.06)*.

be viewed. Although it occurs outside the camera and after the moment of capture, it exists silently and is indelibly welded to the photographic image. The crucial deviation in this *Contextual development*: *Digital marks* enabled me to visualise the connection between the photographic image and its augmentation.

By employing this tool in a markedly different way *Contextual development*: *Digital marks* ultimately serves as a means to revisualise the subliminal inner workings of photography itself. While I found this conceptually interesting,[16] ultimately the placement of an additional 'image' or 'marks' in front of my work begins to suggest an erosion of the autonomy of my photographic practice. As a result I decided to abandon the acrylic front plate amendments. By removing this interesting, yet problematic algorithm, I was compelled to further investigate the core principles at play in the technological construction of the photographic image.

Key work: The Reflective Field

In the previous *Contextual development*: *Digital marks* it was revealed that the computer selectively allows or prohibits particular procedures. In some formats information is made visible and in others it is rendered invisible. I borrowed the notion that photography is 'marks on a surface', but do so in an entirely different manner to finalise my second key body of work, *The Reflective Field*. I decided not to place the amendment to the acrylic sheet, but deployed operations to the photographic image itself. I returned to the works produced in *Contextual development*: *Dislocation* and decided to refigure this body of work conceptually. Upon re-engaging with this first *Contextual development*, I found the 'White Space' of *Dislocation* is manifest differently in the physical and the digital worlds. A desynchronisation occurs between the computer and the physical world. On screen 'White Space' is presented as 'white', however when the file is transferred to the printing process, this 'White Space' is translated as a 'void.'

The inherent visual acuity of the photographic image (Demos, 2006) allows the photographed subject to supersede its displacement from space and time. The photographic image also manifests the ability to surpass its physicality, effectively it renderers both the frame, the glass, and even the structure of the wall that supports the work as non-existent (Maynard, 1997; Tsuchiya,

16 They were, for instance physically very faint, to the point that they had to be viewed at close range. A decision was subsequently made that while compelling as a strategy this course of investigation was only partially useful as a means to help define the required theoretical conditions.

2005; Wigley, 2000, 2001). The physicality of photography cannot be ignored, however when we view the photographic image, its physicality vanishes because of photography's connection to observable reality. The photographic image operates as a portal through which the viewer looks, resting their gaze on the world contained beyond. The *Contextual developments* in this series of work however brought about an understanding that 'confronts' these ideas. The 'White Space' in *The Reflective Field* challenges to reveal the realisation that the photographic image is a coalescing of 'marks on a surface' rather than a viewer engaging with the 'inhabitable' world created within the image. When I reflect on the role of 'White Space' in *The Reflective Field* series, I begin to uncover a connection between how the conditions of the site influenced my creation of the work. This project is sited on a large industrial facility. [17] Administered by multinational corporations, making contact and gaining the ability to visit this site was difficult.[18] Prior to arrival I was informed of two types of interference that could impede my activities on this site: electronic interference that would render digital capture potentially impossible and magnetic interference that may affect the metal components of my camera. When I arrived to the site, I experienced further layers of interference. The molten metals produced an altered the thermal environment causing humidity and condensation. The general hum of machinery was so powerful that the ground vibrated. The magnetic interference was so great that the division between individual exposures was dissolved. Multiple fragments of time were expressed repeatedly within a single frame (Fig.9). The site met me with a resistance. It repelled my attempts to produce photography. I found it was interesting to consider that it was not only difficult to gain the entry to the site, but also the site itself was resistant to my entry. The works produced in *The Reflective Field* series attempt to bury themselves, but not amongst the heat, dust, vibration, magnetism and electrical disturbance, but by the subliminal technological disruptions that are actuated in the process

17 The site this body of work was produced on has been extensively represented in mass media. It has been deeply ingrained in the public's memory for decades as a national construction project that initiated the damming of a major river artery and the subsequent increase in a fragile lake level as a means to produce a large volume of consistent hydroelectric power. It has also risen to notoriety as the demand for electricity production increased and as such this single facility consumes an immense percentage of the entire nation's production. There are ongoing concerns about its viability and the potential impact of closure on its thousands of employees as their region (as well as on national electricity prices).

18 In the exhibition *We are not getting out of this alive, OR The Land Show* one other artist explored this site in his video work. However, he was unable to gain the necessary permissions and the work became an exercise of looking at the structure from the 'corporate defined' boundaries some kilometres away. In advising that I wished to photograph the site, the level of security increased and further layers of permission were requested. The corporation acknowledged the photographic image could be viewed as a hazard, which indicates that the photographic image creates a link to observable reality.

of photography. Even though one seeks to make connection to the content presented in the photographic image, 'White Space' operates as a mechanism to prohibit and repel unauthorised inhabitation of the photographic image. 'White Space' is paradoxically a part of the image, but not part of 'observable reality', creating a sense of tension and bringing viewers a realisation that the photographic image is only a series of marks applied to a surface.

Fig.9

The Reflective Field_Fragment (2012)

In this example a technological disruption is made evident in the production of the photographic image. Due to the high volume of magnetic current in this area, the iris diaphragm of lens was unable to function correctly. Never closing, this disruption permitted light to enter long after I believed I had made my exposure. In this image a faint record of my manipulating the camera and retreating from the site is indelibly etched in the image surface.

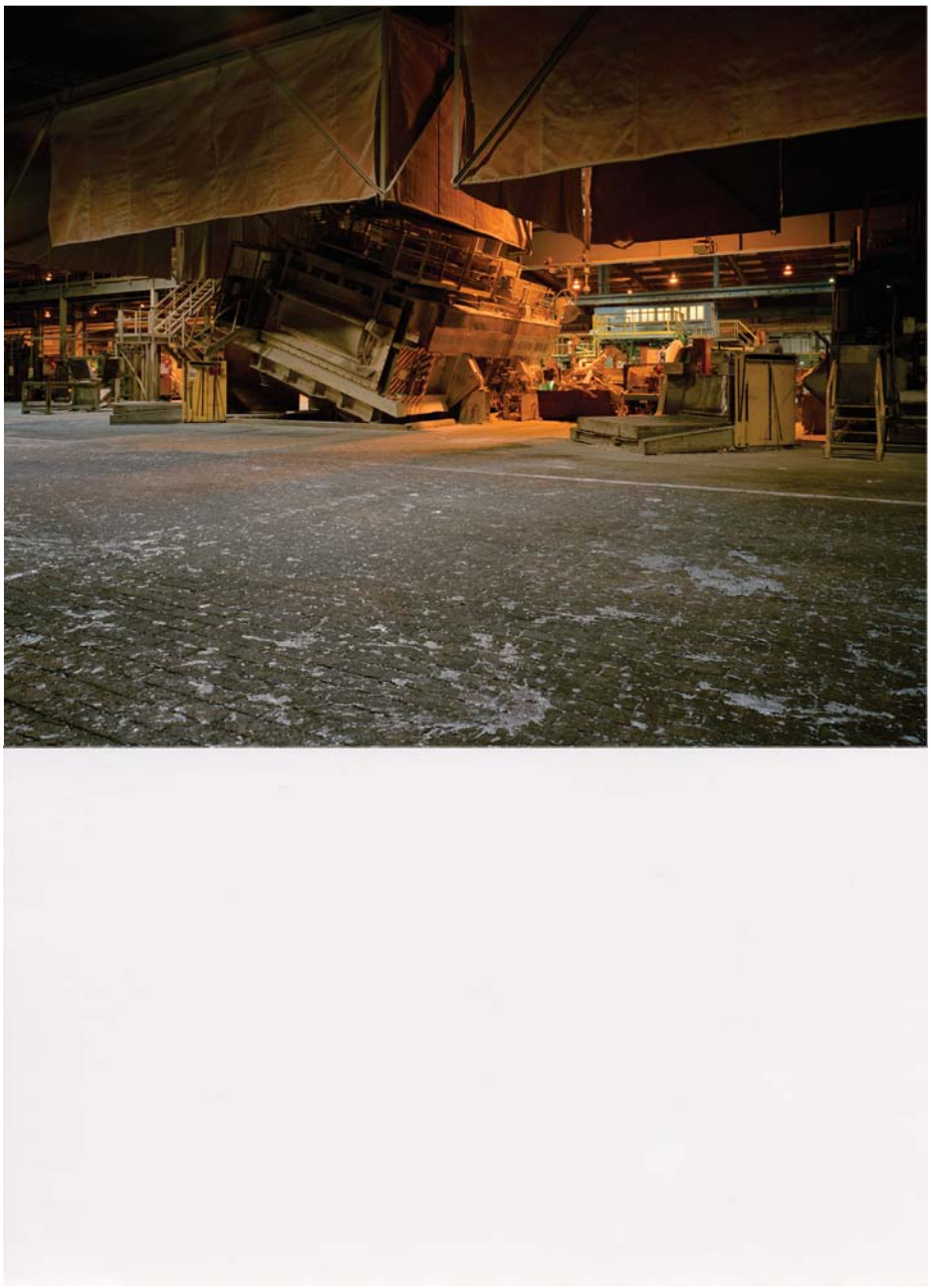

Fig.10

The Reflective Field (2012)

Fig.11

The Reflective Field (2012)
Pigment print on baryta paper, framed, 31”x44”(800x1111mm)
Exhibited in 2012 at Blue Oyster Gallery, Dunedin, New Zealand.

Fig.12

The Reflective Field (2012)

Fig.13

The Reflective Field (2012)

Fig.14

The Reflective Field (2012)

PART TWO

Producing photography

The following stage of research identifies key theoretical positions that note the mutability of data in the contemporary age. Sounds, moving images, pictures, numbers, and texts are equally homogenised as electronic information. This positioning alters the way in which I can situate my studio-based photographic practice, noting that the transmission of visual information as data proliferates the act of accumulating numerical information under the guise of photography. Through a series of *Contextual developments* and my final body of work, I examine the technological influence in the production and experience of photography. The current electronic means for production and consumption of the photographic image through digital methods is presently under explored and offers fertile ground from which to build a critically reflective studio-based practice. By exploiting technological disruption to reveal the subliminal operations in a digital context, my image-making challenges traditional ways of thinking about the photographic image.

The complex nature of the photographic medium makes defining it in singular terms problematic. In terms of a creative endeavour, a full description of the scope and capacities of the medium would on one hand attract significant criticism citing inadequacy, or at least resort to such generalisation that it would never yield a cohesive analysis. In order to find a method to locate my studio practice this thesis is grounded in Maynard's seminal book *The Engine of Visualization* (Maynard, 1997), where he argues that photography is a technology that does not reproduce but authors completely new objects; a means to produce, through the synthesis of light, the creation of series of marks. Artists such as Gottfried Jäger have investigated mechanisms to explore and make visible what is technologically unique to the medium of photography. Jäger states that an alternative motivation to image-making through photography occurred in the early 20th century (Jäger, 1986). A group of young artists from Germany in the 1920s' established a mode of practice called 'Experimental Photography', which was combined with an earlier form of 'Apparatus Art' to produce generative systems to author the photographic image. Combining 'Experimental Photography', 'Apparatus Art' and generative systems, Jäger created the new term 'Generative Photography' by focusing on the practices and processes of photography. Borrowing from a heritage of experimentalism, he states that 'Generative Photography' is used to describe the "photographic process not as a reproductive, but as a productive, generative, system" (Jäger, 1986, p. 19). Although based in photography, 'Generative Photography' does not seek to reproduce or represent any particular space, object or event. The photographers' work

however, does indeed aim to experiment openly and emphasise the making of photographic images (Jäger, 1986; Reese, 2005). Beate Reese states further in 2005 that he, along with Jäger, developed an art practice named 'Concrete Photography' (Reese, 2005). Although 'Generative Photography' is situated within 'Concrete Photography', one seeks a fuller engagement with technology; the other seeks to communicate something of the process of photography. 'Concrete Photography' seeks to activate a discussion through the means and making of the photographic image and operates at a philosophical level, which Jäger describes as creating works that are "self-reflexive, self-referential, auto-dynamic and universal" (Jägar, 2005, p. 15). The key premise is to articulate and discuss the capacity and abilities of the photographic system. Through 'Concrete Photography', artists seek not to represent, or reproduce, but aim to present and discuss the photographic within photography. When considering photographic images within the context of 'Concrete Photography' Jäger suggests:

> *They do not want to illustrate anything; they do not want to represent anything. They are nothing but themselves: objects referring to themselves; they are independent, authentic, autonomous, autogenic, photographs of photography (Jägar, 2005, p. 15).*

In his 1967 work *Lochblendenstruktur 3.8.14 B2.6* Jäger demonstrates 'Generative Photography' in the outcome of a photo-mechanical apparatus (Jägar, Krauss, & Reese, 2005, p. 245). The work is produced through an arrangement of two sheets of multiple pinhole apertures placed above a piece of photosensitive paper. These two sets of apertures are then rotated clockwise and counter clockwise respectively. The turning of these two desynchronised apertures only permits projected light onto the photosensitive paper when the light pattern filters reach their geometric and mathematical alignment. The combination of multiple apertures ultimately controls the placement of an array of multiple points of light. The parameters of speed, direction, size and number of apertures are variables that have the ability to generate remotely of the artists' input. Jäger proposes that the specific capacities of the photographic medium offer the opportunity to explore the role of technology in creative practice in a new light. Stating that photography aligns to the operations and rules defined in Max Bense's 'generative aesthetics', Jäger states that photography serves to "build a bridge between the two cultures of art and technology" (Jägar, 2005, p. 25). I believe those connections, which are employed, link 'Generative Photography' to the modern world of computers. However, Jäger states that digital photography is "in veritable crisis" (Jägar et al., 2005, p. 17) due to

its manipulability. Furthermore Rolf Krauss invokes the end of photography as a discipline stating that digital photography is the "apotheosis" (Krauss, 2005, p. 76) of photography. This ultimately signals a terminal point in the development of the genre. However as contemporary photographic practice ultimately implies an increasing engagement with the electronic, the digital and the computational, if a valid approach to experimentation lies in the investigation and itemisation of contemporary photographic processes, I question is there possibility to capitalise on this new and evolving platform?

In digital photographic capture, silent translations occur. The translations facilitate the introduction of computation into the processes required of contemporary photographic capture. Computation at its most fundamental level produces results by asking questions.[19] In the case of digital photography, reflected light needs to be collected and translated into numerical values. Radiant photons travelling through three-dimensional space must be assembled, transformed and assigned to a two-dimensional plane. Computation identifies these input sources as problems that require certain procedures to produce a solution. In this case, photography is a 'solution' to a computational problem. While at the most simplistic level the computer offers photographic controls over hue, saturation, contrast and other visual qualities comparable to analogue film photography, the underlying methods of how the computer handles these processes is different. In this context photography is automatically introduced into the procedures of computer calculation. This translation though encoding, and then decoding, presents a compelling reconstruction of the systems at play when engaging with digital photography. Kittler locates a platform for the understanding of contemporary media stating that:

> *The general digitization of channels and information erases the difference among individual media [...] Inside the computers themselves everything becomes a number, quantity without image, sound, or voice [...] Modulation, transformation, synchronization; delay, storage, transposition; scrambling, scanning, mapping - a total media link on a digital basis will erase the very concept of medium (Kittler, 1999, p. 2).*

Contemporary media, of which photography is a part, escapes format boundaries, and exists as pure data (Kittler, 2010). So presently photography operates in such a way that recordings do not necessarily capture visual

19 When I press the shutter button, the digital camera's processor asks the photoelectric sensor a series of questions: How much light is there? How bright is it? How much red is there? How much green is there? How much blue is there? Where are these values placed? and so on. The camera processor then assembles these answers to compile the digital photographic image.

information, but capture a record of information in the broadest sense. The photographic image has always been physically disparate from the subject of its representation. Photography does not copy or reproduce; it yields an entirely new and discrete object (Bense, 2007; Kittler, 1999; Maynard, 1997). In analogue film photography, the reflected light is collected and condensed upon a sensitised filmic surface. The capture of radiant light is enacted through a direct connection between the subject, the camera and the film surface. Digital photography enforces a refiguring of this position and presents the possibility of these physical links between the subject, the camera and the filmic surface becoming entirely severed. In digital photography radiant light is concentrated by a lens and is then projected toward an electronic sensor. This sensor will be divided into a number of sectors, each of which maintains the capacity to distinguish between RGB[20] values. The processor uses the collected light values and translates these into a blend of numerical digits. These numerical digits are then recomposed as data files and stored within physical media. Typically this data can be transferred and stored within the operating system of a computer. This process of dislocating underpins the fundamental change in digital photography where the radiant light is captured and translated into data. No physical connection is retained between the subject and the codes electronically recorded by the camera's sensor, calling into question the relation between the subject and its capture. Paul Wombell discusses the transition in photography stating:

> *Until recently, at least, it was possible to define photography as a process involving optics, light sensitive material and chemical processing of this material to produce slides or prints. Today, though, that definition is subject to change. Technological innovations are shifting photography from its original chemical basis towards electronics . . . it is not overstating it to say that the advent of this new technology is changing the very nature of photography as we have known it (Wombell, 1991, p.0-2).*

Lev Manovich describes this position by comparing analogue film to digital modes of capture, which he proposes sacrifices spatial and temporal resolution through a process of sequential scanning (Manovich, 1995). In this context the content of a photographic image is now a long and complex string of numerical digits where visual, spatial and tonal information, not to mention time, GPS and camera controls, are all contained and bundled within a single image file. Kittler also identifies the complication of digital

20 Refers to a colour model that uses three colour values to produce a wide array of tones. The variations of tonal values are organised in relation to a scale of 0 to 255 in each of Red, Green and Blue hues.

capture in a photographic context, which is arrived at through the subtle but unavoidable introduction of computing to photography. Computers are not natively capable of discerning visual information; rather radiant light is translated into data and ultimately sent to a microcomputer processor for recompiling and reconstitution as visual information otherwise known as the photographic image. A reliance on data and technological capacity of computational processes in contemporary photographic practice allows for a theoretical revisiting of Bense's "Information Aesthetics" (Franke, 1971, p.332) which presents an early interest in the use of computational processes in the production of art (Bense & Nees, 1965). Digital methods of capture have fundamentally altered the technological composition of the photographic image in the context of a series of computer operations. The introduction of computation into the photographic lexicon encourages a brief investigation of some of the motivations and approaches to using computers in art. The use of computer operations in photography may reveal new methods to construct creative works, or new constructs within the theorisation of a photographic practice as a culmination of the application of a range of technologies.

Ishac Bertran is a contemporary artist who works within the framework whereby photography is computational and specifically applies computer operational procedures to process photographic images. Filip Visnjic writes about Bertran, describing an appreciation of material and process. While Jäger's 'Generative Photography' denies a 'randomness' or 'arbitrary' approach, Bertran identifies a degree of random interruption in the construction of the work. Visnjic notes:

> *As in generative art, this photography technique uses an algorithm that is polluted with a certain randomness. The randomness comes from rendering imperfections and the asynchrony between the frame rate of the video signal and the refresh rate of the projector (Visnjic, 2011).*

In Bertran's work, rule sets are enacted. Once initiated the rule sets interrelate and arrive at a terminal point that will yield an unknown outcome. In the case of *FRAMERATED* (2011) a computer program was developed to display a series of moving rectangles. Bertran controls how often the rectangles appear 'on screen' and how quickly they move through space. He also controls the refresh rate of the computer screen. The outcome is then recorded via digital photography and reveals a desynchronised relationship between the varying technologies due to differences in the frame rate of the video signal, the

refresh rate of the projector and the long exposure time of the camera. These conditions combine to produce an unrepeatable outcome through a specific and focused deployment of technology.

In contemporary 'Generative Photography' the randomness Bertran claims evident in his work may not be the same randomness that Jäger denies. However this new 'Generative Photography' inducts the incredible complexity of contemporary computing in relation to digital photography, combining as 'randomness'. In the new 'Generative Photography' the apparatuses of photography are computer-equipped and manifest the ability to transcribe physical light into electronic signals. This indicates that the 'Concrete Photography' and 'Generative Photography' theorised by Jäger has not ended, but has instead drastically altered and allows the introduction of contemporary technology. What artists such as Bertran make evident is how contemporary photographic processes force a requisitioning of conventional ways of understanding photographic practice, and also demonstrate a new direction can be made evident. Is there the possibility that interacting with contemporary photographic processes can bring about a new mode of aesthetic enquiry that can reveal new means by which I can create the photographic image? American art theorist Philip Galanter notes that the departure from a traditional studio based arts practice occurs when the artist starts to leverage the innate technological processes embedded in the tools of their practice:

> *The key is that generative art happens when an artist chooses to cede some degree of control to an external system, and the artwork thus results from more than just the moment-to-moment intuitive decisions of the artist (Galanter, 2006, para. 3).*

In order to create a new challenge to photography as a medium, the processes employed in photographic operation have to be identified. Thinking beyond to Galanter, photography has always evidenced some degree of autonomy; it is a highly complex scaffolding of technologies. Simultaneously this implies that there are numerous opportunities to engage in the processes used to produce the photographic image. The aim of this stage of my research is to explore the medium of photography by analysing the processes employed in photographic technology and developing a method to deploy this for further aesthetic exploration. The next sections introduce a range of approaches that are used to develop a mode of operation that concludes the studio practice.

Fig.15

Specimens_ 01

Collected botanical matter, vinyl bag

Contextual development: Digital Bloom

Initially I started my project by borrowing the working methodology developed in the *Excavations* series. I proposed that as I made my way across the natural landscape, each time I physically came in contact with a leaf, twig or branch I would produce a photograph in the traditional landscape sense. To add to this I also retrieved a physical sample from the site. The means by which my subject matter scratched and poked its way into my body produces an unequal but none the less form of exchange for producing the photographic image and the removal of the specimen. The specimens were stored in a vinyl bag and were subsequently transported to my studio (Fig.15). These specimens were then retrieved from the vinyl bag and separated from one another as I began to develop a photographic survey. The individual specimens were contained and photographed. Due to the large number of specimens, an archival like methodology was employed that sought to differentiate size, colours and form. At this point I became more interested in the retrieved specimen than in the formally composed landscape image. The motivation for shifting focus from the landscape to the specimen lay in the fact that I was quite bound by the long established traditions found in landscape photography. Issues such as orientation, framing, location, season, time of day all bear heavily on the decisions to be made when exposing an image in the landscape tradition. By shifting away from this, into a formalised studio context, I free myself of the restrictions of established technique. The move to a formal study in controlled conditions places my practice in a position of active engagement with technology and technique that is not dislocated from the landscape tradition, but considerably different from it. The studio environment evokes association of efficiency and most importantly offers a homogeneous and technological imaging environment, which plays an important role as this allows me to closely control the photographic system and to focus my practice on technique and technology. By removing the specimen from the natural environment, I am able to excise societal specific readings of location and time, which would be unintended readings of the works.

In the first *Contextual development* I took the specimens from their vinyl bag and individually photographed them. I investigated a number of ways to photograph the items and found a view that appeared as though it was a night time landscape scene with a full moon. The photographic process produced a large pale sphere that resembled a photographic image of the moon. This is however not the moon, but was actually a photographic occurrence that can only be considered as a technological disruption to the photographic system. The disruption occurs when the individual sensors of the CCD[21] are

21 A charge-coupled device (CCD) is an electronic sensor that possesses the ability to translate a physical light into an electronic signal, which then into a digital signal. In the case of photography emitted light rays electronic charges are measured and converted to electronic signals.

Fig.16

Digital Bloom_ 01 (2013)
Collected botanical matter, electronic photosensor disruption.

exposed to high levels of light or great contrast. In the case of *Digital Bloom (2013)* (Fig.16) the CCD sensors are no longer able to maintain the discrete data values within the sensor array and the light values are leaked out onto the surrounding sensors producing a disruption in the recording. This disrupted area of the photographic image contains no pictorial information: no colour, no tonal variation, no highlight or shadow detail. This machine process intervention is related to the occurrence of the unprintable area in *Uninhabited Space* and *The Reflective Field* series. The 'void of information' in *The Reflective Field* was located to the lower half of the work. However, in *Digital Bloom* the 'void of information' was allowed to internally inhabit the photographic image. This lack of pictorial information is refigured as visual information. Through projections from the Memory Archive the 'moon' is generated in the photographic image. The physical world and the now virtualised world experienced through the photographic image do not correlate. The translation of observable reality is altered through technological disruption and the refigured photographic image.

Contextual development: Pixels A and Pixels B

I selected photographic images from *Digital Bloom* and extended the analysis by introducing generative processes to create the works *Pixels A* (2013) and *Pixels B* (2013). In *Digital Bloom* an excess of light colonises and corrupts the photographic image via a systematic error. *Pixels A* (Fig.17) explores a related act of disruption to *Digital Bloom*, however this occurs through applying an algorithm as a method to understand the components at play in the construction of a digitally authored photographic image. The algorithm in *Pixels A* divides the image into a grid of pixels. It sets a process in place that affects at first a single pixel in the photographic image. The algorithm will then attach itself to an adjacent pixel and replace the resident data with the data from the first pixel. The central premise explored in *Pixels A* is to emphasise the ability to situate a digital photographic practice as a collection of data. What this work makes evident links to ideas proposed by Kittler, who stated that all media ultimately is formatted as data. If his proposition is correct, *Pixels A* represents the ability to manufacture a computational apparatus to extract and transcribe visual information as data. The operations performed in *Pixels A* manipulate the photographic image at a pixel scale. The manipulations are minute, but numerous, and in this way they can affect the entirety of the photographic image.

Because of the construction of digital photography, the individual pixel can be treated as equal and exchangeable values. I experimented with methods for refiguring the overall formal composition of the photographic image. The

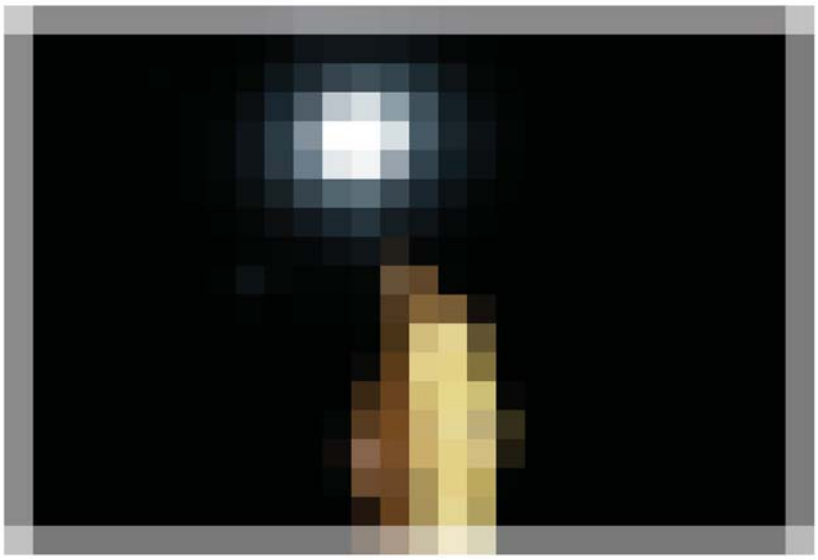

Fig.17

Pixels A (2013)

Digital Photographic image, algorithm

In this algorithm the digitally developed white border is absorbed into the 'image'.

Fig.18

Pixels B (2013)

Digital Photographic image, algorithm

manner was identical to *Pixels A*, but in *Pixels B* (Fig.18) the scale operated at a pictorial level as a way to retain photographic qualities. Although the photographic image is constituted of data, the ability to transcribe electronic information as a means to produce the photographic image has also the same capacity to destroy the photographic quality. The photographic image stands upon a very delicate balance. The graphical inaccuracy introduced into this photographic image invokes an alternative reading. Spectatorship of the works invites close inspection and encourages a mental refiguring, and cross-referencing against the 'Memory Archive'. Just like the 'voids' in *Uninhabited Space*, or the 'Moon' in *Digital Bloom*, the view by looking completes the photographic image in *Pixels B*.

Contextual development: Colour Block

The digital camera stores reflected light in an electronic format that is stored as a series of discrete data values. If this data can be converted from one form to another, the question that can be applied, what happens if I output this data in other ways? Kittler proposes that an engagement with contemporary capture and outputting technologies forces an engagement with the digital. A digital photographic image created and stored upon digital media can be unpackaged in a range of ways. He states that no differentiation exists between, sound, image, or geometry once converted into data, and that data exists as a varied set of states without form or substance. He outlines:

> *…to begin with, computer technology simply means being serious about the digital principle… There are no longer any differences between individual media or sensory fields: if computers send out sounds or images, whether to a so-called 'human machine' interface or not, they internally work with endless strings of bits, which are presented by electrical voltage. Every individual sound or pixel must then be constructed out of countless elements (Kittler, 2010, p. 225).*

This in turn means that any capture that is encoded by a digital camera, can be decoded to yield a sound, or any other digital form of output. In this context the process of photography implies a form of translation.

The idea of a decoding between the two forms of output can be seen to offer fertile ground for the innovative practices to occur. Actively involved in the use of machine to produce an artwork is Sonia Sheridan. Although her practice is initiated prior to the digital era, her studio practice was directly engaged in a participation of exploring using technological processes. Sheridan in the 1960's developed a critical practice centred on repurposing technology

for creative or aesthetic expression. She states "Our primary concern is the creative development and application of technology to human need" (Sheridan, 2002, p. 2). In collaboration with AT&T, 3M a C-in-C thermal process colour photocopier and Xerox saw Sheridan produce an innovative set of works. Her work can be divided into experimentation with machinery or software. In one influential project she, together with a group of student assistants attempted to augment the transfer of an image during its passage across America using a precursor to the fax machine. Sheridan utilised the understanding that within this machine, a scanning process facilitated a transferral of graphical information to audible tones prior to transmission. These tones were then sent via the telephone network to be 'listened' to by the receiving fax machine. In this exploration however, Sheridan created an intervention that allowed her to alter the acoustic tones before receipt and thus cause an artistic intervention to transmitted image.

This *Contextual development: Colour Block* (2013) could be viewed to align to processes employed by Sheridan. While she investigates a translation of visual images into analogue acoustic signals, contemporary technology allows me to refigure the photographic image without altering the media itself, strengthening Kittler's proposition regarding the homogenisation of media. In the working of *Colour Block* I reprocessed an image from *Pixels A* to enact a re-encoding of the photographic image. A digitally constructed photographic image file is a sequence of data from which a computer program is able to convert colour values to a grid to reveal the photographic image on screen. Because of the inherent and homogeneous qualities of the digital file format, the work is able to facilitate a translation from image data to audio data. An algorithm was developed to scan the contents of an image file from *Pixels A* and translate the RGB values into a set of acoustic tones. The rule set defined that darker colours were mapped to a lower acoustic tone and lighter colours were assigned to higher acoustic tones. What this work communicates is not only showing that digital photography is constructed by data, but also emphasises a 'void of information'[22] through acoustic tones. The overload of light displayed in the images is interpreted as white,[23] but it is in fact a sensor overload that is unable to record a value[24] resulting in

22 The other 'moon' revealed in *Digital Bloom* contains no information. But through a visual interpretation a 'virtual' moon appears in the photographic image. This moon was transformed at a pixel scale in *Pixels A* and through the augmentation of the algorithm the circular field was refigured as a series of orthogonal forms. This allowed the *Colour Block* algorithm to produce entire pixel regions with a void of information.

23 For example in the photographic printing processes an area of white is enacted through a lack of colour being printed on the paper. This is a parallel translation to the positioning of the *The Reflective Field*, where 'white' is reliant on a substance other than that of the photographic capture.

24 This area of the image yields a RGB result of 255,255,255, which in the computer reads and simultaneously displays as white.

an area of zero information. The role the audio plays in this work is that the 'white' area in the image is maintained as zero information and is translated as silence. The algorithmic process deployed in *Colour Block* makes the 'void of information' more tactile through the co-presentation of both visual and audio material.

A void of information

The 'void of information' introduced to my works are each caused by employing a disruption of technology. I have used a variety of technological approaches to influence my studio practice. The *Uninhabited Space* project uses reciprocity failure in film photography to create a body of works that present a 'void' in the photographic image. The concluding outputs blend the result of 'void' and conventional capture within a single image. The photographically expectable but unsettling scene is renewed through the projection of the viewer's 'Memory Archive' onto the photographic image. *The Reflective Field* project utilises silent inductions into the printing process to expose or retain 'void'. It confronts a conventional practice through the relationship between how the image is mapped and processed through into a physical print. The intervention is deliberate and guides the viewer to acknowledge the existence of the photographic image as two entities. The work presents the photographic image as a source of visual information and as an object that is manufactured and applied to a substrate. Through factoring the work in this way, the viewer must engage the 'void' visually after the computer makes an autonomous decision to relate white as a 'void of information'. The *Contextual developments* undertaken in *Digital Bloom*, and *Colour Block* explored the composition of a digital photographic image from a computational perspective. *Digital Bloom* undertook a documentation of a physical sample and analysed the misrepresentation of how the camera maps reflected light. In this work an excess of light escapes the capacity of digital recording and overloads the electronic sensors forming a bright white sphere in the middle of the work. An excess input is refigured as an absence of information as the computer makes an autonomous decision to transcribe excess as a 'void'. *Colour Block* extends this position by transcribing colour values as acoustic values and presenting the 'void of information' as mute.

Key Work: Machine Time_Nature Time

A modern camera possesses the ability to record sound, still and moving images, all of which can be freely stored and edited in the camera's internalised memory. The mass homogenisation of media changes the situation a practitioner can operate within, in the production of visual media. The ability for these different media to be collected is facilitated by

their homogenisation into a common format. This stage of the project looks closely at the structures underpinning the construction of an image file. The approach allows for a level of experimentation that is bound by the position where digital content is rendered into a homogeneous state that can be interpreted as an "endless strings of bits" (Kittler, 2010, p. 225). One aspect of data processing in a digital realm is that from a computing perspective the data or material is exceedingly malleable. However, one of the interesting aspects of photography is that we can deconstruct the image, and look at the individual colour or tonal values of a given pixel, yet we cannot construct a photographic image without a connection to physical light. Despite the ability of illustrators to produce photo-realistic images, these are not produced through the capture of reflected light and therefore cannot be classed as a photographic image. The moment we become too heavy handed in our operations, the photographic image loses what it is to be photography, which is to be constructed by light, not by placement of hue or tone.

Through the *Contextual developments* I gained insight into the technological production and processing of a digital image file. Reconstructing images in the manner of *Pixels A* severs the understanding that the photographic image is produced through the sensing of reflected light. Photography has evolved over time to introduce an extremely varied range of technological processes. Where photography has altered in response to technology, so have the qualities that define the photographic image. Due to this characteristic flexibility (if 'capture' is central to the production) the photographic image withstands considerable addition, abrasion, erasure and translation. Additions may take the form of dust or solar flares; yet these inclusions to the photographic images are still considered as photographic. Abrasion can be associated with emulsions eaten by fungus, or scratches on negatives or prints. Despite these alterations to the 'original' process of capture, these abrasions do not disqualify the resulting outcome. Translations occur at the moment of capture (lens distortion) and in the printing process. Monochrome renders all content into a highly appreciated but unnatural world rendered in a series of grey tones. Newsprint requires images to be broken down further where ink is placed sparingly on white paper to yield satisfactory photographic images. The outputs that are created by photography are so varied from the originating scene, that it makes sense that the act of photography is pinned to the processes and technologies used to capture the image. The only reliable constant that can be found is in the moment of capture. I investigated the idea that 'capture' is the central concern to qualify the photographic image and attempt to extend the range of mark-making facilities made available to photography by contemporary digital practices.

In the final key body of work I also wanted to regain the production of 'marks on a surface' by the process of recording reflected light, but at the same time I explored how to make visible the technological heritage of photographic image in a digital era. The work *Machine Time_Nature Time* (2015) (Fig.19) presented here offers a fresh approach to image-making that is made through acknowledging the technological production of the photographic image.

Dissections

The methods I employed to create *Machine Time_Nature Time* offer an extension to the enquiries undertaken in Excavations,[25] *Digital Bloom*,[26] *Pixels A*, *Pixels B* and *Colour Block*. A selection of specimens were retained and physically dissected. I arrived at this position after taking an interest in the technological process that occurred in *Digital Bloom* and Pixels series. In *Machine Time_Nature Time* the works maintain some degree of visual information through conserving the qualities of tone, texture, hue or graduation within a body of work. This was achieved though the adoption of dissecting the smaller specimens less frequently than larger specimens. The initial decision to dissect both small and large specimens at the same scale was abandoned as the larger objects lost their recognisability. In this situation my engagement with the photographic image initiated a process of adapting subject matter before it was translated through photography. While in the Pixels series the photographic image was dissected after capture, for this series I dissected the specimen before it became a photographic image. I employed this methodology to retain the notion of 'capture', which I view a key quantifier of photographic practice. Drawing from the electronic imaging processes employed in digital photography, the works in *Machine Time_Nature Time* are primarily used as a means to examine the point at which the photographic image shifts such that the works produced can no longer be wholly conceived as photographic. The dissection also fused the vinyl bag that contained the specimens. This inclusion of both specimen and container was enacted to mimic the combined packaging of content and procedure within a digital file format. In the work *Pixels A* I noticed that the surrounding white border to the images was included and operated on equally by the algorithm. No hierarchy was made between differing types of information: photographic content or white border (no photographic information). The white borders were inevitably absorbed into the final photographic composition and no longer maintained a discrete identity. The border was not a capture of observable reality, but is made part of the photographic image.[27] In *Machine Time_Nature Time* the border is replaced

25 By way of collecting a physical sample at the time of creating the photographic image.
26 By utilising technological disturbance to inform the making of the work.
27 This occurrence has a direct connection to conclusions drawn from the works produced in *Uninhabited Space* series where the 'void' becomes absorbed as part of the photographic composition.

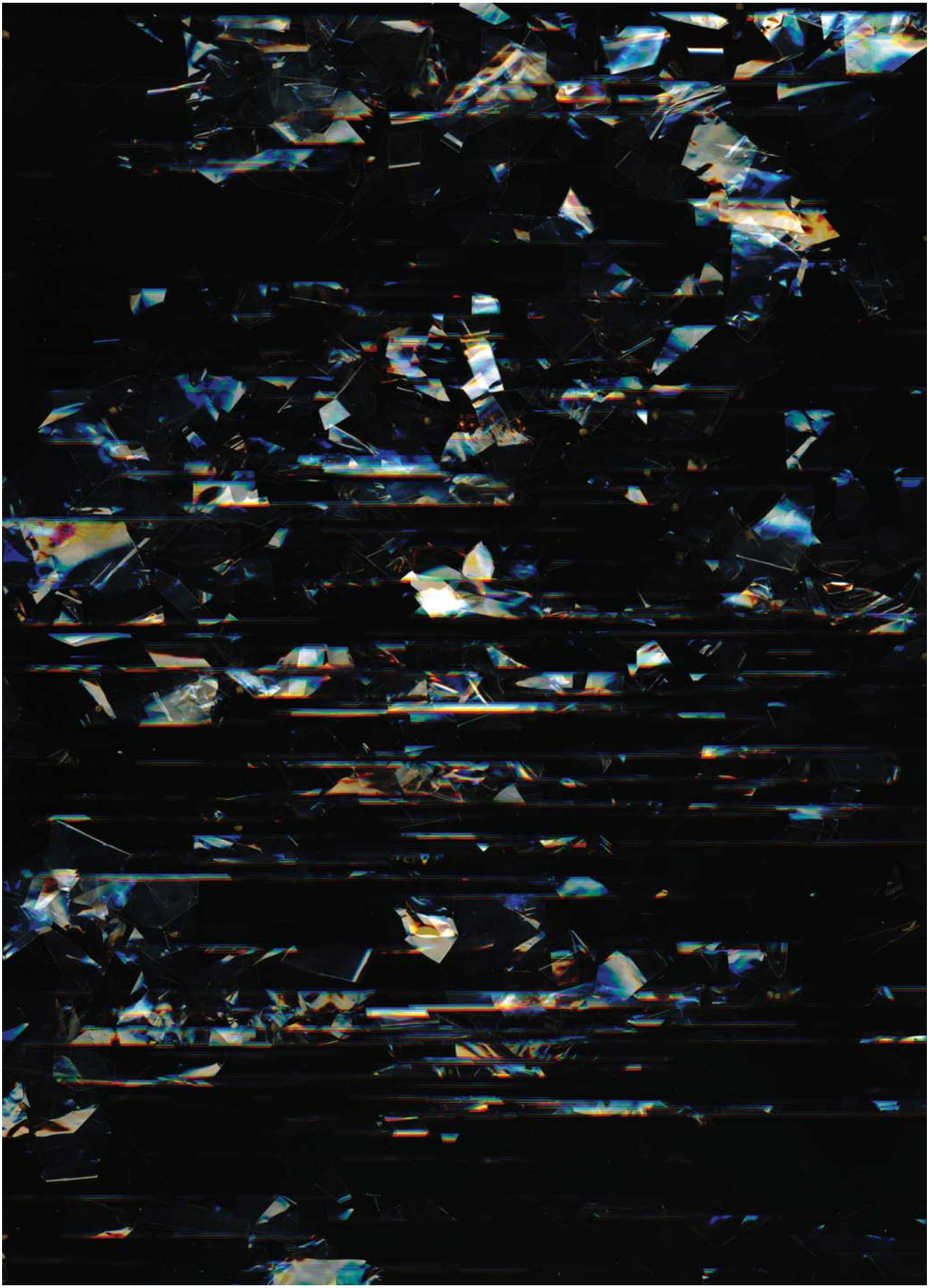

Fig.19

Machine Time_Nature Time_0/1 (2013 - 2015)
Pigment print on gloss paper 44” x 60.6” (1111 x 1540.9mm)

and conceptually mapped to include the vinyl container that holds the physical specimens. The notion of dissection is a process that influences the body of work, *Machine Time_Nature Time*. The cut first occurs through a physical act. Initially I physically remove the specimen from the site, and then I release the specimen from its enclosure. Careful incisions are made exposing the specimen to light, air, humidity and variations in environment. Through photographic capture the specimens are released once again, and given a new life as objects rendered as 'marks' on two-dimensional surfaces. The final cut occurs in the inability of the camera to record the specimens as they appear to the human eye. In the *Machine Time_Nature Time* series I decided to employ the method of dissecting specimens physically as mentioned earlier. By cutting the content (specimens), this work not only indicates that photographic images are made of "bits and bytes" (Kittler, 2010), but also I conceptually reinforce the notion of dislocation that is occurring in time and space through being photographed. Through this photographic process and my artistic procedure the resulting images start to imply a small combustion. Fragments float mid picture frame and appear suspended in three-dimensional space on a two-dimensional plane.

Two types of time

The use of photography as an instrument of technical reproduction sees its use in numerous disciplines such as medical, geographic, scientific and so on. These uses of technical photography strive to produce clarity, precision and optical resemblance for a specific goal. Although *Machine Time_Nature Time* still requires clarity of the image because of its responding to the notion of the photographic, the approach to precision and optical resemblance is an entirely different manner to enable examination of the photographic procedure in operation. The motivation to my studio practice is to explore the employment and conversion of photographic technology to reach new artistic methods of investigation and reconsider the photographic medium through an altering of photographic procedures.

The term 'Nature Time' is used to describe the existing environmental conditions that the exposed image will be created within. 'Nature Time' is an ever-present participant in the construction of any photographic image. The key variable in this photographic procedure is how 'Nature Time' is permitted entry and how I orchestrate the moderation of 'Nature Time' through the use of technology, which I term 'Machine Time'. By facilitating a desynchronisation between 'Machine Time' and 'Nature Time', I reconfigure how photography maps the passage of time. In doing so I produce a new means to create a body of work that visibly exposes the subliminal existence of technology in the production of a photographic image. In the work *Machine*

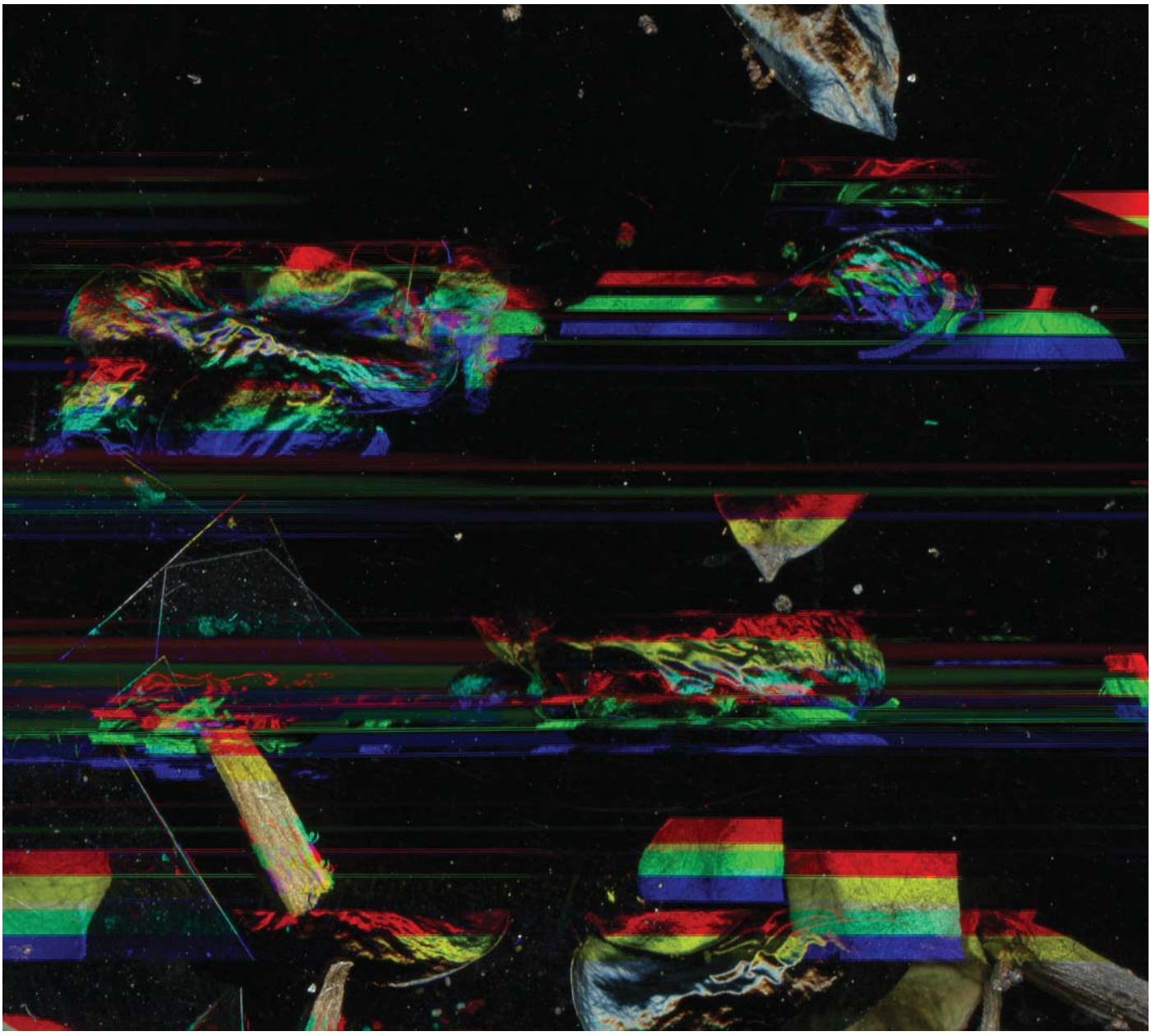

Fig.20

Machine Time_Nature Time (2015)
Pigment print on gloss paper, detail

Time_Nature Time wind was permitted entry into the studio environment and to physically manipulate the dissected specimens. Stronger wind caused complete migrations of these specimens and conversely light winds offered only a gentle rocking. Each of these variations of 'Nature Time' had an impact on the construction of the works. In the field of photography 'Machine Time' is used to alleviate the variation present in the 'Nature Time'. On the other hand, 'Machine Time' is a reliable constant and exists as a range of adjustments that may be enacted to 'correctly' expose a photographic image. I deployed a recording device to produce high-resolution images of largely static subjects. To produce an image, three passes of an imaging sensor are required to complete the photographic image. I took advantage of the characteristics of this system and created a situation where a desynchronisation would occur. This was achieved through the considerable vigour upon which 'Nature Time' played on the dissected specimens and the comparable slowness of 'Machine Time'. Because *Machine Time_Nature Time* required considerable amount of time to expose the entirety, 'Nature Time' was afforded more time to inscribe its existence. Through letting the wind, rain and general atmospheric conditions play upon the scene while the image was made, the dissected specimen moved erratically, shrivelled, dried up, and was blown about the imaging plane. On the other hand, 'Machine Time' proceeded accurately and diligently, receiving visual information and recording it to disk. In this work, *Machine Time_Nature Time* itself is a photographic procedure; at the same time it is also a photographic image. The works produced are not moments of observable reality captured from scenes I have viewed, but are instead generative works whose formal morphology cannot be presumed until the procedure is completed. The procedure is generative; it is not made consciously. It is set in place and then examined at detail at a later date.

In my conclusive body of work the harvested images are strewn with scratches and aberrations that are only ever visible to the camera. The gaps where 'Nature Time' outpaced 'Machine Time' tear through the visual pane. Aberrations of colour information occurred in gouged yellow scratches, magenta overlays distort and refute full colour renditions of the specimens. The result of this desynchronisation produces constant disruptions of undifferentiated colour and distortions that stretch out across the image surface to confront conventional interpretations of the photographic image. Defying the way photography produces detail, the lines that project across the surface are impossibly thin, and invite close inspection in regards to the manner of their presentation. Yet, upon engaging in close inspection of the photographic image, one is exposed to a distortion of the details or representation of individual specimens. Ultimately these works operate on a level where the recording sequence is disputed and forces a new

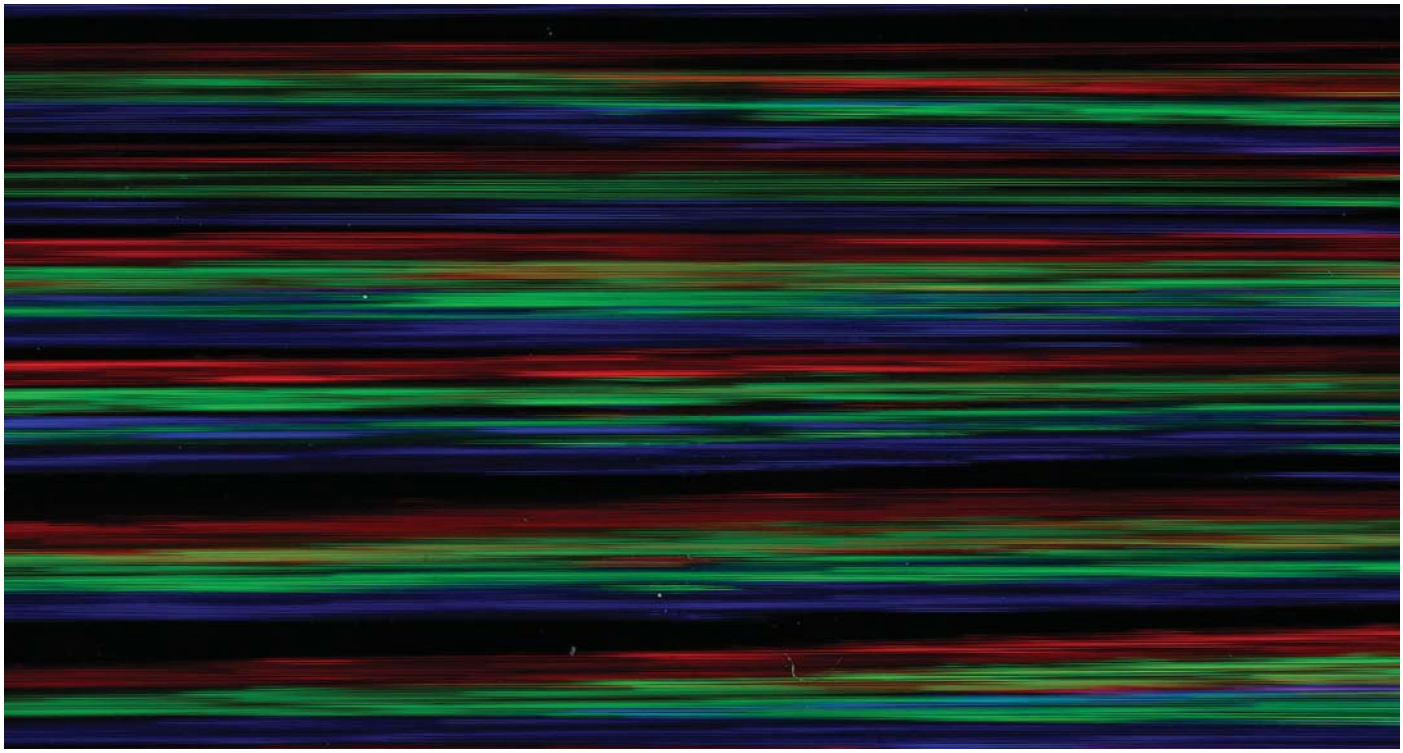

Fig.21

Machine Time_Nature Time (2015)
Pigment print on gloss paper, detail

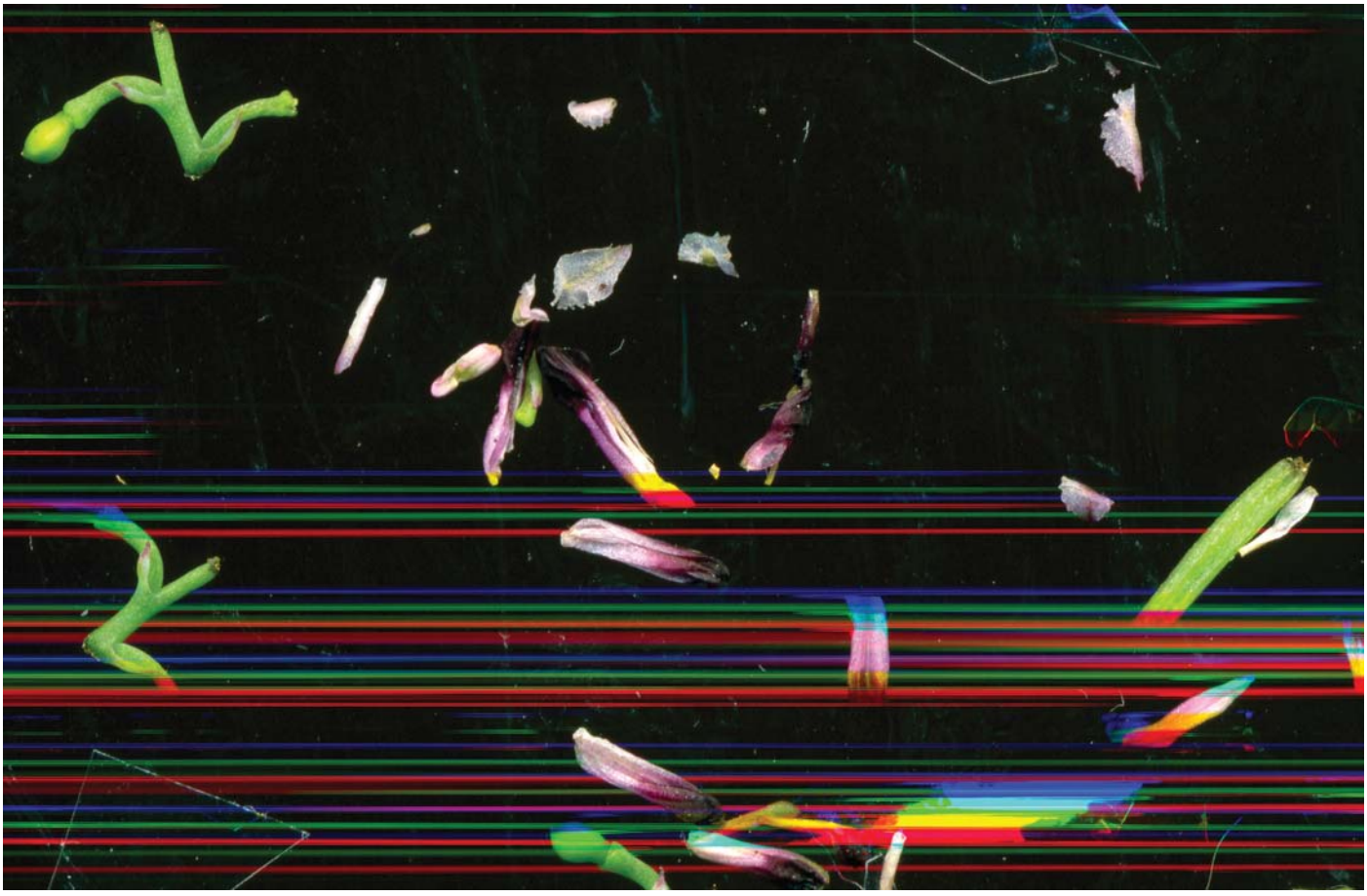

Fig.22

Machine Time_Nature Time (2015)
Pigment print on gloss paper, detail

consideration of our understanding of how photography operates. The works offer reconciliation between the two temporal systems that photographic practice has hitherto failed to acknowledge.

The data sublime

Due to the nature of photography as a process of production, the way in which it may be materialised is varied; it is a process without any material properties. As explored in *The Reflective Field* series photography is amorphous, and the photographic image must be reprocessed and applied as 'marks on a surface' to a final substrate prior to viewing. Some of the decisions around scale are guided by available technology or resolution of the image. However secondarily, conclusions must be drawn based on what photographic detail I need to be delivered to the viewer. The use of the large photographic print has been steadily increasing in contemporary art practice now that technology makes their production accessible. Art historian Julian Stallabrass states that an increase in print size is a response to a general normalising of the photographic image, which erodes the means for artists to aesthetically distinguish themselves against the unification of technology (Stallabrass, 2007). The background to this situation is underpinned by the fact that the internet has changed the way in which people engage with photographic content, stating that now everyone has the ability to self-produce, and to self-publish. Weibel describes that this unification of technology has risen to provide a highly accessible forum to disperse photographic material as an 'artist' or 'publisher' (Weibel, 2011). This complicates the relationship between an artist as a producer of aesthetic objects and a viewing public who are now much more inclined to engage with the production of their own creative endeavours. Weibel states:

> *20th century art was defined by the paradigm of photography. In the electronic world and its electronic media, the art of the 21st century will be defined by the paradigm of the user and the net. With the advent of photography, the visual artist lost his monopoly on the image. Now artists no longer have the monopoly on creativity (Weibel, 2011, p. 142).*

This situation signals a significant shift for creative disciplines. Stallabrass continues to discuss the position artists can take in the current age, stating "The manifest display of very large amounts of data in such images may be related to a broader trend in contemporary art to exploit the effect of the data sublime" (Stallabrass, 2007, p. 82). While the conception of data sublime is evident in numerous contemporary photographic practices, all cases opt to present this conception through an action of addition. In this mode of practice the viewer is presented with an overwhelming scale of large printed works

that contain immense levels of visual information that are predominantly centred around the presentation of high detail subject matter. An artist such as Andreas Gursky is renowned for presenting gigantic prints in public exhibition. But size is not the only characteristic that Gursky reveals, a large number of small elements inhabit the image surface. Allowing a viewer to examine his works in great detail for extended periods of time. Ohlin notes that the condition of the sublime hints at a degree of infinity, and that even under close inspection the individual elements reveal high levels of detail, and repetitive variation (Ohlin, 2014).

Photography as a discipline can take a range of forms as a final outcome: projection, displaying by screen or printing on physical media. This refers to a flexible enlargement of the captured information. Frequently the act of photography does not have a fixed final outcome. It may be produced in any number of percentages of enlargement, until the print reproduction displays the limits of resolution or at the point the photographer decides to print. In order to present the maximum level of detail captured in *Machine Time_ Nature Time* I decided to produce large-scale prints as a mechanism to reveal the qualities of the photographic system. The large-scale and high-resolution images are propagated with a high volume of digital information. The digital image file contains a vast variety of technical information such as colour definition, contrast, highlight and shadow detail and so on. The production of an image that sustains these technical qualities responds to the notion of addition in the data sublime. A secondary addition occurs through the act of capturing. The specimens are re-presented to the viewer as a complex and repeated assemblage of fragmented traces of time by a continual re-sampling of the specimens. The works map the desynchronised traverse of the specimens as they migrate their way across the sensor in accordance to 'Nature Time'. The exposure of the image is not instant. The images are constructed from multiple passes of the sensor over the image plane. The work offers the opportunity to experience the contents repeatedly and continually as a challenge to the notions of the data sublime.

Another form of technology

Through a series of large-scale works, *Machine Time_Nature Time* suggests enclosure. The work invites the viewer to become enmeshed within a field of petals, pollen, twigs and leaves. Initially the viewer is persuaded to interpret the works as a reproduction of botanical specimens. Fostered by a trust in the powers of the camera as a resolving device, the viewer is encouraged to inhabit a known place. Botanical specimens offer a degree of morphological 'familiarity', especially when reproduced as photographic images. The rendering of scale, colour, shape and texture of botanical matter through

photography is a well-established tradition as 'marks' on a two-dimensional plane. Although the viewer has never seen the exact specimen represented disrupted and dislocated in this body of work, the botanical specimens appear 'familiar' to the viewer. They are identifiable as 'flowers' or 'leaves'. The forms of the botanical matter is not completely reproduced, however the viewer is able to mentally complete the image by drawing from the 'Memory Archive'. This phenomenon is progressivly facilitated through access to the Internet which has become 'an evolving patchwork of public memory' (Haskins, 2007, 405) due to its immeasurable quantity of photographic materials. Haskins states "Perhaps like no other medium before, the internet has made collective authorship a reality" (Haskins, 2007, 405). Marshall McLuhan predicted this occurrence, proposing disintegration of the distinction between personally experienced sensations and technologically distributed experiences via mass media. He states:

> *In this electric age, we see ourselves being translated more and more into the form of information, moving toward the technological extension of consciousness (McLuhan, 1964, p. 71).*

However, *Machine Time_Nature Time* denies the photographic image its role as a technological extension of consciousness within the 'Memory Archive' by permitting a slippage between the combination of 'Nature Time' and 'Machine Time'. Interpretation of the works in *Machine Time_Nature Time* gradually degrade from the 'familiarity' of the botanical to the 'unfamiliarity' of technological disruption. The translation between 'Nature Time' and 'Machine Time' resists a perceived sense of 'trueness' to observable reality and simultaneously develops an unsettling balance. Those two time frames avoid McLuhan's 'technological extension of consciousness' and re-weave the binary of the 'familiar' and the 'unfamiliar'. Subliminally 'Machine Time' has always existed within the photographic image, although never permitted centre stage. It exists behind the depiction of a subject and is considered as a participant but only as technique to facilitate the creating of the image. Photographic technology has always been subliminal (Wilder, 2009). Recording devices such as cameras are developed as tools to extend the capacities of human sight to record the natural world, however they are typically not supposed to make themselves evident. Benjamin mentioned the relationship between how the human views the natural world and how nature 'creates' a world with technology, stating:

> *Slow motion not only reveals the familiar aspects of movements, but discloses quite unknowns aspects within them –"which do not appear as the retarding of natural movements but have a curious gliding, floating character of their own" Clearly, it is another nature which speaks to the*

camera as compared to the eye (Benjamin, 2008, p. 37).

However, if I consider the photographic image as a "nature that speaks to the camera", I must also question then what is the nature of the photographic image and how can I make it evident, not in a way that it depicts nature, but in the way it might be enabled to make its 'marks' if it is removed from a supporting role as a depicter of nature. *Machine Time_Nature Time* collapses these two natures as identified by Benjamin, and attempts to create a space within them, where 'Machine Time' and 'Nature Time' can co-exist. This work makes evident 'another' world of photographic technology that enables a dialogue with nature, producing records in accordance with its own systems. *Machine Time_Nature Time* therefore does not present the inability to record 'Nature Time', but the ability to proceed independently of it. Therefore the camera does not only capture the natural world, but also records its own technologically reflected self.

CONCLUSION

The *Remote Photography Project* started with a simple experiment that unexpectedly presented a path to enable me to reconsider in depth the changing role and dynamics of technology in relation to the medium of photography. The *Remote Photography Project* prompted some initial questions about how notions of time and place inform image-making in the digital age and what it means to be a photographer in the digital era. For a brief moment I step away from the established mode of image-making. I relinquish the weight and solidity of my camera. I surrender authorship. I exchanged the action of pressing the shutter with the click of a computer mouse and I exchange physical observation for an electronically mediated view. In doing so I began to explore the remote operations, working digitally and online and then considered how to combine them with my analogue film photographic practice. This research prompted questions about how an investigation of the role of such technologies in the creative process might offer new ways to consider such things as authorship and how to reconceptualise the production of the photographic image within my practice.

In the *Uninhabited Space* series I employed a technological procedure that facilitates subtractive operations in the creation of a photographic image. The outcome of this photographic procedure is a 'void of information' in the image resulting from reciprocity failure; the inability of film to record information in low light relative to long exposure. The camera was simply unable to record it, but during the process of image capture, the technology subliminally marks out the site in the photographic image as a 'void'. Ironically though this absence of information is not a void. It is a black space devoid of detail that still refers to its referent – an absent undulating landscape of hills and valleys. The breach between observable reality and the reality constructed by the camera is revealed as a void or subtraction of information that requires an additive process by the viewer to complete the photographic image by drawing information from the personally created 'Memory Archive', a term I have adopted to refer to the concept of information reconstruction in the mind of the viewer.

The Reflective Field series was created through a series of *Contextual developments* that produced many surprising results. These *Contextual developments* were initiated by the idea that photography is a series of 'marks on a surface'. I explored how exposing the subliminal technological operations of mark making could be investigated by altering an acrylic sheet that was placed on top of the photographic print. While many of these were

successful, I observed that the application of this technique in my work, although visually and theoretically compelling, ran counter to the overall aims of the project. However each played an important part and enabled me to confirm how deeply technology is embedded in the image-making process.

I once again explore the role of technology in relation to the physicality of the photographic image. The content of these images floats above a perpetually extendable 'White Space'. While not part of the scene, this 'White Space' maintains a substantial presence that is embedded in the photographic image file. It was not in the scene but neither was it captured in the camera. It contains no reference to visual information from observable reality. Moreover, although 'White Space' contained visible colour on screen, it is however not translated to the photographic print. This allows me to consider how technology mediates the construction of the photographic image and how this mediation influences the reading of the photographic image. While I came to the conclusion that in the *Uninhabited Space* series, the void signals an absence of information that invites the viewer to enter the image, *The Reflective Field* prints also refers to the void, however the 'White Space' is added to the image, and operates to prevent the viewer from inhabiting the image. The 'White Space' draws attention to the photographic image as a series of marks that coincide to resemble the approximation of a scene. Any relationship between observable reality and the reality as reconstructed in the photographic print is severed by the notion of selective desynchronisation that happens during the production of the photographic image.

In Part Two I employed the ideas from the previous projects that argue the photographic image is mediated by technology, and further investigated this exclusively in a digital context. Again, I extended my body of work through a series of contextual explorations. These works were initiated through my collection of a 'parcel of information'. I then explored various aspects of digital capture, closely focusing on characteristics of how the digital image file is created, processed, stored and transmitted. I presented reflection and experimentation to explore new domains of possibility through my photographic practice. The work was constructed considering that the contemporary condition of the medium in a digital era is no more than a compilation of data. Due to the homogeneous nature of data, I determine that the photographic capture may not necessarily be held to a static two-dimensional image alone and opens new creative possibilities for engaging with the photographic image.

My final body of work *Machine Time_Nature Time* forms the conclusive component of my thesis. The work generates new ways to conceptualise

and understand how the worlds of technology and nature can be brought together visually and reveals new ways to imagine and represent observable reality through the medium of photography. I explored how photography maps the passage of time onto a photographic surface by exposing the subliminal existence of technology, and desynchronisation between the two frameworks - the variability of nature: 'Nature Time' and the machine that records it: 'Machine Time'. The technology was pushed beyond the limits of its ability to form a complete photographic image and produced instead a more complex map of the relationship between these two worlds. *Machine Time_Nature Time* enmeshes the familiarity of the botanic and the unfamiliarity of marks made by technological disruption. The exhibition attempts to envelop the viewer with this disruption set against a permanent black void, the constellations of flowers, petals, seeds and leaves enact their temporal migration across the image plane. They are eager for their record to be made, but offer one that is incomplete, or perhaps the works suggest a record in progress.

As a photographer I am caught in a perpetual struggle to harness reflected light and time as a means to resolve a photographic image. Tethered to the technologies of my medium, I direct my tools, apply adjustments and initiate processes that will result in the coalescing of an image. Bound by the increasing complexity of photographic technologies, I am at times locked within a framework that seems to limit the potential creative possibilities of the medium. Leveraging technology to harness and tame reflected light, I am made more aware that in this negotiation, there are deeper, richer questions that photographers can ask. By way of subtle disruption, my body of work exposes an interconnected string of technologies that offer new possibilities and ways to capture light to construct the photographic image.

Afterword

The final body of work Machine Time_Nature Time series was exhibited at the Engine Room Gallery in Wellington in 2015. The gallery space was characterized by a high ceiling that was largely glazed which let in a large amount of natural light. When the work was presented on high-gloss paper, unframed and affixed directly to the wall with headless steel pins, the reflected highlights on the undulating print surface were emphasised. The reflected sunlight begins to simulate the operations undertaken to the content presented in my photographic image that is predominantly a series of reflective shards. On another layer the highly reflective image surface disrupts the viewer and invites a negotiation with fragments of physical light that inhabit surface of the prints to engage with the work.

The following images then begin to introduce two key characters: photographic representation and its technological disruption. The manner in which a viewer experiences leads them to question the value and a degree of trust in the visual acuity as they become accustomed to how the images recede from a traditional means of photographic representation. A thick white boarder surrounding the image also adds an association with the notion that the work exists within the form of photography. I planned the order of the exhibition to produce a particular rhythm that was created by the scale of the specimens. At times botanical matter takes the fore, and other times it escaped capture so that a technical disruption forms the overarching characteristic of the work. When the viewer travels past the series of works, a pulsing of density fades in and out confronting a relation to observable reality. By producing large scaled prints with high resolution and detail, I wanted to create a situation where the works invite a lengthily inspection. The outcome was that the viewers frequently enquired ‘this is photography, isn’t it?’ and then they ask ‘of what?’ exposing a sense of uncertainty and yet a desire to confirm that the works must be photography. The seamless translation from the visible world to photography collapsed under the weight of exposing the technological manufacture of the photographic image. Just as I have, through this public presentation of my final work I aimed for the viewer to share and to ultimately question the boundaries of this medium.

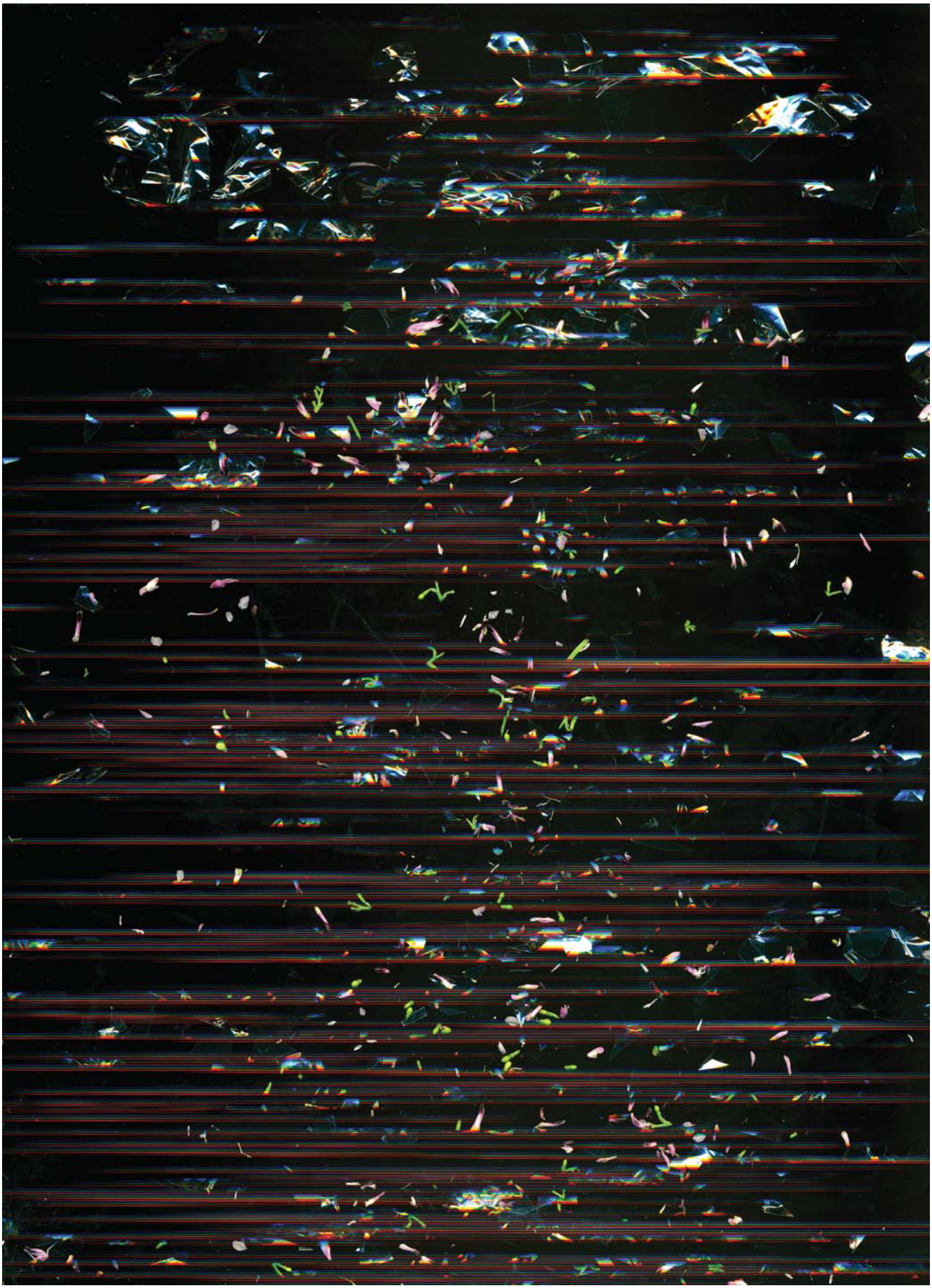

Fig.23

Machine Time_Nature Time_0/2 (2013 - 2015)
Pigment print on gloss paper 44” x 60.6” (1111 x 1540.9mm)

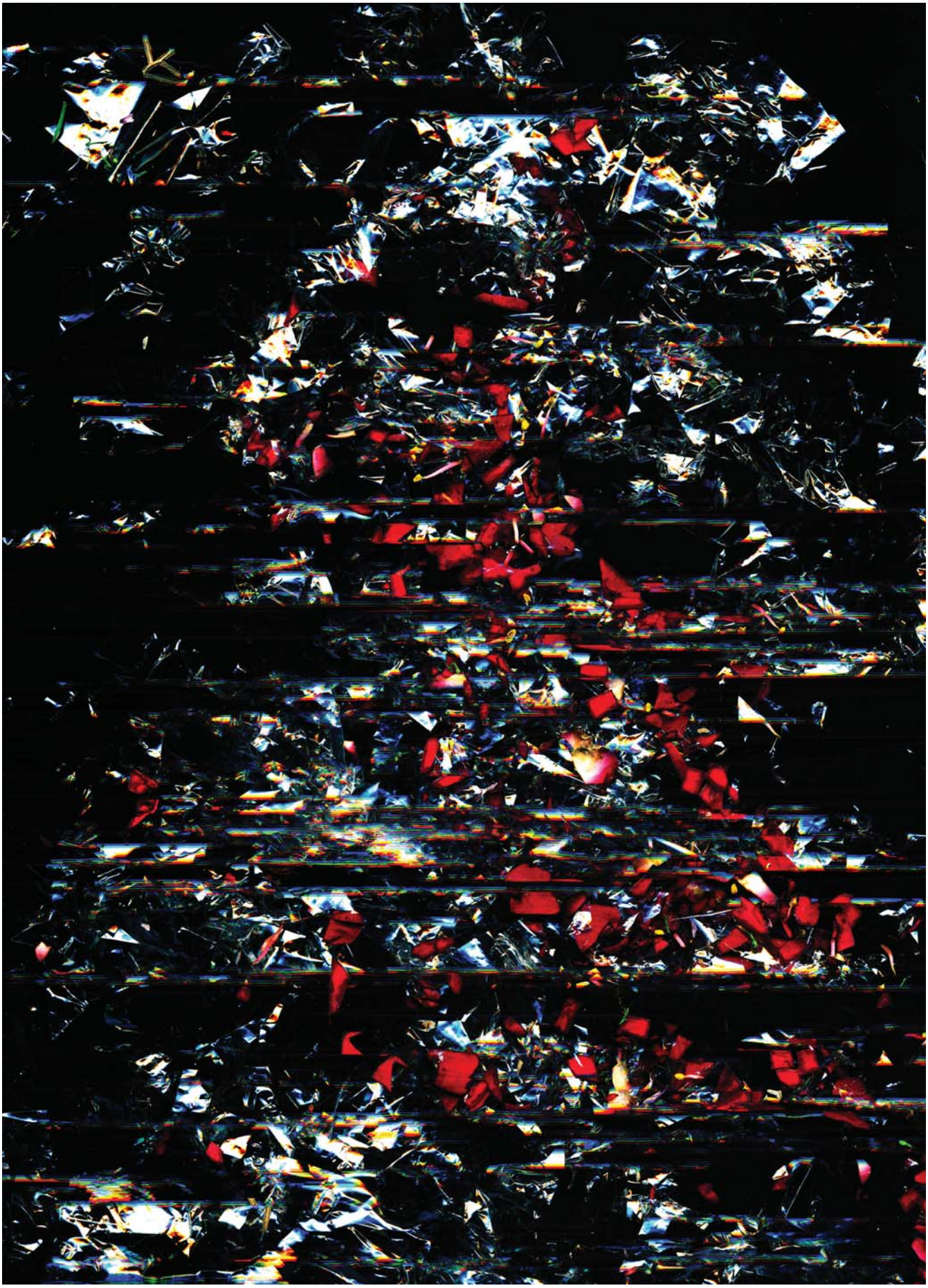

Fig.24

Machine Time_Nature Time_0/3 (2013 - 2015)
Pigment print on gloss paper 44” x 60.6” (1111 x 1540.9mm)

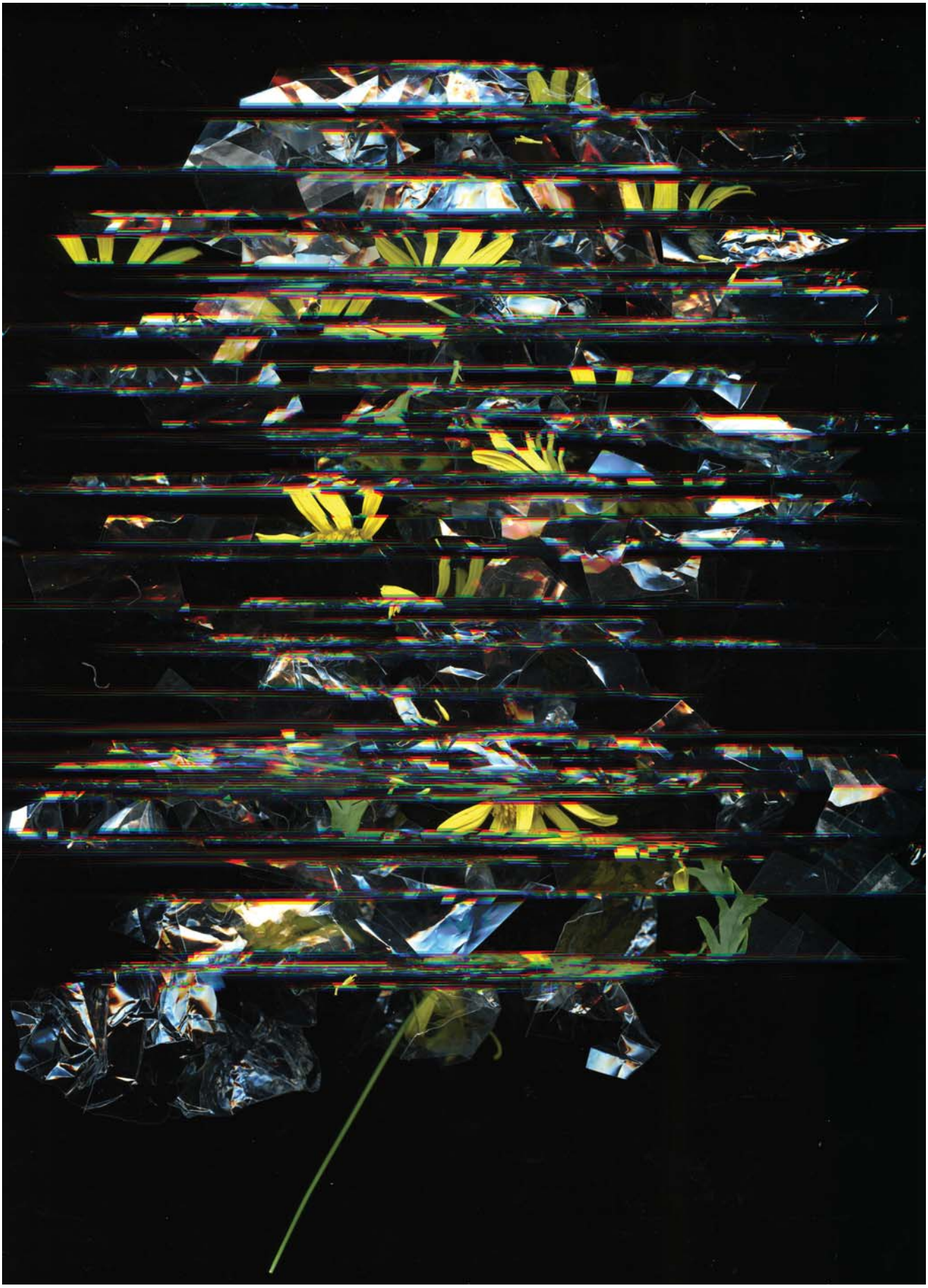

Fig.25

Machine Time_Nature Time_0/8 (2013 - 2015)
Pigment print on gloss paper 44” x 60.6” (1111 x 1540.9mm)

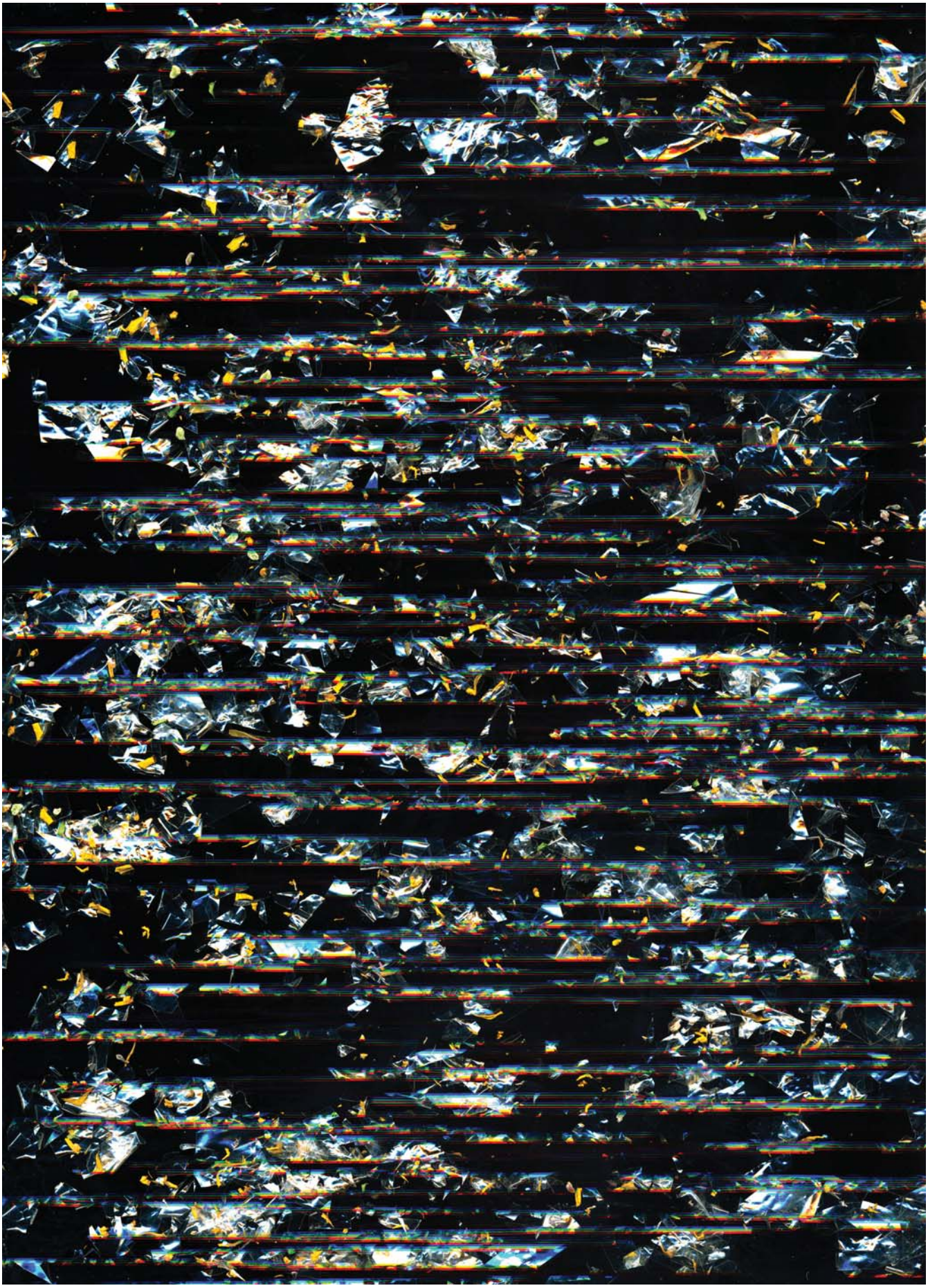

Fig.26

Machine Time_Nature Time_0/5 (2013 - 2015)
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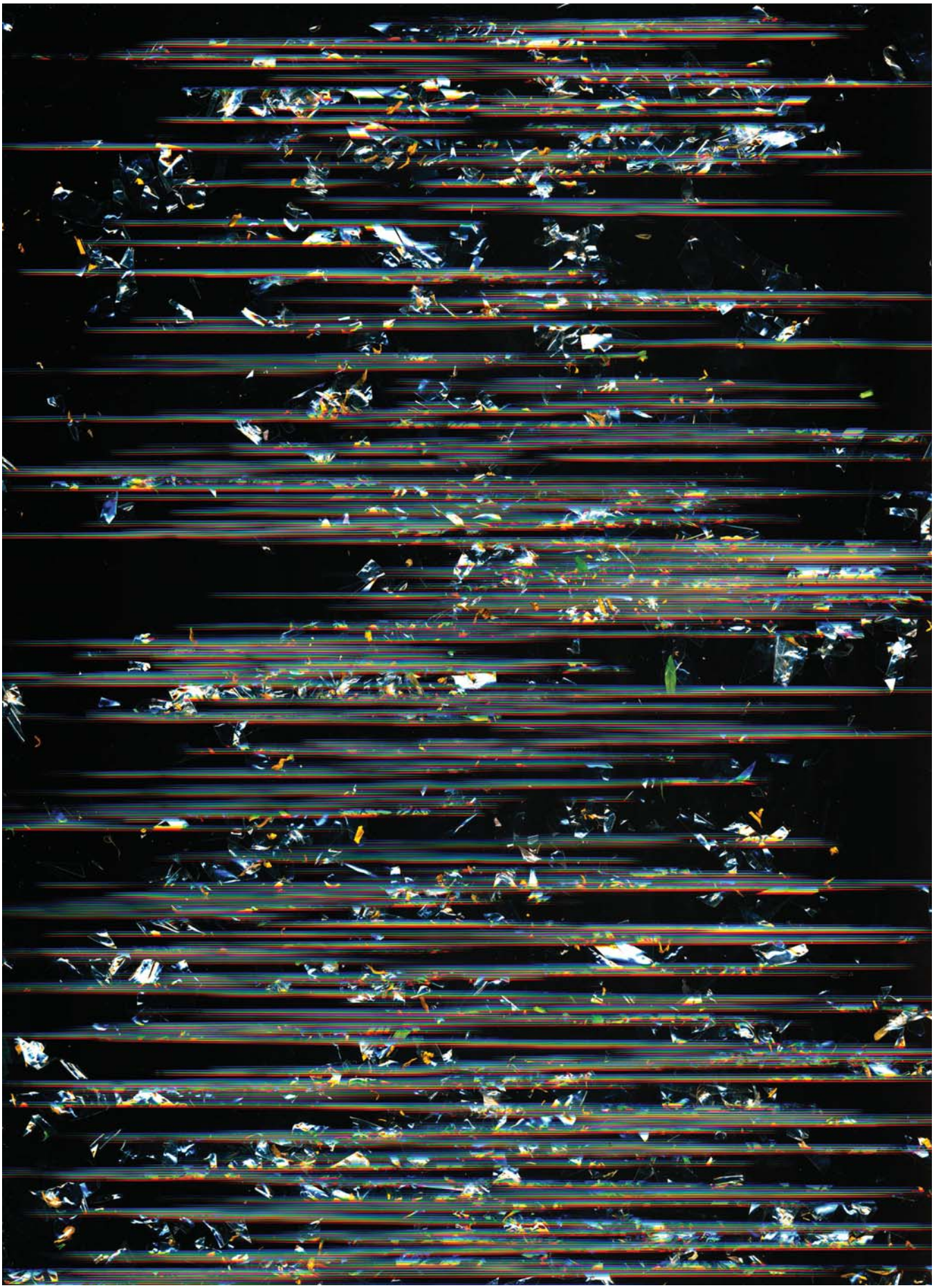

Fig.27

Machine Time_Nature Time_0/4 (2013 - 2015)
Pigment print on gloss paper 44” x 60.6” (1111 x 1540.9mm)

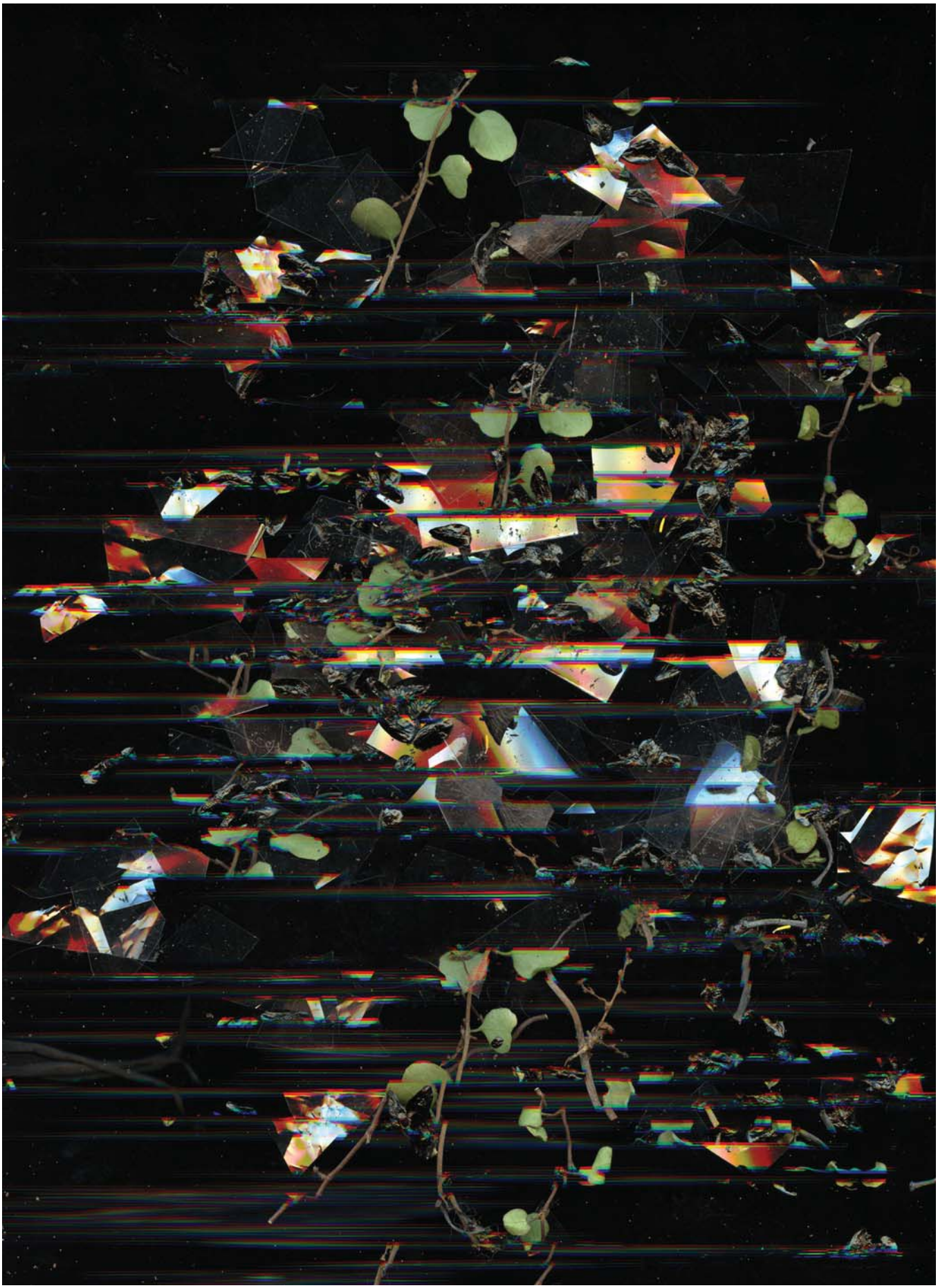

Fig.28

Machine Time_Nature Time_0/6 (2013 - 2015)
Pigment print on gloss paper 44” x 60.6” (1111 x 1540.9mm)

Fig.29

Machine Time_Nature Time_0/1 (2013 - 2015)
Pigment print on gloss paper 44” x 60.6” (1111 x 1540.9mm)

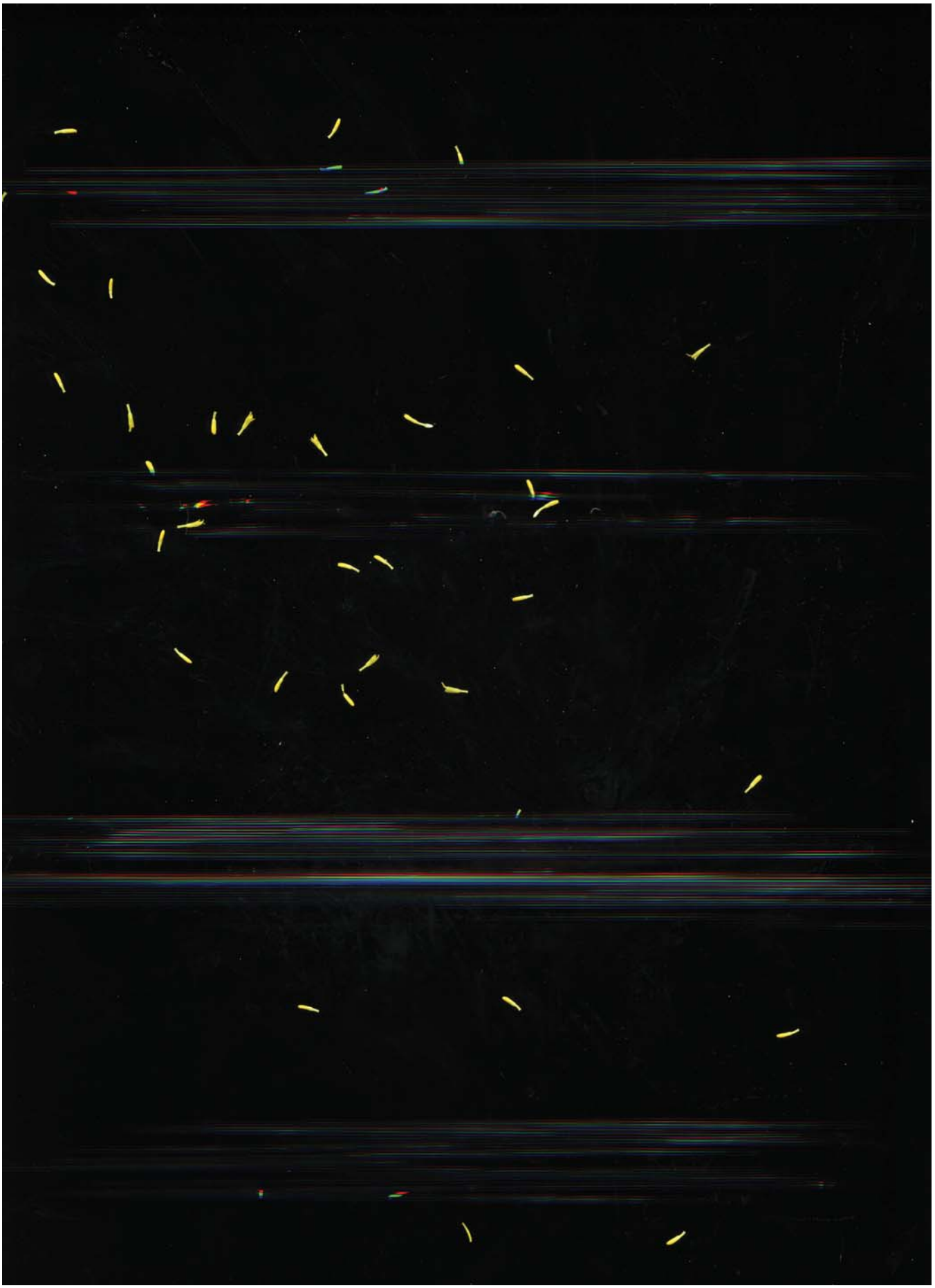

Fig.30

Machine Time_Nature Time_0/7 (2013 - 2015)
Pigment print on gloss paper 44” x 60.6” (1111 x 1540.9mm)

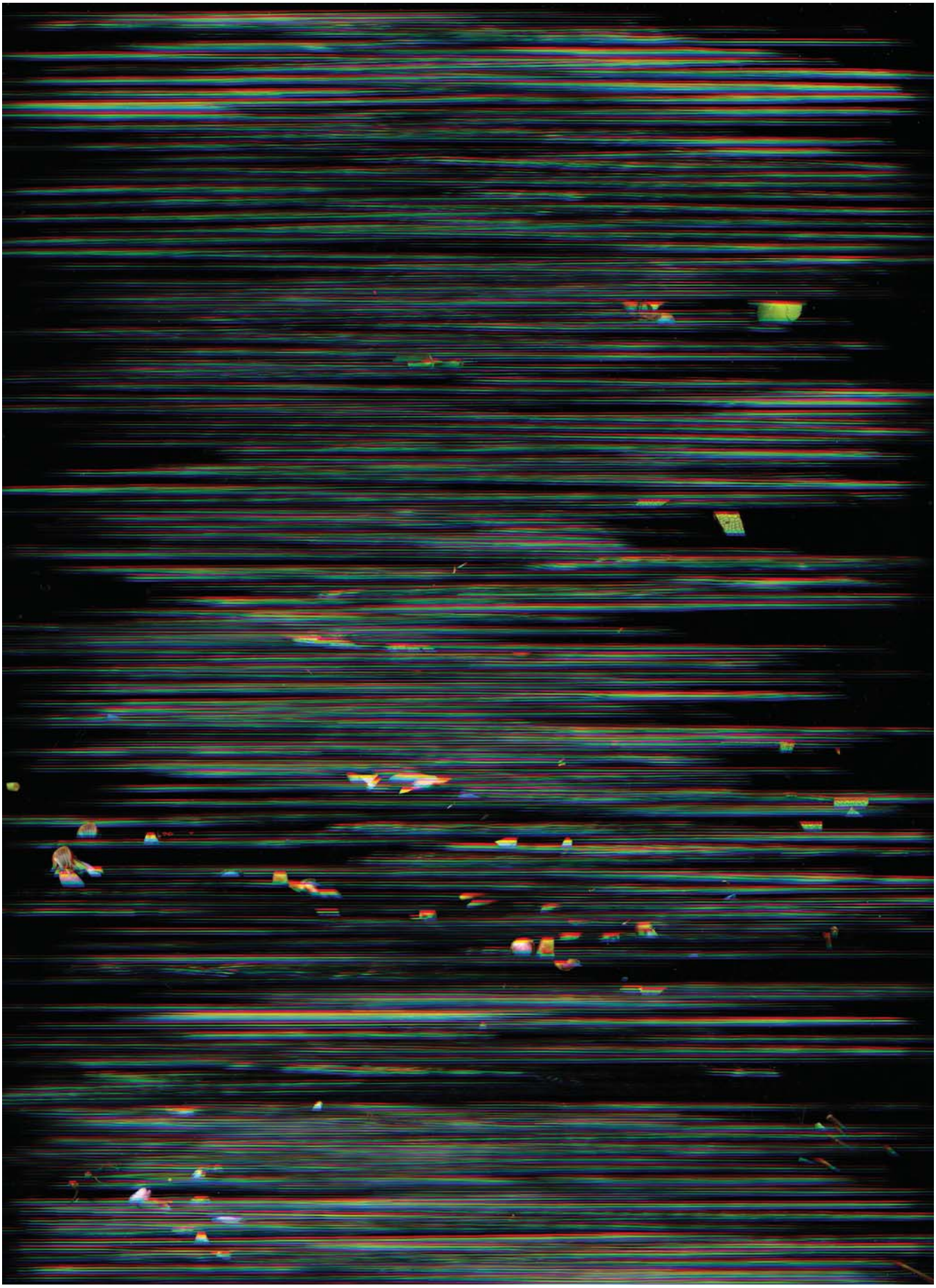

Fig.31

Machine Time_Nature Time_0/9 (2013 - 2015)
Pigment print on gloss paper 44” x 60.6” (1111 x 1540.9mm)

REFERENCE LIST

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APPENDIX

The presentation of works follows the order in which they are introduced in the main body of text.

APPENDIX LIST OF FIGURES

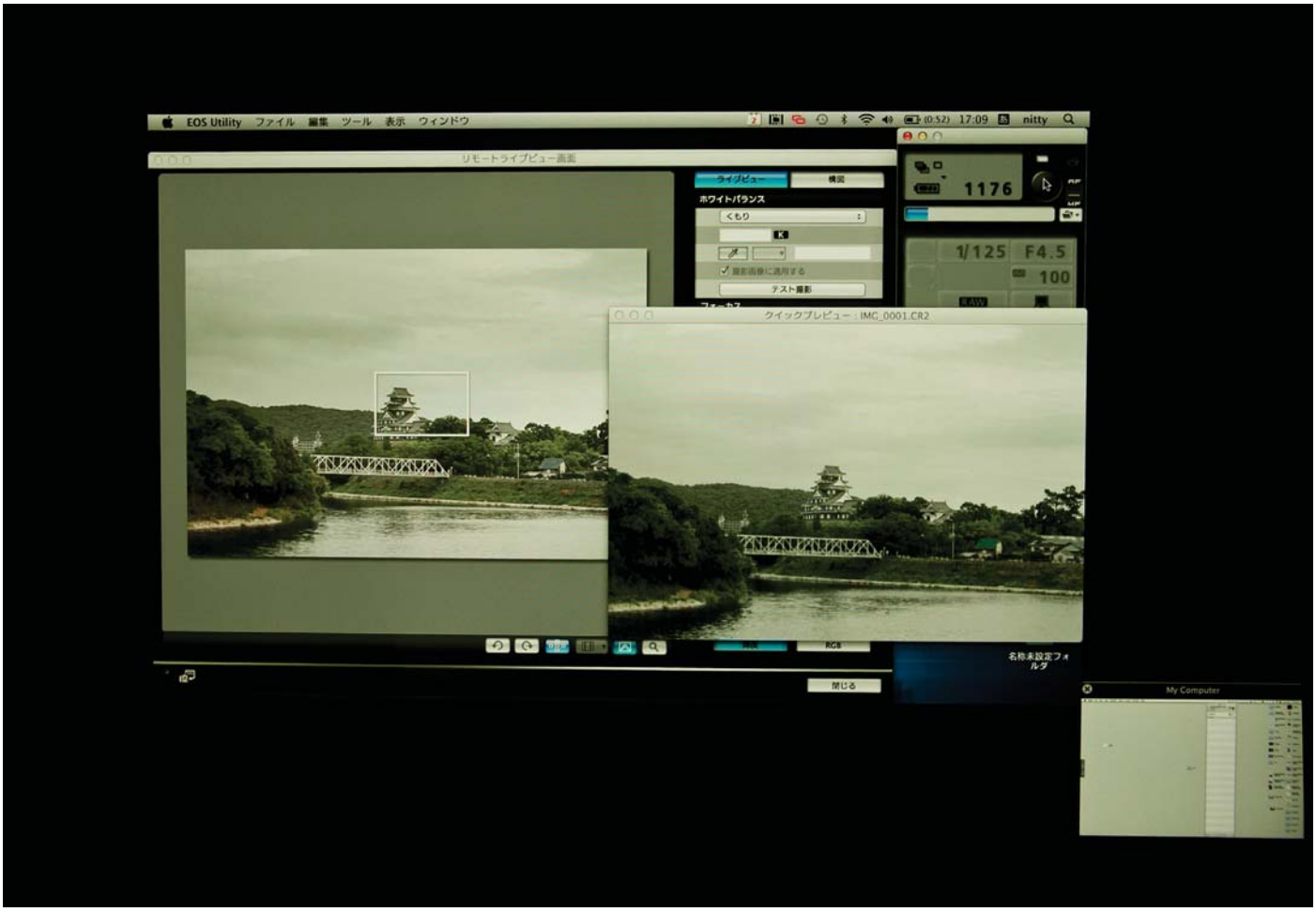


Fig.33

Remote Photography Project (2009 - 2010)

Fig.32

Remote Photography Project (2009 - 2010)

Fig.34

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

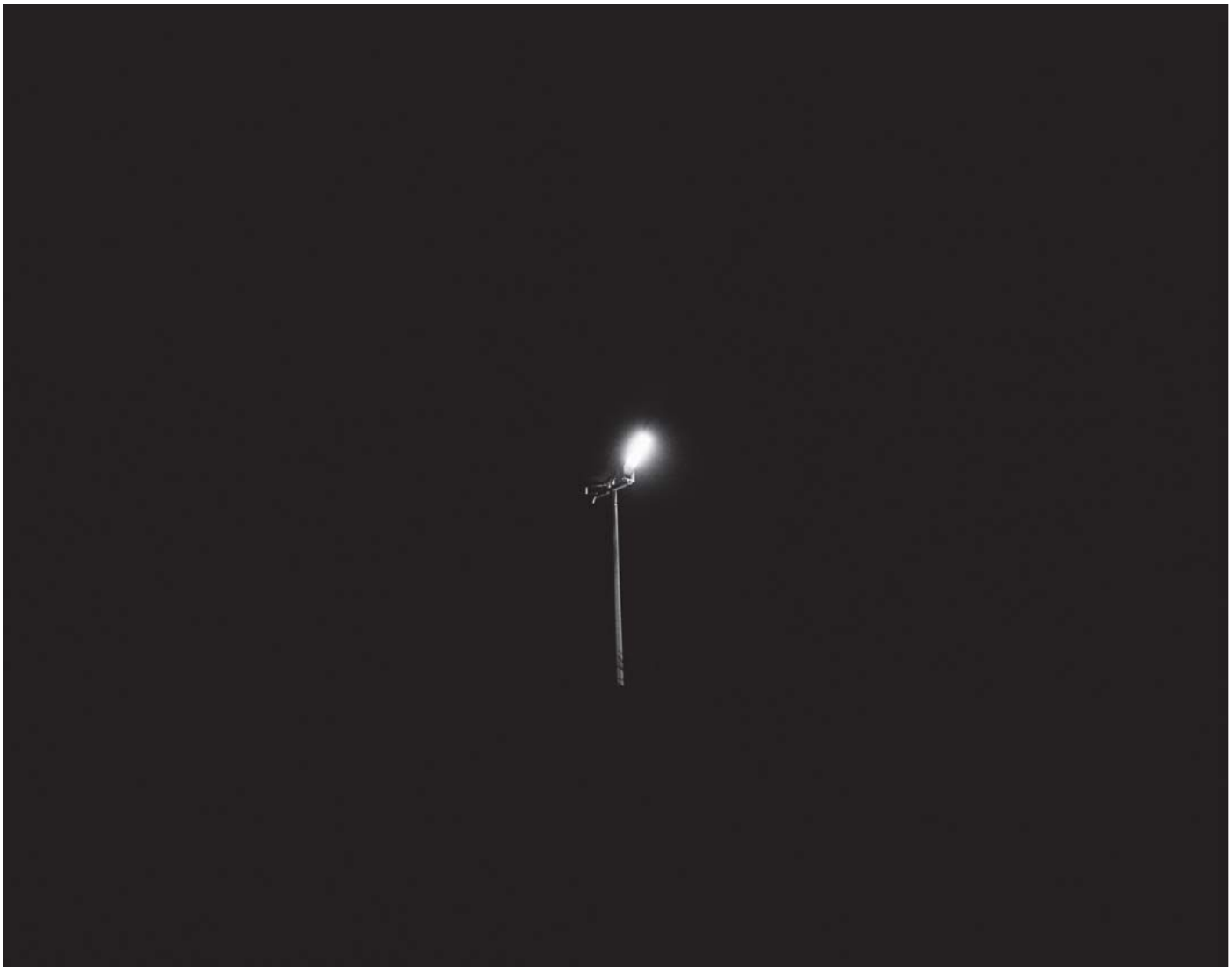


Fig.35

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Fig.36

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

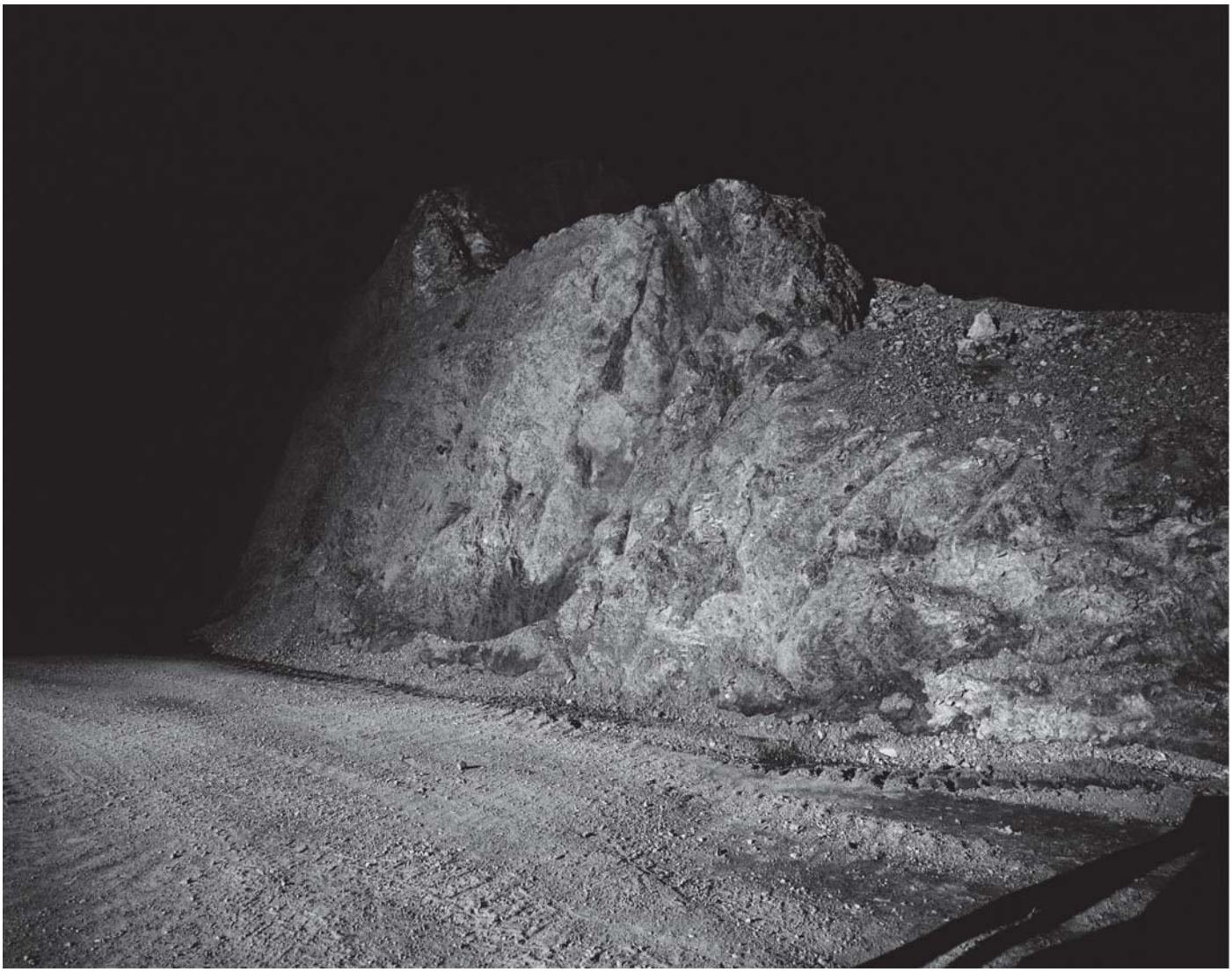


Fig.37

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Fig.38

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Fig.39

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Fig.40

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Fig.41

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Fig.42

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Fig.43

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Fig.44

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Fig.45

Uninhabited space (2011 - 2012)
Pigment print on baryta paper 11.6” x 16.5” (295 x 420 mm)

Fig.46

The Reflective Field_ Installation view_ 01 (2012)

The Reflective Field series was exhibited at Blue Oyster Gallery in Dunedin, New Zealand in 2012. An issue that arose relating to contextualisation was the fact that the work was in a group show with its own title. Originally the curator intended to call it *The Land Show*. However, due to the politically motivated series of works produced by other artists exploring the increasingly damaging use of land in industrialised society, the proposal title was changed to the more dystopian, *We are not getting out of this alive*. As discussed earlier in the section, my work was produced to expose the influence of technology in the way we produce photographic images. Because I captured the observable reality of the industrial site, my work adjusted itself to fit in this dystopian context, although my intention was to draw the viewer's attention by presenting this observable reality and then to repel through exposing a technological disruption. I outlined to the curator my concerns about the new title in the light of my intentions for the work and the permissions I had needed to obtain to enter and photograph the site. The final titling for the show then became *We are not getting out of this alive, Or The Land Show*. The change from the original title indicates how the photographic image performs within the archive. This verifies the position that photographic images in the archive can evolve new meanings through the collection and association of images (Enwezor, 2008; Sassoon, 1998; Spieker, 2008).

Fig.47

The Reflective Field_ Installation view_ 02 (2012)

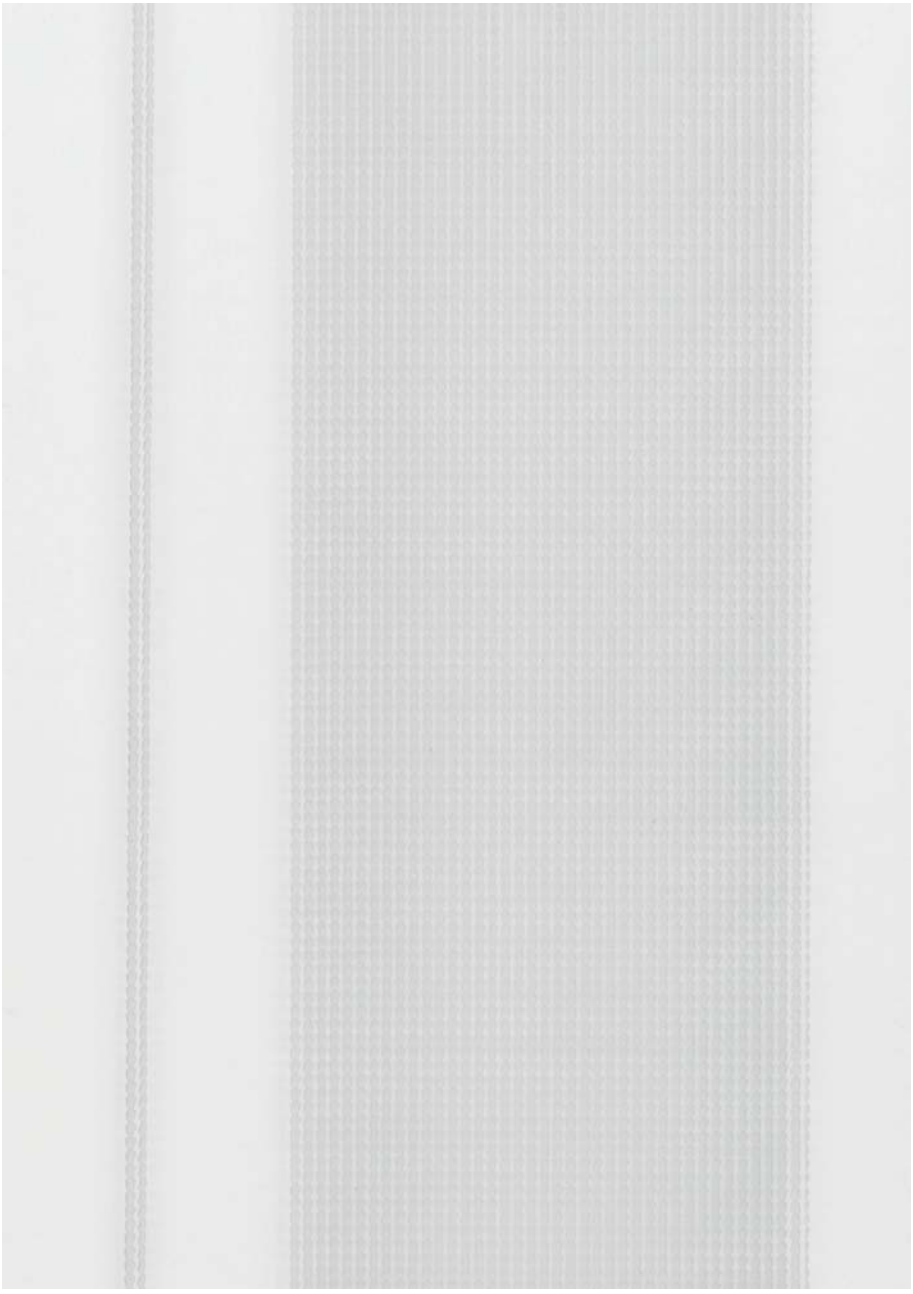


Fig.48

Contextual development: Digital marks _Test sheet (2012)
Laser etched acrylic sheet, various strengths

Fig.49

Contextual development: Digital marks _Test sheet (2012)
Laser etched acrylic sheet, various strengths

Fig.50

The Reflective Field (2012)

Fig.51

The Reflective Field (2012)

Fig.52

The Reflective Field (2012)

Fig.53

The Reflective Field (2012)

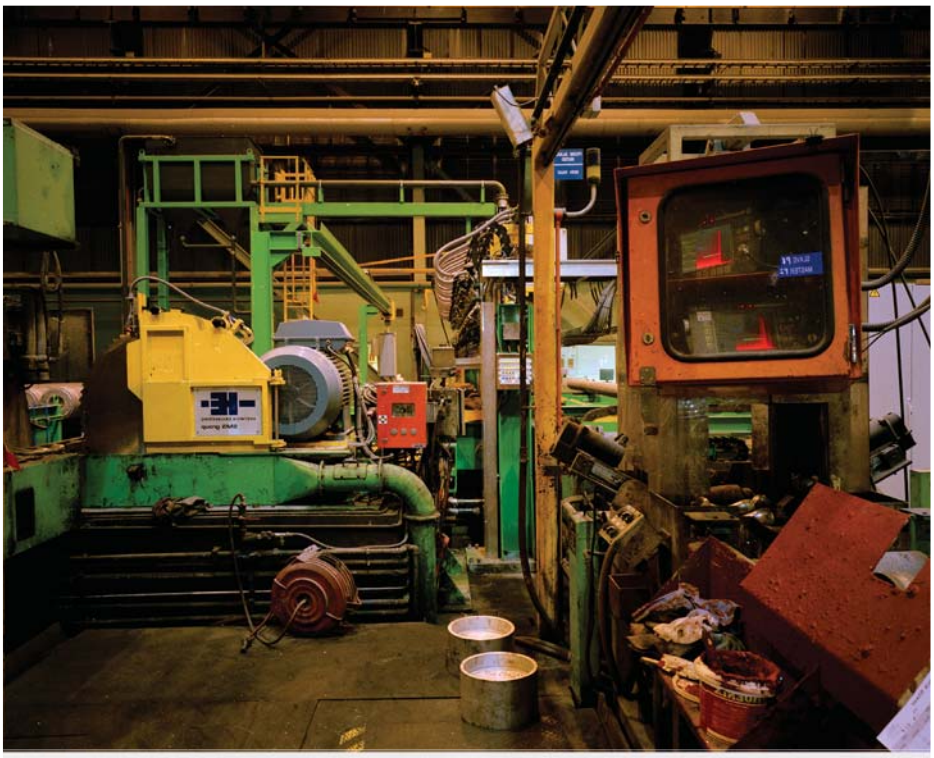


Fig.54

The Reflective Field (2012)

Fig.55

The Reflective Field (2012)

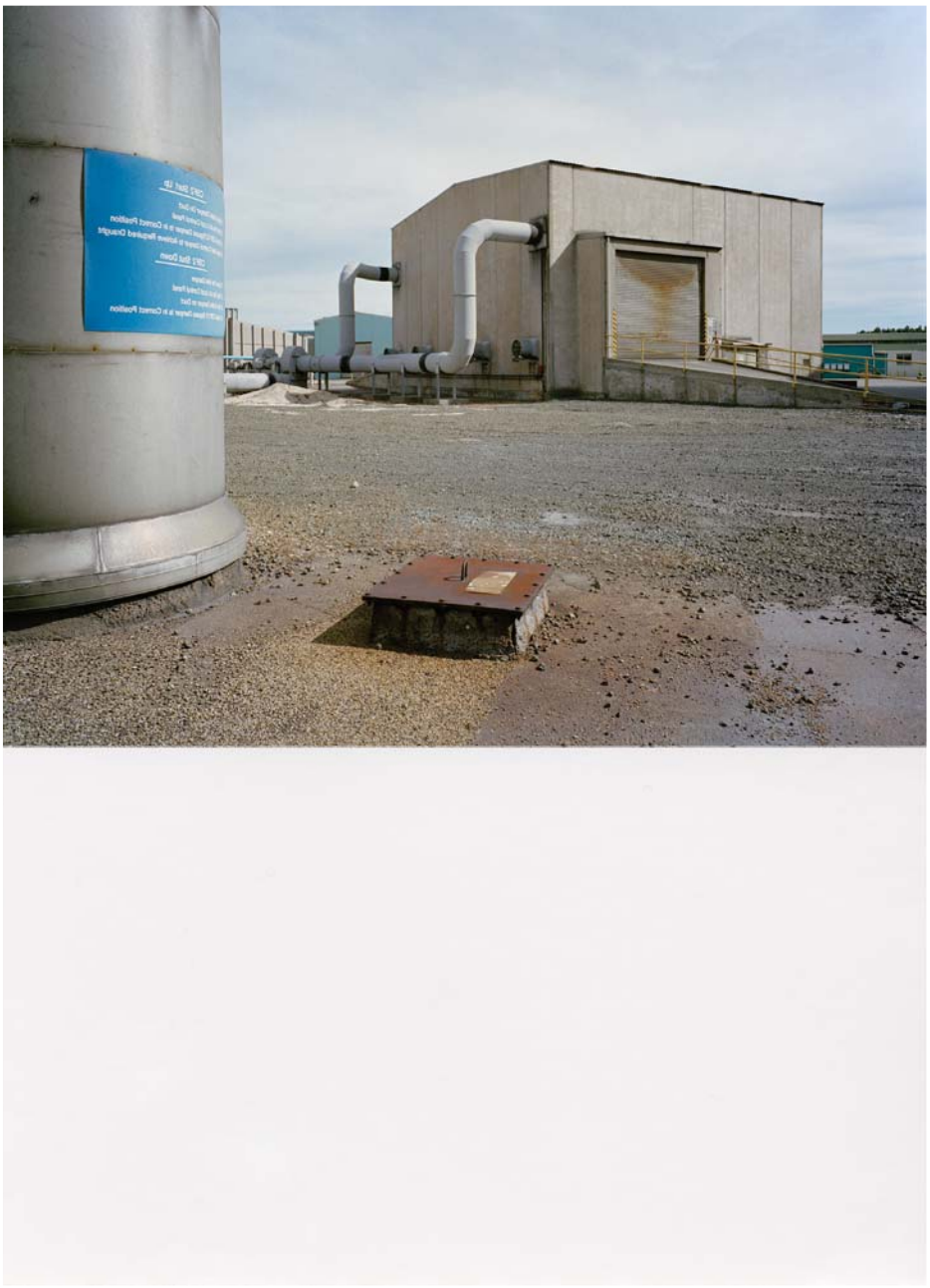


Fig.56

The Reflective Field (2012)

Fig.57

The Reflective Field (2012)

Fig.58

The Reflective Field (2012)

Fig.59

The Reflective Field (2012)

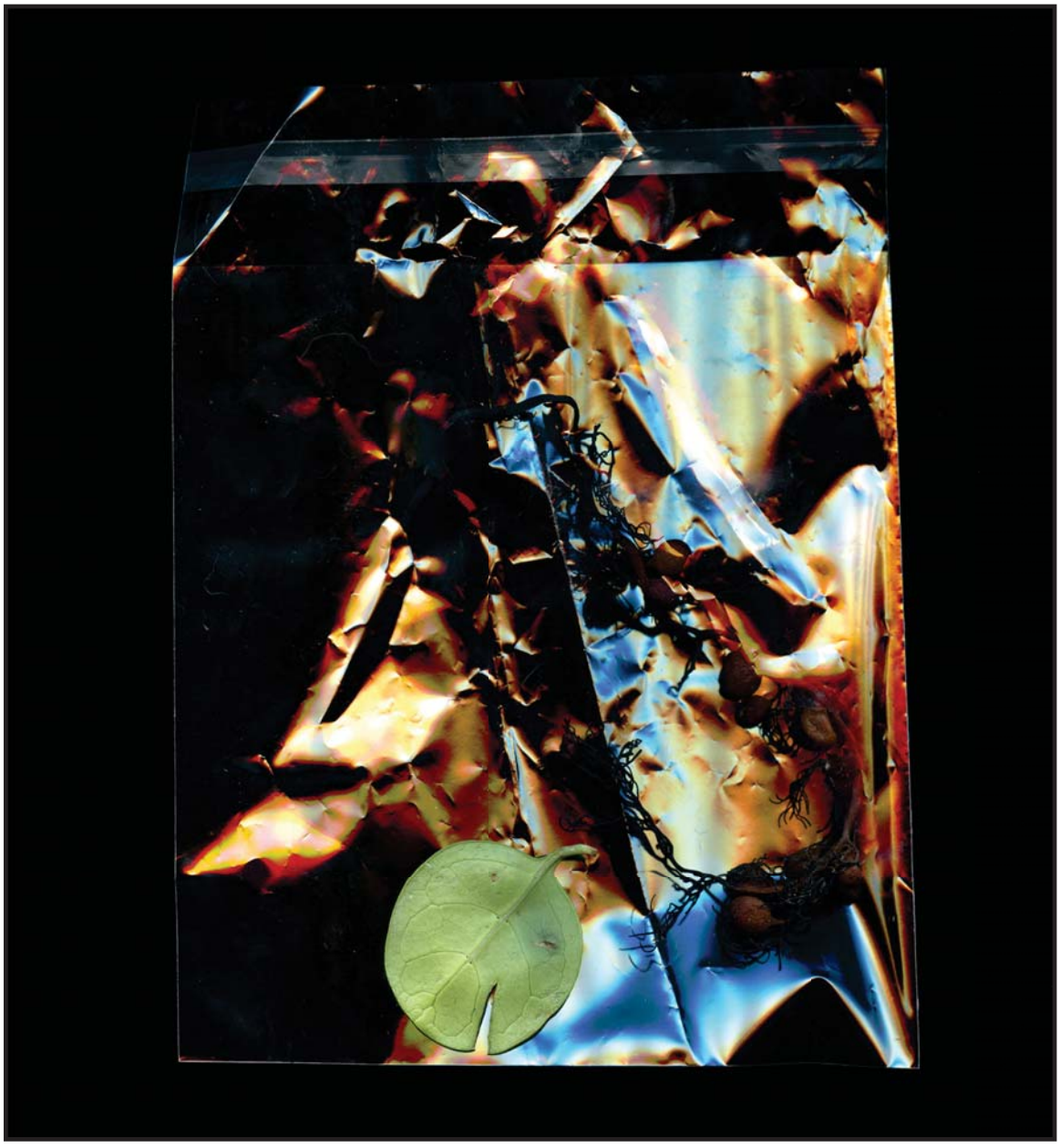


Fig.60

Specimen_02 (2013)
Collected botanical samples, vinyl bag

Fig.61

Specimen_03 (2013)
Collected botanical samples, vinyl bag

Fig.62

Digital Bloom_ 02 (2013)

Fig.63

Digital Bloom_ 03 (2013)

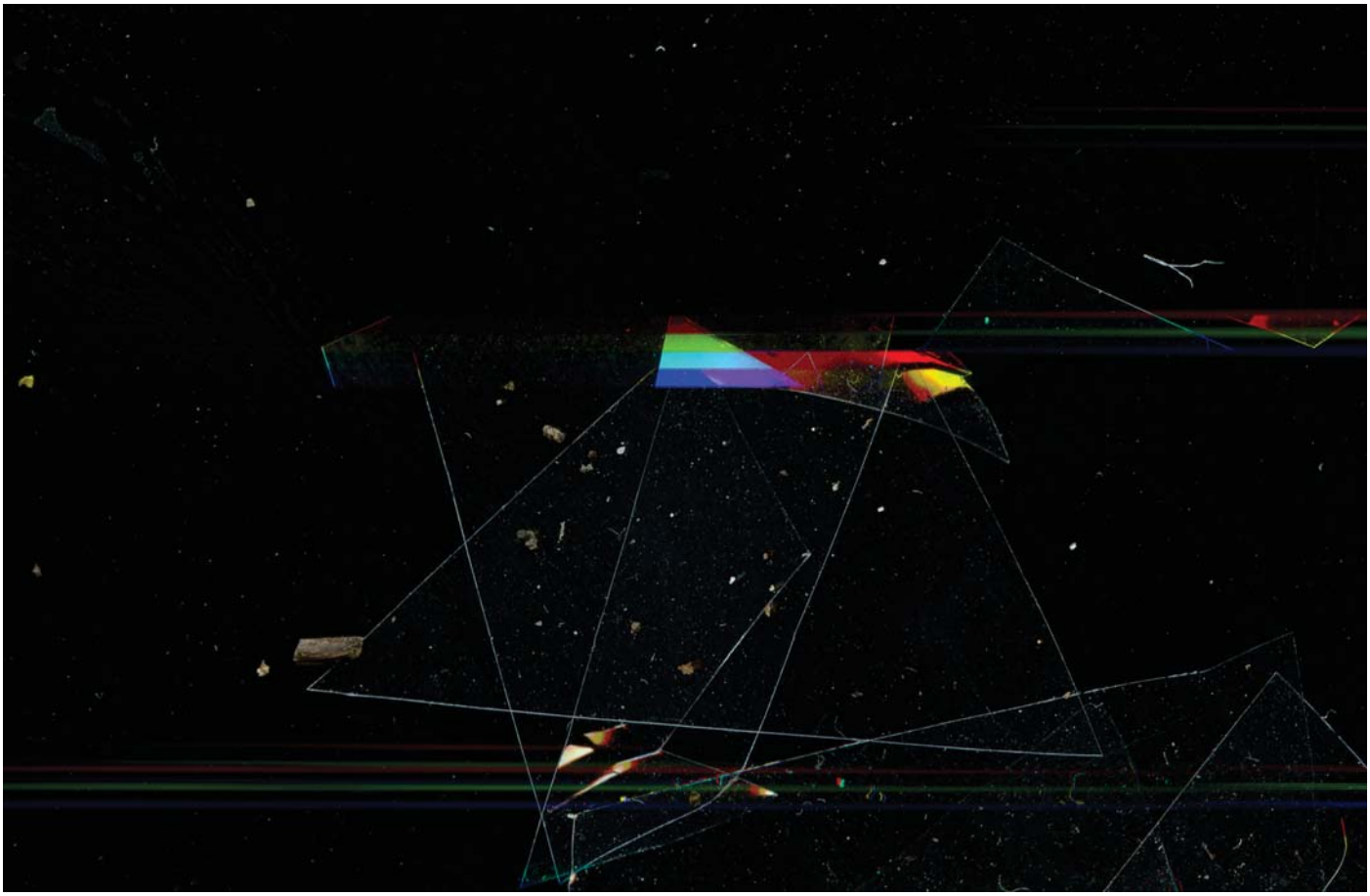


Fig.64

Machine Time_Nature Time (2015)
Pigment print on gloss paper, detail

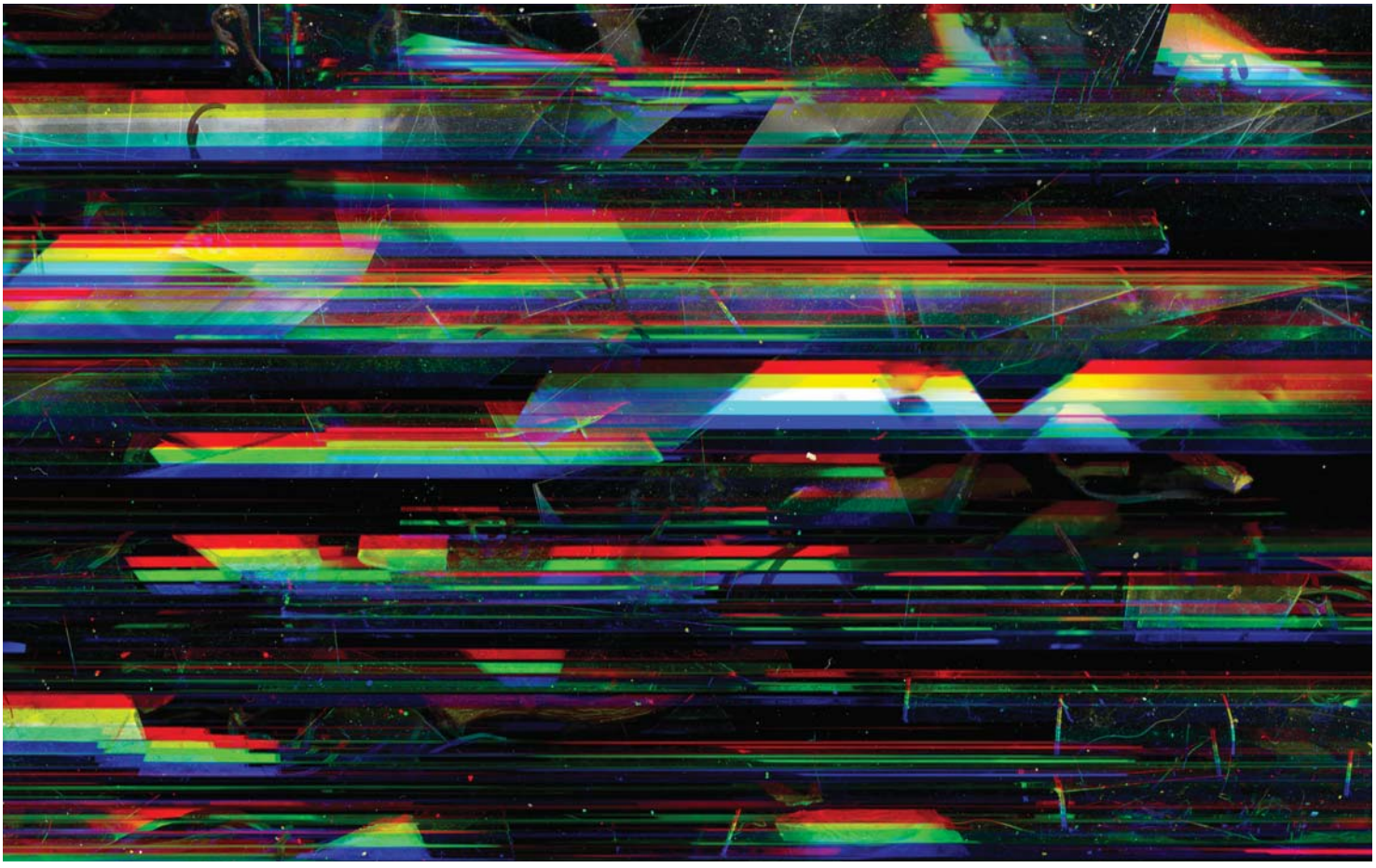


Fig.65

Machine Time_Nature Time (2015)
Pigment print on gloss paper, detail

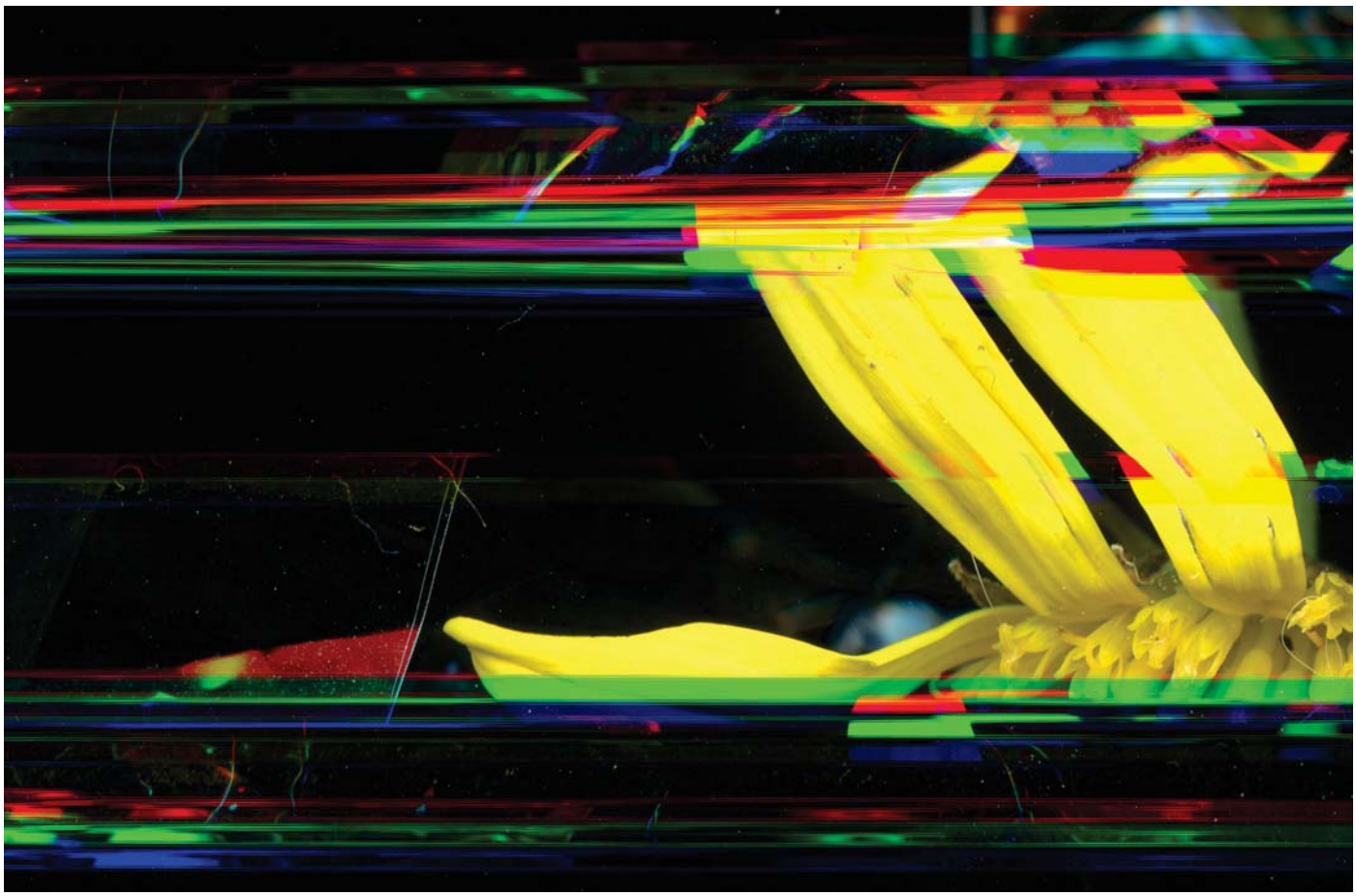


Fig.66

Machine Time_Nature Time (2015)
Pigment print on gloss paper, detail

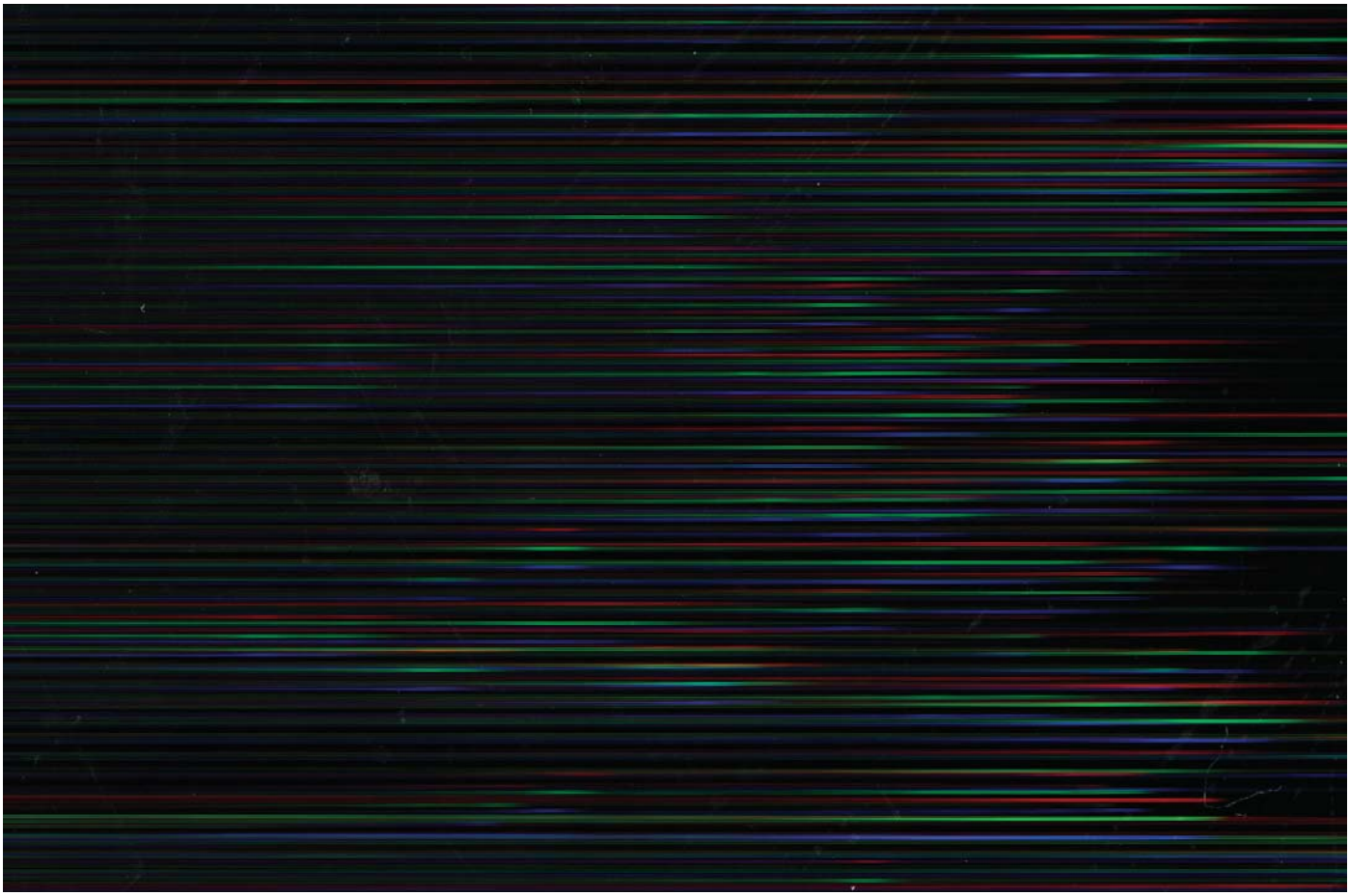


Fig.67

Machine Time_Nature Time (2015)
Pigment print on gloss paper, detail

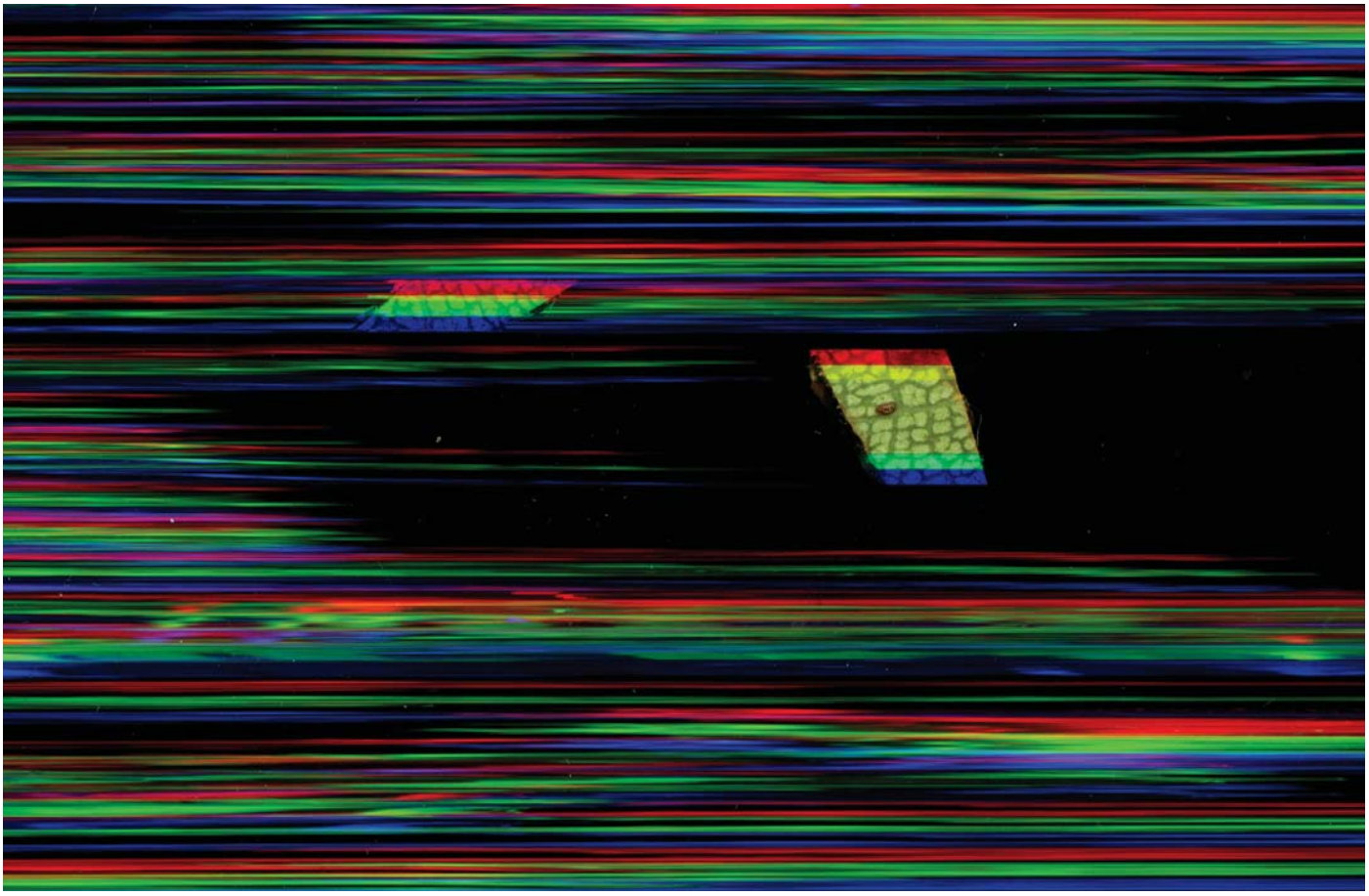


Fig.68

Machine Time_Nature Time (2015)
Pigment print on gloss paper, detail

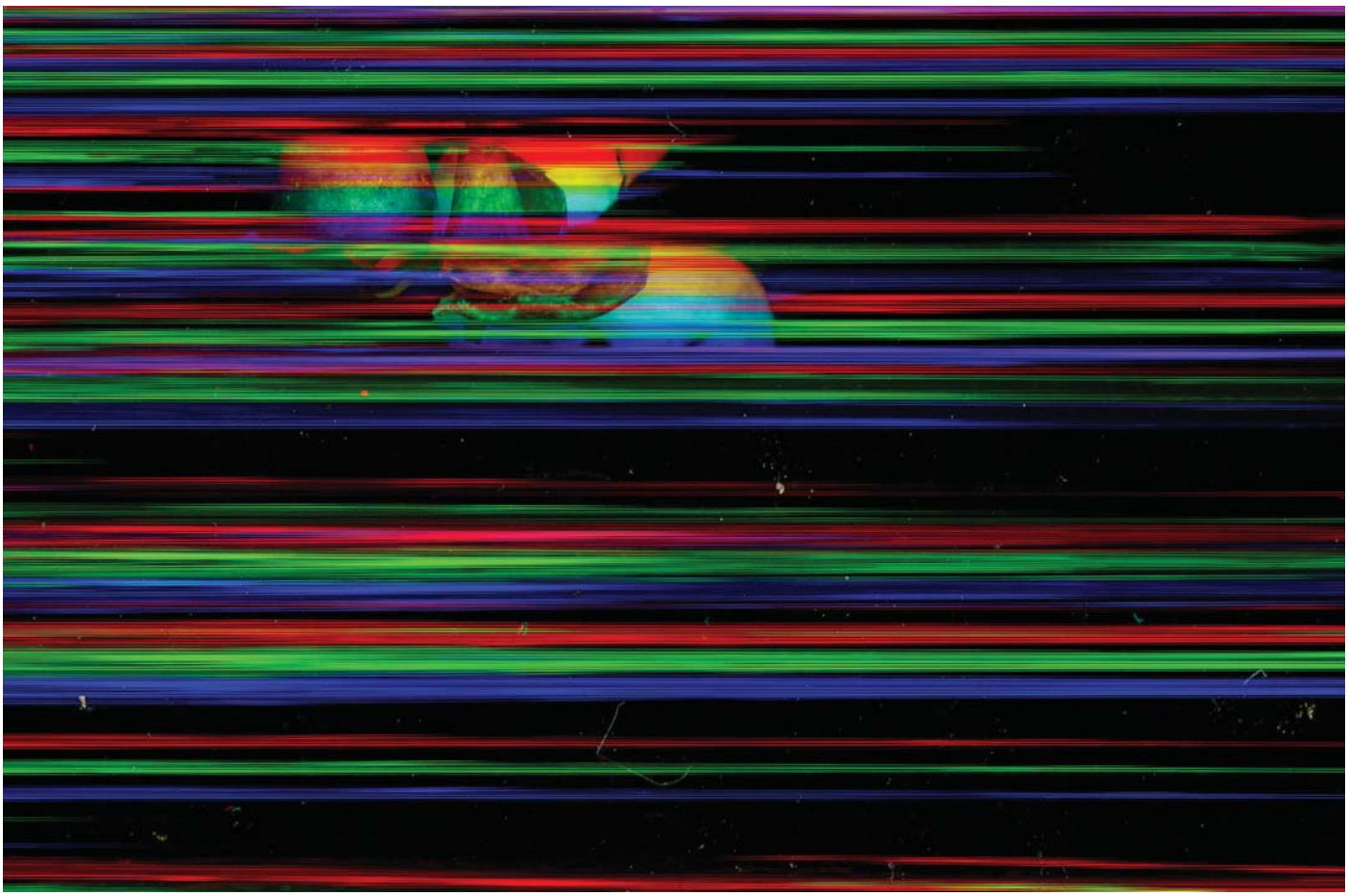
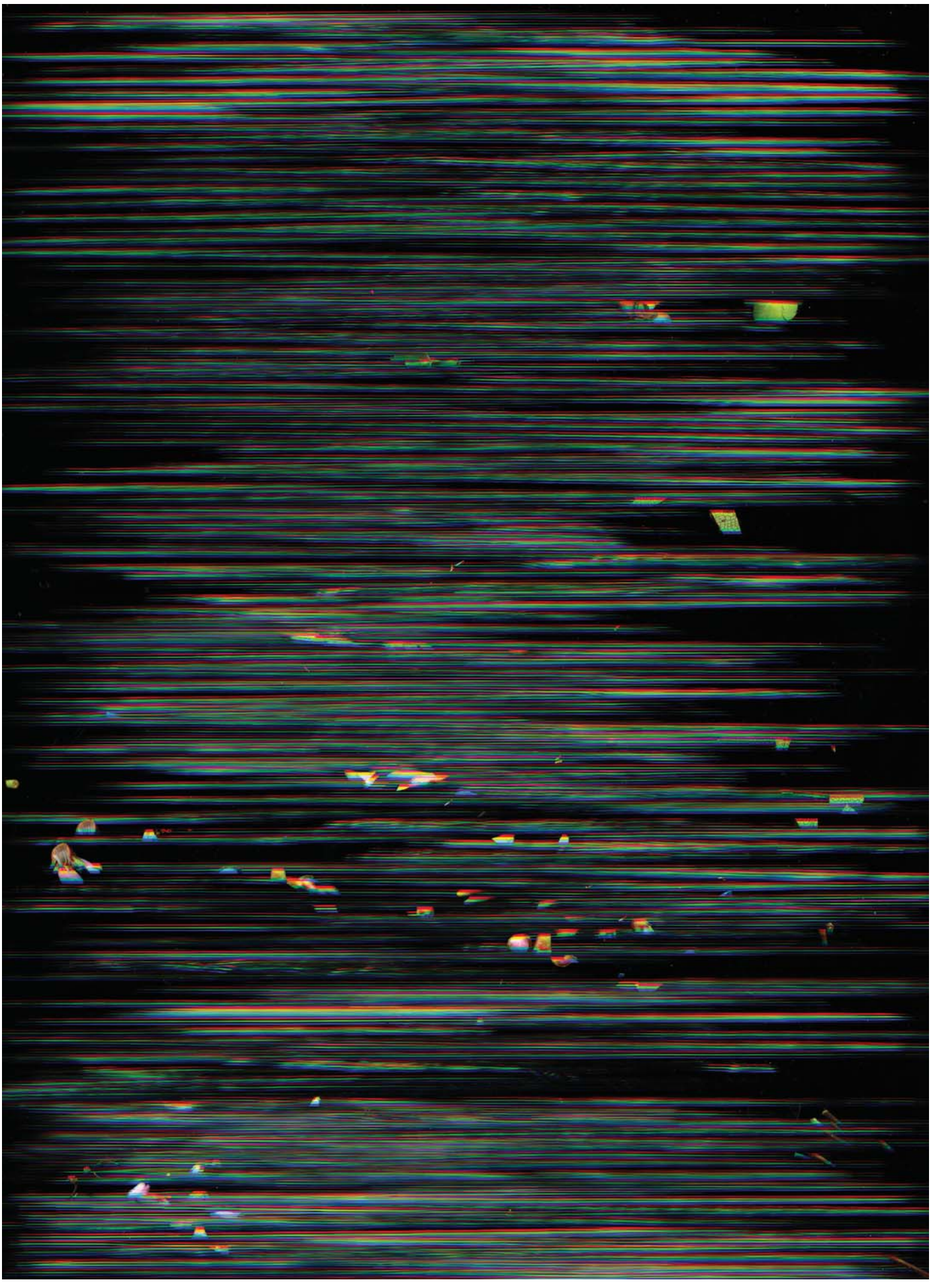


Fig.69

Machine Time_Nature Time (2015)
Pigment print on gloss paper, detail



| A String of Data_

Disrupting, altering and generating the photographic image

Mizuho Nishioka

2015