

## Chapter 2.

### The Research.

#### Layering and mapping light.

I ask myself sometimes whether my eyes may be playing tricks. But no – an unbroken skyline signals that my desire to see something special beyond it remains forever unappeased. Like Jerusalem I will just have to live with it as the nearest thing to a celestial image that I will ever know. Air, too, I must learn to accept for the invisible substance that it is.<sup>1</sup>

James Cowan, 1997. *A Mapmaker's Dream. The Meditations of Fra Mauro, Cartographer to the Court of Venice.*

In this chapter I introduce the research, giving the reader a sense of the way in which the work has been conceived and realized. Vision has been extended and mediated in various ways, through artistic, photographic and digital interactions and representations. The invisible is over time penetrated by the visible, as observation generates a process of transformation. An interest in astronomy, sense experience, space and mapping, all of which have a long history associated with the process of observation, has stimulated this research. My intention has been to gain an understanding of the process of observation and image capture in the context of the mapping of remote space, where astronomers employ telescopes, computers and light in the full range of the electromagnetic spectrum to reveal the invisible. It raises the question of how we orient ourselves to accommodate increasing revelations about cosmic space in terms of nature and culture.

Working with data and the senses, I have searched for resonant associations with scientific and artistic observational and spatial practices, both historic and contemporary. These are related to the way in which nature is increasingly filtered through culture, challenging, or alternatively, extending our sense of what is meant by reality. The intention is to suggest, by implication, in a kind of photographic 'still' frozen in time, an experience of the

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<sup>1</sup> James Cowan, *A Mapmaker's Dream. The Meditations of Fra Mauro, Cartographer to the Court of Venice*, (Sydney: Vintage, 1997), p. 12.

night sky, and a synthetic and imagined map of the hidden phenomena within it. It is also in the process, intended to be an exploration of the properties of light as a visual and aural medium that, in the case of the digital prints, is different from painting and hand made graphics yet has grown out of my understanding of them.

Embedded within the works and their imaging technologies are layers of information that appear simultaneously. This is what I would describe as a 'double awareness', where the intention is to layer multiple surfaces that penetrate each other and reveal different processes and images simultaneously. They can be experienced through the viewers' ability to decode and interact with the functional and artistic structures contained within both the actual and virtual spaces. In this way meaning can be deciphered in relation to a broader network of relations. Stacey Spiegel recounts how the late Doc Eggerton from MIT described film as a storage medium and images as encoded information, stating:

'you have to know how to read an image,' ... [and holding up a photographic satellite image he would]... proceed to describe what he saw in that generic photographic image; everything from geographical location to geological character to celestial time to local temperature, humidity, wind and so on, as he moved to finer and finer grain detail.<sup>2</sup>

Intuition also has the insight of observation. Often it was during the printing process, or after the works had been made, that I fully realized the relationships and connections beginning to appear. These had emerged in unexpected ways from my research and subconscious musings.

My investigations have led me to imaging techniques surrounding the process of mapping cosmic space. These technologies work with the emanation of light and data, in which scientific research employs such things as particle detection, radio astronomy and spectroscopy which cannot be seen by the naked eye. Although interested in becoming more informed about how these practices operate, I am aware that there is a limit to how much the lay person can hope to understand.

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<sup>2</sup> Stacey Spiegel 'Emerging Space – From Plato's Cave to the Rotterdam Harbour Simulator' in *Painting in the Age of Artificial Intelligence*, ed., David Moos, Art and Design Profile No. 48, (London: Academy Editions, 1996), p. 27.

As scientist and multimedia artist Adam Nieman observes:

[n]on- astronomers rely on guidance when, for instance, confronted with startling images from the Hubble Space Telescope. The techniques employed are not transparent for non-astronomers, nor are the theoretical assumptions behind the interpretation, nor the choices made in presenting data... non-astronomers ...rely on guidance about how they should orient themselves to those results.<sup>3</sup>

### **Night Journeys.**

I work with a hybrid mix of media, objects and images, which sometimes appear as multiples, variations and series. The work has unfolded in a number of inter-related and layered ways, sometimes site responsive and usually able to be reconfigured according to their location. They are able to operate somewhat like a nomadic narrative, in which the literal and metaphorical elements are revealed through changing perceptions of time and space. In 2004 I began testing the research questions with an installation of work titled *Night Journeys* (at Stephen McLaughlan Gallery). The intention was to set in train a perceptual play of relationships between images and objects in and of space. The components involved a digital print, an aerial view, partly framed by the aircraft window, which I photographed over the Timor Sea at dusk, (a liminal space between the upper atmosphere and the cloud strata), a vertical strip of red light projected on to the wall and floor that acted as a trope-like signal or flash, a sound recording, and a series of object paintings with deep returns. (See fig. 9).

These works, tall cylinders, long thin panels and gore shapes, through their placement and their object-like geometry and physicality, in contrast with the more ephemeral patterns of light on their surfaces, required the viewer to physically navigate the space. As one moved through the space the experience of the inter-relation with these objects changed, as well as the visual interactions between light, space and time. The intention, through their

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<sup>3</sup> Adam Nieman, *Welcome to the Neighbourhood: Belonging to the Universe*, Leonardo, Vol. 38, No. 5, 2005, p. 385. He also comments in 'Human Eyes and Atomic Landscapes: The Visual Culture of Scanning Probe Microscopy' that '[i]mage makers draw on the conventions of visual culture to make data accessible to human senses. Landscapes and landscape art provide scientists with a powerful visual language to give meaning to their data. Image makers are constrained both by the visual culture in which they operate and by the data the images denote, but they are ingenious when it comes to bridging the 'super-sensory gap' between scientific instruments and human vision.' [www.adamnieman.co.uk/writing/wholethesis.pdf](http://www.adamnieman.co.uk/writing/wholethesis.pdf) p 2-3. [accessed 2006].



Fig. 9 Felicity Spear, *Night Journeys*, 2004, installation (detail), oil on canvas on industrial strength cardboard columns, 208 by 47 cm, oil on canvas on wood, 201 by 36 by 7 cm, Stephen McLaughlan Gallery, Melbourne.

form and surface, was to create abstract mathematical resonances associated with mapping space, geometry and the activity of light. It was to situate the viewer in the materiality of the mapping process, where the art objects themselves revealed on their surfaces waves, networks, intermittent flashes, navigational patterns in light and time, and light associated with the time-lapse photography of stars. (See figs. 10,11,12,13). It was the evidence of the process of navigation and mapping through networks and data within both historical and contemporary technologies.

A convex mirror situated in the space acted as a symbolic reference point. It was an optical device enabling the viewer to reflect on his or her orientation from different or oblique points of view. At the same time, the viewer could experience the visual distortions of the works situated in the space created by the shape of the mirror's surface and its consequent light reflection. ( See fig. 14). The co-ordinates of latitude and longitude of the Gallery, recorded with a hand held global positioning instrument, or GPS, appeared beneath the mirror. The ambient sounds forming the audio-installation, (assisted by a sound technician), interacted with the space in a more auratic way. I selected or recorded short, repetitive sounds sourced from analogue and digital material lasting about a minute. These were recordings of waves against the hull of a moving boat superimposed with electronic sounds in random short bites superimposed over longer pulses. <sup>4</sup>

### **Which Way Is Up ?**

The subsequent project has become the major part of my research. This involved working with printmaking, the cartographic language of the European visual tradition (where art and science once shared a field of inquiry), in conjunction with contemporary cartographic practices associated

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<sup>4</sup> Whilst conducting research at the National Maritime Museum and Observatory at Greenwich in London in 2004 I was able to experience the multimedia artist Bill Fontana's temporary sound sculpture, *Wave Phases at Chesil Beach* 1999, a sound sculpture of Chesil Beach using remote microphones, audio codes, digital lines, playback system, hard - disk recorder. An image and text can be found in *New Vision of the Sea – Contemporary Art at the National Maritime Museum*, London: National Maritime Museum, 1999, p.15. The sound emanated from loud speakers buried in the ground along the approach path to the main entrance. Although this work was in recorded form, initially the sound of breaking waves was directly transmitted digitally from microphones installed at the beach and able to be experienced directly in real time, emphasizing the ephemeral and changing nature of sound, where audio space is overlaid over visual space, mapping and imagining the beach through the air waves.



Fig. 10 Felicity Spear, *Night Journeys*, 2004, installation (detail), oil on canvas, on industrial strength cardboard column and panels, projected light, dimensions variable, Stephen McLaughlan Gallery, Melbourne.



Fig. 11 Felicity Spear, *Night Journeys*, 2004, installation (detail), convex mirror, oil on canvas on panels, projected light, dimensions variable, Stephen McLaughlan Gallery, Melbourne.



Fig. 12 Felicity Spear, *Night Journeys*, 2004, installation (detail), oil on canvas on panels, 220 by 30 by 5 cm, and 180 by 30 by 7 cm, Stephen McLaughlan Gallery, Melbourne.



Fig. 13 Felicity Spear, *Night Journeys*, 2004, installation (detail), oil on canvas, on panel, 240 by 30 by 5 cm, Stephen McLaughlan Gallery, Melbourne.



Fig. 14 Felicity Spear, *Night Journeys*, 2004, installation (detail), mirror reflection view, convex mirror, 75 cm diam., vinyl lettering co-ordinates of Gallery, oil on canvas on industrial strength cardboard columns, oil on wood, pigmented ink jet print on cotton rag paper, sheet size 120 by 90 cm, Stephen McLaughlan Gallery, Melbourne.

with the transmission of light. It was a somewhat chance and experimental process of mapping through transparent layers. It involved the collection, sorting, distillation, and assembling of fragments of 'found' analogue and digital images and data. These consisted of historical maps, Aitoff (ellipsoid) and polar azimuth projections, diagrams of an analemma (equation of time) and red shifts in the spectra of quasars, photographs and telescopic mapping data from contemporary and historical sources and collections associated with astronomy, astrophysics, gravitational forces, remote sensing and light in the electromagnetic spectrum. They are from the N.A.S.A. website (National Aeronautics and Space Administration in the U.S.A.), the National Maritime Museum at Greenwich in the U.K., and the Anglo-Australian Observatory astronomer and photographer David Malin's website. These images, found in the course of my research, are discussed in greater detail in Appendices 1 -10.

This data formed the basis for a series of digital pigmented inkjet prints, In 2005 the major work ( titled *Deep Field*), together with a group of smaller works (titled, *Bi-Polar 1,2 and 3, Out There and South* ), were sent to the U.K. for the exhibition *Which Way Is Up?* at Fermynwoods Contemporary Art Gallery and the University of Hertfordshire Art Gallery. This installation was created in collaboration with Sarah Winfrey, a fellow artist who had returned to the U.K. after some time in Australia, and with whom I have exhibited a number of times before.<sup>5</sup> We share an interest in the visual and technological histories of revealing and mapping space, and our subjective relation to this. Our work emphasized a complementary engagement with the manipulation and representation of space, and although working with different media, we both used digital technologies in the construction of the work. Sarah worked with metal sculptural forms and projections which were manipulated, marked and distorted in various ways. (See figs.15,16). This

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<sup>5</sup> Nicholas Shakespeare in his article 'The Power of the South', (A2, *The Age*, Melbourne, 27/05 06), p.13, talks about the tensions between the two global hemispheres observing that, '[i]n Euro-centred cartography, England where I was born, is located near the top; Australia near the bottom. Named for the Latin for Southland, Australia is a case of a continent being invented before being discovered (at least by Europeans), the Greeks believing that there should be a gigantic landmass to counterbalance the North....Up north...is - spatially speaking – the head. It's cerebral, detached, sterile, cold. And yet an irony is that the north pole is tamer than its antipodean equivalent. ... From the polar star everyone knows where they stand. A self-fulfilling metaphor it seems to me of the northern psyche. Aligned. Geometric. Clear headed. Guided by the brain and not the loins. And static. The more I travel I glimmer that south is not just a compass point, a direction, but also an indication of temperament; and attitude and an affiliation.'



Fig. 15 Felicity Spear, Sarah Winfrey, *Which Way Is Up?*, 2005, installation (detail), Felicity Spear, *Out There*, archival pigmented inkjet print, sheet size 120 by 88 cm, edition of 10, Sarah Winfrey, *Missing 1*, *Out of Square*, computer etching on metal, dimensions variable, Fermynwoods Contemporary Art Gallery, United Kingdom.



Fig. 16 Felicity Spear, Sarah Winfrey, *Which Way Is Up?*, 2005, installation (detail), Felicity Spear, *Deep Field*, archival pigmented inkjet prints on soft cotton matt paper, 5 sheets, each 3.5 by 1.1 m, Sarah Winfrey, *Missing 1*, computer etching and inks on metal, dimensions variable, Fermynwoods Contemporary Art Gallery, United Kingdom.

project was largely conducted and made possible by the internet and email, and various co-operative institutions, technicians and individuals across the fields of art, science and technology.<sup>6</sup>

My work for the major installation, *Deep Field*, consisted of five pigmented inkjet prints, large paper panels, each 1.1 meter by 3.5 meters. (For the final version of this work for exhibition at Monash University, I have planned three additional panels). The panels were pinned high on the wall side by side, spanning its width. The lower ends of the panels ran out in a curve onto the floor like a giant wave, disrupting the conventional geometry of wall and floor. The configuration set up a physical experience that shifted the body to and fro' across the work. It drew the viewer up into the space of this large conglomerate image with wide visual sweeps of the eye, reminiscent of an eighteenth century fresco. It was intended to reveal how physical space and fictional space collapse into each other. As if manipulating a camera lens or a mouse, the viewer was able to zoom in and out at different distances from the work. The various layers within the work also mirrored this process, activated by different technological imaging devices used in image capture and the process of mapping. (See figs.17,18).

In this work I returned to an earlier graphic form of mapping and making art through printmaking (but in this case it was the digital print). The creation of this work involved working with Photoshop computer software. In this way images were scanned and manipulated electronically, superimposing various independent layers in a composite and sometimes chance assembly or montage of photographs, data and map fragments. (See appendices 3,4,9 and 10). The first layer in the construction of all the digital prints was formed using the time lapse star trail images captured by the astro-photographer David Malin. (See appendix 8). The intention was to express the relationship between time and space as well as exploring the durational quality of the still photo. Viewing these works involved zooming in and out at varying degrees of the proximate and distant, where different expressions of time and spatial mappings appear simultaneously. These result in a transparent and

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<sup>6</sup> The mounting of this exhibition (at Fermynwoods Contemporary Art, April - June 2005, and subsequently at the University of Hertfordshire Art Gallery, February - March 2006), and the printing and shipping costs, were made possible through funding from the Arts Council of England.



Fig. 17 Felicity Spear, *Which Way Is Up?*, 2005, installation (detail), *Deep Field*, archival pigmented inkjet prints on soft cotton matt paper, 5 sheets, each 3.5 by 1.1 m, Fermynwoods Contemporary Art Gallery, United Kingdom.



Fig. 18 Felicity Spear, Sarah Winfrey, *Which Way Is Up?*, 2005, installation (detail), Felicity Spear, *Deep Field*, archival pigmented inkjet prints on soft cotton matt paper, 5 sheets, each 3.5 by 1.1 m, Sarah Winfrey, *Missing I*, computer etching and inks on metal, dimensions variable, Fermynwoods Contemporary Art Gallery, United Kingdom.

heterogeneous surface, a deeply layered spatial membrane at a significantly enlarged scale. Cosgrove observes that:

[e]nlarging or reducing the space generated and occupied by phenomena alters their form, their significance, their relations of meaning with other phenomena. Scale selection and manipulation is... a powerfully imaginative and generative act which at once records and sets in train chains of meaning and association in an active process of knowing.<sup>7</sup>

Embedded in this surface is the behaviour of light captured in streaks, flashes, pixels and distortions, and an almost hallucinogenic emanation of colour and patterns, flecks and dots. (See figs.19,20,21,22,23). In the process of the enlargement and final printing of this work more detailed evidence emerged in a serendipitous way. This further revealed the technological processes involved in image capture, and the structure and motions of matter in a space still being mapped and coming into being. It was in retrospect that I realized the coincidental relationship between the atmospheric purplish-red light that derived from Malin's star trail photograph, and which permeates the whole image, and the changing colour of the universe. This was identified recently by astrophysicists who devised a cosmic spectrum, revealing that over time the colour has changed from the predominantly blue light of younger stars to the currently more evident red shifts of the relatively larger number of older stars.<sup>8</sup> The space-borne Hubble Space Telescope has given us a deeper look into the universe and enabled us to see further back into time. This work references the 'Deep Field' image taken from the space-borne Hubble Space Telescope. The Telescope's virtual eye has focused deep into the universe, further back into time, to the extent of the universe's observable limits.<sup>9</sup>

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<sup>7</sup> Cosgrove, *Mappings*, p. 9. It is said of the famed 19<sup>th</sup> century French artist Monet, that he intuitively worked in close relation to the most advanced scientific thought of the day, producing the painterly embodiment of the vibration of particles in matter, and the lines of force that form a unifying field. In light of this Monet felt driven to create a more immersive environment in which the spectator could have an aesthetic experience of his work. As Shattuck observes, 'The dramatic change of scale of his late work seems to spring from his hyperesthesia, from his preternatural vision of universes physicists were trying to map.' Roger Shattuck, *The Innocent Eye*, (New York: Farrer Strauss Giroux, 1984), p. 230.

<sup>8</sup> European Organization for Astronomical Research in the Southern Hemisphere, *The Colour of the Young Universe*: [www.eso.org/outreach/press-rel/pr-2003/pr-34-03.html](http://www.eso.org/outreach/press-rel/pr-2003/pr-34-03.html) p.1, [accessed 31/01/07].

<sup>9</sup> This space-borne telescope, with its huge and complex reflective mirror has through its observing and imaging capacity changed our view of time, distance and perspective. In 1995, using computer generated photographs and data, over a ten day period the Hubble Space Telescope observed what amounted to a 'core sample' of the universe containing more than 1,500 galaxies.

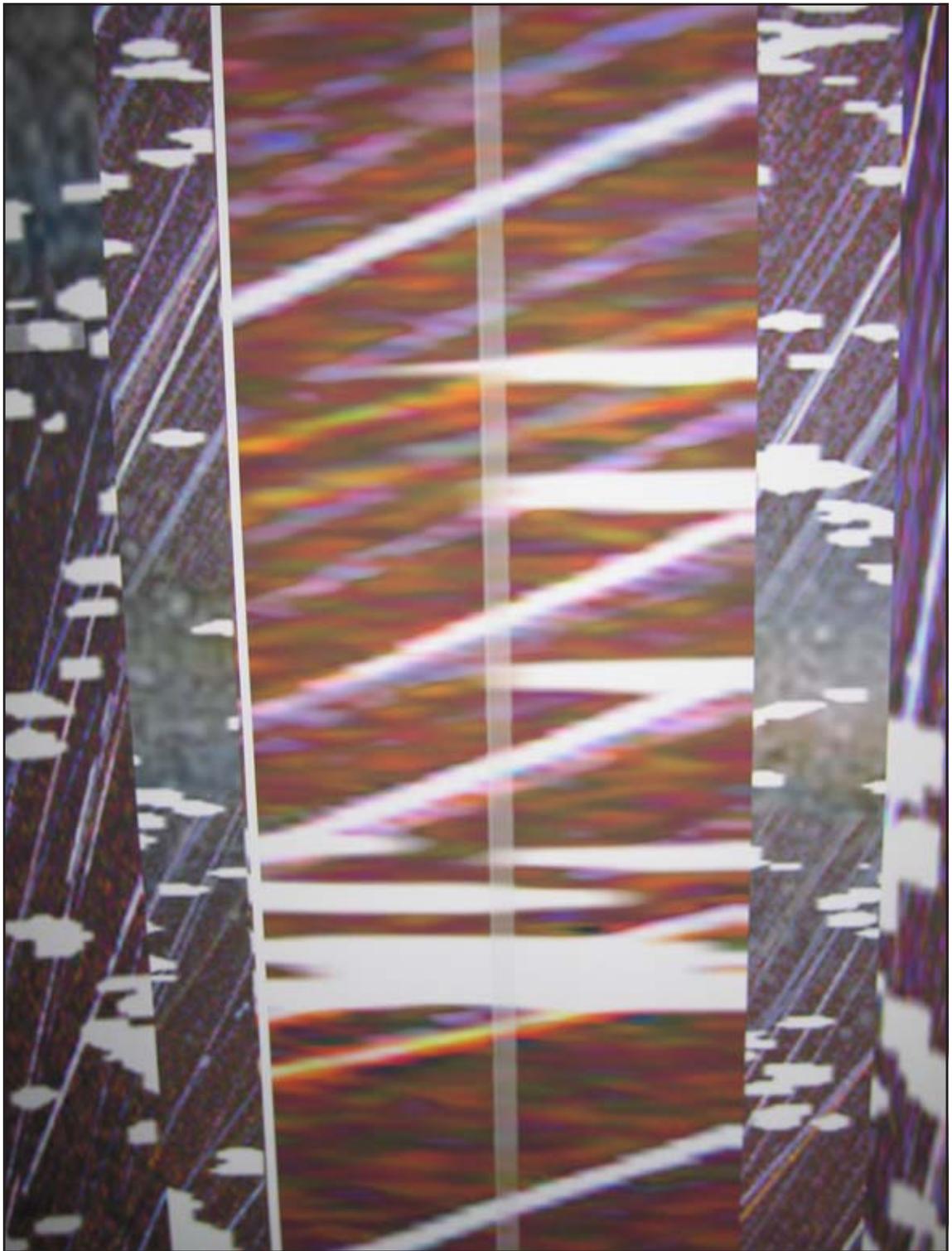


Fig. 19 Felicity Spear, *Which Way Is Up?*, 2005, installation (detail), *Deep Field*, archival pigmented inkjet prints on soft cotton matt paper, 5 sheets, each 3.5 by 1.1 m, Fermynwoods Contemporary Art Gallery, United Kingdom.

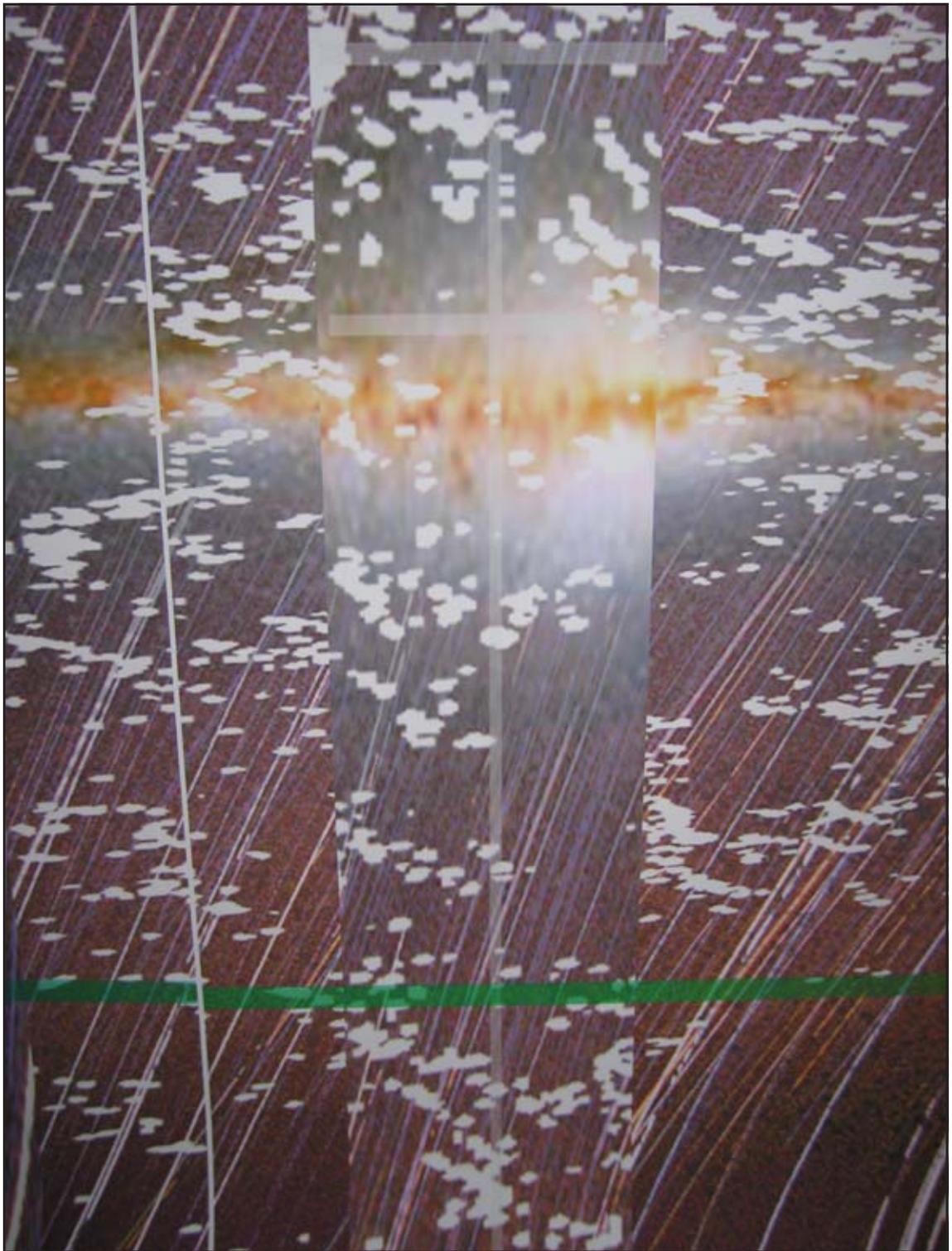


Fig. 20 Felicity Spear, *Which Way Is Up?*, 2005, installation (detail), *Deep Field*, archival pigmented inkjet prints on soft cotton matt paper, 5 sheets, each 3.5 by 1.1 m, Fermynwoods Contemporary Art Gallery, United Kingdom.

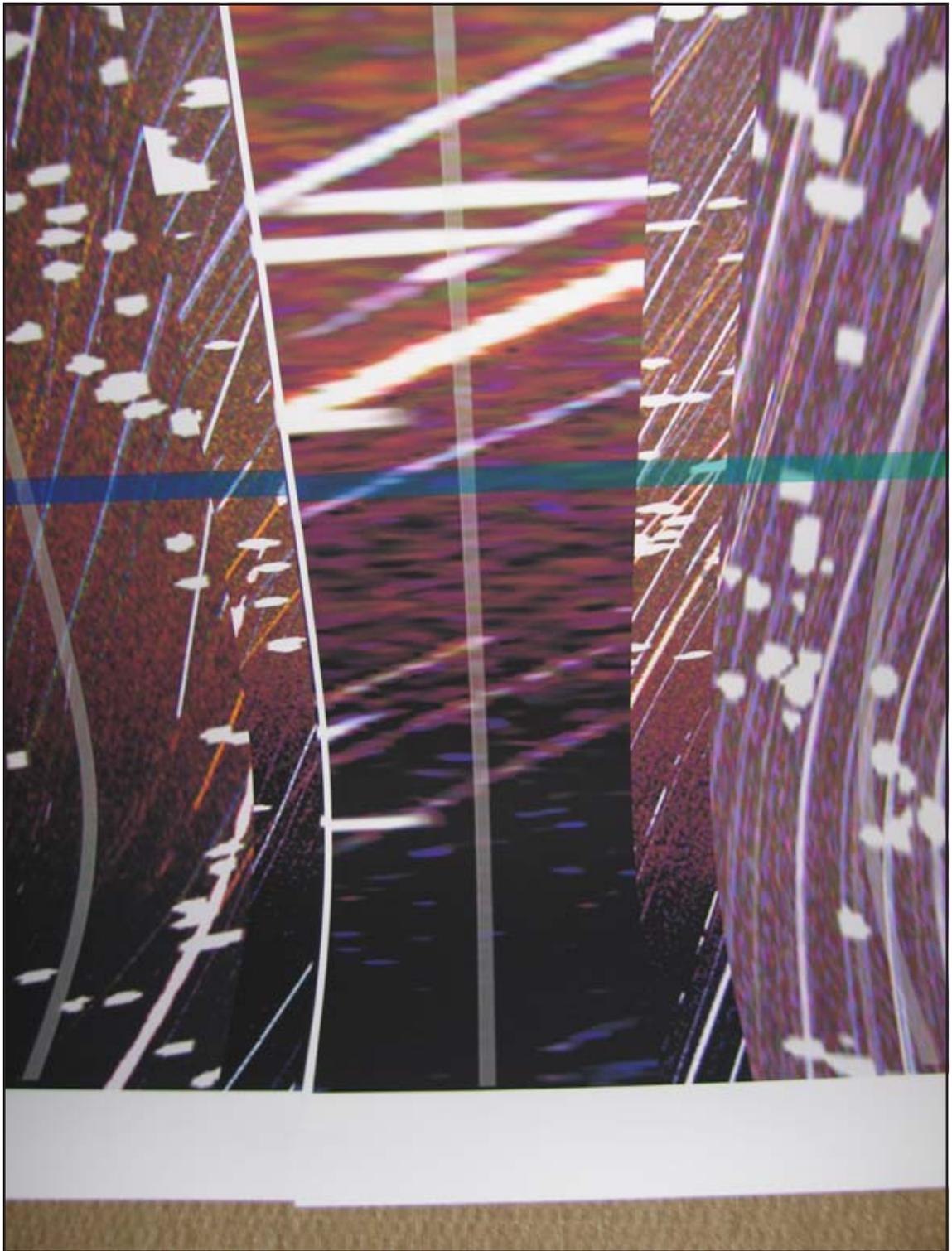


Fig. 21 Felicity Spear, *Which Way Is Up?*, 2005, installation (detail), *Deep Field*, archival pigmented inkjet prints on soft cotton matt paper, 5 sheets, each 3.5 by 1.1 m, Fermynwoods Contemporary Art Gallery, United Kingdom.



Fig. 22 Felicity Spear, *Which Way Is Up?*, 2005, installation (detail), *Deep Field*, archival pigmented inkjet prints on soft cotton matt paper, 5 sheets, each 3.5 by 1.1 m, Fermynwoods Contemporary Art Gallery, United Kingdom.

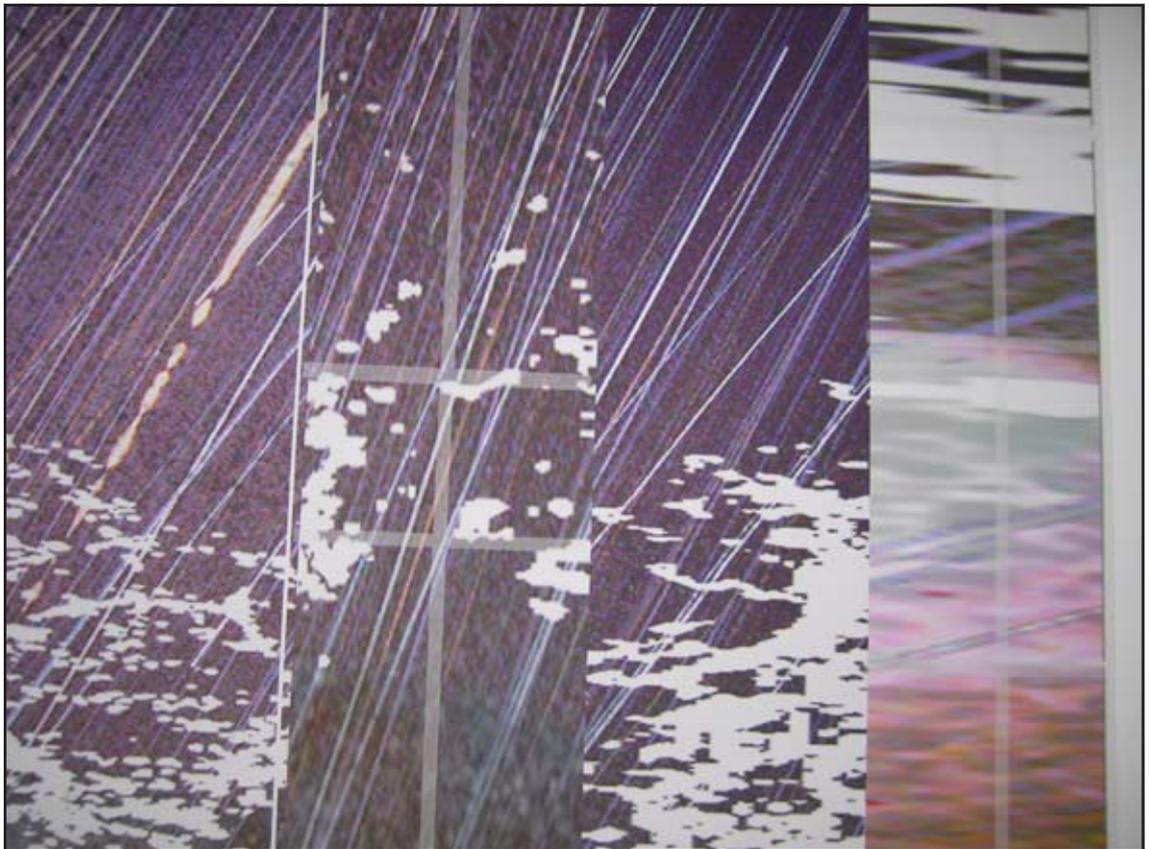


Fig. 23 Felicity Spear, *Which Way Is Up?*, 2005, installation (detail), *Deep Field*, archival pigmented inkjet prints, 5 sheets, each 3.5 by 1.1 m, Fermynwoods Contemporary Art Gallery, United Kingdom.

Each layer of this work has its own content, but when these separate layers are overlaid together they form a stratified amalgam of relationships amongst parts. They form a montage of multiple and hybrid elements, where one layer is intended to become legible through the lens of another. These layers are evidence of a mapping process that has taken place through intervention and observation in an indeterminate reality of complex systems in the natural world. The graphic encoding of phenomena, which cannot be subject to direct picturing, mirror a rhythm and pattern in natural phenomena that is mostly decoded through the eye of the analyst. These works are fragmented and layered mappings of light that reference time, space and matter. When looking in to them they seem to develop the appearance of an atomistic, undulating landscape of foaming, flickering and fluctuating surfaces flowing out beyond the wall on to the floor of the gallery. (See fig. 24). The images are intended to extend vision by exploring the behaviour of light and visual sense experience. In this way it is possible to reveal the paradox of this disquieting yet alluring space in which we seek to orient ourselves, and where order and chaos become part of each other in a somewhat chance and experimental process.<sup>10</sup>

Further experimentation with painting, sound and constructed objects has been trialed in smaller projects. This includes photographic work with a one meter diameter wooden sphere.<sup>11</sup> (See fig.25) The intention was to explore phenomenological aspects of this geometric spatial trope, the sphere being fundamental to ancient understandings and representations of cosmic space. Digital prints were also developed out of earlier prints and video material, both found and original. The digital print *Out There*, (see fig. 26), was part of the series that was exhibited in the U.K. It has been created through a transparent layering process. Embedded in its fragmented and textured surface, rather like a palimpsest, is evidence of the history of printmaking. The layered surfaces are an amalgam of an engraved image (see appendix 5), photography (the Malin image of star trails at the South Pole), and the

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<sup>10</sup> A small version of *Deep Field*, in single print form, was short-listed for the World Year of Physics Art Prize at Macquarie University in Sydney, and exhibited from December 2005 for two months. This Award was established to honour the 100 year anniversary of Albert Einstein's transformative work.

<sup>11</sup> This sphere was a project I proposed to my stretcher maker, Mark Boyle (Frameworks), who is also a furniture maker. It was purely experimental and no time limit was set for its completion. Eighteen months later he had constructed this prototype. Made of wood the individual arcs from which it is constructed are marked with a surface grain of fractal patterns.



Fig. 24 Felicity Spear, *Which Way Is Up?*, 2005, installation, *Deep Field*, archival pigmented inkjet prints, 5 sheets, each 3.5 by 1.1 m, University of Hertfordshire Art Gallery, United Kingdom.

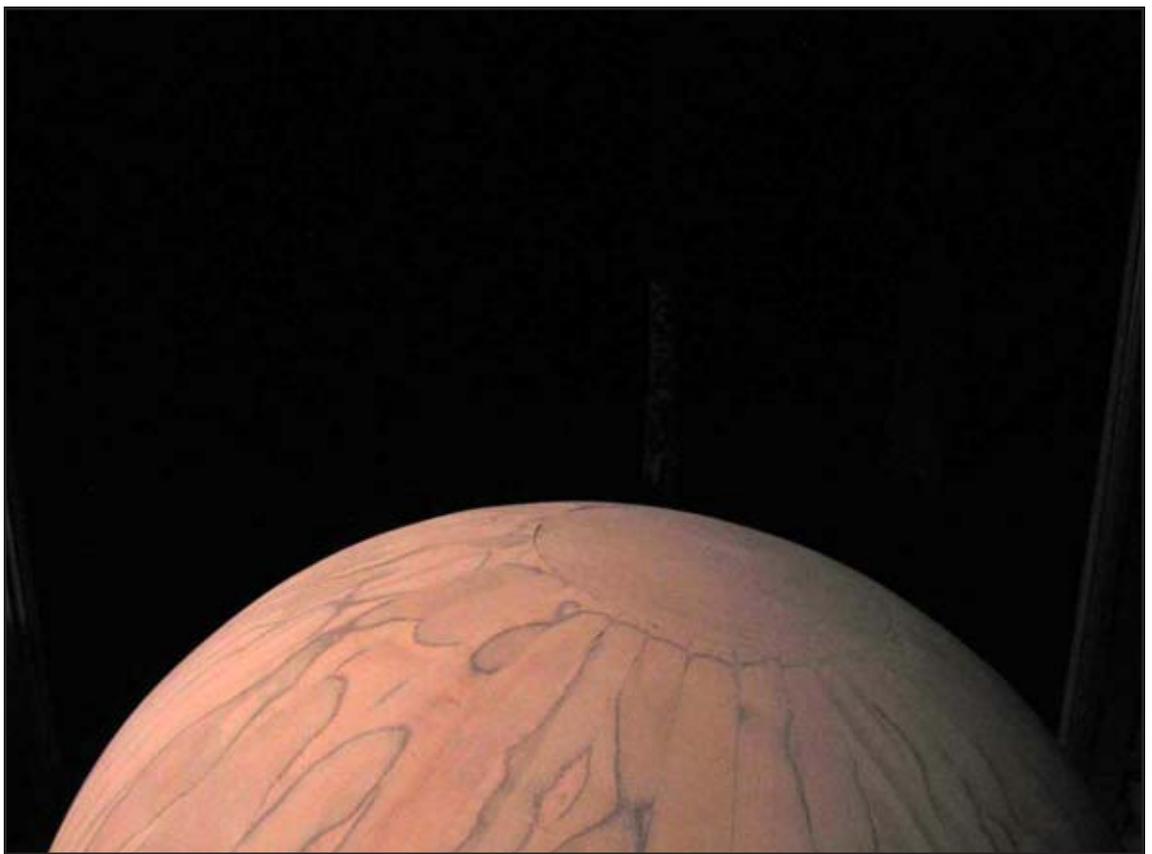
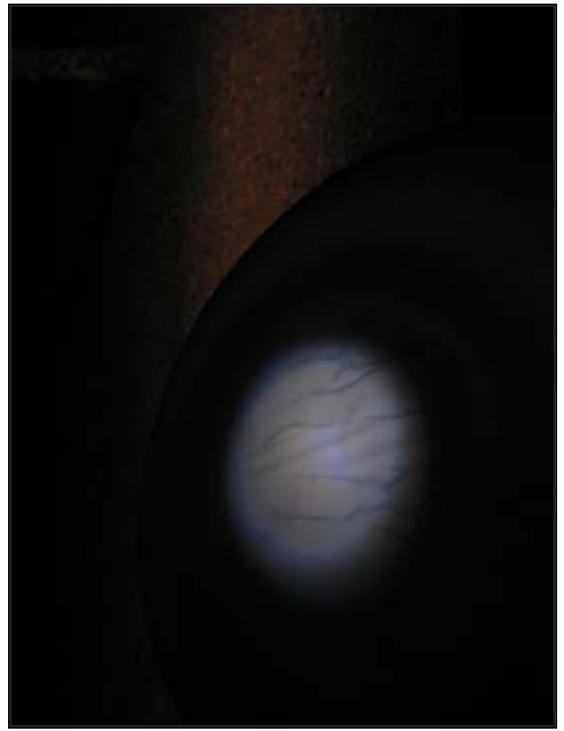
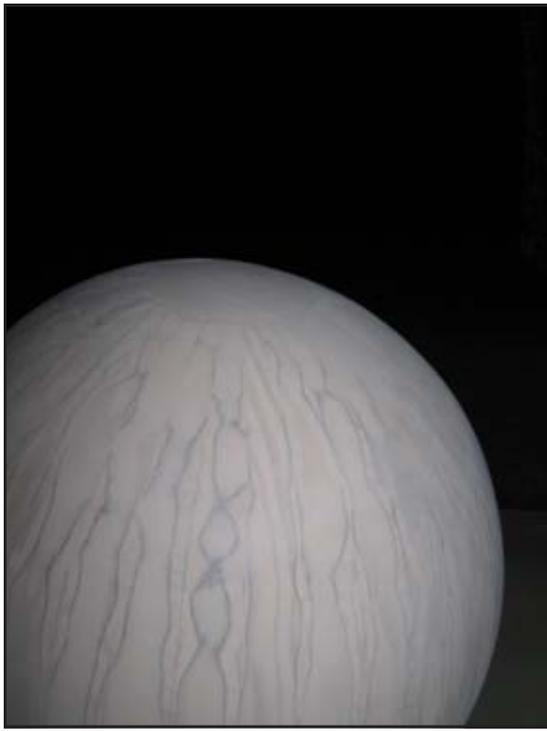


Fig. 25 Felicity Spear, *Sphere*, 2004–5, wood, paint stain, light, 1 m diam.

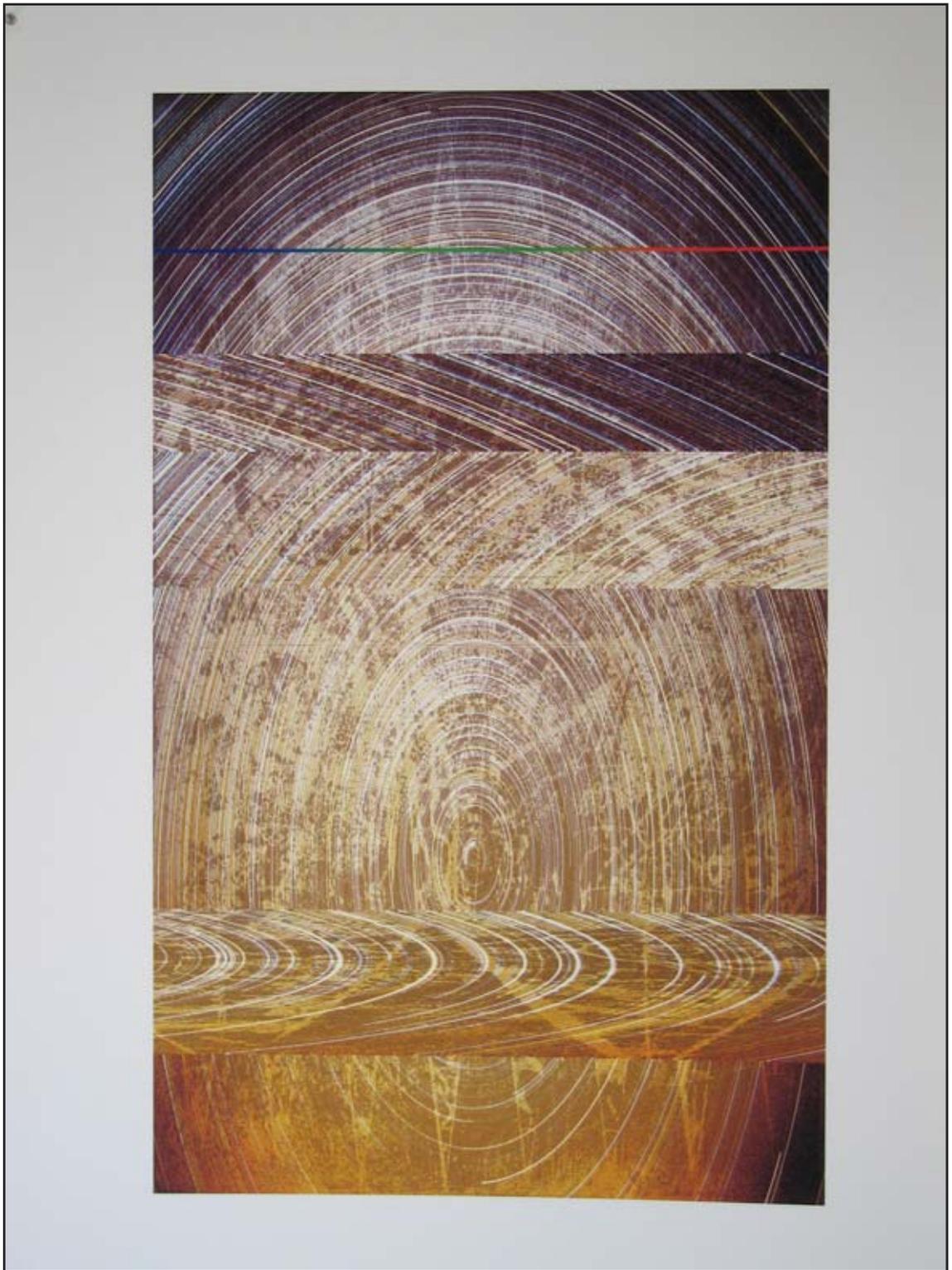


Fig. 26 Felicity Spear, *Out There*, 2005, archival pigmented inkjet print on Bright Cube matt paper, sheet size, 120 by 88 cm, edition of 10.

final printing as a digital print. The strips and layers of fragmented lines of the star trails push and pull against each other like gravitational distortions, and are cut through by a thin line of light referencing the electromagnetic spectrum.<sup>12</sup>

The digital prints titled *Bipolar 1, 2, and 3*, (see figs.27, 28), also shown in the U.K., were based on the *Aitoff Projection* (see appendix 1), and a series of images of artificially intense, blue-green, ultra-violet x-rays of globes. (See appendix 2). In *Bipolar 1*, I have used a polar projection from a rare map. (See appendix 6). In *Bipolar 2* I have used fragments from the NASA image of the *Cassini-Huygens False Colour Image of Saturn's Rings*. (See appendix 7). The x-ray images are stretched out or squashed into ellipsoids that reference both mapping projections of the *Cosmic Micro-wave Background* and gravitational distortions of space. The textures and lines revealed by the x-rays through the surface layers of the historical globes, together with the underlying fragments of Saturn images and star trails, form a map-like surface made from a series of transparent layers. These images are intended to expose a surreal, somewhat hallucinogenic and other-worldly form of reality in which different versions of reality are mapped simultaneously.

### **A Remote Possibility.**

In 2006, I created the installation *A Remote Possibility*, (at Stephen McLaughlan Gallery), referencing analogue and digital imaging technologies and abstract models. It consisted of four different works. They came together through a field of relationships and observations about remote space and the process of astronomical mapping through time. These works, installed in the long, narrow space of the gallery included a gore-shaped painting, titled *Out There*, which hung horizontally on one of the end walls. (See fig. 29). Its form and its objectness was derived from the spatial mapping of the sphere. The painted surface, the nature of which is reminiscent of a black and white photograph, references diagrammatic maps and photographic models generated by telescopes associated with the NASA's Sloan Digital All Sky Survey. (See appendix 10). Its high gloss surface created a play of light and

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<sup>12</sup> *Out There* was short-listed for the Geelong Acquisitive Print Award in 2005 at the Geelong Gallery. It was also exhibited at Stephen McLaughlan Gallery in the group show *05 Formal*, together with two other prints made from the same source, titled *Shrink* and *Stretch*.



Fig. 27 Felicity Spear, *Bipolar 1*, 2005, archival pigmented inkjet print on Bright Cube matt paper, sheet size, 120 by 88 cm, edition of 10.

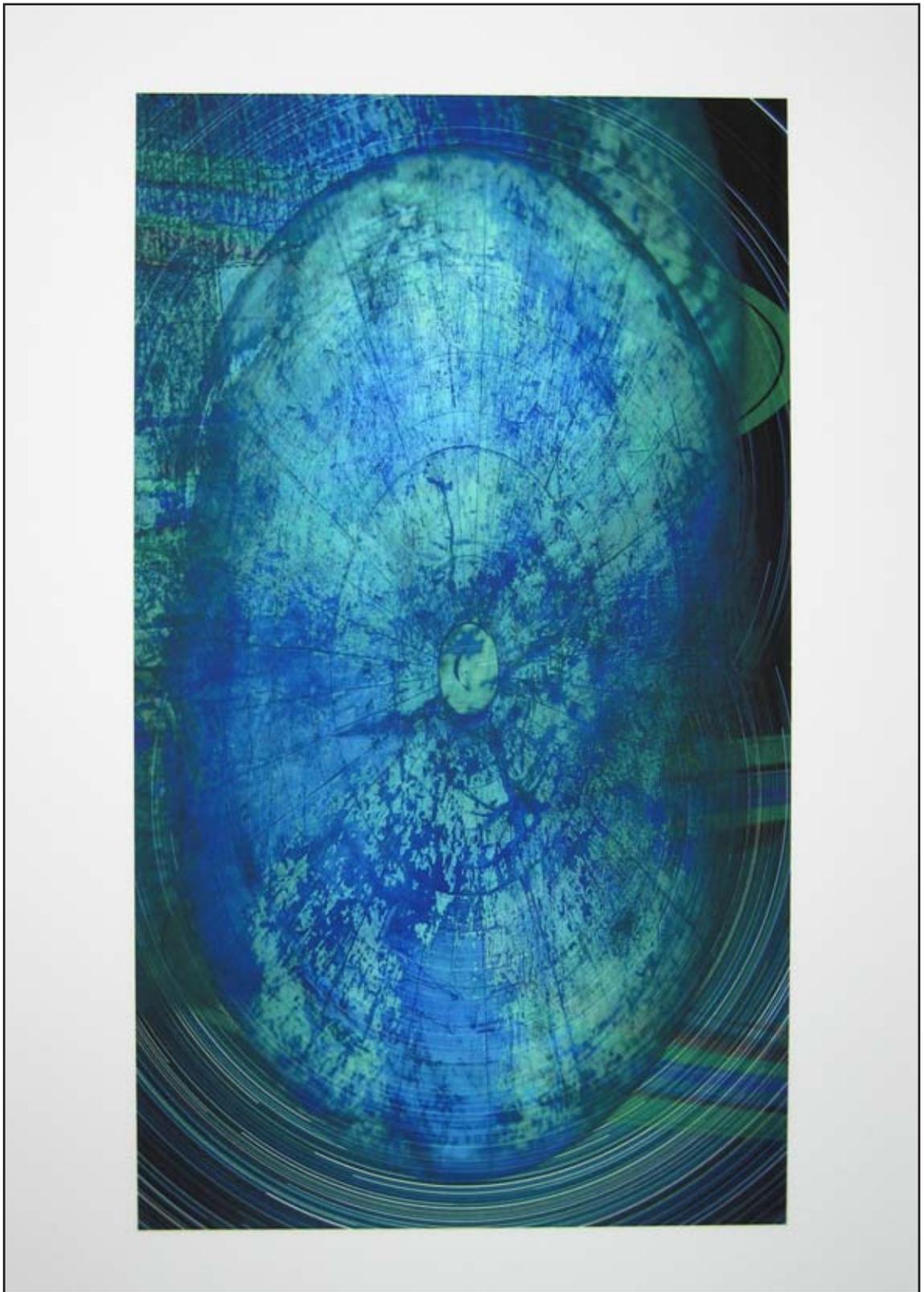


Fig. 28 Felicity Spear, *Bipolar 2*, 2005, archival pigmented inkjet print on Bright Cube matt paper, sheet size, 120 by 88 cm, edition of 10.

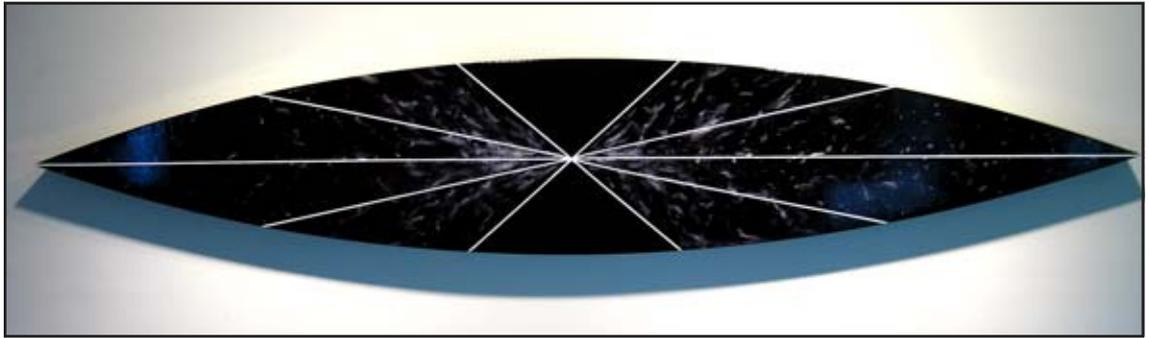


Fig. 29 Felicity Spear, *A Remote Possibility*, 2006, installation (detail), *Out There*, oil on canvas on wood, 35 by 200 by 7 cm, Stephen McLaughlan Gallery, Melbourne.

reflection in real time, the surface mirroring other objects in the gallery and the process of observation by the viewer.

There were two large digital inkjet prints. One, titled *Zoom*, long and narrow, ran horizontally along the complete length of a side wall. (See fig.30). To view this six metre work one must move to and fro' and in and out along its length as the information and the images unfold. It is created from close in detail from a fragment of the central section of the other print. Titled *South* and two metres by one metre, this print hung with the long side vertical, as a large single image on the other end wall at right angles to *Zoom*.<sup>13</sup> (See figs. 31, 32). The digital prints were developed from fragments of historical and contemporary data. These included an analemma (see appendix 2), lines from the red section of the electromagnetic spectrum, sections from the map by Corsali (see appendix 6), x-ray imaging of globes (see appendix 5), and star trail images. (See appendix 8).

A small television-DVD was suspended at viewing height on the other side wall. (See fig.33). The DVD, titled *Turbulence*, shows a rather enigmatic, austere, light and partly shadowed sphere, (in fact the planet Mars). It is seen through a reflecting telescope and the turbulence of the earth's atmosphere, that through this screen based technology appears to have a textured, graininess and an ever-unfolding kinetic energy.<sup>14</sup> In a minimal way it was intended as an experience of contemplative duration. The colours at the edges of the sphere vibrate and shift as the image agitates, somewhat like a process of 'painting with time.' This was a term used by the German

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<sup>13</sup> Nicholas Shakespeare in his article 'The Power of the South' (Melbourne: A2, The Age), p. 13, describes an experience looking into the southern night sky with an amateur astronomer from his home in Tasmania. "[W]hat struck me vividly about this evening of a million stars was the absence of a South celestial pole. Phil flashed his laser pointer out over Oyster Bay The sky was a black void. 'There's absolutely nothing there at all.' And on viewing the aurora australis, 'the horizon flared with a green and vaporous light as if a great black sheet of paper was foxed at the bottom. To the west, over Swansea, the hills were haloed with a dull throbbing glow, while due south the southern lights rose vertically in straight rays, hoisting to the stars even the most jaded eye.' [Due south can be established by lining up the pointers of the southern cross and drawing a line south from the outer most pointer.]

<sup>14</sup> This image (together with a number of other planets and the moon), was recorded by Zane Hammond when I visited the Magellan Observatory in New South Wales. He used a modified web cam through a 12 inch aperture Schmidt Cassegrain telescope with an effective focal length of 7.5 metres. From the astronomers point of view this image is a curiosity rather than the perfect image that otherwise he would strive for in attempting to see into the night sky. Atmospheric turbulence is something to be avoided. From my point of view, as an artist, this image is redolent with associations that are not bound by the parameters of science.



Fig. 30 Felicity Spear, *A Remote Possibility*, 2006, installation (detail), *Zoom*, archival pigmented inkjet print on soft cotton paper, sheet size, 61 by 620 cm, edition of 5, Stephen McLaughlan Gallery, Melbourne.

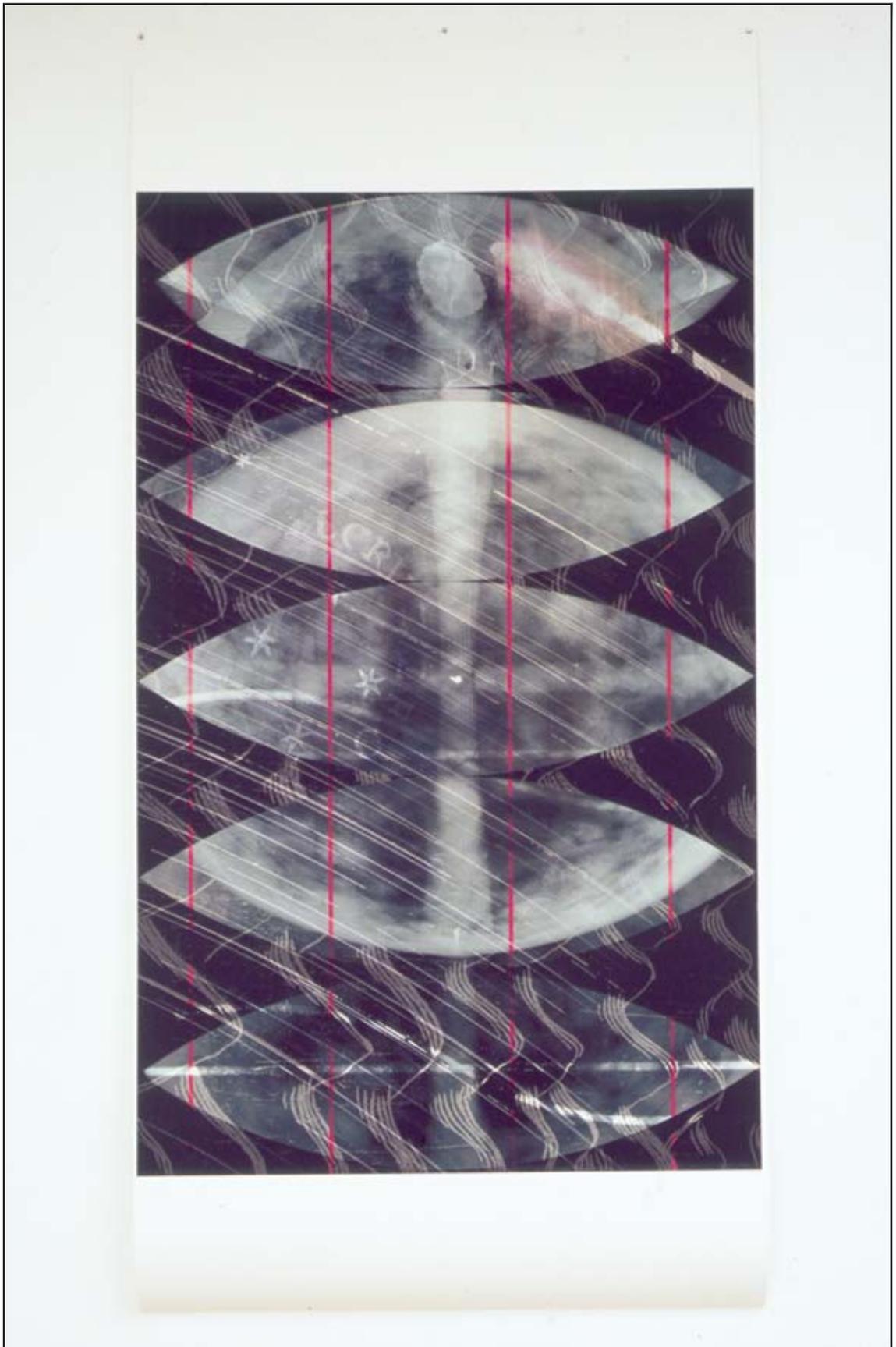


Fig. 31 Felicity Spear, *A Remote Possibility*, 2006, installation (detail), *South*, archival pigmented inkjet print on Bright Cube matt paper, sheet size, 230 by 112 cm, edition of 10, Stephen McLaughlan Gallery, Melbourne.



Fig. 32 Felicity Spear, *A Remote Possibility*, 2006, installation (detail), archival pigmented inkjet prints on soft cotton paper, *Zoom*, sheet size, 61 by 620, and *South*, sheet size 230 by 112 cm, Stephen McLaughlan gallery, Melbourne.



Fig. 33 Felicity Spear, *A Remote Possibility*, 2006, installation (detail), *Turbulence*, DVD, television monitor, and *Out There*, oil on canvas, Stephen McLaughlan Gallery, Melbourne.

abstract painter Walther Ruttmann in 1919 when experimenting with painting and film.<sup>15</sup>

Through the manipulation of light, I hoped to evoke in this installation an ambivalent space. Muniz suggests that x-ray images 'evoke a sense of mystery and danger, of something that cannot be publicly understood or messed with.'<sup>16</sup> They map the unseen. These layered images, fragments of maps, lines of light and x-rays of globes, (revealing their construction and in their surfaces and interiors small details and deformities), are intended to map a more ambiguous space beyond the visible. A space where there is constant movement and change over time. The late Tristan Humphries, a computer artist and researcher, explored the use of computers to transform and extend strategies and methods of image and object making. He described the way in which this process unfolds:

The virtual and the physical, fact and fiction, intermingle seamlessly in this paradoxical world. The artist chooses the moment, selects the view, cutting, pasting, and editing experience. Images and objects are viewed and understood both directly and subliminally, while the expectations and assumptions of the artist and the viewer slip and slide in and out of the authentic.<sup>17</sup>

The images were intended to unfold through various transparent layers as a montage of sensorial and processed information and data. When significantly enlarged they take on a rather more disquieting and strange life of their own, another esoteric layer associated with mapping beyond the visible.

## **Sound.**

An adjunct to my visual research is the immersive sound installation which evolved from research into raw data from stellar emissions obtained from the Parkes and Jodrell Bank Radio Observatories, and through the Australian National University's Australian Gemini Project Scientist, the astronomer Dr. Paul Francis.<sup>18</sup> (A video was made of the installation *A Remote Possibility*

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<sup>15</sup> Cindy Keefer, 'Space Light Art, Early Abstract Cinema and Multimedia 1900-1959', in exh.cat. *White Noise*, eds. Ernest Edmonds and Mike Stubbs, (Melbourne: Australian Centre for the Moving Image, 2005), p. 21.

<sup>16</sup> Muniz, *Reflex*, p. 185.

<sup>17</sup> Tristan Humphries 'From the Virtual to the Physical' in exh. cat. *Transformations Australia – Digital Imaging and the Art Object*, (Melbourne: RMIT University, 1998), p. 6.

<sup>18</sup> *Library of Sounds*, (Creative Commons Attribution 2.5 License), Paul Francis Homepage: <http://msowww.anu.edu.au/~pfrancis/Music/library/index.html>

accompanied by a sound clip from Francis's work, manipulating this raw data to represent *A Journey to the Centre of a Quasar*). These emissions, recorded in both ground and space based observatories, are another form of extended vision. They map space through computer imaging from sound waves in the low energy, non-visible part of the electromagnetic spectrum. Some are eerily soft or static whisperings and others are harsh, insistent and repetitive. Each combination reflects the identity of the stellar object.<sup>19</sup> Through a non-visual sense, the ambient sound data has an integral relationship to the final installation. It is intended to enable the viewer to experience the relationships or disconnects, as the case may be, between all the works, between the visible and invisible, reality and fantasy, data and the senses.

The manipulation of sound by contemporary artists, and the use of what could be described as raw phenomena, continues to echo past influences. The most notable is the mid twentieth century American composer and advocate of concrete reality, John Cage. Ina Blom says of Cage, that he:

posited the radical ideal that any sound – or indeed any phenomena of the world – could be understood as music or as art. He was, in other words, the most explicit propagandist for the notion that art should open itself up to the particularities of the concrete world of phenomena....To Cage reality is indeterminate and indeterminacy is reality. Reality is an infinitely heterogeneous sphere of chance occurrences, a place of becoming where (as Cage puts it, borrowing the words of Marshall McLuhan ) “information brushes against information” ... [However as Blom observes], [c]hance is, simply, framed by cause, and indeterminacy appears only in terms of a sublime fascination for the infinite continuities of the reality-surface. Cage's concrete reality has in fact returned as a fantasy.<sup>20</sup>

A number of artists have worked with astronomy and sound. John Cage at one time using star charts, namely Becvar's *Atlas Eclipticals* to compose a piece for chamber orchestra. In 1991 in Paris the composer Gerard Grisey created a percussion piece, *Music for Percussion and Pulsar, Le noir de*

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<sup>19</sup> Sound waves running through a star help astronomers reveal its inner properties. For example, in Alpha Centauri, the brighter of the two pointers in the Southern Cross, churning gas in the star's outer layers create low-frequency sound waves that bounce around the inside of the star, causing it to ring like a bell with the result that the stars surface begins to pulsate. Astronomers can detect these changes by measuring the small, associated wavelength shifts. Sampling the light from these shifts tells the astronomer about the ages and properties of stars.

<sup>20</sup> Ina Blom, 'Too Close to the Real' in *Olafur Eliasson – Surroundings Surrounded*, p. 102, 103.

*l'étoile*, (see fig. 34), incorporating the tempos and rhythms generated by pulsars recorded from a radio-telescope. The composition of sounds are superimposed over an astronomical photograph of the *Vela Pulsar* by the astronomer David Malin.

### **Text and image.**

Books and maps have a history within the traditions of printmaking. I have brought together a group of digital prints and text into a limited edition artist's book. Titled, *An Atlas of Remote Possibilities*, it grew out of my historical research. What became evident was that for each seminal shift in thinking there was always a book. In the course of writing this exegesis I have made reference through quotation in the text to James Cowan's book *A Mapmakers's Dream – The Mediations of Fra Mauro, Cartographer to the Court of Venice*. Cowan, through Fra Mauro's observations draws attention to the poetics of mapping. In the final pages of the book Fra Mauro admits to the map as a mirror of himself, emphasizing the subjective nature of the map. I quote his words in the *Atlas of Remote Possibilities* to elucidate what I believe finally emerges from my response as an artist to the process of mapping, and which are reflected in the digital prints inserted into this artist's book. Fra Mauro observes:

[g]azing at the map, I begin to see a portrait of myself. All the diversity of the world is intimated on the parchment, even as this diversity is intimated within me. An aura of remoteness hovers about its contours, as it does about my head, clarifying what I see. Both the map and myself cling to the invisibility of what we represent. Nor is the tension between us that of myself and it, but of the merging of these. The map and myself are the same.<sup>21</sup>

Certain books, through their enunciation and perpetuation of ideas at particular times, places, and in different cultures, have become visionary and iconic texts. In the catalogue for the exhibition *Mirror World – Books and Ideas*, mounted in 2005 at the State Library of Victoria, Marshall McLuhan is quoted as saying, 'the book is an extension of the eye.'<sup>22</sup> The author continues:

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<sup>21</sup> James Cowan, *A Mapmaker's Dream*, p. 144-145.

<sup>22</sup> *Mirror World - Books and Ideas*, exh.cat. (Melbourne: State Library of Victoria, 2005), np.



Fig. 34 Gerard Grisey, *Music for Percussion and Pulsar*, *Le noir de l'étoile*, Paris, 1991.

[b]ooks now share [the space of communication] with television and the internet, but have not been superseded by them. Because of their physicality, their ability to be held and owned, their bringing together of word and image, books continue to be central to our lives.<sup>23</sup>

The architecture and design of books is often dictated by their content. Books are physical objects to be experienced in time and space where the content reveals itself. The artist's book has a sense of the unfolding of time through the viewing experience. The information on the individual pages, hidden at first and like separate moments in time, is revealed and then folded into each other as the viewer turns the pages.

In this chapter I have discussed the objects and map-like images made during the process of my research. They engage with the process of mapping and technologies that are associated with a range of light in the electromagnetic spectrum, exploiting a resonant series of visual and auratic associations between nature and culture, art and science, data and the senses. Constructing the digital prints involved the manipulation and layering of fragments of historical and contemporary maps, photographs, diagrams and computer images or models of found material. The layers form a transparent surface constructed using the technologies involved in observation and image capture (using telescopes and analogue and digital photography). As a result the images appear like photographic 'stills', frozen in time. Situated in both a physical and fictional space they propose alternative mappings of reality that stimulate the imagination. They attempt to reveal to the naked eye observer not only what is visible, but perhaps for some more interestingly, what is not visible in the night sky. It is a hybrid mapping of cosmic space occupying a liminal space between art and science. The intention has been to draw attention to new or different ways of experiencing 'back here', by thinking about 'out there.'

The layering process references processes associated with the long tradition of printmaking. Transparent layering also proposes other more creative acts for the mapping of space. It enables different spaces to appear simultaneously, and to interact with each other to reveal a synthetic or imagined map, a construction, of the hidden phenomena in the night sky. It is a place where it is now understood that space-time warps in response to

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<sup>23</sup> Ibid., np.

matter and energy, and when and where things happen is purely relative to the observer. This process echoes perhaps Nietzsche's query, 'Is there still any up or down?',<sup>24</sup> and his appeal to engage with different historical spaces simultaneously to broaden our vision of the world. Cosgrove says of mapping:

[c]ontemporary scholarship seeks often to reverse the tendency [of closures and certainties], by seeking out the instabilities of meaning in the finished map, its openness to interpretation and its stimulus to further elaborations of spatial meaning.<sup>25</sup>

The succeeding chapters develop the context for the research, discussing the field of relationships out of which it has evolved, its historical underpinnings and the meanings that emerge from these. They are, as Pickles observes 'genealogical tracings of linkages and influences....'<sup>26</sup> Rather than dedicate a chapter to the precedents established by other artists I thought it was more profitable to weave them through the layers of the text. In this way I was able to make more direct connections between other artists' work, and the contexts surrounding my own work.

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<sup>24</sup> Lawrence Rinder, ed. *Searchlight – Consciousness at the Millenium*, (United Kingdom: Thames and Hudson, Californian College of Art and Crafts, 1999), p. 87.

<sup>25</sup> Cosgrove, *Mappings*, p. 14.

<sup>26</sup> Pickles, *A History of Spaces*, p. 89.