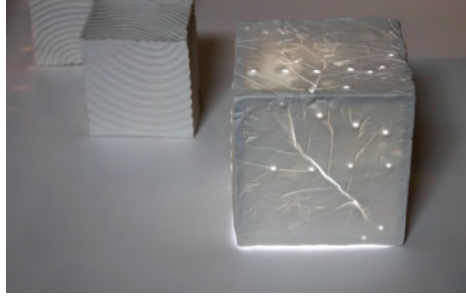
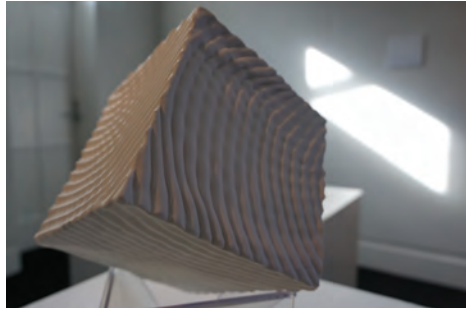




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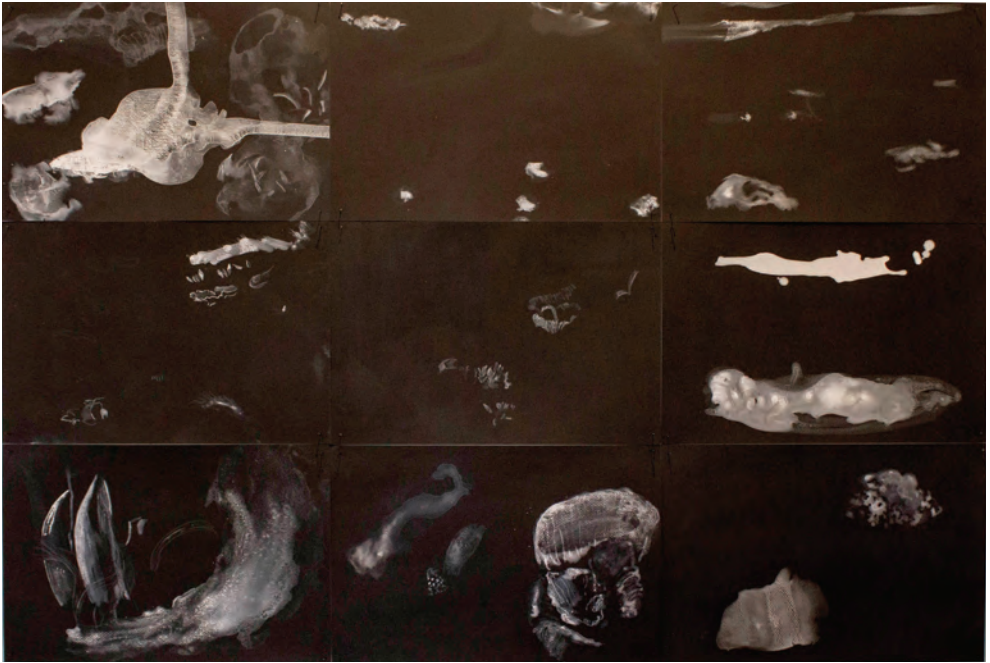


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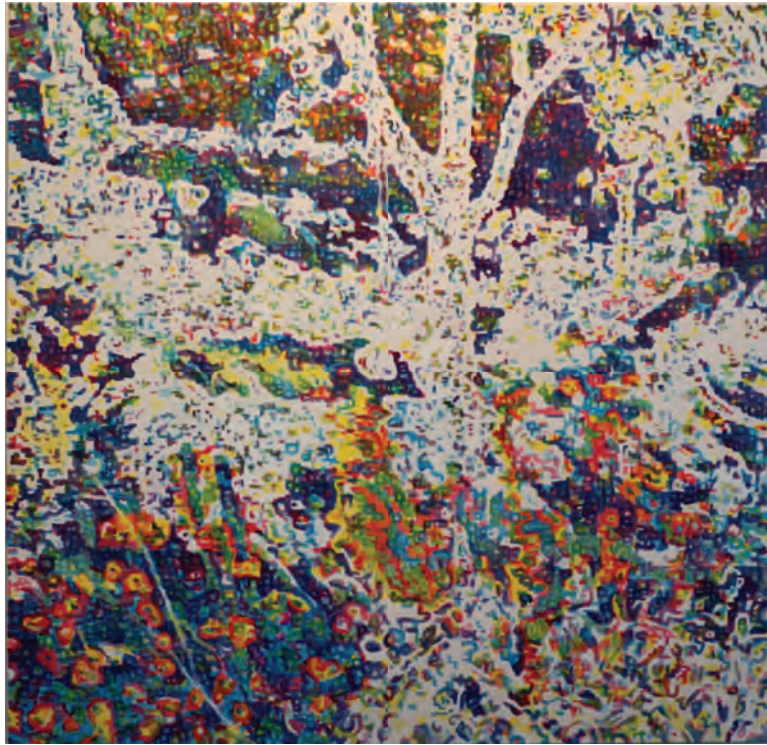
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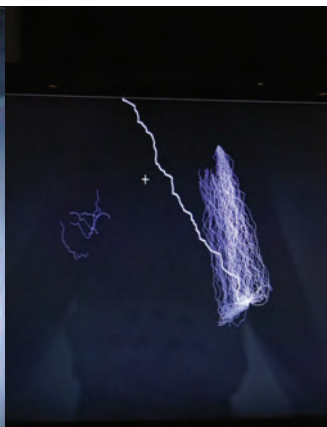
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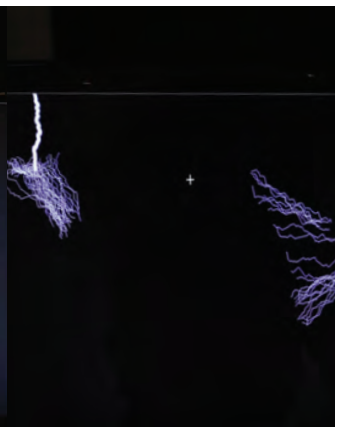
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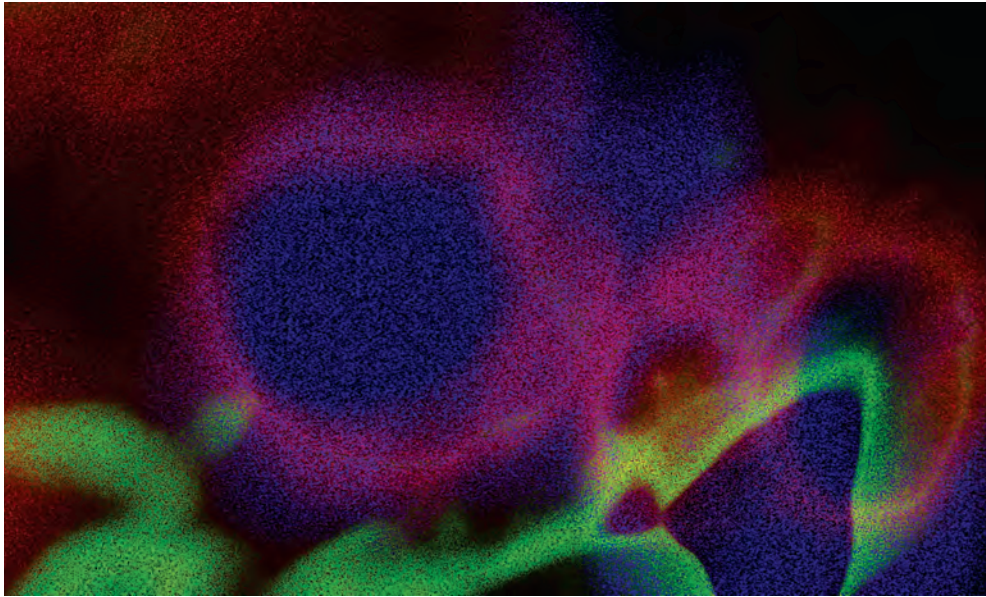
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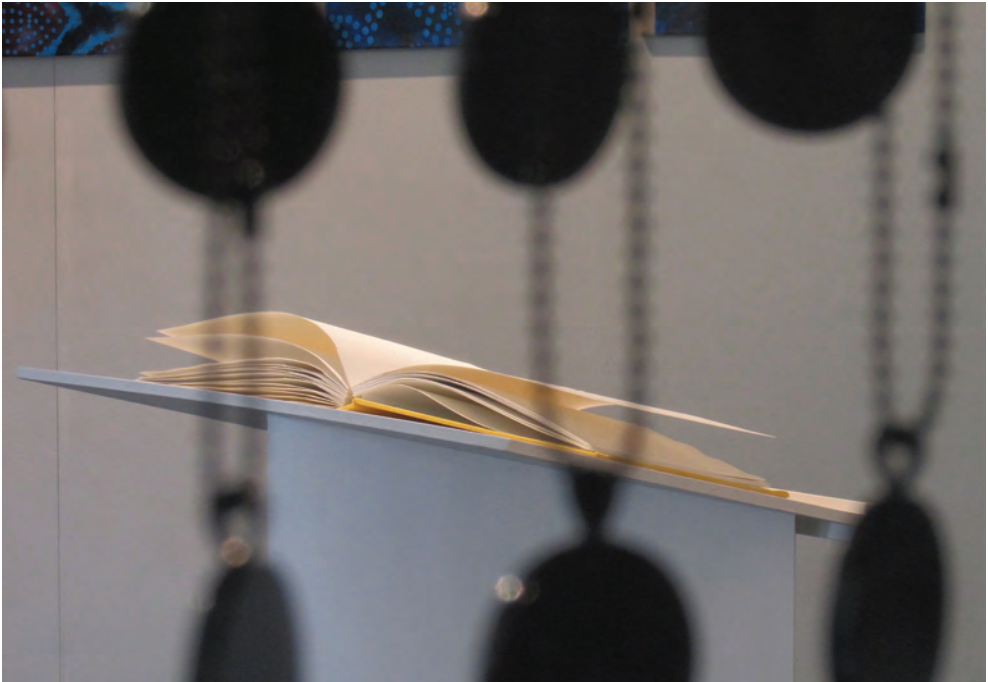
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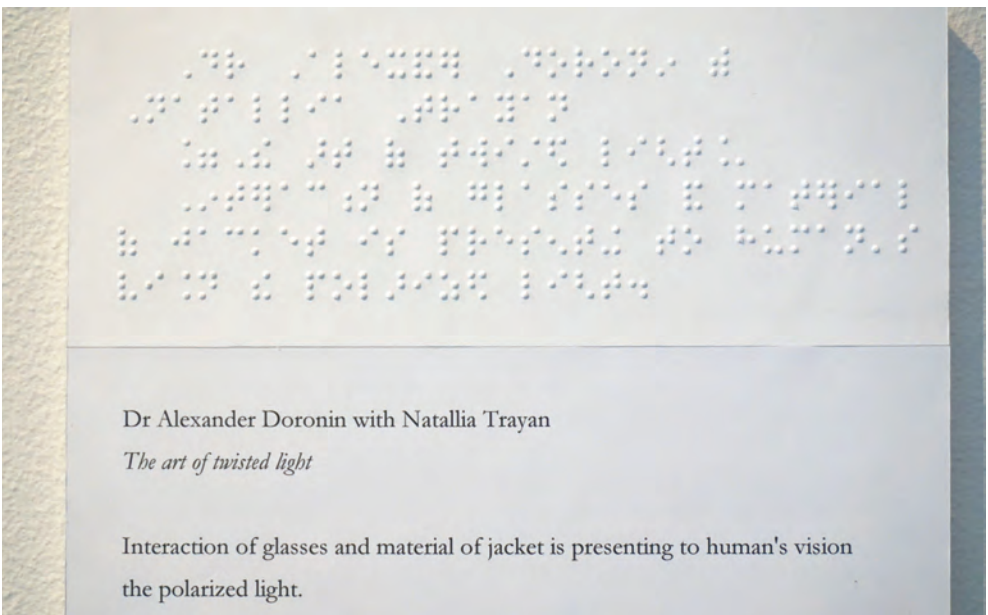
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COLLABORATIONS BETWEEN ARTISTS AND SCIENTISTS

Exhibition Installation: Art and Light Project 2015 Exhibition

REBECCA CAMERON AND DAVID HUTCHINSON

Numbers 1-3. Rebecca Cameron, detail of *Modelling Quantum Physics*, 2015, porcelain elements, 100-200mm. square approx.

Modelling Quantum Physics—working with porcelain, using its translucent nature to embody the ideas of the wave-particle duality of light. Wave patterns were cut into the clay, either side of thin slabs; the patterns front and back were then merged, producing interference patterns.

LYNN TAYLOR AND PETRA FERSTERER

Number 4. Lynn Taylor, *Trapping Ultra-Cold Atoms II*, 2015.

Layered and overprinted plates printed on paper were exhibited as pendants installed on a lattice within the exhibition and mimicked atom coherency by shining reflected light on each other.

SARAH MCKAY AND CRAIG RODGER (WITH IAN GRIFFIN)

Number 5. Sarah McKay, image from series *Within the Outside*, 2015, photographic print on glass, 440 x 900mm.

Within the Outside is a series of photographic images alluding to a world that is created, constructed and captured only through the manipulation of light through the camera lens. Taking light as its sole subject, *Within the Outside* traces the transition from what we are able to see to what we can no longer see, but the camera can.

JAMES BELLANEY AND LOUISE PARR-BROWNLIE (WITH STELLA CAMERON)

Number 6. James Bellaney, *I'm a Part of This World*, 2015, acrylic on canvas, 900mm x 1600mm.

A simulation of deep-brain stimulation by blue light, conveyed in the painting through the colours/wavelengths and the forms of remaining neuro-links which might be strengthened by the applied stimulation of light in Parkinson's research.

DESI LIVERSEEDGE AND REBECCA CAMPBELL

Numbers 7-8. Desi Liversedge, *Untitled (Making Visible)*, 2015, crochet, 3m x variable, materials: yarn, electroluminescent wire

The shape or morphology of neurons can tell us a lot about their function. Rebecca's research involves peering into the hypothalamus and labelling neurons by applying fluorescent molecules, a process which enables visualisation of structures in the brain, particularly those which regulate fertility.

SUE PEARCE AND JANICE LORD

Number 9. Sue Pearce, *LE1* (work in progress), 2015, acrylic, chalk pastel and black gesso on paper, 450 x 400mm.

The importance of weta as pollinators was "novel and unexpected," and discovered through a chance walk into the megaherb field at night in the subantarctic islands. Janice Lord's images of Campbell Island landscapes, flora and fauna, photographed for scientific purposes, form the source reference material for this artwork.

SUE TAYLOR AND JANICE LORD

Number 10. Sue Taylor, *Illuminations: Weta*, 2015, sewing machine used as a drawing tool with embroidery threads on felt, 305 x 225mm.

In her paper "Floral Biology and Flower Visitors on Subantarctic Campbell Island," botanist Janice Lord points out that biotic pollination is more important than initially thought. Unusual groups of insects, such as nocturnal weta and weevils, are attracted to these flowers at night and transfer pollen between plants.

SUE NOVELL AND STEVEN MILLS

Number 11. Sue Novell, *Untitled*, 2015, acrylic on canvas, 760 x 760mm.

Taking a photograph involves the loss of information as a three-dimensional scene is projected into a two-dimensional image. One of Steve Mills's research interests is the reconstruction of this lost dimension from multiple images. The basis for Sue Novell's painting was a digital image that she had merged from three photographs taken years apart and translated into physical marks using three colours in the painting process.

HOLLY AITCHISON AND DAVID HUTCHINSON

Number 12. Holly Aitchison, *The Measurement Problem* (work in progress), 2015, oil on canvas, detail, 1500 x 1250mm.

This painting deals with confusion and relationships that may or may not be present, worlds within worlds within worlds, mathematics, light and discovery. What quantum physics really tells us is that the way we look at the world affects that which we observe. The world, like art, is not independent of the observer.

LIZ ROWE AND STEVEN MILLS

Number 13. Liz Rowe, *2D-3D-2D*, 2015, glazed mid-fire ceramic, four pieces, dimensions variable.

When recovering 3D structure from 2D images in a computer, we are not restricted to just two viewpoints. My project has involved taking Steve Mills's vector images and recreating small portions of them in ceramic wall pieces—3D back to 2D.

PAM MCKINLAY AND TERENCE SCOTT

Number 14. Pam McKinlay, *Step into my Light Cone*, 2015, digital inkjet prints on Hahnemuhle torchon matte paper, 410 x 273mm.

"Caustics"—A Burning Word for the Light Fantastic. An aesthetic investigation of the mathematical and optical properties of light at the boundary determined by light intensity, lens curvature and strength.

DAVID GREEN, STEVEN MILLS, CRAIG RODGER (IN COLLABORATION WITH JAMES BRUNDELL)

Numbers 15-17. David Green and Craig Rodger, Steven Mills, *Embodied Earth*, 2015, interactive installation.

Viewers experience lightning strikes multi-sensorily in synchronicity with actual lightning events occurring over a large swathe of the earth's surface by live stream. Embodied Earth is the first of a series of scientific reification artworks designed to extend our sensorial and temporal limitations in ways that enable us to "feel" the larger environment, over time, as ourselves. (Contributors: Ben Watson, Peter Brook, Mike Paulin and Stuart Smith.)

DAVID GREEN IN COLLABORATION WITH CRAIG RODGER

Numbers 18-19. David Green, *Light Drawing #17*, 2015.

The "whistler-mode chorus" reified in sound and light. Twenty-one-minute loop, single channel HD digital video with audio. Audio courtesy of Radio and Plasma Wave Group, Department of Physics and Astronomy, University of Iowa.

MARION WASSENAAR, KIRI MITCHELL AND JANICE LORD

Numbers 20. Marion Wassenaar, Kiri Mitchell (with David Allen), *Glistens with Nectar* (work in progress), 2015, printed and embossed book.

Number 21. All exhibition labels were printed in braille and letterpress text.

In Janice Lord's field of botanical research, flower colour is commonly interpreted in terms of pollinator attraction; however, animals differ in their ability to perceive reflected light. Thus, the colours and patterns we see when we look at a flower are not necessarily the colours perceived by pollinators. As a result, trying to understand the interactions between flowering plants and their pollinators is like feeling your way in a dark landscape. Thus technical approaches to the measurement of colour and light are required to overcome the limitations of human vision.

LYNNETTE TAYLOR AND MIRIAM SHARPE

Number 22. Lynnette Taylor, *Blue Assay*, 2015, a series of four paintings, acrylic on canvas, each 510 x 510mm.

In this series of paintings the motifs are derived from firefly squid (*Watasenia scintillans*; *hotaruika* in Japanese) that spawn off the western coast of Japan each year from March to April. What is exciting about these tiny squid is that they glow, emitting an array of minute star-like blue lights. Unlike other glowing sea creatures, which rely on bacteria to provide their light, firefly squid are able to produce this light themselves from protein crystals within their bodies. Miriam's research aims to extract the DNA that encodes these light-producing protein crystals so that she might discover how to make them in the laboratory.

NATALLIA TRAYANN AND ALEX DORONIN

Numbers 23-25. Natallia Trayann, *Smart Textiles*, 2015, polarising material and tape, dimensions variable.

Our eyes are not able to see/detect/interpret all the forms of light around us, as evolution has limited our vision. Some animals detect light very differently from the human eye, including the ability to detect polarised light. Until the nineteenth century, polarised light was an unexplained and unexplored phenomenon. When polarised light is made visible to the human eye, we experience very bright, rich and varied colours. This artwork uses a combination of high-tech materials that polarise light together with layers of tape to achieve a range of patterns of light refraction.

Exhibition photographs by Sarah McKay and Pam McKinlay.