

Semiconductor: Ruth Jarman (1973) and Joe Gerhardt (1972)

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Selected Solo Exhibitions

2023 *Parting the Waves*, Gnratron, Braga, Portugal
2023 *Spectral Constellations*, Schafhof - European Art Forum Upper Bavaria, Freising, Germany
2021 *Semiconductor*, Tolbooth Gallery, Stirling, Scotland
2021 HALO, presented by John Hansard Gallery at MAST Mayflower Studios, Southampton, UK
2021 HALO, UK premiere at Attenborough Centre for the Creative Arts (ACCA), part of Brighton Festival, University of Sussex, Brighton, UK
2020 *Earthworks*, Fabrica, Brighton, UK
2019 *Semiconductor*, The 14th Media Art Biennale Santiago, National Center of Contemporary Arts, (CNAC), Santiago, Chile.
2019 *The Technological Sublime*, City Gallery, Wellington, New Zealand
2018 HALO, Art Basel, Basel, Switzerland, The 4th Audemars Piguet Commission
2018 *The View from Nowhere*, Le Lieu Unique, Nantes, France
2017 *Where Shapes Come From*, Phoenix, Leicester, U.K
2017 *Parting the Waves*, Axiom Art and Science Gallery, Tokyo, Japan
2016 *Earthworks*, Sonar Planta, Sonar Festival, Barcelona
2014 *Cosmos*, Jerwood Open Forest, Alice Holt Forest, UK
2013 *Let There Be Light*, House of Electronic Arts, Basel, Switzerland
2012 *Imagine Science Festival* (screening), Dublin, Ireland
2012 *Aurora Picture Show* (screening), Houston, USA
2011 *Worlds in the Making*, FACT, Liverpool, UK
2011 *Solar Systems*, Phoenix Brighton, UK
2011 *Semiconductor*, Nuit Blanche, Paris, France
2011 *Vienna Independent Shorts* (screening), Austria, *International Tribute Guests*
2011 *OFNI Film Festival* (screening), Poitiers, France
2010 *Semiconductor*, Institute of Modern Art, Brisbane, Australia
2010 *Heliocentric*, Northern Gallery for Contemporary Art, Sunderland, UK
2010 *San Francisco International Animation Festival* (screening), USA. Semiconductor retrospective+ performance
2010 *Atopia* (screening), Oslo, Norway
2009 *Magnetic Movie*, Exploratorium, San Francisco, USA
2009 *Animasivo* (screening), 25th Festival of Mexico, Mexico City
2008 *Chicago Art Institute* (screening), USA
2008 *Magnetic Movie*, Hirshhorn Museum, Smithsonian Institute, Washington, USA

Selected Group Exhibitions

2025 [City and Science Biennial](#), (in collaboration with HacTe, the Network of Arts, Science and Technology and the Society of Catalonia), 2025, Barcelona, Spain
2025 *In the Ether – A Festival of Quantum Science and Technology*, [ArtScience Museum](#), Singapore
2025 *time:lapse*, [A Plus A Gallery](#), Venice (curated by the School for Curatorial Studies Venice), Italy
2025 *Quantum Visions*, [HEK](#), Basel, Switzerland
2025 *From Amber to the Stars*, [M.K. Čiurlionis Museum of Arts](#), Lithuania
2025 *Visiones Cuánticas*, Tabakalera, Spain
2025 *Symptomática I Horizon*, 798CUBE, Beijing, China
2024 [UMWELT](#), Fondazione Modena Arti Visive, Italy
2024 [Cosmos Archaeology](#), Exploring the Universe through Art & Science, Shanghai Astronomy Museum, China
2024 *Seeing the Unseeable: Data, Design, Art*, [PST: Art & Science Collide](#), Artcenter College of Design, Pasadena, USA
2024 *Black Air*, [Casino Luxembourg](#), Forum D'art Contemporain, Luxembourg
2024 *DINAMO: Disinformation* (screening), International Film Festival Rotterdam, The Netherlands
2023 *MANIFEST: Art & Policy*, Bloc Projects, Sheffield, UK
2023 *Measure*, New Media Gallery, Vancouver, Canada
2023 *Dark Matters*, Science Gallery Melbourne, University of Melbourne, Australia
2023 *Creating the Commons*, VU Art Science Gallery, Amsterdam, The Netherlands
2023 *Celestial Objects: Cosmos and Cinema* (screening), curated by Andrea Franco, Espacio Vilaseco, Chantada Lugo, Spain
2023 [Visualiser le Son](#), L'Atelier Numérique, Gentilly, France
2022 Novartis Pavillon, commission for LED media façade, Basel, Switzerland
2022 *Indivisible*, New Media Gallery, Vancouver, Canada
2022 Sónar Lisboa 2022, Portugal
2021 *Au-delà du réel?*, Nemo Festival, 104-Paris, France
2021 *To the Edge of Time*, University Library KU Leuven, Belgium
2021 *Temporal Stack, The Deep Sensor*, Research Centre of Contemporary Visual Art, Guizhou Normal University, Guizhou, China
2020 *Broken Symmetries*, Kumu Art Museum Tallinn, Estonia

2020 *Invisible*, Science Gallery Dublin, Ireland
2020 *Quantica*, NTMoFA (National Taiwan Museum of Fine Arts), Taichung, Taiwan
2020 *Quantica*, iMAL, Brussels, Belgium
2020 London Short Film Festival (screening), London, UK
2019 *Desire Lines*, University of Brighton Edward St Campus, Brighton Digital Festival, UK
2019 *DARK MATTER: 95% of the Universe is Missing*, Science Gallery, London, UK
2019 *Ecovisionaries*, LABoral, Gijón, Spain
2019 *D'un soleil à l'autre*, Base Sous-Marine, Bordeaux, France
2019 *Quantica*, CCCB, Barcelona
2019 *D'un soleil à l'autre*, Base Sous-Marine, Bordeaux, France
2019 *SOLA*, annual festival for experimental music and moving image (screening), Helsinki, Finland
2019 The 12th Imagine Science Film Festival (screening), New York, USA
2019 The fifth edition of InScience (international science film festival) (screening), Nijmegen, The Netherlands
2019 Seoul International New Media Festival (screening), Seoul, South Korea
2018 *SUPERPOSITION: Equilibrium and Engagement*, 21st Biennale of Sydney
2018 *Broken Symmetries*, FACT, Liverpool, UK
2018 *Nature as Data*, Jing-an International Sculpture Park, Shanghai, China
2018 *Groundwork*, CAST, Cornwall, UK
2018 *Strata: Rocks, Dust, Stars*, York Art Gallery, York, UK
2018 Arica Nativa Film Festival (screening), Arica, Chile
2017 *Future Emerging Art and Technology*, BOZAR Centre for Fine Arts, Brussels
2017 *Infosphere*, Centro Nacional de las Artes (CENART), Mexico City, Mexico
2017 *The Universe and Art*, ArtScience Museum, Singapore
2017 *No Such Thing as Gravity*, National Taiwan Museum of Fine Arts, Taiwan
2017 The 24th Stuttgart Festival of Animated Film (screening), Stuttgart, Germany
2017 Rotterdam International Film Festival (screening), Rotterdam, Netherlands
2016 *Nonspaces*, Akbank Sanat, Istanbul, Turkey
2016 *The Universe and Art*, Mori Art Museum, Tokyo, Japan
2016 *Seeing Round Corners*, Turner Contemporary, Margate, UK
2016 *The Thinking Machine, Ramon Llull and the Ars combinatorial*, CCCB, Barcelona, Spain
2016 *Project Daejeon: Cosmos*, Daejeon Museum of Art, South Korea
2016 *Extra Fantôme*, La Gaîté Lyrique, Paris, France
2016 Hamburg International Short Film Festival (screening), Germany
2015 *Infosphere*, ZKM, Museum of Contemporary Art, Karlsruhe, Germany
2015 *Three Branches of the Same Tree*, Pump House Gallery, London
2015 *Animated Wonderworlds*, Museum of Design, Zurich
2015 *Beyond the Single Screen* (screening), Tate Britain, London. (Semiconductor in conversation)
2014 *Da Vinci: Shaping the Future*, ArtScience Museum, Singapore
2014 *Jerwood Open Forest*, Jerwood Space, London
2014 *Vertigo*, SIM Gallery, Curitiba, Brazil
2014 *Assembly: A Survey of Recent Artists' Film and Video in Britain 2008-2013* (screening), Tate Britain, UK
2013 *Galápagos*, CAM, Lisbon
2013 *Radical Fictions*, 4th Exhibition of Digital Art, Instituto Tomie Ohtake, São Paulo, Brazil
2013 *Space Odyssey 2.0*, Z33 House for Contemporary Art, Hasselt, Belgium
2013 *The Dark Universe*, Sonic Acts Festival, New Arts Space, Amsterdam
2013 Ann Arbor Film Festival (screening), USA
2013 London International Animation Festival (screening), London, UK
2012 *Field Conditions*, San Francisco Museum of Modern Art, San Francisco, USA
2012 *Is this Thing On?*, Contemporary Art Center (CAC), Cincinnati, Ohio, USA
2012 *Galapagos*, The Fruitmarket Gallery, Edinburgh, UK
2012 *Digital Crystal: Swarovski at the Design Museum*, Design Museum, London
2012 Curtas Vila Do Conde (screening), Portugal
2012 New York Film Festival: Views from the Avant Garde (screening), New York, USA
2012 Melbourne International Animation Festival (screening), Australia
2012 European Media Art Festival (screening), Osnabrueck, Germany
2012 San Francisco International Film Festival (screening), USA
2012 *Visualizing Sound*, Laboral, Gijón, Spain
2011 *Watch Me Move*, Barbican, London, UK
2011 *Wild Sky*, Edith Russ Haus Fur Media Kunst, Oldenburg, Germany
2011 *Invisible Fields*, Arts Santa Monica, Barcelona
2011 *Star Voyager: Exploring Space on Screen*, Australian Centre for the Moving Image, Melbourne, Australia
2011 *L'Objet Photographique, une Invention Permanente*, Maison Européenne de la Photographie, Paris, France
2011 11th Seoul International New Media Festival (screening), Korea
2010 *Black Rain*, RIXC Gallery, Riga, Latvia
2010 27th Kassel Documentary Film and Video Festival (screening), Germany
2010 Venice Film Festival (Orizzonti section) (screening), Venice, Italy
2010 *Into the Great Wide Open*, Vlieland, Netherlands

2009 *Earth: Art of a changing world*, Royal Academy of Arts, London, UK
2009 Sundance Film Festival (screening), USA
2009 13th Media Art Biennale WRO 09 (screening), Wroclaw Poland
2009 Cannes Film Festival (screening), British Council
2009 31st Clermont-Ferrand Short Film Festival (screening), France
2009 *Fuzzy Electronics (+Magnetics)*, Network Gallery, Aalst, Belgium
2008 Los Angeles Film Festival (screening), Los Angeles, USA
2008 Annecy International Animated Film Festival (screening), Annecy, France
2008 British Animation Award (screening), London (Awarded Best Film at the Cutting Edge)

Selected Residencies/Fellowships

2023-ongoing Analogue Modelling Lab, Royal Holloway University
2023 Placement at UK Government Office for Science, MANIFEST programme
2022-ongoing Extreme Light Group, University of Glasgow
2021 Planet Disc Connection Group & Duncan of Jordanstone College of Art & Design, University of Dundee
2016 FEAT (Future Emerging Art and Technology), De Waag, Amsterdam, Netherlands
2015 Collide@CERN Artist Residency, Geneva, Switzerland (3 months)
2010 Smithsonian Artist Research Fellowship, Mineral Sciences Laboratory, Smithsonian Institution National Museum of Natural History, Washington DC, USA (3 months)
2010 Gulbenkian Galapagos Artists Residency (2 months)
2005/6 ACE International Fellowship: Art and Space Science at UC Berkeley Space Sciences Lab, USA (6 months)

Selected Commissions / Awards

2022 DeepMind Headquarters, permanent kinetic sculpture, UK
2022 Novartis Pavillon, commission for LED media façade, Basel, Switzerland
2018 The 4th Audemars Piguet Commission at Art Basel
2016 Sónar Planta commission, Barcelona, Spain
2015 Pump House Gallery commission, London
2014 ArtScience Museum commission, Singapore
2014 Jerwood Open Forest commission, Alice Holt Forest, UK (first public sculptural work)
2013 Swarovski commission
2012 Samsung Art + Prize Award
2012 Golden Gate Award for New Visions at San Francisco International Film Festival
2012 Art and Science Award at Ann Arbor Film Festival
2012 ACE Lottery Award
2011 Arts Santa Monica and Lighthouse co-commission. Supported by British Council
2011 FACT and Jacqui Davies co-commission
2009 Awarded the Nature Scientific Merit award for Magnetic Movie at Imagine Science Film Festival, New York
2008 British Animation Awards, London. Awarded Best Film at the Cutting Edge
2007 An Animate Projects commission for Channel 4 in association with Arts Council England

Collections

VU Art Collection – Vrije Universiteit Amsterdam, The Netherlands
University of Dundee, Scotland
Private collection, Genova, Italy
Private collection, Milan, Italy
Audemars Piguet Collection, Le Brassus, Switzerland
CERN collection, Meyrin, Switzerland
Sorigué Collection, Lleida, Spain
Hirshhorn Museum, Washington, US
Centre Pompidou Collection, Paris, France

Selected Articles/Reviews

2022 Wired Middle East, *Young stars of the art world*, [Spectral Constellations]
2021 [Science Meets Music at the Brighton Festival](#), BBC Radio 4, Front Row, UK
2021 [Help, it's 1,000 trillion degrees in here! The Big Bang artwork that makes scientists cry](#), The Guardian [Online], UK
2018 *Art of the Matter*, Financial Times Collecting
2018 *The Art of the Particle*, Wired
2018 *Surveying the Technological Sublime*, Art Monthly, Australasia
2014 *Semiconductor, The (New) Age of Discovery*, HOLO Magazine, CA/USA
2013 *Music of the Spheres*, Film Comment, USA
2011 *Worlds in the Making*, Aesthetica, UK
2011 *Worlds in the Making*, The Wire, UK
2011 *Art and Science collide at Worlds in the Making*, The Guardian, UK
2009 *Semiconductor*, Wonderland Magazine, UK

Publications

- 2023 Art Education for a Sustainable Planet – Embracing Ecopedagogy in K-12 Classrooms (Teachers College Press)
- 2022 Landscape and the Moving Image, Cate Elwes, Intellect
- 2021 Art and Nature in the Anthropocene, Planetary Aesthetics, Susan Ballard, Routledge
- 2021 The Art of Science: Artists and artworks inspired by science, Heather Barnett, Richard J Bright, Sheena Calvert, Nathan Cohen, Adrian Holme, Welbeck
- 2018 The Live Creature and Ethereal Things: Physics in Culture, Arts Catalyst
- 2017 Universe: Exploring the Astronomical World, Phaidon
- 2016 Sound Art. Sound as a Medium of Art, ZKM, edited by Peter Weibel. Distributed by MIT Press.
- 2015 Installation and the Moving Image, Catherine Elwes, Wallflower Press/Columbia University Press.
- 2014 Sound and Image in Digital Media, Oxford University Press, 2014. A Noisy Brush with the Infinite by Laura U. Marks.
- 2014 Technoetic Arts: A Journal of Speculative Research, Volume 12, 2014, Intellect Journals. *Semiconductor's landscapes as sound-sculptured time- based visualizations* by Inge Hinterwaldner.
- 2014 Earth Sound Earth Signal, Douglas Kahn, UC Press.
- 2013 Moving Image Review & Art Journal, Volume 2 Number 2, Intellect Journals. *The meta-physics of data: Philosophical science in Semiconductor's animated videos* by Lilly Husbands