

lighting for the frankensteins:

a glimpse of creation up north

Video Dome David Carson Paul Bourke

We call that sublime which is absolutely great—Kant, *Critique of Judgment* (§ 25)

Artist profiles:



Paul Bourke was born in New Zealand and currently lives in Australia. The majority of his working life has revolved around high performance computing and computer graphics, in particular scientific visualisation: the use of computer graphics to represent scientific data with the aim of enhancing understanding of the underlying structure and processes. Fundamental to the visualisation process is the encoding of equations and/or data as 3 dimensional geometry. The ways in which this geometry is presented in an informative and engaging way, to both the researchers and a wider public audience, is the 'art'.



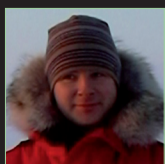
David Carson recently completed a two-year residency at the Centre for Living and Electronic Arts Research at the Innovation Centre in Perth, Western Australia, working with geologist, musician and film-maker John Reed. David has worked as an independent curator of several major exhibitions, which have toured Australia supported by ARTSWA, The Australia Council for the Arts and Visions Australia. He has been an active advocate of 3D stereoscopic video in Western Australia, inspired by Brian McClave's example and is currently an advisor and teacher of 3D video in the FutureSphere at Christ Church Grammar School in Claremont WA.



Brian McClave is an experimental video artist, his background is in experimental photographic art, building and modifying cameras to perform unusual functions. During an MA in America he was introduced to digital imaging and digital video technology. It became apparent that principles used in 19th century stereoscopic photography could be applied to digital video to produce manipulatable 3D (stereoscopic) moving images. The experimentation that followed, coupled with advances in computer gaming 3D imaging systems (that crossed over into the world of video), resulted in the production of several innovative 3D videos.

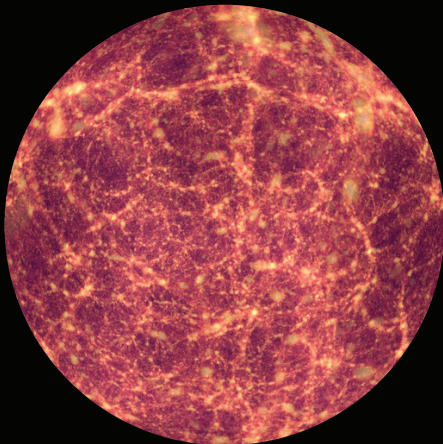


George Millward is a US based sound-artist and an atmospheric physicist - currently Visiting Scientist at NOAA/Space Environment Laboratory for Atmospheric and Space Physics CU, Boulder. He is a member of the Atmospheric Physics Research Group and his interests are the chemistry and dynamics of the Jovian Ionosphere and Thermosphere. His recent musical collaborations have included – Spaced Out, a visual remix of NASA footage to original beats; taking a leftfield look at 40 years of space exploration creating original music and visual mixes of the Gemini era, the Apollo moon landings, Skylab and shuttle missions.



Thomas Ulich is a geophysicist at the Sodankylä Geophysical Observatory in Finland. Born in Nienburg/Weser, Federal Republic of Germany in 1968. He has lived in Finland since 1993. He is currently researching long-term changes in the upper atmosphere, and his operational tasks include work with ionosonde and VLF measurements. The observatory is an independent department of the University of Oulu, Finland, and an integral part of the university's broad space research programme in ionospheric, magnetospheric and heliospheric physics. The paintedSKY exhibition includes a small selection from Thomas' extensive personal collection of auroral photographs. As he quotes an Inuit wisdom: He who looks long upon the aurora soon goes mad. How true!

Carson, McClave and Millward have worked together previously on a number of projects including *Geoderma* and *Skylab* touring exhibitions



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I

The *Aurora Borealis* (or Northern Lights) has long been associated with the sublime. Its aesthetic appeal is partly a result of its scientific intrigue—an intrigue engendered in turn by the aesthetics of the experience itself. The appeal of this celestial miasma and light show at the top of the world would have always been accompanied with curiosity and awe. It can leave one quietly gob-smacked—like getting a glimpse of the tail end of creation. It is not quite like Job peering in to the whirlwind—but it may be as close as one can get.

In Mary Wollstonecraft Shelley's *Frankenstein* (1818), the first narrator writes to his sister,

I try in vain to be persuaded that the pole is the seat of frost and desolation; it ever presents itself to my imagination as the region of beauty and delight. There ... the sun is forever visible ... diffusing a perpetual splendour. ... we may be wafted to a land surpassing in wonders and in beauty... Its productions and features may be without example, as the phenomena of the heavenly bodies undoubtedly are in those undiscovered solitudes. What may not be expected in a country of eternal light?

Light has long been associated with the notion of divinity. "... for the Gnostics an 'Unknown God', for the Romantics a presence 'known' though Nature; with the 'divine spark' of gnosis being the spiritual equivalent to the 'animating principle' which gave Frankenstein's Creature his 'light of being' via galvanic electricity."²

In 'An Essay on Heat, Light, and Combinations of Light' the chemist Humphry Davy (1778–1829) said "We may consider the sun and fixed stars, the suns of other worlds, as immense reservoirs of light destined by the great ORGANISER to diffuse over the universe organization and animation." And in his introduction to *Frankenstein* Hindle notes 'Davy conjectured that electricity... 'produced from the condensation of light' was probably 'supplied with repulsive motions at the poles, by the revolution of the earth on its axis... Hence the phenomenon of the aurora borealis or northern lights.'³ However, it turns out that the aurora is not caused by planetary spinning and friction but by something only just discovered. More on this below.

The central scene in *Frankenstein* is that of creation and transgression—that of bestowing—without due authorization—the 'divine spark'. It is a story about human beings seeking to unravel life and death—about hubris and illegitimate aspirations. It is about an attack on the proper order and nature of things. Of course it all goes terribly wrong—let that be a lesson to us all—and a chastened and bitter Dr Frankenstein follows his bitter and angry creature to the arctic to destroy it. It is in this white, desolate land of snow and ice-floe, that he glimpses the creature at a distance—lit perhaps by the Northern Lights.

Some scientists—and even some artists—tell us that even the great beauty found in human aesthetic creations of the highest order may often pale in comparison to that found in nature; or, in a true and adequate understanding of the physical universe. Mathematical equations and proofs, we are told, can be sublime. The study of celestial mechanics or stellar interiors can be, for the lucky few, an aesthetic endeavor every bit as much as a scientific one. Scientists, it would seem, may be aesthetically privileged. They can be true artists; or short of that may have aesthetic experiences by means of what they investigate and discover that most of us simply cannot.

II

Short of bolstering or even privileging the aesthetic credentials of science, the subtle grandeur of the *Aurora Borealis* goes some way to dissolving the artificial barriers between science and art that many of us have come to think of as written in stone. Like oil and word? (water) truth and politics, the two just do not mix.

The fact that the world has been divided up in certain ways may prevent us from thinking about things in ways that enable alternative kinds of experience and understanding. It is good to have ordinary and accepted ways of dividing up the world challenged.

In a famed and often quoted essay ('El idioma analítico de John Wilkins') Jorge Luis Borges considered the apparent arbitrariness with which we classify things. He quotes from the classification of animals allegedly found in 'a certain Chinese encyclopaedia entitled "Celestial [Emporium]" of Benevolent Knowledge'. "The animals are divided into: (a) belonging to the emperor, (b) embalmed, (c) tame, (d) sucking pigs, (e) sirens, (f) fabulous, (g) stray dogs, (h) included in the present classification, (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (l) et cetera, (m) having just broken the water pitcher, (n) that from a long way off look like flies.

This exhibition does not seek to have sucking pigs (d) included under the classification fabulous (f). But it does question the banishment of the realm of the aesthetic from that of the kingdom of science. Furthermore, using technology, a terrific video dome, and science, it reintroduces aspects of science into art in ways that makes the whole greater than the sum of its parts. Science, art and technology are now so bound up with one another they are practically a *ménage à trios*. They just need to control their petty jealousies.

III

Sublime, a. and n. Of things in nature and art: Affecting the mind with a sense of overwhelming grandeur or irresistible power; calculated to inspire awe, deep reverence, or lofty emotion, by reason of its beauty, vastness, or grandeur. (OED)

Those who think of science as 'the new (or contemporary) sublime,' are perhaps unfamiliar with the old sublime.⁴ It was and still is, a term applied to the inimitable grandeur of nature and to that which is ungraspable and incomprehensible—something feared yet fascinating—a *mysterium tremendum*—to borrow Rudolph Otto's (1869–1937) description of the 'Holy.' Prior to, and long into, the scientific revolution, there was no clear distinction made between aspects of what we now call science and what has come to be known as philosophy. The study of nature in early modern times was called natural philosophy, and natural philosophy was simply early science—astronomy, cosmology, chemistry, physics—anything that purported to add to our knowledge of nature—including travel books. Newton's *Principia Mathematica* (*Mathematical Principles of Natural Philosophy*) (1687), was the most important book of the scientific revolution. When natural philosophy split between the sciences and what was to become philosophy (including aesthetics), it was philosophers that were the big losers in terms of prestige. Philosophy, with its 20th century trend towards scientism, still bears a grudge—as do theologians some of whom wish to again claim the crown as 'queen of the sciences.'

The break or chasm between science and other fields of the study of nature and human nature—including art—remains significant, but the divisions wrought by the disintegration of natural philosophy in the seventeenth century are undergoing a rapprochement of sorts. It isn't just that the hard sciences are now recognized as having a resident aesthetics(s); or that environmental science, architecture and medicine (which incidentally was regarded not as a science but as a practice in the 17th century) have to take on board aesthetic and ethical considerations as well as questions of value. Rather, it is that the practical and theoretical significance of art and other humanistic disciplines in relation to science and technology has managed to claw their way to the surface.

Science cannot be the new sublime since aspects of science have always been associated with the sublime—or with putting one in touch with what is sublime. (Imagine the early use of microscopes and telescopes resulted in some such experiences). The sublime recognizes no divide between science and art as sources of such experience. It sits, or can sit, easily on both sides of such academic dichotomies—and invites us to sit with it. Holism and holistic approaches are the order of the day.

IV

With the help of five satellites launched by NASA in 2007, scientists have come to understand the phenomena of the *Aurora Borealis*.

[S]ubstorms—[are] celestial events caused when the Earth's magnetic field captures energy from the solar wind and then releases it... the Earth's magnetic field lines -stretched well into space by the solar wind—suddenly snap back into place like giant rubber bands and shower the planet with solar particles that sudden release of energy is what causes the northern lights to flicker and dance.⁴

Probing, investigating and ultimately explaining some phenomena can sometimes be deflationary. It may empty an experience of mystery and attraction. This isn't the case with the aurora.

To see great sinuous sheets of light towering over the dark horizon is to feel that some fundamental force is being illuminated in the most diaphanous of ways. Until now, the cause of the aurora's shifts in mood was unclear ... The next time you see the northern lights, you'll be able to imagine immense lines of magnetism reaching toward the moon, capturing the solar wind as if they were sails, and then spilling the wind's particles into Earth's atmosphere. What we are seeing, in a sense, is the last iridescence of a particle-breeze blowing outward from the Sun.

V

This intriguing explanation of the lights does little to curb my enthusiasm. The *Aurora Borealis* as brought to us in this hybrid exhibition (art, science, technology) brings me to the Californian poet Robinson Jeffers (1887–1962). Son of a professor of Old Testament literature and exegesis, he built "Tor House" (quite ugly)—with its forty-foot stone tower, overlooking Carmel Bay. In his poetry, Jeffers was determined to articulate ways that people could establish a kind of egoless and non-anthropocentric rapport and understanding, with the beauty of things—a beauty he came to associate with divinity, immortality and even 'salvation.' Jeffers sees the individual as part of a Unity—what he calls the "one organic whole ... this one God."

I believe that the universe is one being, all its parts are different expressions of the same energy, and they are all in communication with each other, influencing each other, therefore parts of one organic whole. (This is physics, I believe, as well as religion.) The parts change and pass, or die, people and races and rocks and stars; none of them seems to me important in itself, but only the whole. This whole is in all its parts so beautiful, and is felt by me to be so intensely in earnest, that I am compelled to love it, and to think of it as divine. It seems to me that this whole alone is worthy of the deeper sort of love; and that there is peace, freedom, I might say a kind of salvation, in turning one's affections outward toward this one God, rather than inwards on one's self, or on humanity...⁵

This may well be the first time that anyone has captured the sublime in a portable inflatable dome. Grab a seat next to the Frankensteins.

Michael Levine 2008

1. *Frankenstein, or the Modern Prometheus* [1818] (1831). Mary Wollstonecraft Shelley. Introduction by Maurice Hindle. London: Penguin Classics, xxxvi.

2. Hindle, xxvi.

3. A Terrible Beauty: Is Science the New Sublime? John Mullan. *The Guardian*. Saturday August 19 2000. <http://www.guardian.co.uk/books/2000/aug/19/scienceandnature>. Mullan says "it has for a long time been pure science, not technology, that has given us a sense of the sublime. Now the voids into which we are invited to gaze in amazement are the unimaginably huge ones of Godless space and time." But what exactly is science apart from technology?

4. Behind the Aurora Borealis. Editorial, New York Times August 6, 2008. <http://www.nytimes.com/2008/08/07/opinion/07thu4.html>.

5. Robinson Jeffers in a letter to Sister Power; cited in George Sessions, "Spinoza and Jeffers on Man in Nature," *Inquiry*, 20, 1977, p.512.

Image: Paul Bourke *Cosmological Simulation Visualisation*

This exhibition is presented by Artist/Curator David Carson (www.davecarson.net). The tour of this exhibition is managed by ART ON THE MOVE and will begin an Australia wide tour in November 2008

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