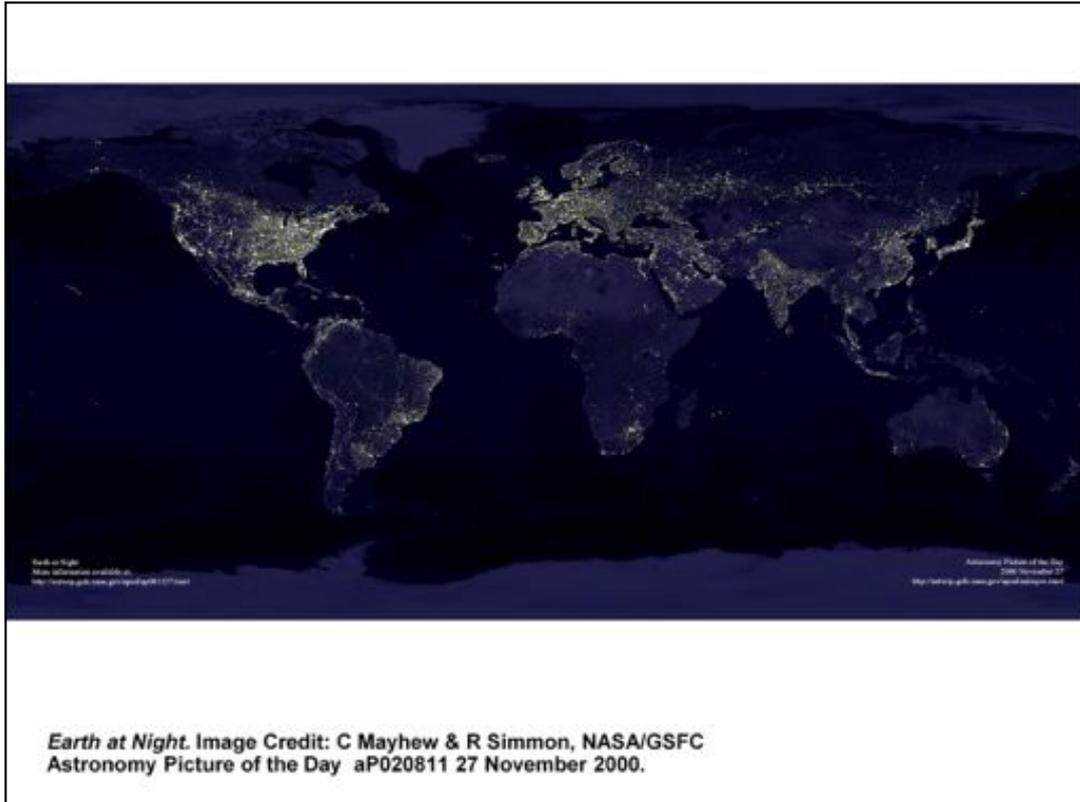


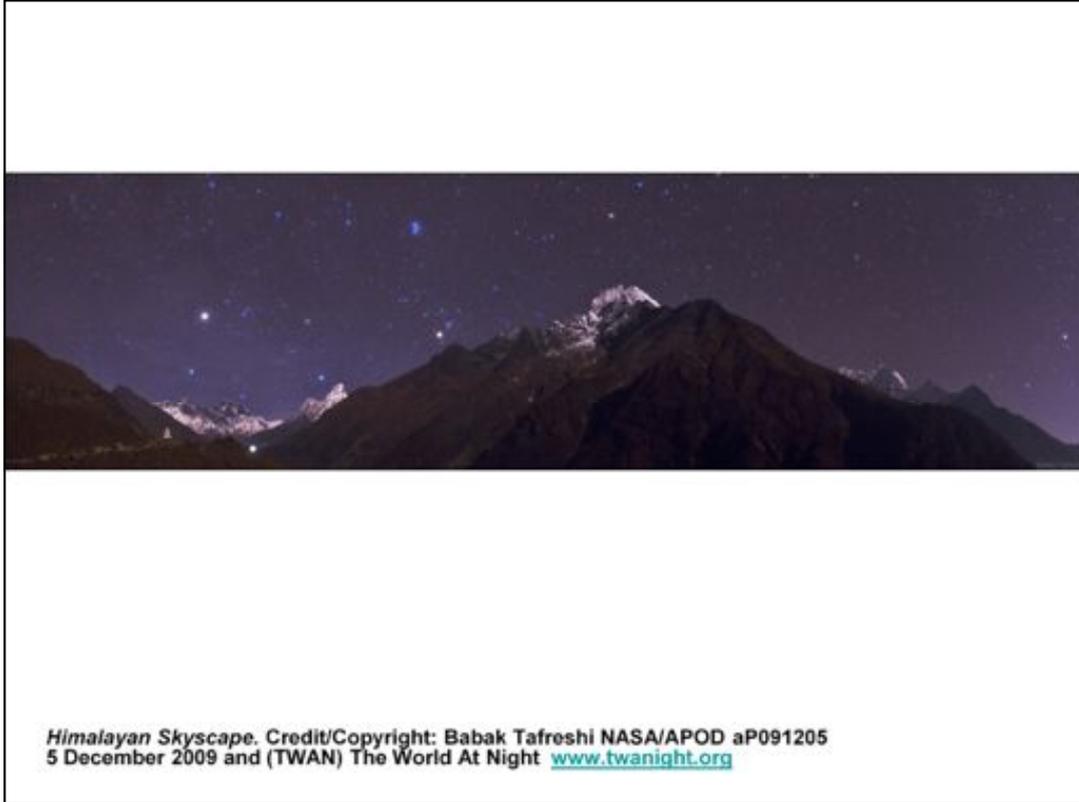
Beyond Visibility



A presentation by Felicity Spear for Star Light Star Bright at the National Library of Australia – Canberra's Enlighten Festival, 10th March 2012.



Looking back, my life seems to have been punctuated by a patchwork of encounters with the sky and space. I suspect that some of you will relate to these when I take you on this brief tour. Like random pieces of a puzzle, they nevertheless build a picture of the way our lives intersect with things astronomical, as well as changing our view of the world. If you want the whole story, that movie star astrophysicist Professor Brian Cox can tell you more in his series *Wonders of the Universe*.



Himalayan Skyscape. Credit/Copyright: Babak Tafreshi NASA/APOD aP091205
5 December 2009 and (TWAN) The World At Night www.twanight.org

I've lived in the country for most of my life, away from the glare of city lights. The starry sky in its constancy and clarity has always been in my purview. Recently I went in search of mountains, the Himalaya, at 5000 metres, *nature red in tooth and claw* baring its frozen beauty, and a sky absolutely saturated with stars. As a child I shared with my father a love of the evening sky, and we would watch for Venus, the star of love, descending towards the horizon.



Apollo 11 Launch 1969. Image Credit: GRIN (Great Images in NASA)
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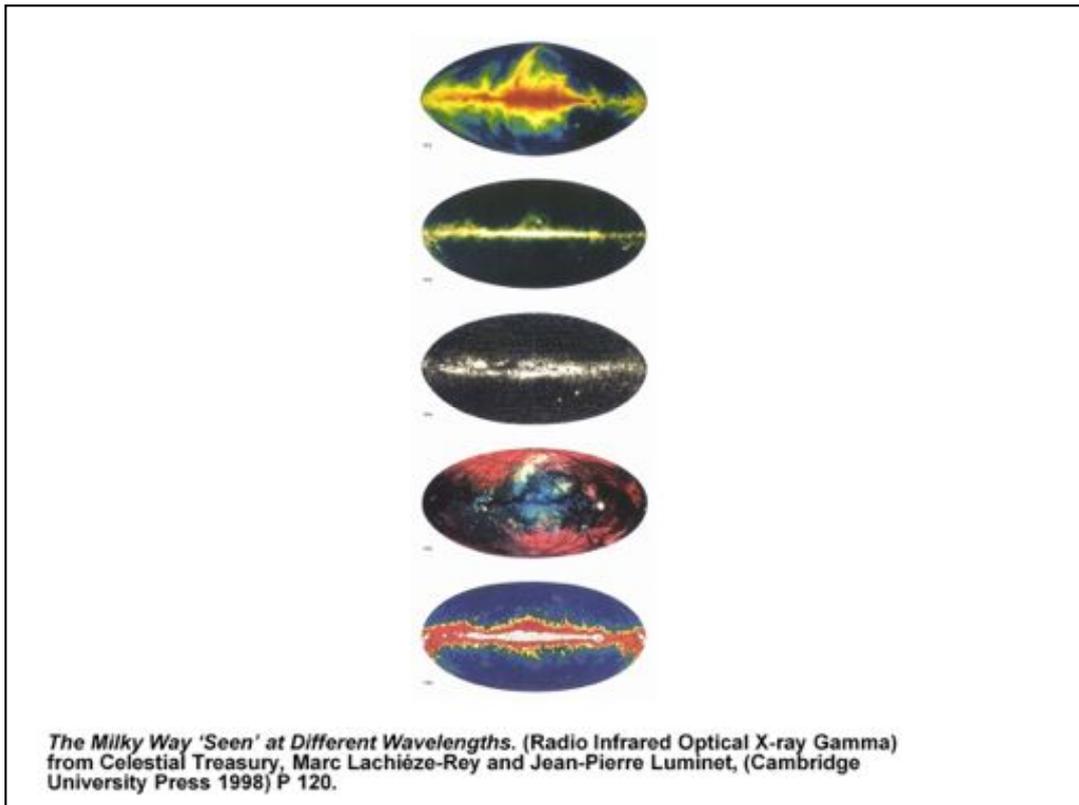
Then in the fifties, the first satellite etched its path across the sky, watched in awe from my uncle's garage roof. Fast forward, 1969, I'm in India, on the hippy trail, and an *Earthling* walks on the moon. Whenever I see the moon in the daylight sky I always remember that amusing film *The Dish*, in which this moon revealed itself just in time to save reputations, and forever change our perspective of planet Earth.

With my children I was seduced by the fantasies of early Star Wars movies and their enduring conflicts between good and evil, but I also took them to the old Melbourne Planetarium so they could get a grasp of the physics. Now I take my grandchildren to the new one. Here they're seduced by technologies that bring these ideas alive in a visually stunning way. This tour ends in a Paris museum. There I discovered Galileo's modest telescope, a Medici treasure, resting innocently under its protective glass, but a potent reminder of how far we've extended our vision over time. How much smaller our Earth has become as our knowledge of the Universe has expanded.



To Fly Free in Space. Image Credit: STS-41B, NASA/APOD aP090927
22 March 2005.

From a cosmic perspective science tells us that Earth is a totally insignificant speck of dust, in an expanding and accelerating Universe. The knowledge that we *Earthlings* are made from that dust, and part of something unbelievably bigger than ourselves, requires another way of thinking. We're looking out, but is something looking back? The astronomer John Barrow has observed that, 'We feel like the Universe's only child and that has many consequences.' Can we keep remaking the natural world on the basis of new understandings, or is Nature, for all its resistance and infinite depth, headed for defeat? As an *Earthling* I want to find out if Michael Leunig's *Understandascope* might reveal something more than human chaos.

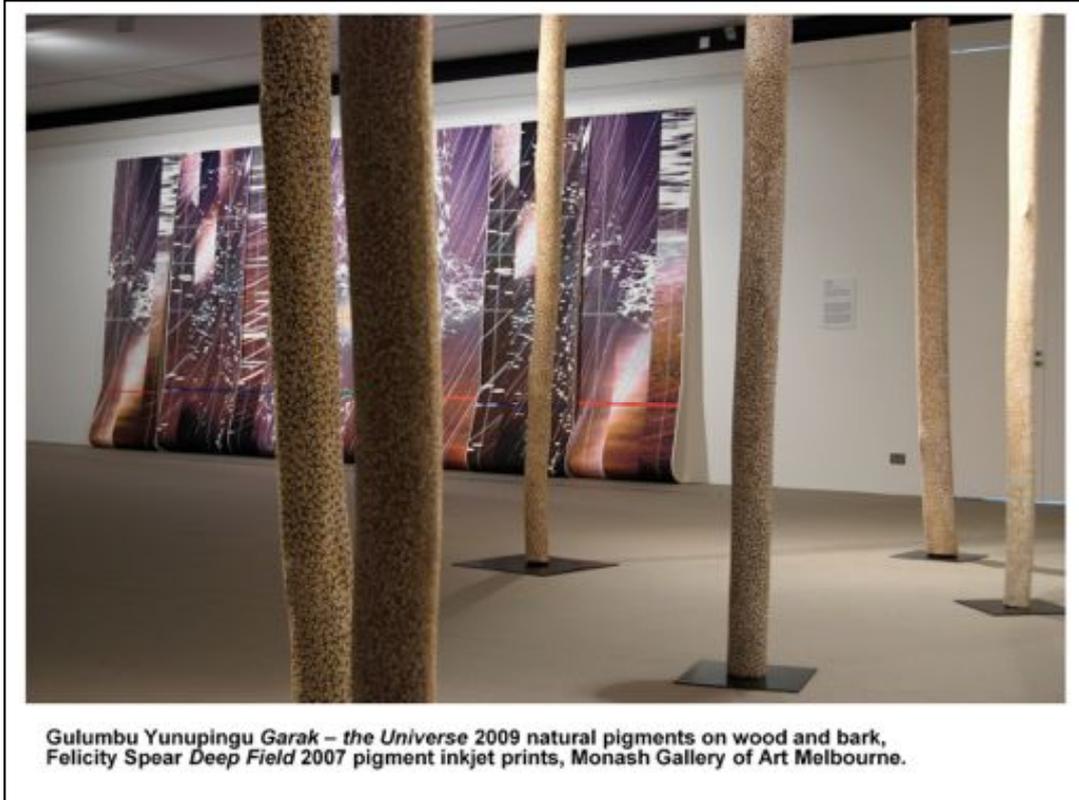


Gazing into the night sky is an intense engagement with the senses. But many of us are curious to know what lies beyond the naked eye, beyond the full range of our senses. What's going on behind the scenes ? What enables us to see beyond the visible stars into the depths of space ? It is in fact *remote* sensing, across a range of radiations emitted at different wavelengths in the electromagnetic spectrum, which are often not accessible from Earth. Together with computer simulations we are mapping a new form of reality beyond the visible, generated by electronic data. As a painter and printmaker I play with the fall-out from such things.



David Malin Felicity Spear Gulumbu Yunupingu *Beyond Visibility: light and dust* 2009 mixed media, University of Technology Sydney Gallery. Photo Credit: Paul Pavlou.

Tonight I'm going to tell you about the exhibition titled *Beyond visibility: light and dust*, which coincided with the International Year of Astronomy in 2009. The idea emerged from my doctoral research and brought together my work, that of astronomer and scientific photographer, David Malin, and the Indigenous artist, Gulumbu Yunupingu. Each of us created work which focused on seeing beyond the visible, emphasizing the resonances to be found within different systems of knowledge. Systems which shape human consciousness.



Experiencing Gulumbu Yunupingu's larrakitj or memorial poles is like wandering through a forest of stars in the night sky. Titled *Garak – the Universe*, they are encrusted with intricately painted dots. These layered and patterned surfaces suggest the invisible depths of the Universe, and reflect the cycles and atomistic interconnectedness of all life.



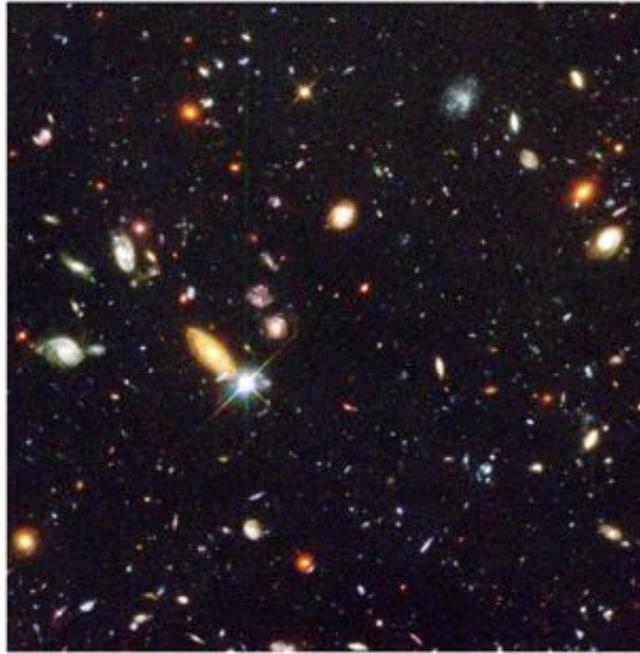
Gulumbu Yunupingu Garak – *the Universe* 2008 natural pigments on wood.

They remind me of the sensation that some astronauts experience when looking back to Earth from their all-encompassing view in space. Described as *interconnected euphoria* or the *overview effect*, they develop an intense sense that every atom in the Universe is connected in some way. Somewhat like the sense that a deep state of meditation is said to engender. For Western eyes I think Gulumbu's work suggests subliminal mathematical relationships that hint at links between art and science.



David Malin *Corona Australis reflection nebula* 2008 pigment inkjet print uks 037a.

David Malin exhibited six large-scale inkjet prints of his pioneering analogue photographs, the first true colour images of deep space. Captured while working at the Anglo Australian Observatory, these images are celestial phenomena found in the southern sky. They map the vast multitudes of starfields in the Milky Way and, between them, dark clouds of dust. Dust from which we and the stars are made. The light captured on David's photographic plates has travelled through space and time, sometimes for millions of years. When we look into these images we are looking at things as they were then, not as they are now.

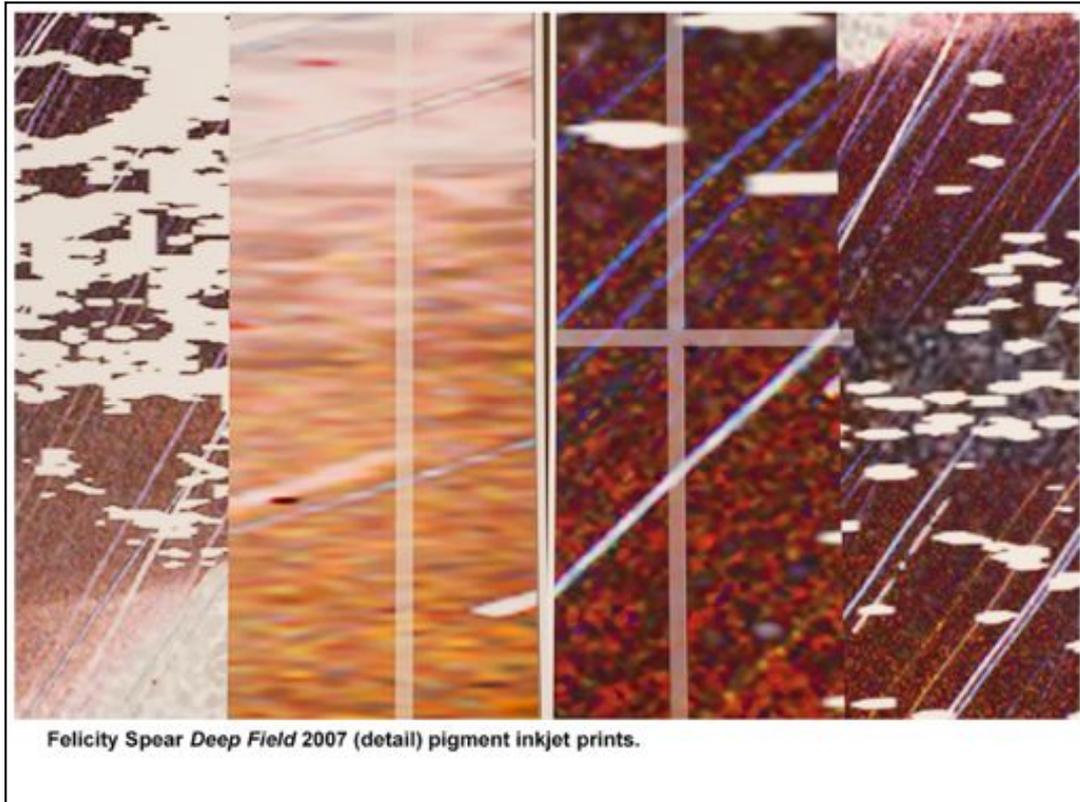


Hubble Deep Field 1995. Image Credit: NASA.

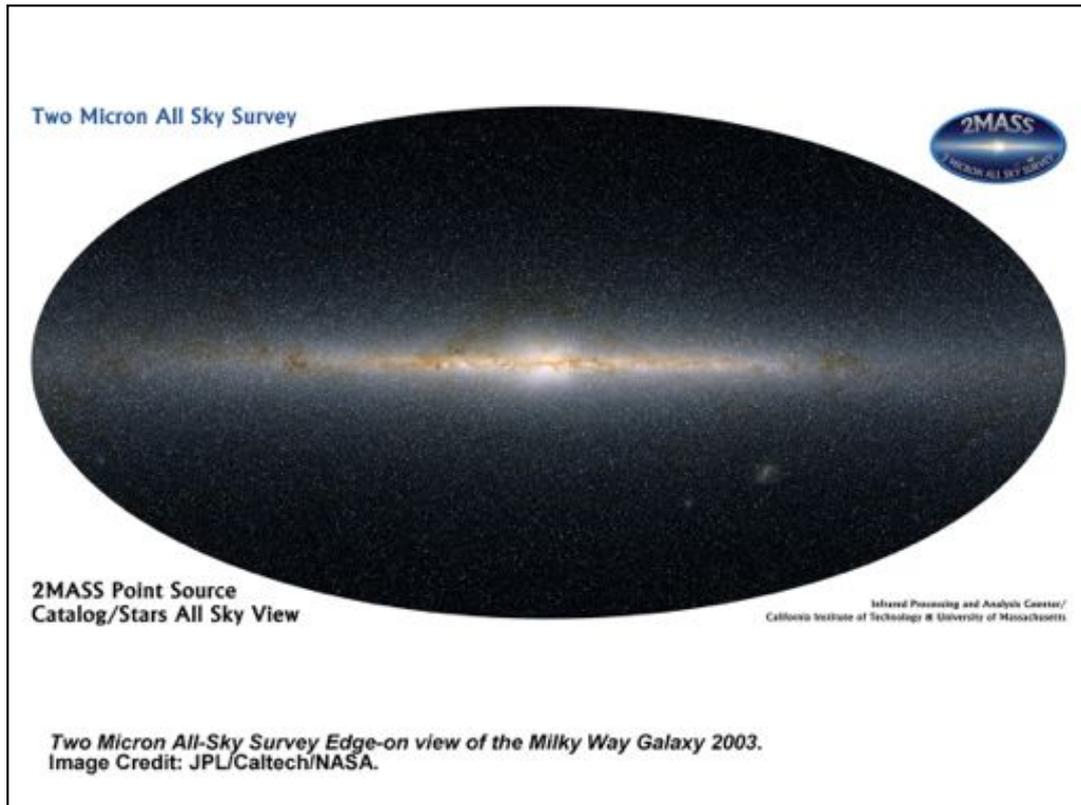
The title of my work *Deep Field* was selected both as a homage and a playful reference to the famous photograph the *Hubble Deep Field*. Captured in 1995 by one of the Hubble Space Telescope's digital cameras, this image, unseen before, revealed a core sample of the extent of the Universe's observable limits, the light from galaxies 13 billion light years away.



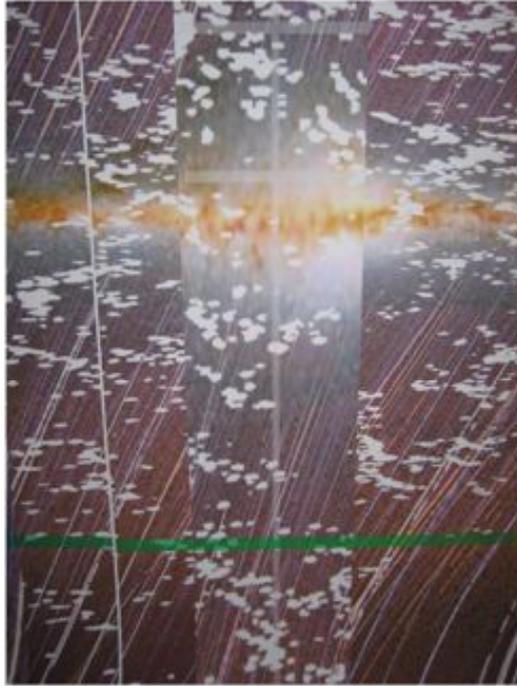
My *Deep Field*, consists of seven mural-sized inkjet prints on paper. Like an all-encompassing speculative map, my aim was to create for the viewer a sense of immersion in the night sky, beyond the visible, at vastly different distances from Earth. Everything in *Deep Field* is seen simultaneously through complex patterns of light and layers of data at different magnifications and different dimensions. Its seven vertical panels form a wave-like structure at their base suggesting the curved nature of space and time as we now understand it. The work has been created from digitally manipulated fragments of astronomy images and data, mapped at different wavelengths in the electromagnetic spectrum.



A background of time-lapse star-trail images, captured by David Malin, streak across each panel. From our Earthbound point of view they remind us of our rotating Earth, its rotation around the Sun, and together with its Solar family its endless journey around the Milky Way.

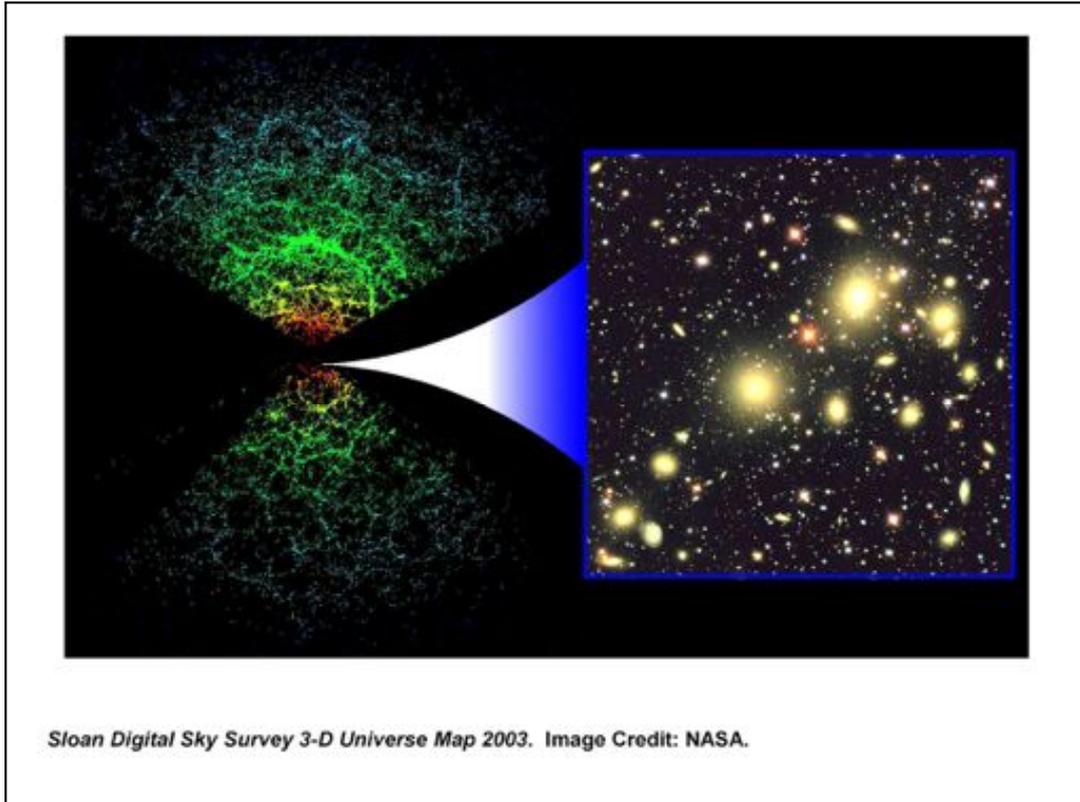


Moving deeper in to space you will see across the centre of the work a section of a telescopic image of the Edge-on View of the Milky Way Galaxy. This image, viewed from our solar system in a spiral arm in the galaxy's outer suburbs, was captured in infra-red by the *Two Micron All-Sky Survey (2MASS)*, 2003, using ground based telescopes.



Felicity Spear *Deep Field 2007* (detail) pigment inkjet print.
Photo Credit: Robert Colvin.

Visible in this false-colour, edge-on, inside-out view of the Milky Way is a thin disc of stars, (the white area), and the central bulge or nucleus, surrounded by huge clouds of inter-stellar dust, (the yellow area) This dust blocks our view of the galaxy in visible light.



Moving even deeper in to space you will see a V shape pattern reminiscent of the foam formed by waves as they wash up on the beach. This is stretched or magnified in some of the vertical panels. The image references the *Sloan Digital Sky Survey 3-D Universe Map*, a wedge shaped slice representing one quarter of the entire sky, mapping its large scale structure and the distribution of galaxies.



To accompany this work I developed a sound installation. This work immersed the viewer in sounds made from data selected from star radio-frequencies in many different regions of deep space.

The works in this exhibition privilege the subjective, sensuality and aesthetics over clever science. But at the same time they immerse the viewer in an experience of the night sky which would not be possible without scientific and technological knowledge and innovation. Here both art and science are offering another dimension of the real. As an artist I search for a poetic dimension or insight which points to things outside art, in this case astronomy, in new or different ways.



Finally Babak Tafreshi, the photographer who captured the 'Himalayan Skyscape', has suggested I draw your attention to The World At Night Website. This organization has been collecting the world's most diverse landscape astro-photos. They frame Earth and sky together, merging culture, art and science in nightscape images.

For more information about my work you can visit my website at www.felicityspear.com

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