From its inception four years ago, Karel Nel has been an active participant in one of the most comprehensive astronomy projects ever undertaken – the Cosmic Evolution Survey (COSMOS). This project was initiated with the largest allocation of time ever on the Hubble Space Telescope (ten per cent of the time for two years) to obtain deep, high resolution images of galaxies and clusters of galaxies in a two degree square area of the sky. The project now involves over 100 scientists (in the US, Japan, and Europe) and data from all large ground based and space telescopes.

I invited Karel to join our project at the beginning, after several insightful conversations with him. The project studies the evolution of galaxies, galaxy clusters and dark matter structures over 75 per cent of the age of the universe. With deep astronomy imaging, one is seeing galaxies at greater and greater distances and hence further back in time or cosmic epochs. Effectively we are turning back the clock to observe the universe as it was near the beginning and as it evolves, coming forward in time to the present epoch seen in the nearby universe.

Karel has attended and interacted closely with the COSMOS science team at our meetings over the last four years; at the American Museum of Natural History in New York, Kyoto University (Kyoto, Japan), the Max Planck Institute, Ringberg Castle (near Munich, Germany), and this June, at the Institute for Astrophysics in Paris. In the meetings, he is a stimulating presence, talking to the astrophysicists and attending the science talks. At four of these meetings, Karel provided hour-long lectures on his past work and his more recent art relating to our COSMOS project. His presentations were the best attended, vastly enriching our experience with deeper insights and appreciation, holding the audience in rapt attention.

Karel has a unique ability to bring out the commonality between the aspirations of both artistic and scientific endeavors, a desire in each case for unification and distillation of diverse phenomena, together with an appreciation of beauty and elegance – physical as well as philosophical. His approach is equally insightful to the specialist and the layperson, which makes it a real pleasure to collaborate with him on this project.

Often in our profession, one becomes fixated on the details of narrow corridors, losing sight of the interconnectedness and poetry of the whole. Karel’s images distill these connections metaphorically, much like the physicist uses equations to unify phenomena in diverse environments and over vast ranges of scale. For example, it is remarkable that the same Newton’s law of gravitation, describing how it is we are held to the surface of a spinning earth, also provides a prescription for the assembly of large scale cosmic structures of dark matter extending over a 100 million light years. Although artistic imagery can be much more complex and nuanced, Karel’s work often provides a similar unification between such diverse phenomena, bringing together ‘significant’ salts and dusts to express our view and connection to the cosmos.

Over the last decade astronomers have come to realize that the overall evolution of the universe is determined by mysterious ‘dark matter’ and ‘dark energy’. Our project has mapped for the first time the dark matter structures over half the age of the universe. They are detected indirectly since their gravitational lensing distorts the space nearby, thus distorting the images of more distant background galaxies – an effect referred to as ‘gravitational lensing’. The normal matter we observe with our eyes and through powerful telescopes constitutes but a trace four percent of the mass and energy content of the universe. Karel finds deeper significance in the recognition of these unobserved constituents as symbolic of our human need to experience the darkness of night for our spiritual well-being.
Sector: Two Square Degrees
2007
Charcoal, pastel, specularite and sprayed pigment on bonded fibre fabric
193 x 193 cm
The Brilliance of Darkness

Darkness, it would seem, is revelatory, clear, all-encompassing, and it is the nurturing matrix of manifestation itself. The series of works for this exhibition deals with the reciprocal process of looking into darkness to see scattered stellar light, and looking at this light in an attempt to understand the darkness.

Dark matter and dark energy appear, as I understand it, to form a kind of invisible scaffolding in our universe. The dark matter affects galaxy formation, leading to vast strand-like structures of clustered galaxies through deep space, yet we don’t know really what dark matter is. The dark energy is causing an apparent speeding up of the universe’s expansion, and our understanding of it seems to be mainly by inference.

Now in its fourth year, The COSMOS Project has meticulously recorded over a million new galaxies in a seemingly small, seemingly dark, two square degree sector of the universe. These awesomely beautiful images contain galaxies as large and even larger than the one in which our own solar system exists. Over two decades, a central concern in my work has been an investigation into the interface between the seen and the unseen worlds, between knowledge and consciousness, recording and mapping, and between the disciplines of art and science.

I am currently working with astrophysicists in the COSMOS team, as they create lexicons to quantify, understand, and name the nodes of galaxy formation within the darkness. For example, ‘the green valley’ refers to the colors of galaxies undergoing the most vigorous and transformational evolution. This kind of projected metaphorical labeling indicates a human effort to understand and claim the unknown through the known. The green valley so familiar to us on a kind of topological language to name, describe and locate the nodes of galaxy formation within the darkness. For example, ‘the green valley’ refers to the colors of galaxies undergoing the most vigorous and transformational evolution.

Galaxy formations seem to spread in much the same way as filaments or capillaries, within the tissue of organic systems. In their attempts to understand large scale structures and galaxy formation, astronomers often use a kind of topological language to name, describe and locate the nodes of galaxy formation within the darkness. For example, ‘the green valley’ refers to the colors of galaxies undergoing the most vigorous and transformational evolution. This kind of projected metaphorical labeling indicates a human effort to understand and claim the unknown through the known.

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Astronomers around the world have to go to great lengths and travel large distances to view the firmament from isolated points on the planet they are free from light pollution. I have spent time with them at the Subaru telescope on Mauna Kea, a 13000 ft high volcano deep within the Pacific, on The Big Island of Hawaii, visited the plains of St Augustine in New Mexico, the site of The Very Large Array; and on remote islands in Polynesia and Micronesia – to view the stars as our ancestors did.

After hot days in these distant and sometimes inhospitable places, it is a great relief as night falls and the heat is tempered and cools. As the light fades, one’s eyes incrementally adjust to the powder-black darkness and the pinpoints of light emerge like a developing photograph, till the darkness is radiant with millions of visible stars. At the same time, we are bathed with emanations of infra-red and radio waves so low in energy that we humans have never evolved to receive them.

It is within these very specific conditions that we see once more, for the ‘first time’, the complexities of the firmament from which we extrapolate the very existence of our galaxy in relation to the countless and nameless others within the unfolding mystery that is the universe. It is only within the all-encompassing darkness that we are able to see light, acutely observe, record and attempt to comprehend the singularity of the briefest instant at the very beginning of our universe and an ever-expanding consciousness.

Karel Nel
2008
Composing Darkness
2008
540 million year old black carboniferous dust and salt
80x80 cm
Leaping Darkness
2008
Sprayed pigment on bonded fibre fabric
250x80cm
Stellar Noise
2008
Salt and lacquered wooden pegs
100 x 100 cm
Bandwidths

20GB
540 million year old black carboniferous dust and salt
50x145 cm
Dark Transmissions
2008
540 million year old black carboniferous dust and salt
50 x 145 cm
Hidden Beauty
2008
540 million year old black carboniferous dust and salt and vermillion pigment
100 x 100 cm
New Light
2008
Salt and violet pigment
70x70cm

New Light (detail)
Stellar Calculus
2008
540 million year old black carboniferous dust and prehistoric salt from the atomic testing site, White Sands, New Mexico
170x170 cm
Representational Problem
2008
540 million year old black carboniferous dust and salt
100x100 cm
Stacked Coda

2008
Sprayed pigment on bonded fibre fabric
250 x 80 cm

Stacked Coda (detail)
Icon
2008
540 million year old black carboniferous dust and salt
and vermillion pigment
36x65 cm
Nel working on The Collapse Of Time

2008
Sprayed pigment on bonded fibre fabric
240x360cm (3 part screen)
Silent Sector  
2008  
Salt and lacquered wooden pegs  
37 x 75 cm

Signal/Noise  
2008  
540 million year old black carboniferous dust and salt  
37 x 75 cm
Biography

Karel Nel was born in 1955, in Pietermaritzburg, South Africa. He studied Fine Art at the University of the Witwatersrand, Johannesburg, St Martin’s School of Art, London and the University of California, Berkeley ( Fulbright Placement 1988-89). He now lives and works in Johannesburg and is Associate Professor at the School of Arts, University of the Witwatersrand. Nel is a respected collector of African, Asian and Oceanic art with a particular interest in currencies. He has expertise in southern African art and advises and consults with museums in South Africa, New York, London and Paris. He has also been part of curatorial teams for major international exhibitions on early Zulu, Tsonga and Shangaan art, and has contributed to numerous publications on this material.

Over many years Karel Nel has been interested in the interface between art and science and this ongoing investigation has led to his inclusion in the COSMOS project as artist-in-residence.

Solo exhibitions

- 2008 The Brilliance of Darkness, Art First, London
- 2007 Lost light: fugitive images from deep space, Standard Bank Gallery, Johannesburg
- 2005 In the Presence of Leaves, Art First, London
- 2004 Leslie Sacks Fine Art, Los Angeles
- 2003 Status of Dust, Art First, London
- 2002 Status of Dust, Art First, New York
- 2000 Volcanic Texts, Art First, London
- 1999 Solo Journeys, Standard Bank Gallery, Johannesburg
- 1998 Images of Paradise and Death, Leslie Sacks Fine Art, Los Angeles
- 1996 View on the Inner House, Art First, London
- 1995 Inner Province, Art First, London
- 1994 Recent Work, Standard Bank Gallery, Johannesburg
- 1993 Quiet Lives, Gertrude Posel Gallery, University of Witwatersrand
- 1989 Recent Drawings, Art First, London
- 1988 Quiet Lives, Gertrude Posel Gallery, University of Witwatersrand

Selected group exhibitions

- 2004 Ten Years of Democracy, South African National Gallery, Cape Town
- 2003 Place, Galerie Asbaek, Copenhagen and touring exhibition to Pretoria Art Museum and Oliewenhuis Art Museum, Bloemfontein, South Africa
- 2001 Art First at 10, Art First, London
- 2000 The Schachat Art Collection, SASOL Art Museum, Stellenbosch, South Africa
- 1999 Claiming Art/Reclaiming Space: Post Apartheid Art from South Africa, Smithsonian, Washington DC
- 1998 Three Years On, Art First, London
- 1992 University Art Museum, University of California, Berkeley
- 1991 Institute of Contemporary Art, Johannesburg
- 1988 Cape Town Triennial
- 1987 Vita Art Now, Johannesburg Art Gallery
1986 The Volkskas Atelier Award (and 1987, 1988)
1986 Selections From a Century, Johannesburg Art Gallery
1985 Tributaries A View of Contemporary South African Art, BMW Exhibition, touring Germany and Europe
– Cape Town Triennial
– Paperworks Group Show (prize winner)
1983 Tatham Gallery, Pietermaritzburg Association of Arts, Natal
1982 Cape Town Triennial (gold medalist)
1980 Durban Arts ‘80
– Young Artists, Olivetti Gallery
– Sculpture ’80, University of Pretoria
1977 University of Witwatersrand
Commissions
2004 Oval Carpet, South Africa House, London
2002 Field of Value, Nedbank headquarters, Johannesburg
1997 B/M/D Headquarters, Cape Town, Signs of
1999 ABSA, Johannesburg, Place of Nurture
1986 Selections From a Century, Johannesburg
1986 Johannesburg Art Gallery: Intact – graphic
1984 Anglo American: Trance Atlantic – drawing
– Sandh Du Plessis Theatre, Bloemfontein:
  Inner Dance – drawing

Awards and residencies
2003 Gammeldok Copenhagen artists residency
1999 The Old Mutual Vita Award (overall winner)
– The Simpson Fellowship, University of California, Berkeley
1989 Art Gallery Founders Prize of the University of California, Berkeley
1987 Fullbright Placement (University of California, Berkeley)
1985 Tributaries A View of Contemporary South Africa
1984 Anglo American: Trance Atlantic – drawing
1986 Johannesburg Art Gallery: Intact – graphic
1979 Montagu White Travel Grant
1978 Montagu White Bursary
– Afrox Prize (open category)
1977 Afro Art Metal Sculpture Annual Competition (student award)

Collections
Anglo American Corporation, Johannesburg
Barkworld Corporate Collection, Johannesburg
BHP Billiton Art Collection, Johannesburg
Bloemfontein University
Durban Art Gallery
General Electric Company, USA
Johannesburg Art Gallery
The Metropolitan Museum of Art, New York
MTN Collection, Johannesburg
National Museum of African Art, Smithsonian Institution, Washington DC
Pretoria Museum
Rembrandt Foundation, Stellenbosch
Sanlam, Cape Town
South African Broadcasting Corporation, Johannesburg
South African National Gallery, Cape Town
Standard Bank Collection, Johannesburg
Tatham Art Gallery, Pietermaritzburg
Trust Bank, Johannesburg
University of South Africa, Pretoria
William Humphreys Art Gallery, Kimberley
Witwatersrand University, Johannesburg

Writings by Karel Nel

Selected bibliography
Wullschlager, J. ‘Karel Nel at Art First,’ FT Magazine, London 3 September 2005
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