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EARTH, FIRE & WATER

THE DYNAMIC FRACTALS OF EARTH



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INTRODUCTION

The 2005 Exhibition “IN SEARCH OF THE WATCHMAKER” explored the notion of fractals in the invisible world – the incomprehensible mathematics of the Universe. “Earth, Fire & Water” is about the dynamic fractals of the visible world, where observation and not imagination is the prerequisite for understanding the nature of fractal structures of the earth. The mystery of the two worlds is the interconnectivity by fractals, an observation which continues to haunt the mind. Are these observable fractal formations simply the result of millions and millions of years of cosmic change or are they the fabric by which the Watchmaker, God, has used to weave the universe together?

The notion of God has become quite unfashionable in today’s post, post modern world (post²), being superseded by a mumbo jumbo of rhetoric that reflects the confused times we live in. This loss of spirituality has resulted in a floundering of moral and ethical standards, which despite the vast array of consumer goods available and the fantastic achievements in science, medicine and technology, the post² world lives in fear and lacks direction. Our leaders continue to take us on a merry dance, ignoring the signals of Global Warming as a mere environmental inconvenience that will go away at the next election. The new pandemic is psychological – fear. In the exhibition of Earth, Fire & Water, the viewer is asked to observe the earth that he lives upon, and wonder by what processes this most precious jewel has been assembled, and by what means is it being held together. We are moving into a world of unknowable knowledge, but none the less our minds must explore its boundaries and determine for ourselves whether a Watchmaker exists or that the universe is one big fractal of chance.

But before we proceed, let me explain what fractals are all about. In 1985 a mathematician by the name of Benoit Mandelbrot discovered fractal mathematics, which have become known as the Chaos Theory. This form of mathematics explains how simple forms can be transformed into very complex patterns and forms. The example of the table napkin serves as the simplest way of comprehending fractal mathematics. Consider the vertical edge and horizontal edge to be axis lines. Draw 2 dots on the napkin. The relationship of those two dots can be explained by referring back to the points where they are located, by measuring the distance from the vertical and horizontal axes. This is the notion of Euclidian Geometry – this is the geometry of high school, the square, the circle, the triangle and so on. Now take the napkin in your hand and crush it. Now unfold it. The two points are on the napkin but no longer can their position be explained by measuring the distance from either axis. The two points are now in a multidimensional framework that is constantly in a state of flux. This is the notion of fractal mathematics and describes how the real world is held together. Once you become aware of the notion of fractals, you begin to see them everywhere. Cloud formations, coast lines, bark on trees, branches on trees, rock formations, cracks in the road – nature is full of fractals. Look closely at the veins in your hand; the blood vessels follow fractal lines. The nervous system is a fractal network; brain patterns follow fractal forms. In the kitchen, broccoli and cauliflower are fractal forms. When you add milk to coffee, fractals form before the two are blended together.

Earth, Fire & Water observes fractal forms in nature. The beautiful array of colours are not invented, they belong to earth. If you are not convinced, visit Google Earth. Your eyes will be amazed.

The repetitive nature of fractals almost defies the notion that they can be destroyed, that is the paradox. Fractal filaments are destroyed slowly, with no apparent visual disturbance evident. This process occurs over time until the break up is reached where the entire fractal network plunges into disarray.

We may have stumbled upon the keys of the universe, but must now ask how is it that these keys came to exist. Like William Paley’s discovery of a watch in a field, the question is asked, ‘are these fractal formations the result of a long process of accidental occurrences or is there another explanation – one that we cannot know or explain, one that demands a belief that there exists an invisible world that too is held together by these fractal forms?’ We cannot know the answer. We have found the keys, but have no idea where the door is or how to open it. That is the start of a new journey of the mind. That is the challenge in the post² world.

We, as guardians of Planet Earth are all capable of making a difference to the biosphere and ecosystems of earth. It is up to us to choose where and how we walk, to ensure that earths fractal filaments are not destroyed.



- NICK CHLEBNIKOWSKI. Melbourne, April 2006

SpecialThanks: Professor Hugh O’Neil for opening the exhibition. The Manningham Gallery Team, Katelyn Stanyer - Exhibition & Programs Officer; Greg Cleave - Cultural Programs Coordinator; & Nicky Forster - Cultural Support Officer. Yuri Chlebnikowski for graphic design. Irene Kornienko for marketing support. Jennifer Mackowiak for making the frames. Bernard Newsome for digital printing. Simon, Alex & Vic Chlebnikowski and Nicks Wine Merchants /Vintage Direct. Graham Lind, Ozanam Enterprises for boards. My wife Ann who continues to put up with a house full of paintings –Thanks Snoopy!

THE PAINTINGS

- I. EARTH, FIRE, WATER \$5000
Fire, smoke and ash create a fractal chaos sequence.
Oil on Board. 3 Panel Work – overall 1800 x 1200
2. THE BALANCES ARE ALTERED \$8000
Alterations of the ecological and environmental balances are now taking place on a large scale with permanent effects on all living creatures.
The fractals break away, forming filaments that make repair impossible.
Oil on Board. 3 Panel Work – overall 1800 x 1200
3. EARTH'S FIERY INTERIOR \$3500
Earth's fiery interior spills out into the sea, creating a cauldron of boiling salt water and spray. Red hot molten rock forms a new brown fractal landscape. Oil on Board. 3 Panel Work – overall 1800 x 1200
4. SMOKE ENGULFS THE AIR \$3500
Smoke engulfs the air, mixing the ashes of the forest floor in a turbulent display. There is great beauty in the process of destruction.
Oil on Board. 3 Panel Work – overall 1800 x 1200
5. NATURE STRIVES FOR EQUILIBRIUM \$10000
Nature strives for equilibrium. Man and his machines choose to alter the balance. Nature retaliates.
Oil on Board. 3 Panel Work – overall 1800 x 1200
6. THE TURMOIL OF CURRENTS \$6000
The turmoil of currents and under currents drawn out by the gravitational pull of the moon creates wondrous fractal seascapes.
Oil on Board. 3 Panel Work – overall 1800 x 1200
7. WATER HAS DISAPPEARED \$4000
Water has disappeared. Plant life is nowhere to be seen. Sand and dust mix with wind and sun. Seeds lay hidden, awaiting the next rains.
Oil on Board. 3 Panel Work – overall 1800 x 1200
8. FLAMES ENGULF THE TALL TIMBERS \$8000
Flames engulf the tall timbers, destroying the habitat of man and animal. The landscape is destroyed – black fractals abound.
The mystery of the vegetation will soon unfold.
Oil on Board. 3 Panel Work – overall 1800 x 1200
9. FRESH & SEA WATER CONVERGE \$5000
Fresh water and salt water converge at land's edge, creating dynamic fractal patterns as water, sand and rock intermix. Sea life is abundant.
Oil on Board. 3 Panel Work – overall 1800 x 1200
10. MOUNTAIN TOP ALIVE \$3500
Fires run along the ridge of the mountain; fanned by a north wind, they will soon reach the next valley. The community of the small town moves out. What is left are distorted streets of building material – galvanized sheds take on a new fractal form.
Oil on Board. 2 Panel Work – overall 1600 x 800
- II. SUN, WIND AND WATER \$3000
Sun, wind and water continuously reshape the fractal landscape – moving boundaries of forest and sand one way, and then another.
The process of gradual change. Oil on Board. 2 Panel Work – overall 1600 x 800
12. POLLUTION POURS INTO THE OCEANS \$2500
Pollution pours into the oceans, without an immediate impact. More pollution follows, the seas appear to forgive. More pollution follows.
A yellow bloom rises to the surface of the sea. Fractal waves are now destroyed. Oil on Board. 1200 x 600
13. LIFE WILL SOON REAPPEAR \$2500
The wasteland that is left behind after the fire is a dark composition of fractals. Sticks and branches all become interlaced into an expression of despair. Life will soon reappear. Oil on Board. 1200 x 600
14. SERPENTINE RIVER SYSTEMS \$2000
Serpentine River systems meet serpentine streams creating a fractal network, distributing earth's most precious liquid – water.
Oil on Board. 1200 x 600
15. (A) FORMATION OF ISLANDS Oil on Board. 1200 x 300 \$2500
(B) PACIFIC WAVE Oil on Board. 1200 x 300 \$2500

16. **WAVE SOLD** \$6000
The polar ice caps melt. Tsunami waves pound coastlines. Cities are lost. Waves keep coming and coming. Will they stop tomorrow?
Oil on Board. 3 Panel Work – overall 2400 x 800
17. **RIVER SYSTEMS ALTER THE LANDSCAPE** \$10000
River systems meander through the rainforest, carving away one side of the river bank and depositing on the other.
Oil on Board. 3 Panel work – overall 1800 x 1200
18. **DEEP OCEAN WATERS** \$1500
Deep ocean waters shelter a remarkable diversity of sea life – from microscopic plankton to giant whales.
All co-exist in a perfectly balanced ecosystem – until man interferes. Oil on Board. 900 x 600
19. **THE DELTA, NATURE'S NEURAL NETWORK** \$1500
The Delta, nature's neural network, meets the sea, providing flood plains with soils rich in nutrients for crops to be planted and harvested.
It is a fragile place. Oil on Board. 900 x 600
20. **FRACTALS OF THE INTERFACE** \$1500
The fractals of the interface at the edges of rivers and seas change colour according to the volume of silt that is carried down from mountain and plain. Oil on Board. 900 x 600
21. **SCARRED FROM TORRENTIAL RAIN** \$1500
Scarred from constant torrential rain, mineral deposits change the colours of the water's edge.
A new chaotic set of fractals is established with each downpour. Oil on Board. 900 x 600
22. **THE HAZE OF FRACTAL FLAMES** \$1000
Fractal flames are sucked into the vacuum of the sky – filling the air in a haze of fractal light.
Oil on Board. 900 x 600
23. **RIVERS SNAKE AROUND** \$1500
Rivers snake around the sand banks of the plains, creating meanders which follow a preset mathematical formula.
There is apparent order in chaos. Oil on Board. 900 x 600
24. **CURRENTS SWIRL – POWERFUL WAVES** \$1500
Currents swirl at the mouth of the river, powerful waves pound the solid rock walls. Sand forms.
Oil on Board. 900 x 600
25. **THE PROTECTIVE CANOPY OF THE RAINFOREST SOLD** \$1000
The canopy of the rainforest protects the fragile life under its branches. An abundance of fragile plant and animal life thrives.
New medicines are to be found. Oil on Board. 900 x 600
26. **ROCK, SAND & WATER SOLD** \$1500
Rock, sand and water are mixed into a slow moving fractal mud pool. Blue seas turn brown.
Oil on Board. 900 x 600
27. **THE SCULPTURAL POWER OF THE OCEAN** \$1000
The power of the ocean resculpts the land, creating new forms and microclimates. The shelters of the rock pools generate an abundance of sea life. Oil on Board. 900 x 600
28. **FIRES AT THE COAST LINE SOLD** \$1000
The fires finally reach the coastline. Sea birds have long gone, submerged in cold ocean currents. The echidna is too slow.
Oil on Board. 900 x 600
29. **MOUNTAIN RANGES & RAIN SHADOWS SOLD** \$1500
Mountain ranges create rain shadows. To the right, the land is flushed with green vegetation.
To the left, the land cries for water. That is nature's way. Oil on Board. 900 x 600
30. **TROPICAL RAINSTORMS SOLD** \$1500
Tropical rainstorms alter the surface of the dry land, reshaping the fractal patterns of the last season's downpour.
Permanent scars emerge. Oil on Board 900 x 600
31. **MOON STUDIES.** Oil on Board. Unframed. 300 x 210 **SOLD** \$200
32. **MOON STUDIES SECOND SERIES.** Oil on Board. Unframed. 600 x 450 \$300
33. **SUN STUDIES.** Oil on Board. Unframed. 600 x 450 **SOLD** \$300