

# New theories make a creator of the universe redundant – Hawking

LONDON: God did not create the universe, and the "Big Bang" was an inevitable consequence of the laws of physics, the eminent British theoretical physicist Stephen Hawking argues in a new book.

In *The Grand Design*, co-authored with US physicist Leonard Mlodinow, Hawking says a new series of theories made a creator of the universe redundant, according to the Times newspaper, which published extracts yesterday.

**'The universe can and will create itself from nothing'**

"Because there is a law such as gravity, the universe can and will create itself from nothing. Spontaneous creation

is the reason there is something rather than nothing, why the universe exists, why we exist," Hawking writes.

"It is not necessary to invoke God to light the blue touch paper and set the universe going."

Hawking, 68, who won global recognition with his 1988 book *A Brief History of Time*, an account of the origins of the universe, is renowned for his work on black holes, cosmology and

quantum gravity.

Since 1974, the scientist has worked on marrying the two cornerstones of modern physics – Albert Einstein's General Theory of Relativity, which concerns gravity and large-scale phenomena, and quantum theory, which covers subatomic particles.

His latest comments suggest he has broken away from previous views he has expressed on religion. Previously, he wrote that the laws of

physics meant it was simply not necessary to believe that God had intervened in the Big Bang. He wrote in *A Brief History* ... "If we discover a complete theory, it would be the ultimate triumph of human reason – for then we should know the mind of God."

In his latest book he said the 1992 discovery of a planet orbiting another star other than the Sun helped deconstruct the view of the father of physics, Isaac Newton, that the

universe could not have arisen out of chaos but was created by God.

"That makes the coincidences of our planetary conditions – the single Sun, the lucky combination of Earth-Sun distance and solar mass, far less remarkable, and far less compelling evidence that the Earth was carefully designed just to please us human beings," he writes.

Hawking, who is only able to speak through a computer-

generated voice synthesiser, has a neuro muscular dystrophy that has progressed over the years and left him almost completely paralysed.

He began suffering the disease in his early 20s but went on to establish himself as one of the world's leading scientific authorities, and has also made guest appearances in *Star Trek* and the cartoons *Futurama* and *The Simpsons*.

*The Grand Design* is due to go on sale next week. – Reuters

## City pupils grill acting energy DG on nuclear ambitions

Melanie Gosling  
Environment Writer

"YOU hold our future in your hands, so do not leave us with increased radioactive waste by building more nuclear power stations."

This was the message from a group of high school pupils who met Ompi Aphane, acting deputy director-general of the Department of Energy, at Reddam School in Tokai yesterday.

The pupils, from Reddam, Hout Bay High and Waldorf, invited Aphane to meet them to discuss the government's proposed expansion of nuclear power stations, and to explain why there was not a greater commitment to using renewable energy.

Aphane told the group the government was looking at a mix of different energy sources. He said while nuclear energy plants were expensive to build, over a period of time the relatively low running and maintenance costs made nuclear energy "extremely attractive".

Anna Kent, in Grade 11 at Reddam, said: "We keep on hearing the words, 'reliable, safe and cheap' (about nuclear power), but from the research I've done it's none of these things. Have you forgotten Chernobyl? We don't want to be left with that."

Nosiphe Tomtala, in Grade 12 at Hout Bay High, asked Aphane what would happen to the high-level radioactive waste from the spent fuel from nuclear power stations.

"You say it is cheap, but it is not true. The costs don't calculate disposing of nuclear waste. It is always left out," Tomtala said.

Aphane agreed that the cost of decommissioning a nuclear power plant was high, adding that this was "a big negative".

However, he said the pupils should also consider these advantages of nuclear power generation: it did not emit carbon, SA held some of the world's largest uranium resources and it was reliable as a base-load power supply.

"If you relied on renewable energy only, and Koeberg shut down, all Cape Town's lights would go out," Aphane said.

The government's Integrated Resource Plan was being formulated and various forms of electricity generation were being considered. "Renewable energy needs to form part of this... (but) you cannot run an economy like ours on renewables," he said.

### MERCY MISSION

# Boy burnt by aunt's remedy in city for op

Udani Samarasekera

BONGANI PHAKATHI was six when his aunt accidentally plunged his face into a large pot of boiling water.

She was trying to treat Bongani's cold and cough, said Mitah Lekaba of Children of Fire, a charity that helps children with burns to get treatment and care.

His aunt had boiled the water for Bongani to inhale the steam. She covered him and the pot with a towel and forced his head down. She thought the closer he got to the water, the better it would be for his cold.

But she pushed too far. Bongani's face went into the scorching water.

The accident caused severe burns to the boy's face and

throat. Bongani, from East Rand, Johannesburg, was in hospital for months after the accident. He had surgery on his eyelids at Chris Hani Baragwanath Hospital because "he couldn't close his eyes while sleeping", said Lekaba.

"Sometimes there are atrophic scars" after burn accidents, explained Lekaba, herself a burns survivor. These are deep scars that can leave a depression or hole in the skin.

Last year, Bongani's mother approached Children of Fire for further help with his appearance.

"His mother brought him to us," said Lekaba. "She was looking for a place where he could be accepted. She wanted us to take him in, make him look better so he could go to a



**BRAVE FACE:** Children of Fire's Mitah Lekaba fits a pressure garment to Bongani Phakathi's face. Burn victim Bongani, 8, will have to wear this after plastic surgery at the Red Cross Children's Hospital this month. The charity flew him to the city from Johannesburg for the life-changing operation.. Picture: MATTHEW JORDAAN

normal school."

Bongani was not at school at the time; he was not encouraged to attend. "People, in general, are intolerant of disfigurement. Teachers at school said he would disturb the other children," Lekaba said.

Children of Fire arranged

for Bongani, now eight, to have plastic surgery at the Red Cross Children's Hospital this month, and he was flown to Cape Town on Wednesday.

Bongani is very lively, despite his injuries and impending operation. Waiting to see the doctor for an assess-

ment at the Red Cross yesterday, he ran around, climbing on beds, playing with blinds and steaming up a mirror with his breath to make patterns in the condensation.

He falls quiet, however, when Lekaba puts a pressure garment on his face. The spe-

cially-made garment is used to reduce the risk of keloids (hard skin) coming back, said Lekaba.

Bongani has to get used to wearing it, as he will have to wear it a lot after his operation.

Bongani's surgery is due to take place on Monday. "We want to improve his neck, ears,

nose, and mouth," said Lekaba who is accompanying Bongani on his life-changing trip.

"This operation will excise the keloids on his face, making it easier for him to open his mouth, and therefore making it easier for him to eat, and smile," she said.

## Cape's dry winter sees dam levels falling

Staff Writer

IT WAS a dry winter, with less than half the long-term average rainfall recorded in July and last month.

The Cape Town weather office said the city received only 40.3mm of rain in July and only 31.4mm in August.

The rural areas also didn't get much rain.

According to Agri Western Cape, a farm in Franschoek received 612.5mm between January and August last year and only 472.5mm during the same period this year.

A farm in Breede Valley went from 352mm last year to 182.5mm this year.

Areas such as Mossel Bay are suffering because of water shortages.

Wolwedans Dam, Mossel Bay's main water source, is drying up, and it could be a cracked mud patch by October.

The lack of rainfall over the past two months has resulted in lower storage levels in the majority of dams around the Western Cape.

Wemmershoek dam was sitting at 79.3 percent capacity at the end of last month, against

99.7 percent last year. Steenbras Lower dam was at 59.1 percent with Steenbras Upper at 94.6 percent, compared to 100.1 percent and 100.8 percent last year.

The waterskloof dam has gone down to 94.7 percent capacity. Overall, the storage levels for the Western Cape have decreased by 6.9 percent from last year.

## Legal blow to vuvuzela patent hopes

JOHANNESBURG: It would not be legally possible to patent the vuvuzela, a lawyer said yesterday.

"In the case of the vuvuzela, the concept of a device through which a noise is created by blowing into it would have been superseded by prior horns. It would therefore not be 'patentable,'" said Dale Verster, an associate at

commercial law firm Bowman Gilfillan.

At one stage, the vuvuzela could perhaps have been protected as a registered design, but the scope would have been limited, Verster said.

"At the date of its original release, it is probable that the actual shape of the vuvuzela was new and original. If not, the proprietor could have

altered its shape and configuration, added a pattern, or included some form of ornamentation to the article to make it new and original."

But since the release of the first vuvuzela, numerous variations have seen the light.

"This further hampers the possibility of receiving a valid design registration," said Verster. – Sapa

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**Ingnite 28 Daypack** R299  
This daypack is ideal for daily use, as either a back-to-school-bag or for short hiking trips. It includes a detachable waist strap for extra stability and reflective piping for safety.

**Water Bottles** from R125  
These water bottles will make sure you stay hydrated every step of the way making those outdoor adventures even more enjoyable.

**8x42 Binoculars** R699  
These K-Way binoculars are waterproof and have BK7 roof prisms. The lenses are fully coated and are nitrogen filled to prevent fogging.

**K-Way Evo XL Gear bag (160L)**  
Now only **R40\***  
(normally R399)  
\*when you spend R2000 or more.

**All Terrain Hat** R160  
This hat is ideal for game viewers. It features a dark underside to ease the glare of the sun, and has a unique chin strap to keep your hat on no matter how strong the wind might be. It also has a Velcro-closure pocket and will float if it gets blown into water.

**Women's Micayla Shorts** R280  
These bedford cord knee length utility shorts are available in stone and charcoal colour.

**Women's Lanai Sandals** R299  
These sandals are rugged enough for outdoor use, but look at home in urban settings. They have a hiking shoe or sneaker outsole and are perfect for any surface. Extremely comfortable for wearing all day.

**Old Khaki Men's Tuan Golfer** R225  
This slim fit golf shirt comes in solid colours with heavy brush treatment for a slightly aged look. Available in red and blue.

**Old Khaki Women's Lanai Sandals** R299  
These sandals are rugged enough for outdoor use, but look at home in urban settings. They have a hiking shoe or sneaker outsole and are perfect for any surface. Extremely comfortable for wearing all day.

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