The mystery of mass

Higgs Boson - 2013 Nobel Prize for Physics

'God particle' scientists win Nobel

PHOTO: REUTERS

STOCKHOLM - Science's greatest prize was awarded yesterday to a modest retired professor from Edinburgh and a Belgian physicist for suggesting the existence of the so-called "God particle" - the Higgs boson - which gives mass to matter.

Professors Peter Higgs, 84, and Francois Englert, 80, won the 2013 Nobel Prize for physics for their theory that an invisible ocean of energy suffusing space is responsible for the mass and diversity of the universe.

Their theory that the "God particle" was the elementary structure that comprised all of nature sent a generation of physicists on a chase that culminated on July 4 last year with the discovery of the long-

sought Higgs boson at the Large Hadron Collider (LHC) at the European Organisation for Nuclear Research (Cern) in Switzerland.

Prof Higgs said in a statement released by the University of Edinburgh that he was "overwhelmed".

Prof Englert told AFP: "I'm very happy to have received the prize."

Professors Higgs and Englert, together with Belgian physicist Robert Brout, proposed the Brout-Englert-Higgs mechanism in 1964 in two papers published independently.

Prof Brout died on May 3, 2011. The Nobel prize committee's rules dictate the science prizes cannot be awarded posthumously.

The Brout-Englert-Higgs mechanism suggested the existence of the elusive "boson" in the 1960s to provide an answer to the riddle: why matter has mass. The tiny particle, they believed, acts like molasses on snow - causing other basic building blocks of nature to stick together, slow down and form atoms.

The mainstream media dubbed the Higgs boson the "God particle", from a 1993 book on the topic, a nickname strongly disliked by many physicists - including Prof Higgs.

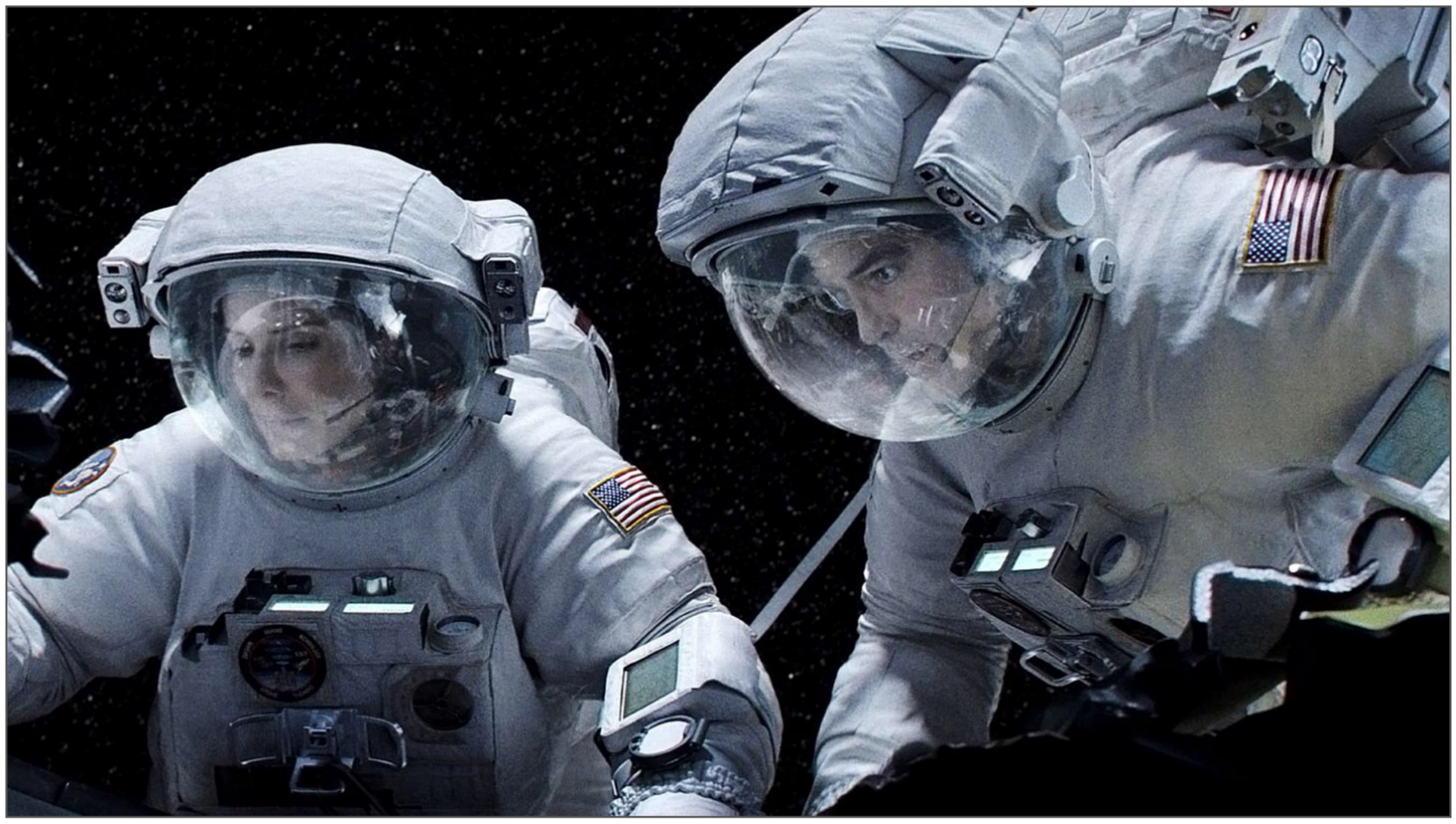
By just awarding the men behind the theoretical discovery of the Higgs boson, the Nobel prize committee avoided the tricky issue of picking someone from among the thousands who worked at the Cern laboratory to share the award. The Nobel award can only be shared by three people.

AGENCE FRANCE-PRESSE, REUTERS

The beauty & horror of gravity

Or the lack of it

Science fantasy with a warm heart



PHOTOS: WARNER BROS, ASSOCIATED PRESS

BY JOHN LUI

Review Drama thriller

GRAVITY (PG13)

91 minutes/Opens tomorrow/*****

The story : Medical engineer Ryan Stone (Sandra Bullock) and veteran astronaut Matt Kowalski (George Clooney, both below) are on a spacewalk when their shuttle is struck by satellite debris. The pair become stranded in the void, cut off from mission control. They must save themselves before they run out of air or drift away from Earth.

This gripping drama of survival might be this year's most ambitious big-budget summer showpiece. Not because of its massive scale, but for the opposite: its intimacy.

This is a space movie without sleek futurism, a feast for hardware junkies that puts a frightened, lonely human at the centre of the action for much of the running time, and instead of science fiction, the audience gets plain old science.

On that last point: Yes, not everything is absolutely factual, as many news reports have pointed out, but the important point is that director Alfonso Cuaron

makes it all feel factual, so much so that entertainment journalists are compelled to fact-check aeronautical trivia with experts.

If that is not a sign that a film had made fiction feel like reality, then it is hard to tell what would be.

Cuaron, who co-wrote this with his son, Jonas, has a genius for finding drama in the realistic, when lesser directors would resort to tropes.

In the opening scene, when disaster strikes, it strikes silently, as it should in the near-vacuum of space. The absence of booms and bangs takes nothing away from the sense of threat; it adds to the feeling of being alone in a vast, alien emptiness, in an environment thoroughly hostile to human well-being.

Increasing the sense of isolation is how there is never a point of view of the action from Earth, and the presence of mission control and other astronauts is felt only indirectly.

Dr Stone (Bullock) is at the centre of what is essentially a lifeboat drama - her craft is her suit and her ocean is the inter-planetary void, and Cuaron, with the help of cinematographer Emmanuel Lubezki (Oscar-nominated for Cuaron's Children Of Men, 2006) fully exploit a horrible paradox: The gear she wears, the reason for her continued survival, is also claustrophobically confining. If things go wrong, it might be her coffin.

Cuaron and Lubezki use the 3-D format more effectively than any film in recent years.

Spacecraft feel large and looming when they should and floating astronauts look like insignificant dots against the inky blackness when they should.

More than that, the point of view is high enough for viewers to witness the magnificence of the planet's arc, and low enough to feel the giddying altitude in the gut.

In the third act, the team of Cuaron and Cuaron discard the lifeboat theme in favour of action and thrills, complete with affirmations of self-belief, false starts, near misses and, if one were to be completely honest, deus ex machina plot points.

All that would have been glaringly obvious and unforgivable if not for Bullock's wonderfully empathetic performance.

In a movie filled with hardware and cold, hard-edged science, her Dr Stone is its warm heart.