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# T O B O L

GRAVITY SEES SANDRA BULLOCK AND GEORGE CLOONEY LOST IN SPACE. A STUNNING TRIUMPH OF SPECIAL

## gravity *noun*

**1.** the force that attracts objects toward one another, especially the force that makes things fall to the ground.

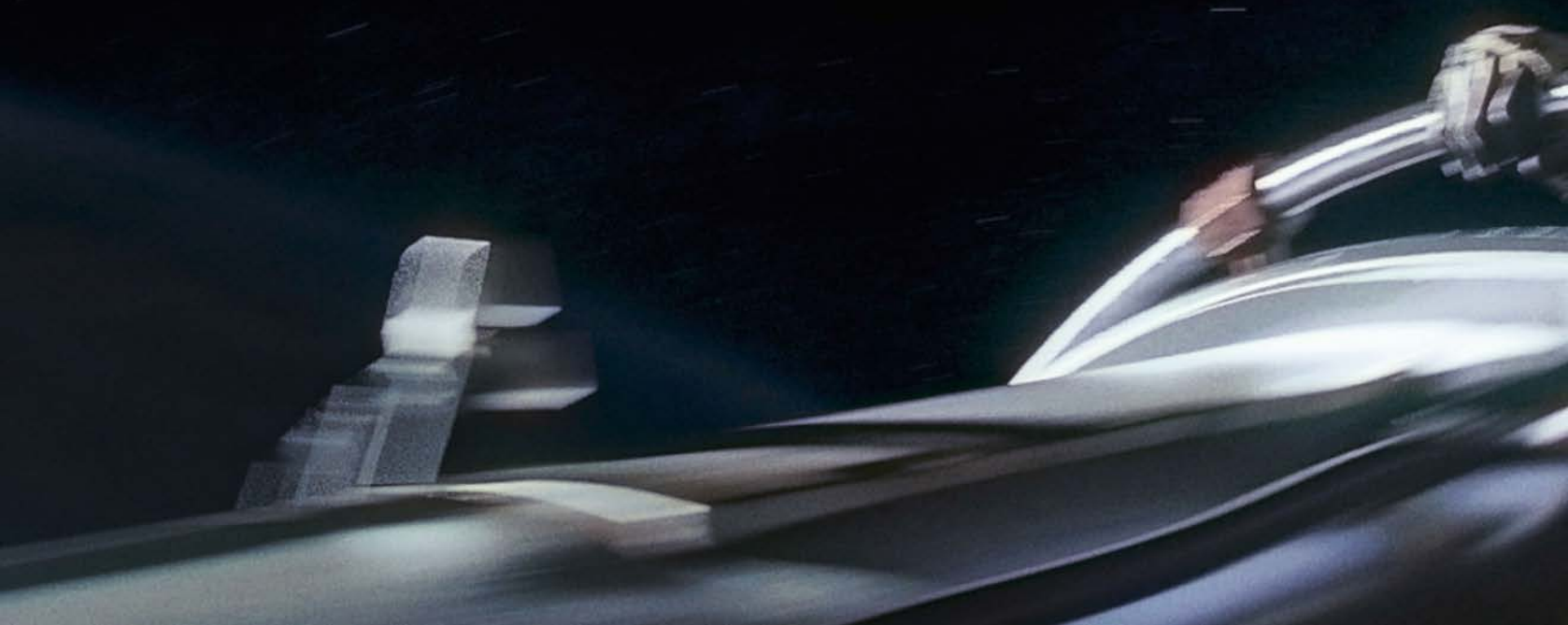
**2.** seriousness.

If you've wondered what swallowed up Alfonso Cuarón after his last film *Children Of Men*, which came out in 2006, look no further than *Gravity*. A space thriller about two astronauts (Sandra Bullock and George Clooney) on a Space Shuttle

mission who are left stranded 372 miles above Earth after their ship is destroyed, Cuarón's latest took four and a half years to make. When you see it, you'll understand why: it contains the most mesmerising visual effects of astronauts in zero gravity ever concocted for the big screen. No doubt about it, *Gravity* has been a labour of love, one the stubborn Mexican filmmaker refused to give up on despite frequent tear-inducing setbacks - and industry brainiacs like David Fincher advising Cuarón's beleaguered DoP Emmanuel "Chivo" Lubezki to postpone the

film for five to seven years until technology caught up with his lofty ambitions.

"In the end, Fincher was nearly right. It did take almost five years," smiles Cuarón when *Total Film* meets with him in LA, right before Comic-Con. David Heyman, who first worked with Cuarón when he handed him the reins to the third *Harry Potter* ("some thought I was crazy to do that"), never expected an easy shoot but nor did he anticipate *Gravity* taking quite so long to pull off. "Alfonso is a perfectionist who is always pushing the limits of what is possible, and he >>



D L Y L G O

EFFECTS WEIGHTED BY A STRONG HUMAN CORE, IT'S UNLIKE ANYTHING YOU'VE SEEN BEFORE. REALLY.







‘IT WAS JUST AN EMPTY STAGE WITH A CUBE OF LIGHT, A TRUCK WITH A ROBOT, AND ROWS OF GEEKS’ **ALFONSO CUARÓN**

doesn't give in," says the producer. "If you're pushing for greatness, it doesn't come easy."

*Gravity* started with an idea by Cuarón's son Jonas, who had written a script involving two characters in a perilous environment. "It was *Gravity* but set in the desert," explains Jonas. What impressed his dad was how it delivered an immersive, suspenseful narrative not just through action set-pieces but through vivid character emotion. Together, father and son decided to transpose this minimalist, self-contained concept into space, building a story grounded in present-day reality. "We didn't want it to be a sci-fi," says Jonas, "we wanted it to feel like, the moment before the debris strikes and it all goes wrong, you are in one of those IMAX documentaries about the Hubble telescope."

*Gravity*'s two primary characters are Dr. Ryan Stone (Bullock) and Matt Kowalsky (Clooney). The former is a medical engineer who's lost her child and is on her first mission. She's not a terribly good astronaut, it turns out, unlike her veteran cohort. When Stone spins off into space after the shuttle's wiped out, there is a sense of genuine peril. As for the accidental destruction, it's inspired by an apparently feasible scenario in which two satellites strike and the resulting debris sets off a cataclysmic chain reaction of clashing, disintegrating satellites; it's called the Kessler syndrome. The resulting cascade of bullet-sized debris, travelling at lethal speeds, would make all future space exploration impossible, not to mention bringing an end to satellite-aided communication. No more iPhone.

"The debris in our film is a metaphor for adversities in life," says Cuarón, "but the adversities also create the scenario for possibilities of rebirth." He was determined to keep *Gravity* present-day so audiences would be familiar with the space technology, and to continue the visual language he's deployed in his recent work: long, unbroken takes with as little editing as possible. The two decisions collided to create their own Kessler's Syndrome for the production. There's a good reason why most space movies are set in the future: they don't have to deal with the mundane realities of modern-day space travel.

**D**etermined that the effects of space look true and real, with no sagging of skin, hair or clothing to betray gravity's presence, Cuarón steered the bulk of the film through a meticulously exhaustive process at Soho-based FX house Framestore under the aegis of visual effects supervisor Tim Webber. "The weirdest thing about this film is that we had to post-produce it before we could even start shooting," says Cuarón, "we had to invent everything." Nothing was ruled out during the gruelling process of trialing practical techniques to try and achieve the desired results, from conventional wires to the 'vomit comet', a large plane which drops out of the sky to create brief intervals of weightlessness (which Ron Howard used to masterful effect in *Apollo 13*).

Ordinary wires didn't work because the strain was obvious on the actor's faces. As for the vomit

comet, Cuarón loved it - he even had a go himself - but it was much too limiting. "The whole thing drops for about 25 seconds and after the first five seconds you're floating, but out of that you can use maybe 15 seconds," says the director, "and our opening shot is 12 minutes long..." So long, vomit comet.

Ultimately, *Gravity*, which made use of soundstages at Shepperton as well as a brief location shoot in Arizona, ended up being created predominantly inside the Framestore hard drives using a combination of technologies. The most complex involved a 9ft-by-9ft LED cube suspended off the ground. Inside would be Bullock, dressed in a white leotard fitted with motion sensors, surrounded on all sides by LED lights. Screens would show her images of what Dr. Stone was witnessing, while the LED display lit her face depending at what angle she was facing the sun and Earth. Outside the cube was a car assembly robot fitted to a computerised track, specially adapted to carry a camera.

It all sounds terribly complicated. Cuarón attempts to rid *Total Film* of our confusion by leaping up with a marker pen and a nearby desk lamp to demonstrate. "So, this is the sun, OK?..." When we still look confused, he admits, "Even people who were there didn't understand what we were doing. You would walk into that set and it was just an empty stage with a cube of







Lost in space: Dr Ryan Stone (Sandra Bullock) and Matt Kowalsky (George Clooney) drift through Alfonso Cuarón's zero gravity nightmare.



light at the end, a truck with the robot and rows and rows of geeks with computers."

Suffice it to say that every last detail had to be meticulously pre-programmed. If the actress' choreography was complicated, the mind boggles at what went into mapping out camera moves and lighting changes. "I'm still baffled at the magnitude of what he had to deal with on this," says Bullock, recalling the precision demanded of her performance. "They were like, 'You need to move your head three-quarters [of an inch] and I'd be like, 'Argh, fucking maths!' until I saw the timing. Had it been a quarter of an inch off with different lighting and not the blue hue, you wouldn't have gotten the emotional throughline."

The only real piece of Bullock and Clooney you'll see in *Gravity's* exterior, touching-the-void sequences are their terrified faces. Anything and everything that you see outside the confines of the shuttle (or the space-stations they try to reach once that's been destroyed), down to their spacesuits, helmets and whatever they happen to be doing, was all created inside a computer. On her light-cube days, Bullock would spend

hours in isolation, with Cuarón feeding her music to reflect different moods. "She would just stay in her state; she used it as a tool," says Cuarón, "and whenever she was not there, she was working out, because some of the rigs were gruesome. She needed a lot of strength for those things, and she needed to make it appear effortless."

For scenes of Dr Stone floating inside a spacecraft (see right), the actress wore a super-thin carbon-fibre mould that fit snugly to her torso under her costume. "We did a system of wiring that had never been done before. Because of the amount of wires on different axes [*they were*] also computerised so they were in sync with the lighting and with Sandra moving around," says Cuarón. "Sometimes she would be held by the puppeteers from *War Horse*. The rig would come toward them, they would catch her and continue the Zero G floatiness. Everything we did had two things in common: it was all pre-programmed; and it was very painful for Sandra. Everything was a torture chamber for her."

Clooney had it slightly easier. His jokey astro buzzes around the shuttle like a big kid with a new toy. To create said effect, the actor would sit on a teeter-totter chair and float around space, held up by the puppeteers, with Bullock

sometimes suspended by wires nearby to allow for interaction. The length of time it took to get *Gravity* airborne saw other stars come and go. Early on, Angelina Jolie was set to play Dr. Stone and Robert Downey Jr. was briefly attached to Kowalsky. Jolie moved on, while Cuarón admits that Downey Jr.'s improvisatory genius was an unworkable fit for *Gravity*. "We had this whole pre-determined system, like, 'You have seven seconds to say that line'," says Cuarón. "That was not going to work with Robert."

Ultimately, Bullock and Clooney

stepped into the breach, and after years of anticipatory buzz, *Gravity* has turned out to be the coolest space film in years, a terrifying thrill-ride packed with whizz-bang set-pieces, astonishing bravura camera moves, high-tech visual effects to blow the mind and a superb performance from Bullock. Thanks to Cuarón's relentless driving, *Gravity* is as beautiful as it is harrowing. "It's an artful movie," says Heyman. "It's also a genre movie in the vein of *Duel*, but carrying those ideas that resonate through *Y Tu Mamá También* and *Children Of Men* about embracing the life that is before you."

While Bullock is *Gravity's* self-doubting but ultimately resolute heroine, it was always about much more than heroism for her. "I love stories where people are unafraid to show that they're broken or don't know the answer or are struggling with something, and in a very human way figure out a way to overcome it," she declares. "We'll never be superheroes, but we can do pretty spectacular things." **TF**

*Gravity* opens on 18 October.



## INTO THE VOID



VISUAL EFFECTS SUPERVISOR TIM WEBBER TALKS THROUGH THE FILM'S PHENOMENAL SPACE SPECTACLE...

### REAL DEAL

"Before Alfonso had written a script, he came in and talked through the story. What he wanted was a realistic movie set in space, and it had to feel like a contemporary real location and not like a sci-fi fantasy in any way. Space isn't a location you can go and shoot in, and zero gravity is difficult to pull off, so we knew from the start it was going to be very tricky."

### LONG HAUL

"As the film developed, there were other aspects that were even harder. Zero gravity is very hard but when you combine it with Alfonso's style of long, roaming camera shots, it compounds the complexity. Most movies, like *Inception*, cut around their zero-gravity sequences; we had to find new techniques that worked from the beginning of the shot, the wide shot, and then still worked as you went in for a close-up and orbited around the character, going underneath and over the top."

### POUND OF FLESH

"In space, the camera can go anywhere it likes. For the exterior space shots, which are the bulk of the movie, I suggested we just shoot the faces and make everything else CG, from their suits to their helmets to everything around them. The simple rule is, if it's flesh, it was filmed; if it's not flesh, it wasn't filmed. Reflecting the stars and earth and light and space debris in their visors was difficult, as was timing the breath on the visor to Sandra's performance."

### TRIP THE LIGHT FANTASTIC

"When Sandra is working on things outside the shuttle, we gave her cardboard cutouts and objects to fiddle with, and we used her performance as a guide to the animation that we put in. They wore suits that weren't far off mo-cap suits and they'd wear these funny helmets which were vaguely the shape of the real helmets, with stalks sticking out of the top with red LED lights on them. They did look faintly ridiculous."