

A Matter of Gravity

“Out! Out!”

Raoul unwound his battered body and half-closed his functioning right eye against the brilliant brightness: his left was already swollen tight shut.

“Out! Out!”

He joined other shuffling figures heading towards a short military convoy. His nail-beds were still too raw to be able to grip, so he was bundled bodily, painfully onto the bed of a truck.

He had arrived in similar transport – how many weeks ago? – when he was taken from his Buenos Aires home. He briefly entertained the hope that he might be out for good, now that they had finished with him, and that he would be able to re-join his mother and sister; but he quickly dismissed that cruel delusion. Last year his father and older brother, both civil engineers, had disappeared: to all enquiries the authorities’ response was simply a closed door.

The tail-gate was fastened and the truck moved off. For ten minutes or so Raoul registered every pot-hole in the dirt road with a gasp of pain but then, mercifully, they moved onto a metalled road and he relaxed into a reverie of what might have been.

As a physics undergraduate he had been really excited by Hulse and Taylor’s discovery of a pair of neutron stars orbiting each other, but whose orbit was very gradually decaying and losing energy: Einstein’s General Theory of Relativity predicts that such energy loss would be in the form of gravity waves. Long before Raoul was awarded a first class honours degree he had flown to Massachusetts to give a paper on the development of gravity wave detectors and Professor Taylor had offered him a place on his doctoral programme. Although his broken body was earthbound his mind was free to explore the cosmos, and even to reflect on the potential of large scale laser interferometry.

He had little awareness of time so, when they came to a halt, he had no idea how far they had come. Over the tailgate he recognised that they were still out on the pampas. Once on his feet again, he rounded the front of the cab and saw first a limp wind-sock, and then an elderly, heavily weathered Dakota. He was helped, half-carried, up the steps and installed at the back of the plane, fettered to his seat. Another twenty or so shadows of manhood were sat shackled to the seats ahead of him.

The engine was gunned into life, the door closed and half a dozen of the junta’s men took seats at the front. When he had boarded for New York he had been welcomed aboard, told the time of arrival and the cruising height, but now... nothing; and any questions would have been answered with a blow from a rifle butt.

The only sounds came from the accelerating engines and the drone of tyres on asphalt, soon to cease as the plane rose and banked, but Raoul could not see enough of the sun to estimate their course. At least he was more or less comfortable in his seat, and he was fractionally nearer to stars that so preoccupied him. He dozed, dreaming of circling pulsars.

On waking he was puzzled to find no land below, just ocean. They could not be bound for Las Malvinas as that was British Territory, and beyond them lay only St Helena and southern Africa.

The conundrum was solved as quickly as it was posed by the opening of the aircraft door. The first prisoner was released from his seat and dragged, struggling to the open door. He resisted, gripping the door frame, so they shot him, kicking his body out into the void.

Now Raoul knew his destination, but he still had a choice. Should he force them to shoot him before falling or should he just jump?

He did not know their height but he guessed at 4-5,000 metres, high enough for surface craft to be unable to identify their transport, but not so high as to require oxygen in this unpressurised craft. Rounding up the acceleration due to gravity to 10 metres per second per second, he estimated that he might experience up to half a minute of free-fall, thirty seconds of freedom, out for good from the junta's grasp.

He chose freedom.

He waited calmly as the others were unshackled and led forward to be pushed through the wind-blown door, some first shot. When his turn came he stood and walked forward, with all the dignity his bruised body could muster, and leapt across the threshold into free-fall,.. and into recall of the love, affection and comfort of his family – his parents, brother and sister. He pictured them clearly, holding the image closely until it disintegrated when his body smashed on the top of the ocean.

The energy of his impact radiated across the surface of the swell in widening, concentric waves.

Timeline

1915 – Albert Einstein completes the Theory of General Relativity postulating, amongst other things, the existence of Gravity Waves. (Einstein, Albert (2014) Encyclopædia Britannica Ultimate Reference Suite: Chicago.)

1974 – American astronomers Joseph Taylor and Russell Hulse observed two pulsars in orbit around each other and found that their orbital period was decreasing because of gravitational radiation at exactly the rate predicted by Einstein's Theory of General Relativity. (Taylor, Joseph H., Jr. (2014). Encyclopædia Britannica Ultimate Reference Suite: Chicago.)

1974-83 – A military junta takes power in Argentina, closing Congress, imposing censorship, banning trade unions, and bringing state and municipal government under military control. They also undertake the Process of National Reorganization, known subsequently as the "Guerra Sucia" ("Dirty War"), in which it is estimated that between 10,000 and 30,000 citizens were killed, often following their imprisonment and torture. (Argentina (2014) Encyclopædia Britannica Ultimate Reference Suite: Chicago.)

2015 – The Laser Interferometer Gravitational-Wave Observatories (LIGO) at Hansford, Washington and Livingston, Louisiana detect gravitational waves for the first time, arising from the collision of two black holes. (www.ligo.caltech.edu/page/timeline)

The character of Raoul is entirely fictional

(995 words)