Space opens opportunities for many fundamental physics experiments impossible on Earth. It also takes the physicist into worlds different from any he ever expected. The test of General Relativity known as Gravity Probe B, launched in 2004, engaged a fascinating intersection of physics and engineering challenges and a succession of (often pleasant) surprises, including four years of steadily progressing data analysis so full of twists and turns that we venture to call it the Gravity Probe B Detective Story.

Unexpected technologies, a succession of extraordinarily diverse doctoral dissertations, two university departments actually collaborating, and spin-offs to fields as far off as autofarming are just some of the surprises that come from a journey of testing Einstein. To quote P. M. S. Blackett whom I had the good fortune of working with in the very different field of palaeomagnetism, “If you can’t think what experiment to do next, invent some new technology. It’ll always lead to new physics.”