

1014-Z1-1331      **Christopher G Moseley\*** ([Chris.Moseley@usma.edu](mailto:Chris.Moseley@usma.edu)), Department of Mathematical Sciences, United States Military Academy, West Point, NY 12518. *Time dilation, neutron stars, and space war: teaching relativity and differential geometry aboard a Bussard ramjet.*

During the Spring 2005 term at West Point, a Special Topics Course in General Relativity was offered by the mathematics department in response to student demand. The course employed two texts: James Hartle's *Gravity* and Larry Niven's science fiction novel *Protector*. For their final project, the cadets performed a relativistic analysis of the space war in *Protector*, which required them to model the flight of a Bussard ramjet spacecraft in Schwarzschild spacetime near a slowly rotating neutron star. The challenge of designing a suitable flight path near the star, combined with Mr. Niven's lively and accurate portrayal of relativistic effects, brought theorems in differential geometry to life for the students. (Received September 27, 2005)