1051-14-50   **Chris Hillar**, **Luis García-Puente**, **Abraham Martín del Campo**, **James Ruffo**, **Stephen L. Johnson** and **Zach Teitler*** (`zteitler@tamu.edu`), Department of Mathematics, Texas A&M University, College Station, TX 77843, and **Frank Sottile**. *Experimentation at the Frontiers of Reality in Schubert Calculus.*

We describe the setup, design, and running of an experiment utilizing a supercomputer that is helping to formulate and test conjectures in the real Schubert calculus. Largely using machines in instructional computer labs during off-hours and University breaks, it has consumed in excess of 350 GigaHertz-years of computing in its first six months of operation, solving over 1.1 billion polynomial systems. This experiment can serve as a model for other large scale mathematical investigations. (Received August 05, 2009)