Abstract for an Invited Paper for the NEF09 Meeting of The American Physical Society

Professor Galileo's 21st Century Syllabus

TIMOTHY F. SLATER, University of Wyoming

Precisely four hundred years ago, Italian scientist Galileo's observations of the heavens forever and profoundly altered the way we view our place in the Universe. Among many influential observations he made with the newly invented telescope, he observed that our Moon's surface is not smooth, but covered with countless impact craters. He was the first to measure our Sun's rotation by monitoring sunspots, he demonstrated that the planets orbit our Sun by observing that the planet Venus shows Moon-like phases he recorded four moons orbiting the planet Jupiter once and for all disproving the widespread notion that Earth was the center of all celestial motions, and he dramatically increased our thinking about the size of the known Universe discovering that there thousands of more stars than had ever been thought to exist before. Taken together, Galileo and his telescope initiated one of the most important scientific revolutions in history, but what would he choose to teach if he were alive today?