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FalconSAT-7–A deployable solar telescope ANITA DUNSMORE, MATTHEW MCHARG, United States Air Force Academy — The Physics Department at USAFA is the program integrator for FalconSat-7, an innovative mission to perform space-based imaging with a 0.2m diameter, photon-sieve telescope deployed from a 3U (10x10x30cm) CubeSat. The telescope will perform narrow-band imaging of the Sun's chromosphere at the hydrogen-alpha wavelength. The photon-sieve telescope relies on a new technology consisting of a deployable structure that supports an optical membrane called the photon sieve. The photon sieve is a flat diffractive element that consists of 2.5 billion holes, configured such that transmitted light is diffracted to a focal plane where a camera is located. As such, the technology is particularly promising as a means to achieve large optical primaries from compact, lightweight packages. We focus our discussion on the current status of the payload design and development to include the photon sieve, deployment system, optical bench, and payload electronics.

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