

**Title:** Modern Tools for DKIST Science Exploitation

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**Abstract:**

Ground-based solar telescopes are capable of providing important information about the Sun and its atmosphere at extremely high resolutions and without many of the constraints imposed by observations from space. However, in order to interpret the data collected by these telescopes, it is necessary to correct for disturbances produced by the Earth's atmosphere, such as the dispersion caused by refraction of different wavelengths through the atmosphere and the distortion caused by atmospheric turbulence. To that end, we produce software in Python, based on existing routines in IDL, that will apply these corrections. This software will be used to interpret data from the Daniel K. Inouye Solar Telescope (DKIST), a four-meter solar telescope which will achieve first light in 2019. We also expect to incorporate the software into the SunPy project, where it will be applied to existing data sets to study the evolution of solar granules as well as the dynamics of the photosphere and chromosphere.