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A Computer Based Synthetic Telluric Line Atlas CHARLES AL-LISON, Texas A&M University Kingsville — Earth's atmosphere provides a substantial blanket of gases surrounding our planet that has a definite effect upon the spectrum and intensity of incoming light from astronomical objects. The effect is molecular absorption lines imposed upon the incoming signal which are referred to as telluric lines. While space based instruments such as the Hubble are placed well above Earth's atmosphere, there are far more telescopes and equipment in use which are located on Earth and are subject to the problems of telluric lines. This article describes the implementation of a computer-based, synthetic atlas for telluric lines based upon data from the HITRAN molecular database. This atlas differs from others created by direct measurement in that it permits custom tailoring of parameters to fit the specific needs of an observer. Uses include telluric line identification, wavelength calibration, filter selection analysis, and in some cases, photometric intensity correction.

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