



# The Infrared Spectrum of Uranium Hollow Cathode Lamps from 850 nm to 4000 nm: Wavenumbers and Line Identifications from Fourier Transform Spectra

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We provide new measurements of wavenumbers and line identifications of 10 100 UI and UII near-infrared (NIR) emission lines between 2500  $\text{cm}^{-1}$  and 12 000  $\text{cm}^{-1}$  (4000 nm to 850 nm) using archival FTS spectra from the National Solar Observatory (NSO). This line list includes isolated uranium lines in the Y, J, H, K, and L bands (0.9  $\mu\text{m}$  to 1.1  $\mu\text{m}$ , 1.2  $\mu\text{m}$  to 1.35  $\mu\text{m}$ , 1.5  $\mu\text{m}$  to 1.65  $\mu\text{m}$ , 2.0  $\mu\text{m}$  to 2.4  $\mu\text{m}$ , and 3.0  $\mu\text{m}$  to 4.0  $\mu\text{m}$ , respectively), and provides six times as many calibration lines as thorium in the NIR spectral range. The line lists we provide enable inexpensive, commercially-available uranium hollow-cathode lamps to be used for high-precision wavelength calibration of existing and future high-resolution NIR spectrographs.

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