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Interactive Spectral Analysis And Computation (ISAAC)

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Isaac is a task in the NSO external package for IRAF. A descendant of a FORTRAN program written to analyze data from a Fourier transform spectrometer, the current implementation has been generalized sufficiently to make it useful for general spectral analysis and other one dimensional data analysis tasks. The user interface for Isaac is implemented as an interpreted mini-language containing a powerful, programmable vector calculator. Built-in commands provide much of the functionality needed to produce accurate line lists from input spectra. These built-in functions include automated spectral line finding, least squares fitting of Voigt profiles to spectral lines including equality constraints, various filters including an optimal filter construction tool, continuum fitting, and various I/O functions.