

A Graphical User Interface for NIRC2 Asteroid Data Reduction

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NRX Asteroid analyses asteroid images taken with the Keck II diffraction limited near infrared camera (NIRC2). The system is being developed using the Interactive Data Language (IDL) and incorporates a graphical user interface (GUI). In three steps, flat fielding, hot pixel replacement, and background subtraction, *NRX Asteroid* removes the effects of instrument systematics, optical defects, and background emission. Hot pixels are identified by brightness deviations and then replaced by the average of their neighbors. Background frames are created by one of two user-selectable methods: averaging or median filtering.

NRX Asteroid can be run from a GUI or, alternatively, individual components can be run programmatically. It can be operated from Windows or UNIX. The resulting bitmaps and surface plots are output in both the FITS and JPEG image formats. These are then wrapped in XHTML web pages so that they can be accessed via a browser. Sequences of reduced data can be animated in the MPEG or GIF formats.

NRX Asteroid also quantifies the noise characteristics found in each frame it analyses. This function will compliment ongoing efforts to determine trends in the performance of the NIRC2 detector electronics.