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SKYMAP: Exploring the Universe in Software

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SKYMAP is a computer program which produces maps of arbitrary portions of the sky in a variety of projections and coordinate systems. Over the past 10 years it has been used to produce finder charts for occultations by planets, display scan and image data from the Spacelab 2 Infrared Telescope, and make maps of fields for astronomical observations at X-ray, optical, infrared, and radio wavelengths. It can display multiple source catalogs, including the HST Guide Star Catalog, as well as solar system objects with astrometric accuracy using the JPL DE-130 ephemeris or tabulated positions. SKYMAP can be tuned to a specific task using an ASCII parameter file which controls how information is displayed on any Tektronix-compatible graphics display. The program contains a variety of interactive graphic and image processing features and has been ported to a variety of computer systems. A recent project visually demonstrates source density variation in various commonly-used all-sky catalogs.