During the Cassini spacecraft's cruise phase and nominal mission, the Cassini Science Planning Team developed and maintained an online database of geometric and timing information called the Cassini Tour Atlas. The Tour Atlas consisted of several hundreds of megabytes of EVENTS mission planning software outputs, tables, plots, and images used by mission scientists for observation planning. Each time the nominal mission trajectory was altered or tweaked, a new Tour Atlas had to be regenerated manually.

In the early phases of Cassini's Equinox Mission planning, an a priori estimate suggested that mission tour designers would develop approximately 30 candidate tours within a short period of time. So that Cassini scientists could properly analyze the science opportunities in each candidate tour quickly and thoroughly so that the optimal series of orbits for science return could be selected, a separate Tour Atlas was required for each trajectory.

The task of manually generating the number of trajectory analyses in the allotted time would have been impossible, so the entire task was automated using code written in five different programming languages. This software automates the generation of the Cassini Tour Atlas database. It performs with one UNIX command what previously took a day or two of human labor.

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This software is available for commercial licensing. Please contact Daniel Broderick of the California Institute of Technology at danielb@caltech.edu. Refer to NPO-47219.