

U.S. NAVAL OBSERVATORY
Astronomical Applications Department
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Washington, DC 20392-5420

ALMANAC PRODUCTS

Annual Publications

- *The Astronomical Almanac*. Contains precise ephemerides of the Sun, Moon, planets, and satellites, data for eclipses, and other astronomical phenomena. Most data are tabulated at 1-day intervals. The *Explanatory Supplement to the Astronomical Almanac* is available from a private publisher (University Science Books; <http://www.uscibooks.com/seid.htm>).
- *Astronomical Phenomena*. Preprint of selected data from *The Astronomical Almanac*, including the calendar, equinoxes and solstices, phases of the Moon, visibility and configurations of the planets, eclipses, equation of time and declination of the Sun, rising and setting of the Sun and Moon, position of Polaris.
- *The Nautical Almanac*. Contains the astronomical data required for marine navigation. Most data on the main pages are tabulated at hourly intervals to a precision of 0.1 arcminute.
- *The Air Almanac*. Contains the astronomical data required for air navigation. Most data on the main pages are tabulated at 10-minute intervals to a precision of 1 arcminute.

USNO Special Publications

Provide computed data, formulas, mathematical developments, or observational results by Naval Observatory scientists. See <http://aa.usno.navy.mil/AA/publications/docs/usnopubs.html> for current list.

Software

- MICA (Multi-year Interactive Computer Almanac). Executable software that provides much of the information printed in the annual *Astronomical Almanac* but covers a 16-year period (1990-2005). Allows the user to tailor computations for a specific location and accepts input catalogs of celestial objects prepared by the user. Available for both PCs and Macintosh systems.
- NOVAS (Naval Observatory Vector Astrometry Subroutines). An integrated package of modules for the computation of a wide variety of common astrometric quantities and transformations; C and Fortran source code. Download from the Software section of the AA Department Web site (see URL below).
- SLAC (Solar-Lunar Almanac Core). A integrated set of modules that provides information concerning the Sun and Moon useful for operations planning, mission scheduling, and other applications; C source code. *U.S. DoD only, for official use.*
- STELLA (System to Estimate Latitude and Longitude Astronomically). Executable software that provides a standard, automated means for performing the computations required for celestial navigation. Widely used throughout the U.S. Navy and Coast Guard. *U.S. DoD only, for official use.*

Internet

USNO Home Page: <http://www.usno.navy.mil/>

Astronomical Applications (AA) Department:

Public Home Page: <http://aa.usno.navy.mil/AA/>

Interactive data services: <http://aa.usno.navy.mil/AA/data/>

Answers to frequently asked technical questions: <http://aa.usno.navy.mil/AA/faq/>

DoD Home Page: <http://aa.usno.navy.mil/AA/DoD/> (access from a computer in the .mil domain)

Availability

For information on obtaining the above products, see the AA Department DoD home page (URL above), or call DSN 762-1439.