Navigation and Ancillary Information Facility

Using Module Headers

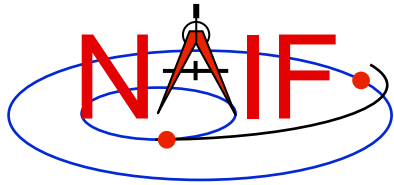## January 2012

Topics

- **Module* Header Purpose**
- **FORTRAN Module Header Locations**
- **C Module Header Locations**
- **Icy Module Header Locations**
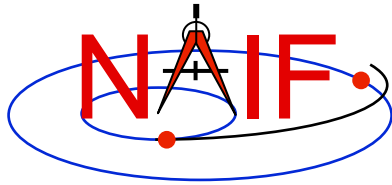- **Mice Module Header Locations**
- **Examine a Typical Header**

* "Module" = routine, API, subroutine, procedure, function

Module Header Purpose

- **NAIF uses module "headers" to provide SPICE users with detailed information describing a module's function and design.**

  - **In FORTRAN, C and MATLAB Toolkits the "headers" are comment blocks inserted in the source code**

  - **In IDL Toolkits, where there are no source code files, the "headers" exist as independent files**

- **All Toolkit distributions include HTML versions of the module headers.**

- **Using the HTML formats is usually the best approach because they are hyperlinked with other NAIF documentation**

- **The next charts provide the header locations**

Fortran Module Header Locations

- ## In FORTRAN Toolkits:
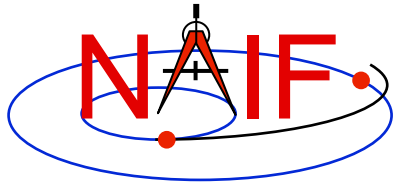 - **\<path to SPICELIB\>/toolkit/src/spicelib/\<name.f or \<name\>.for**
  - In most cases there is a single "header" at the top of the source code. For cases where a FORTRAN module has multiple entry points, there are additional "headers" at each entry point. For example:
    - » "keeper.f" has entries for:
      - FURNSH, KTOTAL, KINFO, KDATA, KCLEAR, and UNLOAD
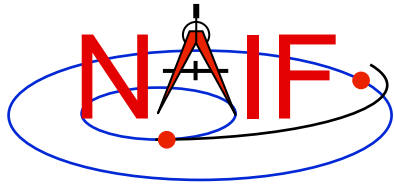- ## HTML versions of the headers:
  - **\<path to SPICELIB\>/toolkit/doc/html/spicelib/index.html**

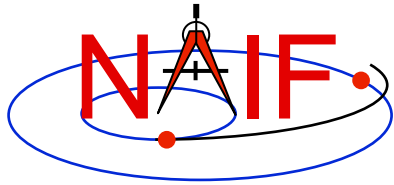# C Module Header Locations

- ## In C Toolkits:
  - <path to CSPICE>/cspice/src/cspice/<name>_c.c

- ## HTML versions of the headers:
  - <path to CSPICE>/cspice/doc/html/cspice/index.html

Icy Module Header Locations

- **In IDL ("Icy") toolkits, two sets of headers are provided.**
  - **Icy headers in HTML format:**
    - » **<path to Icy>/icy/doc/html/icy/index.html**
  - **CSPICE headers, in text and HTML formats:**
    - » **<path to Icy>/icy/src/cspice/<name>_c.c**
    - » **<path to Icy>/icy/doc/html/cspice/index.html**

- **The information provided in an "Icy" header is minimal in some cases; the corresponding CSPICE header provides more detail.**
  - **A link to the corresponding CSPICE header is provided in the Icy header.**

Mice Module Header Locations

- **In Matlab ("Mice") toolkits, two sets of headers are provided.**
  - **Mice headers in HTML format:**
    - » **<path to Mice>/mice/doc/html/mice/index.html**
    - » **The user can also access the information presented in the HTML document via the Matlab `help` command, e.g.**
      ```
      >> help cspice_str2et
      ```
  - **CSPICE headers, in text and HTML formats:**
    - » **<path to Mice>/mice/src/cspice/<name>_c.c**
    - » **<path to Mice>/mice/doc/html/cspice/index.html**

- **The information provided in a "Mice" header is minimal in some cases; the corresponding CSPICE header provides more detail.**
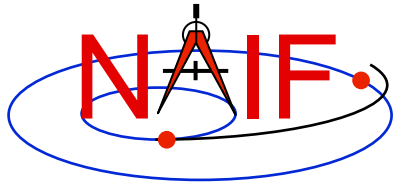 - **A link to the corresponding CSPICE header is provided in the Mice header.**

- **As example, look for and examine the headers for the modules named spkezr and str2et**

FORTRAN	C	IDL (Icy)	MATLAB (Mice)
SPKEZR	spkezr_c	cspice_spkezr	cspice_spkezr
STR2ET	str2et_c	cspice_str2et	cspice_str2et

spkezr is the principle ephemeris access module
str2et   is a key time conversion module