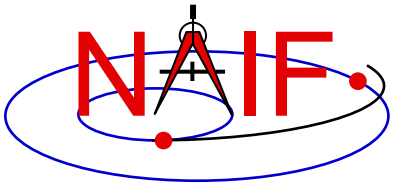
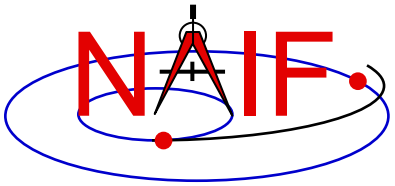


Navigation and Ancillary Information Facility

Using Module Headers

January 2017



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” = API, routine, subroutine, procedure, function

Module Header Purpose

- NAIF uses module "headers" to provide detailed information describing how to use the module
  - In FORTRAN, C and MATLAB Toolkits the "headers" are comment blocks inserted in the source code
  - In IDL Toolkits, where there are (currently) no source code files, the "headers" exist as independent files
- All Toolkit distributions include plain text and HTML versions of the module headers.
  - Using the HTML version is usually the best approach because they are hyperlinked with other NAIF documentation
- The next charts provide the header locations

Fortran Module Header Locations

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- **Plain text versions:**
  - **<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:**
  - **<path to SPICELIB>/toolkit/doc/html/spicelib/index.html**

C Module Header Locations

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- **Plain text versions:**
  - **<path to CSPICE>/cspice/src/cspice/<name>_c.c**
- **HTML versions:**
  - **<path to CSPICE>/cspice/doc/html/cspice/index.html**

IDL Module Header Locations

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- **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**

Matlab Module Header Locations

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- **Two sets of headers are provided**
  - **Mice headers in HTML format:**
    - **<path to Mice>/mice/doc/html/mice/index.html**
    - **Also available using 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**

Examine a Typical 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 principal ephemeris access module
str2et is a key time conversion module