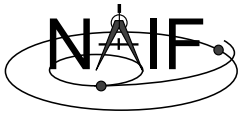




Navigation and Ancillary Information Facility

SPICE Toolkit Common Problems

October 2007



Topics

Navigation and Ancillary Information Facility

- **Prevention**
- **Documentation**
- **Help from NAIF**

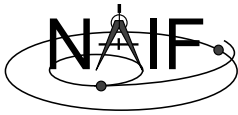


Prevention - 1

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- **To minimize problems using SPICE:**
 - Use a Toolkit obtained directly from NAIF and intended for your specific environment (platform/OS/compiler/compiler options)
 - Read the pertinent documentation
 - » Module headers, Required Reading, comments in kernels
 - Get the right (usually latest) kernel files
 - » Verify that coverage and intended use are suitable
 - Verify that correct time systems are used
 - » e.g., TDB, UTC, or SCLK?
 - Verify that correct reference frames are used
 - » e.g., MOON_PA versus MOON_ME?
 - » e.g. which version of the IAU_Mars body-fixed frame?

continued on next page



Prevention - 2

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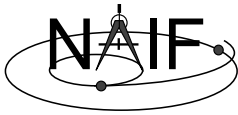
- Check definitions of geometric quantities
 - » Geodetic vs latitudinal coordinates
 - » Oblate vs spherical body shapes
- Check aberration corrections
 - » Converged Newtonian light time + stellar aberration, light time+stellar aberration, light time only, or none?
 - » Target orientation corrected for light time?
- Don't confuse an instrument reference frame ID with the ID of the instrument itself (the object ID)



Documentation

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- **NAIF has compiled a list of common problems, probable causes, and solutions:**
 - Refer to PROBLEMS.REQ, provided in each Toolkit package
- **It may be useful to read this document BEFORE embarking on extensive SPICE-based programming projects, since some problems are best solved early in the software development cycle.**



Help from NAIF

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- **If you need troubleshooting help from NAIF, you can help to speed the process along by providing important information.**
 - Capture SPICE or operating system diagnostic messages written to the screen or to log files.
 - Identify kernel files used.
 - » You may be asked to provide the actual files to NAIF.
 - Determine inputs to SPICE modules in which the error occurred.
 - Cut/paste into email your code fragment where the error seems to occur.
 - Identify the Toolkit version you are using.
 - Provide the name and version of the operating system you're using.
 - Provide the name and version of the compiler or programming environment (IDL, Matlab) you're using.
- **Send all of the above to someone on the NAIF team at JPL.**