

SPICE Documentation Taxonomy

Arranged by Category

September 2009

General Reading, including installing the SPICE Toolkit

<u>Document Name</u>	<u>File Name</u>	<u>Location</u>	<u>Description/Comments</u>
Introduction to SPICE	intrdctn.req	T	An introduction to SPICE
Installing the SPICE Toolkit	Installing_toolkit	TUTOR	A collection of viewgraph-style packages providing tutorial information on nearly all components of the SPICE system.
Instructions for getting the Toolkit components from NAIF's FTP server	README	GETTK	Description of the files to be FTP'd in order to get, install and use the SPICE Toolkit.
Preparing your environment for programming with SPICE	Preparing_for_programming	TUTOR	
Toolkit Contents	dscripnt.txt	T	Describes the structure and contents of the Toolkit
New features and major changes	whats.new	T	Describes significant new features added to the Toolkit since the last version.

TUTOR = Tutorials on NAIF web pages (<http://naif.jpl.nasa.gov/tutorials.html>)

T = SPICE Toolkit, in the /doc subdirectory

GETTK = Go to the desired language and then platform under <ftp://naif.jpl.nasa.gov/pub/naif/toolkit>

General SPICE Programming

<u>Document Name</u>	<u>File Name</u>	<u>Location</u>	<u>Description/Comments</u>
Must Useful SPICE Subroutines	Mostused.html	T	Practical but terse specifications, including examples, for many popular routines.
Permuted Index (SPICELIB or CSPICE)	Spicelib_idx.html or cspice_idx.html	T	Permuted index built from the "Brief Abstract" found in every routine. Helps focus your search for a routine that meets your needs.
CSPICE Required Reading ICY Required Reading MICE Required Reading	cspice.req or cspice.html icy.req or icy.html mice.req or mice.html	T	A discussion of how the product is produced and how to use it.
Summary of Key Points	Summary_key_points	TUTOR	Tips for getting started on programming with SPICE modules.
Module headers	*.f or *_c.c	T	Each module (subroutine) in SPICELIB and CSPICE contains an extensive "header" providing the detailed specifications for the routine needed by a programmer. Examples are included.
ICY and MICE "wrappers" around corresponding CSPICE modules	/doc/html/Index.html	T	IDL and MATLAB interface "wrappers" for the
NAIF IDs reference	naif_ids.req	T	A summary of numeric ID codes used throughout the SPICE system
Error Required Reading	error.req	T	Reference for configuring and using the exception handling system built-in to SPICELIB and CSPICE
Common Problems	problems.req	T	A discussion of the most commonly encountered problems using SPICE

TUTOR = Tutorials on NAIF web pages (<http://naif.jpl.nasa.gov/tutorials.html>)

T = SPICE Toolkit:

Plain text, in the /doc subdirectory

HTML under the /doc/html/... subdirectory

Ephemerides for spacecraft and solar system bodies (SPK Subsystem)

<u>Document Name</u>	<u>File Name</u>	<u>Location</u>	<u>Description/Comments</u>
SPK Tutorial	spk	TUTOR	Tutorial on using SPK files
Making an SPK Tutorial	making_an_spk	TUTOR	Tutorial on making an SPK file
Using Frames Tutorial	using_frames	TUTOR	Tutorial on using frames, including in SPK routines
SPK Required Reading	spk.req	T	Reference for the SPK subsystem
Frames Required Reading	frames.req	T	Reference for working with reference frames
NAIF IDs Required Reading	naif_ids.req	T	Summarizes numeric ID codes used throughout the SPICE system
SPC Required Reading	spc.req	T	Reference for use of the "comment area" in binary kernels
BRIEF User's Guide	brief.ug	T	BRIEF produces a concise summary of the contents/coverage of an SPK file.
SPACIT User's Guide	spacit.ug	T	SPACIT provides file conversion, detailed summarization and read access to internal comments (metadata).
Convert User's Guide	convert.ug	T	Describes use of the command line utilities named TOBIN and TOXFR used to convert binary kernels to transfer format and vice-versa.
Comment User's Guide	commnt.ug	T	Comment is used to add, extract, read and delete comments (metadata) in binary kernels.
SPK Merge User's Guide	spkmerge.ug	T	SPKMERGE is a utility program used to merge two or more SPK files, or to subset a single SPK file.
SPKDIFF User's Guide	spkdiff.ug	T	SPKDIFF computes differences between geometric states obtained from two SPK files and either displays these or shows statistics about them.
SPY User's Guide	spy.txt	UTIL	SPY is a utility for validating, inspecting and analyzing SPK files.
MKSPK User's Guide	mkspk.ug	T	MKSPK is a utility for making an SPK file from a set of state vectors or conic elements or two-line elements.

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UTIL = Utilities link on the NAIF website

Target body size, shape and orientation (PCK Subsystem)

<u>Document Name</u>	<u>File Name</u>	<u>Location</u>	<u>Description/Comments</u>
PCK Tutorial	pck	TUTOR	Tutorial viewgraphs on using PC-kernels
High Accuracy Orientation and Body-fixed Frames for the Moon and Earth	lunar-earth_pck-fk	TUTOR	Tutorial viewgraphs on special orientation files (binary PCKs) and body-fixed frames for the moon and the earth
PCK Required Reading	pck.req	T	Reference for the PCK subsystem
Frames Required Reading	frames.req	T	Reference for working with reference frames
NAIF IDs Required Reading	naif_ids.req	T	Summarizes numeric ID codes used throughout the SPICE system
Kernel Required Reading	kernel.req	T	Reference for general specifications of text kernels

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Instrument Information Pertinent to SPICE (IK Subsystem)

<u>Document Name</u>	<u>File Name</u>	<u>Location</u>	<u>Description/Comments</u>
IK Tutorial	ik	TUTOR	Tutorial viewgraphs on using I-kernels
IK Required Reading	ik.req	--	(Not yet written!)
n/a	*.ti	D	Look at an existing I-kernel; these are text files that contain substantial internal documentation
Frames Required Reading	frames.req	T	Reference for working with reference frames
NAIF IDs Required Reading	naif_ids.req	T	Summarizes numeric ID codes used throughout the SPICE system
Kernel Required Reading	kernel.req	T	Reference for general specifications of text kernels

D = Project Data on NAIF web pages (<http://naif.jpl.nasa.gov/naif/data.html>)

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Orientation of a Spacecraft or Structure (CK Subsystem)

<u>Document Name</u>	<u>File Name</u>	<u>Location</u>	<u>Description/Comments</u>
CK Tutorial	ck	TUTOR	Tutorial viewgraphs on using C-kernels
Using Frames Tutorial	using_frames	TUTOR	Tutorial on using frames, including in transformation modules
CK Required Reading	ck.req	T	Reference for the CK subsystem
Frames Required Reading	frames.req	T	Reference for working with reference frames
NAIF IDs Required Reading	naif_ids.req	T	Summarizes numeric ID codes used throughout SPICE
SPC Required Reading	spc.req	T	Reference for use of the "comment area" in binary kernels
Rotations Required Reading	rotation.req	T	Reference for construction and use of rotation matrices within the SPICE context
CKBRIEF User's Guide	ckbrief.ug	T	CKBRIEF produces a concise summary of the contents/coverage of an SPK file.
SPACIT User's Guide	spacit.ug	T	SPACIT provides file conversion, detailed summarization and read access to internal comments (metadata).
Convert User's Guide	convert.ug	T	Describes use of the command line utilities TOBIN and TOXFR used to convert binary kernels to transfer format and vice-versa.
Comment User's Guide	commnt.ug	T	COMMENT is used to add, extract, read and delete comments (metadata) in binary kernels.
DAFCAT User's Guide	dafcat.ug	T	DAFCAT provides a very simple and simplistic file merge capability for CK files.
CKslicer User's Guide	ckslicer.txt	UTIL	CKSLICER subsets a CK into another CK file.
CKsmrg	chsmrg.txt	UTIL	CKSMRG merges segments in Type 3 CK files.
MSOPCK User's Guide	msopck.ug	T	MSOPCK is a utility for making a CK file from orientation data in the form of quaternions, Euler angles or rotation matrices.
FRMDIFF User's Guide	frmdiff.ug	T	Provides a statistical comparison of the orientations of two frames, one or both of which might be specified using CK(s).

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Connectivity of Reference Frames (FK Subsystem)

<u>Document Name</u>	<u>File Name</u>	<u>Location</u>	<u>Description/Comments</u>
Frames Tutorial	fk	TUTOR	Tutorial viewgraphs on contents of a Frames kernel
Using Frames	using_frames	TUTOR	Tutorial viewgraphs on using Frames kernels
Dynamic Frames	dynamic_frames	TUTOR	Tutorial on defining/implementing custom so-called dynamic frames
n/a	*.tf	N	Look at an existing Frames kernel; these are text files and contain substantial internal documentation
Frames Required Reading	frames.req	T	Reference for the Frames subsystem
NAIF IDs Required Reading	naif_ids.req	T	Summarizes numeric ID codes used throughout the SPICE system
Rotations Required Reading	rotation.req	T	Reference for construction and use of rotation matrices within the SPICE context
Kernel Required Reading	kernel.req	T	Reference for general specifications of text kernels
FRMDIFF User's Guide	frmdiff.ug	T	Provides a statistical comparison of the orientations of two frames, one or both of which might be specified using CK(s).

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"EVENTS", broken down into three sub-products (EK Subsystem)

<u>Document Name</u>	<u>File Name</u>	<u>Location</u>	<u>Description/Comments</u>
Introduction to EK subsystem	ek_intro	TUTOR	Tutorial Introduction to the Events subsystem
EK Required Reading	ek.req	T	Reference for the Events-kernel subsystem

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Time Conversion

<u>Document Name</u>	<u>File Name</u>	<u>Location</u>	<u>Description/Comments</u>
Time Tutorial	time	TUTOR	Tutorial viewgraphs on time conversions
Time Required Reading	time.req	T	Reference on time systems (excluding SCLK)
SCLK Required Reading	SCLK.req	T	Reference on spacecraft clock time
CHRONOS User's Guide	chronos.ug	T	CHRONOS is a full-featured, flexible time conversion utility program
Kernel Required Reading	kernel.req	T	Reference for general specifications of text kernels

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