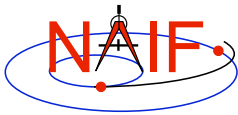


# Finding SPICE Components

## An Introduction to the NAIF Server

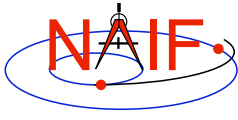
March 2006



## Overview

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- **In the U.S. many SPICE “products” are available from the NAIF server**
  - Access is via the http or ftp protocol
  - See next page for URLs
- **SPICE products made outside of JPL are controlled by the producing organization. Some may be available from the NAIF server, some may be available at other public servers, or on restricted servers, or not at all.**
  - Some of these SPICE products may eventually become accessible via NAIF after they are formally archived within NASA’s Planetary Data System.



# NAIF URLs

Navigation and Ancillary Information Facility

- **NAIF home page**

<http://naif.jpl.nasa.gov>

- Here you may access all SPICE products available to NAIF\*
  - kernels (mission ops, mission archived, or generic)
  - software (Toolkits and individual application programs)
  - documents
  - tutorials
  - problem solving tips

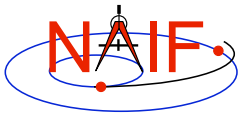
- **SPICE announcements (by NAIF)**

[http://naif.jpl.nasa.gov/mailman/listinfo/spice\\_announce](http://naif.jpl.nasa.gov/mailman/listinfo/spice_announce)

- **SPICE discussion (by anyone)**

[http://naif.jpl.nasa.gov/mailman/listinfo/spice\\_discussion](http://naif.jpl.nasa.gov/mailman/listinfo/spice_discussion)

\* Note: some SPICE products made outside of JPL may not be available to NAIF until formally archived with the Planetary Data System (PDS), or perhaps never.



# Mission Ops Example - 1

Navigation and Ancillary Information Facility

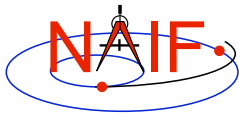
Address: <http://naif.jpl.nasa.gov/pub/naif/CASSINI/kernels/>

**kernels**

-----  
 Jet Propulsion Laboratory  
 \* \* \* W A R N I N G \* \* \*  
 Property of the  
 UNITED STATES GOVERNMENT  
 -----  
 This computer is funded by the United States Government and operated by the California Institute of Technology in support of ongoing U.S. Government programs and activities. If you are not authorized to access this system, disconnect now. Users of this system have no expectation of privacy. By continuing, you consent to your keystrokes and data content being monitored.  
 -----  
 Login successful. Have fun.  
 -----

Path: [\[naif.jpl.nasa.gov\]](http://naif.jpl.nasa.gov)[\[pub\]](#)[\[naif\]](#)[\[CASSINI\]](#)[\[kernels\]](#)

Name	Size	Kind	Last Modified
<a href="#">aareadme.txt</a>	400 bytes	ASCII Text	Thu, Mar 11, 2004, 10:39 PM
<a href="#">ck</a>	-	Folder	Tue, Apr 20, 2004, 5:10 PM
<a href="#">ek</a>	-	Folder	Fri, Apr 16, 2004, 11:04 PM
<a href="#">fk</a>	-	Folder	Thu, Mar 18, 2004, 11:45 PM
<a href="#">ik</a>	-	Folder	Mon, Apr 12, 2004, 8:51 PM
<a href="#">lsk</a>	-	Folder	Wed, Mar 20, 2002, 12:00 AM
<a href="#">pck</a>	-	Folder	Thu, Mar 18, 2004, 11:47 PM
<a href="#">selk</a>	-	Folder	Mon, Mar 29, 2004, 9:06 PM
<a href="#">spk</a>	-	Folder	Fri, Apr 16, 2004, 4:58 PM



# Mission Ops Example - 2

## Navigation and Ancillary Information Facility

Address: <ftp://naif.jpl.nasa.gov/pub/naif/CASSINI/kernels/spk/>

spk ← **.../CASSINI/kernels/spk**

```

-----
Jet Propulsion Laboratory
* * *  W A R N I N G  * * *
Property of the
UNITED STATES GOVERNMENT

This computer is funded by the United States Government and
operated by the California Institute of Technology in support of
ongoing U.S. Government programs and activities.  If you are not
authorized to access this system, disconnect now.  Users of this
system have no expectation of privacy.  By continuing, you consent
to your keystrokes and data content being monitored.

-----
Login successful.  Have fun.

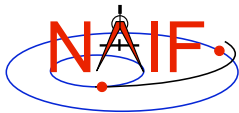
Path: [naif.jpl.nasa.gov][pub][naif][CASSINI][kernels][spk]

Name                               Size  Kind          Last Modified
000202R_SK_LP0_V1P32.bsp           238K  Document      Thu, Feb 21, 2002, 12:00 AM
000202R_SK_LP0_V1P32.bsp.lbl        2K    Document      Thu, Feb 21, 2002, 12:00 AM
000202R_SK_V1P32_V2P12.bsp         502K  Document      Thu, Feb 21, 2002, 12:00 AM
000202R_SK_V1P32_V2P12.bsp.lbl      2K    Document      Thu, Feb 21, 2002, 12:00 AM
000202R_SK_V2P12_EP15.bsp          198K  Document      Thu, Feb 21, 2002, 12:00 AM
000202R_SK_V2P12_EP15.bsp.lbl       2K    Document      Thu, Feb 21, 2002, 12:00 AM
000203_SE_JUP156.bsp               4,968K Document      Thu, Feb 21, 2002, 12:00 AM
000203_SE_JUP156.bsp.lbl            3K    Document      Thu, Feb 21, 2002, 12:00 AM
00031R_SK_LP0_V1P32.bsp            307K  Document      Thu, Feb 21, 2002, 12:00 AM
00031R_SK_LP0_V1P32.bsp.lbl         3K    Document      Thu, Feb 21, 2002, 12:00 AM
00031R_SK_V1P32_V2P12.bsp          622K  Document      Thu, Feb 21, 2002, 12:00 AM
...
aareadme.txt

```

Kernel file  
Kernel file detached label (text)  
Kernel file naming conventions

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# Generic Kernels Example - 1

## Navigation and Ancillary Information Facility

Address: [ftp://naif.jpl.nasa.gov/pub/naif/generic\\_kernels/](ftp://naif.jpl.nasa.gov/pub/naif/generic_kernels/)

**generic\_kernels** ← **ftp://naif.jpl.nasa.gov/pub/naif/generic\_kernels/**

```

-----
Jet Propulsion Laboratory
* * *  W A R N I N G  * * *
Property of the
UNITED STATES GOVERNMENT

This computer is funded by the United States Government and
operated by the California Institute of Technology in support of
ongoing U.S. Government programs and activities.  If you are not
authorized to access this system, disconnect now.  Users of this
system have no expectation of privacy.  By continuing, you consent
to your keystrokes and data content being monitored.

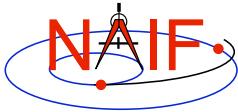
-----
Login successful.

Path: [naif.jpl.nasa.gov][pub][naif][generic_kernels]

Name                               Size  Kind          Last Modified
fk                                  -    Folder        Wed, Sep 19, 2001, 12:00 AM
lsk                                  -    Folder        Fri, Jul 17, 1998, 12:00 AM
pck                                  -    Folder        Sat, Apr 2, 2005, 1:07 AM
plate_model                          -    Folder        Thu, Jan 13, 2005, 6:23 PM
spk                                  -    Folder        Thu, Oct 18, 2001, 12:00 AM
stars                                -    Folder        Fri, May 7, 2004, 12:00 AM

```

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# Generic Kernels Example - 2

## Navigation and Ancillary Information Facility

Address: [ftp://naif.jpl.nasa.gov/pub/naif/generic\\_kernels/spk/satellites/](ftp://naif.jpl.nasa.gov/pub/naif/generic_kernels/spk/satellites/)

satellites

Jet Propulsion Laboratory  
\*\*\* WARNING \*\*\*  
Property of the  
UNITED STATES GOVERNMENT

This computer is funded by the United States Government and operated by the California Institute of Technology in support of ongoing U.S. Government programs and activities. If you are not authorized to access this system, disconnect now. Users of this system have no expectation of privacy. By continuing, you consent to your keystrokes and data content being monitored.

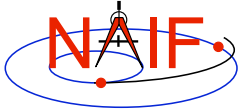
Login successful. Have fun.

Path: [naif.jpl.nasa.gov][pub][naif][generic\_kernels][spk][satellites]

Name	Size	Kind	Last Modified
<a href="#">aa_summaries.txt</a>	48K	ASCII Text	Wed, Apr 23, 2003, 2:17 AM
<a href="#">jup068.bsp</a>	1,292K	Document	Wed, Jan 29, 1997, 12:00 AM
<a href="#">jup068.cmt</a>	535 bytes	Document	Fri, Jun 13, 2003, 12:00 AM
<a href="#">jup069.bsp</a>	1,314K	Document	Sat, Oct 23, 1999, 12:00 AM
<a href="#">jup069.cmt</a>	2K	Document	Sat, Oct 23, 1999, 12:00 AM
<a href="#">jup073-hst.bsp</a>	10,408K	Document	Fri, Sep 25, 1998, 12:00 AM
<a href="#">jup073-hst.cmt</a>	692 bytes	Document	Fri, Jun 13, 2003, 12:00 AM
<a href="#">jup073s.bsp</a>	6,092K	Document	Thu, Oct 17, 1996, 12:00 AM
<a href="#">jup073s.cmt</a>	592 bytes	Document	Thu, Oct 17, 1996, 12:00 AM
<a href="#">jup100-95-05.bsp</a>	4,096K	Document	Sun, Nov 22, 1998, 12:00 AM
<a href="#">jup100-95-05.cmt</a>	2K	Document	Fri, Jun 13, 2003, 12:00 AM

Annotations:  
 - Red arrow points to the URL in the address bar: [ftp://naif.jpl.nasa.gov/pub/naif/generic\\_kernels/spk/satellites/](ftp://naif.jpl.nasa.gov/pub/naif/generic_kernels/spk/satellites/)  
 - Red arrows point to [aa\\_summaries.txt](#) and [jup068.cmt](#) with the text: "BRIEF" summary of all SPK files in the directory  
 - Red arrows point to [jup068.bsp](#) and [jup069.bsp](#) with the text: Typical SPK file  
 - Red arrows point to [jup069.cmt](#) and [jup073-hst.cmt](#) with the text: Comments, also placed inside the SPK file

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# Mission Archived Kernels

## Navigation and Ancillary Information Facility

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Planetary Data System

Data Set Advanced Search

Select one or more parameters from below, then hit Go!  
Click on to filter parameters. Click on parameter name for more information.

Missions: (pick one or many and Filter)  
 2001 Mars Odyssey  
 Cassini/Huygens  
 Deep Space 1  
 Mars Exploration Rover  
 Mars Global Surveyor  
 Near Earth Asteroid Rendezvous

Target Name: (pick one to Filter)

Instruments: (pick one or many and Filter)  
 Spice Kernels

Start Date: (YYYY-MM-DD)

Stop Date: (YYYY-MM-DD)

Data Type: (pick one to Filter)

Data Set Name: (pick one to Filter)

Instrument Host: (pick one or many)  
 2001 Mars Odyssey  
 Cassini Orbiter  
 Deep Space 1  
 Mars Exploration Rover 1  
 Mars Exploration Rover 2  
 Mars Global Surveyor

Instrument Host Type: (pick one to Filter)

Quick Search Power Search

This is the PDS web page at which you'll arrive if you click on "PDS Archived SPICE Kernels" on NAIF's "Data" web page.

"Spice" data has been pre-selected for you.

Select a "Mission," or an "Instrument Host" (they are not always identical).

Select START and STOP dates if desired.

Then press "GO" and see what turns up!

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