



Spitzer Space Telescope

Release Notes

Leopard
Version 9

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1 Introduction

Welcome to Leopard, the Spitzer Space Telescope Science Data Archive interface. In these release notes we provide information about the computing requirements needed to run Leopard and the features in this version. A regularly updated bugs and issues list is kept on the Proposal Kit page at the Spitzer Science Center (<http://ssc.spitzer.caltech.edu/propkit/spot/>) from which you downloaded the software. Download the Leopard User's Guide from the Proposal Kit web page for documentation about how to use the software. Please email us at the Spitzer Science Center (SSC) Helpdesk at help@spitzer.caltech.edu with any questions or comments.

To make using Leopard easier we recommend:

1. *Read these release notes and the Leopard User's Guide.*
2. *Check the Leopard bugs list on the web page if you think you have found a software problem.*

We appreciate any feedback you have on this version of Leopard. Just email the Spitzer Science Center Helpdesk at help@spitzer.caltech.edu with your comments or questions.

2 This Release of Leopard

This is the ninth release of the Leopard software. Future releases will incorporate more features as they are implemented. This release contains features, such as searching the Spitzer Archive with basic search parameters, selecting various data product types for retrieval, and data download options --- direct data delivery (preferred) or staged FTP.

You may notice that Leopard looks a lot like Spot, the Spitzer Planning Observations Tool. Leopard is based on the same JAVA architecture as Spot and shares many of the same features. If you are comfortable with using Spot you are already familiar with many of the features of Leopard.

Several items have changed in this version of Leopard. In addition, we have added a number of new features. We have attempted to encapsulate in the list below the most obvious changes that affect users the most:

- Background calculation output format modified.
- Inclusion of all Legacy Science enhanced data products in the Popular Products query.
- Inclusion of "Select All" button in Query by Campaign/Observer.
- Inclusion of IRS Staring and Spectral Mapping quicklook previews.
- Depth-of-Coverage overlay now uses observation date, when available.
- Catalog data available for image overlays from the VizieR service (in beta).
- Visualization: Load FITS images from a URL.
- Visualization: Load images from NVO Simple Image Access Protocol (SIAP) sites.

- Visualization: Slice Tool now handles image overlay layers.
- Visualization: Allow for creation of blank image for overlays.
- Visualization: Removed 10° limit on Depth-of-Coverage overlays for MIPS Scan AORs.
- Visualization: Allow for Depth-of-Coverage overlays for IRAC Post-Cryo Mapping AORs.
- Various other improvements and bug fixes.

There are two issues to note for this release of Leopard:

1. If a data download fails, check your hard disk space. Leopard cannot tell if you have filled up your disk space, so an incomplete data download may be due to a full disk on your computer
2. Read the README file that comes with the data download. It will indicate if the download was successful or if there were problems.

3 Minimum Recommended Hardware Configuration

Leopard is written in the JAVA language and therefore requires lots of memory and a fast processor in your computer. If you run it on a system with less memory or processor power than our minimum recommended configuration, the software may work, but it is likely to be slow, and you will probably see window redraw/refresh problems. While we suggest minimum hardware configurations, we recommend that users have more RAM (512 MB or above) and a fast processor, if you plan on intensive use of the visualization features within Leopard. The minimum recommended hardware configurations are:

3.1 Sun WORKSTATIONS: Sun Ultra 5 with 256 MB RAM

If you are not using the visualization features in Leopard, then it may run acceptably on an Ultra 1 with at least 256 MB of RAM.

3.2 Windows PC (2000, NT, XP): 512 MB RAM

3.3 Windows PC (Vista): 1 GB RAM

3.4 Linux PC: 256 MB RAM

We have done limited testing on Linux systems running with a Pentium 2 processor at 266 MHz and 256 MB of RAM, as well as with a Pentium 3 processor and 256 MB of RAM.

3.5 Mac PC: OS 10.4, 512 MB RAM; OS 10.5, 1 GB RAM

We have tested Leopard on a G4 processor with 512 MB RAM under OS 10.4, and it runs acceptably. However, we recommend 1 GB RAM for OS 10.5 (Leopard).

4 Operating System Configurations Supported

The majority of the testing Leopard has been done under Solaris 2.8, Windows XP, Linux, and Mac OSX. We do not anticipate major problems with other flavors of Windows. Except for Mac, the versions of Leopard in this release come with JAVA 1.5.

4.1 UNIX: Solaris 2.8+

The software has been tested on Solaris 2.8 and 2.10.

4.2 WINDOWS: NT, 2000, XP, Vista

The functionality of the software has been tested using Windows XP. Minimal testing has been completed using other versions of Windows, but we do not anticipate problems. Due to security measures for Windows Vista, you will need system administration privileges for software installation. To allow auto-update under Windows Vista, use the right mouse button when clicking on the Leopard icon, and select “Run as Administrator.” You can click on the icon and run Leopard normally thereafter.

4.3 LINUX: RedHat 8.0, 9.0; Fedora Core; Enterprise

Leopard on Linux runs acceptably on RedHat 8.0, 9.0. We tested distributions ‘straight out of the box.’ We ran the GNOME windowing environment. We know that Leopard does NOT run properly with the fvwm2 window manager (all JAVA Swing programs seemed to hang) or KDE. Leopard also appears to run well under Fedora Core, although we have not yet fully tested Fedora Core 4 or 5. Undoubtedly, there will be various Linux OS under which Leopard will not run successfully. For example, we are not supporting Spitzer Pride for 64-bit Linux machines. You will need to install the ‘generic’ package and download your own Java; see the Installation webpage.

4.4 Mac: OS X

Leopard requires JAVA 1.5, so Mac OS 10.4 or 10.5 is required. (**Note: Leopard will no longer run under Mac OS 10.3.**) Apple offers JAVA 1.5 (JAVA 2 Standard Edition [J2SE] 5.0) as a software update. By now, nearly all Mac OS 10.4 or 10.5 systems should be running JAVA 1.5, unless you have not allowed software updates to run over a year or so. You may need system administration privileges for software installation.

5 Performance Issues and Troubleshooting

In this section we discuss general performance issues that we have discovered. JAVA does run on multiple hardware and software platforms, but each combination of hardware and software has issues.

5.1 RAM Memory

512 MB is recommended for many platforms as the minimum RAM (256 MB, still, for a few platforms). The image and catalog manipulation features, in particular, require more

memory than just editing AORs. The performance of Spot may degrade if you run other memory intensive programs concurrently, e.g., IRSKY or IDL.

5.2 Window Managers

5.2.1 Solaris – CDE Settings

When using CDE on a Sun Workstation you need to turn off the ‘Raise Window When Made Active’ feature. Otherwise, the dialogs and message windows continually disappear under the main screen. To turn off this feature go to the Style Manager in the CDE tool bar, select the Window icon, and turn off ‘Raise Window When Made Active.’

5.2.2 Solaris-JAVA Memory Management

Although this is likely no longer applicable, an annoying feature on Solaris is the ‘garbage collection’ process will sometimes hang Leopard for about 30 seconds. If Leopard becomes unresponsive, and you hear the hard disk working away, this is probably what is occurring. It usually finishes in less than a minute, and then you can continue working. We have implemented more regular garbage collection features in Leopard to try and alleviate this problem. When Leopard is busy cleaning up, it will show a message, asking you to wait while it clears up memory.

5.3 No Server Access from Leopard

Leopard works as a client-server application. You have downloaded Leopard, the client, onto your local computer. The server software is located at the SSC, and Leopard accesses it via the internet. If your computer is not connected to the Internet or one of our servers is down, Leopard will display the “NET DOWN” symbol at the bottom of the main Leopard window. If you are connected to the Internet, but still see the “NET DOWN” symbol, please email the Spitzer Science Center Helpdesk at help@spitzer.caltech.edu, as one of our servers may be down.

This is now a very old issue, but **for Windows NT**, if you NEVER see the “NET UP” symbol, this is a similar problem to the one above, but it has a different fix. Follow the steps below.

a) Using a text editor, open the leopard-DATE_TIME.log file located in

C:\Winnt\Profiles\{user ID}\Spot directory.

b) Look for the following error:

```
java.net.SocketException: setsockopt() TCP_NODELAY
```

If seen, then you probably are running WinNT4.0 Service Pack 6 and need to download Service Pack 6a update. Verify that your machine is running Service Pack 6, and if so, download the update as follows:

c) Go to <http://www.microsoft.com/ntworkstation/>

d) Select “Latest Updates in Service Pack 6” and follow the instructions. This should result in the “NET UP” symbol on the Leopard main window.

The only other instance of a permanently “NET DOWN” situation we have seen is for a **Windows PC that was behind a very strong firewall** that apparently was stripping off the JAVA objects in the data stream when they were sent to our servers. We cannot fix this situation.

5.4 Firewalls

If you are running firewall software on your PC, you must make sure that it is configured correctly to let Leopard reach our servers. If you are at an institution with a firewall, then port 80 must be open or accessible with a proxy for Leopard to reach our servers at soas.ipac.caltech.edu, port 443 must be open or accessible with a proxy to submit proposals or to check-in a modified observing programs, and port 10011 must be open or accessible with a proxy to access images from the NASA/IPAC Extragalactic Database (NED). Please see your system administrator for help or contact us if you have questions.

6 Known Bugs and Issues

The current list of known bugs and issues is updated regularly and kept on the Proposal Kit web page from which you downloaded this software. If you think you have found a bug, before reporting it please check the bugs list and read the previous section to discover if it is a ‘feature’ we already know about. Also check the appropriate section of the User’s Guide to understand what the software is doing.

If you have found a real bug, then please do let us know via Email, or use the bug report form at <http://ssc.spitzer.caltech.edu/propkit/spot/bugform.html>.

1. Email a description of the problem to the Spitzer Science Center Helpdesk at help@spitzer.caltech.edu.
2. Include the hardware configuration you are using (e.g. SunBlade 100, 512 MB).
3. Attach the Leopard log file. Each time you run leopard it creates a file called ‘leopard-DATE_TIME.log.’ The log files can be found in the default directory created when you install the software. The default directories are:

Solaris/Linux/Mac	~/spot
Windows ME	c:\spot
Windows NT/2000/XP	c:\Documents and Settings\{username}\Application Data\Spot
Windows Vista	c:\Users\[username]\AppData\Roaming\spot

Please note that Application Data is a *hidden folder*. The same is true for AppData for Windows Vista. If you want to see the Application Data folder, or the AppData folder, select the “Show Hidden Folders” option under “Folder Options” from the Tools menu.

The text showing in any error windows that pop up in Leopard should show up in the log file as well. Additionally, Leopard will allow you to save to disk the text displayed in an error window.