



Spitzer Space Telescope

Release Notes

Spot
Spitzer Planning Observations Tool v18

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1 Introduction

Welcome to Spot – the Spitzer Planning Observations Tool, Version 18. In these release notes we provide information about the computing requirements needed to run Spot and the new features in this version. A regularly updated bugs and issues list is kept on the Proposal Kit page at the SSC (<http://ssc.spitzer.caltech.edu/propkit/spot/>) from which you downloaded the software. Download the Spot User's Guide from the Proposal Kit web page for complete documentation about how to use the Spot software. Please email us at the Spitzer Help Desk at help@spitzer.caltech.edu with any questions or comments.

To make using Spot and planning your Spitzer observations easier we recommend:

1. *Read the relevant sections of the Spitzer Observer's Manual to decide how best to implement the science you want to do.*
2. *Read these release notes and the Spot User's Guide.*
3. *Check the Proposal Kit web page for additional information in helping you plan your observations. Check the Spot bugs list on the web page if you think you have found a software problem.*
4. *Save your AORs often. Spot does not save your work to disk automatically. Though the software is very robust, given the variety of operating systems we support we cannot guarantee that it will never crash. Saving your work will make these events much less painful.*

We appreciate any feedback you have on this version of Spot. Just email the Spitzer Help Desk at help@spitzer.caltech.edu with your comments or questions.

2 Major Changes

Several items have changed in this version of Spot. 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:

- Provide Exposures table for IRAC AOTs.
- Allow for switching between array and celestial coordinates for Fixed Cluster targets.
- Background calculation output format modified.
- 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 bugfixes.

3 Minimum Recommended Hardware Configuration

Spot is written in the JAVA language and therefore requires lots of memory and a fast processor in your computer. If you run Spot 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 Spot. 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 Spot, then it may run acceptably on an Ultra 1 with 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 Spot on a G4 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 for this version of Spot 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, all of the versions of Spot 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 the 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 Spot icon, and select "Run as Administrator." You can click on the icon and run Spot normally thereafter.

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

Spot on Linux runs acceptably on RedHat 8.0, 9.0. We tested each distribution “straight out of the box”. We ran the GNOME windowing environment. We know that Spot does NOT run properly with the fvwm2 window manager (all JAVA Swing programs seemed to hang) or KDE. Spot did seem to run OK with the older fvwm window manager, but our testing was only cursory. Spot 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 Spot 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

Spot requires JAVA 1.5, so Mac OS 10.4 or 10.5 are required. (**Note: Spot will not 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, which may sometimes hang Spot for about 30 seconds. If Spot 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 Spot to try

and alleviate this problem. When Spot is busy cleaning up, it will show a message, asking you to wait while it clears up memory.

5.3 No Server Access from Spot

Spot works as a client-server application. You have downloaded Spot, the client, onto your local computer. The server software that provides observing time estimates, visibility windows, sky backgrounds, etc., is located at the SSC, and Spot accesses it via the internet. If your computer is not connected to the Internet or one of our servers is down, Spot will display the “NET DOWN” symbol at the bottom of the main Spot screen. If you are connected to the Internet, but still see the “NET DOWN” symbol, please email the Help Desk at help@spitzer.caltech.edu, as one of our servers may be down.

This is now a very old issue, and rare, however, **for Windows NT PCs**, 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 Spot-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 Spot 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 Spot reach our servers. If you are at an institution with a firewall, then port 80 must be open or accessible with a proxy for Spot to reach our servers at soas.ipac.caltech.edu for time estimates and visibility servers, 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 Help Desk at help@spitzer.caltech.edu.
2. Include the hardware configuration you are using (e.g. SunBlade 100, 512 MB).
3. Please attach the Spot log file. Each time you run Spot, it creates a file called 'spot-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 for Windows NT/2000/XP 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 Spot should show up in the log file as well. Additionally, Spot will allow you to save to disk the text displayed in an error window.