

PDSWIN Help Index

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File menu commands

The File menu offers the following commands:

<u>Open</u>	Opens an image file.
<u>Next</u>	Opens the next file.
<u>Previous</u>	Opens the previous file.
<u>Scan Forward</u>	Scan files in alphabetical order.
<u>Scan Back</u>	Scan files in reverse order.
<u>Stop Scan</u>	Stop scanning files.
<u>Close</u>	Closes an image.
<u>Save As</u>	Saves an image to a BMP file.
<u>Print</u>	Prints an image.
<u>Print Preview</u>	Displays the image on the screen as it would appear printed.
<u>Print Setup</u>	Selects a printer and printer connection.
<u>Exit</u>	Exits PDSWIN.
<u>File 1, 2..</u>	Open most recently used files.

Edit menu commands

The Edit menu offers the following commands:

Copy Copies an image to the clipboard.

View menu commands

The View menu offers the following commands:

<u>Toolbar</u>	Shows or hides the toolbar.
<u>Status Bar</u>	Shows or hides the status bar.
<u>Zoom</u>	Turns zoom mode on or off.
<u>Image Info</u>	Shows or hides information from the image label.
<u>Brightness</u>	Shows or hides a dialog to adjust brightness and contrast.

Window menu commands

The Window menu offers the following commands, which enable you to arrange multiple views of multiple images in the application window:

- New Window Creates a new window that views the same image.
- Cascade Arranges windows in an overlapped fashion.
- Tile Arranges windows in non-overlapped tiles.
- Arrange Icons Arranges icons of closed windows.
- Window 1, 2, ... Goes to specified window.

Color menu commands

The Color menu offers the following commands:

Load Palette Load a color palette.
Reset Palette Reset color palette to default.

Options menu commands

The Options menu offers the following commands:

<u>Auto-Bright</u>	Enable/disable automatic contrast stretch.
<u>Scan pause</u>	Set pause between files when scanning.

Help menu commands


The Help menu offers the following commands, which provide you assistance with this application:

- Index Offers you an index to topics on which you can get help.
- Using Help Provides general instructions on using help.
- About Displays the version number of this application.

Open command (File menu)

Use this command to open an image in a new window. PDSWIN displays the Open dialog box, in which you can locate and open the desired file. You can open multiple images at once. Use the Window menu to switch among the multiple open images. See Window 1, 2, ... command.

Shortcuts

Toolbar: 
Keys: CTRL+O

File Open dialog box

The following options allow you to specify which file to open:

File Name

Type or select the filename you want to open. This box lists files with the extension you select in the List Files of Type box.

List Files of Type

Select the type of file you want to open. Supported file types are:

Compressed files (.IMQ)

Browse files (.IBG)

Uncompressed files (.IMG)

Color files (.RED, .GRN, .SGR, .VIO)

When the dialog is displayed from a Load Palette command, file types are:

PDS (IMDISP) palettes (.PAL)

FRACTINT palettes (.MAP)

Drives

Select the drive which has the file that you want to open.

Directories

Select the directory which has the file that you want to open.


Network...

Choose this button to connect to a network location, assigning it a new drive letter.

Next command (File menu)

Use this command to open the next file on the disc. The file will be displayed in the currently active window. PDSWIN searches the currently active file's directory (in alphabetical order) and opens the next file with with the same extension. If there are no more files in the current directory, it will search subdirectories and then parent directories until it finds a file or runs out of places to look.


Shortcuts

Toolbar: 
Keys: ALT+N

Previous command (File menu)

Use this command to open the previous file on the disc. The file will be displayed in the currently active window. PDSWIN searches the currently active file's directory (in reverse alphabetical order) and opens the next file with with the same extension. If there are no more files in the current directory, it will search parent directories and then subdirectories until it finds a file or runs out of places to look.

Shortcuts


Toolbar: 
Keys: ALT+P

Scan Forward command (File menu)

Use this command to browse through multiple files on a disc. The files will be displayed in the currently active window. PDSWIN searches for files in the same manner as the next command. After a new image is displayed PDSWIN will pause for the time specified by the Scan pause option, and then proceed to the next file. This will continue until a Stop scan command is received, or the last file is displayed.

The scan forward command only works when the toolbar is visible.

Shortcuts


Toolbar: 

Scan Back command (File menu)

Use this command to browse through multiple files on a disc. The files will be displayed in the currently active window. PDSWIN searches for files in the same manner as the previous command. After a new image is displayed PDSWIN will pause for the time specified by the Scan pause option, and then proceed to the next file. This will continue until a Stop scan command is received, or the last file is displayed.

The scan back command only works when the toolbar is visible.

Shortcuts

Toolbar: 

Stop Scan command (File menu)

Use this command to halt a Scan Forward or Scan Back. The scan will stop as soon as the image that is currently being read is displayed.

Shortcuts

Toolbar: 
Keys: ESC

Next file error dialog

This dialog appears when PDSWIN has encountered a problem while trying to open a new file in an already open window. Click one of the buttons to tell the program what to do with the open window:

Skip to next file Skip over the problem file and try to open the next one.

Return to last file Go back to the file that was last displayed.

Skip to next directory Skip all the files in this directory and open the next available file.

Cancel Give up and close the window.

Close command (File menu)

Use this command to close all windows containing the active image.

You can also close a image by using the Close icon on the image's window, as shown below:



Save As command (File menu)

Use this command to save and name the active image. PDSWIN displays the Save As dialog box so you can name your image. The file is always saved as a Windows bitmap (.BMP) file.

Shortcuts

Toolbar:



File Save As dialog box

The following options allow you to specify the name and location of the file you're about to save:

File Name

Type a new filename to save an image with a different name. A filename can contain up to eight characters and an extension of up to three characters. PDSWIN adds the extension you specify in the Save File As Type box.

Save File As Type

Select the type of file you want to save:

Windows bitmap files(.BMP)

This is the only file type that PDSWIN currently knows how to save.

Drives

Select the drive in which you want to store the image.

Directories

Select the directory in which you want to store the image.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.

1, 2, 3, 4 command (File menu)

Use the numbers and filenames listed at the bottom of the File menu to open the last four images you closed. Choose the number that corresponds with the image you want to open.

Exit command (File menu)

Use this command to end your PDSWIN session. You can also use the Close command on the application Control menu.

Shortcuts

Mouse: Double-click the application's Control menu button.




Keys: ALT+F4

Copy command (Edit menu)

Use this command to copy the image onto the clipboard.

Copying data to the clipboard replaces the contents previously stored there.

Shortcuts

Toolbar: 
Keys: CTRL+C

Toolbar command (View menu)

Use this command to display and hide the Toolbar, which includes buttons for some of the most common commands in PDSWIN, such as File Open. A check mark appears next to the menu item when the Toolbar is displayed.

See Toolbar for help on using the toolbar.

Toolbar



The toolbar is displayed across the top of the application window, below the menu bar. The toolbar provides quick mouse access to many tools used in PDSWIN,

To hide or display the Toolbar, choose Toolbar from the View menu (ALT, V, T).

Click To



Open an image file.



Save the active image as a .BMP.



Copy the image to the clipboard.



Print the active image.



Display the copyright notice and version number.



Get help.



Turn zoom mode on and off.



Show or hide the Image Info dialog.



Show or hide the Brightness/Contrast dialog.



Scan back through files.



Open the previous file.



Stop scanning through files.



Open the next image file.



Scan forward through files.

Status Bar command (View menu)

Use this command to display and hide the Status Bar, which describes the action to be executed by the selected menu item or depressed toolbar button, and zoom factor for the current window. A check mark appears next to the menu item when the Status Bar is displayed.

Status Bar



The status bar is displayed at the bottom of the PDSWIN window. To display or hide the status bar, use the Status Bar command in the View menu.

The left area of the status bar describes actions of menu items as you use the arrow keys to navigate through menus. This area similarly shows messages that describe the actions of toolbar buttons as you depress them, before releasing them. If after viewing the description of the toolbar button command you wish not to execute the command, then release the mouse button while the pointer is off the toolbar button.

The right area of the status bar shows the zoom factor of the active image.

New command (Window menu)

Use this command to open a new window with the same contents as the active window. You can open multiple image windows to display different parts or views of an image at the same time. If you change the contents in one window, all other windows containing the same image reflect those changes. When you open a new window, it becomes the active window and is displayed on top of all other open windows.

Cascade command (Window menu)

Use this command to arrange multiple opened windows in an overlapped fashion.

Tile command (Window menu)

Use this command to arrange multiple opened windows in a non-overlapped fashion.

Window Arrange Icons Command

Use this command to arrange the icons for minimized windows at the bottom of the main window. If there is an open image window at the bottom of the main window, then some or all of the icons may not be visible because they will be underneath this image window.

1, 2, ... command (Window menu)

PDSWIN displays a list of currently open image windows at the bottom of the Window menu. A check mark appears in front of the file name of the active window. Choose an image from this list to make its window active.

Load Palette command (color menu)

Use this command to load a color palette for the currently active image. PDSWIN can read PDS (IMDISP) format .PAL files or FRACTINT format .MAP files.

Reset Palette command (color menu)

Use this command to reset the color palette for the currently active image to the default linear gray scale palette.

Auto-Bright command (options menu)

This command enables or disables automatic contrast stretching when a new file is opened. If Auto-Bright is enabled, PDSWIN will examine images when they are opened and try to optimize brightness and contrast settings for them.

Changing the Auto-Bright option has no effect on images that are already open. Use the Auto button in the Brightness/Contrast dialog on open images.

Scan Pause command (options menu)

The scan pause command allows you to set a pause when PDSWIN is browsing images using the scan forward or scan back commands. Enter the number of seconds to pause between images in the dialog box that is displayed.

Index command (Help menu)

Use this command to display the opening screen of Help. From the opening screen, you can jump to step-by-step instructions for using PDSWIN and various types of reference information.

Once you open Help, you can click the Contents button whenever you want to return to the opening screen.

Using Help command (Help menu)

Use this command for instructions about using Help.

About command (Help menu)


Use this command to display the copyright notice and version number of your copy of PDSWIN.

Context Help command



Use the Context Help command to obtain help on some portion of PDSWIN. When you choose the Toolbar's Context Help button, the mouse pointer will change to an arrow and question mark. Then click somewhere in the PDSWIN window, such as another Toolbar button. The Help topic will be shown for the item you clicked.

Shortcuts

Toolbar: 
Keys: SHIFT+F1

Title Bar



The title bar is located along the top of a window. It contains the name of the application and image.

To move the window, drag the title bar. Note: You can also move dialog boxes by dragging their title bars.

A title bar may contain the following elements:

- Application Control-menu button
- Image Control-menu button
- Maximize button
- Minimize button
- Name of the application
- Name of the image
- Restore button

Scroll bars

Displayed at the right and bottom edges of the image window. The scroll boxes inside the scroll bars indicate your vertical and horizontal location in the image. You can use the mouse to scroll to other parts of the image.

Size command (System menu)

Use this command to display a four-headed arrow so you can size the active window with the arrow keys.



After the pointer changes to the four-headed arrow:

1. Press one of the DIRECTION keys (left, right, up, or down arrow key) to move the pointer to the border you want to move.
2. Press a DIRECTION key to move the border.
3. Press ENTER when the window is the size you want.

Note: This command is unavailable if you maximize the window.

Shortcut

Mouse: Drag the size bars at the corners or edges of the window.

Move command (Control menu)

Use this command to display a four-headed arrow so you can move the active window or dialog box with the arrow keys.



Note: This command is unavailable if you maximize the window.

Shortcut


Keys: CTRL+F7

Mouse: Drag the title bar at the top of the window.

Minimize command (application Control menu)

Use this command to reduce the PDSWIN window to an icon.


Shortcut

Mouse: Click the minimize icon  on the title bar.
Keys: ALT+F9

Maximize command (System menu)

Use this command to enlarge the active window to fill the available space.

Shortcut

Mouse: Click the maximize icon  on the title bar; or double-click the title bar.
Keys: CTRL+F10 enlarges a image window.

Next Window command (Image Control menu)

Use this command to switch to the next open image window. PDSWIN determines which window is next according to the order in which you opened the windows.

Shortcut

Keys: CTRL+F6

Previous Window command (Image Control menu)

Use this command to switch to the previous open image window. PDSWIN determines which window is previous according to the order in which you opened the windows.

Shortcut

Keys: SHIFT+CTRL+F6

Close command (Control menus)

Use this command to close the active window or dialog box.

Double-clicking a Control-menu box is the same as choosing the Close command.



Note: If you have multiple windows open for a single image, the Close command on the image Control menu closes only one window at a time. You can close all windows at once with the Close command on the File menu.


Shortcuts

Keys: CTRL+F4 closes an image window
 ALT+F4 closes the main window or dialog box

Restore command (Control menu)

Use this command to return the active window to its size and position before you chose the Maximize or Minimize command.

Shortcut

Mouse: To restore a maximized window click the restore icon  on the title bar, or double click on the title bar.
To restore a minimized window double click on its icon.

Switch to command (application Control menu)

Use this command to display a list of all open applications. Use this "Task List" to switch to or close an application on the list.

Shortcut

Keys: CTRL+ESC

Dialog Box Options

When you choose the Switch To command, you will be presented with a dialog box with the following options:

Task List

Select the application you want to switch to or close.

Switch To

Makes the selected application active.

End Task

Closes the selected application.

Cancel

Closes the Task List box.

Cascade

Arranges open applications so they overlap and you can see each title bar. This option does not affect applications reduced to icons.

Tile

Arranges open applications into windows that do not overlap. This option does not affect applications reduced to icons.

Arrange Icons

Arranges the icons of all minimized applications across the bottom of the screen.

No Help Available

No help is available for this area of the window.

No Help Available

No help is available for this message box.


<< If you wish to author help specific to each message box prompt, then remove the AFX_HIDP_xxx values from the [ALIAS] section of your .HPJ file, and author a topic for each AFX_HIDP_xxx value. For example, AFX_HIDP_INVALID_FILENAME is the help topic for the Invalid Filename message box. >>

Print command (File menu)

Use this command to print an image. This command presents a Print dialog box, where you may specify the range of pages to be printed, the number of copies, the destination printer, and other printer setup options.

PDSWIN will stretch the image to fill as much of the page as it can.

Shortcuts

Toolbar: 
Keys: CTRL+P

Print dialog box

The following options allow you to specify how the image should be printed:

Printer

This is the active printer and printer connection. Choose the Setup option to change the printer and printer connection.

Setup

Displays a Print Setup dialog box, so you can select a printer and printer connection.

Print Range

Specify the pages you want to print:

All Prints the entire image.

Selection Not currently implemented.

Pages PDSWIN always prints one page.

Copies

Specify the number of copies you want to print for the above page range.

Collate Copies

Prints copies in page number order, instead of separated multiple copies of each page.

Print Quality

Select the quality of the printing. Generally, lower quality printing takes less time to produce.

Print Preview command (File menu)

Use this command to display the active image as it would appear when printed. When you choose this command, the main window will be replaced with a print preview window in which the page will be displayed in its printed format. The print preview toolbar offers you options to zoom in and out of pages and initiate a print job.

Print Setup command (File menu)

Use this command to select a printer and a printer connection. This command presents a Print Setup dialog box, where you specify the printer and its connection.

Print Setup dialog box

The following options allow you to select the destination printer and its connection.

Printer

Select the printer you want to use. Choose the Default Printer; or choose the Specific Printer option and select one of the current installed printers shown in the box. You install printers and configure ports using the Windows Control Panel.

Orientation

Choose Portrait or Landscape.

Paper Size

Select the size of paper that the image is to be printed on.

Paper Source

Some printers offer multiple trays for different paper sources. Specify the tray here.

Options

Displays a dialog box where you can make additional choices about printing, specific to the type of printer you have selected.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.

Print Preview toolbar

The print preview toolbar offers you the following options:

Print

Bring up the print dialog box, to start a print job.

Next Page

Preview the next printed page.

Prev Page

Preview the previous printed page.

One Page / Two Page

Preview one or two printed pages at a time.

Zoom In

Take a closer look at the printed page.

Zoom Out

Take a larger look at the printed page.

Close

Return from print preview to the editing window.


Print Progress Dialog

The Printing dialog box is shown during the time that PDSWIN is sending output to the printer. The page number indicates the progress of the printing.

To abort printing, choose Cancel.

Zoom Command (View menu)

This command allows you to zoom in and out on a part of the image.

When PDSWIN is in zoom mode, its cursor will change to a magnifying glass  when it is over an image. To zoom in, move the cursor over the area you want to see and click the left mouse button. To zoom out, click the right mouse button. The zoom factor for the active image is shown on the status bar.

Shortcuts


Toolbar: 
Keys: ALT+Z

Image Info command (View menu)

Use this command to show or hide the Image Info Dialog.

Shortcuts

Toolbar:
Keys: ALT+I



Brightness command (View menu)

Use this command to show or hide the Brightness Dialog.

Shortcuts


Toolbar: 
Keys: ALT+B

Image Info Dialog

The files that PDSWIN displays all start with a label section that has information about the image stored in the file. This dialog box shows some of the information from the label. The contents of the box will vary, depending on where the file came from.

Brightness/Contrast dialog

Use these controls to enhance the brightness and contrast of the image you are viewing. Each pixel in the image is stored as a digital number (DN value) which indicates its brightness. In most PDS images the values can be anywhere from 0 to 255; 0 means black, 255 means white, and the numbers in between indicate shades of gray. Much of the detail in an image is often concentrated in a fairly narrow brightness range. The controls in this dialog allow you to make details in the image clear by modifying the way the DN values are displayed.

The dialog has the following controls:

The Brightness and Contrast sliders

Use the mouse to drag the slider handles up and down.

The Brightness and Contrast text boxes

Brightness and contrast numeric values are displayed and can be entered here from the keyboard.

The Graph

Use the mouse to drag the red and blue handles along the edges of the graph. The graph also shows the brightest (DN high) and darkest (DN low) displayed values, and the image histogram, a graph (green lines) of the frequency of pixel values in the image.

The Negative checkbox

Converts the image to a photo-negative.

The Reset button

Returns all controls to their default values.

The Auto Button

Performs an automatic contrast stretch. Use the Auto-Bright command in the options menu to auto-stretch files as they are read.

The Hide Button

Hides the dialog box. Use the Brightness command to restore it.

The Options Button

Lets you set options which affect the appearance of the brightness dialog.

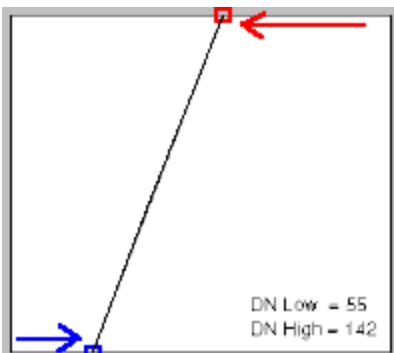
The Show/Hide Graph button

Expands or shrinks the dialog to show or hide the graph.

Tip:

An easy way to get a good setting is to:

1. Drag the red (upper right) graph handle to the left along the top of the graph until the bright parts of the image start to turn white.
2. Drag the blue (lower left) graph handle to the right along the bottom of the graph until the dark parts of the image turn black.



Brightness options dialog

This dialog lets you set options which affect the Brightness/Contrast dialog. The dialog has the following controls:

Histogram checkbox

Enables/disables display of the image histogram.

Grid checkbox

Enables/disables display of grid lines in the graph.

DN Values checkbox

Enables/disables display of DN High and DN Low values in the graph.

Registration

If you'd like to receive notification of future upgrades, or if you have any suggestions, requests, comments, bug reports, or whatever, drop me a line.

Steve Green
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Folsom, CA 95630

Email: sgreen@well.com

Conditions on use:

This version of PDSWIN is copyrighted freeware. As such, it may be freely copied and distributed but may not be sold. PDSWIN may not be given away with commercial products without explicit permission from the author.

There is no warranty of PDSWIN's suitability for any purpose, nor any acceptance of liability, express or implied.

The author of this program is not affiliated with NASA, The National Space Science Distribution Center, or Hughes STX corporation.

Ordering CD-ROMS from NASA

All information shown below is subject to change without notice.

CD-ROMs can be ordered from the National Space Science Data Center (NSSDC). The NSSDC is operated for NASA by Hughes STX Corporation.

The information shown below was taken from the August, 1993 "NASA SPACE AND EARTH SCIENCE DATA ON CD-ROM" catalog. For updated information and more details, request the latest version from the address listed below.

NASA CD-ROMS can be ordered from:

National Space Science Data Center
Code 633.4
Goddard Space Flight Center
Greenbelt, MD 20771

Phone: (301) 286-6695
Fax: (301) 286-1771
E-Mail: request@nsscda.gsfc.nasa.gov

Credit card orders are accepted.

General price information:

The CD-ROMS cost **\$20 for the first disc and \$6 for each additional disc per order, per data set.** There are also shipping and handling charges.

Fees may be waived...

On up to six discs per year "as resources permit" for ...

1. NASA installations, NASA contractors, or NASA grantees.
2. Other U.S. government agencies, their contractors, or their grantees.
3. Accredited universities or colleges.
4. State or local governments.
5. Non-profit organizations.

... if the discs are to be used for scientific or specific college-level educational purposes. K-12 educators can get a free sample disk if they can't pay the \$20. See the catalog or ask NSSDC for details.

Available sets include:

Voyagers to the Outer Planets. 12 discs, \$86.
Viking Orbiter images of Mars (raw data). 14 discs, \$98.
Mars Digital Image Model (processed Viking Orbiter data). 14 discs, \$92.
Magellan Venus Mosaic Image Data Records (Radar map). 80 discs, \$494.
Magellan Venus Global Data Records. 1 disc, \$20.
Galileo Cruise Imaging of Venus, Earth, and The Moon. 5 discs, \$44.
International Halley Watch. 24 discs, \$158.

Note: You can order partial subsets of these sets as explained in the general pricing information above.

Note: IMDISP (for DOS) and Image4PDS (for Mac) are also available at \$9 per copy. These programs are viewers similar to PDSWIN. They are not Windows programs.

Note: This version of PDSWIN doesn't fully support all of these data sets. See Supported CD-ROMS and files and Future upgrades.

Future upgrades

Some of the features I'd like to add to future versions PDSWIN are:

Near term:

- Support for all available PDS image CD-ROMs.
- Image enhancement.
- Trim and resize.
- Cut and paste, map and merge.
- Palette load.
- Rotate and mirror.
- More formats for save.
- Gamma control.

Long Term:

- Integrated database.
- OLE.
- Mosaicking.
- Color composites.
- Radiometric and Geometric corrections.
- Illumination correction.
- Camera Calibration.
- Educational help.
- Map and place name references.

These and other improvements will come when and if I get the time and energy to do them. If you would like to be notified of future upgrades, see [Registration](#). This version of PDSWIN is free, there may be a charge for some future versions. If you have any suggestions, comments, or, if you can contribute information, data, source code (C or C++ preferred) please [contact me](#). I am particularly interested in digital image processing software, geometric data for the image sets, information on the spacecraft and their imaging systems, and research results and interpretive information concerning the images themselves.

Recommended hardware and software

PDSWIN requires Windows 3.1. It has not been tested with any other version of Windows. CD-ROM caching (available under DOS version 6.2 or as an add-on from several software manufacturers) is recommended for best speed.

CPU:

'386 or better required.

'486 or better recommended for fastest performance.

Memory (RAM):

2 Mbytes Untested, may not work.

4 Mbytes Should be OK for limited use.

8 Mbytes Recommended.

The more the merrier.

CD-ROM drive:

Required to view CD-ROMS, double-speed recommended.

Video:

256 color VGA required. (The program may work with less but the images won't look very good.)

640x480 resolution is OK, 800x600 is a good general purpose mode, 1024x768 can show most of an 800x800 Voyager image without zooming out. Higher resolution hardware is great if you can afford it.

8 bit (256 color) is fine for most purposes. 16 bit (65K color) doesn't add much. 24 bit (16 million color) cards are best. Most 8 bit and 16 bit video cards are really only "5 bit" cards when they display gray scale images like those on the NASA discs. This means they can only display 32 shades of gray, some "banding" may be visible on smoothly shaded images.

Windows graphics accelerators can speed things up a lot, especially if they accelerate "DIBtoDevice" and "StretchDIB" functions.

I get a good combination of speed and accuracy using a Diamond Stealth 24 bit video card in 800x600, 256 color mode.

Acknowledgements

The decompression routine used by PDSWIN is based on the source code supplied on the Voyager CD-ROMs.

PDSWIN was inspired by the Voyager CD-ROM data set created by:
The Voyager Experiment Team, team leader, Dr. Bradford A. Smith.
The Planetary Data System.
The National Space Science Data Center.

Supported CD-ROMs and files

This version of PDSWIN has been tested on the following CD-ROM data sets:

Voyagers to the Outer Planets

All

Viking Orbiter Images of Mars

All

Mars Digital Image Model

Vol. 1-13: All, except a few that are too large for Windows to handle.

Vol 14: Contains GIF format images, not supported by this version of PDSWIN.

Magellan Mosaic Image Data Records

All

Magellan GxDRs

All

Galileo Cruise Imaging

All

International Halley Watch

All browse files, all 8 and 16 bit .IMG files. Not supported are 16 bit compressed .IMQ files and 32 bit uncompressed .IMG files.

PDSWIN can also be used with uncompressed (.IMG) files that are found in space and astronomy sections of some computer bulletin boards.

In general, PDSWIN should be able to read any 1, 4, 8, or 16 bit PDS image file.

Future upgrades will be tested on other data sets.

Voyagers to the Outer Planets

The 12 Disks in this set contain approximately 26,000 800x800 black and white images from Voyager 1 and Voyager 2's encounters with Jupiter, Saturn, Uranus, Neptune, and their moons.

- Discs 1-3 Uranus
- Discs 4,5 Saturn
- Discs 6-8 Jupiter
- Discs 9-12 Neptune

The last disc for each planet (3, 5, 8, 12) includes 200x200 "browse" files for each image in the planet's set.

Best of: Disc 6--The first pictures from Voyager 1. Lots of spectacular images of Jupiter and it's moons.

Mars Digital Image Model

This 14 disc set contains processed images from the Viking Orbiters. A real triumph of image processing, this set is highly recommended for anyone interested in images of Mars. The U.S. Geological Survey took the [raw Viking Orbiter images](#), cleaned them up, and processed them into a complete image map of Mars at several resolutions. All images are 8 bit gray scale unless otherwise noted.

Volumes 1-6:

Planet-wide coverage at 256 pixel/deg. (0.231 KM/pixel) and 64 pixel/deg. (0.925 KM/pixel) resolution.

Volume 7:

Planet-wide coverage at 64 pixel/deg. (0.925 KM/pixel) and 16 pixel/deg. (3.702 KM/pixel) resolution. Also, a complete 16-bit topographic map at 64 pixel/deg. (0.925 KM/pixel), 16 pixel/deg. (3.702 KM/pixel) and 4 pixel/deg. (14.8 KM/pixel) resolution.

Volumes 8-13:

Color filtered images at 64 pixel/deg. (0.925 KM/pixel) resolution. Red, green, and violet filtered images are provided in separate files for each area covered. Coverage isn't as complete as in vols. 1-6, many of the tiles have blank spots where color information wasn't available. Theoretically these files could be combined into true-color, 24-bit images, but the software to do this isn't generally available. A future version of PDSWIN should (I hope) solve this problem. These volumes each also include gray-scale coverage of the entire planet at 16 pixel/deg. (3.702 KM/pixel).

Volume 14:

8 bit color GIF format images produced from the data on vols. 8-13. This version of PDSWIN doesn't read GIF files, but there are many other viewers available which do.

Volumes 1-13 also have a shaded relief map at 16 pixel/deg. (3.702 KM/pixel) and 4 pixel/deg. (14.8 KM/pixel) resolution.

Volumes 8-14 have a "special" subdirectory with orthographic, point-perspective, and oblique views of selected areas of the planet.

The areas covered by vols. 1-6 and 8-13 are:

Vol. 1, 8. Vastitas Borealis Region. The north polar region of Mars southward from the pole to a latitude of 37.5 deg. North.

Vol. 2, 9. Xanthe Terra Region. 37.5 deg North latitude to 52.5 deg South latitude, and 0 deg longitude to 90 deg. West longitude. Includes Valles Marineris.

Vol. 3, 10. Amazonis Planitia Region. 37.5 deg. North latitude to 52.5 deg. South latitude, and 90 deg West longitude to 180 deg West longitude. Includes Olympus Mons.

Vol. 4, 11. Elysium Planitia Region. 37.5 deg North latitude to 52.5 deg. South latitude, and 180 deg. West longitude to 270 deg West longitude.

Vol. 5, 12. Arabia Terra. 37.5 deg North latitude to 52.5 deg South latitude, and 270 deg. West longitude to 0 deg. West longitude.

Vol. 6, 13. Planum Australe Region. The South polar region of Mars northward from the pole to a latitude of 52.5 South latitude.

Best of: Disc 7 has medium resolution images of the whole planet plus the nifty topo

maps.

Viking Orbiter Images of Mars

The raw image data from the Viking orbiters on 14 discs. The Images are stored by orbit number; each image is available as a compressed 1056 x 1202 pixel .IMQ file and an uncompressed 264 x 300 "browse" (.IBG) file. Many of the images have a lot of noise and crud in them; unless you like your data raw, I suggest you try the [Mars Digital Image Model](#) data set instead of this one. All images are in 7 bit (stored as 8 bit) gray-scale.

Best of: Pick a disc, go to the browse directory, and start scanning. You'll know its time to stop when you start seeing faces.

Magellan Venus Radar Mosaics

This 80 disc set contains processed images of Venus from Magellan's synthetic aperture radar. Most of the planet is covered at several resolutions. The images are organized as "Mosaic Image Data Records" (MIDRs), 8,192 x 7168 sample projections of an area the planet. Each MIDR is stored in a subdirectory as 56 1,024 x 1,024 files. There is also a 1,024 x 896 browse image for each MIDR. Each disc contains 10 MIDRs.

Full-resolution MIDRs (F-MIDRs) are available for about 15% of the planet. Image resolution is 1407.4 pixel/deg. (75 M/pixel). The following volumes contain F-MIDRs: 1, 3-11, 13, 15, 17, 18, 23-29, 32, 35, 36, 38, 39, 42, 44-46, 49, 50, 52, 53, 55, 56, 58, 59, 62-68, 70-77, 80.

Compressed once MIDRs (C1-MIDRs) cover most the planet at a resolution of 469.1 pixel/deg. (225 M/pixel). The following volumes contain C1-MIDRs: 2, 12, 14, 16, 19, 20, 21, 22, 30, 31, 33, 34, 37, 40, 41, 43, 47, 48, 54, 57, 60, 61, 69, 78, 79.

Compressed twice MIDRs (C2-MIDRs) cover most the planet at a resolution of 156.4 pixel/deg. (675 M/pixel). The following volumes contain C2-MIDRs: 30, 33, 34, 37, 43, 51, 54, 61, 69.

Compressed thrice MIDRs (C3-MIDRs) cover most the planet at a resolution of 52.1 pixel/deg. (2025 M/pixel). The following volumes contain C3-MIDRs: 69,78.

See also: [Magellan GxDRs](#)

Best of: The C3-MIDRs on vols. 69 and 78 cover the planet in a manageable number of files.

Magellan GxDRs

This disc contains processed data from Magellan's radar mapping mission to Venus. The images show reflectivity, emissivity, slope, and topography. Mercator, sinusoidal, and polar projections are included for each data type. Resolution is 22.76 pixel/deg. (4641 M/pixel). Emissivity and topography images are 16 bit/pixel gray-scale; slope and reflectivity images are 8 bit/pixel gray-scale.

See also: [Magellan Venus Radar Mosaics](#)

Best of: Check out the topographic images in the GTDR directory. Load a topo color palette and terraform Venus.

Galileo Cruise Imaging

Images of Venus, Earth, and the Moon from Galileo's fly-bys on the way to Jupiter. The images are 800 x 800 8 bit gray-scale; they haven't been processed. The images aren't compressed and they include a lot of extra data, so they are relatively slow to read and a disc only holds 800 of them. Venus images are on volume 2, Earth and the Moon are on volumes 3-6; volume 1 hadn't been released yet at this writing.

Best of: Vol. 2 for Venus, vol. 3 for Earth.

International Halley Watch

24 discs with lots of images of Comet Halley. Most of the images are scans of photographs made from ground-based telescopes. Volumes 25 and 26 will have images made in-situ by spacecraft, they weren't available yet at the time this was written.

Best of: Vol. 18 has browse images from the first 18 discs.

