WINMK
Version 2.4a

Installation:

There are six files in this installation:

Winmk2.4a.exe
Linedata.dat
Winmk.ini
stan.nor
stan.rec
Winmk2.4a.rtf (this file)

The executable image (winmk2.4a.exe) of the program and the winmk.ini along with the linedata.dat files are required to be located in the same directory. It is advisable to store spectra standards and data in their own directories, but this program requires no special file structure. The program has been tested in Windows NT, 2000, and XP, but should run on anything running 95 or later. If anyone has problems with any of these operating systems, please let me know.

Operation:

    File Formats:

        Spectra Files:

        WINMK expects spectra files to be two columns of ascii representations of floating point values. The first column being wavelength (in angstroms) and the second column is flux. Spacing and number of digits is not restricted. Comments may be included in the file by placing a "#" sign in the first column. Comments can be placed anywhere in the file.

    Program Execution:

        In the default opening state the file controls are located on the left side of the window. Up to four files can be open at once. To open a file, left click on the button "o" (open) under the first file location identified by "File 1". To close the file left click on "c" (close). The "+" and "-" buttons shift the spectra to the red and blue respectively. The "u" (up) and "d" (down) buttons shift the spectra up and down respectively. The "s" button smoothes the spectrum across the number of points selected in the Smooth setting (see below). The controls for file locations 2 through 4 are similar to those for the first file. The third set of file controls is different from the others. It is used to display difference between the two files opened in locations 1 and 2. If a file is opened normally in location three, it will revert to normal file controls.

        The spectra displayed are color coded according to which file location they are in. File 1 is displayed in red, 2 in blue, 3 in green, and 4 in purple.

        The offset controls are located in the lower left of the window. The desired offset needs to be entered before any files are opened. To increase the offset left click on the "u" (up) button below the offset label. To decrease the offset left click on the "d" (down) button. The current offset is displayed near the label and the buttons. If the offset is non-zero when the second or subsequent file location is opened the offset is added to each file after the first so that the spectra are displayed staggered in the y direction. If more than one file has been opened when a display offset is entered, the method to redisplay the files in the staggered manner is to press the Reset Scale button.

        The Smooth setting is also located in the lower right. The u and d buttons increase and decrease the number of points over which the smooth function will operate. The minimum value is 2.

Individual "s" buttons for each spectrum apply this smoothing across the number of points selected.

Utility Buttons:

The utility buttons are located across the top of the window in three rows. The first row contains Mouse Scale, Reset Scale, Normalize, Rectify, Accept, Copy, Color, W on B, and About. The second row contains Symbol, Full Width, DSCA, Smooth and Legend. The third row contains Y Zoom In, Y Zoom Out, Up, Down, Zoom In, Zoom Out, =>, and <=. Each will be discussed individually below:

Mouse Scale:
This button enters the mouse scale mode. After clicking on the Mouse Scale button, select a corner of the desired zoom area and left click and release with the mouse. Next, drag the mouse to the desired opposite corner of the zoom area. A red rectangle will be drawn on the display showing the zoom area. To invoke the zoom, left click when the desired zoom area is displayed. There is no requirement to zoom in any specific direction. Note: If a file is opened after this zoom has been processed, the scales will be reset to the original scales.

Reset Scale:
This button will restore the display to an unzoomed display similar to the display when files are opened.

Normalize:
This button currently scales the entire spectra to a maximum value of 1.0. A line will be displayed at the default point to normalize to (the maximum point). To select a different point to normalize to left click on the desired point. The new line will be displayed at the new selection point After the appropriate normalization point has been selected the user should press the Accept button, a file save dialog box will be displayed. If the user wishes to save this normalized spectra, enter a new file name in the dialog box and click "Save".

Rectify:
This button implements the rectify routines from xmk. A estimate of the continuum is calculated and displayed. The user can then add a point in the continuum by left clicking on a peek in the spectra. Similarly a point in the continuum can be removed by right click on the displayed point. After the selection of the continuum points the user should left click on the "Accept" button. The file dialog box is again displayed to save the rectified file. The new rectified file is displayed at the same time as the file dialog box, so the user can examine the rectified file. If the user decides not the press the "Accept" button, pressing the "Rectify" button again will reset everything and take the user back the normal mode of operation.

Copy:
This button will copy the plot section of the window to the windows clipboard. This clipboard can be pasted into any graphical display, such as Power Point.

Color:
This will toggle the color of the display lines on and off. The primary use of this button is to preview a black and white image similar to printing in black and white. The Symbol button is handy for use in black and white.

W on B:
This button will invert the colors of the plot area of the window. The normal display is colors on a light background. After pressing the "W on B" the display will show color on a black background. Pressing the button again will restore the display to normal. "Copy" will always copy a color on light background to the clipboard and is unaffected by the state of

the "W on B" button.

About:
This is a plug for the author of the program and Dr. Richard O. Gray who designed the X windows version XMK.

Symbol:
This button will dray symbols at each data point in the spectra. This is handy if copying the data to a graphical program and then printing in black and white. Pressing the "Symbol" button again will remove the symbols.

Full Width:
This will move the file, offset, and smooth controls to right below the rest of the buttons in order to make the display as wide as possible. Pressing it again will return the controls to the left side.

DSCA:
This is short for "Digital Spectral Classification Atlas", which is published by Dr. Richard O. Gray. This will bring up a dialog box to select the spectral class of interest. After selecting the temperature range of interest and pressing the OK button a selection of spectral lines and an abbreviated name will appear on the plot display. In addition, after a class has been selected, right clicking in the plot area will bring up the text from the DSCA for this class. The data file for this button is included in the linedata.dat file included with the program. Additional data can be added to this file. The data structure is fairly obvious. If you have problems extending the data file, drop me an e-mail with any problems and I'll try to solve it with you.

Auto:
This "autoclassification" routine does a simple comparison of the spectrum in the File 2 location with the list of standard stars in the auxiliary files stan.rec and stan.nor, providing the directory for these standards is indicated in winmk.ini. The two closest spectra are displayed in the File 1 and File 3 locations to give at least somewhere to start zeroing in on the classification of the unknown spectrum.

Legend:
This adds a legend to the display area. If there is an offset entered, the names of the open files will be located on the right side of the display above each line. If no offset is used, the file names will be located in a box on the lower right of the plot area.

Y Zoom In:
This button will decrease the extent of the y axis.

Y Zoom Out:
This will expand the extent of the y axis.

Up:
This button will shift the display of the y axis up.

Down:
This button will shift the display of the y axis down.

Zoom In:
This button will decrease the extent of the x axis display.

Zoom Out:
This button will expand the extent of the x axis.

=>:
This button will shift the display of the x axis to increasing wavelength.

<=:
This button will shift the display of the x axis to decreasing wavelength.

Lastly, a readout of the current location of the cursor is displayed in the upper right area of the plot area.

Any suggestions for improvements or new features should be sent to:

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This text updated by
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