
Subject: JHU/APL/S1R library update
Posted by [sterner](#) on Mon, 14 Nov 1994 15:18:00 GMT
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JHU/APL/S1R IDL anonymous ftp site update notice
The latest update was made on 1994 Nov 14.
The last update was made on 1994 July 1.

fermi.jhuapl.edu IDL library ftp site description

Purpose of this ftp site

This ftp site contains several JHU/APL/S1R IDL libraries.

The library routines fall into the following broad categories:
Text Files, Text strings, Date & time routines, Information,
Plotting/Graphics, Imaging, Array processing, Math, Programming,
Widget tools, Library maintenance and documentation, and Miscellaneous.
One demonstration library is currently included for the eqv routine.

Accessing the ftp site (Make sure you use ftp, not telnet)

ftp fermi.jhuapl.edu (128.244.147.18)
For Name type: anonymous
For Password enter: your email address (ex: sterner@tesla.jhuapl.edu).
Change directory by entering: cd pub/idl
Set the correct transfer type: ascii (for README, cat.one, doc_guide.txt)
or binary (for the *.Z files).
To get a file enter: get filename
When finished enter: bye.

Get the ascii file README (~7.0k byte) for a guide to this ftp site.
You may also want to get the one line description file cat.one (~31kb).

What's New

New date/time string formatting codes: In the routine DT_TM_MAK, which
may be used to convert a Julian day number and seconds into a
date/time string (like Mon Nov 14 07:23:20 1994), two new formatting
codes are available. I\$, was available but not mentioned in the
help text, displays the total time interval in day with 2 decimal places.
H\$ is new and displays the total time interval in integer hours. It is
intended to be used with m\$ and s\$ as in H\$:m\$:s\$ and will not wrap
around to 0 at multiples of 24 hours. This allows a time axis to
be labeled from 0:00 to 24:00 if desired. All the formatting codes
in dt_tm_mak may be listed by the IDL command: help,dt_tm_mak(/help).
DT_TM_MAK is used to format the date/time labels used by the routine
TIMEAXIS, which is used by JSPLLOT (time series plots).

Color bar upgrade: The labeled axis on the color bar drawn by the routine CBAR may now be positioned on any side using the new keywords /LEFT,/RIGHT,/TOP,/BOTTOM.

New routine to draw a curve: The new routine XCURVE may be used to draw a curve in the display window in one of the three standard coordinate systems: data, device, normalized.

Legend routine upgrades: Dick Jackson (djackson@ibd.nrc.ca) added the FONT keyword and passed the thickness values on to the plot calls so symbols have the correct thickness.

Easy access to top color index: New routine, TOPC, returns the top color index. Useful for statements like tv,bytsc1(z,top=topc()).

String editing routine upgrade: Trevor Harris (harris@hfrd.dstov.gov.au) upgraded STRESS, one of the earliest routines in the library, to allow target and replacement substrings to be arrays. This is done using recursion.

Obsolete routines dropped: the following routines were dropped from the library since they have become obsolete: CRS, DATACRS, DEVCRS, NORMCRS, AVE2D, SUM2D, CEIL, FLOOR. I would guess that if you have IDL v3.0 or later you will not need these. Old code will have to be modified. Consider keeping a copy of the old JHU/APL/S1R library around until your routines are all updated.

New box color added: Sometimes an interactive box is hard (or impossible) to see because its color does not contrast with the underlying image. This should now be less of a problem as color=-2 is used. This color number plots the box outline using alternating dashes of 0 and the last color index, usually contrasting colors.

New routine to scramble integers: A new routine, SCRAMBLE, returns an array of N scrambled integers from 0 to N-1.

Inverse bilinear interpolation: The new routine, IBILIN, does inverse bilinear interpolation. Here is the problem: Assume a rectangular image with known 2-d coordinates at the corners. Bilinear interpolation may be used to find the 2-d coordinates at any point in the image (from the pixel coordinates). However, knowing the 2-d coordinates of a point, finding the corresponding pixel coordinates is not so straightforward. This routine solves that problem with a consistent, linear mapping.

Finding the intersection of two great circles: A new routine, SPHGC, finds the intersection coordinates of two great circles on a sphere. This is the same as finding the poles of some coordinates system given segments along two meridians.

Adding brightness shading to an image: The new routine SHADE_IMG may be used to shade a given image based on a given shading array. The shading array is same size as image and ranges from 0 (black) to 1 (brightest). The given image has its brightness modified by the shading array. The resulting color image is returned along with the corresponding color tables.

Exploring an unknown data file: The new routine XDATAFILE may be used to explore a data file of unknown format. Displays a selected section of

data as ascii text, bytes, integers, long integers, floats, and doubles all at the same time. Allows byte swapping.

Pick one of the color table colors: The new routine PICKCOLOR allows the selection of a color from the current color table.

Displaying text as an image: A new routine XTEXTIMG allows text from a text file to be displayed in an image window. This is a widget based interactive routine that allows text size, position, font, thickness, foreground and background color, and so on to be adjusted using widgets. This routine was designed to make viewgraph captions and works quite well for that purpose. It saves the resulting images in TIFF format (use XVIEW to convert to something else).

Converting between Julian Days and Julian Seconds: two new routines, JD2JS and JS2JD do conversion between these two time systems. Many of the new JHU/APL/S1R routines that deal with time are based on Julian Seconds (do help,dt_tm_tojs(/help)).

TV-like adjustments to a displayed image: A currently displayed image may be enhanced using the new routine XHSBC to adjust overall image hue, saturation, brightness, and contrast. Uses draw widgets instead of slider bars. This allows a 256 color image to be viewed during adjustment, slider bars would not. Brightness and contrast together adjust value: brightness is an offset in value, contrast is the deviation from the mean value.

Drawing ellipses: A new routine, ELLIPSE, is a modification of ARCS by David Steele, Department of Physics and Astronomy, The University of Calgary. It makes it easy to draw ellipses in any of the coordinate systems. May specify semi-major axes, orientation, colors, centers, and line-styles. Inputs may be arrays making it very easy to draw very interesting figures.

Preserving image shape: A new routine, IMGWINDOW, makes it easy to display an image anywhere in the window and keep the true shape. IMGWINDOW is used to find a normalized position value given three of the four position elements. The resulting position may be used with IZOOM to display an image with labeled axes.

Zero padding on spectra: Zero padding was added to the two routines RSPEC (ensemble averaged spectrum of real 1-d data) and CSPEC (ensemble averaged spectrum of complex 1-d data). Zero padding gives finer spacing on the frequency axis but not more actual frequency resolution.

World coastline (low resolution): The world coastline data has been moved from worldxdr.save2 to worldxdr.res. The old format was a save2 file, non-self-documenting. The new is a res file which is self-documenting. To access: resopen,'worldxdr.res',/xdr
rescom
resget,'lat',lat
resget,'long',lng
resget,'pen',pen
resclose
plot,[-180,180],[-90,90],/nodata

plotp, lng, lat, pen

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