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Plans for the Future:

- Now that it can do DEM's, I'd like to add USGS DLG's as well (digital line graphs). This would allow you to overlay roads, regions, and towns on the surface of a DEM.
- More font options for axis labels and better scale selection routines.
- Better contour routine. The current routine can generate contour lines that cross each other if the data resolution is too low.
- Better labels on contour/density plots to make them publication quality as well.
- More functions in the parser (let me know what you want added).

Changes since 3.1

- DEMs (Digital Elevation Maps) can now be viewed (after processing with demproc, also in this archive). Please read the docs before trying to use this feature. You can get DEM's for any part of the country from

the USGS. You can download DEMs with 200 foot horizontal resolution from <http://sun1.cr.usgs.gov/eros-home.html>.

-Gradient surface mapping is now supported. Rather than coloring the surface based on the z value at each position, the surface will be colored so steep slopes are considered high and flat areas are considered low, ie - $\sqrt{((dz/dx)^2 + (dz/dy)^2)}$

- Surface mapping based on another data set is also now supported (for data set 0 only). This feature still needs a bit of work...

- Adjustable transparency (alpha) for data sets is now supported in photorealistic plots. Adjusting alpha will have no effect on the interactive display.

Changes since 3.0

- Data can now be read for scatter plots, not just mesh plots.

- The density plot is now in color. The colors will match the mapping on the 3d surface. This allows, among other things, for the colors to be inverted (black high, white low). If the 3d plot is in mono mode, the density plot reverts to grey scale.

- Simple labels/ticks on contour/density plots. Not publication quality, but better than nothing.
- The "density EPS" menu item now works properly.
- The cylinder plotting option has become a histogram-like option. The plot will be histogram style, except the individual points are cylindrical instead of rectangular.
- Corrected position of tick meshes on contour plot, was shifted by $\sim 1/2$ of a data point.

Changes since 2.01

- MUCH improved color support. Now supports altitude based color mapping with a palette of up to 5 colors.
- Display options now include: Floor, backs, axes, ticks, "slicing planes", and labels.
- Color selection for above options.
- Support for user defined tick marks and labels.
- Contour plots with user settable number of levels, spacing, etc ...
- Surface mapping of contour plots, density plots, data meshes and tick meshes on final, photorealistic, output (no interactive support).

- Surface maps may be placed on the surface or the "floor".
- Custom shader to do high quality contour overlays on surfaces.
- High quality text support for scales and axis labels in photorealistic output. Interactive mode supports low quality scales only.
- Spherical plots with full surface mapping/contour support.
- More functions in equation parser including bessel functions and s-f spherical harmonics.
- Variable support. 4 misc variables (a,b,c,d) and time sliders supported for use as parameters in equations.
- Better data file support. Data files may now be in arbitrary order, and may be "incomplete" meshes.
- Larger grids supported (up to 120X120 now).
- Animation support. Program will automatically generate "Movie" compatible tiff animations.
- New "inspector" style user interface.
- Clicking/dragging in density/contour window now has coordinate display.
- Aspect ratio control for "flattening" plots.
- Orthographic as well as standard perspective projections supported.

- New color icons and buttons.
- Name changed from Plot3D to NXplot3d.

Changes since 2.0

Fixed scaling problem when symbols are displayed

Added axes/plane switch

Changes since 1.1

Uses Renderman instead of my 3d routines (this may actually be a bit slower in wireframe mode).

Standard help interface.

Viewing angles redefined to be more "standard".

Color works, but only in "shaded" mode (I think).

Hidden surface removal (thanks to renderman).

Since renderman does solid modeling, symbols have been replaced with 3d objects.

Fixed scaling bug for small grid sizes.

Density plot now displays data files much better.

Printing of density plots improved.

Changes since 1.0

Source included

Full mesh added (for functions only)

3d view can be resized

Printing works better (still won't print "dots")

Alt and az displayed in 3d window

Zoom In and Freeze added

$\ln()$ changed to $\log()$ and $\log_{10}()$ added

Formula input larger

Formulas can contain '[' and ']' (treated like '(' and ')')

Uppercase ok in functions, eg 'Sin(x)' is ok now

Fixed bug in expressions like : 'x+3.2'

Infinities/undefined results are dealt with gracefully.