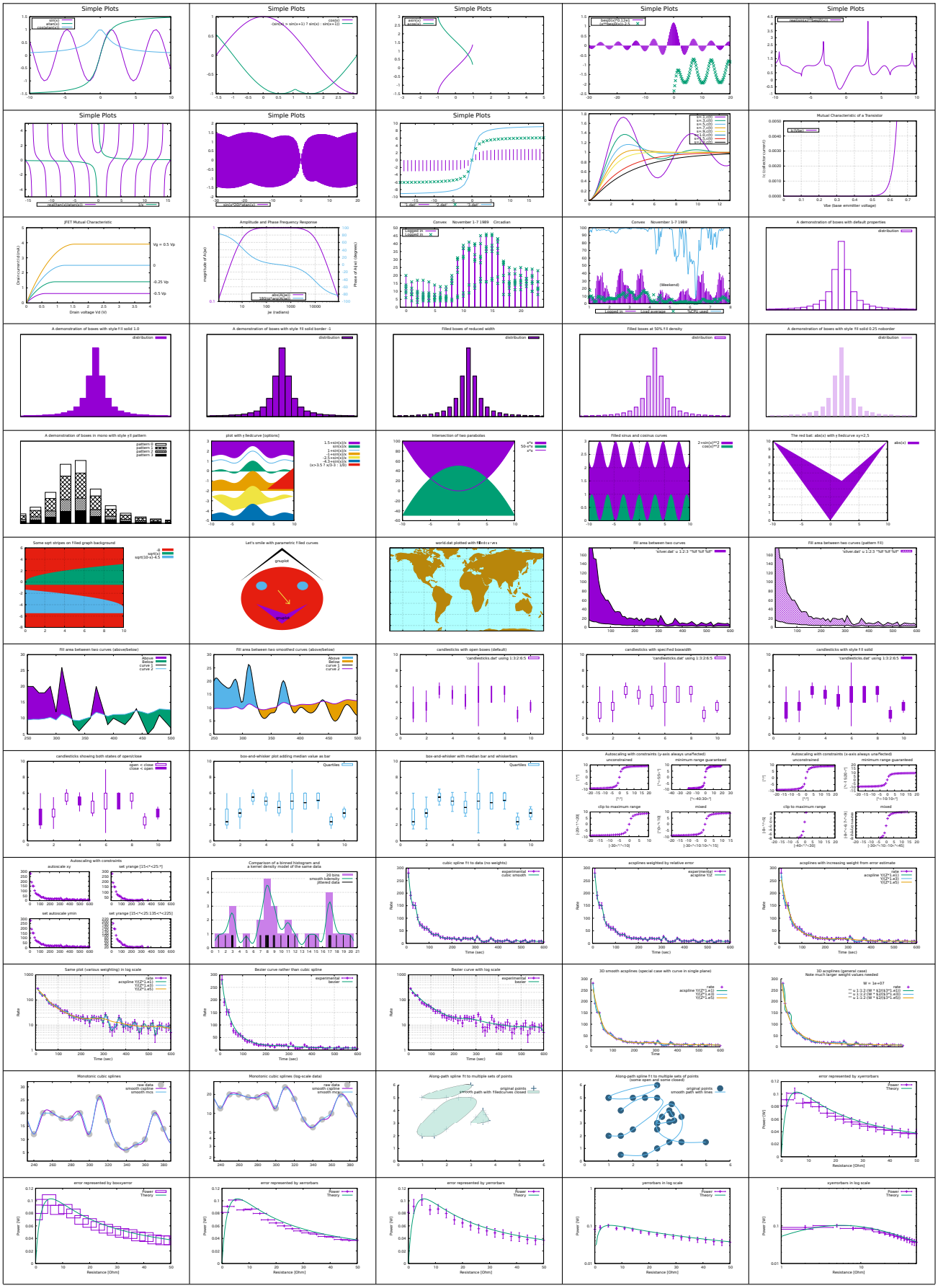
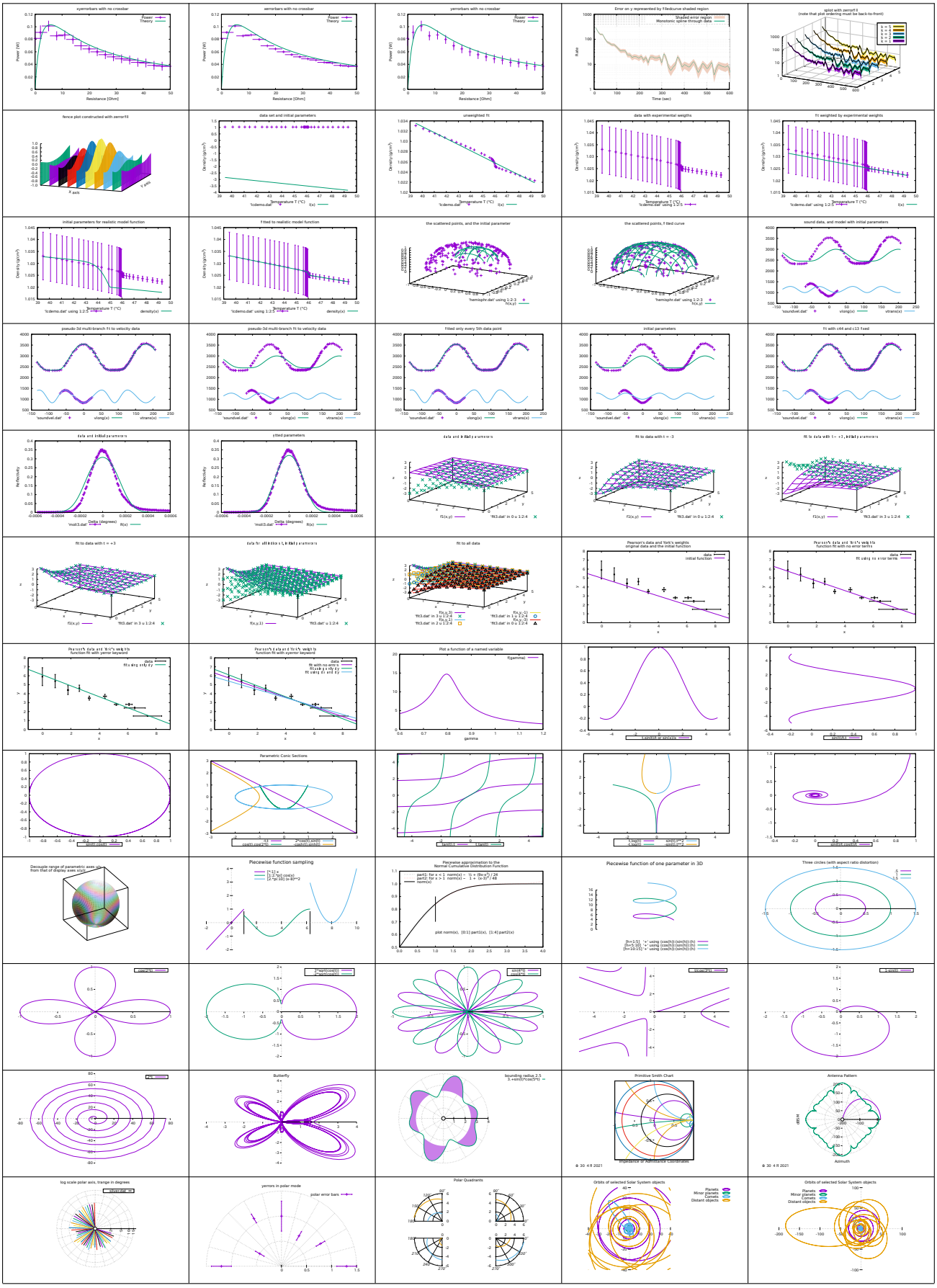
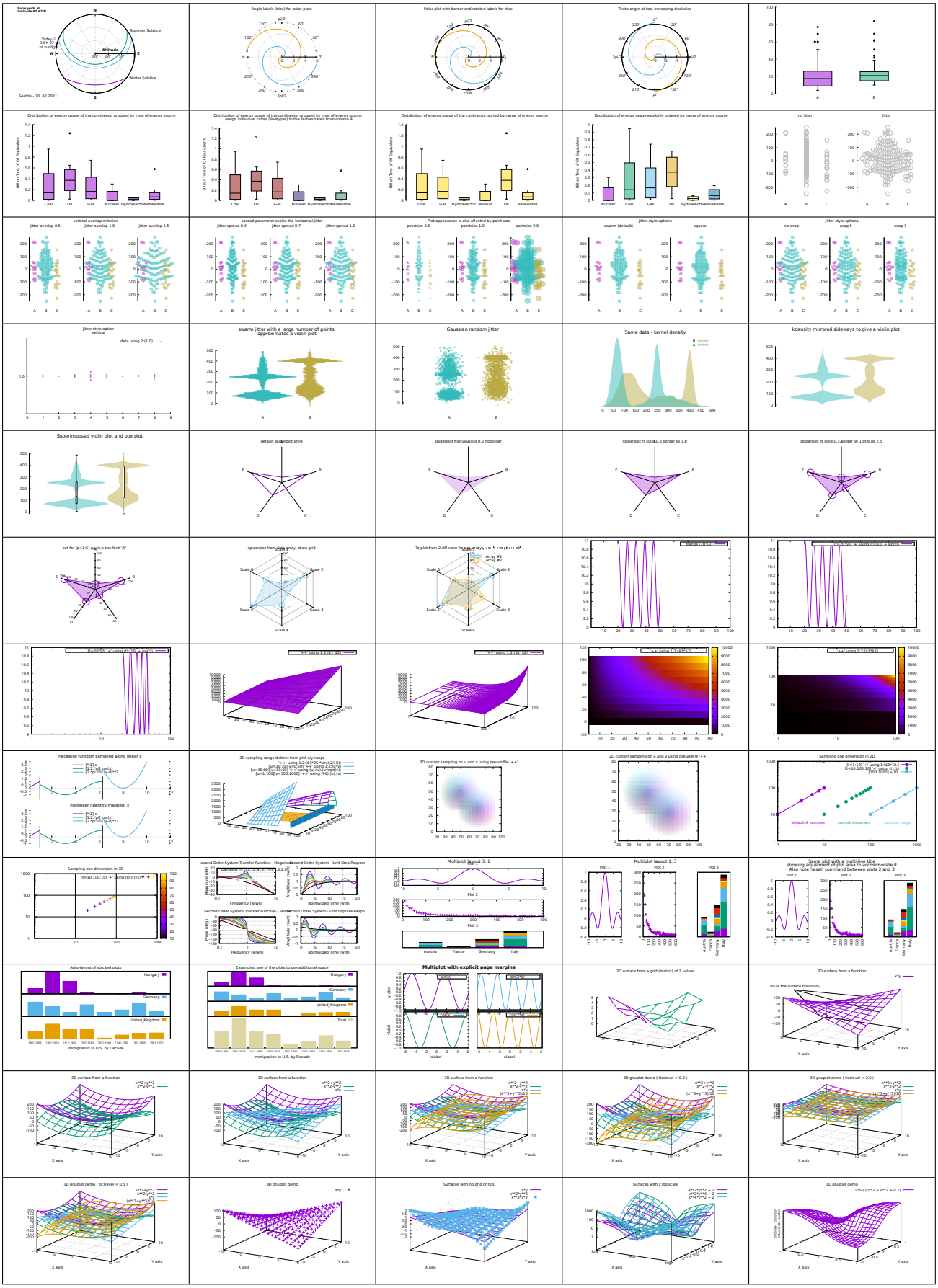
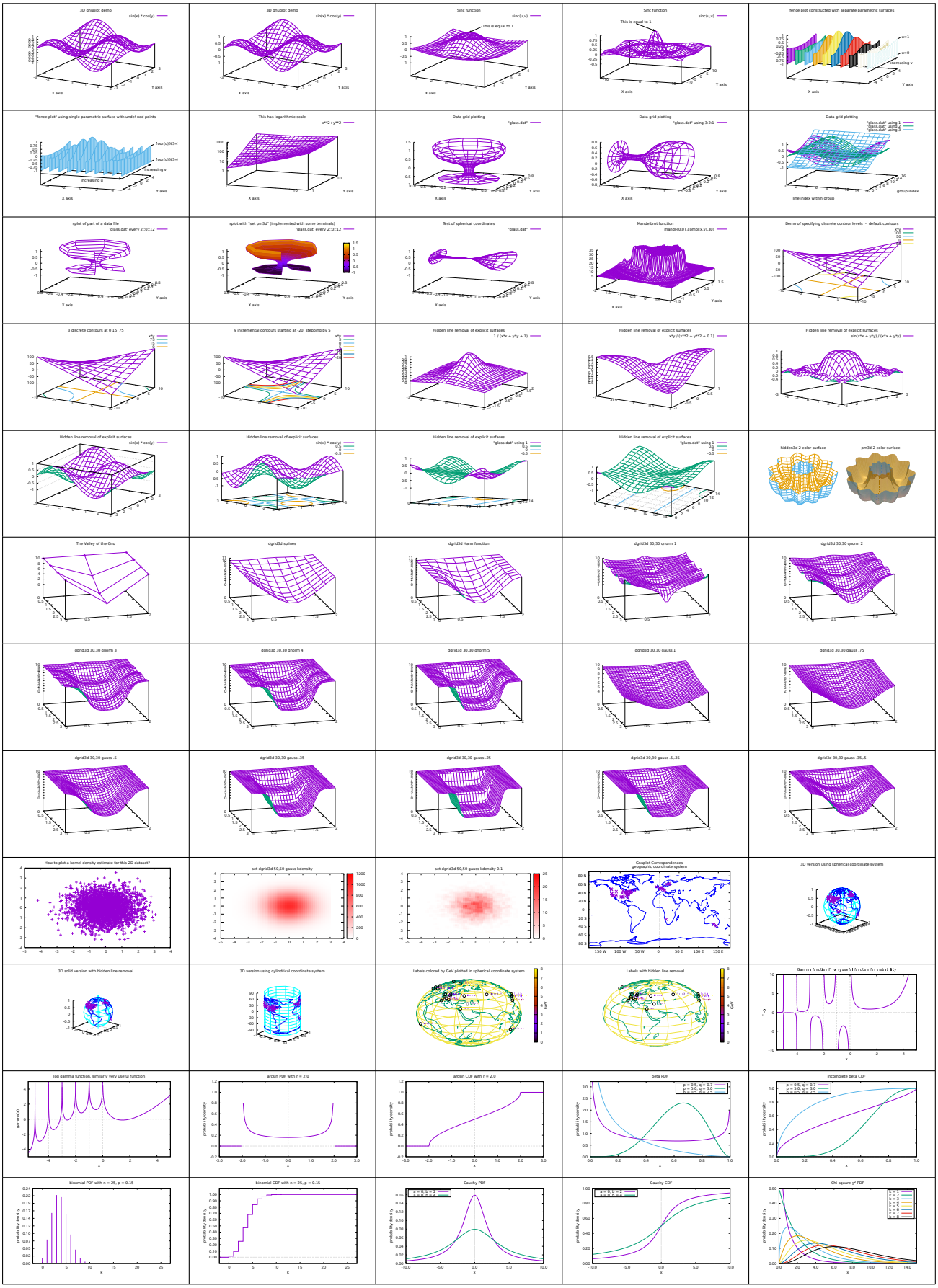
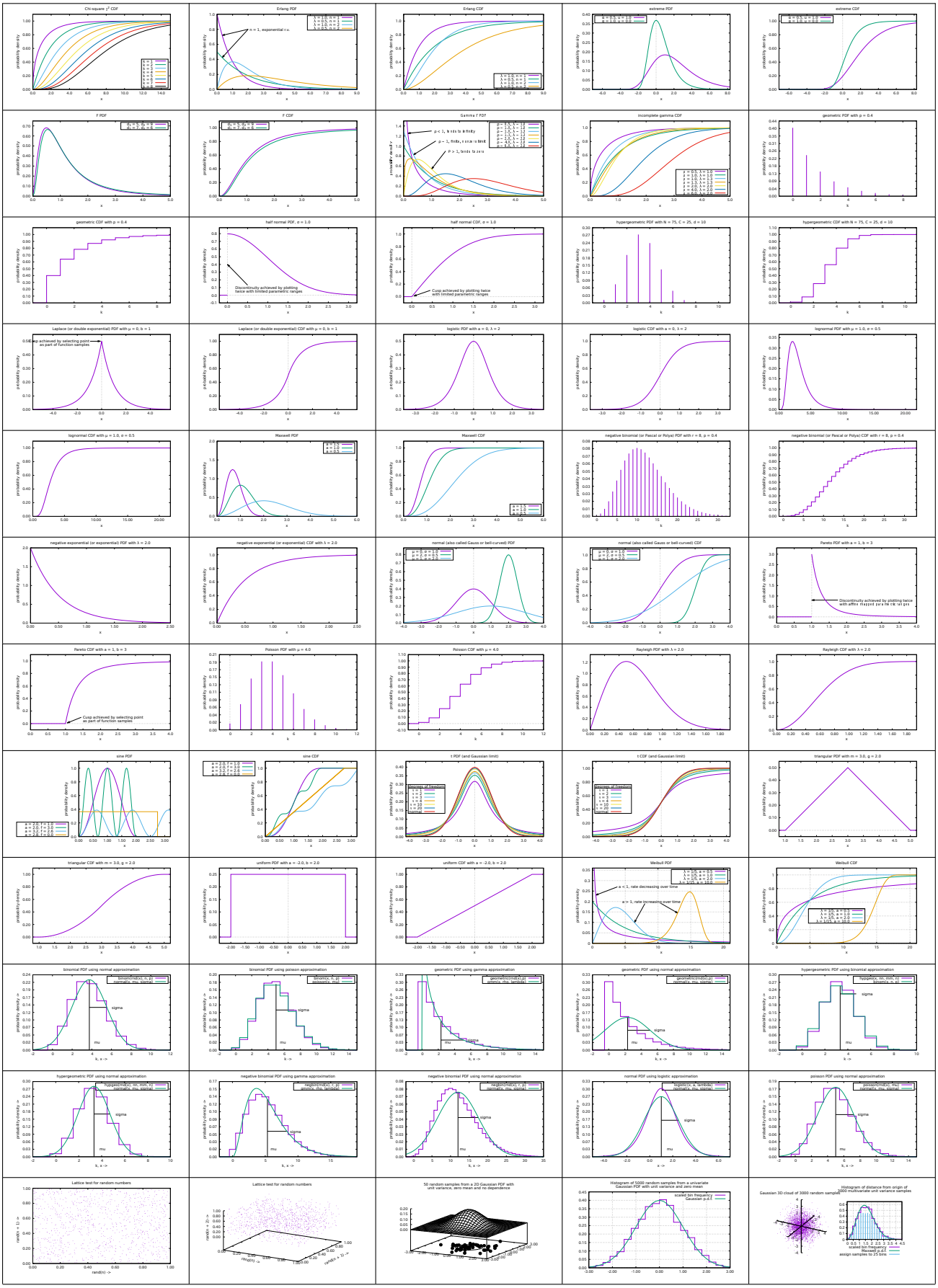
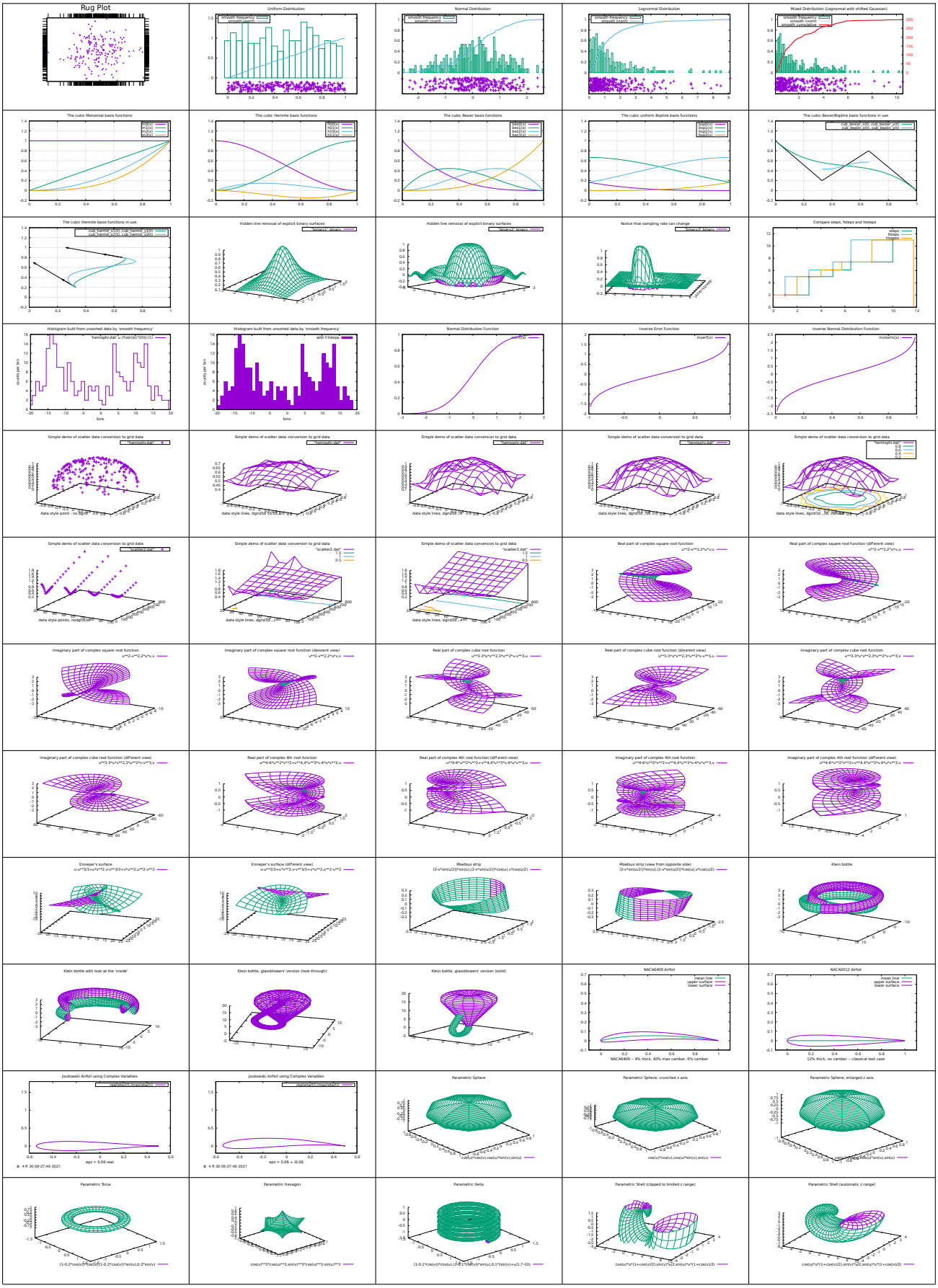

Simple Plots
Simple Plots
Simple Plots
Simple Plots
Simple Plots
Simple Plots
Simple Plots
Simple Plots
Mutual Characteristic of a Transistor
JFET Mutual Characteristic
Amplitude and Phase Frequency Response
Convex November 1-7 1989 Circadian
Convex November 1-7 1989
A demonstration of boxes with default properties
A demonstration of boxes with style fill solid 1.0
A demonstration of boxes with style fill solid border -1
Filled boxes of reduced width
Filled boxes at 50% fill density
A demonstration of boxes with style fill solid 0.25 noborder
A demonstration of boxes in mono with style fill pattern
plot with p filedcurve [options]
Intersection of two parabolas
Filled sinus and cosinus curves
The red bat: abs(x) with p filedcurve xy=2,5
Some sqrt stripes on f filed graph background
Let's smile with parametric f filed curves
world.dat plotted with filledcurves
Fill area between two curves
Fill area between two curves (pattern fill)
Fill area between two curves (above/below)
Fill area between two smoothed curves (above/below)
candlesticks with open boxes (default)
candlesticks with specified boxwidth
candlesticks with style f fill solid
candlesticks showing both states of open/close
box-and-whisker plot adding median value as bar
box-and-whisker with median bar and whiskerbars
Autoscaling with constraints (y-axis always unaffected)
Autoscaling with constraints (x-axis always unaffected)
Autoscaling with constraints
Comparison of a binned histogram and a kernel density model of the same data
cubic spline f1 to data (no weights)
acsplines weighted by relative error
acsplines with increasing weight from error estimate
Same plot (various weighting) in log scale
Bezier curve rather than cubic spline
Bezier curve with log scale
3D smooth acsplines (special case with curve in single plane)
3D acsplines (general case)
Monotonic cubic splines
Monotonic cubic splines (log-scale data)
Along-path spline f1 to multiple sets of points
Along-path spline f1 to multiple sets of points
error represented by xyerrorbars
error represented by boxxyerror
error represented by xerrorbars
error represented by yerrorbars
yerrorbars in log scale
xyerrorbars in log scale

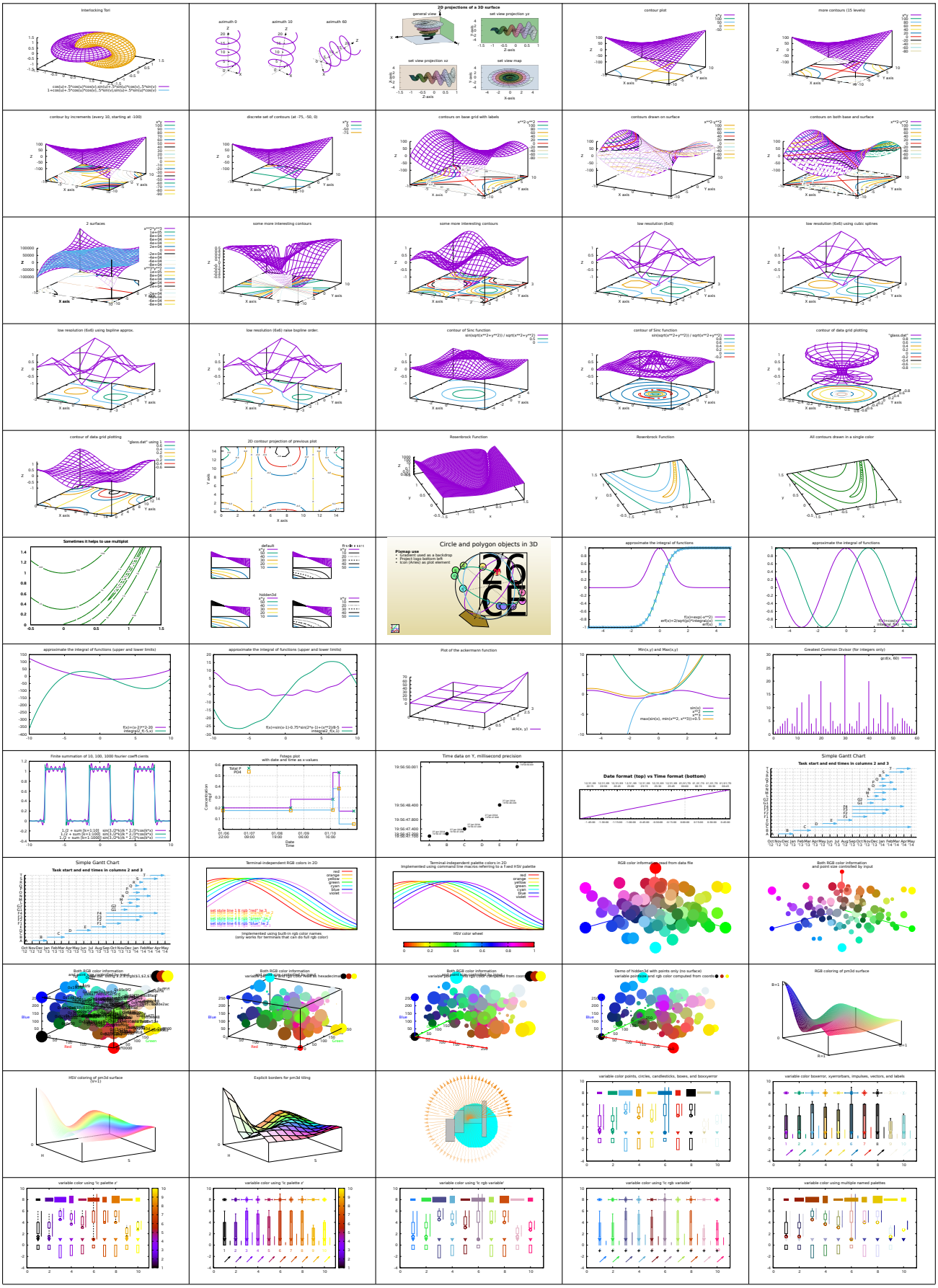

yerrorbars with no crossbar
Power
Theory
Power (W)
Resistance [Ohm]
xerrorbars with no crossbar
Power
Theory
Power (W)
Resistance [Ohm]
yerrorbars with no crossbar
Power
Theory
Power (W)
Resistance [Ohm]
Error on y represented by filledcurve shaded region
Shaded error region
Monotonic spline through data
Rate
Time (sec)
splot with zerrorfill
(note that plot ordering must be back-to-front)
fence plot constructed with zerrorfill
X axis
Y axis
data set and initial parameters
Density (g/cm^3)
Temperature T (°C)
'icdemo.dat'
f(x)
unweighted fit
Density (g/cm^3)
Temperature T (°C)
'icdemo.dat'
f(x)
data with experimental weights
Density (g/cm^3)
Temperature T (°C)
'icdemo.dat' using 1:3:5
f(x)
fit weighted by experimental weights
Density (g/cm^3)
Temperature T (°C)
'icdemo.dat' using 1:2:5
f(x)
initial parameters for realistic model function
Density (g/cm^3)
Temperature T (°C)
'icdemo.dat' using 1:2:5
density(x)
fitted to realistic model function
Density (g/cm^3)
Temperature T (°C)
'icdemo.dat' using 1:2:5
density(x)
the scattered points, and the initial parameter
'hemisphr.dat' using 1:2:3
f(x,y)
the scattered points, fitted curve
'hemisphr.dat' using 1:2:3
f(x,y)
sound data, and model with initial parameters
'soundvel.dat'
vlong(x)
vtrans(x)
pseudo-3d multi-branch fit to velocity data
'soundvel.dat'
vlong(x)
vtrans(x)
pseudo-3d multi-branch fit to velocity data
'soundvel.dat'
vlong(x)
vtrans(x)
fitted only every 5th data point
'soundvel.dat'
vlong(x)
vtrans(x)
initial parameters
'soundvel.dat'
vlong(x)
vtrans(x)
fit with c44 and c13 fixed
'soundvel.dat'
vlong(x)
vtrans(x)
data and initial parameters
Reflectivity
Delta (degrees)
'mol3.dat'
R(x)
fitted parameters
Reflectivity
Delta (degrees)
'mol3.dat'
R(x)
data and initial parameters
f(x,y)
'fit3.dat' in 0:u 1:2:4
fit to data with t = -3
f(x,y)
'fit3.dat' in 0:u 1:2:4
fit to data with t = +7, initial parameters
f(x,y)
'fit3.dat' in 0:u 1:2:4
fit to data with t = +3
f(x,y)
'fit3.dat' in 3:u 1:2:4
data for all fits, initial parameters
f(x,y,)
'fit3.dat' u 1:2:4
fit to all data
f(x,y,3)
'fit3.dat' in 3:u 1:2:4
f(x,y,1)
'fit3.dat' in 1:u 1:2:4
'fit3.dat' in 2:u 1:2:4
'fit3.dat' in 0:u 1:2:4
Pearson's data and York's weights
original data and the initial function
data
initial function
Pearson's data and York's weights
fit with no error terms
data
fit using xy error terms
Pearson's data and York's weights
function fit with yerror keyword
data
fit using only dy
Pearson's data and York's weights
function fit with yerror keyword
data
fit with no errors
fit using dy only dy
fit using dx and dy
Plot a function of a named variable
f(gamma)
gamma
t_epoch / yr epoch/yr
epoch1
t_epoch
Parametric Conic Sections
epoch1
epoch2
Decouple range of parametric axes (u,v) from that of display axes (x,y,z)
Piecewise function sampling
Piecewise approximation to the Normal Cumulative Distribution Function
plot norm(x), [0:1] part1(x), [1:4] part2(x)
Piecewise function of one parameter in 3D
Three circles (with aspect ratio distortion)
Butterfly
Primitive Smith Chart
Impedance or Admittance Coordinates
Antenna Pattern
dBm
Azimuth
log scale polar axis, trange in degrees
yerrors in polar mode
polar error bars
Polar Quadrants
Orbits of selected Solar System objects
Planets
Minor planets
Comets
Distant objects
Orbits of selected Solar System objects
Planets
Minor planets
Comets
Distant objects

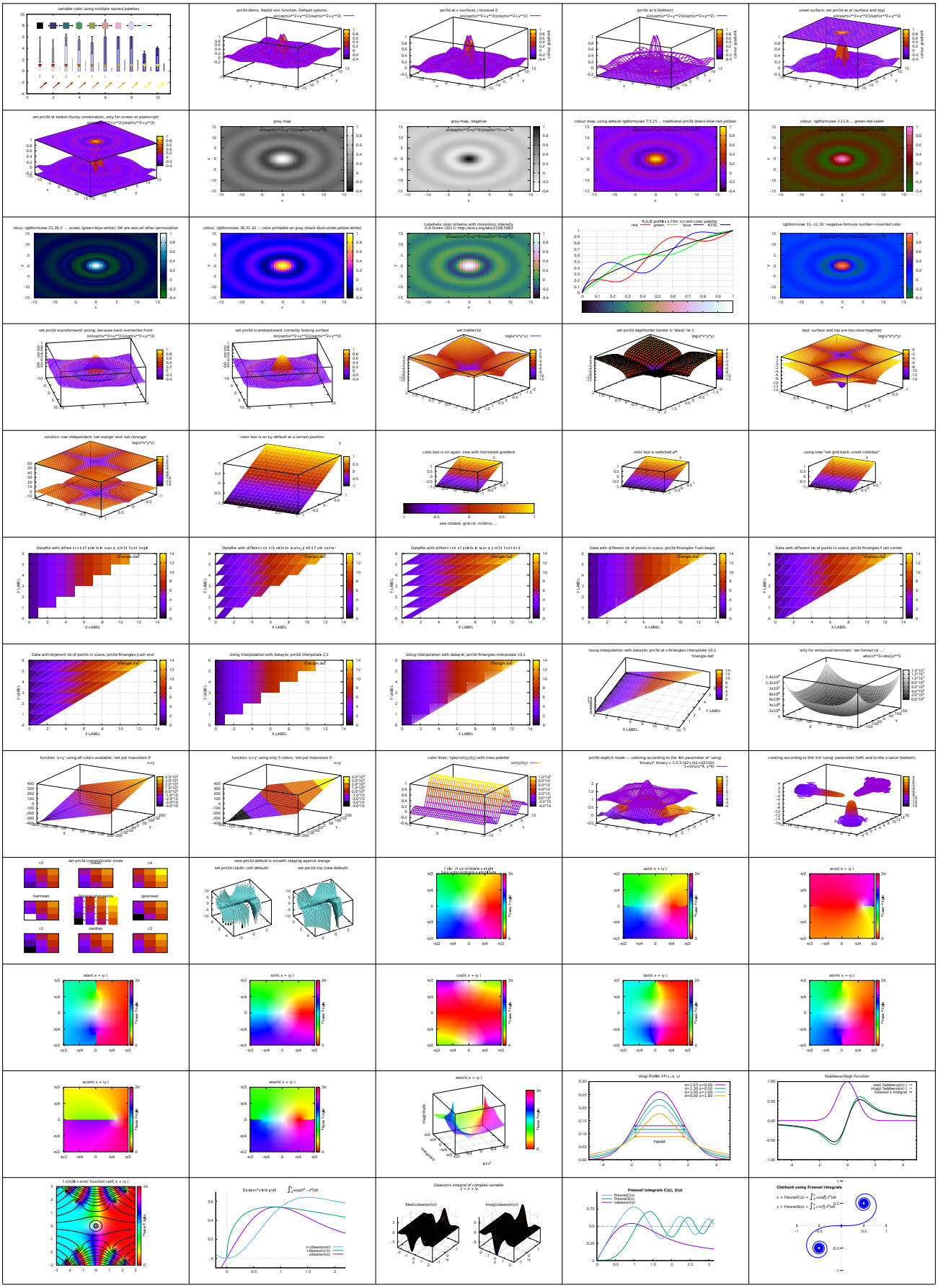


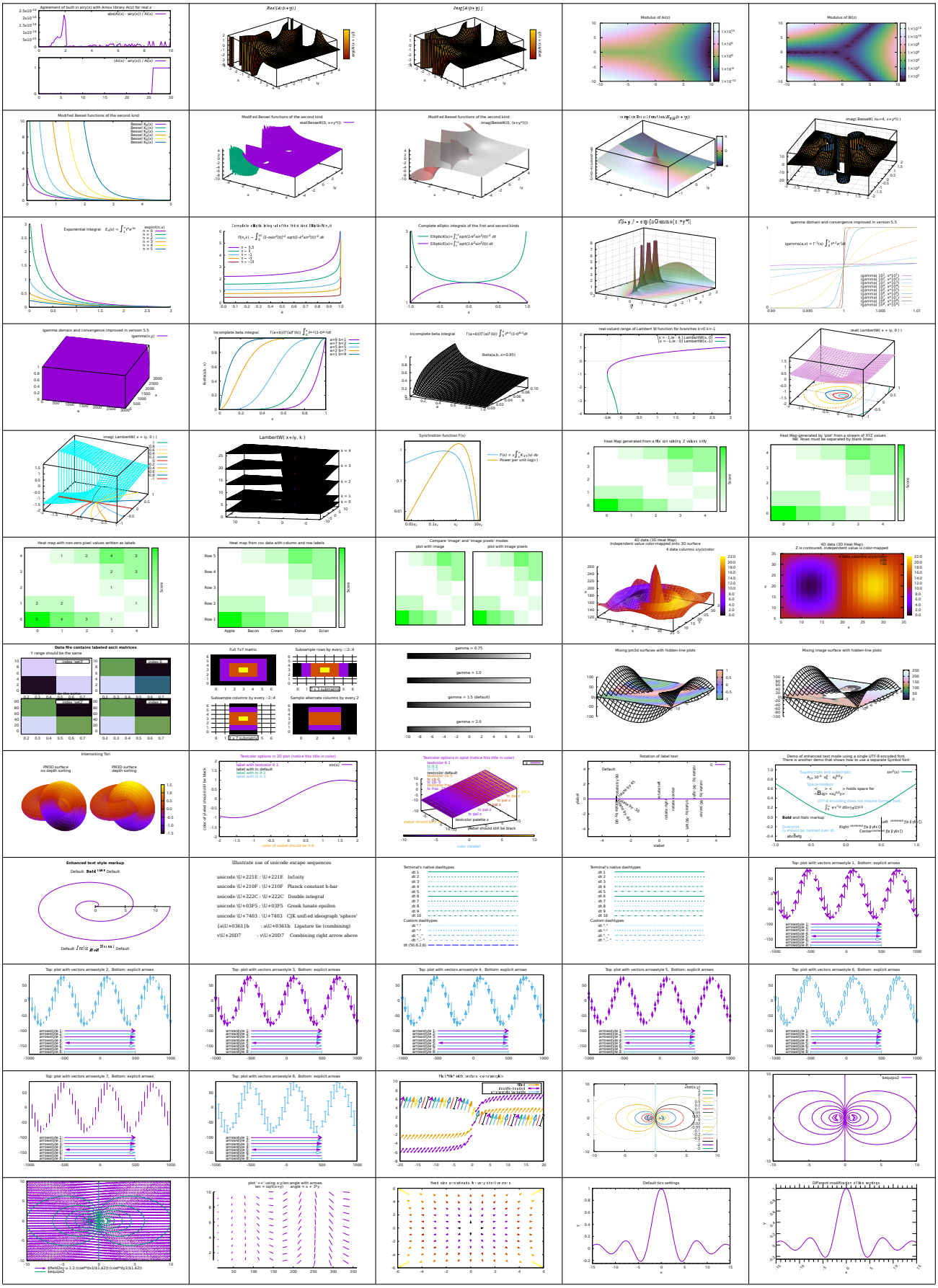

3D gnuplot demo
sin(x) * cos(y)
X axis
Y axis
3D gnuplot demo
sin(x) * cos(y)
X axis
Y axis
Sinc function
sinc(u,v)
This is equal to 1
X axis
Y axis
Sinc function
sinc(u,v)
This is equal to 1
X axis
Y axis
fence plot constructed with separate parametric surfaces
u=1
u=0
increasing v
X axis
Y axis
"fence plot" using single parametric surface with undefined points
increasing u
increasing v
X axis
Y axis
This has logarithmic scale
x**2+y**2
X axis
Y axis
Data grid plotting
"glass.dat"
X axis
Y axis
Data grid plotting
"glass.dat" using 3:2:1
X axis
Y axis
Data grid plotting
"glass.dat" using 1
"glass.dat" using 2
"glass.dat" using 3
line index within group
group index
splot of part of a data file
'glass.dat' every 2::0::12
X axis
Y axis
splot with "set pm3d" (implemented with some terminals)
'glass.dat' every 2::0::12
X axis
Y axis
Test of spherical coordinates
"glass.dat"
X axis
Y axis
Mandelbrot function
mand(-{0.0},.complex(x,y),30)
X axis
Y axis
Demo of specifying discrete contour levels - default contours
X axis
Y axis
3 discrete contours at 0 15 75
x*y
X axis
Y axis
9 incremental contours starting at -20, stepping by 5
x*y
X axis
Y axis
Hidden line removal of explicit surfaces
1 / (x*x + y*y + 1)
Hidden line removal of explicit surfaces
x*y / (x**2 + y**2 + 0.1)
Hidden line removal of explicit surfaces
sin(x*x + y*y) / (x*x + y*y)
Hidden line removal of explicit surfaces
sin(x) * cos(y)
Hidden line removal of explicit surfaces
sin(x) * cos(y)
Hidden line removal of explicit surfaces
"glass.dat" using 1
Hidden line removal of explicit surfaces
"glass.dat" using 1
hidden3d 2-color surface
pm3d 2-color surface
The Valley of the Gnu
dgrid3d splines
dgrid3d Hann function
dgrid3d 30,30 qnorm 1
dgrid3d 30,30 qnorm 2
dgrid3d 30,30 qnorm 3
dgrid3d 30,30 qnorm 4
dgrid3d 30,30 qnorm 5
dgrid3d 30,30 gauss 1
dgrid3d 30,30 gauss .75
dgrid3d 30,30 gauss .5
dgrid3d 30,30 gauss .35
dgrid3d 30,30 gauss .25
dgrid3d 30,30 gauss .5,.35
dgrid3d 30,30 gauss .35,.5
How to plot a kernel density estimate for this 2D dataset?
set dgrid3d 50,50 gauss kdensity
set dgrid3d 50,50 gauss kdensity 0.1
Gnuplot Correspondences
geographic coordinate system
3D version using spherical coordinate system
3D solid version with hidden line removal
3D version using cylindrical coordinate system
Labels colored by GeV plotted in spherical coordinate system
Labels with hidden line removal
log gamma function, similarly very useful function
arcsin PDF with r = 2.0
arcsin CDF with r = 2.0
beta PDF
incomplete beta CDF
binomial PDF with n = 25, p = 0.15
binomial CDF with n = 25, p = 0.15
Cauchy PDF
Cauchy CDF
Chi-square χ² PDF

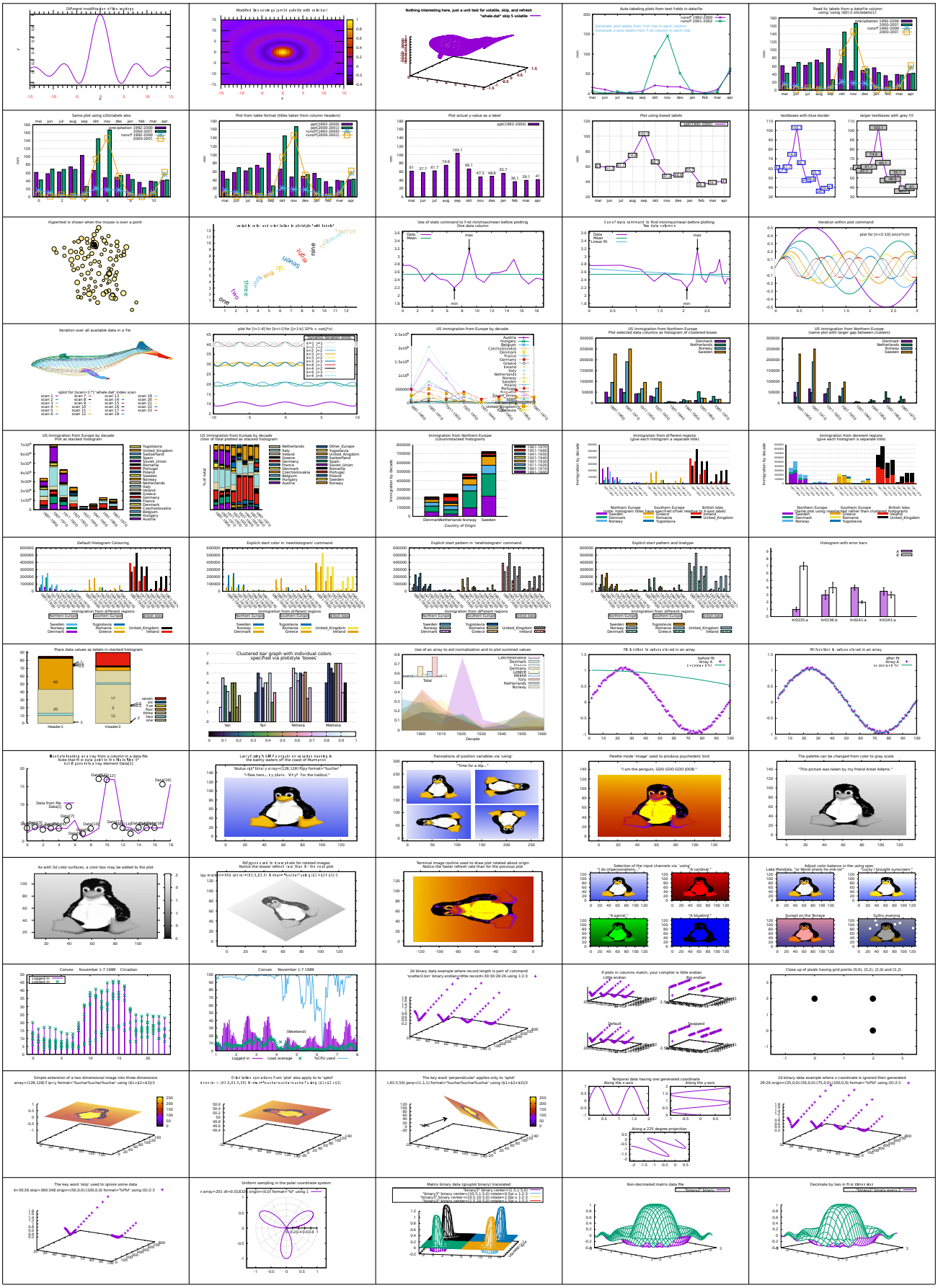

Chi-square χ^2 CDF
Erlang PDF
Erlang CDF
extreme PDF
extreme CDF
F PDF
F CDF
Gamma Γ PDF
incomplete gamma CDF
geometric PDF with p = 0.4
geometric CDF with p = 0.4
half normal PDF, σ = 1.0
half normal CDF, σ = 1.0
hypergeometric PDF with N = 75, C = 25, d = 10
hypergeometric CDF with N = 75, C = 25, d = 10
Laplace (or double exponential) PDF with μ = 0, b = 1
Laplace (or double exponential) CDF with μ = 0, b = 1
logistic PDF with a = 0, λ = 2
logistic CDF with a = 0, λ = 2
lognormal PDF with μ = 1.0, σ = 0.5
lognormal CDF with μ = 1.0, σ = 0.5
Maxwell PDF
Maxwell CDF
negative binomial (or Pascal or Polya) PDF with r = 8, p = 0.4
negative binomial (or Pascal or Polya) CDF with r = 8, p = 0.4
negative exponential (or exponential) PDF with λ = 2.0
negative exponential (or exponential) CDF with λ = 2.0
normal (also called Gauss or bell-curved) PDF
normal (also called Gauss or bell-curved) CDF
Pareto PDF with a = 1, b = 3
Pareto CDF with a = 1, b = 3
Poisson PDF with μ = 4.0
Poisson CDF with μ = 4.0
Rayleigh PDF with λ = 2.0
Rayleigh CDF with λ = 2.0
sine PDF
sine CDF
t PDF (and Gaussian limit)
t CDF (and Gaussian limit)
triangular PDF with m = 3.0, g = 2.0
triangular CDF with m = 3.0, g = 2.0
uniform PDF with a = -2.0, b = 2.0
uniform CDF with a = -2.0, b = 2.0
Weibull PDF
Weibull CDF
binomial PDF using normal approximation
binomial PDF using poisson approximation
geometric PDF using gamma approximation
geometric PDF using normal approximation
hypergeometric PDF using binomial approximation
hypergeometric PDF using normal approximation
negative binomial PDF using gamma approximation
negative binomial PDF using normal approximation
normal PDF using logistic approximation
poisson PDF using normal approximation
Lattice test for random numbers
Lattice test for random numbers
50 random samples from a 2D Gaussian PDF with unit variance, zero mean and no dependance
Histogram of 5000 random samples from a univariate Gaussian PDF with unit variance and zero mean
Histogram of distance from origin of 3000 multivariate unit variance samples

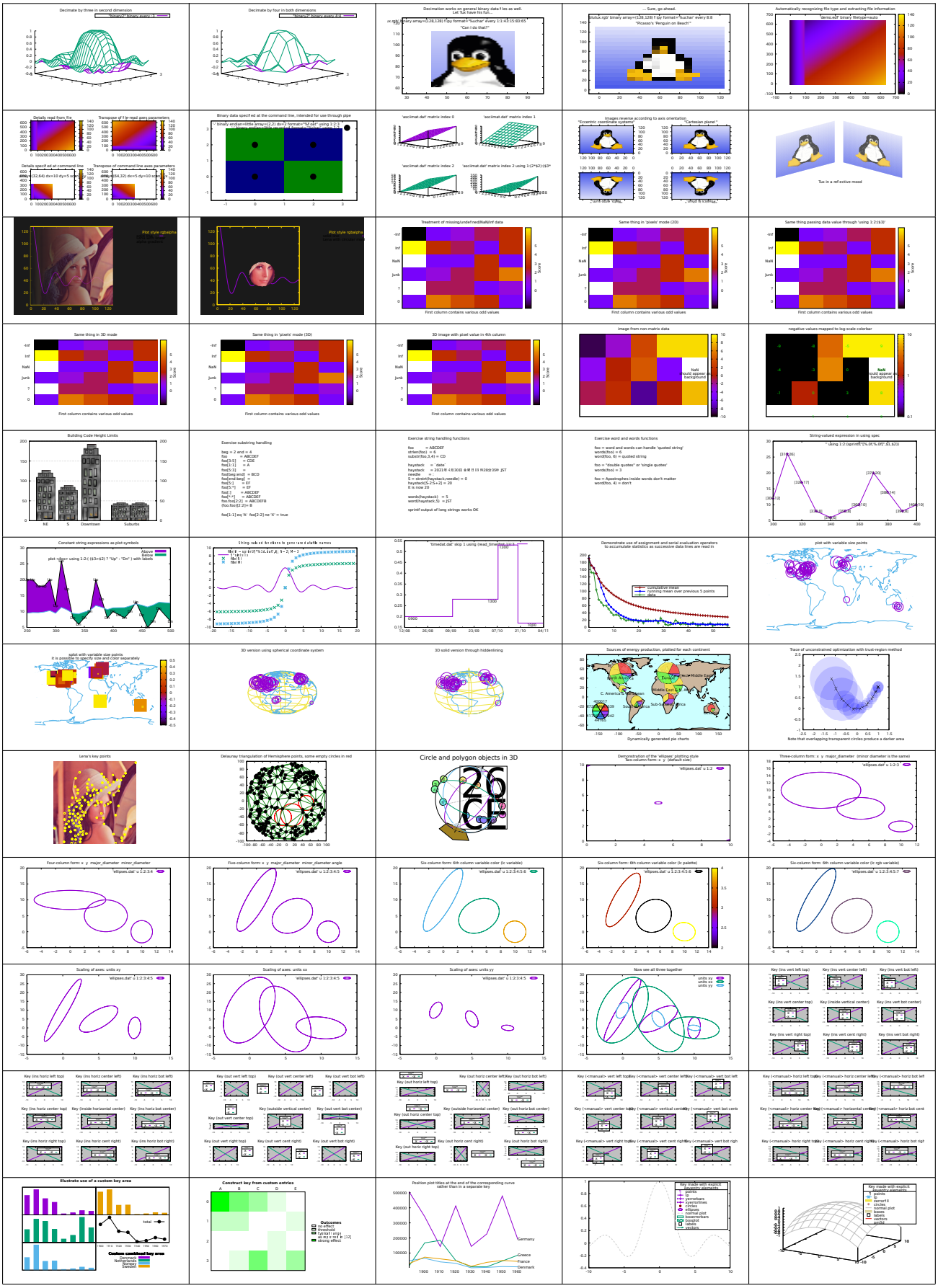

Rug Plot
Uniform Distribution
Normal Distribution
Lognormal Distribution
Mixed Distribution (Lognormal with shifted Gaussian)
The cubic Monomial basis functions
The cubic Hermite basis functions
The cubic Bezier basis functions
The cubic uniform Bspline basis functions
The cubic Bezier/Bspline basis functions in use
The cubic Hermite basis functions in use
Hidden line removal of explicit binary surfaces
Hidden line removal of explicit binary surfaces
Notice that sampling rate can change
Compare steps, fsteps and histeps
Histogram built from unsorted data by 'smooth frequency'
Histogram built from unsorted data by 'smooth frequency'
Normal Distribution Function
Inverse Error Function
Inverse Normal Distribution Function
Simple demo of scatter data conversion to grid data
Simple demo of scatter data conversion to grid data
Simple demo of scatter data conversion to grid data
Simple demo of scatter data conversion to grid data
Simple demo of scatter data conversion to grid data
Simple demo of scatter data conversion to grid data
Simple demo of scatter data conversion to grid data
Simple demo of scatter data conversion to grid data
Real part of complex square root function
Real part of complex square root function (different view)
Imaginary part of complex square root function
Imaginary part of complex square root function (different view)
Real part of complex cube root function
Real part of complex cube root function (different view)
Imaginary part of complex cube root function
Imaginary part of complex cube root function (different view)
Real part of complex 4th root function
Real part of complex 4th root function (different view)
Imaginary part of complex 4th root function
Imaginary part of complex 4th root function (different view)
Enneper's surface
Enneper's surface (different view)
Moebius strip
Moebius strip (view from opposite side)
Klein bottle
Klein bottle with look at the 'inside'
Klein bottle, glassblowers' version (look-through)
Klein bottle, glassblowers' version (solid)
NACA6409 Airfoil
NACA0012 Airfoil
Joukowski Airfoil using Complex Variables
Joukowski Airfoil using Complex Variables
Parametric Sphere
Parametric Sphere, crunched z axis
Parametric Sphere, enlarged z axis
Parametric Torus
Parametric Hexagon
Parametric Helix
Parametric Shell (clipped to limited z range)
Parametric Shell (automatic z range)

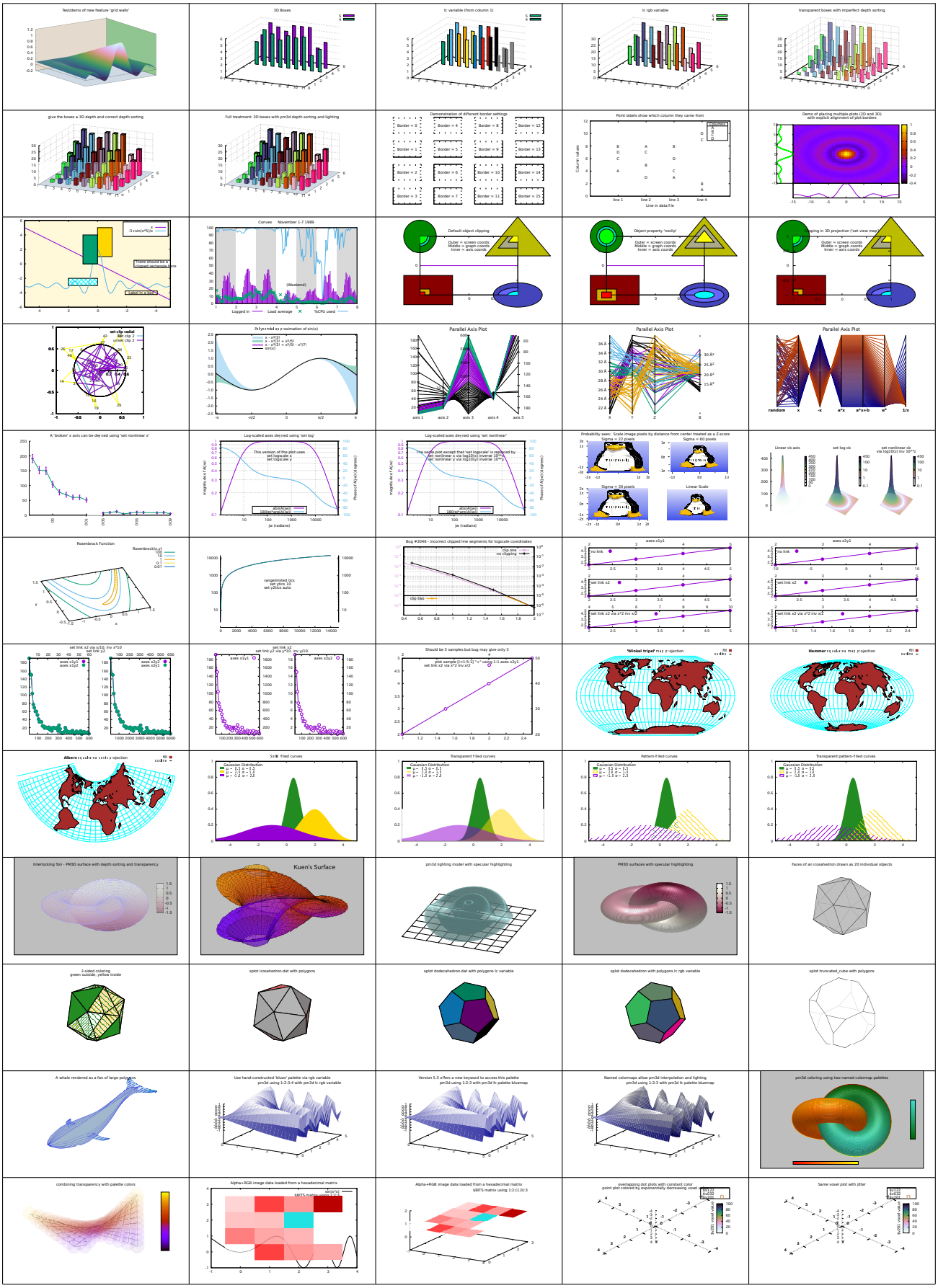

Interlocking Tori
2D projections of a 3D surface
contour plot
more contours (15 levels)
contour by increments (every 10, starting at -100)
discrete set of contours (at -75, -50, 0)
contours on base grid with labels
contours drawn on surface
contours on both base and surface
2 surfaces
some more interesting contours
low resolution (6x6)
low resolution (6x6) using cubic splines
low resolution (6x6) using bspline approx.
low resolution (6x6) raise bspline order.
contour of Sinc function
contour of data grid plotting
2D contour projection of previous plot
Rosenbrock Function
All contours drawn in a single color
Sometimes it helps to use multiplot
Circle and polygon objects in 3D
approximate the integral of functions
approximate the integral of functions (upper and lower limits)
Plot of the ackermann function
Min(x,y) and Max(x,y)
Greatest Common Divisor (for integers only)
Finite summation of 10, 100, 1000 fourier coefficients
Fstepps plot with date and time as x-values
Time data on Y, millisecond precision
Date format (top) vs Time format (bottom)
Simple Gantt Chart
Task start and end times in columns 2 and 3
Terminal-independent RGB colors in 2D
Terminal-independent palette colors in 2D
RGB color information read from data file
Both RGB color information and point size controlled by input
HSV coloring of pm3d surface
Explicit borders for pm3d tiling
variable color points, circles, candlesticks, boxes, and boxyerror
variable color boxerror, xyerrorbars, impulses, vectors, and labels
variable color using 'lc palette z'
variable color using 'lc rgb variable'
variable color using multiple named palettes

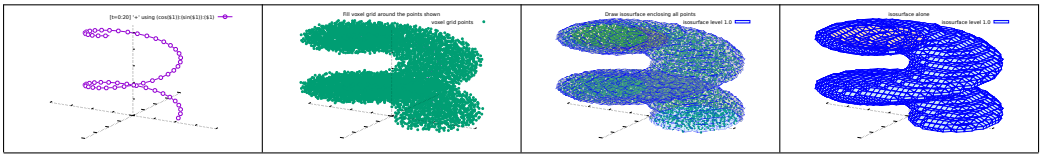









Test/demo of new feature 'grid walls'
3D Boxes
lc variable (from column 1)
lc rgb variable
transparent boxes with imperfect depth sorting
give the boxes a 3D depth and correct depth sorting
Full treatment: 3D boxes with pm3d depth sorting and lighting
Demonstration of different border settings
Point labels show which column they came from
Demo of placing multiple plots (2D and 3D) with explicit alignment of plot borders
Convex November 1-7 1989
Default object clipping
Object property 'noclip'
Clipping in 3D projection ('set view map')
set clip radial
Parallel Axis Plot
Parallel Axis Plot
Parallel Axis Plot
A 'broken' x axis can be dep ned using 'set nonlinear x'
Log-scaled axes dep ned using 'set log'
Log-scaled axes dep ned using 'set nonlinear'
Probability axes: Scale image pixels by distance from center treated as a Z-score
Linear cb axis
set log cb
set nonlinear cb via log10(x) inv 10**x
Rosenbrock Function
Bug #2046 - incorrect clipped line segments for logscale coordinates
axes x1y1
axes x2y1
set link x2 via x/10; inv x*10
Should be 5 samples but bug may give only 3
'Wicked tripel' map projection
Hammer equal-area map projection
Albers equal-area conic projection
Solid filled curves
Transparent filled curves
Pattern filled curves
Transparent pattern filled curves
Interlocking Tori - PM3D surface with depth sorting and transparency
Kuen's Surface
pm3d lighting model with specular highlighting
PM3D surfaces with specular highlighting
Faces of an icosahedron drawn as 20 individual objects
2-sided coloring
green outside, yellow inside
splot icosahedron.dat with polygons
splot dodecahedron.dat with polygons lc variable
splot dodecahedron with polygons lc rgb variable
splot truncated_cube with polygons
A whale rendered as a fan of large polygons
Use hand-constructed 'blues' palette via rgb variable
pm3d using 1:2:3:4 with pm3d lc rgb variable
Version 5.5 offers a new keyword to access this palette
pm3d using 1:2:3 with pm3d fc palette bluemap
Named colormaps allow pm3d interpolation and lighting
pm3d using 1:2:3 with pm3d fc palette bluemap
pm3d coloring using two named colormap palettes
combining transparency with palette colors
Alpha+RGB image data loaded from a hexadecimal matrix
Alpha+RGB image data loaded from a hexadecimal matrix
overlapping dot plots with constant color
point plot colored by exponentially decreasing voxel
Same voxel plot with jitter


[t=0:20] '+' using (cos($1)):(sin($1)):($1)
Fill voxel grid around the points shown
voxel grid points
Draw isosurface enclosing all points
isosurface level 1.0
isosurface alone
isosurface level 1.0