

Package: ximage (via r-universe)

August 26, 2024

Title Draw Images of Raster Data and Related Adornments

Version 0.0.0.9014

Description Draw images easily and as if doing that was considered desirable or even essential to be able to do. Set up a plot with an image, specify where that image should be placed. Image plot by default reflects the index of the image data itself, or can be specified in simple extent terms 'xmin,xmax,ymin,ymax'. Numeric matrices, integer arrays, byte arrays, character arrays, and native rasters are (or will be) supported. A little bit like 'image()' and 'rasterImage()' from the 'graphics' package but with the good features celebrated and made easier to use.

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Encoding UTF-8

Language es

Roxygen list(markdown = TRUE)

Depends R (>= 2.10)

LazyData true

RoxygenNote 7.3.2

Imports palr

Repository <https://hypertidy.r-universe.dev>

RemoteUrl <https://github.com/hypertidy/ximage>

RemoteRef HEAD

RemoteSha 90e34fe299272d26e675b78902de4b15949e4297

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logo_a	<i>R logo as an RGB image</i>
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Description

Data obtained from png package.

Details

logo_n A matrix of colour values in native raster form.

logo_a An array of RGB colour values.

Examples

```
ximage(logo_n, asp = .3)
ximage(logo_a, extent = c(8, 18, 60, 80), add = TRUE)
rect(8, 60, 18, 80)
```

topo	<i>topographic elevation</i>
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Description

Data obtained from GEBCO 2019, via whatarelieft package from AAD COG (GeoTIFF).

Details

A matrix of global elevation values in a smallish matrix, extent is -180,180,-90,90, crs is "OGC:CRS84".

Examples

```
ximage(topo, extent = c(-180, 180, -90, 90))
ximage(logo_n, extent = c(135, 155, -48, -30), add = TRUE)
```

xcontour	<i>A new contour</i>
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Description

To work with `ximage()`

Usage

```
xcontour(x, extent = NULL, ..., add = FALSE)
```

Arguments

x	something we can contour
extent	optional, numeric xmin,xmax,ymin,ymax
...	Arguments passed on to <code>ximage</code>
	zlim optional, range of data to set colour map (to maintain absolute colours across multiple plots)
	xlab x axis label, empty by default
	ylab y axis lable, empty by default
	breaks a set of finite numeric breakpoints for the colours:
	col optional colours to map matrix/array data to
add	add to plot, or start afresh

Details

Input may be a matrix or a list from `gdal_raster_data()` in the vapour package.

Value

nothing, called for its side effect of creating or adding to a plot

Examples

```
ex <- c(2667394, 2668004, 6478902, 6479772)
v <- volcano[nrow(volcano):1, ncol(volcano):1]
ximage(v, extent = ex, asp = 1)
#im <- whatarelieff::imagery(extent = ex, projection = "+proj=nzmg +datum=WGS84")
#ximage(im, add = TRUE, extent = ex)
xcontour(v, add = TRUE, extent = ex, col = "white")
xrect(ex, add = TRUE, border = "hotpink", lwd = 5)
```

ximage

A new image() Plot an image (no matter what)

Description

ximage combines the best of image() and rasterImage().

Usage

```
ximage(
  x,
  extent = NULL,
  zlim = NULL,
  add = FALSE,
  ...,
  xlab = NULL,
  ylab = NULL,
  col = hcl.colors(96, "YlOrRd", rev = TRUE),
  breaks = NULL
)
```

Arguments

x	matrix, array, or native raster (nativeRaster, or raster)
extent	optional, numeric xmin,xmax,ymin,ymax
zlim	optional, range of data to set colour map (to maintain absolute colours across multiple plots)
add	add to plot, or start afresh
...	passed to plot when add = FALSE
xlab	x axis label, empty by default
ylab	y axis lable, empty by default
col	optional colours to map matrix/array data to
breaks	a set of finite numeric breakpoints for the colours:

Details

`ximage()` is designed like graphics function with the following limitations removed, `image()` 1:4, `rasterImage()` 5:7.

1. Allow arrays with RGB/A.
2. Allow matrix with character (named colours, or hex) or raw (Byte) values
3. Allow list output from vapour, a list with numeric values, hex character, or nativeRaster
4. Plot in 0,ncol 0,nrow by default
5. Override default with extent (xmin, xmax, ymin, ymax)

6. Allow general numeric values.
7. Start a plot from scratch without setting up a plot to paint to.
8. Plot by default in 0,ncol,0,nrow if unspecified.

ximage uses the GIS raster default used by rasterImage. WIP: There is a similar function 'image0?' that provides the same features but assumes that orientation is like image...

Colours by 'col' are only mapped for numeric data, this may change (to remap RGB or raw imagery via greyscale conversion)

Value

a list with 'x' and 'extent' invisibly (extent is the 0,ncol 0,nrow space of the array if not supplied)

Examples

```
ximage(volcano)
ximage(as.raster(matrix(0:1, 49, 56)))
```

xrect

xrect

Description

Draw rectangles from four columns xmin,xmax,ymin,ymax

Usage

```
xrect(x, add = FALSE, ..., asp = 1L)
```

Arguments

x	four columns worth of rectangles
add	instantiate a plot or add to existing (default is add = FALSE)
...	arguments passed to rect()
asp	aspect ratio, defaults to 1

Details

Calls [rect\(\)](#), but will instantiate a plot if add = FALSE.

Value

nothing, called for side effect of creating or adding to a plot

Examples

```
xrect(runif(100))
xrect(sort(runif(100)))
xrect(runif(100), col = hcl.colors(25, alpha = seq(.2, .8, length.out = 25)))

#example(xcontour, ask = FALSE)
ex <- c(0.2, 0.8, .2, .6)
xrect(ex, add = TRUE, lwd = 5, lty = 2)
```

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