

Package ‘AcuityView’

January 29, 2026

Title A Package for Displaying Visual Scenes as They May Appear to an
Animal with Lower Acuity

Version 1.1.1

Date 2026-01-28

Description This code provides a simple method for representing a vi-
sual scene as it may be seen by an animal with less acute vision. When using (or for more infor-
mation), please cite the original publication.

Depends R (>= 3.0.0)

Imports imager (>= 0.40.1), fftwtools (>= 0.9-7), plotrix (>= 3.2.3),
tools, grid, grDevices, graphics

License GPL (>= 2)

Encoding UTF-8

RoxygenNote 7.3.3

NeedsCompilation no

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AcuityView

AcuityView

Description

This function provides a simple method for displaying a visual scene as it may appear to an animal with lower acuity.

Usage

```
AcuityView(
    photo = NULL,
    distance = 2,
    realWidth = 2,
    eyeResolutionX = 0.2,
    eyeResolutionY = NULL,
    plot = TRUE,
    output = NULL
)
```

Arguments

| | |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| photo | The photo you wish to alter; if NULL then a pop up window allows you to navigate to your photo, otherwise include the file path here |
| distance | The distance from the viewer to the object of interest in the image; can be in any units so long as it is in the same units as RealWidth |
| realWidth | The real width of the entire image; can be in any units as long as it is in the same units as distance |
| eyeResolutionX | The resolution of the viewer in degrees |
| eyeResolutionY | The resolution of the viewer in the Y direction, if different than ResolutionX; defaults to NULL, as it is uncommon for this to differ from eyeResolutionX |
| plot | Whether to plot the final image; defaults to T |
| output | The name of the output file, must be in the format of output="image_name.filetype"; acceptable filetypes are .bmp, .png, or .jpeg |

Value

Returns an image in the specified format

Image Format Requirements

Image must be in 3-channel format, either PNG, JPEG or BMP. Note: some PNG files have an alpha channel that makes them 4-channel images; this will not work with the code. The image must be 3-channel.

Image size

Image must be square with each side a power of 2 pixels. Example: 512x512, 1024 x 1024, 2048 x 2048 pixels

For Linux Users

You may need to install the fftw library in order for the R package "fftwtools" to install and perform correctly. The FFTW website and install information can be found here: <http://www.fftw.org/> This library can easily be installed on Ubuntu with: apt-get install fftw3-dev

Examples

```
## Not run:
require(imager)
photo <- system.file("extdata/reef.bmp", package = "AcuityView")
reef <- load.image(photo)
AcuityView(photo = reef, distance = 2, realWidth = 2,
            eyeResolutionX = 2, eyeResolutionY = NULL,
            plot = TRUE,
            output = file.path(tempdir(), "Example.jpeg"))

## End(Not run)
```

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