Old Faithful Geyser Data

Description

Waiting time between eruptions and the duration of the eruption for the Old Faithful geyser in Yellowstone National Park, Wyoming, USA.

Usage

```
faithful
```

Format

A data frame with 272 observations on 2 variables.

[,1]	eruptions	numeric	Eruption time in mins
[,2]	waiting	numeric	Waiting time to next eruption (in mins)

Details

A closer look at `faithful$eruptions` reveals that these are heavily rounded times originally in seconds, where multiples of 5 are more frequent than expected under non-human measurement. For a better version of the eruption times, see the example below.

There are many versions of this dataset around: Azzalini and Bowman (1990) use a more complete version.

Source

W. Härdle.

References

Härdle, W. (1991) *Smoothing Techniques with Implementation in S*. New York: Springer.

Azzalini, A. and Bowman, A. W. (1990). A look at some data on the Old Faithful geyser. *Applied Statistics* **39**, 357–365.

See Also

`geyser` in package [MASS](#) for the Azzalini–Bowman version.

Examples

```
require(stats); require(graphics)
f.tit <-  "faithful data: Eruptions of Old Faithful"
```

```
ne60 <- round(e60 <- 60 * faithful$eruptions)
all.equal(e60, ne60)                # relative diff. ~ 1/10000
table(zapsmall(abs(e60 - ne60))) # 0, 0.02 or 0.04
faithful$better.eruptions <- ne60 / 60
te <- table(ne60)
te[te >= 4]                         # (too) many multiples of 5 !
plot(names(te), te, type = "h", main = f.tit, xlab = "Eruption time (sec)")

plot(faithful[, -3], main = f.tit,
     xlab = "Eruption time (min)",
     ylab = "Waiting time to next eruption (min)")
lines(lowess(faithful$eruptions, faithful$waiting, f = 2/3, iter = 3),
      col = "red")
```