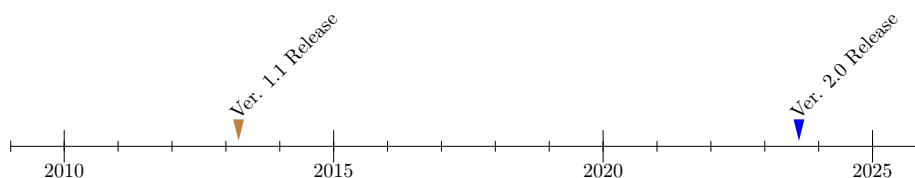# chronology — a versatile timeline utility

Ben Armacost

Version 2.0, released 20 August 2023

Abstract

A package that creates timelines featuring multiple events with per-day precision. Other features include relative positioning with unit specification, adjustable tick mark step size, and scaling to specified width.

Installation

To use this package, simply enter `\usepackage{chronology}` in the preamble. No other dependencies are required.

The *chronology* Command

Each individual timeline is enclosed within the *chronology* command:

```
\begin{chronology}[step]{year-start}{year-stop}{timeline-width}[scaling]
    <event commands>
\end{chronology}
```

Where

- *step* refers to the number of years between year labels (default is 5).

- *year-start* is the earliest year on the timeline at the left end.

- *year-stop* is the latest year on the timeline at the right end.

- *timeline-width* is the total width of the timeline across the page.
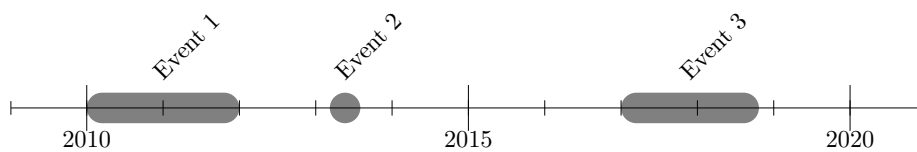
- *scaling* permits size fine-tuning

Three commands are used within the *chronology* environment: *event*, *eventspan*, and *eventpoint*. For per-day precision, all these commands can utilize the optional *decimaldate* command to convert dates from dd-mm-yyyy format to decimal.

The *event* Command (legacy)

The legacy *event* command allows for backward compatibility and should permit the display of timelines from the previous release without modifications. The *begin date* argument is optional, which results in a circle to represent a single point in time. If both dates are entered, the result will be a span in time between those dates.

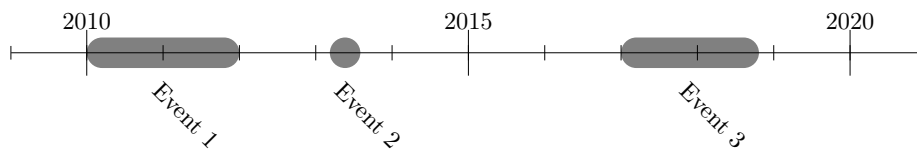The *event* command is used as follows:

```
\event[begin-date]{end-date}{label}
```



```
\begin{chronology}[5]{2009}{2020}{\textwidth}
    \event[2010]{2012}{Event 1}
    \event{\decimaldate{20}{5}{2013}}{Event 2}
    \event[2017]{\decimaldate{22}{10}{2018}}{Event 3}
\end{chronology}
```

With the *event* command, the timeline can be flipped with the labels beneath the timeline by placing an asterisk (*) in the main chronology command before the step argument:[1]

```
\begin{chronology}*[step]{year-start}{year-stop}{timeline-width}[scaling]
```



```
\begin{chronology}*[5]{2009}{2020}{\textwidth}
    \event[2010]{2012}{Event 1}
    \event{\decimaldate{20}{5}{2013}}{Event 2}
    \event[2017]{\decimaldate{22}{10}{2018}}{Event 3}
\end{chronology}
```

---

[1]This feature is not available with the commands *eventspan* and *eventpoint*.

The *eventspan* Command

Like the *event* command, *eventspan* creates a configurable band representing a span of time between two dates. However, it provides additional capabilities such as defining the thickness of the event bar, as well as color-coding and transparency, both of which help to distinguish between overlapping events.

```
\eventspan{begin-date}{end-date}{label}[fill][opacity]%
    [event-bar-thickness][bottom-label-indicator]
```

- *fill* defines the color of the event span (default is black).

- *opacity* determines the opacity of the span (default is .3).

- *event-bar-thickness* determines the thickness (height) of the span (default is .2).

- *bottom-label-indicator* is a flag that determines the placement of the label. It takes no specific value and has no default. Omitting this option entirely will place the label above the event at a 45 degree angle. If any value is given (including empty square brackets), the label will be placed beneath the timeline and centered under the span of that event.
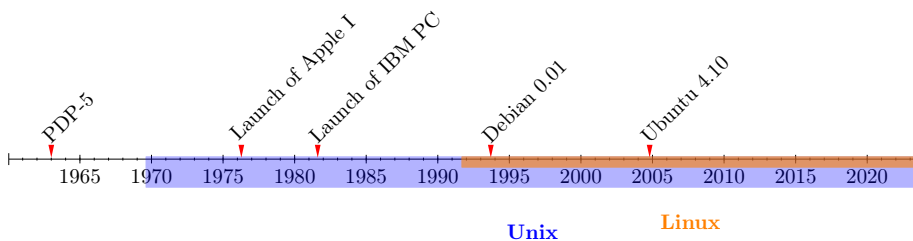
The *eventpoint* Command

For any singular point in time, use the *eventpoint* command as follows:

```
\eventpoint{date}{label}[fill][opacity][height]
```

- *fill* defines the color of the arrow (default is red).

- *opacity* determines the opacity of the arrow (default is 1, no transparency).

- *height* defines the vertical size of the arrow (default is .3).
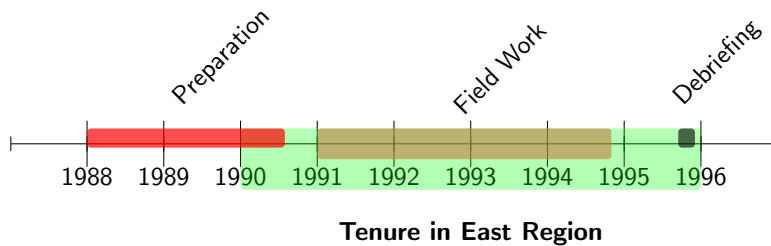
Examples Using *eventspan* and *eventpoint*

```
\begin{chronology}[5]{1965}{2023}{\textwidth}[100ex]
    \eventpoint{1963}{PDP-5}[red][1][1]
    \eventspan {\decimaldate{1}{8}{1969}}{\decimaldate{31}{8}{2023}}%
        {\textbf{\color{blue}Unix}}[blue][.3][2][b]
    \eventpoint{\decimaldate{11}{4}{1976}}{Launch of Apple I}[red][1][1]
    \eventpoint{\decimaldate{12}{8}{1981}}{Launch of IBM PC}[red][1][1]
    \eventpoint{\decimaldate{15}{9}{1993}}{Debian 0.01}[red][1][1]
    \eventpoint{\decimaldate{26}{10}{2004}}{Ubuntu 4.10}[red][1][1]
    \eventspan {\decimaldate{25}{8}{1991}}{\decimaldate{31}{8}{2023}}%
        {\textbf{\color{orange}Linux}}[orange][.6][.6][b]
\end{chronology}
```


Tenure in East Region

```
\sffamily
\begin{chronology}[1]{1987}{1996}{4in}[60ex]
    \eventspan {1990}{1996}{\textbf{Tenure East Region}}[green][.3][.6][b]
    \eventspan {1988}{\decimaldate{30}{7}{1990}}{Preparation}[red][.7][.05]
    \eventspan {1991}{\decimaldate{1}{11}{1994}}{Field Work}[brown][.6]
    \eventspan {\decimaldate{15}{9}{1995}}{\decimaldate{3}{12}{1995}}%
        {Debriefing}[black][.6][.05]
\end{chronology}
\normalfont
```

Version History

- Version 1.1, uploaded to CTAN on 4 April 2013 by Levi Wiseman.

- Version 2.0, uploaded to CTAN on 20 August 2023 by Ben Armacost.