Chronosys
Draw time-lines diagrams !

1982

2050

2011
chronosys's creation

Mathieu LONG
mlong.tex@hotmail.fr

Contents

1 Introduction

Chronosys is distributed under the LaTeX Project Public License.You may use it for drawing time-lines. It uses the **tikz** package for drawing. You need to have ε-TeX to use it.

This package is version 1.10, others versions might be created later.

It is recommended not to load the **color.tex** file if you use plain TeX.

You can load **chronosys** by :

▷ **\usemodule[chronosys]** in ConTeXt.

▷ **\usepackage{chronosys}** in LaTeX.

▷ **\input chronosys** in plain TeX.

With the new version you can modify the alignment of the time-line on the page, the width of the labels of the events; it provides a better support of the events placed over the time-line, the possibility of colour the background of the labels of the periods and events and corrects problems of compatibility.

I wish to thank Gonçalo Pereira for his idea about colouring in white the background of the labels of events and periods to avoid them to be mixed with other vertical straights.

2 First use

2.1 Main function: `\startchronology`

The control sequence `\startchronology` is the first one you need to know.[1] : it starts the chronological frieze :

$$\textcolor{green}{\texttt{\textbackslash startchronology[...=...]}}$$

 See **3.1.3** to have the different possible options

The next one is `\stopchronology`[2], it ends the time-line.

$$\textcolor{green}{\texttt{\textbackslash stopchronology}}$$

Let's have a look on the result :

`\startchronology`
`\stopchronology`

0   2012

You can see the time-line is on all the page's width, furthermore it starts at 0 and ends at the current year 2012 when this document was compiled. **Chronosys** will compare these years with the events and periods you will give him (see **2.2** and **2.3**).

Now let's learn how to add events on the time-line.

2.2 Events: `\chronoevent`

You can add events with `\chronoevent`. This control sequence needs two arguments: the first one is the date of the event[3] and the second is the label of this event.

$$\textcolor{green}{\texttt{\textbackslash chronoevent[...=...]\{1.\}\{2.\}}}$$

---

[1] There are `\begin{chronology}` and `\end{chronology}` for LaTeX

[2] or `\end{chronology}`

[3] you can go to **3.3.2.3** to see another way of specifying the date

...=...   options (see **3.3.4**)
1.   date (*number*)
2.   label

For example:

```
\startchronology
\chronoevent{1977}{\TeX's creation}
\stopchronology
```

0   2012

1977

T$_{E}$X's creation

The event appears between 0 et 2012, proportionally with his gap with 0. You can also give several events:

```
\startchronology
\chronoevent{476}{Fall of the Roman empire}
\chronoevent{1492}{Discovery of America}
\chronoevent{1969}{first steps on the Moon}
\stopchronology
```

0   2012

476   1492   1969
Fall of the Roman empire   Discovery of America   first steps on the Moon

N.B.: the font size has been reduced to avoid label to overlap; a best way will be given further (see **3.3.4**).

Chronosys won't generate any error if the event's date is out of the starting year and ending year, however it will be ignored. The way of customize the time-line, especially the starting year and ending year, will be seen further(see **3.1.3**).

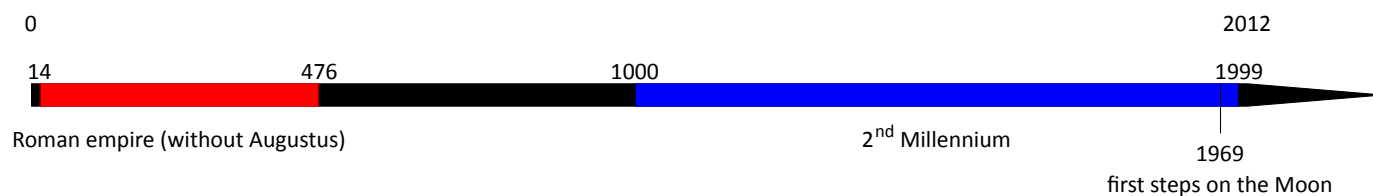## 2.3   Periods: **\chronoperiode**

You can also add one period (or several[4]) on the frieze with **\chronoperiode**.

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[4] If two periods are overlapping, the last one will overlap the other

\chronoperiode[...=...]{1.}{2.}{3.}

...=...   options (see **3.2.4**)
1.   date of the beginning (*number*)
2.   date of the end (*number*)
3.   label

\startchronology
\chronoperiode{1000}{1999}{2\high{nd} Millennium}
\chronoperiode{476}{1453}{Eastern Roman Empire}
\chronoevent{1969}{first steps on the Moon}
\stopchronology

0   2012

14   476   1000   1999

Roman empire (without Augustus)   2nd Millennium
                                                                                        1969
                                                                                        first steps on the Moon

N.B.: on the period from 1000 to 1999, blue on the time-line, we can now see the vertical straight under the frieze. You can disable it (see **3.3.4**), but if you want it you should place the events after the periods.

The period appears automatically with colour, and the dates are also visible (see **3.2.4** to disable them) and the label. The periods can be automatically coloured in 5 colours : blue, red, cyan, purple and yellow, except if the colour is identical to the frieze's one. Of course you can choose the colour of the period (see **3.2.4**).

3 Time-lines' customization

3.1 `\startchronology`

3.1.1 Example

`\startchronology` can have an optional argument in brackets. For example:

```
\startchronology
[startyear=-800,stopyear=500,
color=darkblue,height=7ex,width=\hsize]
\chronoevent{-753}{Rome's foundation}
\stopchronology
```

-800   500

  -753
Rome's foundation

3.1.2 Different options

The different options of `\startchronology` are:

- **`startyear`** :

  starting year of the time-line. It needs to be a valid **`number`**. It is by default 0

- **`stopyear`** :

  ending year of the time-line. It also needs to be a valid **`number`**. It is the current year by default.

- **`color`** :

  colour of the frieze. It must be a **`colour`** recognized by the **`tikz`** package. It is black by default.

- **height** :

  height of the frieze. It must be a valid **dimen** and it is **0.7pc** by default.

- **width** :

  width of the frieze. It must be a valid **dimen** and it is **\hsize**[5] by default.

- **datesstyle** :

  style to apply to dates. It must be a **control sequence** (it can take one argument, which will be the dates), is empty by default.

- **dateselevation** :

  height of the dates from the time-line, it must be a valid **dimen** and it is **20pt** par by default.

- **startdate** :

  boolean which indicate if the starting year has to be placed. It must be either **true** or **false** and it is **true** by default.

- **stopdate** :

  boolean which indicate if the ending year has to be placed. It must be either **true** or **false** and it is **true** by default.

- **dates** :

  boolean which indicate if both dates have to be placed. It must be either **true** or **false** and it is **true** by default.

- **arrow** :

  boolean which indicate if an arrowhead has to be placed. It must be either **true** or **false** and it is **true** by default.

- **arrowheight** :

  height of the arrowhead. It must be a valid **dimen** and it is identical to the height of the time-line by default.

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[5] **\textwidth** in LATEX

- **arrowwidth** :

  width of the arrowhead. It encroaches on the entire (**height**) width of the frieze. It must be a valid **dimen** and it is 1/10 of the entire width of the time-line (**width**) by default.

- **arrowcolor** :

  colour of the arrowhead. It must be a **colour** recognized by the **tikz** package. It is identical to the colour of the frieze by default.

- **box** :

  boolean which indicates if the time-line should be passed back with a black line. It must be either **true** or **false** and it is **false** by default.

- **align** :

  alignment of the time-line on the page. You can choose between **right**, **center** and **left**. It is **center** by default.

3.1.3 Summary

\startchronology [...=...]		
startyear	=	**<number>**
stopyear	=	**<number>**
color	=	**<colour>**
height	=	**<dimen>**
width	=	**<dimen>**
datesstyle	=	**<control sequence>** *or* **<control sequence#1>**
dateselevation	=	**<dimen>**
startdate	=	**<true>** *or* **<false>**
stopdate	=	**<true>** *or* **<false>**
dates	=	**<true>** *or* **<false>**
arrow	=	**<true>** *or* **<false>**
arrowheight	=	**<dimen>**
arrowwidth	=	**<dimen>**
arrowcolor	=	**<colour>**
box	=	**<true>** *or* **<false>**
align	=	**<right>** *or* **<center>** *or* **<left>**

Table 3.1 **startchronology**'s options

3.2 \chronoperiode

3.2.1 Example

\chronoperiode can have an optional argument for the options' customization.

```
\startchronology[startyear=-800,
stopyear=500,color=darkgreen]
\chronoperiode[color=orange,
stopdate=false,textstyle=\it]
{-753}{-509}{Roman Royal period}
\chronoperiode[color=cyan,textstyle=\bf,textdepth=35pt]
{-509}{-27}{Roman Republic}
\stopchronology
```
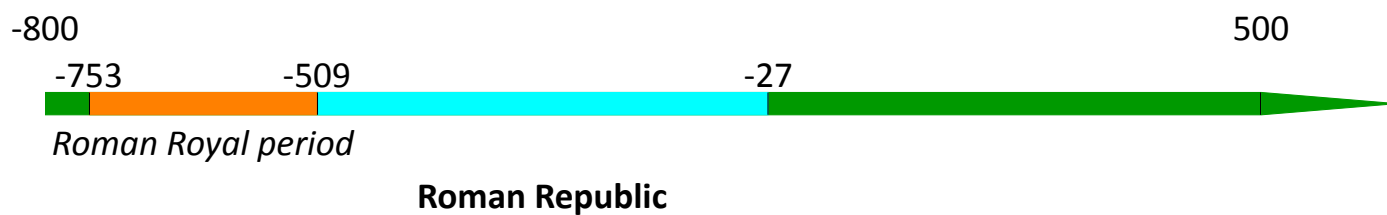

3.2.2 The colour of the background

Chronosys colours the background of the label in white to erase the eventual vertical straights. You can disable it or change the colour if you want (see **3.2.3**).

3.2.3 Different options

The different options of **\chronoperiode** are:

- **startdate** :

  boolean. It indicate if the starting year has to be placed, and must be either **true** or **false**. It is **true** by default.

- **stopdate** :

  boolean. It indicate if the ending year has to be placed, and must be either **true** or **false**. It is **true** by default.

- **datestrue** :

  boolean. It indicate if both dates have to be placed, and must be either **true** or **false**. It is **true** by default.

- **datesstyle** :

  style to apply to the dates. It must be a
  control sequence or **control sequence#1** and is empty by default.

- **textstyle** :

  style to apply to the label. It must be a **control sequence** or
  control sequence#1 and is empty by default.

- **color** :

  colour of the period on the frieze. It must be a **colour** recognized by **tikz**. It alternates between blue, red, cyan, purple and yellow by default.

- **dateselevation** :

  height of the dates from the frieze. It must be a valid **dimen** and it is **0pt** by default.

- **textdepth** :

  depth of the label from the frieze. It must be a valid **dimen** and it is **15pt** by default.

- **colorbox** :

  colour of the background of the text of the period. It must be a **colour** recognized by **tikz** and it is white by default.

- **ifcolorbox** :

  boolean which indicates if the background of the text has to be coloured. It must be either **true** or **false**. It is **true** by default.

3.2.4 Summary

\chronoperiode [...=...]{...}{...}{...}		
startdate	=	**\<true\>** *or* **\<false\>**
stopdate	=	**\<true\>** *or* **\<false\>**
dates	=	**\<true\>** *or* **\<false\>**
datesstyle	=	**\<control sequence\>** *or* **\<control sequence#1\>**
textstyle	=	**\<control sequence\>** *or* **\<control sequence#1\>**
color	=	**\<colour\>**
dateselevation	=	**\<dimen\>**
textdeph	=	**\<dimen\>**
ifcolorbox	=	**\<true\>** *or* **\<false\>**
colorbox	=	**\<colour\>**

Table 3.2 **chronoperiode**'s options

3.3 **\chronoevent**

\chronoevent can also have an optional argument for customization.

3.3.1 Example

```
\def\MyIcon{{\starttikzpicture \filldraw
[color=orange](0,0)--(0,5pt)--(5pt,5pt)
--(5pt,0)--cycle;\stoptikzpicture}}

\catcode`\@=11
\def\chron@selectmonth#1{\ifcase#1\or January\or February\or
 March\or April\or May\or June\or July\or August\or
 September\or October\or November\or December\fi}

\startchronology[startyear=-800,stopyear=500,
color=darkgreen,height=7ex]
\chronoevent[textstyle={\switchtobodyfont[sansserif]},
datesstyle=\os,dateseparation=/,conversionmonth=false,
icon=\MyIcon,year=false]{15/3/-44}
```
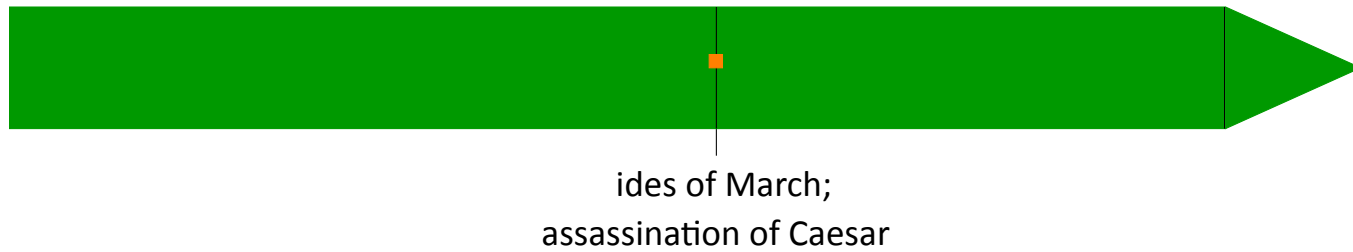
```
{\vbox{\hbox{\qquad ides of March;}%
\hbox{assassination of Caesar}}}
\stopchronology
```

-800   500

ides of March;
assassination of Caesar

3.3.2 Specificities

3.3.2.1 The colour box of the text

As for the periods, to avoid vertical straight to overlap the others labels, as you can see there, if you wanted to type :
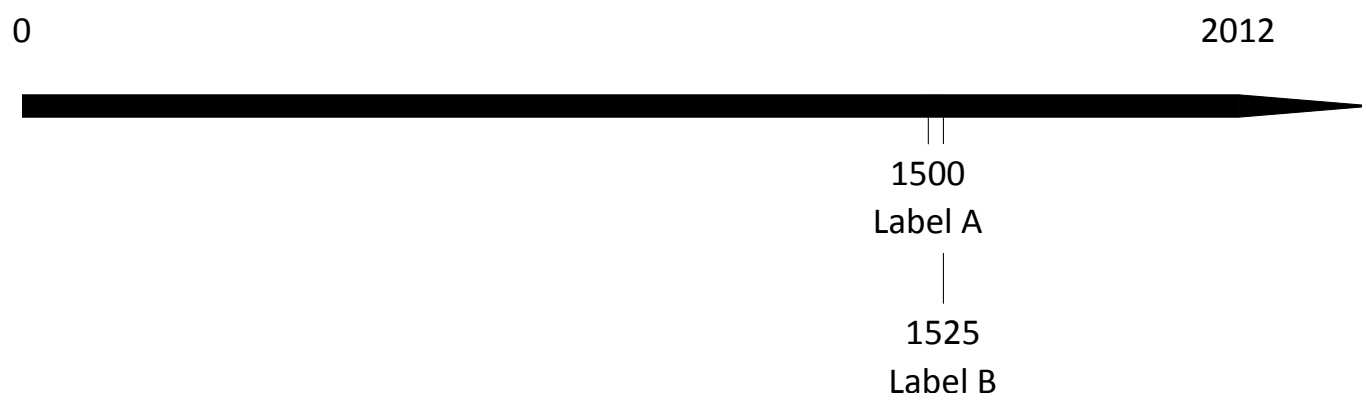
```
\startchronology
\chronoevent{1500}{Label A}
\chronoevent{1525}{Label B}
\stopchronology
```

0   2012

1500
Label A

1525
Label B

chronosys place a white colour box behind the text, so that you can have

0   2012

1500
Label A

1525
Label B

You should type the events from the one you want to place from the farthest to the nearest from the time-line. You can of course choose the colour of the box, and disable it if you need (see **3.3.3**).

3.3.2.2 Width of the text

You can modify the width of the label, in the aim to cut the lines to avoid exceeding on the others labels. You do this with the option **textwidth** of **\chronovent**. However, this functionality is considered to be disabled, except if you specify this option. This is done in the aim to avoid problems about the alignment of the text. This option cannot have a default value (see **??**).

3.3.2.3 A new way for specifying the date

You can specify with more precision the date with **\chronoevent**. We saw that typing **\chronoevent{-44}{Assassination of Caesar}** specified the year of the event, now we will saw the way of specifying the month and the day. You have to type **<day number>/<number of the month>/year**, only specifying the year is compulsory.

You can give only the year as we saw before, the number of the month and the year or the day number and the number of the month and the year. The number of the month is automatically converted to the name of the month (in French by default). You can disable this conversion (see **3.3.4**).The control sequence of conversion is:

```
\def\chron@selectmonth#1{\ifcase#1\or janvier\or f\'evrier\or
 mars\or avril\or mai\or juin\or juillet\or ao\^ut\or
 septembre\or octobre\or novembre\or d\'ecembre\fi}
```

To change the language, you only need to redefine the control sequence, for example for English as:

```
\def\chron@selectmonth#1{\ifcase#1\or January\or February\or
 March\or April\or May\or June\or
 July\or August\or September\or
 October\or November\or December\fi}
```

For example,

```
\catcode`\@=11
\def\chron@selectmonth#1{\ifcase#1\or January\or February\or
 March\or April\or May\or June\or
 July\or August\or September\or
 October\or November\or December\fi}
\startchronology[startyear=-44,
stopyear=-43,color=darkgreen,height=7ex]
\chronoevent{15/03/-44}{Assassination of Caesar}
\stopchronology
```

-44   -43

15 March -44
Assassination of Caesar

3.3.3 Different options

Here are the different possible options.

- **barre** :

  boolean which indicate if a vertical straight has to be placed on the frieze at the event
  position. It must be either **true** or **false**. It is **true** by default.

- **date** :

  boolean which indicate if the date of the event has to be placed. It must be either **true**
  or **false**. It is **true** by default.

- **conversionmonth** :

  boolean which indicate if the number of the month has to be converted to the name month. It must be either **true** or **false**. It is **true** by default.

- **mark** :

  boolean which indicate if a vertical straight has to be placed under the time-line at the event position. It must be either **true** or **false**. It is **true** by default.

- **year** :

  boolean which indicate if the year of the event has to be placed. It must be either **true** or **false**. It is **true** by default.

- **icon** :

  symbol to add on the frieze at the event position. It can be a control sequence or some text, and it is empty by default.

- **markdepth** :

  depth of the label of the event and of the vertical straight under the frieze. It must be a valid **dimen** and it is **10pt** by default.

- **iconheight** :

  height of the icon on the time-line. It must be a valid **dimen** and it is half of the height of the frieze by default.

- **textstyle** :

  style to apply to the label. It must be a **control sequence** or
  control sequence#1.

- **datesseparation** : symbol of separation of each element of the date. It can be a control sequence or some text and is a space by default.

- **datestyle** :

  style to apply to the entire date with the symbols of separation. It must be a **control sequence** or **control sequence#1**.

- **`datesstyle`** :

  style to apply each element of the date without the symbols of separation. It must be a **`control sequence`** or **`control sequence#1`**.

- **`colorbox`** :

  colour of the background of the text and date of the event. It must be a **`colour`** recognized by **`tikz`** and it is white by default.

- **`ifcolorbox`** :

  boolean which indicates if the background of the text and the date has to be coloured. It must be either **`true`** or **`false`**. It is **`true`** by default.

- **`textwidth`** :

  Width of the label on the page. Contrary to the other options, this one cannot have a default value and is disabled while the option is no given. It must be a valid **`dimen`**.

3.3.4 Summary

\chronoevent [...=...]{...}{...}		
barre	=	**\<true\>** *or* **\<false\>**
date	=	**\<true\>** *or* **\<false\>**
conversionmonth	=	**\<true\>** *or* **\<false\>**
mark	=	**\<true\>** *or* **\<false\>**
icon	=	**\<text\>** *or* **\<control sequence\>** ...
datesseparation	=	**\<text\>** *or* **\<control sequence\>** ...
markdepth	=	**\<dimen\>**
iconheight	=	**\<dimen\>**
textstyle	=	**\<control sequence\>** *or* **\<control sequence#1\>**
datestyle	=	**\<control sequence\>** *or* **\<control sequence#1\>**
datesstyle	=	**\<control sequence\>** *or* **\<control sequence#1\>**
ifcolorbox	=	**\<true\>** *or* **\<false\>**
colorbox	=	**\<colour\>**
textwidth	=	**\<dimen\>**

Table 3.3 **chronoevent**'s options
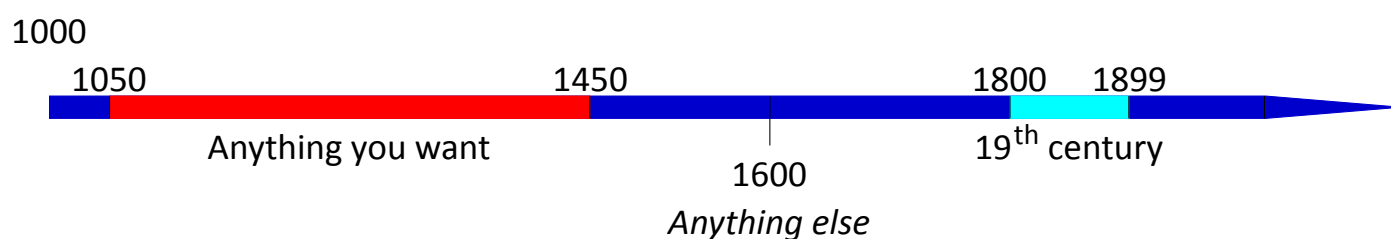
3.4   Permanent changes

You can apply changes on default values with using **\setupchronology**, **\setupchronoevent** and **\setupchronoperiode**.   You use the same name for each option you want to change. The only exception is **textwidth** of **\chronoevent** (see **3.3.2.2**). For example,

```
\setupchronology{startyear=1000,color=darkblue,stopdate=false}
\setupchronoperiode{color=darkgreen}
\setupchronoevent{textstyle=\it}
\startchronology
\chronoperiode{1050}{1450}{Anything you want}
\chronoevent{1600}{Anything else}
\chronoperiode{1800}{1899}{19\high{th} century}
\stopchronology
```
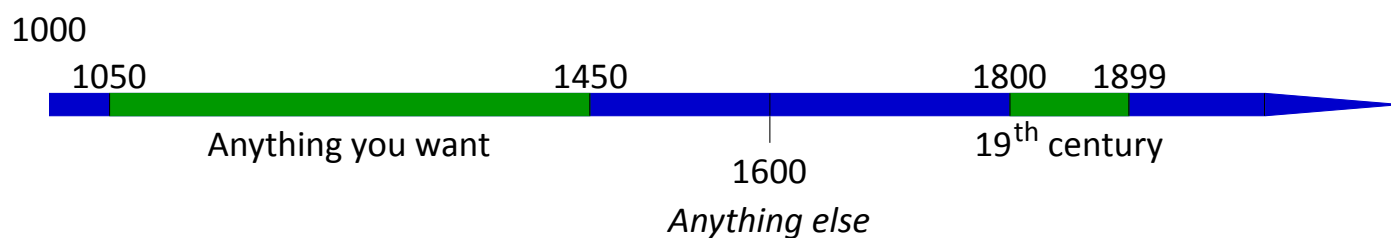

N.B.: if you want to reapply the automatic colour's alternation of the periods, use

```
\setupchronoperiode{color=\chron@periodcolor}
```

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