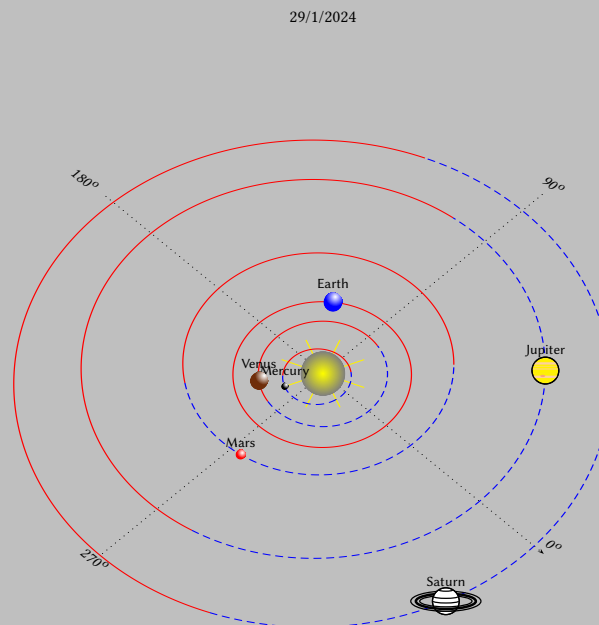


# PSTricks

## pst-solarsystem

Position of the visible planets, projected on the plane of the ecliptic; v.0.14

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## 1 introduction

For the method of calculation, I was guided by:

- that given by *Jean Meeus* astronomical calculations in the book for use by published by the Amateur Astronomical Society of France.
- and that of Guy Serane in *Astronomy & PC* published by Wiley & Sons.

As we can not represent all the planets in the real proportions, only Mercury, Venus, Earth and Mars are the proportions of the orbits and their relative sizes observed. Saturn and Jupiter are in the right direction, but obviously not at the right distance.

The orbits are shown in solid lines for the portion above the ecliptic and dashed for the portion located below. We can compare the view obtained with the following representation:

<http://users.skynet.be/fa274406/rubriques/live/orbites/orbites.htm>

The use of the command is very simple, just specify the date of observation with the following parameters, for example:

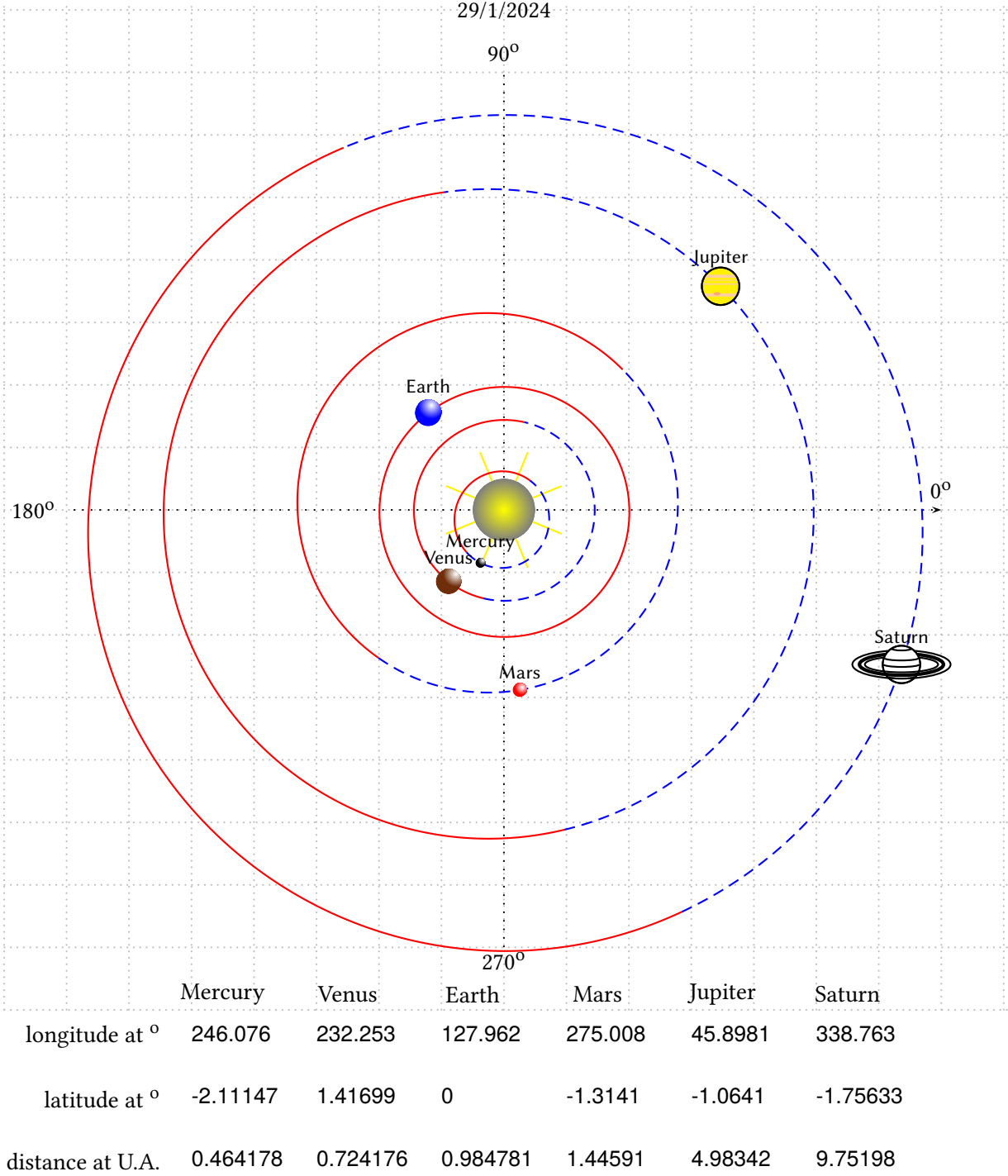
```
\SolarSystem[Day=31,Month=06,Year=2001,Hour=23,Minute=59,Second=59]
```

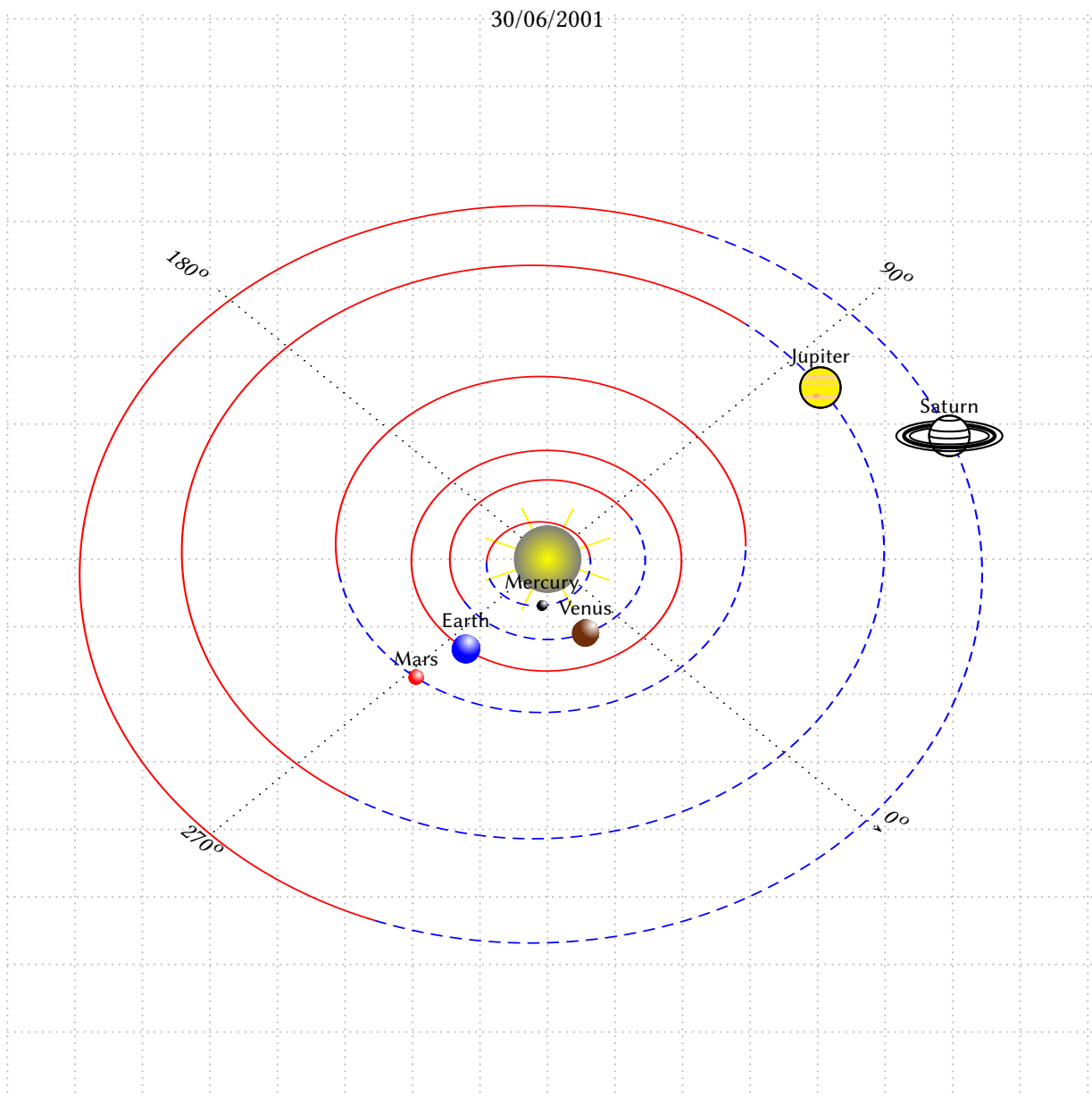
By default, if no parameter is specified, `\SolarSystem` gives the configuration day 0 hours to compile.

The `solarValues` is enabled by default. It displays the values of longitude, latitude, and the distance in astronomical units.

The accuracy of the calculations is about 0.1 to 0.3 degrees (comparing to ephemeris the Bureau des Longitudes), which is more than enough for a performance graph.

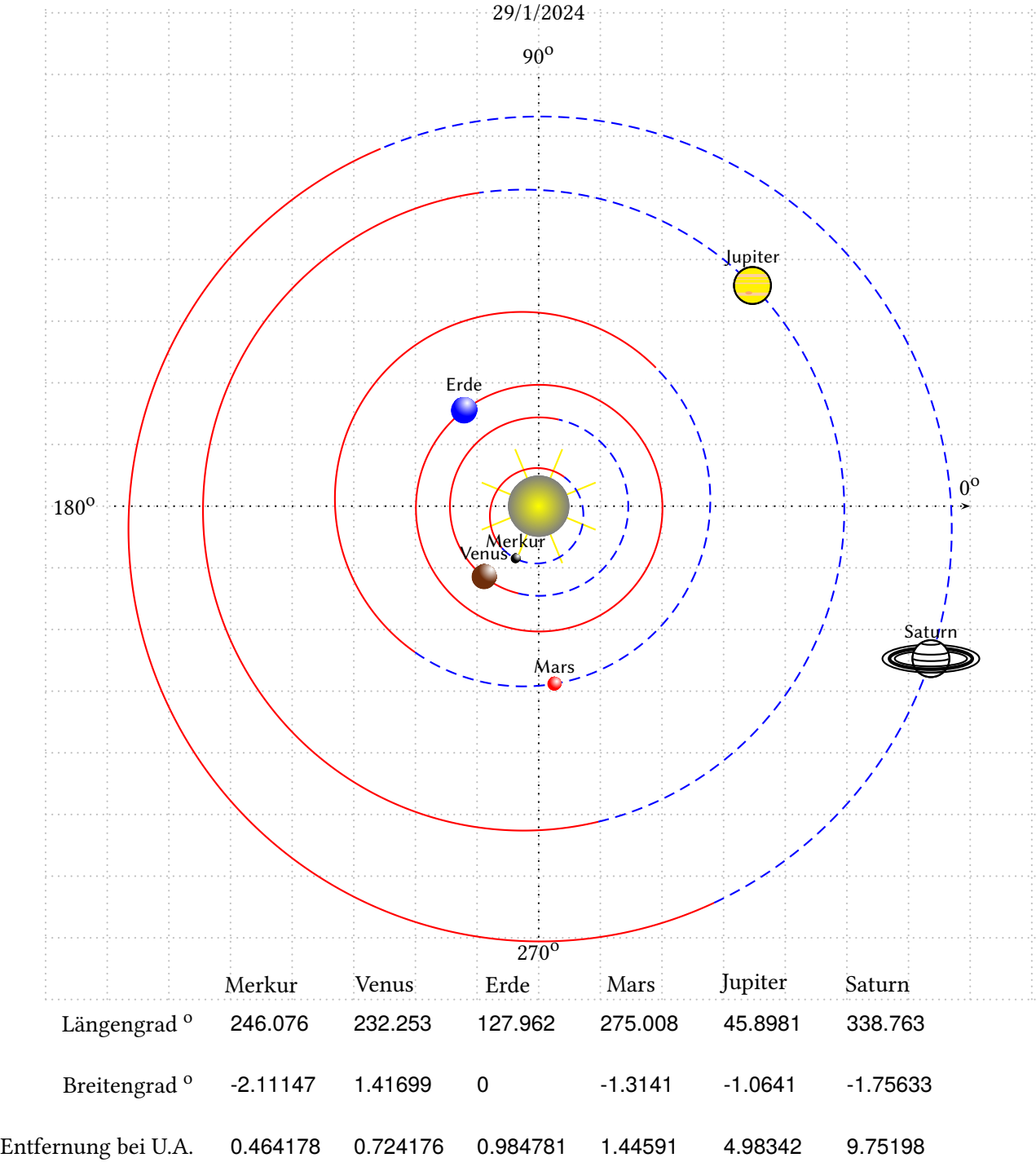
[http://www.imcce.fr/fr/ephemerides/formulaire/form\\_ephepos.php](http://www.imcce.fr/fr/ephemerides/formulaire/form_ephepos.php)

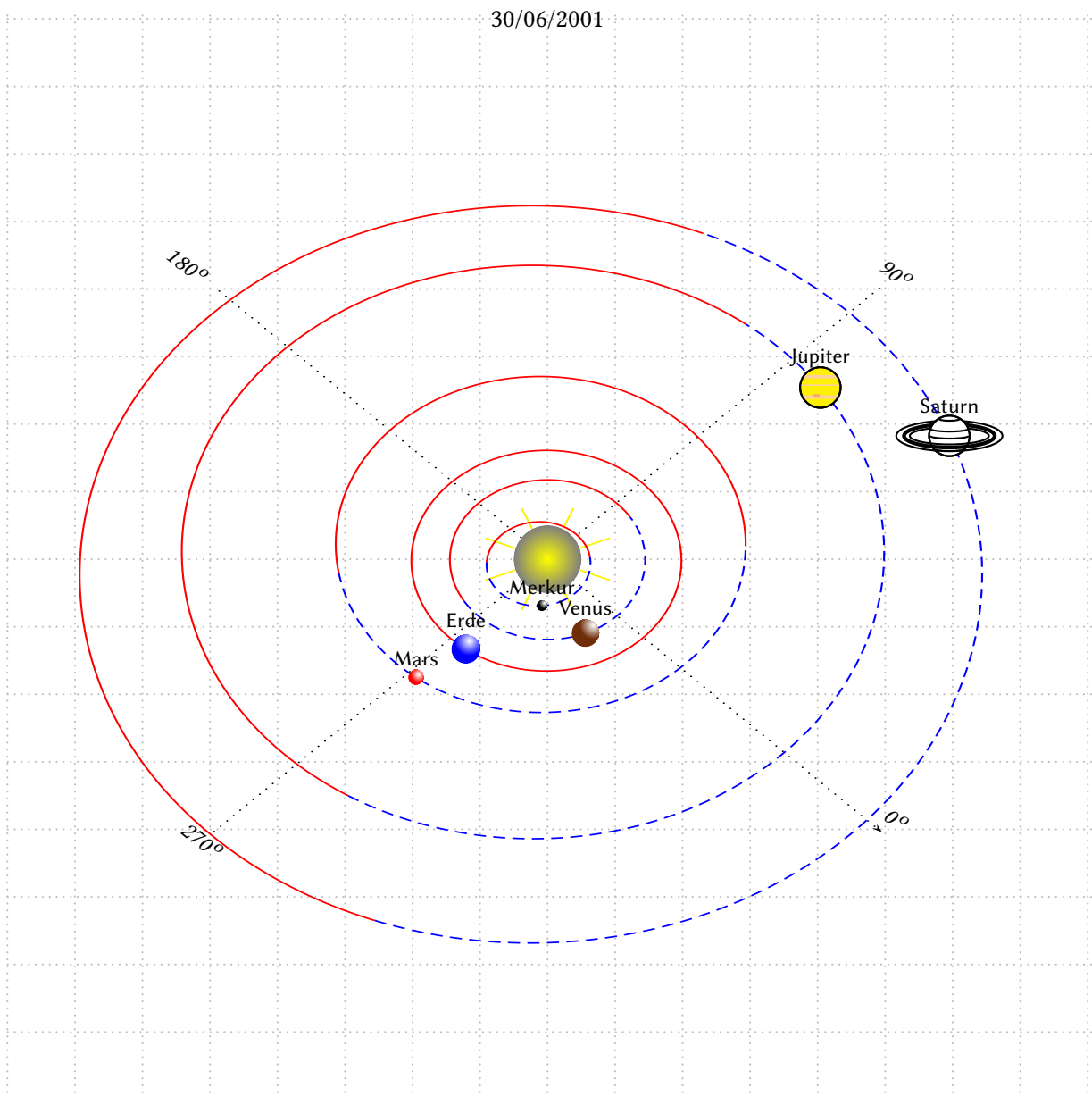




```
\SolarSystem[Day=30,Month=06,Year=2001,  
  Hour=23,Minute=59,Second=59,  
  viewpoint=1 -1 2,solarValues=false]
```

Possible languages are DE, FR and the default EN. With the setting language=DE:





```
\SolarSystem[language=DE]  
\SolarSystem[Day=30,Month=06,Year=2001,Hour=23,Minute=59,Second=59,  
viewpoint=1 -1 2,solarValues=false,language=DE]
```

## 2 List of all optional arguments for *pst-solarsystem*

Key	Type	Default
Day	ordinary	<code>\number \day</code>
Month	ordinary	<code>\number \month</code>
Year	ordinary	<code>\number \year</code>
Hour	ordinary	12
Minute	ordinary	0
Second	ordinary	0
language	ordinary	EN
solarValues	boolean	true

## References

- [1] Denis Girou. “Présentation de PSTricks”. In: *Cahier GUTenberg* 16 (Apr. 1994), pp. 21–70.
- [2] Michel Goossens et al. *The L<sup>A</sup>T<sub>E</sub>X Graphics Companion*. 2nd ed. Reading, Mass.: Addison-Wesley Publishing Company, 2007.
- [3] Herbert Voß. *PSTricks – Grafik für T<sub>E</sub>X und L<sup>A</sup>T<sub>E</sub>X*. 7th ed. Heidelberg and Berlin: DANTE – Lehmanns, 2017.
- [4] Herbert Voß. *PSTricks – Graphics for T<sub>E</sub>X and L<sup>A</sup>T<sub>E</sub>X*. Cambridge: UIT, 2011.
- [5] Herbert Voß. *Typesetting mathematics with L<sup>A</sup>T<sub>E</sub>X*. Cambridge: UIT, 2010.
- [6] Timothy van Zandt. *PSTricks - PostScript macros for generic T<sub>E</sub>X*. 1993. URL: <http://www.tug.org/application/PSTricks>.
- [7] Timothy van Zandt and Denis Girou. “Inside PSTricks”. In: *TUGboat* 15 (Sept. 1994), pp. 239–246.

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