Contents

Solartime 1.2

General Information

SolarTime displays a worldmap showing the actual day and night zones.

SolarTime will tell you the times of <u>sunrise</u> and <u>sunset</u> for the given date within
a high accuracy. The are computed times are only valid if you enter your correct
<u>location</u> and <u>timezone</u>.

To point out the variation of the <u>terminator</u> during the year and the rotation of the
earth a high speed simulation is provided. (See <u>Accelerate</u>)

When running with status bar, the actual date and local time as well as the
times of sunrise and sunset and your <u>Timezone</u> are ahown in the status bar.

<u>New Features of Version 1.2</u>

Programm Information

SolarTime was written by Martin Moennighoff in January 1994. (Last Update: March 1994)

Due to the complex computations a 386DX with numeric coprocessor or better
is recommended.

If you enjoy SolarTime send $10 to:

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D 53113 Bonn, Germany

Got some comments ??   Let me know !

Settings

Location Settings

General Settings

If **Save settings on exit** is selected, your settings will be saved on leaving SolarTime.

If you select **Save settings now**, your actual configuration is saved.

Location Settings

Geographic Location:

To compute the appropriate times of sunrise and sunset SolarTime needs to know your geographic location.

Set your position in eastern longitude, for western longitudes use negative values. Latitudes have to be set as nothern latitudes, southern latitudes have negative values.

Your location is marked in the map with a red cross.

Timezone:

Internal calculations are based on UT.

To get the UT from a given local time it's necessary to have the correct offset in time. This offset is given by your local **Time Zone**.   It varies from -12 hours in the west of Greenwich to +12 hours in the east.

Another correction is necessary for **Daylight Saving**. Be sure having set the Checkbox right to get the correct times. (See LMT.)

General Settings

Increment in Time:

Sets the increment in time used when <u>speeding up</u>.
Steps between 5 minutes and one week may be selected.

Checkbox Title: Sets window style at startup time.

See also <u>Commands</u>

Accelerate

If checked the actual time is incremented not in realtime but in steps selected in the General Settings section.

Commands:

Doubleclick with the left mouse button to toggle the title and status bar.

When running without titlebar press the right mouse button to **quit** SolarTime.

Use the TAB key to toggle fast and realtime mode. See Accelerate.

The SPACE key is used to cycle the following time overlay options:

> Default: No times are shown in the map window

> Local Time   (LMT)

> Local Mean Time   (LMT), Greenwich Mean Time (GMT)

> Local Hour Angle   (LHA), Greenwich Hour Angle (GHA)

> Local Solar Time   (LST), Greenwich Solar Time (GST)

> Local Mean Time   (LMT), Equation of Time   (EoT)

> Times of Sunrise and Sunset.

To toggle the size of the overlay press the '<' key.

See also Terms

New features:

Dragging of SolarTime when running without caption.

The size of overlay time display now may be toggled by pressing the **'<'** key. This is especially usefull if you're running SolarTime in a tiny window or if your system is running in an low resolution mode (640x480).

See also <u>Commands</u>

The border between day and night is called terminator.

The computed times of Sunrise and -set are valid for the apparent sun. The refraction due to the atmosphere is taken into account, scattering which leads to twilight is neglected.

The difference between mean times such as (**GMT**) and solar times (**GST**) is given by the equation of time. The difference results from the nonlinear motion of the earth around the sun and an additional effect due to the attitude of earths axis.
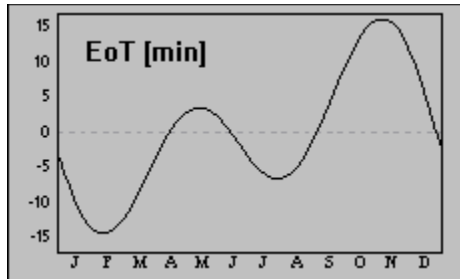
UT=universal time; counted from 0h at midnight

GMT=greenwich mean time; GMT = UT

LMT=local mean time; LMT = UT - Timezone
(The LMT is corrected for Daylight Saving.)

GHA=greenwich hour angle of mean equinox of date

LHA=local hour angle; LHA = greenwich hour angle + east longitude

GST=greenwich solar time; GST = universal time + equation of time

LST=local solar time; LST = GST - Timezone + east longitude