DigitalAlmanacSE

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COLLABORATORS

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Chapter 1

DigitalAlmanacSE

1.1   main

Welcome to Digital Almanac II SE

Please read the chapters marked with an asterisk, because they contain important information

to ensure a safe working on your Amiga !!

Best viewed on a 800*600 resolution.

Copyright

Requirements **

Introduction

Installation **

Start program **

Description

Troubleshooting **

Author

1.2   copyright

Digital Almanac II SE © 1997-2000 by Achim Stegemann

This version of DA II is only available on this Aminet-CD-ROM.

You are not allowed to copy the program and give to other persons.

* The program uses MUI .

* The MUI-NList classes are copyrighted by Gilles Masson.

THE AUTHOR OF DIGITAL ALMANAC IS NOT RESPONSIBLE FOR ANY EVENT THAT IS CAUSED DIRECTLY OR

INDIRECTLY BY USING THIS PROGRAM !!

1.3   copyright-mui

MUI - MagicUserInterface

(c) Copyright 1993-1999 by Stefan Stuntz

MUI is a system to generate and maintain graphical user interfaces. With

the aid of a preferences program, the user of an application has the

ability to customize the outfit according to his personal taste.

MUI is distributed as shareware. To obtain a complete package containing

lots of examples and more information about registration please look for

a file called "muiXXusr.lha" (XX means the latest version number) on

your local bulletin boards or on public domain disks.

If you want to register directly, feel free to send

DM 30.- or US$ 20.-

to

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1.4   vorraussetzungen

Minimum system configuration:

* OS 3.0 + AGA

* MC68020/68881

* 4 MB free FastRAM

* MUI 3.8

Recommended system configuration:

* OS 3.5

* MC68040 or MC68060

* Graphic card with CyberGraphX 3.x

1.5   einführung

Digital Almanac is a "virtual telescope". That means, you can watch the stars, planet

constellations and more from any location on Earth or the solar system from any time

(sufficient accuracy about +/- 5000 years from today).

The program uses a MUI interface for easy use.

It offers all the things, you desire, like:

* Producing animations.

* Dozens of possibilities in displaying, like objekt naming, constellations, (de)activating

of objekt groups, ephemeris calculation, ephemeris tables, eclipse calcation and

much more.

Difference of this version to the commercial or shareware version

* This version is less restrictied in its functionality as the shareware version.

But therefore it contains only a minium of data for demonstration purpose.

* Not limited are:

- Full printer and disk io.

- Saving of configurations is possible.

- The whole sky will be displayed, not only a part.

- You can watch the sky from any place, not only from Earth.

- Calculation of solar and lunar eclipses.

* Restrictions:

- No upgrade possibility.

- Star catalog only contains stars up to +6.0m.

- Only Messier- and NGC catalog.

- Amount of asteroids is limited to 20.

- Surface textures only of Mars and Moon.

- No Quicktime or MPEG animations, only IFF-ANIM.

The number of frames is limited to 10.

- Saving of screen only as IFF-ILBM file.

- No support of the Hubble-GSC star catalog.

- Picture folder only contains two pictures.

- No ARexx support.

- No Message-Port for remote control of a telescope.

- The date is limited from 01.01.1990 to 01.01.2010.

* The CD-ROM full version contains:

- Free upgrade via Internet or cheap upgrade on CD-ROM.

- Lots of different startup-possibilites to limit use of memory and to speed-up program

start.

- Special versions for 020/030 and 040/060 CPUs are available.

- Star catalog contains more than million stars internally up to +16m.

- Animations in Quicktime and MPEG format.

- Saving the screen also in the formats IFF-RGFX, JPEG, GIF and PPM.

No limitation of frames.

- Asteroid catalog contains more than 56000 objects.

- Another 5 deep-sky catalogs (IC, UGC, Abell, Zwicky und miscellaneous objects).

- Hubble-GSC catalog with more than 15 million stars.

- Surface textures of all planets and moons.

- Picture collection with more than 500 pictues of astronomical objects.

AGA mode and FBlit:

A very useful tool for all AGA users is FBlit, which can read and write graphic data from

FastRAM with the CPU, to prevent low ChipRAM.

To make DA work together with FBlit, you need - in difference to the default prefs - the

following settings:

* Start FBlitGUI.

* Enter DA's taskname, i.e. DigitalAlmanacSE in FAllocBitMap/Lists/Include List.

Of course you must activate FAllocBitMap and turn on the option Include List.

* Turn off the switches FAreaEnd/Activated and FDraw/Activated, to make lines and areas

visible.

DA runs prefect together with FBLit with these settings. You don't need to close Workbench.

Even large pictures from the picture galery cause no more trouble.

1.6 installation

Start the installer script and follow the instructions.

To have the correct font in some requesters, please follow these steps:

* Start Digital Almanac.

* Click the corresponding MUI gadget or menu item for the local MUI settings for

Digital Almanac from any of its window.

Do not start MUI preferences manually !!

* Select Windows in the MUI preferences.

* Type Astro/11 in Fonts/Normal.

* Save these prefs.

Digital Almanac will now use the Astro font in some error requesters.

The global MUI prefs will not be affected !

MUI preferences will create the file in the ENVARC:MUI/DIGITALALMANACSE.prefs.

Very important:

It is absolutely necessary to set the flag Windows/Refresh in the MUI preferences

to Smart. Otherwise it is possible, that Digital Almanac refuses to work with your

selected menuitems. On the other hand you avoid timeconsuming window refreshing whenever MUI

feels to update the windows !!

1.7 programmstart

From CLI:

Template: DigitalAlmanacSE FILE,HOMENAME=HN/K,HOMECOORDS=HC/K,

SCREENMODE=SM/K,

CACHE/K/N

CLOSEWB/S,LIKEWB/S,SCREENMODEREQUESTER=SMR/S

From Workbench:

Tooltypes:

* HOMENAME=Name of City

* HOMECOORDS=Latt. Long. Alt.

* SCREENMODE=SUPER72:SuperHighRes Interlace

* CACHE=#kBytes for the cache memory (double buffer).

* CLOSEWB

* LIKEWB

* SCREENMODEREQUESTER

FILE (CLI only)

Name of a config file to be loaded at program startup.

If you don't supply a filename, Digital Almanac will try to load the file Projects/Startup.

In this case time will be set to current system time.

HOMENAME

Enter the name of observing point.

This tooltype will be overwritten, if you have supplied the file Projects/Startup.

Example: New York

HOMECOORDS

Enter the lattitude, longitude in degrees and your altitude in metre.

This tooltype will be overwritten, if you have supplied the file Projects/Startup.

Example: 34.5 -64.2 123

If you start the program from CLI, set the input string in quotes !

SCREENMODE

The program tries to use this specified screenmode as you can see in several screenmode

requesters.

Click here for more information about screenmode handling.

CACHE

Set the size of cache memory in kBytes for the stars and asteroid catalogs.

The default is 100 kBytes, the minimum are 8 kBytes.

It does not make much sense to use large values for cache memory, because memory consuption is

greater than speed gain.

Usually values more than 500 kBytes should not be used.

CLOSEWB

Attempts to close the Workbench at startup.

This might be interesting for AGA users, as you can save lots of ChipMem.

Note:

* The Workbench can be closed only, when there is no other program using it.

* Changing screenmode or iconification will reopen Workbench.

* This option overrides LIKEWB !

LIKEWB

Opens a screen for Digital Almanac with the Workbench's screen mode.

If this option is deactivated, it tries to open an 800x600 or 640x480 screen.

SCREENMODEREQUESTER

Opens a requester where you can select the screen mode at startup.

This option overrides LIKEWB !

1.8   modusauswahl

Digital Almanac uses the following order of priority choosing a screenmode:

* Tooltype SCREENMODE

* Tooltype SCREENMODEREQUESTER

* Tooltype LIKEWB , if Workbench is (still) open.

* 800x600x8 screen

* 640*480x8 screen

If the first item fails by any reason (tooltype is not set or invalid), then the next item

downwards will be checked .. and so on.

To make the current screenmode the default mode, just choose the menu item 'Save screenmode'.

This will write the name of the screenmode directly into the tooltypes of DA's program icon

and with the next start of DA, the screen will open in your saved mode.

1.9   beschreibung

The program is mostly self explaining. If you have used some other astronomy software in the

past, you should have no difficulties using this program.

Lots of gadgets have bubblehelp.

Online and menu help is available !

Project Windows Map Extras

Open Preferences Planetarium Calendar

Save as Coordinates Locale sky Solar eclipse

About Telescope Orrery Lunar eclipse

MUI Settings Animation Redraw

Screenmode Tracking System time

Colors Solar system Direction

Save map as Asteroids

Export Stars

Printer DS-Objects

Reset Orbital elements

Quit

1.10 projekt-öffnen

Loads a configuration file.

The new settings will be immediately displayed.

1.11 projekt-speichern

Saves the current configuration.

The icon Icons/Project.info will be saved with the configuration !

You can replace this icon by a different icon of your choice.

1.12 projekt-mui

Opens the MUI preferences on the Workbench.

Here you adjust several local MUI settings, that only affect Digital Almanac.

1.13 projekt-bildschirm

Choose a new display resolution for Digital Almanac.

1.14 projekt-farben

Opens a window where you can adjust the most important system colors.

1.15 projekt-karte

* ILBM

Saves the main window as an IFF-ILBM file.

If the icon ENV:Sys/def_ILBM.info exists, it will be added to the picture.

1.16 projekt-export

In this window you find all parameters you need to create an ephemeris table.

* Select your starting parameter (location, time) in the window Coordinates and the calculation

parameters in the window Preferences/Accuracy.

* Choose the output mode (window, printer or file).

* Select the stepsize and the number of outputs.

* Open the corresponding window for the object of your choice.

* Drag the object with the mouse to the text field of the export window.

With the help of the two lists, you tell the program, what datas you want to be calculated.

Choose an item in the left list and drag it with the mouse to a position of your choice to the

right list.

Multiselection is supported.

Double inputs will be ignored !

To swap an item within the right list, just drag it to a different position.

Only the active item is swapped.

To delete an item from the right list, drag it back to the left list.

Multiselection is supported.

Press the Start button to begin calculation.

The datas will be printed according the order in the right list !

If calculation does not start, check your inputs (empty list, missing filename etc. ?).

Outputs, which don't make any sense, will be automatically filtered by the program.

Example: Sun -> Elongation and phase are filtered.

Important:

To get a formated printer output, you must set a nonproportional font on your printer !

1.17 projekt-drucker

Here you can print the contents of the map window !

{fg highlight}Screen{fg text}

Prints the current contents of your screen.

{fg highlight}Hires map{fg text}

A high-resolution black-white starmap is created in the background with all the settings you

have made.

The only exceptions are, that all stars are drawn in the area mode (magnitudes are

reflected by area size) and that solar system objects are drawn without texture.

A color output is currently not supported.

Note:

This mode needs lots of memory, depending on your printer resolution.

Additionally the fonts Helvetica and CGTriumvirate are required. These fonts are usually

available on every Amiga.

Example:

In your printer preferences a resolution of 300x300 dpi has been set.

After clicking on Start a printing size 8*6 inch is shown.

The memory amount of the bitmap calculates as following:

Amount (kBytes) = (8 inch * 300 dpi) * (6 inch * 300 dpi) / 4096 = 1054 kBytes

{b}OS 3.0/3.1 users:{ub}

Please remember, that the printer.device from Commodore only can print screens with a depth

<= 8 bit (also CyberGraphX screens).

For High/Truecolor screens you need the program TurboPrint, which is supported by Digital
Almanac.

The program will fall back to original printer.device, if TurboPrint has been selected, but not
installed.

{b}OS 3.5 users:{ub}

The improved printer.device for OS 3.5 now supports all bitmap depth.

The TurboPrint support is deaktivated with OS 3.5 (Amiga NDK 3.5).

Note:{ub}

The image will be printed according to the printer preferences !!

Additionally you can override some printing options with the special-flags.

Pressing Start the program calculates the size of the image on the
paper.

Note, that the size information is only a suggestion from the printer.device !

This does not mean, that your print will have this size !

Confirming the following requester starts printing the image.

If the image appears distorted on the paper, you need to adjust your printer preferences.

Note, that you might need to print the image as a negative, if it appears as a black area on
the paper.

1.18   projekt-reset

With this function, you can reset the whole display as described in the file Projects/Startup.

It is recommended, always to support such a startup file, otherwise the reset function will not
work.

1.19   fenster-einstellungen

In this window you can change the most important options of Digital Almanac.

The window is divided into three pages:

1. Display and Details

Objects

Accuracy

Grid

Display

2. Objects

Solar system

Constellations

Stars

Objectname

3. Magnitudes

1.20   einstellungen-11

(De-)Activate one of the different categories of objects.

1.21   einstellungen-12

Select the accuracy of calculation.

Geocentric parallax

Difference between a geocentric (in the centre of the Earth) and a topocentric

(on the Earth's surface) observer.

Important for Moon (up to 0.5° difference) and near planets.

Refraction

Effect caused by the atmosphere at lower heights.

Important for calculation of rises and sets (some minutes difference !).

Extinction

Lightweakening caused by earth's atmosphere depending on the zenith's distance.

Usually this option is not needed.

Precession

Difference of coordinates caused by motion of the Earth axis.

If this option is disabled, all calculations are referred to the equinox J2000.0.

Important for comparison of tables of eohemeris or star maps.

Nutation

Secondary effect caused by motion of the Earth axis.

Small effect (some arcseconds).

Proper motion

Consideration of proper motion of the stars.

Very small effect. Use only during long time periods.

Planetary aberration

Difference of the position of a planet caused by the time travelling

from a planet to Earth.

Important during calculations of eclipses or observing details on a planet's surface

(deviation of some arcminutes).

Stellar aberration

Deviation caused by Earth orbiting around the Sun.

Small effect (max. 20").

Daily aberration

Deviation caused by the rotation of the Earth.

Very small effect (max. 0.3").

Remark:

These options have no influence on the calculation in the calendar or eclipse mode !!

If you have chosen a position outside Earth, corresponding options will not be recognized

during calculations. All coordinates are then calculated for the equinox J2000.0.

1.22 einstellungen-13

Equator

Draws the equator (only when Earth is selected as location).

Has no function in orrey mode.

Ecliptic

Draws the ecliptic.

Horizon

Simply plots the horizon with direction labels (only when Earth is selected as location).

Has no function in orrey mode.

Kind

Choice of some different coordinate grids.

Draw as

Display either as dots or as a line.

Distance

Distance between grid lines in degree,

Step

Increment in degree.

1 = slow, but accurate -> 90 = very fast, but inaccurate

1.23 einstellungen-14

Map

Choose between planetarium and local sky.

Projection

The map will be either displayed on an area or on a sphere.

Not used in orrery mode.

Az/He system

There exist two different measuring systems fpr the azimuth angle.

The first one starts measuriung from south (default), the second one from north.

Date

Put the date, local, universal und sidereal time in the upper left corner.

Night palette

Switch between normal colors and night colors.

Important:

* MUI colors are not affected as they are under MUI's control.

Invert colors

Invert all object colors.

Pixelcheck

When the screen is covered all over with stars, it may happen, that bright stars are

overwritten by fainter stars. To prevent this, you can enable this mode.

When enabled, the program checks the position for an eventually previous star.

This will protect bright stars from being overwritten.

The speed loss ranges between 5% and 20% (depending on your CPU and screenmode), but you

receive a better map at a high star density.

This mode does not work on CyberGraphX hi/truecolor screens !

ObtainPen

With this gadget you can change the color remapping behaviour.

If you are a programmer, you know these values for sure.

The remapping quality ranges from GUI (=not so well) to EXACT (=best).

The better the value, the more exact the colors will be remapped to the current color palette.

At the same time, they allocate more pens, so that following remapping procedures will be

less exact.

Before drawing a map, all old, allocated pens will be released and can be overwritten by

new colors.

Usually you don't want to change the default value IMAGE, as this is the best compromise

between allocation and quality.

Important:

Only surface textures and pictures from the galery are affected by this gadget.

True/hicolor screens are not affected.

1.24   einstellungen-21

Planetname / Asteroidname / Orbitname

Kind of name.

Show phase

Draw phase of moons and planets.

Show grid

Draw a planetographic coordinate grid.

Texture

Show planets and moons with a surface texture.

Autozoom

Enlarge a selected object when centering.

1.25   einstellungen-22

Lines

Draw constellation figures.

Limits

Draw constellation borders.

Names

Choice of language.

1.26   einstellungen-23

Names

Draw names of stars.

Symbol

Draw greek letter of stars.

Flamsteed

Draw Flamsteed number of stars.

Plotting mode

Here you can select four different modes for the stars.

* Graylevel Pixel

* Graylevel Area

* Spectra Pixel

* Spectra Area

In the area modes, bright stars will be drawn as little circle areas.

Mag factor

With this factor you can take influence on the size of a star begin plotted.

Actually this factor works like a filter to avoid that stars are drawn too bright.

The greater the value the darker a star appears.

Note: Currently only stars are influenced with it !!

1.27   einstellungen-24

Messier / NGC

Draw objectnames from the catalogs.

Mark

* Simple

The object will be marked with a little cross and its size in the sky will be displayed.

1.28   einstellungen-3

Min. mag. stars

Minimum magnitude for the star catalog.

Min. mag. Objects

Minimum magnitude for planets, asteroids and deep-sky object catalogs.

Darkest pen

Darkest colors that is used during drawing.

Serves to make dark object more visible.

Note:

When zooming at an object, the object will become brighter !!

Actually it is: The half field angle increases the magnitude by factor four.

1.29   fenster-koordinaten

Input of location, time and environmental parameters of the observer.

This window is divided into two groups. Location and Date.

In the location group you choose you observing location on Earth.

In the date group you enter the date and time for any calculation you wish to do.

* Geogr. latitude and longitude

Enter angles either in decimal (XX.YYY) oder in hexagesimal (DD°MM'SS") format.

Southern latitudes or western longitudes must be entered as negative angles.

* Elevation above sea

This parameter is used for topocentric coordinates (geocentric parallax).

The elevation must be given in metres above sea.

* Temperature and Air pressure

This parameter is used in refraction calculations.

The temperature must be given in deg Celsius, the air pressure in mbar.

* Meridian shift

Adjust the meridian shift for the corresponding location.

Locations with a western longitude have a negative value, such with an eastern longitude

have a positive value.

Example: MET=1, MEST=2

Default is the value defined in the SYS:Prefs/Locale.

* TDT - UT

Astronomy does not use the "normal" time for calculation, but the "Terrestrial Dynamic

Time" (ephemeris time) is used.

This value gives the difference between the ephemeris time und the universal time in

seconds.

Because of steady fluctuations of Earth's orbit, it is impossible to give an exact

value for a certain time. However, the program gives you a quite accurate estimate

for a period of some centuries.

So usually this value should not be changed.

* Automatic update

Here you can adjust the time intervall (minutes) in which the map should be recalulated

with the current preferences.

Using a '0' will deactivate this option.

How to handle different locations ?

* Enter your geogr. lattitude, longitude etc. in the left column.

CyberGraphX users also can click on the little popup button to choose a location.

A window with a world map opens. With a mouse click the selected location will be copied

into the string gadgets.

Because if the limited chip memory, this button is not visible when using AGA !!

* Press the Add button.

The paramters from the left side will be added to the list.

* To save the list, press the Save button.

The list will be saved as Data/place.data.

* To delete an entry from the list, press the Del button.

The currently activated entry will be deleted.

* The list is always sorted in alphabetical order.

Note:

Enter negative values for western/southern positions !

The coordinates format is XX.YY° or DD°MM'SS".

1.30   fenster-teleskop

The handling of the gadgets in locale sky and planetarium mode is different than when being

in orrery mode.

Locale sky and planetarium mode:

* The string gadgets shows you the center coordinates and the angle-of-view corresponding to

the current active coordinate system.

* With the arrow-buttons, you can move in longitude and latitude in steps of 1/4th of the

angle-of-view.

* The zoom-buttons will zoom in or out by doubling (halfing) the angle-of-view.

* The reset button in the middle of the arrows will reset your center angles.

* Dragging a solar system body (planet, moon, asteroid or orbital-element object) to the

textfield will show you the sky as seen from this selected object.

* Pressing the button left to the textfield will reset your position to Earth.

Orrery mode:

* The string gadgets shows you the heliocentric polar coordinates of your position (note the

difference to above !) from a center, which is by default the sun.

* With the arrow-buttons, you can move in longitude and latitude in steps of 10° around

the center.

* The zoom-buttons will zoom in or out by doubling (halfing) the angle-of-view.

* The reset button in the middle of the arrows will reset your position.

Because you have more animation possibilites in orrery mode, handling an animation is a bit

more complex than in the other two modes.

Single map:{ub}

The map is drawn with your position shown in the string gadgets, no matter what is in

the textfield set as observing position !!

To set yourself to the position of solar system body, just drag the object to the string

gadgets, not to the textfield !!

Animation mode:{ub}

1. View from a fixed position:

Unselect the checkmark right to the textfield. The program will use the coordinates below

like an a single map.

2. View from a solar system body.

Drag the desired object above the textfield next to the checkmark.

Select the checkmark. When you start the animation, you will fly at the selected body

in the textfield through the solar system.

1.31   fenster-animation

Set the parameter of an animation.

Animations on true/high color screens can only be saved in QuickTime or MPEG format.

An animation will only be saved when the option Save is activated.

Follow telescope

The telescope will stay at the selected coordinates during the whole animation.

Follow object

The telescope centers a chosen object during animation.

The field-of-view has to be adjusted first.

With this option you can e.g. watch a planet rotating or trace eclipses !

Simply drag any object from any list to the text field.

It is recommended to reduce the screen resolution if you want to save an animation.

Use for example DblPAL-Lores or CyberGraphX 320x240.

If the icon ENV:Sys/def_ANIM.info, ENV:Sys/def_QuickTime.info or ENV:Sys/def_MPEG.info

exists, it will be added to the animation !

1.32   fenster-spur

With this window you set the parameters for object tracking. This means you can view the

position of an object for different dates within one map.

* Select your starting parameter (location, time) in the window Coordinates and the calculation

parameters in the window Preferences/Accuracy.

* Select the stepsize and the number of steps.

* Drag as many objects you want to track to the list as you like.

Only planets, asteroids and orbital element objects are allowed !

Press the Start button to start calcluation.

At first the program draws a map according to your setting as usual.

Then it will calculate the positions from all objects in the list - regardless whether they are

activated or not in the preferences window - from the initial date, and will draw their

positions in the map.

This feature is very useful to watch the movement of a comet or other objects with unusual

orbits.

To delete objects in the list, simply select them (multiselection is support) and press the

Delete button.

1.33   fenster-sonnensystem

In this window you can choose several actions that refer to objects of the solar system.

The objects in the list are draggable.

See also Export , Coordinates , Animation and Orbital elements.

Actions are: Look for, Center and Ephemeris.

1.34   fenster-asteroide

In this window you can choose several actions that refer to minor planets and asteroids.

The objects in the list are draggable.

See also Export , Coordinates , Animation and Orbital elements.

Actions are: Look for, Center and Ephemeris.

If you want to search the list for a name, simply enter the name in the string gadget.

All names matching your input will be shown in an extra window.

Example: Enter 'Cer' and all matching names are displayed.

The entries of this created list are draggable and you can perform the same actions as above.

1.35   fenster-sterne

In this window you can choose several actions that refer to stars

The objects of all lists except constellations and the string gadget Star (click at the frame !!)

are draggable.

See also Export and Animation .

Actions are: Look for, Center and Ephemeris.

If you want to search the lists for a name, simply enter a text in the string gadget.

All names matching your input will be shown in an extra window.

Example: Enter 'Sir' and all matching names are displayed.

The entries of this created list are draggable and you can perform the same actions as above.

1.36   fenster-objekte

In this window you can choose several actions that refer to objects outside the solar system.

The objects of all lists are draggable.

See also Export .

Actions are: Look for, Center and Ephemeris.

If you want to search the lists for a text, simply enter the text in the string gadget.

All object that contain your input will be shown in an extra window.

Not only names are searched but aLso decription and note texts.

Example: Enter 'And' and all objects containing this word are displayed.

The entries of this created list are draggable and you can perform the same actions as above.

You can create your own table of common object names with a text editor.

Each entry constists of two lines. The first one is the common name, the second its internal

name.

The file name is User/ngcnames.data.

Example:

Great Nebula in Orion

M42

1.37   fenster-orbit"

Here you can create your own database of solar system bodies, as long as you have the

orbital elements.

First choose the type of object: Asteroid or Comet.

When you have chosen Asteroid you have to know the mean anomaly at a given time (epoche)

and the semi major axis.

If you have selected Comet, you need the perihelion time and the periheion distance.

JD Epoche

Julian date of the epoche of the orbital elements at Asteroid.

JD Perihelion

Julian date of the perihelion at Comet.

Mean anomaly

Mean anomaly at epoche time.

Only used for Asteroid.

Eccentricity

Also values >=1 (parabel, hyperbel) are allowed !!

For Asteroid you should avoid values >0.9.

Mag. Parameter H

Describes the absolute magnitude of the object in standard distance of 1 AU.

Is often called V(1,0).

Mag. Parameter G

This is a phase-depending parameter of the magnitude.

Is currently not used and may be supported in the future !

Note:

All parameters must refer to the equinox J2000.0 !!

The objects of the list are draggable.

See also Export , Coordinates and Animation .

Actions are: Look for, Center and Ephemeris.

All other gadgets are self-explaining.

This window also offers three special drag&drop features:

1. Make a copy of an asteroid's elements.

Simply drag an object from the asteroid window to the list here. All parameters are copied

into the list. For example you now can alter these parameters.

2. Calculate the current osculating elements of a planet for J2000.0.

Just drag a planet from the window Solar system to the list. The program will then

calculate its orbital elements. You can do this to speed up some planet-relating

calculations.

You can only drag planets, no Sun or moons !

3. Drag the Julian date gadget from the coordinates window over the corresponding

"JD ..." gadget to copy its value (and vice versa !).

1.38   karte-planetarium

Draws the map in the RA/Dec system.

1.39   karte-himmel

Draws the map in the Azimuth/Altitude system.

This map is only available, when Earth is chosen as observing position.

1.40   karte-orrery

This mode shows a view of the planet constellations and their orbits from a free to choose

point inside or outside of our solar system.

For a better look, the orbit above the ecliptic is drawn in white color, below in gray color.

Orbit projection of other bodies:

This mode is getting interesting, when you like to watch the orbit of e.g. a comet or an

asteroid. This is also very simple to realize.

As an example, we want to display the orbit of comet Hale-Bopp.

* Open the tracking window and the orbital-element window

* Drag the list entry "Hale-Bopp" to the list of the tracking window.

* Redraw the map.

Now with the help of the telescope window and its possibilities you can watch the comets's

orbit from all the different view positions.

The same procedures are with asteroids.

When you set the time parameters in the tracking window and start tracking from this window,

you can also watch, how the comet will move trough the solar system !

Note:

No matter what entries are in the tracking window, only asteroids and orbit-element objects

will additionally be displayed with their orbits. All other will not be read.

Asteroids and comets are only plot from the tracking window, even if their display flags

are set globally. This avoids the window to be filled with thoussands of ellipses.

Please also read the chapter telescope window , because handling of the telescope is different

than in the other viewmodes !!

1.41   karte-neu

Redraws the map according to the current settings.

1.42   karte-systemzeit

Updates time to current system time and redraws the map.

1.43   karte-richtung

Move the telescope to a direction.

1.44   extras-kalender

In this window you can inform yourself of some different events at a certain day or month.

Events of the day

Select a day of the month.

The apparent positions of Sun and Moon at 0h GMT and their time of rise and set will be

displayed.

Special events of the Sun or the Moon will be also shown.

Events of the month

Press the button Events.

The program will calculate for each day of the month special events of Sun, Moon, planets and

asteroids (if activated !) and displays them.

Depending on your hardware, this may take some time !!

1.45 extras-sf

If you know the date of a solar eclipse, for example with the help of the calendar, you can
trace the course of the eclipse.

1. Input the date of the solar eclipse.

Input a time two to three hours before the center of the eclipse.

2. Input the number of steps and the step size in the window Solar eclipse and
start calculation.

In the listview below you can see the course of the solar eclipse:

- Local time of the observer

- Geographic lattitude and longitude of the main shadow

- Duration and phase of the eclipse

The example file Projects/SolarEclipse1999 shows the total solar eclipse at 11-Aug-1999 over
Middle Europe. You can immediatly watch an animation of this eclipse.

Currently only a minor graphical output the course is supplied.

Only when there is a total solar eclipse, the course of the umbra will be diplayed as a black
line.

The area of the penumbra will currently not be displayed.

1.46 extras-mf

If you know the date of a lunar eclipse, for example with the help of the calendar, you can
trace the course of the eclipse.

1. Input the date of the lunar eclipse.

Input a time two to three hours before the center of the eclipse.

2. Input the number of steps and the step size in the window Lunar eclipse and
start calculation.

In the listview below you can see the course of the lunar eclipse:

- Local time of the observer

- Phase of the eclipse

The example file Projects/LunarEclipse1997 shows the total lunar eclipse at 16-Sep-1997 over
Middle Europe. You can immediatly watch an animation of this eclipse.

1.47 probleme

This program is designed to work on all those different Amigas that fulfill the
hard- and software requirements.

However, it is possible, that on some systems the program crashes or shows an
unexpected behaviour.

This is not a mistake of Digital Almanac !!

Because of those many different hardware configurations and background patches

being installed, it can happen, that Digital Almanac does not work correctly.

In this case, you should check your system configuration. Degrade your system

(deactivate all those utilities you do not need) and restart Digital Almanac.

This will work in most cases.

Known problems and their solution:

Problem:

Digital Almanac won't start. There is even no error requester. Most times the computer crashes.

Solution:

Digital Almanac makes intensive use of the FPU. If you negate one of the following statements,

itis possible, that the program will not run on your Amiga !!

* I run a MC68040 and I have installed the original 68040.library from Commodore.

* I run a MC68060 and I have installed the latest 68060.library.

* I have installed the original math-libs from Commodore, i.e

I do not use any replacement libs or patches concerning these math-libs.

Problem:

I have problems running Digital Almanac with CyberGraphX. Sometimes the computer even crashes.

With AGA I have no problems.

Solution:

Digital Almanac has some problems with CyberGraphX, if the flag PLANES2FAST is deactivated.

Maybe because of an internal mistake of CyberGraphX, the animation mode shows a strange

behaviour, which may lead into a guru.

To avoid those problems it is recommended to set the PLANES2FAST flag to TRUE (1) !!

It is also reported, that their might be problems with CybervisionPPC cards !

Problem:

Sometimes the menu freezes for a short time.

Solution:

This behaviour can be caused by some menu patches (Magic Menu usw).

I myself do not have any problems with Magic Menu 2.21.

Deactivate those patches.

Problem:

Digital Almanac doesn't react on chosen menu items and drawing is extremly slow.

Solution:

Set the flag Windows/Refresh of the MUI prefs to Smart.

Problem:

Digital Almanac calculates very slow, though I run a MC68060.

Solution:

It seems you have on older version of the 68060.library and running Cyberpatcher with it

in the background.

Install by all means the latest 68060.library from Aminet and deaktivate Cyberpatcher as

this is obsolete with it.

This 68060.library emulates all missing FPU commands correctly and very fast.

The latest version is 68060.library 46.6.

Problem:

In AGA mode I often cannot run any animations or some textures are not loaded.

Solution:

Well... I cannot help you, because your RAM (chip or fast) is too small.

Buy a graphic card and some RAM modules !

Problem:

Digital Almanac doesn't start and I get an error message from the locale.library.

Solution:

It seems you use a different language than those being supported by Digital Almanac.

Start the prefs program SYS:Prefs/Locale and add the installed language of Digital Almanac.

If you should detect any bug, strange behaviour etc., please report this to me

with a detailed description of your system (hardware, background patches etc.).

1.48   autor

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Here you can read the latest developer news of Digital Almanac.