



**Coeli** <sup>(TM)</sup>

## **Electric Planisphere**

Planispheres are simple but wondrous, and come in small and large sizes. If you are unacquainted, the device is no more than two concentric discs, the lower printed with a star map centred on the local zenith, the upper - the dial - with a substantial segment cut away. This permits partial visibility of the former and can be rotated according to time and season to reveal the sky's present or coming aspect.

Coeli will perform this function and more. It is Coeli's starting point.

COELI is Latin for 'the sky', as I expect you knew. To be more pedantic, it literally means 'the heavens', plural. If you were to describe Coeli as no more than a visual front end for the Yale Catalogue, you would be doing it an injustice. Coeli is a planisphere. And there is nothing more useful than a planisphere if you are intent on learning the sky.

Think of Coeli as your indoor observing tool - the 'dry run'. It is a simulation of the stars in their courses as seen from Earth, **and has the capacity to transform you into an expert on the skies.**

## **Installing and running Coeli**

Let's get the technical requirements out of the way as quickly as possible.

Coeli's primary requirement is an IBM-compatible PC. It is virtually guaranteed to run on anything better than, or equivalent to, a 486 DX2 with SVGA and 1 Mb of video RAM. Ideally, you should be running MS DOS 6.0 or later. Of course, Coeli will probably work on SVGA 386s with DOS 5.0 and 586s dragging Windows 95 along for exercise. Although the latter cannot as yet be guaranteed, it is well worth trying. Our P133 with Diamond Stealth 2 Mb ( TRIO S3 chipset) runs Coeli with no problems under Microsoft's newest operating system.

Because we have used the VESA standard, a further hardware requirement is a VESA-compatible Super VGA. Coeli offers various video modes, so if the preset mode (800x600x256) doesn't set, please change to another (see below). Coeli's video modes are as follows:

- |  |   |
|--|---|
| 0) 320 by 200 pixels (VGA) with 256 colours    | ( Not recommended - last resort only!)      |
| 1) 640 by 400 pixels (SVGA) with 256 colours   | ( Excellent if the others cause eyestrain ) |
| 2) 640 by 480 pixels (SVGA) with 256 colours   | ( The SVGA common denominator )             |
| 3) 800 by 600 pixels (SVGA) with 256 colours   | ( Superb. What Coeli was designed for. )    |
| 4) 1024 by 768 pixels (SVGA) with 256 colours  | ( ditto )                                   |
| 5) 1280 by 1024 pixels (SVGA) with 256 colours | ( ditto )                                   |

640 k of base RAM will be needed. Since this version of Coeli loads all stars into conventional memory, ensure you free as much as possible, just as you might for games. SmartDrive does not have to go, in fact Coeli will load its stars and world map quicker with SmartDrive enabled. Load as much system stuff as possible into upper memory. See your DOS manual or a decent DOS handbook for how to do this if you are unsure.

Coeli takes advantage of an 80x87 maths co-processor if one is available, and performance is considerably degraded if one is not present. All DX PCs possess an 80x87, as do Pentiums.

Coeli's basic suite of files comprises the following:

COELI.EXE	( Coeli's program file : this is what you run )
COELICAT.001	( Coeli's current star database - editable )
COELIKEY	( Coeli's key-guide - might be useful to print this )
WORLD.ASC	( World map data in ASCII format )
COELICOL.MAP	( Coeli's colour palette data - editable )
GREEKLET.FNT	( Font data for Coeli's Greek alphabet )
COELI.TXT	( You're reading it. Other WP formats included )

To get Coeli up and running quickly, just follow these simple steps:

1) First create a new directory on your hard drive from DOS or Windows. We suggest you call the directory COELI-3, but of course anything will suffice. To accomplish this from the DOS command line you would type the following:

**MD COELI-3**

In Windows, you would double-click the **File Manager** icon and then select **Create Directory** from the **File** menu.

2) Copy all the files from your distribution media into the new directory.

3) Switch to the new directory and unpack the main archive according to your supplier's instructions (it will probably have a .ZIP or .LZH extension). Note: none of these steps may be necessary if you have received your Coeli package on a diskette with **COELI379.EXE** in the root directory unarchived. If such is the case, you should be able to launch a file called INSTALL.BAT, which will automate the process described here.

From the DOS prompt, you might proceed as follows (assuming your distribution medium is a floppy disk currently in drive A, the archive is called COELI.ZIP, and your hard disk is labelled drive C):

**COPY A:\\*.\* C:\COELI-3** ( copy from floppy )

**CD C:\COELI-3** ( switch to new directory )

**PKUNZIP COELI.ZIP** ( unpack archive )

4) Your Coeli package is contained in a self-extracting file called **COELI379.EXE**. Simply run this like a normal program. All the Coeli files will be reconstituted, and you will then be able to delete

COELI379.EXE from your hard disk, as it will have served its purpose.

5) If you have not already done so, install your VESA driver by typing its name. If it loads without error, you'll be home and dry and all you will need to do is run COELI from the DOS prompt or in a batch file. ( yes, it works in Windows 3.1 too, but a bit more slowly). Coeli's only limitation here is that it must be run *from* the directory in which you placed it. In other words, check that you have made COELI-3 (or whatever) the current directory (DOS' **CD** command) before running Coeli.

**Please note that you should always install the VESA DRIVER prior to using Coeli. A VESA driver may have been provided on the same disk volume as Coeli. If you cannot find it, please see the footnote for suggestions on how to obtain one. Coeli will not function without a VESA driver!**

#### WINDOWS 95 USERS:

There hasn't been much time to check Coeli's functionality exhaustively within Microsoft's newest operating system. However, on a Pentium with a 2 Mb Diamond Stealth graphics card (S3 chipset) and UniVBE version 5.3 installed, there don't seem to be any problems.

Simply drag COELI.EXE from the Explorer onto the desktop, and a shortcut should create itself there with Coeli's own icon. If the correct icon doesn't appear, right-click on the new desktop icon, select Properties, Change Icon, then Browse. While you're about it, go to the Memory tab and ensure 'Auto' is visible in all the selection boxes. Check out the Screen tab at the same time: Coeli should run as a full screen application. Under Program - Advanced, the following boxes should have ticks in them:

'Prevent MS DOS-based programs from detecting Windows' and  
'Suggest MS-DOS mode as necessary'

If problems occur the first time round under Win 95, take note of the resulting error messages, and then start fiddling around with the Properties settings until you begin to get positive results. The most likely cause of problems will be failure to install a working VESA driver...

If your system is not equipped with a real time clock (but what PC isn't nowadays?), you should set the correct time via DOS or Windows before entering Coeli. Coeli assumes the system time to be your local time, and computes Greenwich and Sidereal in relation to it. It is thus rather important to get it right. That also goes for the date. There are facilities for entering zone-correction via the command line and within Coeli itself, of which more later.

### **Command-line Options**

Because Coeli will be used on different computers in varying locations in widely differing time-zones, it will need to be set up optimally for your specific circumstances. Rather than use configuration files, Coeli accepts options typed on the command line. You can enter them at the DOS prompt, but setting them permanently via a batch file is the most convenient method. (again, if you are not sure, consult a good DOS guide on how to accomplish this). Essentially, to run Coeli, you just type its name at the prompt, thus:

```
C:> COELI
```

Press [enter] and Coeli now runs, or tries to, with all its preset values.

Unless you have a dedicated copy, these will be as follows:

Video mode:	800x600 256 colours ( Coeli's mode 3 )
Stars Loaded:	All stars ( declination 180 degrees from North/South )
Extra star-names:	No. ( put a <b>Y</b> on the command line if you would like these loaded)
Location :	Greenwich (London)
Zone-correction :	Zero (daylight-saving is presumed applicable at appropriate dates)

The example location I shall now set up will be Lahti, Finland, lying at 60 degrees 58 minutes north

latitude, 25 degrees 40 minutes east longitude, and with a time-zone correction of 2 hours (ahead of Greenwich, but Coeli will work this out for itself). Since we discovered our machine was not capable of displaying 800x600 resolution, we will enter one we know it can handle: 640x400 ( Coeli mode 1 ), and we want only the stars we can be sure of seeing from Lahti, so we will instruct Coeli not to load stars with a declination below about 120 degrees *zenith angle* ( we will thus be sure of getting every Yale star our sky area contains). In addition, we would like Coeli's 150-odd extra star-names to be loaded.

To accomplish the above, we would type the following:

```
C:> COELI 1 Y 120 Lahti Finland 60 58 N 25 40 E 2
```

The parameters are each separated by a single space, and the order in which you type them is vital. This is the order:

```
[Video] [Star names (Y/N)] [Zenith angle] [Locale] [Country] [Lat - deg] [Lat - min] [N or S] [Long - deg] [Long - min] [E or W] [Zone]
```

**If you have REGISTERED Coeli, your home circumstances will have been internally pre-programmed, and you won't have to bother about the command line unless you specifically wish to change something.**

If you need to modify isolated parameters, then use the 'dummy character' [\*] ( asterisk ) for values you do not wish altered. If the parameter to be changed is the first (video mode), you need only enter this; if the second, only the first and second; if the third, only the first, second, and third etc.

If you wanted to set the video mode to 1 and nothing else, you would merely type **coeli 1**

But if you needed to alter the longitude and nothing else, you would have to type something like:

```
coeli * * * * * 23 21 W
```

One more example:

```
C:> COELI 2 N 180 Buenos_Aires Argentina 34 36 S 58 27 W 4
```

The feature to note is the use of the underscore for spaces *within* place names.

Using a batch file, you type exactly the same as at the DOS prompt, but you only need do it once initially. Afterwards, typing the name of the batch file at the prompt will load and run Coeli for you with the correct parameters. But you have probably got the idea by now, so let's proceed to the program proper.

### 'Full of Stars...'

Once Coeli has faded out its titles, what first appear are, or ought to be, stars. They are processed by Coeli as they are loaded in from file, taking a maximum of 20 seconds on a DX2-50. During this period you also get a chance to check your location-settings and to watch your memory ( the bottom figure) diminish as the stars (upper figure) increase. The more RAM you have available the more stars you will get. Try to

optimise memory as best you can by getting rid of unnecessary resident utilities and by loading DOS, Smartdrive, and even your VESA driver, high.

Press the **[space]** bar during the loading process if you think you have sufficient stars for your purposes. This is sometimes useful, saving time if you merely want to check the sky's general aspect or test your knowledge of the brighter stars and constellations.

Finally, what you see before you is the entire celestial sphere for the preset location ( Greenwich, if you acquired Coeli from a library; your very own home if it is a personal copy), with South at the bottom of your screen, East at the left. Capella will be the initial focus for northern observers and Canopus for the southern hemisphere. Stars plotted in dark green lie below your horizon: they have set, not yet risen, or may never rise at your position. Click on one using the **<right>** mouse button to find out.

Display the time by pressing **[t]** ( repeatedly to cycle through Local/Greenwich/Sidereal/none.)

Coeli requires no elaborate instructions, which is why we're keeping this all rather discursive. It's best to plunge in and try things out. Just press the **[h]** key for a quick list of Coeli's functions, or avail yourself of Coeli's comprehensive key-sensitive help system.

An important feature of Coeli is its online Guide. All you need do is start Coeli as already instructed. When the stars finish loading, or at any point subsequently, simply press the **[CTRL]** key whenever you require information on the function of a particular key or key-combination. Either wait for the prompt (about 2 seconds) or immediately press the key(s) whose operation puzzles you. If you're unsure even of that, press **[a]** to access the top of the text and then page down through our comprehensive Key Guide. You'll discover over 6000 words of help and tips on Coeli's inner workings.

The Guide, called KEYGUIDE.TXT, can also be read externally and/or printed out.

Coeli's virtual Earth revolves in real time, and the apparent motion of the stars is from left to right when facing south. Coeli's optimal star population at present is between 5 & 7 thousand from Yale's total of 9000 odd, and this results in an update roughly every 2 minutes. As was stated before, the more free memory, the more stars can be loaded.

Coeli's default celestial projection is an azimuthal equidistant one, centred on your zenith. It is the type of display used by planispheres the world over, so it is in good company. When you gain a little more experience using Coeli, you'll want to begin experimenting with contrasting viewpoints.

Start by pressing **[H]** for a horizon view of the southern sky. To traverse through the 360 degrees of the compass, use the **<left/right>** **[arrow keys]**, pressing **[ENTER]** to redraw the stars to the new viewpoint. **[Z]** will return you to a zenith view, but at the new line of sight you traversed with the arrow keys.

It is worth stressing that after *any operations which somehow change Coeli's viewpoint*, pressing **[ENTER]** immediately is the safest way to ensure an accurate display of all stars visible at the current magnification. For extra responsiveness, some operations do not incorporate this process!

By default, **[a]**uto-resolution of stars is switched on. What this means is that you only begin to see the dimmer stars as you increase your resolving power (change to binoculars/telescope), in imitation of reality. Coeli's initial magnification is negative in order to encompass the entire sky. Zoom down to zero magnification to receive an impression of the sky as seen on a clear night by the naked eye.

For Coeli's representation of the sky, realism has been the watchword, and we think the ideal has been at least partially achieved. **Colour is the key.** Why do the developers of most of the PC's astronomy Applications persist in the belief that stars are white against the backcloth of space, or assume that we don't

particularly care whether they are or not? - Do they imagine a star's essence can be ignored? Because the essence, the 'key' to a star is its colour, linked intimately to its spectral class. Astronomers have given all the brighter stars a colour-index, and Coeli's star-palette is based on it. So, if you see a deep crimson in Coeli, you can be certain that it is an M, or a piercing white an A, or an orange like Arcturus or Aldebaran a K. Not that this may matter to you, but it will to many. Observe the true heavens on a crystal night - each star has its tint, each planet its hue, albeit cast over with tropospheric blue.

Coeli itself provides these keys for tampering with colours: **[B]** , **[D]** , and **[R]**. **[B]** brightens (lightens) the palette uniformly, giving a washed-out effect, and finally washes colour out completely. **[D]** achieves exactly the opposite, darkening - and thereby deepening - all the colours. Unrealistic, as if seen through sunglasses, but you may find it a change. It at least reveals a star's underlying 'character', subtleties that the brightness may have hidden.

Inveterate stargazers and stellar observers will recognise that Coeli is meant to be viewed to full effect in subdued lighting. It is preparatory, if you like, to the 'real thing', and the human eye takes at least ten minutes to become fully dark-adapted. Coeli is not going to make the situation trickier than it already is!

The command line gave you one way - the most precise - of setting your geographical position. The location browser (world map) is another. Perhaps you would like to view the heavens as Amundsen saw them after finding Scott's camp? Press **[I]** to accomplish this feat. Just use the mouse to move the creamy monocle about the continents and oceans and click the **<left>** button when you find your desired spot. You will be instantly returned to the skies and the constellations' altered prospect will greet you. Note: if you were centred on a northern star, and you then choose the southern hemisphere, or vice versa, chances are you will be on the 'edge' in a 'never rises' region. Just zoom out and re-centre.

**[z]** does what it says: zooms you in (or narrows the field of view, like a pair of binoculars or telescope), displaying the magnification factor as you go. Try this on Albireo, Izar, Castor, Mizar and many others. They will eventually resolve as true doubles, imitating reality. **[x]** widens the field, and zooms you out. Coeli automatically resolves stars for you in proportion to the magnification, like real binoculars: the bigger the objective glass, the more stars you will see and the brighter the more brilliant ones will appear. Conversely, the more extremely your field narrows, the *fewer* stars will be seen, because Coeli's database is restricted, unlike the galaxy's.

By the way, at zoom factors beyond about 16x , be wary of artifacts - strange results of the computer's internal representation of numbers. These will eventually appear, since we have not limited the magnification in Coeli. Just don't overdo it!

Perhaps the **[a]**uto resolution feature merits a bit more elaboration. Firstly, if you disable it, you will have to add and brighten stars manually via the keys listed on Coeli's **[h]**elp screen. This is long winded, but the best way to achieve the most impressive results for the given magnification, and to derive the most personal satisfaction. We all see the sky differently and are affected by different facets of it. But for quicker and yet still fairly realistic resolution, our preset values are quite good. Keep it automatic until you come across a starfield which you truly deem worth perfecting.

Use **[F]** to find a specific constellation. The group of stars will be spotlighted for you. Clicking on 'Constellation - not designated' will always return you to a normal display.

**[f]** will bring you facilities for finding individual stars, either by Bayer, Flamsteed, variable-star, or common-name reference. In general here, the **<left>** button sets the constellation and the **<right>** button designates the star. Which you do first is immaterial, but both buttons must be pressed in turn to initiate the search. Flamsteed and Variable star designation may necessitate more than one press of the **<right>** button prior to setting the constellation with the **<left>**.

Stars may also be searched for by common name: Coeli has almost 200 of these recorded, and you may add more if you've the inclination. There is also a file of extra names whose inclusion you may specify on the command line, bringing Coeli's potential total to more than 300, but please bear in mind that adding more names will further restrict the RAM available for the stars themselves.

To search for a star by its common name, first highlight and then click the entry 'Common names...' displayed at the end of the constellation-list. Input the initial letter - as you are prompted to do - and a list of stars with that initial will appear. Narrow the search by adding letters until a unique name is highlighted ( 3 or 4 letters is generally enough). **[backspace]** will delete characters already entered. If you've an urge to flood the screen with names, then simply backspace until there are no more letters on the line. Press **[enter]** to confirm your choice, **[esc]** to abort the operation.

Above all, Coeli is a point-and-click introduction to the skies, and the mouse-monocle its most useful instrument. Use the monocle to encircle a star, then click the **<left>** button for a short display of the star's name and designation as follows:

The Greek letter plus I.A.U. abbreviation (Bayer nomenclature) or, failing this, the Flamsteed number plus I.A.U. abbreviation. Finally, for dimmer stars, a Yale Catalogue number will be given. ( Future versions of Coeli will allow their users the option of displaying Henry Draper numbers instead of Yale, but as these are longer they take up more precious conventional memory and we opted for Yale in Coeli 3 because of this). If the star has a common name this will be displayed underneath.

You should assume the last star clicked on to be the focus of most operations you perform subsequently. If you clicked on, say, Betelgeuse half an hour ago, went outside for a quiet smoke, any later zooms and unzooms will centre Betelgeuse in your display. Using the **[c]**entre key on a series of stars is another way of 'walking' across the heavens: the stepping-stone method. Incidentally, clicking on 'empty' space will clear all text displays and banish the monocle, effectively providing you with a rather wonderful screen saver.

The Celestial Sphere modeled by Coeli revolves in real time, updating itself without your intervention. Ever yearned to see a heliacal rising of Sirius on an unexpectedly clear southeastern horizon when all the zenith is thunderous overcast? Coeli plots the moment of its rising, so effectively you're permitted to observe it twice - first on Coeli's virtual heavens as seen from beyond our atmosphere, and then outside in the strangely silent dawn cold where Sirius twinkled ominously red for a fleeting instant in the atmospheric turbulence of sea-level.

Incidentally, if the relative positions of some stars begin to appear a little scrambled (as they may do during frequent use of functions which change your viewpoint in some way) , simply press **[s]**, **[n]**, **[e]**, **[w]**, **[ENTER]**, or **[SPACE]** depending on your preferred orientation, for a full recalculation of all altitudes and azimuths. This will take no more than a second or two on a 486. Alternatively, you might consider pressing **[HOME]** for a return to startup conditions if you were particularly disoriented. In any event, Coeli's ongoing calculations will eventually get around to returning every star to its correct position.

The **<right>** button will get you what the left button gets plus ancillary data - things of interest comprise the following:

A full expansion of the rather cryptic Bayer nomenclature. Eg. Omicron Ursae Majoris for 'o UMA'. A great help if you are new to astronomical conventions.

The full Latin name for the constellation, followed, if applicable, by the English translation. Bare catalogue numbers, although they may lie slap in the centre of, say, Orion, will have no constellation associated with them. This will probably be cosmetically remedied in future Coelis.

The brightness (apparent magnitude) and luminosity (absolute magnitude), based on the Yale Catalogue parallax value. If the star is among the 100 brightest, this will also be indicated.

The star's *approximate* distance in light-years (LY), again computed from the parallax figures in the Yale Catalogue. You may assume the lower numbers are about as accurate as we can get, but please take anything over about 150 LY with a pinch of salt - they *may* be reliable. Extreme uncertainty will always be signalled. More than 1000 LY for Polaris means just that: more than 1000 (could be 2000, 3000 or anything beyond). You will occasionally notice huge discrepancies ( take Deneb for instance). And you can of course edit any low parallax values to yield more acceptable results. Don't say I didn't warn you! There doubtless exist more accurate figures, but Coeli 3 hasn't access to them. All values are computed from Yale Catalogue data.

At the bottom-left, you will be shown some terrestrially-based information, the most important of which will be the rising, setting, and transit times for the currently focussed star, its altitude, azimuth, right ascension, and declination. The local (L), Greenwich (G), or local sidereal time (S) will appear below if you have switched on the display. If a star is being tracked, a 'T' indicator will flash here too.

Useful extensions to the information tables now include sunrise/sunset, dawn/dusk/hours of darkness, solar and lunar apparent and equatorial coordinates, astronomical twilight, as well as the phase of the moon. Use **[S]** to switch solar / lunar displays on or off along with their readouts.

Setting the **[i]** key will get the above text displayed continuously, until you cancel it with [i] again. In other words, your readouts of stellar data will not thenceforth be banished by screen-updates. Recommended for use in conjunction with the rise/set/transit alarms.

## The Trouble with Coeli...

Coeli has been thoroughly tested and found to work faultlessly on the following PC systems:

**Compaq LTE Elite 4/40C 486 notebook with 4 Mb RAM, Paradise SVGA with 512 k video RAM.**

**Olivetti PCS 44/C 486 with 8 Mb RAM, Cirrus Logic CL GD5428 SVGA with 1 Mb video RAM.**

**Meisaku Pentium 133 with 16 Mb RAM, TRIO S3 (Diamond Stealth) with 2 Mb video RAM.**

(European configured systems)

**Micron Pentium 90 with 32 Mb RAM, Diamond Speedstar 64 graphics card with 2 Mb video RAM.**

(U.S. configured system)

We hope Coeli loaded and ran for you first time with no problems.

If not, you have our sympathy and deep understanding. Never fear: Coeli may have treated you to a system-reset the first time, but this will have been due merely to the vagaries of 'standards', or lack thereof, in the big bad world of the PC.

**Did you load the VESA driver?** ( UniVBE is an excellent one, available from the sources listed in the footnote.)

Right. You did load the VESA driver before attempting to run Coeli. **Perhaps your PC's video/graphics board is not VESA-compatible?** Check with your PC manuals if you still have them.

**Coeli likes most to run on a 486 DX or above with SVGA graphics (preferably 800x600 resolution) and positively needs 256 colours.** Maybe it's time to upgrade?

**Perhaps your system hasn't enough video RAM for the mode selected.** Change to a lower mode (see Command Line above), or upgrade your video memory to 1 Mb or more.

' **Coeli works, but the display flickers when performing zoom/centre/unzoom operations.**' This indicates that the current video mode is supported by your driver, but does not offer *paging*. If the flicker annoys you, change to a less demanding mode, acquire a different VESA driver, or upgrade your video RAM.

' **Coeli's display appears fractured, with the left-hand part on the right, and vice-versa, but otherwise functions okay.**' A quirk of your particular VESA driver. Try another of Coeli's video modes (640x480 is usually a safe bet), or better still, change your VESA driver. (UNIVBE is an excellent Universal VESA Driver and is available from most libraries and bulletin boards. It's shareware, so don't forget to register once you have obtained your copy.)

' **The screen display is totally scrambled, chaotic, and/or the monitor utters strange whistling sounds.**' We're not joking: switch off immediately and don't try that mode again with the same video configuration.

' **Everything was fine for a while, but then the PC locked up quite unexpectedly, and I had to reboot.**' Oh dear. Sounds like a peripheral or TSR conflict, quite common with all the various software drivers the PC traditionally has to put up with. Your VESA driver is itself a TSR ( a program which stays resident in memory while others are running ), as are DOS utilities such as MSCDEX, SmartDrive, Himem.sys, EMM386 etc etc. The only advice we can offer is to try different configurations in your AUTOEXEC.BAT or CONFIG.SYS, or else boot relatively clean ( see a good DOS guidebook or guru on how to do this!).

SuperVGA graphics and the lack of standards between boards is the root of most conflicts.

## Shareware: definitions

Uniquely, shareware distribution gives you the chance to try software before buying it. If you try a shareware program and continue using it, you are expected to register. Individual programs differ on details - some request registration while most require it, usually specifying a maximum trial period. With registration, you might get anything from the simple right to continue using the software to an updated program shrink-wrapped and boxed with glossy manuals. Price, as always, will generally determine the final packaging.

Copyright laws apply to both shareware and commercial software, and the copyright holder retains all rights, with a few specific exceptions. Shareware authors are accomplished programmers, just like commercial authors, and the programs are of comparable quality. (In both cases, there are good programs and bad ones!) The main difference is in the method of distribution. The shareware author specifically grants the right to copy and distribute the software, either to all and sundry or to a specific group. Some authors require written permission before a commercial disk vendor may copy their shareware.

In the early to mid '80s when shareware was in its youth and adolescence, the precise concepts had yet to be formulated and authors tended neither to *demand* payment nor invoke the law. It was then as now a system based on honour, but back then it was far more an offshoot of programming enthusiasm and a desire to *share*. By the nineties we'd had Thatcherism and terms like 'professional', 'enterprise' and 'capital' were at a premium. That outlook has, for better or worse, now filtered through to shareware programmers, who were once mere enthusiasts, but who are now fully fledged professionals with their own umbrella organisations such as the ASP.

Today, with the rise of the Internet, even corporate multinationals have seen the benefits of shareware distribution, the only differences being that they call their packages 'trialware' or 'evaluation software' rather than good old honest 'shareware', and a high proportion of 'shareware' authors have jumped on the same bandwagon. Distinctions are becoming blurred, but please do not make the mistake of equating shareware with the commercial demo: there is a world of difference. True shareware is, or should be, fully - and continuously - functional. Above all, remember that the term shareware defines a *distribution method* rather than the nature of the software itself.

You should find an application suited to your needs and pocketbook, whether it be shelfware or shareware. The shareware system simply makes fitting your needs easier, because you can try before you buy. And because shareware overheads are negligible prices are often low, or at least lower than the equivalent shelfware products. Shareware offers the ultimate money-back guarantee: if you don't use the program, you don't pay for it. If you do use it, however, you are expected to bring out your wallet in just the same way as you would for a more conventionally marketed product, whatever its type.

## Share without Wear

Using Coeli beyond the decent period allowable for evaluation is a clear infringement of several laws, but let's not delude ourselves that the vast majority won't do just that.

On the other hand, if you have every intention of registering you can be confident in the knowledge that you will gain and the majority will lose. The others, ultimately, get only the 'nag screens'.

Registration brings many benefits, not the least of which will be a sensation of warm altruism accompanied by a clear conscience.

Among the features setting Coeli's registered versions apart from the shareware copy you have received is the **Sky Quiz(TM)**, total personalization, complete absence of reminder screens, the capacity to load the entire first-level database of **over 9000 stars** without memory problems, and the **Messier Catalog in ImageIcons**.

Coeli is not finished: what program ever is? So if you get in touch, doing the decent thing and registering, Swimming Elk Software will keep in touch with you, informing you of major additions as they see the light of day. And Coeli is now in a phase of rapid development.

Bug-reports and suggestions for improvements will not go unheeded. Your feedback will never be more valuable than right now.

In return for your registration, we will send you a personal (dedicated) copy of the latest version of Coeli with the initial observer slot pre-programmed with your name, home location and startup preferences. It will arrive complete with the integral Sky Quiz. Thenceforth, you will be advised of major Coeli updates and be uniquely eligible for our exclusive offers. You may also contact us by post or E-mail at any time after registration with problems and queries concerning the inner workings of Coeli.

Swimming Elk Software welcomes any pre-registration enquiries you might have, even if their sole motive is to confirm to yourself that we actually exist. A simple postcard or e-mail with your name, address, and the Coeli version number will suffice to get you a reassuring reply, along with details of some exciting new incentives. We undertake to answer ALL Coeli-related correspondence, whether it concerns registration or not.

## Payment Alternatives

\* Registration costs **£20 (20 pounds) sterling** (\$34 US). It might be in the form of a cheque drawn on a UK bank (made out to R. Hughes), major credit card, International Postal Money Order, IRCs, or even the equivalent at present rates in your own hard currency. But *sterling is the preferred tender* and can be obtained at most banks.

Regrettably, we must charge a **handling fee** if payment is non-sterling currency or IMO, bringing the total to **\$36 U.S.** at the current exchange rate in whatever other tender you decide to send.

If paying by **PERSONAL CHECK**, as opposed to banker's check, in non-sterling currency, please add **another \$3 U.S.**, bringing the total to **\$39 U.S.** It costs us more in bank charges to handle these items.

This also applies to orders by **CREDIT CARD** via PsL or Share-It! (see next page for details)

A final alternative is **140 Finnish marks**, to which handling need not be added if payment is in cash or any cheque drawn is on a Finnish bank.

If you wish to make an **electronic transfer** of funds (hard currency), please take note of the following account details:

1) **National Westminster Bank**

**PO Box 2403  
8-11 Pavilion Buildings  
Brighton BN1 1DP  
United Kingdom**

**Sorting code 60-30-09**

**Account no. 00435465**

**Account holder R.W.J.Hughes**

2) **Merita Pankki OY**

**1519 Lahti-Aleksi 5  
Lahti  
Finland**

**Account no. 151950-15736**

**Account holder Roger Hughes**

If you decide to wire the funds to our Finnish bank account, you may also **E-mail** your completed registration form to Swimming Elk's Internet address (attached, for example, using MIME). This is by far the fastest method of receiving your registered copy of Coeli, since we have online banking here.

We will of course check for the arrival of funds the moment we receive your e-mailed form.

**Order by CREDIT CARD via PsL**

CREDIT CARD ORDERS ONLY -

You can order with MC, Visa, Amex, or Discover from Public (software) Library by calling

**800-2424-PsL (free inside the U.S.)  
713-524-6394**

**or by FAX to 713-524-6398  
or by CIS E-mail to 71355.470  
or by Internet E-mail to 71355.470@compuserve.com**

If calling from outside the U.S. don't forget to prefix the correct international code to these numbers!

You can also mail credit card orders to PsL at **P.O.Box 35705, Houston, TX 77235-5705, U.S.A.**

**THE ABOVE NUMBERS ARE FOR CREDIT CARD ORDERS ONLY. THE AUTHOR OF THIS PROGRAM CANNOT BE REACHED AT THESE NUMBERS.**

When ordering, please quote item/product ID

**14900 ( Coeli - Electric Planisphere )**

Any questions about the status of the shipment of the order, refunds, registration options, product details, technical support, volume discounts, dealer pricing, site licenses, non-credit card orders, etc, must be directed to

**Swimming Elk Software  
Manskiventie 1031  
16790 Manskivi  
Finland**

or via the Internet to

**Swimming.Elk@sci.fi**

or through CIS at

**106217,2576**

To ensure you get the latest version of Coeli, PsL will notify us the day of your order and we will ship the product directly to you (an e-mail MIME attachment is an option). So please send your registration /

customization form to us here at Swimming Elk Software either electronically or through the post.

## Summary of Payment Methods

To sum up, then. The following payment methods are accepted:

Non-sterling equivalents are given in U.S. dollars.

METHOD	TOTAL COST
1A) Sterling currency (cash)	20 pounds UK
1B) Sterling cheque (personal or banker's)	20 pounds UK
1C) Sterling electronic transfer (to UK bank)	20 pounds UK
2A) Non-sterling currency (cash)	\$36 U.S.
2B) Non-sterling banker's check/draft	\$36 U.S.
2C) Non-sterling personal/business check	\$39 U.S.
2D) Non-sterling electronic transfer	\$36 U.S.
3A) International Money Order	\$36 U.S.
3B) International Reply Coupons	\$36 U.S.
4A) 140 Suomen markkaa	140 Fmk
5A) Credit card order via PsL or Share-It!	\$39 U.S.

Aside from the possible handling fee, everything else is included.

**You have only to press the [r] key, and a registration facility is available from within Coeli itself. Here, you may set out your preferences for a personalised copy, enter comments and criticisms and prepare/print out a registration form. We could come round to your door and collect it, but that might be taking service a little too far... ;-)**

***Or maybe you'd like to register online right now?***

**Just point your Web browser at**

**<http://ourworld.compuserve.com/homepages/coeli/homepage.htm>**

**and follow the link to the special secure order forms of Share-It! and PsL.**

Alternatively, you could simply print and then fill out **REGISTER.FRM**, which should be amongst the files you received with Coeli. If you cannot find this, a simple letter along with your registration will suffice. ( Don't forget to include any preferences you may have for personalisation! Only the most unreasonable requests are refused...)

We recognise that in these times many cannot afford even shareware prices, particularly students, pensioners, and the unemployed. If you happen to find yourself in any of these groups, simply include a declaration to the effect, sign it, and enclose just **HALF THE REGISTRATION FEE**. We will consider it encouragement, pure and simple, and be honoured to serve you.

**Coeli 3.7**  
**Bugs and Current 'Features'**  
or  
**Coming Clean**

After extreme zooms (20x or more), you *may* occasionally notice whimsicalities in subsequent centring/unzooming operations. Pressing [home] is the only way to get back to startup conditions. This 'feature', undoubtedly due to logic-errors in the code, will eventually be fixed. Remember, we warned you not to overdo zooms, preferring to leave you the freedom to resolve close binary stars at the limit.

Auditory feedback (beeps) provisionally follow most mouse-clicks and keypresses in the star search routines. We thought this was good and positive, but if you want none of it, we will listen. The starting- and ending- screens (with the fade-ins and fade-outs) : we are willing to dedicate your copy without them, if you're truly in such a hurry! Personally, we think they lend Coeli some style...

Registration reminders and their associated delays will of course no longer be present in your own dedicated copy of Coeli.

If you feel we've omitted anything indispensable to you personally, or to your habitual observing circumstances, please don't be too shy to let us know.

A final note on 'getting in touch'. You will find our **address** displayed quite legibly below, on Coeli's loading screen, and whenever you press the [h] key for help. So why not exercise your fingers, the postman, and your undeniably fertile mind by writing me a LETTER...

I assure you once again of my sincerest intent to respond, and continue to respond, to all Coeli-related correspondence.

**Roger Hughes**  
**Swimming Elk Software**  
**Manskiventie 1031**  
**16790 Manskivi**  
**Finland**

E-mail to: [Swimming.Elk@sci.fi](mailto:Swimming.Elk@sci.fi)



**Ombudsman Statement**

This program is produced by a member of ASP. ASP wants to make sure that the shareware principle works for you. If you are unable to resolve a shareware-related problem with an ASP member by contacting the member directly, ASP may be able to help. The ASP Ombudsman can help you resolve a dispute or problem with an ASP member, but does not provide technical support for members' products. Please write to the ASP Ombudsman at 545 Grover Road, Muskegon, MI 49442 or send a CompuServe message via CompuServe Mail to ASP Ombudsman 70007,3536.



### DISCLAIMER OF WARRANTY

THIS SOFTWARE AND MANUALS ARE SOLD "AS IS" AND WITHOUT WARRANTIES AS TO PERFORMANCE OF MERCHANTABILITY OR ANY OTHER WARRANTIES WHETHER EXPRESSED OR IMPLIED. BECAUSE OF THE VARIOUS HARDWARE AND SOFTWARE ENVIRONMENTS INTO WHICH THIS PROGRAM MAY BE PUT, NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS OFFERED. THE USER MUST ASSUME THE ENTIRE RISK OF USING THE PROGRAM. ANY LIABILITY OF THE SELLER WILL BE LIMITED EXCLUSIVELY TO PRODUCT REPLACEMENT OR REFUND OF PURCHASE PRICE.

\* The best universal VESA driver is undoubtedly UniVBE from SciTech Software.

If you don't already have a copy of UniVBE, it can be obtained easily from the following sources:

The Public Domain and Shareware Library (PDSL)  
Winscombe House  
Beacon Rd  
Crowborough  
East Sussex  
TN6 1UL  
United Kingdom

Just ask for **disk number 003813**, where it will be found among several other graphics utilities. PDSL's catalogue describes it as the Universal VESA VBE v.4.3, 'a small TSR providing the latest VESA BIOS extensions for most SVGA cards on the market'

Here are some numbers for PDSL:

Tel. 01892 663298  
Fax. 01892 667473

BBS (8,N,1) 01892 661149 / 667090 / 667091

Or, if you have a modem, try one of these:

World Wide Web : <http://www.scitechsoft.com>  
Internet/FTP : <ftp.scitechsoft.com>  
CompuServe : GO VESA (file library 12)  
America Online : Keyword VESA

Finally, SciTech Software's own direct mailing address is:

SciTech Software  
5 Governors Lane,  
Suite D  
Chico, CA 95926  
USA

Tel. (orders only) : 800-4UNIVBE  
: 800-486-4823

Main & Technical Support: 916-894-8400  
Fax : 510-208-8026

UniVBE is Copyright (C) 1993-1997 SciTech Software.

The program Coeli (TM) and its accompanying documentation Copyright (C) 1995, 1996 Swimming Elk Software.

All rights reserved.

For last minute Coeli updates and information, point your Web browser at:

**<http://ourworld.compuserve.com/homepages/coeli/homepage.htm>**

All registered trademarks and trademarks are the property of their respective owners.