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this file is called: DeltaCADmacrosREADME.pdf  
see also: NotesOnProgrammingDeltaCAD.pdf

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**NOTE:** There are several sets of macros, they work on Windows XP as well as Vista win64.

first: newest: **analemma.bas** covers all hour angle dials except bifilar, and it includes longitude corrected hours and analemmas and calendar curve. Some dials have the gnomon based analemma. While this is one simple macro, other macros have some special features so they should be used as well.

**calendarDeclination.bas.bas** the same as analemma.bas except no analemmas, and better control of calendar curves.

**nomogram.bas** builds dialing nomogram aids

second: specialized macros for each dial type, default parameters are in the program which you can still override

third: same as second set except but parameters are in a file.

**NOTE:** Winzip acts differently under VISTA than XP. Extraction under VISTA may be to a folder on the desktop, So an icon appears, and just click that icon.

**NOTE:** The parameter file has defaults, which you can still override by the way,

And the parameter file "DcadParms.txt" AND the macros must be in the same folder, and should be run by

MACRO, E, FILE, OPEN, and then select the file, then RUN it.

If you run them using

MACRO, E, FILE, and select from the history list, then the macros may or may not run.

Opening these macros with MACRO, E, then FILE, and then OPEN will cause DeltaCAD to set the current directory to the place the macro came from, and then all works well.

But, using the history list instead of opening from a folder panel with OPEN has DeltaCAD keep the DeltaCAD default folder and thus the parameter file will not be found.

Placing the macros and the text file in the Program Files\DeltaCAD folder does not solve the problem, so always use MACRO, E, FILE, OPEN, and then the folder panel.

**NOTE:** Especially when using Windows VISTA, unless you use the version of the macros that has a parameter file, you can double click the macro directly from its folder.

**NOTE:** When using Windows VISTA, the DeltaCAD drawing area and the DeltaCAD macro, while in two windows, appear as only one on the Windows VISTA selection bar. In XP they are each discrete selectable windows.

DESCRIPTION	FILE NAME	DESCRIPTION
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### ALTITUDE DIALS

Cappucin dial	alt-cappucin.bas	Cappucin altitude dial
planispheric astrolabe	alt-astrolabes.bas	the planispheric astrolabe generator - and notes on formula derivation – depicted horizontally and also, the rete shown vertically aligned and clutter removed
shepherd's dial	alt-shepherds.bas	Shepherd's dial using true declinations not fixed ones, animated, much better curves. both single and dual gnomon (long for winter short for summer)

### AZIMUTH DIALS

winged azimuth dial	azi-winged-azimuth.bas	Summer/equinox/winter hour lines [can animate hour lines with latitude, 7 month circles, dial plate options
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### HOOR ANGLE DIALS

simple bi-filar h-dial	MAIN-bifilar.bas	Bi filar dial (h-dial with hour angles of 15 degree separation) with a gnomon as two wires of differing heights
horizontal dial	MAIN-h-dials.bas	Horizontal dial, longitude/latitude specific, and for north or south hemisphere, and calendar lines & gnomon based on sub-style length [can animate hour-lines with latitude], and sub style length is fixed - gnomon linear height varies. And a horizontal dial whose shadow is animated using a given solar declination, thus can do calendar lines and curves for h-dials.
	cubicShadows.bas	True quadrant sensing, 24 hours, equinox line <b>July 23, 2010</b>
inclined decliner	MAIN-inc-dec.bas	Inclined decliner dial plate design. Cautionary note added to check hrs:hr lines the angles, SD, and SH are correct, sometimes the naming is "different".
meridian dial	MAIN-m-dials.bas	Meridian dial constrains the hour lines to the calendar lines, and meridian dial true east and west inclined dial
polar dial	MAIN-p-dial.bas	with calendar lines and longitude adjusted
equatorial dial	MAIN-q-dial.bas	with calendar circles and sunrise/set lines longitude adjusted

vertical dial	MAIN-v-dials.bas	<p>Simple vertical dials – non declining, both hemispheres, and</p> <p>vertical decliner dial, and if you enter declination of 0 it is animated, north hemisphere only</p> <p>vertical decliner for north or south hemisphere, with declinations so the dial faces largely east or west</p> <p>vertical declining dial but facing the pole, not equator</p> <p>vertical declining dial for mostly east or west alignments</p>
	cubicShadows.bas	<p>True quadrant sensing, 24 hours, equinox line both facing pole, and equator <b>July 23, 2010</b></p>

### MISC DIALLING AIDS

calendar lines/curves	MAIN-calendar-curves.bas	
almanac and tables	MAIN-almanac-tables.bas	<p>calendar curves for a V or H dial using SH</p> <p>EOT (2 and 3 wave), Declination (small formula), as tables and graphs and other functions such as sunrise and sunset etc, and a daily almanac.</p>

### ALL DIALS

analemma.bas	<p>All hour angle dials but with longitude corrected analemmas, hour lines, and calendar curves. While this is one simple macro, the earlier second and third macros have some special features so they should be used as well.</p>
calendarDeclination.bas.bas	<p>as analemma.bas except no analemmas, and better control of calendar curves.</p>
nomogram.bas	<p>builds dialing nomogram aids</p>

**NOTE:** If you run the .....bas file directly, thus invoking DeltaCAD by doing so, then the DeltaCAD macros will run. However they may end with an error message such as "error in running basic script". Click OK, the program ran fine. The solution is to bring up DeltaCAD first, rather than invoking it by double clicking the macro name, then... click on: MACRO, and then click on E, and then click on FILE ...and open the desired macro, and then that message goes away.

**NOTE:** Some screen capture programs may not get the correct aspect ratio when capturing some CAD screens, and some CAD system may display a slightly incorrect aspect ratio on a screen yet still print correctly. The tabulated and displayed angles in these DeltaCAD macros are correct.

**NOTE:** The calendar-curves output is used by placing its "noon" line on the actual dial **using the actual dial's SD for noon, and its SH for the calendar curves "latitude"**.

**NOTE:** **MAIN**-xxxxxx.bas are the most common dialling programs, or, hour angle dial programs, **the others** are less common, or, altitude or azimuth dial programs. Many of the programs have animation of shadows, calendar curves, or hour lines available, but should not be used by epileptic persons. Many dials can handle both north and south hemispheres.

**NOTE:** xxxxxxxxxxxx[f].bas are the same as the ones without the "[f]" file name suffix except that they read a parameter file with the preferred latitude and longitude, and legal meridian. You can always still override them. There show DeltaCAD file handling, reading parameters, and setting them in a DeltaCAD program. These macros are not as up to date as the macros that do not use file handling; bugs are fixed of course, however, refinements are not up to date. For the most up to date macros, use the ones that do NOT use a parameter file.

## NOTES ABOUT ISSUES WITH DELTACAD

### 1. SCRIPT ERROR

**NOTE:** The command STOP causes a BASIC SCRIPT ERROR, use EXIT FUNCTION or some equivalent instead. [October 25, 2009](#)

### 2. TEXT REVERSAL

**NOTE:** In DeltaCAD prior to version 7, when a CAD drawing was mirrored, then the text location was mirrored, however the text itself stayed un mirrored. This made sense. The mirror function is used in the following macros:

```
calendarDeclination.bas  
MAIN-m-dials.bas  
MAIN-m-dials[f].bas
```

and prior to version 7, they worked well. With version 7, the text itself, not just the location was reversed. While DeltaCAD version 7 allows mirroring not to mirror the actual text itself in a CAD drawing

```
SELECT  
OPTIONS (on right hand side, not on top bar)  
MIRROR TEXT LOCATION ONLY
```

this is cancelled when a macro is started. I changed the macros using mirroring to at least correct some of the text, however, short of using a stack for the other text, sadly the hour line markings are mirrored text. The lines themselves are correct, just the text needs to be rotated. I tried to add a loop that selected each object, and if text then to extract the x,y location and the text, and then delete the object and then add a new object back in with that saved text at the saved x,y location. That didn't work. I emailed the DeltaCAD developer and he said a fix would be coming along either in the next DeltaCAD version or as an update.

**PRINTING TECHNIQUES ~ ~ ~ DIAL PLATES LARGER THAN PRINT PAPER SIZE**

Once you have a DeltaCAD macro executed and a dial plate depicted, printing is easy.

FILE

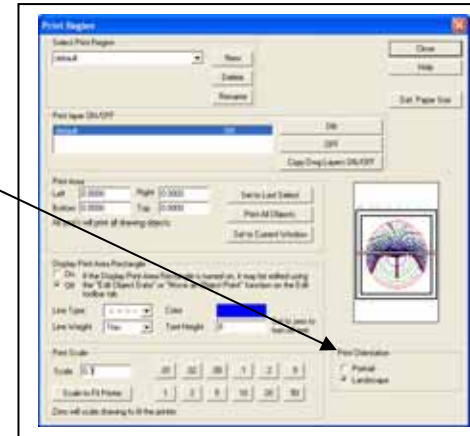
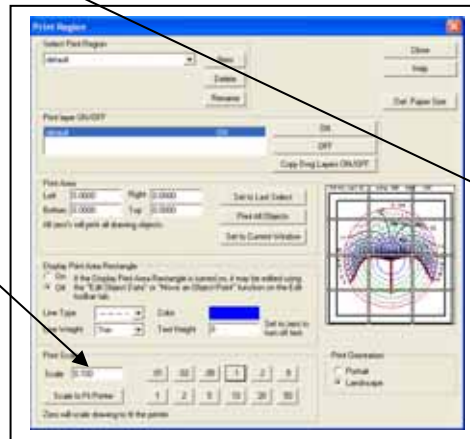
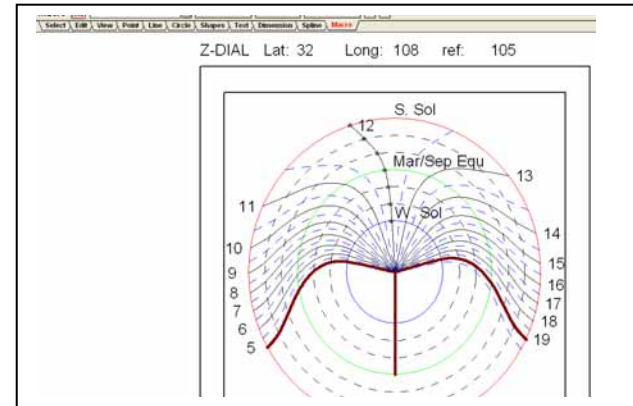
**PRINT SETUP**

- select printer
- select properties
- landscape or portrait
- OK

FILE

**SET PRINT REGION**

- check portrait or landscape
- set print scale so that the result is the final size you want, recall that paper is often 8.5 x 11 inches. The left used a print scale of 0.1 and needed 12 sheets, this would be a big dial, the right used a scale of 0.3 and used 2 sheets and the final dial plate size can be visually estimated.



FILE

PRINT

The above process can be used to print dial plates using DeltaCAD for dials larger than the print paper size.

CAUTION: Some screen capture programs do not accurately preserve aspect ratios


**PRINTING TECHNIQUES ~ ~ ~ PRINTING A SMALL PART OF A DIAL PLATE ~ ~ ~ TYPICALLY DECLINING VERTICAL DIALS FACING ABOUT EAST OR WEST**

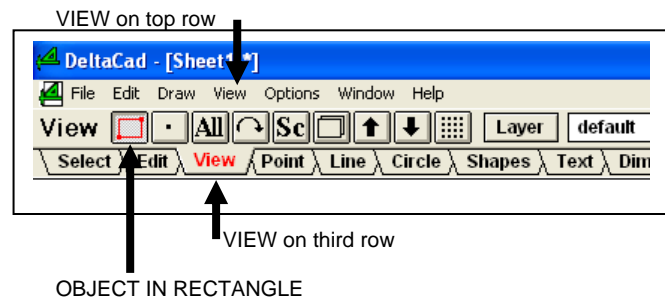
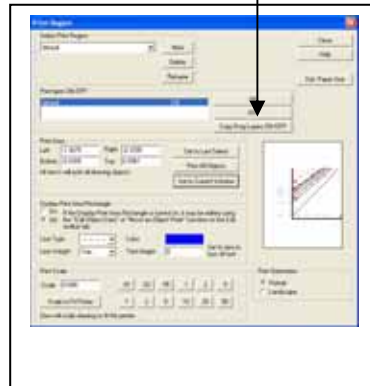
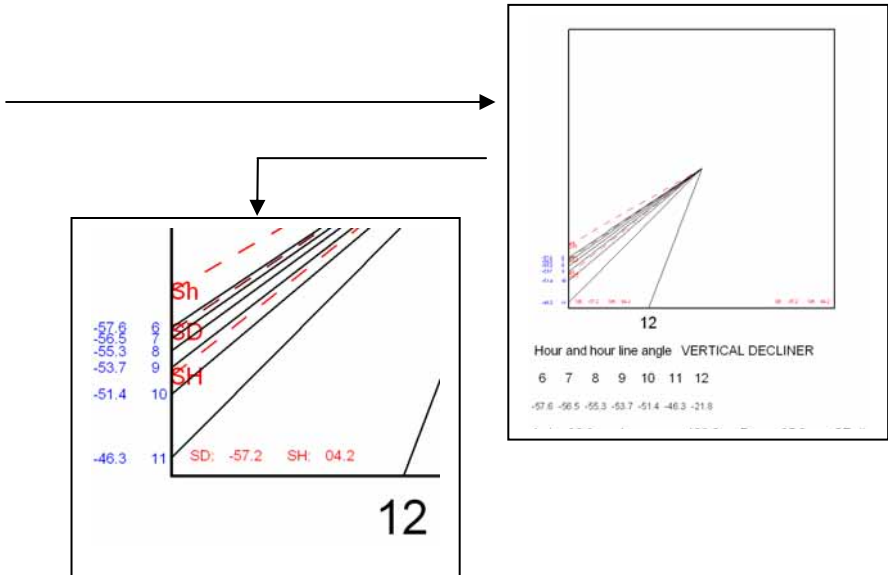
Once you have the dial plate drawn, as shown to the left,

Use DeltaCAD VIEW (top row, not third row of tabs in DeltaCAD) then zoom to get the area you desire.

If you use screen capture, beware that some capture programs may distort DeltaCAD angles. The Angles in DeltaCAD are correct as tabulated and as displayed.

Because of hour line bunching, use the following print technique:

VIEW (third row, not top row) then  
 VIEW OBJECT IN RECTANGLE and draw its rectangle   
 FILE then SET PRINT REGION and in that box...  
 in PRINTAREA do SET TO CURRENT WINDOW  
 you may enter print scale numbers also  
 FILE then PRINT PREVIEW and then you may print



The above process can be used to print dial plates using DeltaCAD for dials smaller than the displayed size.

CAUTION: Some screen capture programs do not accurately preserve aspect ratios