

ILLUSTRATING SHADOWS

illustratingshadows at yahoo.com

www.illustratingshadows.com (primary)

www.geocities.com/illustratingshadows (secondary)

First, thank you for acquiring this book. This book was designed with the web site in mind. Please use the web site for updates or clarifications. You may wish to join the North American Sundial Society, or the British Sundial Society whose web sites are accessible on this book's web site.

Please check:

www.illustratingshadows.com/reference

regularly for updates, typos, clarifications, or corrections, and download the articles, templates, or spreadsheets you desire.

That page provides links to the following which you may access directly:

- The acrobat file (what you are reading) of all updates is:
www.illustratingshadows.com/reference-updates-3ed.pdf
- This file also includes the promotional and draft editing copy updates,
- An all purpose spreadsheet covering most dialing functions is:
www.illustratingshadows.com/reference-spreadsheets.xls

Please click on the VRML link on the main web page to see how to add a VRML browser easily that works and then to view some manipulatable 3d dials on the internet!

A backup web site is:-

www.geocities.com/illustratingshadows/reference

Simon Wheaton-Smith
Silver City
New Mexico
March 16, 2008

SUNRISE AND SUNSET FORMULA:

11/18/06

$$\text{hsr} = \arccos(\tan(\text{lat}) * \tan(\text{decl}))$$

The formula was correct, the note said from noon, whereas the basis is midnight for sunrise and sunset is the mirror image time

THE 2 SINE WAVE EOT FORMULA IS BETTER SHOWN AS

11/18/06

$$\text{eot} = 7.36 * \text{Sin}(2 * 3.1416 * (\text{doy} - 4.21) / 365) + 9.92 * \text{Sin}(4 * 3.1416 * (\text{doy} + 9.9) / 365)$$

KEY UPDATE: Illustrating Shadows has some notes on altitude and azimuth dials not being latitude portable. The following note is more accurate.

11/1/06

Hour angle dials use the hour angle around the style and can easily be latitude corrected by tilting. Italian and Babylonian hours are not corrected when a dial is tilted because they depend on the Earth's curvature [which causes sunset/rise] at a specific latitude. Azimuth and altitude dials may be ported across latitudes but rigid polar alignment must be retained.

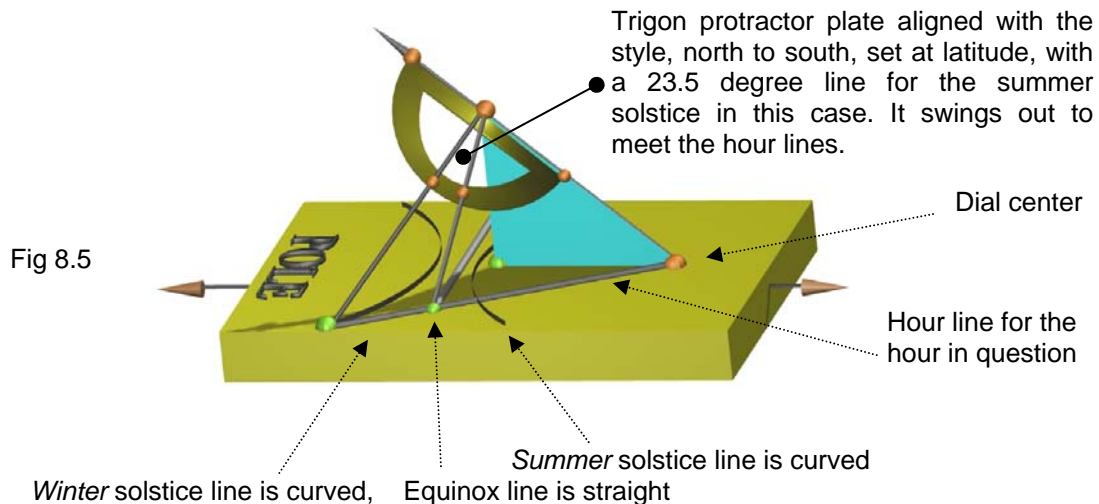
Also, Pages 168, 170 of chapter 10 and page 258 of appendix 8 have the formula for hour lines for inclined decliners, the angle produced is from the vertical, the notes say noon. Corrected in the downloadable files for book 2, the download page is here and needs a userid/password to actually download.

11/26/06

PAGE 73 Figure 8.5 The *solstice naming* was the wrong way round

4/11/07

The trigon's protractor plate could be turned sideways, and then lines marked up and down by 23.5 degrees for the winter and summer solstices.



PAGE 175 The *solstice naming* was the wrong way round

12/31/07

Page 175 of book 1 (Illustrating Shadows) has "RECLINES 30" and "INCLINES 60" as spurious text. The PDF version has this corrected, the printed edition does not. This was caused by a bug in Microsoft Word.

DL significant digits. Most people using these tables and spreadsheets do not use, nor do they need to use the DL figures. However, just in case...

Page 115 in chapter 12

3/16/08

The DL shows 1.2 hours (1hr 12 m) and it should be 1.28 hours and 1hr 17m

Page 156 in chapter 16

3/16/08

The DL shows 1.2 hours and it should be 1.22

Page 250-270 in appendices

3/16/08

The appendices for decliners and great decliners were 1 significant digit, they are now 2 significant digits. And the spreadsheets for them have been updated and are in the "b1" folder on the web site.

INITIAL COPIES: USED FOR TRIAL MARKETING AND THE LIKE

These two printings were used for promotions, proof reading, and trial marketing. They do not have their own update files. If you have one of these, **please use** the main third edition numbered printing updates below, **as well as** the second edition 4th printing update. Please remember that page numbers may be off by one or two pages for the two initial print runs of the third edition.

Library of Congress Control Number: 2005900674
ISBN 0-9765286-8-1 Third edition [first printing] January 2006

Use the third edition updates below as well as the second edition fourth printing.

Library of Congress Control Number: 2005900674
ISBN 0-9765286-8-1 Third edition [second printing] February 2006

Use the third edition updates below

UNRESTRICTED WORLDWIDE NUMBERED COPIES

The final third edition made available for unrestricted worldwide sales March 1, 2006 had about 100 improvements based on reader feedback. Also note that **chapter 20** was completely rewritten from the January and February printings.

The first page with the table of contents determines the updates. This is the version of the third edition that was marketed worldwide, and every copy was numbered from 001 to 250.

Library of Congress Control Number: 2005900674
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March 2006

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