

## Celestial Tools Revision History (publicly distributed versions only)

### What's new in Celestial Tools V1.7.1 (compared to V1.7.0)

#### Additions and changes:

- 1) In Sight Reduction and Fix and Noon Sight, the number of characters that can be entered into the dip short distance box has been increased from four to five.
- 2) Changed General Help to address the existence of Windows 7.
- 3) In General Help, simplified the description of and added more information about the known printer issue and its fix.

#### Bug fixes:

- 1) In Sight Reduction and Fix and Noon Sight, corrected a problem where a manual ZD was treated as positive. (This was incorrect only in V1.7.0.)
- 2) In Sight Reduction and Fix and Noon Sight, corrected some problems when switching hs/IE format.
- 3) In Sight Reduction and Fix, corrected problem where if you entered watch time box you could not leave it until a valid value was entered, even if nothing was entered
- 4) Corrected some rounding issues.
- 5) Made changes to help prevent entry of erroneous values.
- 6) In Favorite Places, corrected a problem where a Favorite Place with a dip short horizon caused an error.

### What's new in Celestial Tools V1.7.0 (compared to V1.6.0)

#### Additions and changes:

- 1) In Sight Reduction and Fix, added a button in the Time Diagram to show the mean sun for sun sights and the apparent sun for all other sights, and the Equation of Time.
- 2) Changed Help to reflect change.

#### Bug fixes:

- 1) In Sight Reduction and Fix, fixed incorrect EP L for southern latitudes and incorrect EP Lo for eastern longitudes.
- 2) In Sight Planner, fixed incorrect twilight times for eastern longitudes. (This was incorrect only in V1.6.0.)

### What's new in Celestial Tools V1.6.0 (compared to V1.5.2)

#### Additions and changes:

- 1) Daylight Savings Time can now be included with a check box rather than as part of a manual zone description.
- 2) Printing can be done to any available printer, not just to the Windows default printer.
- 3) Changed Help to reflect changes.

#### Bug fixes:

- 1) Corrected problems with negative zone descriptions and zone descriptions with minutes.

Known issue: This and previous versions did not print properly under Windows Vista if the Windows Vista theme with the Aero color scheme was being used. See the Help for a solution.

### What's new in Celestial Tools V1.5.2 (compared to V1.5.1)

#### Additions and changes:

- 1) Off the arc index error can be entered either as read from the sextant or as the calculated value.
- 2) Tool tip text for hs/IE format corrected to show both sextant altitude and index error.
- 3) Changed Help to reflect changes and made some clarifications.

#### Bug Fixes:

- 1) Corrected a problem where index errors off the arc in whole degrees (zero minutes) gave an incorrect index correction.

### What's new in Celestial Tools V1.5.1 (compared to V1.5.0)

#### Additions and changes:

- 1) Index error is now always entered as read from the sextant, so if it is off the arc the user does not have to subtract – the program performs the necessary calculations.
- 2) Changed Help to reflect bug fixes and changes.

#### Bug Fixes:

- 1) In Sight Reduction and Fix and Noon sight, if hs format DMS is selected, that format is made available to index error in addition to sextant altitude.

### What's new in Celestial Tools V1.5.0 (compared to V1.4.1(a))

Additions and changes:

- 1) In Sight Planner, added option to view “helper” stars.
- 2) In Sight Planner, changed horizon view from 360 degrees to 180 degrees azimuth and scaled altitude and azimuth equally, to reduce distortion.
- 3) Changed Help to reflect these changes.
- 4) Added additional details to Help.
- 5) Changed format of Help – now five separate files.

Bug Fixes:

- 1) In Sight Planner Star Finder Data, corrected a situation where in certain angles 60 minutes would not become zero and increase degrees by one.

What's new in Celestial Tools V1.4.1(a) (compared to V1.4.0)

Additions and changes:

- 1) Changed Help to reflect printing bug fix.

Bug Fixes:

- 1) Printing now works with “trouble” devices, e.g. HP All-In-Ones.
- 2) In Sight Planner, “Star Finder” view was incorrect when viewing toward east or west.

What's new in Celestial Tools V1.4.0 (compared to V1.3.0)

Additions and changes:

- 1) In Sight Planner, option of a “horizon view” of the visible bodies.
- 2) In Sight Planner, the ability to rotate the Overhead and “Star Finder” views.
- 3) Changed Help to reflect these changes.

What's new in Celestial Tools V1.3.0 (compared to V1.2.0)

Additions and changes:

- 1) In Sight Planner, options to view the visible bodies as they appear from inside or outside the celestial sphere.
- 2) In Sight Planner, the option to limit the azimuth range of the visible body display.
- 3) Changed Help to reflect additions, changes, and bug fixes.

Bug Fixes:

- 1) In Noon Sight, fixed the DR latitude data entry (cosmetic only, bug created in V1.2.0).

What's new in Celestial Tools V1.2.0 (compared to V1.1.1)

Additions and changes:

- 1) In Sight Planner, an option to view the visible bodies as they appear in the sky, not just as a list.
- 2) In Sight Planner, if latitude, longitude, or time zone is changed, activating List Visible Bodies, View Visible Bodies, or Star Finder Data automatically updates twilight times, visible bodies list, visible bodies view, and star finder data. It is no longer necessary to activate Get Twilight Times first.
- 3) Additional error checking for latitude and longitude inputs.
- 4) In Sight Planner, “Pertinent Data” was changed to “Star Finder Data”.
- 5) Changed Help to reflect additions, changes, and bug fixes.

Bug Fixes:

- 1) In Sight Planner, a latitude of 90° caused the program to crash.

What's new in Celestial Tools V1.1.1 (compared to V1.0.6)

Additions and changes:

- 1) An option to display the corrections going from  $h_a$  to  $h_o$  as either the actual parameters (refraction, parallax, semi-diameter - the way it was in previous versions) or as a Sight Reduction form (Main, Add'l, etc.), with the latter being the default.
- 2) In Sight Planner, the values used for the magnitudes of the stars is a function of the Greenwich year of the sight. (The Nautical Almanac changed the star magnitude values in 2006.)

- 3) In Sight Reduction and Fix and Noon Sight, the formula used to calculate refraction is a function of the Greenwich year of the sight. (The Nautical Almanac changed refraction values in 2004.) This also affected the Moon tables.
- 4) Improved positional accuracy of the bodies, particularly the Moon.
- 5) Latitude by Altitude of Polaris is now done using the full method of the Nautical Almanac, showing approximate (within 0.2') values of all three corrections, in addition to the direct (accurate) method of previous versions. If Polaris is selected, Latitude by Altitude of Polaris replaced Full Reduction as the default method.
- 6) Eliminated EP L and EP Lo from Latitude by Altitude of Polaris.
- 7) An expanded Favorite Places. In addition to latitude, longitude, and azimuth range, the type of horizon (natural, artificial, or dip short), and dip short distance (if dip short horizon) can also be saved. Unfortunately, lists of Favorite Places made using previous versions of Celestial Tools (including betas dated before 9/30/2006) will not work properly and will have to be re-entered (see Help).
- 8) In Noon Sight, eliminated N or S from l diff.
- 9) Changed Help to reflect additions and bug fixes.

#### Bug Fixes:

- 1) In Noon Sight, if "sun was to north" or "sun was to south" was selected for "At LAN (select one)", an S or an N would appear after the refraction value. (This was purely cosmetic and did not affect the calculations.)
- 2) Under certain conditions, Celestial Tools would still be running in the background, using memory, even after all of its windows were closed. Specifically, if a favorite place was selected in Favorite Places, but any of Sight Planner, Sight Reduction and Fix, or Noon Sight modules were not used, the unused module(s) would still be running invisibly after all visible windows had been closed.
- 3) In Sight Planner/Pertinent Data (Star Finder Data in V1.2.0) data display section, there was no space between the month and the year in the date.
- 4) In Sight Reduction and Fix, if no latitude was entered (which is accepted as zero degrees) and a manual zone description was entered, UT would be calculated incorrectly. (ZD was displayed properly in the data display part of the form, but was treated as zero.)
- 5) The background of the Sight Planner, Sight Reduction and Fix, and Noon Sight modules was changed from gray to white to conserve printer ink or toner. The method used to change the background to white only during printing in previous versions could not be made to work for all printers.
- 6) In sight Reduction and Fix and Noon Sight, the incorrect calculations for altitudes near zero has been fixed.
- 7) In the LHA box of Sight Reduction and Fix, "W" or "E" did not appear after Lo value.
- 8) Corrected several problems with dip short calculation.
- 9) Various data entry cleanup items.

Celestial Tools V1.0.6 was the first publicly distributed version.

Note: The size of the executable file has increased from 668K (v1.0.6) to 876K, but the zipped file is only 220K.