Horizon v0.12a

Andrew Smith

Independent scholar
agksmith@internode.on.net

This brief note is to announce that a long-overdue update to *Horizon* (Version 0.12a) was released in January 2019.

For those unfamiliar with this software, *Horizon* is a Geographic Information System (GIS) tool originally designed for archaeoastronomers investigating alignments of prehistoric monuments with astronomical phenomena (for example, rising and setting of the Sun, Moon and stars) in relation to the local geographic horizon at a specified point on the Earth's surface. It uses 3D rendering techniques to generate panoramic scenes or horizon profiles from Digital Terrain Model (DTM) / Digital Elevation Model (DEM) mapping data, allowing visualisations and accurate measurements of the landscape and/or horizon that are not subject to obscuration by atmospheric conditions, vegetation or modern structures, over a full 360°. A more detailed description of the software has been given in a previous update note (Smith 2017).

The previous public release (0.11b) was made in January 2014. The software has steadily improved since then, but a public release has been delayed several times due to competing work priorities. The latest release (0.12a) contains around 150 changes from the previous public version. Most of these changes are invisible (for example, major changes to the program's internal architecture) or appear minor (lots of tweaks to improve usability and fix bugs). The most significant changes from a user's perspective are:

- Added support for the 1-arcsecond (approximately 30 metre resolution) SRTM dataset.
- Improved support for generating landscapes for *Stellarium* (<http://www.stellarium.org>).
- Added options for improving output image appearance for publication in monochrome.
- Smaller data files and faster rendering times.
- Improved integration with the Windows Desktop.

Existing users are urged to upgrade as soon as possible, as this version fixes some major issues in earlier releases that may have adversely affected the accuracy of the results.

Despite the gap of nearly five years between the releases of Versions 0.11b and 0.12a, I would like to assure users that *Horizon* is still in active development and that there are big plans for the future. The top priority for the next major release, due early later this year, is to complete the major overhaul of the program's internal architecture which was started in the current release. This will provide a solid base upon which to build new functionality in later releases.

The current version now contains inbuilt support for the freely-downloadable SRTM (Shuttle RADAR Topography Mission) datasets, both the 1-arcsecond (30 m) and 3-arcsecond (90 m) versions. Support for other DTM datasets and file formats are planned for the future. In the meantime, users are invited to contact me if they need to use other DTM data with *Horizon* in order to support their research.

The *Horizon* software (requires Windows 2000 or higher) is available as a free download from the project's homepage at <http://agksmith.net/horizon>.

References

Smith, A. G. K., 2017. "Horizon v0.11b". *Journal of Skyscape Archaeology* 3 (2): 269–270. <https://doi.org/10.1558/jsa.35635>