Horizon v0.11b

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Horizon is a Geographic Information System (GIS) tool designed for archaeoastronomers investigating alignments of prehistoric monuments with astronomical phenomena (for example, rising and setting of the Sun, Moon and stars). It gets its name from its primary function, calculating accurate horizon profiles using Digital Terrain Model/Digital Elevation Model mapping data. More generally, it is a landscape visualisation tool which can generate full 360° panoramic scenes using 3D rendering techniques which may have some applications in the field of landscape archaeology. Possible applications include:

- Analysis of field measurements using calculated horizons which are not subject to obscuration by atmospheric conditions, vegetation or modern structures.
- Allows an archaeologist working in the field to visualise astronomical phenomena in relation to the observed landscape. The software has been deliberately designed with minimal computing resource requirements so that it can be run on small portable computers (for example, netbooks or tablets).
- Creation of realistic horizons for use with Stellarium (<http://www.stellarium.org>).

There are more details on the project homepage, <http://agksmith.net/horizon>. The software (requires Windows 2000 or higher) is available as a free download from the homepage. Users are advised that the software is at a pre-release stage of development and, although the major functionality has been implemented, it is still very much a work in progress and the occasional bug or user interface quirk should be expected.

The most recent public release of *Horizon* (Version 0.11b) was made in January 2014. The software has continued to evolve over the last three years according to the demands of my own personal research projects but, due to other priorities I have not had the time to complete the testing and documentation updates that are needed for a formal public release. I am hoping that the next public release will be ready sometime before the end of 2017. However, this will be a minor release (0.11c in my version-numbering convention) which will include a large collection of bug fixes and user interface tweaks with no major new functionality.

I have received a number of requests to include support for the 1-arcsecond (approximately 30m) global Shuttle Radar Topography Mission (SRTM) dataset since it was released in 2014. Work on implementing this is underway, but the code is not yet ready for integration into the main program. The inclusion of this feature will be the main objective of the next major release (0.12a) which hopefully will be ready in the first half of 2018.