Announcing Updates to NAIF's WebGeocalc Tool (WGC)
December 13, 2018

NAIF is pleased to announce updates to WebGeocalc (WGC), a tool that is useful in making many kinds of SPICE observation geometry calculations without having to write a program incorporating SPICE Toolkit application program interfaces (subroutines).

RESTful Interface

The primary update is the availability of an API interface to a new instance of WGC deployed on the new WGC2 server (wgc2.jpl.nasa.gov). Using this interface, a program written by you on your computer submits a calculation request to this new WGC instance via a URL with RESTful structure and containing a JSON payload specifying request details. WGC performs the calculation and returns results to your program in JSON format. Documentation about this interface, including usage examples, is available here:

https://wgc2.jpl.nasa.gov:8443/webgeocalc/documents/api-info.html

That documentation is also available under the "API Docs" link found near the top-right of any WebGeocalc page displayed when using this new instance of WebGeocalc on the WGC2 server.

This programmatic interface is available **ONLY** in the WebGeocalc instance on the new WGG2 server.

https://wgc2.jpl.nasa.gov:8443/webgeocalc

The long-existing GUI interface to WebGeocalc also works on this new WGC2 server as well as on the original WGC server available at this URL:

https://wgc.jpl.nasa.gov:8443/webgeocalc

IMPORTANT: As of this release in December 2018, the programmatic interface on wgc2 is offered as an experiment. NAIF reserves the right to revise it without prior notice. NAIF also reserves the right to fully remove this capability. Consequently, for the time being no-one should employ this programmatic interface in critical processes.

Kernel Automatic Loading

After reviewing the WGC error logs NAIF has decided it would be useful for WGC to automatically load at startup ("pre-load") generic kernels sets that are often needed in WGC calculations. Starting with this release, Version 2.0.0, the GUI interfaces of both WGC instances will pre-load the ***Ground Stations***, ***Solar System***, and ***Latest LSK*** kernel sets. Each of these kernels could be unloaded if desired using the "X" symbol appearing next to it in the "Kernels Selected" area at the bottom-right of any WGC page.

Additional Calculations

Two new Geometric Event Finder calculations have been added to the GUI interface – ***Range Rate Finder***, and ***Phase Angle Finder***. These two new calculations are not yet accessible via the RESTful interface.

Digital Shape Kernel (DSK) Support
Both WGC instances are based on the latest SPICE toolkit, N0066, and include the ability to use digital shape data provided in DSKs in the ***Illumination Angles***, ***Sub-Solar Point***, ***Sub-Observer Point***, ***Surface Intercept***, and ***Occultation Finder*** calculations.

Looking Ahead
After a long hiatus NAIF now has a person working part-time on further improvements to WebGeocalc. Watch for further release announcements provided using the spice_announce notification system.

Reminder
Probably the most common user error stems from an attempt to make a calculation at a time outside of the time span of the loaded kernels. Please read the section titled "Using Named Kernel Set Selection" found in the "About the Data" webpage. A link to this page is found near the top-right of every WGC page.

Browser Issue
If you have been using a browser's bookmark to reach WebGeocalc you should edit it or replace it so as to now use the https protocol with port 8443 instead of http with port 8080, as shown above. You might also need to clear the cache in your browser.

Your Feedback
You can easily provide feedback to NAIF about any aspect of WebGeocalc using the **Feedback** button found at the top-right of any WGC page.