



## SunEye News

September 2008

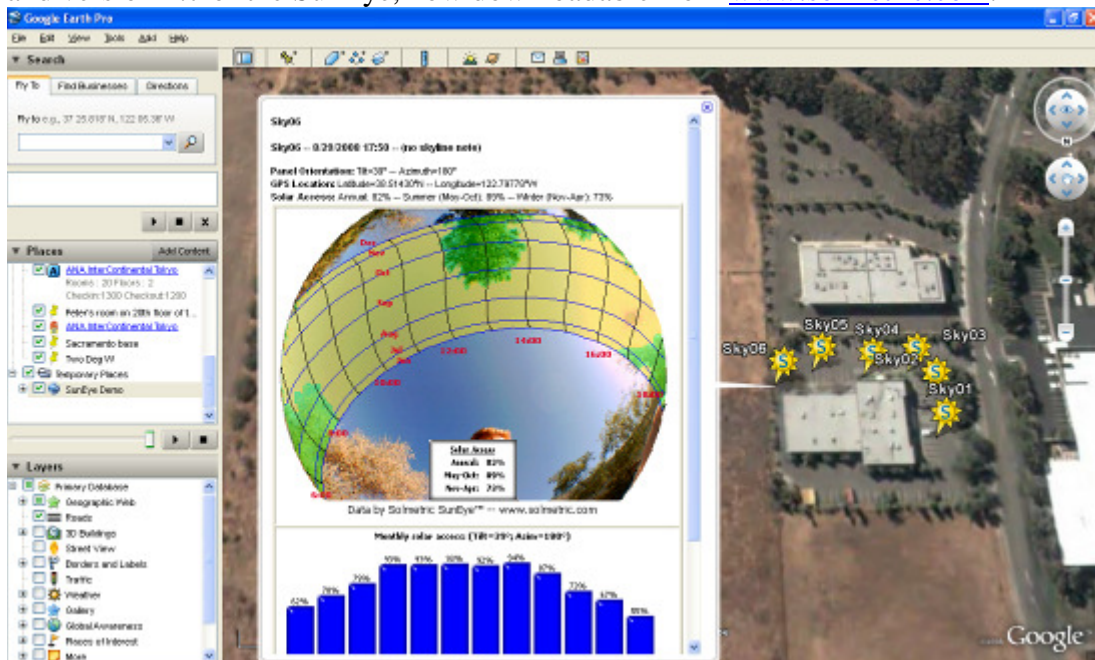
This newsletter provides some updates from Solmetric about the SunEye, including:

1. [Viewing Skylines in Google Earth™ \(new software\)](#)
2. [Viewing insolation vs panel orientation \(web site only\)](#)
3. [French, Italian, Spanish languages in international versions](#)
4. [Expanding City database including European Union](#)
5. [SunEye User Tip](#)

We welcome your feedback on this information and on our products. Thank you again for choosing the SunEye.

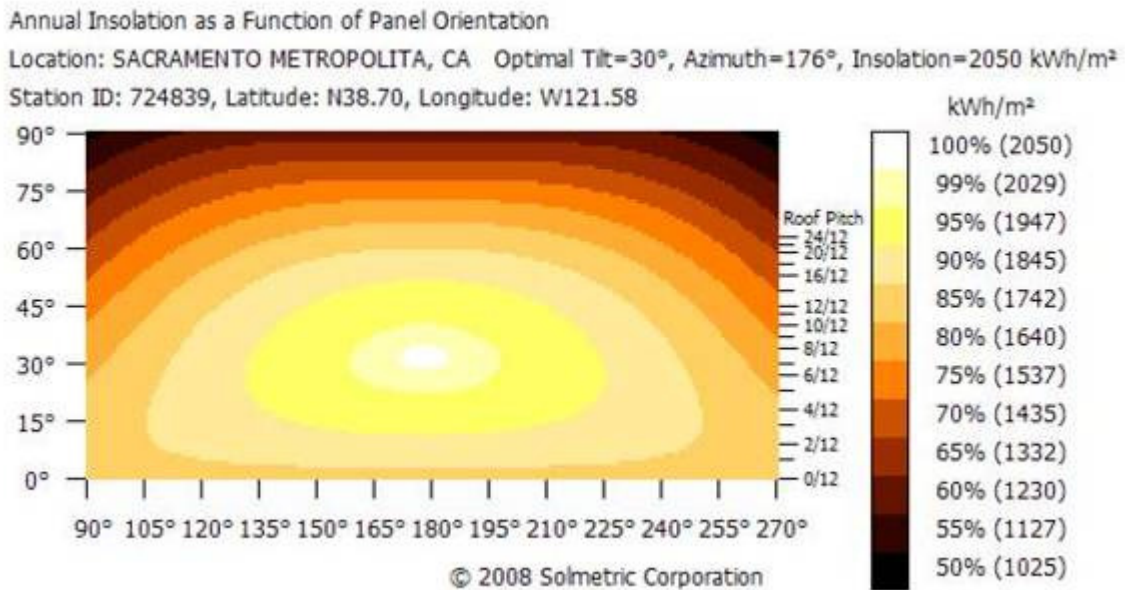
### Viewing Skylines in Google Earth™ (new file export)

When equipped with the GPS add-on, the SunEye can “geo-tag” each Skyline with its latitude and longitude. The Skylines can now be exported to Google Earth in your PC by way of a “.kmz” file included in the SunEye report. When the .kmz file is selected, Google Earth will run (assuming it is loaded in the computer), and zoom into the location of the Skylines. Placemarks called SunTacks™ pinpoint each Skyline, and solar access data can be viewed within the Google Earth environment. This capability provides a great tool for generating reports or communicating your evaluation process to clients. An example screenshot is shown below. Please note, this feature requires the GPS Add-on and version 2.7 of the SunEye, now downloadable from [www.solmetric.com](http://www.solmetric.com).

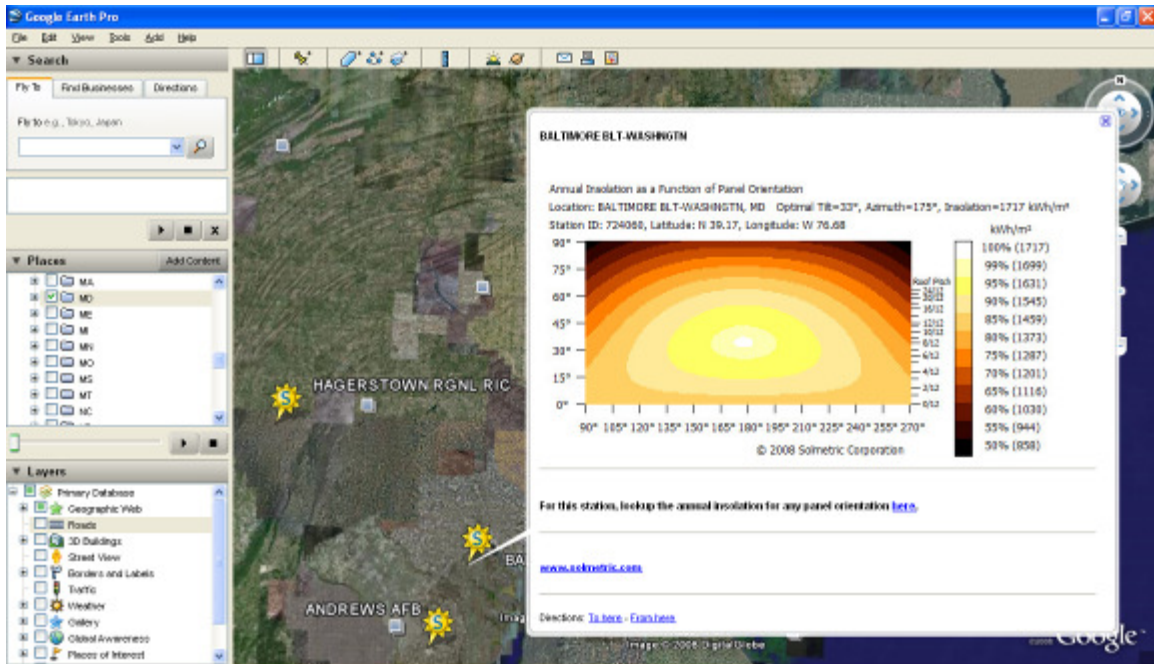


## Viewing insolation vs panel orientation (web site or Google Earth)

The US National Renewable Energy Laboratory recently published updated weather data for over 1,000 locations in the U.S. Using this data, Solmetric has generated annual insolation charts for each of these locations showing incident solar radiation as a function of panel tilt and azimuth. The charts can help you see the optimum orientation, and how close your system will be compared to that. An example chart is shown below for Sacramento, California.



The insolation plots can also be viewed in Google Earth. A SunTack™ marks each weather station location, and by selecting the closest weather station, you can view that insolation chart.



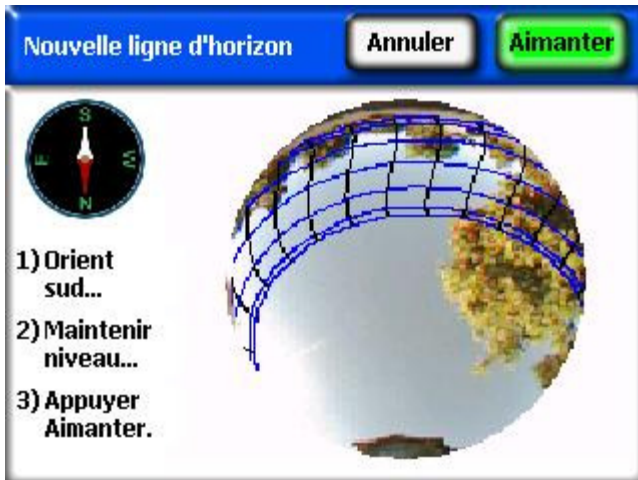
The data for insolation is shown without the effects of shading. Shading can cause significant shifts in this data, for example, with morning (eastern) shade, the optimum azimuth may shift to the west.

Have a look under Resources at [www.solmetric.com](http://www.solmetric.com), and let us know what you think about the insolation charts.

### French, Italian, Spanish languages in international versions

With the International license, the SunEye can be used anywhere in the world. In fact, the SunEye has already been sold in nineteen countries! French, Italian, and Spanish languages are now available, in addition to German and English. All five languages are available with version 2.7, and the language can be selected from the tools menu.

Note that the international license is required to operate the SunEye outside the US, and it enables all languages other than English. This license is normally factory enabled prior to shipment. However, if you need to upgrade a US version to have worldwide operation capability, please contact us at [info@solmetric.com](mailto:info@solmetric.com).



### Expanding City database including European Union

The SunEye has a database of thousands of cities, and has been expanded to include more cities in more regions with software version 2.7. The International License now includes cities from all European Union countries, in addition to Australia. Selecting a nearby city is a convenient option, and version 2.7 makes this possible for many more locations. More cities will be coming soon.



Remember, if the SunEye does not currently include your region or your city, you can still make excellent measurements. Sun paths are calculated based on the location's latitude and longitude, which are entered automatically if the city is selected. If the city selection is not available, the latitude and longitude can be automatically detected using the GPS option or manually entered by the user. Magnetic declination is calculated automatically based on a mathematical model built into the SunEye.

Location Cancel Prev Done

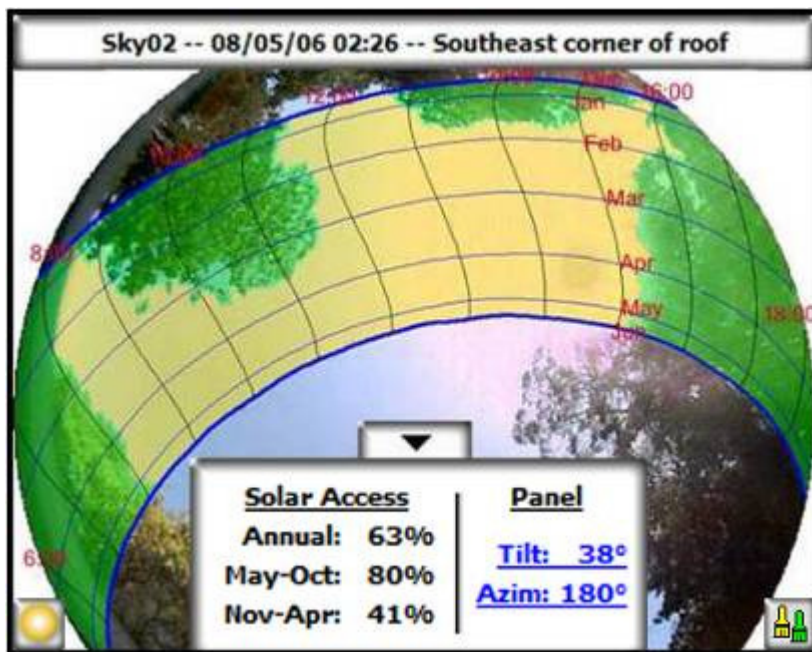
Latitude:

Longitude:

Mag Dec:

### SunEye User Tip

A topic that sometimes causes confusion is this month's user tip:  
 "Why aren't the sun paths symmetrical, but seem to be rotated in one direction?"



Compass direction is determined by the earth's magnetic field and is offset from the true direction by a parameter called magnetic declination. The Solmetric SunEye uses the convention that the top of the Skyline photo is magnetic south in the Northern Hemisphere (or north in the Southern Hemisphere). In the Northern Hemisphere, the sun paths are symmetrical around the true south. So sun paths on the SunEye Skyline appear rotated relative to symmetrical. But in which direction?

Magnetic declination is defined in degrees offset either EAST or WEST, from North. Magnetic declination of EAST is like a clockwise rotation from north. For example, assume you are in the Northern Hemisphere and your magnetic declination is about 12

degrees EAST. If you are facing MAGNETIC South when you capture the skyline, then you are actually facing 12 degrees WEST (in the clockwise direction) of TRUE South. Therefore, in a picture of this orientation, the sun paths would need to be rotated to the EAST (counter-clockwise) to compensate, which is what is done in the SunEye.

Another way to think about it: Consider Spring Equinox where the sun rises exactly in the EAST and sets exactly in the WEST. If you are facing TRUE south on that day, the sun path goes from 90 degrees to your left (EAST) to 90 degrees to your right (WEST) during that day. If you are facing MAGNETIC south, ie. 12 degrees WEST of TRUE south, then the sun will rise at 102 degrees to your left (a little more EAST) and set at only 78 degrees to your right (a little less WEST). So the sun path has appeared to rotate EAST, or counterclockwise. The SunEye does the same thing. With MAGNETIC south at the top of the picture, the sun paths need to be rotated counterclockwise.

A useful resource is <http://www.ngdc.noaa.gov/geomagmodels/Declination.jsp>, where you can enter latitude and longitude and see a map of your location with a visual representation of the true and magnetic directions.

## **THANK YOU**

If you have any questions or inputs for our next SunEye News, please call us or send an email to [info@solmetric.com](mailto:info@solmetric.com). If you want to unsubscribe from this newsletter, please send an email to [info@solmetric.com](mailto:info@solmetric.com).