



## Instructions Master Layout Calculator

This calculator is best suited for temporary re-locatable exhibits and will layout a two dimensional solar body array based on planetary locations as of a **Base Year** of January 1, 2014. It assumes circular co-planar orbits viewed from "below" the ecliptic plane with the planets moving in a clockwise direction. Average orbital velocities were used to calculate planetary positions in a selected **Target Year**. The User selects a **Unit of Measure** (feet, yards, miles, meters or kilometers) to facilitate a more compact array or a larger expanded array. Selection of **Orbital Spacing** allows the User to designate **Relative** spacing based on astronomical units from Sol or **Equal** orbital spacing which facilitates a more compact array. The **Base Year Azimuth** is the compass heading of the Sol-Planet azimuth measured from a Sol-Earth azimuth of zero degrees (due North). The User may select a **Relative Azimuth** which is a new compass heading of the Sol-Earth vector. New Sol-Planet azimuths are then calculated. Finally the User may specify actual **GPS** coordinates of the placement of the Sol image marker. The Green panel describes planetary layout of compass headings (**Relative + Base Azimuths**) from the Sol image marker to each respective solar body image marker and a **Vector Length** in the selected **Unit of Measure** from the Sol image marker to the solar body image. This layout may be done with a compass and measure device or wheel. The Blue panel describes the layout using x- (east is positive/west is negative) and y- (north is positive/south is negative) rectangular coordinates from the Sol image marker to each solar body image marker in the selected **Unit of Measure**. The Orange panel defines a layout using a **GPS** coordinates from the location of the Sol image marker.