

Calculation Positions

TMG calculates black body view factors, Solar, Earth and Albedo view factors and resulting heat loads at each calculation position on the orbit. All calculation positions are located from the *Start Angle*, the initial spacecraft position.

The *Start Angle* is measured from the specified reference position to the satellite location in the direction of satellite rotation. (See *Orbit Definition*).

Start and End Angle

The initial position of the spacecraft is always a calculation position as well as its last defined position. These two calculation positions are respectively 0° and 360° from the *Start Angle* for a full orbit or the *Start Angle* and the *End Angle* for a partial orbit.

When stringing together several *Partial Orbit* segments to simulate a spacecraft maneuver, you must ensure that the start time and start angle are identical to the end time and end angle of the previous orbit segment.

- To calculate the end time of a previously defined orbit segment, pick *Compute From Other Orbit* and select the parent orbit from the list that pops up. Only partial orbits that do not use *Local Noon* or *Local Midnight* to reference the angles appear in the list.
- An orbit segment that uses either *Local Noon* or *Local Midnight* to reference the start and end angles can only be used as the last segment in the sequence of partial orbits. This includes all segments defined as *Beta Angle* or *Geostationary*.

Distribution of Calculation Positions

By default, ten evenly distributed calculation positions are added between the first and last calculation positions of the orbit or the orbit segment.

Use the *Angle Positions from Start* option to specify unevenly distributed calculation positions or to add a few specific calculation positions to the default ones.

TMG adds four new calculation positions to those defined when solving orbits with eclipse. Two are located at the start of the eclipse region and two at its end to capture the rapid heat flux variation that occurs in these regions.

Use *Orbit Display* to see the calculation positions on the orbit, including those added because of the eclipse.

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