



Knowledgebase > General ALMA Queries > The time estimate for an observation of a Solar System Object is higher using the defaults than when I enter the source's expected position. Why is this, and what can I do?

---

## The time estimate for an observation of a Solar System Object is higher using the defaults than when I enter the source's expected position. Why is this, and what can I do?

John Hibbard - 2023-11-01 - General ALMA Queries

If a user selects the "Choose a Solar System Object" option (SSO) in the OT Field Setup, the OT sets the position to RA=0deg, Dec=0deg.

However the OT time estimate depends on the declination of the observed source, as described in Section "Sky temperature" of the [Technical Handbook](#):

*"When estimating the time for a project, the OT will always select a PWV octile that is appropriate to the frequency being observed. It does this by calculating the time required for each octile and then choosing (and reporting) the highest (worst) octile for which the increase in time relative to the first is less than 100 per cent. A consequence of this definition is that the octile also depends on source declination i.e. sources at low elevations will require better weather conditions. The resulting curve of octile versus frequency is shown in Figure 9.1, for a source declination of zero degrees. A user can override this choice in the GUI version of the ASC, but submitted projects will always use an automatic choice."*

Therefore, sources that are designated as SSOs will have time estimates calculated assuming a declination of 0 deg (even if an ephemeris file is also uploaded).

As a result, the time estimate for the same source may be lower if the object was not designated as an SSO, and instead an appropriate RA and DEC were entered.

Users are not compelled to identify SSO's using the "Choose a Solar System Object" option (SSO) in the OT Field Setup. They may instead specify an appropriate RA,DEC. If the RA,DEC are only appropriate for a relatively limited amount of the observing period in each Cycle, they should additionally identify the observation as "Time Constrained" and enter the range of dates where the RA,DEC are relevant. In the "Technical Justification" node for that Science Goal they should mention that they are doing this in order to get a more accurate assessment of the time estimate, and that the appropriate ephemeris will be used when phase2 products are prepared.