

For (simple) On-Off measurements most observers want to have the reference position at the same Elevation level as the ON position. Therefore, they choose an azimuthal offset. However, the control software applies this offset to the position of the source at the time when the OFF measurement starts. As a consequence, the elevation angles of ON and OFF do not match exactly.

Example:

ON-OFF with azimuthal offset -900 arcsec; two scan repeats, each subscan has a length of 60 sec:



There exists a better solution, which is able to have the OFF position exactly on the same track as the ON. That is to apply the offset in Right ascension and to make the offset match exactly the time difference between the start of ON and OFF, i.e. the length of a subscan plus any overhead.

In our example we have 60 sec integration time per subscan. Using a typical overhead time of 15 sec, we need to apply an offset of -75 sec (or 1125 arcsec):



Now the ON and OFF measurements follow quite the same track on the sky. Unfortunately, this solution is only viable for simple On-Off observations. If one does PSW maps or wants to have more complicated patterns (e.g., REF-ON-ON-REF-ON-ON...), it won't work.

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