



How to Survive Lunar Night

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In the frame of the recent worldwide activities of Lunar research, including various studies for surface stations, the aspect of longevity of such stations represents a particular technical challenge. The reason for this lies in the long (about 14 days) and cold Lunar night during which it is non-trivial to keep spacecraft systems alive and sensitive equipment within an acceptable temperature range.

Various concepts will be described, how to survive Lunar night, both with and without radiothermal heater technology.

The latter, normally implies the use of highly toxic material (typically plutonium), which is politically problematic and a driver for cost and safety procedures.

Concepts without radiothermal heating, need to foresee special measures, like innovative methods for energy storage, extremely efficient thermal insulation or sub-surface positioning of all temperature sensitive components.