Scheduling the Sun

As the Sun is regularly observed by I-LOFAR a script was made by Jessica Murphy to indicate the best times for observations.

This script calculates the periods during which the sun is above a specified horizon angle for a given location and date. It also retrieves solar flare probabilities from NOAA and MCSTAT estimates.

The script prints the periods during which the sun is above the specified horizon angle, along with the solar flare probabilities retrieved from the `sun_flare_prob` shell script. If the `-plot` flag is used, a plot of the sun's elevation over time is displayed. A `-horizon` flag can be used to set the minimum elevation. If a specific data is required the `-date` flag will calculate the viability for that day, in the form of YYYY-MM-DD. The following output will be printed for a given set of parameters, which is in the **correct format to go straight into an observation schedule**.

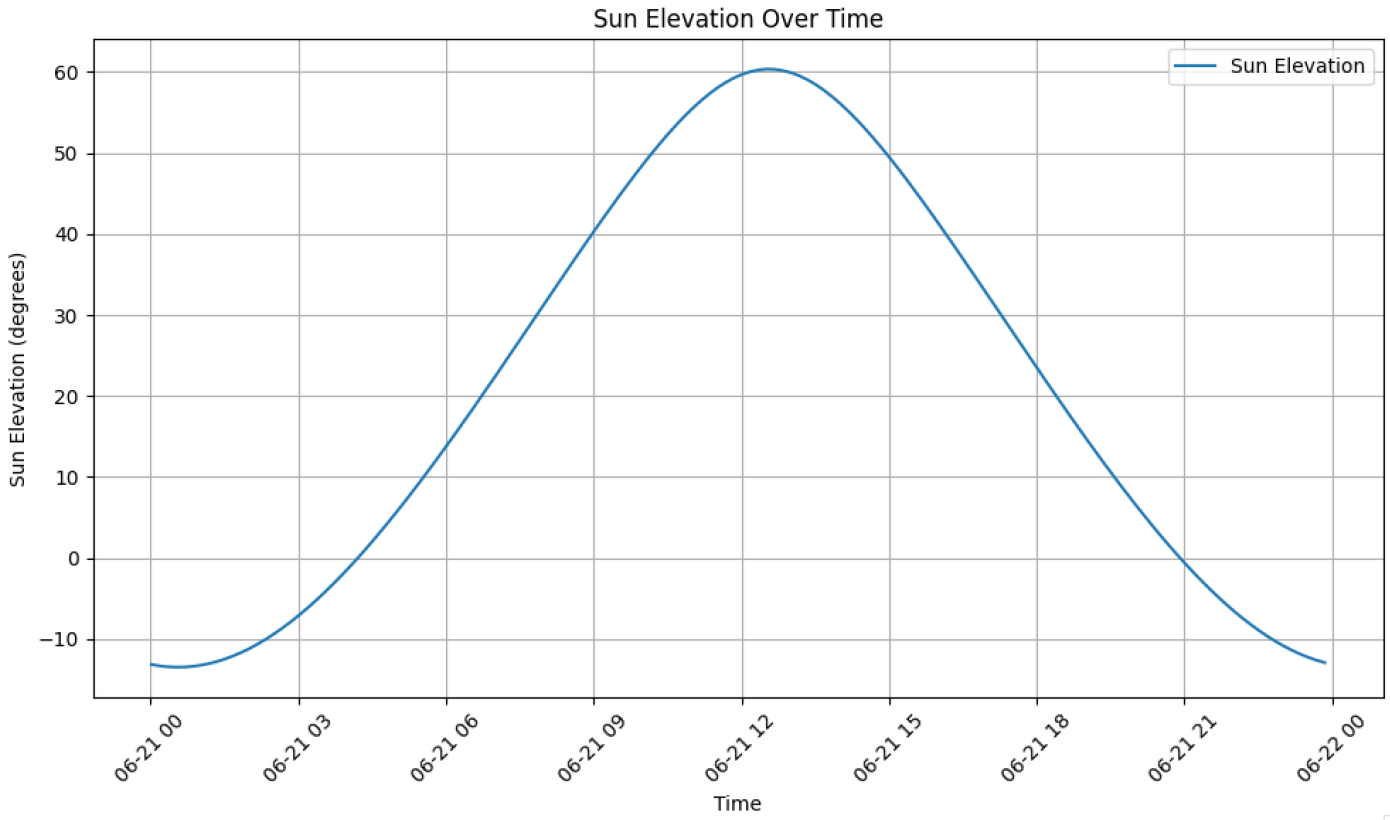
```
2024-06-21T04:00 - 2024-06-21T20:00 ; [Sun357] # Flare probs: 25% MCSTAT 15% NOAA
```

Running this code on the LGC

To get the ideal times to observe the Sun on a given day, simply run into the LGC and run the command `sun`.

If you want to change the date of the calculation, the elevation or plot out the results. The following can be done.

```
cd ~/scheduling/schedules/tmp/Solar-Schedule/; python3 sun.py -horizon 45.0 -plot -date 2024-06-21
```



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