

SkyalmanacPP Usage Notes

SkyalmanacPP is a Python program to create PDF files relating to Planetary Phenomena. It is invoked using a name that runs Python (e.g. py, python, python3), the program name (skyalmanacPP) and optional arguments, some of which require a value. A typical command line could look like:

```
py -m skyalmanacPP -tex -pv2 -dpo -lat 45.0N
```

(**'-lat'** takes the value **'45.0N'** above)

Entering an invalid argument prints out a brief list of all permitted arguments:

```
Valid command line arguments are:
-v    ... 'verbose': to send detailed output to the terminal
-vt   ... 'verbose': to send pdfTeX output to the terminal
-log  ... to keep the log file
-tex  ... to keep the tex file
-a4   ... A4 papersize
-let  ... Letter papersize
-dpo  ... data pages only
-un   ... also plot Uranus & Neptune*
-pss  ... plot sunrise/sunset & civil dusk/dawn at chosen latitude*
-sbr  ... use square brackets in Unix filenames
-sp   ... execute in single-processing mode (slower)
      * applies only to the Planet Diagram
----- Planet Visibility charts -----
-pv1   .... for Mercury
-pv2   .... for Venus
-pv3   .... for Mars
-pv4   .... for Jupiter
-pv5   .... for Saturn
-pv6   .... for Uranus
-pv7   .... for Neptune
-pv    .... for the first 5 planets (Mercury to Saturn)
-lat 51.5N ... select one latitude as nn.nN or nn.nS
-lat ... print charts with all the following latitudes:
        60S 58S 55S 50S 45S 40S 30S 15S 0 15N 30N 40N 45N 50N
        55N 58N 60N 62N 63N 64N 65N 66N 67N 68N 69N 70N 71N 72N
-lats .. print all above latitudes as separate PDF chart files
-orth .. orthogonal plot data: data 00h to 24h is aligned vertically
        on start of day
```

Latitudes are confined to the range found in Nautical Almanac data: 60°S to 72°N.

Some arguments have no meaning in the chosen context, e.g. **-pss** and **-un** have no meaning in Planet Visibility charts. The sequence of arguments is irrelevant; however, an argument's value must follow the argument, e.g. **'-lat 45.0N'** cannot be separated.

The year or range of years are then requested as follows:

Enter as numeric digits:

- 'YYYY' (1951 <= year <= 2050)
- 'YYYY-YYYY' for a range of years
- nothing for the current year

SkyalmanacPP can be invoked as follows:

- To create Planetary Phenomena pages at the default latitude 51.5°N:
py -m skyalmanacPP
- To create Planetary Phenomena pages at latitude 54.1°N:
py -m skyalmanacPP -lat 54.1N
- Ditto, including sunrise/sunset and civil dusk/dawn offset from Sun's Meridian Passage at the chosen latitude¹:
py -m skyalmanacPP -lat 54.1N -pss
- Ditto, without the initial description text:
py -m skyalmanacPP -lat 54.1N -pss -dpo
- To create Planet Visibility Charts for Venus at latitude 41.5°N:
py -m skyalmanacPP -pv2 -lat 41.5N
- To create Planet Visibility Charts for Mars at all latitudes in one PDF:
py -m skyalmanacPP -pv3 -lat
- To create Planet Visibility Charts for Mars at all latitudes in separate PDF files:
py -m skyalmanacPP -pv3 -lats
- Ditto, without the initial description text:
py -m skyalmanacPP -pv3 -lats -dpo

¹ This is slightly confusing to grasp as one assumes that the Sun's Meridian Passage now becomes Sunrise and the red line below represents Civil Dawn as minutes (time) offset from, i.e. before, Sunrise. Alternatively, one assumes that the Sun's Meridian Passage now becomes Sunset and the blue line above represents Civil Dusk as minutes (time) offset from, i.e. after, Sunset. Thus, as a *preliminary assumption*, planets between the red and blue lines are not visible on those days. This is the basic rationale for the shaded area 45 minutes (time) above and below the Sun's Meridian Passage on every Planet Diagram, though this does not take the latitude into account.