

AGA0414

Scheduling

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What is a survey?

Hard to get a good definition. One could be:

An observation which takes a considerable amount of telescope time.

Two main types:

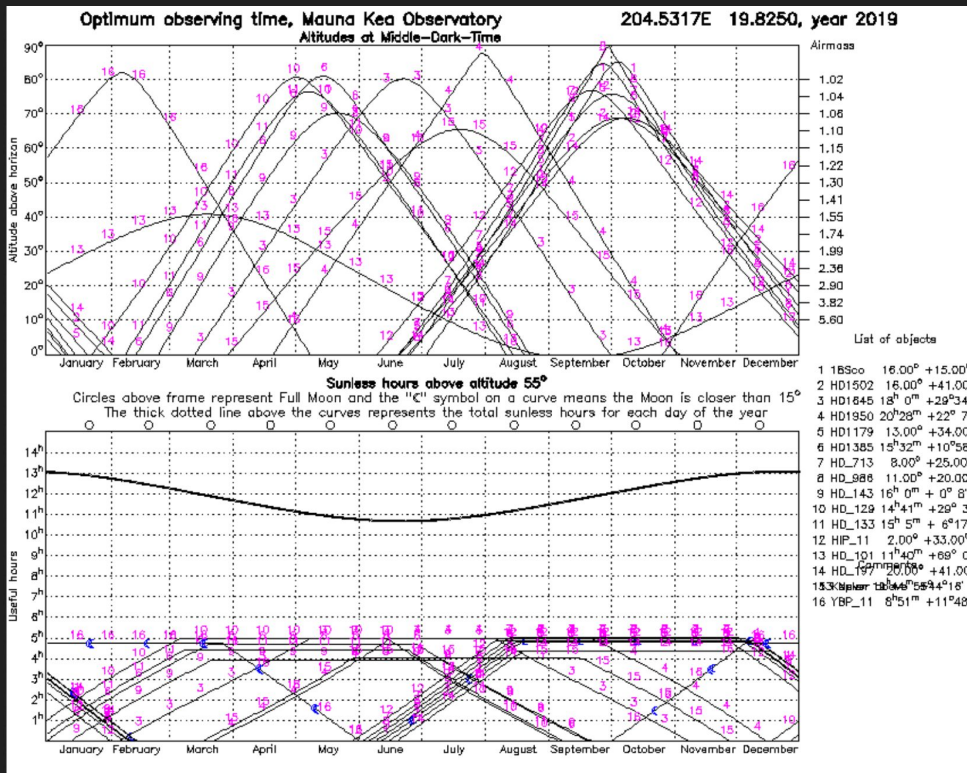
1. “Pencil beam”: observing one field for a long time, e.g. the Hubble Deep Field
2. “Wide Field Surveys”: observing thousands of square degrees (e.g. SDSS)

Survey #1

Given 10 stars https://en.wikipedia.org/wiki/Solar_analog :

- When is it the best moment to observe each of them?
- Is there a good date to observe most of them?
- Assume that it takes 20minutes (including overheads) to observe each of them, how long would it take to observe them all?

Starobs



Mode Starobs

Night 20 March 2019 or date when the local night starts. *Staralt, Startrack only.*

Observatory Mauna Kea Observatory (Hawaii, USA)
 Select one above or specify your own site with this format:
 Longitude (°E) Latitude (°N) Altitude (metres) UT-offset (hours)
 Ex.: 289.2767 -30.2283 2725 -4

Coordinates

Formats can be any of these:
 name hh mm ss tdd mm ss
 name hh:mm:ss tdd:mm:ss
 name ddd.ddd dd.ddd
 name must be a single word with no dots, avoid using single numbers. Every entry must be in the same format, do not use different formats with different entries. We recommend a maximum of 100 targets per submission.

```

18Sco 16 15 37.3 -08 22 06
HD150248 16 41 49.8 -45 22 07
HD164595 18 00 38.9 29 34 19
HD195034 20 28 11.8 22 07 44
HD117939 13 34 32.6 -38 54 26
HD138573 15 32 43.7 10 58 06
HD_71334 08 25 49.5 -29 55 50
HD_98649 11 20 51.8 -23 13 02
HD_143436 16 00 18.8 00 08 13
HD_129357 14 41 22.4 29 03 32
HD_133600 15 05 13.2 06 17 24
HIP_11915 02 33 49.0 -19 36 42.5
HD_101364 11 40 28.5 69 00 31
HD_197027 20 41 54.6 -27 12 57
Kepler-452 19 44 00.9 44 16 39.2
YBP_1194 08 51 00.8 11 48 53
  
```

Alternatively, you can upload a file with coordinates. You can use the same format as in the [TCS catalog](#). Target names must be single words with no dots.

Browse... No file selected.

Options Moon distance Included on plot. Moon coordinates at -02:00 UT. *Staralt only.*
 55° X=1.2 Min. elevation (or max. airmass X). *Starobs, Starmult only.*
 GIF [inline] Output format

Submit Retrieve Help

Survey #1

Given 10 stars:

- **When is it the best moment to observe each of them?** 18Sco, beginning of October,...
- **Is there a good date to observe most of them?** End of September / Beginning of October is best for 7 out of 16
- **Assume that it takes 20minutes (including overheads) to observe each of them, how long would it take to observe them all?** $16 \times 20\text{min} = 320\text{min} = 5.3\text{h}$

Survey #2

J-PLUS has ~4,000 pointings.

Assuming that each pointing takes about 1h of observing time (including overheads):

- How long would it take to complete the survey (one can assume that the average night at OAJ is 8h long)?
- How long would it take to complete the survey, if only 75% of the time is available because of lunar illumination?
- What if one also adds that the sky has transparency conditions good for J-PLUS for only 50% of the time?
- Are you able to simulate a realistic scenario, taking into account the RA distribution of the sources?

Survey #2

J-PLUS has ~4,000 pointings.

Assuming that each pointing takes about 1h of observing time (including overheads):

- How long would it take to complete the survey (one can assume that the average night at OAJ is 8h long)? $1\text{h/pointing} \times 4000\text{ pointings} = 4000\text{h} \Rightarrow 4000\text{h} / 8\text{h/night} = 500\text{ nights}$
- How long would it take to complete the survey, if only 75% of the time is available because of lunar illumination? $500\text{ nights} \times 100 / 75 = 666\text{ nights}$
- What if one also adds that the sky has transparency conditions good for J-PLUS for only 50% of the time? $666\text{ nights} \times 2 = 1333,3\text{ nights} (=3.6\text{ years})$
- Are you able to simulate a realistic scenario, taking into account the RA distribution of the sources?

Messier Marathon

https://en.wikipedia.org/wiki/Messier_object

How would you plan a Messier Marathon from Hawaii on Mar21?

When is the best date for a Messier Marathon from Hawaii?

How would you plan a Messier Marathon from OPD on Mar21?

Messier Marathon

https://en.wikipedia.org/wiki/Messier_object

How would you plan a Messier Marathon from Hawaii on Mar21? Night goes from LST 7:15 until LST 16:45.

When is the best date for a Messier Marathon from Hawaii?

How would you plan a Messier Marathon from OPD on Mar21? M81 and M82 are barely observable from OPD.

Exercises

Plan a Messier Marathon from Paris and one from São Paulo for 1st April 2020

(1st step: find the coordinates of the Messier objects in decent format to put them in Staralt ... and pass them to Ale :-))