SEO Itzamna Cheat Sheet

1 "Typical" SEO Sequence of Observing Commands

This would be a somewhat typical set of commands that you would use to do an observation on SEO:

1. **Make sure there is no rain in the near future.** You should do this a couple different ways: a) Check the NOAA Sonoma weather page [1], and b) Check one of the nearby airport weather reports, e.g., KPAC[2], KDVO[3], KO69[4].

   If: humidity $> 90\%$**, or chance of rain** $> 10\%$ **or sky cover** $> 25\%$**, then don't observe!**

2. # List all the commands available in itzamna

   \help

3. # make sure there are no clouds visible in the sky via a webcam image of the sky

   \skycam

4. # confirm the current weather is ok, i.e., no rain, etc.

   \weather

5. # Double check that no-one is using the telescope.

   \who

6. # take over control of the telescope, locks the telescope for your use

   \lock

7. # Cracking the dome open, i.e., opening the observatory

   \crack

8. # find the object in the database, to make sure it has an object with the RA, Dec that you expected for your object

   \find *object*

[1] https://forecast.weather.gov/MapClick.php?lat=38.2919&lon=-122.4573
[2] https://en.allmetsat.com/metar-taf/northern-california.php?icao=KAPC
[3] https://en.allmetsat.com/metar-taf/northern-california.php?icao=KDVO
[4] https://en.allmetsat.com/metar-taf/northern-california.php?icao=KO69

9. # Plot a visibility plot, to make sure object is "up" right now and visible

   \plot

10. # Point on the object number listed under \find (object). For example, if \find M33 found two objects with that name, but the first object was the actual M33, then you would say *pinpoint 1*:

    \pinpoint 1

11. # alternative if you want to point to a particular RA Dec location (i.e., instead of observing an object with a known name)

    \pinpoint 06:55:32 +74:03:09

12. # centers the dome slit on the telescope. It might not be strictly necessary in this sequence, if you did the above commands, but It would be a good cross-check that the dome slit is pointed towards the object that you are expecting to observe

    \dome center

13. # take an image; where the syntax is *image (exposure (s)) (binning) (oiii — g-band — r-band — i-band — sii — clear — h-alpha) (count)*. For example, the below command would be 60-sec exposure, with 1-pixel binning, r-band filter, and repeat the observation only once.

    \image 60 1 r-band 1

14. # Close the observatory, to protect it from the elements.

    \squeeze

15. # Hand back the telescope for general use

    \unlock

2 Itzamna help

Output of \help in Slack itzamna channel:

```
\abort terminates the current task
\bias <binning> <count> takes a bias frame. <count> defaults to 1
\ccd shows CCD information
\clearsky shows Clear Sky chart(s)
\clouds shows the current cloud cover
\configure displays the configuration (advanced users only)
\configure <setting> <value(s)> sets the configuration (advanced users only)
```

```
\connect attempts to reconnect to the telescope via SSH.
\crack opens the observatory
\dark <exposure (s)> <binning> <count> takes a dark frame. <count> defaults to 1
\dome shows the dome slit azimuth
\dome center centers the dome slit on telescope
\domecam shows the observatory dome camera image
\filter shows the filter
\filter <oiii|g-band|r-band|i-band|sii|clear|h-alpha> sets the filter
\find <object> finds <object> in the sky (add wildcard * to widen the search)
\focus shows the telescope focus position
\focus <integer> sets the telescope focus position to <integer>
\forecast shows the grid-based 48-hour forecast
\hdr shows the status of the CCD HDR (High Dynamic Range) mode
\hdr <on|off> enables/disables the CCD HDR (High Dynamic Range) mode
\help shows this message
\hocus calibrates the focus setting
\home dome calibrates the dome movement
\image <exposure (s)> <binning> <oiii|g-band|r-band|i-band|sii|clear|h-alpha> <count> takes
\lights shows state of the dome lights
\lights <lamp|led|all> <on|off> turns the dome lights on/off
\lock locks the telescope for use by you
\mirror shows state of the mirror cover
\mirror <open|close> opens/closes the mirror cover
\moon shows the moon altitude and phase
\nudge <dRA> <dDEC> offsets the telescope by dRA/dDEC degrees
\pinpoint <RA> <DEC> <exposure (s)> <oiii|g-band|r-band|i-band|sii|clear|h-alpha> uses astr
\pinpoint <object #> <exposure (s)> <oiii|g-band|r-band|i-band|sii|clear|h-alpha> uses astr
\plot <object #> or \plot <RA (hh:mm:ss.s)> <DEC (dd:mm:ss.s)> shows if/when object (run \f
\point <object #> or \point <RA (hh:mm:ss.s)> <DEC (dd:mm:ss.s)> points the telescope to an
\preview shows the state of the FITS image preview
\preview <on|off> enables/disables the FITS image preview
\psf <exposure (s)> <binning> <oiii|g-band|r-band|i-band|sii|clear|h-alpha> takes an image
\share <on|off> enables/disables others to access a locked telescope
\shutter manually closes the camera shutter
\skycam shows skycam image(s)
\slit shows state of the dome slit
\slit <open|close> opens/closes the dome slit
\squeeze closes the observatory
\status shows telescope status information
\sun shows the sun altitude
\tostars uploads images to http://stars.uchicago.edu
```

```
\track shows if telescope tracking is on/off
\track <on/off> toggles telescope tracking
\unlock unlocks the telescope for use by others
\weather shows the current weather conditions, along with the next few hours of precipitati
\where shows where the telescope is pointing
\who shows who has the telescope locked
```