

My favorite initial settings of *Stellarium*

The distribution package of *Stellarium* is okay, I guess, but it has a lot of defaults that I find to be non-useful or cumbersome (possibly these are out front to force you to customize). This presentation is to show you a set of operating parameters that I found to be better at allowing *Stellarium* to be a more useful tool for investigating the night sky.* I may seem to be painfully obvious to existing *Stellarium* users in some points, but I hope to be helpful to even advanced users concerning some obscure topics.

This is version 0.20.3

* Of course, your application may have different requirements. You are perfectly welcome to vary them.

Default display in daytime.

Sun

Type: star
Magnitude: **-26.76** (reduced to **-26.56** by **1.56** Airmasses)
Absolute Magnitude: 4.83
RA/Dec (J2000.0): 15h12m24.80s/-17°53'06.9"
RA/Dec (on date): 15h13m34.42s/-17°57'41.5"
HA/Dec: 0h57m41.18s/-17°56'32.7" (apparent)
Az./Alt.: +197°59'56.6"/+39°55'58.0" (apparent)
Gal. long./lat.: -15°53'13.5"/+33°28'59.4"
Supergal. long./lat.: +145°45'21.7"/+25°42'23.4"
Ecl. long./lat. (J2000.0): +230°32'29.8"/+0°00'01.5"
Ecl. long./lat. (on date): +230°49'40.7"/-0°00'06.6"
Ecliptic obliquity (on date): +23°26'13.1"
Mean Sidereal Time: 16h11m18.1s
Apparent Sidereal Time: 16h11m17.0s
Rise: 6h05m
Transit: 11h27m
Set: 16h48m
Daytime: 10h43m
Parallactic Angle: +16°18'35.0"
IAU Constellation: Lib
Hourly motion: +0°02'34" towards 104.8°
Hourly motion: $da=+0^{\circ}02'36"$ $d\delta=-0^{\circ}00'41"$
Distance: 0.990 AU (148.048 M km)
Light time: 0h08m13.8s
Sidereal period: 1.00 days (0.003 a)
Apparent diameter: +0°32'19.36"
Diameter: 1392000.0 km
Sidereal day: 654h36m35.9s
Equatorial rotation velocity: 1.856 km/s

Earth, Panama City, 13 m
FOV 60°
17.8 FPS
2020-11-12 12:24:34 UTC-06:00

Annotations:

- Too much info and too small a font. Who cares about supergalactic cords of Sun?
- Rural scene gets in the way sometimes. We want a good horizon
- I don't often use night mode
- Meteors and satellites should not be front and center!
- Little tabs turn off or on the "stickiness" of the top and bottom menus. I hide the vertical menu and show the horiz full time.

VERTICAL SIDE MENU



Location Setting Dialog Box (where you are)

Date/Time Window
(time of display)



Rarely used Julian Day tab

Sky and Viewing Options (mostly astronomical detail)

Tabs: Sky...Solar Sys Obj...Deep Sky Obj...Markings...Landscape...Starlore...Surveys

Search Dialog Box

Configuration Window (mostly *Stellarium* control)

Tabs: Main...Information...Extras...Time...Tools...Scripts...Plugins

Astronomical Calculations Window (operations)

Tabs: Positions...Ephemeris...Transits...Phenomena...Graphs...WUT...PC

“what’s up tonight” “planetary calculator”

Help (mostly keyboard shortcuts)

LOCATION MENU: Check that you are at your location (if the network is active, it probably found your location). The default is Paris. France. Club members put Panama City in the search box. If your location is not listed, you have two choices. Either 1) select near your location in Google Maps and read off *What's Here?*

(And change the time zone.)



1200-1298 W 12th St
Lynn Haven, FL 32444
30.241323, -85.661294

Decimal convert:
x decimal by 60

Close to N30° 15', W85° 40'

2) Put in a very close city that IS on the list and adjust the time zone.

Enable DST if you don't live in Hawaii (and don't need it), Arizona (if you're contrary), and N. Indiana (close to Chicago). Port St. Joe is nearby example of one you may want to switch.

Note the permanent change button if you want these changes to stick.

Location

- 'Afak, Iraq
- 'Ain Abid, Algeria
- 'Ain Benian, Algeria
- 'Ain Deheb, Algeria
- 'Ain Merane, Algeria
- 'Ain el Bell, Algeria
- 'Ain el Berd, Algeria
- 'Ain el Hammam, Algeria
- 'Ain el Melh, Algeria
- 'Ain el Turk, Algeria

Search box

Reset Location List

Current location information

Latitude: N 48° 51' 12.27"
Longitude: E 2° 20' 55.68"
Elevation: 42 m

Name/City: Paris
Country: France
Planet: Earth
Time zone: Europe/Paris

Get location from GPS
 Get location from Network
 Use current location as default

Use custom time zone ← If time zone is wrong, check this box
 Enable daylight saving time

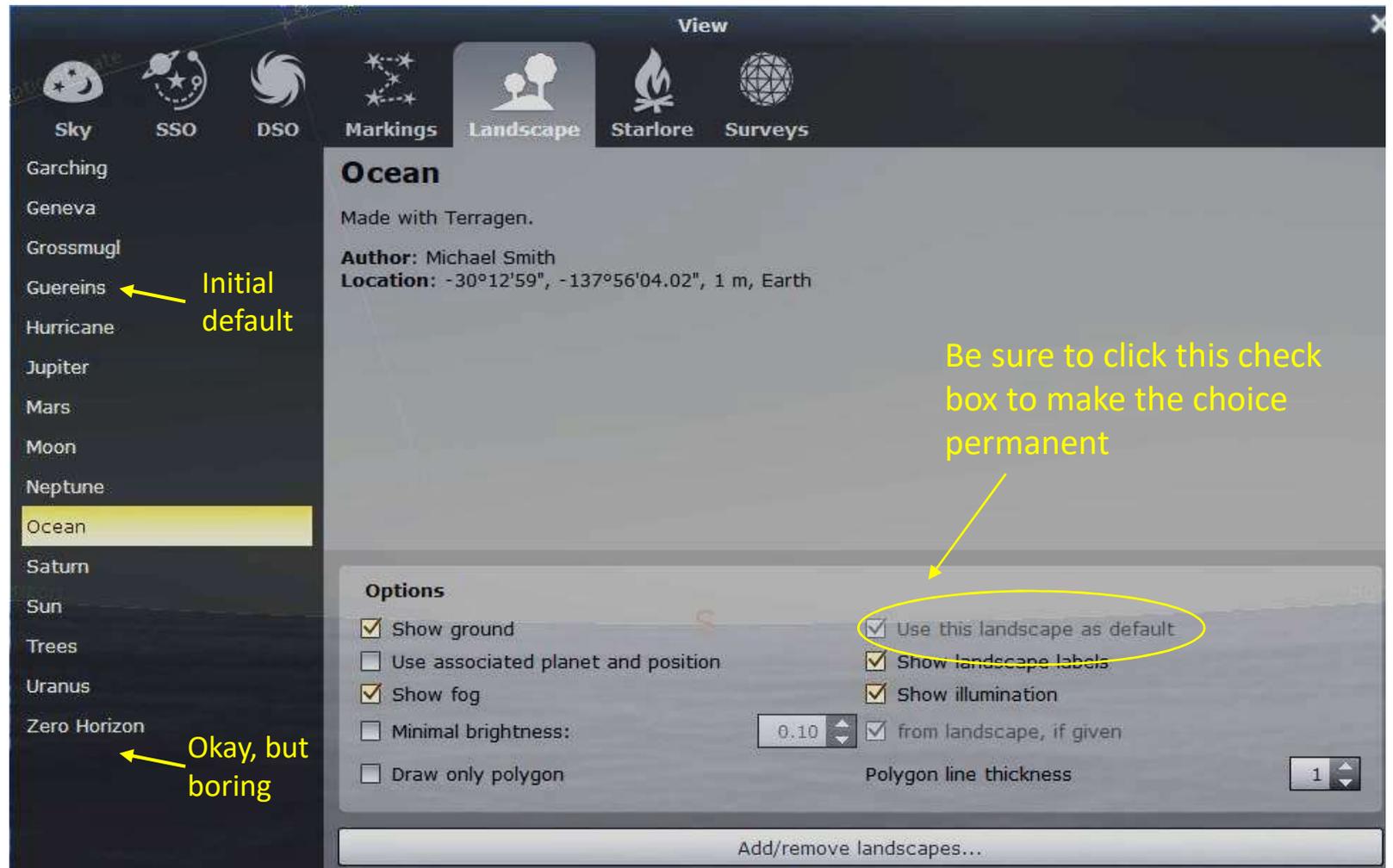
Permanent change

Add to list Delete from list Return to default location

DATE/TIME WINDOW (operation is obvious)

SKY AND VIEWING OPTIONS

First, get rid of the farm landscape and chose something with a level horizon.



I like Ocean.
It is more
interesting
than Zero
Horizon

SKY AND VIEWING OPTIONS

- 1) Turn off Zodiacal Light
- 2) Increase Milky Way brightness
- 3) Turn light pollution down to 1
- 4) Turn limit magnitude to 7
- 5) Ratchet back lines and markers

View

Sky

- Milky Way brightness/saturation: 1.50
- Zodiacal Light brightness: 1.00
- Dynamic eye adaptation
- Atmosphere visualization
- Light pollution: 1 or take from locations database
- Shooting stars: 10

Stars

- Stars
- Absolute scale: 1.00
- Relative scale: 0.85
- Twinkle: 0.20
- Limit magnitude: 7.00
- Spiky stars
- Labels and Markers
- Use additional names of stars
- Use designations for screen labels

Projection

- Perspective
- Stereographic**
- Fish-eye
- Orthographic
- Equal Area

Stereographic **Advanced**

Stereographic projection is known since antiquity and was originally known as the planisphere projection. It preserves the angles at which curves cross each other but it does not preserve area.

Vertical viewport offset: 0%

SKY AND VIEWING OPTIONS

On Deep Sky Objects tab, turn on Barnard and Caldwell objects

Turn ON Outlines for Big Deep-Sky Objects

Turn OFF Additional names

Reduce labels and markers

View

Sky SSO **DSO** Markings Landscape Starlore Surveys

Display objects from catalogs

<input checked="" type="checkbox"/> M	<input checked="" type="checkbox"/> IC	<input type="checkbox"/> vdB	<input type="checkbox"/> LDN	<input type="checkbox"/> PGC	<input type="checkbox"/> Arp	<input type="checkbox"/> PN G	<input type="checkbox"/> HCG	<input type="checkbox"/> DWB	<input type="checkbox"/> Ru
<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> B	<input type="checkbox"/> RCW	<input type="checkbox"/> Cr	<input type="checkbox"/> UGC	<input type="checkbox"/> VV	<input type="checkbox"/> SNR G	<input type="checkbox"/> vdBH	<input type="checkbox"/> Tr	<input type="checkbox"/> vdB-Ha
<input checked="" type="checkbox"/> NGC	<input type="checkbox"/> SH 2	<input type="checkbox"/> LBN	<input type="checkbox"/> Mel	<input type="checkbox"/> Ced	<input type="checkbox"/> PK	<input type="checkbox"/> Abell (ACO)	<input type="checkbox"/> ESO	<input type="checkbox"/> St	<input checked="" type="checkbox"/> Other

Filter by type

<input checked="" type="checkbox"/> Galaxies	<input checked="" type="checkbox"/> Bright nebulae
<input checked="" type="checkbox"/> Active galaxies	<input checked="" type="checkbox"/> Dark nebulae
<input checked="" type="checkbox"/> Interacting galaxies	<input checked="" type="checkbox"/> Planetary nebulae
<input checked="" type="checkbox"/> Clusters of galaxies	<input checked="" type="checkbox"/> Supernova remnants
<input checked="" type="checkbox"/> Open star clusters	<input checked="" type="checkbox"/> Hydrogen regions
<input checked="" type="checkbox"/> Globular star clusters	<input checked="" type="checkbox"/> Other

Labels and Markers

Labels

Hints

Use designations for screen labels

Use outlines for big deep-sky objects

Use proportional hints

Use surface brightness

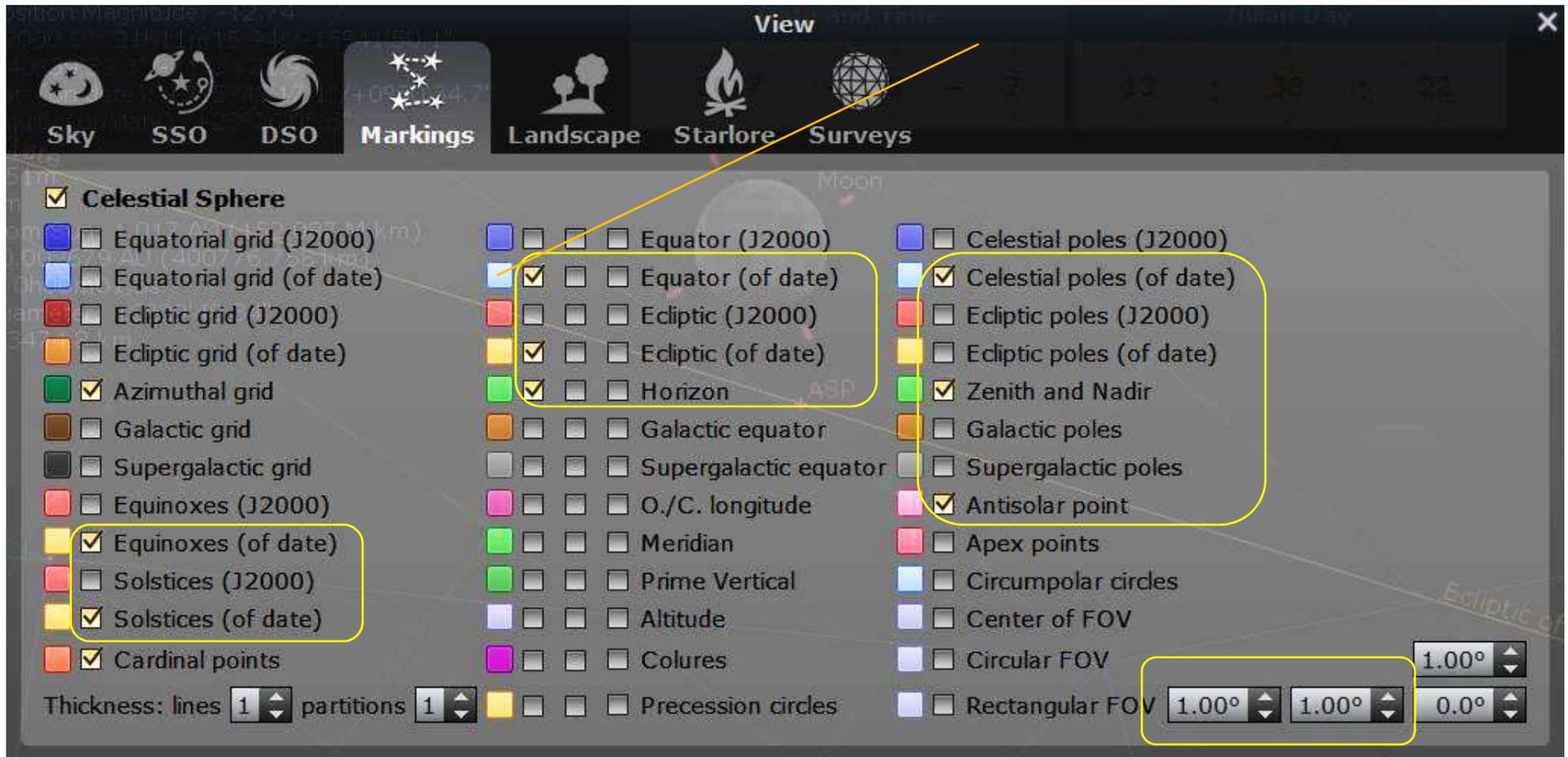
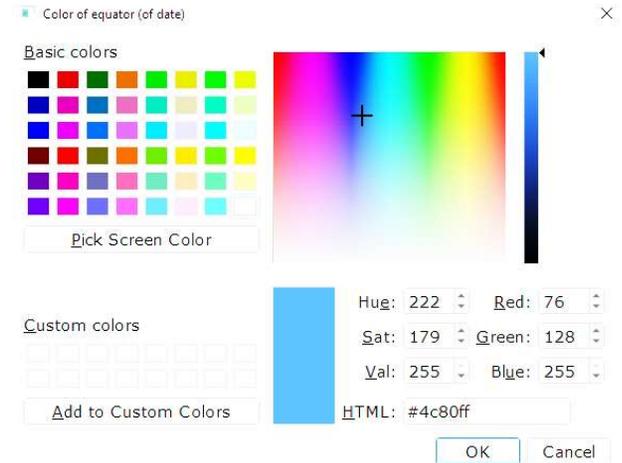
Use additional names of DSO

Limit magnitude:

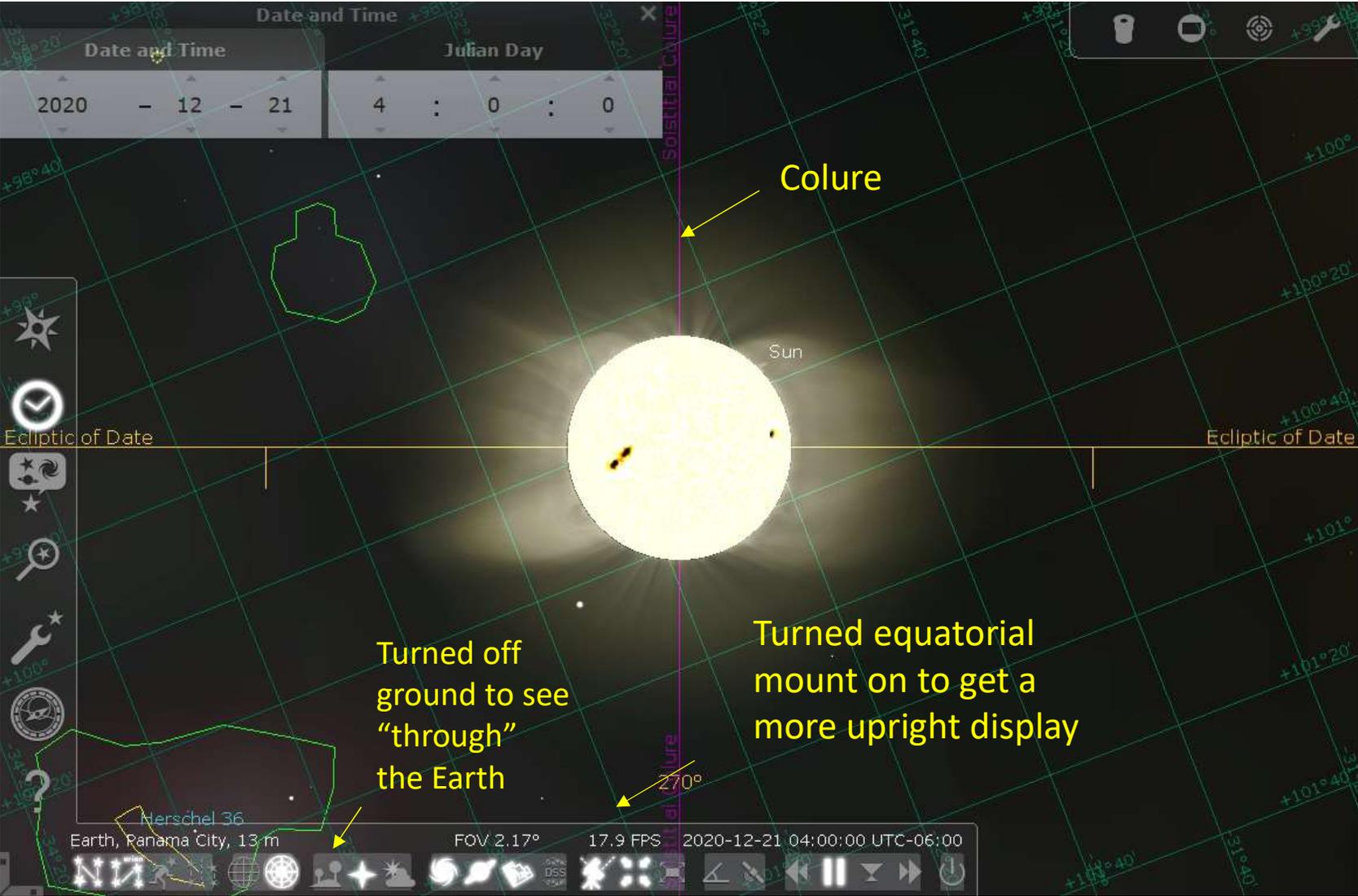
Limit angular size (arcmin):

SKY AND VIEWING OPTIONS

- 1) Want the equinoxes and solstices turned on
 - 2) Same with equator and ecliptic of date
 - 3) Horizon is for case where you turn landscape button off
 - 4) Want the celestial pole, zenith and nadir, and antisolar point indicated
- 1) Rectangular area change to 1 by 1 degree



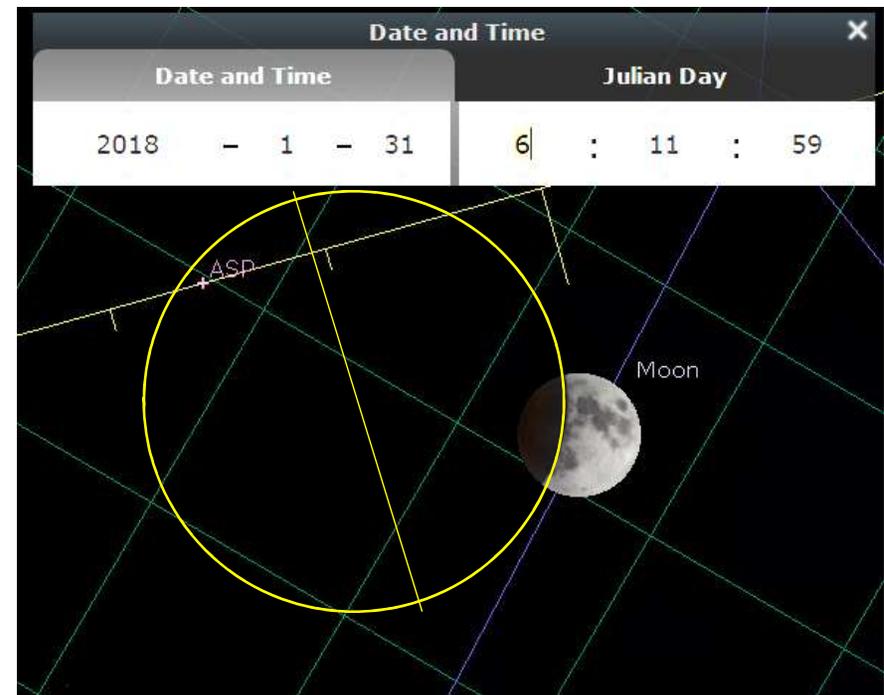
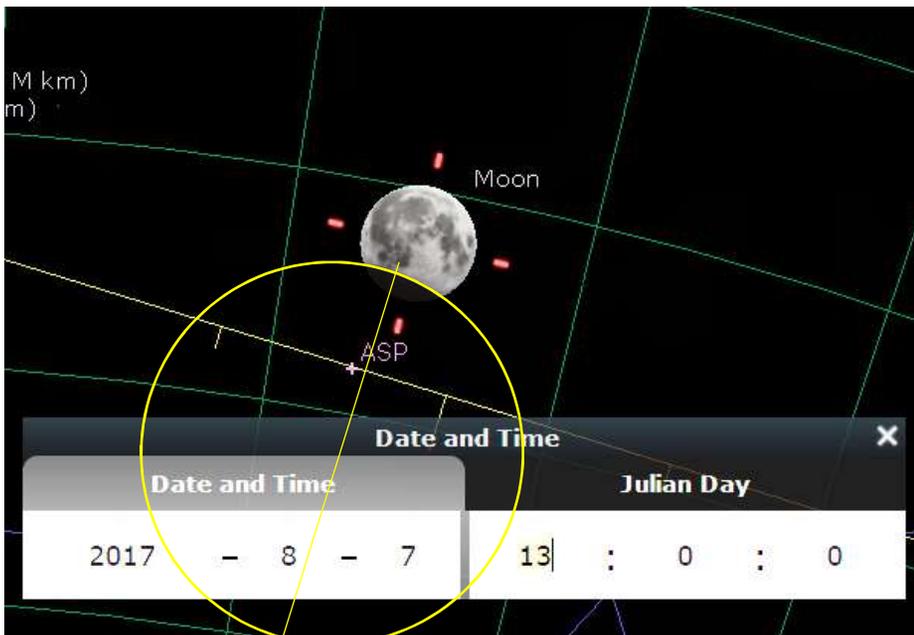
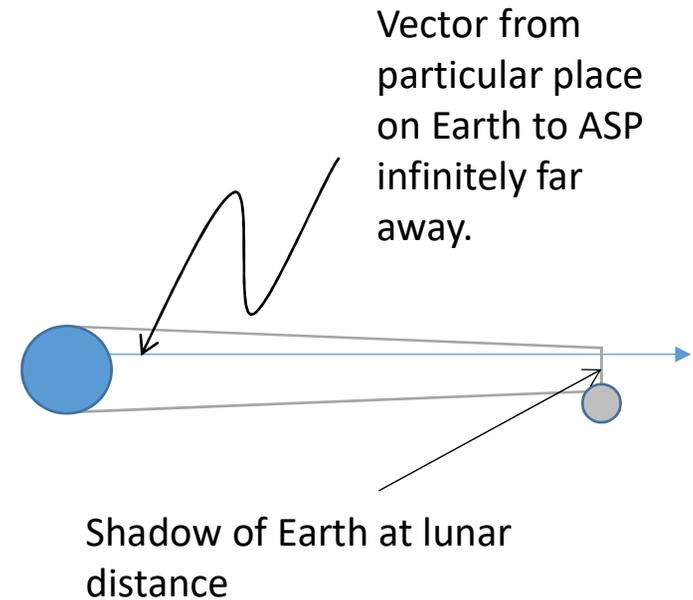
EXAMPLE: Turned on Colure line to predict time of winter solstice as 4:00 on Dec 21, 2020. Determined time by bisecting Sun on ecliptic of date. Have to make an eyeball estimate, but timeanddate.com says that the true time is 4:02 on that date. Pretty close!



EXAMPLE: TWO LUNAR ECLIPSES. If we display the Anti-Solar Point (ASP), we must keep in mind that the ASP is a vector projected to infinity, whereas the shadow of the Moon is a circle at 1/4 million miles or so. There is a parallax effect.

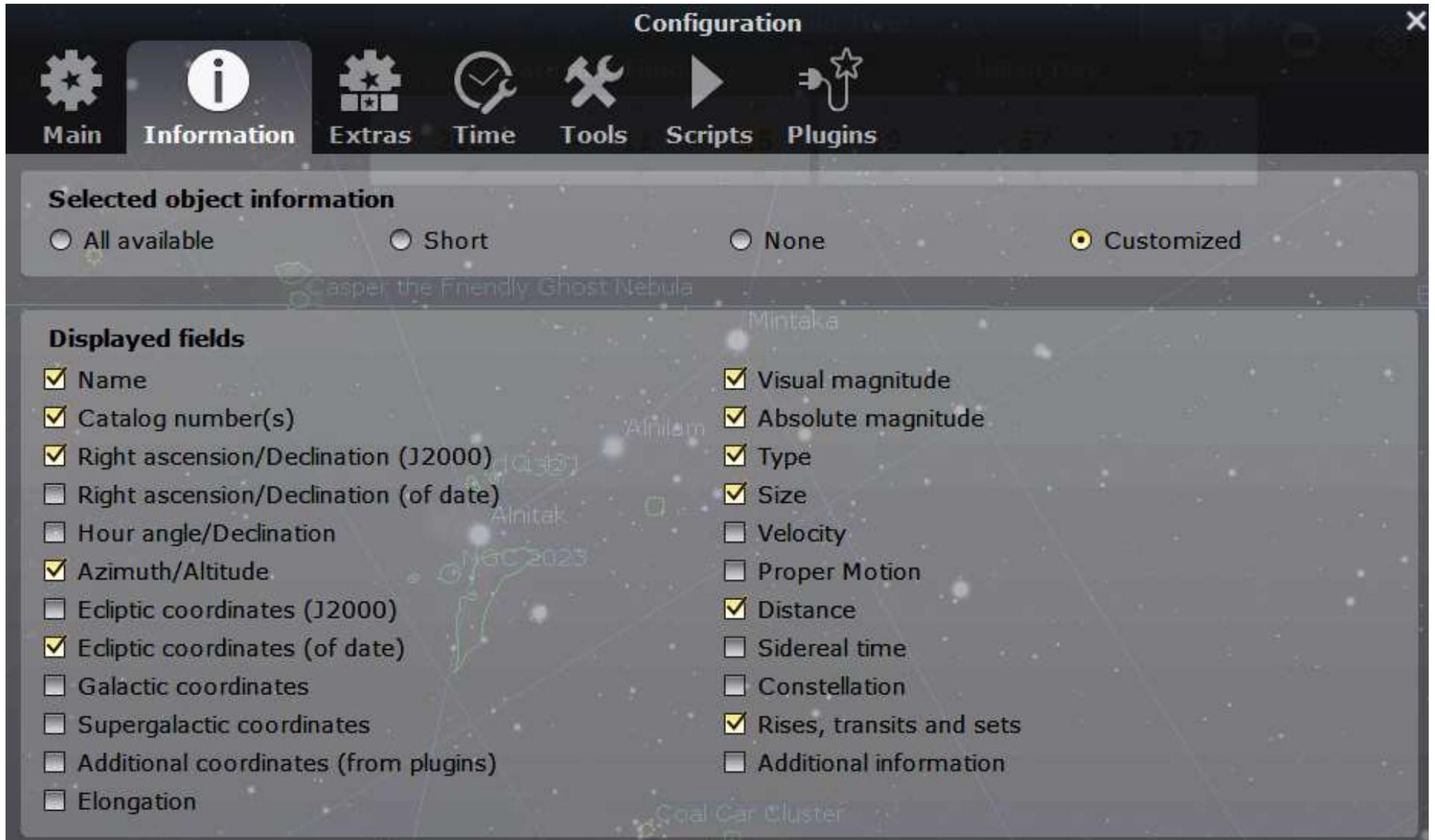
Both of these yellow circles are estimates drawn on the graphic in Powerpoint by just looking at the arc of the shadow of the Earth on the Moon. Nevertheless, they still demonstrate the principle

Note that when the local time is near noon (or midnight) the ASP seems to balance along the ecliptic. When the local time is near sunset or sunrise it moves toward one edge.

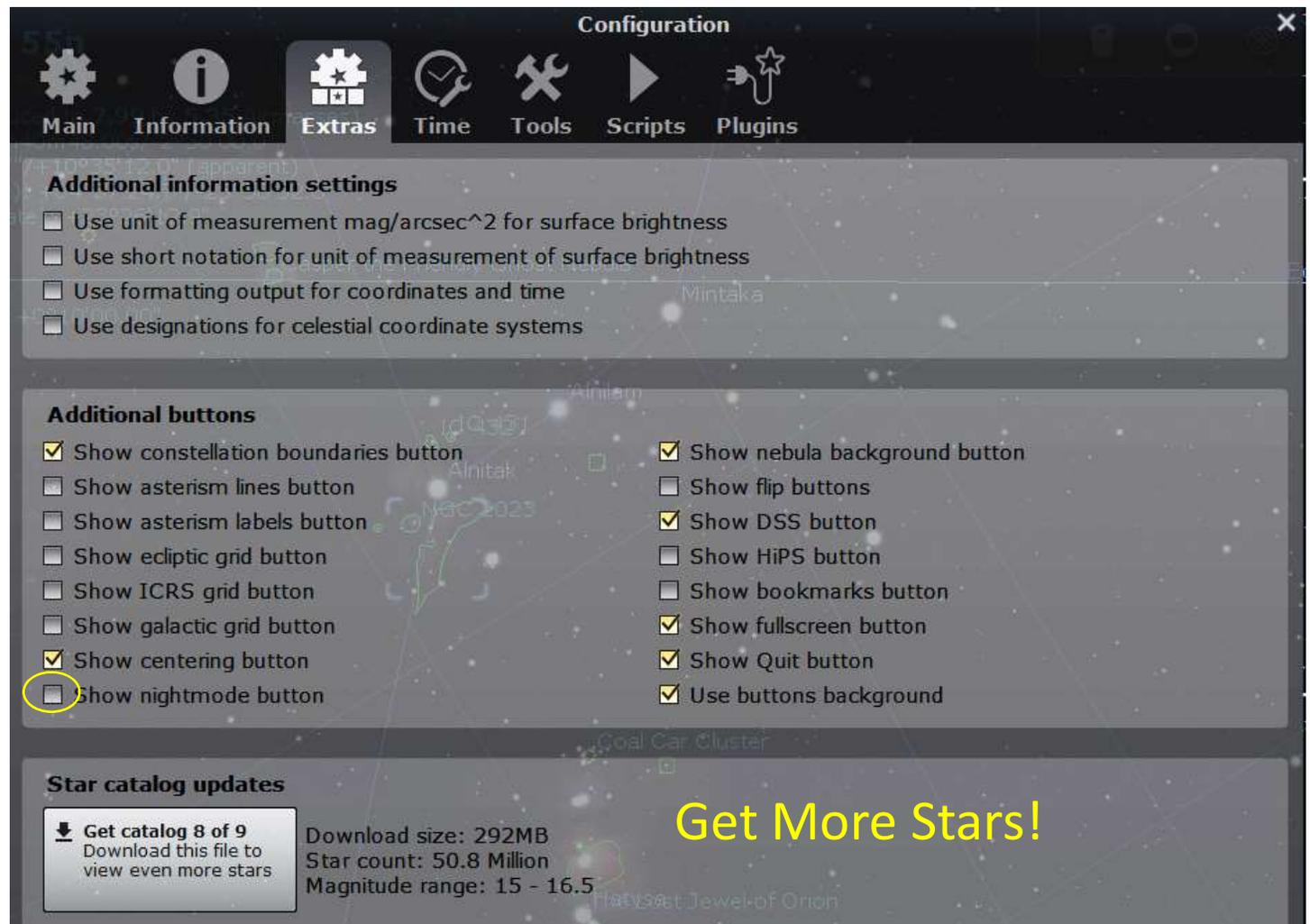


CONFIGURATION WINDOW

Information tab: This is the text that appears at the left when you select an object



CONFIGURATION WINDOW Extras tab



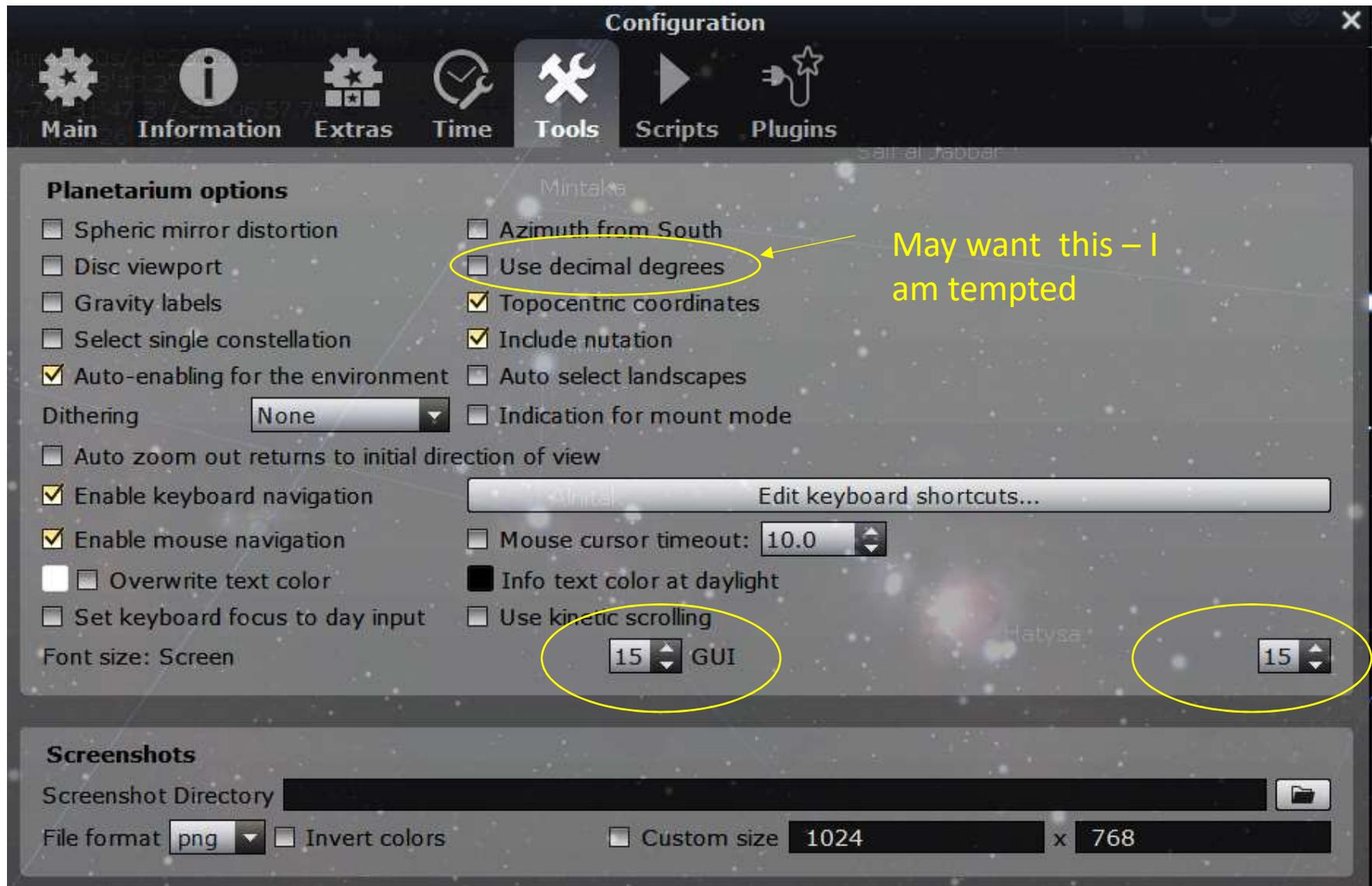
These are useful buttons on the bottom row.

When you are attached to the network, download these at least until you are waiting for Catalog 8. This means you have stars to mag 15 (440 mm aperture).

CONFIGURATION WINDOW Tools tab

Change GUI and Info fonts to be bigger (here from 13 to 15)

Use decimal degrees if you want



CONFIGURATION WINDOW Plug-Ins tab

The screenshot shows the 'Configuration' window with the 'Plug-ins' tab selected. The left sidebar lists various plugins, with '3D Sceneries' highlighted. The main panel displays the configuration for '3D Sceneries', including a description, usage instructions, acknowledgments, authors, contact information, and version. At the bottom, there is an 'Options' section with a checkbox for 'Load at startup' and a 'configure' button. Yellow annotations highlight specific elements: 'Turn on' points to the '3D Sceneries' header, 'Turn off' points to the 'Exoplanets' and 'Meteor Showers' entries, and another 'Turn off' points to the 'Load at startup' checkbox. A note states 'The way these are turned on and off' and another note says 'Once they are on you may have to go in and configure or update them' pointing to the 'configure' button.

Configuration

Main Information Extras Time Tools Scripts **Plug-ins**

3D Sceneries

3D foreground renderer. Walk around, find and avoid obstructions in your garden, find and demonstrate possible astronomical alignments in temples, see shadows on sundials etc.

To move around, press Ctrl+cursor keys. To lift eye height, use Ctrl+PgUp/PgDn. Movement speed is linked to field of view (i.e. zoom in for fine adjustments). You can even keep moving by releasing Ctrl before cursor key.

Acknowledgments: Development of this plugin was in parts supported by the Austrian Science Fund (FWF) project FROSIM (P 21208-G19; <https://astrosim.univie.ac.at/>). Further development is in parts supported by the Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology, Vienna, Austria (<http://archpro.lbg.ac.at/>).

Authors: Georg Zotti, Simon Parzer, Peter Neubauer, Andrei Borza, Florian Schaukowitsch

Contact: <http://homepage.univie.ac.at/Georg.Zotti>

Version: 0.14.1

License: GNU GPLv2 or later

Options

Load at startup

configure

Turn on

Turn off

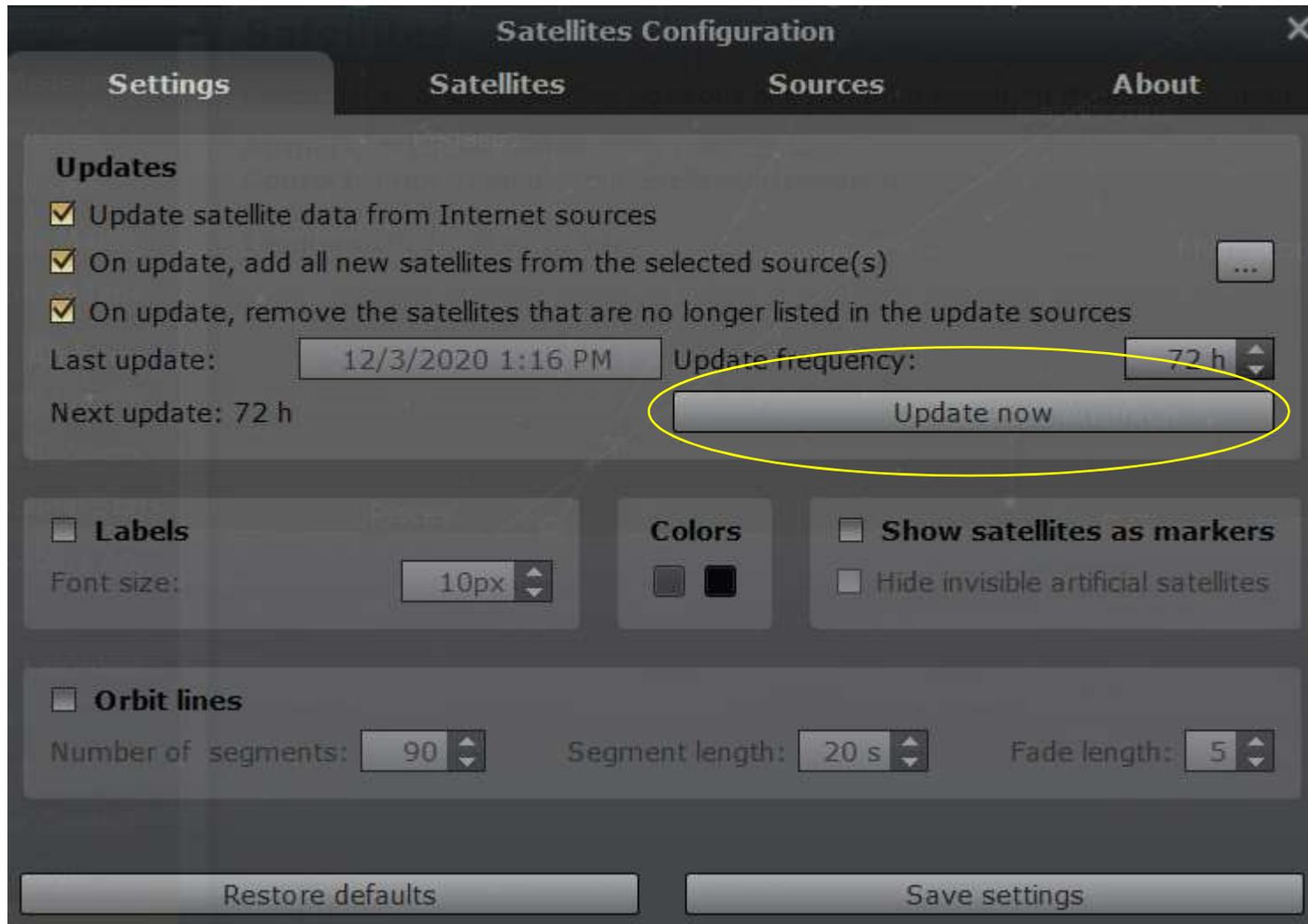
Turn off

Turn off

The way these are turned on and off

Once they are on you may have to go in and configure or update them

Aside: If you do turn Satellites on, you must update at the time. Satellite orbits are off after only a few days.



Example: Angle Plug-In (during dusk on Dec 21)

Date and Time
✕

Date and Time				Julian Day		
2020	-	12	-	21	17	: 3 : 21

RA/Dec (J2000.0): 20h10m11.05s/-20°33'55.7"
 Az./Alt.: +228°37'55.3"/+21°18'37.7" (apparent)
 Gal. long./lat.: +22°05'28.4"/-26°09'37.1"
 Ed. long./lat. (on date): +300°32'02.8"/-0°28'50.3"
 Ecliptic obliquity (on date): +23°26'12.9"
 Rise: 8h36m
 Transit: 13h50m
 Set: 19h03m
 Distance from Sun: 5.099 AU (762,820 M km)
 Distance: 5.927 AU (886.732 M km)
 Light time: 0h49m17.8s
 Apparent diameter: +0°00'33.26"
 Equatorial diameter: 142984.0 km

Earth, Panama City, 13 m FOV 0.181° 17.8 FPS 2020-12-21 17:03:21 UTC-06:00

CONFIGURATION WINDOW Main tab

“Save view” saves just view direction and angle (I like East, FOV ~ 70 deg startup)

“Save settings” saves all the setting changes mentioned in this slideshow

“Restore defaults” returns everything to beginning is case you foul it up

Configuration [X]

Main Information Extras Time Tools Scripts Plugins

Language settings

Program Language **glish (United States)** Sky Culture Language **glish (United States)**

Ephemeris settings

Use DE430 (high accuracy) Not Available

Use DE431 (long-time data) Not Available

VSOP87/ELP2000-82B is used when these are not installed or not activated.

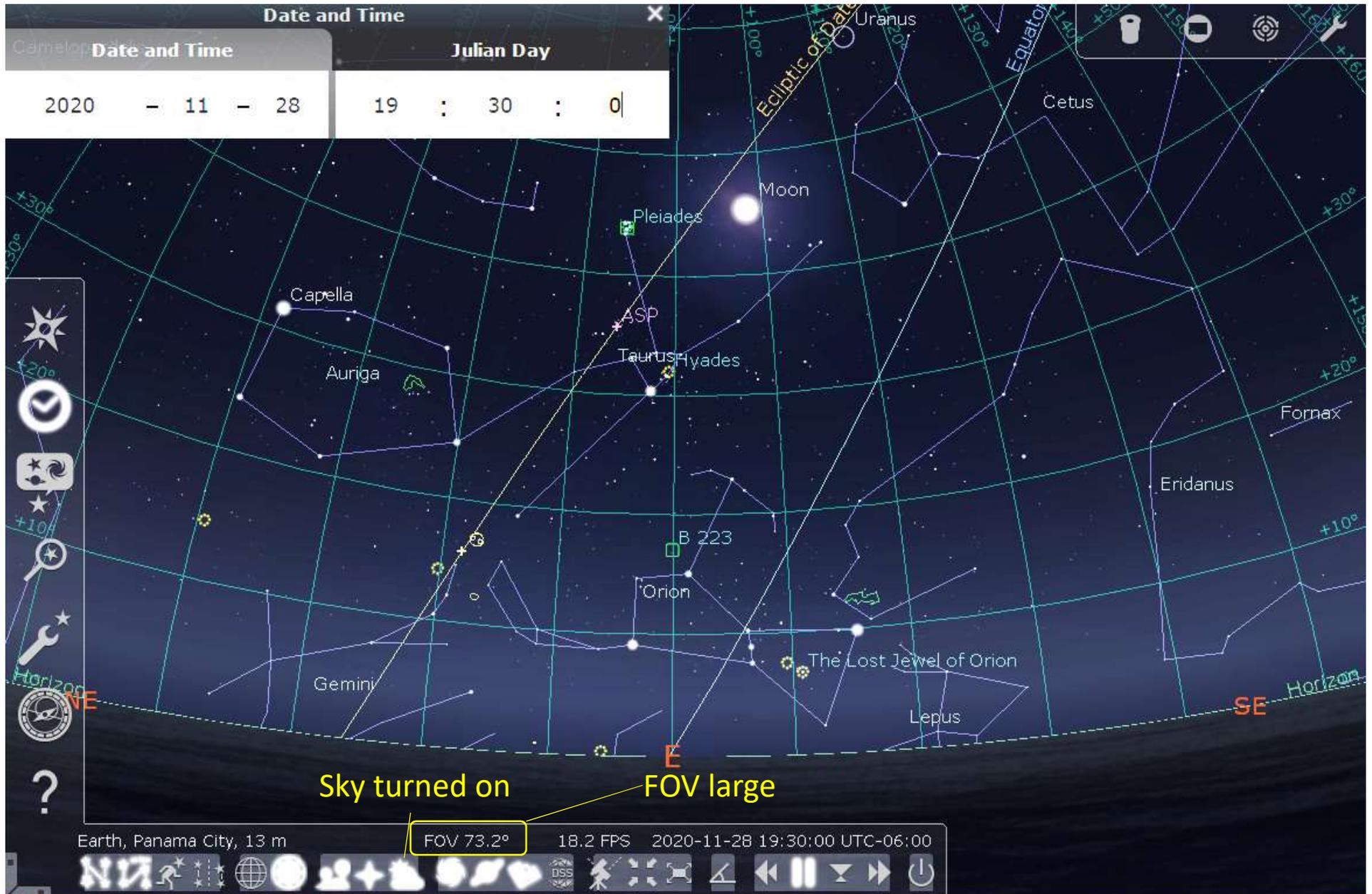
Default options

Save view **Save settings** **Restore defaults**

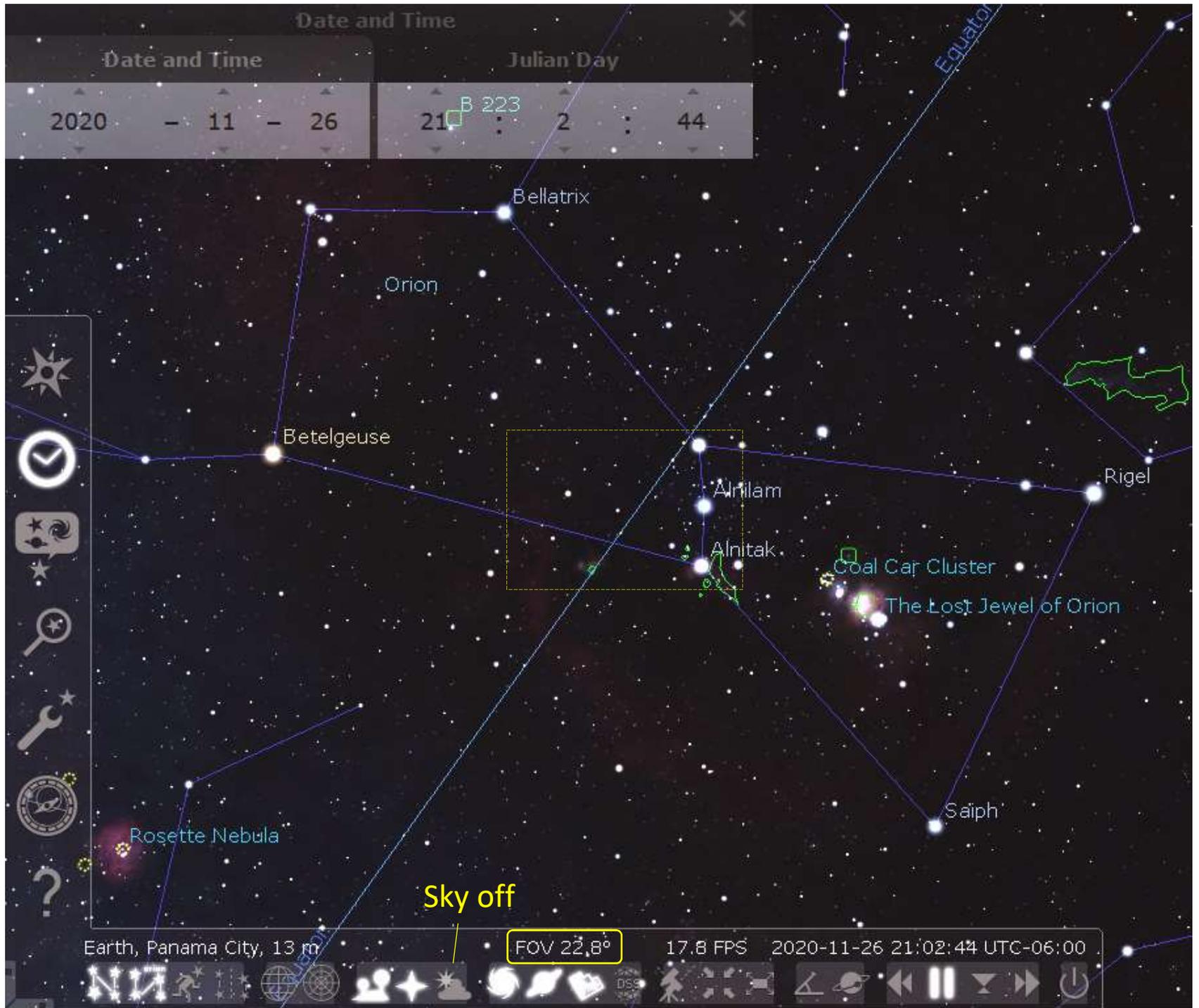
Save either the current FOV and direction of view or all the current options for use at next startup. Restoring default settings requires a restart of Stellarium.

Startup FOV: 102.131° Startup direction of view Az/Alt: +93°38'32"/+5°16'51"

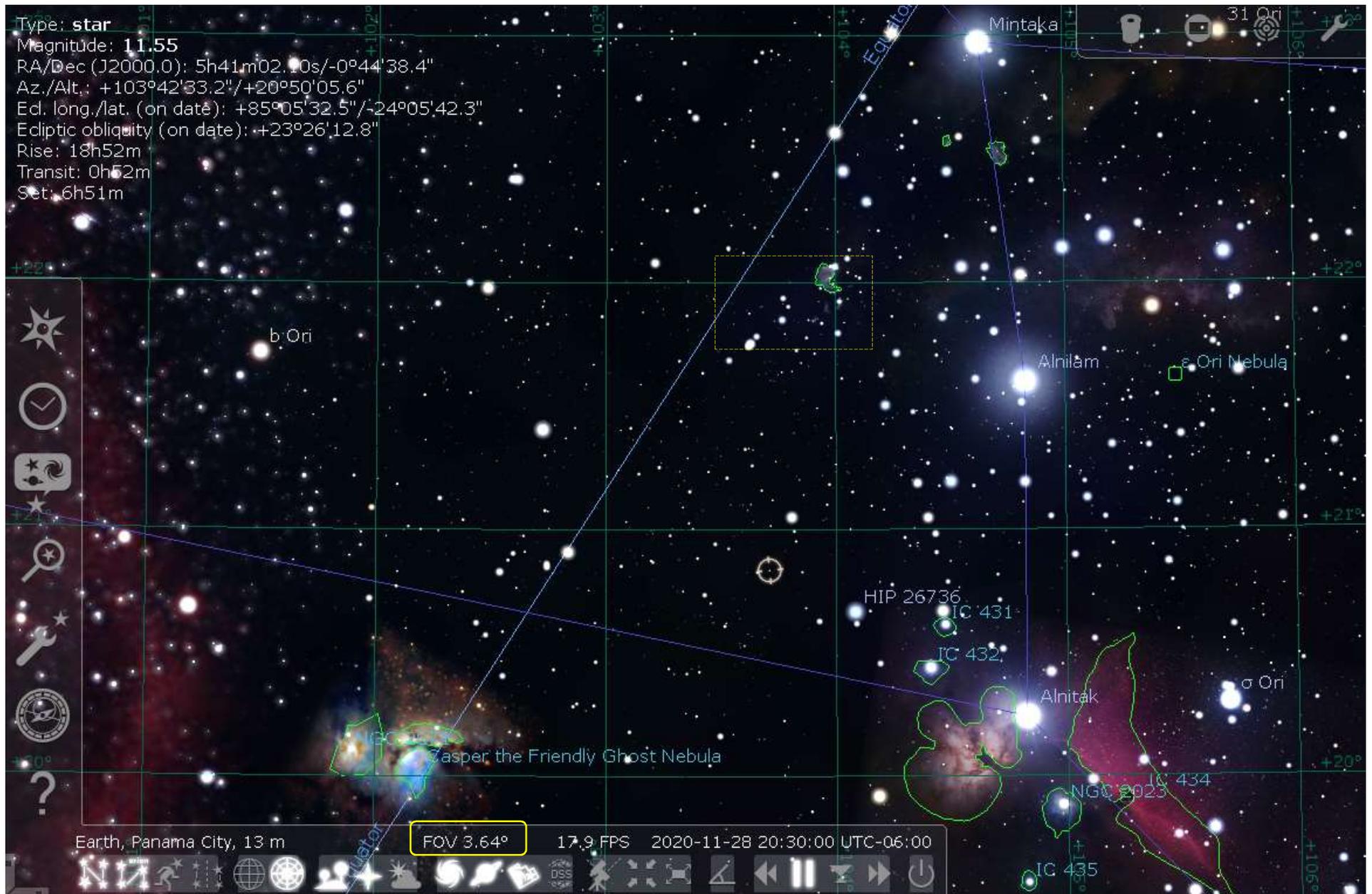
The Way It Looks



Moving closer



And closer



Narrow FOV

Type: **star**
Magnitude: **14.70**
RA/Dec (J2000.0): 5h37m05.95s/-0°08'04.2"
Az./Alt.: +103°43'49.1"/+21°59'31.7"
Eq. long./lat. (on date): +84°02'40.1"/-23°26'49.5"
Ecliptic obliquity (on date): +23°26'12.8"
Rise: 18h47m
Transit: 0h48m
Set: 6h48m

HIP 26431

HIP 26494

FOV 0.299°

Earth, Panama City, 13 m

18.8 FPS 2020-11-28 20:30:00 UTC-06:00

The image shows a star field with a green grid overlay. The star HIP 26431 is the central focus. The interface includes a data panel on the left, a toolbar on the bottom left, and a status bar at the bottom. The status bar shows the FOV is 0.299 degrees, the frame rate is 18.8 FPS, and the date/time is 2020-11-28 20:30:00 UTC-06:00. The location is Earth, Panama City, 13 m. The data panel on the left provides detailed information about the star, including its type, magnitude, and various coordinates. The toolbar on the bottom left contains icons for star selection, zoom, and other functions. The status bar at the bottom provides real-time information about the observation.