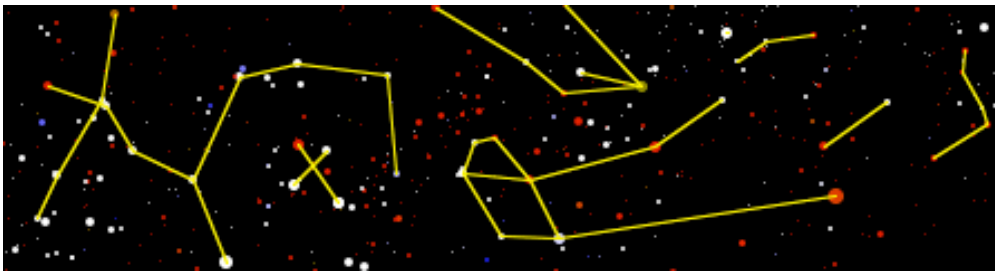


NIGHTSKY 3.2 FOR MAC OS X

Introduction

Night Sky 3.2 is a planetarium for Mac OS X. Night Sky displays the night sky for any latitude, date and time. This includes 20,000 stars (files with up to 50,071 stars available), the Messier catalog of deep space objects, the planets out to Neptune, the Moon and Sun.



Downloading Night Sky

NightSky 3.2 can be downloaded with the following URL:

<http://www.kaweah.com/NightSky/NightSky-32.hqx>

Using Night Sky

• Getting Started

When Night Sky launches, an open file dialog will appear. Select a data file, for example, the data file provided with Night Sky 3.2 is "stars20k.dat". A window will then open, displaying the night sky.

• Getting Around

Night Sky updates its sky displays every minute to keep up with the sky outside. This is called "real time mode". If you want to control which part of the sky is displayed, you can move to another part of the sky with several methods:

- 1) Use your mouse to drag a rectangle to *zoom in* on the region contained by that rectangle. If you draw a big enough rectangle, you will *zoom out*.
- 2) Use the scroll bars to move around.
- 3) Use the *RA & Dec* sliders to move to another part of the sky. Use the *View Angle* slider to set the width of the display (in degrees).
- 4) Select the *Position* or *Time* item from the *Settings* menu, and enter a specific set of numbers into the fields in the dialog box that appears. If you select *Tonight* from the *Settings* menu, the display will show the sky for 9 pm tonight. Any change in time or right ascension (longitude) switches off Night Sky's real time mode. Selecting *Current* tells NightSky to switch back to "real time" mode.

• Clicking Around

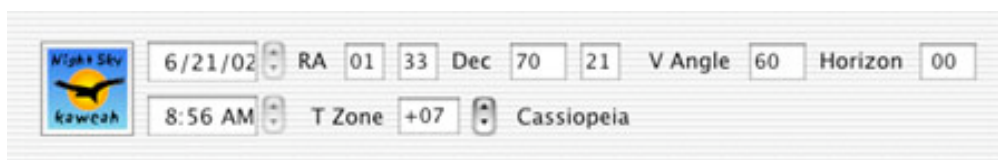
By default, clicking on a spot on the display moves the center of the display to that spot (*recenter* mode). In the default *stepwise motion* mode, Night Sky moves to the new center step by step.

Alternatively, clicking on a star can cause its (1) name or (2) a dialog displaying its data to be displayed. Use the *Click To* menu to change how Night Sky responds to mouse clicks.

Do you want to see what the sky looks like from another star? Just activate the *Go to Star* feature and click on a star. Once you go, however, it may not be easy to get back, so just close the current window if you get lost. Open a fresh window and you'll wake up safely on mother earth.

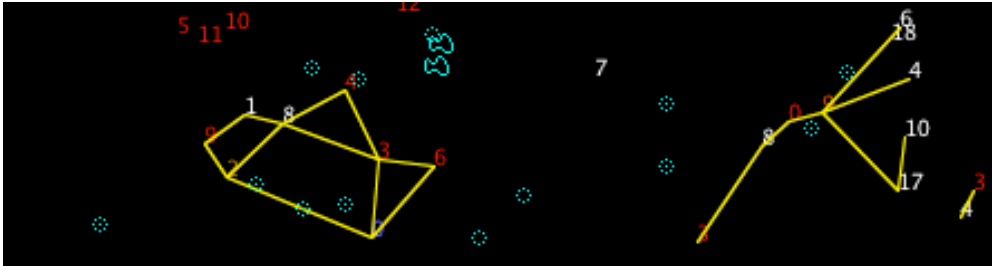
• Dragging Around

Dragging a rectangle over the sky display directs Night Sky to use that rectangle as a new bounding frame for the sky display. This is "Recenter & Zoom" drag-to mode; other modes are available to registered users.



- **Star Visibility & Availability**

If you see too many or too few stars, you can use the *Brightness* slider to fix that. If you still need more stars, you can acquire star files with up to 50,071 stars.



- **Special Features**

In View Star by Group mode, stars are represented as numbers indicating their constellation groups. In View Star by Rank mode, each star is represented as a number indicating its rank (according to apparent magnitude) within its constellation group.

The *magnitude density* feature enables you want to see a magnitude density map of the night sky.

In *auto constellations* mode, which NightSky attempts to draw its own constellations.

If you want to save what you see in a window, you can save it as a PICT file. See the *Make Image* submenu of the *File* menu.

- **Special Files**

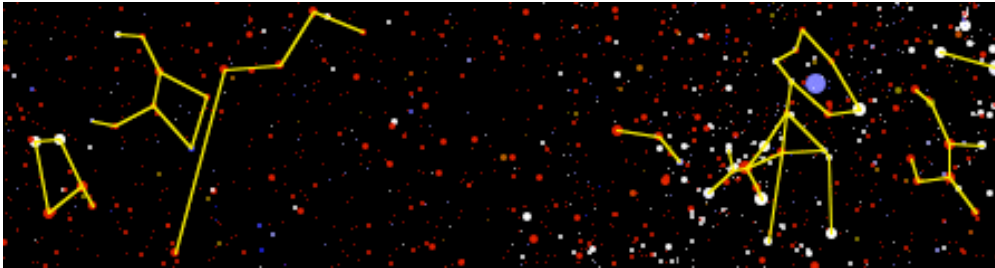
Night Sky stores its preferences in the file "NightSky-prefs.txt" in the folder `{ $HOME } / Library / Preferences`.

The file "constel.dat" holds constellation data. Alternate constellation sets are provided in the files "constel-simple.dat" and "constel-fancy.dat". To use either of these alternate constellation sets, simply rename the file to "constel.dat" (making sure to save the original "constel.dat" file under

another name).

The file "messier.dat" holds data from the messier catalog of deep space Objects. Night Sky reads this file for its Messier object data.

Night Sky writes to a log file in the folder {\$HOME}/Library/Logs. The log file is named "NightSky-log.txt".



Registration

Night Sky 3.2 is shareware that provides enhanced functionality to registered users. It is distributed in a freeware mode that is feature-filled in its own right.

To register your copy of Night Sky, please send a check or money order for \$25, made out to Dan Jensen, to:

Kaweah Software
6738 Positano Lane
San José, CA 95138

Upon registering, you will receive a registration code that will give you access to the following features:

- Print out sky displays.
- Save sky displays to PNG and JPEG formats.
- Open concurrent star files (up to 5).
- "Horizon" mode: view the sky along the horizon, in any azimuthal direction.
- "Twilight": render sky displays with continuous variations of light to represent day and night.
- Edit star and constellation data.
- "Draw Freely": customize sky displays by drawing over them.



New Features

The Moon

- phases are displayed.
- image scales with sky display.
- minimum display size to ensure visibility.

Constellations

- complete set of constellation patterns.
- optional "fancy" and "simple" constellation pattern sets.
(just duplicate the optional file and rename to "constel.dat")

Find Dialog

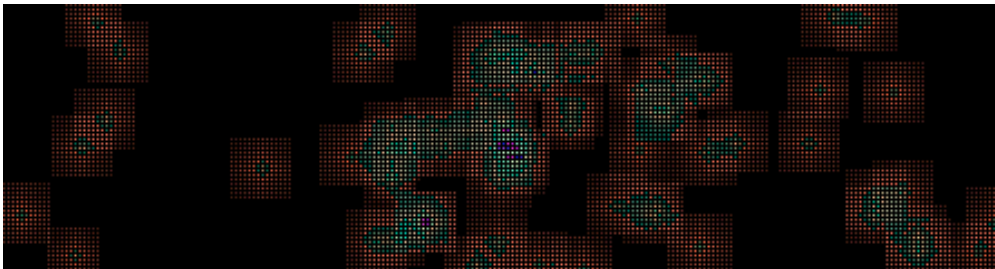
- found object is selected, so that its name is displayed along side it
(until another object is selected in its place).
- constellations are searchable.
- deep sky (Messier) objects are searchable.
- planets are searchable.

Toolbar

- date
- time
- right ascension
- declination
- view angle (width of display in display)
- time zone
- name of constellation at screen center
- azimuth (horizon angle from due north)

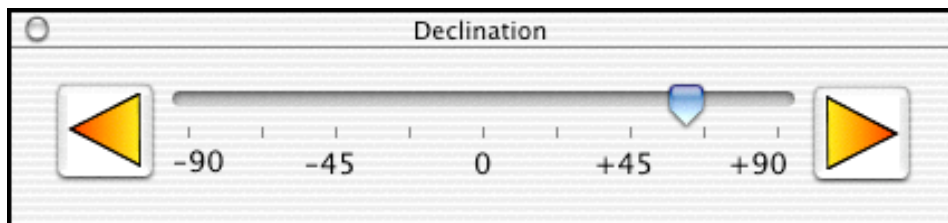
Miscellaneous

- stepwise movement.
- star sets as large as 50,071 stars available.
- view star by group (constellation) and/or rank in group.
- horizon (azimuthal) view.
- sliders for controlling RA, declination, view angle (width), horizon angle and brightness.
- textual output to the UNIX shell.
- drawings persist for duration of application session, and may be saved to disk.



Functionality to be added in the future

- Change time zones from toolbar (as well as from dialog).
- "Browse Stars" data browser (list view).
- Stepwise translations (in "Go To Star" mode).
- Print to file (PDF).



Known problems

Time dialog requires leading zero for day; ... elsewhere?

Vertical scroll bars don't always refresh completely.

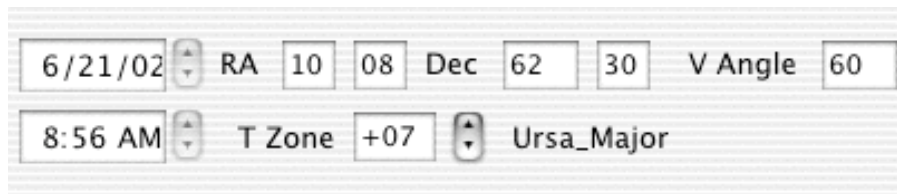
Position bar occasionally becomes unresponsive.

When a view is opened and closed, then another view is opened and closed, a third view cannot be opened, because "installMenuEventHandler() failed."

When first action is finding and stepping to Regulus, the name may not be displayed on the final step — difficult to replicate.

Zoom

- doesn't work properly in horizon mode.
- may reduce horizon (zenith RA) to zero? — difficult to replicate.
- may occasionally reduce view angle to zero.



Known problems (registered mode)

Horizon Display

BAD_ACCESS while roaming around in horizon mode ... or in general? — difficult to replicate.

Horizon mode doesn't wrap over +/- 180 deg.

Twilight Display

Twilight display looks strange in horizon view: sky beyond star dome is colored variably, but should be black or a neutral color.

In default projection, thin, dark vertical lines appear.

Printing

- Print error alert may not be working correctly.

- Display doesn't scale to printed page:
big displays are not scaled down to fit in printout.



Contacting Kaweah

To make comments or to request further information, please write Kaweah at software@kawah.com, or direct your web browser to <http://www.kawah.com/NightSky/>.



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