

Instructions for Installing KStars, Dependencies, and related software on OS X (Not tested on 10.12)

(At least until we work out an automated and/or simpler method of doing it)

1. Make sure you have home-brew installed. brew.sh
2. From here, I followed Sean Houghton's Instructions to install a variety of dependencies needed for indi and kstars using home-brew: gist.github.com/seanhoughton/1b2649a2a0ef904d79f9
First we Start with qt5 (which by the way could take a very long time):

```
brew install qt5 --with-dbus
```

Note, if you have an issue with qt5 installing, you might need to apply this fix:

```
diff --git a/Formula/qt5.rb b/Formula/qt5.rb
index f63a40f..3be6244 100644
--- a/Formula/qt5.rb
+++ b/Formula/qt5.rb
@@ -89,6 +89,9 @@ class Qt5 < Formula
  -qt-freetype
  -qt-pcre
  -nomake tests
  + -skip qtconnectivity
  + -skip qtwebengine
  + -skip qtwebview
  -no-rpath
]
```

3. Then install the rest of the dependencies using homebrew:
brew tap homebrew/science
brew install cmake
brew install pkgconfig
brew install cfitsio
brew install cmake
brew install eigen
brew install gettext
brew install astrometry-net

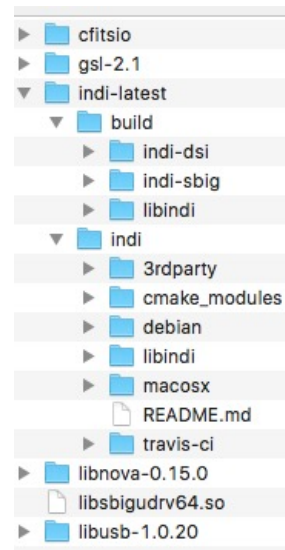
```
brew tap haraldf/kf5
brew install haraldf/kf5/kf5-kplotting
brew install haraldf/kf5/kf5-kxmlgui
brew install haraldf/kf5/kf5-knewstuff
brew install haraldf/kf5/kf5-kdoctools
brew install haraldf/kf5/kf5-knotifications
brew install haraldf/kf5/kf5-kcrash
```

4. I followed these instructions to build INDI from source and get it installed on the Mac in the proper location: indilib.org/forum/general/210-howto-build-st-libindi-ekos.html

Do this at the command line:

```
mkdir ~/Projects
cd ~/Projects
git clone github.com/indilib/indi.git
```

Before you can build, follow the instructions in the Mac OS X readme file in the download from the git. This includes downloading libnova-0.15.0, libusb-1.0.19, cfit3380, and gsl-2.1, then placing the unzipped folders at the same level as your git download, and then running configure and make from the command line in the gsl folder. See the screenshot to the right.



Also before you build, double check that CMakeLists.txt in the libindi folder is correct. Open the file and make sure it says this, if not, change it.

```
set (indiclient_SRCS
${CMAKE_CURRENT_SOURCE_DIR}/libs/indibase/basedevice.cpp
${CMAKE_CURRENT_SOURCE_DIR}/libs/indibase/baseclient.cpp
${CMAKE_CURRENT_SOURCE_DIR}/libs/indibase/indiproperty.cpp
${CMAKE_CURRENT_SOURCE_DIR}/base64.c
)
```

```
set (indiclientqt_SRCS
${CMAKE_CURRENT_SOURCE_DIR}/libs/indibase/basedevice.cpp
${CMAKE_CURRENT_SOURCE_DIR}/libs/indibase/baseclientqt.cpp
${CMAKE_CURRENT_SOURCE_DIR}/libs/indibase/indiproperty.cpp
${CMAKE_CURRENT_SOURCE_DIR}/base64.c
)
```

Now go back to the Projects directory and follow these instructions.

```
mkdir -p build/libindi
cd build/libindi
cmake -DCMAKE_INSTALL_PREFIX=/usr/local -DCMAKE_BUILD_TYPE=Debug
~/Projects/indi/libindi
sudo make install
```

If you want the 3rd Party drivers like SBIG or DSI, you can try to build and install them or just copy them from somewhere else if you can find them. An alternative would be to install the free Cloudmakers Indiserver program:

<http://www.cloudmakers.eu/indiserver/>

And just run that to serve your 3rd Party devices

Check that the binary files for the drivers are all in /usr/local/bin and that the driver xml files are in /usr/local/share/indi

5. We can now use the latest version of KStars, rather than the one from Sean Houghton. I picked an empty folder on my hard drive to download the latest version of kstars-bleeding. I executed this from the command line in that folder. You might need a github account and password for this step:

```
git clone git://anongit.kde.org/kstars.git
```

6. Then I ran the following commands to export useful directory paths and use cmake to build the Xcode project (also on his page):

```
mkdir kstars-build
cd kstars-build
export PATH=$PATH:${(brew --prefix gettext)/bin}
export Qt5_DIR=${(brew --prefix qt5)}
export Qt5DBus_DIR=$Qt5_DIR
export Qt5Test_DIR=$Qt5_DIR
export Qt5Network_DIR=$Qt5_DIR
export ECM_DIR=${(brew --prefix kf5-extra-cmake-modules)/share/ECM}
```

7. Now you have a choice, if you would like to create an xcode project where you can edit the code and make an app bundle, run the following command:

```
cmake -DCMAKE_INSTALL_PREFIX=~/.usr/local -G Xcode ../kstars
```

If you would prefer a command line version and don't want to use xcode at all, then do this command instead:

```
cmake -DCMAKE_INSTALL_PREFIX=~/.usr/local ../kstars
```

Then follow one of the sets of directions below depending on which option you chose:

- 8a. If you chose to create an XCode project, you can go and get it in the build directory and double click, Xcode should open it. If that is the case then follow these directions to get an app:
- First copy the entire data directory in the KStars folder from the git to a folder you create called `~/Library/Application Support/kstars`
 - In Xcode, Near the top left, it should say "all build." Change that to kstars.
 - Go to "schemes" in the product menu and edit scheme
 - Select "Release" and uncheck "debug executable"
 - Hit the run button at the top left. KStars should run successfully. Do any tests you need to do. Edit code if you like.
 - Then close XCode.
 - In the KStars build folder, you should find a folder called KStars and in there one called "Release" In that folder is kstars.app
 - Copy and paste KStars.app wherever you like.

8b. If instead you chose to just get the command line version, then follow these instructions instead:

- a. After running the cmake command, do `sudo make install`
- b. Then run this command to symlink the data directory to
`~/Library/Application Support/kstars`

```
ln -s /usr/local/share/kstars/* ~/Library/Application\ Support/kstars/
```

9. If you would like gsc so that the simulators can have nice stars to work with, then install gsc following these instructions:

<http://www.indilib.org/support/tutorials/139-indi-library-on-raspberry-pi.html>

- a. Find a folder on your hard drive in a terminal window and use these commands:

```
mkdir ~/gsc  
cd ~/gsc  
wget -O bincats_GSC_1.2.tar.gz http://cdsarc.u-strasbg.fr/viz-bin/nph-Cat/tar.gz?bincats/GSC_1.2  
tar -xvzf bincats_GSC_1.2.tar.gz  
cd src  
make  
mv gsc.exe gsc  
sudo cp gsc /usr/local/bin/  
cd ..  
cp ~/gsc/bin/regions.* /gsc
```

I had a couple of problems. First, it needed both of the regions files in a subfolder called bin inside the final gsc folder. Second, I had to copy all the folders that began with N and S to the final gsc folder (but NOT in the bin subfolder). Third, I had trouble getting the environment variable permanent, so you will note I made the final line install to /gsc not ~/gsc

10. If you would like astrometry.net for offline plate solving or xplanet for planet rendering, they should be easy to install using the same methods used for unix systems and may be available on homebrew, but I have not tried that with the os x version yet. I highly recommend the astrometry.net package and index files. I have used them extensively on my Raspberry Pi, but not on OS X yet.