eFinder install on 32bit Raspian OS

Install recommended standard 32bit Raspian OS (use Raspberry Pi Imager app) Insert SD card in Pi and boot.

When prompted to enter your username:

use “efinder” (note all lowercase)

if not, use your own, but then edit the code

use search & replace, with Match Case, to find all “efinder’ and replace with your username

(its in filename paths)

If using a previous build: (much better to start afresh though!) sudo apt update

apt list --upgradeable

sudo apt upgrade

to enable remote Finder access from a Mac

sudo apt install netatalk

edit the config file by

sudo nano /etc/netatalk/afp.conf

to remove some ‘;’ and add /home

[Homes]

basedir regex = /home

save and exit

sudo systemctl restart netatalk

If needed during installation of files, to enable a file manager with sudo privileges

sudo pcmanfm

Update numpy

sudo pip3 install numpy==1.22.0

sudo apt install libatlas3-base

Download astrometry.net-0.90 or later from the GitHub https://github.com/ dstndstn/astrometry.net/releases/tag/0.90

Install all the dependencies first.

pip install fitsio

pip install astropy

pip install pyfits

'sudo apt-get install' the following

libcairo2-dev

libnetpbm10-dev

netpbm

libpng-dev

libjpeg-dev

python3-numpy maybe installed already

zlib1g-dev

libbz2-dev

swig

libcfitsio-dev

Edit profile to include new PATH

sudo nano /etc/profile

add to end of file

export PATH=/home/<username>/.local/bin:$PATH

save and close

Reboot the Pi

build astrometry.net using default directory (/usr/local/astrometry/) In a terminal session, move to the astrometry.net-0.90 folder. Run sudo make

sudo make py

sudo make extra

sudo make install

Add some index files to

/usr/local/astrometry/data

Suggest: index-4107.fits thru index-4111.fits

(the default astrometry.cfg will point to these index files)

Add some catalog files to a new folder

/usr/local/astrometry/annotate\_data

Suggest:

abell-all.fits

brightstars.fits

hd.fits

hip.fits

tycho2.kd

Edit profile to include new PATHs

sudo nano /etc/profile

add to end of file

export PATH=/usr/local/astrometry/bin:$PATH

save and close

Reboot

remove need for password during code execution

sudo visudo

then add following line to end

<username> ALL = NOPASSWD: /bin/date, /sbin/reboot

save & exit

install image viewer accessible to Python

sudo apt install imagemagick

Install Skyfield

pip install Skyfield

Install Tkinter

sudo apt-get install python3-pil.imagetk

Set up the Pi wifi to ‘know’ the Nexus DSC wifi DSC & password. That way on Pi boot it will always look for the Nexus wifi and connect as a priority.

eFinder configure…..

add directories

~/Solver

~/Solver/images

~/Solver/Stills

add files

to ~/Solver

M16.jpeg

test.jpg

polaris.jpg

36 test images to /Solver/Stills - optional

Install LCD display driver if being used

sudo pip install adafruit-circuitpython-charlcd

Enable i2c and SPI in the Raspberry Pi configuration setup.

install the zwoasi linux SDK

get ZWO Linux SDK from Developers tab on

https://astronomy-imaging-camera.com/software-drivers

unpack and find folder /lib/armv7 and file asi.rules

make a copy of /armv7 in a new folder /lib/zwoasi/armv7 (might need sudo privileges - use ‘sudo pcmanfm’)

move to folder containing asi.rules and run…..

sudo install asi.rules /lib/udev/rules.d

pip3 install zwoasi

to enable autoboot of eFinder program on power up

in terminal enter

crontab -e

at very end add following line, save & exit

PATH = <copy your default PATH into here>

@reboot sleep 10 && python3 /home/<username>Solver/eFinder.py &

If using a usb hand box. The code main.py should be loaded into the raspberry pi Pico.