Running EXOTIC under Windows Subsystem for Linux

Martin J F Fowler, South Wonston, UK

References:

Installing Anaconda on Windows Subsystem for Linux
https://jensenwaud.com/2019/01/17/installing-anaconda-on-windows-subsystem-for-linux/

How to install g++ in Ubuntu 14.04? [duplicate] https://askubuntu.com/questions/481807/how-to-install-g-in-ubuntu-14-04

EXOplanet Transit Interpretation Code (EXOTIC) Instructions

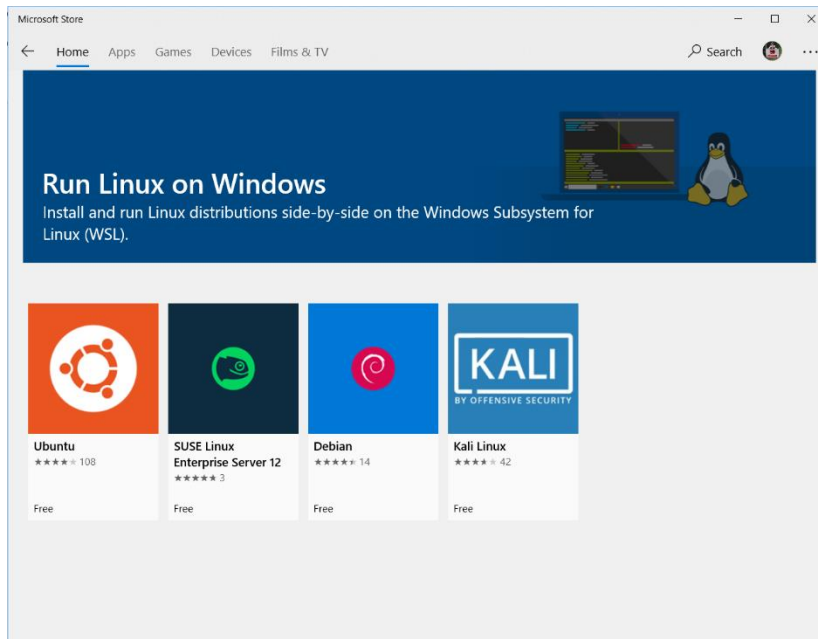## Step 1: Enable Windows Subsystem for Linux in Windows 10

- Open Windows Settings
- Search for Turn Windows features on or off
- Check the Windows Subsystem for Linux option
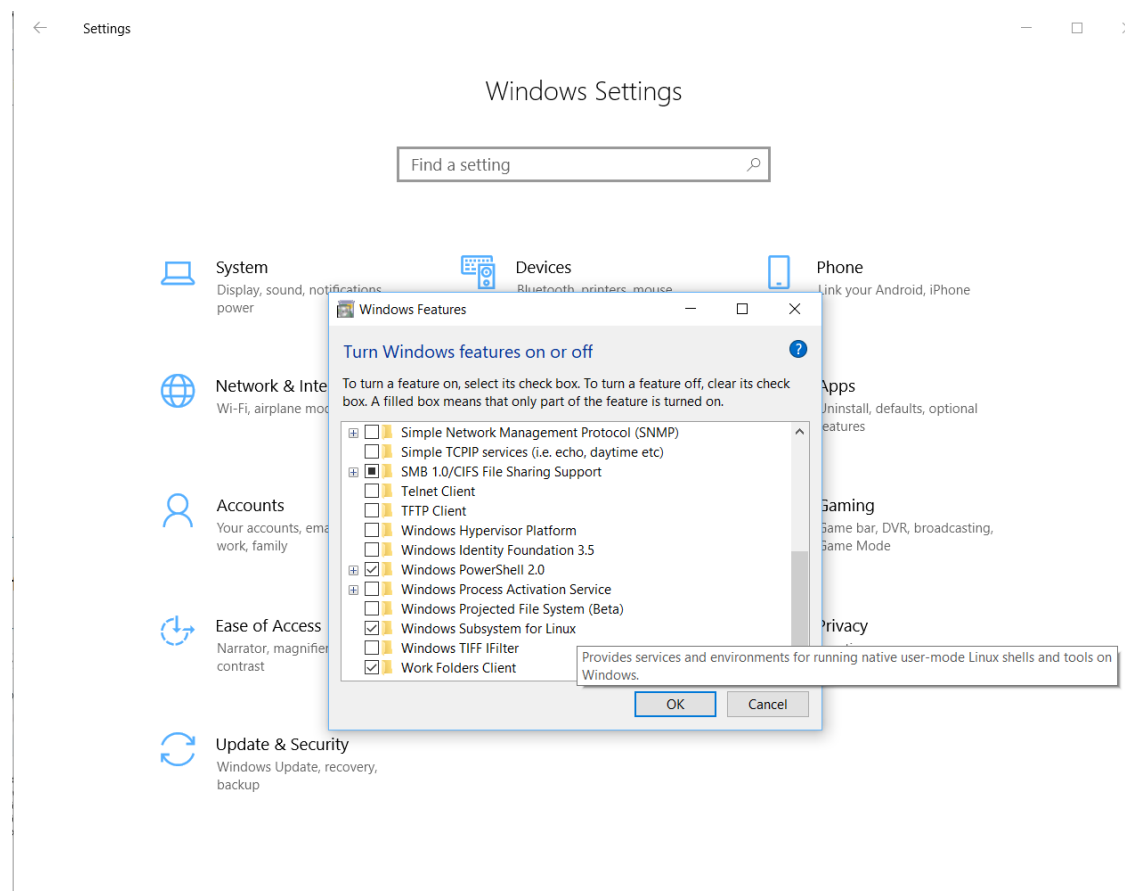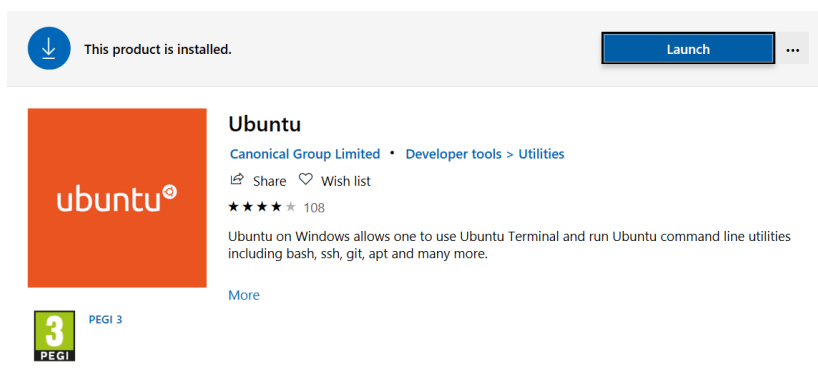

- Click OK.
- Click Restart now.

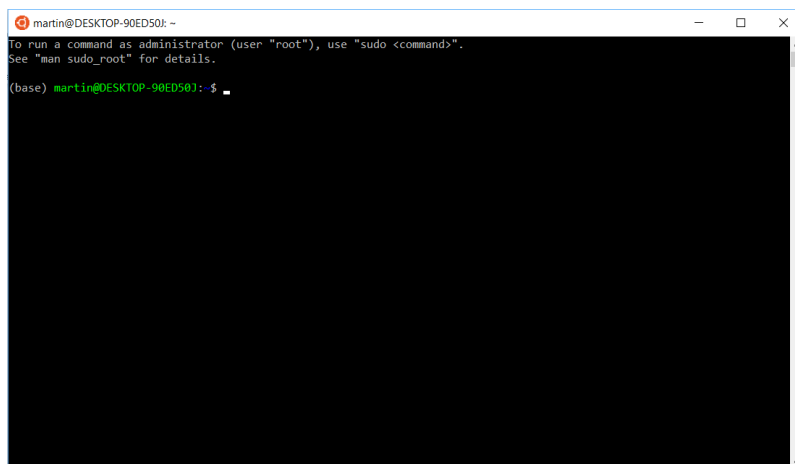## Step 2: Install Linux from the Windows Store

- Open the Windows Store
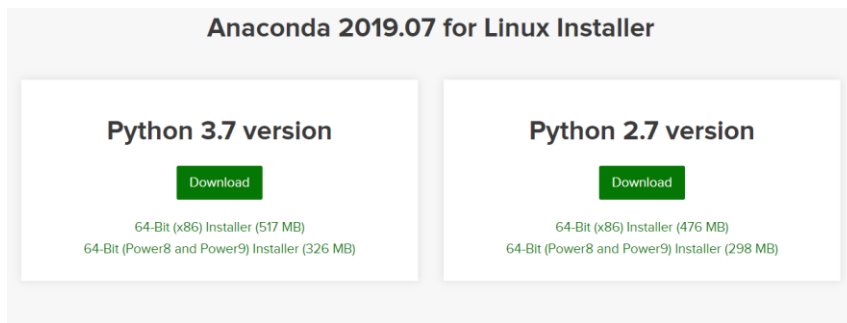- Search for 'Run Linux on Windows'

- Download ubuntu and install

- Run ubuntu from the start menu to get the command-line interface E.g.

Step 3: download and install Anaconda

- Once installed, open browser and go to https://www.anaconda.com/download/#linux
- Pick 64-bit for Linux (**not Windows**).

Anaconda 2019.07 for Linux Installer

Python 3.7 version

Download

64-Bit (x86) Installer (517 MB)
64-Bit (Power8 and Power9) Installer (326 MB)

Python 2.7 version

Download

64-Bit (x86) Installer (476 MB)
64-Bit (Power8 and Power9) Installer (298 MB)

- Instead of downloading in the browser, right-click the button and select 'copy link' e.g.

```
https://repo.anaconda.com/archive/Anaconda3-2019.07-Linux-x86_64.sh
```

- Go back to the terminal window and download the installer from the command line.

```
wget https://repo.anaconda.com/archive/Anaconda3-2019.07-Linux-x86_64.sh
```

- Anaconda is now downloading and you should get something like

```
--2019-08-06 18:11:02--  https://repo.anaconda.com/archive/Anaconda3-
2019.07-Linux-x86_64.sh

Resolving repo.anaconda.com (repo.anaconda.com)... 104.16.130.3,
104.16.131.3, 2606:4700::6810:8203, ...

Connecting to repo.anaconda.com (repo.anaconda.com)|104.16.130.3|:443...
connected.

HTTP request sent, awaiting response... 200 OK

Length: 541906131 (517M) [application/x-sh]

Saving to: 'Anaconda3-2019.07-Linux-x86_64.sh'

Anaconda3-2019.07-Linux-x86_6
100%[===============================================>] 516.80M  2.73MB/s
in 2m 27s

2019-08-06 18:13:34 (3.51 MB/s) - 'Anaconda3-2019.07-Linux-x86_64.sh'
saved [541906131/541906131]
```

- Make the file executable and run it:

```
chmod +x Anaconda3-2019.07-Linux-x86_64.sh

./Anaconda3-2019.07-Linux-x86_64.sh
```

- Some text will fly by. Grab a cup of tea after you have answered a few questions as this will take a while. If you use bash, remember to key 'yes' to add conda to your path, so you can resolve the binary from within your path (usually inside ~/anaconda).
- Anaconda is now installed

Step 4: Install Photutils and PYMC3 Packages

- As per the instructions for EXOTIC
- Install photutils with conda

```
conda install -c astropy photutils
```

- Install pymc3 with conda

```
conda install -c conda-forge pymc3
```

- After starting to build the package, it will ask you if you want to continue and then type "y" and hit enter
- Certain pymc3 plots require ArviZ so to install it

```
conda install -c conda-forge arviz
```

- An online package is used for Barycentric Julian Day conversions, so to install it enter

```
pip install barycorrpy
```

- Restart the terminal by closing the window and then reopening a new one

Step 5: Install g++ compiler

- Update the package list with the most recent version of g++

```
sudo apt-get update
```

- Enter your password and press Return
- Install g++

```
sudo apt-get install g++
```

Step 6: Running the EXOTIC code

- Change into the directory in which "exotic.py" is located e.g.

```
cd /mnt/c/Users/daneb/EXOTIC
```

- Then run ipython

```
ipython
```

- Then run EXOTIC

```
run exotic.py
```

- The pipeline is now running and you should get something like:

```
WARNING: AstropyDeprecationWarning: Composition of model classes will be
removed in 4.0 (but composition of model instances is not affected)
[astropy.modeling.core]

WARNING: AstropyDeprecationWarning: astropy.extern.six will be removed in
4.0, use the six module directly if it is still needed
[astropy.extern.six]

*************************************************************

Welcome to the EXOplanet Transit Interpretation Code (EXOTIC)

*************************************************************
```

Enter "1" for Real Time Reduction or "2" for for Complete Reduction:

- Follow the EXOTIC instructions from now on

==============

Version 1.1

05 September 2019