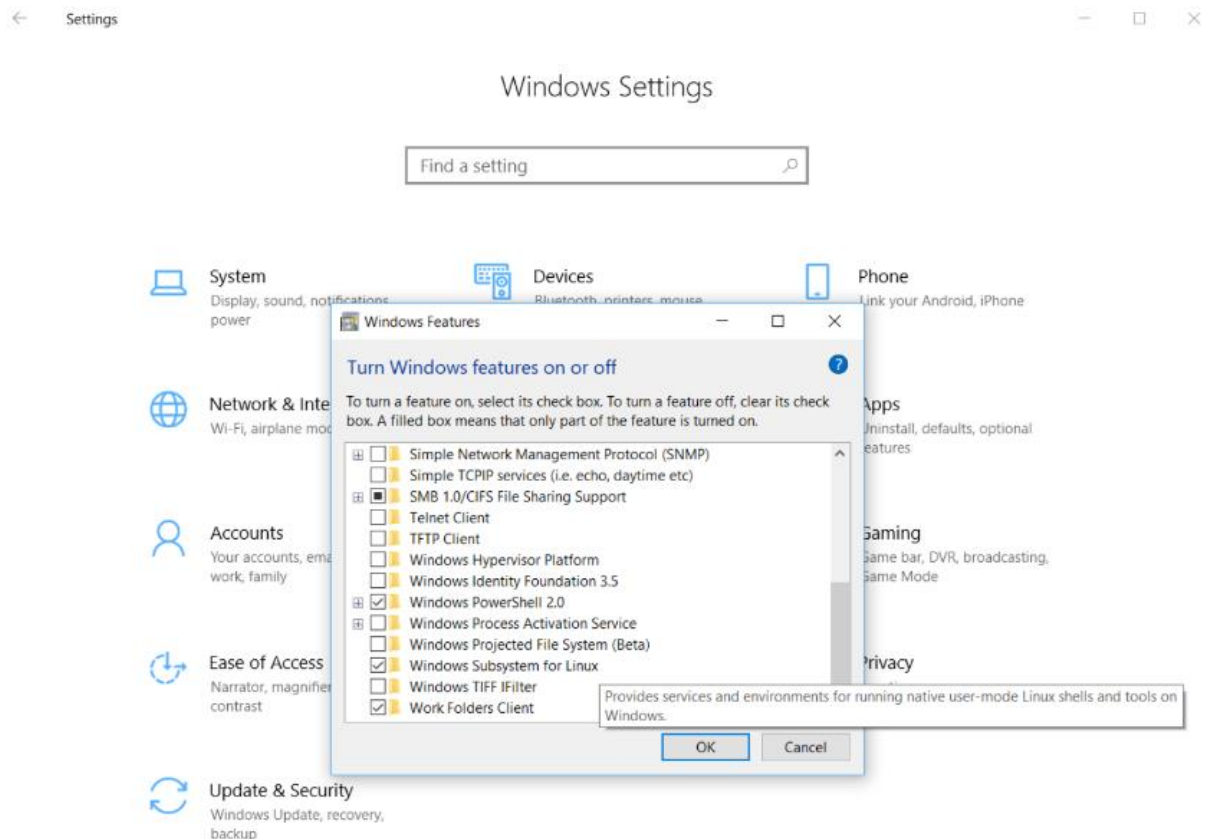# EXOTIC Installation Instructions for Windows Users (Recommended)

I. **Install Ubuntu**

- Open Windows Settings
- Search "Turn Windows features on or off"
- Check the box for "Windows Subsystem for Linux"
- Click OK.
- Click Restart now.

- Open Windows Store
- Search "Ubuntu"
- Install the application

Note: Ubuntu is what is known as a Linux operating system. The operating system is the software that manages your computer's processes and memory. You are currently running on the Windows operating system. Installing Ubuntu will simply allow you to make use of the Linux operating system when (and only when) you are using the app. It will in no way affect your current Windows operating system.

Note: EXOTIC can be run on your Widows computer without installing Ubuntu. However, we do not recommend this as the installation process is much more difficult and EXOTIC runs much slower on Windows. However, if you would prefer running EXOTIC natively on Windows (instead of in Ubuntu), follow this guide instead: https://github.com/rzellem/EXOTIC/blob/master/Documentation/EXOTIC-Instructions.pdf

II. Download DS9 (Astronomical Image Viewing Software)
- Follow the link: https://sites.google.com/cfa.harvard.edu/saoimageds9?pli=1&authuser=1
- Download the version corresponding to your Windows operating system.
- Run the installer once downloaded.
- Follow the instructions in the installer to complete the installation.

Note: This software will be used to view the ".FITS" images you obtain during observations. For more information on DS9, check out the User Guide: http://ds9.si.edu/doc/user/index.html

III. Open Ubuntu
- Click the start button in the lower left-hand corner.
- Type "Ubuntu" or scroll down to "U" in the list of applications
- Click on Ubuntu.

- When opening Ubuntu for the first time, you might be prompted to enter a password. Enter your new password and take note of it. You will be prompted again later to enter it.

Note: Ubuntu allows you to perform actions on your computer (run python programs, install applications, edit files, etc.) by typing in commands. If you are interested in learning more about Ubuntu and the different commands you can use, follow this link: https://ubuntu.com/tutorials/command-line-for-beginners#1-overview

IV. Execute the following commands in Ubuntu's command line:

- Type "cd /mnt/c/Users/your_username/"– do not include the quotes and replace "your_username" with the username for the account you are signed into on Windows.
- Hit Enter.

- If you have yet to download EXOTIC –

  o Type "cd /PATH/" – replacing PATH with the directory you want the EXOTIC folder to be downloaded in. For example, typing "cd Documents" will mean that the EXOTIC files will be stored in /mnt/c/Users/your_username/Documents/EXOTIC/.
  o This will also be the location in which you run the program.

  Note: cd stands for "Change Directory". In executing this command, you are navigating to your Downloads folder, just as you would by double-clicking on Downloads in File Explorer.

```
mjs2369@DESKTOP-R2PG3MN:~$ cd /mnt/c/Users/Marlena\ Smith/Documents/
mjs2369@DESKTOP-R2PG3MN:/mnt/c/Users/Marlena Smith/Documents$
```

- If you have already downloaded EXOTIC off of GitHub –

  - Navigate into your EXOTIC directory by typing "cd /PATH/" – replacing PATH with the directory the EXOTIC files are stored in.
  - For example, type "cd Documents/EXOTIC/ if the EXOTIC folder is stored in your documents. /mnt/c/Users/your_username/Documents/EXOTIC/ would be your current directory listed on the screen.
  - This will also be the location in which you run the program.

    Note: cd stands for "Change Directory". In executing this command, you are navigating to your Downloads folder, just as you would by double-clicking on Downloads in File Explorer.

```
mjs2369@DESKTOP-R2PG3MN:~$ cd /mnt/c/Users/Marlena\ Smith/Documents/EXOTIC/
mjs2369@DESKTOP-R2PG3MN:/mnt/c/Users/Marlena Smith/Documents/EXOTIC$
```

- Do not include the quotes.
- Hit Enter.

- If you have already downloaded EXOTIC off GitHub, skip the following steps:

  - Type "git clone https://github.com/rzellem/EXOTIC.git" – do not include the quotes.
  - Hit Enter.
  - When the process has finished, type "cd EXOTIC" – do not include the quotes.
  - Hit Enter.

    Note: This command is what is known as a git clone. Essentially, this command copies all of the files off of the EXOTIC page on the website GitHub onto your computer.

Note: Git cloning also allows you to update any files that might be changed by the developers of EXOTIC by executing the command 'git pull' while in your EXOTIC folder.

- Type "chmod 755 exotic_installation_linux.sh" – do not include the quotes.
- Hit Enter.

  Note: this command alters the file you downloaded "exotic_installation_linux.sh" to be executable (i.e. you can now run it in your terminal).

- Type "./exotic_installation_linux.sh" – do not include the quotes.
- Hit Enter.
- Enter the password you created earlier (or already had) when prompted.

  Note: this command runs the file you downloaded, which is called a script. A script is simply a list of commands to be executed in the Ubuntu. This script will download Python (unless you already have it) and install all the necessary packages to run EXOTIC. Finally, the script will run EXOTIC to test that it is functional.

- Wait a while. This process will take several minutes. You can leave your computer and check back in on it in a few minutes.
- Once the process has completed, you should see the introductory header to EXOTIC as pictured below, which tells you that it is all up and running!

```
Thinking |
****************************************************************
Welcome to the EXOplanet Transit Interpretation Code (EXOTIC)
Version  0.7.5
****************************************************************

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

And that's it! You've successfully installed EXOTIC and can now use it at any time to reduce the data from your amazing transit observations!

To learn how to run the code and how EXOTIC works, check our other guides on GitHub!

➔ **https://github.com/rzellem/EXOTIC/tree/main/Documentation**

If you have any questions or comments, please feel free to reach out to us on Slack or email at exoplanetwatch@jpl.nasa.gov