A Guide to GitHub: Easily Updating EXOTIC

Please note: in order to be able to click on the links and select text in this document, you must **download it off GitHub**. The GitHub preview simply shows you an image of the document, which does not allow for those functions.

I.   **What is GitHub?**
- GitHub is an extremely common tool among software developers. It is a code hosting platform that lets many people work on the same project simultaneously, even in different locations. It does so by using a feature called version control, which simply allows one to save specific versions of a program or file.
- GitHub is organized in terms of **repositories** and **branches**. A repository is used to organize a single project, such as EXOTIC. Repositories contain the folders, files, images, etc. for the project. A repository can have one or more branches. Each branch acts as its own unique set of files, allowing developers to make changes to one branch without affecting the others. The main branch is where the final changes to the files are posted, and this is the branch that EXOTIC users will stay on all the time.
- GitHub is a command line tool. This means that it is used by running text-based commands in the terminal. The terminal allows you to perform actions on your computer (run python

programs, install applications, edit files or directories, etc.) by typing and executing these commands. If you are interested in learning more about the terminal and the different commands you can use, follow:

- this link for Ubuntu users: https://ubuntu.com/tutorials/command-line-for-beginners#1-overview
- this link for Mac users: https://www.macworld.com/article/2042378/master-the-command-line-navigating-files-and-folders.html
- this link for native Windows users: https://www.bleepingcomputer.com/tutorials/windows-command-prompt-introduction/#:~:text=A%20Command%20Prompt%20allows%20you,on%20the%20Command%20Prompt%20icon.

- Below is the terminal interface for reference.


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

- However, there are applications one can use to use GitHub without using the terminal. If you would rather not use the command line, there are tools you can use to get around this. This will be discussed in the next section.
- Note: This guide is simply to assist our users with using GitHub for keeping EXOTIC updated. There are many other things you can do with GitHub. If you are interested in learning more, here is a more extensive guide: https://guides.github.com/activities/hello-world/

II.   How to Use GitHub to Download EXOTIC

If you already cloned EXOTIC using GitHub, then skip ahead to the following section on updating EXOTIC.

This section will focus on performing a 'git clone' on EXOTIC. This means that the online repository and all its contained files will be copied onto your computer. You can choose <u>either</u> of the following options to do so.

There are two main types of repositories to be familiar with, remote repositories and local repositories. There is only one remote repository for any given project, and this is the repository found on the GitHub website. Local repositories refer to the cloned versions of the repository that are saved to personal computers.
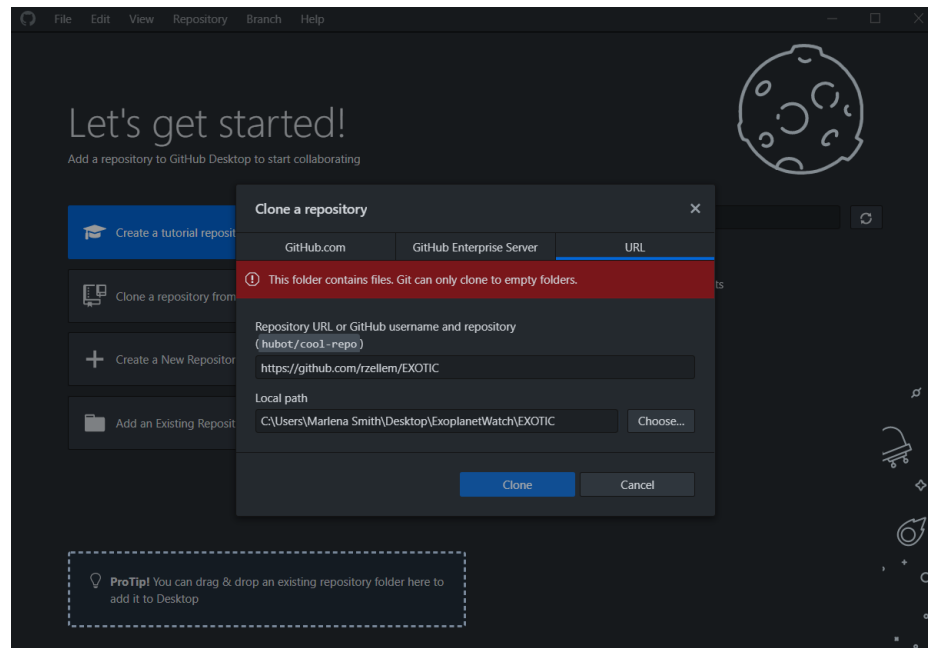
Cloning the remote repository allows you to have access to all versions of the files, old and new! This will allow you to easily update your own copy of EXOTIC when new updates are released!

Option 1: Using GitHub Desktop

- GitHub Desktop is an extremely useful application that allows you to make use of GitHub with a graphical interface (has interactive visual components that the user clicks on, like most applications we use on our computers).
- GitHub Desktop is easy to use and allows you to use GitHub without using the command line.
- To download GitHub Desktop, follow this link: https://docs.github.com/en/desktop/getting-started-with-github-desktop/installing-github-desktop
- Follow the instructions on the page. Make sure to download the correct version for either Windows or Mac.
- Follow this link to access the online page for the EXOTIC repository: https://github.com/rzellem/EXOTIC
- Select the green Code button on the top right corner of the page. In the drop-down menu, select 'Open with GitHub Desktop'.
- This will open the application and bring you to the 'Clone a repository' window. See the image below for reference.
- Edit the Local Path at the bottom of the window to be the folder you'd like to have the EXOTIC folder saved into. For example, setting the local path to 'C:\Users\your_username\Desktop\EXOTIC' will save the

EXOTIC folder on your desktop. Make sure to replace your_username with the username you are logged onto your computer with.
- Hit Clone!

Option 2: Using GitHub via the Command Line
- Open your terminal.
    - If you are using Mac, open the Terminal app.
    - If you are using Ubuntu, open Ubuntu.
    - If you have chosen to run EXOTIC natively on Windows, open Command Prompt. However, it is recommended that you install and use Ubuntu if you are using a Windows computer. This will allow you to have a much easier installation process and EXOTIC will run faster. To do so, see the guide EXOTIC-Installation-Instructions-for-Windows-Users.pdf in the Documentation folder: https://github.com/rzellem/EXOTIC/tree/main/Documentation
- If you already have EXOTIC downloaded, but did not do so using git clone, delete the EXOTIC folder from your computer.

- Navigate to the directory (folder) in which you wish to save exotic. You can do this in your terminal by typing 'cd <PATH>', replacing <PATH> with the folder you'd like the EXOTIC folder to be saved in. For example, setting the local path to 'C:\Users\your_username\Desktop\' will save the EXOTIC folder on your desktop. Make sure to replace your_username with the username you are logged onto your computer with. Hit enter.
- Type 'git clone https://github.com/rzellem/EXOTIC.git'
- Hit enter.

You now have a working, local repository for EXOTIC on your computer! Changes made to your local repository will not affect the remote repository.
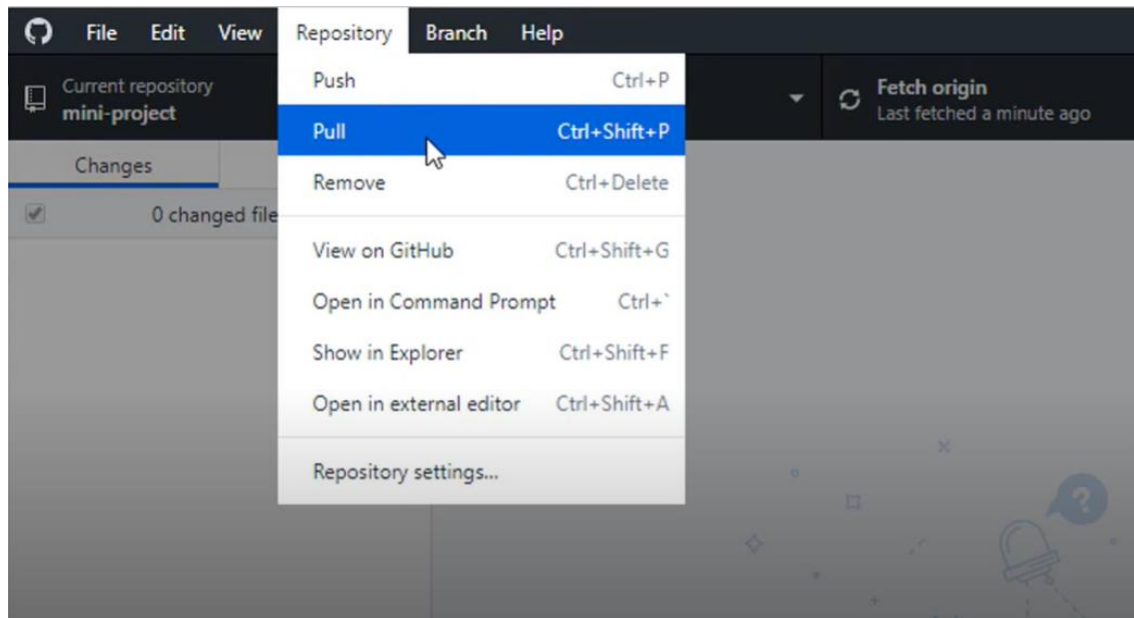
III. Updating EXOTIC with GitHub

This section will show you how to update your current version of EXOTIC. In doing so, you will be able to keep up with the bug fixes and improvements made to EXOTIC!

Option 1: Using GitHub Desktop

- Open GitHub Desktop.
- Make sure your Current repository is set to EXOTIC and your Current branch is set to Main.
- Select the Repository menu in the top left of the screen. Select Pull from the drop-down menu. See image below.
- And done! Now you can make use of the new updates to EXOTIC!
- Note: A 'git pull' literally 'pulls' the current versions of the files from the remote repository to your local one. Basically, a git pull means to update your local repository to be up to date with the

corresponding remote repository. You can do this whenever a new update is released.

Option 2: Using GitHub via the Command Line

- Make sure you are in the EXOTIC directory (folder). Change directories using 'cd <PATH>' if not.
- Type 'git status' and hit enter. This command will tell you important information about your current status in your EXOTIC repository. See the image below. The status command informs you of your current working branch, as well as whether or not it is up to date with respect to the remote repository.
- Using the information from the status command, make sure you are on the branch 'main'.
- If the status reads 'Your branch is up to date with 'origin/main'.', there is no need to continue this updating process.
- Type 'git pull' and hit enter.
- Note: A 'git pull' literally 'pulls' the current versions of the files from the remote repository to your local one. Basically, a git pull means to update your local repository to be up to date with the

corresponding remote repository. You can do this whenever a new update is released.

And that's all you need to know to be able to both download and update EXOTIC! If you have any questions or recommendations for improving this guide, please feel free to reach out to us on Slack or email at exoplanetwatch@jpl.nasa.gov. Happy observing!