

# Install and use starfish on local laptop

Modification History:

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##### START #####

## 1. Overview

After talking with Mike Gully on July 7th and learning to use GitHub on July 8th, now I have a better idea about using Starfish. The important installation and usage notes start in this Notebook.

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## 2. Prerequisites

### 2.1 GitHub

Install [git](#)

Create a new GitHub account: [zjzhang42](#) and start contributing.

### 2.2 Python3

To use the Starfish, a python with version 3.x is recommended. I therefore manage multiple versions of python altogether -- python 2.7 and python 3.6. Basically I set up a python36 environment and activate/deactivate it every time I would like to use/unuse it. Details here: [6. Managing multiple versions of Python using Anaconda](#).

I end up using “[actpy36](#)” and “[deactpy36](#)” in bash to activate/deactivate the python3.6 environment.

### 2.3 Model spectra

Starfish by default uses the [PHOENIX](#) model spectra, which is pretty large (~175 GB). It is always a good idea to download the model spectra at first before going deeper.

Another model library: [Marley13](#) model spectra are also given by Mark Marley. This would be used for fitting spectra of late-T dwarfs.

Details of unpacking model libraries are described here: [0. Preparation: III. Unpacking Model Libraries](#)

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## 3. Acquisition & Installation

### 3.1 Fork Starfish

Go to the [GitHub website](#) and fork [Gully's Starfish version](#).

### 3.2 Clone to local

```
cd /Users/zhang-dirac/Dropbox/Laniakea/ZhangDirac/OtherWorlds
```

```
git clone https://github.com/zjzhang42/Starfish.git
```

### 3.3 Create my own branch from Gully's branch “mix\_model\_omega2”

```
git checkout mix_model_omega2
```

```
git checkout -b ZJ_BD_v0 mix_model_omega
```

```
git status
```

On branch [ZJ\\_BD\\_v0](#)

[nothing to commit, working tree clean](#)

### 3.4 Push the existing branch to the original framework

```
git remote set-url origin https://github.com/zjzhang42/Starfish.git
```

```
git push origin ZJ_BD_v0
```

### 3.5 Create ZJ\_Func folders and start adding ZJ's function scripts

```
git checkout ZJ_BD_v0
```

```
mkdir ZJ_Func
```

```
cd ZJ_Func
```

```
cp /~path~/download_PHOENIX.sh .
```

```
git add ZJ_Func
git commit -m "commit message - e.g., download PHOENIX model spectra"
git push origin ZJ_BD_v0
...make revisions to files and the folder... and repeat uploading the file
git add ZJ_Func
git commit --amend --no-edit
git push origin ZJ_BD_v0
```

### 3.6 Install Starfish

```
actpy36
cd Starfish
git checkout ZJ_BD_v0
- build the cython extensions: python setup.py build_ext --inplace
- install in *develop* mode: sudo python setup.py develop
```

### 3.7 Test Installation

```
ipython
>>> import Starfish
```

A warning will show if there is no “config.yaml” under your current directory:

```
/Users/zhang-dirac/Dropbox/Laniakea/ZhangDirac/OtherWorlds/Starfish/Starfish/__init__.py:16:
UserWarning: Using the default config.yaml file located at /Users/zhang-
dirac/Dropbox/Laniakea/ZhangDirac/OtherWorlds/Starfish/Starfish/config.yaml. This is likely NOT what
you want. Please create a similar 'config.yaml' file in your current working directory.
  warnings.warn("Using the default config.yaml file located at {0}. This is likely NOT what you want.
Please create a similar 'config.yaml' file in your current working directory.".format(default),
UserWarning)
```

The “config.yaml” should be located in the current workplace path every time the Starfish is being used. And config.yaml is like a configure file, recording, say, the structure of the model parameter grid for fitting processes.

=> As a default, the program will use its own default (trivial and useless) “config.yaml” unless the user provides one.

### 3.8 Additional adjustments

Add Starfish/scripts into the “\$path” parameter by manually revise “.bash\_profile”

```
vi ~/.bash_profile
add /Users/zhang-dirac/Dropbox/Laniakea/ZhangDirac/OtherWorlds/Starfish/scripts/ in PATH
```

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## 4. What Else?

