Software Packaging with Python: Writing a setup.py

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Why would you need to do this?

- You want to your code to be reliably installed and used by others

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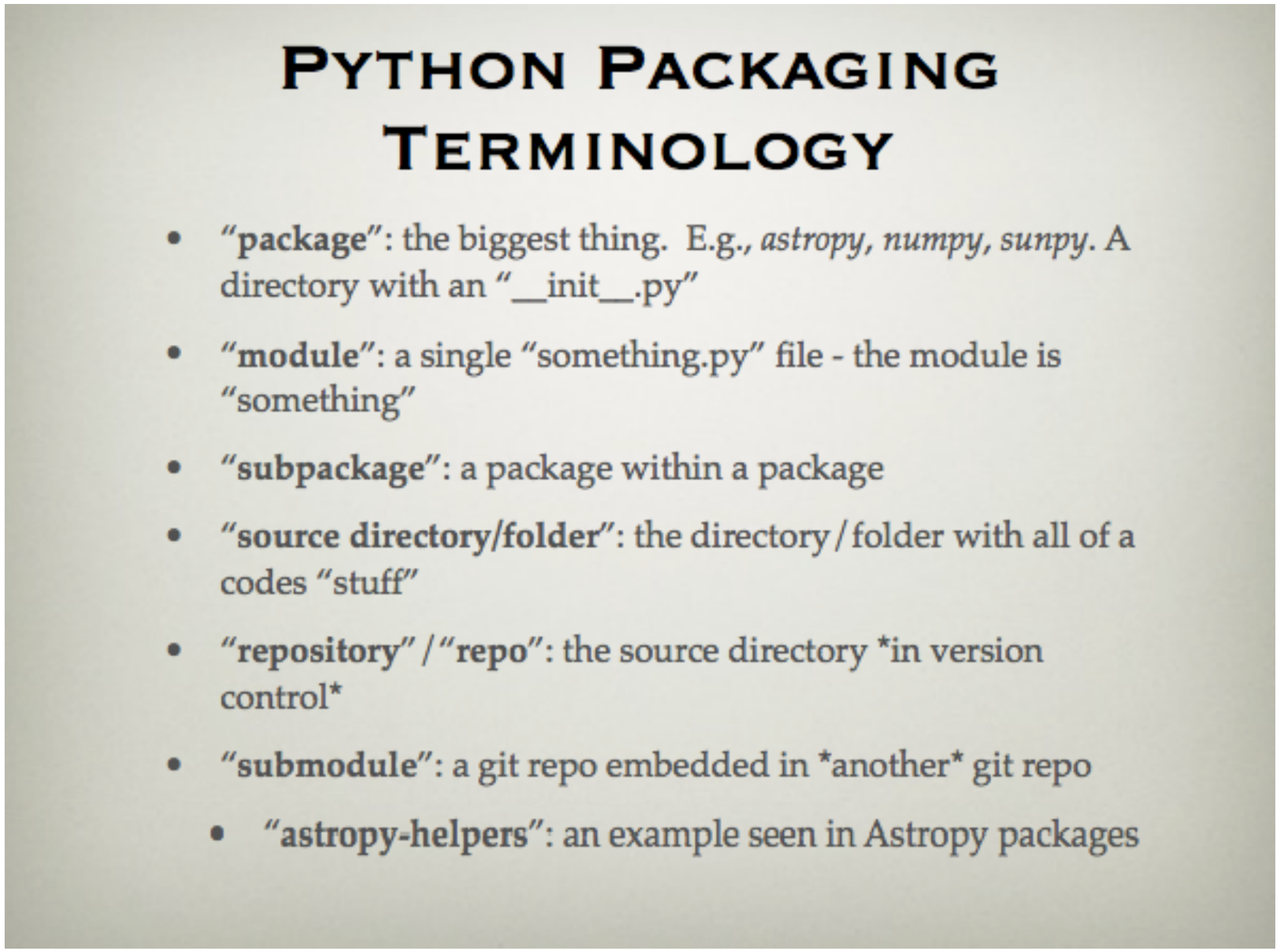
- You have a cpu-intensive function that you is too slow in python

What is a python package?



Erik Tollerud, https://github.com/eteq/pyastro17-tutorials

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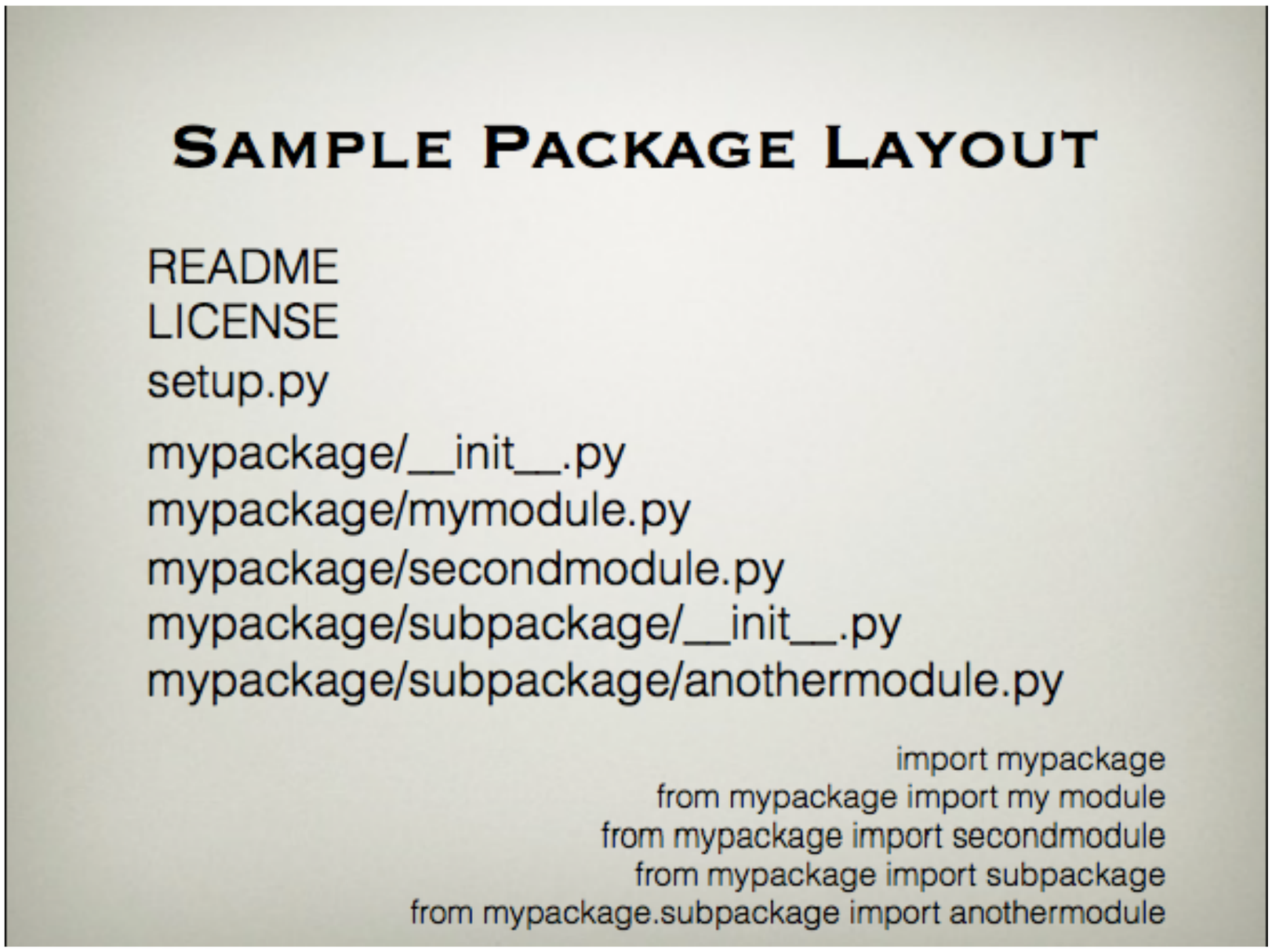

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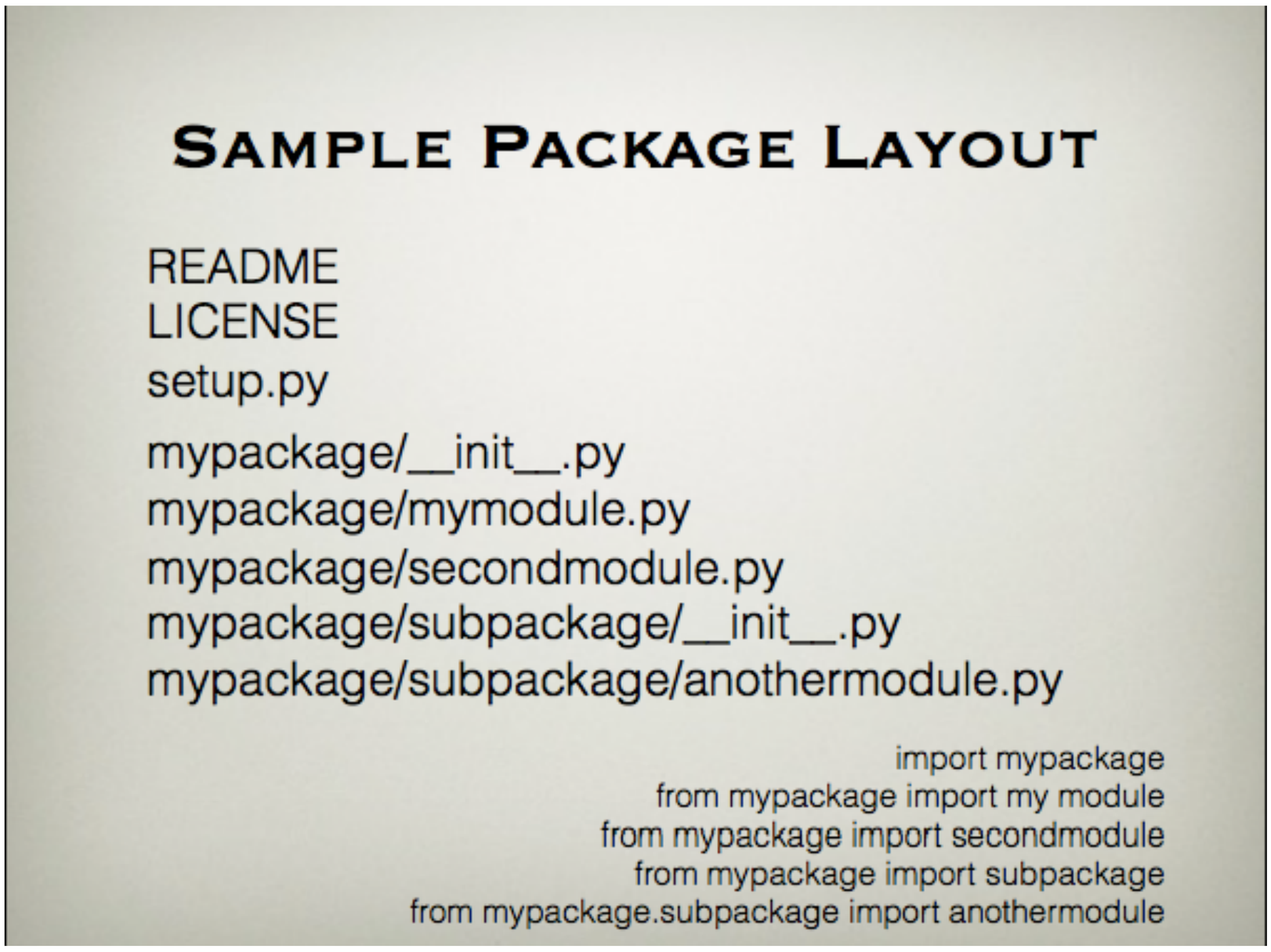

lower-case

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Writing a setup.py file

If all you want to do is distribute a module called `foo`, contained in a file `foo.py`, then your setup script can be as simple as this:

```
from distutils.core import setup
setup(name='foo',
      version='1.0',
      py_modules=['foo'],
      )
```

https://docs.python.org/3/distutils/introduction.html#distutils-simple-example

Writing a setup.py file

```
#!/usr/bin/env python

from distutils.core import setup

setup(name='Distutils',
      version='1.0',
      description='Python Distribution Utilities',
      author='Greg Ward',
      author_email='gward@python.net',
      url='https://www.python.org/sigs/distutils-sig/',
      packages=['distutils', 'distutils.command'],
     )
```

https://docs.python.org/3/distutils/setupscript.html

Let’s add a C extension

https://github.com/astrofrog/fast-histogram/

Let’s add a C extension

Branch: master ▾ fast-histogram / setup.py Find file | Copy path

astrofrog Back to development: v0.3 58cf5ce 3 days ago

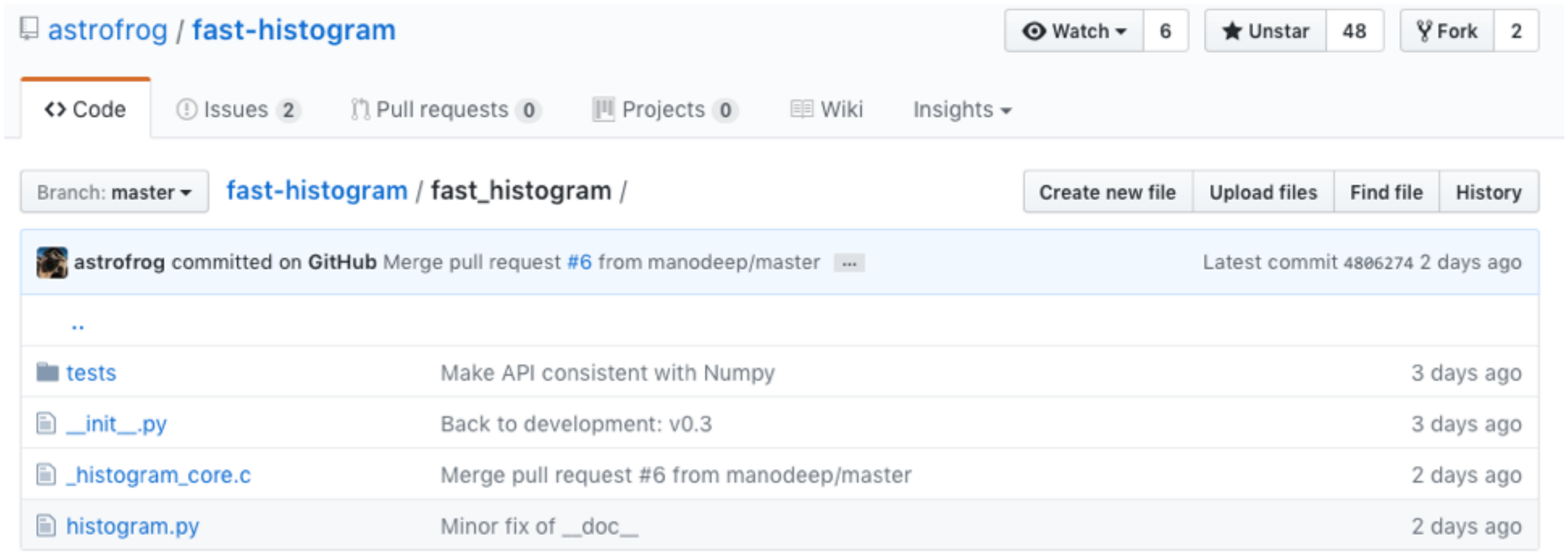
1 contributor

22 lines (18 sloc) | 741 Bytes Raw | Blame | History

```
1  import os
2
3  import numpy as np
4  from setuptools import setup
5  from setuptools.extension import Extension
6
7  extensions = [Extension("fast_histogram._histogram_core",
8                          [os.path.join('fast_histogram', '_histogram_core.c')],
9                          include_dirs=[np.get_include()])]
10
11 setup(name='fast-histogram',
12       version='0.3.dev0',
13       description='Fast simple 1D and 2D histograms',
14       long_description=open('README.rst').read(),
15       install_requires=['numpy'],
16       author='Thomas Robitaille',
17       author_email='thomas.robitaille@gmail.com',
18       license='BSD',
19       url='https://github.com/astrofrog/fast-histogram',
20       packages=['fast_histogram', 'fast_histogram.tests'],
21       ext_modules=extensions)
```

https://github.com/astrofrog/fast-histogram/

What does the fast-histogram package contain?



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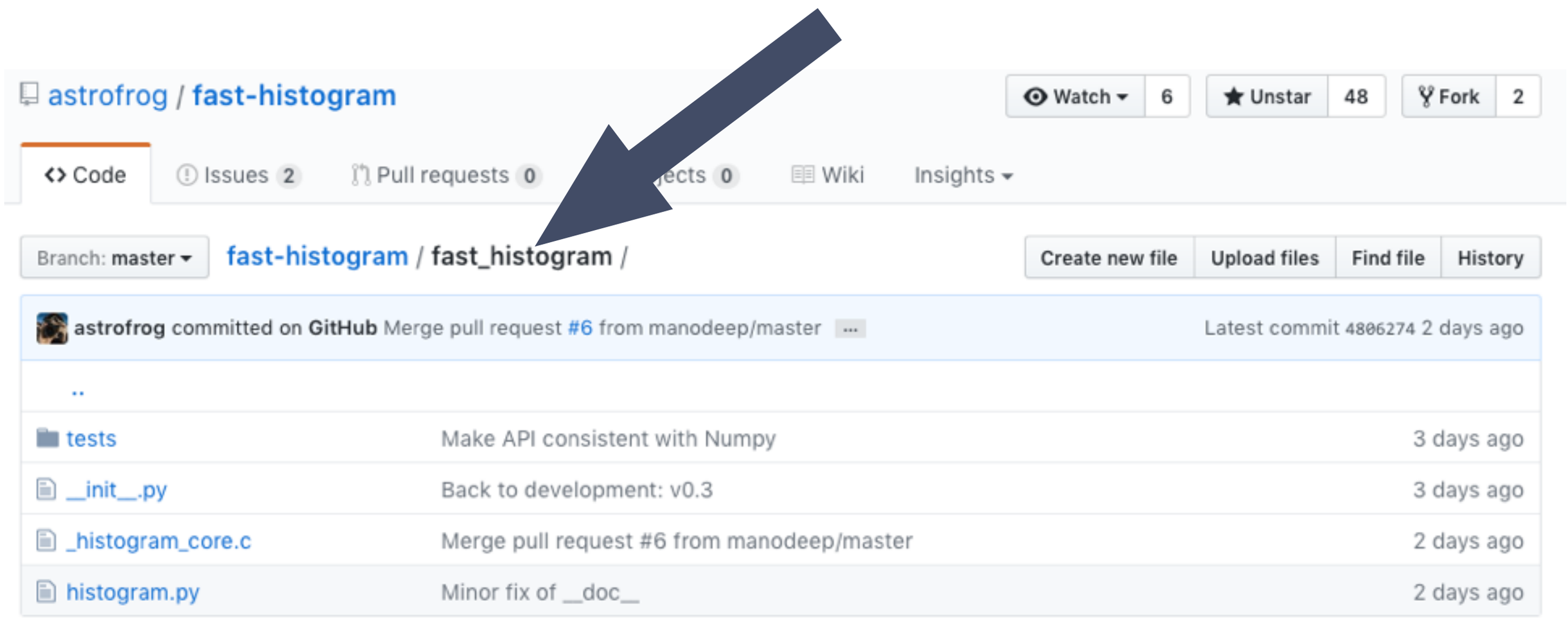

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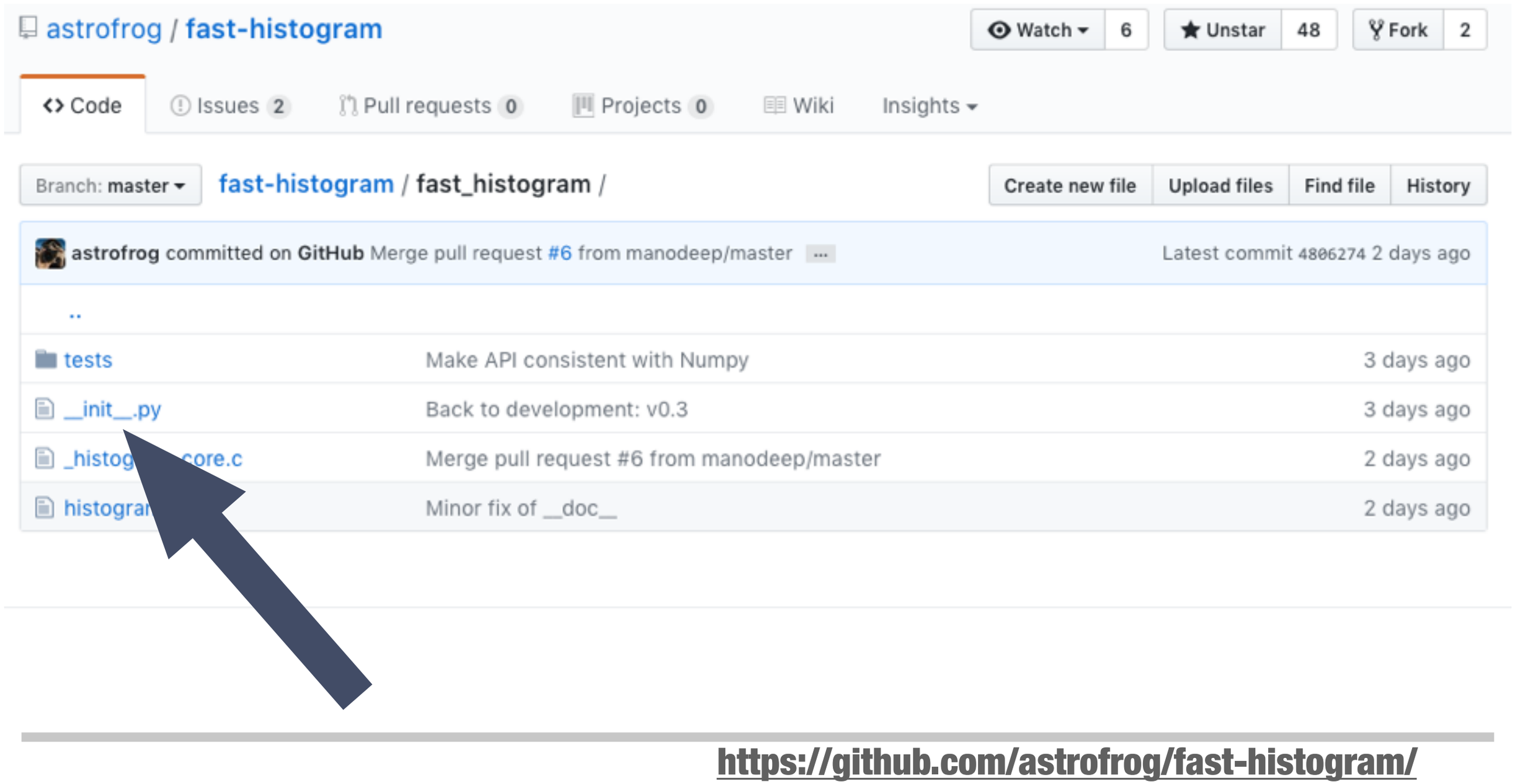

https://github.com/astrofrog/fast-histogram/

What does the fast-histogram package contain?

astrofrog / fast-histogram

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Branch: master ▾ fast-histogram / fast_histogram / | Create new file | Upload files | Find file | History

astrofrog committed on GitHub Merge pull request #6 from manodeep/master ... Latest commit 4806274 2 days ago

..		
tests	Make API consistent with Numpy	3 days ago
__init__.py	Back to development: v0.3	3 days ago
_histogram_core.c	Merge pull request #6 from manodeep/master	2 days ago
histogram.py	Minor fix of __doc__	2 days ago

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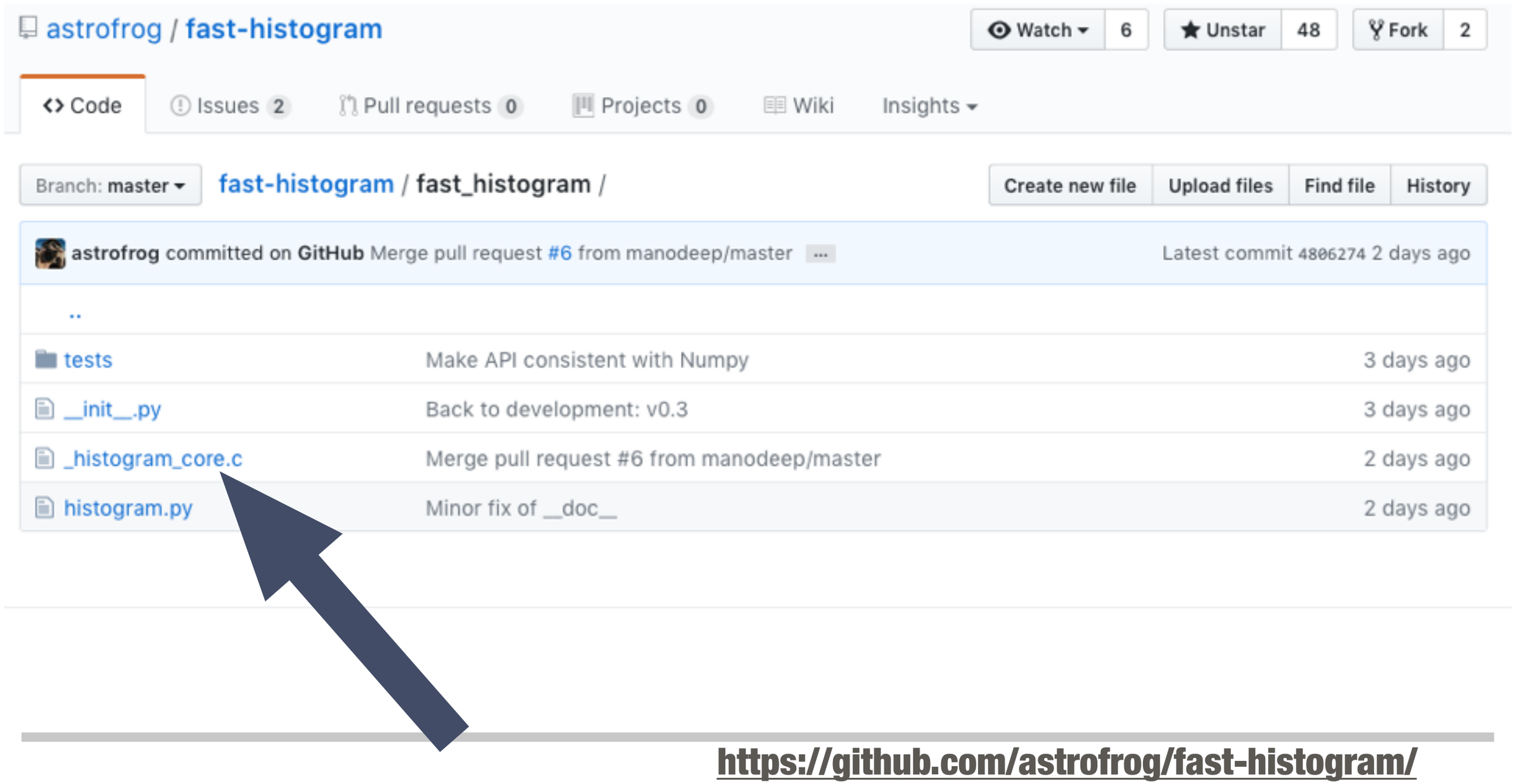

https://github.com/astrofrog/fast-histogram/

What does the fast-histogram package contain?

Look at histogram1d within histogram.py

https://github.com/astrofrog/fast-histogram/

Now the C extension

The C function (+ boilerplate)

https://github.com/astrofrog/fast-histogram/