GammaLib - Bug #4222

gammalib 2.0 crashes when the test suite is called

03/13/2023 06:15 PM - Peresano Michele

Status:	Closed	**Start date:**	03/13/2023
Priority:	High	**Due date:**	
Assigned To:	Knödlseder Jürgen	**% Done:**	100%
Category:		**Estimated time:**	0.00 hour
Target version:	2.1.0		

Description

I installed *gammalib* from conda (*v2.0.0* is the last version available from this channel).

Following the documentation, I started by checking if everything works with
the test() function and the program crashed immediately.

(gammalib) [michele@d-h-122 ~]$ ipython
Python 3.10.9 | packaged by conda-forge | (main, Feb 2 2023, 20:24:27) [Clang 14.0.6]
Type 'copyright', 'credits' or 'license' for more information
IPython 8.11.0 -- An enhanced Interactive Python. Type '?' for help.

In [1]: import gammalib

In [2]: gammalib.test()

ModuleNotFoundError   Traceback (most recent call last)
Cell In[2], line 1
----> 1 gammalib.test()

File

    66 def test():
---> 67   from gammalib.tests import test_python
    68   test_python.test(installed=True)

ModuleNotFoundError: No module named 'gammalib.tests'

There is indeed no test*s* module, just *test*.
First I tried naïvely to fix the typo, but there is also no function named test_python in that module,

ImportError: cannot import name 'test_python' from 'gammalib.test'

Related issues:

Related to GammaLib - Change request # 4223: Replace distutils by setuptools	**Closed**	**03/14/2023**

History

#1 - 03/13/2023 06:31 PM - Knödlseder Jürgen

- Status changed from New to In Progress

- Assigned To set to Knödlseder Jürgen

- % Done changed from 0 to 10

On what OS have you tried the installation?

And what do you see when you type:

ls ~/Applications/mambaforge/envs/gammalib/lib/python3.10/site-packages/gammalib-2.0.0-py3.10-macosx-10.9-x86_64.egg/gammalib/

#2 - 03/13/2023 06:33 PM - Peresano Michele

On what OS have you tried the installation?

macos Big Sur 11.7.4

ls ~/Applications/mambaforge/envs/gammalib/lib/python3.10/site-packages/gammalib-2.0.0-py3.10-macosx-10.9-x86_64.egg/gammalib/

```
__init__.py              _linalg.py               _support.cpython-310-darwin.so  lat.py
__pycache__              _model.cpython-310-darwin.so  _support.py              linalg.py
_app.cpython-310-darwin.so    _model.py                _test.cpython-310-darwin.so    model.py
_app.py                  _mwl.cpython-310-darwin.so    _test.py                 mwl.py
_base.cpython-310-darwin.so    _mwl.py                 _vo.cpython-310-darwin.so     numerics.py
_base.py                 _numerics.cpython-310-darwin.so _vo.py                obs.py
_com.cpython-310-darwin.so    _numerics.py             _xml.cpython-310-darwin.so    opt.py
_com.py                  _obs.cpython-310-darwin.so    _xml.py                 sky.py
_cta.cpython-310-darwin.so    _obs.py                 _xspec.cpython-310-darwin.so    spi.py
_cta.py                  _opt.cpython-310-darwin.so    _xspec.py                support.py
_fits.cpython-310-darwin.so    _opt.py                 app.py                test.py
_fits.py                 _sky.cpython-310-darwin.so    base.py                vo.py
_lat.cpython-310-darwin.so    _sky.py                 com.py                xml.py
_lat.py                  _spi.cpython-310-darwin.so    cta.py                xspec.py
_linalg.cpython-310-darwin.so _spi.py                 fits.py
```

#3 - 03/13/2023 07:00 PM - Knödlseder Jürgen

- % Done changed from 10 to 20

Okay, there is a tests folder missing, but everything else looks ok.

Have you tried stuff from http://cta.irap.omp.eu/gammalib/users/quickstart.html, skipping the gammalib.test() command?

Maybe the installation is correct but something went wrong with the tests installation. I need to see whether I manage to install a macos Big Sur 11.7.4 VM for testing.

#4 - 03/13/2023 09:19 PM - Peresano Michele

Yes the rest of the quickstart works as expected (by the way, the link to the Doxygen documentation points to a non-existent HTML page)

#5 - 03/14/2023 09:19 AM - Knödlseder Jürgen

Thanks for feedback. I will see if I can reproduce and fix the problem.

Thank also for mentioning the broken Doxygen link, I will fixed it.

#6 - 03/14/2023 09:31 AM - Knödlseder Jürgen

- Target version set to 2.1.0

- % Done changed from 20 to 30

In the meantime I tested the conda version for Python 3.10 on my Mac to see whether the problem is related to this specific Python version, and this seems to be the case!

After creating a Python 3.10 environment and installing gammalib I see the following in the site-package folder:

```
$ ls /Users/jurgen/anaconda3/envs/gammalib-test-3.10/lib/python3.10/site-packages/
README.txt              pip-23.0.1-py3.11.egg-info
_distutils_hack         pkg_resources
distutils-precedence.pth          setuptools
gammalib            setuptools-67.6.0-py3.11.egg-info
gammalib-2.0.0-py3.10-macosx-10.9-x86_64.egg    wheel
gammalib.pth            wheel-0.38.4-py3.11.egg-info
pip
```

Here there is a gammalib folder and a gammalib-2.0.0-py3.10-macosx-10.9-x86_64.egg folder. The tests directory ends up in the gammalib folder, the remaining stuff is in the gammalib-2.0.0-py3.10-macosx-10.9-x86_64.egg folder.

For Python 3.9 the organisation of the site-packages folder is different:

```
$ ls /Users/jurgen/anaconda3/envs/gammalib-test-3.9/lib/python3.9/site-packages/
README.txt              gammalib-2.0.0-py3.9-macosx-10.9-x86_64.egg-info    setuptools
_distutils_hack            pip                 setuptools-67.6.0-py3.11.egg-info
distutils-precedence.pth          pip-23.0.1-py3.11.egg-info          wheel
gammalib           pkg_resources              wheel-0.38.4-py3.11.egg-info
```

Here, everything is in gammalib, there is no gammalib-2.0.0-py3.9-macosx-10.9-x86_64.egg folder but a gammalib-2.0.0-py3.9-macosx-10.9-x86_64.egg-info folder that does not contain the modules.

The difference between both formats is described at https://setuptools.pypa.io/en/latest/deprecated/python_eggs.html. I guess that the conda package manager changed the way how it deals with the eggs between Python 3.9 and 3.10 (the setuptools are setuptools-67.6.0 for both Python versions, as shown above).

#7 - 03/14/2023 10:57 AM - Knödlseder Jürgen

I think the issue comes from the fact that the building and installation of the Python module is handled over the pyext/setup.py script, while the tests folder is generated using the gcc make system (file pyext/Makefile.am).

#8 - 03/14/2023 12:32 PM - Knödlseder Jürgen

- % Done changed from 30 to 50

It turns out that the different installation in Python 3.10 with respect to Python 3.9 is related to a behind-the-scenes switch from distutils to setuptools. See #4223 for more information.

#9 - 03/14/2023 12:32 PM - Knödlseder Jürgen

- Related to Change request #4223: Replace distutils by setuptools added

#10 - 03/15/2023 04:41 PM - Knödlseder Jürgen

- Status changed from In Progress to Closed

- % Done changed from 50 to 100

I have implemented the necessary changes (see #4223), they will go into the next release. I close the issue now.