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This site is the PyEphem home page

PyEphem


Simply scroll down to find:

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Download PyEphem for Windows, Linux, or as source code, directly from the Python Package Index.

python™


[PyPI PyEphem page](#)
Includes Windows installers!

[Source code](#)
As a .tar.gz file

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Welcome!

PyEphem provides basic astronomical computations for the [Python](#) programming language. Given a date and location on the Earth's surface, it can compute the positions of the Sun and Moon, of the planets and their moons, and of any asteroids, comets, or earth satellites whose orbital elements the user can provide. Additional functions are provided to compute the angular separation between two objects in the sky, to determine the constellation in which an object lies, and to find the times at which an object rises, transits, and sets on a particular day.

The numerical routines that lie behind PyEphem are those from the wonderful [XEphem](#) astronomy application, whose author, Elwood Downey, generously gave permission for us to use them as the basis for PyEphem.

Installation

Version 3.7.6.0 is the most recent release of PyEphem. Consult the [change log](#) to see the new features!

The easiest way to install PyEphem on a Linux or Mac OS machine, after making sure that "Python.h" and the other Python header files are installed (which on Ubuntu requires the "python-dev" package), is to use the [pip](#) command, like this:

```
$ pip install pyephem
```

Firefox

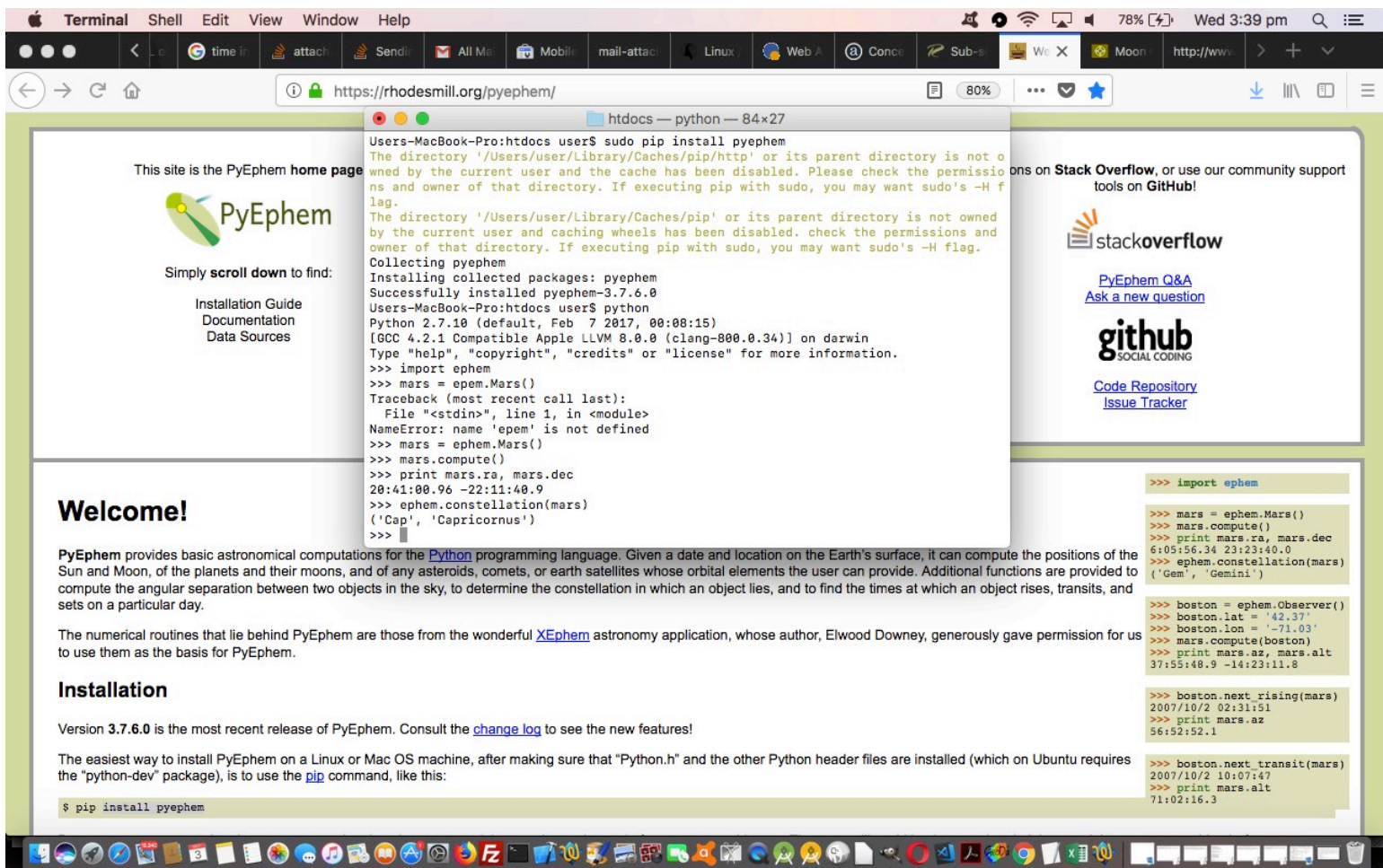
```
>>> import ephem

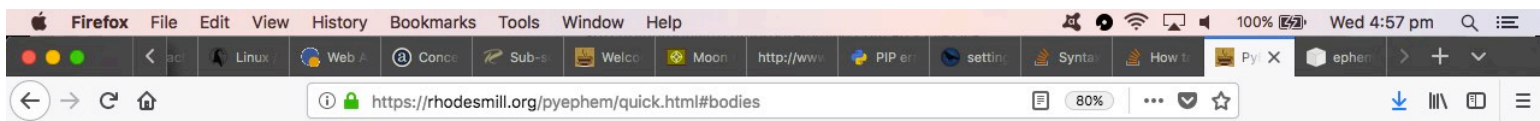
>>> mars = ephem.Mars()
>>> mars.compute()
>>> print mars.ra, mars.dec
6:05:56.34 23:23:40.0
>>> ephem.constellation(mars)
('Gem', 'Gemini')

>>> boston = ephem.Observer()
>>> boston.lat = '42.37'
>>> boston.lon = '-71.03'
>>> mars.compute(boston)
>>> print mars.az, mars.alt
37:55:48.9 -14:23:11.8

>>> boston.next_rising(mars)
2007/10/2 02:31:51
>>> print mars.az
56:52:52.1

>>> boston.next_transit(mars)
2007/10/2 10:07:47
>>> print mars.alt
71:02:16.3
```





To understand each of the following examples, first read the source code snippet carefully, and only then dive into the explanations beneath it.

Bodies

```
>>> m = ephemeris.Mars()
>>> m.name
'Mars'
>>> a = ephemeris.star('Arcturus')
>>> a.name
'Arcturus'
```

- The Sun, Moon, planets, and major planet moons each have their own class.
- PyEphem includes a modest catalog of famous bright stars.
- Body instances know their name (which you can set to whatever you want).

```
>>> m = ephemeris.Mars('2003/8/27')
>>> print('%s %s %10f' % (m.name, m.elong, m.size))
Mars -173:00:34.2 25.1121063232
```

- Extra arguments when you create a Body are used to perform an initial `compute()` (see the next section).

`body.compute(date)`

```
>>> j = ephemeris.Jupiter()
>>> j.compute('1986/2/8')
>>> print('%s %s' % (j.ra, j.dec))
21:57:50.46 -13:17:37.2
>>> j.compute('1986/2/9', epoch='1950')
>>> print('%s %s' % (j.a_ra, j.a_dec))
21:56:50.83 -13:22:54.3
```

- Computes the position of the body.
- The date if omitted defaults to `now()`.
- The epoch if omitted defaults to '2000'.
- Date and epoch arguments can be anything acceptable to `date()`.
- Sets the following body attributes:

`a_ra` — [Astrometric geocentric](#) right ascension for the epoch specified
`a_dec` — [Astrometric geocentric](#) declination for the epoch specified
`g_ra` and `ra` — [Apparent geocentric](#) right ascension for the epoch-of-date
`g_dec` and `dec` — [Apparent geocentric](#) declination for the epoch-of-date
`elong` — Elongation (angle to sun)
`mag` — Magnitude
`size` — Size (diameter in arcseconds)
`size_s` — Size (radius in arcseconds)



TextWranglerFileEditTextViewSearchWindow#!Help

ephem_astronomy.php_GETME

Last Saved: 3/10/18, 6:54:01 pm
File Path : /Applications/MAMP/htdocs/ephem_astronomy.php_GETME

ephem_astronomy.php_GETME (no symbol selected)

```
1 <?php
2 // ephem_astronomy.php
3 // Supervising great pyephem module in python3.3
4 // RJM Programming
5 // October, 2018
6
7 $bodies=["Mercury","Venus","Earth","Mars","Jupiter","Saturn","Uranus","I
8
9 $bodyopts="";
10 for ($i=0; $i<sizeof($bodies); $i++) {
11     $bodyopts.="<option value=\"$bodies[$i]\" . ">\" . $bodies[$i] . "</op
12 }
13
14 $htmlis="<!doctype html>
15 <html>
16 <head>
17 <title>Astronomy Helper via Python PyEphem Module</title>
18 </head>
19 <body style='background-color: pink;'>
20 <h1>Astronomy Helper via Python <a target='_blank' title='PyEphem ... tha
21 <h3>RJM Programming - October, 2018</h3>
22 <table style='background-color: yellow;' border=50>
23 <tr><th>Celestial Body</th><th>Astrometric geocentric <br>Right Ascensi
24 <tr><td><select size=" . (1 + sizeof($bodies)) . " onchange=\"if (this.
25 </table>
26 </body>
27 </html>";
28
29 if (isset($_GET['body'])) {
30     if (urldecode($_GET['body']) != "") {
31         if (file_exists('py_ephem.xxx')) {
32             unlink('py_ephem.xxx');
33         }
34         if (isset($_GET['epoch'])) {
35             if (urldecode($_GET['epoch']) != "") {
36                 exec("cat .." . '/' . "Python" . '/' . "Jupiter.py | sed ''
37                 $htmlis=str_replace(" value=''", " value=\"\" . urldecode($_GET
38             } else {
39                 exec("cat .." . '/' . "Python" . '/' . "Jupiter.py | sed ''
40             }
41         } else {
```

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www.rjmprogramming.com.au/PHP/ephem_astronomy.php

Astronomy Helper via Python PyEphem module

RJM Programming - October, 2018

Celestial Body	Astrometric geocentric Right Ascension ... for now or ...	Declination
Please select a Celestial Body below ... Mercury Venus Earth Mars Jupiter Saturn Uranus Neptune Pluto Moon Sun	Optional date definition such as '1986/2/9', epoch='1950' 23:04:05.42	-7:03:40.3