What happens when the main maintainer of a project takes a step down?

Name: Jorge Martinez
GitHub: @jorgepiloto
Website: jorgemartinez.space

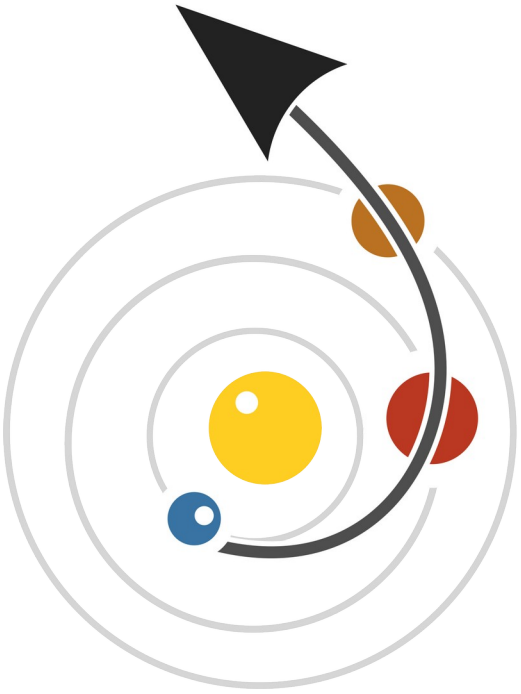
The project dies...

The project dies...

Does it?

Community is the key

The case of poliastro



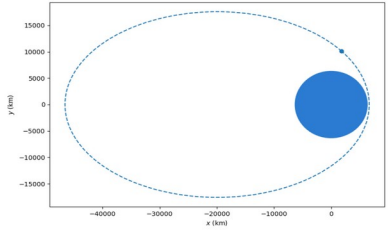
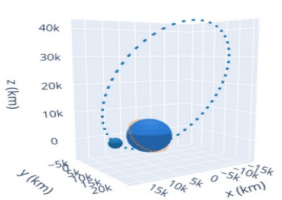
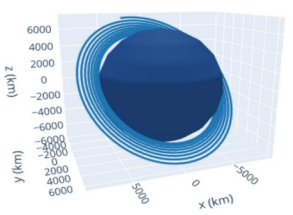
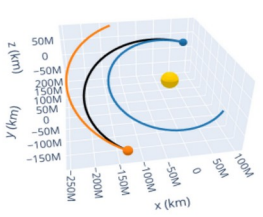
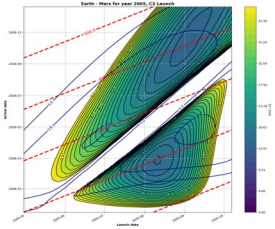
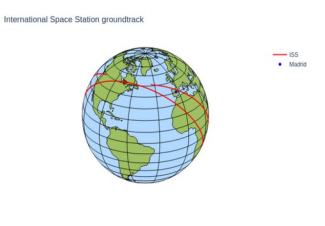
poliastro

Astrodynamics in Python

https://www.poliastro.space

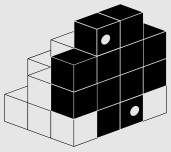
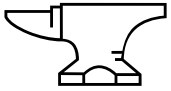
What is poliastro?

poliastro is an open source (MIT) pure Python library for interactive Astrodynamics and Orbital Mechanics, with a focus on ease of use, speed, and quick visualization. It provides a simple and intuitive API, and handles physical quantities with units.

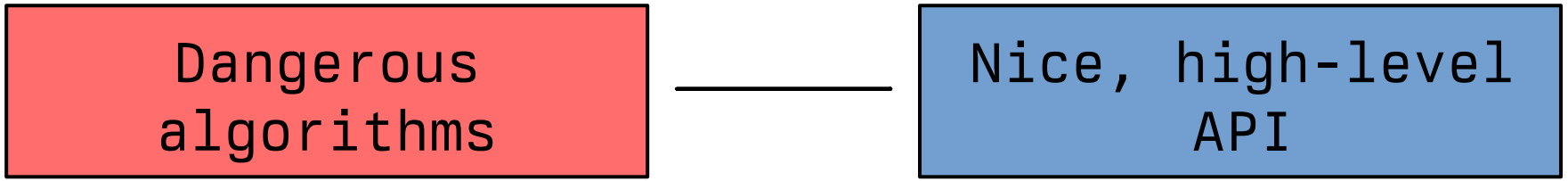







https://github.com/poliastro/poliastro

How to install poliastro

Logo	Platform	Command
	PyPI	python -m pip install poliastro
	Conda Forge	conda install poliastro --channel conda-forge
	GitHub	python -m pip install https://github.com/poliastro/poliastro/archive/main.zip

The architecture of poliastro




```
poliastro
|
├── core/          # Basic astrodynamics routines
└── ...            # Pythonic high-level routines
```

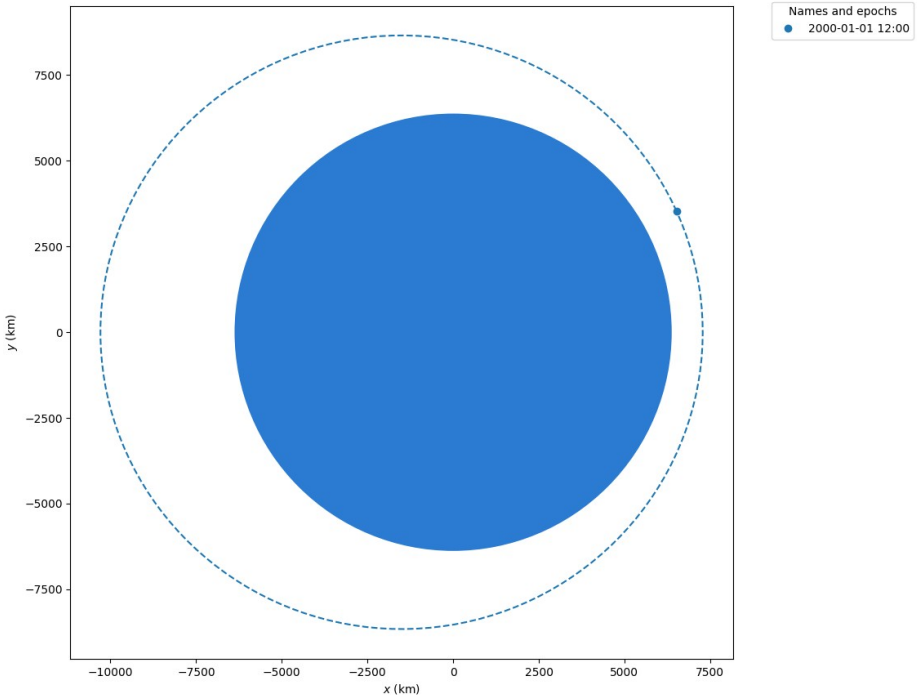
Some of its capabilities...

Easy orbit manipulation

- Orbit.from_vectors
- Orbit.from_classical
- Orbit.from_coords
- Orbit.from_sbdb

… and more!

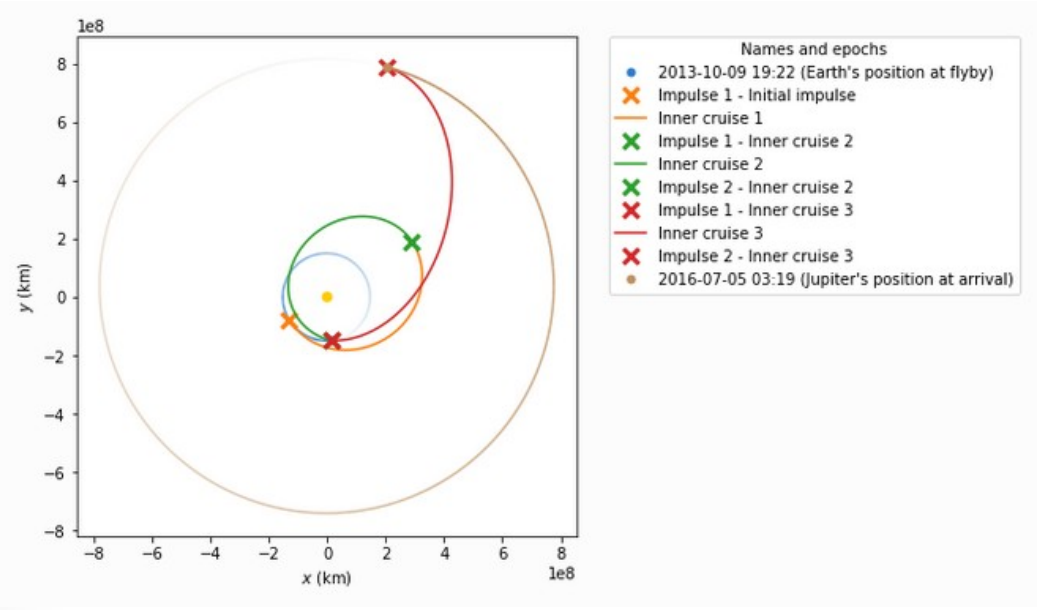
```python
from astropy import units as u
from poliastro.bodies import Earth
from poliastro.twobody import Orbit

# Data from Curtis, example 4.3
r = [-6045, -3490, 2500] << u.km
v = [-3.457, 6.618, 2.533] << u.km / u.s
orb_curtis = Orbit.from_vectors(Earth, r, v)
orb_curtis.plot()
```



Simple orbit maneuvers

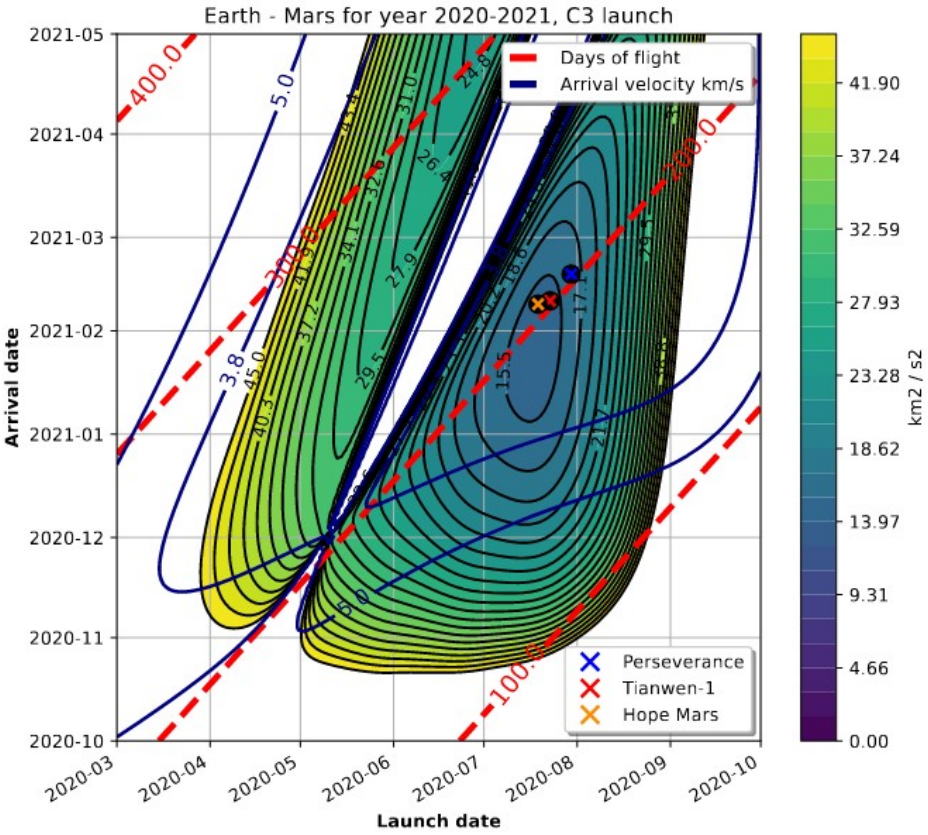
Create simple manuevers including Hohmann, bi-elliptic, and Lambert’s transfers. These maneuvers provide the mission-analysis capabilities of poliastro.

```python
from astropy import units as u
from poliastro.maneuver import Maneuver
from poliastro.twobody import Orbit

# Create a circular orbit and raise its altitude using a
# Hohmann maneuver
orb_i = Orbit.circular(Earth, alt=700 << u.km)
hohmann_man = Maneuver.hohmann(orb_i, r_f=36000 << u.km)
orb_f = orb_i.apply_maneuver(hohmann_man)
```



Beautiful porkchop figures

```python
from poliastro.plotting.porkchop import PorkchopPlotter
from poliastro.utils import time_range

# Generate all launch and arrival dates
launch_span = time_range(
    "2020-03-01", end="2020-10-01", periods=int(150)
)
arrival_span = time_range(
    "2020-10-01", end="2021-05-01", periods=int(150)
)
# Create an instance of the porkchop and plot it
porkchop = PorkchopPlotter(
    Earth, Mars, launch_span, arrival_span,
)
```



How to use poliastro

Gallery of examples
https://docs.poliastro.space/en/stable/gallery.html

Background
https://docs.poliastro.space/en/stable/background.html

Quickstart
https://docs.poliastro.space/en/stable/quickstart.html

Talks, videos, and more!
https://github.com/poliastro/poliastro#examples-background-and-talks

https://docs.poliastro.space

Who uses poliastro?

Students and researchers
All over the world!

IBM
https://github.com/IBM/spacetech-ssa

Satellogic
https://github.com/satellogic/orbit-predictor

Ansys
https://github.com/AnalyticalGraphicsInc/STKCodeExamples

Libre Space Foundation
https://gitlab.com/librespacefoundation/polaris/vinvelivaanilai

Who started poliastro?

Name ..... Juan Luis Cano Rodríguez

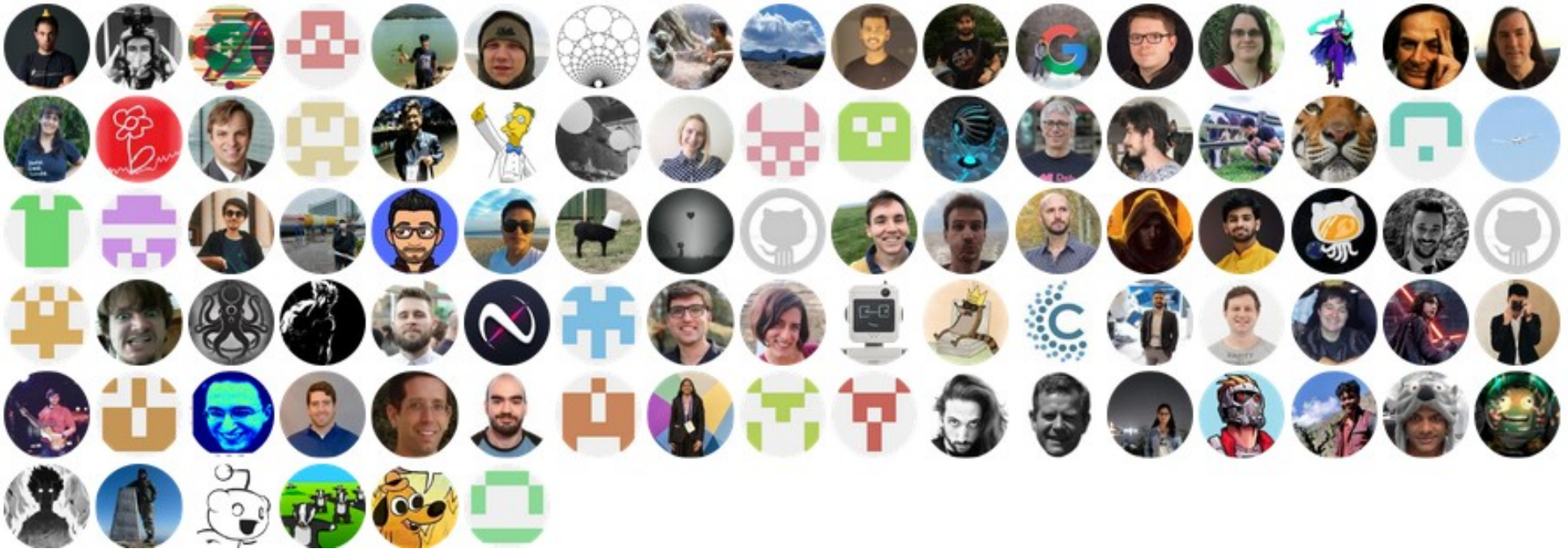
GitHub ..... @astrojuanlu

Founded ..... Asociación Python España

Organizes ..... PyData Madrid

Writes ..... Noticiero Python y Datos

Who maintains poliastro?

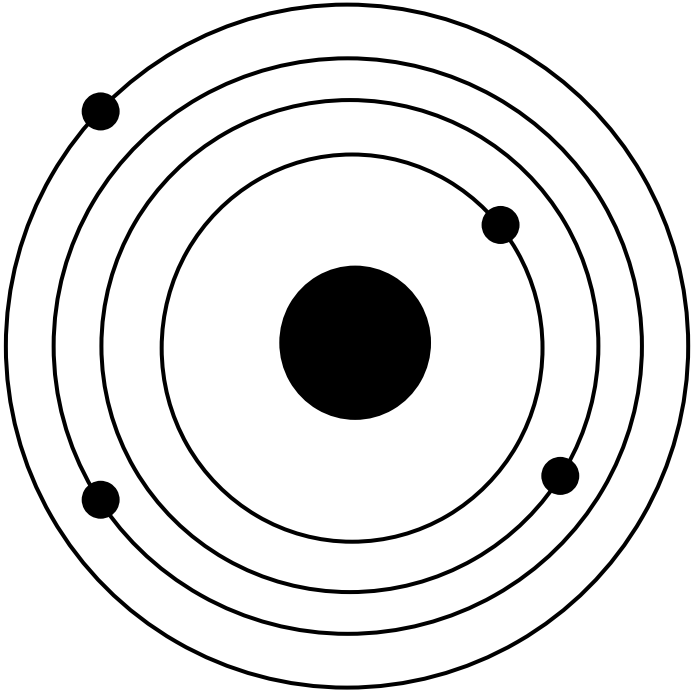


Thank you all for your support!

How did poliastro build its community?

The Orbit Model

Observers
Participants
Developers
Advocates
==========
Gravity + Love + Reach + Impact



Talks and tutorials

Per Python ad astra: Interactive Astrodynamics with poliastro
SciPyConf 2022
https://www.youtube.com/watch?v=0GqdIRdDe9c

Interplanetary mission analysis with poliastro
Open Source Cubesat Workshop 2019
https://docs.poliastro.space/en/stable/background.html

Can we make Python fast without sacrificing readability? numba for Astrodynamics
EuroSciPy 2019
https://pyvideo.org/euroscipy-2019/can-we-make-python-fast-without-sacrificing-readability-numba-for-astrodynamics.html

The chat

Regular chats or conversations within a community are important for maintaining engagement, fostering connections, and facilitating communication.

By having ongoing chats, community members can stay connected with each other, share ideas, discuss relevant topics, and address any concerns or questions.

element

Our weekly meetings

They provide a regular opportunity for members to come together, discuss important matters, and make collective decisions.

These meetings promote transparency, accountability, and active participation, ensuring that everyone has a voice and can contribute to the community's growth and development.

jitsi.org

The contrib/ directory

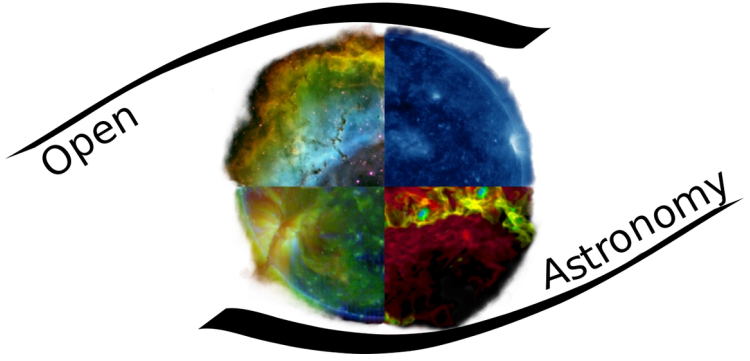
The contrib/ directory allows newcomers to contribute while its code is adapted to the requirements of the project.

```
poliastro
|
├── binder/                 # Binder configuration
├── contrib/                # Newcomers friendly zone
├── docs/                   # Documentation source
├── src/                    # Library source code
└── tests/                  # Testing source code
```

Google Summer of Code

Spend the Northen summer working on amazing free and open source code projects while getting an stipend.

Open Astronomy



Libre Space Foundation

NumFOCUS Small Development Grants

poliastro is an affiliated NumFOCUS project. Therefore, it can apply to the different Small Development Grants rounds that NumFOCUS organizes.

Transparent finance

All money that goes into poliastro can be traced. This is thanks to its Open Collective account.

open collective

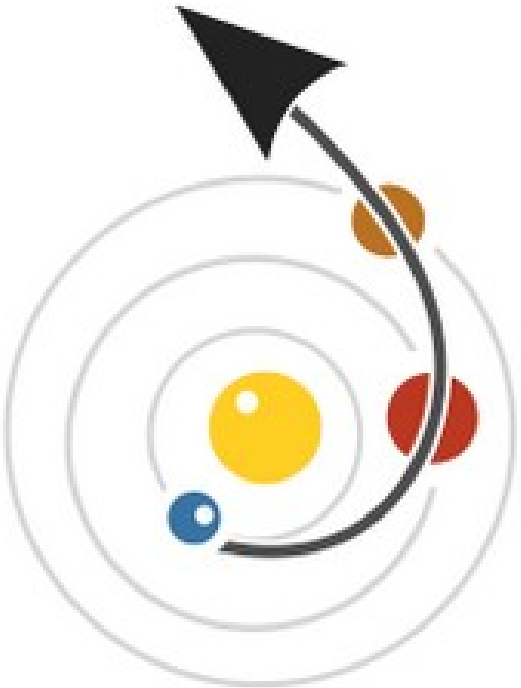
Thanks to all our backers!

Thanks to all our sponsors!

https://opencollective.com/poliastro

But after all this time ...

But after all this time ...



... we are taking a step down

Unless...

Unless...

... you want to take a step forward