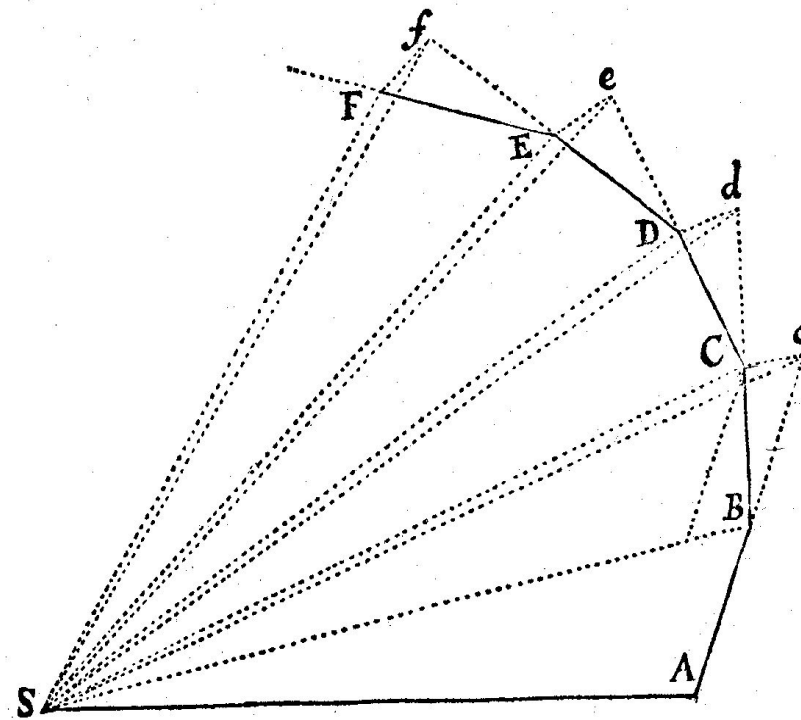


# Building Models with AMUSE



SE

sse

bse

evtwin

mesa

gravitational dynamics

stellar evolution

gravitational dynamics

GD

BHtree

hermite0

phiGRAPE

twobody

smallN

octgrav

mercury

huayno

mmc

stellar evolution

stellar evolution

gravitational dynamics

stellar evolution

gravitational dynamics

GD

imports

```
import numpy
from amuse.community.mercury.interface import MercuryWayWard
from amuse.ext.solarsystem import Solarsystem
from amuse.support.units import units
from amuse.plot import *
```

initial  
conditions

```
def planetplot():
    sun, planets = Solarsystem.new_solarsystem()
    timerange = units.day(numpy.arange(0, 120 * 365.25, 12))
```

setup code

```
    instance = MercuryWayWard()
    instance.initialize_code()
    instance.central_particle.add_particles(sun)
    instance.orbiters.add_particles(planets)
    instance.commit_particles()
```

```
    channels = instance.orbiters.new_channel_to(planets)
```

evolve

```
    for time in timerange:
        err = instance.evolve_model(time)
        channels.copy()
        planets.savepoint(time)
```

```
    instance.stop()
```

process

```
    for planet in planets:
        t, x = planet.get_timeline_of_attribute_as_vector("x")
        t, y = planet.get_timeline_of_attribute_as_vector("y")
        plot(x, y, '.')

    native_plot.show()
```

```
if __name__ == "__main__":
    planetplot()
```

