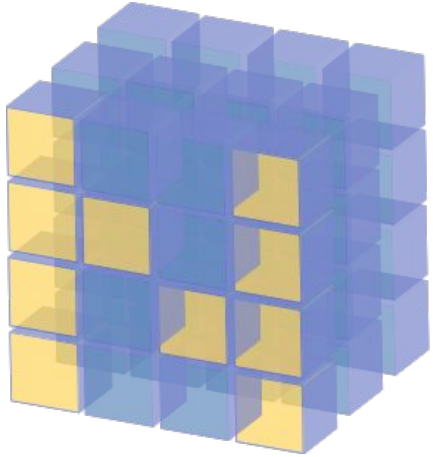
sunpy

A Community Python Library for Solar Physics

and sustainable!

python SOFTWARE FOUNDATION




jupyter


DASK


scikit
learn

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LEGACY CODE

[...] *legacy code* is simply code without tests.

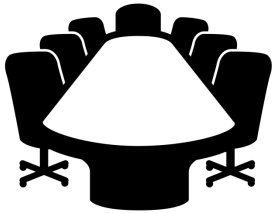
> Code without tests is bad code. It doesn’t matter how well written it is; it doesn’t matter how pretty or object-oriented or well-encapsulated it is. With tests, we can change the behavior of our code quickly and verifiably. Without them, we really don’t know if our code is getting better or worse.

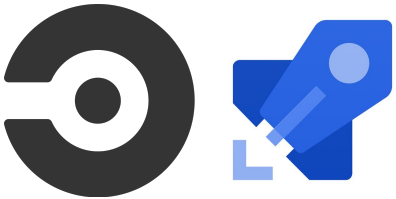
Working Effectively with Legacy Code by Michael Feathers

TESTS

```
def test_rotation_angle(map_data, hpc_test_header):
    header = sunpy.map.make_fitswcs_header(map_data, hpc_test_header,
                                           rotation_angle=90*u.deg)
    wcs = WCS(header)
    np.testing.assert_allclose(wcs.wcs.pc, [[0, -1], [1, 0]], atol=1e-5)
```

sustainable!





Contributing guide

Code of Conduct

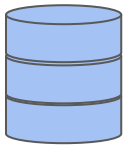
SEPs

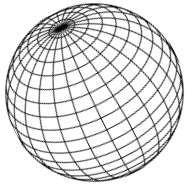
- VSO
- JSOC
- GOES
- NOAA
- NORH
- FERMI
- …

```
>>> Fido.search(a.Time('2012/3/4', '2012/3/6'), a.Instrument('aia'),
...             a.Wavelength(171*u.angstrom), a.vso.Sample(10*u.minute))
```

```
>>> Fido.search(a.Time('2012/3/4', '2012/3/6'),
...             a.Instrument('lyra') | a.Instrument('rhessi'))
```

db





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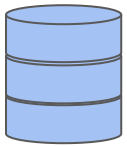
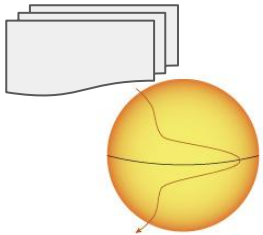
- Yohkoh
- SoHO
- TRACE
- STERE0
- PROBA2
- SDO
- Hinode
- Iris
- ...

```
>>> my_map = sunpy.map.Map('/mydirectory/mymap.fits')
>>> my_map.plot()
```

db





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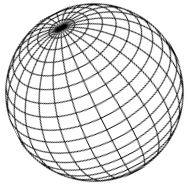

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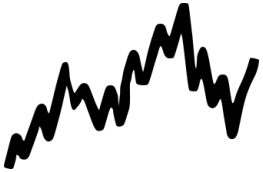

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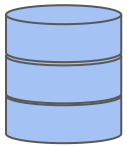

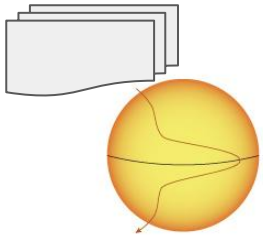

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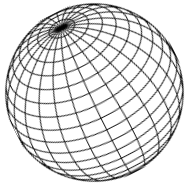

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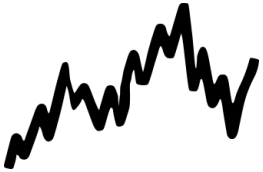

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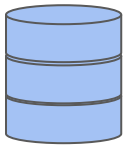
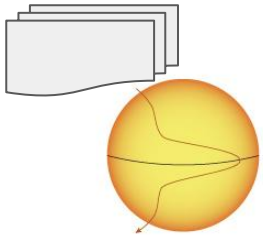
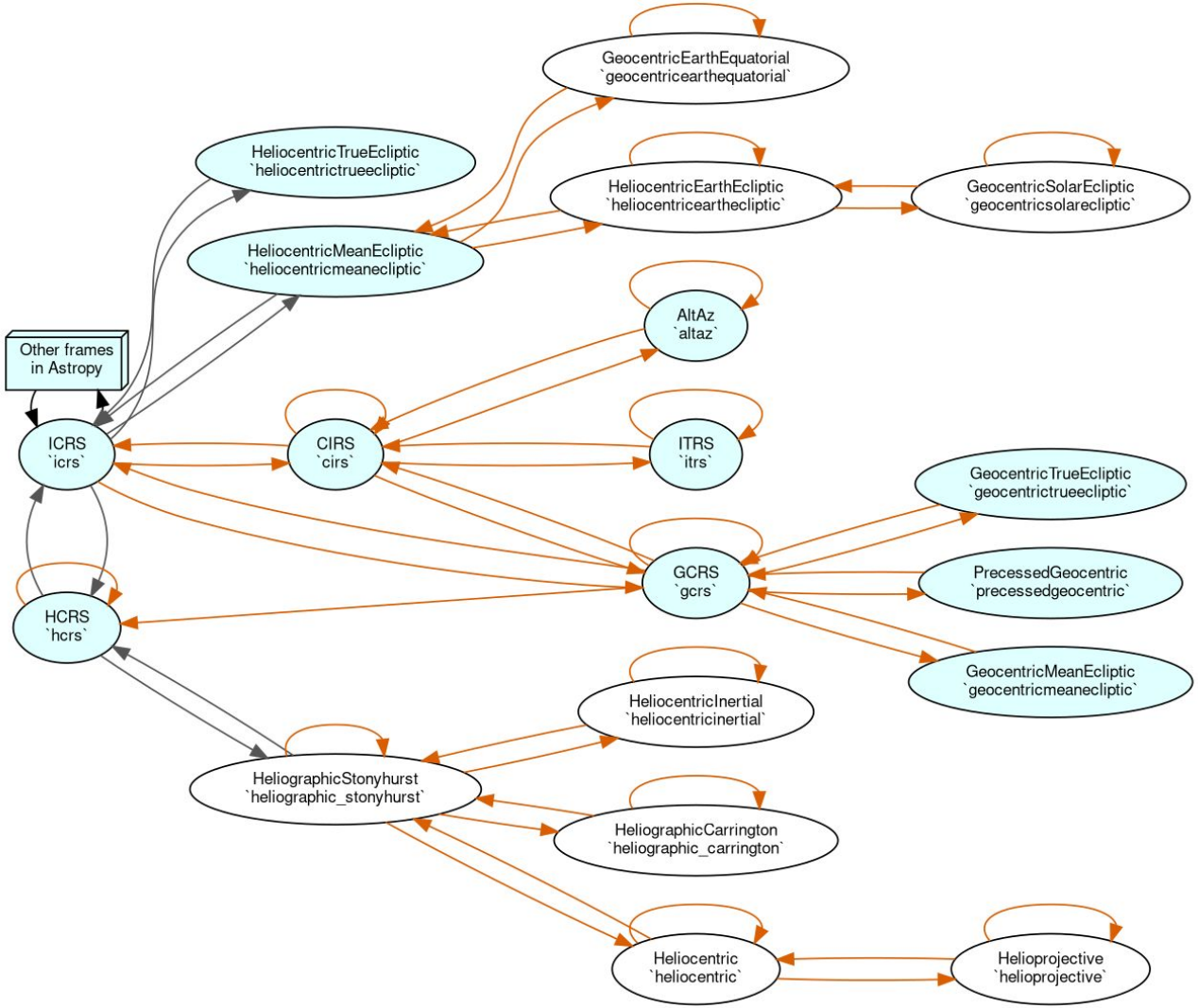
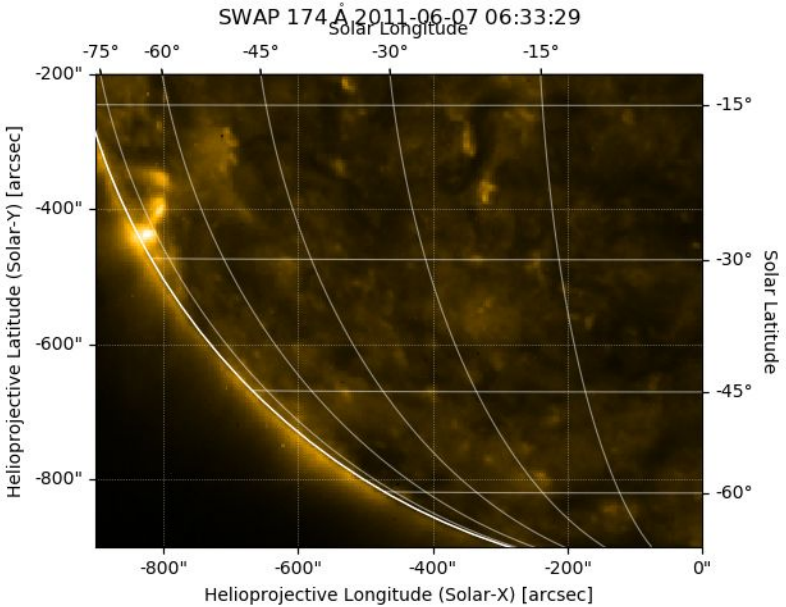
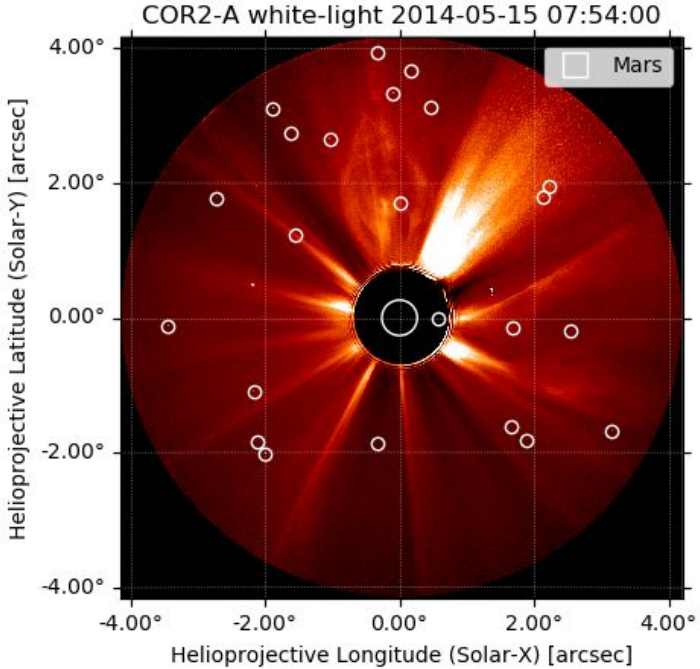





GeocentricEarthEquatorial
`geocentricearthequatorial`
HeliocentricTrueEcliptic
`heliocentrictrueecliptic`
HeliocentricEarthEcliptic
`heliocentricearthecliptic`
GeocentricSolarEcliptic
`geocentricsolarecliptic`
HeliocentricMeanEcliptic
`heliocentricmeanecliptic`
AltAz
`altaz`
Other frames
in Astropy
ICRS
`icrs`
CIRS
`cirs`
ITRS
`itrs`
GeocentricTrueEcliptic
`geocentrictrueecliptic`
GCRS
`gcrs`
PrecessedGeocentric
`precessedgeocentric`
HCRS
`hcrs`
GeocentricMeanEcliptic
`geocentricmeanecliptic`
HeliocentricInertial
`heliocentricinertial`
HeliographicStonyhurst
`heliographic_stonyhurst`
HeliographicCarrington
`heliographic_carrington`
Heliocentric
`heliocentric`
Helioprojective
`helioprojective`


SWAP 174 Å 2011-06-07 06:33:29
Solar Longitude
-75°
-60°
-45°
-30°
-15°
-200"
-400"
-600"
-800"
-15°
-30°
-45°
-60°
Solar Latitude
Helioprojective Latitude (Solar-Y) [arcsec]
-800"
-600"
-400"
-200"
0"
Helioprojective Longitude (Solar-X) [arcsec]


COR2-A white-light 2014-05-15 07:54:00
Mars
4.00°
2.00°
0.00°
-2.00°
-4.00°
Helioprojective Latitude (Solar-Y) [arcsec]
-4.00°
-2.00°
0.00°
2.00°
4.00°
Helioprojective Longitude (Solar-X) [arcsec]

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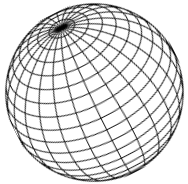

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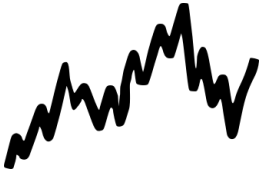

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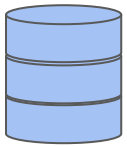
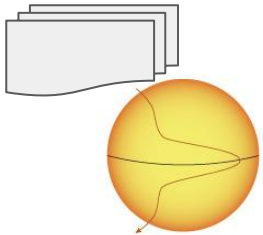




Affiliated packages

radiospectra

drms

JSOC

SDP

IRISPy

other packages

pfsspy

XRAYVISION

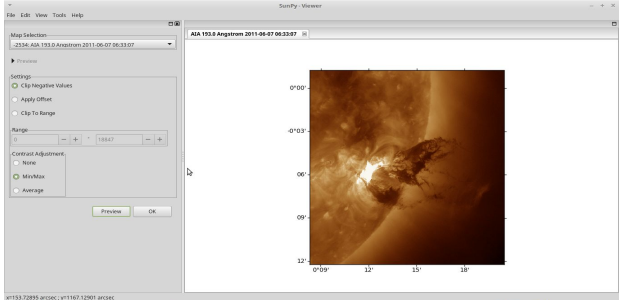
Sunkit-Image

EISPy

SolarBExtrapolation

NuSTAR Solar

Sunpy Viewer



HelioPy

Where does SolO want to be?

At least do

- Tests
- Documentation
- Releases
- issues tracker
- accept and review contributions