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Project overview

https://sunpy.org/project/

Board

- 9 members
- Meets ~4 times / year
- Leads overall structure and direction

Maintainers

- 11 currently
- Run project day to day
- No explicit funding for this work (currently)

UCL

sunpy

"General-purpose tools to analyse solar physics data"

- Data retrievers (`sunpy.net.Fido`)
- Data containers (`sunpy.map.Map`)
- Coordinates (`sunpy.coordinates.*`)
- + others (e.g. differential rotation, visualisation)

- ~6 month release cycle
- 2.1 released Feb 2021
- 3.0 in Aug 2021
- Regular bugfixes in between (currently 2.1.4)

Affiliated packages

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"well-maintained, open source software packages that are useful to solar physicists and integrate well with the SunPy ecosystem"

- e.g.:
  drms - accessing JSOC for HMI/AIA/MDI data
  sunraster - analysing rastering spectrograph data
  radiospectra - analysing solar radio spectragrams
  pfsspy - PFSS modelling
  aiapy - analysing data from SDO/AIA

- sunpy provides publicity and a single home for these packages (https://sunpy.org/project/affiliated)

Downloading data

+ sunpy

- Downloading data → sunpy-soar
  https://github.com/dstansby/sunpy-soar
- Single interface to all files on the SOAR

```python
# Importing sunpy_soar registers the client with sunpy
import sunpy_soar
from sunpy.net import Fido

from sunpy.net.attrs import Instrument, Level, Time
from sunpy_soar.attrs import Identifier

# Create search attributes
instrument = Instrument('EUI')
time = Time('2021-02-01', '2021-02-02')
level = Level(1)
identifier = Identifier('EUI-FSI174-IMAGE')

# Do search
result = Fido.search(instrument, time, level, identifier)
print(result)

# Download files
files = Fido.fetch(result)
print(files)
```

Loading data

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- Loading data → `sunpy.map.Map`

- Colourmaps → `sunpy.visualisation.cm` (automatically used)

- Thanks for being FITS compliant!

- Live demo…

sunpy + instruments

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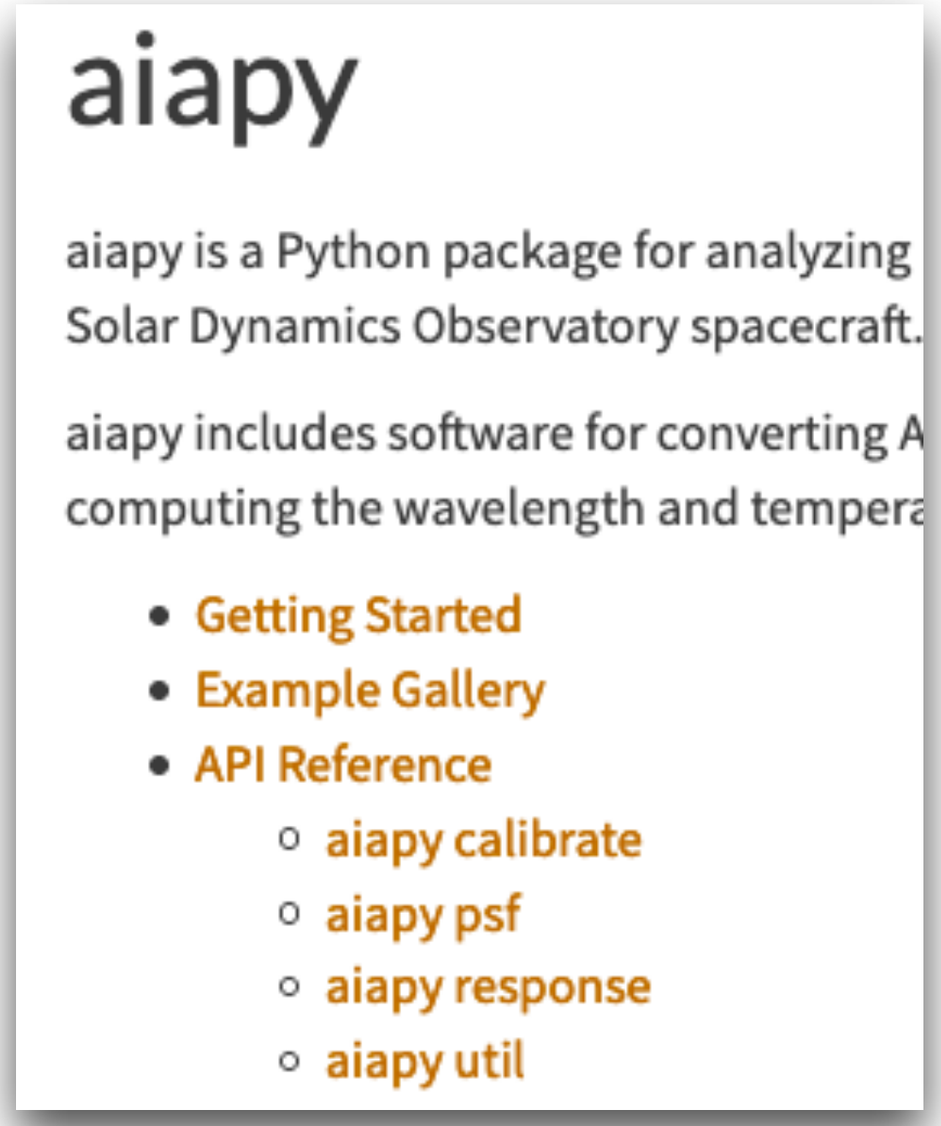
- sunpy contains no instrument specific code (deliberate decision)
- Suggest a model of one package / instrument
- aiapy is successful example
- **We are happy to help!**



https://aiapy.readthedocs.io

Contacting

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- Questions:
  Mailing list: **https://groups.google.com/g/sunpy**
  Chat room: **https://sunpy.org/chat**

- Bugs or feature requests:
  https://github.com/sunpy/sunpy/issues

- Anything:
  (I can be point of contact between SolO and sunpy):
  d.stansby@ucl.ac.uk

New resources

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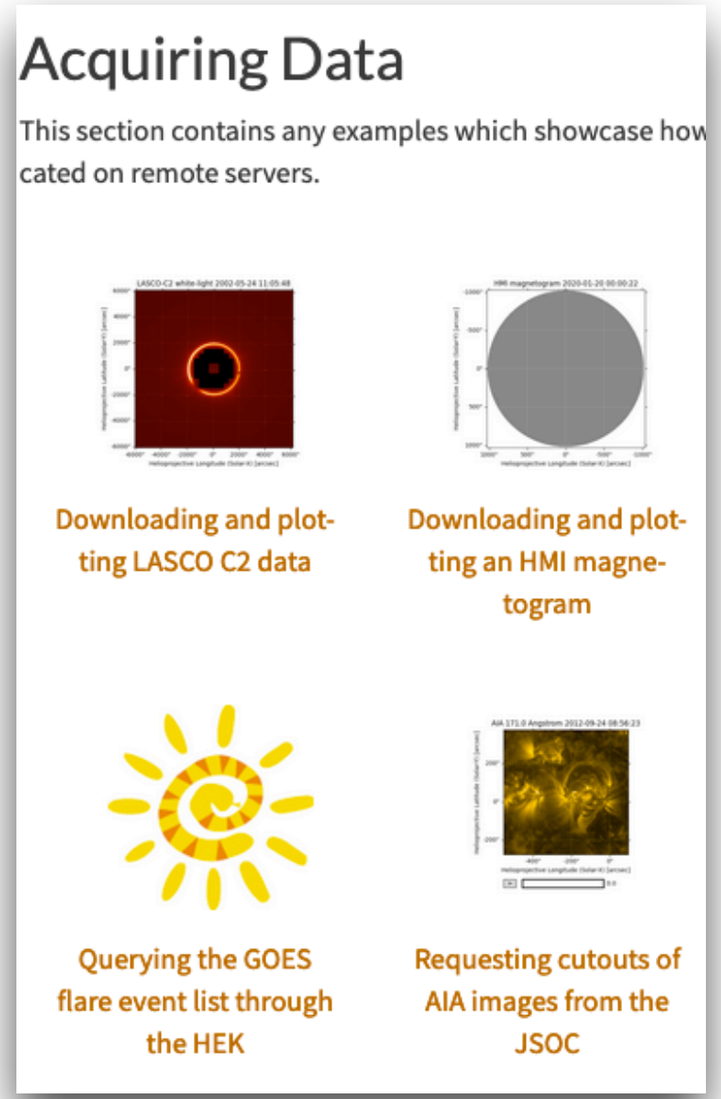
- I would like to make a “python + solar orbiter” example gallery

- Community resource with code snippets for analysing data

- Remote + in-situ + modelling



https://docs.sunpy.org/en/stable/generated/gallery

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ESA | NASA

solar orbiter

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Searching

Loading

Generic analysis

Instrument packages

Calibration

Other instrument specific tasks

In-situ + modelling

HelioPy

pfsspy

Analysis examples

Questions? Anything in particular we can help instrument teams with?