# The SOLARNET project and the Solar Virtual Observatory (SVO)

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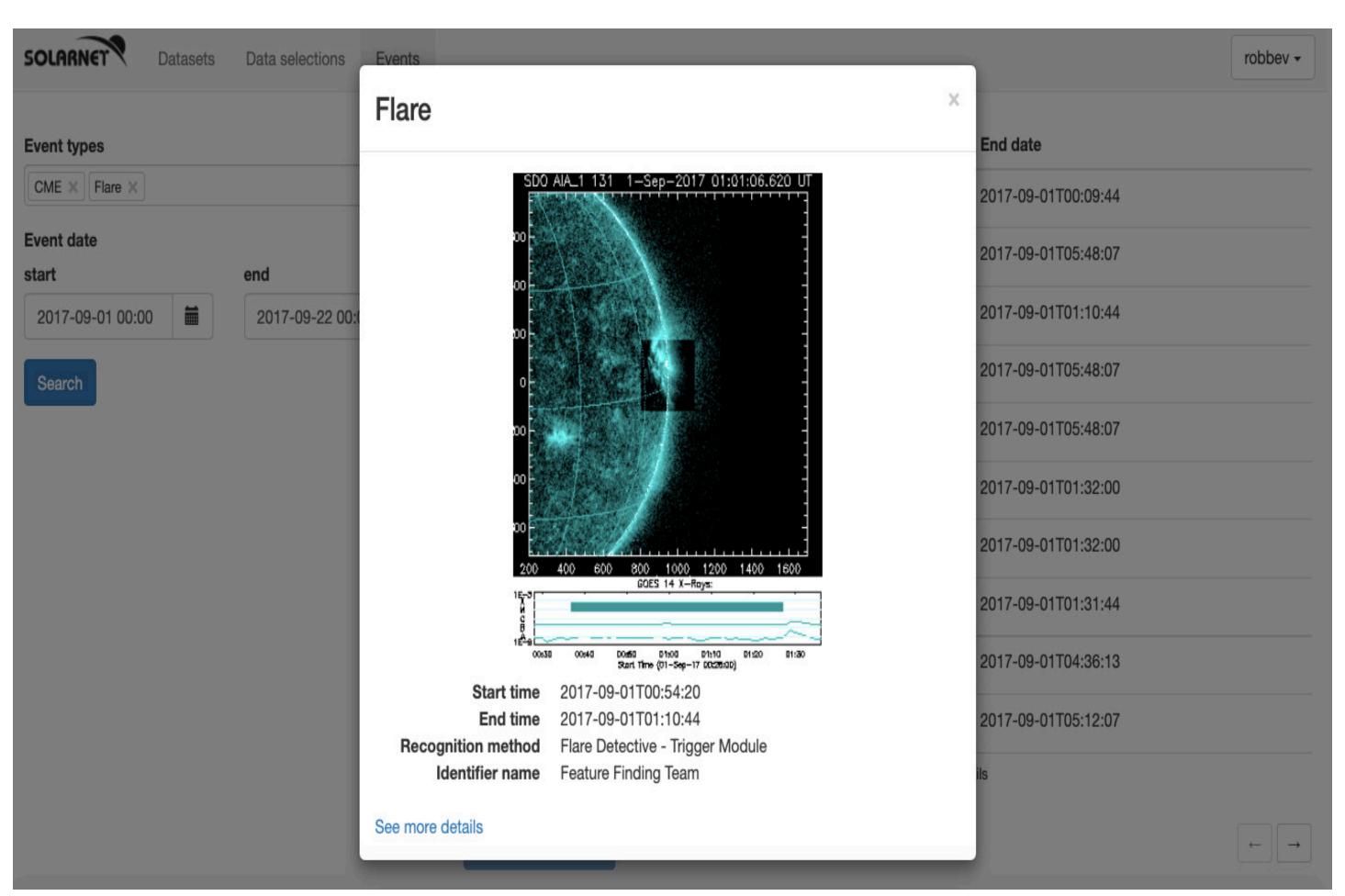
Developed in the framework of the H2020 SOLARNET project, the SOLARNET Virtual Observatory (SVO) aims at **making solar data more findable and accessible** to the solar physics community. The SVO lets you search across **multiple datasets** as well as the Heliophysics Event Database (HEK) and it lets you search for data that overlaps with **events** from the HEK.

SOLARNET Datasets	Data selections E	Events						robbev <del>-</del>
Telescopes			Dataset	# Items	Instrument	Telescope	Characteristics	
SDO × PROBA2 ×			AIA level 1	84	AIA	SDO	space based, E.U.V., full sun	
Characteristics select or search characteristics			HMI magnetogram	10	HMI	SDO	space based, full sun	
			SWAP level 1	478	SWAP	PROBA2	space based. E.U.V., full sun	

It is designed so that other event databases may also be linked to the SVO in the future. These features will help researchers in **discovering and accessing solar datasets** from synoptic observations as well as solar data taken during short observation campaigns.

# Tags venus transit x Click on any row to see dataset content or refine search Observation date stat end Observation wavelength min max nm nm nm Search

### << Cross-dataset searches



In addition, you can search **single datasets** using search criteria specific to the dataset, and see quicklook images of the data as well as the FITS header and download your data selection by FTP.

from \_\_future\_\_ import print\_function
from SOLARNET import datasets

# See all available datasets
for dataset in datasets:
 print(dataset)

# Get a specific dataset
aia\_lev1 = datasets["aia\_lev1"]

# Filter the record in that dataset for June 2012 the 6th with a wavelength of 171A
filtered\_aia\_lev1 = aia\_lev1.filter("DATE-OBS", "2012 June 6", WAVELNTH = 171)

# Display the date of observation and the wavelength in that filtered dataset
for record in filtered\_aia\_lev1:
 print(record.meta\_data["DATE-OBS"], record.meta\_data["WAVELNTH"])

# Download the data from a record
record = filtered\_aia\_lev1[0]

# << Quicklook images

SOLARNET	Detecto	Data coloctions	Evente				robbev -
Sounder	Datasets	Data selections	Events				
Event types				Туре	Start date	End date	
CME × Flare ×	)			Flare	2017-09-01T00:06:44	2017-09-01T00:09:44	
Event date start		end		CME	2017-09-01T00:48:08	2017-09-01T05:48:07	
2017-09-01 00:0	00	2017-09-22 00:0	00	Flare	2017-09-01T00:54:20	2017-09-01T01:10:44	
Search				CME	2017-09-01T01:25:47	2017-09-01T05:48:07	
				CME	2017-09-01T01:25:47	2017-09-01T05:48:07	
				Flare	2017-09-01T01:26:00	2017-09-01T01:32:00	
				Flare	2017-09-01T01:26:00	2017-09-01T01:32:00	
				Flare	2017-09-01T01:28:32	2017-09-01T01:31:44	
				CME	2017-09-01T01:36:13	2017-09-01T04:36:13	

record.download("/tmp")

# Get the data as a BytesIO [1] without saving to disk
data = record.data()

# Open the data as a fits file (see astropy.io.fits [2])
hdus = record.HDUs()

## << Python Client

□         CME         2017-09-01T01:36:15         2017-09-01T05:12:07           Click on any row to see event details           Click on any row to see event details	0	02							
		CME	2017-09-01T01:36:15	2017-09-01T05:12:07					
Search overlapping $\leftarrow$	Click on any row to see event details								
	Search	overlapping			$\leftarrow  \rightarrow $				

### << Event-based searches

http://solarnet.oma.be/



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