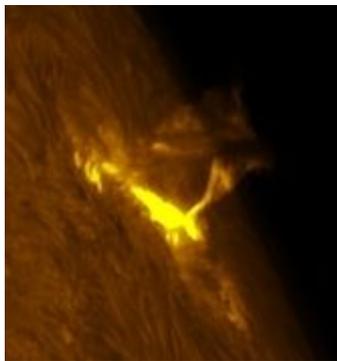


FireCapture plugin FlareDetect



User's manual

v0.90

Introduction

The FireCapture plugin “FlareDetect” provides the possibility of automated image recording sessions based on the current X-ray flux. This plugin uses flux data of the GOES satellite provided by the Space Weather Prediction Center (<http://www.swpc.noaa.gov/>).

The plugin provides the following functionality:

- Recording is started if flux reaches configured minimum threshold
- Recording is stopped after configured time
- After recording is stopped and after a configured pause time, a new recording run can be started automatically
- The maximum number of recording runs is configurable

The plugin checks the Space Weather Prediction Center website each 30s for the current 1 minute average flux data of the 0.1-0.8 nm passband.

Note: You need a permanent internet connection for execution of this plugin!

Special thanks to Torsten Edelmann for providing the great imaging software FireCapture with plugin interface.

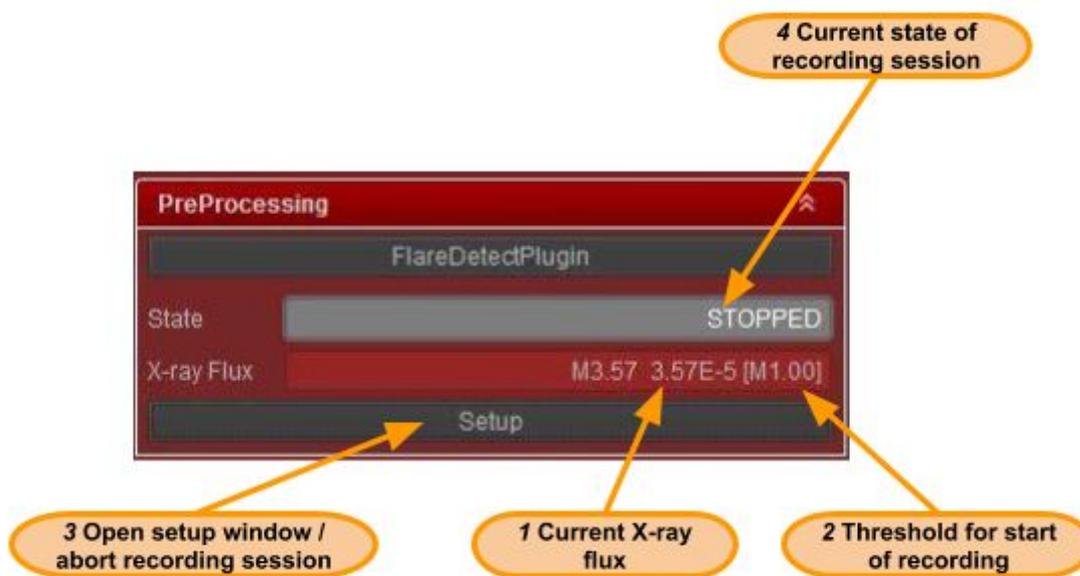
Flare images by courtesy of Pedro Ré: <http://re.apaaweb.com/index.html>

Installation

- Read file readme.txt for required software versions
- Create a folder named FlareDetect in folder
<FC installation folder>\plugins\x86 or
<FC installation folder>\plugins\x64 (depending on Windows version)
- Copy FlareDetect.jar into this folder
- Start FireCapture
- Select FlareDetect plugin in section PreProcessing (press button “None” if no plugin is selected)

Plugin Interface

If the FlareDetect plugin is selected, the plugin interface is displayed in section “PreProcessing” of the FireCapture window.



1 Current X-ray flux

If the flux is higher than the configured threshold value, image recording is started (see also section “Setup”).

2 Threshold for start of recording

Threshold flux value for start of recording. Press “Setup” button to change threshold value..

3 Setup/Stop button

Press button to open setup window. During execution of recording sessions, the button is named “Stop” and can be pressed to abort the recording session.

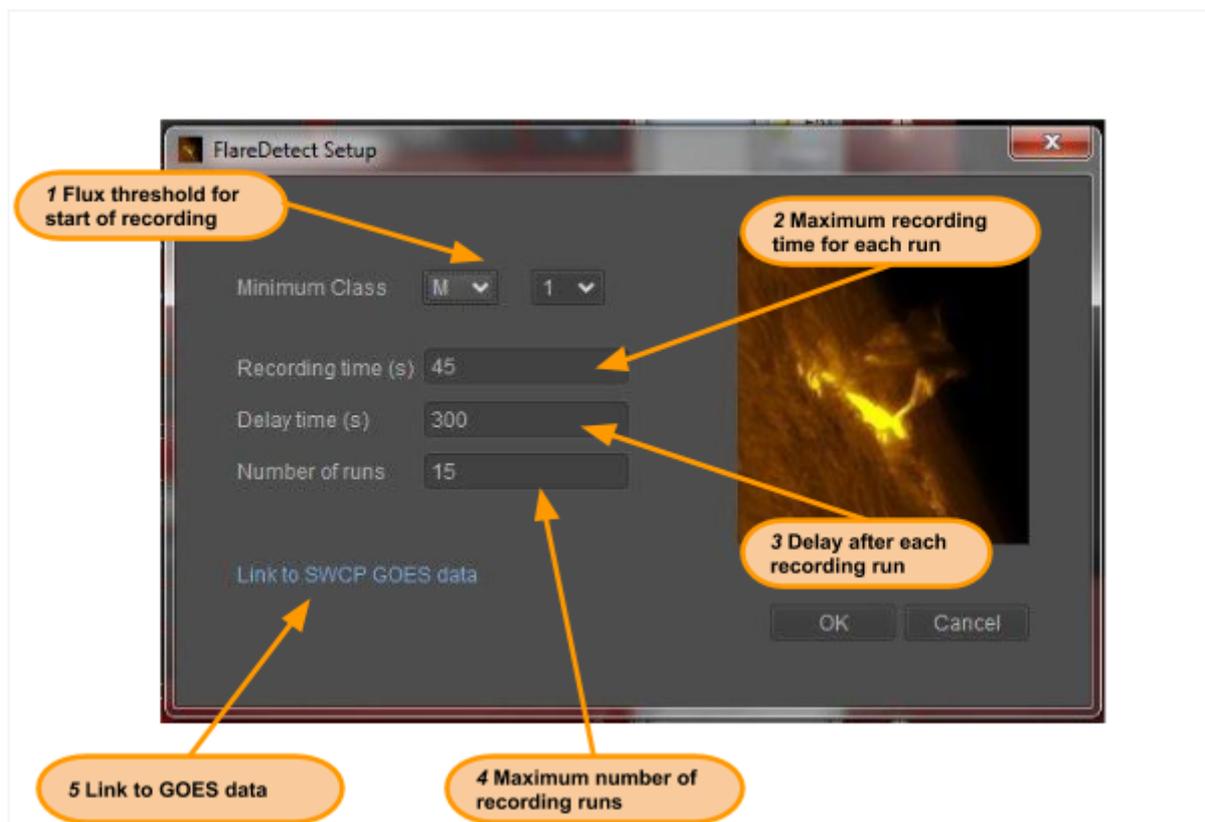
4 State of recording session

STOPPED	No recording session scheduled
READY	Recording session active, waiting for flux higher than threshold value
RUNNING	Recording running
POST_RUN	Recording run finished, waiting for configured time until next recording run

Setup

Open setup window by pressing button "Setup" in plugin interface.

Press "OK" to apply changes.



1 Flux threshold

Minimum X-ray flux for start of a recording run. Provide flare class (A, B, C, M or X) and subclass (1..9)

2 Recording time for each recording run

This is the recording time for each recording run and equals to the length of the recorded files.

3 Delay after recording run

After each recording run there is a pause of the configured time.

4 Maximum number of recording runs

Maximum number of recording runs until complete session is stopped.

5 Link to GOES data

Opens browser with link to current SWCP GOES X-ray flux data.

The example setup in the figure above will start recording as soon as the X-ray flux is flare class M1 or higher. The recording is stopped after 45 seconds. After a recording there is a minimum delay of 5 minutes (300 seconds) until the next recording might start (if the flux is higher than M1 again). A maximum of 15 recording runs is executed.

Start and Stop Recording Sessions

The start and stop buttons of the FireCapture section “Capture” are used to start and stop recording sessions.



1 Start button

Press button to start recording session.

2 Stop button

Press button to stop recording session. This button is enabled only during an active recording run. During waiting times (delay between recording runs) this button is disabled. In these cases press button “Stop” in FlareDetect plugin to stop the recording session.

FireCapture Log File

The FlareDetect plugin adds two lines into the FireCapture log file recorded for each captured file:

“FlareDetect threshold”: Configured threshold for start of recording run

“FlareDetect max flux”: Maximum flux during recording run

Hints

- The plugin assigns suffix “_FD_<fluxthreshold>” to the file names of captured files.
- The plugin checks the Space Weather Prediction Center website each 30s for latest data. Therefore there might be some seconds delay until it reacts on data updates.

More Information

- [GOES website](#)
- Latest version of FlareDetect plugin
- [FireCapture website](#)

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Contact

Comments, error reports and suggestions for improvement are welcome. Please report to

info@joachim-stehle.de