



User Manual

STAFF v2.0

[09/01/2013]

Contents

Staff v2.0	1
Contents	2
Document History	3
Publication	3
References	3
Introduction	4
Delivery.....	4
Definitions	4
Prerequisites	4
List of Tables and Images	5
Tables	5
Images	5
Quick Overview	6
1. Links	7
2. Menu	7
• Export as file...	7
• Export as Image...	8
• Information.....	10
• Statistics.....	10
• Contact.....	12
• Links/References.....	12
• Help.....	13
• About...	14
3. Dataset Selection	15
4. Timerange Selection	16
5. Plot Area	18
Known Issues	20
Appendix	21

Document History

Name	Type	Description	Date	Version
Vincent Malisse	Document creation	First version of the user manual.	09/01/2013	V0.1

Publication

This document is for all Staff users.

References

Reference	Description	Version
-----------	-------------	---------

Introduction

Delivery

The Staff viewer is a web based application that can show the timelines for several types of solar measurements like X-Ray, EUV, Solar wind, Interplanetary Magnetic Field, ... The data is imported in near-real time and can go back several years. The viewer also allows the user to zoom in or out a time frame and to combine the plots as desired.

Definitions

Term	Description
AFFECTS	<u>A</u> dvanced <u>F</u> orecast <u>F</u> or <u>E</u> nsuring <u>C</u> ommunications <u>T</u> hrough <u>S</u> pace. (http://www.affects-fp7.eu/)
Staff	<u>S</u> olar <u>T</u> imelines viewer for <u>A</u> <u>F</u> <u>F</u> <u>E</u> <u>C</u> <u>T</u> <u>S</u> .
STCE	<u>S</u> olar- <u>T</u> errestrial <u>C</u> entre of <u>E</u> xcellence

Prerequisites

- Javascript should not be blocked from the user's webbrowser.
- Staff has been tested on Internet Explorer, Safari, Chrome and Firefox.

List of Tables and Images

[each table or screenshot should have a small caption like “table1” or “image1” that caption you can bookmark and copy into this link with a hyperlink.]

Tables

Link	Description
Table1	Downsample levels
Table2	Known Issues

Images

Link	Description
Image1	General overview
Image2	Links
Image3	Menu – File
Image4	Exporting data
Image5	Exporting image
Image6	Menu – Advanced
Image7	Plot Information
Image8	Statistics
Image9	Menu – About
Image10	Contact form
Image11	Links
Image12	Help
Image13	About
Image14	Dataset selection
Image15	Timerange selection
Image16	Plot area

Quick Overview

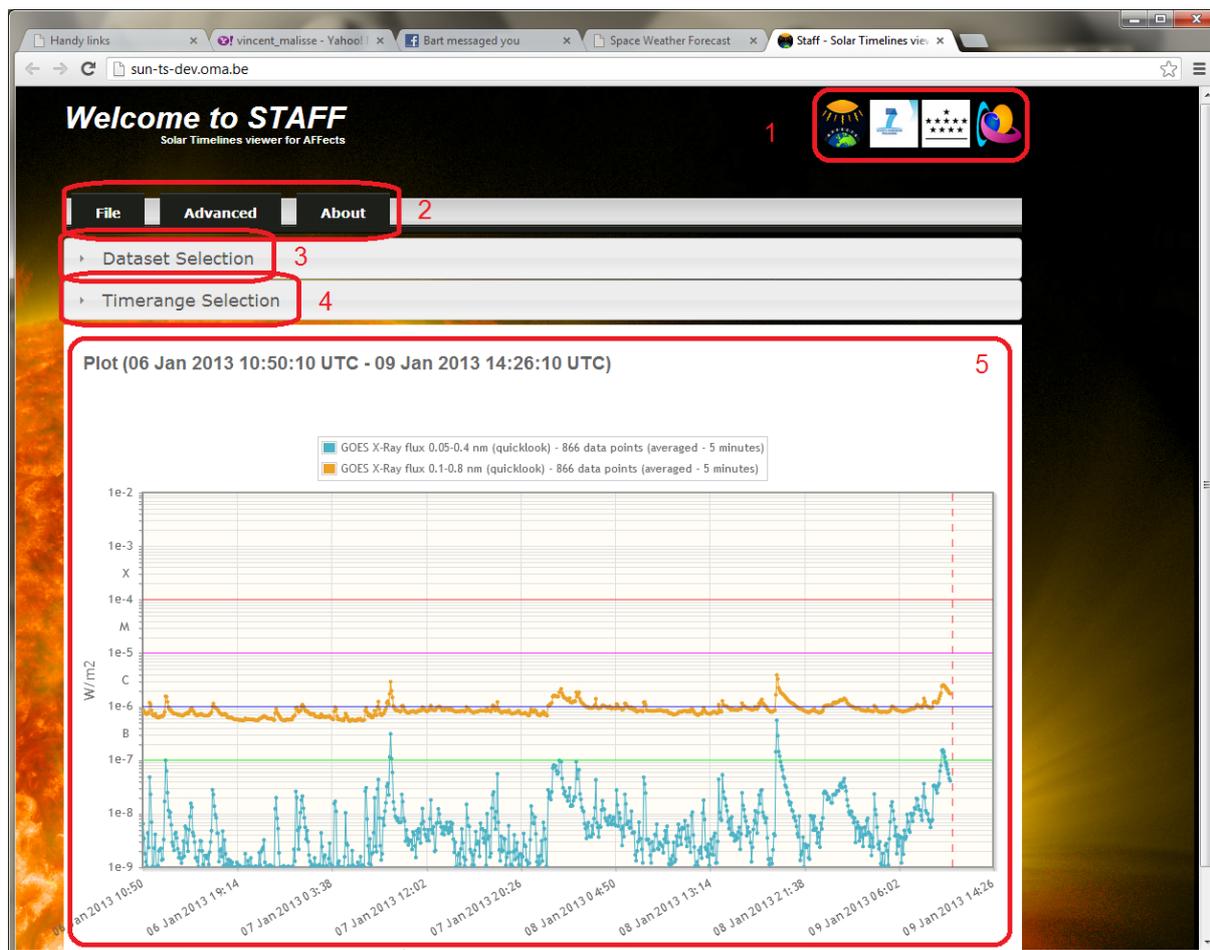


Image1: First view when opening the web page.

1. Links to several third party websites related to Staff. Links open in a new window.
2. Menu for some advanced options like export, additional information and help.
3. Clicking slides a part of the page open and allows the user to (de)select timelines.
4. Clicking slides a part of the page open and allows the user to change the time window
5. This part shows the actual plot.

1. Links



Image2: links

From left to right each image is a link to:

- The AFFECTS web site.
- The European FP7 project web site.
- The homepage of the Royal Observatory of Belgium.
- The STCE homepage.

2. Menu

Note: All dialogs can be closed by clicking on the cross on the top right.

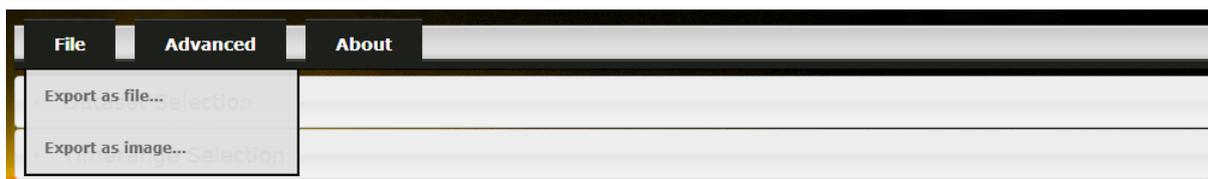


Image3: Menu – File

If you hover over the menu item “File” a dropdown is shown with the following options:

- **Export as file...**

Allows the user to export the current shown plot as data to a txt, xls or csv formatted file. When clicking the menu-item a popup dialog will open allowing the user to review the data.



Clicking on the export button () gives the user the option to export that timeline to a certain fileformat and whether the full dataset should be exported. The export is per timeline, not for the full plot.

Note: Exporting the full dataset is potentially dangerous as it can be a huge amount of data.

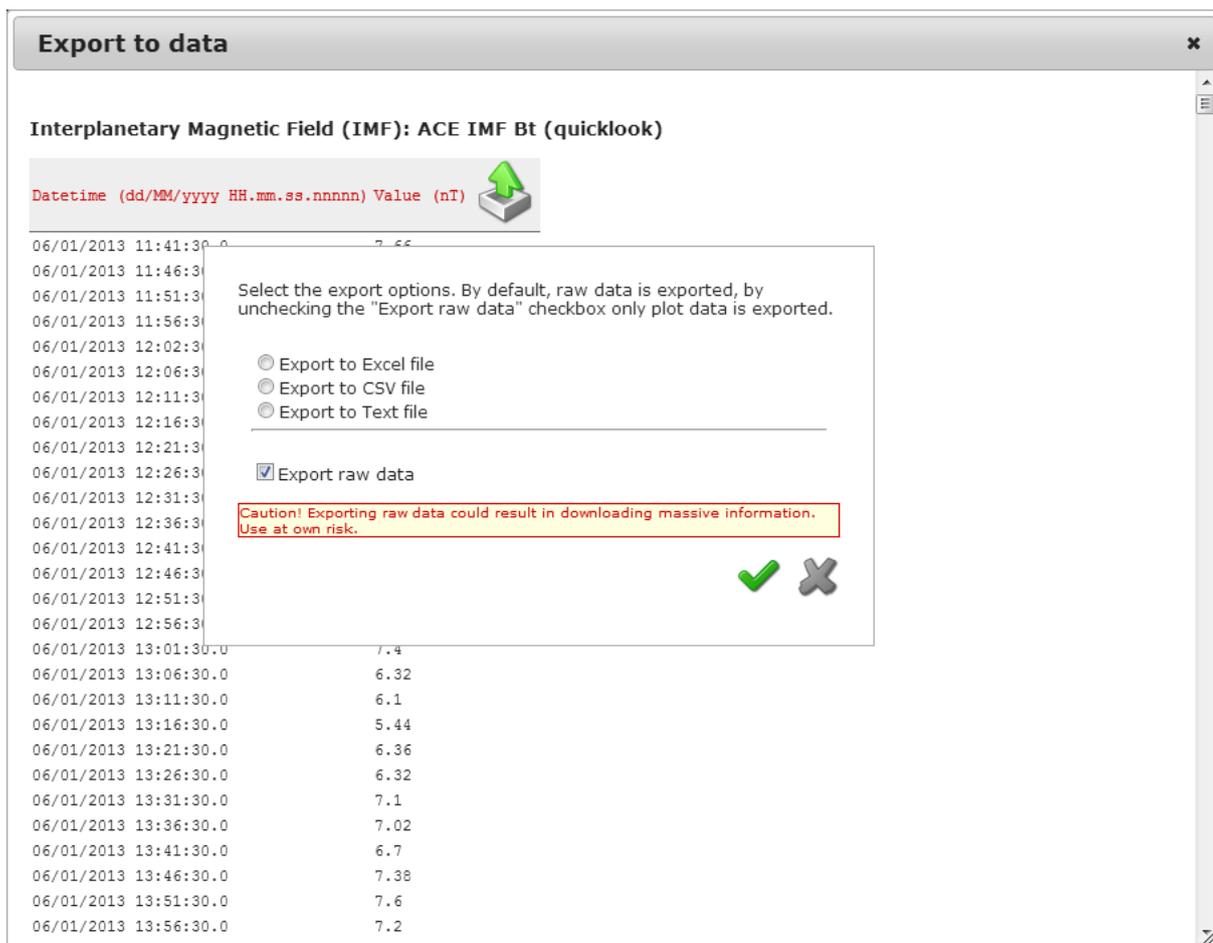


Image4: Exporting data

With the buttons OK/Cancel ( ) the user can confirm or cancel the options.

- **Export as Image...**

Allows the user to export the current shown plot as an image. When clicking the menu-item a popup dialog will open allowing the user to review the prepared image, including the copyright print. By right-clicking the image and selecting "Save as..." in the popup menu, the image can be saved to disc.

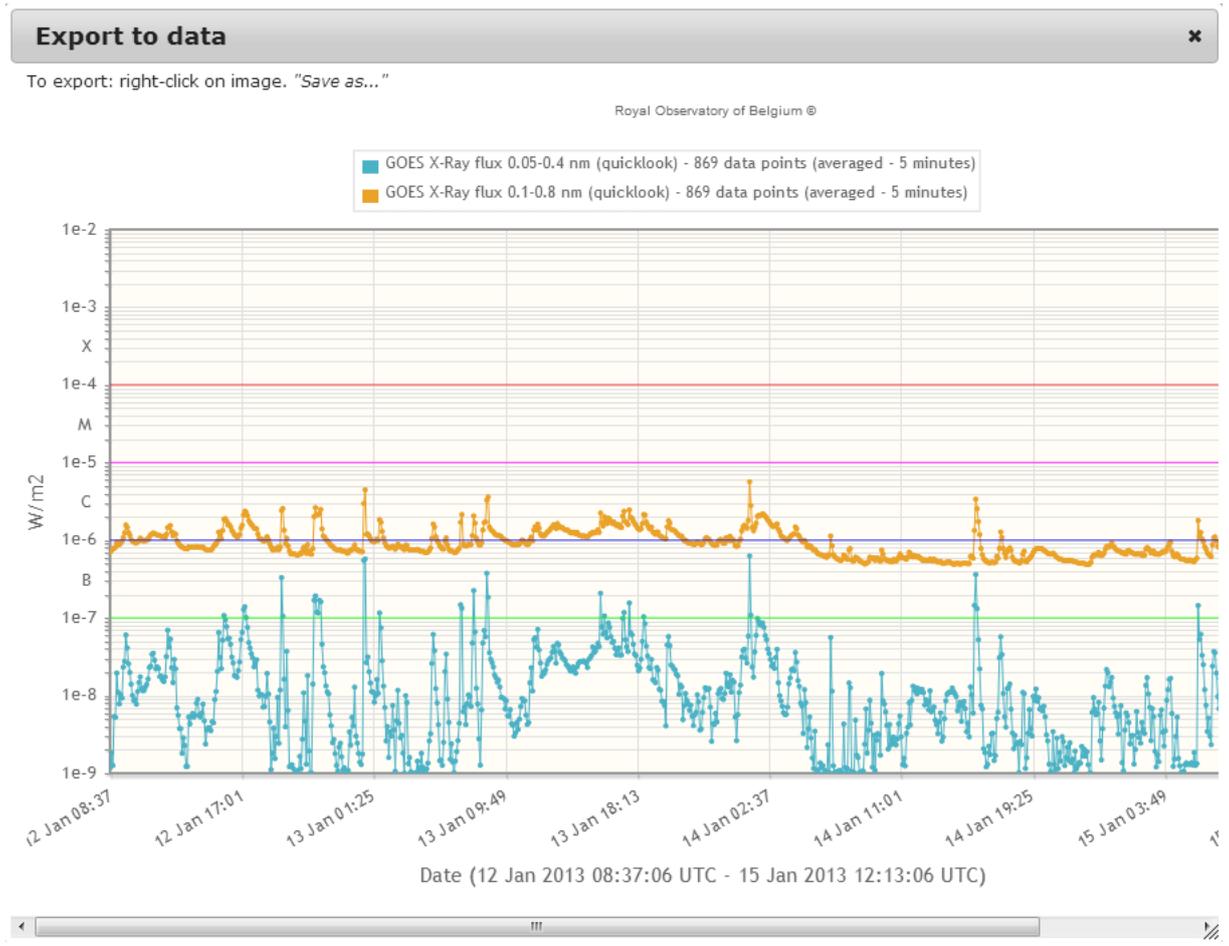


Image5 : Exporting as image

Note: The full image will be downloaded. The dialog can only show part of the image at one time due to size constraints. The full image can be reviewed by using the horizontal scrollbar.

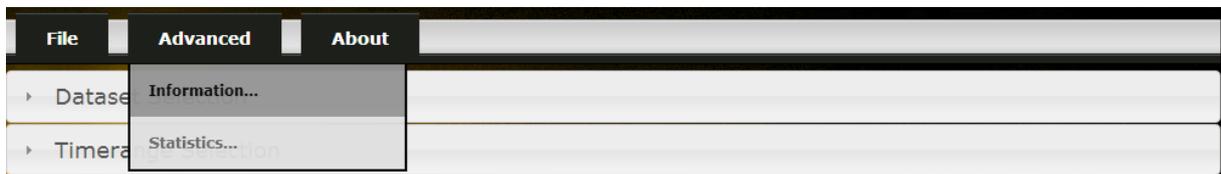


Image6: Menu – Advanced

If you hover over the menu item “File” a dropdown is shown with the following options:

- **Information...**

This option will show where the information comes from which can be files, a database or some ground station.

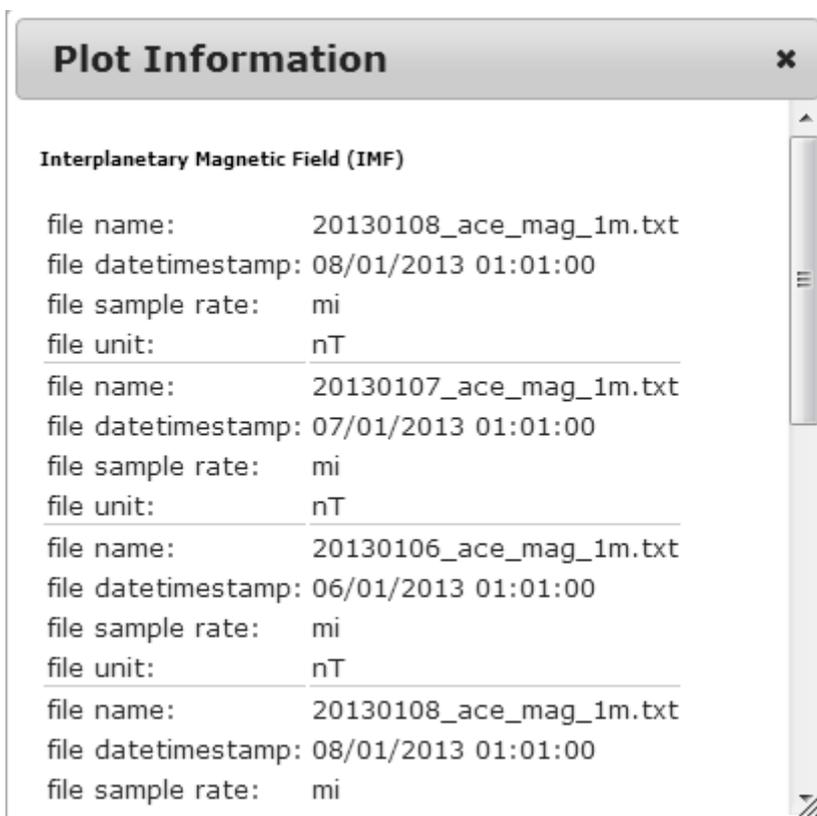


Image7: The information about the current plot.

- **Statistics...**

This option will open a new page that shows for each plot the oldest datapoint, the newest datapoint, the lowest value, the highest value and the amount of records of the raw data. Not all datasets have the same timerange, that is why this page can be useful to retrieve a valid plot. If a plot turns out empty, this should be the first place to look.

Staff Statistics - Google Chrome
sun-ts-dev.oma.be/Statistics.jsp

Staff Statistics

Datetime format: dd/MM/yyyy HH:mm:ss.SSS

EUV

Category	Sub-Category	Minimum Datetimestamp	Maximum Datetimestamp	Minimum Value	Maximum Value	Record Count
Lyra Aluminium	science - centiseconds	06/01/2010 17:02:10.535	28/08/2012 05:49:38.051	1.3772897E-8	1.7940023E38	1888562635
Lyra Herzberg	science - centiseconds	06/01/2010 17:02:10.535	28/08/2012 05:49:38.051	1.0077209E-6	2.5376821E32	1890981425
Lyra Lyman Alpha	science - centiseconds	06/01/2010 17:02:10.535	28/08/2012 05:49:38.051	1.7285969E-7	2.1040114E38	1888668581
Lyra Zirconium	science - centiseconds	06/01/2010 17:02:10.535	28/08/2012 05:49:38.051	1.0843656E-9	2.3985018E38	1888284232

Geomagnetic

Category	Sub-Category	Minimum Datetimestamp	Maximum Datetimestamp	Minimum Value	Maximum Value	Record Count
Ak Chambon-La-Forét	quicklook - days			0.0	0.0	0
Ak Dourbes	quicklook - days			0.0	0.0	0
K Chambon-La-Forét	quicklook - days			0.0	0.0	0
K Dourbes	quicklook - days			0.0	0.0	0
Kp (K values planetary index)	quicklook - days	27/09/2011 22:00:00.000	26/12/2011 21:00:00.000	1.0	7.0	32

Interplanetary Magnetic Field (IMF)

Category	Sub-Category	Minimum Datetimestamp	Maximum Datetimestamp	Minimum Value	Maximum Value	Record Count
ACE IMF Bt	quicklook - minutes	04/11/2012 00:00:00.000	09/01/2013 11:59:00.000	0.1	23.0	94597
ACE IMF Bx	quicklook - minutes	04/11/2012 00:00:00.000	09/01/2013 11:59:00.000	-15.4	17.3	94597
ACE IMF By	quicklook - minutes	04/11/2012 00:00:00.000	09/01/2013 11:59:00.000	-21.2	21.5	94597
ACE IMF Bz	quicklook - minutes	04/11/2012 00:00:00.000	09/01/2013 11:59:00.000	-19.4	20.4	94597
Ace IMF Phi	quicklook - minutes	04/11/2012 00:00:00.000	09/01/2013 11:59:00.000	0.6030912	359.1449	95341
ACE IMF Bt	science - minutes	06/02/1998 00:00:00.000	20/07/2012 23:59:00.000	0.18	9999.99	7601760
ACE IMF Bx	science - minutes	06/02/1998 00:00:00.000	20/07/2012 23:59:00.000	-49.51	9999.99	7601760
ACE IMF By	science - minutes	06/02/1998 00:00:00.000	20/07/2012 23:59:00.000	-50.94	9999.99	7601760
ACE IMF Bz	science - minutes	06/02/1998 00:00:00.000	20/07/2012 23:59:00.000	-55.57	9999.99	7601760
Ace IMF Phi	science - minutes	06/02/1998 01:22:00.000	19/07/2012 11:57:00.000	0.03871336	359.9754	5129785

Image8: Statistics

Note: This screen can be set next to the normal application for re-use.
Note: Statistics are updated once a day.

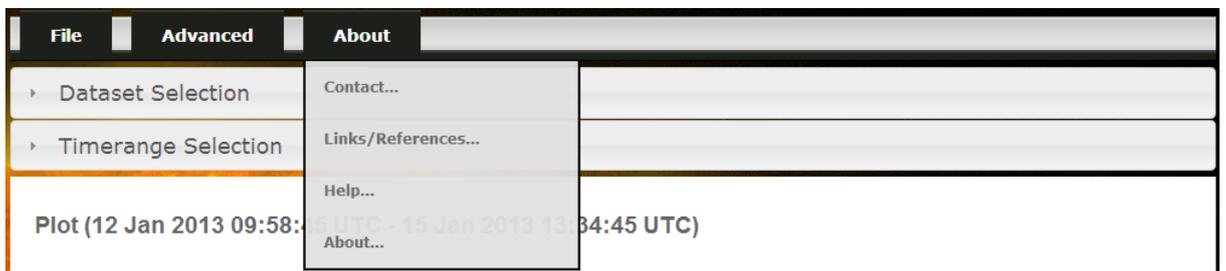


Image9: Menu - About

If you hover over the menu item "About" a dropdown is shown with the following options:

- **Contact...**

This allows a user to contact the site administrator. The user just needs to fill in the required data similar like sending an email.

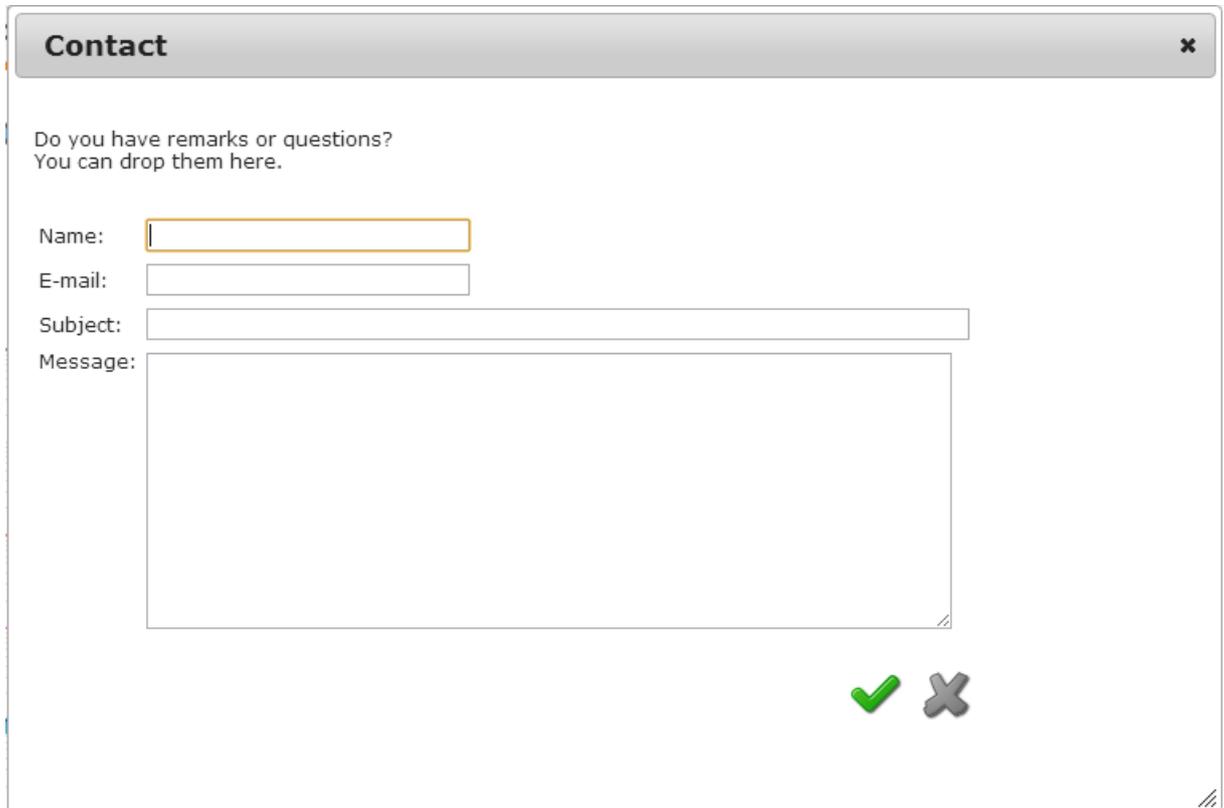


Image10 : Contact form.

With the buttons OK/Cancel ( ) the user can send or cancel the email.

- **Links/References...**

Shows a popup with links to related sites.



Image11 : Links

- **Help...**

Shows a popup with a quick help guide on the topics of the application. Navigation is also through a menu.

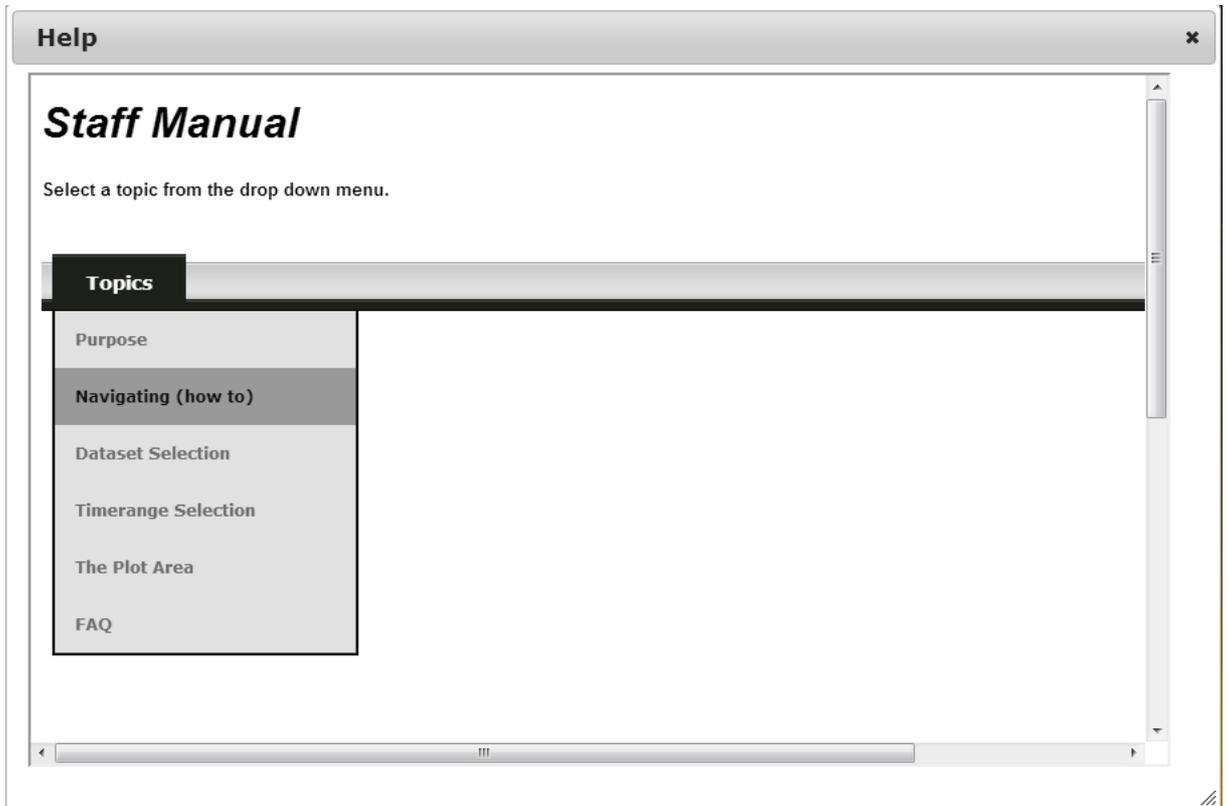


Image12 : Help

- **About...**

Shows quick information about Staff.

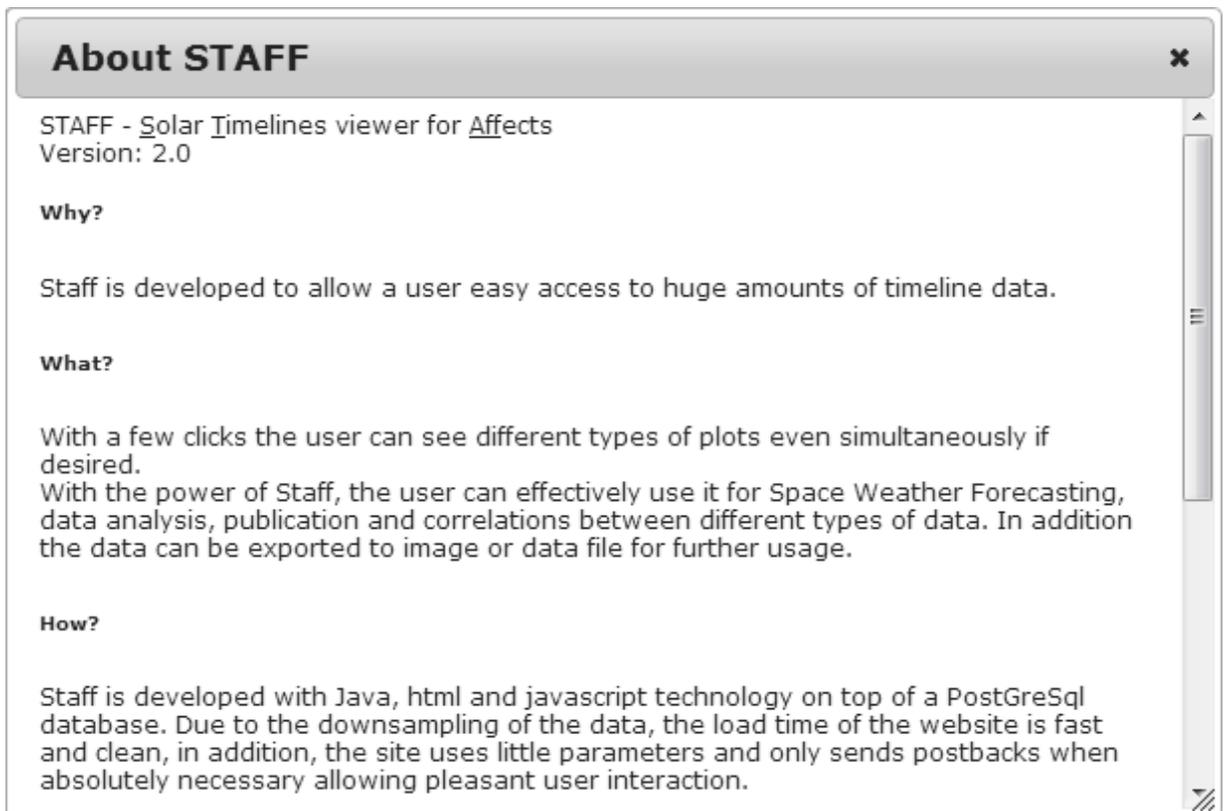


Image13 : About

3. Dataset Selection

Clicking on the bar opens a part of the website previously not visible.

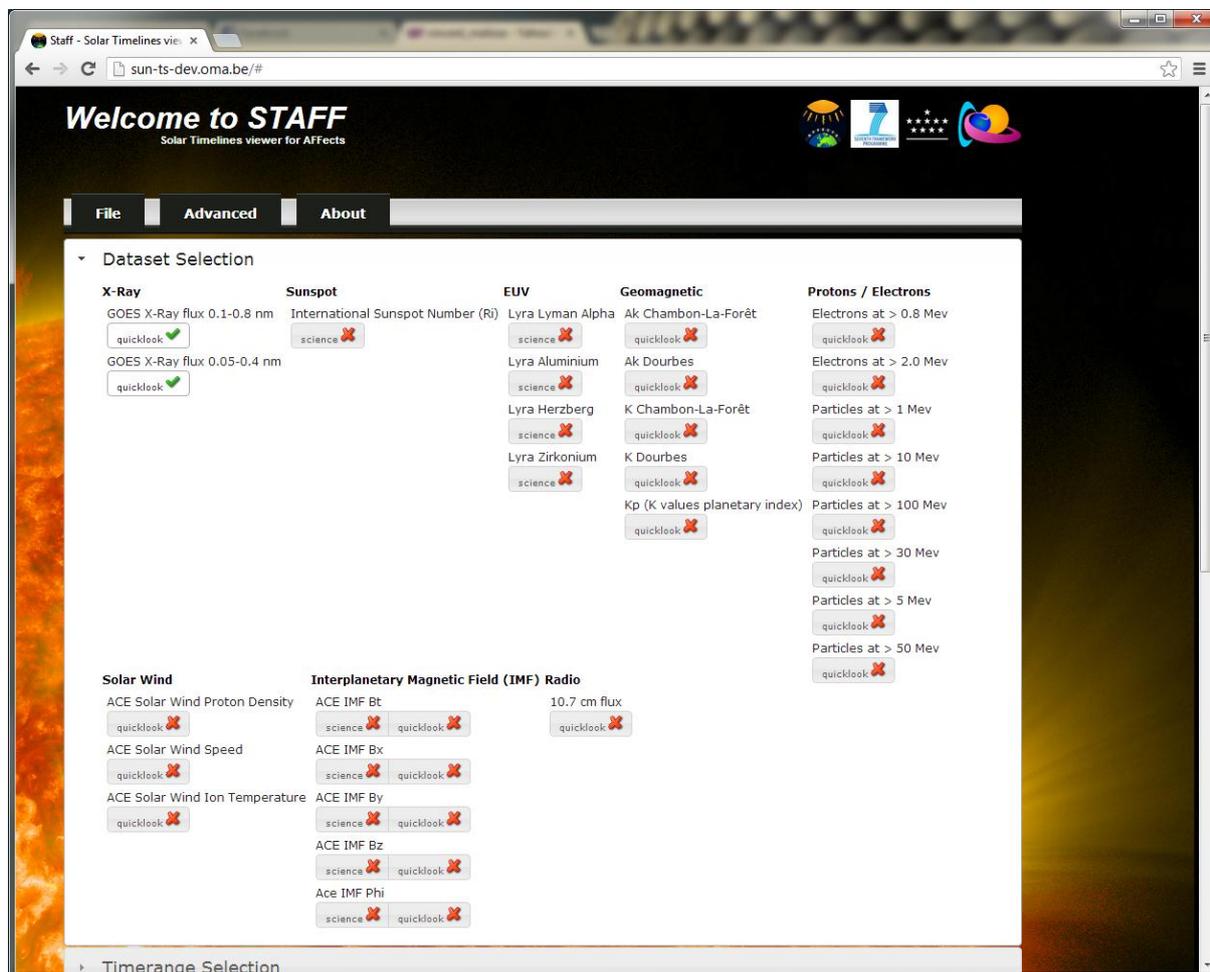


Image14: dataset selection

This part allows you to select any selection of the available timeline data sets. A green V marker (✓) means the plot is selected, a red cross marker (✗) is unselected.

By default the GOES X-Ray long and short bands are selected.

Note: Though perhaps personal preference, more than 3 selections make the plots very hard to read.

4. Timerange Selection

When clicking on the bar a new part of the website opens allowing the user to select a desired time range and order the application to draw the plot with the selected settings.

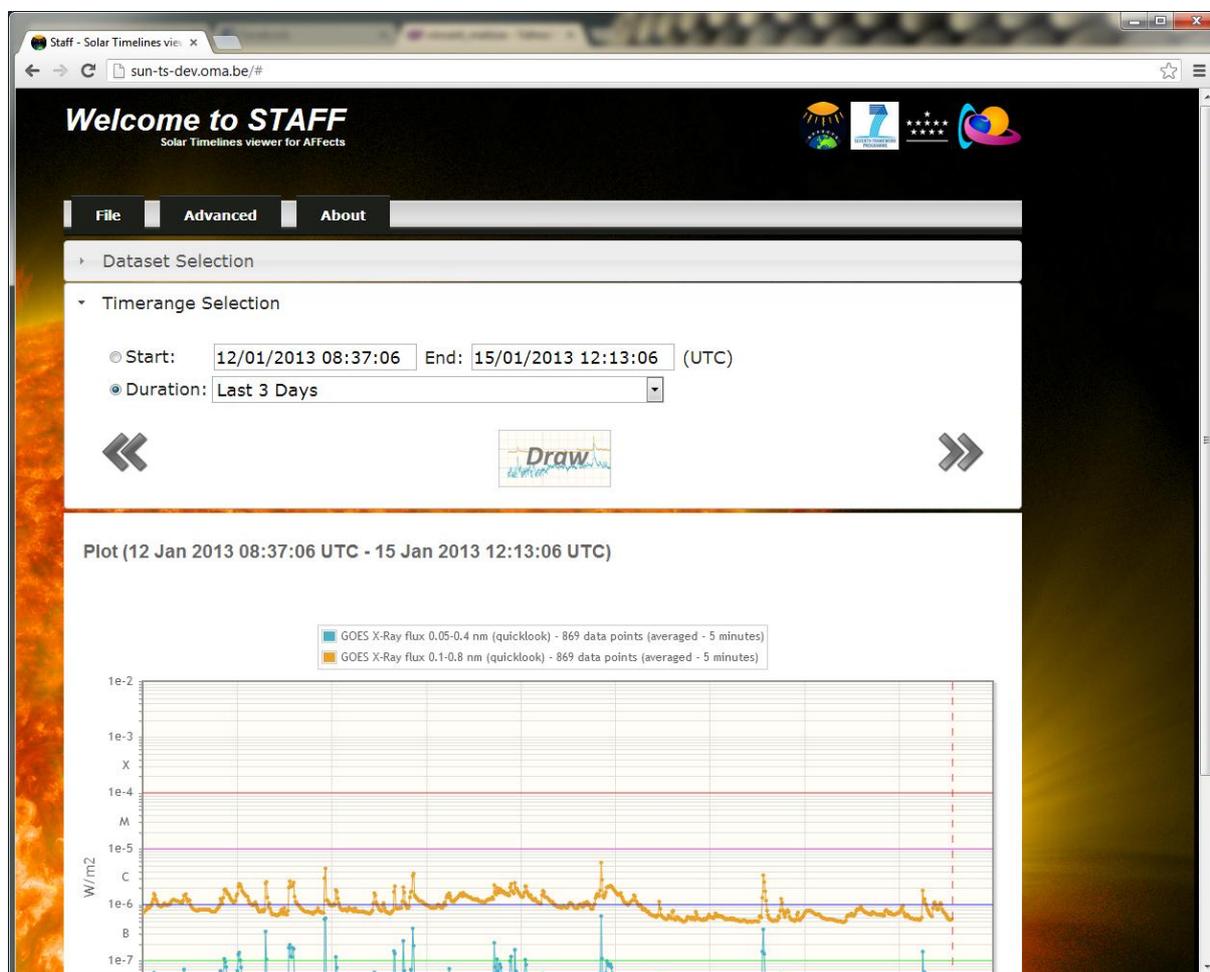


Image15: Timerange selection

The user can select a defined time range using start – end datetimes or select a pre-defined duration ranging from the last minute to the last year. By default the last three days is selected.

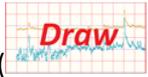
Using the  and  buttons the application will calculate a shift in the selected timerange earlier or later. Eg. When a timerange of 3 months was selected, the buttons will shift the start and end time by 3 months. This action can be repeated. Notice that when the duration radiobutton was selected, it will be unselected and the start-end radiobutton will be selected instead.

Note: The timerange automatically adds 5% when selecting a duration so that the current time does not fall of the plot.



The draw button () will execute the selections the user made and fetch the data from the server to draw the plot. Notice that when the user changed something the button turns red



() indicating the drawn plot might not correspond to the user's selections.

5. Plot Area

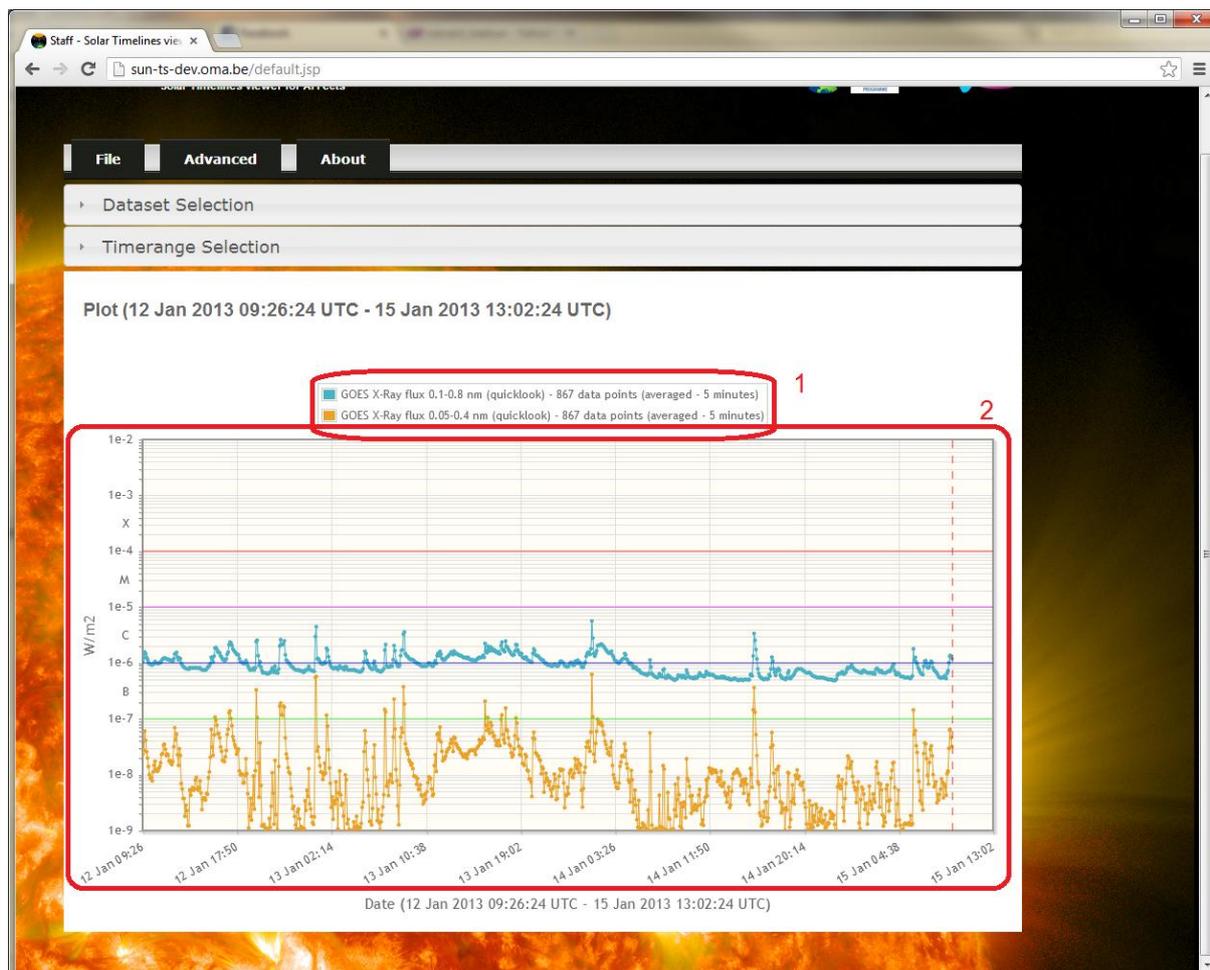


Image16: Plot area

The plotarea consists of :

1. The legend

This contains information about which color each dataset has as well if it is quicklook, science or predictions, how many points were selected from the dataset and if it is averaged and to what level. In this case the blue curve is the goes Long quicklook data on 5 minute averages that has 867 data points.

2. The plot

The plots are dynamically adapted to the selected plots. That means that each plot can have a different Y-axis defined (linear or logarithmic) or show different markers. The label on the Y-Axis is defined by the selected dataset. Multiple Y-axes are possible.

The X-axis is dynamically built up depending on the timerange selected and the dataset selected. The vertical striped red line is the current datetime. If you drag a square on the plot the application will horizontally zoom in on the data. As long as you don't use the draw button the application will remember the previous zoom level and by doubleclicking the plot area the application will zoom out again.

Note: Due to the limitations of the used plotting library, zooming will not go further than about an hour. Zooming in further can be done by using the timerange selection option.

To improve speed, the amount of datapoints is limited to 2000 per selected dataset. The Staff application determines the correct downsampel level based on the highest resolution of the raw (not downsampled) data and the selected timerange. It is therefore possible that a zoomed in plot has more datapoints than a zoomlevel higher.

Following table gives the downsample levels supported by Staff. However, datasets are downsampled only, if the highest resolution is minutes, there will be no second or millisecond data for example.

Milliseconds
Centiseconds
Deciseconds
Seconds
Minutes
Hours
Days
Carrington Rotations
Years

Table1: downsampel levels.

Known Issues

Id	Issue	Solution / Workaround
1	Zooming via dragging a square is limited (to up about an hour)	Zoom in using the start-stop time range option.
2	An error occurred: <i>TypeError: Cannot call method 'getTop' of undefined at l.H.jqplot.CanvasGridRenderer.draw (http://sun-ts-dev.oma.be/Scripts/JQPlot/jquery.jqplot.min.js:57:70671) at l.draw (http://sun-ts-dev.oma.be/Scripts/JQPlot/jquery.jqplot.min.js:57:18813) at N.draw (http://sun-ts-dev.oma.be/Scripts/JQPlot/jquery.jqplot.min.js:57:40375) at Function.H.jqplot (http://sun-ts-dev.oma.be/Scripts/JQPlot/jquery.jqplot.min.js:57:1350) at CreateGraph0 (http://sun-ts-dev.oma.be/default.jsp:724:14) at <anonymous>:1:1</i>	The plot library has some bugs. Try selecting less plots at the same time. Recommend a maximum of three axes.
3	I selected 2 plots, but only 1 shows	Try to draw again, this happens occasionally.
4	The page gives me an unresponsive script message.	Close the page and try again with less timelines.

Table2:known issues

Appendix

[add appendices if any]



Acknowledgement

The research leading to these results has received funding from the European Union's Seventh Framework Programme (FP7/2007-2013) under the grant agreement n° 263506 (AFFECTS).

