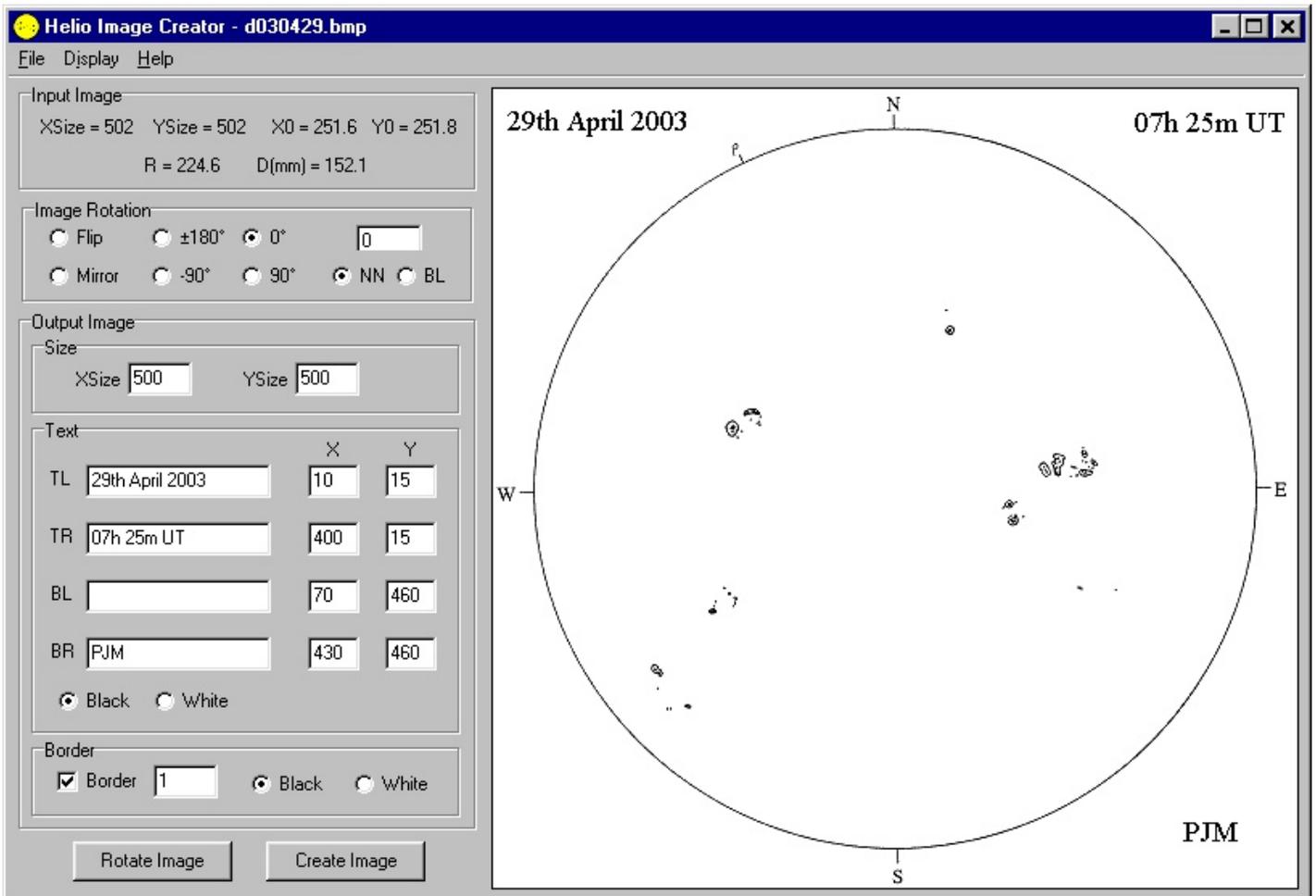


Helio Image Creator v1.0 User Guide



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1. Introduction

As a solar observer who makes full disk drawings and who creates electronic copies of these for display on a web site, I wanted an easy way of centering the images, adding annotation such as date & time, cropping to a given size and adding a border. Helio Creator performs these functions.

Thus Helio Image Creator has the following features:

- Inputs a user full disk solar image (in bitmap format).
- Determines the center of the solar image.
- Changes the orientation of the image via a flip/mirror or rotation by any angle.
- Creates a solar image of a specified size, adds annotation to top left, top right, bottom left and/or bottom right of the image and/or adds border.
- Outputs the created image in bitmap format.
- On-line help.

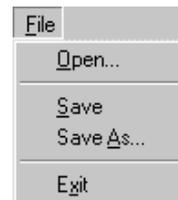
Warning: never look at the Sun with the naked eye or with any optical instrument unless you are familiar with safe solar observing methods.

2. Menus

Here the various menu items shown along the top of the Helio Image Creator program are explained. Changes to users selectable parameters are stored in the Helio Image Creator Settings file (see Appendix A) for subsequent executions of the Helio Image Creator program (i.e. changes from initial setting only need to be performed once).

File

The 'Open...' menu item opens a user solar image (in bitmap format) and shows displays this image. 'Save Image' and 'Save Image As...' save the current image after the 'Create Image' button has been pressed (again in bitmap format). Note that the 'Rotate Image' button may be pressed prior to the use of the 'Create Image' button.



Using the 'Exit' menu item exits the program.

Display

For each input image, Helio Image Creator detects the edge of the solar disk and then fits a circle to these points. These points and the fitted circle can be displayed via the 'Points' and 'Circle' menu items.



As the size of the Helio Image Creator window depends on the size of the input solar image, this may be greater than the screen. With the 'Screen Resolution' menu item selected correctly, scroll bars will appear if the window size is larger than the screen size.

Help

The help menu gives the Helio Image Creator on-line help information, the welcome window and the about box. The welcome window appears when Helio Image Creator is started for the first time and at every successive start if the tick box in the lower left is not ticked. The about box includes the web address where additional information about solar observing can be found.



3. Display

Here the various parts of the Helio Image Creator display (as shown in the cover page of this document) are explained:-

Menus

These are described in section 2.

Input Image Panel

Here the properties of the input image are displayed - the image size, the center of the image, the radius of the fitted circle all in pixels and its diameter in mm. Note that once the 'Create Image' button has been pressed, the parameters in this panel refer to the created image and not the input image.

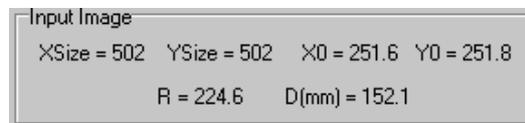
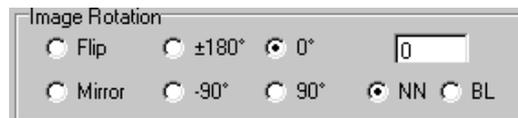


Image Rotation Panel

The orientation of the input image can be changed, if required, using this panel and by then pressing the 'Rotate Image' button. The changes in orientation are 'Flip' (i.e top to bottom', 'Mirror' (i.e. left to right), rotating by various predefined angles and by an user input angle. For this user input rotation angle, there are two interpolation methods available - nearest neighbour and bi-linear, the former is the quickest while the latter gives a better quality rotated image.



Output Image Panel

The output image will be centered at the middle of the solar image (at the X0 and Y0 pixel position). This panel defines the output image size (excluding any border), the text that can appear at top left, top right, bottom left or bottom right of the image including the positions of the text, whether the text is to appear black or white plus any border. To add a border, the 'Border' check box need to be ticked, the size of the border specified and whether this to be black or white. The information shown below produced the image shown on the cover page of this document.

Output Image

Size

XSize YSize

Text

		X	Y
TL	<input type="text" value="29th April 2003"/>	<input type="text" value="10"/>	<input type="text" value="15"/>
TR	<input type="text" value="07h 25m UT"/>	<input type="text" value="400"/>	<input type="text" value="15"/>
BL	<input type="text"/>	<input type="text" value="70"/>	<input type="text" value="460"/>
BR	<input type="text" value="PJM"/>	<input type="text" value="430"/>	<input type="text" value="460"/>

Black White

Border

Border Black White

4. Operation

The use of Helio Image Creator is outlined below:-

Image Input

A full disk solar image in bitmap format (.bmp) is input using the 'Open...' item in the 'File' menu. The size of the Image Creator window adjusts to display the whole image. If the new window size is larger than that of the computer display, scroll bars appear. The size of the computer screen can be adjusted using the 'Screen Resolution' item in the 'Display' menu. The user can check that circle has been fitted in the solar image by using the 'Points' and/or 'Circle' items of the 'Display' menu.

Image Rotation

The orientation of the input image can be changed using the buttons on the 'Image Rotation' panel or by inputting a user defined rotation angle (a positive angle rotates the image clockwise). There are two interpolation methods available - nearest neighbour and bi-linear, the former is the quickest while the latter gives a better quality rotated image. To change the orientation or make a rotation, the 'Rotate Image' button at the bottom left of the Helio Image Creator window needs to be pressed. Note that it is not necessary to press this button if no orientation change or rotation is required.

Create Image

After the user has input all the information in the 'Output Image' panel, pressing the 'Create Image' button creates the final image. The information required in this panel is the output image size (excluding any border), the text that can appear at top left, top right, bottom left or bottom right of the image including the positions of the text, whether the text is to appear black or white plus any border. To add a border, the 'Border' check box need to be ticked, the size of the border specified and whether this to be black or white.

Output Image

After the output image has been created, it can be output (in bitmap format) using the 'Save' or 'Save As' items of the 'File' menu.

Appendix A: Helio Image Creator Settings File

This file contains the user selected parameters. The contents of the file should not be changed via a text editor - they are altered by selecting the user parameters from within the Helio Image Creator program itself. Below, the default parameters are given together with a brief explanation.

<u>Parameter</u>	<u>Explanation</u>
false	Welcome window ticked (true or false)
500	Output image X size
500	Output image Y size
1st January 2002	Top left text
10	Top left X position
15	Top left Y position
08h 00m UT	Top right text
400	Top right X position
15	Top right Y position
	Bottom left text
70	Bottom left X position
460	Bottom left Y position
PJM	Bottom right text
430	Bottom right X position
460	Bottom right Y position
Black	Output text colour (black or white)
true	Output border (true or false)
1	Output border size
Black	Output border colour (black or white)
1024 768	Screen resolution size
false	Points on user solar disk edge shown (true or false)
false	Fitted circle to user solar disk shown (true or false)
false	Image rotation set to flip (true or false)
false	Image rotation set to mirror (true or false)
0	Image rotation angle
1	Interpolation method - nearest neighbour (1) or bi-linear (2)

Appendix B: Tab Order

The date and time in the Output Image Panel are in ascending tab order. Thus pressing tab moves the cursor between these boxes and in this order (shift tab moves the cursor between these boxes in the other order).

