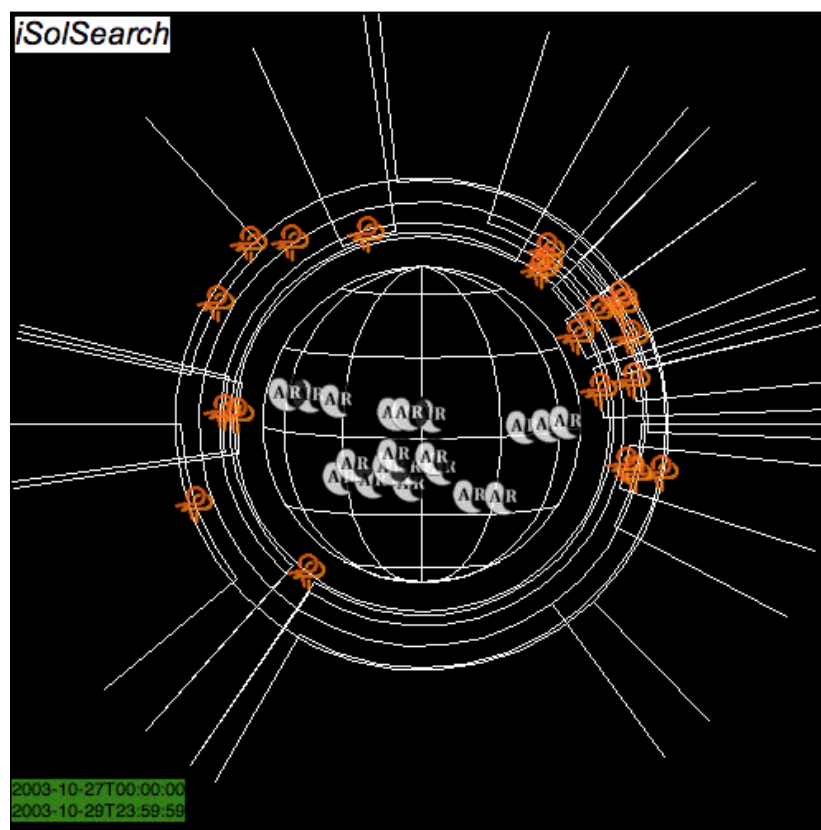


Heliophysics Knowledge Base User's Guide



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1.00

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INTRODUCTION

This brief guide leads the user through the basic steps necessary to use the components of the Heliophysics Knowledge Base (HKB) interface software for the purposes of:

1. Data selection (Plauncher tool)
2. Movie viewing and creation (Panorama tool)
3. Event definition and registration (Annotator tool)
4. HKB browsing (iSolSearch tool) **(Not yet Included!)**

CREATING AND SUBMITTING VOEVENTS

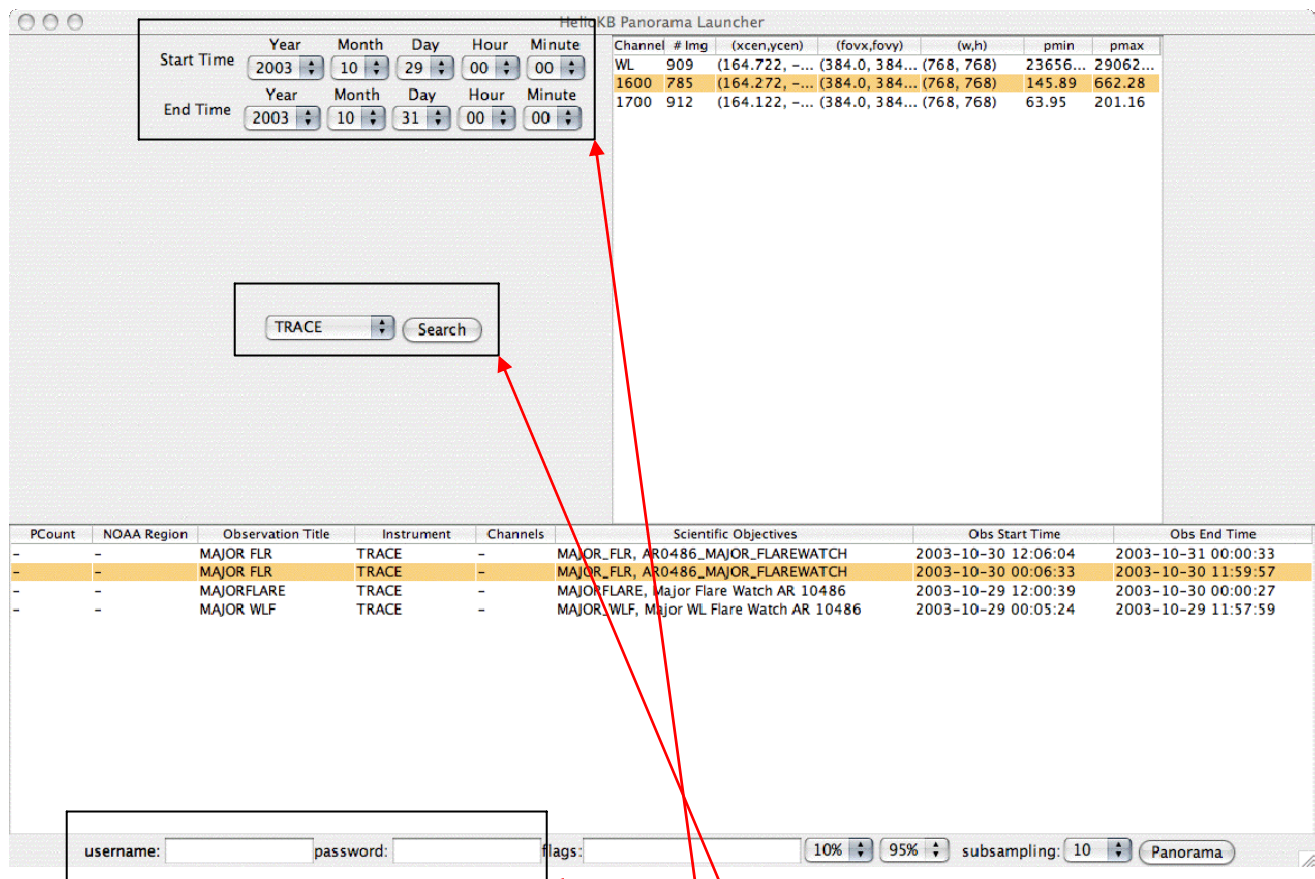
The following describes the basic steps to searching and selecting data, creating a VOEvent movie, creating an associated VOEvent (XML) file, and submitting the VOEvent to the HKB.

I. Use of Panorama Launcher Tool

Step 1: Run 'plauncher' (Panorama Launcher) interface from UNIX command line:

```
> plauncher
```

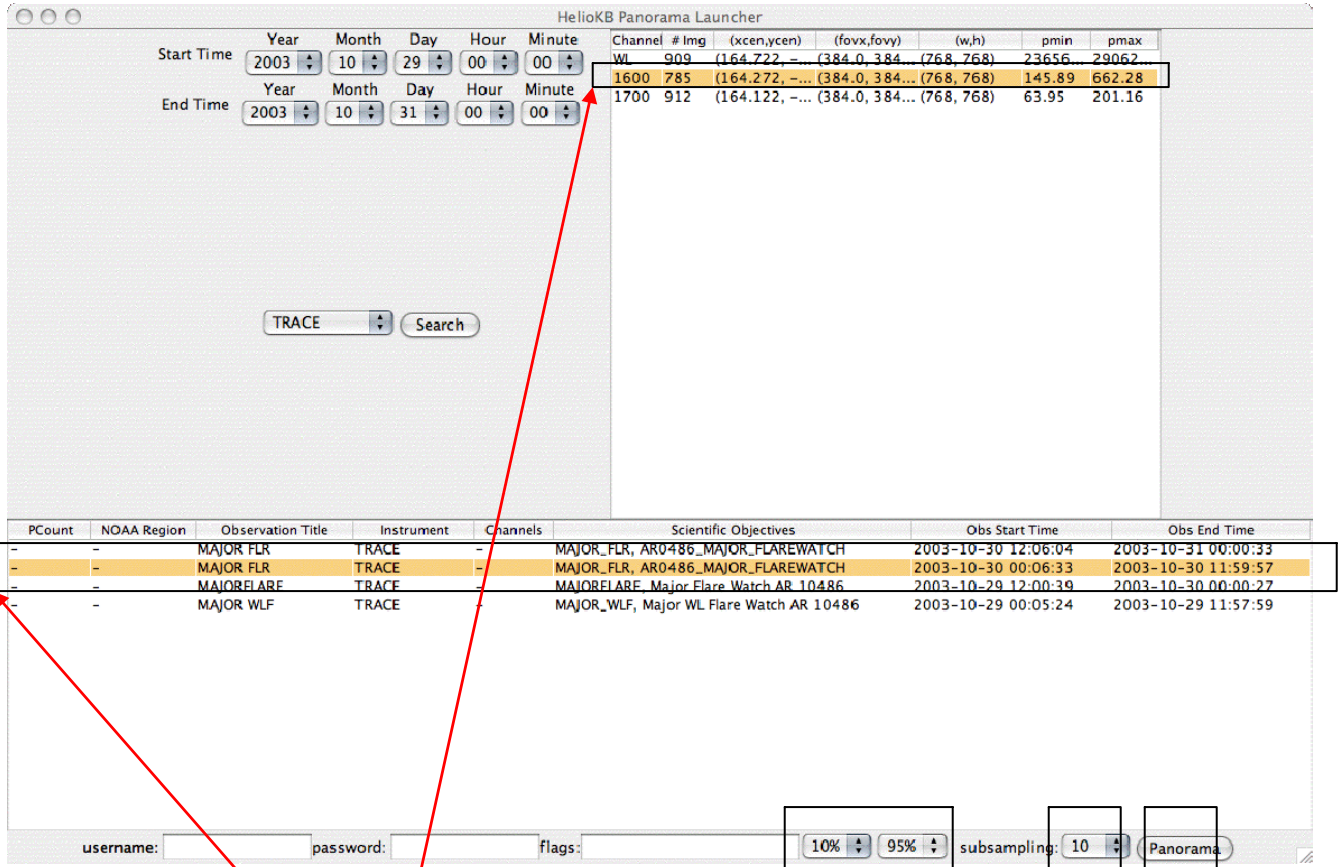
This generates the Plauncher GUI:



Step 2: Enter valid username and password for the HKB website

Step 3: Select start and stop times for search

Step 4: Select archive to search and initiate search



Step 5: Select image set

Step 6: Select channel

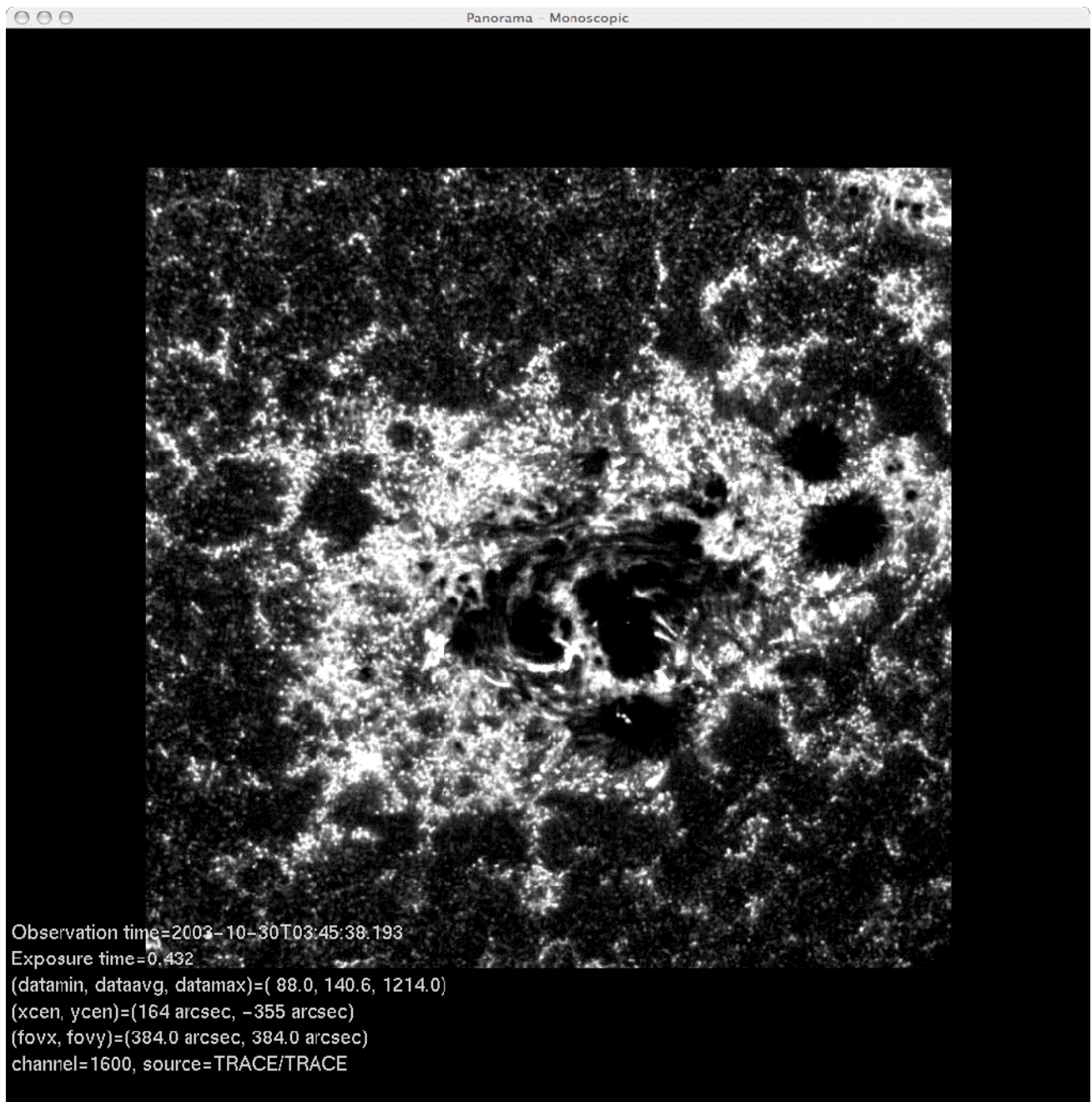
Step 7: Select lower and upper levels for image scaling

Step 8: Select frame sub-sampling

Step 9: Launch Panorama Movie Tool

This will retrieve the selected FITS files and launch the Panorama movie tool (next page):

II. Use of Panorama Movie Tool



Controlling the Panorama Movie Tool:

The Panorama movie tool can be controlled either by using keyboard shortcuts or by menu selection. To display the definition of special keyboard control keys, toggle '?'. The following legend is then displayed over the movie viewer:

Keyboard Shortcuts (toggle '?' to display / hide this list):

?	toggles this help display
q Esc	exits the application
spacebar	pauses/resumes
+ -	speed up (+) / slow down (-) playback rate
drag left mouse	time advance or retreat (right/left); transparency level adjust (up/down)
arrow keys	pans image when not paused; frame step / transparency adjust / alpha adjust when paused
< >	zoom out (<) or in (>)
i	toggles FITS header information display
f	cycles through font styles
F	cycles through text colors
L	toggles between looping playback and rocking playback
I	toggles channel layout between tiled and stacked.
c	cycles through canned image color settings
Alt-A	launches annotator GUI
Alt-F	toggles between window display and full screen display
Alt-T	takes a snapshot image
Alt-R	records all frames for a movie

Menu Options (click and hold the right mouse button to display):

View	>
Window	>
Select	>
Channels	>
Playback	>
Launch Annotator	
Pause / Resume	[or hit space bar]
Reset zoom / pos	[or hit Enter key]
First frame	[or hit Home key]
Last frame	[or hit End key]
Write out an mpeg movie of currently selected frame set, zoom, pan, etc settings	[or hit 'Alt-M']
Write out all frames to disk	[or hit 'Alt-R']
Take a snapshot image	[or hit 'Alt-T']
Invoke Help menu	[or hit '?' key]
Quit Panorama	[or hit escape key]

The first five menu options open up secondary menus:

View > Tile / Stack	Window > Match data aspect
Full screen	480p
Reset View	720p
Zoom in	1080p
Zoom out	256 x 256
Pan left	320 x 320
Pan right	512 x 512
Pan up	640 x 480
Pan down	1024 x 768
Channel info	1024 x 1024
Frame rate / Stats	2048 x 1024
	Full screen

Select > Mark start time	Channels > Show all channels
Mark stop time	Hide all channels
Clear time selection	
Clear bounding box	

Play > Play all frames
 Play gridded
 Pause / resume
 Faster
 Slower
 30 Hz
 60 Hz
 50 Hz
 40 Hz
 24 Hz
 20 Hz
 15 Hz
 10 Hz
 05 Hz

Using the options available from the keyboard or the menus, the user may adjust the frame selection, field of view, resolution, color table, etc of the movie, and then write it out in mpeg format, as well as saving individual frames. The user may also return to the Panorama Launcher Tool (Section I above) to select a different data set for viewing by the Panorama movie player.

When the user has created an mpeg movie that she wishes to contribute as a VOEvent, she then initiates the Annotator Tool to generate the XML VOEvent file and submit it to the knowledge base

III. Use of Annotator Tool

Step 1: Launch the Annotator from Panorama by either Alt-A or menu selection (see Section II):

The Annotator

Publisher ID: slater@lmsal.com Name: Greg Slater
Institution: lmsal.com Uri: http://lmsal.com
Address: B/252, ADBS Telephone:
Email: slater@lmsal.com
Telescope:
Observatory: TRACE Instrument:
Citations: citations
xCen: 354 yCen: 354
FOV x: 384 FOV y: 384
OBS_ChannelID:
MeanWavel:
Observation Title: AR0486 Major Flarewatch
Name of Movie: Interflare activity in TRACE 1600A
Verify Channels Select Movie

Start Time: 2003/10/30 00 06 33
End Time: 2003/10/30 11 59 57

Output Directory: /Users/slater/xml_files/ Select Objects Use Select Objects Button

Description: Movie shows interflare active region brightenings and surges from AR 10486 during the October–November 2003 'Halloween Flares' period

Testing Only RegisterEvent

Exit

Step 2: Fill in as much information as you can.

Step 3: Hit 'Verify Channels' button and verify settings

Step 4: Hit 'Select Objects ' button and select event type:

The Annotator

Publisher ID: slater@lmsal.com Name: Greg Slater
Institution: lmsal.com Uri: http://lmsal.com
Address: B/252, ADBS Telephone:
Email: slater@lmsal.com
Telescope:
Observatory: TRACE Instrument:
x Cen: 354 Citations: citations
FOV x: 384 y Cen: 354
OBS_ChannelID:
MeanWavel: Observation Title: AR0486 Major Flarewatch
Name of Movie: Interflare activity in TRACE 1600A

Verify Channels Select Movie

Start Time: 2003/10/30 00 06 33
End Time: 2003/10/30 11 59 57

Output Directory: /Users/slater/xml_files/ Select Objects Use Select Objects Button

Description: Movie shows interflare active region brightenings and surges from AR 10486 during the October-November 2003 'Halloween Flares' period

Testing Only RegisterEvent

Exit

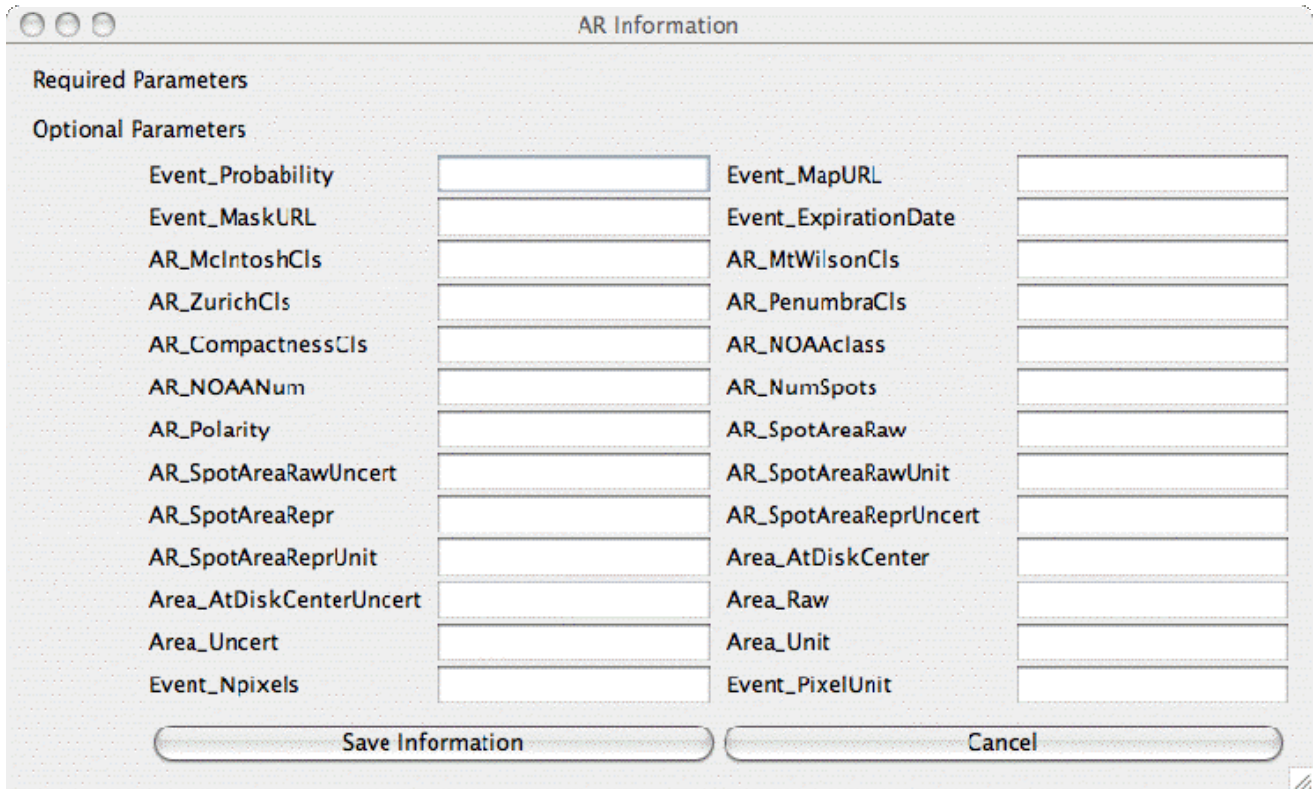
Objects to Choose From

Choose an Object

- ActiveRegion
- BrightPoint
- CME
- CoronalDimming
- CoronalHole
- CoronalWave
- Filament
- FilamentEruption
- Flare
- Loop
- Oscillation
- Sunspot
- EmergingFlux
- CoronalJet

Cancel Select

Step 5: Enter as much information as available for selected event type:



The image shows a dialog box titled "AR Information" with a standard macOS window header (three circles on the left). The dialog is divided into two sections: "Required Parameters" and "Optional Parameters". The "Optional Parameters" section contains two columns of text labels, each followed by an empty rectangular input field. At the bottom of the dialog, there are two buttons: "Save Information" and "Cancel".

Required Parameters	
Event_Probability	<input type="text"/>
Event_MaskURL	<input type="text"/>

Optional Parameters			
Event_Probability	<input type="text"/>	Event_MapURL	<input type="text"/>
Event_MaskURL	<input type="text"/>	Event_ExpirationDate	<input type="text"/>
AR_McIntoshCls	<input type="text"/>	AR_MtWilsonCls	<input type="text"/>
AR_ZurichCls	<input type="text"/>	AR_PenumbraCls	<input type="text"/>
AR_CompactnessCls	<input type="text"/>	AR_NOAAclass	<input type="text"/>
AR_NOAANum	<input type="text"/>	AR_NumSpots	<input type="text"/>
AR_Polarity	<input type="text"/>	AR_SpotAreaRaw	<input type="text"/>
AR_SpotAreaRawUncert	<input type="text"/>	AR_SpotAreaRawUnit	<input type="text"/>
AR_SpotAreaRepr	<input type="text"/>	AR_SpotAreaReprUncert	<input type="text"/>
AR_SpotAreaReprUnit	<input type="text"/>	Area_AtDiskCenter	<input type="text"/>
Area_AtDiskCenterUncert	<input type="text"/>	Area_Raw	<input type="text"/>
Area_Uncert	<input type="text"/>	Area_Unit	<input type="text"/>
Event_Npixels	<input type="text"/>	Event_PixelUnit	<input type="text"/>

Buttons: Save Information, Cancel

Step 5: Hit 'RegisterEvent' button to submit VOEvent to HKB:

The Annotator

Publisher ID: slater@lmsal.com Name: Greg Slater
Institution: lmsal.com Uri: http://lmsal.com
Address: B/252, ADBS Telephone:
Email: slater@lmsal.com
Telescope:
Observatory: TRACE Instrument:
x Cen: 354 Citations: citations
FOV x: 384 y Cen: 354
OBS_ChannelID: FOV y: 384
MeanWavel: Observation Title: AR0486 Major Flarewatch
Name of Movie: Interflare activity in TRACE 1600A

Verify Channels Select Movie

Start Time: 2003/10/30 00 06 33
End Time: 2003/10/30 11 59 57

Output Directory: /Users/slater/xml_files/ Select Objects Use Select Objects Button

Description: Movie shows interflare active region brightenings and surges from AR 10486 during the October–November 2003 'Halloween Flares' period

Testing Only

RegisterEvent

Exit

The registration process may take several seconds to tens of seconds. Upon successful completion a popup will appear confirming the successful registration. The user may verify that the submission was successful by browsing the HKB for his submitted event using the browsing tool (iSolSearch Tool, next section).

APPENDIX A

Handy Wallet Guide! (cut out and laminate)

Panorama Controls:

Keyboard Shortcuts:

?	Toggle help display
q Esc	Exit Panorama
spacebar	Pause / Resume
+ -	Faster / Slower
left mouse	Slew r/l; Transpar u/d
arrow keys	Not Paused: Pan Paused: Step / Transpar
< >	Zoom / Unzoom
i	Toggle FITS head displ
f	Cycle font styles
F	Cycle text colors
L	Toggle Loop / Rock
I	Toggle channel layout
c	Cycle colors
Alt-A	Launch Annotator
Alt-F	Toggle full screen
Alt-T	Snapshot
Alt-R	Write mpeg

Menu (right mouse button):

View	>
Window	>
Select	>
Channels	>
Playback	>
Launch Annotator	
Pause / Resume	[space bar]
Reset zoom / pos	['Enter' key]
First frame	['Home' key]
Last frame	['End' key]
Write out an mpeg	
Write out all frames	['Alt-R']
Take a snapshot	['Alt-T']
Invoke Help menu	['?' key]
Quit Panorama	['Esc' key]

