



The CFHTLS-TERAPIX Extragalactic database



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SF2A 18 juin 2004

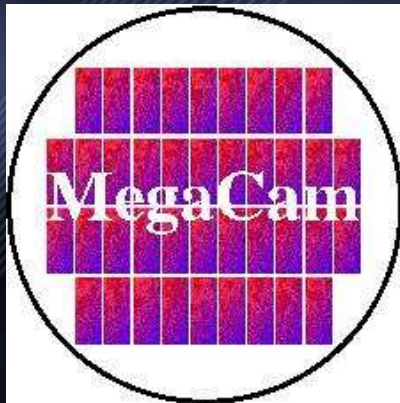


Catalogues



Catalogue of 777 stars

Tycho Brahe (1546-1601)



300000 galaxies per 1x1
(mag 25)

Astrophysical research would be impossible without databases!



What should a database provide?

- Database query interface

TERAPIX Qualityfits Processed data

Home > Tools > Data reduction > Spica

- Server Admin Spica -
- Quality assessment 1.10 -

Images processed	2711
Images invalid	1
Search images	2711
Maximum images display	10

RunId		
Name	Number	%
03AL01	407	15 %
03AL02	78	2 %
03AL03	371	13 %
03AL04	2	0 %
03AL05	49	1 %
03BL01	818	30 %
03BL02	238	8 %
03BL03	325	11 %
03BL04	70	2 %
03BL05	105	3 %
03BL06	248	9 %

Filter		
Name	Number	%
u.MP9301	60	2 %
g.MP9401	788	29 %
r.MP9601	695	25 %
i.MP9701	1023	37 %
z.MP9801	145	5 %

Node		
Name	Number	%
pix1	115	4 %
pix2	102	3 %
pix3	150	5 %
pix4	136	5 %
pix5	595	21 %
pix6	309	11 %
pix7	419	15 %
pix8	441	16 %
pix9	444	16 %

Grade		
Value	Number	%
Not graded	1	0 %
A	1548	57 %
B	1134	41 %
C	28	1 %

PI data access

Login :

Password :

Quality Assessment summary table of input data derived from the Terapix quality assessment tool "QualityFITS". These data are provided for ALL CFHTLS-related images that enter into the Terapix processing.

This front panel can be used to select images according to your preferences

Search	Display	QF Version	Filename	Object / Field	RunId	Filter	Node	Grade (*)
<input type="button" value="Go"/>	10	1.10	<input type="text"/>	<input type="text"/> or <input type="text"/>	---	---	---	---
	RA Min & Max	Dec Min & Max	<input checked="" type="checkbox"/> Master flat	<input checked="" type="checkbox"/> Master mask	Exp_time	Airmass	Mseeing	Mbkg
	0 h 00 m 12.75	-23 ° 54 ' 55.8	<input type="text"/>	<input type="text"/>	Min 1.02	Min 1	Min 0.5608	Min -3.5399
	23 h 59 m 50.13	57 ° 46 ' 30.9	<input type="text"/>	<input type="text"/>	Max 360.08	Max 2.912	Max 4.3188	Max 23.0301

(*) Comments are from Terapix visual control. Grades are Terapix visual image quality control and ranking using the following level:
A = Good,
B = acceptable (see comment) ,
C = serious problem. Rejected for further processing steps (see comment)

All 10 images displayed. Use the form to select more or less [[Export the whole result in CSV](#)] (ASCII file in Comma Separated Values)

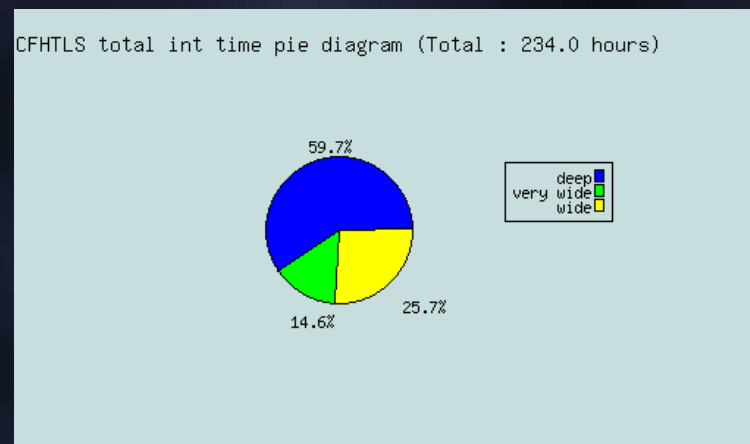
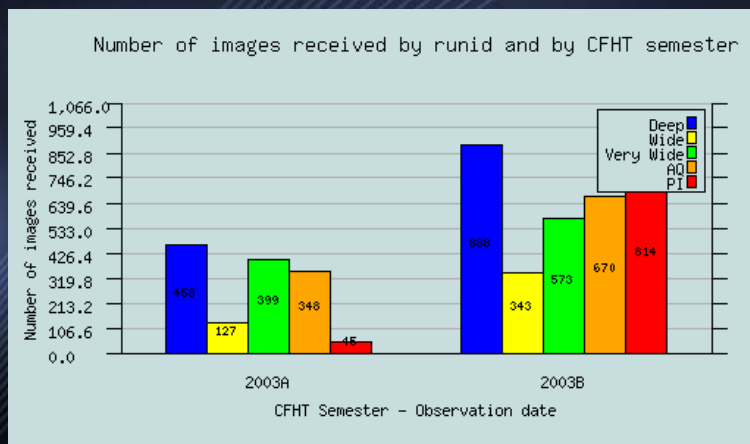
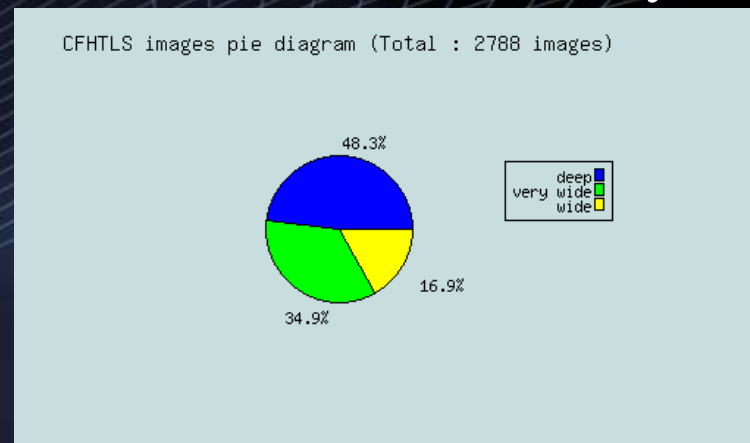
- Rapid access to data < 1s for 4500 images in database
- Ability to perform simple statistical calculations on the fly

RunId		
Name	Number	%
03AL01	407	15 %
03AL02	78	2 %
03AL03	371	13 %
03AL04	2	0 %
03AL05	49	1 %
03BL01	818	30 %
03BL02	238	8 %
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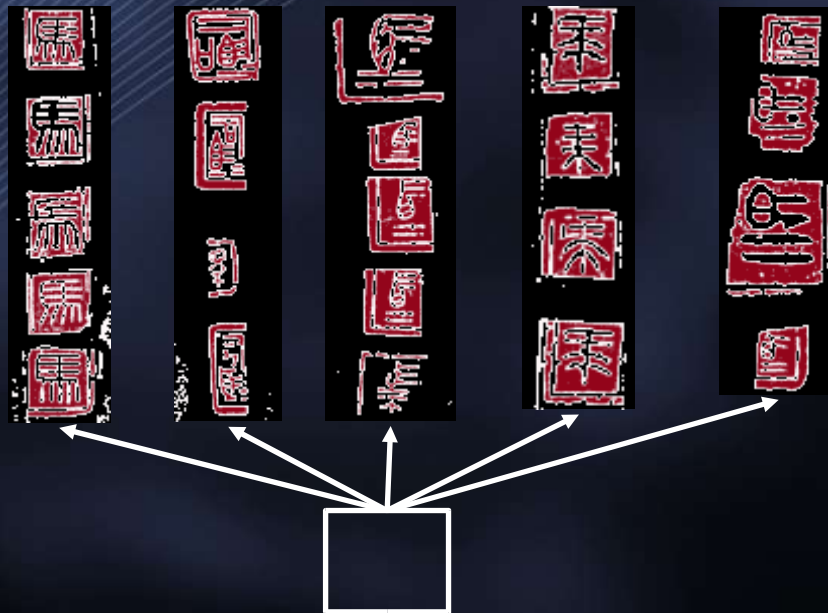
- Ability to accommodate all data from different surveys
- Multiple output formats (ASCII, XML, binary, ...)



Databases must be interoperable

Astrophysicists in different fields are familiar with different databases, use different analysis tools.....

Need survey interface that can span multiwavelength data



We need to find a common language between these databases!

The aim of the proposed Virtual Observatory is to integrate all astrophysical databases.



TERAPIX Database : DBTERAPIX

A MySQL relational database

What does it do ?

- Storage of catalogues and metadata
- Processing history
- Dynamic design

Why MySQL ?

- Open source
- Free



Application : Skywatcher





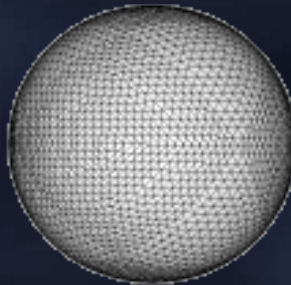
XML file and database of Skywatcher

Includes :

- Filename
- Object
- Runid
- Filter
- WCS coordinates
- HTM (cutting sky)

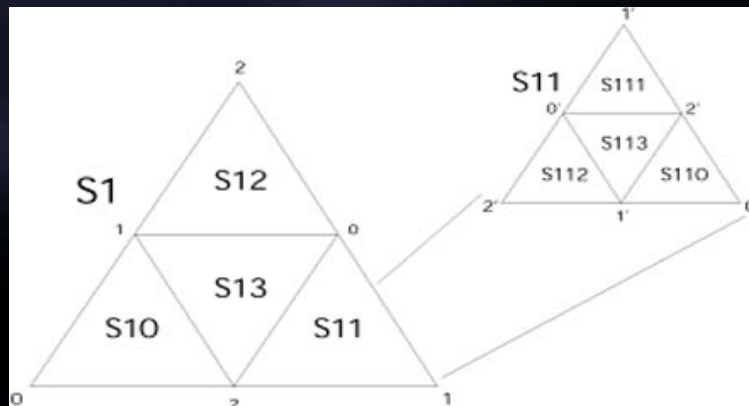


Level 3



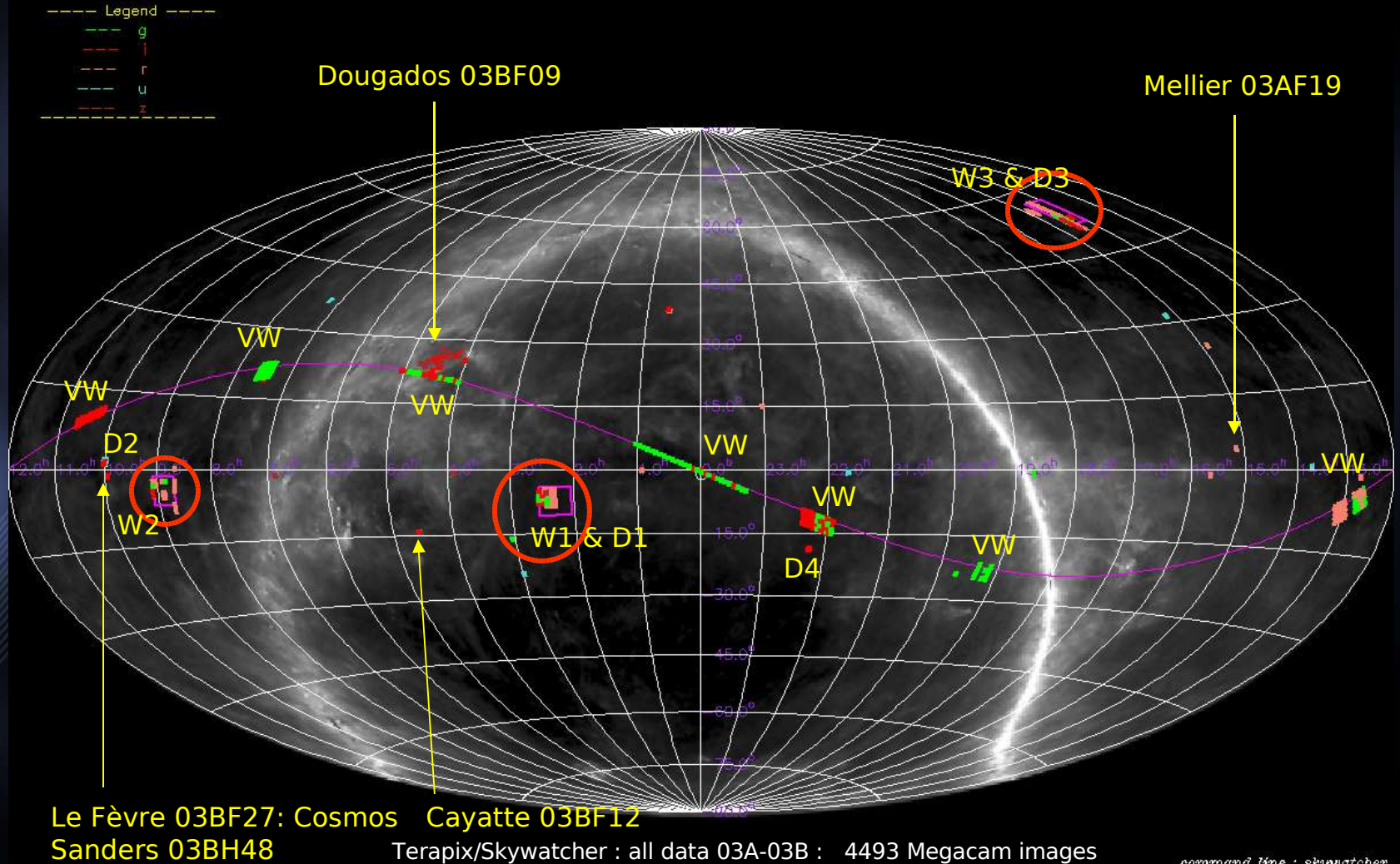
Level 5

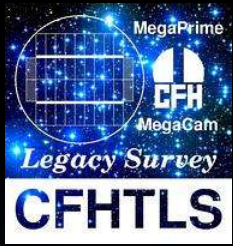
HTM level	Nb of triangles
0	8
1	32
2	128
3	512
4	2048
5	8192





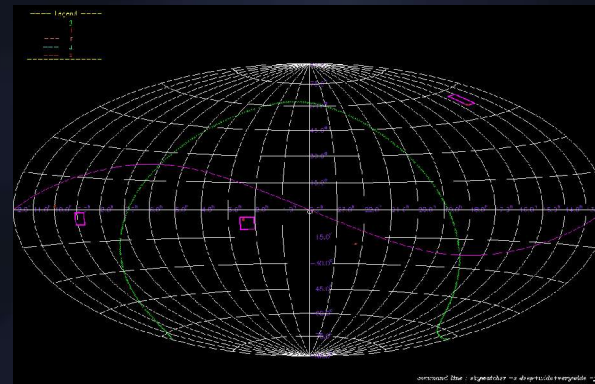
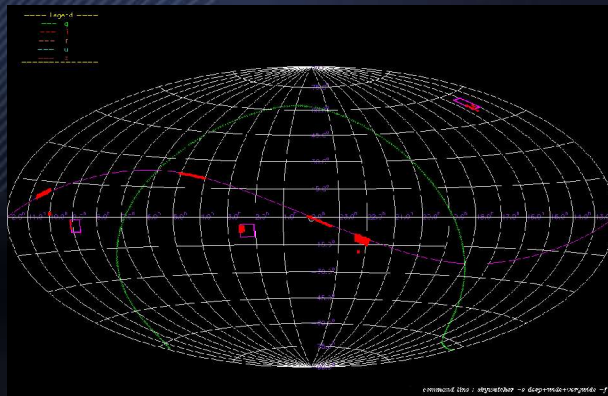
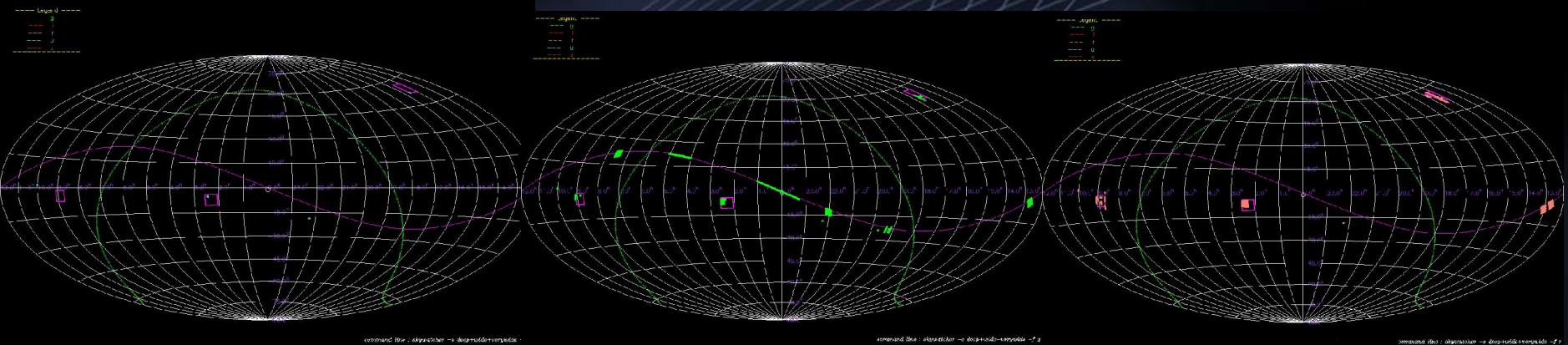
All images received





CFHTLS per filter :

03A/B deep, wide and very wide data dominated by g, r, i data

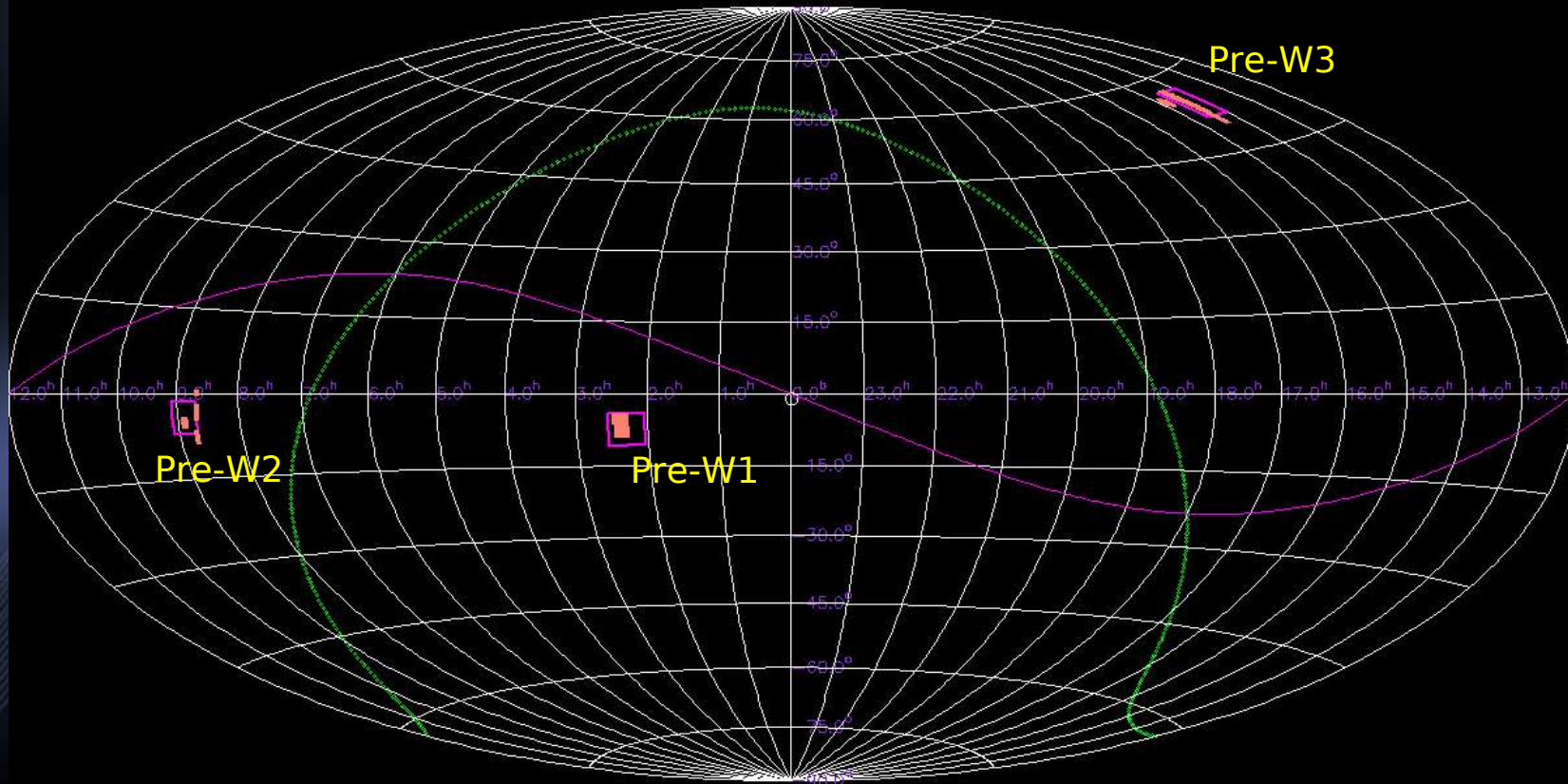


Terapix/Skywatcher: views of all CFHTLS megacam images per filter



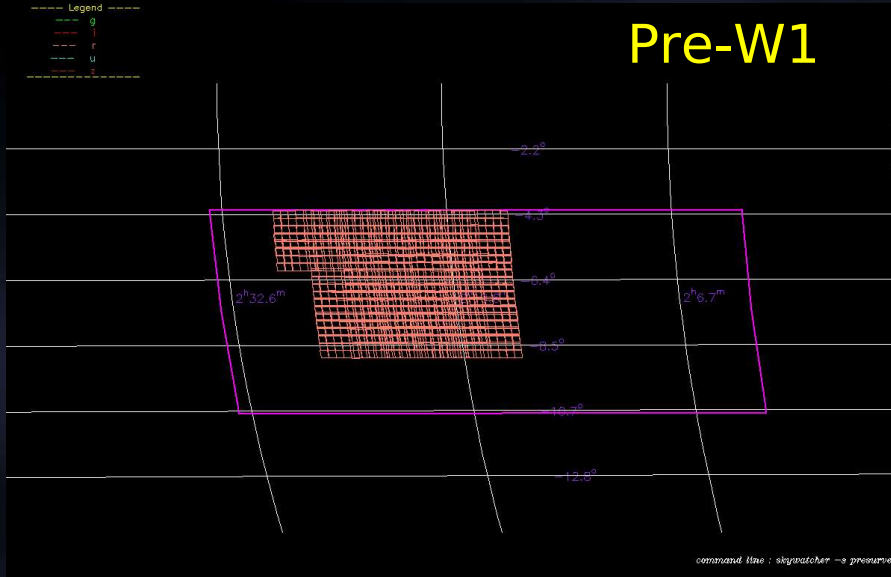
All pre-surveys 03A - 03B

----- Legend -----
 - - - - - g
 - - - - - r
 - - - - - u
 - - - - - z



command line : skywatcher -s presurvey

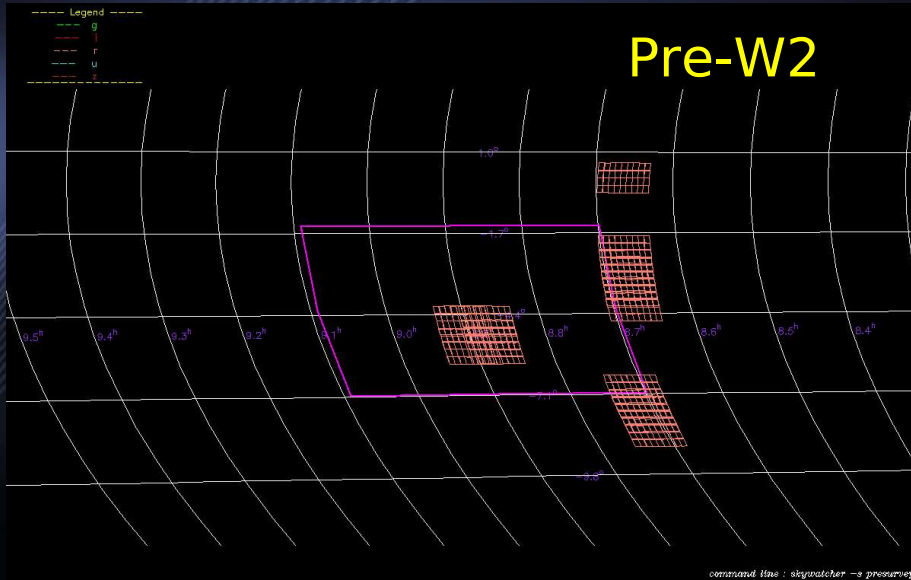
Pre-W1



All pre-surveys

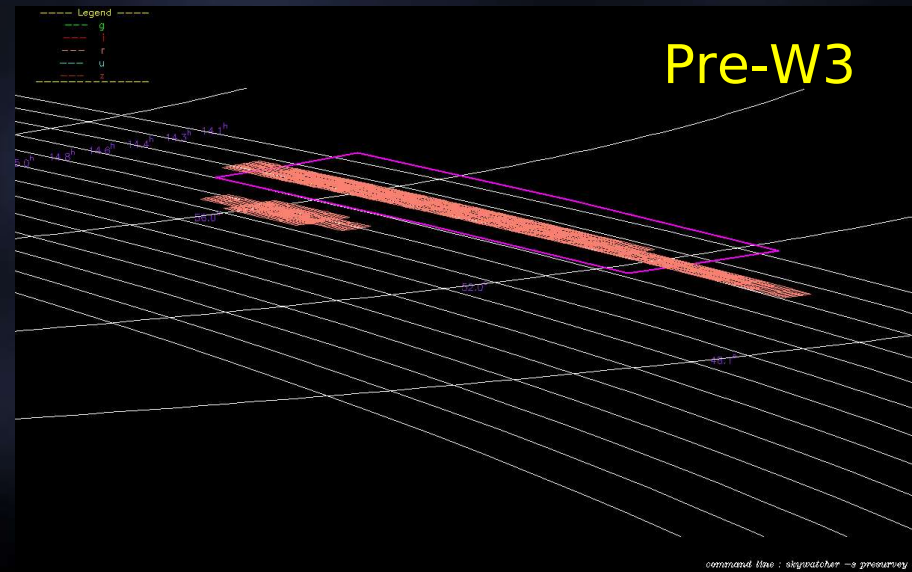
Terapix/Skywatcher: view of all pre-W1 Megacam images

Pre-W2



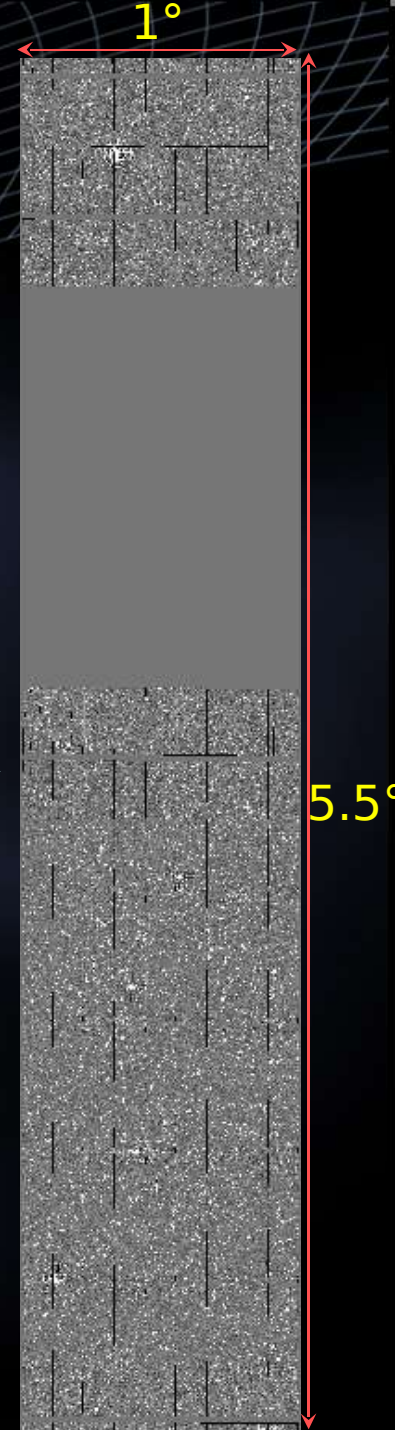
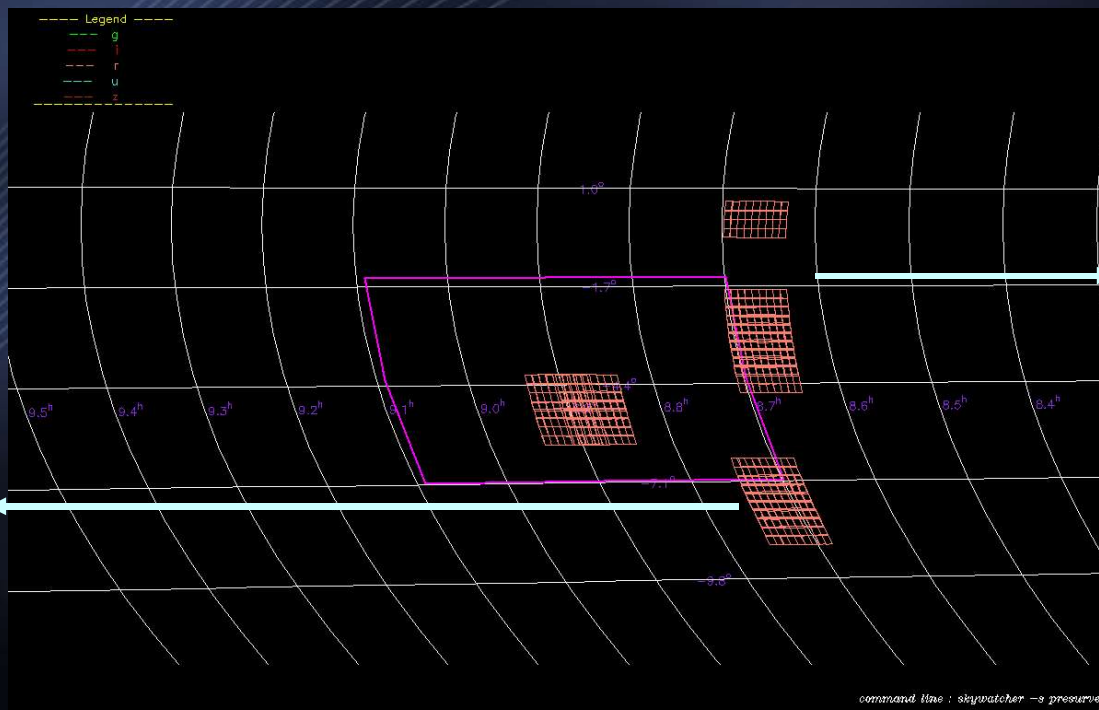
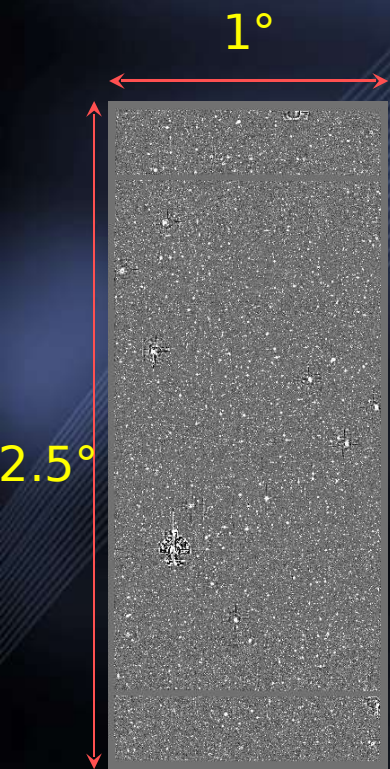
Terapix/Skywatcher: view of all pre-W2 Megacam images

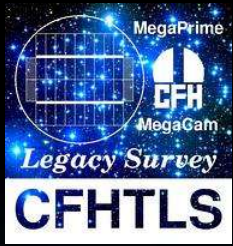
Pre-W3



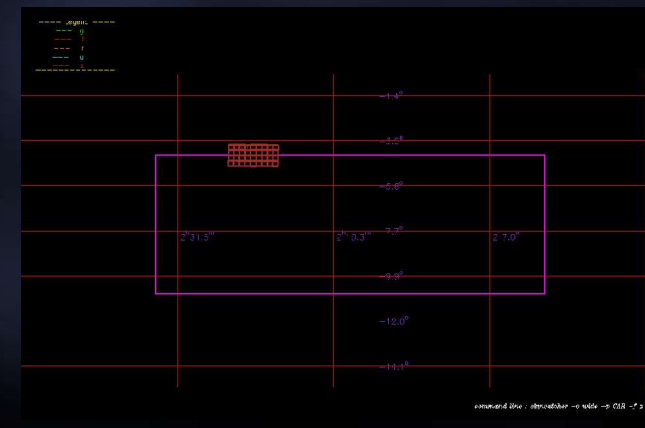
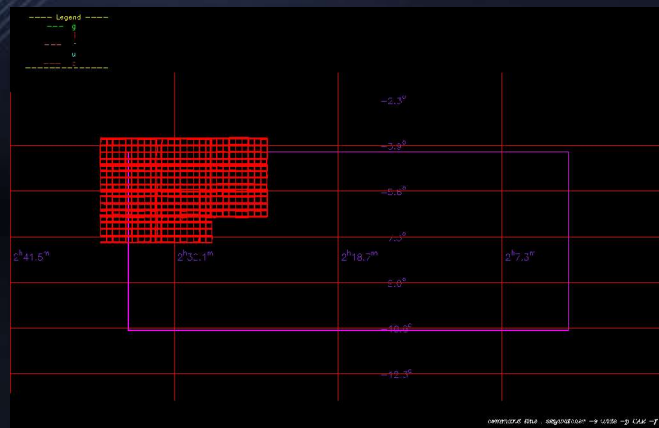
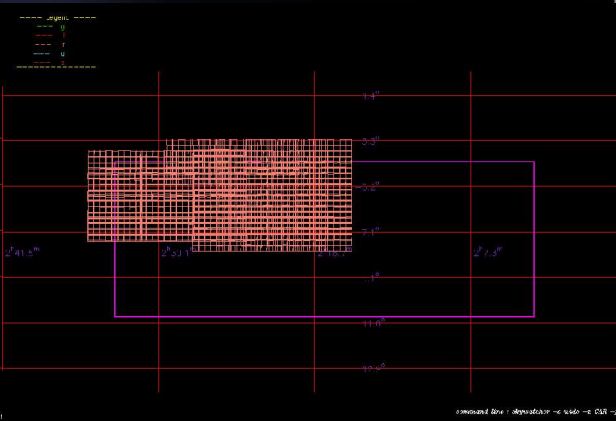
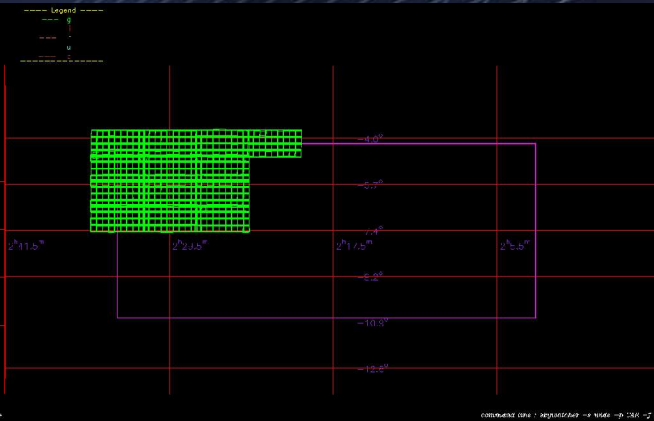
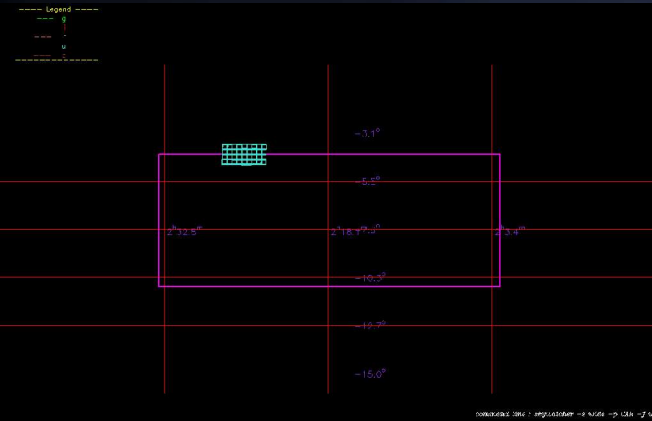
Terapix/Skywatcher: view of all pre-W3 Megacam images

Pre-survey W2



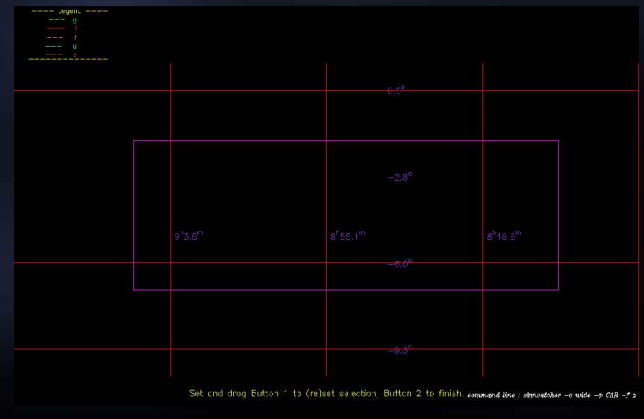
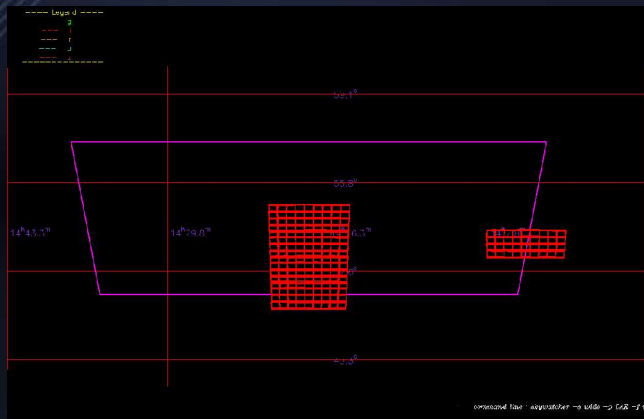
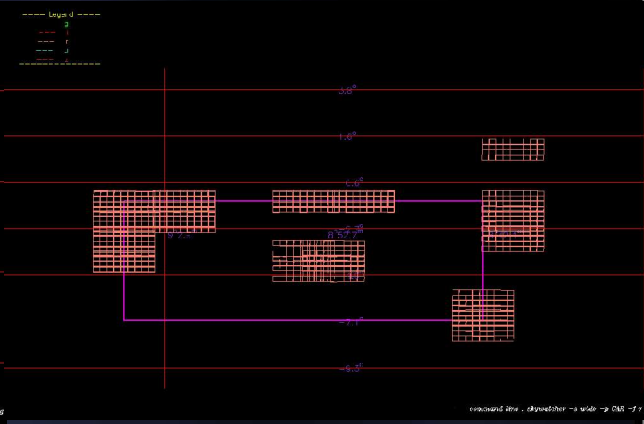
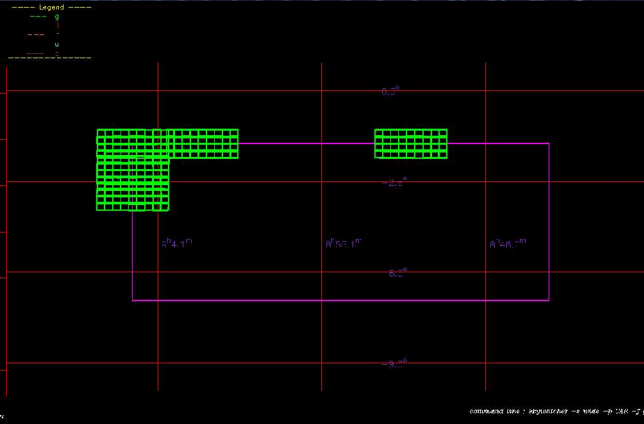
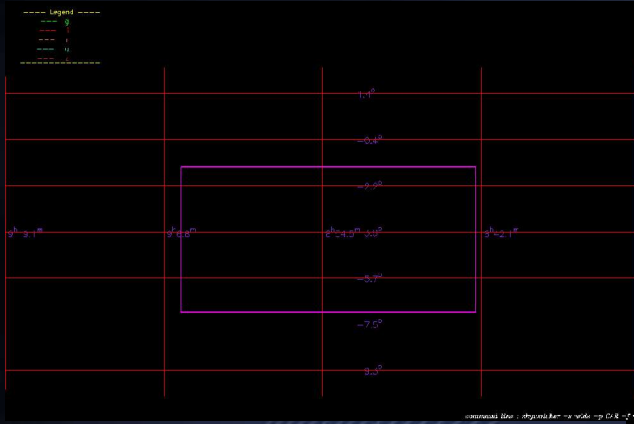


W1



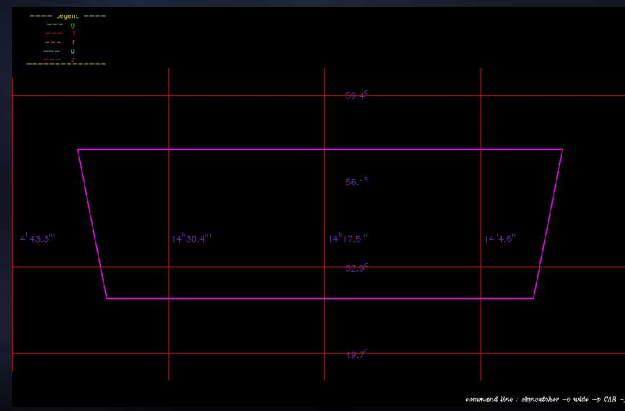
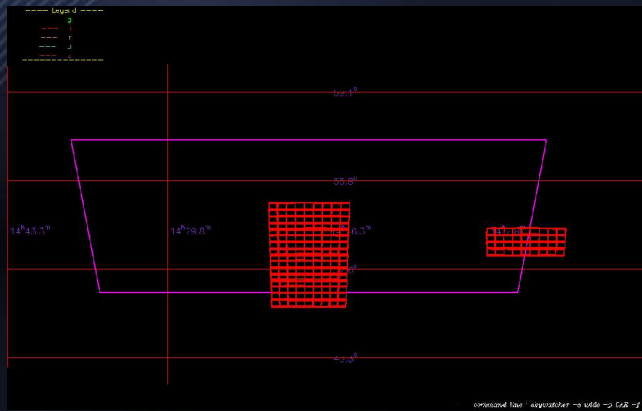
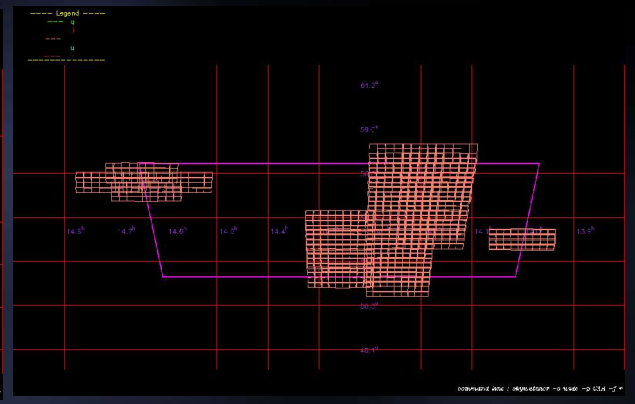
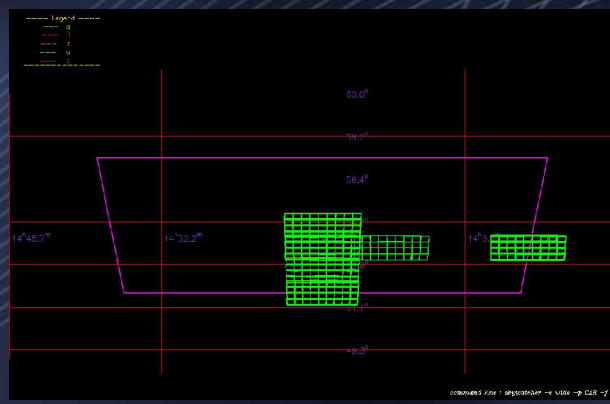
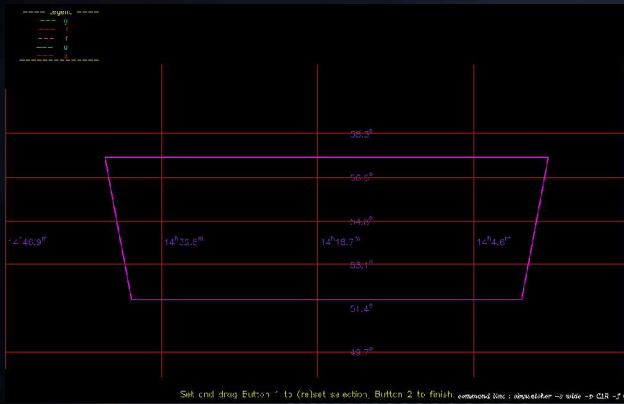


W2



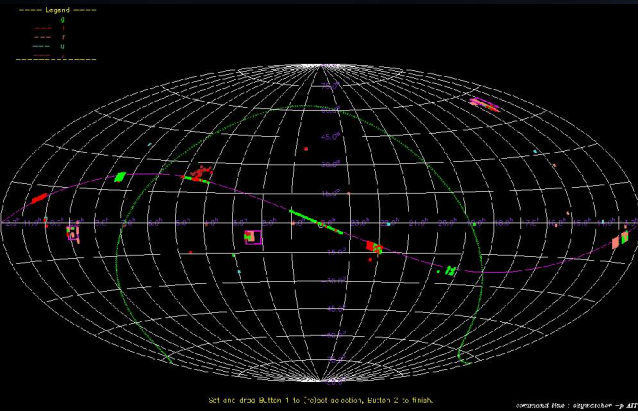


W3

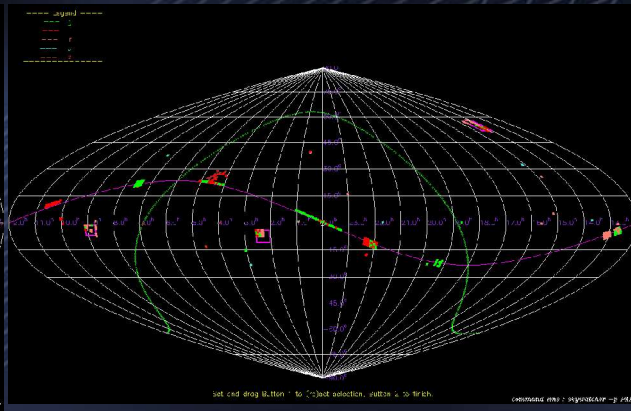




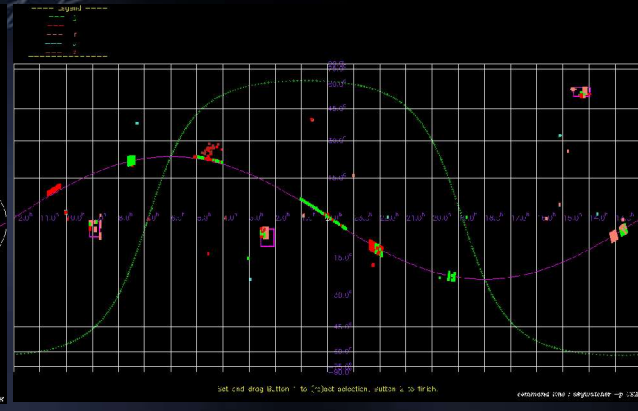
Projections available



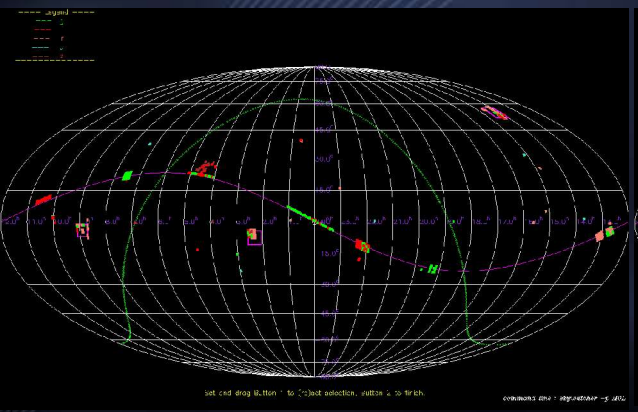
Aitoff



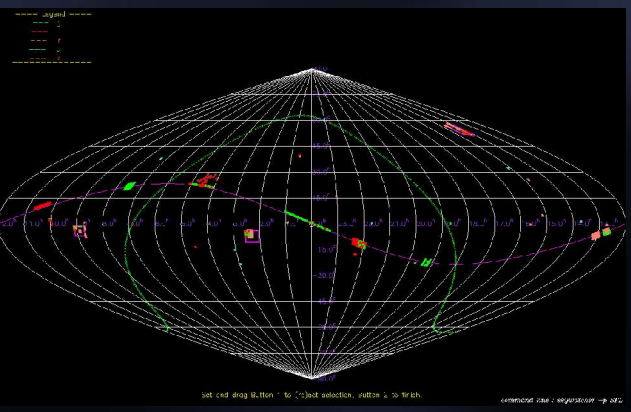
Parabolic



Cylindrical equal area



Mollweide's



Sanson-Flamsteed

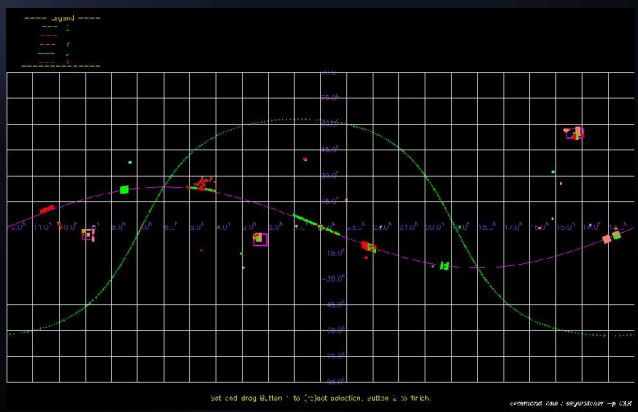
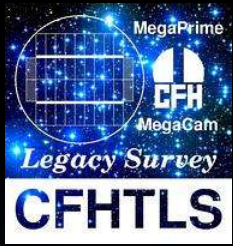


Plate carrée



Software specification

- Display FOV on celestial sphere
- Database filtering
- Different projections available
- Origin shifting, Zoom
- XML input
- Output format (X11 display, png)
- Library used : plplot, wcslib, htm
- GPL licence
- Portability on all Unix systems



Software development in progress

- Input XML file compatible VOTable
- Reading FITS files
- Linking to QualityFits pages
- Linking to catalogue sources
- Web Service
- Web GUI
- On line for MEGACAM and WIRCAM

First Release : End of July