

DataLink

F.Bonnarel
(CDS)

On behalf of
(L.Michel, M.Louys and the CDS Aladin team
-Fernique,Boch,Oberto-)

The DataLink concept

- Once datasets have been « discovered » what can be done ?
 - Retrieval via URL (as in ObsTap, S*AP)
 - AccessData (generation of virtual data)
 - Various linkages : Provenance data, progenitors, ancillary or associated data
- ObsTap only provides retrieval of full datasets
 - Nothing to manage complex datasets
 - Nothing for generation of Virtual Data

Data Link : proposed content

- Basic coupling
 - ObsId (or DataSet ID)
 - Access to a refernce
- Link semantics: resampled spectrum, calibration,
- Reference type (retrieval, S*AP service+method, html page, etc ...)
- Extended Access : describing complex datasets

Extended Acces

- Package Described in Characterisation 2 draft
- Size, format, acref (as in SSA and ObsTap)
- Internal description : Format dependant
 - extension number (FITS/extension),
 - table
 - field names (tables)
 - Cutouts
 - Paths (in archives)

Data Link services ?

- The DataLinks could be delivered by a service
- Input parameter is ObsId
- Response is a Votable describing the DataLink described as above ...
- DAL service (Obstap, S*AP) and DataLink service responses could be merged in the same table with the DAL extension mechanism (possible with ObsTap/PQL and S*AP)
- Two really important use cases:
 - Link ObsTAP response to classical S*AP responses
 - Link to Virtual Data generation : resampling, cutouts, extractions

Example I (from nara)

- Linking an ObsTAP/PQL response for MEF (Mosaic stack) to a classical SIA service



GLIMPSE.8.0MU.GLM.01500+0000.MOSAIC.14

IRAS-IRIS.100MU.I153B4H0

371.7

Sélecteur de serveurs

Autres: File, Allsky, all VO, FOV, SExtractor, Watch

Serveurs d'images: Aladin images, UKIDSS, SkyView, Sloan, DSS..., VLA..., Archives..., Others...

Serveurs de tables: All VizieR, Surveys, Missions, SIMBAD, NED, SkyBot, Others..

Canadian Astronomical Data Center (CADC) ?

Position (ICRS, na... M 17 Pointer

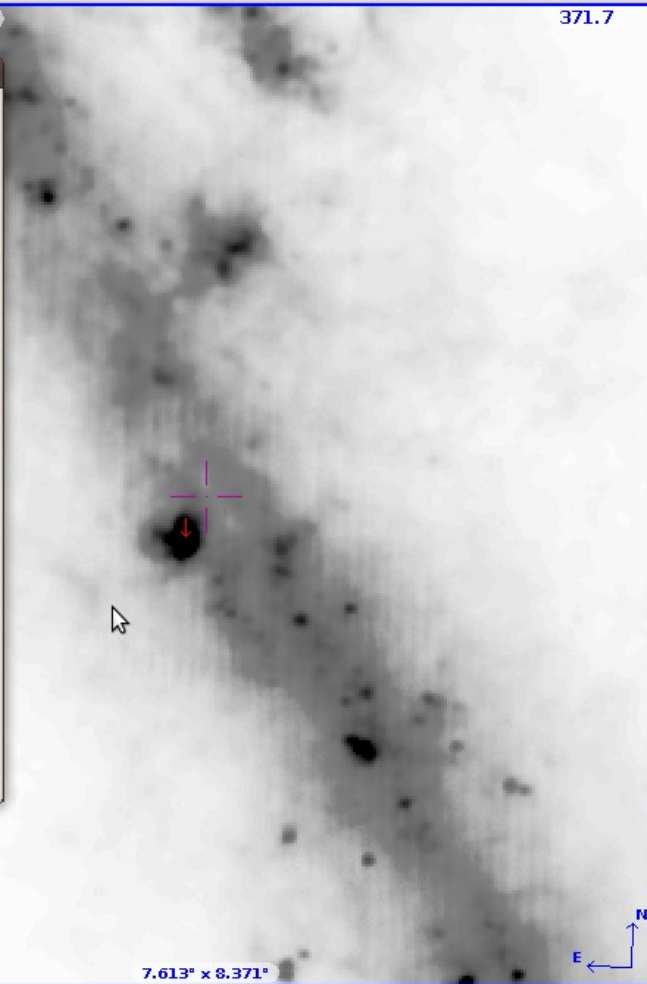
Rayon 14'

Collection CFHT - The Canada-France-Hawaii Telescope

- g. MP9401
 - 853054 1.1° x 45.1'
 - 853051 58.6' x 45.3'
 - 859639 58.7' x 45.2'
 - 853053 58.7' x 45.2'
 - 853266 58.7' x 45.2'
 - 853050 1.1° x 45.1'
 - 853046 58.6' x 45.3'
 - 853264 58.6' x 45.2'
 - 853267 58.7' x 45.3'
 - 853265 58.7' x 45.2'

INFO serveur

Réinit. Effacer **CHERCHER** Fermer ?



select, dépl., zoom, dist., phot., dessin, marq., filtre, corr., r/v/b, assoc., coupe, cont., loupe, pixel, Zoom 2x, prop, suppr.

g. MP9401..
IRAS-IRIS.100
GLIMPSE.8.0M

12.5° x 12.5°

TAP / PQL service for Full MEF discovery:loading start of the MEFt

Position Effacer Référentiel ICRS

g.MP9401[22] 7.599' x 4.158'	g.MP9401[1] 7.484' x 4.111'	g.MP9401[36] 7.488' x 4.113'	g.MP9401[35] 7.526' x 4.117'
g.MP9401[34] 7.563' x 4.125'	g.MP9401[33] 7.577' x 4.124'	g.MP9401[32] 7.577' x 4.124'	g.MP9401[31] 7.578' x 4.125'
g.MP9401[30] 7.565' x 4.123'	g.MP9401[29] 7.525' x 4.116'	g.MP9401[28] 7.481' x 4.107'	g.MP9401[27] 7.508' x 4.145'
g.MP9401[26] 7.548' x 4.149'	g.MP9401[25] 7.578' x 4.156'	g.MP9401[24] 7.597' x 4.156'	g.MP9401[23] 7.601' x 4.158'

select
depl
Z zoom
dist
+ phot
dessin
marq
filtre
corr.
rvb
assoc
coupe
cont
loupe
pixel
prop
suppr

g.MP9401~1
g.MP9401[30]
g.MP9401[31]
g.MP9401[32]
g.MP9401[33]
g.MP9401[34]
g.MP9401[35]
g.MP9401[29]
g.MP9401[28]
g.MP9401[27]
g.MP9401[26]
g.MP9401[25]
g.MP9401[24]
g.MP9401[23]

Zoom 1/8x

6.579' x 14.45'

TAP / PQL service for Full MEF discovery: after 15 minutes/ not that convenient.

Applications Raccourcis Système mar. 7 déc., 22:57 bonnarel

NX - bonnarel@paladin:1000 - paladin (GPL Edition) Aladin v7.0 *** BETA VERSION (based on v7.000) ***

Fichier Edition Image Catalogue Graphique Outil Vue Interop Aide

Position [] Effacer Référentiel ICRS

CFHT_831281

Sélecteur de serveurs

Autres File Allsky allVO FOV Sextractor Watch

Serveurs d'images

Aladin images

UKIDSS

SkyView

Sloan

DSS...

VLA...

Archives...

Others...

Accès aux données utilisateurs (image/table/script/dir)

Indiquez un nom de fichier ou une URL puis appuyez sur CHE...

/home/bonnarel/Bureau/resultCADC.xml Par

energy_bandpassName: i.MP9701

- datasetID: CFHT_831281
 - 831281_1 58.6' x 59.9'
 - 831281_2 58.6' x 59.9'
 - 831281_3 58.6' x 59.9'
 - 831281_4 58.6' x 59.9'
- datasetID: CFHT_831282
 - 831282_1 58.6' x 59.9'

Serveurs de tables

All VizieR

Surveys

Missions

IMBAP

NED

SkyBot

Others..

Information sur les données

Affichage

831281_1

Nom du champ	Valeur
datasetID	CFHT_831281
collectionID	831281_1
instrument_name	MegaPrime
position_center_ra	02:26:00.96
position_center_dec	-04:29:23.7
position_naxes	2
position_naxis	18879,19313
position_scale	5.1689840392229E-...
position_bounds	UNION ICRS GEOCEN...
energy_bounds_center	0.001m
energy_bounds_cval1	0.001m
enerav_bounds_cval2	0.001m

autres actions

select

dépl.

zoom

dist

phot

dessin

marq

filtre

corr.

rvb

assoc

coupe

cont

loupe

pixel

prop

suppr

CFHT_831281

Zoom 1/2x

6.475' x 14.3'

Classical SIA service: Individual CCDs (around 20 Mbytes).

Belonging to the same Dataset allows Associations and gathering under the same node in the tree

Example II : Healpix multiresolution access

- Aladin 7 provides a new access mode: « Allsky » or Healpix multiresolution access
- This mode can be seen as a specific AccessData mode beside cutout, resampling, full retrieval
- Aladin server to provide all the access modes (+ link to progenitors) associated to the query response.
- Illustrates the DataLink concept

Applications Raccourcis Système mer. 13 avril, 09:43 bonnarel@obsfb: ~/Aladin

Aladin v7.0 *** BETA VERSION (based on v7.015) ***

File Edit Image Catalog Overlay Tool View Interop Help

Location

Allsky opt Allsky IR DSS Simbad NED PPMX 2MASS

CFHTLS color (URZ bands)

Server selector

Others File Allsky all VO FOV Sextractor Watch

Image servers

- Aladin images
- SkyView
- UKIDSS
- Sloan
- DSS...
- New Serv
- VLA...
- Archives..
- Others...

Available data in "allsky" mode ?

Select items and press SUBMIT

- Image
- Progressive catalog
- Density map
- CFHTLS-Test Area (2x2° - around 100 +60 GAL)
 - CFHTLS U-Band (c) CFH - powered by Terapix
 - CFHTLS G-Band (c) CFH - powered by Terapix
 - CFHTLS R-Band (c) CFH - powered by Terapix
 - CFHTLS I-Band (c) CFH - powered by Terapix
 - CFHTLS Z-Band (c) CFH - powered by Terapix
 - CFHTLS color (URZ bands) (c) CFH - powered by Terapix
 - CFHTLS color (GRI bands) (c) CFH - powered by Terapix
 - CFHTLS Z weight map (c) CFH - powered by Terapix

Reset Clear SUBMIT Close ?

mgls CFHTLS color

Zoom 1/16x

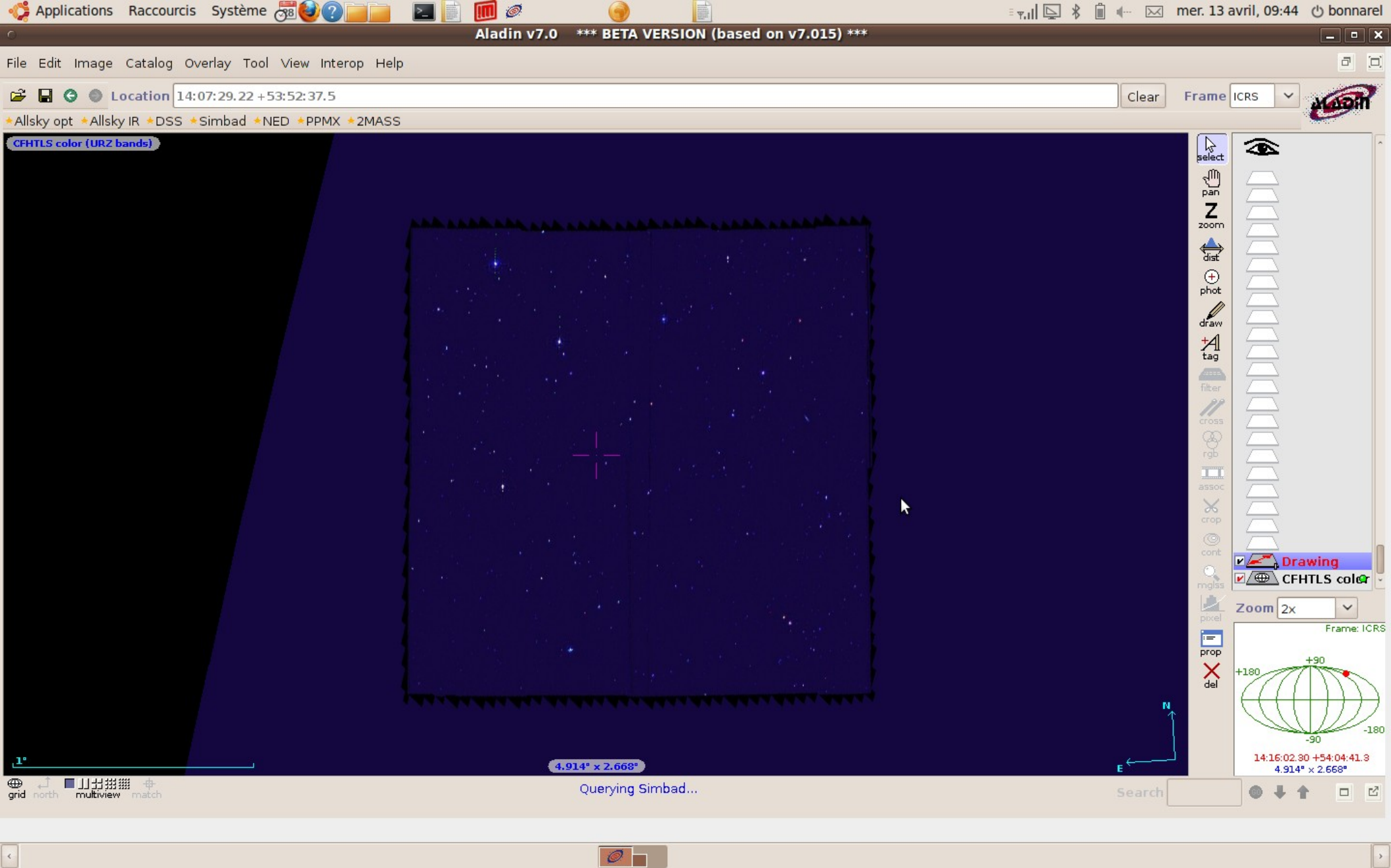
Frame: ICRS

00:00:00.00 +00:00:00.0
180° x 96.33°

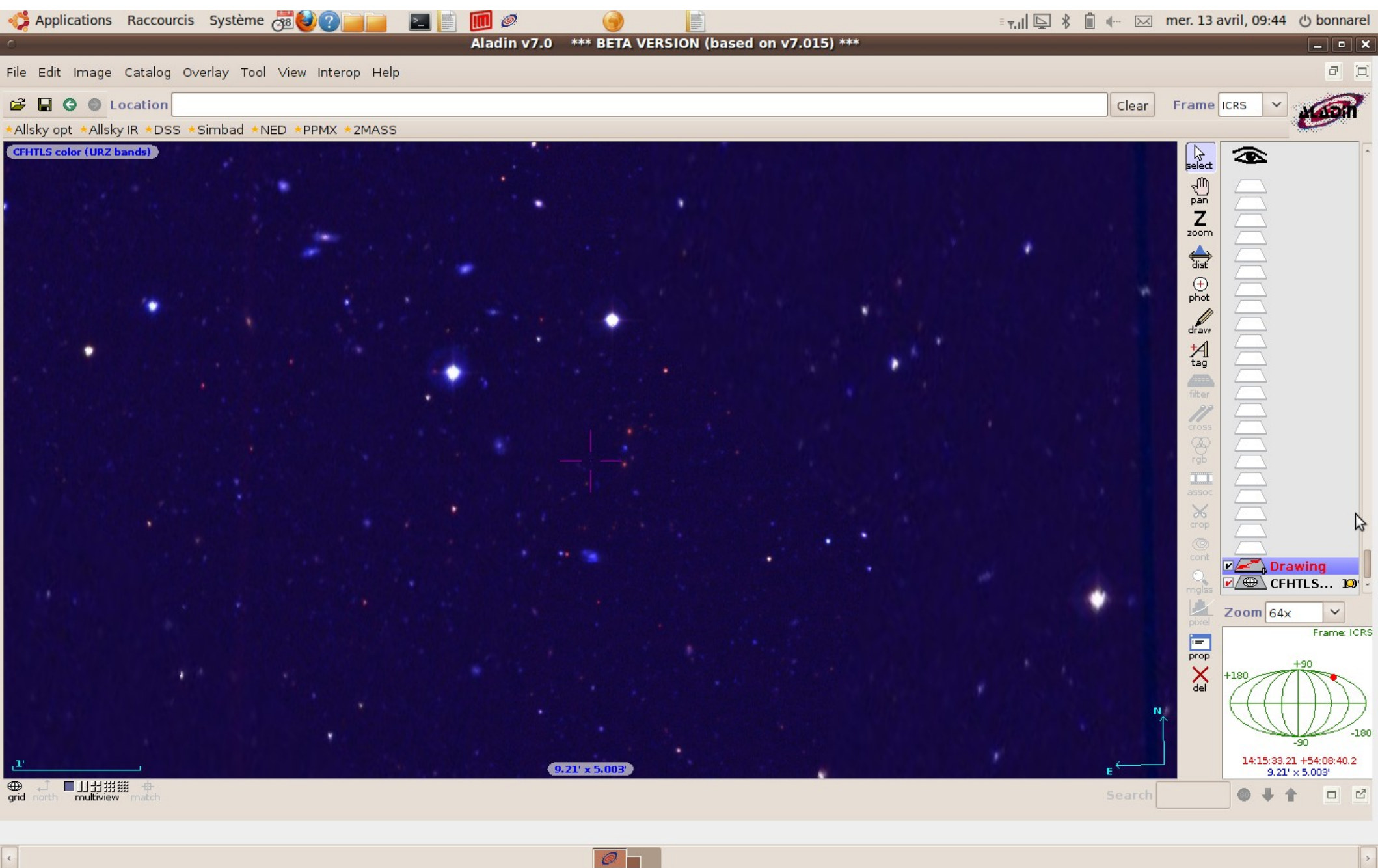
grid north multiview match

Search

Allsky tree to CFHTLS Healpix multiresolution (current interface)
----> where is the field on the sky ?



COLOR composition CFHTLS



High resolution on color composition Healpix CFHTLS

Applications Raccourcis Système mar. 31 mai, 00:54 bonnarel

Aladin v7.0

File Edit Image Catalog Overlay Tool View Interop Help

Location Clear Frame ICRS

POSSIF-DSS2.175-PLATE

Server selector

Others File Allsky all VO FOV SExtractor Watch

Image servers

- Aladin images
- SkyView
- UKIDSS
- Sloan
- DSS...
- NewServ
- VLA...
- Archives...
- Others...

Catalog servers

- All VizieR
- Surveys
- Missions
- IM3D
- NED
- SkyBot
- Others..

CFHTLS Aladin Server

Target (ICRS, name) Grab co...

Radius

- Creator: CFHTLS
 - Collection: null null
 - CFHTLS_R_W3-C
 - Data Access
 - Image Cutout 0.0" x 0.0"
 - Healpix Multiresolution 0.0" x 0.0"
 - Progenitors 0.0" x 0.0"
 - CFHTLS_I_W3-C
 - Data Access
 - Image Cutout
 - Healpix Multiresolution
 - Progenitors
 - CFHTLS_G_W3-C
 - Data Access
 - Image Cutout

Reset Clear SUBMIT Close ?

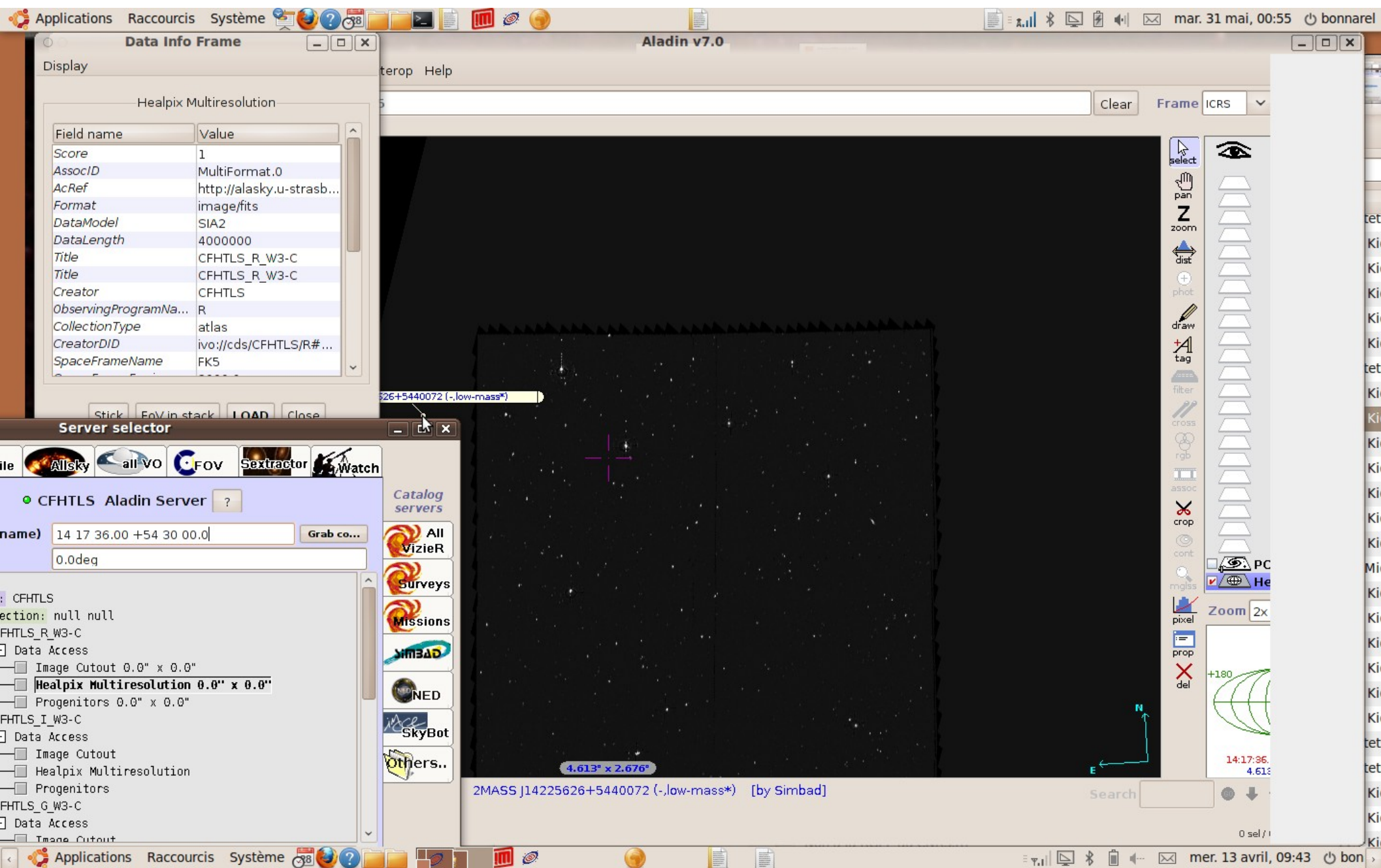
1" 7.75° x 4.491°

Édition grid north multiview match

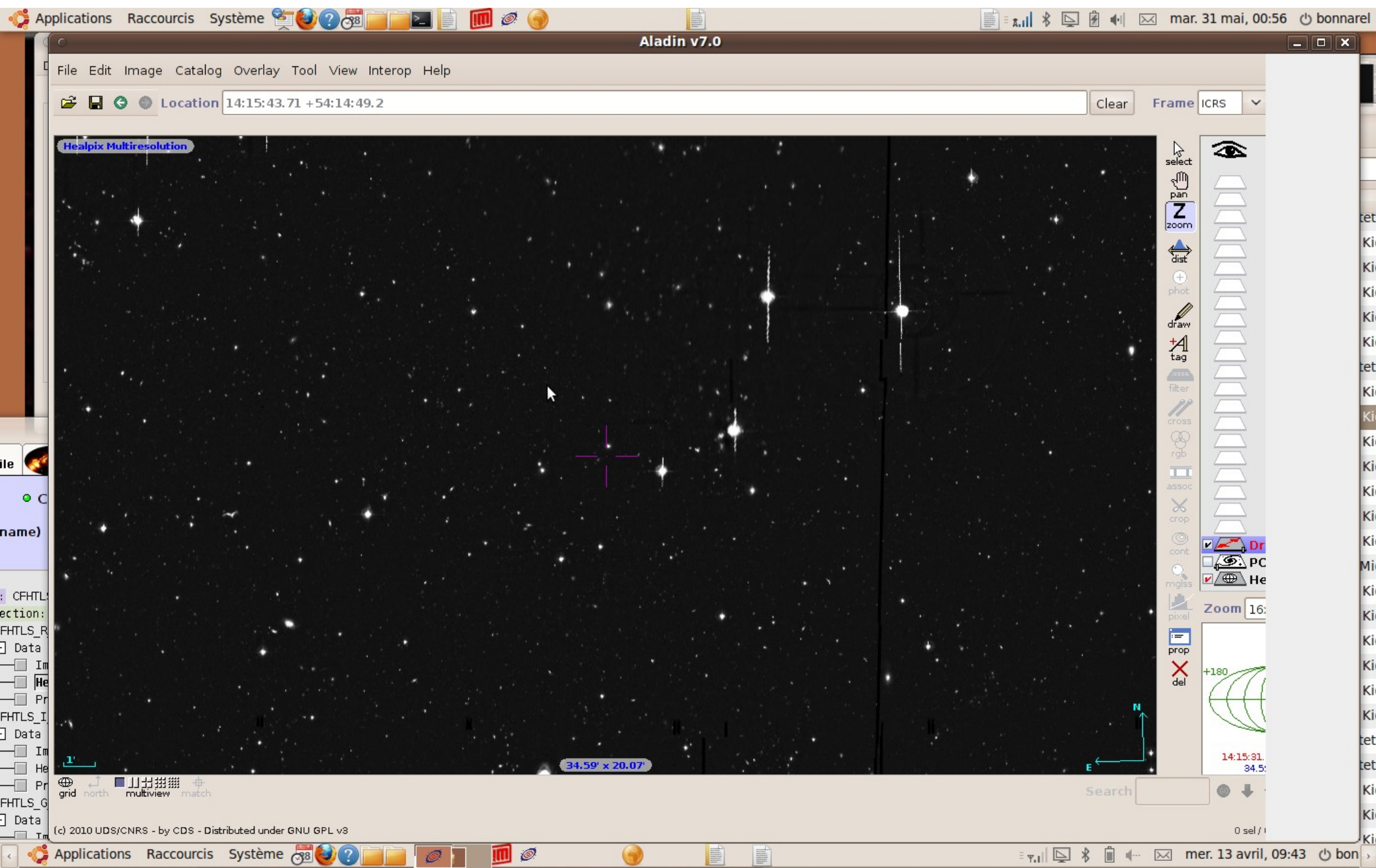
(c) 2010 UDS/CNRS - by CDS - Distributed under GNU GPL v3

Applications Raccourcis Système mer. 13 avril, 09:43 bon

Discovery of CFHTLS stacks on top of a preview: Nice, there is an healpix mode!



HEALPIX Multiresolution mode started



CFHTLS Healpix mode: higher resolution

Data Info Frame

Display

Progenitors

Field name	Value
Score	1
AssocID	MultiFormat.0
AcRef	http://alasky.u-strasb...
Format	image/fits
DataModel	SIA2
DataLength	4000000
Title	CFHTLS_R_W3-C
Title	CFHTLS_R_W3-C
Creator	CFHTLS
ObservingProgramNa...	R
CollectionType	atlas
CreatorDID	ivo://cds/CFHTLS/R#...
SpaceFrameName	FK5

Stick FoV in stack **LOAD** Close

Aladin v7.0

Server selector

Others File Allsky all VO FOV SExtractor Watch

Image servers: Aladin images, SkyView, UKIDSS, Sloan, DSS..., New Serv, VLA..., Archives..., Others...

Catalog servers: All VizieR, Surveys, Missions, SIMBAD, NED, SkyBot, Others..

Target (ICRS, name) 14 17 36.00 +54 30 00.0 Grab co...

Radius 0.0deg

```
graph TD
    Creator[Creator: CFHTLS] --> Collection[Collection: null null]
    Collection --> CFHTLS_R_W3_C[CFHTLS_R_W3-C]
    CFHTLS_R_W3_C --> Data_Access_1[Data Access]
    Data_Access_1 --> Image_Cutout_1[Image Cutout 0.0" x 0.0"]
    Data_Access_1 --> Healpix_Multiresolution_1[Healpix Multiresolution 0.0" x 0.0"]
    Data_Access_1 --> Progenitors_1[Progenitors 0.0" x 0.0"]
    Collection --> CFHTLS_I_W3_C[CFHTLS_I_W3-C]
    CFHTLS_I_W3_C --> Data_Access_2[Data Access]
    Data_Access_2 --> Image_Cutout_2[Image Cutout]
    Data_Access_2 --> Healpix_Multiresolution_2[Healpix Multiresolution]
    Data_Access_2 --> Progenitors_2[Progenitors]
    Collection --> CFHTLS_G_W3_C[CFHTLS_G_W3-C]
    CFHTLS_G_W3_C --> Data_Access_3[Data Access]
    Data_Access_3 --> Image_Cutout_3[Image Cutout]
```

Reset Clear **SUBMIT** Close ?

Clear Frame ICRS

select, pan, zoom, phot, draw, tag, filter, cross, rgb, assoc, crop, cont, mglss, pixel, prop, del

Zoom 32: +180

14:15:57 17.8

17.3' x 10.04'

Data are being downloaded... look at the "stack"

Search

0 sel / 1

Ask CADC for stack progenitors

Data Info Frame

Display

Progenitors

Field name	Value
Score	1
AssocID	MultiFormat.0
AcRef	http://alaska.u-strasb...
Format	image/fits
DataModel	SIA2
DataLength	4000000
Title	CFHTLS_R_W3-C
Title	CFHTLS_R_W3-C
Creator	CFHTLS
ObservingProgramNa...	R
CollectionType	atlas
CreatorDID	ivo://cds/CFHTLS/R#...
SpaceFrameName	FK5

Stick FoV in stack **LOAD** Close

Server selector

Others File Allsky all VO FOV SExtractor Watch


Image servers: Aladin images, SkyView, UKIDSS, Sloan, DSS..., NewServ, VLA..., Archives..., Others...

Catalog servers: All VizieR, Surveys, Missions, SIMBAD, NED, SkyBot, Others..


• User data access (image/table/script/dir) ?

Specify a filename or an URL and press the SUBMIT button

Clear Frame ICRS



select, pan, zoom, dist, phot, draw, tag, filter, cross, rgb, assoc, crop, cont, mglss, pixel, prop, del

Zoom 32: 

14:15:57. 17.8

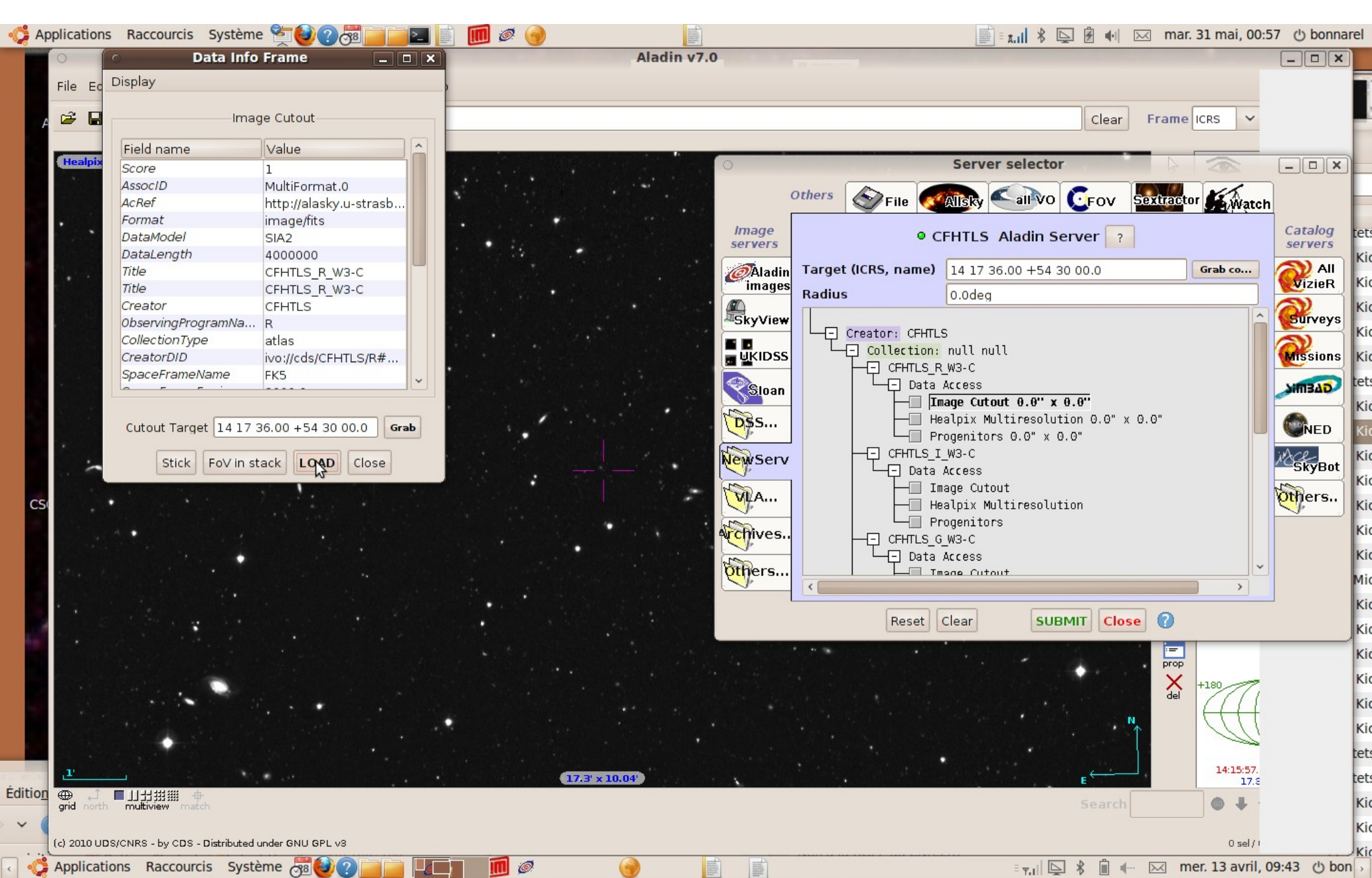
Search

17.3' x 10.04'

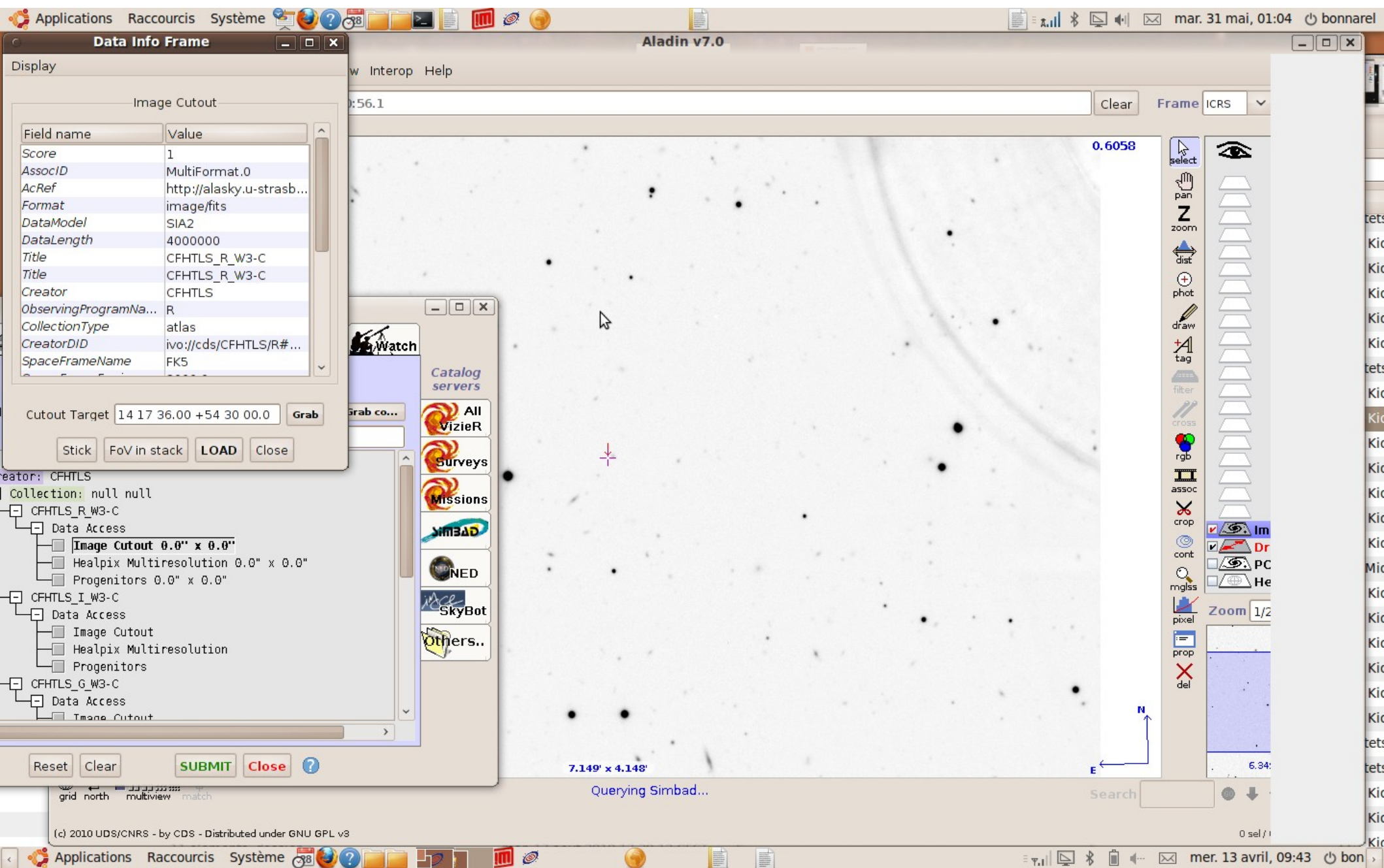
Data are being downloaded... look at the "stack"

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CADC response came in the metadata tree



Cutout in original data



Data Info Frame

Display

Image Cutout

Field name	Value
Score	1
AssocID	MultiFormat.0
AcRef	http://alasky.u-strasb...
Format	image/fits
DataModel	SIA2
DataLength	4000000
Title	CFHTLS_R_W3-C
Title	CFHTLS_R_W3-C
Creator	CFHTLS
ObservingProgramNa...	R
CollectionType	atlas
CreatorDID	ivo://cds/CFHTLS/R#...
SpaceFrameName	FK5

Cutout Target: 14 17 36.00 +54 30 00.0 **Grab**

Stick FoV in stack **LOAD** Close

creator: CFHTLS

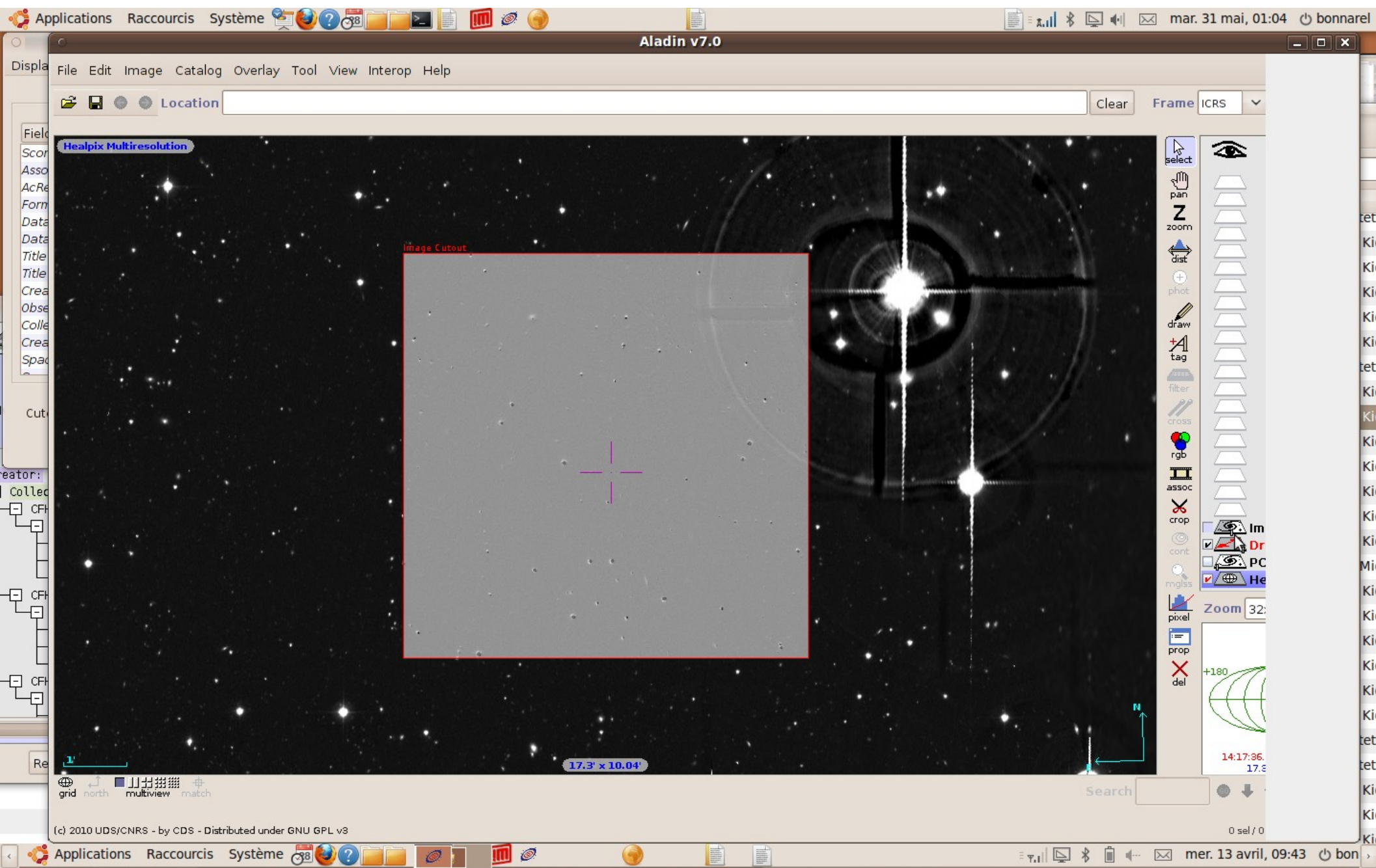
Collection: null null

- CFHTLS_R_W3-C
 - Data Access
 - Image Cutout 0.0" x 0.0"
 - Healpix Multiresolution 0.0" x 0.0"
 - Progenitors 0.0" x 0.0"
- CFHTLS_I_W3-C
 - Data Access
 - Image Cutout
 - Healpix Multiresolution
 - Progenitors
- CFHTLS_G_W3-C
 - Data Access
 - Image Cutout

Reset Clear **SUBMIT** Close ?

- Watch**
- Catalog servers
- All VizieR
 - Surveys
 - Missions
 - Simbad
 - NED
 - SkyBot
 - Others..

Cutout loaded



Cutout in transparency on top of healpix multiresolution display