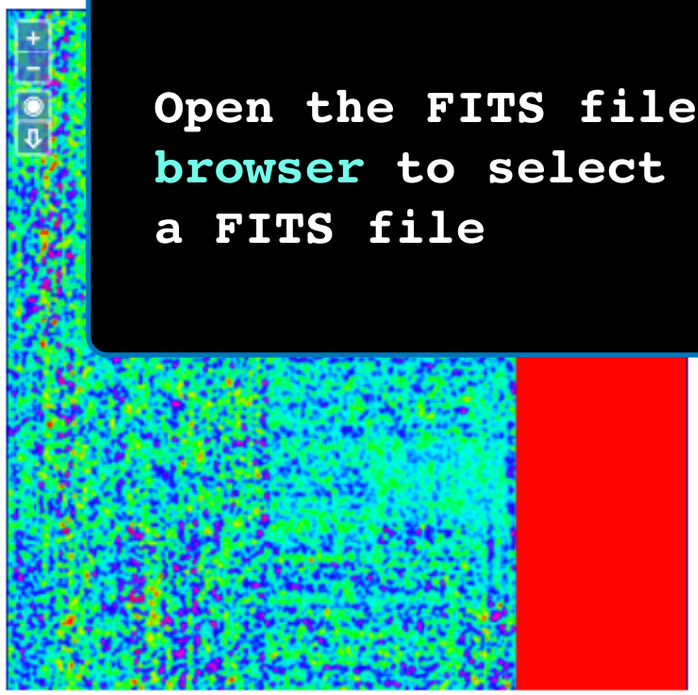
Browse Fits files | Query Fits files | Help

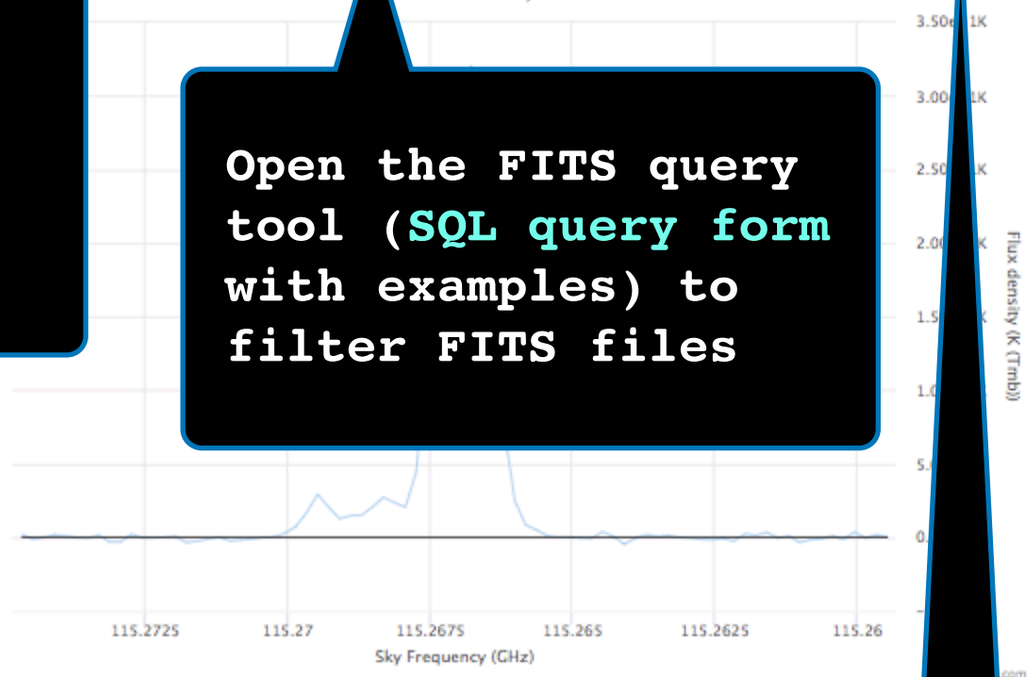
co10 - OBJECT = HORSEHEAD - NAXIS = 3 - NAXIS1 = 325 - NAXIS2 = 434 - NAXIS3 = 80 more ...

31.00' x 31.00', PA 0.0°

Open the FITS file **browser** to select a FITS file

Open the FITS query tool (**SQL query form** with examples) to filter FITS files





Graph

Zoom in

Zoom out

Reset

Smoothed cube

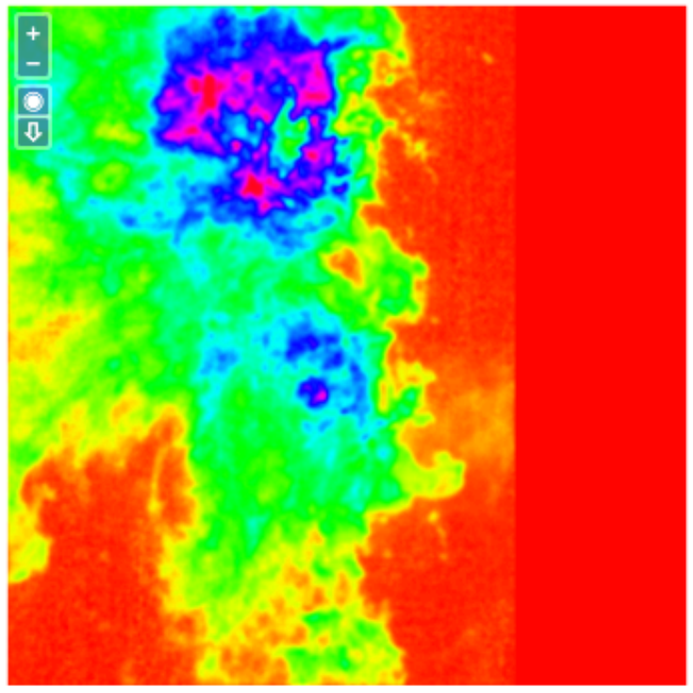
2

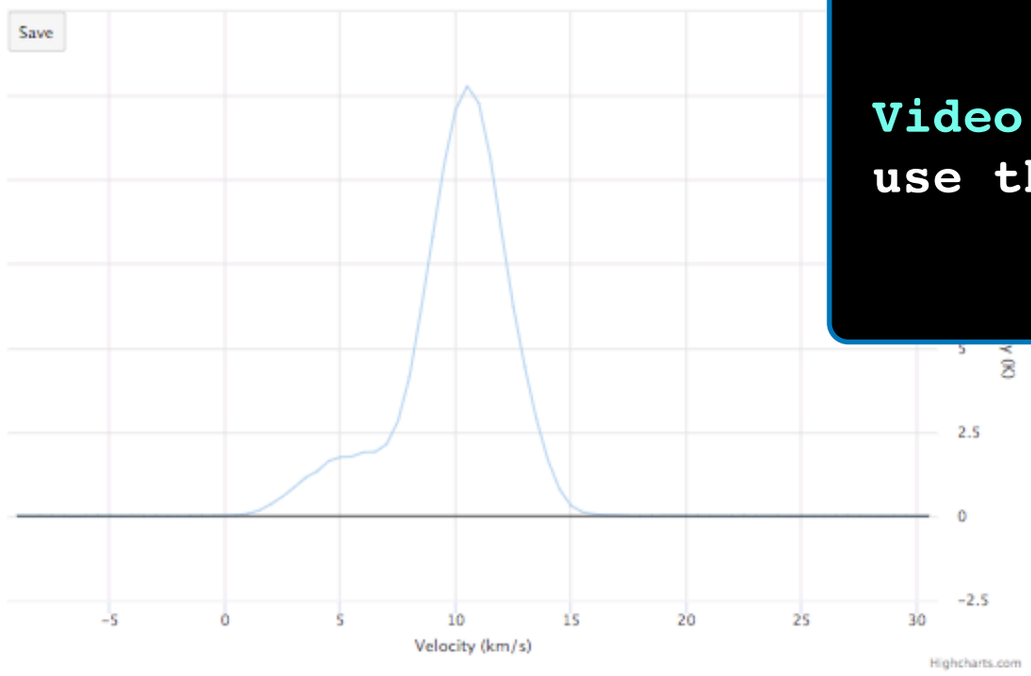
Download

View

6.02e+1 K.km/s, vmin = -9.00 km/s , vmax = 30.50 km/s, imin : 0, imax :79

Save





Video demo & Tips to use the interface

Search NED Data for a flat universe in FOV

H_0 69.6 Omega_M 0.286 Search

Redshift Velocity in km/s DL in Mpc

9:13:45.489;+40:56:28.224;WISEA

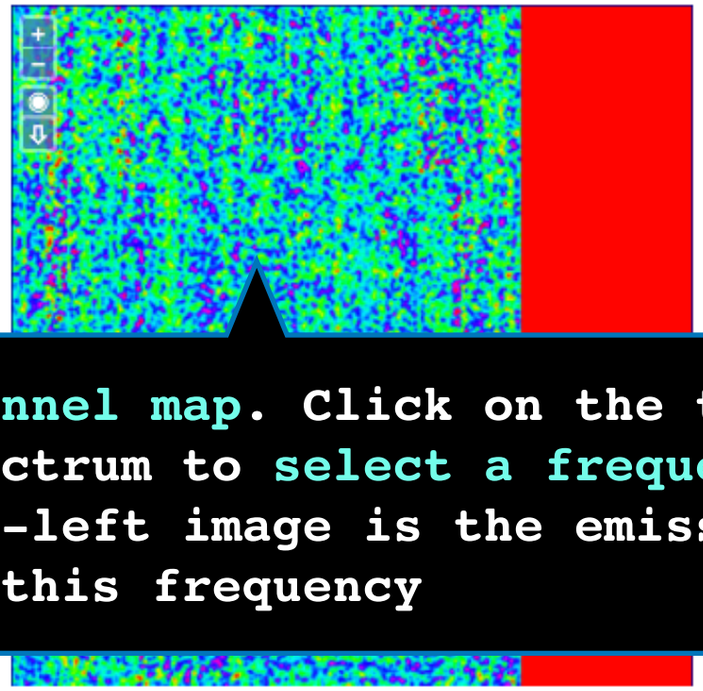
Clear

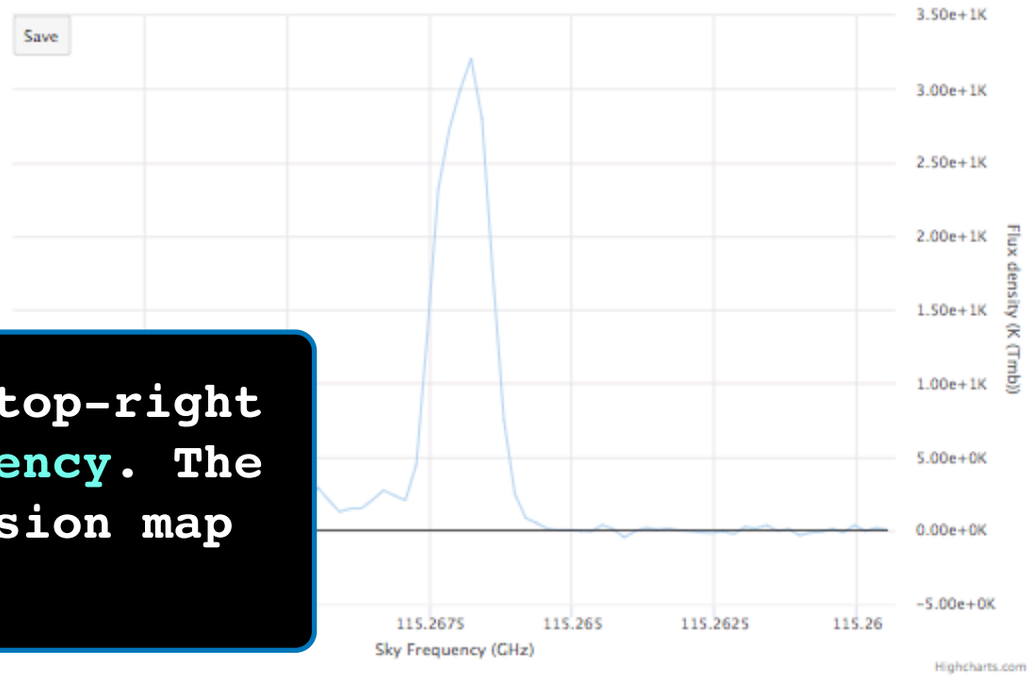
Show Lines after selection ☐

Browse Fits files | Query Fits files | Help

12co10 - OBJECT = HORSEHEAD - NAXIS = 3 - NAXIS1 = 325 - NAXIS2 = 434 - NAXIS3 = 80 more ...

31.00' x 31.00', PA 0.0°





Graph

Zoom in

Zoom out

Reset

Smoothed cube

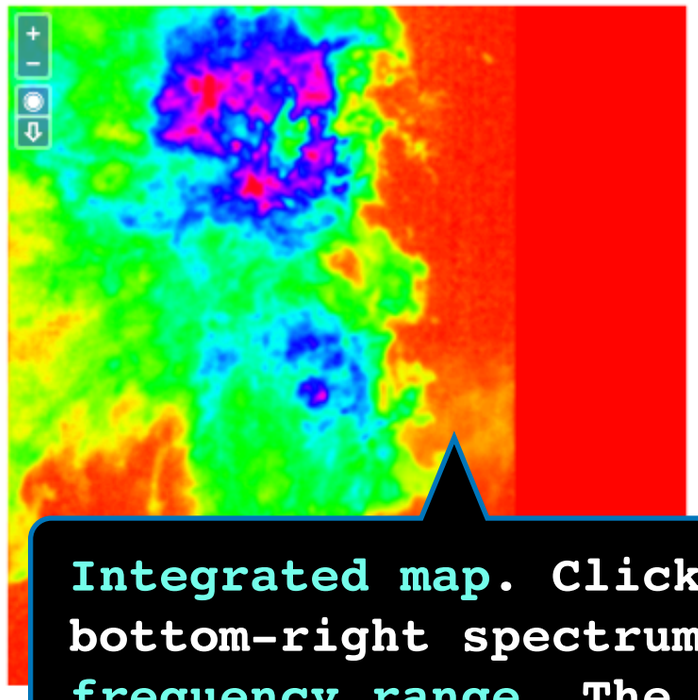
2

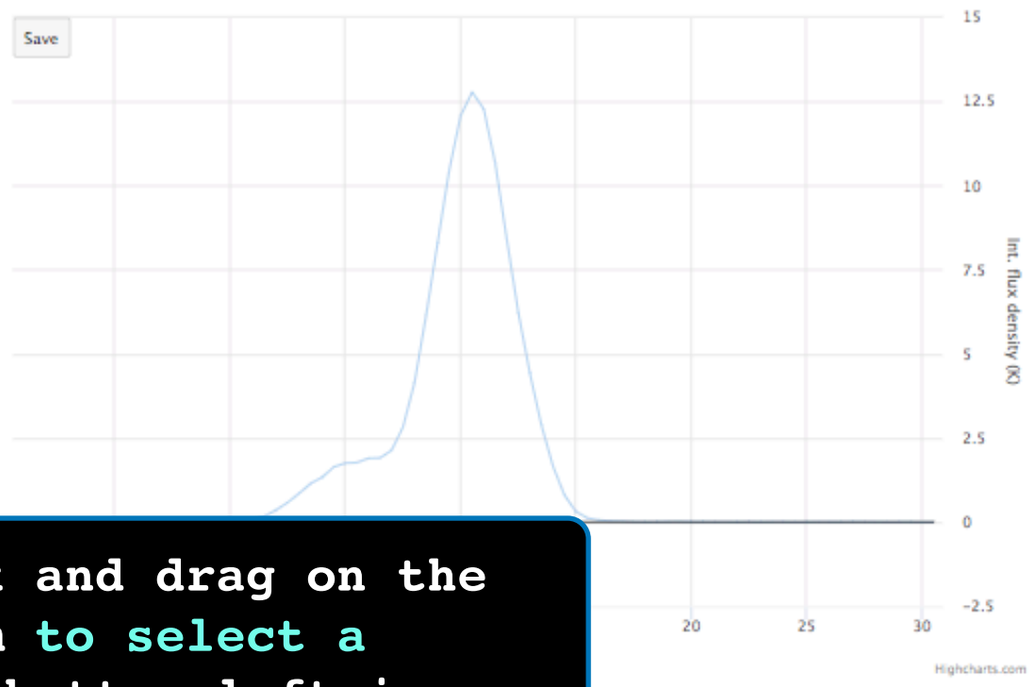
Download

View

Channel map. Click on the top-right spectrum to select a frequency. The top-left image is the emission map at this frequency

6.02e+1 K.km/s, vmin = -9.00 km/s , vmax = 30.50 km/s, imin : 0, imax :79





Integrated map. Click and drag on the bottom-right spectrum to select a frequency range. The bottom-left image is the emission map integrated over this frequency range

Se

H

Re

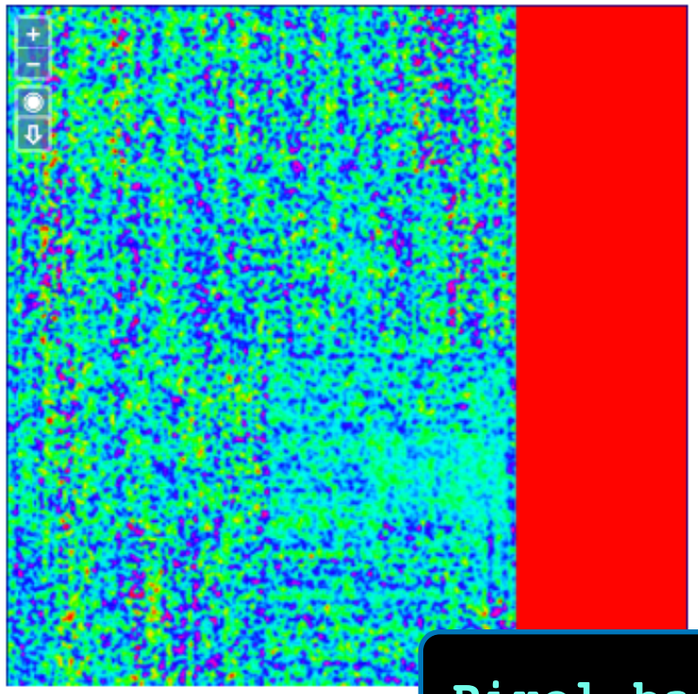
9:13:45.489;+40:56:28.224;WISEA

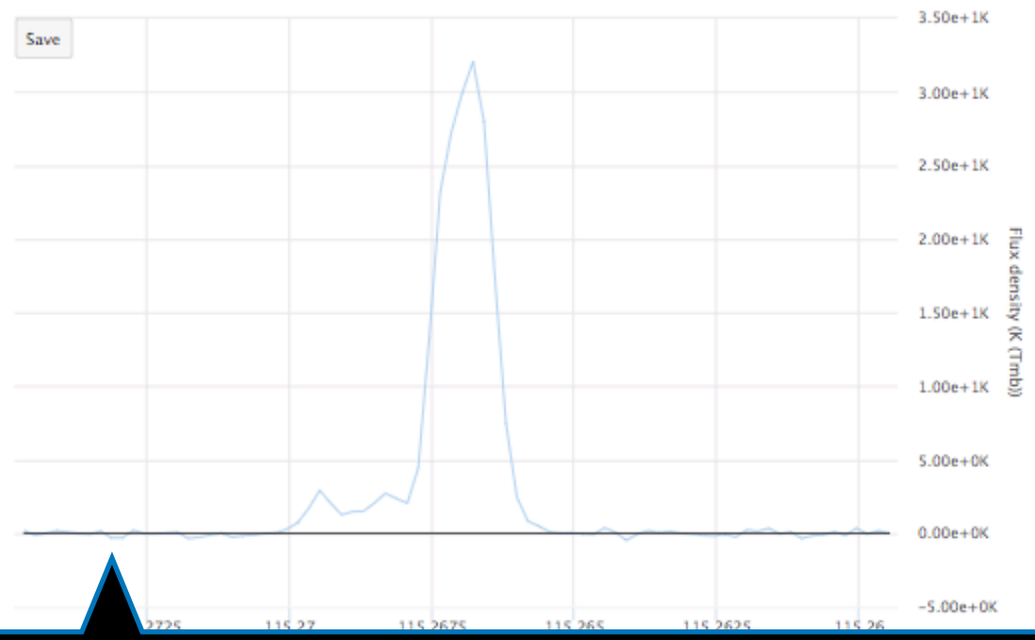
Clear

Browse Fits files | Query Fits files | Help

12co10 - OBJECT = HORSEHEAD - NAXIS = 3 - NAXIS1 = 325 - NAXIS2 = 434 - NAXIS3 = 80 more ...

31.00' x 31.00', PA 0.0°





Graph

Zoom in

Zoom out

Reset

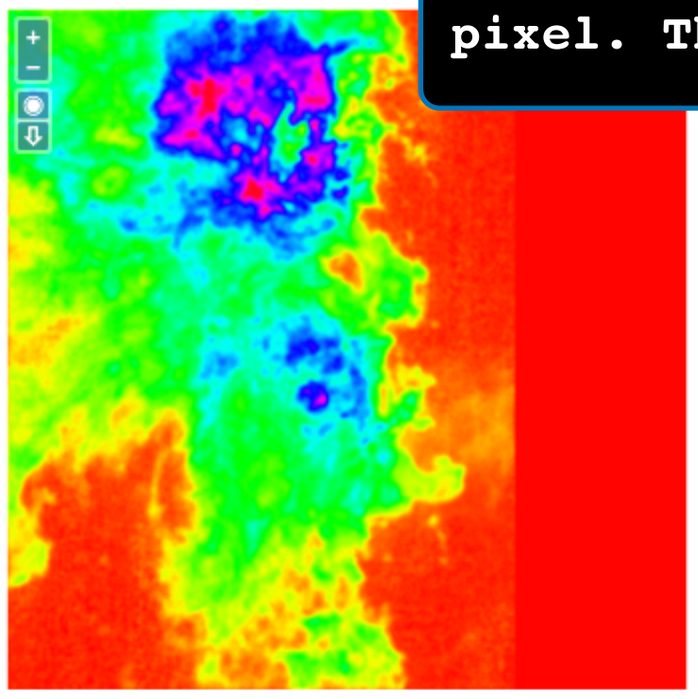
Smoothed cube

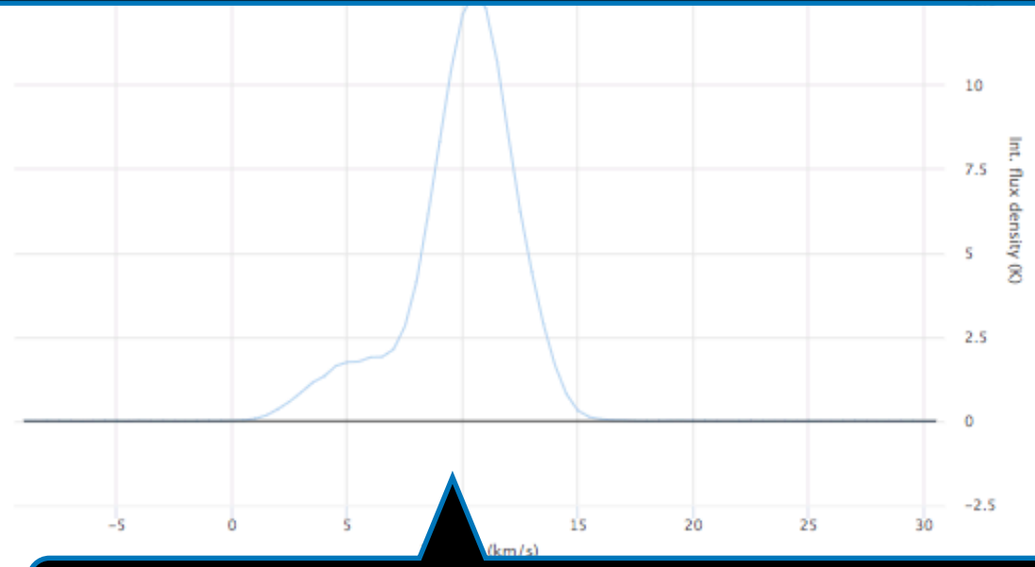
2

Download

View

Pixel-based spectrum. Click on the top-left image to select a pixel. The top-right spectrum is the emission in this pixel





Search NED Data for a flat universe in FOV

H_0 69.6 Omega_M 0.286 Search

Redshift Velocity in km/s DL in Mpc

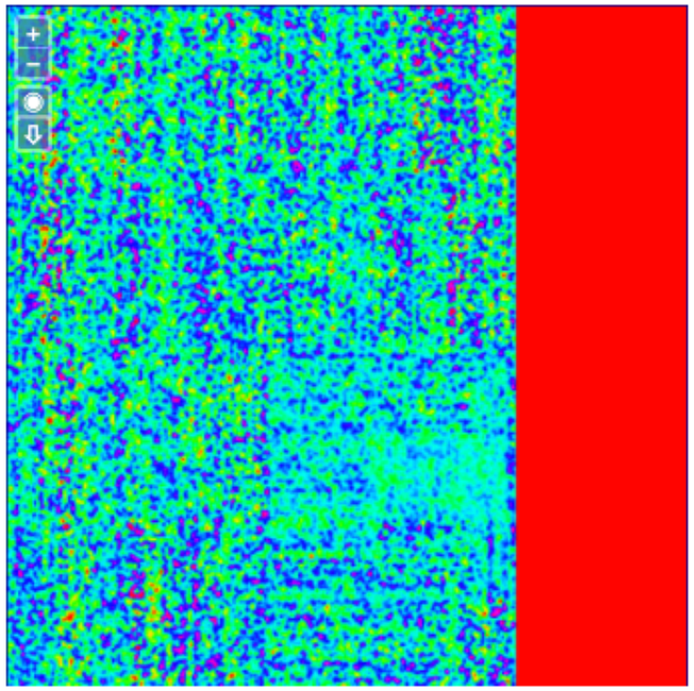
9:13:45.489;+40:56:28.224;WISEA

Clear

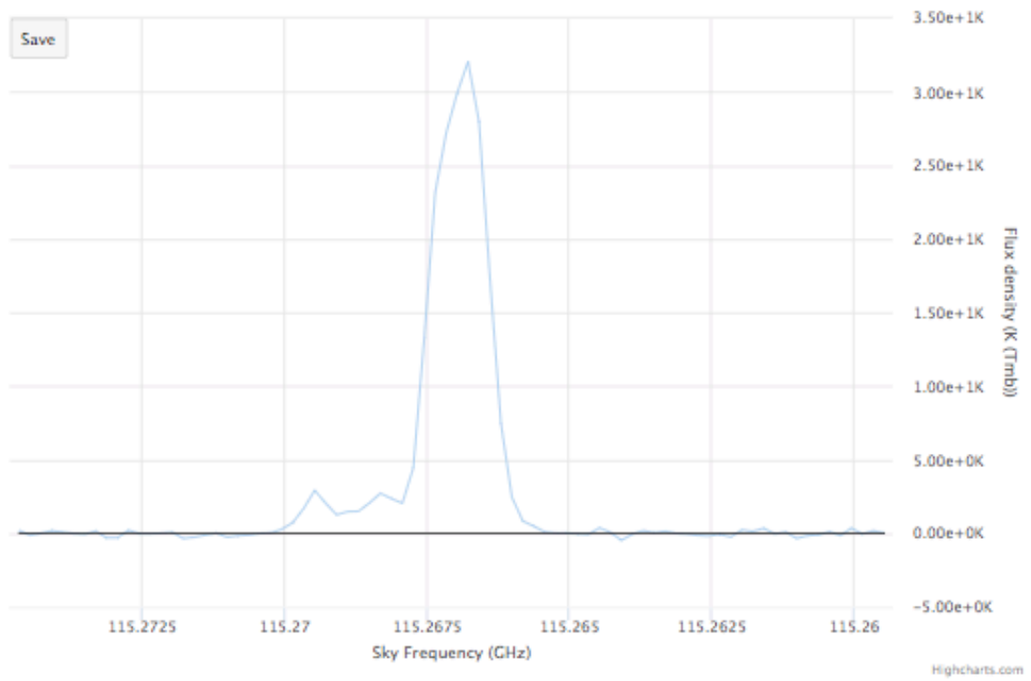
Area-based spectrum. Click and drag on the bottom-left image to draw a box. The bottom-right spectrum is the integrated spectrum over area inside the box

Browse Fits files | Query Fits files | Help

12co10 - OBJECT = **HORSEHEAD** - NAXIS = **3** - NAXIS1 = **325** - NAXIS2 = **434** - NAXIS3 = **80** more ...



31.00' x 31.00', PA 0.0°



Graph

Zoom in

Zoom out

Reset

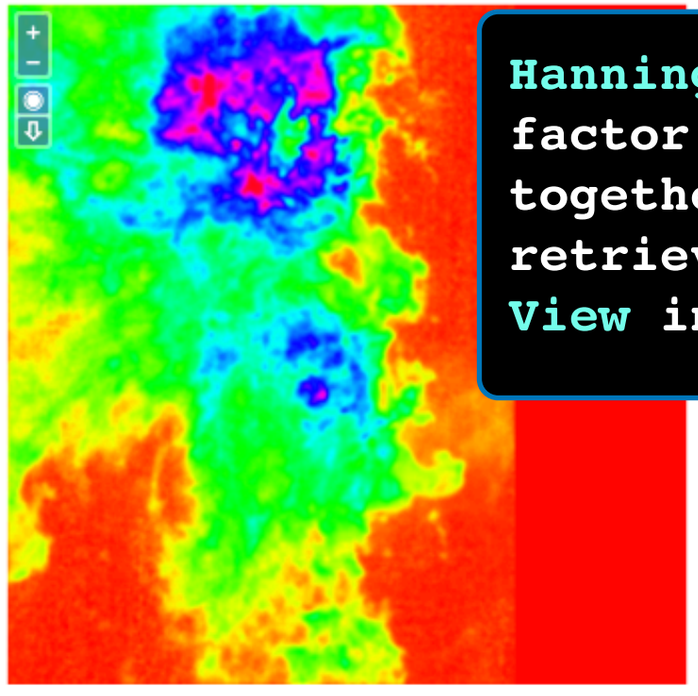
Smoothed cube

2

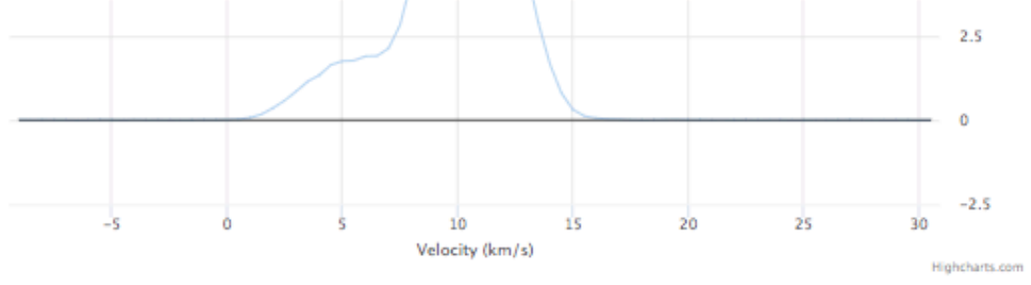
Download

View

6.02e+1 K.km/s, vmin = -9.00 km/s , vmax = 30.50 km/s, imin : 0, imax :79



Hanning-smooth of the full cube. Choose a smooth factor (here 2 will smooth 2 spectral bins together). Then clic on **Download** in order to retrieve in **FITS format** the smoothed cube or clic on **View** in order to open the smoothed cube in Yafits



Search NED Data for a flat universe in FOV

H_0 69.6 Omega_M 0.286 Search

Redshift Velocity in km/s DL in Mpc

9:13:45.489;+40:56:28.224;WISEA

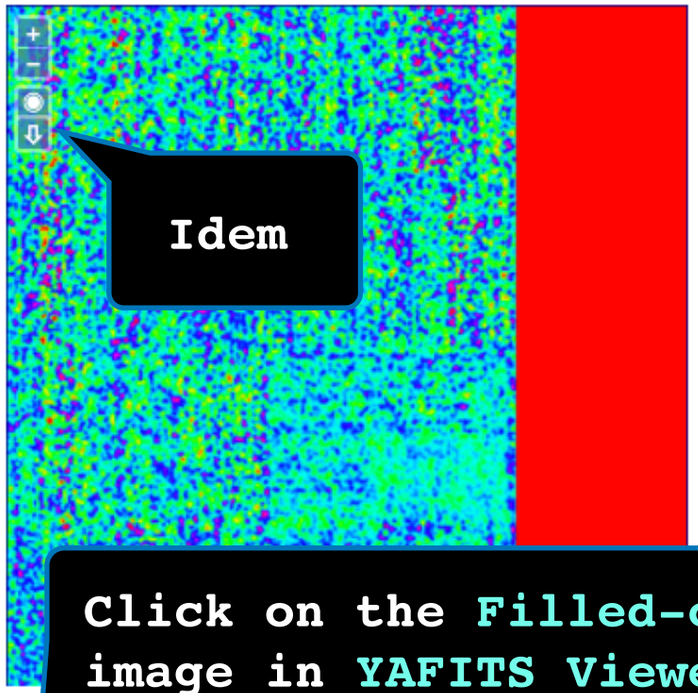
Clear

Show Lines after selection

Browse Fits files | Query Fits files | Help

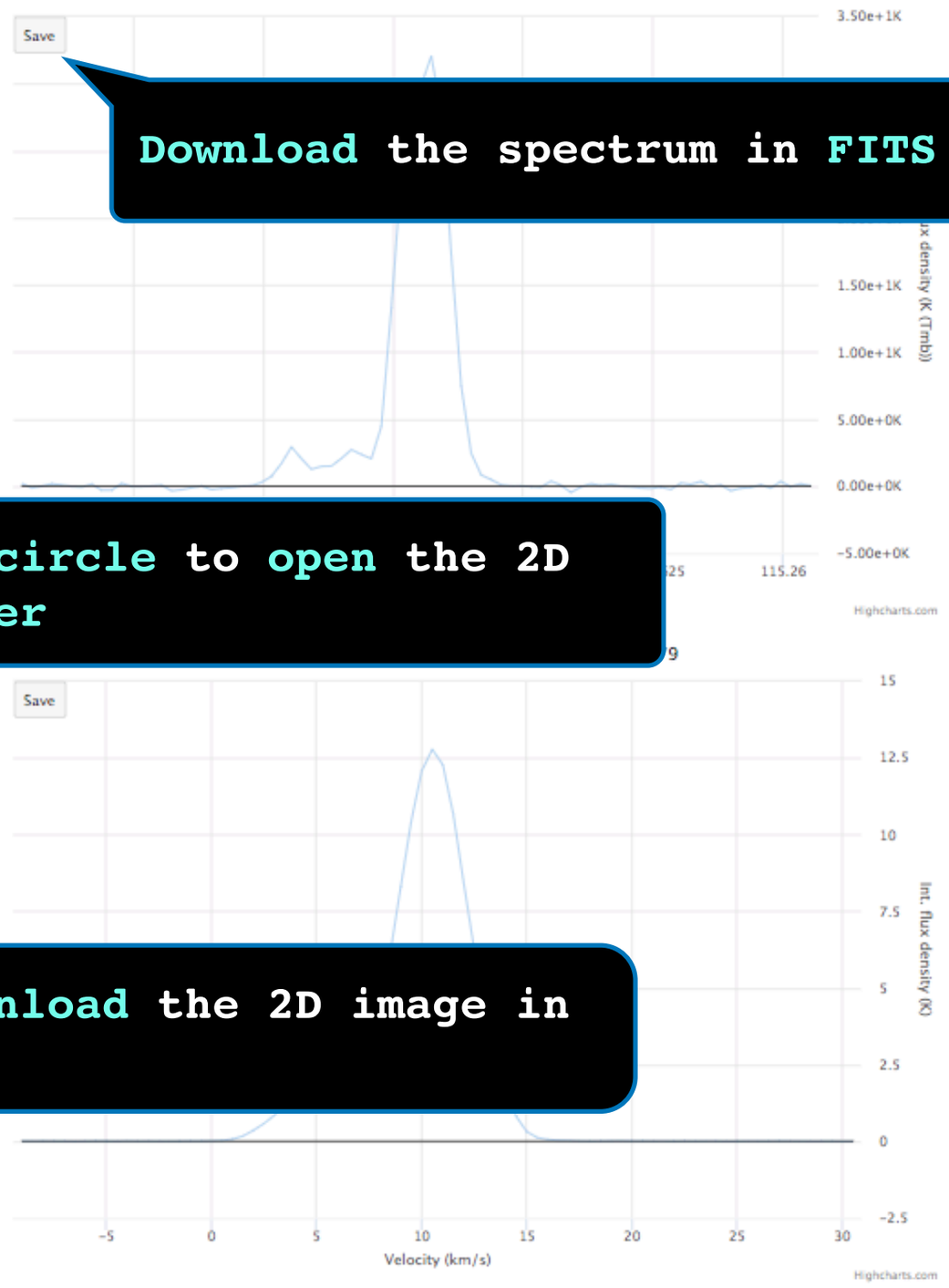
12co10 - OBJECT = HORSEHEAD - NAXIS = 3 - NAXIS1 = 325 - NAXIS2 = 434 - NAXIS3 = 80 more ...

31.00' x 31.00', PA 0.0°



Idem

Download the spectrum in FITS format



Graph

Zoom in

Reset

Smoothed cube

2

Download

View

Click on the Filled-circle to open the 2D image in YAFITS Viewer

Click on the Arrow to download the 2D image in FITS format

Search NED Data for a flat universe in FOV

H_0 69.6 Omega_M 0.286 Search

Redshift Velocity in km/s DL in Mpc

9:13:45.489;+40:56:28.224;WISEA

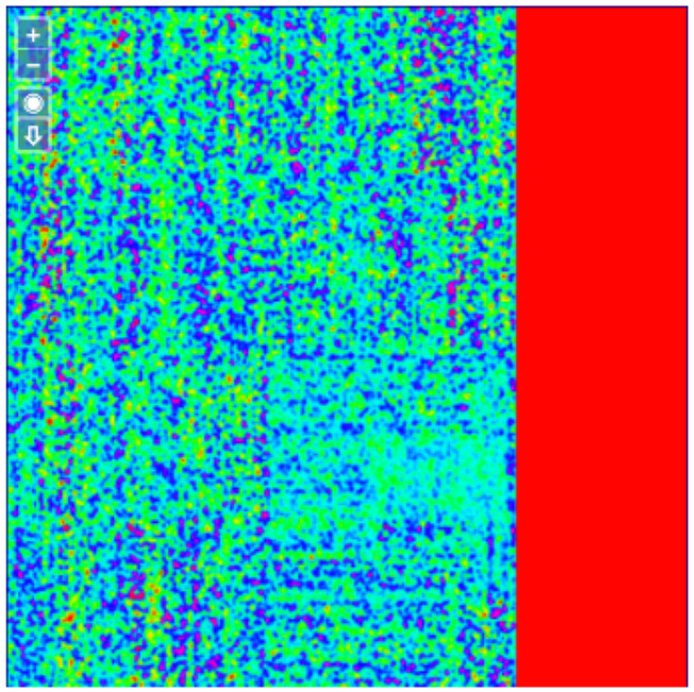
Clear

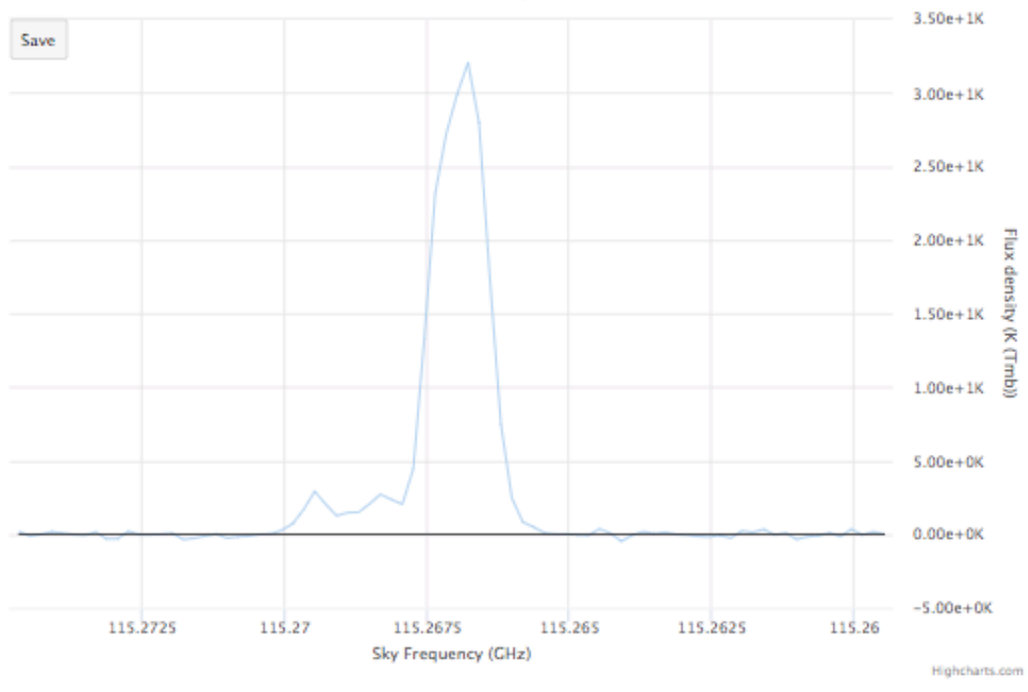
Show Lines after selection

Browse Fits files | Query Fits files | Help

12co10 - OBJECT = HORSEHEAD - NAXIS = 3 - NAXIS1 = 325 - NAXIS2 = 434 - NAXIS3 = 80 more ...

31.00' x 31.00', PA 0.0°





Graph

Zoom in

Zoom out

Reset

Smoothed cube

2

Download

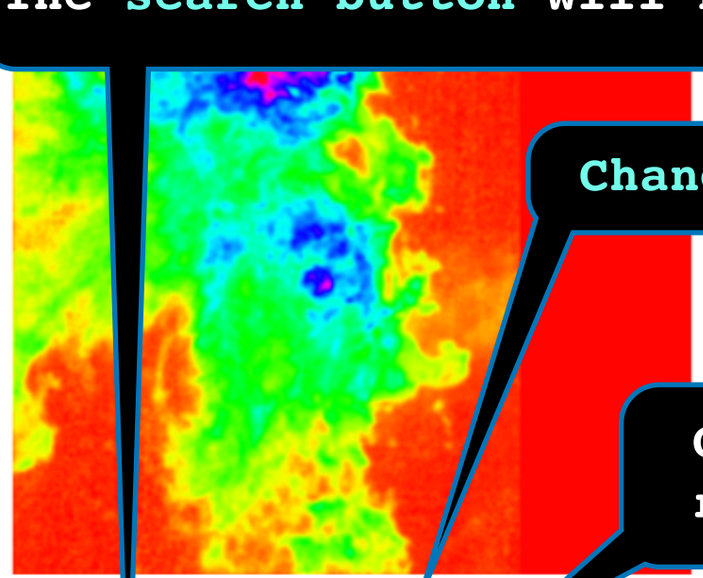
View

vmax = 30.50 km/s, imin : 0, imax :79

Give the redshift of the source.
The search button will help find it

Change the source search area

Click on the Search to run NED resolver :
retrieve the list of source in the FoV



Search NED data for a flat universe in FOV

H_0 69.6 Omega_M 0.286 Search

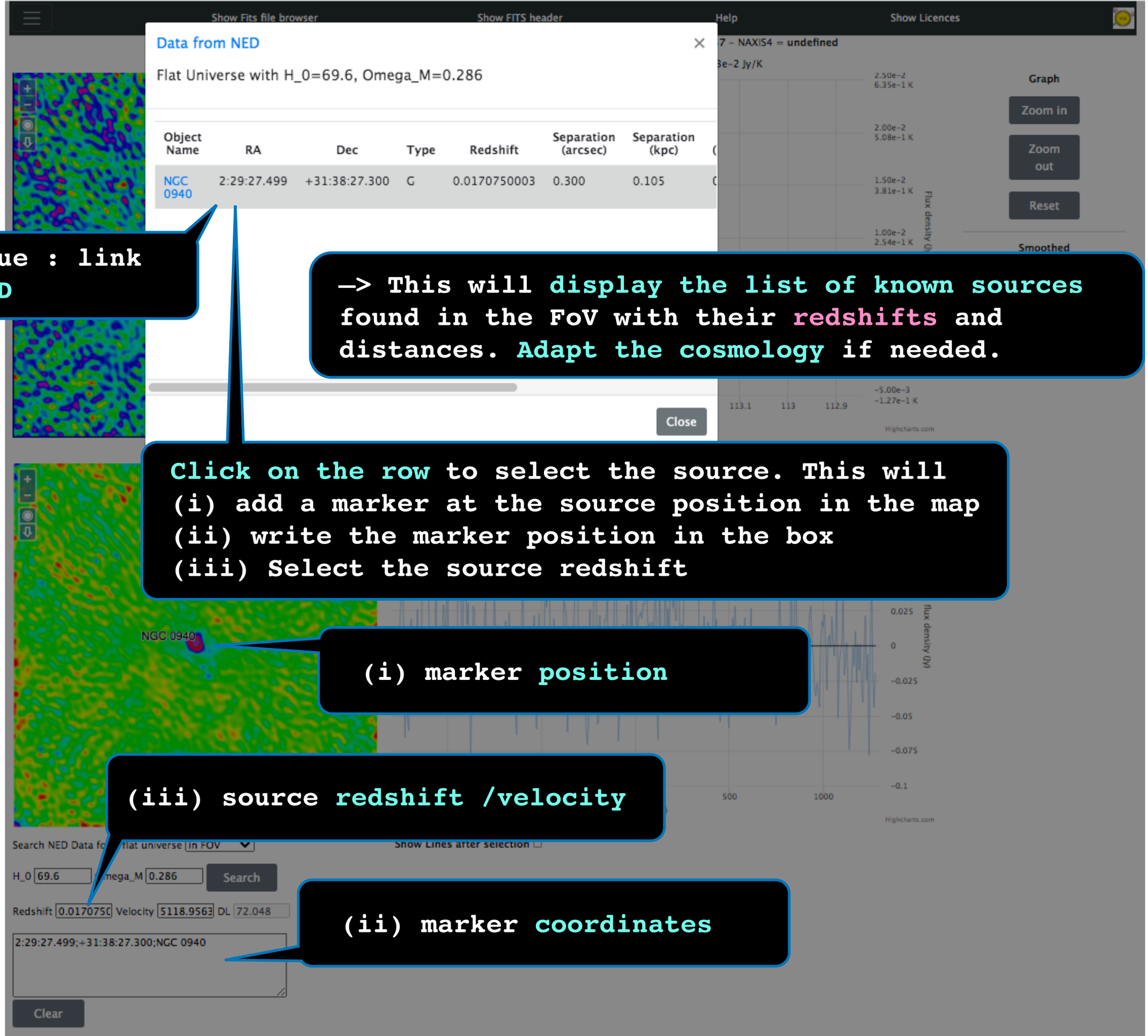
Redshift Velocity in km/s DL in Mpc

9:13:45.489;+40:56:28.224;WISEA

Clear

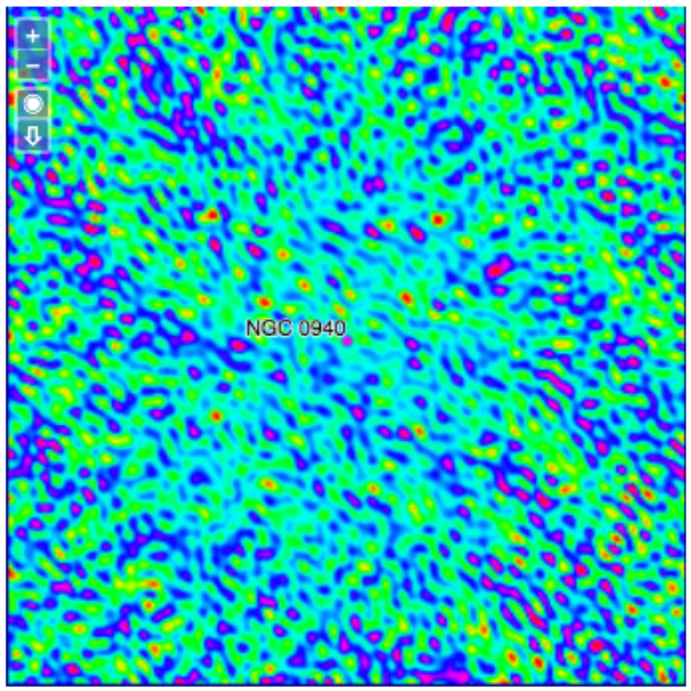
Show Lines after selection

—> This will display the list of known sources found in the FoV with their redshifts and distances. Adapt the cosmology if needed.

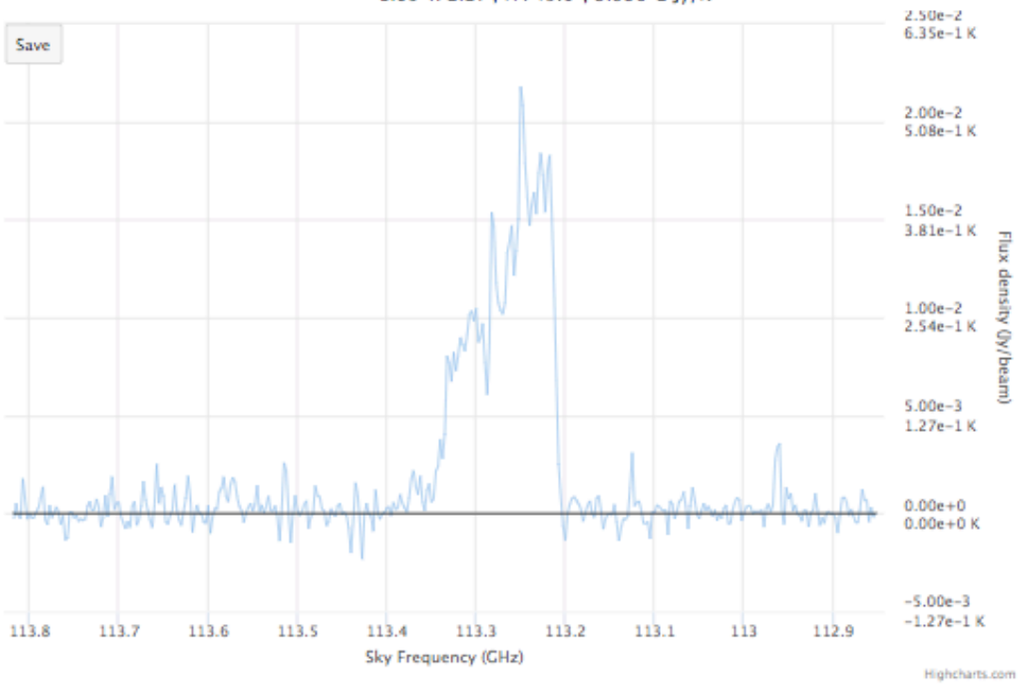

Show Fits file browser
Show FITS header
Help
Show Licences
Data from NED
Flat Universe with H_0=69.6, Omega_M=0.286
Object Name
RA
Dec
Type
Redshift
Separation (arcsec)
Separation (kpc)
NGC 0940
2:29:27.499
+31:38:27.300
G
0.0170750003
0.300
0.105
Close
Graph
Zoom in
Zoom out
Reset
Smoothed
In blue : link to NED
–> This will display the list of known sources found in the FoV with their redshifts and distances. Adapt the cosmology if needed.
Click on the row to select the source. This will
(i) add a marker at the source position in the map
(ii) write the marker position in the box
(iii) Select the source redshift
NGC 0940
(i) marker position
(iii) source redshift /velocity
Search NED Data fo
flat universe
in FOV
Show Lines after selection
H_0 69.6
mega_M 0.286
Search
Redshift 0.017075
Velocity 5118.956
DL 72.048
2:29:27.499;+31:38:27.300;NGC 0940
(ii) marker coordinates
Clear
Highcharts.com

Show Fits file browser | Show FITS header | Help | Show Licences

cl - OBJECT = **NGC940** - NAXIS = **4** - NAXIS1 = **256** - NAXIS2 = **256** - NAXIS3 = **387** - NAXIS4 = **undefined**



1.65' x 2.27', PA 45.0°, 3.93e-2 Jy/K



Graph

Zoom in

Zoom out

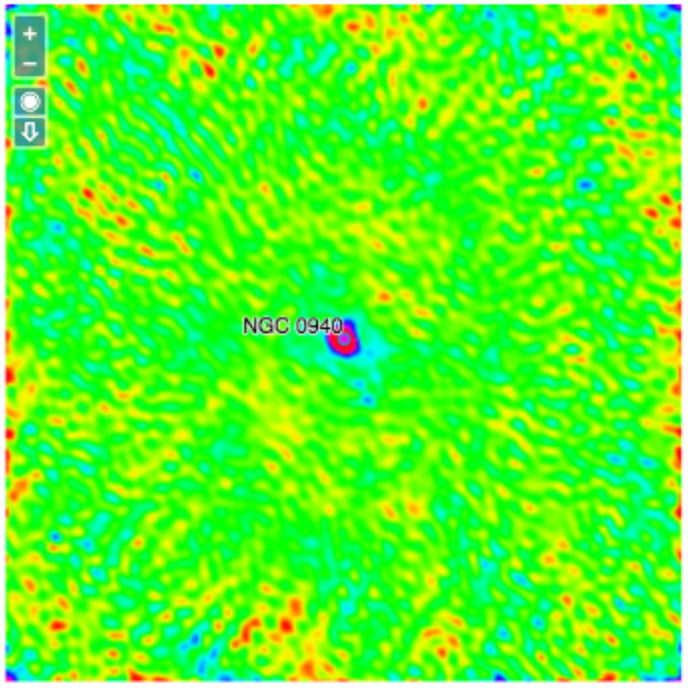
Reset

Smoothed cube

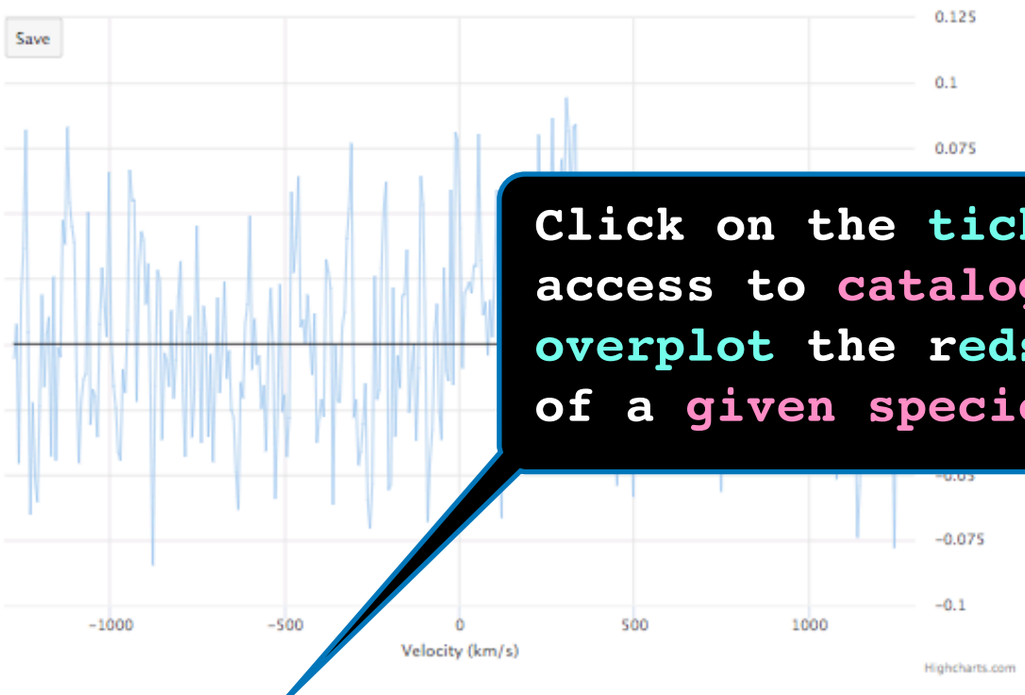
2

Download

View



-2.22e-1 Jy.km/s, vmin = -1276.30 km/s , vmax = 1276.30 km/s, imin : 0, imax :386



Click on the tick-box order to access to catalogue of lines and overplot the redshifted frequency of a given specie

Search NED Data for a flat universe in FOV

H_0 69.6 Omega_M 0.286 Search

Redshift 0.017075(Velocity 5118.956 DL 72.048

2:29:27.499;+31:38:27.300;NGC 0940

Clear

Show Lines after selection

Search for species in local datab...

Search in : Local ISM ISM-CSM CDMS

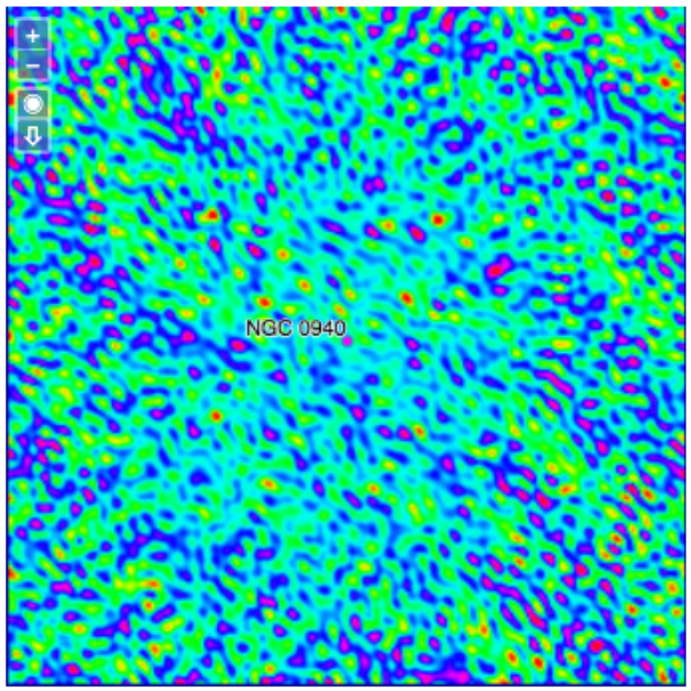
Line intensity -5.1

Energy up max 80 K

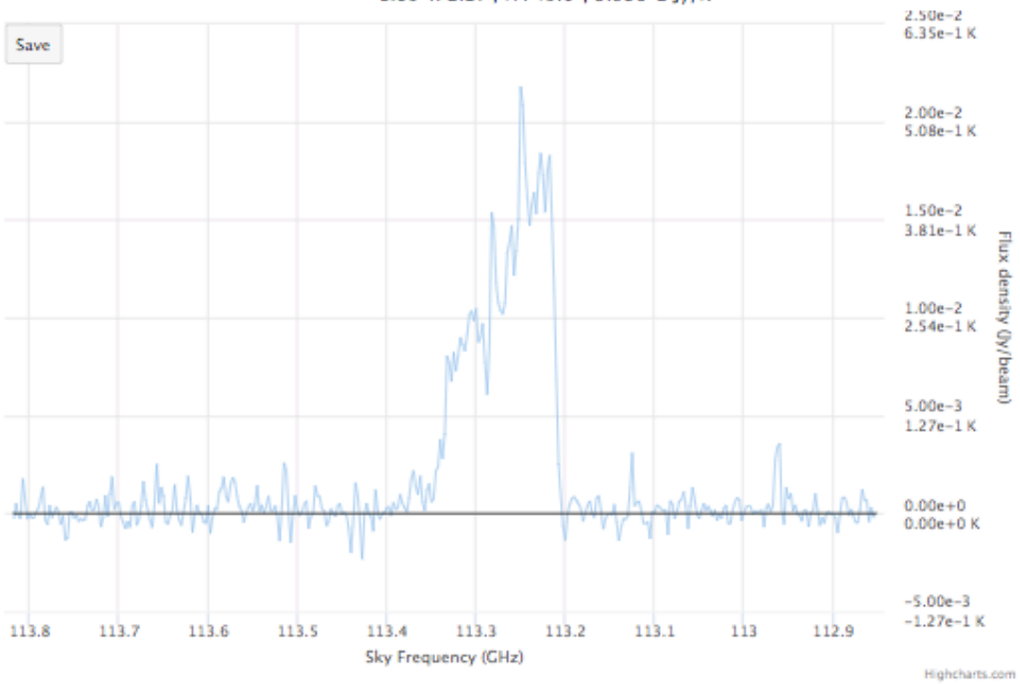
Number of atoms 1 4

Show Fits file browser | Show FITS header | Help | Show Licences

cl - OBJECT = NGC940 - NAXIS = 4 - NAXIS1 = 256 - NAXIS2 = 256 - NAXIS3 = 387 - NAXIS4 = undefined



1.65' x 2.27', PA 45.0°, 3.93e-2 Jy/K



Graph

Zoom in

Zoom out

Reset

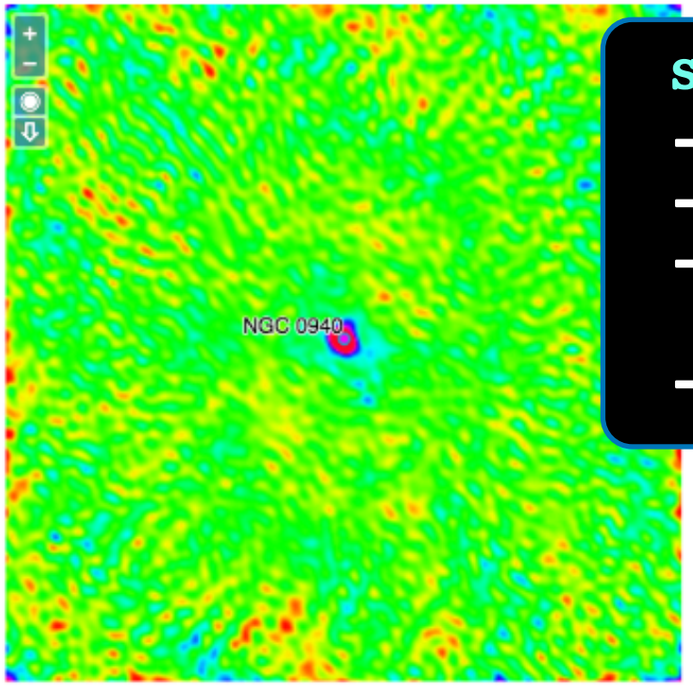
Smoothed cube

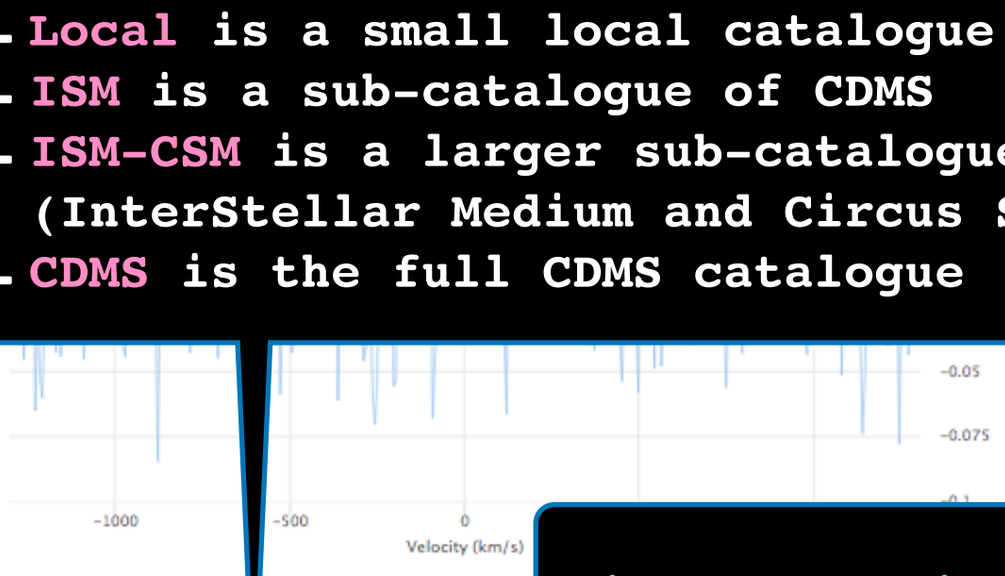
2

Download

View

-2.22e-1 Jy.km/s, vmin = -1276.30 km/s , vmax = 1276.30 km/s, imin : 0, imax :386





Search NED Data for a flat universe in FOV

H_0 69.6 Omega_M 0.286 Search

Redshift 0.017075(Velocity 5118.956: DL 72.048

2:29:27.499;+31:38:27.300;NGC 0940

Clear

Show Lines after selecti

Search for species in local datab...

Search in : Local ISM ISM-CSM CDMS

Line intensity -5.1

Energy up max 80 K

Number of atoms 1 4

Select a catalogue of theoretical line frequencies

- **Local** is a small local catalogue
- **ISM** is a sub-catalogue of CDMS
- **ISM-CSM** is a larger sub-catalogue of CDMS
  (InterStellar Medium and Circus Stellar Medium)
- **CDMS** is the full CDMS catalogue

Filter the line search by

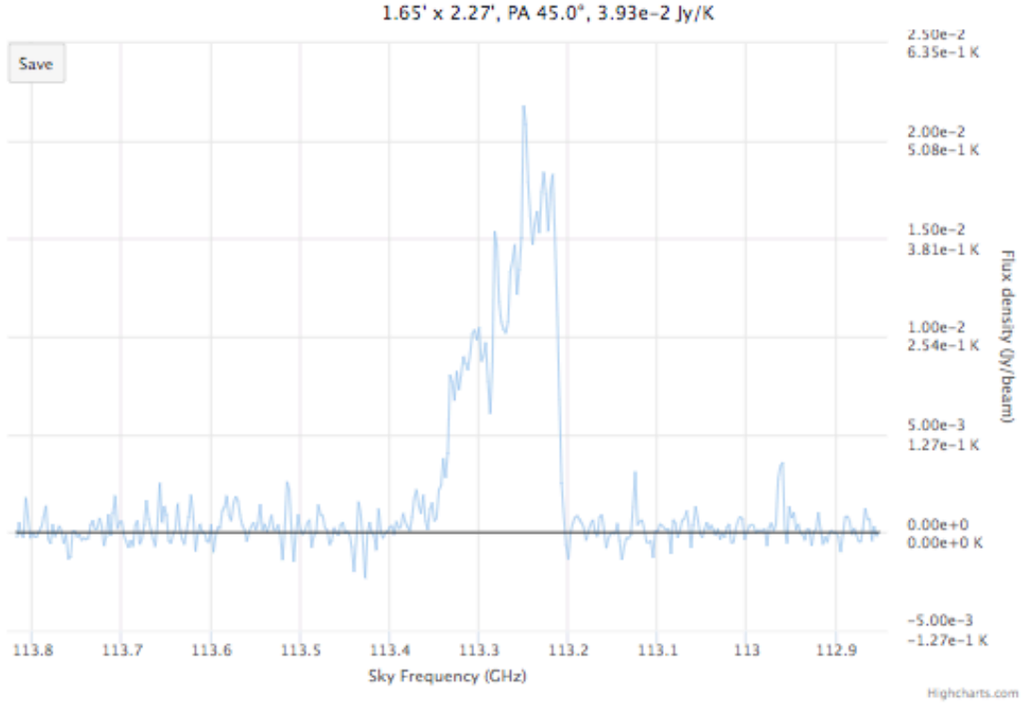
- Line intensity
- Upper Energy
- Number of atoms in the molecule

003501 HD, v=0,1
004501 H2D+
005501 HD2+
005502 HeH+
012501 C
012503 C+
013501 C-13
013502 CH
013503 CH+
013506 C-13-+
014501 CH2
014502 C-13-H+
014506 N+
015501 NH
016501 NH2
016502 ND
016504 O-atom
017501 OH+
018501 NH2D
018503 N-15-H3
018505 H2O+
019501 NHD2
019503 H3O+
019504 N-15-H2D
019506 NH3D+
020501 ND3
020502 D2O
025501 CCH
025503 CCH, v2=1
026501 CCD
026502 C-13-CH
026503 CC-13-H
026504 CN, v=0,1
026506 CN-
027501 HCN, v=0
027502 HNC, v=0
027503 HCN, v2=1
027504 HNC, v2=1
027505 C-13-N
027506 CN-15
027507 HCN, v2=2
027508 HCN, v2=3
027509 HCN, v3=1
027510 HCN, v1=1
028501 HC-13-N, v=0
028502 H2CN
028503 CO, v=0
028504 HCNH+
028506 HCN-15, v=0
028508 DNC
028509 DCN, v=0
028511 HC-13-N, v2=1
028512 CO, v=1-3
028513 CO+, v=0
028515 HNC-13
028517 Si-atom
028518 Si+
028520 HC-13-N, v2=2
028521 HC-13-N, v2=3
029501 C-13-O
029503 CO-17
029504 HOC+, v2=0
029506 N2H+, v=0
029507 HCO+, v=0
029515 HCO+, nu2
029518 H2CNH
030501 H2CO
030502 CO-18
030503 C-13-O-17
030504 HC-13-O+
030505 HCO-17+
030507 N-15-NH+
030508 NN-15-H+
030509 N2D+
030510 DCO+
030512 NO+
030517 NO, v=0
031501 HDCO
031502 C-13-O-18
031503 H2C-13-O
031504 H2COH+
031506 HCO-18+
031507 CF+, v=0,1
031508 DC-13-O+
031514 H2CO-17
032502 D2CO
032503 H2CO-18
032504 CH3OH, vt=0-2
032511 S-atom
033502 C-13-H3OH, vt=0,1
033503 NH2OH
033505 SH+
033506 D2C-13-O
033508 SH, v=0
034502 H2S
034504 CH3O-18-H,vt=0-2

Show FITS header | Help | Show Licences

iGC940 - NAXIS = 4 - NAXIS1 = 256 - NAXIS2 = 256 - NAXIS3 = 387 - NAXIS4 = undefined

1.65' x 2.27', PA 45.0°, 3.93e-2 Jy/K



Graph

Zoom in

Zoom out

Reset

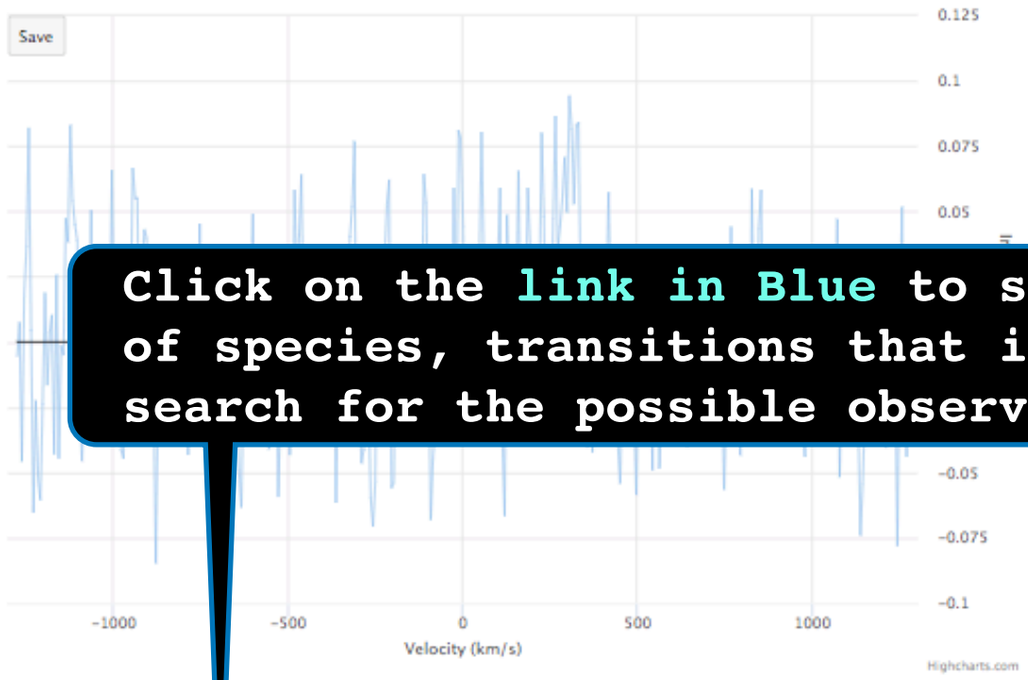
Smoothed cube

2

Download

View

-2.22e-1 Jy.km/s, vmin = -1276.30 km/s , vmax = 1276.30 km/s, imin : 0, imax :386



Click on the link in Blue to see the list of species, transitions that is used to search for the possible observed line

Show Lines after selection

Search for species in local datab...

Search in : Local ISM ISM-CSM CDMS

Line intensity -5.1

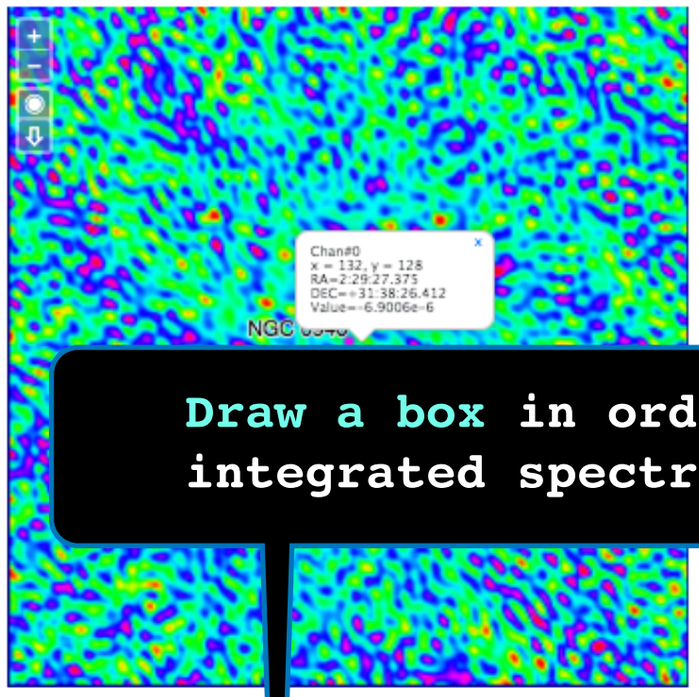
Energy up max 80 K

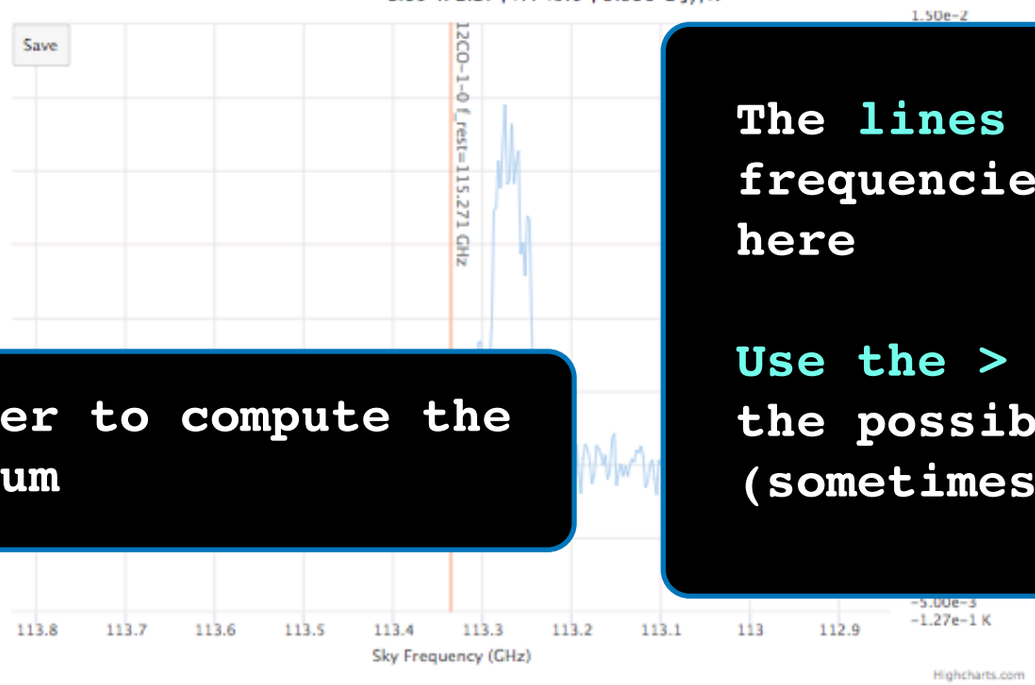
Number of atoms 1 4

Show Fits file browser | Show FITS header | Help | Show Licences

cl - OBJECT = NGC940 - NAXIS = 4 - NAXIS1 = 256 - NAXIS2 = 256 - NAXIS3 = 387 - NAXIS4 = undefined

1.65' x 2.27', PA 45.0°, 3.93e-2 Jy/K

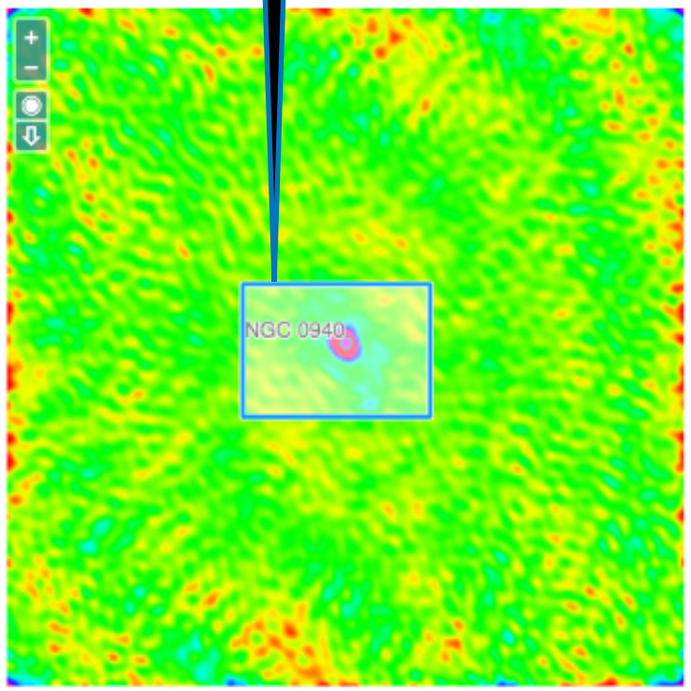




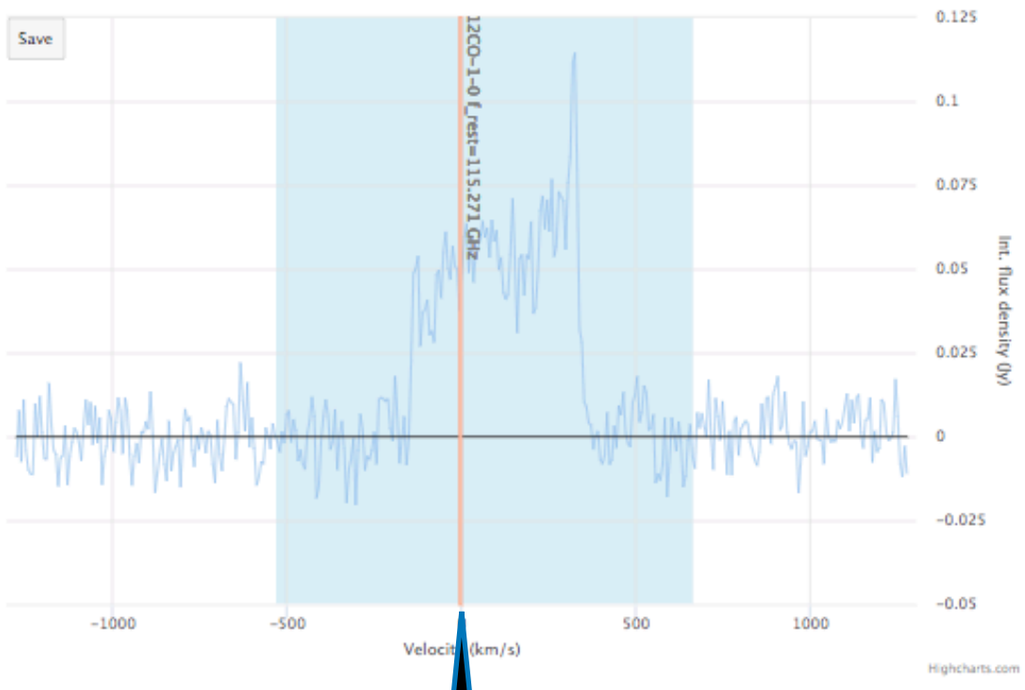
Draw a box in order to compute the integrated spectrum

The lines found and their frequencies is displayed here

Use the > and >> to see all the possible lines (sometimes many)



2.69e+1 Jy.km/s, vmin = -530.73 km/s , vmax = 664.36 km/s, imin : 273, imax :93



<< < > >> 1/ 1

Possible species	Observed Frequency (GHz)
12CO-1-0	113.336

Search NED Data for a flat universe in FOV

H_0 69.6 Omega_M 0.286 Search

Redshift 0.017075(Velocity 5118.956: DL 72.048

2:29:27.499;+31:38:27.300;NGC 0940

Clear

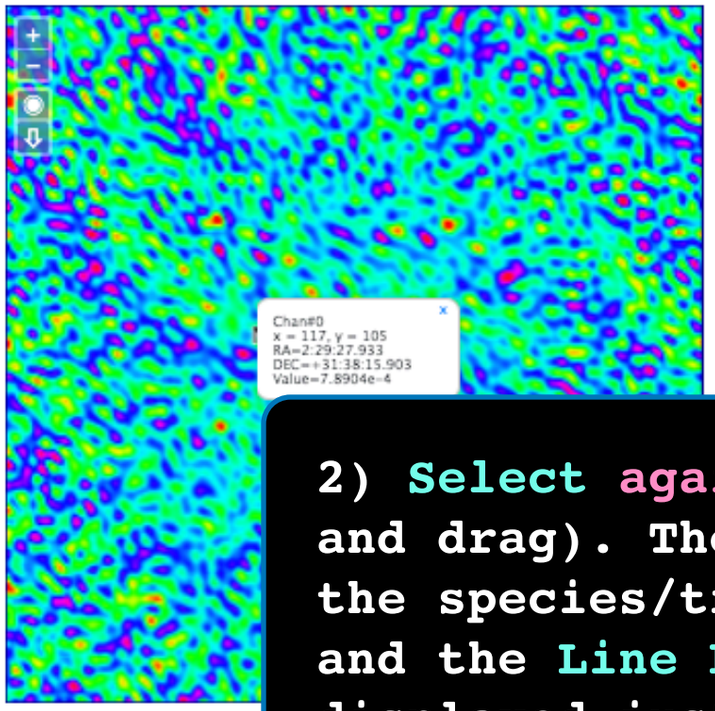
Show Lines after selection

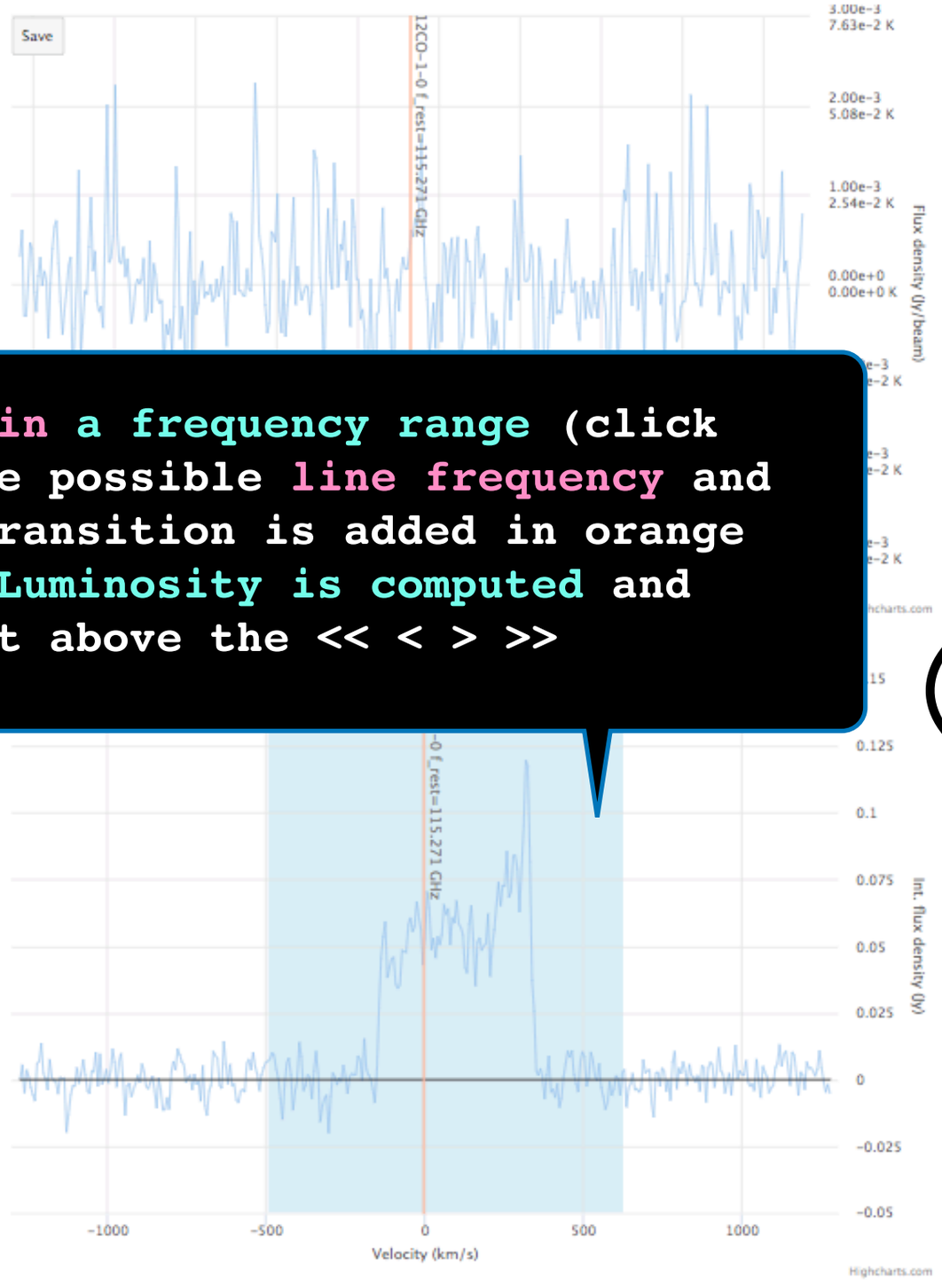
Select a frequency range (click and drag). The possible line frequency and the species/transition is added in orange

Show Fits file browser | Show FITS header | Help | Show Licences

cl - OBJECT = NGC940 - NAXIS = 4 - NAXIS1 = 256 - NAXIS2 = 256 - NAXIS3 = 387 - NAXIS4 = undefined

1.65' x 2.27', PA 45.0°, 3.93e-2 Jy/K





Graph

Zoom in

Zoom out

Reset

Smoothed cube

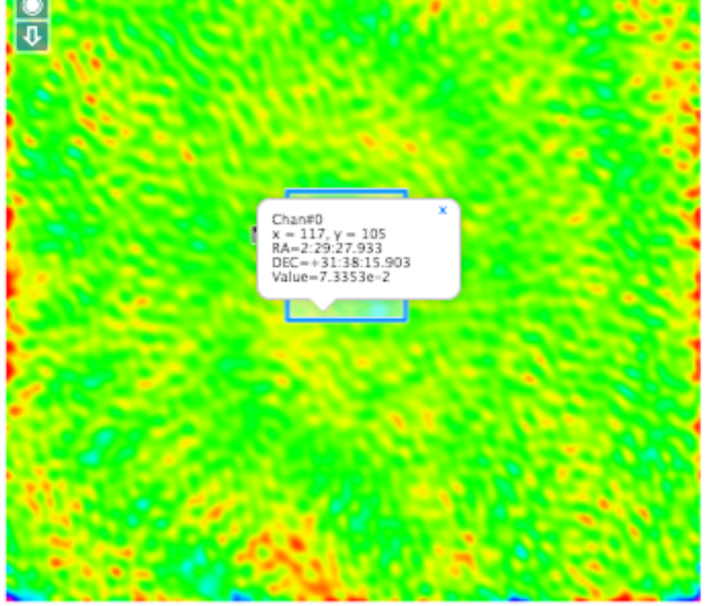
2

Download

View

2) Select again a frequency range (click and drag). The possible line frequency and the species/transition is added in orange and the Line Luminosity is computed and displayed just above the << < > >>

RefLine is 12CO-1-0 113.336 GHz
L' RefLine = 3.62e+8 K.km/s.pc2
<< < > >> 1/ 1



Possible species	Observed Frequency (GHz)
12CO-1-0	113.336

Search NED Data for a flat universe in FOV

H_0 69.6 Omega_M 0.286 Search

Redshift 0.017075(Velocity 5118.956: DL 72.048

2:29:27.499;+31:38:27.300;NGC 0940

Show Lines after selection

Search

Line in

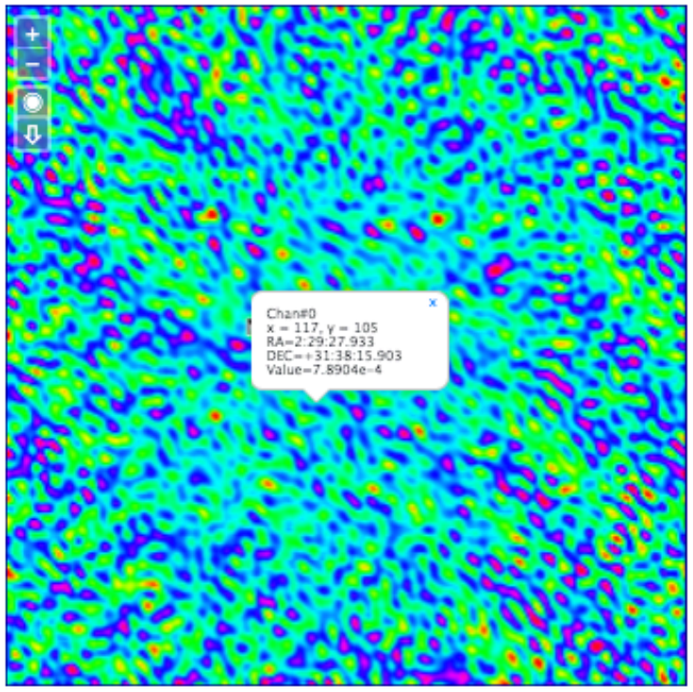
Energy

Number of atoms 1 4

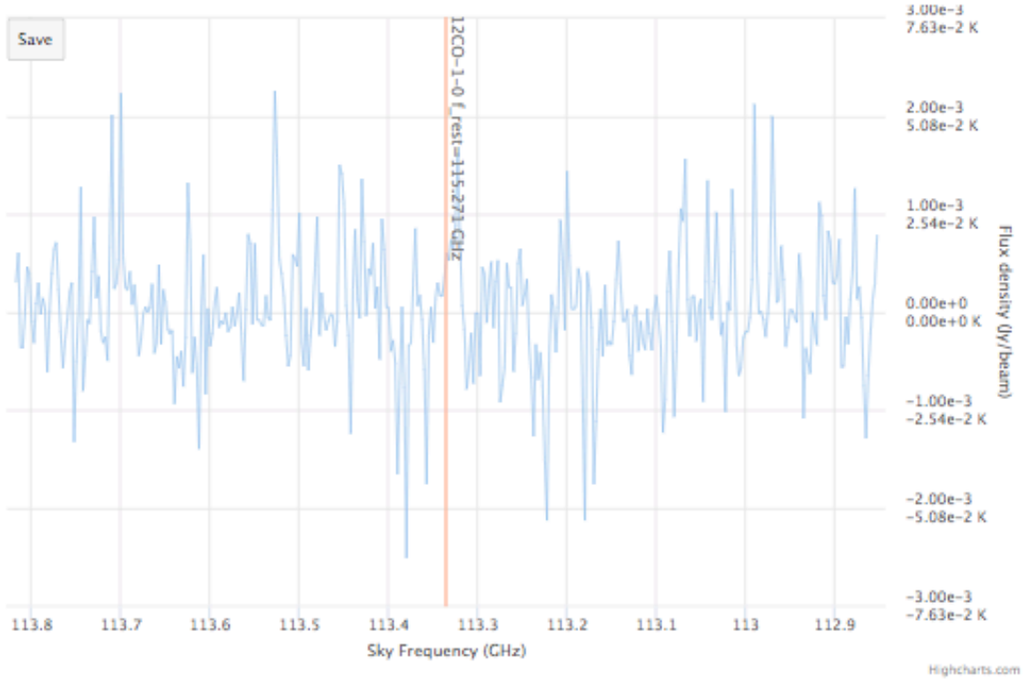
In order to compute the Line Luminosity :
1) Click on one specie to select this line

Show Fits file browser | Show FITS header | Help | Show Licences

cl - OBJECT = NGC940 - NAXIS = 4 - NAXIS1 = 256 - NAXIS2 = 256 - NAXIS3 = 387 - NAXIS4 = undefined



1.65' x 2.27', PA 45.0°, 3.93e-2 Jy/K



Graph

Zoom in

Zoom out

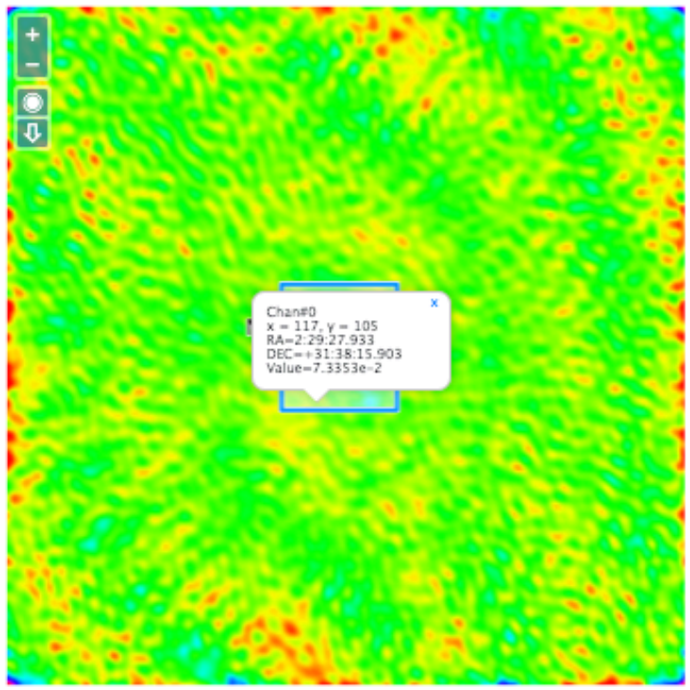
Reset

Smoothed cube

2

Download

View



2.90e+1 Jy.km/s, vmin = -492.55 km/s , vmax = 626.18 km/s, imin : 267, imax :98

RefLine is 12CO-1-0 113.336 GHz
L' RefLine = 3.62e+8 K.km/s.pc2

<< < > >> 1/ 1

Possible species	Observed Frequency (GHz)
12CO-1-0	113.336

If you are looking for a specific line : type its name. Auto-completion will propose the line available in the catalogue

Search NED Data for a flat universe in FOV

H_0 69.6 Omega_M 0.286 Search

Redshift 0.017075(Velocity 5118.956(DL 72.048

2:29:27.499;+31:38:27.300;NGC 0940

Clear

Show Lines after selection

CO

028503- v 1:CO ; $v=0$

028512- v1*:CO ; $v=1,2,3$

028513- v 2:CO +; $v=0$

029503- v 1:CO -17; $v=0$

029507- v2*:HCO +; $v=0$