



ALMA Science Archive and CARTA

Explore ALMA data quickly



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What is in the archive?



- For each project, raw data, calibration/imaging scripts, and tables are delivered
 - Only data that passed QA2 are in the archive
 - To prepare data that are best-suited for your science, running customized calibration and imaging scripts is recommended.
- What is QA2?
 - Offline calibration and imaging process performed by ARC members
 - Verify the achievement of PI requests
 - Outputs are archived and sent to PI.



ALMA Science Archive

ALMA Science Archive (nao.ac.jp)

Search Explore and download

00 00 0.661 -06 18 20.89 FoV: 175.47°

Observations (63076) Projects (4208) Publications (3217)

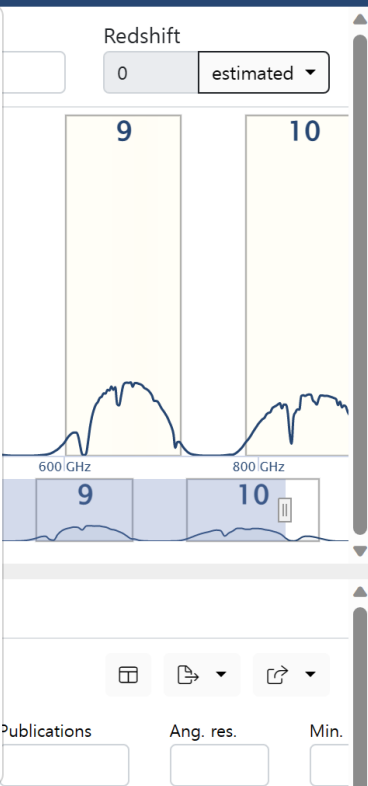
	Project code	ALMA source name	RA	Dec	Band	Cont. sens.	Frequency support	Release date	Publications	Ang. res.	Min.
			h:m:s	d:m:s		mJy/beam				arcsec	km
<input type="checkbox"/>	<input type="text" value="2011.0.00191.S"/>	<input type="text" value="Fomalhaut b"/>	<input type="text" value="22:57:38.685"/>	<input type="text" value="-29:37:12.616"/>	<input type="text" value="7"/>	<input type="text" value="0.1181"/>	<input type="text" value="343.077..358.839 GHz"/>	<input type="text" value="2012-12-06"/>	<input type="text" value="2"/>	<input type="text" value="1.047"/>	<input type="text" value="0."/>
<input type="checkbox"/>	<input type="text" value="2011.0.00101.S"/>	<input type="text" value="GRB021004"/>	<input type="text" value="00:26:54.680"/>	<input type="text" value="+18:55:41.600"/>	<input type="text" value="7"/>	<input type="text" value="0.1136"/>	<input type="text" value="337.009..353.001 GHz"/>	<input type="text" value="2012-12-06"/>	<input type="text" value="2"/>	<input type="text" value="1.107"/>	<input type="text" value="26"/>
<input type="checkbox"/>	<input type="text" value="2011.0.00131.S"/>	<input type="text" value="R Scl"/>	<input type="text" value="01:26:58.079"/>	<input type="text" value="-32:32:36.424"/>	<input type="text" value="7"/>	<input type="text" value="0.9115"/>	<input type="text" value="330.246..346.109 GHz"/>	<input type="text" value="2012-12-06"/>	<input type="text" value="5"/>	<input type="text" value="1.043"/>	<input type="text" value="0."/>
<input type="checkbox"/>	<input type="text" value="2011.0.00397.S"/>	<input type="text" value="J061200.23-062209.6"/>	<input type="text" value="06:12:00.230"/>	<input type="text" value="-06:22:09.600"/>	<input type="text" value="7"/>	<input type="text" value="0.5346"/>	<input type="text" value="337.005..352.989 GHz"/>	<input type="text" value="2012-12-20"/>	<input type="text" value="3"/>	<input type="text" value="1.183"/>	<input type="text" value="26"/>

ALMA Science Archive



Search

Position	Energy	Project	Publication	Observation
Source name <input type="text"/>	Frequency <input type="text"/>	Project code <input type="text"/>	BibCode <input type="text"/>	Observation Date <input type="text"/>
ALMA source name <input type="text"/>	Band <input type="text"/>	Project Title <input type="text"/>	Publication Title <input type="text"/>	Polarisation Type <input type="text"/>
RA Dec <input type="text"/>	Spectral resolution <input type="text"/>	Project abstract <input type="text"/>	Abstract <input type="text"/>	Member ous id <input type="text"/>
Galactic <input type="text"/>	Continuum sensitivity <input type="text"/>	PI Full Name <input type="text"/>	First Author <input type="text"/>	Object type <input type="text"/>
Target List <input type="text"/>	Line sensitivity (10 km/s) <input type="text"/>	Proposal authors <input type="text"/>	Authors <input type="text"/>	<input type="checkbox"/> Public data only <input type="checkbox"/> Calibration observations
Angular Resolution <input type="text"/>		Science keyword <input type="text"/>		
Max. Recoverable Scale <input type="text"/>				



			h:m:s	d:m:s		mJy/beam									
<input type="checkbox"/>	<input type="button" value="Target"/>	<input type="button" value="Left"/>	<input type="button" value="Right"/>	<input type="button" value="Reset"/>	<input type="text" value="2011.0.00191.S"/>	Fomalhaut b	22:57:38.685	-29:37:12.616	7	0.1181	<input type="text" value="343.077..358.839 GHz"/>	<input type="text" value="2012-12-06"/>	<input type="text" value="2"/>	1.047	0.
<input type="checkbox"/>	<input type="button" value="Target"/>	<input type="button" value="Left"/>	<input type="button" value="Right"/>	<input type="button" value="Reset"/>	<input type="text" value="2011.0.00101.S"/>	GRB021004	00:26:54.680	+18:55:41.600	7	0.1136	<input type="text" value="337.009..353.001 GHz"/>	<input type="text" value="2012-12-06"/>	<input type="text" value="2"/>	1.107	26
<input type="checkbox"/>	<input type="button" value="Target"/>	<input type="button" value="Left"/>	<input type="button" value="Right"/>	<input type="button" value="Reset"/>	<input type="text" value="2011.0.00131.S"/>	R Scl	01:26:58.079	-32:32:36.424	7	0.9115	<input type="text" value="330.246..346.109 GHz"/>	<input type="text" value="2012-12-06"/>	<input type="text" value="5"/>	1.043	0.
<input type="checkbox"/>	<input type="button" value="Target"/>	<input type="button" value="Left"/>	<input type="button" value="Right"/>	<input type="button" value="Reset"/>	<input type="text" value="2011.0.00397.S"/>	J061200.23-062209.6	06:12:00.230	-06:22:09.600	7	0.5346	<input type="text" value="337.005..352.989 GHz"/>	<input type="text" value="2012-12-20"/>	<input type="text" value="3"/>	1.183	26

Search data of your interest

30 Doradus in the LMC (Project code: 2015.1.00217.S)

The screenshot displays the ALMA archive search interface. At the top, there is a search bar with the text "Search" and a magnifying glass icon. To the right of the search bar, it says "2 column filters active". Further right, there are icons for sharing, help, and a green button labeled "Explore and download".

The main content area is divided into two parts. On the left, there is a visualization of the 30 Doradus region in the Large Magellanic Cloud (LMC), showing several star clusters highlighted with yellow and orange circles. On the right, there is a spectral plot showing the intensity of the signal across a frequency range from 300 GHz to 800 GHz. The plot is divided into ten panels, numbered 6 through 10, corresponding to different frequency bands. A red arrow points to the "Lines" dropdown menu in the top right corner of the spectral plot area.

Below the visualization and spectral plot, there is a section for filters and filters. It shows "Observations (9)", "Projects (4208)", and "Publications (3217)". Below this, there are input fields for "Project code: 2015.1.00217.s" and "ALMA source name: 30Doradus", with a "Remove filters" button.

The bottom part of the interface is a table of observations. The table has the following columns: Project code, ALMA source name, RA, Dec, Band, Cont. sens., Frequency support, Release date, Publications, Ang. res., and Min. The table contains four rows of data, with the second row highlighted in yellow. A red arrow points to the first column of the table, which contains a checkbox.

	Project code	ALMA source name	RA	Dec	Band	Cont. sens.	Frequency support	Release date	Publications	Ang. res.	Min.
<input type="checkbox"/>	2015.1.00217.S	30doradus	05:38:48.949	-69:04:45.628	10	13.2151	805.022..825.347 GHz	In QA3	0	1.475	0.
<input checked="" type="checkbox"/>	2015.1.00217.S	30doradus	05:38:48.950	-69:04:45.639	6	0.0714	219.327..232.8 GHz	2017-07-26	0	0.540	0.
<input type="checkbox"/>	2015.1.00217.S	30doradus	05:38:46.455	-69:05:01.419	10	18.5841	788.89..825.347 GHz	In QA3	0	1.435	0.
<input type="checkbox"/>	2015.1.00217.S	30doradus	05:38:50.254	-69:04:23.752	6	0.0966	219.31..232.782 GHz	2017-01-22	0	1.339	0.

Total size of the selected files

Download 303 MB

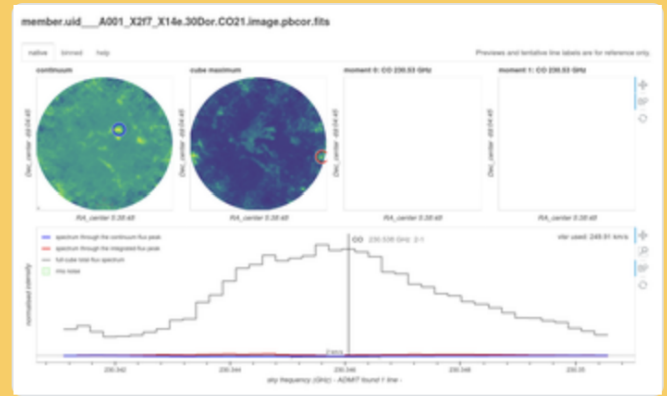
Open legacy Request Handler

Login

- Project (1)
- Group ObsUniSet (1)
- Member ObsUniSet (1)
- Source (1)
- Collection (2)
- Array (1)
- File type (6)
- File class (6)

Filter option

Name	Size	Project
<input checked="" type="checkbox"/> member.uid_A001_X2f7_X14e.ari.l.README.txt	3 kB	2015.1.00217
<input type="checkbox"/> member.uid_A001_X2f7_X14e.ari.l.30doradus_sci.spw2_219386MHz.12m.cube.l.mask.fits.g...	839 kB	2015.1.00217
<input type="checkbox"/> member.uid_A001_X2f7_X14e.ari.l.30doradus_sci.spw0_1_2_3_225982MHz.12m.cont.l.mask...	3 kB	2015.1.00217
<input checked="" type="checkbox"/> member.uid_A001_X2f7_X14e.30Dor.CO21.image.pbcor.fits	41 MB	2015.1.00217
<input checked="" type="checkbox"/> member.uid_A001_X2f7_X14e.ari.l.image.product.rename.txt	11 kB	2015.1.00217
<input type="checkbox"/> member.uid_A001_X2f7_X14e.ari.l.30doradus_sci.spw0_1_2_3_225982MHz.12m.cont.l.pbcor...	911 kB	2015.1.00217



Band: 6
 Frequency range: 230.299..230.416
 Frequency resolution: 121.155 kHz
 Line sens. (10km/s): 1.301mJy/beam
 Line sens. (native): 0.333uJy/beam
 Polarizations: XX YY
 Array: 12m

Filtered files

CARTA



- Cube Analysis and Rendering Tool for Astronomy
 - Designed for ALMA, VLA, and SKA pathfinders (MeerKAT and ASKAP)
 - Future telescopes such as ngVLA and SKA
 - Support terabyte-scale image cubes
 - Provide easy-to-use, efficient user interface for proposal preparation, general image analysis, and Science publication.

○ Latest stable release : v4.1



CARTA lunch icon on
the ALMA Science Archive

New features (v 4.1)



- Enhanced PV generator
 - Interactive preview
- Animation playback with matched images in multi-panel view
- Custom range and number of bins in the histogram calculation



Download 303 MB

Open legacy Request Handler

Login

Project (1)

Group ObsUniSet (1)

Member ObsUniSet (1)

Source (1)

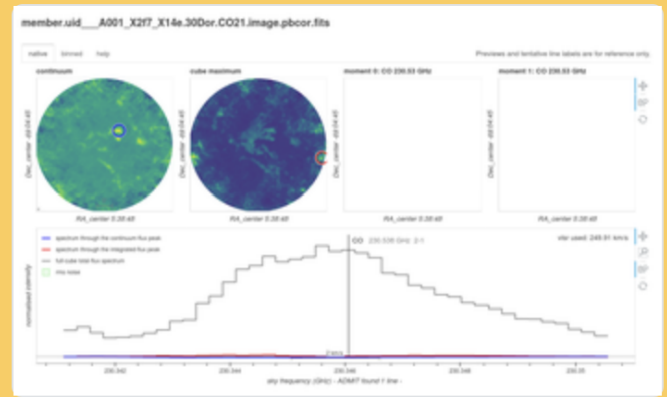
Collection (2)

Array (1)

File type (6)

File class (6)

Name	Size	Project
<input checked="" type="checkbox"/> member.uid_A001_X2f7_X14e.ari.I.README.txt	3 kB	2015.1.00217
<input type="checkbox"/> member.uid_A001_X2f7_X14e.ari.l.30doradus_sci.spw2_219386MHz.12m.cube.l.mask.fits.g...	839 kB	2015.1.00217
<input type="checkbox"/> member.uid_A001_X2f7_X14e.ari.l.30doradus_sci.spw0_1_2_3_225982MHz.12m.cont.l.mask...	3 kB	2015.1.00217
<input checked="" type="checkbox"/> member.uid_A001_X2f7_X14e.30Dor.CO21.image.pbcor.fits	41 MB	2015.1.00217



Band: 6
 Frequency range: 230.299..230.416
 Frequency resolution: 121.155 kHz
 Line sens. (10km/s): 1.301mJy/beam
 Line sens. (native): 0.333uJy/beam
 Dimensions: XX YY
 Array: 12m

<input checked="" type="checkbox"/> member.uid_A001_X2f7_X14e.ari.l.image.product_rename.txt	11 kB	2015.1.00217
<input type="checkbox"/> member.uid_A001_X2f7_X14e.ari.l.30doradus_sci.spw0_1_2_3_225982MHz.12m.cont.l.pbcor...	911 kB	2015.1.00217



Band: 6
 Array: 12m

CARTA

Small pop-up window for brief check.

File View Widgets Help



Open in a new tab

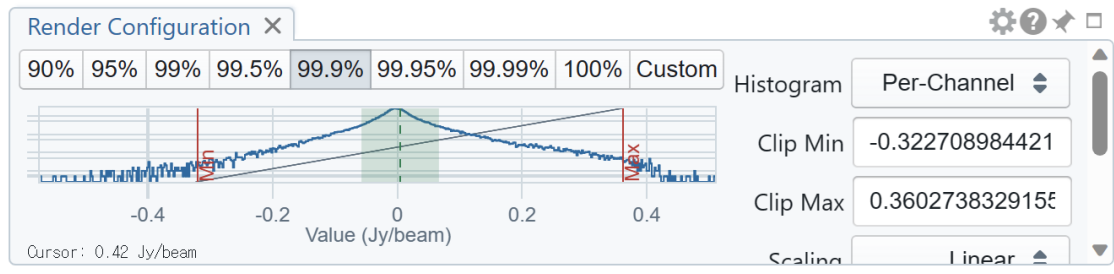
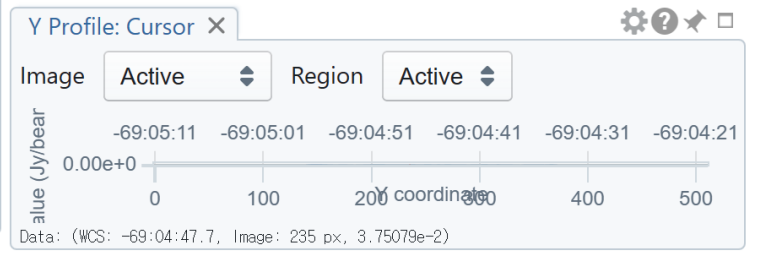
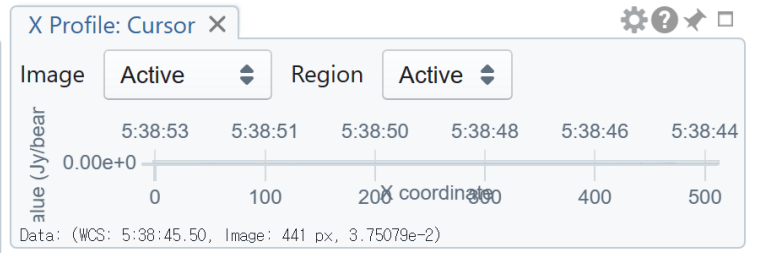
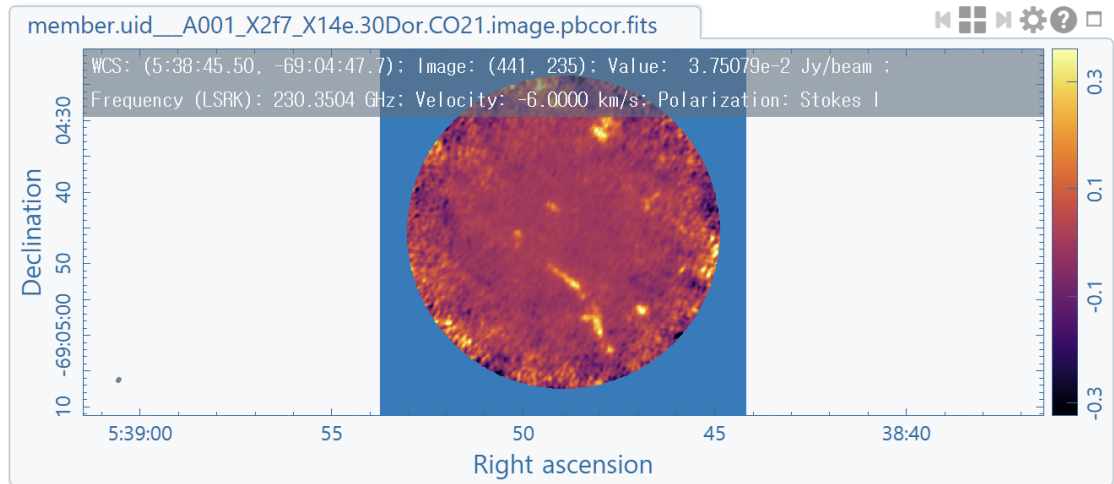


Image List

Image	Layers	Matching	Channel
0 member.uid__A001	R	XY Z R	0

Project	Source Name	RA	Dec	Bandwidth	Frequency	Channel	Flux		
2015.1.00217.S	30doradus	05:38:50.254	-69:04:23.749	6	0.0721	219.327..232.8 GHz	2017-07-26	0	0.534
2015.1.00217.S	30doradus	05:38:48.950	-69:04:45.642	6	0.0853	219.31..232.782 GHz	2017-04-08	0	0.053

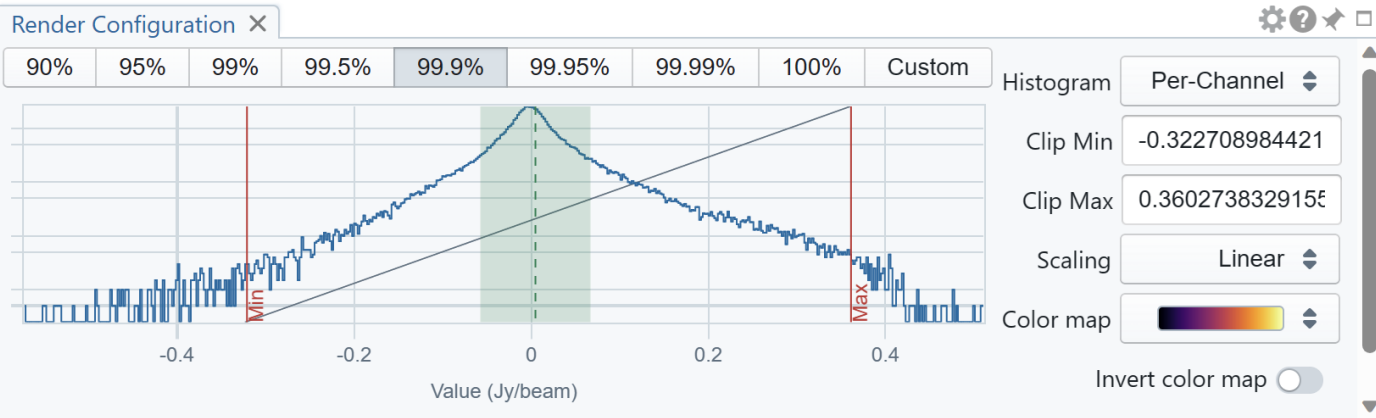
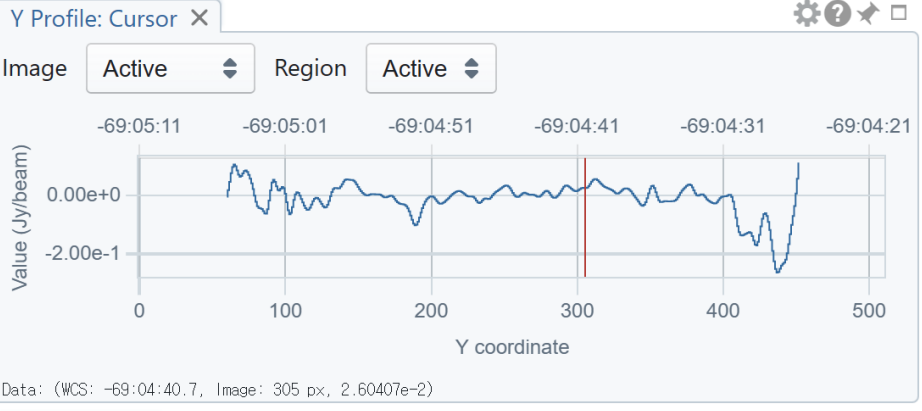
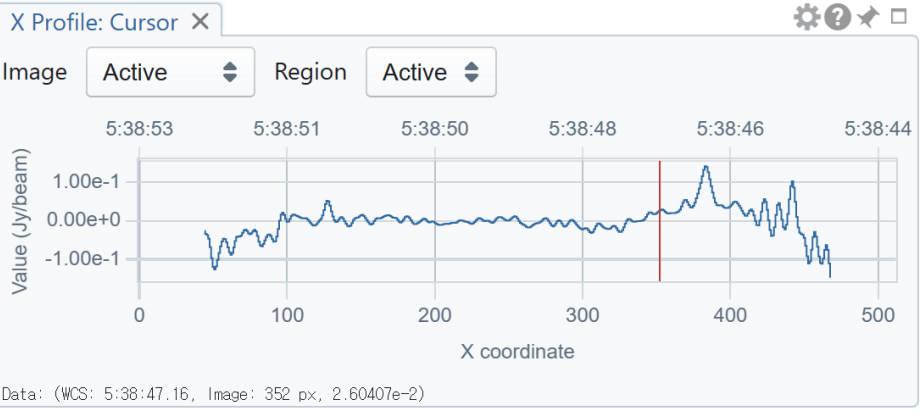
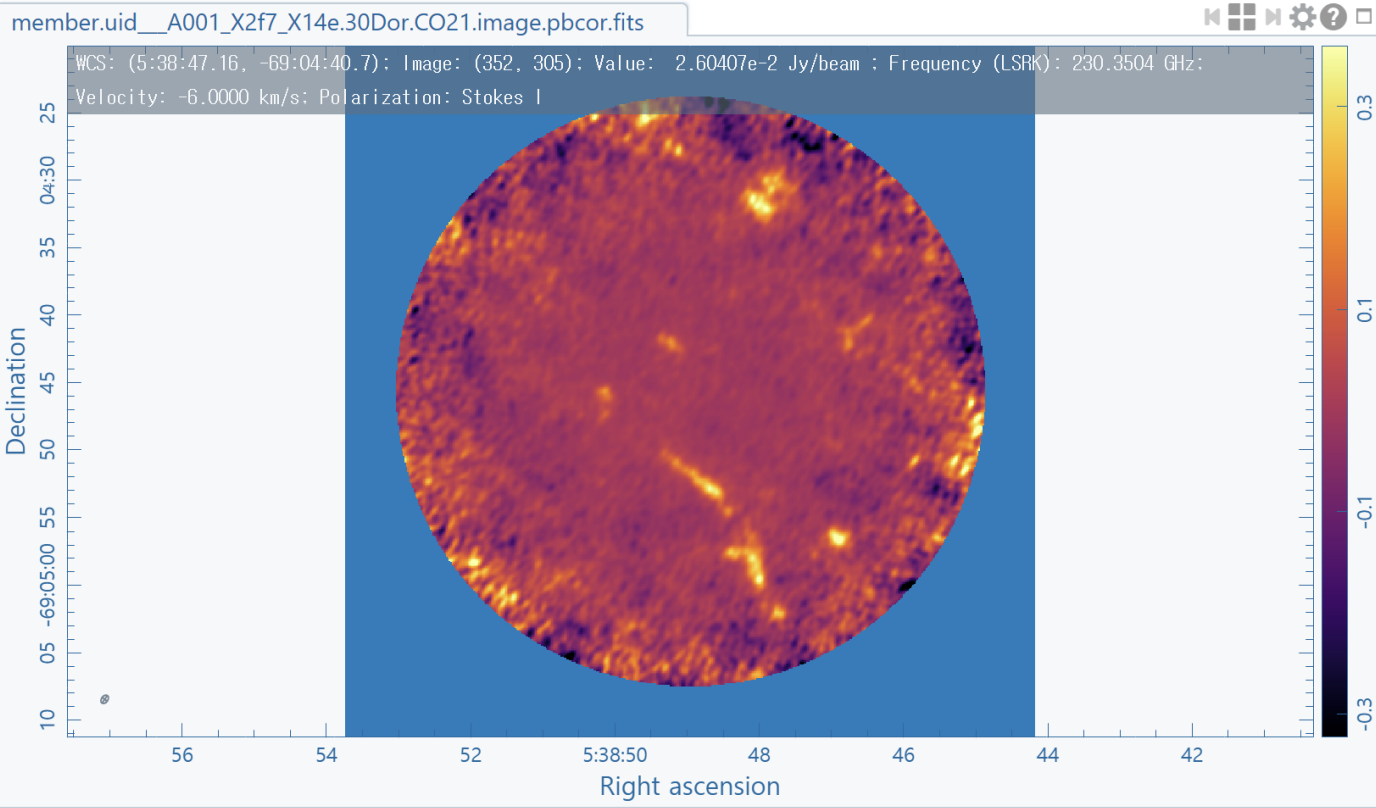


Image List Animator Region List

	Image	Layers	Matching	Channel	Polarization
0	member.uid__A001	R	XY Z R	0	Stokes I

Region tools

The screenshot displays the ALMA Science Archive interface with several key components:

- Top Left:** A spectral line image showing intensity in a circular region. A red arrow points to the **Region tools** icon in the top toolbar.
- Top Right:** A **Z Profile** plot showing the value (Jy/beam) versus [LSRK] Radio velocity (km/s). A red arrow points to the **M** icon in the top right corner.
- Bottom Left:** A histogram showing the distribution of values (Jy/beam). A red arrow points to the **Render Configuration** panel.
- Bottom Center:** A **Z Profile Settings: Region #1 (Active)** dialog box. Red boxes highlight the **Image** dropdown (set to "0: member..."), the **Region** dropdown (set to "Image"), and the **Moments** field (set to "0 x 8 x").

Image	Layers	Matching	Channel	Polarization	
0	memberuid_A001	R	XY Z R	17	Stokes I

Z Profile Settings: Region #1 (Active)

Conversion Styling Smoothing **Moments** Fitting

Image (0: memb...): 0: member.uic

Region (Image): Image

Coordinate: Radio velocity (km/s)

System: LSRK

Range (km/s): From -6.000000 To 5.999999

Mask: None

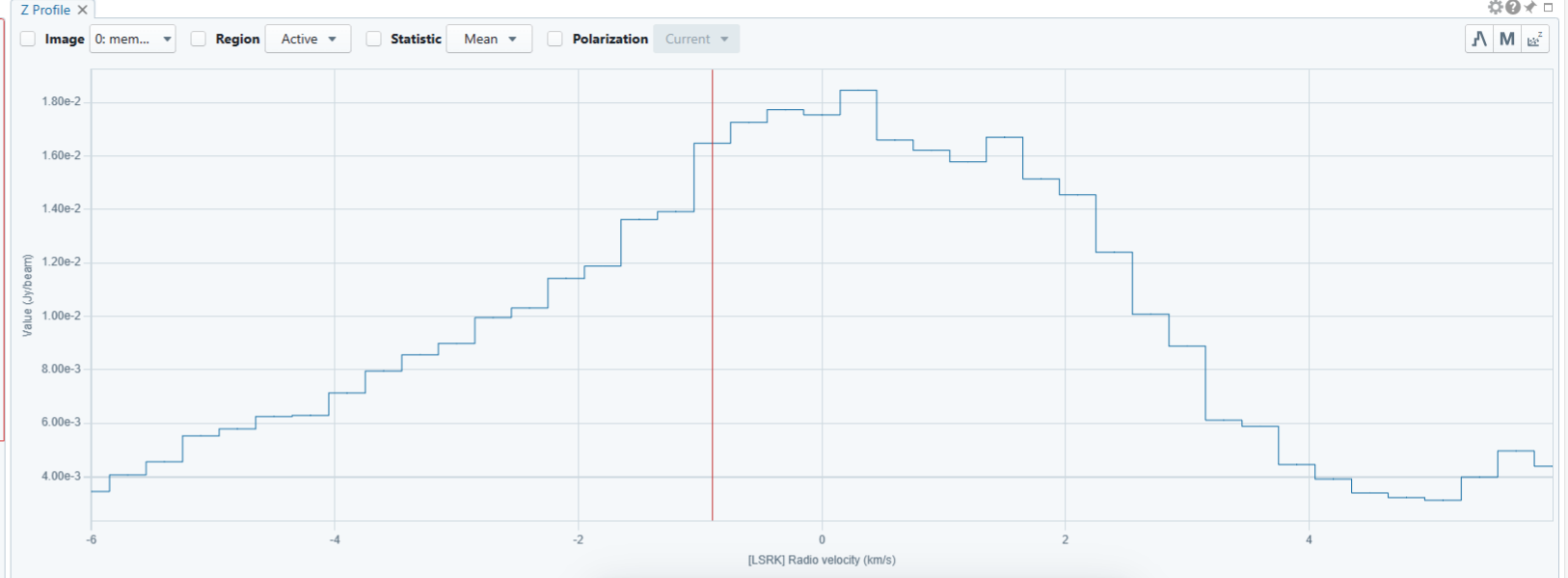
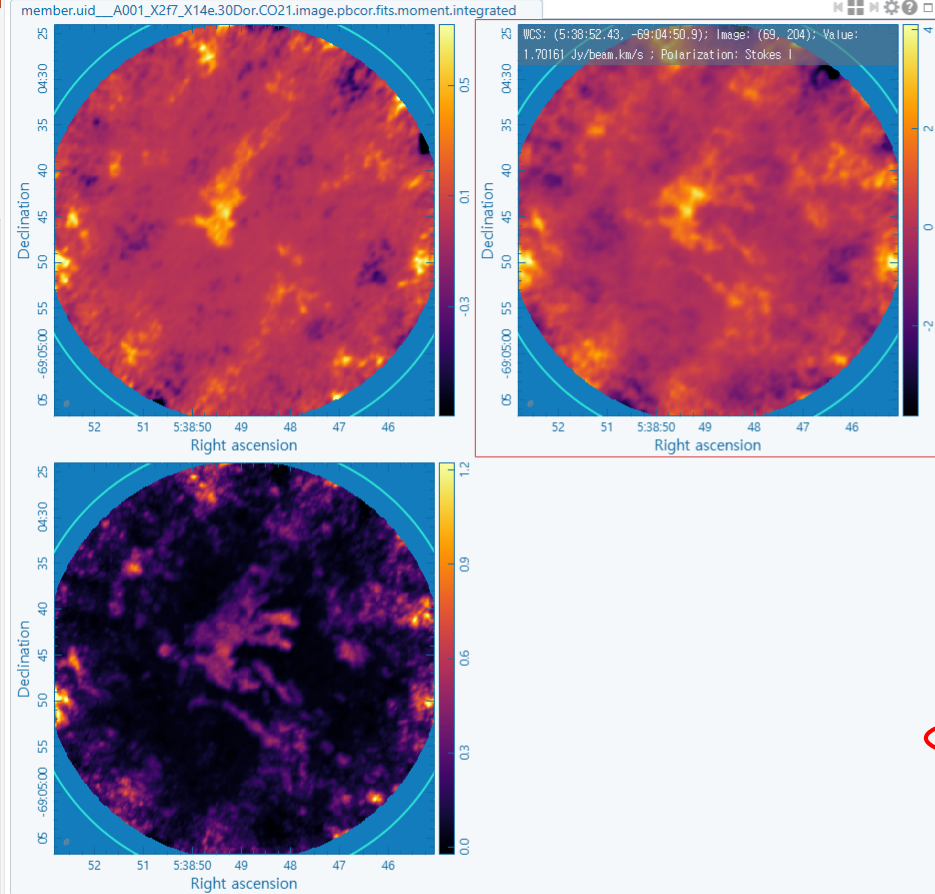
Range (Jy/beam): From 0 To 1

Moments: 0 x 8 x

Options: Keep previous moment image(s) Auto spatial matching

Generate

Example 1 : 30 Doradus



Data: (-0.900 km/s, 1.05e-2)

Image	Layers	Matching	Channel	Polarization
0	member.uid__A001	XY Z R	17	Stokes I
1	member.uid__A001	XY R	0	Stokes I
2	member.uid__A001_	XY R	0	Stokes I

Moment maps

Image List Animator Region List

Render Configuration X

90% 95% 99% 99.5% 99.9% 99.95% 99.99% 100% Custom

Clip min: -3.827708876418
Clip max: 4.0953536724515
Scaling: Linear
Colormap: [Colorbar]
Invert colormap: [Off]
Bias / Contrast: [On]
NaN color: Blue

Cursor: -9.51e-1 Jy/beam.km/s

Value (Jy/beam.km/s)

Z Profile Settings: Region #1

Conversion Styling Smoothing Moments Fitting

Image (0: memb...): 0: member.uid

Region (Image): Image

Coordinate: Radio velocity (km/s)

System: LSRK

Range (km/s): From -6.00000 To 5.999999

Mask: None

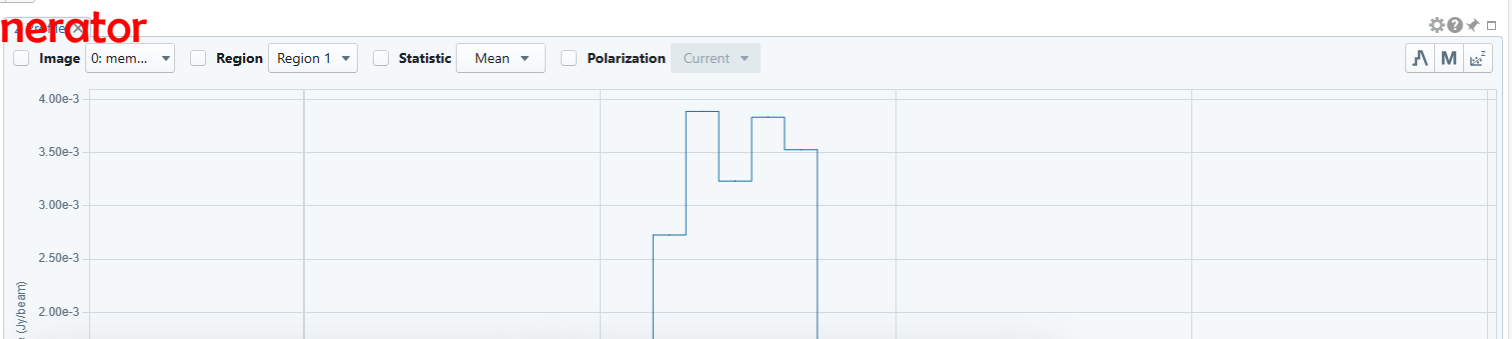
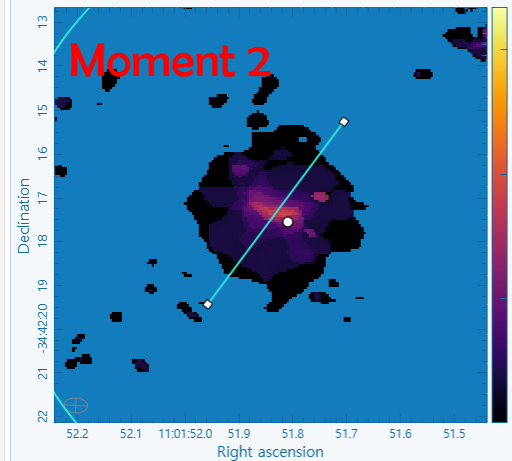
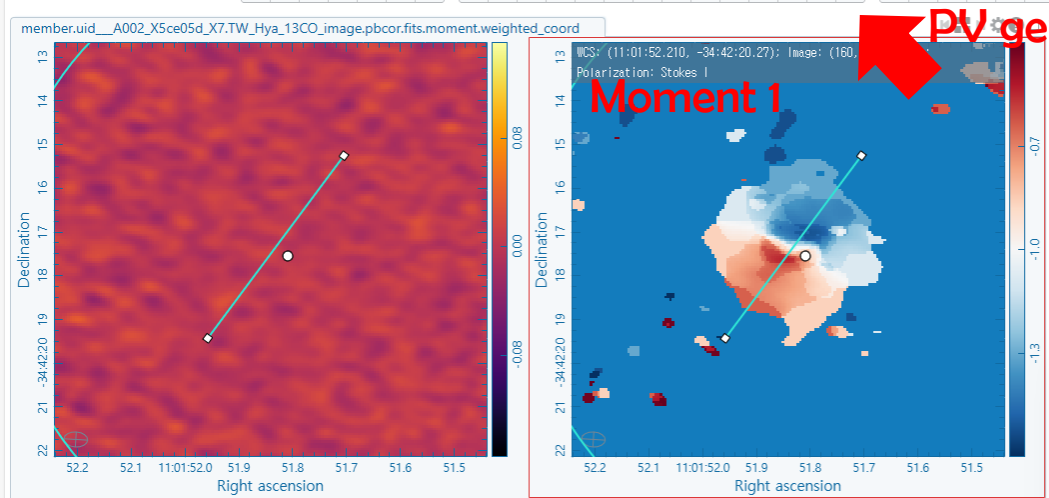
Range (Jy/beam): From 0 To 1

Moments: 0 x 8 x

Options: [Off] Keep previous moment image(s) [On] Auto spatial matching

Generate

Example 1 : 30 Doradus



PV Generator

Image (0: member.uid__A0...): 0: member.uid__A002_X5ce05d

PV cut (Region 2): Region 2

Average width: 3

Coordinate: Radio velocity (km/s)

System: BARYCENT

Range (km/s): From -4 To 2

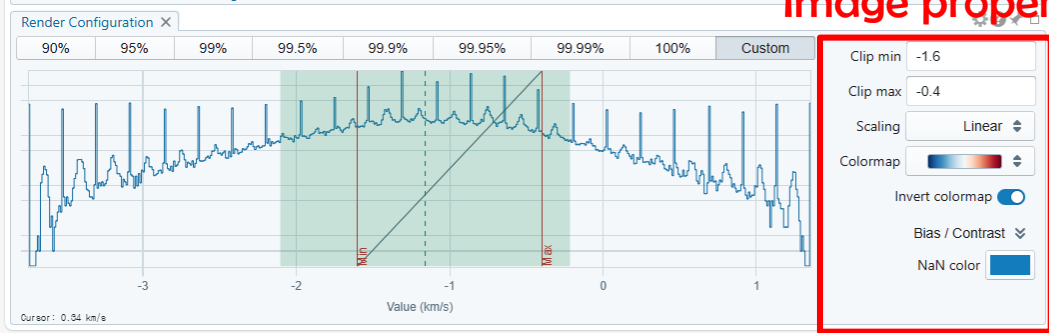
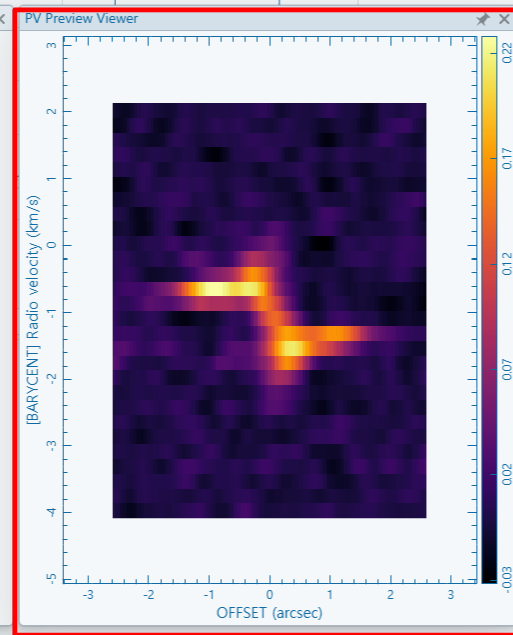
Axis order: X-axis: Spatial, Y-axis: Spectral

Keep previous PV image(s):

Preview region: Image

Preview rebin (px): XY 1 Z 1

Preview cube size (MB): 29.36



Interactive PV preview

Example 2 : TW Hya

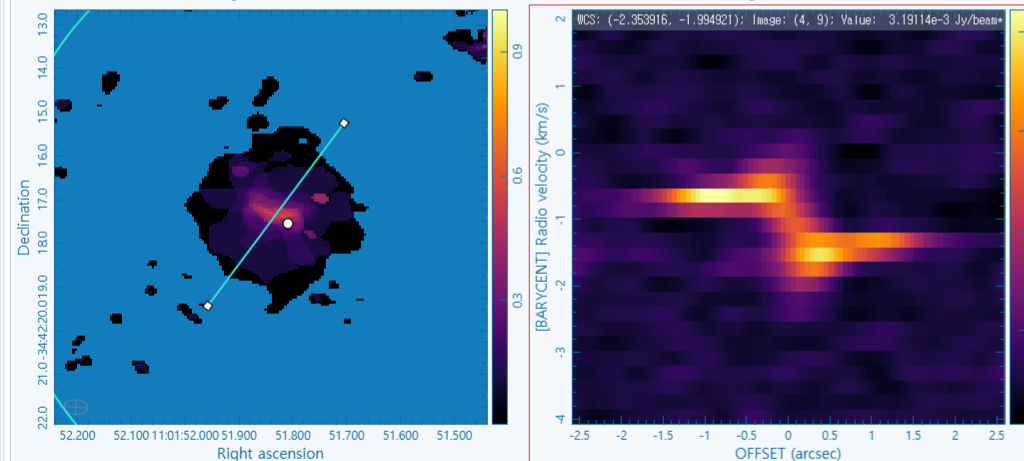
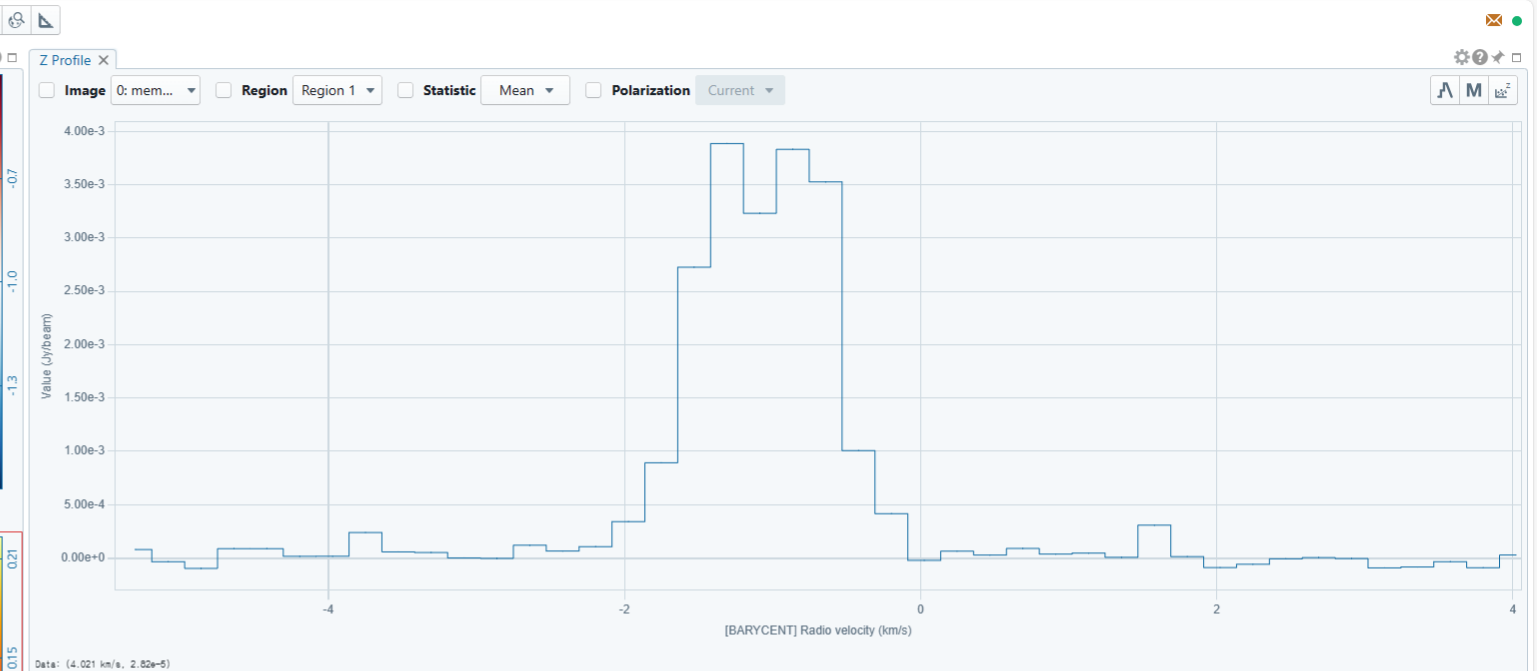
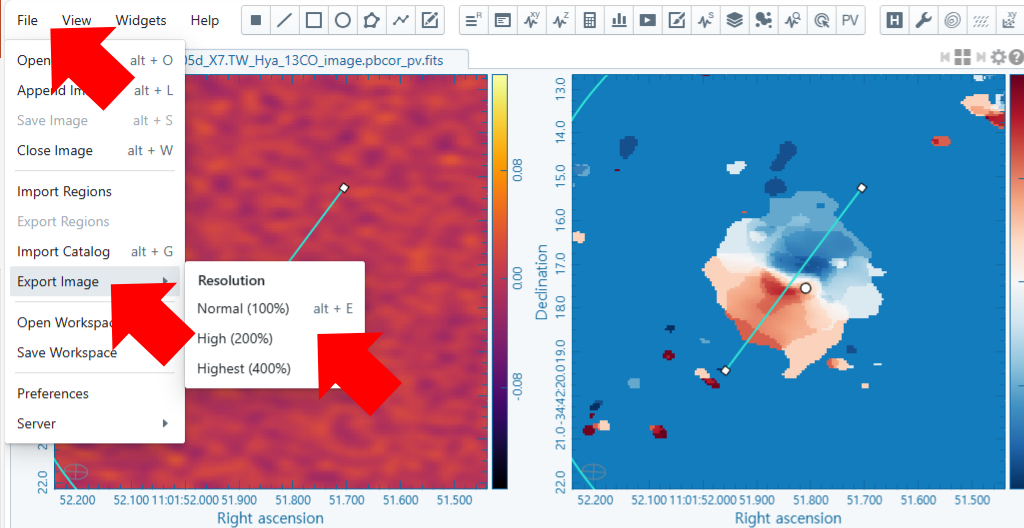
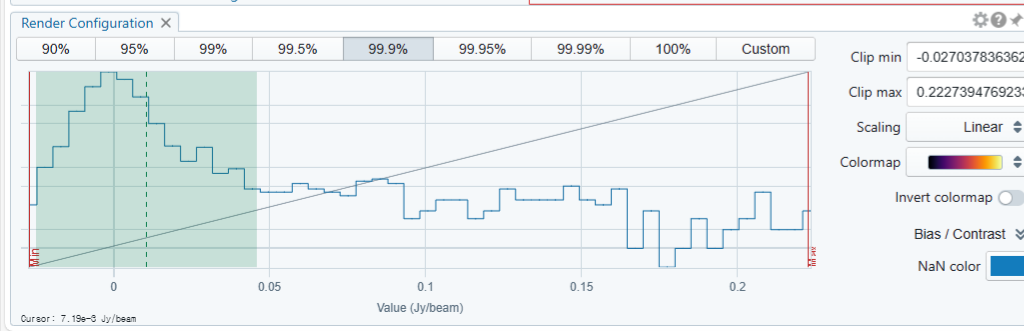


Image	Layers	Matching	Channel	Polarization
0	member.uid__A002_ R	XY Z R	919	Stokes I
1	member.uid__A002_ R	XY R	0	Stokes I
2	member.uid__A002_ R	XY R	0	Stokes I
3	member.uid__A002_ R	XY R	0	Stokes I

PV map



Online information for CARTA



- Homepage
<https://cartavis.org>
- User manual
<https://carta.readthedocs.io/en/latest>
- Controller user manual (for site deployment)
<https://carta-controller.readthedocs.io/en/latest/>
- Helpdesk
Email to
support@carta.freshdesk.com
- Codebase
<https://github.com/CARTAVIS>

HOME FEATURES GALLERY ROADMAP INSTALLATION TEAM ABOUT

CARTA

Cube Analysis and Rendering Tool for Astronomy, is a next generation image visualization and analysis tool designed for ALMA, VLA, and SKA pathfinders.

Installation User Manual

NEW v3.0-beta.2b release is out