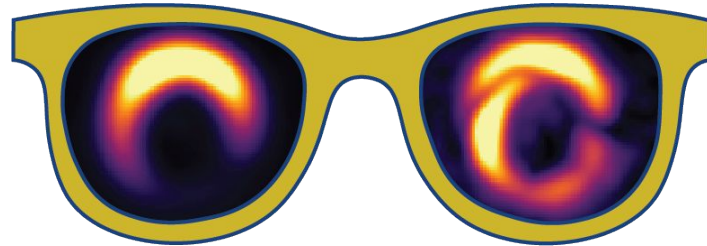


Live Demo of Full Polarization ALMA Archive Data

*Tutorial for exploring & working with Full-Pol data using
CARTA with ALMA [archive](#)*



[I-TRAIN](#) #7 Polarization observations with ALMA
European ARC Network, June 24, 2021

ALMA archive searching for Full Pol data

Click on *Full* in
Polarisation Type

Public data only: true | Polarisation Type: Full

Position

Source name

ALMA source name

RA Dec

Galactic

Target List

Angular Resolution

Maximum Recoverable Scale

Energy

Frequency

Band

Spectral resolution

Continuum sensitivity

Line sensitivity (10 km/s)

Project

Project code

Project Title

Project abstract

PI Full Name

Proposal authors

Science keyword

Publication

Publication Title

Abstract

First Author

Authors

Observation

Observation Date

Polarisation Type

Full

Clear all

Single

Dual

Full

Options

Public data only

Calibration observations

Observations (475) | Projects (146) | Publications (103)



Project Code	Project Title	Type	PI Name	↑ Max. Release Date	Publications	Observations	SB names
2011.0.00017.SV	Science verification observation of 3C 286	SV	observatory, ALMA	2016-06-24	2	1	3c286 b6 Session ON query 1hr
2013.1.00725.S	Interferometric mapping of magnetic fields in the W43 mini-starburst	S	Cortes, Paulo	2016-10-28	2	7	W43-MM8_a_06_TE
2013.1.00355.S	The Morphology of the Magnetic Field of HL Tau	S	Stephens, Ian	2016-10-29	0	1	HL_Tau_a_07_TE
2013.1.00286.S	Particle acceleration and magnetic field in the hot spot of 3C 445	S	Orienti, Monica	2016-12-20	1	1	3C_445_a_03_TE
2013.1.00116.S	How Strongly are the 2 Known Class 0 Disks Magnetized?	S	Looney, Leslie	2017-01-25	0	1	L1527-mm_a_07_TE
2013.1.00053.S	A search for the elusive sub-mm polarisation in protostellar disks	S	Pinte, Christophe	2017-02-05	0	1	HD163296_a_07_TE
2013.1.00726.S	Probing magnetic fields in the inner envelopes of Class 0 protostars via dust polarization	S	Hull, Charles	2017-02-06	6	9	Serpens_a_06_TC, Serpens_a_06_TE, Serpens_a_07_12
2013.1.00254.S	A Comprehensive View of Magnetic Fields around Young Protostar NGC 1333 IRAS 4A	S	Lai, Shih-Ping	2017-03-08	0	1	iras4a_a_07_TC
2013.1.00231.S	Revealing Magnetic Field Structures: Intermediate-mass Prestellar and Protostellar Cores in OMC-3	S	Takahashi, Satoko	2017-03-14	0	7	MMS1_a_07_TE, MMS3_a_07_TE
2015.1.01170.S	Mass accretion onto the Super Massive Black Hole of M 87	S	Asada, Keichi	2017-03-25	2	1	M87_a_03_TE

Selecting a dataset

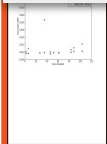
2) then click on download dialog

1) Select dataset...

The screenshot shows the ALMA Science Portal interface. At the top, there's a search bar and filters for 'Public data only: true' and 'Polarisation Type: Full'. Below the filters is a large image of a star field. To the right, there's a spectral plot showing absorption lines. A green 'Request download' button is visible in the plot area. Below the plot is a table of project entries. The entry '2018.1.01172.S' is highlighted in yellow.

Project Code	Project Title	Type	PI Name	Max. Release Date	Publications	Observations	SB names
2019.1.01209.S	Initial environmental magnetic field and turbulent properties: does it matter to shape the outcome of star formation ?	S	Maury, Anaëlle	2021-03-20	0	2	K04166_a_03_TM1
2018.1.01358.S	The Magnetic Heart of NGC253's Starburst-Driven Wind	S	Hughes, Annie	2021-03-17	0	2	NGC_253_a_04_TM1, NGC_253_a_07_TM1
2018.1.00357.S	Magnetic field and emission mechanism in relativistic jets on sub-pc and kpc scales	S	Hovatta, Talvikki	2021-02-15	0	6	3C273_a_04_TM1, 3C273_a_06_TM1, 3C273_a_07_TM1
2018.1.01873.S	Testing protostellar dust polarization properties in different local conditions	S	Maury, Anaëlle	2021-01-22	1	2	B335_a_03_TM1, B335_a_05_TM1
2018.1.00636.S	Protoplanetary Disk Magnetic Fields from the Zeeman Effect	S	Cleeves, Ilse	2021-01-17	0	1	AS_209_a_03_TM1
2018.1.00632.S	Does the magnetic field regulate the collapse in the massive core G31.41+0.31?	S	Beltran, Maite	2020-12-26	0	2	G31.41+0_a_03_TM1, G31.41+0_a_06_TM1
2018.1.00579.T	Radio Polarimetry of GRB Afterglows	T	Urata, Yuji	2020-12-24	0	4	GRB_a_03_TM1, GRB_a_07_TM1, GRB_b_03_TM1, GRB_b_07_TM1
2018.1.01172.S	Measuring Magnetic Field Morphologies in Disks Using the GK Effect	S	Stephens, Ian	2020-12-12	1	2	IM_Lup_a_06_TM1
2018.1.00557.S	An Astrometric Search for Planets Orbiting in the Alpha Centauri System	S	Akeson, Rachel	2020-12-11	0	5	Alpha_Ce_a_07_TM1, Alpha_Ce_c_07_TM1, Alpha_Ce_d_07_TM1
2018.1.01405.T	Revealing the Structure and Magnetization of GRB Jets with ALMA Polarization Observations	T	Laskar, Tanmoy	2020-11-30	1	5	GRB_pol_a_03_TM1, GRB_pol_b_03_TM1, GRB_pol_c_03_TM1

Examine weblog report and scripts



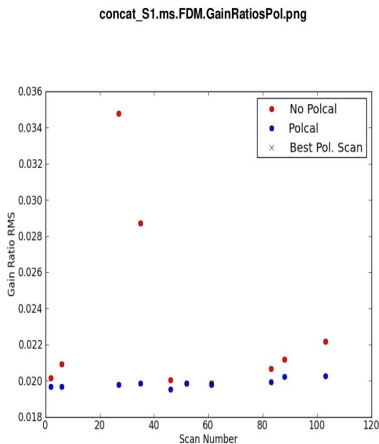
7



8



9



```
Open member.uid__A001_X133d_X4111.scriptForImaging.py [Read-Only] Save
/tmp/mozilla_robiao
1 # ALMA Data Reduction Script
2 # $Id: scriptForImaging_FullPolTemplate.py,v 1.3 2019/06/25 11:23:40 dpetry Exp $
3
4 # Imaging
5
6 thesteps = []
7 step_title = {0: 'Stokes cleaned images of Polarization calibrator',
8               1: 'Stokes images of Phase calibrator (optional)',
9               2: 'IQUV continuum image of the target',
10              3: 'Continuum subtraction',
11              4: 'IQUV cube image at rep_freq',
12              5: 'Polarization images production',
13              6: 'Export images to FITS format'}
14
15 if 'applyonly' not in globals(): applyonly = False
16 try:
17     print 'List of steps to be executed ...', mysteps
18     thesteps = mysteps
19 except:
20     print 'global variable mysteps not set.'
21 if (thesteps==[]):
22     thesteps = range(0,len(step_title))
23     print 'Executing all steps: ', thesteps
24
25 # The Python variable 'mysteps' will control which steps
26 # are executed when you start the script using
27 #   execfile('scriptForCalibration.py')
28 # e.g. setting
29 #   mysteps = [2,3,4]# before starting the script will make the script execute
30 # only steps 2, 3, and 4
31 # Setting mysteps = [] will make it execute all steps.
32
33
34 thevis = 'concat.ms.cal'
35
36 phasecal = '2'
37 phasecalname = 'J1610-3958'
38 polcal = '0'
39 polcalname = 'J1517-2422'
40 target1 = 'IM_Lup'
41 target2 = 'HD_142527'
42
43 originalSPWIDs = '5_7_9_11'
44
45
46 # Stokes images for target Polarization calibrator
47 mystep = 0
48 if(mystep in thesteps):
49     casalog.post('Step'+str(mystep)+' '+step_title[mystep],'INFO')
50     print 'Step ', mystep, step_title[mystep]
51
52 os.system('rm -rf '+polcalname+'_polleak.spw'+originalSPWIDs+'.mfs.IQUV.manual*')
53 tclean(vis = thevis,
54        imaname = polcalname+'_polleak.spw'+originalSPWIDs+'.mfs.IQUV.manual',
```

Python Tab Width: 8 Ln 394, Col 40 INS

Browsing Pol data products

- Polarization Params
 - Stokes I, Q, U, V
 - Angle A
 - LinPol P
- Spectral
 - MFS
 - Cube
- Targets
 - HD_142537
 - IM_Lup
 - polleak=PolCalibr

Getting Started Work Home Gateway Telia

ALMA Request Handler

Anonymous User: Request #2155128258768 ✓
Request Title: [click to edit](#)

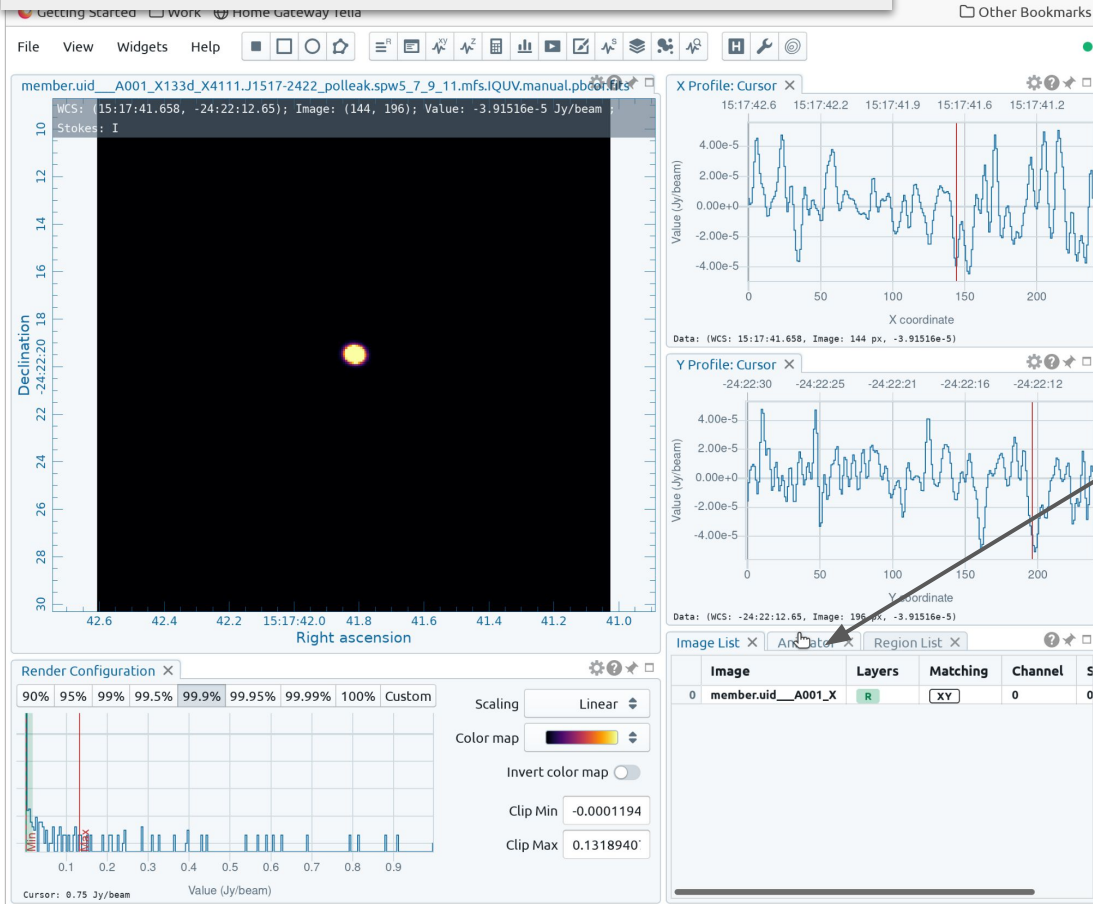
Download Selected

readme product auxiliary raw raw (semipass) external

Project / OUSet / Executionblock	Updated	File	Size	Accessible	Actions
Request 2155128258768			266 MB		
Project 2018.1.01172.S					
Science Goal OUS uid://A001/X133d/X410f					
Group OUS uid://A001/X133d/X4110					
Member OUS uid://A001/X133d/X4111					
SB IM_Lup_a_06_TM1					
<input checked="" type="checkbox"/> readme		member uid_A001_X133d_X4111_README.txt	4 kB	✓	
<input type="checkbox"/> product		2018.1.01172.S_uid_A001_X133d_X4111_001_of_001.tar	851 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111_HD_142527_sci.spw5_7_9_11.mfs.A.manual.pbcor.fits	1 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111_HD_142527_sci.spw5_7_9_11.mfs.IQUV.manual.mask.tgz	9 kB	✓	
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<input type="checkbox"/> product		member uid_A001_X133d_X4111_HD_142527_sci.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	6 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111_HD_142527_sci.spw5_7_9_11.mfs.P.manual.pbcor.fits	1 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111_HD_142527_sci.spw7_cube.IQUV.manual.mask.tgz	285 kB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111_HD_142527_sci.spw7_cube.IQUV.manual.pbcor.fits	123 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111_HD_142527_sci.spw7_cube.IQUV.manual.pbcor.fits	288 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.IM_Lup_sci.spw5_7_9_11.mfs.A.manual.pbcor.fits	1 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.IM_Lup_sci.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	9 kB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.IM_Lup_sci.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	2 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.IM_Lup_sci.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	6 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.IM_Lup_sci.spw5_7_9_11.mfs.P.manual.pbcor.fits	1 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.IM_Lup_sci.spw7_cube.IQUV.manual.mask.tgz	284 kB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.IM_Lup_sci.spw7_cube.IQUV.manual.pb.fits.gz	123 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.IM_Lup_sci.spw7_cube.IQUV.manual.pbcor.fits	288 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.J1517-2422_polleak.spw5_7_9_11.mfs.IQUV.manual.mask.tgz	4 kB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.J1517-2422_polleak.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	436 kB	✓	
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<input type="checkbox"/> product		member uid_A001_X133d_X4111.J1610-3958_ph.spw5_7_9_11.mfs.IQUV.manual.mask.tgz	7 kB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.J1610-3958_ph.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	1 MB	✓	
<input type="checkbox"/> product		member uid_A001_X133d_X4111.J1610-3958_ph.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	4 MB	✓	

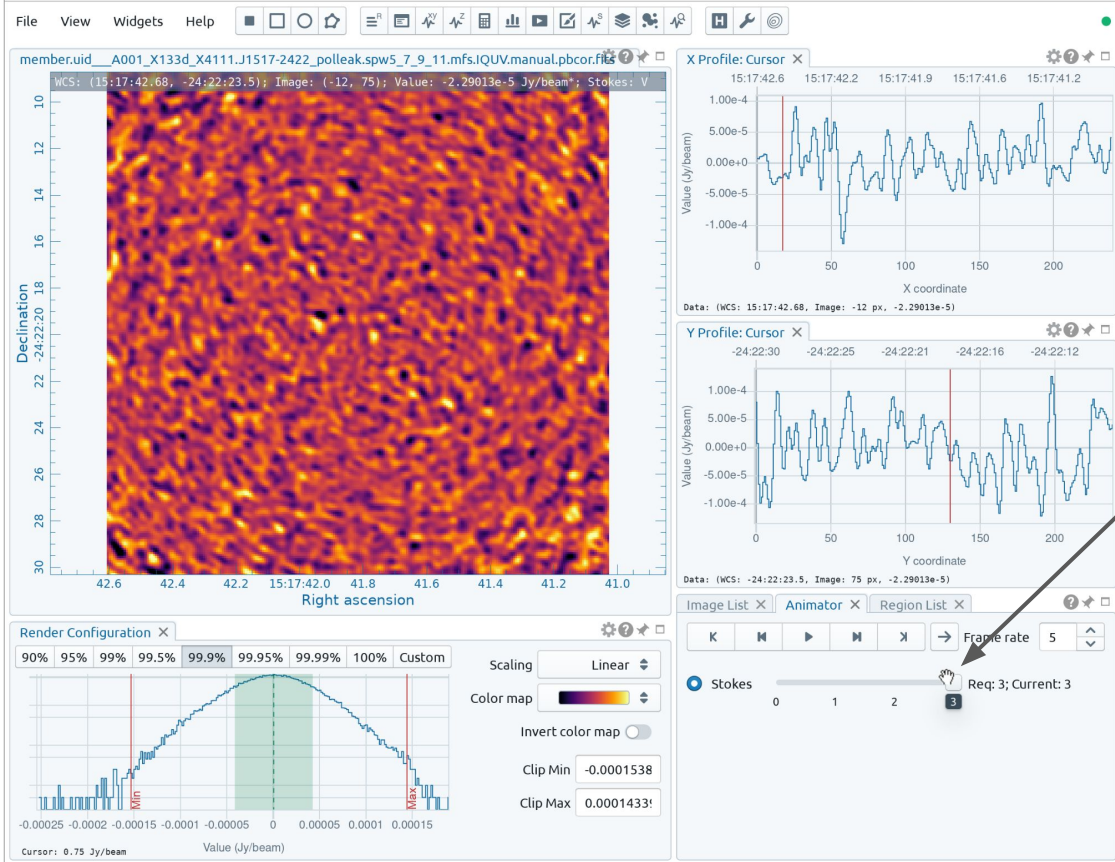
Click on CARTA button for .polleak. FITS

CARTA main Interface



Click on Animator tab to get to Stokes comp. Besides def. Stokes I

Stokes V of pol calibrator



Slide Stokes comp. to #3 to get V
Mapping is (0,1,2,3)=>(I,Q,U,V)

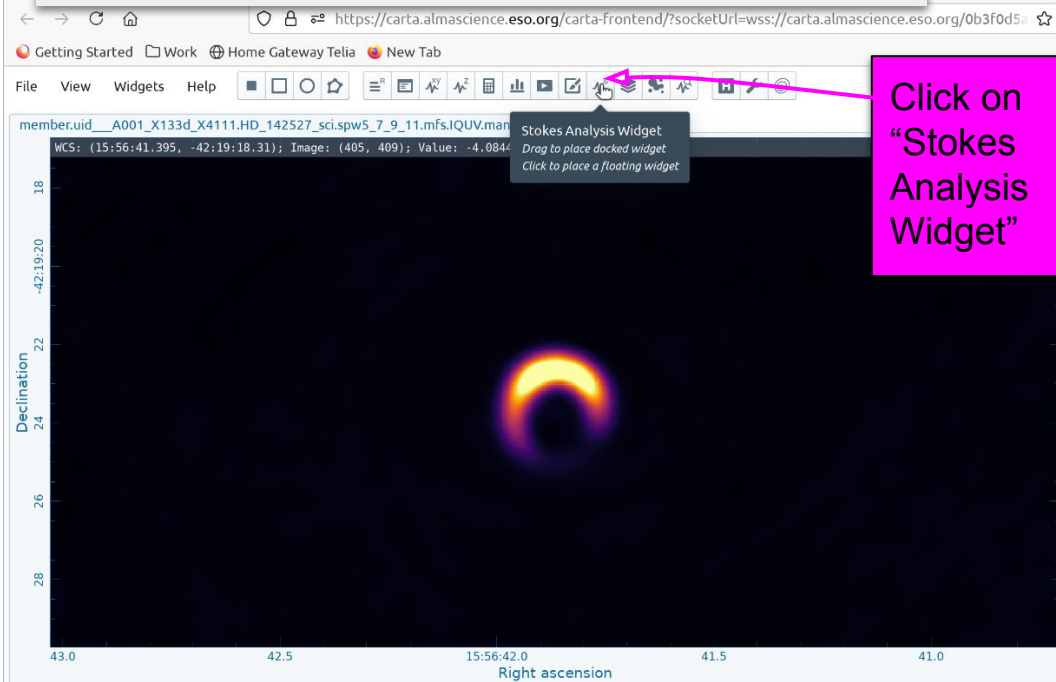
Browsing more Pol data products: MFS

readme product auxiliary raw raw (semipass) external

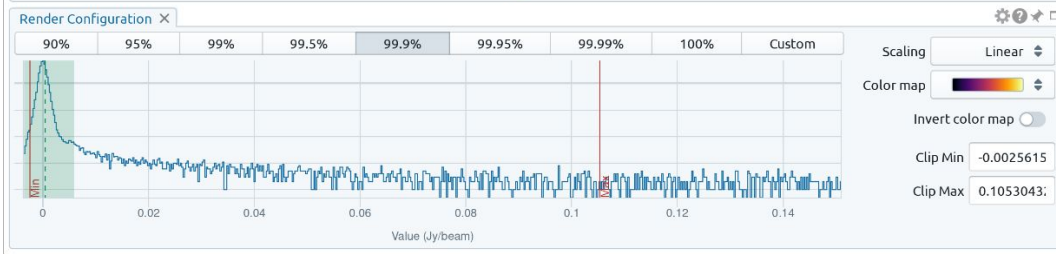
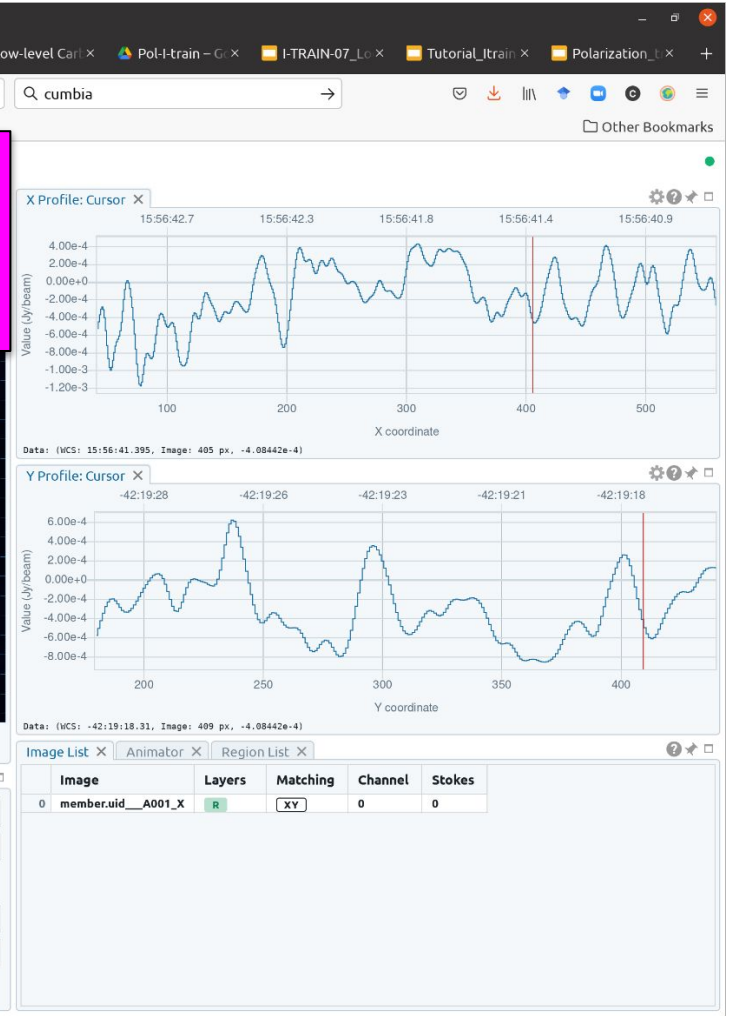
Project / OUSet / Executionblock	File	Size	Accessible	Actions
Request 2155127561110		1 GiB		
Project 2018.1.01172.S				
Science Goal OUS uid://A001/X133d/X410f				
Group OUS uid://A001/X133d/X4110				
Member OUS uid://A001/X133d/X4111				
SB IM_Lup_a_06_TM1				
<input checked="" type="checkbox"/> readme	member_uid_A001_X133d_X4111.README.txt	4 KiB	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> product	2018.1.01172.S_uid_A001_X133d_X4111_001_of_001.tar	812 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.HD_142527_sci.spw5_7_9_11.mfs.A.manual.pbcor.fits	1 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.HD_142527_sci.spw5_7_9_11.mfs.IQUV.manual.mask.tgz	9 KiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.HD_142527_sci.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	2 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.HD_142527_sci.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	6 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.HD_142527_sci.spw5_7_9_11.mfs.P.manual.pbcor.fits	1 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.HD_142527_sci.spw7_cube.IQUV.manual.mask.tgz	278 KiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.HD_142527_sci.spw7_cube.IQUV.manual.pb.fits.gz	117 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.HD_142527_sci.spw7_cube.IQUV.manual.pbcor.fits	275 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.IM_Lup_sci.spw5_7_9_11.mfs.A.manual.pbcor.fits	1 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.IM_Lup_sci.spw5_7_9_11.mfs.IQUV.manual.mask.tgz	9 KiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.IM_Lup_sci.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	2 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.IM_Lup_sci.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	6 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.IM_Lup_sci.spw5_7_9_11.mfs.P.manual.pbcor.fits	1 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.IM_Lup_sci.spw7_cube.IQUV.manual.mask.tgz	278 KiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.IM_Lup_sci.spw7_cube.IQUV.manual.pb.fits.gz	117 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.IM_Lup_sci.spw7_cube.IQUV.manual.pbcor.fits	275 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.J1517-2422_polleak.spw5_7_9_11.mfs.IQUV.manual.mask.tgz	4 KiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.J1517-2422_polleak.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	426 KiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.J1517-2422_polleak.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	914 KiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.J1610-3958_ph.spw5_7_9_11.mfs.IQUV.manual.mask.tgz	7 KiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.J1610-3958_ph.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	1 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> product	member_uid_A001_X133d_X4111.J1610-3958_ph.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	4 MiB	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> auxiliary	2018.1.01172.S_uid_A001_X133d_X4111_auxiliary.tar	253 MiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> raw	2018.1.01172.S_uid_A002_Xdb7ab7_X92ca.asdm.sdm.tar	38 GiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> raw	2018.1.01172.S_uid_A002_Xdb7ab7_X9797.asdm.sdm.tar	14 GiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> raw	2018.1.01172.S_uid_A002_Xdb7ab7_X9a4f.asdm.sdm.tar	39 GiB	<input checked="" type="checkbox"/>	
<input type="checkbox"/> raw	2018.1.01172.S_uid_A002_Xdb7ab7_Xa3aa.asdm.sdm.tar	22 GiB	<input checked="" type="checkbox"/>	

Click on CARTA button
e.g.
HD_142527 IQUV MFS

CARTA continuum images



Click on
"Stokes
Analysis
Widget"



Viewing Stokes Parameters

Stokes I...

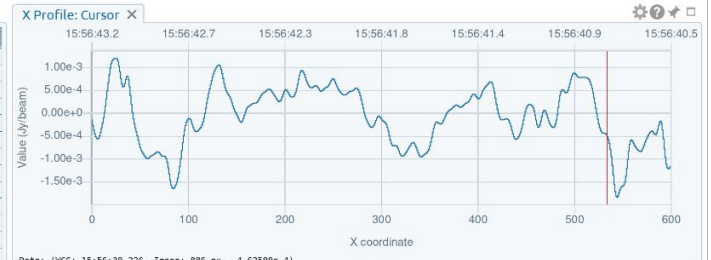
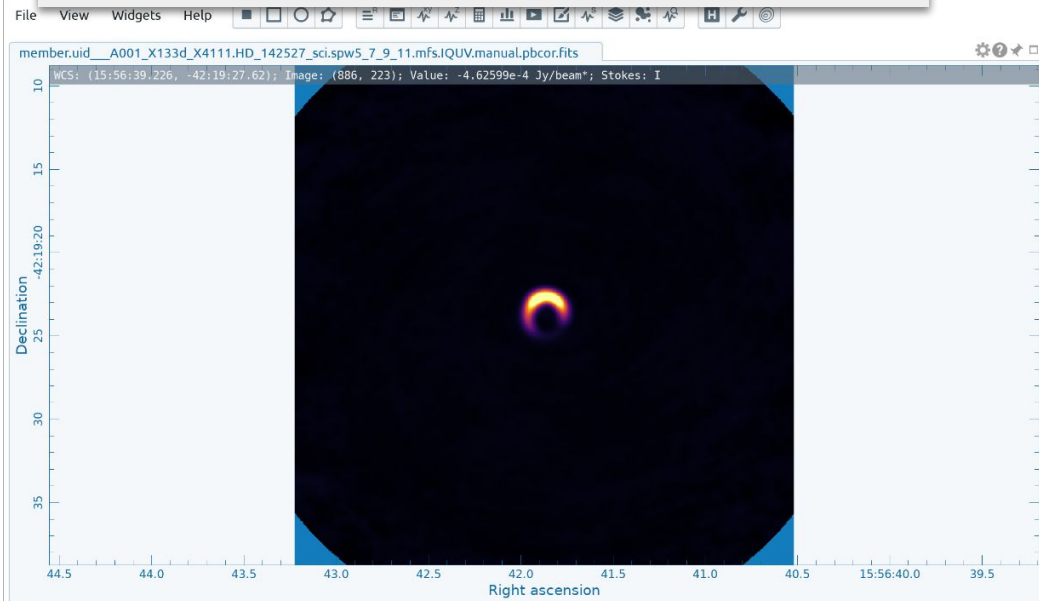


Image List X Animator Region List X

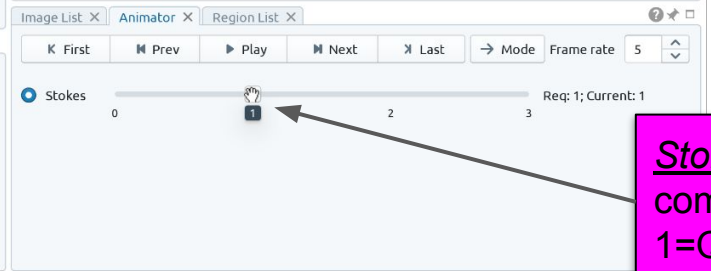
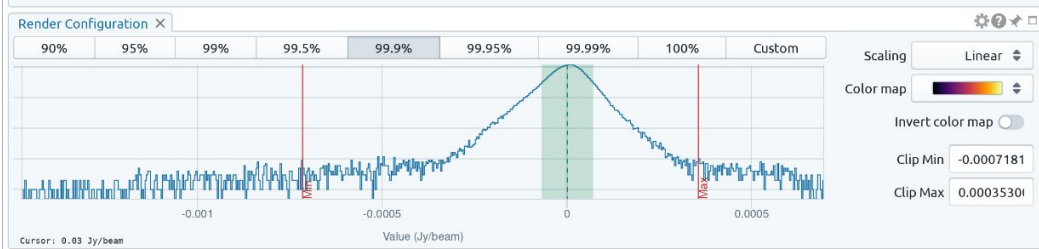
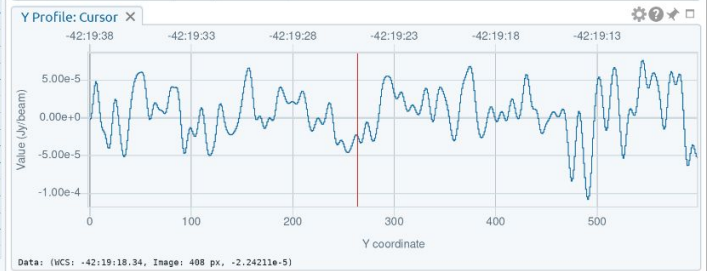
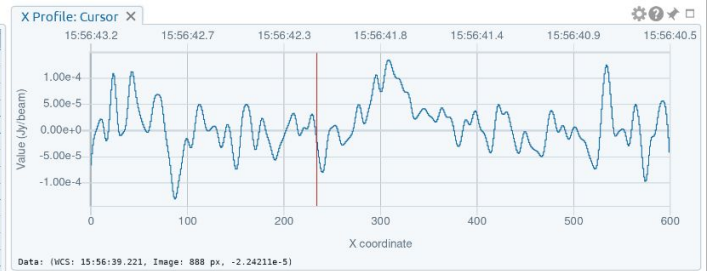
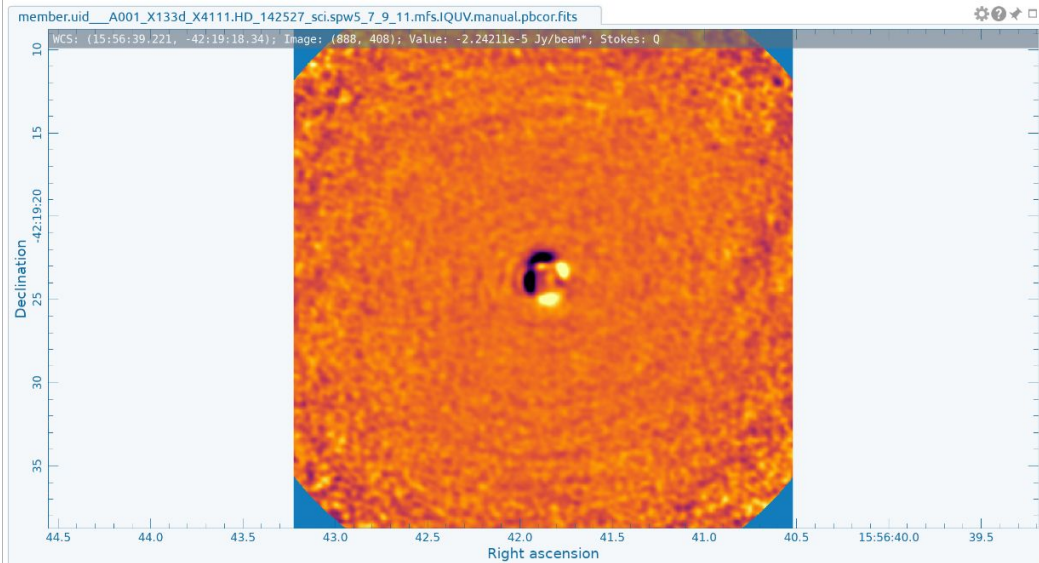
K First Prev Play Next Last Mode Frame rate 5

Stokes 1 2 3 Req: 0; Current: 0

Click on Animator tab

Use Stokes slider

Viewing Stokes Parameters ... Stokes Q



Stokes
comp
1=Q

Selecting Full Pol Cube data

ALMA Request Handler Login

Anonymous User: Request #2155128043572 ✓
Request Title: [click to edit](#)

Download Selected

readme product auxiliary raw raw (semipass) external

Project / OUSet / Executionblock	Updated	File	Size	Accessible	Actions
Request 2155128043572			1 GB		
Project 2018.1.01172.S					
Science Goal OUS uid://A001/X133d/X410f					
Group OUS uid://A001/X133d/X4110					
Member OUS uid://A001/X133d/X4111-09-12					
SB IM_Lup_a_06_TM1					
<input checked="" type="checkbox"/> readme	member.uid_A001_X133d_X4111	README.txt	4 kB	✓	
<input checked="" type="checkbox"/> product	2018.1.01172.S_uid_A001_X133d_X4111	001_of_001.tar	851 MB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.HD	142527_sci.spw5_7_9_11.mfs.A.manual.pbcor.fits	1 MB	✓	🇪🇺
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.HD	142527_sci.spw5_7_9_11.mfs.IQUV.manual.mask.tgz	9 kB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.HD	142527_sci.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	2 MB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.HD	142527_sci.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	6 MB	✓	🇪🇺
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.HD	142527_sci.spw5_7_9_11.mfs.P.manual.pbcor.fits	1 MB	✓	🇪🇺
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.HD	142527_sci.spw7.cube.IQUV.manual.mask.tgz	285 kB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.HD	142527_sci.spw7.cube.IQUV.manual.pb.fits.gz	123 MB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.HD	142527_sci.spw7.cube.IQUV.manual.pbcor.fits	288 MB	✓	🇪🇺
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.IM_Lup	sci.spw5_7_9_11.mfs.A.manual.pbcor.fits	1 MB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.IM_Lup	sci.spw5_7_9_11.mfs.IQUV.manual.mask.tgz	9 kB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.IM_Lup	sci.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	2 MB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.IM_Lup	sci.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	6 MB	✓	🇪🇺
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.IM_Lup	sci.spw5_7_9_11.mfs.P.manual.pbcor.fits	1 MB	✓	🇪🇺
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.IM_Lup	sci.spw7.cube.IQUV.manual.mask.tgz	284 kB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.IM_Lup	sci.spw7.cube.IQUV.manual.pb.fits.gz	123 MB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.IM_Lup	sci.spw7.cube.IQUV.manual.pbcor.fits	288 MB	✓	🇪🇺
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.J1517-2422	polleak.spw5_7_9_11.mfs.IQUV.manual.mask.tgz	4 kB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.J1517-2422	polleak.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	436 kB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.J1517-2422	polleak.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	936 kB	✓	🇪🇺
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.J1610-3958	ph.spw5_7_9_11.mfs.IQUV.manual.mask.tgz	7 kB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.J1610-3958	ph.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	1 MB	✓	
<input type="checkbox"/> product	member.uid_A001_X133d_X4111.J1610-3958	ph.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	4 MB	✓	🇪🇺
auxiliary	2018.1.01172.S_uid_A001_X133d_X4111	auxiliary.tar	266 MB	✓	

Click on
CARTA
button for
.cube.
FITS from
data list

Spectral CARTA tools

The screenshot displays the Spectral CARTA web interface. The main window shows a Stokes Analysis Widget with a circular spectral image. A tooltip for the widget reads: "Stokes Analysis Widget. Drag to place docked widget. Click to place a floating widget." The image is titled "member.uid__A001_X133d_X4111.HD_142527_sci.spw7.cube.IQUV.manual.pbcs" and includes WCS coordinates: (15:56:40.058, -42:19:12.23). The image parameters are: SRK: 230.5633 GHz; Velocity: -32.9113 km/s; Stokes: I.

Two profile plots are shown: "X Profile: Cursor" and "Y Profile: Cursor". Both plots show "Value (Jy/beam)" on the y-axis and "X coordinate" or "Y coordinate" on the x-axis. The X profile plot has a cursor at 15:56:43.2, 15:56:42.7. The Y profile plot has a cursor at -42:19:38, -42:19:33, -42:19:28, -42:19:23, -42:19:18, -42:19:13.

A histogram at the bottom left shows the distribution of values, with a green shaded region around 0. The histogram is titled "Render Configuration" and shows a range from 90% to 100% with a "Custom" option. The x-axis is "Value (Jy/beam)" and the y-axis is "Histogram".

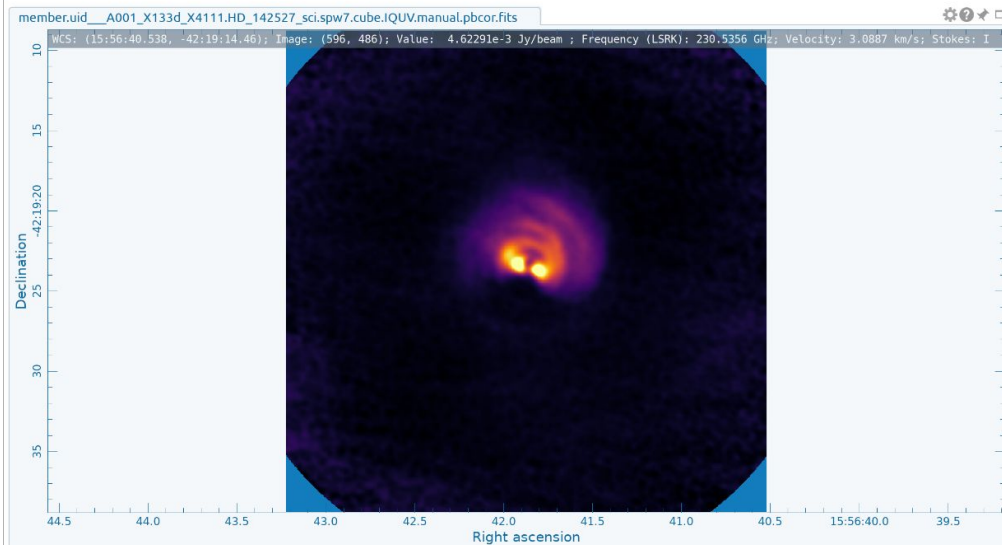
At the bottom right, there is a "Region List" table:

Image	Layers	Matching	Channel	Stokes
0 member.uid__A001_X	R	XY Z	0	0

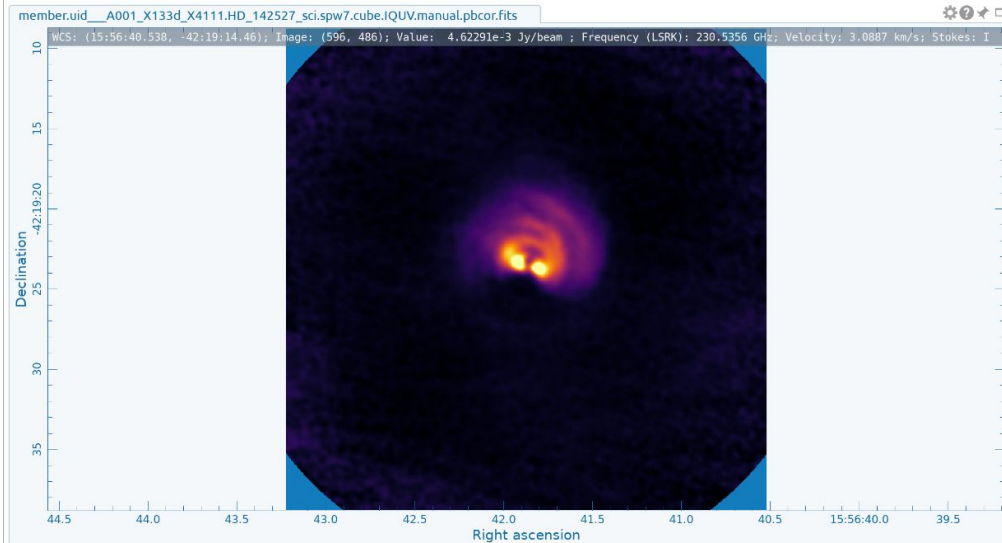
A pink callout box on the right side of the interface contains the text: "Click on Stokes widget menu button".

Setting up Stokes Analysis Widget

Pin & drag
Stokes
widget
somewhere

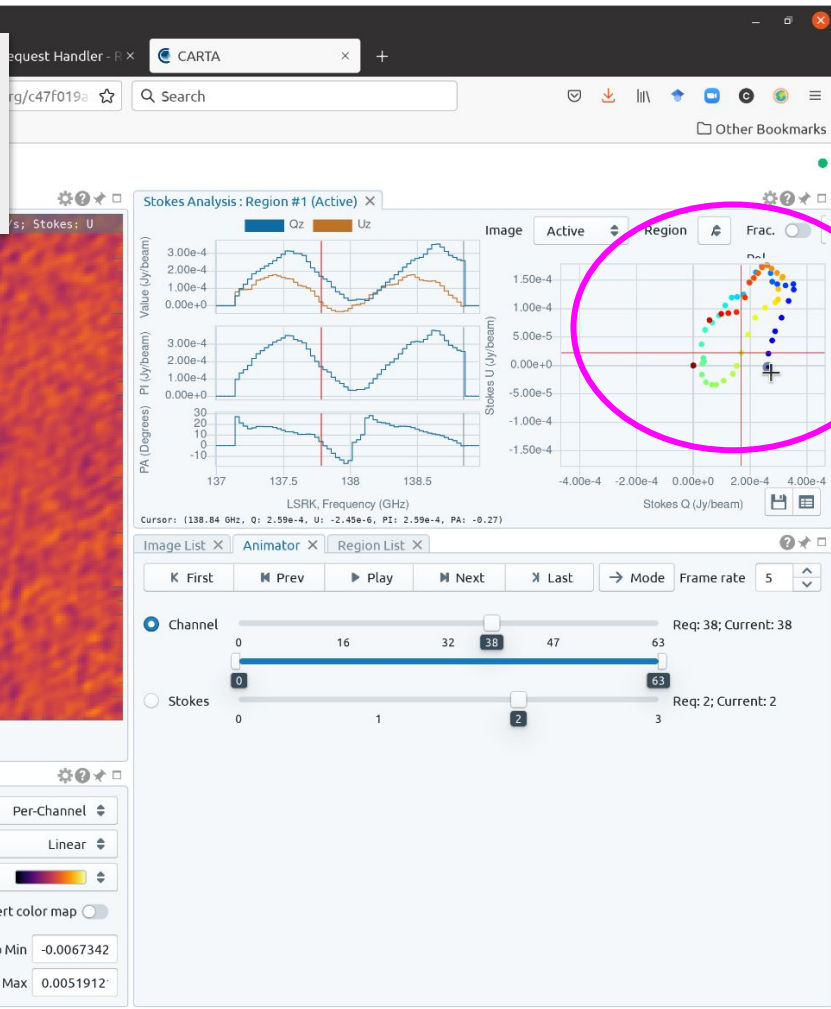
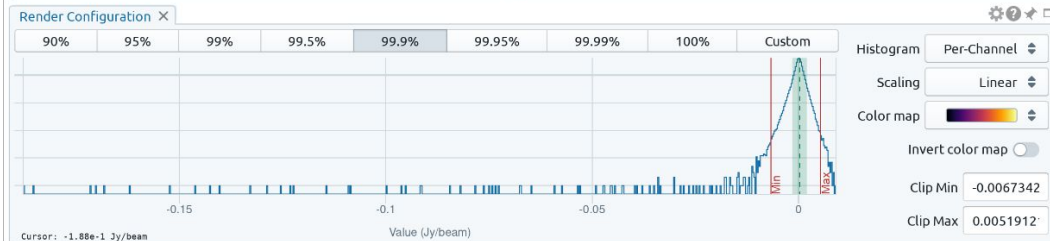
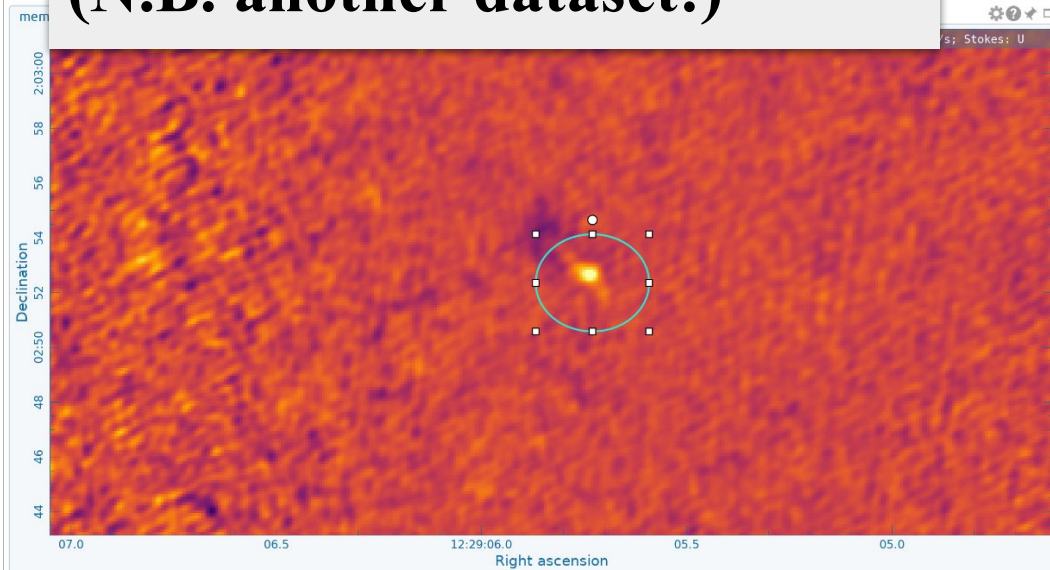


Using Stokes Analysis Widget



Select channel via Stokes spectra or Q-vs-U scatterplot or channel slider

Visualizing Faraday rotation (N.B. another dataset!)



More pol products

.P. Lin Pol Flux

File Edit View History Bookmarks Tools Help

ALMA Science Archive x Alma Request Handler - F x CARTA

https://almascience.eso.org/rh/submission

Getting Started Work Home Gateway Telia

Download Selected

readme product auxiliary raw raw (semipass) external

Project / OUSet / Executionblock Updated File

Request 2159129043572

Project 2018.1.01172.S

Science Goal OUS uid://A001/X133d/X410f

Group OUS uid://A001/X133d/X4110

Member OUS uid://A001/X133d/X4111-09-12

SB IM_Lup_a_06_TM1

File	Size	Status
readme	4 kB	✓
2018.1.01172.S_uid_A001_X133d_X4111_001_of_001.tar	851 MB	✓
product	1 MB	✓
product	9 kB	✓
product	2 MB	✓
product	6 MB	✓
product	1 MB	✓
product	285 kB	✓
product	123 MB	✓
product	288 MB	✓
product	1 MB	✓
product	9 kB	✓
product	2 MB	✓
product	6 MB	✓
product	1 MB	✓
product	284 kB	✓
product	123 MB	✓
product	288 MB	✓
product	4 kB	✓
product	436 kB	✓
product	936 kB	✓
product	7 kB	✓
product	1 MB	✓
product	4 MB	✓
product	266 MB	✓
auxiliary	41 GB	✓
raw	14 GB	✓
raw	42 GB	✓
raw	23 GB	✓

https://almascience.eso.org/dataPortal/member.uid_A001_X133d_X4111.HD_142527_sci.spw5_7_9_11.mfs.P.manual.pbor.fits

File Edit View History Bookmarks Tools Help

ALMA Science Archive x Alma Request Handler - F x CARTA

https://carta.almascience.eso.org/carta-frontend/?s...

Getting Started Work Home Gateway Telia

File View Widgets Help

member.uid_A001_X133d_X4111.HD_142527_sci.spw5_7_9_11.mfs.P.manual.pbor.fits

X Profile: Cursor X

15:56:42.055:56:41.985:56:41.875:56:41.785:56:41.695:56:41.60

1.40e-3
1.20e-3
1.00e-3
8.00e-4
6.00e-4
4.00e-4
2.00e-4
0.00e+0

X coordinate

Data: (WCS: (15:56:41.831, -42:19:22.63); Image: 309 px, 1.39314e-3)

Y Profile: Cursor X

15:56:42.055:56:41.875:56:41.785:56:41.695:56:41.60

1.40e-3
1.20e-3
1.00e-3
8.00e-4
6.00e-4
4.00e-4
2.00e-4
0.00e+0

Y coordinate

Data: (WCS: (-42:19:22.63, Image: 322 px, 1.39314e-3)

Image List X Animator X Region List X

Image	Layers	Matching	Channel	S
0 member.uid_A001_X	R	XY	0	0

Render Configuration X

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

Scaling Linear

Color map

Invert color map

Clip Min 0.0000061

Clip Max 0.0010564

Cursor: 1.99e-5 Jy/beam Value (Jy/beam)

Even more Pol products:

.A. Electric Vector Position Angle

The screenshot shows the ALMA Science Archive interface. The browser address bar displays <https://almascience.eso.org/rh/submission>. The page title is "Alma Request Handler - F X". The main content area shows a table of data products under the heading "Download Selected". The table has columns for "Project / OUSet / Executionblock", "Updated", "File", "Size", "Accessible", and "Actions". A yellow arrow points to the row with the file name "member_uid_A001_X133d_X4111_HD_142527_sci.spw5_7_9_11.mfs.A.manual.pbcor.fits".

Project / OUSet / Executionblock	Updated	File	Size	Accessible	Actions
Request 2155126043572			1 GB		
Project 2018.1.01172.S					
Science Goal OUS uid://A001/X133d/X410f					
Group OUS uid://A001/X133d/X4110					
Member OUS uid://A001/X133d/X4110-09-12					
SB IM_Lup_a_06_TM1					
readme		member_uid_A001_X133d_X4111_README.txt	4 kB	✓	
product		2018.1.01172.S_uid_A001_X133d_X4111_001_of_001.tar	851 MB	✓	
product		member_uid_A001_X133d_X4111_HD_142527_sci.spw5_7_9_11.mfs.A.manual.pbcor.fits	1 MB	✓	
product		member_uid_A001_X133d_X4111_HD_142527_sci.spw5_7_9_11.mfs.IQUV.manual.mask.lzq	9 kB	✓	
product		member_uid_A001_X133d_X4111_HD_142527_sci.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	2 MB	✓	
product		member_uid_A001_X133d_X4111_HD_142527_sci.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	6 MB	✓	
product		member_uid_A001_X133d_X4111_HD_142527_sci.spw5_7_9_11.mfs.P.manual.pbcor.fits	1 MB	✓	
product		member_uid_A001_X133d_X4111_HD_142527_sci.spw7.cube.IQUV.manual.mask.lzq	285 kB	✓	
product		member_uid_A001_X133d_X4111_HD_142527_sci.spw7.cube.IQUV.manual.pb.fits.gz	123 MB	✓	
product		member_uid_A001_X133d_X4111_HD_142527_sci.spw7.cube.IQUV.manual.pbcor.fits	288 MB	✓	
product		member_uid_A001_X133d_X4111_IM_Lup_sci.spw5_7_9_11.mfs.A.manual.pbcor.fits	1 MB	✓	
product		member_uid_A001_X133d_X4111_IM_Lup_sci.spw5_7_9_11.mfs.IQUV.manual.mask.lzq	9 kB	✓	
product		member_uid_A001_X133d_X4111_IM_Lup_sci.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	2 MB	✓	
product		member_uid_A001_X133d_X4111_IM_Lup_sci.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	6 MB	✓	
product		member_uid_A001_X133d_X4111_IM_Lup_sci.spw5_7_9_11.mfs.P.manual.pbcor.fits	1 MB	✓	
product		member_uid_A001_X133d_X4111_IM_Lup_sci.spw7.cube.IQUV.manual.mask.lzq	284 kB	✓	
product		member_uid_A001_X133d_X4111_IM_Lup_sci.spw7.cube.IQUV.manual.pb.fits.gz	123 MB	✓	
product		member_uid_A001_X133d_X4111_IM_Lup_sci.spw7.cube.IQUV.manual.pbcor.fits	288 MB	✓	
product		member_uid_A001_X133d_X4111_j1517-2422_polleak.spw5_7_9_11.mfs.IQUV.manual.mask.lzq	4 kB	✓	
product		member_uid_A001_X133d_X4111_j1517-2422_polleak.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	436 kB	✓	
product		member_uid_A001_X133d_X4111_j1517-2422_polleak.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	936 kB	✓	
product		member_uid_A001_X133d_X4111_j1610-3958_ph.spw5_7_9_11.mfs.IQUV.manual.mask.lzq	7 kB	✓	
product		member_uid_A001_X133d_X4111_j1610-3958_ph.spw5_7_9_11.mfs.IQUV.manual.pb.fits.gz	1 MB	✓	
product		member_uid_A001_X133d_X4111_j1610-3958_ph.spw5_7_9_11.mfs.IQUV.manual.pbcor.fits	4 MB	✓	
auxiliary		2018.1.01172.S_uid_A001_X133d_X4111_auxiliary.tar	266 MB	✓	
raw		2018.1.01172.S_uid_A002_X0b7ab7_X92ca.asdm.adm.tar	41 GB	✓	
raw		2018.1.01172.S_uid_A002_X0b7ab7_X9797.asdm.adm.tar	16 GB	✓	
raw		2018.1.01172.S_uid_A002_X0b7ab7_X93df.asdm.adm.tar	42 GB	✓	
raw		2018.1.01172.S_uid_A002_X0b7ab7_Xa3aa.asdm.adm.tar	23 GB	✓	

Select
“.A.” FITS for polarisation
Angle aka
Electric Vector Position
Angle or just PA

Select 'wrapping' colormap for pol Angle

The screenshot displays a software interface with several components:

- Main View:** A heatmap showing a ring-like structure with a color gradient from blue to red. The axes are labeled 'Right ascension' (41.4 to 42.4) and 'Declination' (21 to 26). The WCS is (15:56:41.374, -42:19:25.55); Image: (410, 264); NaN.
- X Profile:** A line plot showing 'Value (deg)' vs 'X coordinate' (200 to 400). The data points are approximately: (200, 1.00e+0), (250, 9.00e-1), (300, 8.00e-1), (350, 7.00e-1), (400, 6.00e-1).
- Y Profile:** A line plot showing 'Value (deg)' vs 'Y coordinate' (260 to 360). The data points are approximately: (260, 1.00e+0), (280, 9.00e-1), (300, 8.00e-1), (320, 7.00e-1), (340, 6.00e-1), (360, 5.00e-1).
- Render Configuration:** A window showing a histogram of 'Value (deg)' from -80 to 80. The '99.9%' threshold is selected. The cursor is at 47.98 deg.
- Colormap Selection:** A menu with options: rainbow, RdBu, RdCy, reds, seismic, spectral. The 'seismic' colormap is selected.
- Image List:** A table with columns: Image, Layers, Matching, Channel, Stokes. The first row is: 0, member.uid__A001_X, R, XY, 0.

Select seismic colormap

Other sources

In this dataset besides science target HD_142527 there is also

- Sci target: IM_Lup
- Polleak: polarisation calibrator

You may wish to explore these yourselves...

Conclusion

- Full Pol ALMA archive is ...
 - easy to use
 - 100s of public datasets already now (2021)
 - Half of it is unpublished
 - Easy to start up CARTA
- CARTA is ...
 - Stable
 - Quick to use
 - Polarisation aware

So go online and start exploring ALMA Polarisation data!

Thanks