Vissage: Viewing Polarisation Data from ALMA

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Vissage (VISualisation Software for Astronomical Gigantic data cubEs) is a Java-based standalone FITS browser, primarily aiming to offer easy visualisation of huge, multi-dimensional FITS data from ALMA. We report our recent implementation of its new capabilities of viewing polarisation data, as some of ALMA datasets lately open to the

If data of different area and/or frequency contained in the dropped files, they will be separated in other views. This sample shows the case when I, Q and U images of Serpens_Emb8 and an Antenna Galaxy image are dropped together.

R.A. (J2000)

Constant

Intensity Fraction

Orthogonal

18 29 48.0

18[°]29[‴]48[°].2

STED 7

Click to open menu (STEP 2)

(1-2) If the dropped data have common coverage and resolution along spatial and frequency axes, plus common observed date, Vissage recognises them as a single dataset. Above the image, You will see a clickable polarisation indicator.

> In case of just one Stokes value, polarisation indicator is unclickable. In case of no Stokes axis, polarisation indicator not shown.

public have variety in polarisation information. While all the available Stokes values put in a single FITS file for some cases, the bulk of datasets have their Stokes values published in separate files. We therefore had to consider arbitrary combination of them. Yet to be in final shape, but we are trying to offer a simple and intuitive user interface to view polarisation images. Other minor updates, including seamless connection to the latest version of FITSWebQL offered by

JVO, are reported as well.

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	Stokes Q		Jeiert
	Stokes U	Stokes I	
mages dropped	EVPA	Stokes Q	
	PIntensity	Stokes U	
	□ Overlay EV	EVPA	
	Constant	PIntensity	(2-1) Click the polarisation indicator, then you will see a n

PIntensit\

PFraction

Overlay EV

Constant

on indicator, then you will see a menu	States I []	
contain all available values according	+11674	12251 43953 8285 19-1-1-1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2
e on an already displayed image the	• 1 ¹ 18 ⁺ 44 ⁻	



Other Minor Updates (1) Added beam ellipse (2) Added colourbar only for FITS files downloaded from

(3) Access to F	ITSWebQL v4 -
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JVO



Stokes I Stokes Q

I and Q

For details about FITSWebQL, don't miss Chris Zapart's talk on Monday afternoon!

What's Next?

(1) Rotation-measure map, etc. (2) Polarisation in P-V, channel map, etc. (3) Overlay multiple arbitrary polarisation images using colours and/or contours



perimental two-colour	
age of Stokes I (blue)	



Simple Average		° Intensity
PIntensity-weighted Average		• Fraction
and U images dropped		Orthogonal
		Simple Average
		 PIntensity-weighted

Dropping another FITS file menu item will be updated each time. If you drop V data, circular polarisation and total polarisation values become available. Data such as XX, YY, RR, LL etc. will soon be accepted. I, Q and U images dropped



like this. The menu items

to the dropped data.



Linear Polarised Intensity Polarisation Angle Degree of Linear Polarisation POLI / I or **POLI or** POLA or $sqrt(Q^2+U^2)$ $sqrt(Q^2+U^2) / I$ (1/2)arctan(U/Q)



PIntensityweighted Length weighted Length

(2-3) Just a click in the menu, you can instantly overlay electromagnetic vectors on any polarisation image. Vectors are calculated for each cell whose area is equal to that of beam. Vector lengths can be chosen from constant, pintensity-weighted or p-fraction-weighted, while vector direction can be selected from simple mean or p-intensity-weighted. Vectors rotated 90 degrees can be displayed as well - could be useful to see possible magnetic field direction.









map of polarised intensity overlaid on Stokes I image.

Experimental dirty contour

Feel free to ask me for **ON-DEMAND** LIVE PERFORMANCE Nov. 12-14, 2018 around here!

.but only when battery of my laptop is alive :P

Download Site:

http://jvo.nao.ac.jp/download/Vissage

Credit: ESO/B. Tafreshi (twanight.org)