

Vissage: Viewing Polarisation Data from ALMA

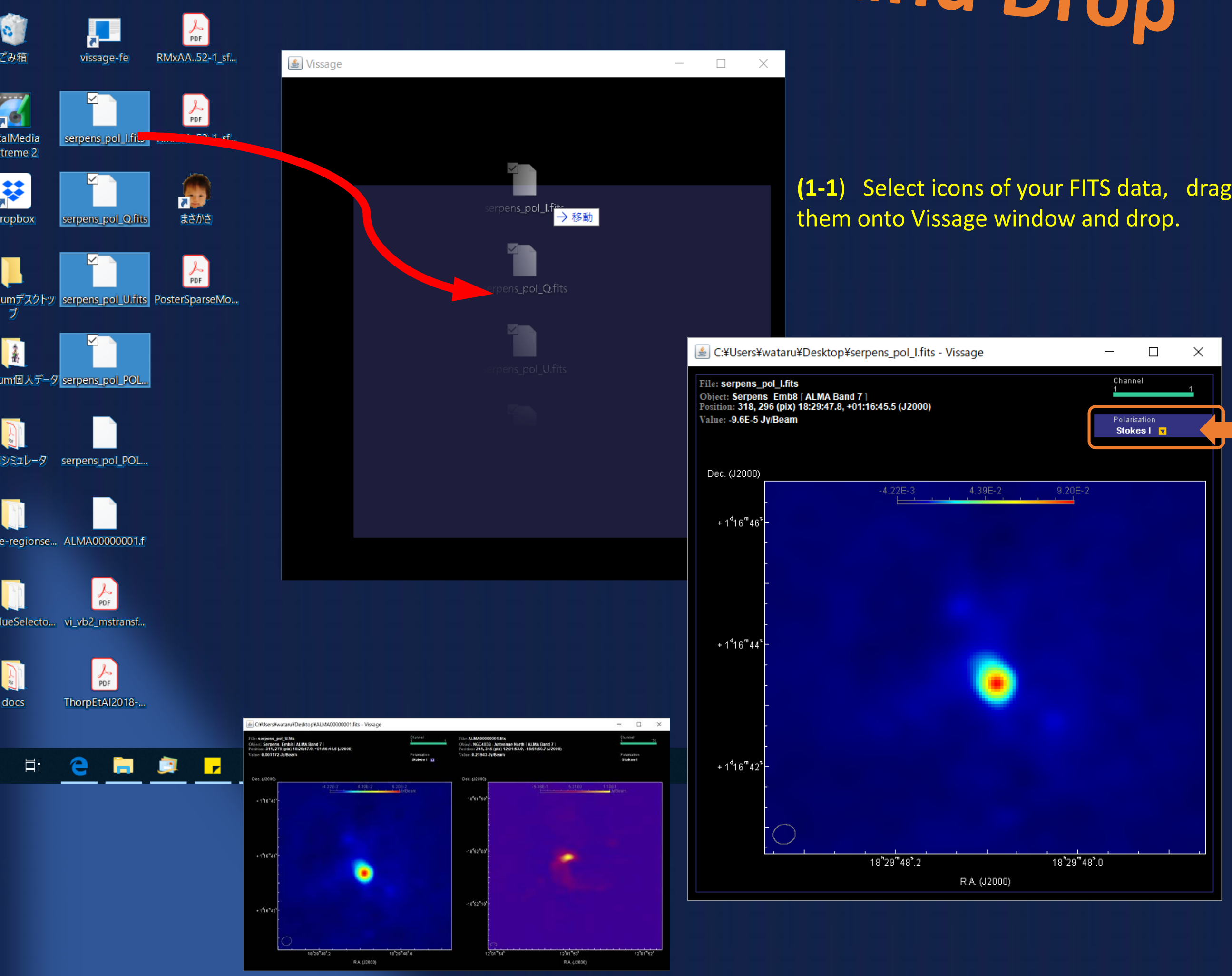


Wataru Kawasaki, Yuji Shirasaki, Christopher Andrew Zapart, Akira Yoshino, Eisuke Morita, Tsuyoshi Kobayashi, George Kosugi, Masatoshi Ohishi and Yoshihiko Mizumoto
(National Astronomical Observatory of Japan)



E-mail: wataru.kawasaki@nao.ac.jp

STEP 1 : Drag FITS Files and Drop



(1-1) Select icons of your FITS data, drag them onto Vissage window and drop.

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.

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.

STEP 2 : Open the Menu and Select

Stokes I
Stokes Q

I and Q images dropped

Stokes Q
Stokes U
EVPA
Pintensity
Overlay EV
Constant
Intensity
Fraction
Orthogonal
Simple Average
Pintensity-weighted Average

Q and U images dropped

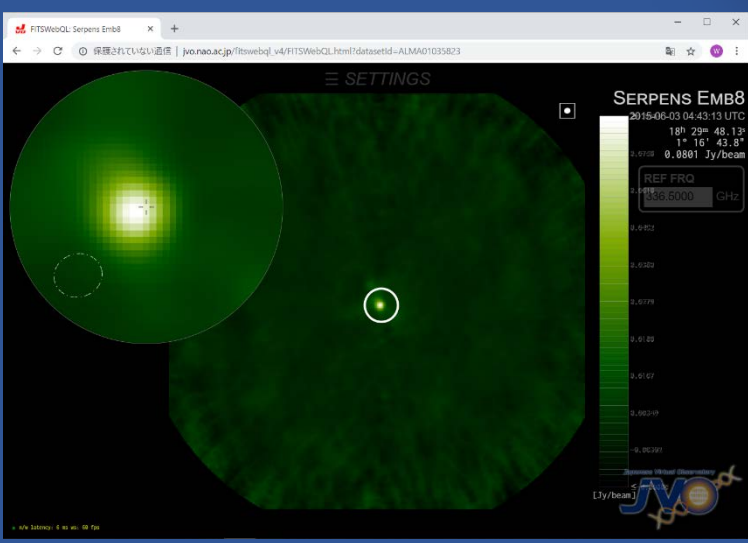
Stokes I
Stokes Q
Stokes U
EVPA
Pintensity
PFraction
Overlay EV
Constant
Intensity
Fraction
Orthogonal
Simple Average
Pintensity-weighted Average

I, Q and U images dropped

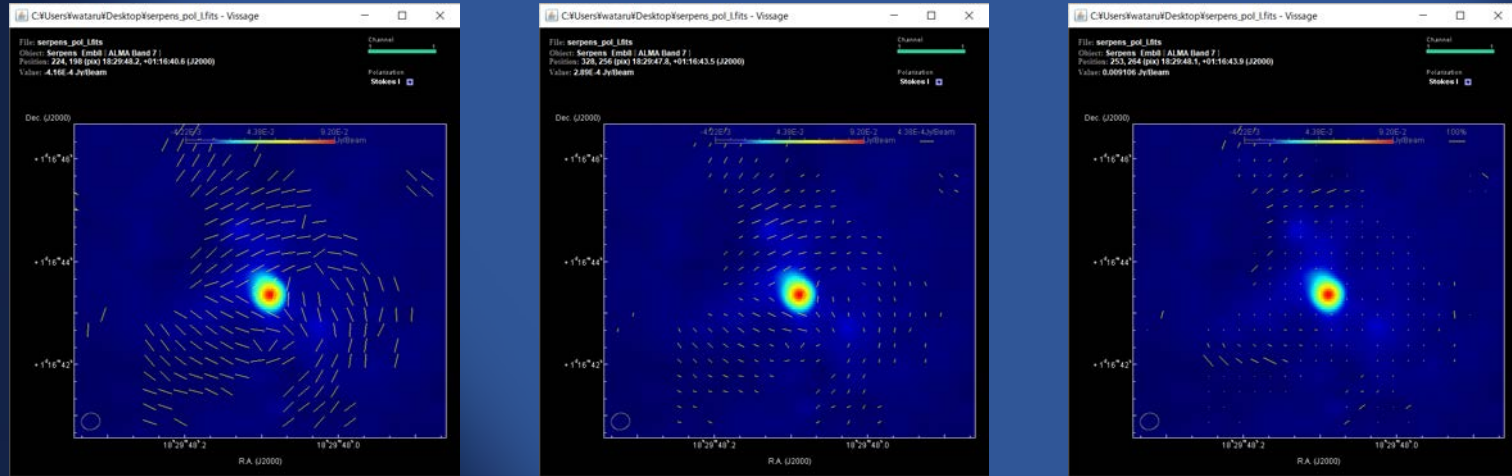
(2-1) Click the polarisation indicator, then you will see a menu like this. The menu items contain all available values according to the dropped data. Dropping another FITS file on an already displayed image, the menu item will be updated each time. If you drop V data, circular polarisation and total polarisation values become available. Data such as XX, YY, RR, LL etc. will soon be accepted.

Other Minor Updates

- (1) Added beam ellipse
- (2) Added colourbar
- (3) Access to FITSWebQL v4 – only for FITS files downloaded from JVO

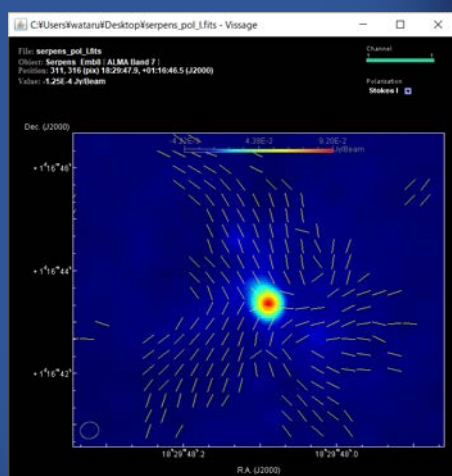


For details about FITSWebQL, don't miss Chris Zapart's talk on Monday afternoon!

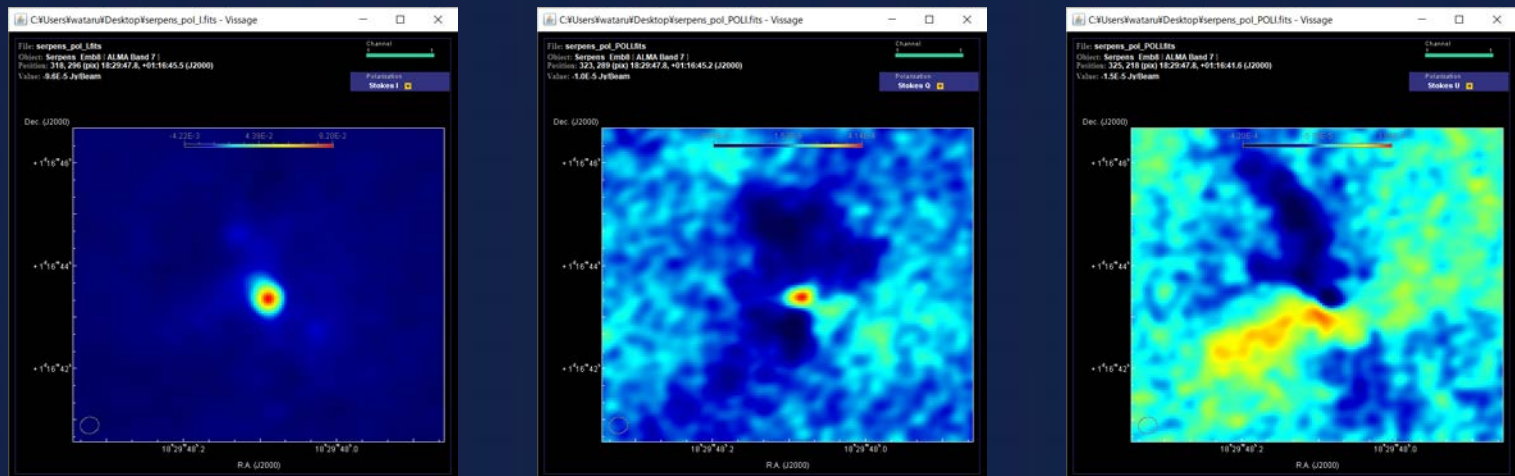


Constant Length
Pintensity-weighted Length
PFraction-weighted Length

(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, p-intensity-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.

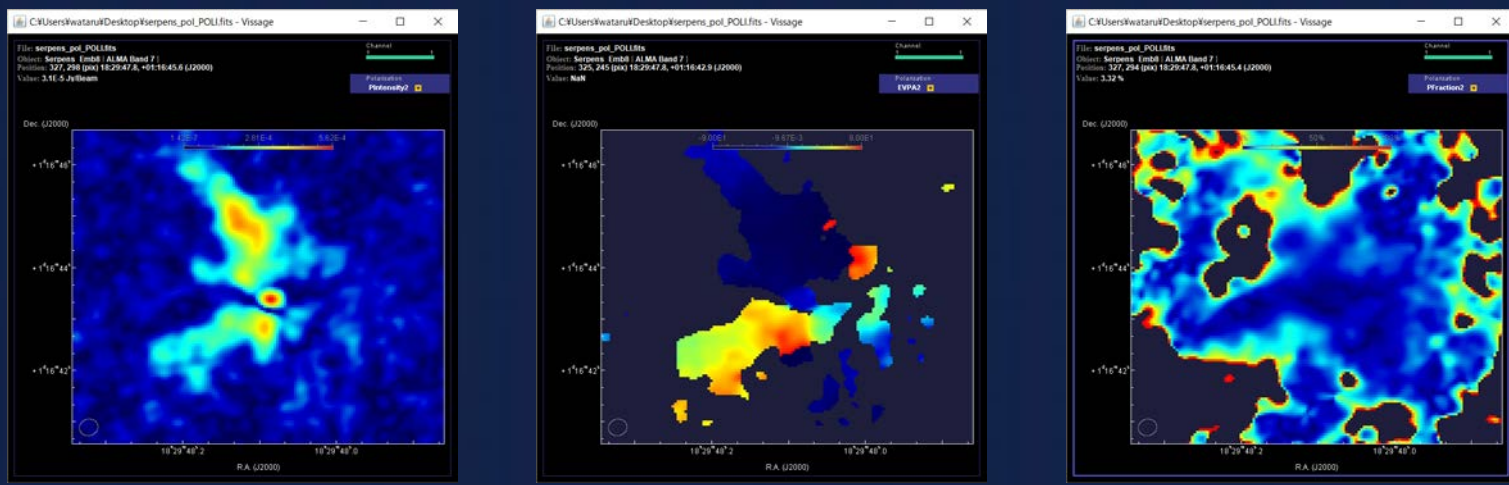


90deg Rotated



Stokes I
Stokes Q
Stokes U

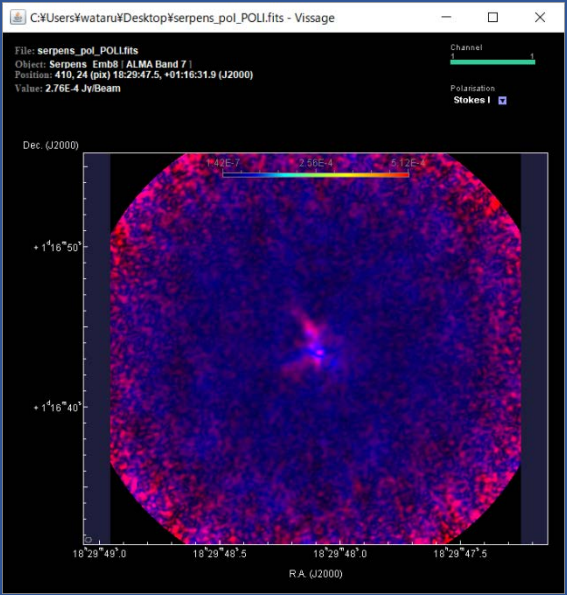
(2-2) Select value and enjoy!



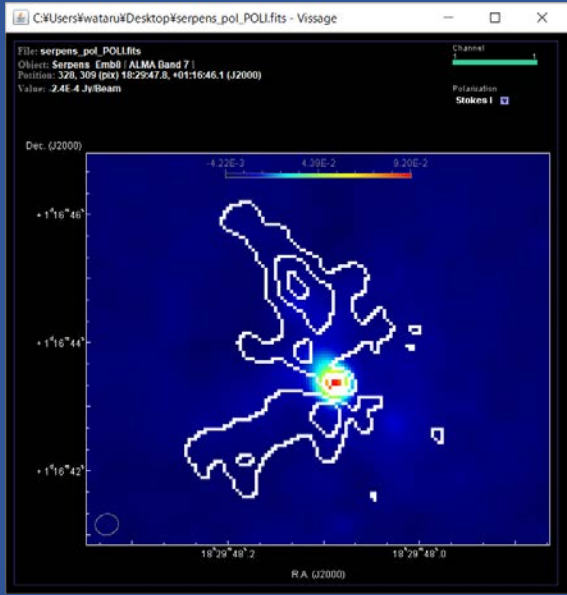
Linear Polarised Intensity
POLI or $\sqrt{Q^2+U^2}$
Polarisation Angle
POLA or $(1/2)\arctan(U/Q)$
Degree of Linear Polarisation
POLI / I or $\sqrt{Q^2+U^2} / I$

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

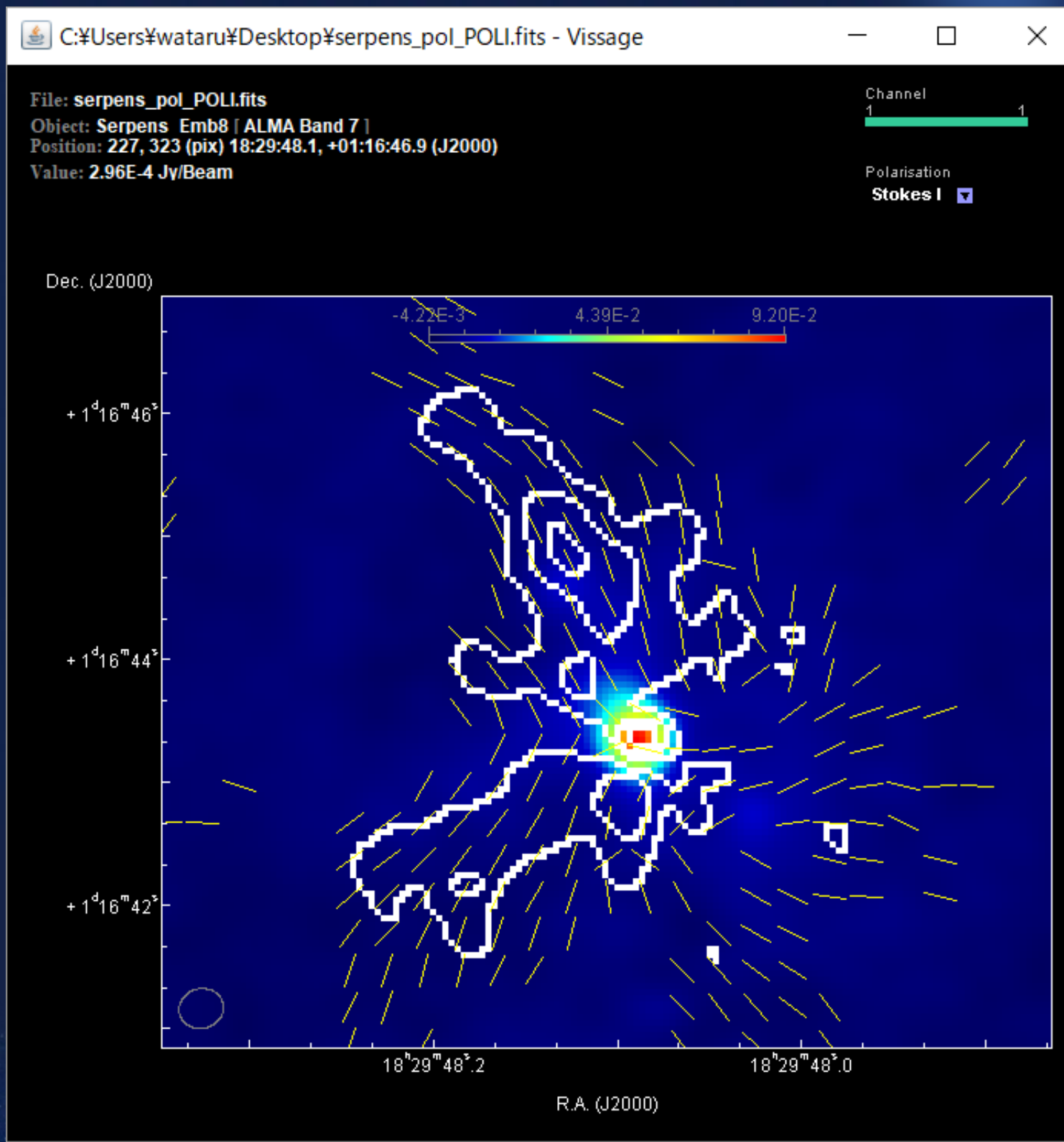


Experimental two-colour image of Stokes I (blue) and polarised intensity (magenta).



Experimental dirty contour map of polarised intensity overlaid on Stokes I image.

... and Voilà!



Download Site:
<http://jvo.nao.ac.jp/download/Vissage>



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