Vissage:

an ALMA - JVO Desktop Application

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Applications Session at IVOA Interop Meeting, Heidelberg, 13/05/2013

- *Visage?*

...No, it's *Vi**ss**age.*

It stands for

VISualisation **S**oftware for **A**stronomical **G**igantic data cub**E**s

a Multi-purpose browser of FITS cube.

Vissage: a FITS cube browser

- Cooperates with JVO ALMA Data Service / WebQL
  to quickly access and utilise ALMA data in public

    * JVO+WebQL : to select subset data of your interest
                              from huge data cube
    * Vissage   : to inspect the downloaded data cube
                              in more detail

- Standalone application for desktop / laptop PC
- Runs on any OS which supports Java

Concepts

- Principals:

  - Optimised for data cubes
    Offer a tool to inspect data cube in various ways.
    Primary target is ALMA (+ Subaru, HST, Chandra, etc. …)

  - Close connection with VO
    Seamless connection with JVO services (ALMA, Subaru)
    Connecting with other VO services in future planning

Concepts

- Ancillaries:

  - Handling multiple images
    - *A data cube can produce various images*
      (0th/1st/2nd/... moment maps, channel maps, P-V diagram, etc.)
    - *Accessing VO may lead to a bunch of images*

  - Usability
    - *Multi-dimensional data has a big flexibility in viewing*
    - *As a latecomer, we need 'User eXperience'*

Requirements

SW requirements

  - OS : Windows, Linux, Mac OS X
      - *any OS supporting Java should be OK*
      - *64-bit OS favourable*

  - Java : JRE 6 or later
  - .NET : .NET 3.5 or later (for Windows only)
      - *needed for front-end for Windows*

HW requirements

  - Memory Size: > than the size of your data
      - *defect in the current version*

Demonstration

(1) launch (drag'n'drop FITS files onto Vissage icon)
(2) drag / zoom / change colour contrast

(3*) colourset variation
(4*) 0th / 1st / 2nd moment maps

(5) change frequency range
(6) flipbook
(7) channel map / change freq. range / change map number
(8) P-V diagram

(9*) ALMA / NRO45m / Spitzer / SCam / HST / Chadra images
(10*) connect ALMA WebQL
(11*) request ALMA data with higher resolution via JVO
(12*) connect Subaru image cutout service by JVO

(13) overlaying two images (NGC4038: HST + ALMA)
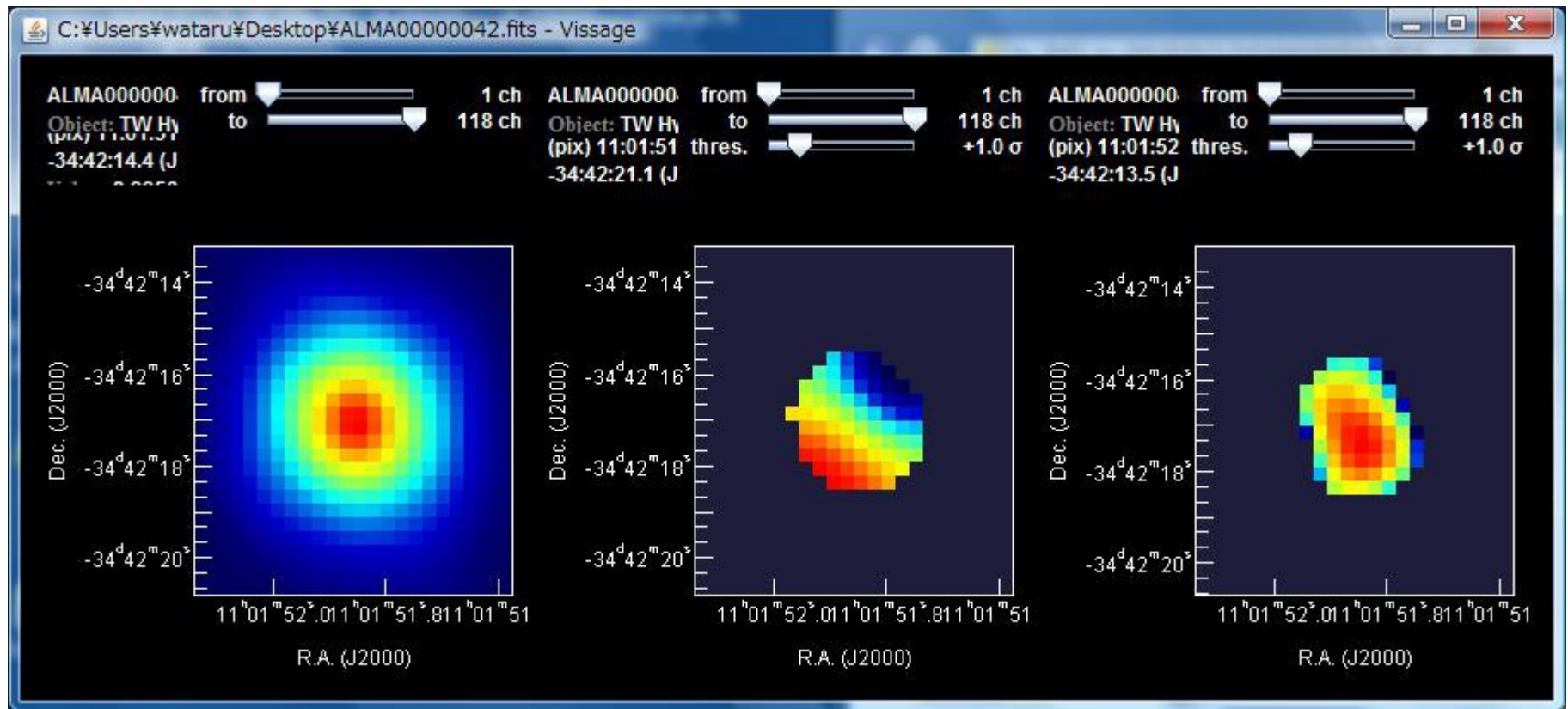(14) flexible layout of multiple images
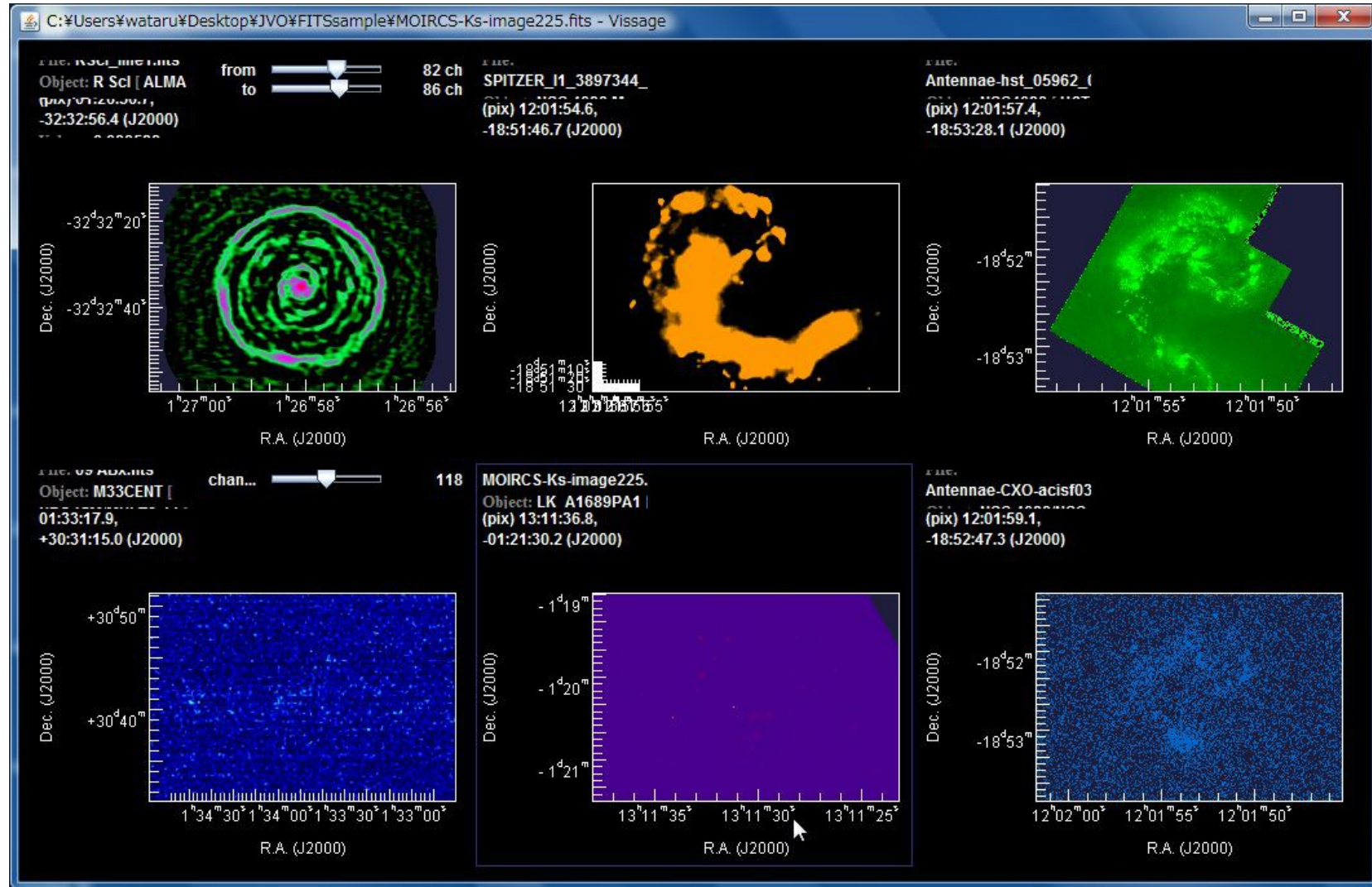
Demonstration

(3) colourset variation
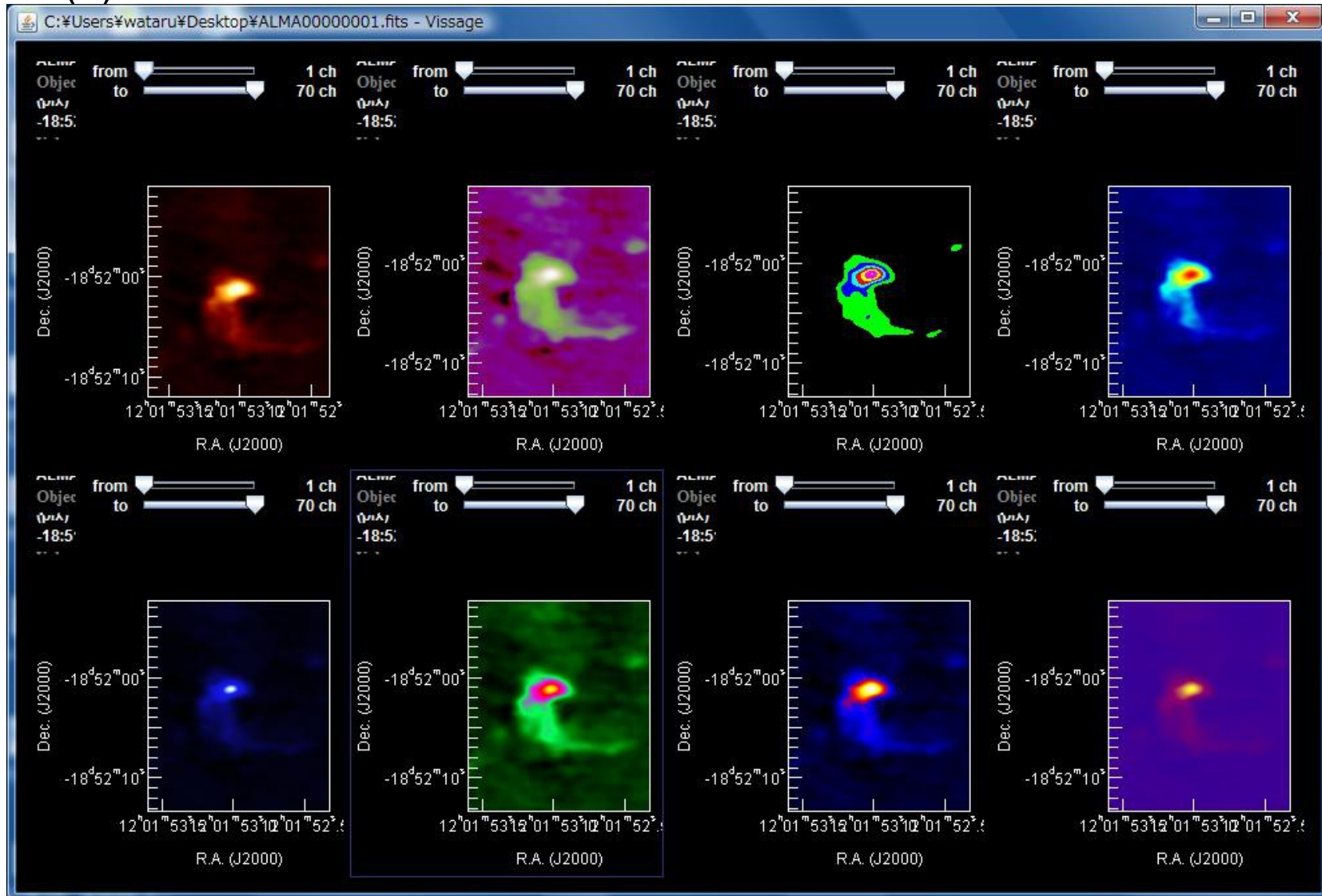
Demonstration

(4) integrated intensity map / 1st moment map / 2nd moment map

Demonstration

(9) ALMA / NRO45m / Spitzer / Subaru / HST / Chadra images

Future Plan

Functions to be available in the near future include:

- handling huge data (> memory size)
- contour plotting
- inter-picture operation (e.g., line-ratio map)
- catalogue overlay
- output graphic image files (jpeg, eps, pdf, etc.)
- etc.

As for UI, the current one is still preliminary and must be more intuitive and user-friendly.

Stay tuned!