IVOA Banff October 2014

A C library to handle MOCs

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followed by:

A Javascript library to handle VOTable

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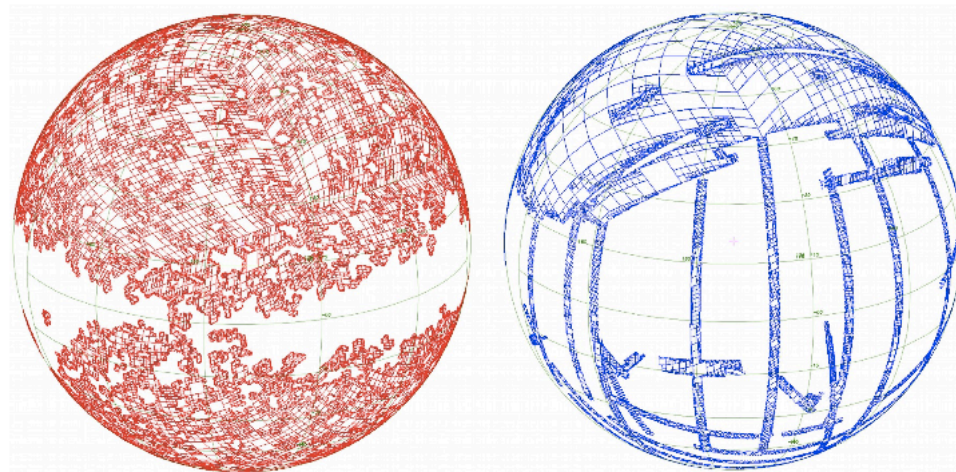
followed by:

Apps session
12 October 2014

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CMOC

- What is CMOC ?

    ○ <u>C</u> library for <u>MOC</u> (Multi-Order Coverage map)

    ○ A library to handle MOCs which is a "inspired" of the Java library

Illustration from the
MOC recommendation

- Two MOCs corresponding to GALEX AIS (HEALPix level 8 – 70,000 cells) and SDSS (HEALPix level 10,- 225,000 cells):

CMOC is available

- As a library which provides:

  - Reading of a FITS, JSON and CSV (catalogues)

  - Writing in FITS and JSON

  - Operations (union, difference, etc.)

  - Equality checking

  - Adding of a disk into a MOC

  - Checking if the MOC is included in a circle

  - Intersection between a circle and a MOC

CMOC is available (2)

- As a standalone with operations (unions, intersections, etc.) through the command line


```
Terminal                                                              _  +  ×
andre@andre-VirtualBox ~/workspace/MOCConsole $ ./MOCConsole
./MOCConsole : operation not available
./MOCConsole : use : cmoc OPTION[OPTION] outputfilename, operation, filename1, [filename2, ...]

OPTION :
-I : interactive mod
-B : bash mod, need second option
x : if outputfile exists, this will overwrite it
v : if outputfile exists, nothing happens
Examples :
./MOCConsole -I ../output.fits, a^b ../glimpse.fits ../smp4.fits
./MOCConsole -Bx ../output.fits, ~(a^b) ../glimpse.fits ../smp4.fits
andre@andre-VirtualBox ~/workspace/MOCConsole $
```

Comparison with the Java library

- The C library "is" around 60% faster than the Java library

  - Benchmark with 1000 unions, 1000 intersections, 1000 differences

A Javascript library to handle VOTable

- What is votables.js ?
  - A Javascript library to handle VOTable developped from scratch
  - Designed to parse both "standard" and binary VOTable
  - No specific internal model, use of JSON for the standard encoding
    - Set of "get…"
  - For binary encoding, loading of the binary part in a object and decoding on demand
    - This part will be deeply improved
  - Flexible to let people adapt it to their needs

Demo

- Live…

Roadmap

- CMOC
  - Under testing, if you are interested you can try it
  - Available probably by the end of the year (deepest testing, packaging, documentation before the release)
- votables.js
  - A first beta release on a GitHub repository in December
  - Mail to the apps mailing list
    - We will take into account (if possible) suggestions and needs
  - Will be added to http://wiki.ivoa.net/twiki/bin/view/IVOA/PublishingInTheVONew

Links

- MOC Recommendation, Java library and source code

  o http://ivoa.net/documents/MOC/20140602/index.html

  o http://wiki.ivoa.net/internal/IVOA/MocInfo/Moc.jar

  o http://wiki.ivoa.net/internal/IVOA/MocInfo/MocSrc.jar

- VOTable Recommendation, other languages

  o http://www.ivoa.net/documents/VOTable/

  o http://wiki.ivoa.net/twiki/bin/view/IVOA/PublishingInTheVONew