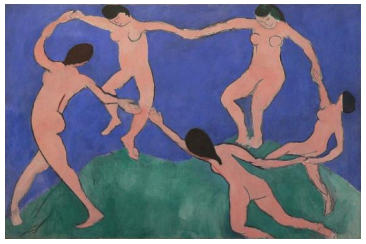


REST functionalities in MATISSE and their potential applications in VOSSIA

Angelo Zinzi[1,2]

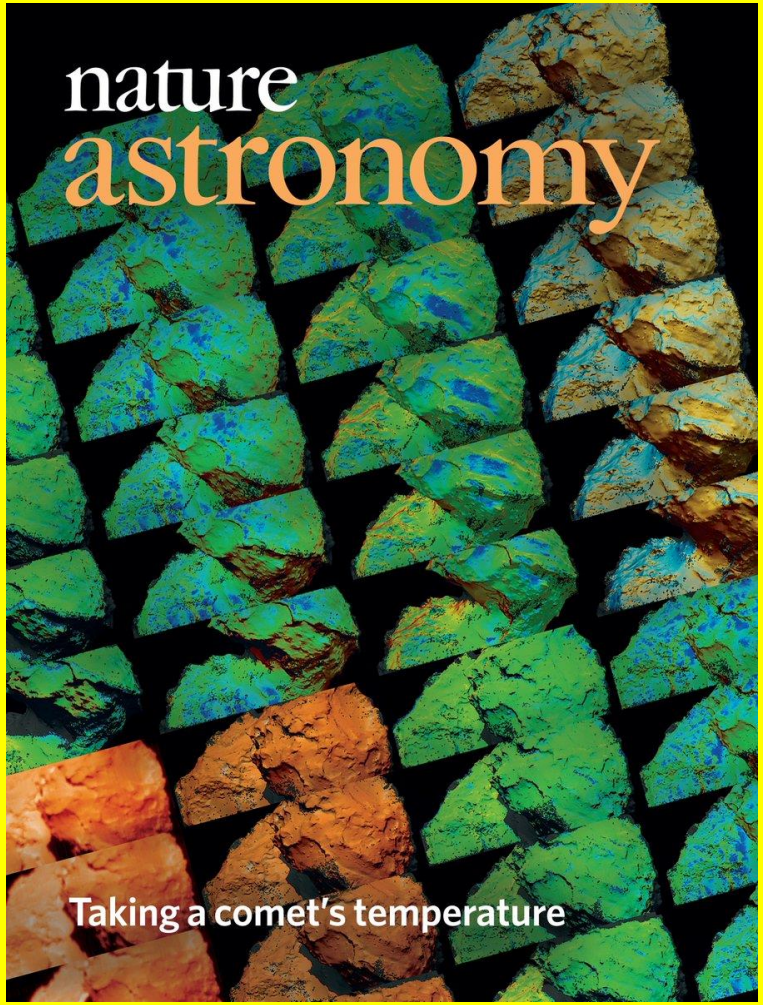
1) Space Science Data Center – ASI, 2) Agenzia Spaziale Italiana

angelo.zinzi@ssdc.asi.it

VObs.it meeting (July 2021)

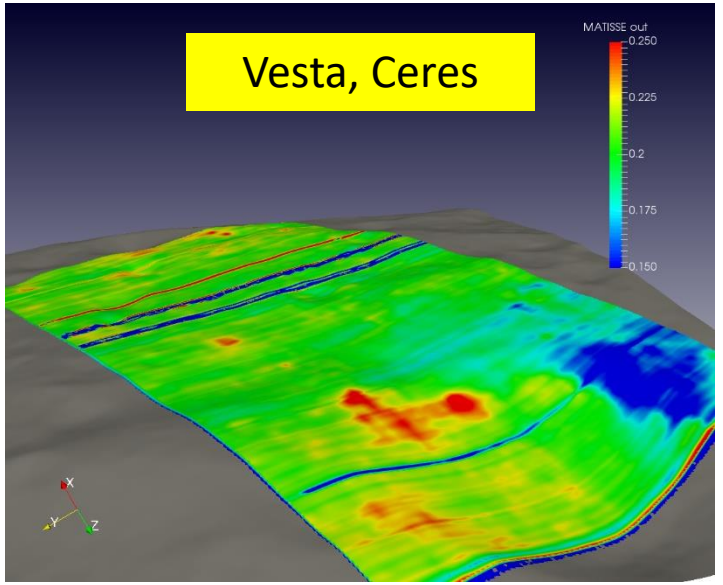
https://indico.ict.inaf.it/event/1588/

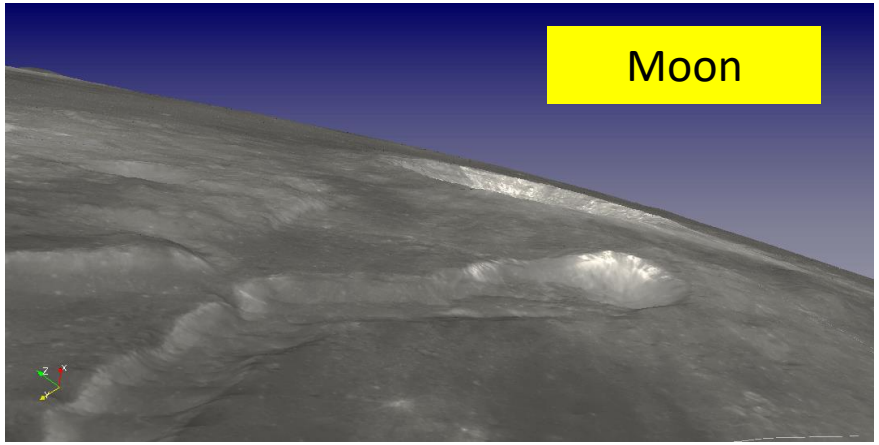
Space Science Data Center

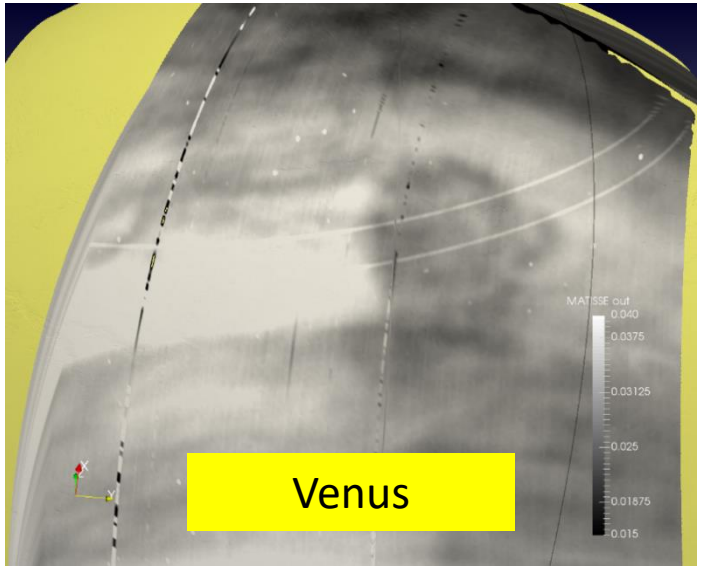


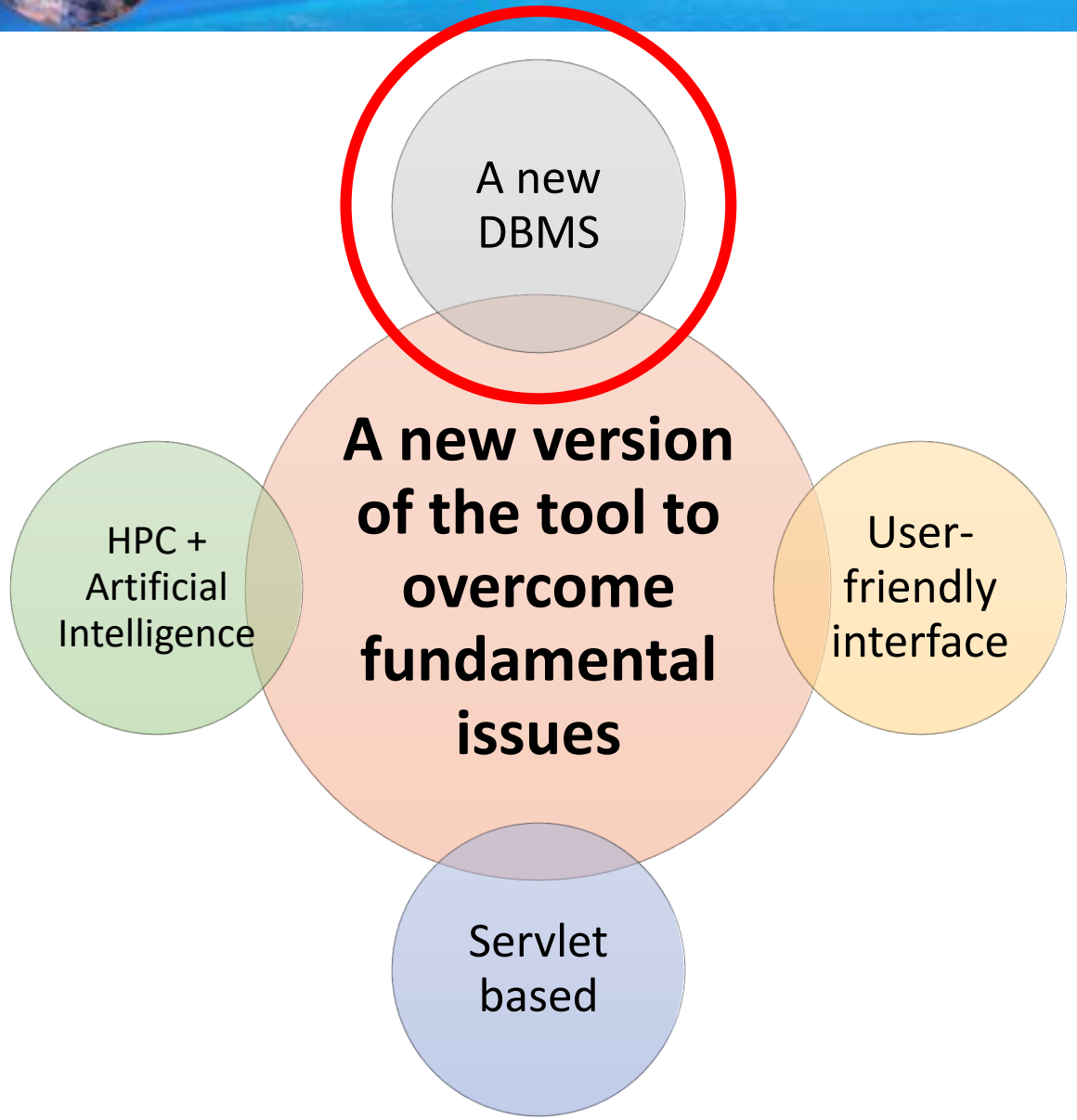
July 2019 Nature Astronomy cover!

MATISSE has grown, improving its scientific capabilities and including new target, missions and instruments









The PostgreSQL + PostGIS solution allows to correctly manage spatial queries, also improving spatial interpolation between observations and DTMs/shape models

Space Science Data Center

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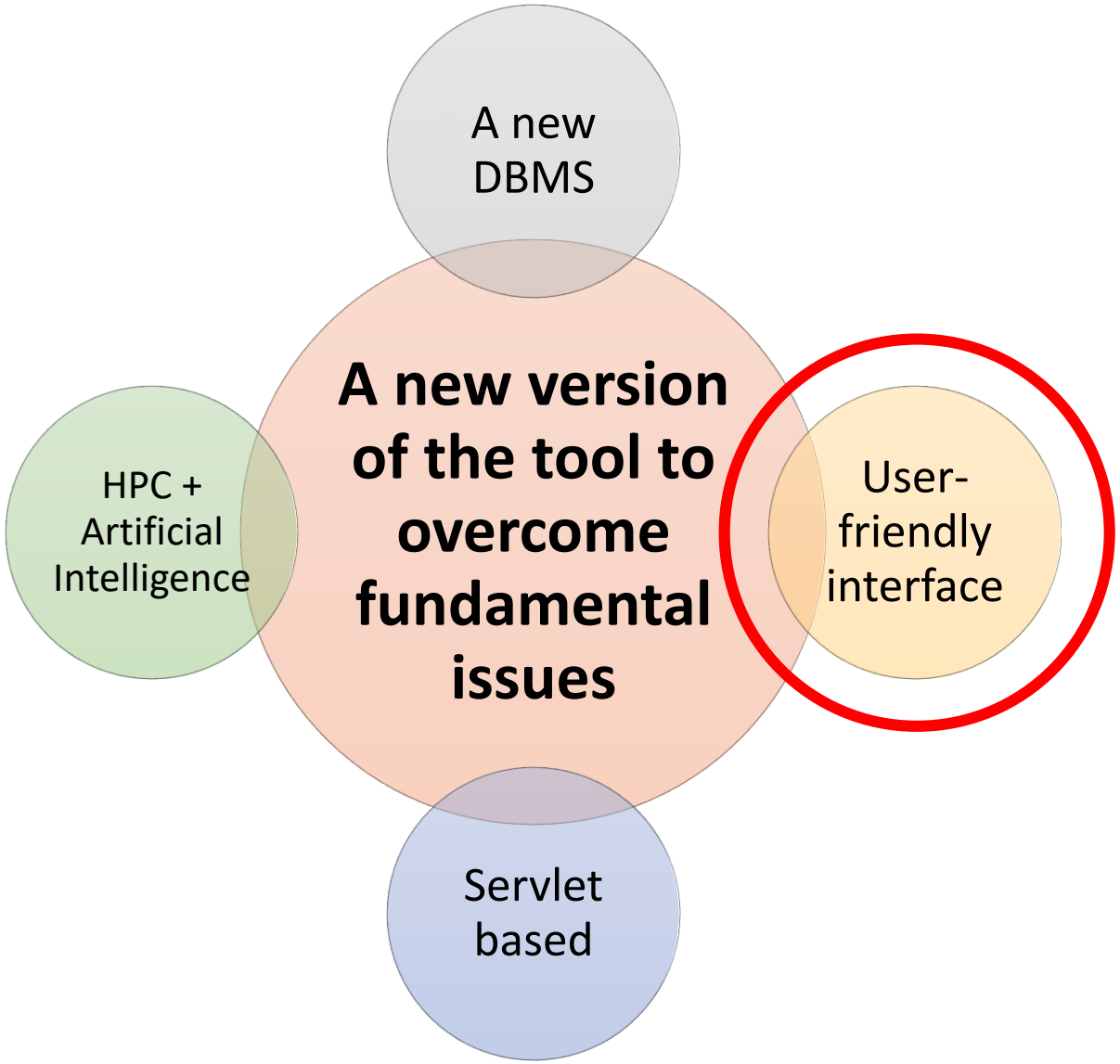
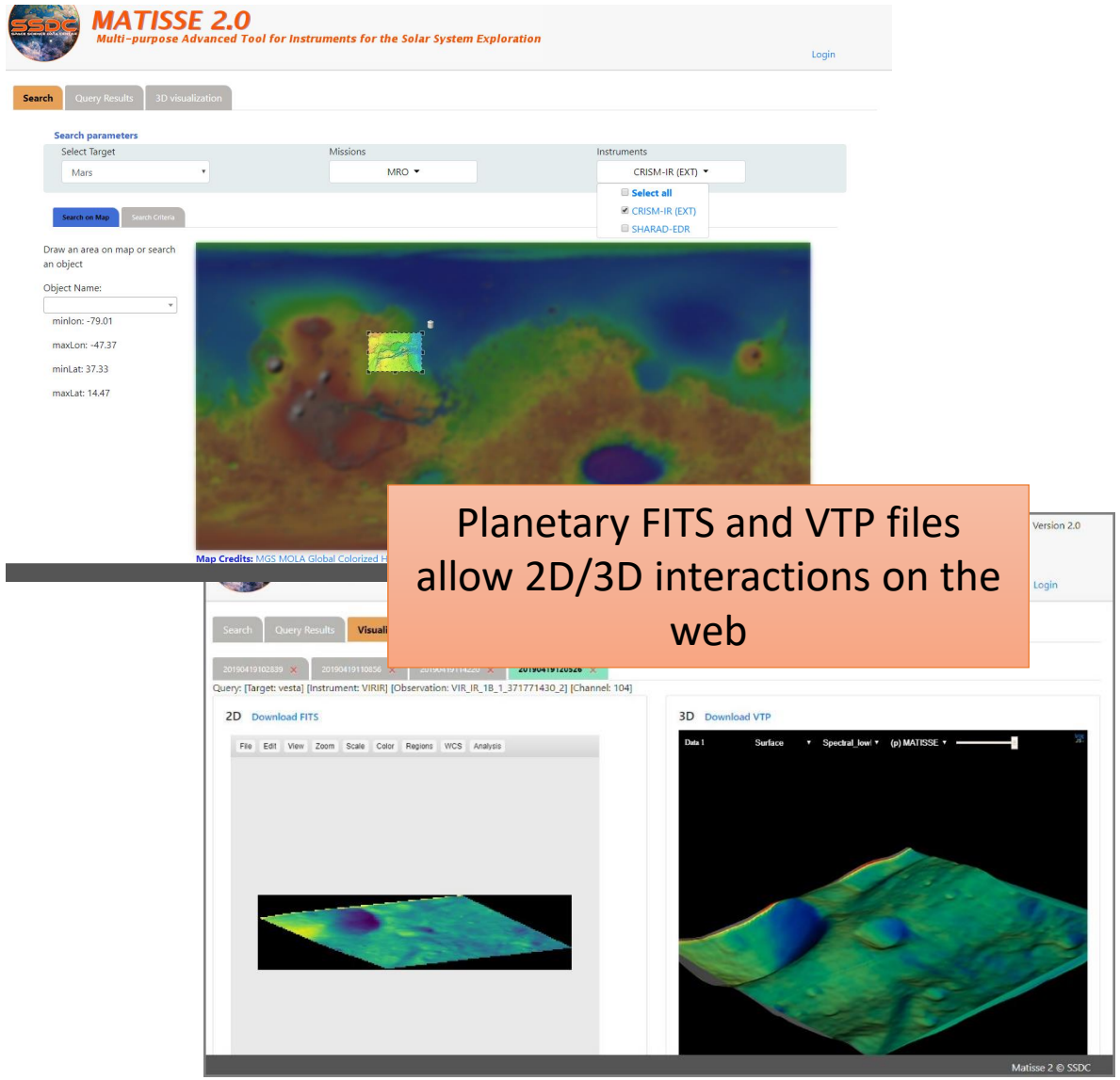
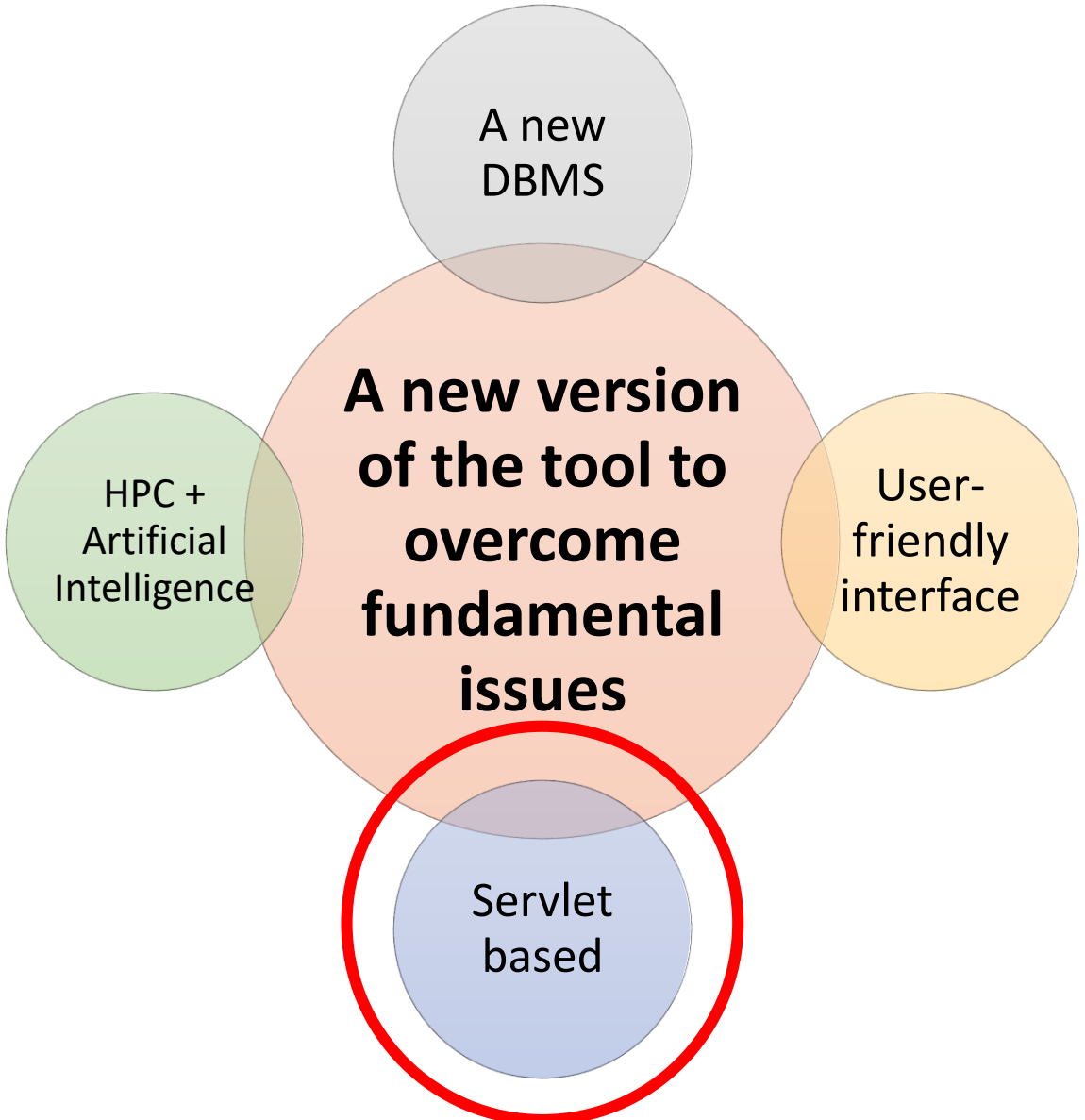


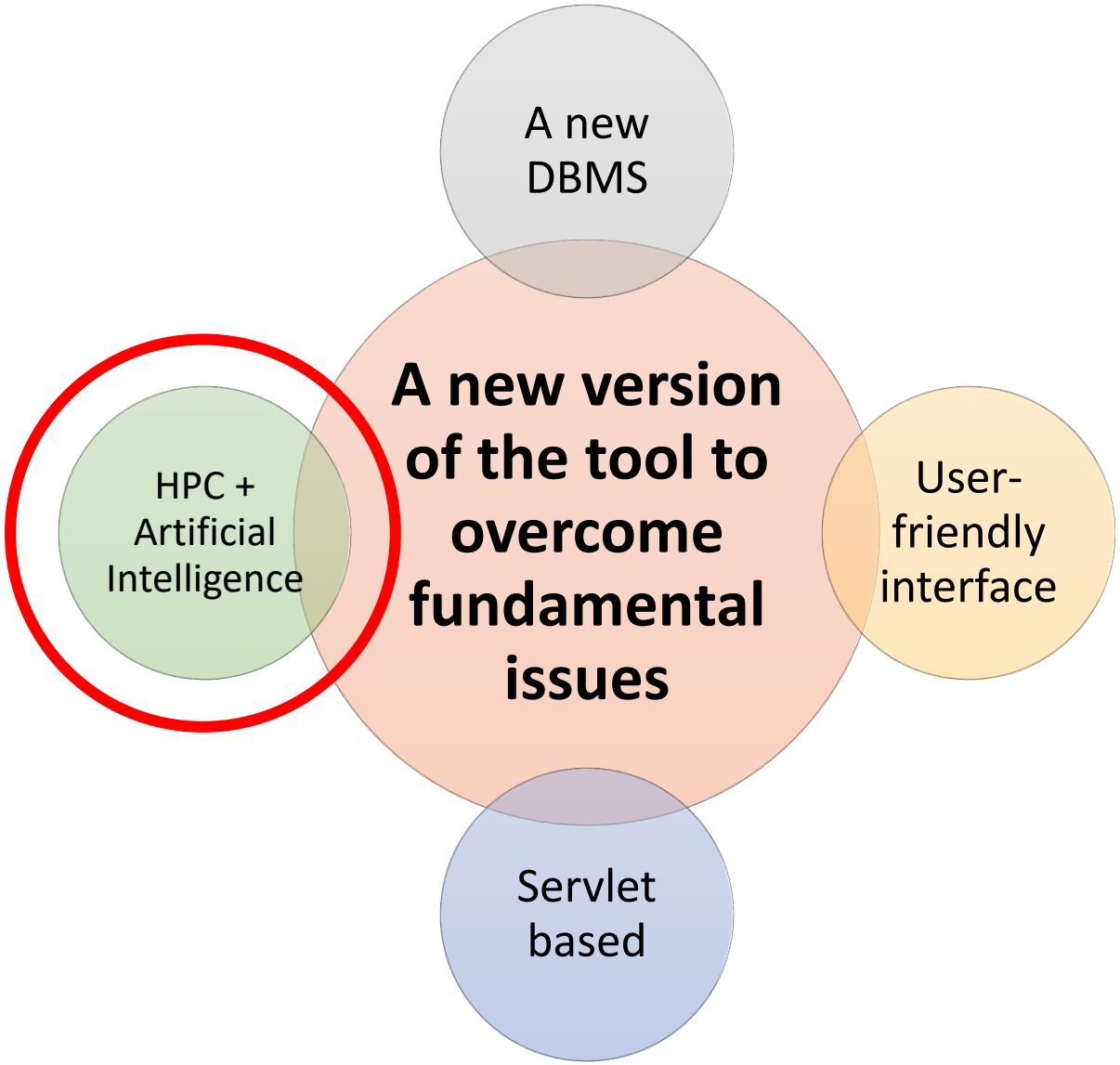




It will be possible to execute complex queries by command-line

Queries could be sent directly by other applications, such as OpenUniverse portal

Space Science Data Center



Big data, featuring the 5 Vs of
Variety, Veracity, Velocity, Volume and Value

Space Science Data Center

Agenzia Spaziale Italiana

MATISSE 2 is now available at https://tools.ssdc.asi.it/Matisse

TRY IT!

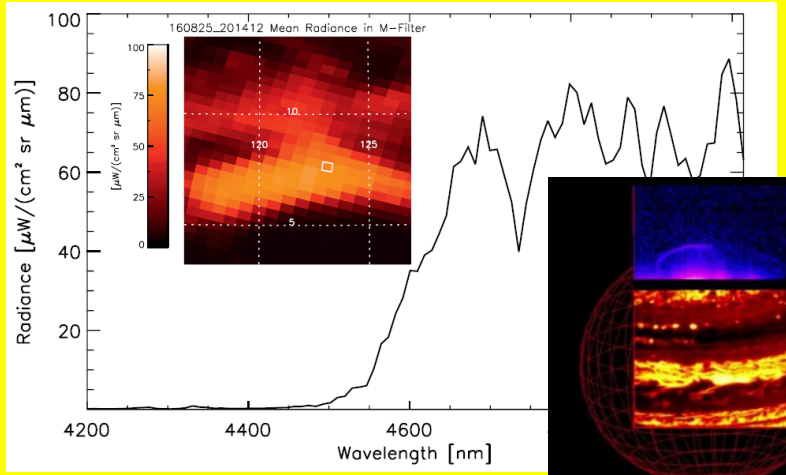
Completely written in Python 3

This version gives access:

- VIR Vesta
- VIR Ceres
- CRISM Mars (via PlanetServer)
- VIRTIS Venus (via EPN-TAP)
- Airless bodies thermophisical model
- MARSIS Mars (restriced access)

Searching, 2D and 3D interactive visualizations working

Future updates

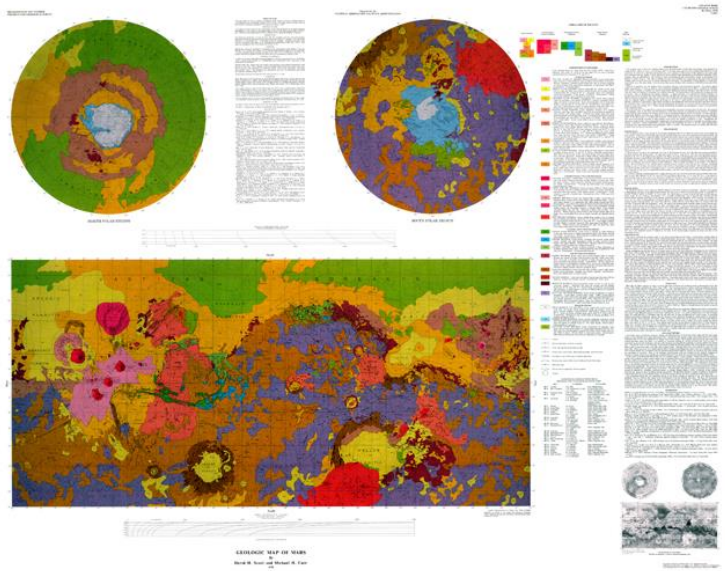


JIRAM atmospheric retrieval (D. Grassi):

- Parallelization
- Database
- Visualization

(the newly developed parallel code runs on a test machine)

MATISSE for geological maps

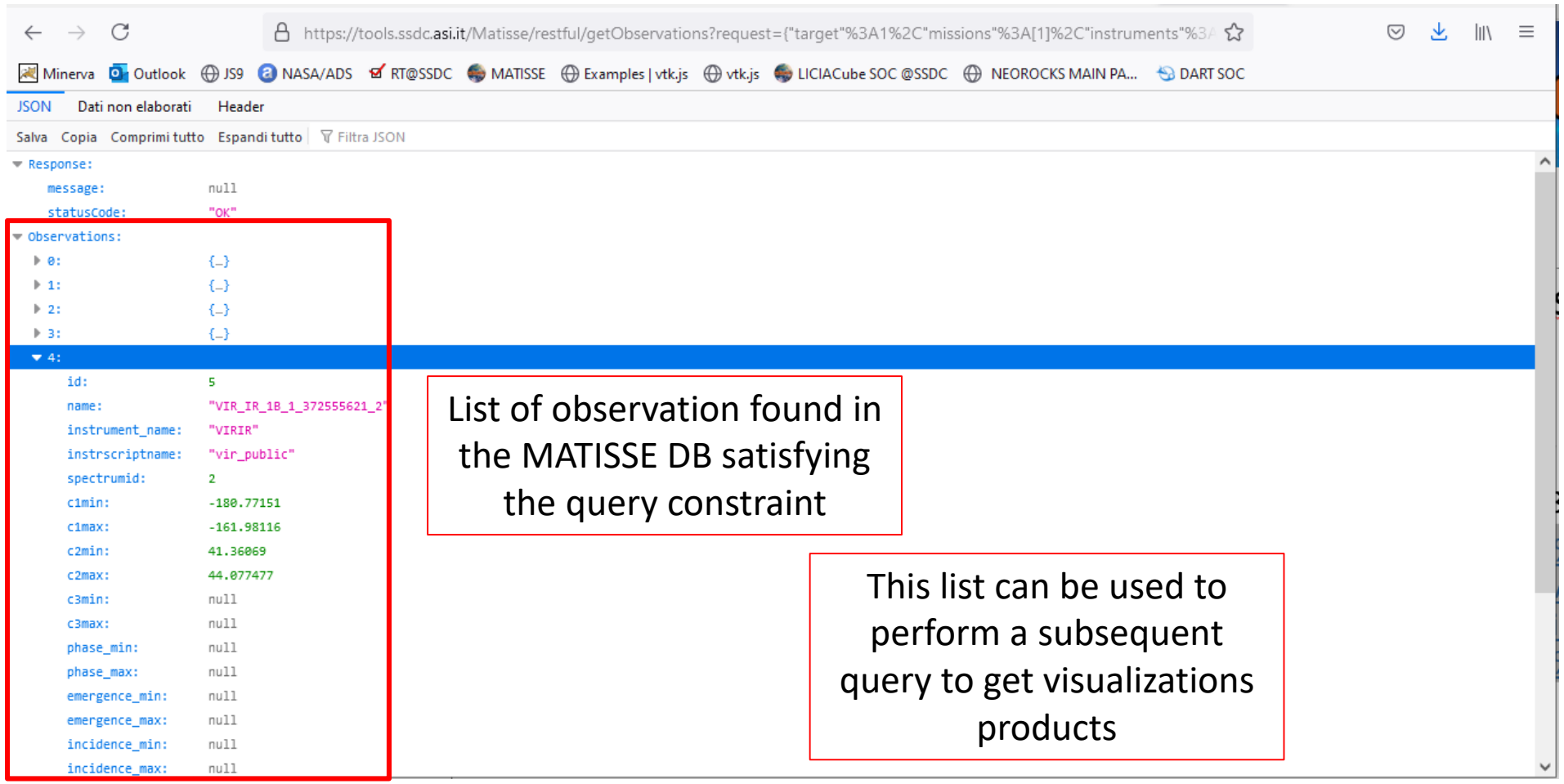


LICIACube:

- SOC established at SSDC
- MATISSE will be used to enhanced data visualization

REST functionalities

- It is now possible to call MATISSE functions by script using REST protocols:
  - getObservations example:
    - { "instruments": [2], "missions": [1], "coordinates": { "latitudeMin": 37.89, "longitudeMin": -132, "longitudeMax": -104.22,"latitudeMax": 66.36 }, "target": 1}
    - https://tools.ssdc.asi.it/Matisse/restful/getObservations?request=%7B%22target%22%3A1%2C%22missions%22%3A%5B1%5D%2C%22instruments%22%3A%5B2%5D%2C%22coordinates%22%3A%7B%22longitudeMin%22%3A-132%2C%22longitudeMax%22%3A-104.22%2C%22latitudeMin%22%3A37.89%2C%22latitudeMax%22%3A66.36%7D%7D

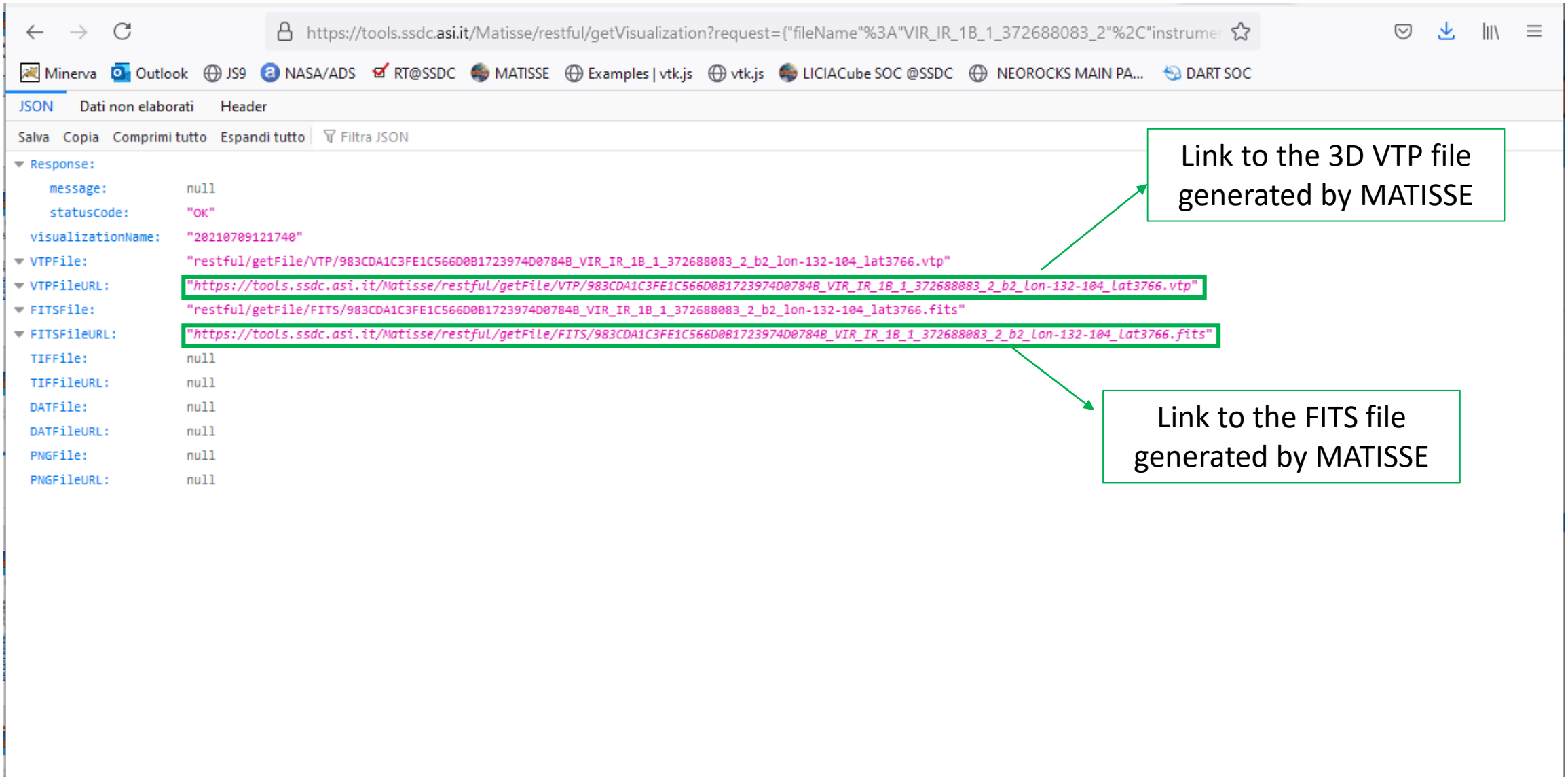


List of observation found in the MATISSE DB satisfying the query constraint

This list can be used to perform a subsequent query to get visualizations products

REST functionalities

- getVisualization example:
  - { "fileName": "VIR_IR_1B_1_372688083_2", "instrumentScript": "vir_public", "channel": "2", "coordinates": { "latitudeMin": 7.89, "longitudeMin": -132, "longitudeMax": -104.22, "latitudeMax": 66.36 }, "queryName": "20200717101934", "instrument": "VIRIR","observationDir": /dataweb/matisse2/data/virpublicir/GEOM_QUBES/vir_da012_11294/", "target": "vesta"}
  - https://tools.ssdc.asi.it/Matisse/restful/getVisualization?request=%7B%22fileName%22%3A%22VIR_IR_1B_1_372688083_2%22%2C%22instrumentScript%22%3A%22vir_public%22%2C%22channel%22%3A%222%22%2C%22coordinates%22%3A%7B%22latitudeMin%22%3A37.89%2C%22longitudeMin%22%3A-132%2C%22longitudeMax%22%3A-104.22%2C%22latitudeMax%22%3A66.36%7D%2C%22queryName%22%3A%22020071710193 4%22%2C%22instrument%22%3A%22VIRIR%22%2C%22observationDir%22%3A%22%2Fdataweb%2Fmatisse2%2Fdata%2Fvirpublicir%2FGEOM_QUBES%2Fvir_da012_11294%2F%22%2C%22target%22%3A%22vesta%22%7D


https://tools.ssdc.asi.it/Matisse/restful/getVisualization?request={"fileName"%3A"VIR_IR_1B_1_372688083_2"%2C"instrume
Minerva
Outlook
JS9
NASA/ADS
RT@SSDC
MATISSE
Examples | vtk.js
vtk.js
LICIACube SOC @SSDC
NEOROCKS MAIN PA...
DART SOC
JSON
Dati non elaborati
Header
Salva
Copia
Comprimi tutto
Espandi tutto
Filtra JSON
Response:
message: null
statusCode: "OK"
visualizationName: "20210709121740"
VTPFile: "restful/getFile/VTP/983CDA1C3FE1C566D0B1723974D0784B_VIR_IR_1B_1_372688083_2_b2_lon-132-104_lat3766.vtp"
VTPFileURL: "https://tools.ssdc.asi.it/Matisse/restful/getFile/VTP/983CDA1C3FE1C566D0B1723974D0784B_VIR_IR_1B_1_372688083_2_b2_lon-132-104_lat3766.vtp"
FITSFile: "restful/getFile/FITS/983CDA1C3FE1C566D0B1723974D0784B_VIR_IR_1B_1_372688083_2_b2_lon-132-104_lat3766.fits"
FITSFileURL: "https://tools.ssdc.asi.it/Matisse/restful/getFile/FITS/983CDA1C3FE1C566D0B1723974D0784B_VIR_IR_1B_1_372688083_2_b2_lon-132-104_lat3766.fits"
TIFFile: null
TIFFileURL: null
DATFile: null
DATFileURL: null
PNGFile: null
PNGFileURL: null
Link to the 3D VTP file generated by MATISSE
Link to the FITS file generated by MATISSE

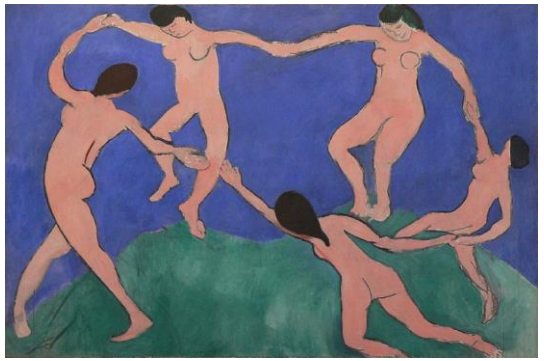
MATISSE for VOSSIA

Heritage

- A TASMAN instance is already running at SSDC (still not used by MATISSE)

Possible applications

- MATISSE could be enhanced by adding a new SIAP service
- VOSSIA could be used to expose this SIAP service by installing a dedicated instance of the tool at SSDC
- Through SIAP, users could directly ask for MATISSE products (e.g., 3D files or FITS)
  - e.g.: service name = MATISSE, command name = query (using the same parameters as for the MATISSE REST query)



https://tools.ssdc.asi.it/Matisse

Thank you for the attention

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