

Recent planetary activity at CDS:

Mars MRO CTX HiPS,
Aladin Lite planets explorer,
planetary features name resolver service,
Sesame extension for solar system objects

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CDS team*

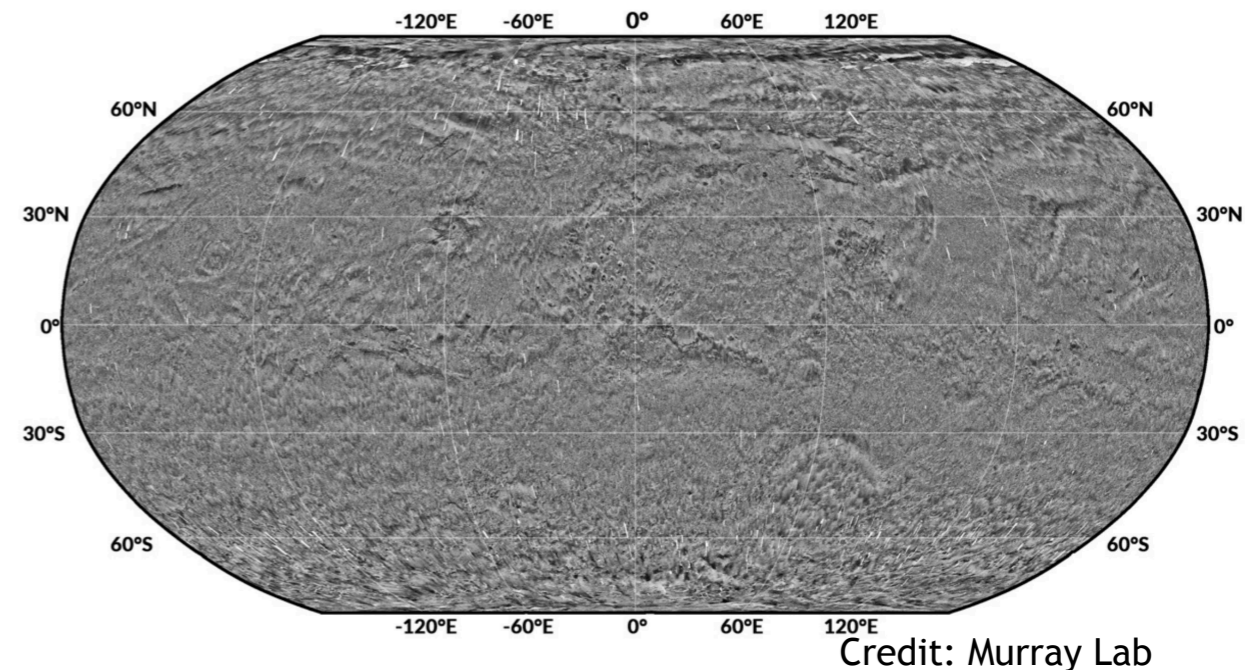


IVOA Bologna 2023 - SSIG



□ Mars MRO CTX HiPS

- MRO CTX images
 - « *The Context Camera, called CTX, provides a big-picture, background view of the terrain around smaller rock and mineral targets that are studied by other cameras on the Mars Reconnaissance Orbiter* »
 - 5 meters/pixel resolution
- Mosaics from Murray Lab (V00)
 - 3960 4°x4° tiles
- HiPS generation process
 - Conversion from TIFF to FITS
 - Adding WCS headers
 - Hipsgen
- HiPS generated (order 11) and published - 16 TB
- Better V01 mosaics available from Murray Lab, will update HiPS in the future
- **Standard**: how to properly describe Mars frame



☐ Mars roulette



Portal Simbad VizieR **Aladin** X-Match Other Help

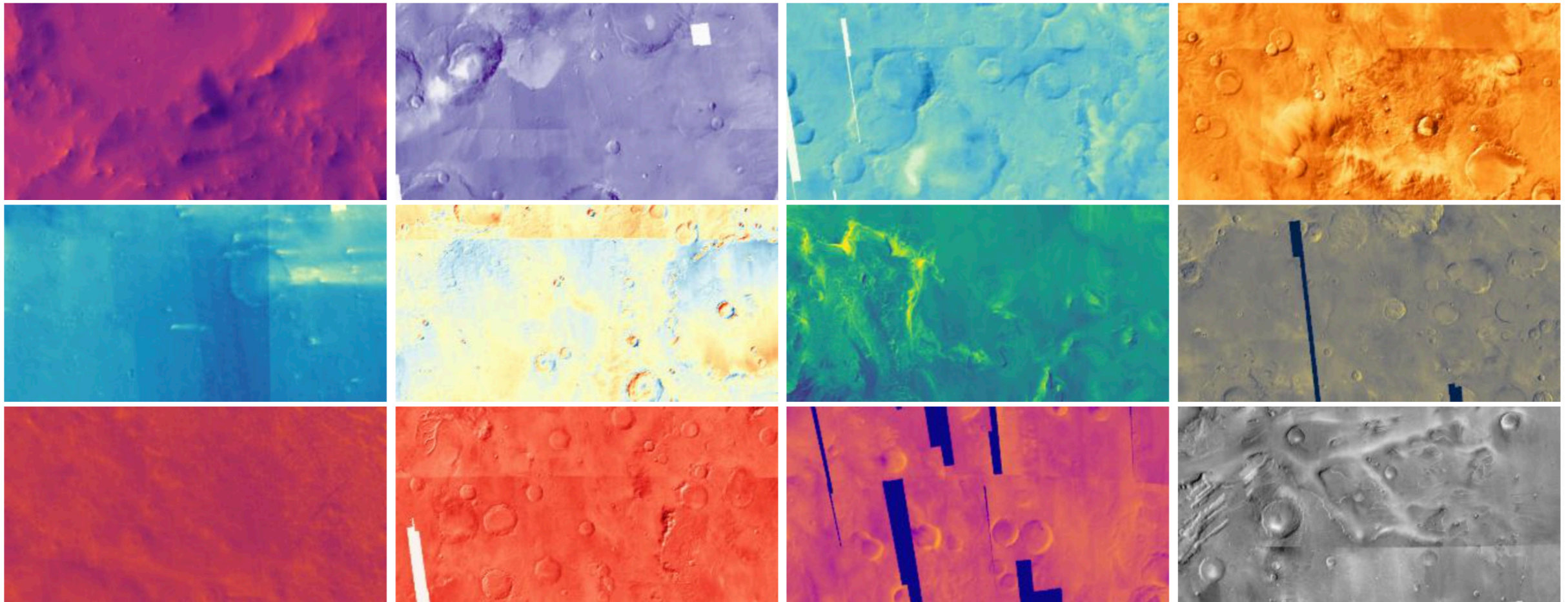


MARS Roulette

(from MARS MRO CTX data)

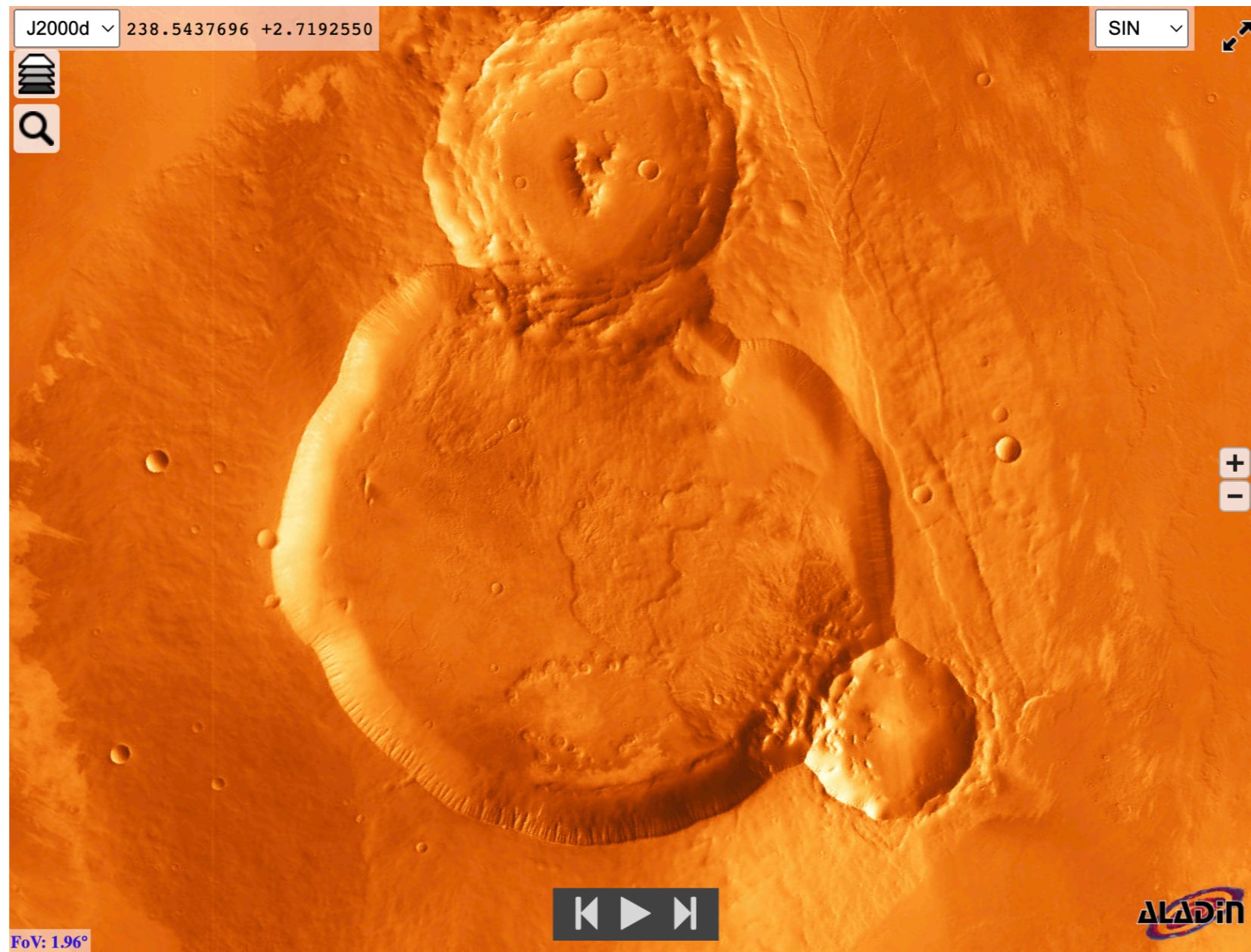
Click on a thumbnail to open the region in Aladin Lite.

[Reload page](#) for new thumbnails



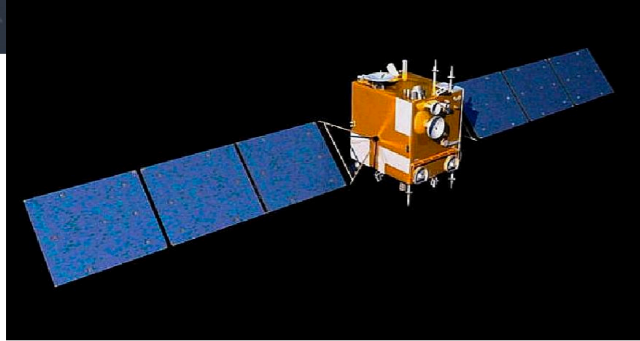
<https://aladin.cds.unistra.fr/AladinLite/showcase/mars-roulette/>

□ Animation "favorite Mars locations"

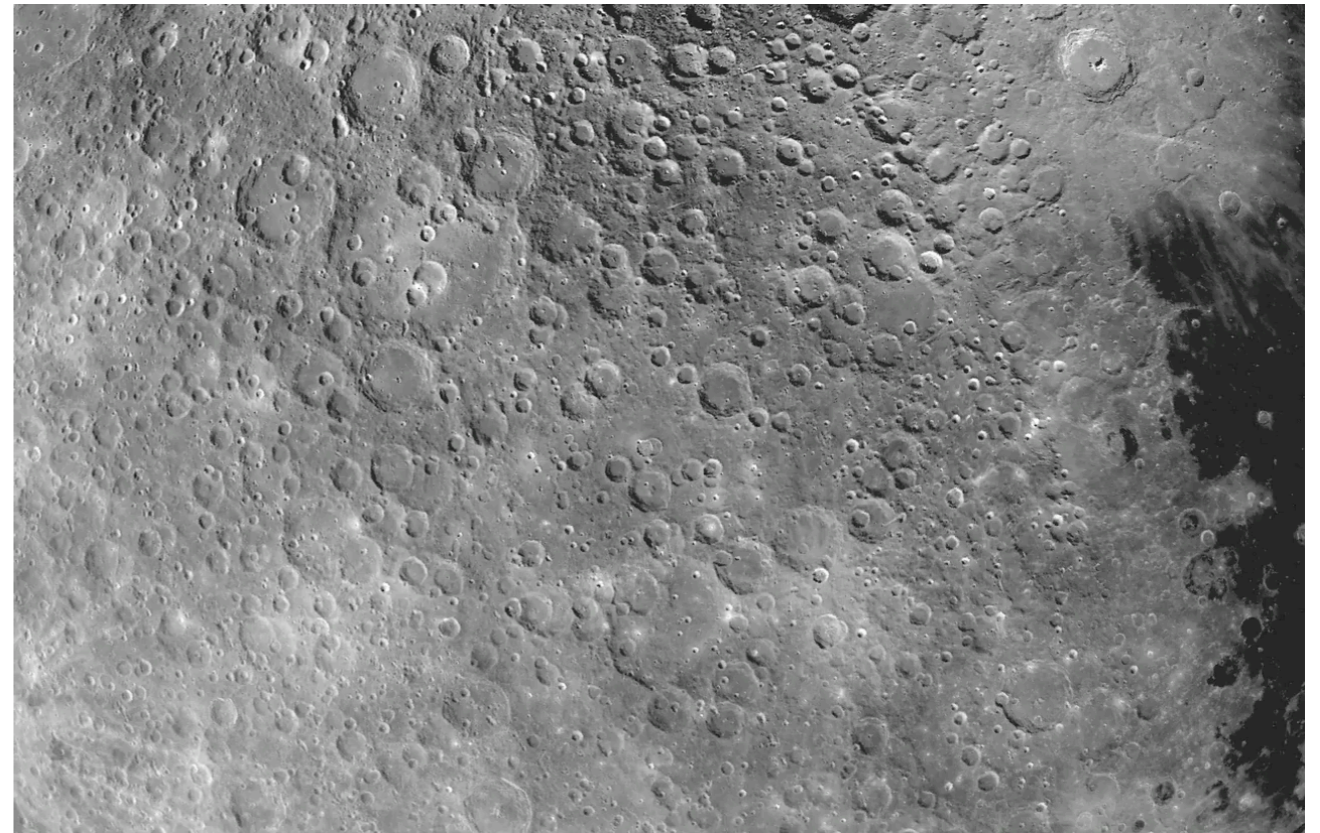


<https://aladin.cds.unistra.fr/AladinLite/showcase/mars-favorite-locations/>

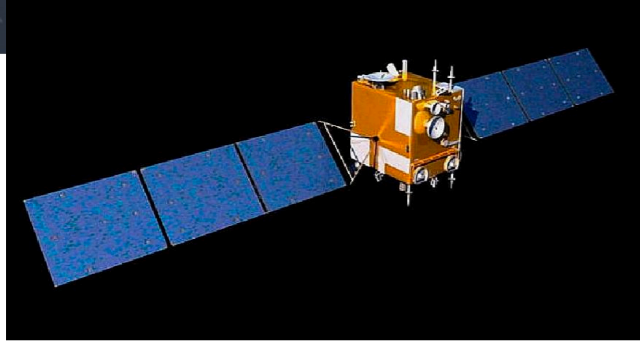
□ Mirroring China-VO Chang'e2 HiPS



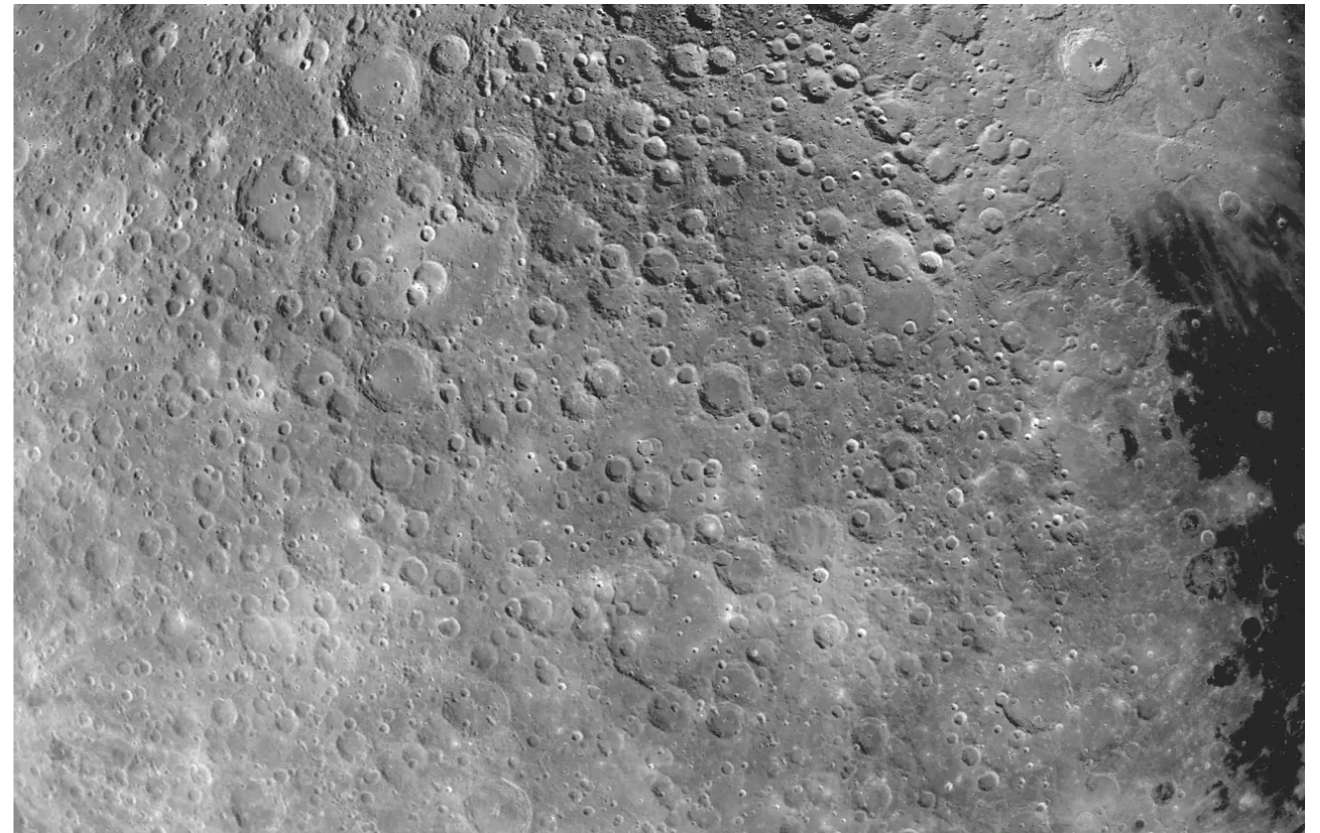
- Chang'e2
 - chinese lunar probe launched in 2010
 - 7 meters/pixel resolution
- HiPS created by China-VO
 - HiPS order 9
 - 1.5 TB
- Mirrored at CDS
 - Allow for faster access from Europe



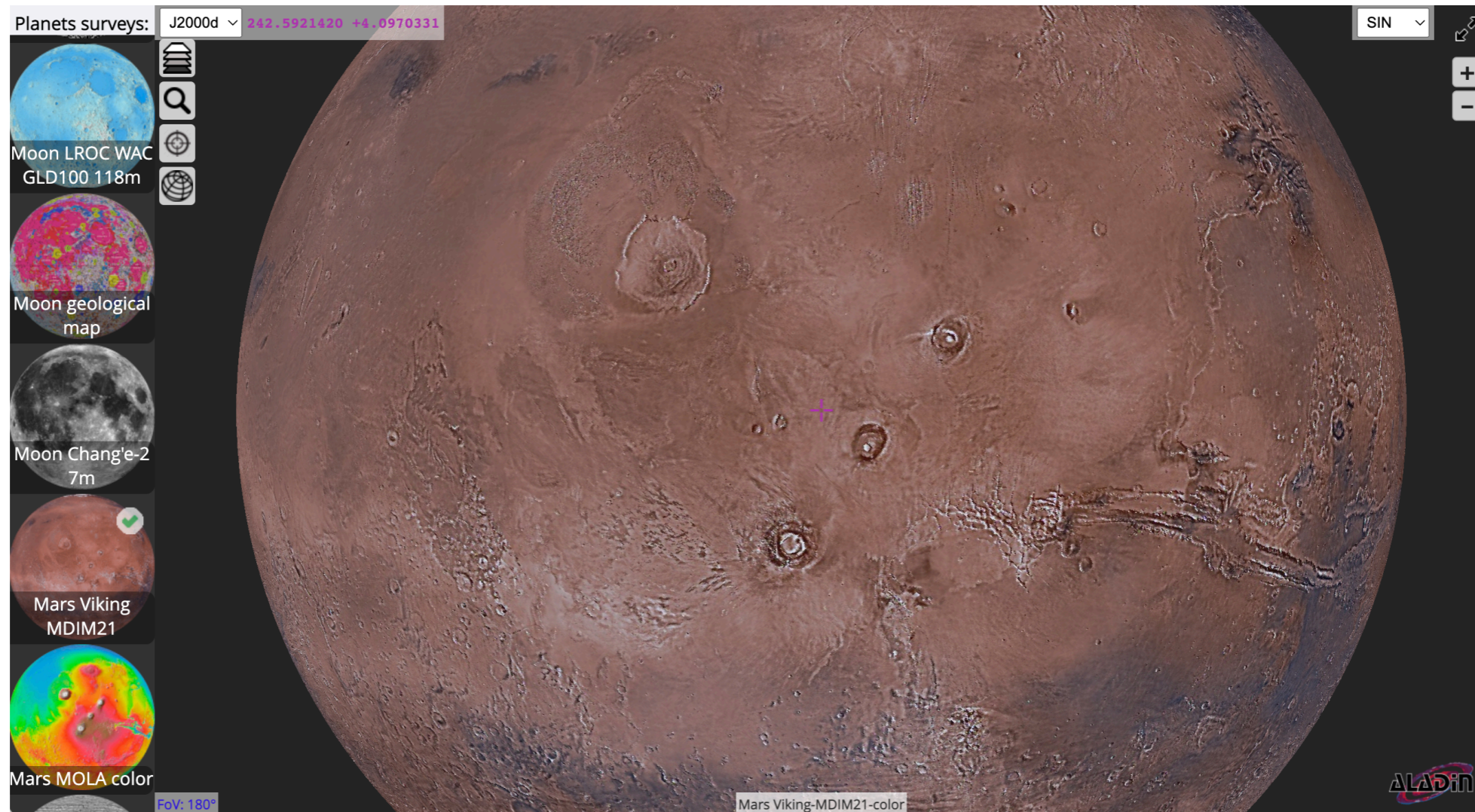
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- Chang'e2
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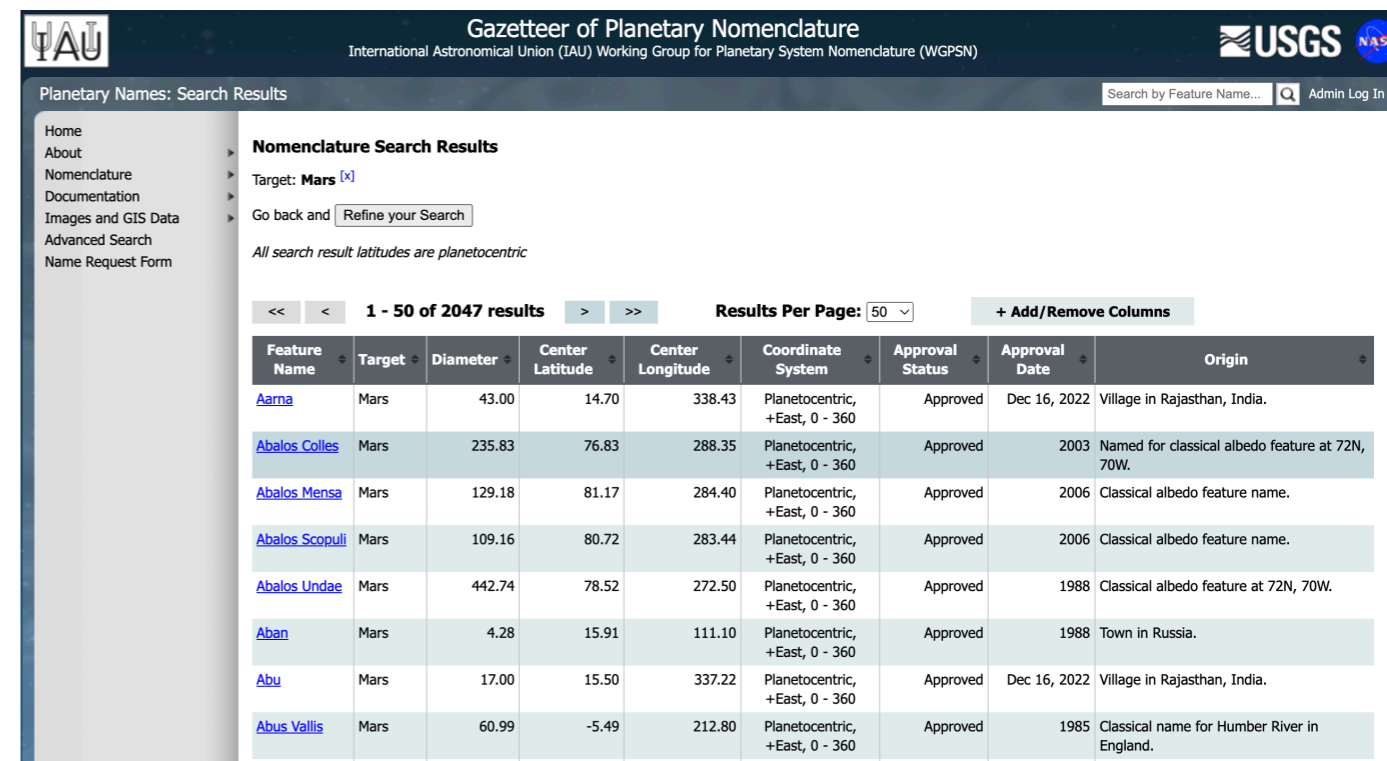
□ Aladin Lite planets explorer page



- Aim: promoting available planetary surfaces HiPS datasets
- Curated list of planetary surfaces HiPS
- <https://aladin.cds.unistra.fr/AladinLite/planets-explorer/>

□ Name resolver for planetary features

- USGS planetary features page
 - List of IAU-approved names for solar system planetary features
 - 46 different bodies (planets, asteroids, satellites)
 - 16k features, 18 columns
- No existing usable API (to my knowledge)

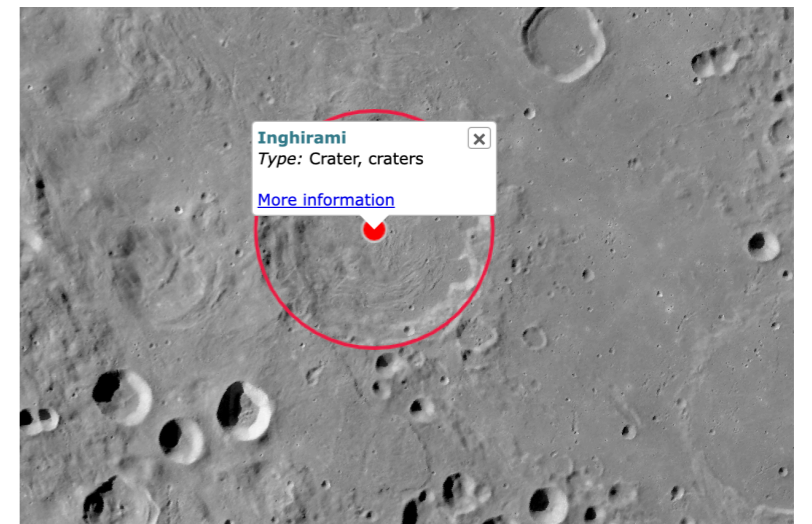


The screenshot shows the 'Gazetteer of Planetary Nomenclature' website, which is part of the USGS and IAU Working Group for Planetary System Nomenclature (WGPSN). The page displays search results for 'Mars' with 2047 results. The table below lists several features with their names, target bodies, diameters, center latitudes and longitudes, coordinate systems, approval statuses, dates, and origins.

Feature Name	Target	Diameter	Center Latitude	Center Longitude	Coordinate System	Approval Status	Approval Date	Origin
Aarna	Mars	43.00	14.70	338.43	Planetocentric, +East, 0 - 360	Approved	Dec 16, 2022	Village in Rajasthan, India.
Abalos Colles	Mars	235.83	76.83	288.35	Planetocentric, +East, 0 - 360	Approved	2003	Named for classical albedo feature at 72N, 70W.
Abalos Mensa	Mars	129.18	81.17	284.40	Planetocentric, +East, 0 - 360	Approved	2006	Classical albedo feature name.
Abalos Scopuli	Mars	109.16	80.72	283.44	Planetocentric, +East, 0 - 360	Approved	2006	Classical albedo feature name.
Abalos Undae	Mars	442.74	78.52	272.50	Planetocentric, +East, 0 - 360	Approved	1988	Classical albedo feature at 72N, 70W.
Aban	Mars	4.28	15.91	111.10	Planetocentric, +East, 0 - 360	Approved	1988	Town in Russia.
Abu	Mars	17.00	15.50	337.22	Planetocentric, +East, 0 - 360	Approved	Dec 16, 2022	Village in Rajasthan, India.
Abus Vallis	Mars	60.99	-5.49	212.80	Planetocentric, +East, 0 - 360	Approved	1985	Classical name for Humber River in England.

□ Dedicated service

- 2 endpoints
 - "Cone search"
 - *LON, LAT, Search Radius*
 - <https://alasky.cds.unistra.fr/planetary-features/cs?>
 - Name resolver
 - *Feature name, body*
 - <https://alasky.cds.unistra.fr/planetary-features/resolve?>
- Powered by Falcon Python application
- Used by Aladin Lite v3
 - demo
- **Standard**: add keyword to HiPS properties in order to describe if longitude is increasing towards East or West?



□ Sesame extension to solar system objects

- Sesame: name resolver gathering results from SIMBAD, VizieR and NED
 - Input: object name
 - Output: ICRS coordinates
- Experiment by G. Landais (CDS) with help from J.Berthier and J.Normand (IMCCE)
 - Extension to results from IMCCE for solar system objects
 - Example: <https://cds.unistra.fr/cgi-bin/nph-sesame/SNVI/?Saturn>
 - Query to IMCCE resolver
 - Result not cacheable
- Available in latest Aladin Desktop beta version