



Four MSL Candidate Sites



2nd MSL Landing Site Workshop - October, 2007

Avernus Colles

Valley Terminus

Dao Vallis

Valley Terminus

NW Isidis Basin

Old Juicy Rocks

Escarpment

Xanthe/Hypanis

**Valley Delta
(Safe Haven)**

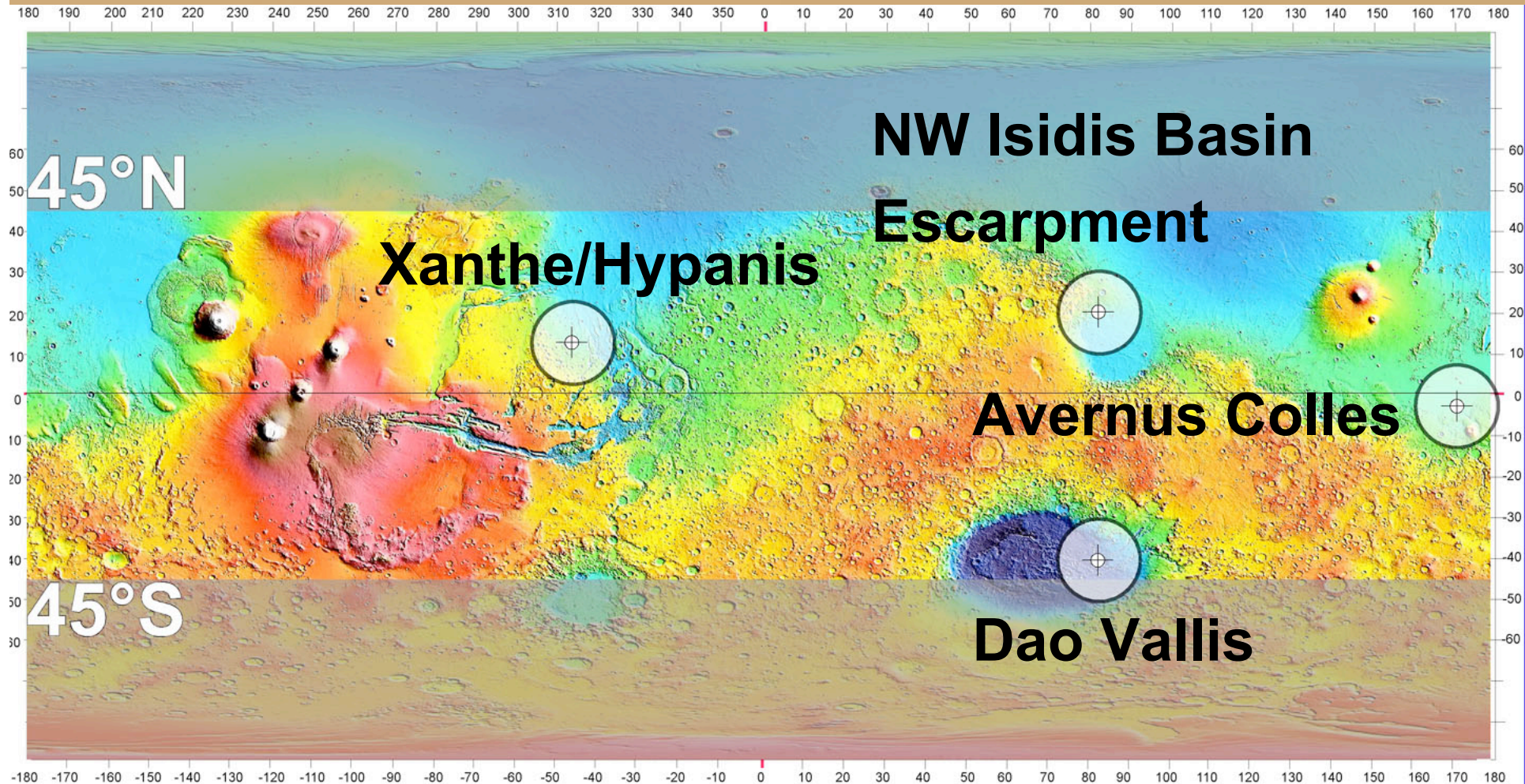
-L.S. Crumpler-



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MOLA elevation

Crumpler - Oct., '07/ 2nd MSL Site Mtg -



Avernus Colles - Valley Terminus

- Downstream from major valley & volcano
- Iron Anomaly

3.05 S, 170.6

Happy Bugs?

Heat/Nutrients

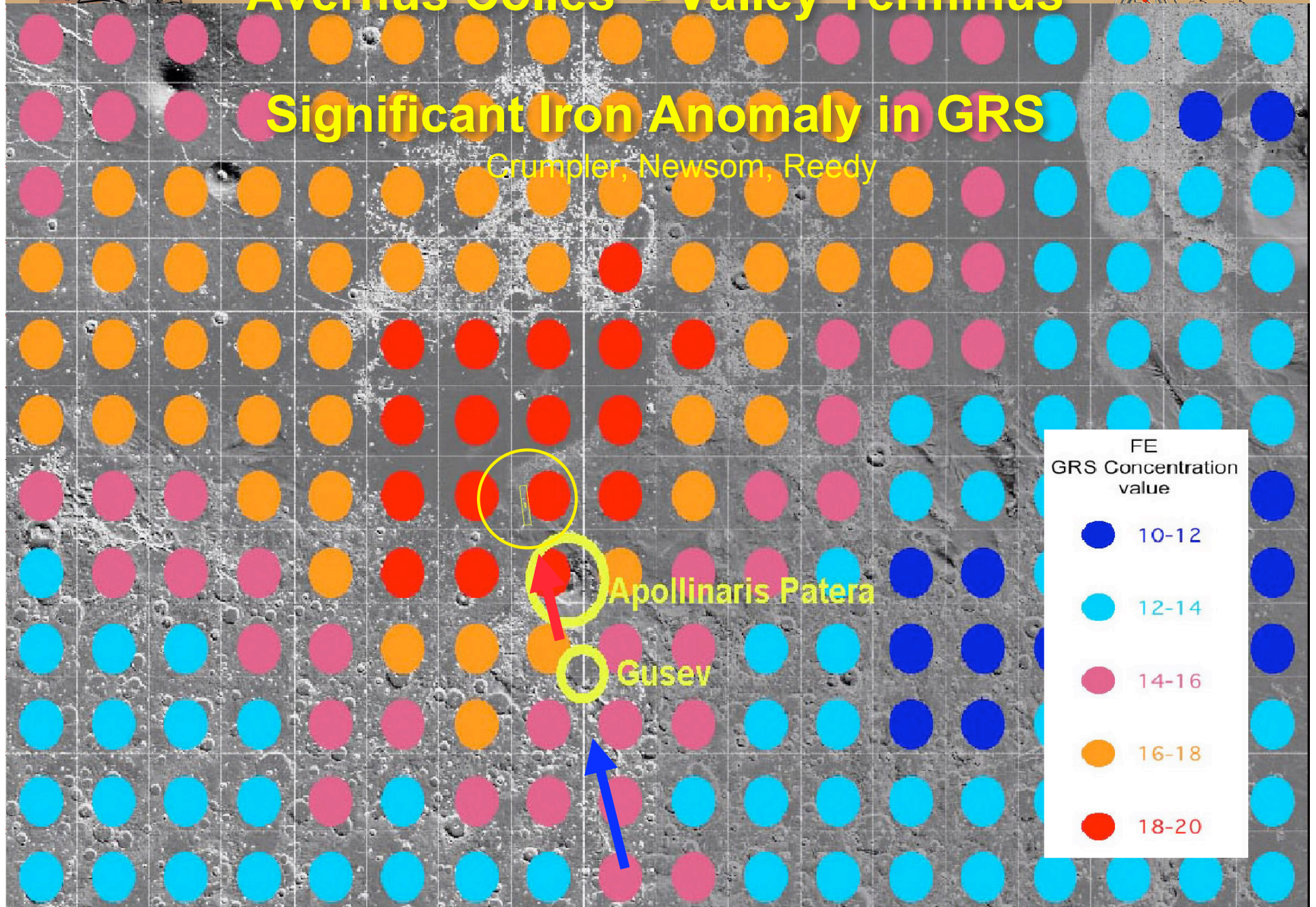
Water



Avernus Colles - Valley Terminus

Significant Iron Anomaly in GRS

Crumpler, Newsom, Reedy





Avernus Colles - Valley Terminus

...But also has significant TI LOW





Avernus Colles - Valley Terminus

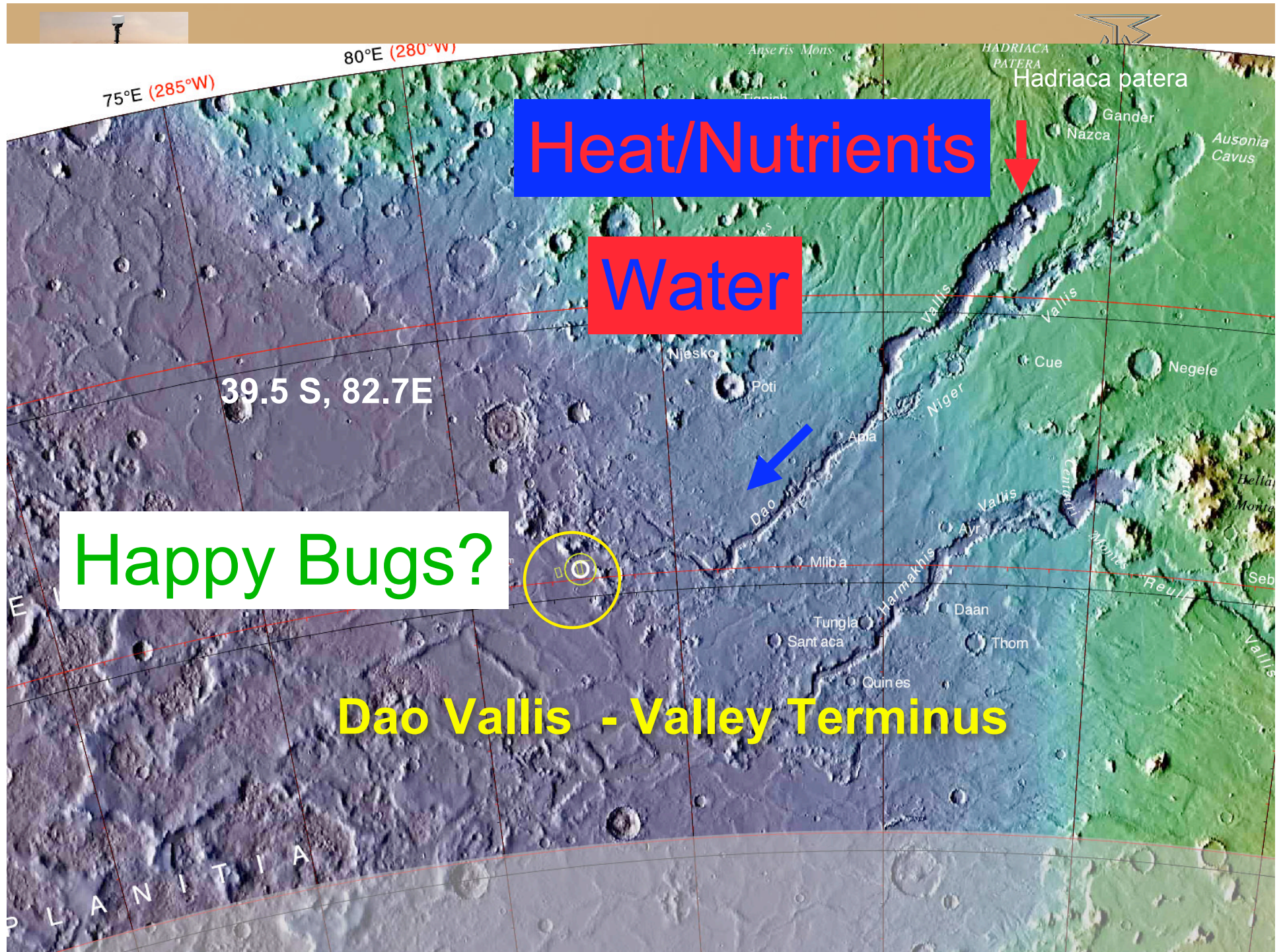


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MRO-HiRISE

500 meters





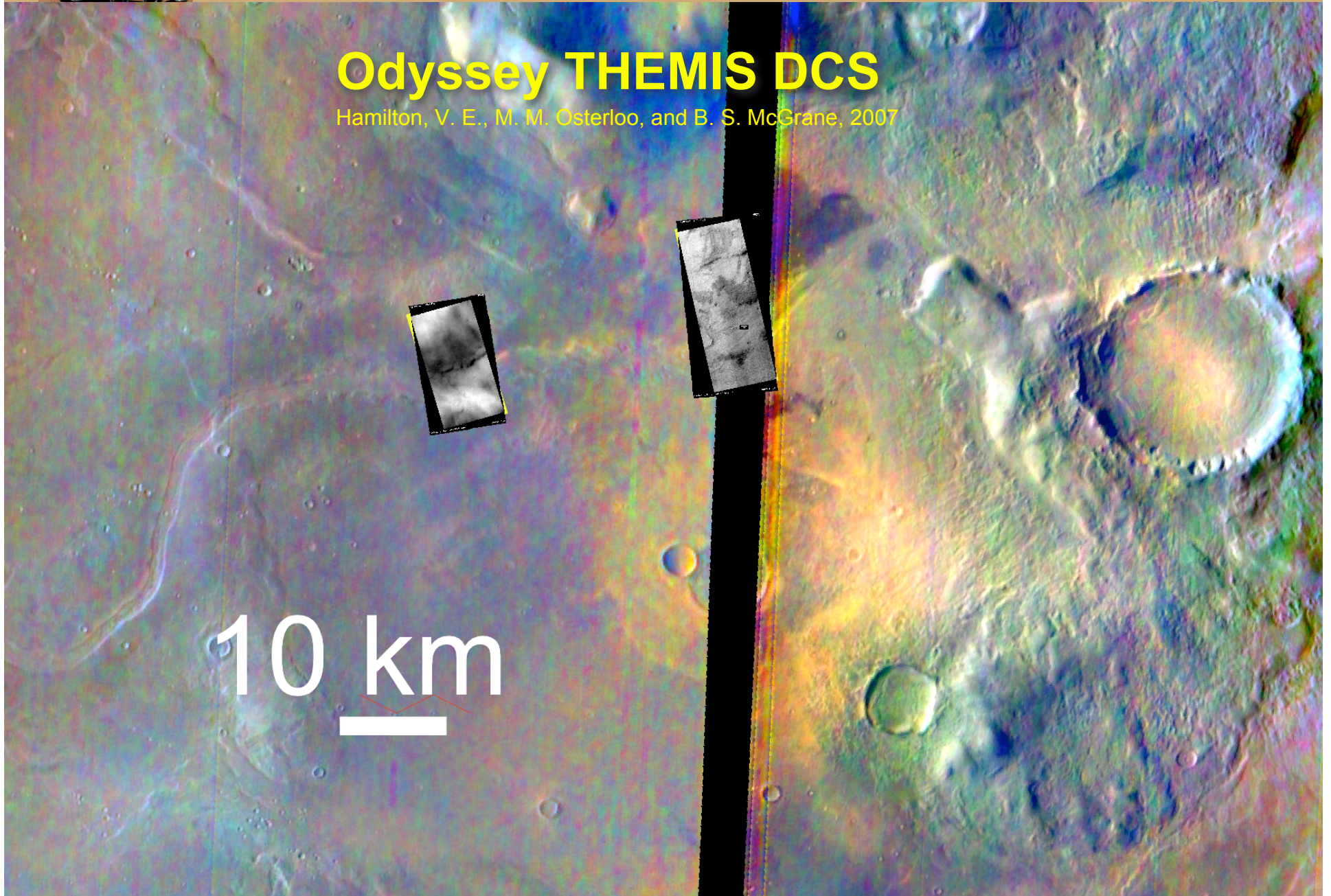


Dao Vallis - Valley Terminus



Odyssey THEMIS DCS

Hamilton, V. E., M. M. Osterloo, and B. S. McGrane, 2007

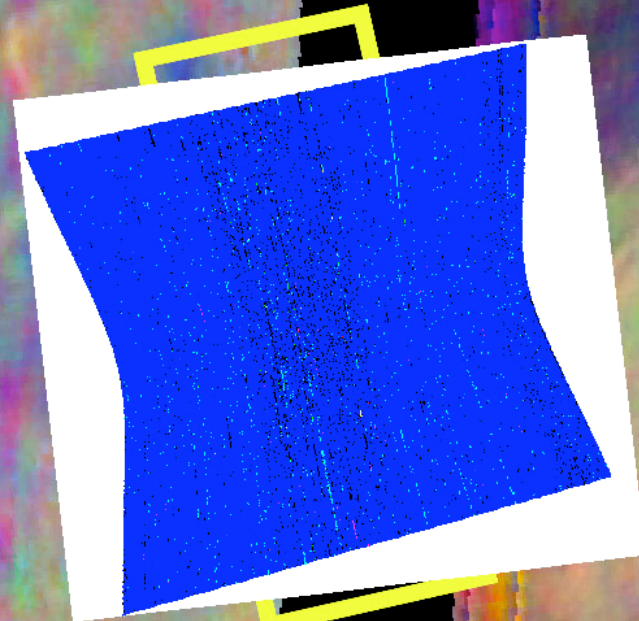




Dao Vallis - Valley Terminus



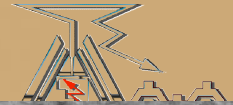
MRO - CRISM (phy)



1 km



Dao Vallis - Valley Terminus



MRO - HiRISE

500 meters

- high southern latitude a problem

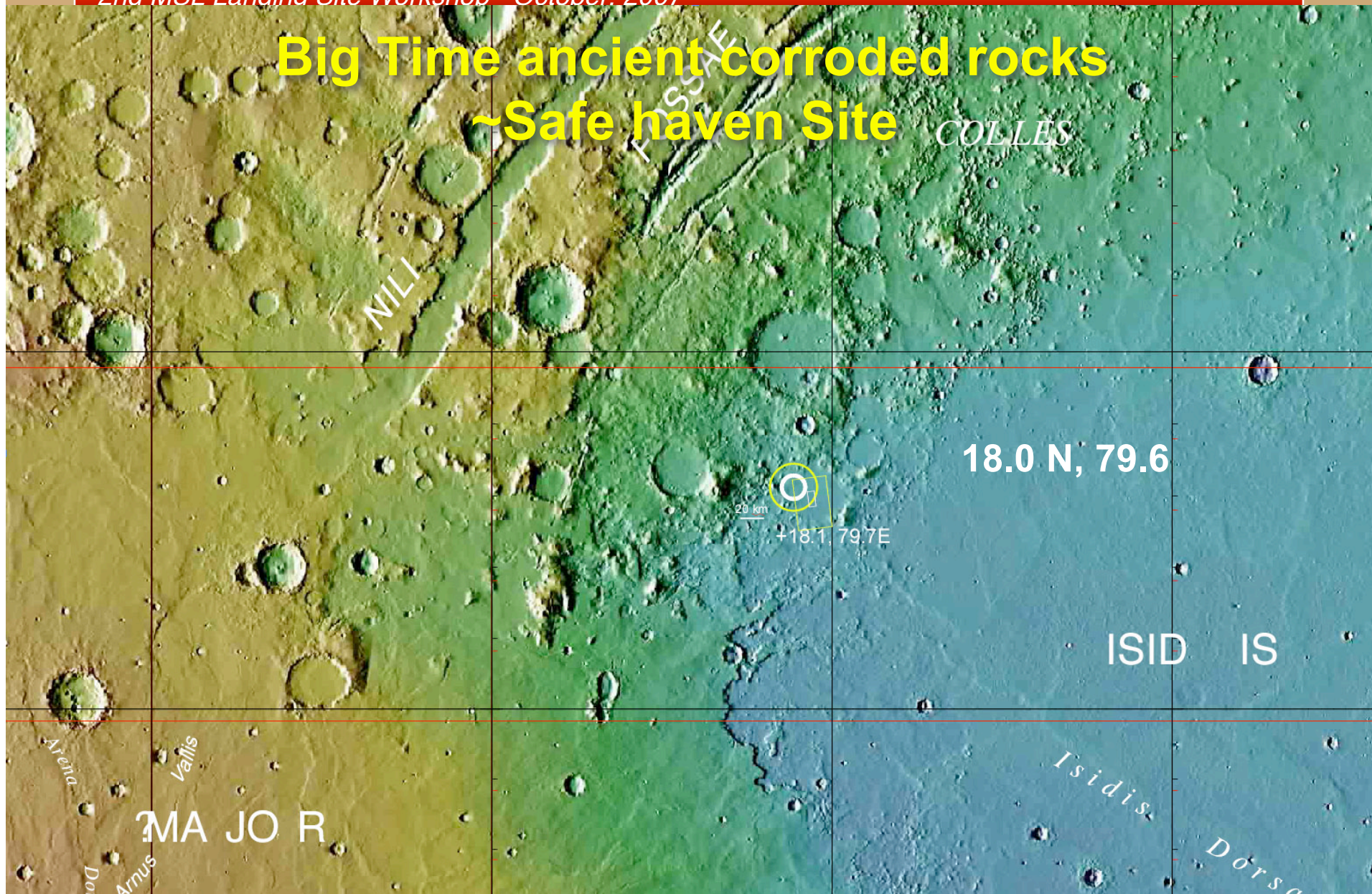


NW Isidis Basin Escarpment - Juicy Rocks



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**Big Time ancient corroded rocks
~Safe haven Site**

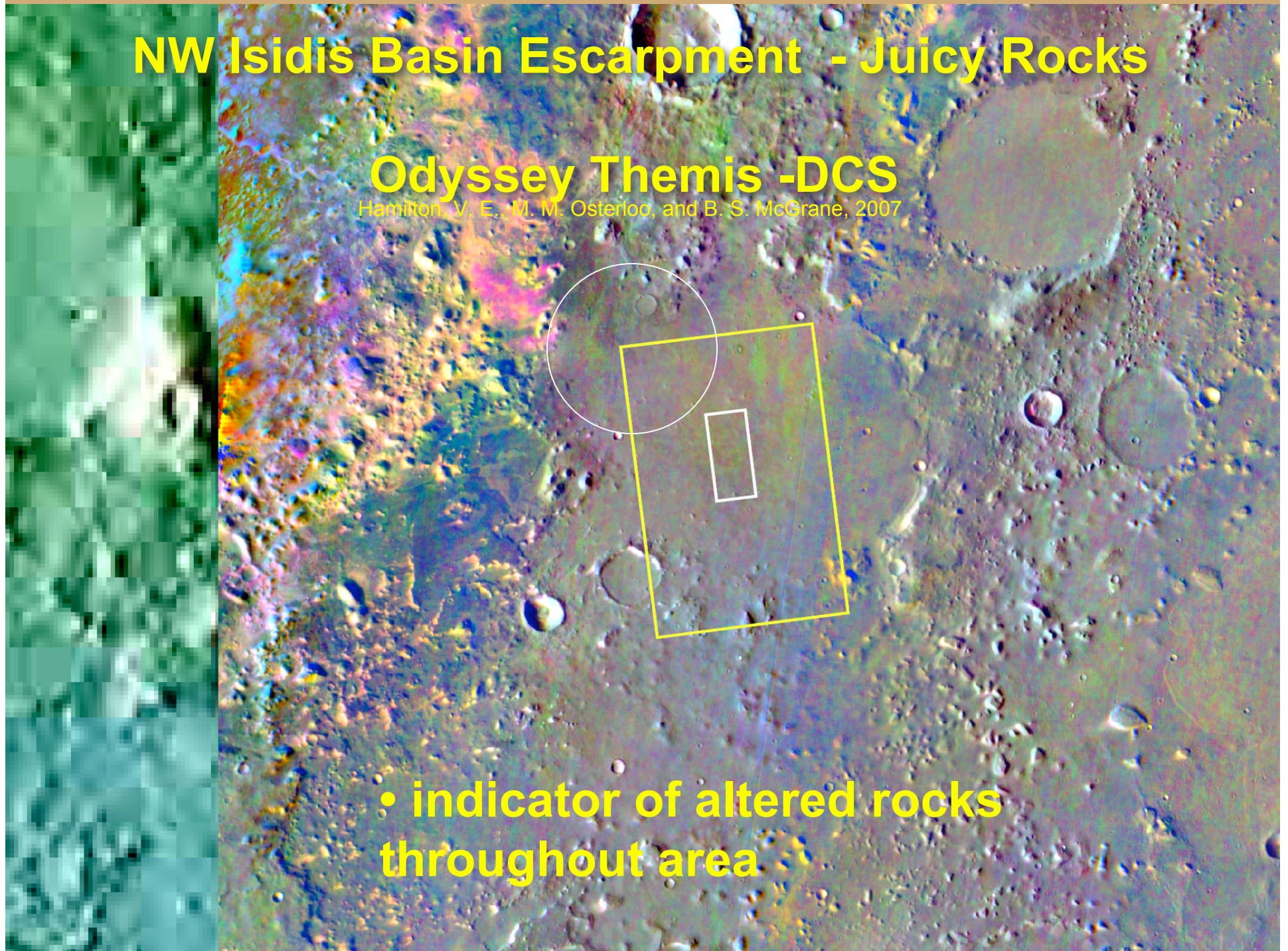


NW Isidis Basin Escarpment - Juicy Rocks

Odyssey Themis -DCS

Hamilton, V. E., M. M. Osterloo, and B. S. McGrane, 2007

- indicator of altered rocks throughout area



NW Isidis Basin Escarpment - Juicy Rocks

MRO - CTX

5 km





NW Isidis Basin Escarpment - Juicy Rocks



MRO - HiRISE

500 meters

Xanthe Terra - Hypanis Delta

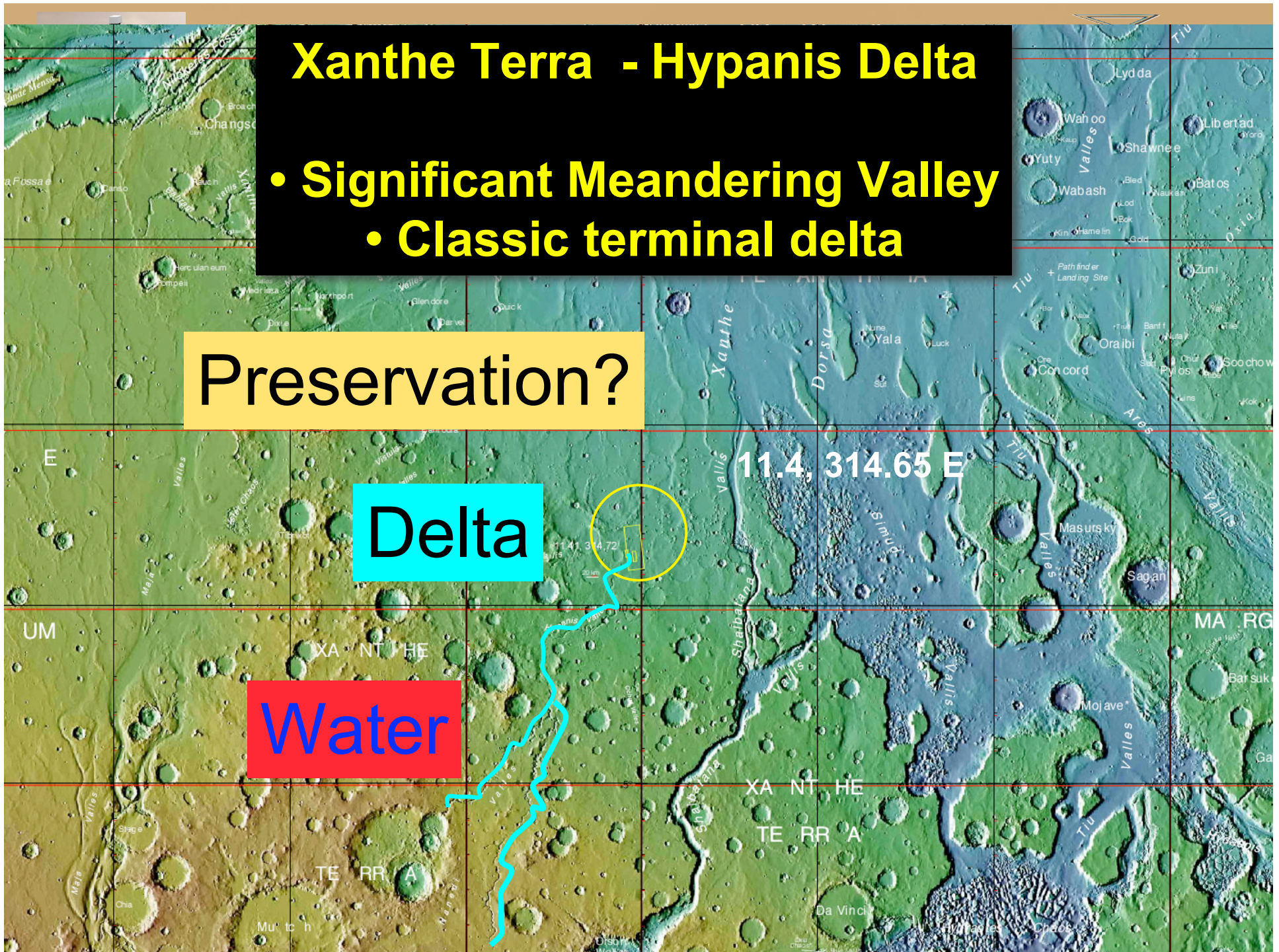
- Significant Meandering Valley
- Classic terminal delta

Preservation?

Delta

Water

11.4, 314.65 E

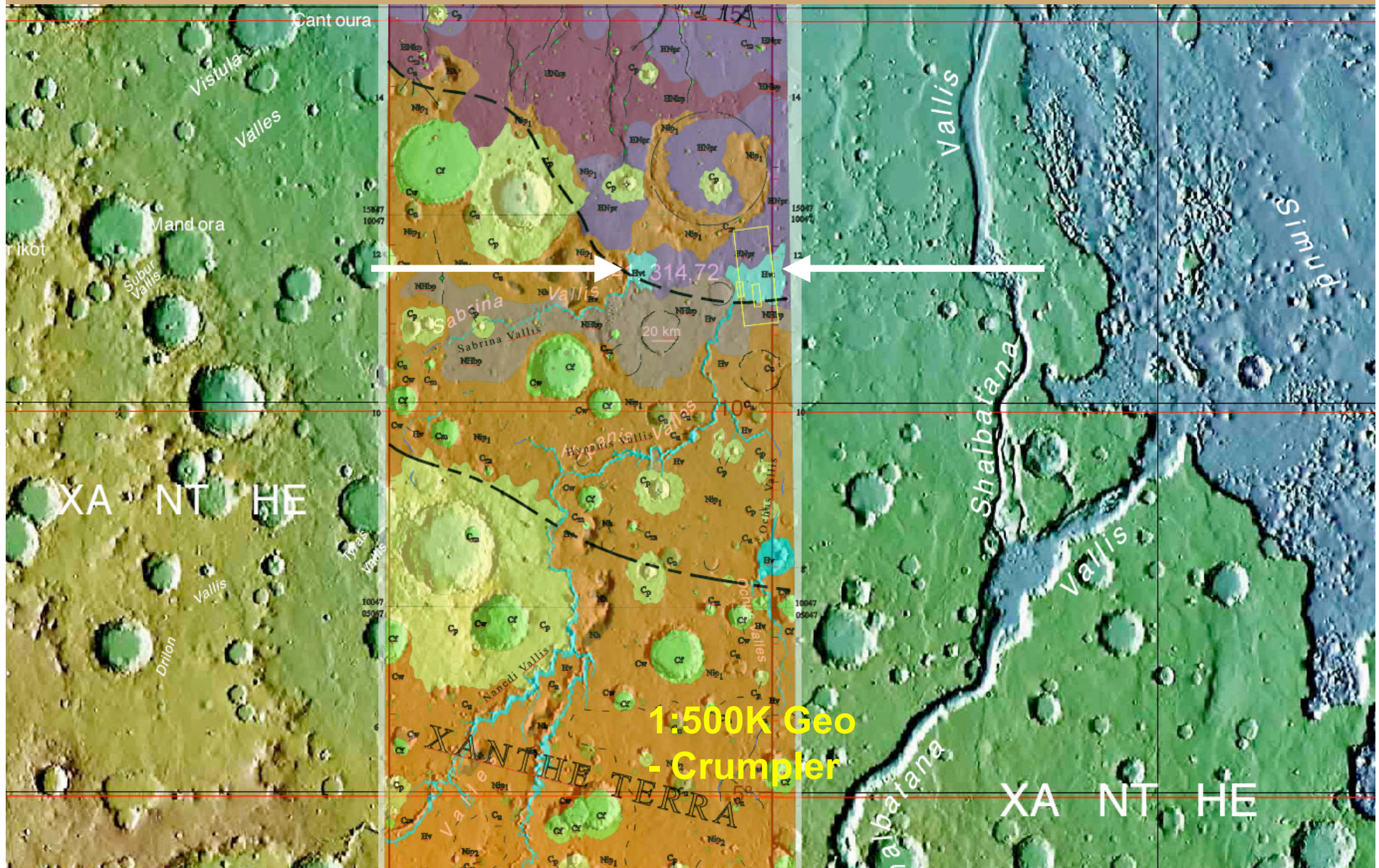




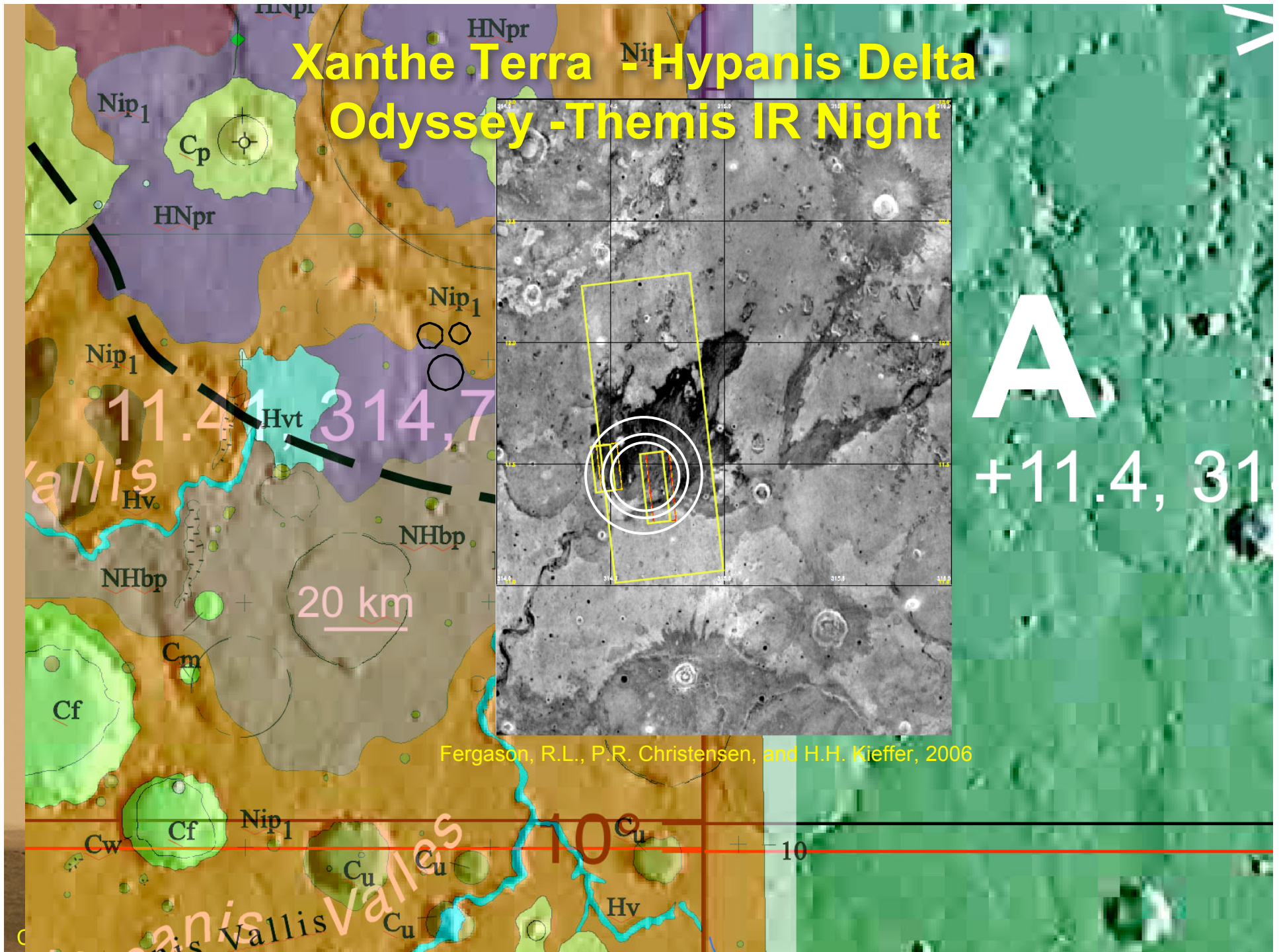
Xanthe Terra - Hypanis Delta



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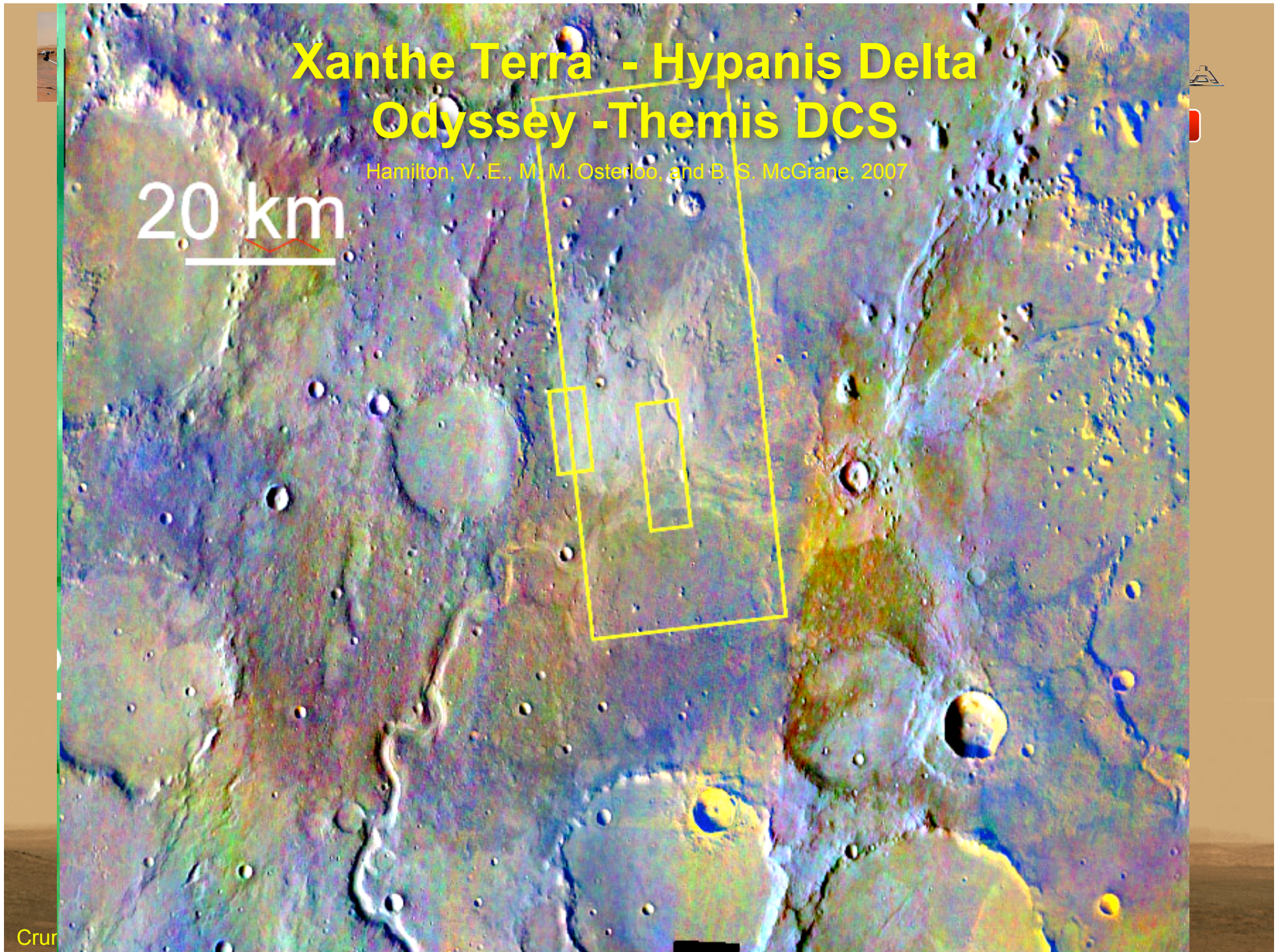
Xanthe Terra - Hypanis Delta Odyssey - Themis IR Night



Xanthe Terra - Hypanis Delta Odyssey - Themis DCS

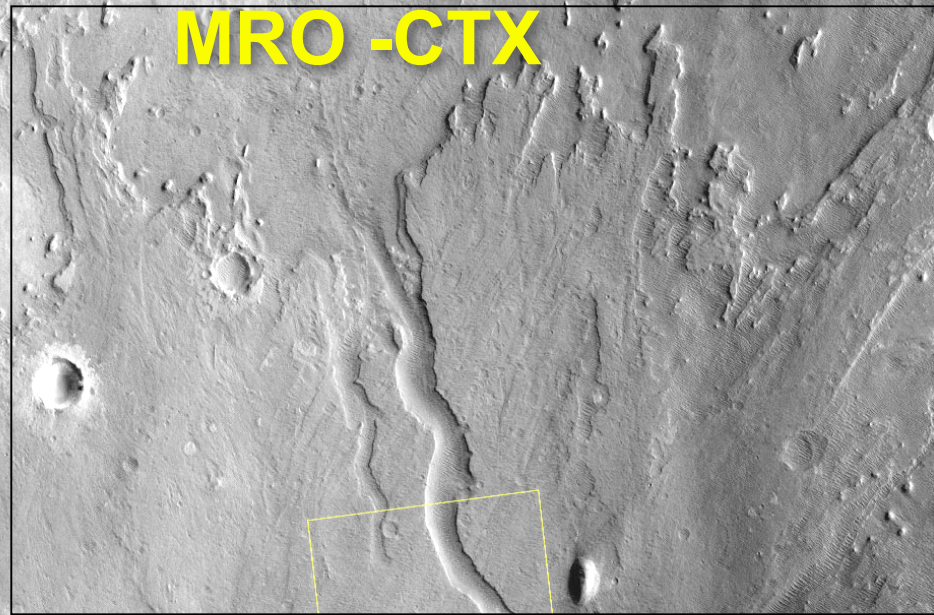
Hamilton, V. E., M. M. Osterloo, and B. S. McGrane, 2007

20 km



Xanthe Terra - Hypanis Delta

MRO - CTX

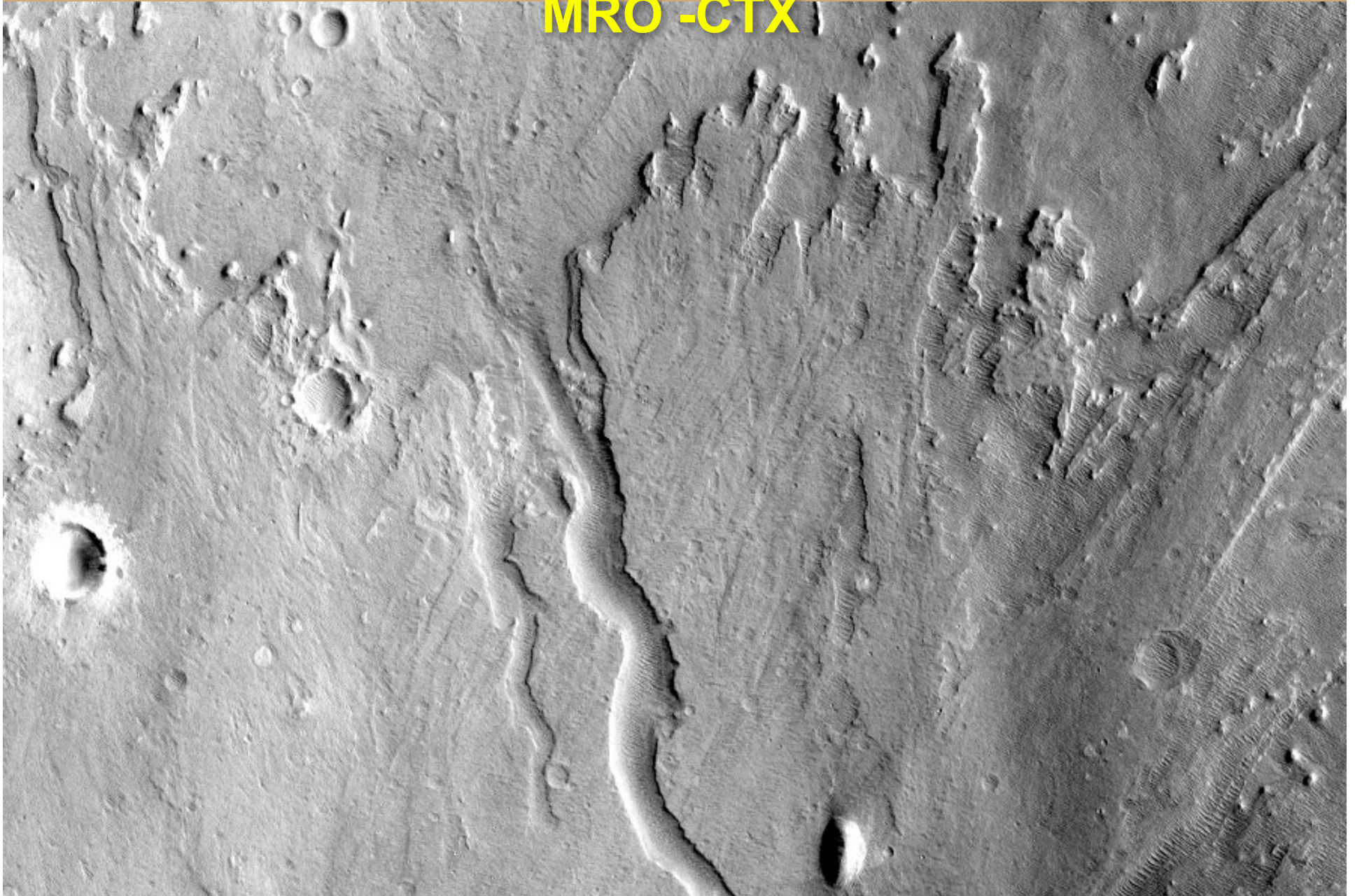


Next slide

5 km



Xanthe Terra - Hypanis Delta MRO -CTX





Xanthe Terra - Hypanis Delta

MRO - HiRISE



500 meters



Relative Ranks (scale of 1 to 5)



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Science Criteria		Avernus Colles	Dao Vallis	NW Isidis Escarpment	Xanthe/HypanisDelta
Assess Bio Potential w/ MSL Payload	Evidence for Habitable Environment	3	3	4	5
	Preservation of Biosignatures	1	2	2	5
Characterize Geology/ Geochemistry	Context within Geologic Timescale	4	4	4	5
	Context within Stratigraphic Setting	4	4	3	5
Accessibility	Assessed by Rover/Arm	3	5	4	4
	Distance/ trafficability	4	5	3	5
	Dust Obscuration	1	3	5	2
Reduced Performance	Thermal Constraints	5	1	4	5
Rank Total		25	27	28	36