Evidence for a Large Anomalous Nuclear Explosions in Mars Past

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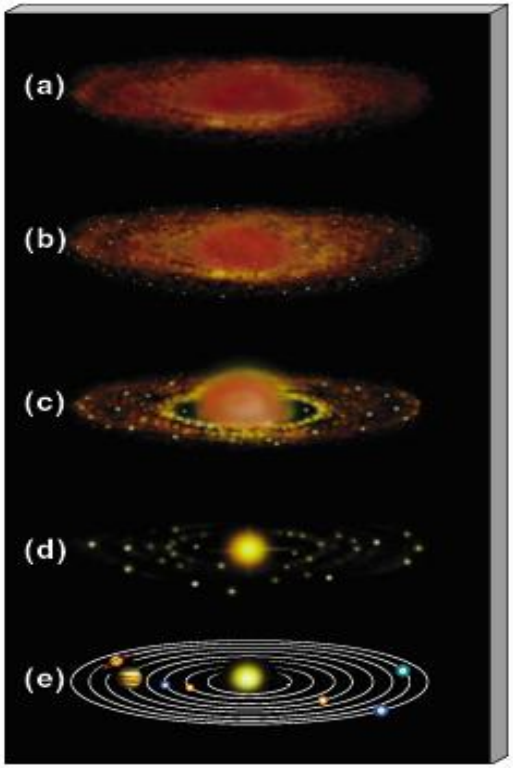
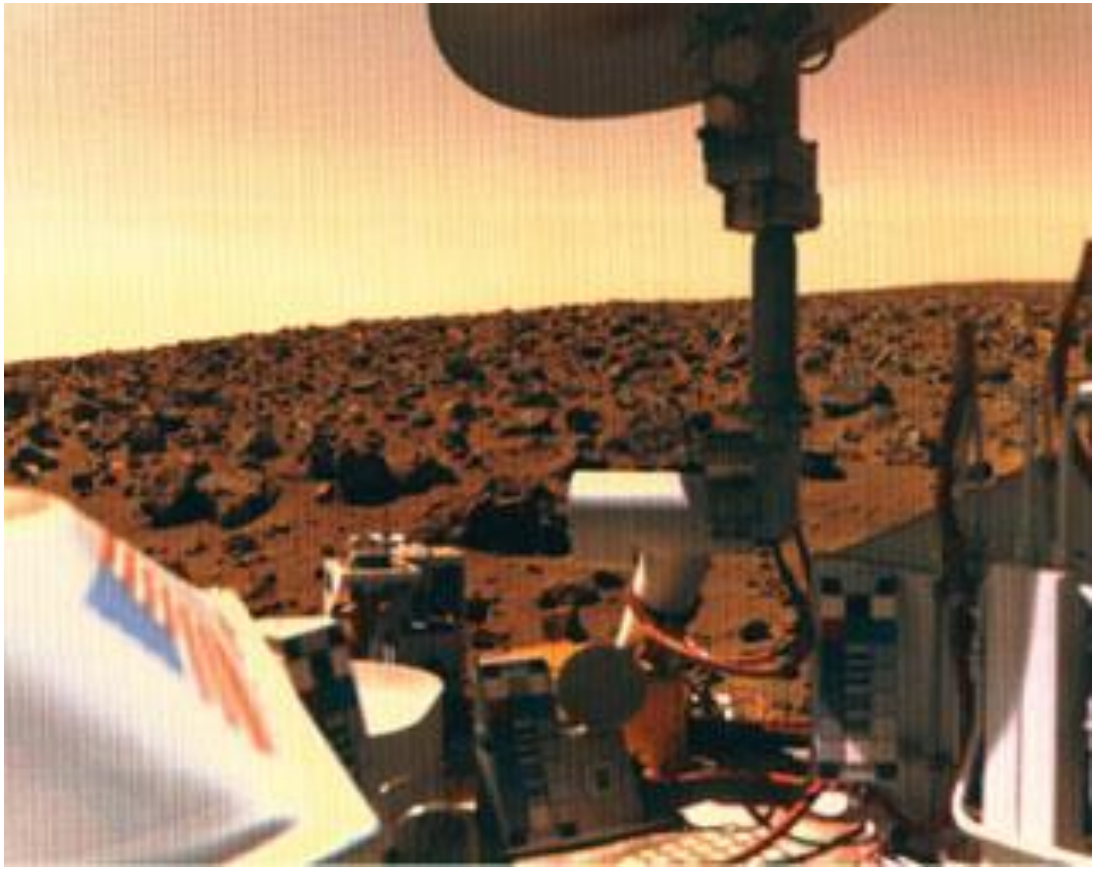
Mars Isotopes: Baseline



We can compare Mars isotopes with those from meteorites Earth and other Planets which sampled the solar nebula

Viking Lander 1976

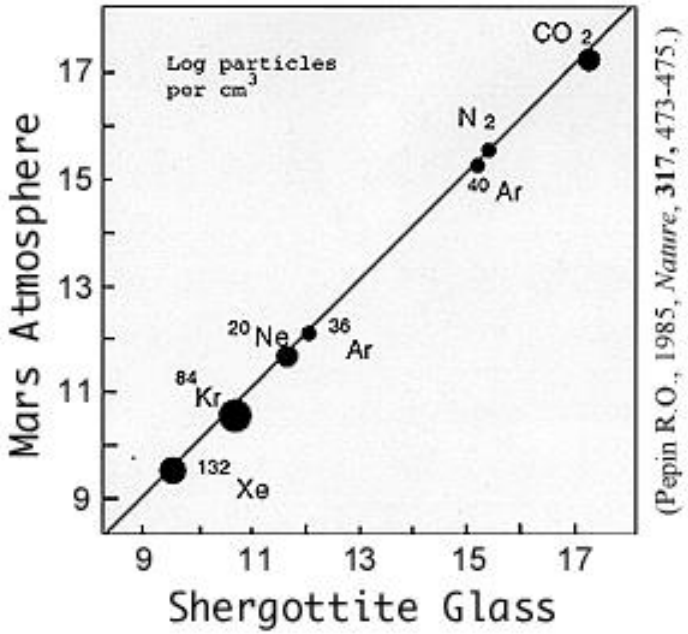


Mars Noble gas isotopes, especially Xenon and Argon are exotic

Mars Meteorites

Mars meteorites were identified as Martian because of trapped Mars atmosphere-because of its exotic isotopic signature

Mars atmosphere found in Mars Meteorites



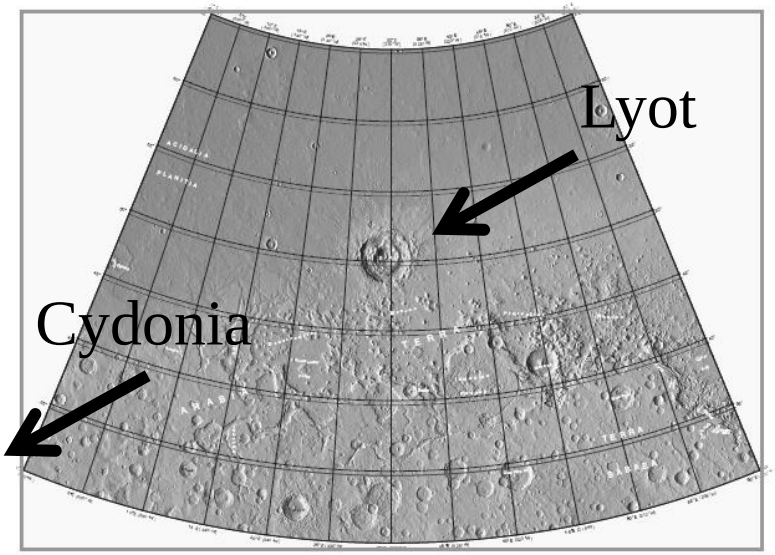
Agenda

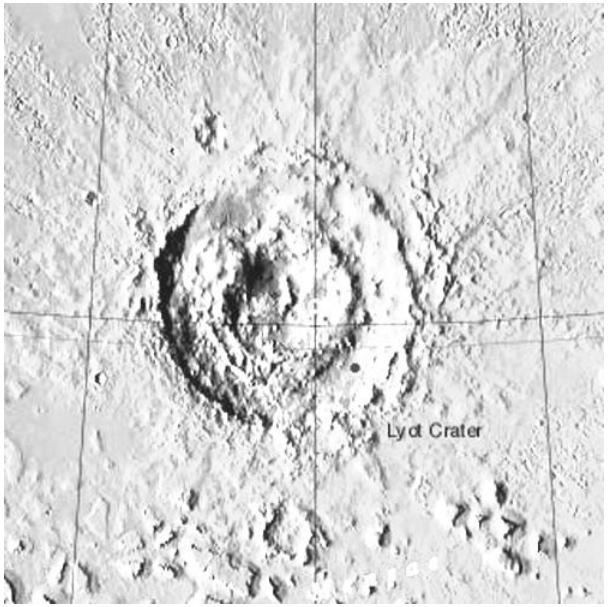
- Introduction: Mars was disaster prone
- Mars Xenon Anomaly
- Mars Krypton- the neutron paradox
- Mars Thorium and Uranium paradox
- Hypothesis: Nuclear Weapon Detonations Over Mare Acidalium and Utopia Planum
- Correlation with Cydonia and Galaxias Archeological sites
- Summary

Mars as a Disaster-Prone Planet

- Mars was apparently Earthlike for most of its history with an ocean and persistent greenhouse like on Venus
- Then, ~0.5Billion years ago Mars suffered a Chixulube-size impact formed the Lyot Impact Basin and apparently collapsed Mars climate and dried up its oceans
- Then, after some indeterminate period Mars suffered a bizarre nuclear disaster

Lyot Impact

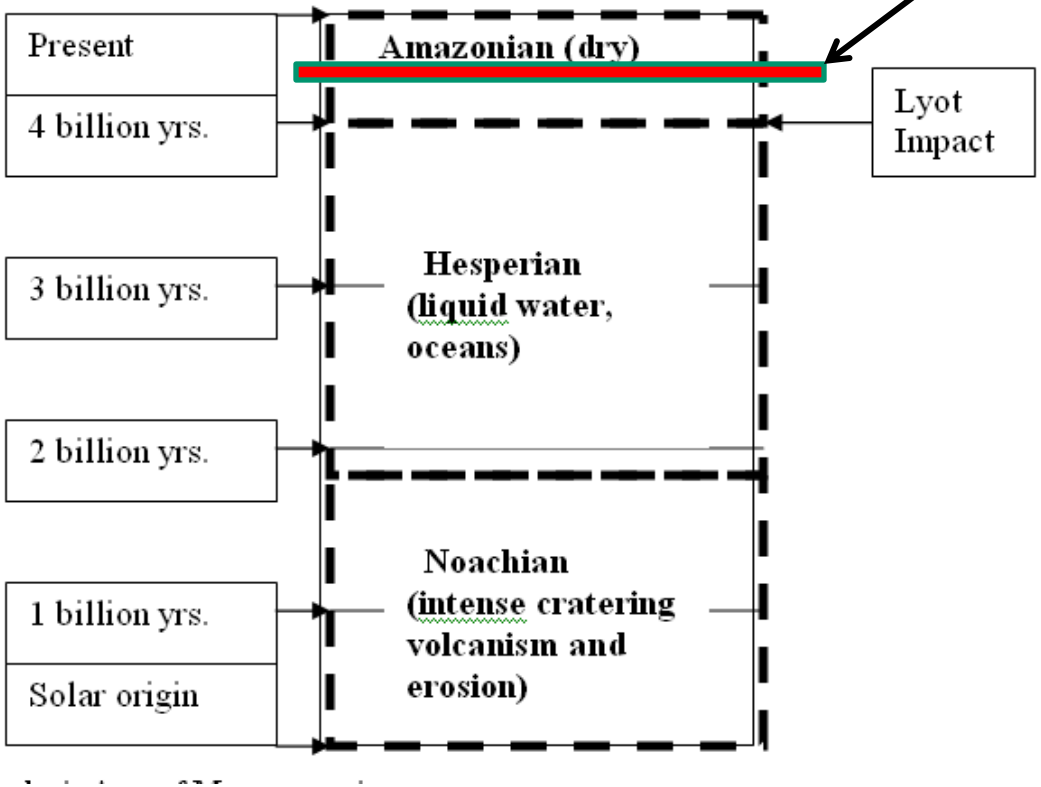




Lyot impact occurred late in Mars history near Cydonia Mensa and appears to have collapsed Mars climate

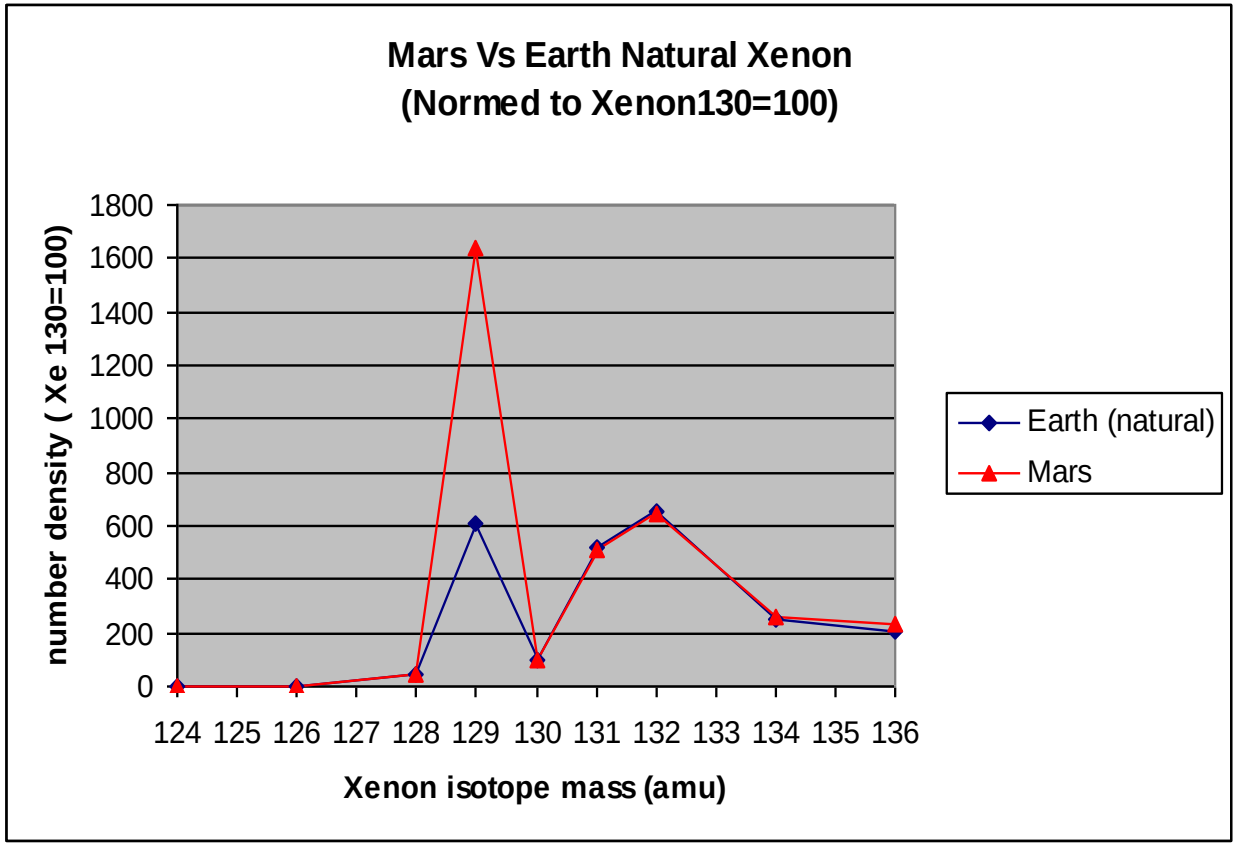
Mars Approximate Chronology

Nuclear explosions
4.2 Billion years ?

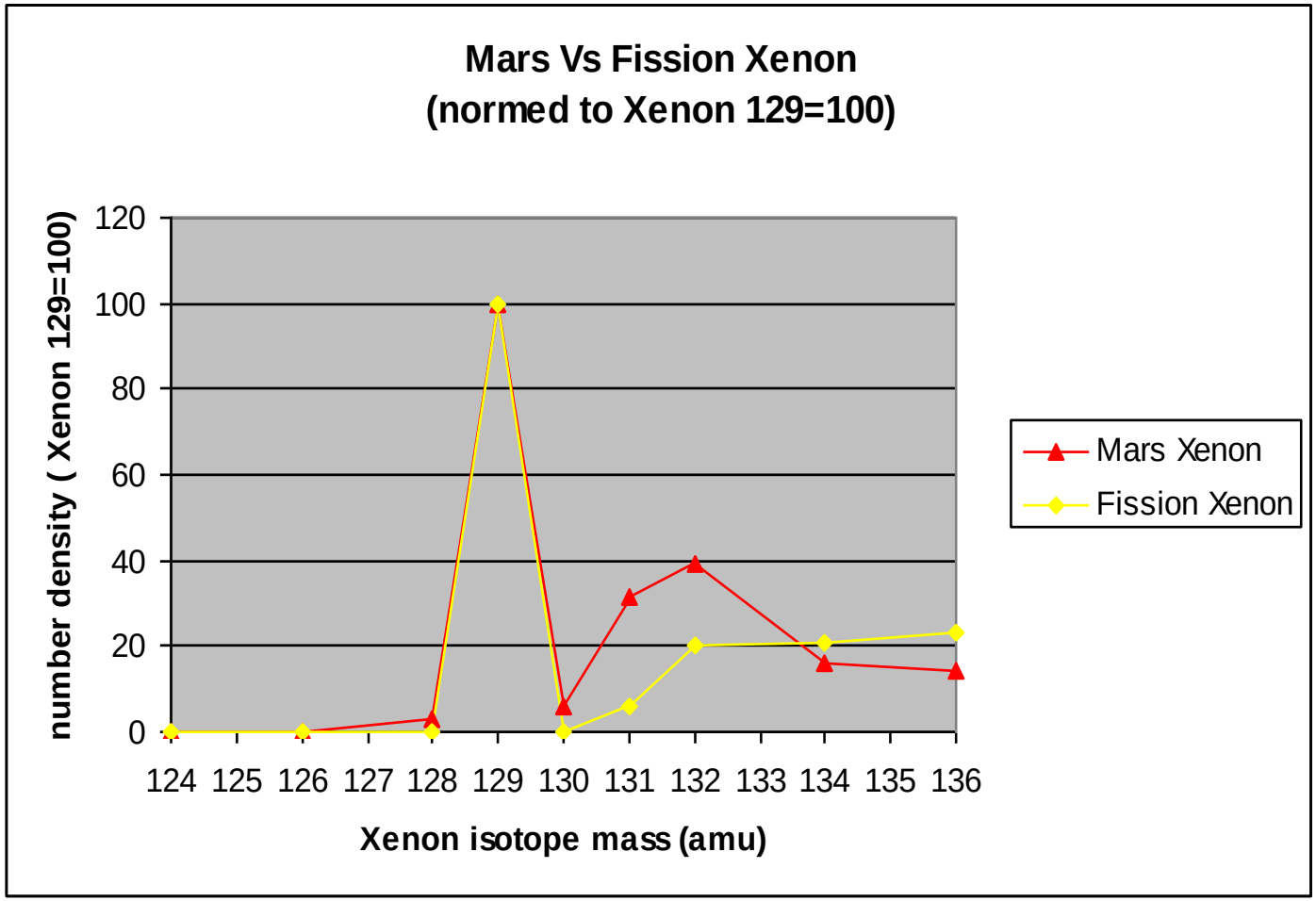


Mars Isotope Anomalies

Mars Versus Earth Xenon



Mars Versus Earth Fission Xenon

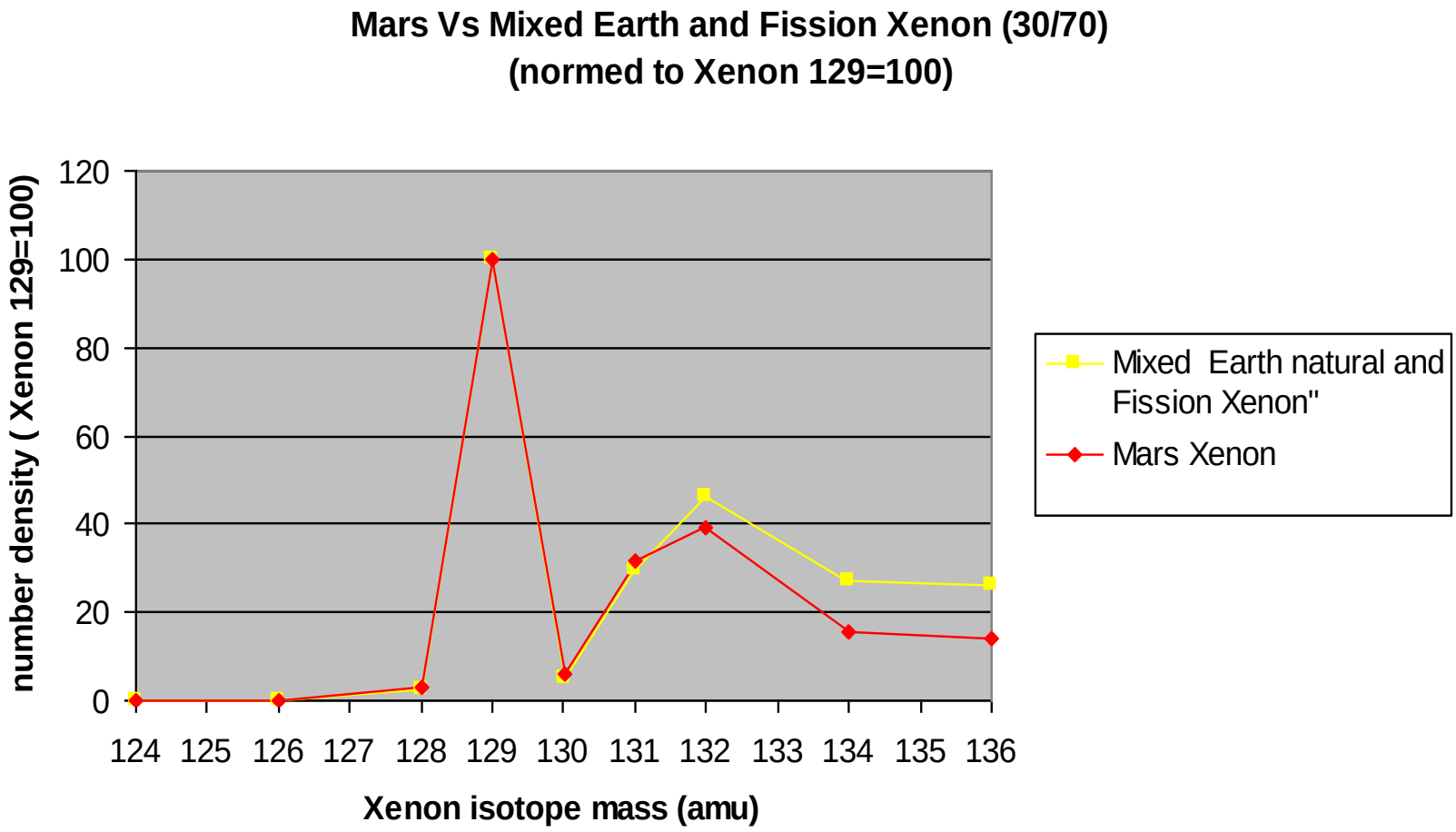


Earth Fission Xe Due to H-Bomb Testing

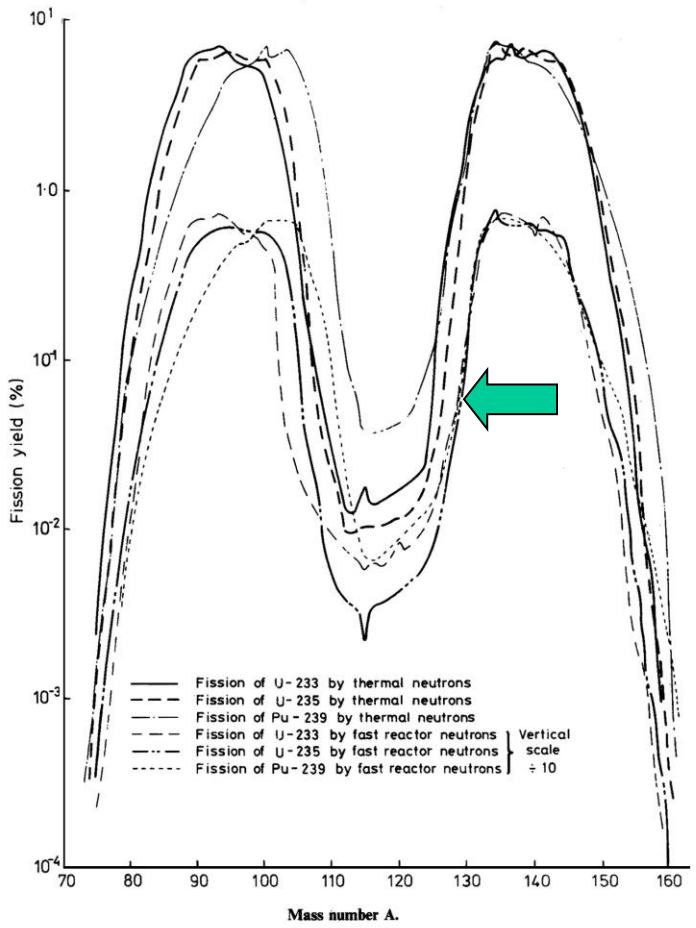
Xenon Isotope Abundance Normalized to ^{130} Xenon Abundance									
Inventory	^{124}Xe	^{126}Xe	^{128}Xe	^{129}Xe	^{130}Xe	^{131}Xe	^{132}Xe	^{134}Xe	^{136}Xe
Earth	2.337	2.180	47.146	649.58	≡100	521.27	660.68	256.28	217.63
Earth w/o NT	2.337	2.180	47.146	605.3	≡100	518.73	651.8	247.0	207.5
Earth Δ	0.00	0.00	0.00	44.28	0	2.54	8.88	9.28	10.13
Mars	2.45	2.12	47.67	1640.0	≡100	514.7	646.0	258.7	229.4

Hydrogen bombs are boosted by fission of a uranium or thorium casing ~50% of yield is fission. This creates xenon isotopes.

Mars Versus Earth Mixed Xenon

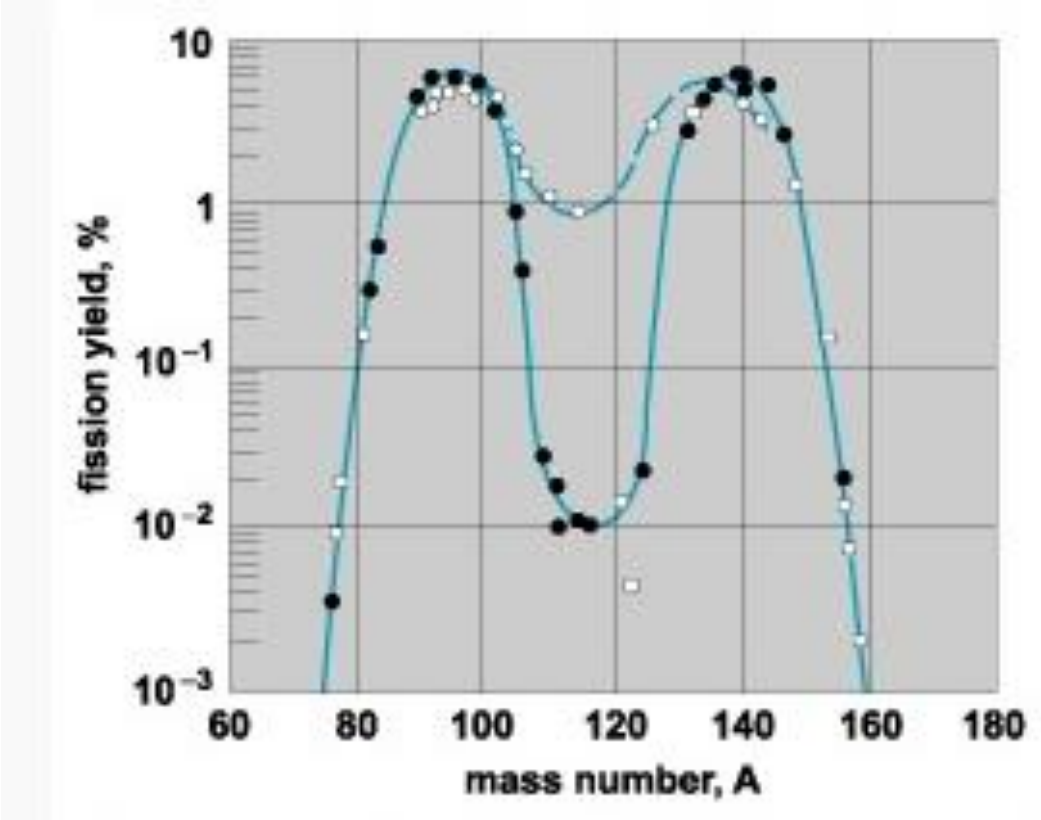


Fission Yeild vs Neutron Energy



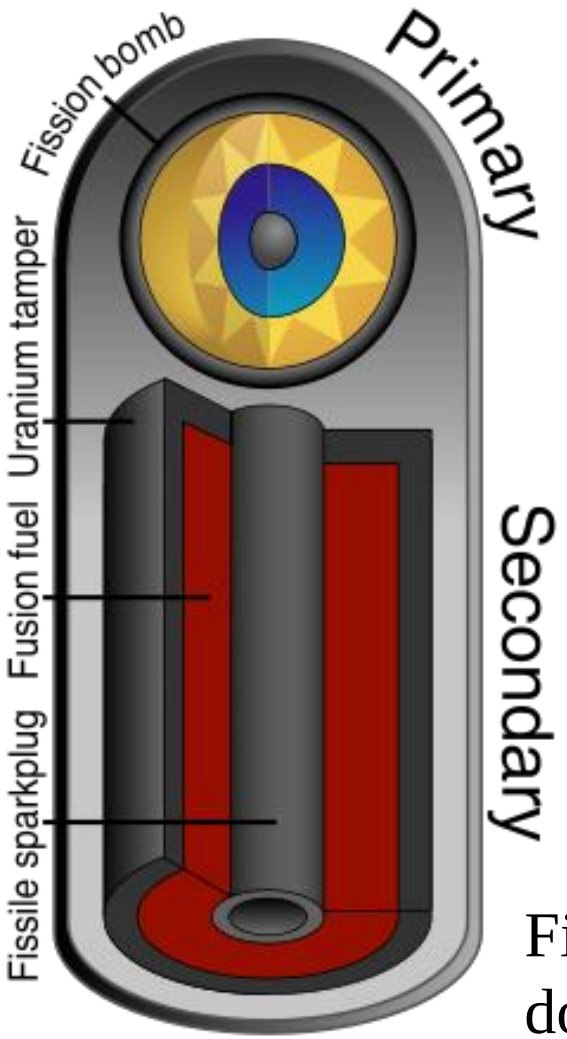
Iodine 129 decays to Xenon 129 in 17 Million years, normal lowneutron energy creates little Xe 129

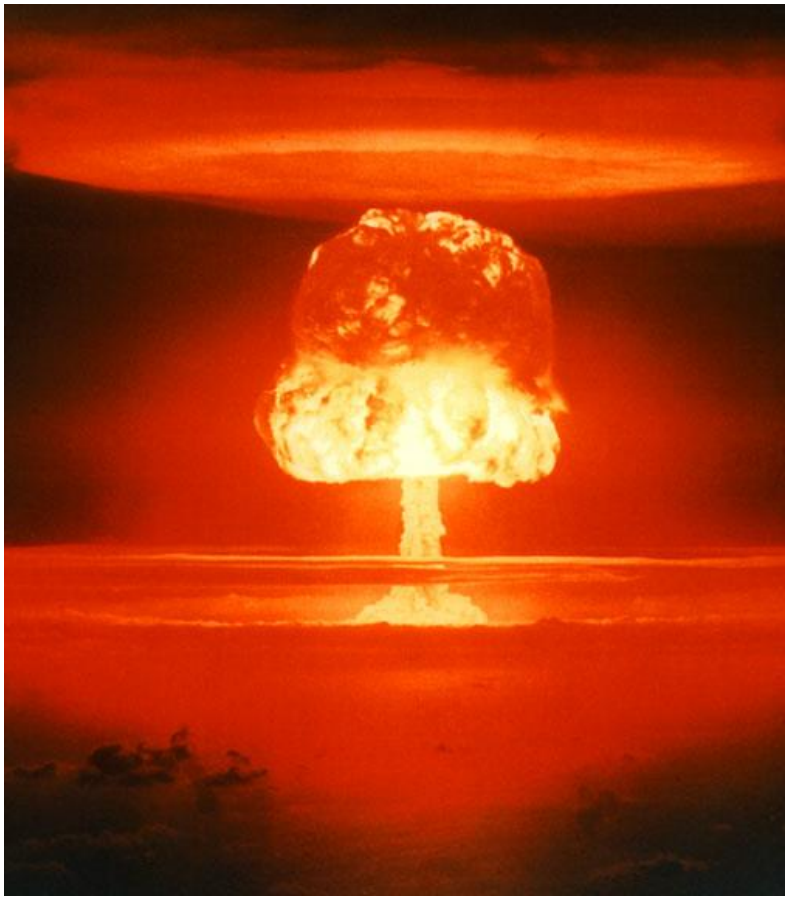
Fission Yield From 14 MeV Neutrons



However fission driven by 14MeV neutrons in hydrogen bomb, produces more Xe129 than other isotopes

Hydrogen Bomb Testing





Fission of Uranium-Thorium casing doubles power of Hydrogen bombs

Mars Krypton

- Mars $^{80}Kr/^{84}Kr$ is enhanced 10% over Solar nebula baseline (Earth $^{80}Kr/^{84}Kr$ ~enhanced 1%)
- ^{80}Kr believed generated by neutron capture on ^{79}Br
- Neutron fluence of $10^{15}/cm^2$ required on Mars rock

Mars Irradiation Evidence

No neutron irradiation

EETA79001_476
lithology A

EETA79001_482 Lithology B
Neutron irradiated ~ $10^{15}/cm^2$

Mars Meteorite ETA79001 –180Myr old

Mars Ar 40 is Super-abundant

Argon 40 is produced by neutron irradiation of Potassium 39 changing it to Potassium 40 which decays after 1.28 Billion years to Argon 40

Also Ar40 can be produced by an intense neutron flux with neutron absorption on K40

Mars $^{40}Ar/^{36}Ar$, $1.9(\pm 0.3) \times 10^3$ vs Earth $^{40}Ar/^{36}Ar$, 298.56 or Mars ~ 6x Earth Consistent with large neutron flux on Mars soil

Mars Uranium and Thorium Paradox

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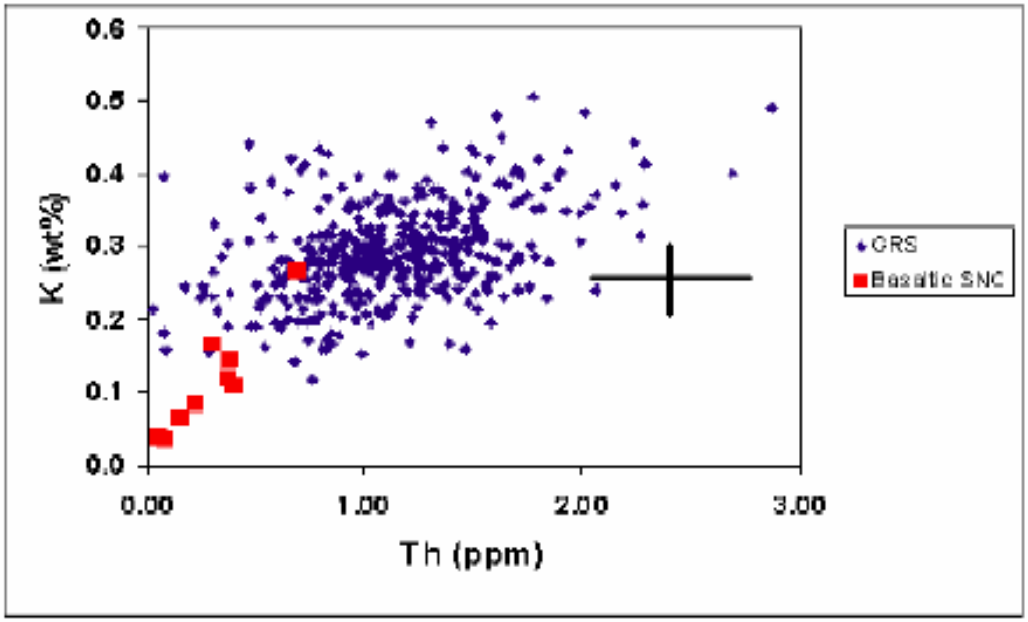
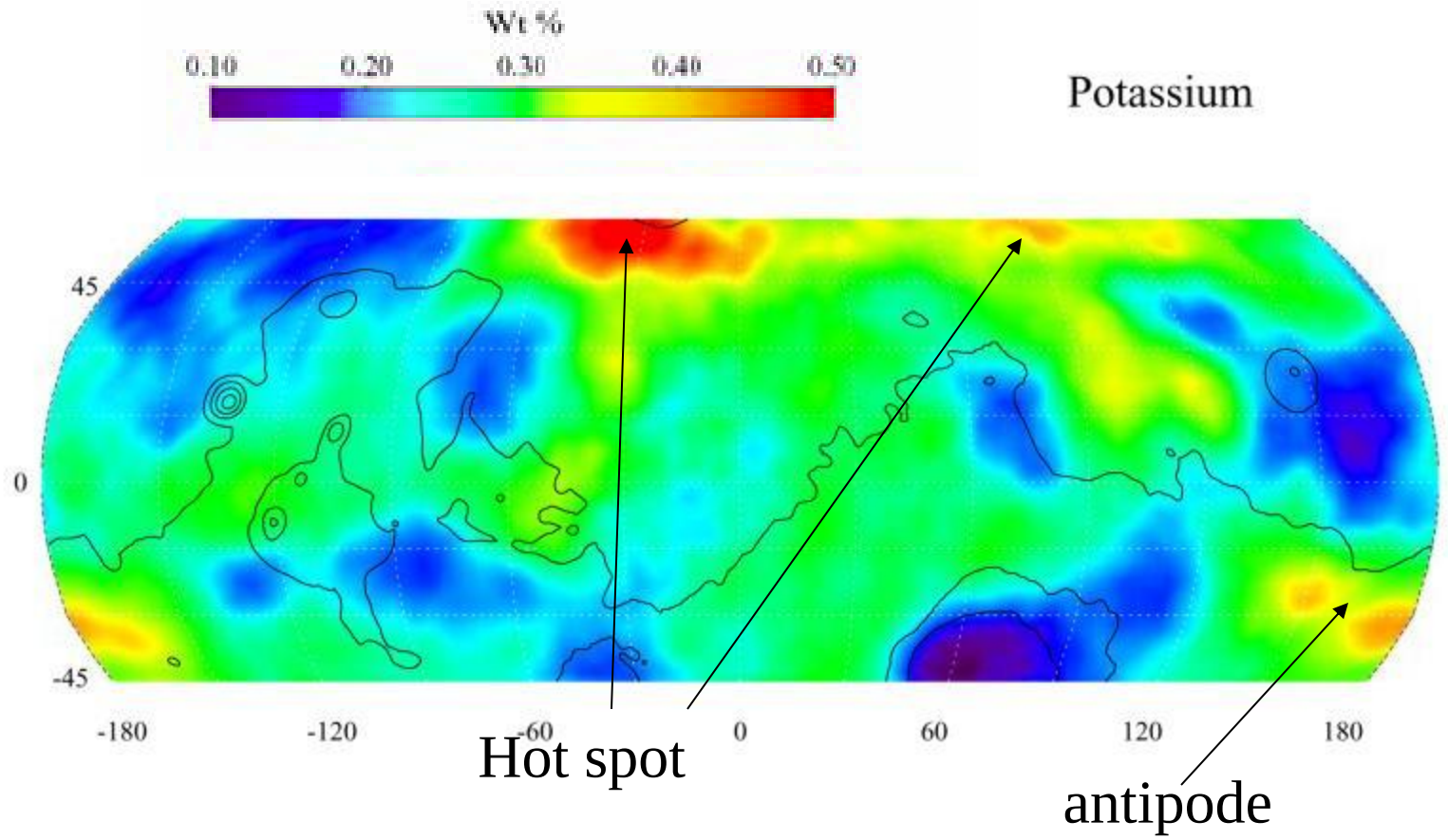
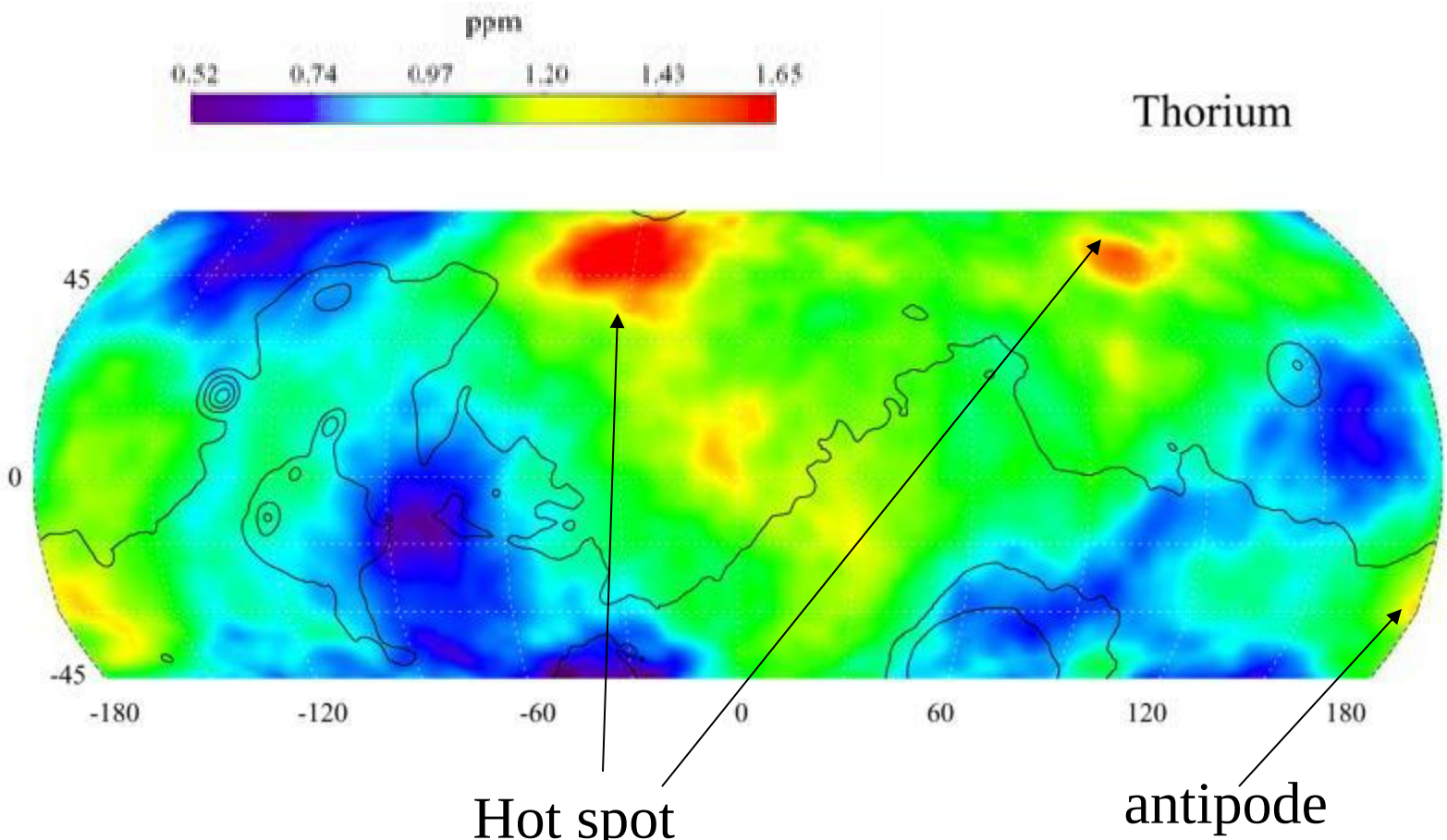


Fig. 5. K, Th variations on Mars compared to Martian (SNC) basaltic meteorites. Typical statistical uncertainty shown on right.

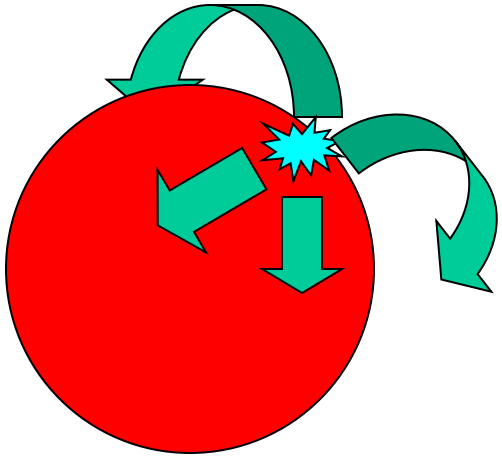
Mars Potassium

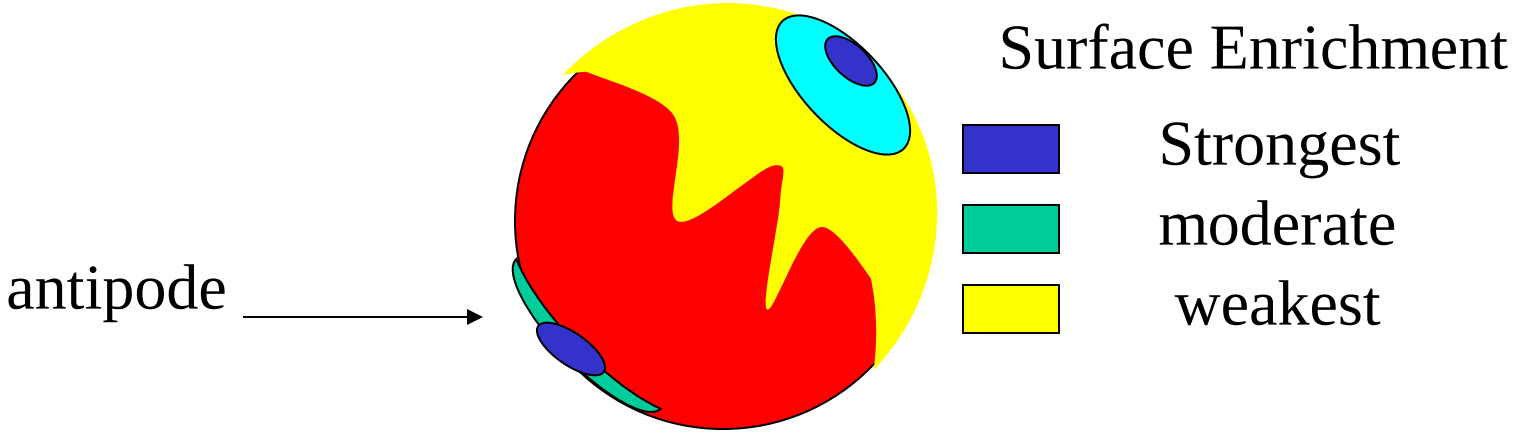


Mars Thorium



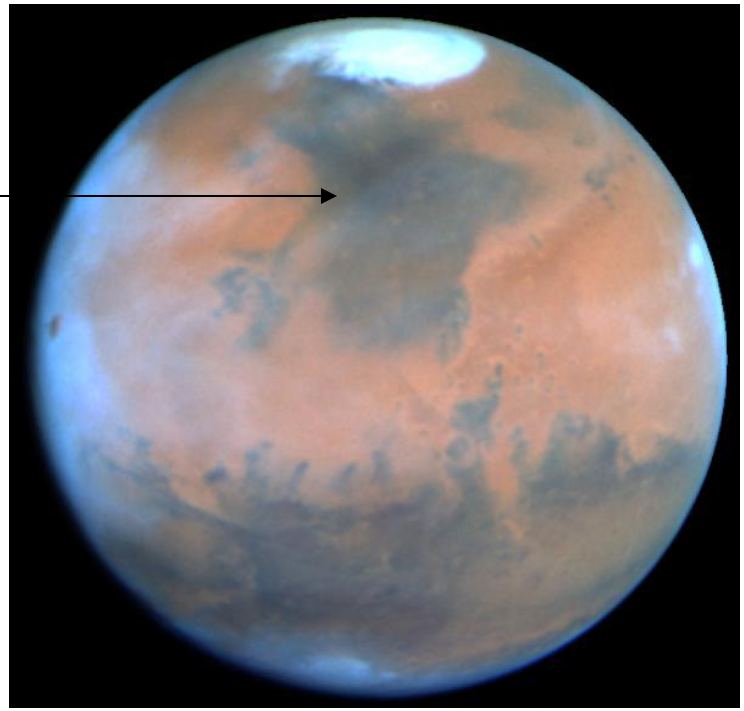
Global Debris Dispersal



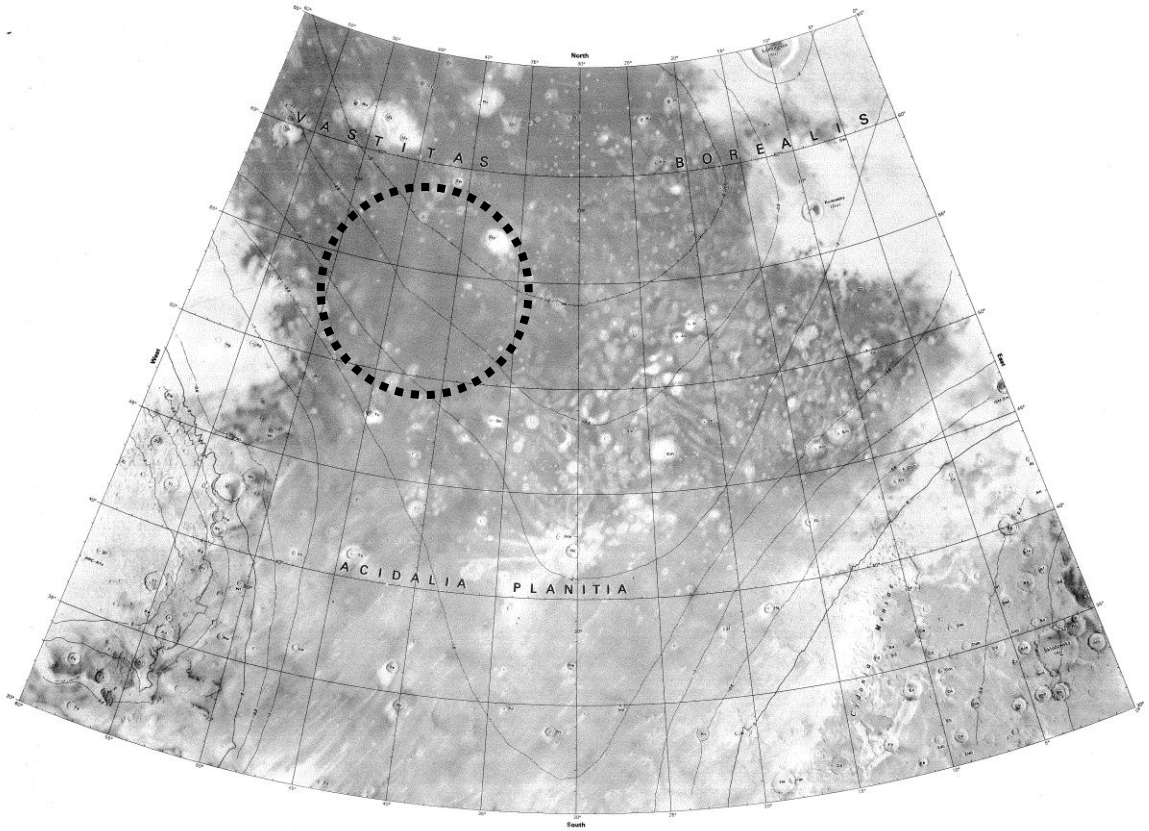


Mare Acidalium

Hot spot

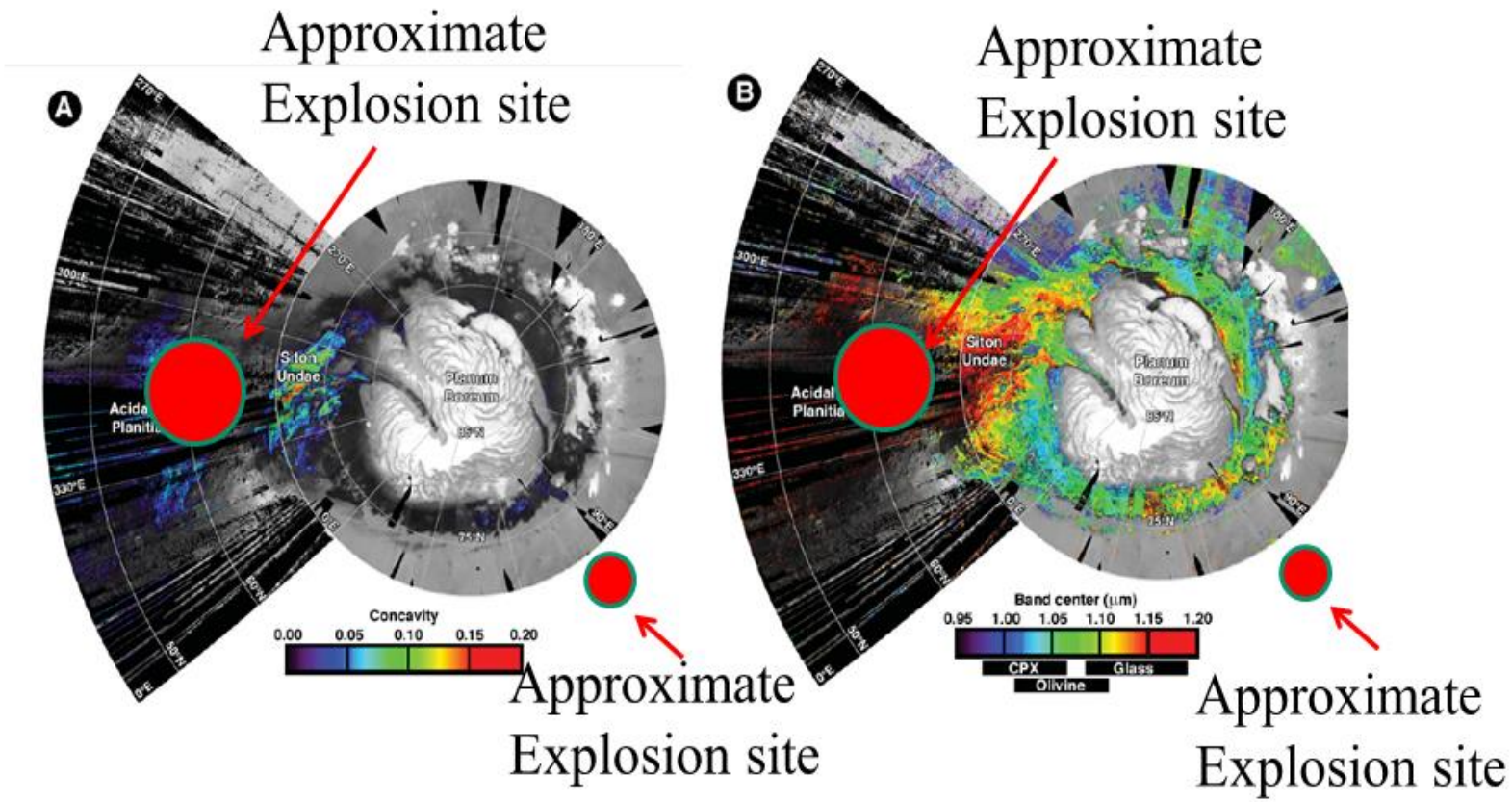


Mare Acidalium



MC-4d—Topographic version of the Mare Acidalium quadrangle. Scale 1:10000000 at 35.8° N. lat. and 59.2° N. lat.; contour interval 1 km.

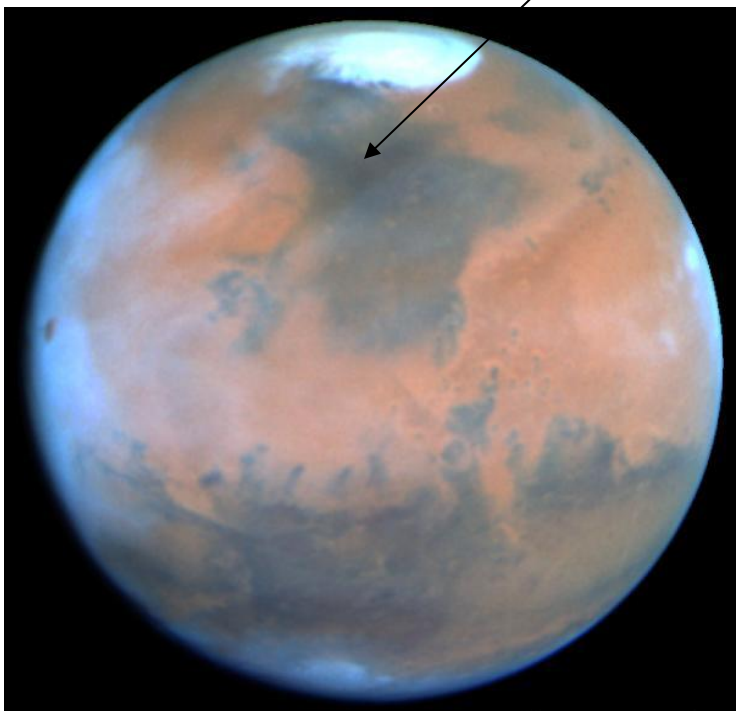
“Trinitite” Glass at Explosion sites

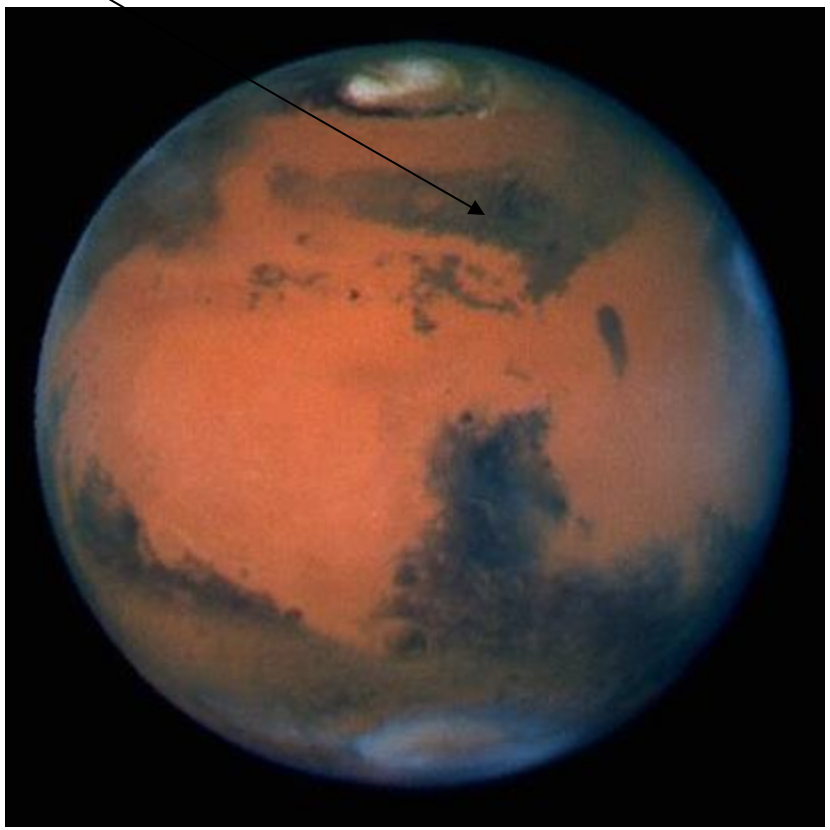


Acid etched glass found at explosion sites

Albedo Marks at Explosion sites

Albedo Features

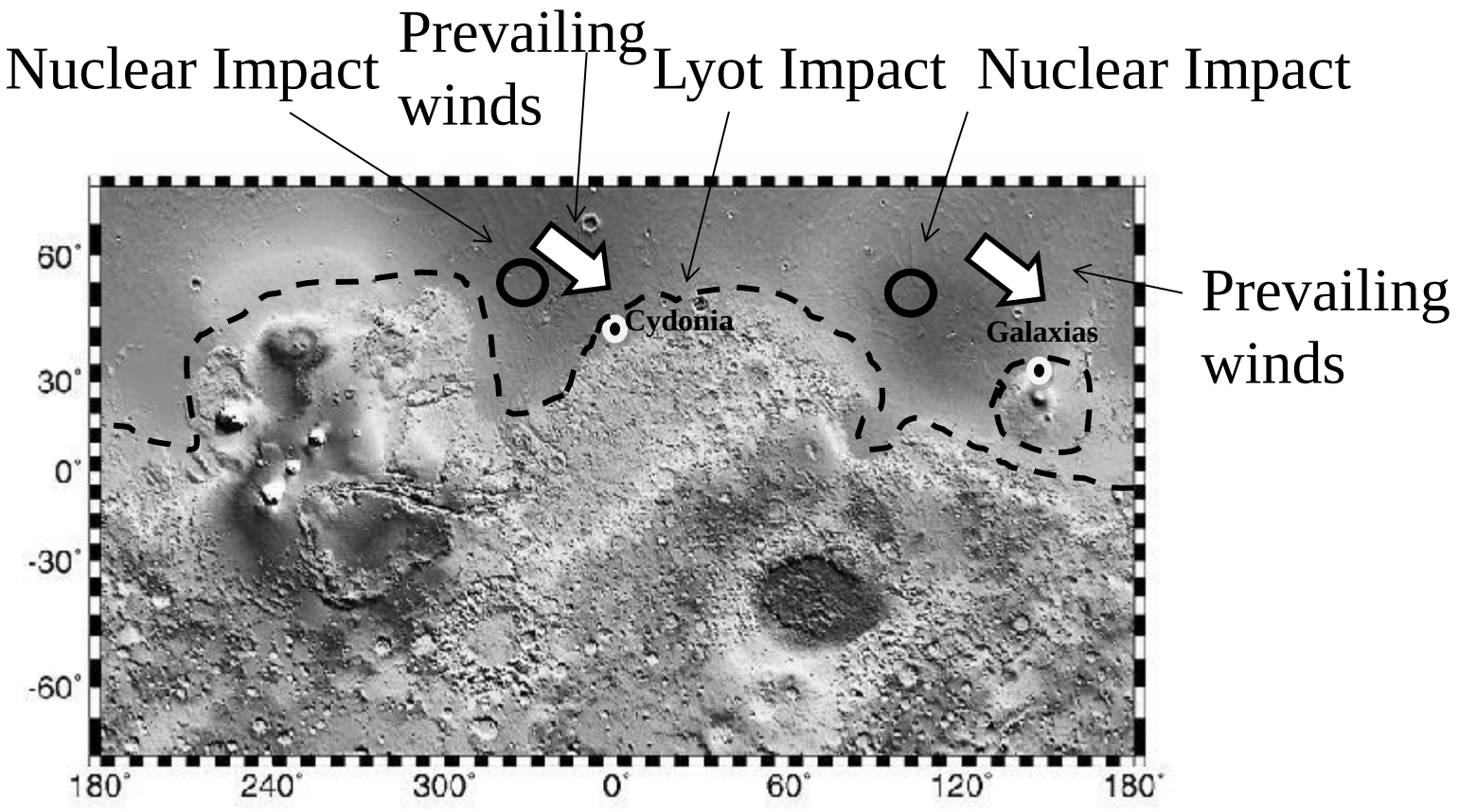




Mare Acidalium

Explosions Left No Craters

Location of Catastrophes



Northern region near Cydonia appears to have been ***"accident prone"***

Hypothesis: Mars hosted natural nuclear reactor

- Xenon created by fission in aqueously moderated natural nuclear reactor
- Reactor went unstable and explosively dis-assembled
- Problems:

–***would have made huge crater***

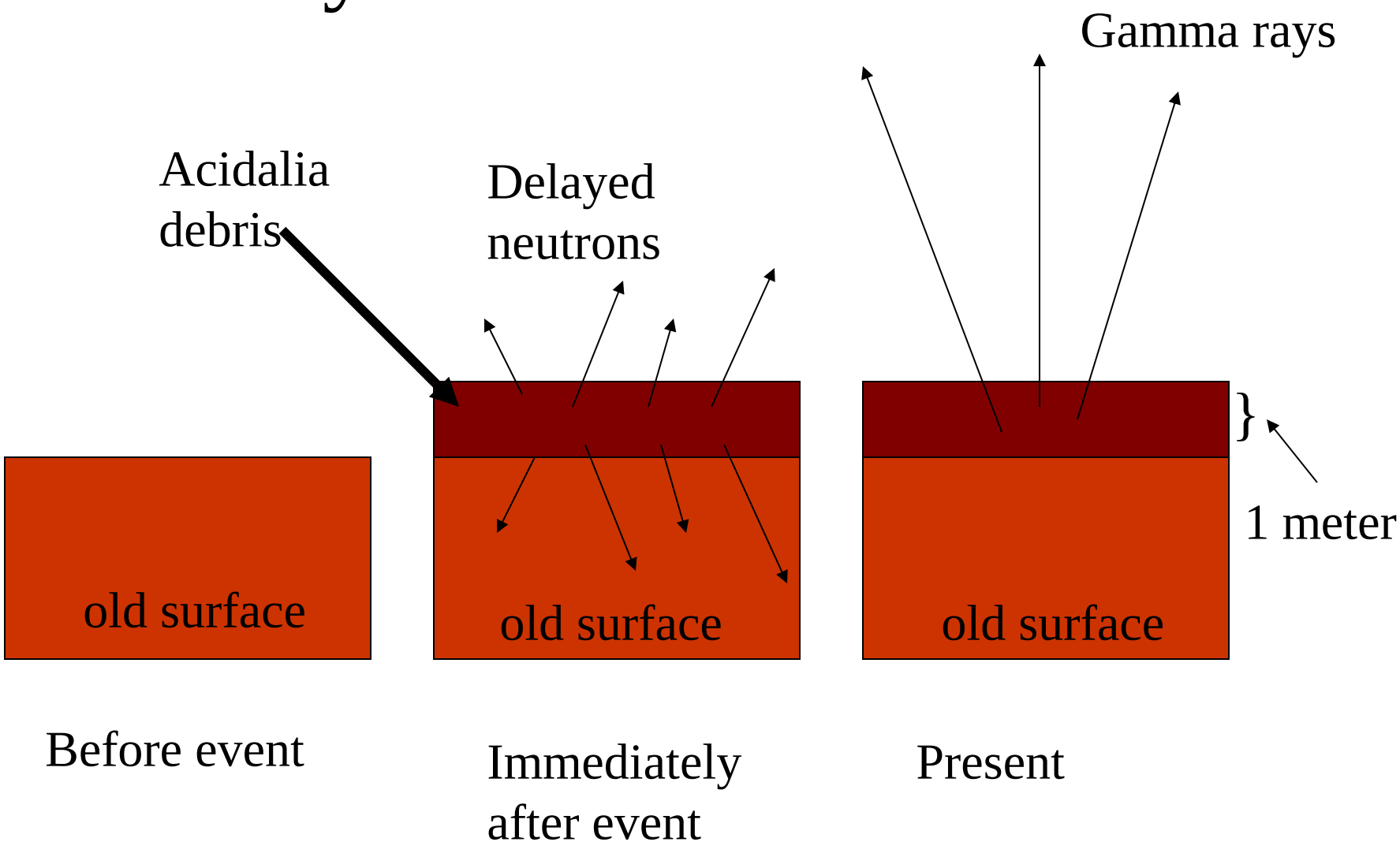
–Xenon isotope spectrum indicates fast neutron event, not moderated reaction

Hypothesis: Asteroid hosted natural nuclear reactor

- Iodine 129 created by fission was aqueously separated form other xenon and iodine and retained on asteroid giving superabundance of Xe 129 retained in rock
- Asteroid then burned up in Mars atmosphere depositing Xe 129
- Problem: 10^{-12}cc STP /g gas retention in meteorite rock –requires 1000km diameter asteroid to impact Mars –***would have made huge crater***

Hypothesis: Mars suffered explosion of large Thermonuclear weapon with fusion+fission over Mare Acidalium and possible a smaller one over Utopia Planum Both had mixed U-Th casing and D-T secondary

Delayed Neutrons after Event

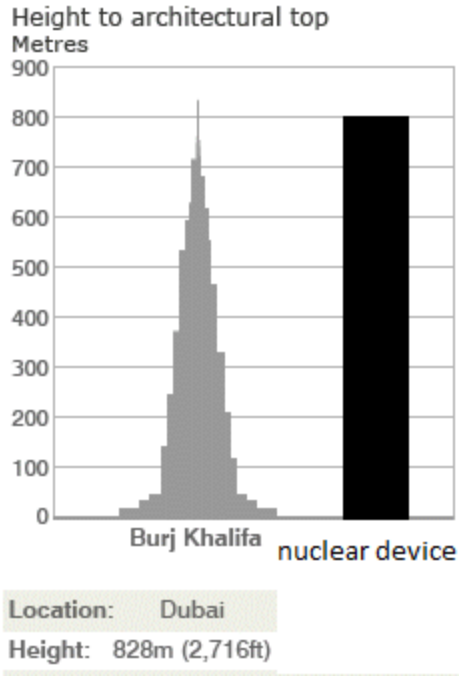


Model parameters

- Xenon 129 ~ 10^{33} atoms ~ 10^{35} Fissions
- Thorium layer ~ 10^{37}atoms ~ 10^{35} Fissions
- $10^{15}/cm^2$ delayed neutrons x 10^{18} cm^2 =10^{33} delayed neutrons ~ 10^{35} Fissions
- 10^{35} fissions x 3 x10^{-11} J/fission~ 10^{24}J
- 10^{24} J = 1 Chixulube ~ 10^{6} MT (terraton)
- 10^{6} MT~ total nuclear energy relased on Earth (Xenon (fission) Earth ~ Xenon Mars)

Size and Yield

- Yield ~ 1 billion megatons
- Size 100meter diameter cylinder 800 meters long



Predictions

- Residues of Uranium plutonium fission will found in surface layer
- Residues of Thorium-U233 fission will be found in surface layer
- Large amounts of radioactive K 0.7Gyr half life will be found buried in high amounts at Acidalium site

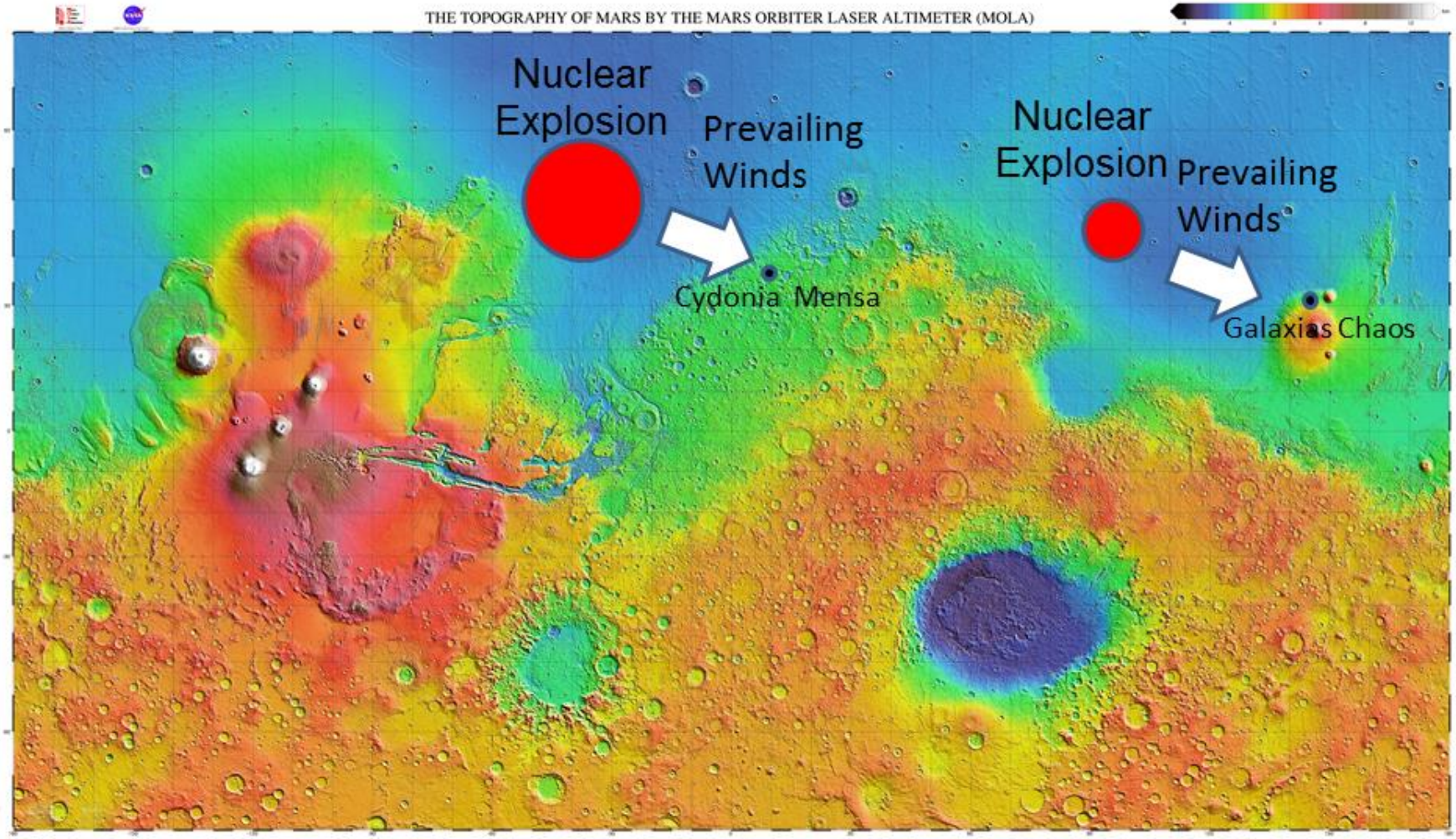
Problems

- Evidence for Mars paleo-nuclear event is strong- ***but no crater at ground zero***
- Natural nuclear reactor explosion would have created a large deep crater
- Absence of crater suggests Air Burst after ocean dried up

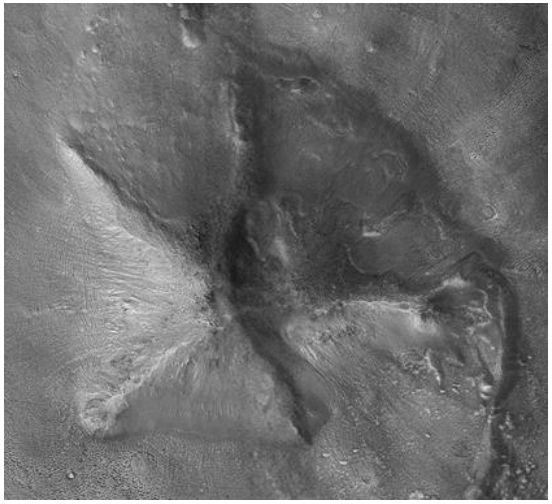
Summary

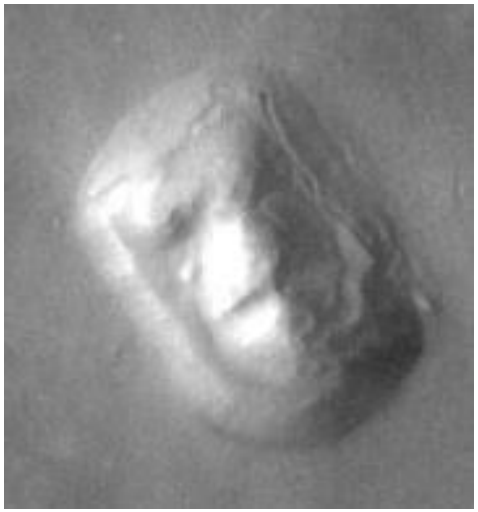
- The Xenon, Krypton and U-Th anomalies can be explained by a large Thermonuclear weapon explosion in the past- ***and little else***
- The weapon exploded over Mars Acidalium after ocean was dried up, throwing debris globally and releasing large amounts of Xenon while a U-Th rich debris layer irradiated the surface by delayed neutrons
- Residues of Thorium-Uranium fission will be found in surface layer- radioactive K will be found buried in high amounts at Acidalium site

Approximate Locations of Centers of Nuclear Explosions

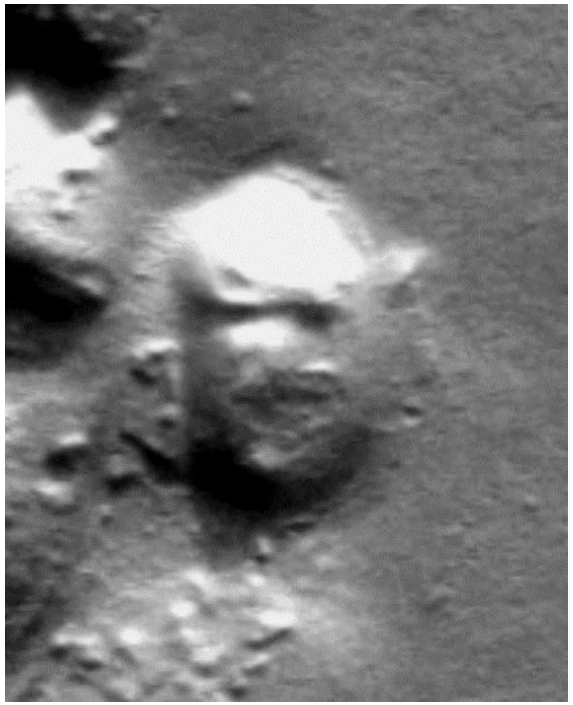


Objects imaged at Cydonia Mensa and Galaxias Chaos





V10598012 Odyssey
Cydonia Mensa



V22286011 Odyssey
Galaxias Chaos