Enigmas and Controversy in Science: Examples from Madagascar and Russian Lakes.

Madagascar-Are the Chevrons from a Megatsunami 10,000 years ago?

Collaborators:
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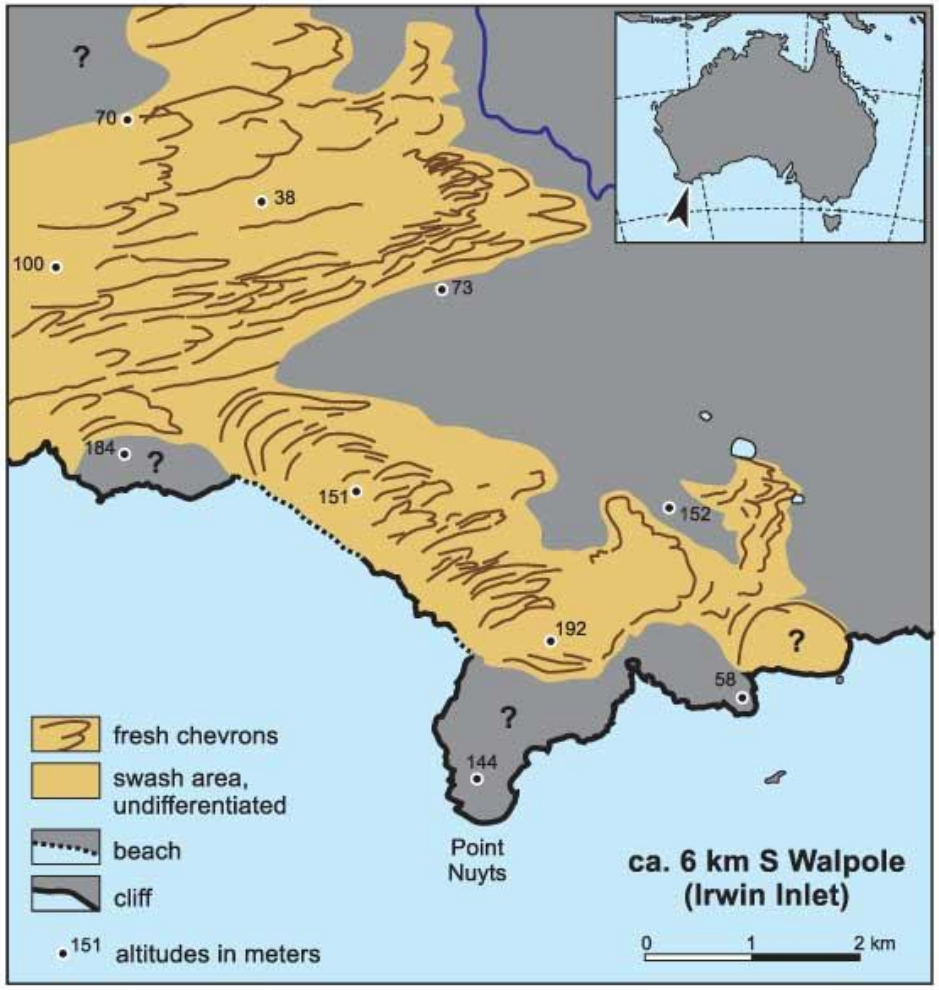
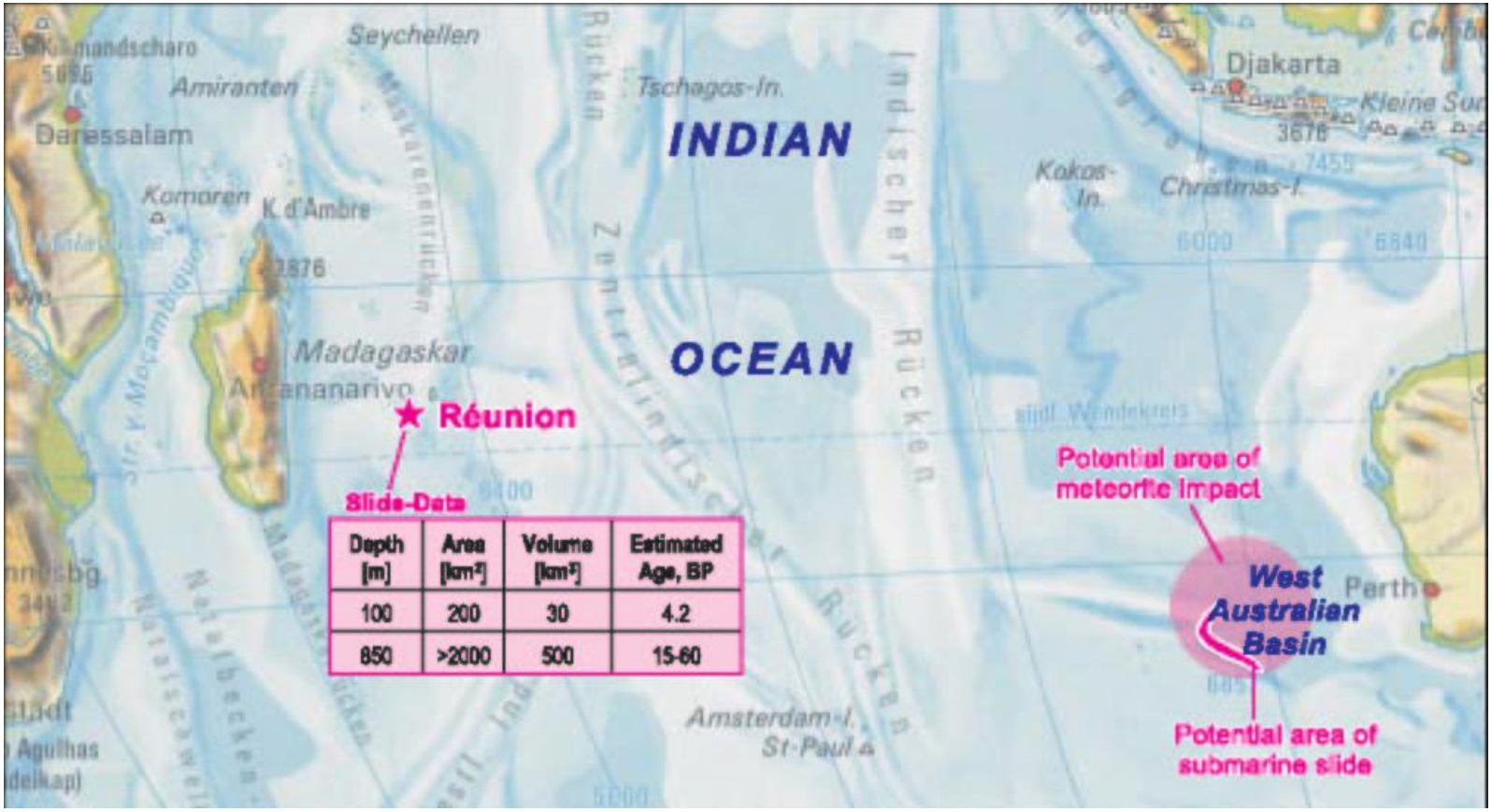
Gerard Rambolamanana
Karina Galinskaya

Chevron Dunes: Maximum runup 150 m/5 km inland in SWAustralia-age early Holocene



Kelletat and Scheffers-no Obvious seismic Source-landslide or impact?

Kelletat and Scheffers: Inferred latitude of impact crater



International Madagascar Expedition


AMPALAZA CHEVRON
LINTA RIVER
FENAMBOSY CHEVRON
AMPALAZA BAY
MENARANDRA RIVER
FENAMBOSY BAY
FAUX CAP CHEVRON
CAP ST. MARIE
FAUX CAP

A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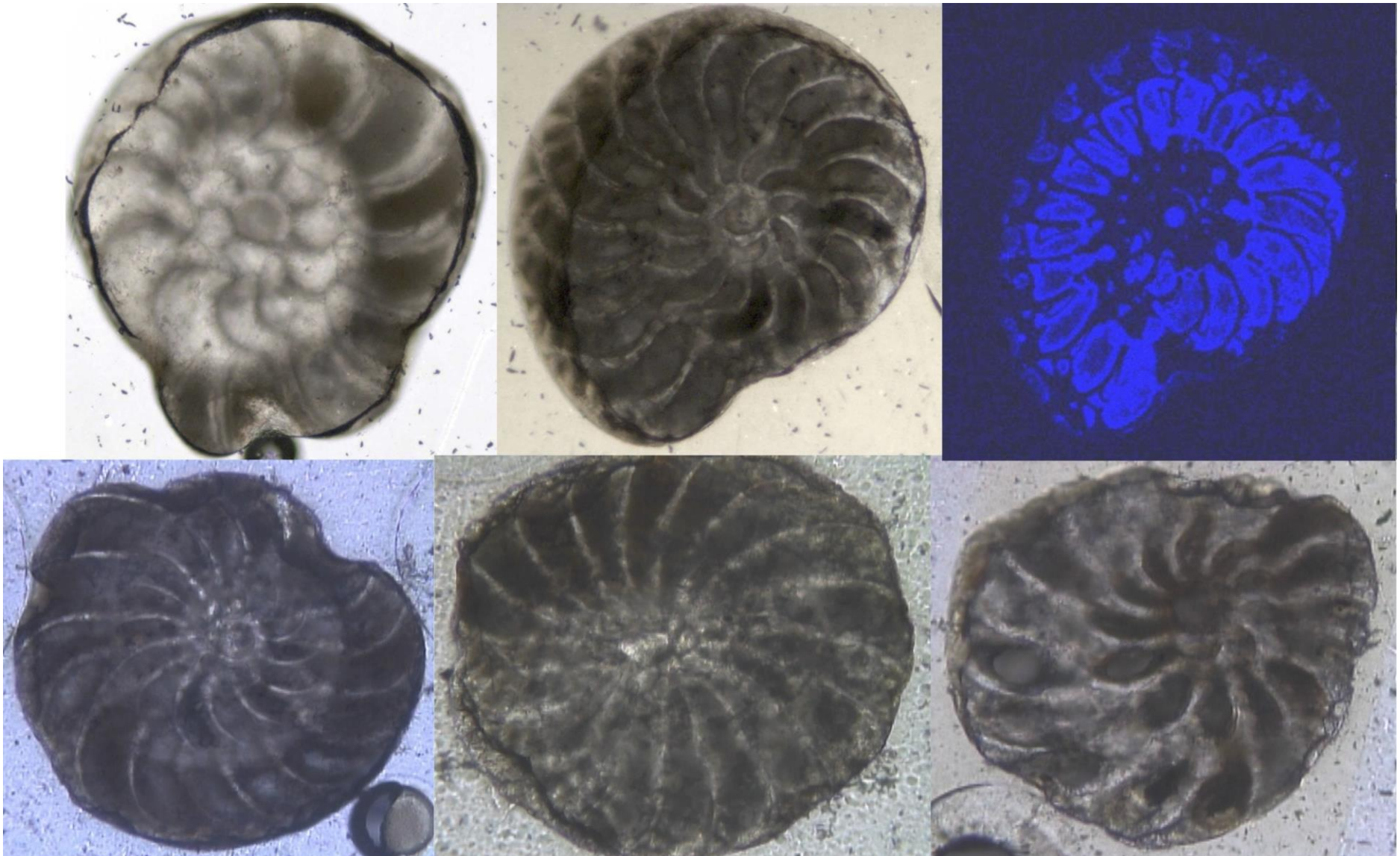
FENAMBOSY BAY
FAUX CAP CHEVRON
CAP ST. MARIE
FAUX CAP

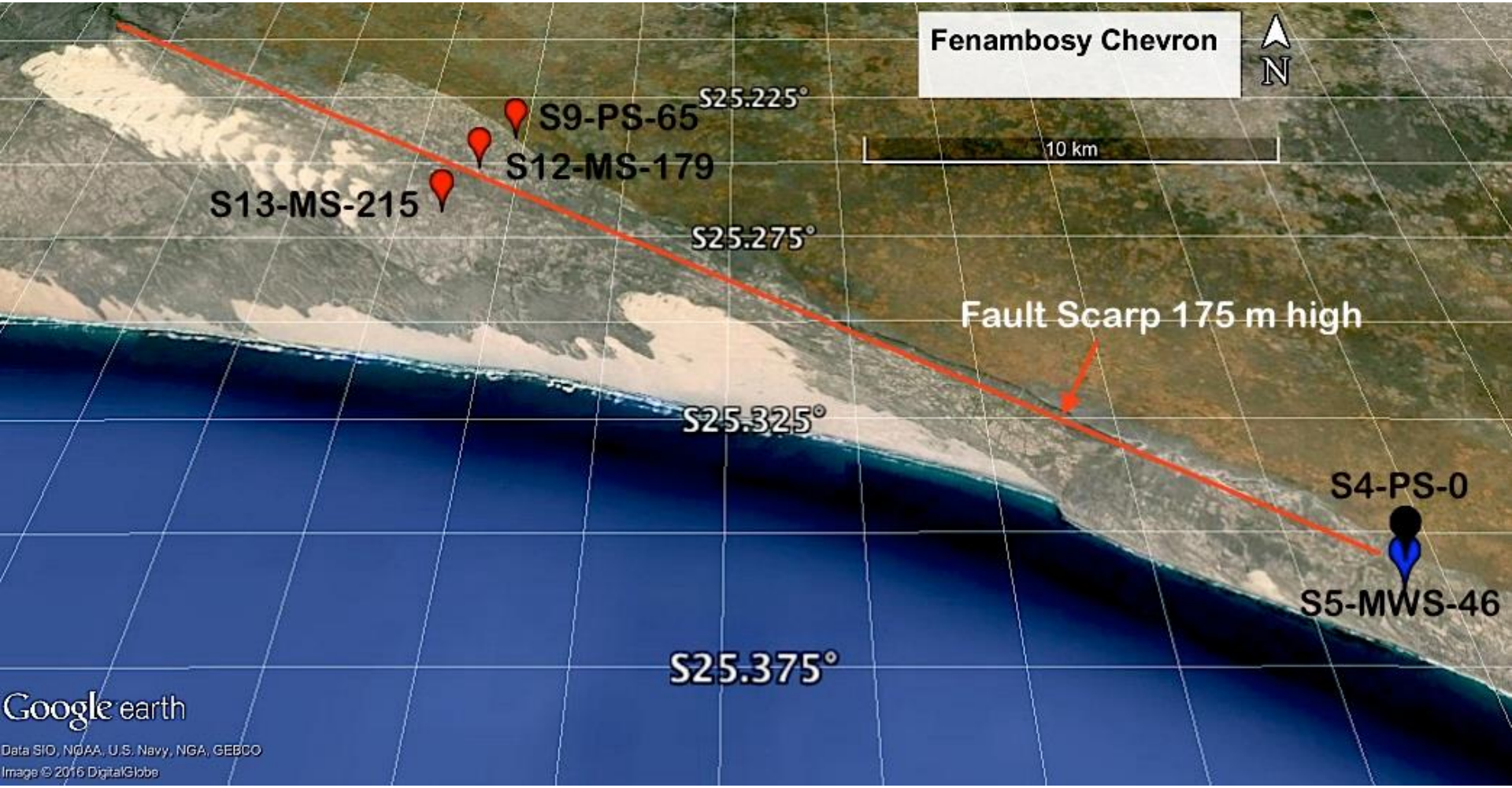
B

Microfossils in Sand-Windblown or Tsunami Deposits?

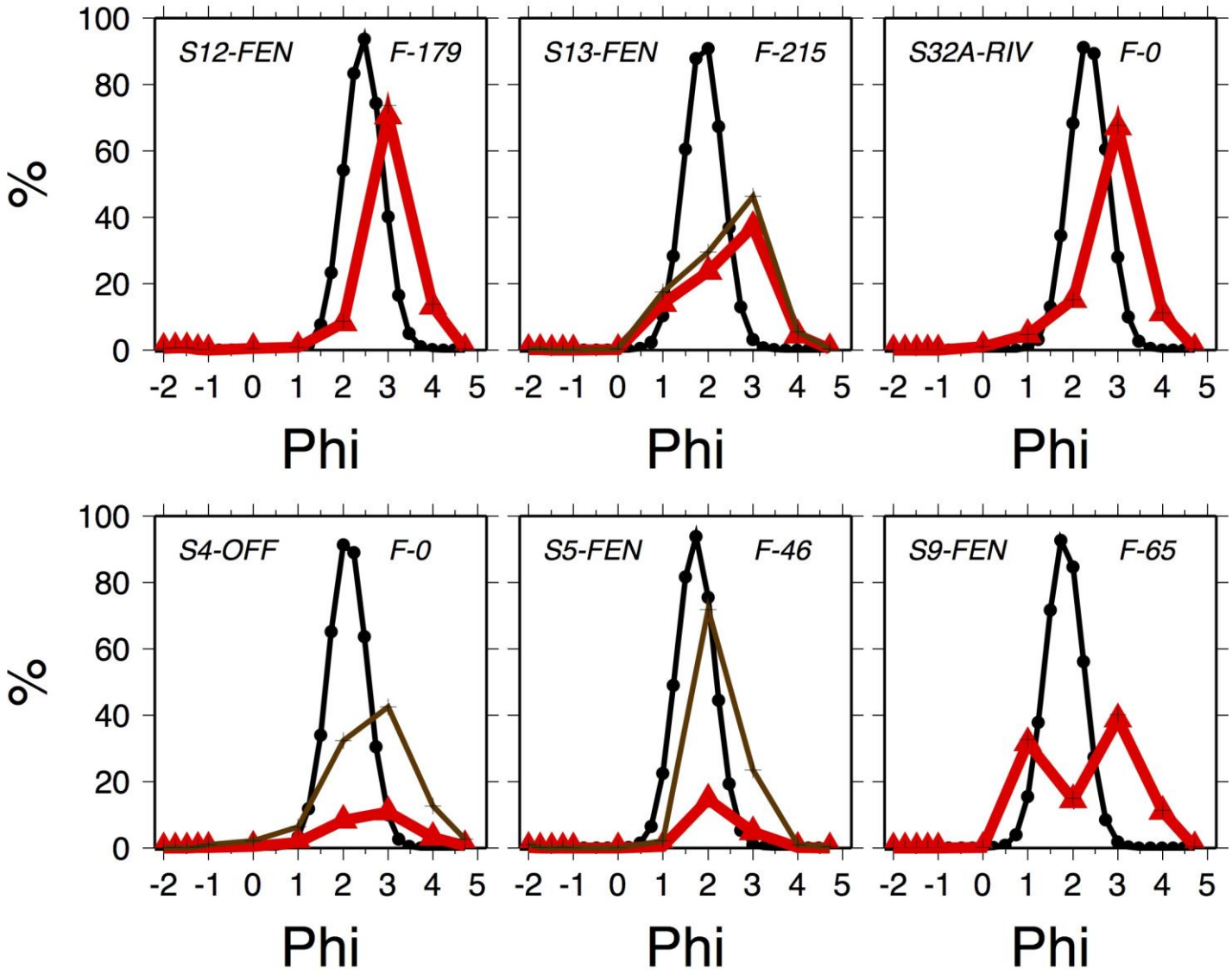


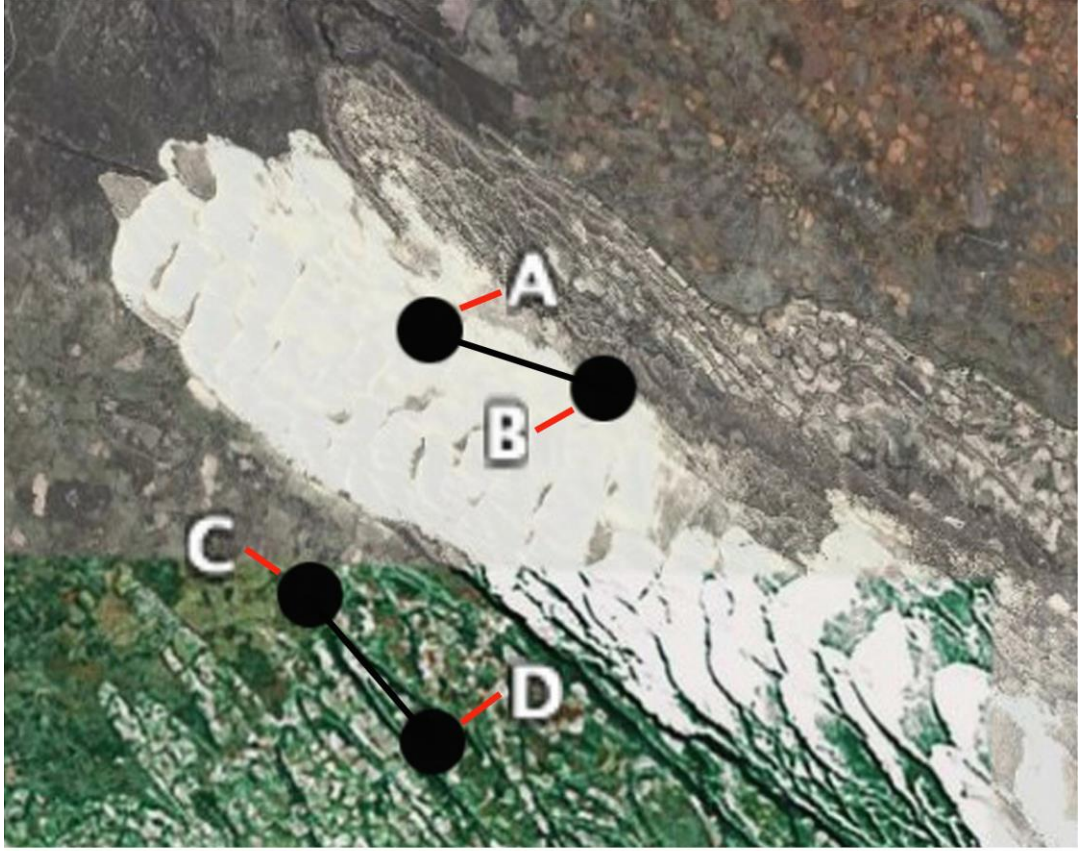
Fenambosy Escarpment

Fenambosy Chevron

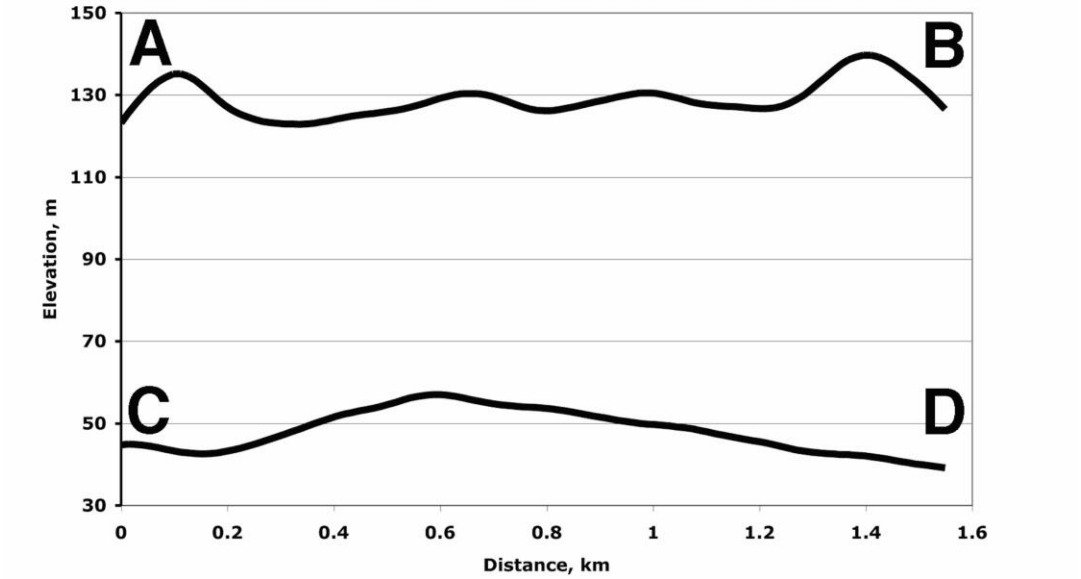


Grain Size Distributions- Fenambosy



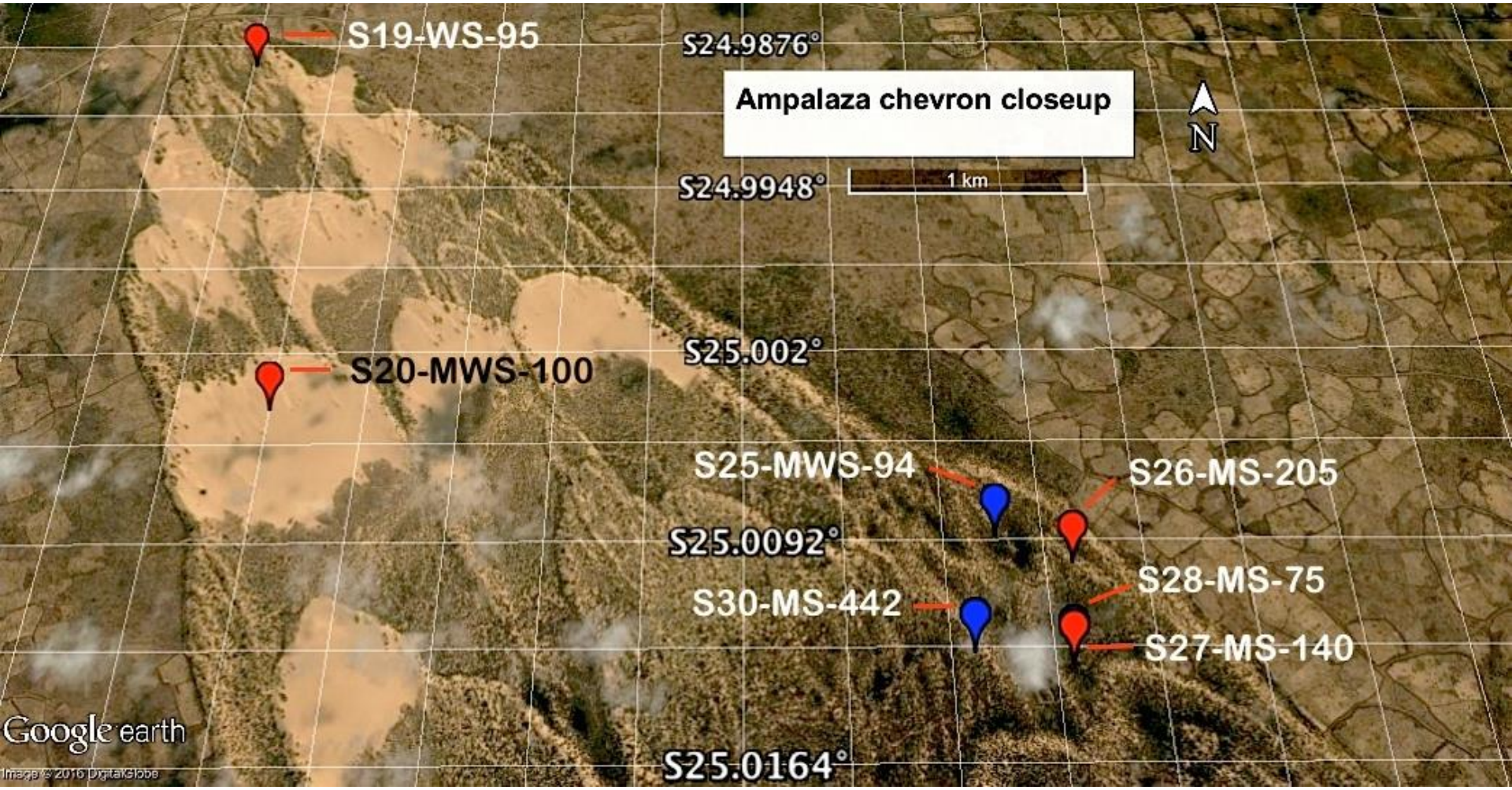


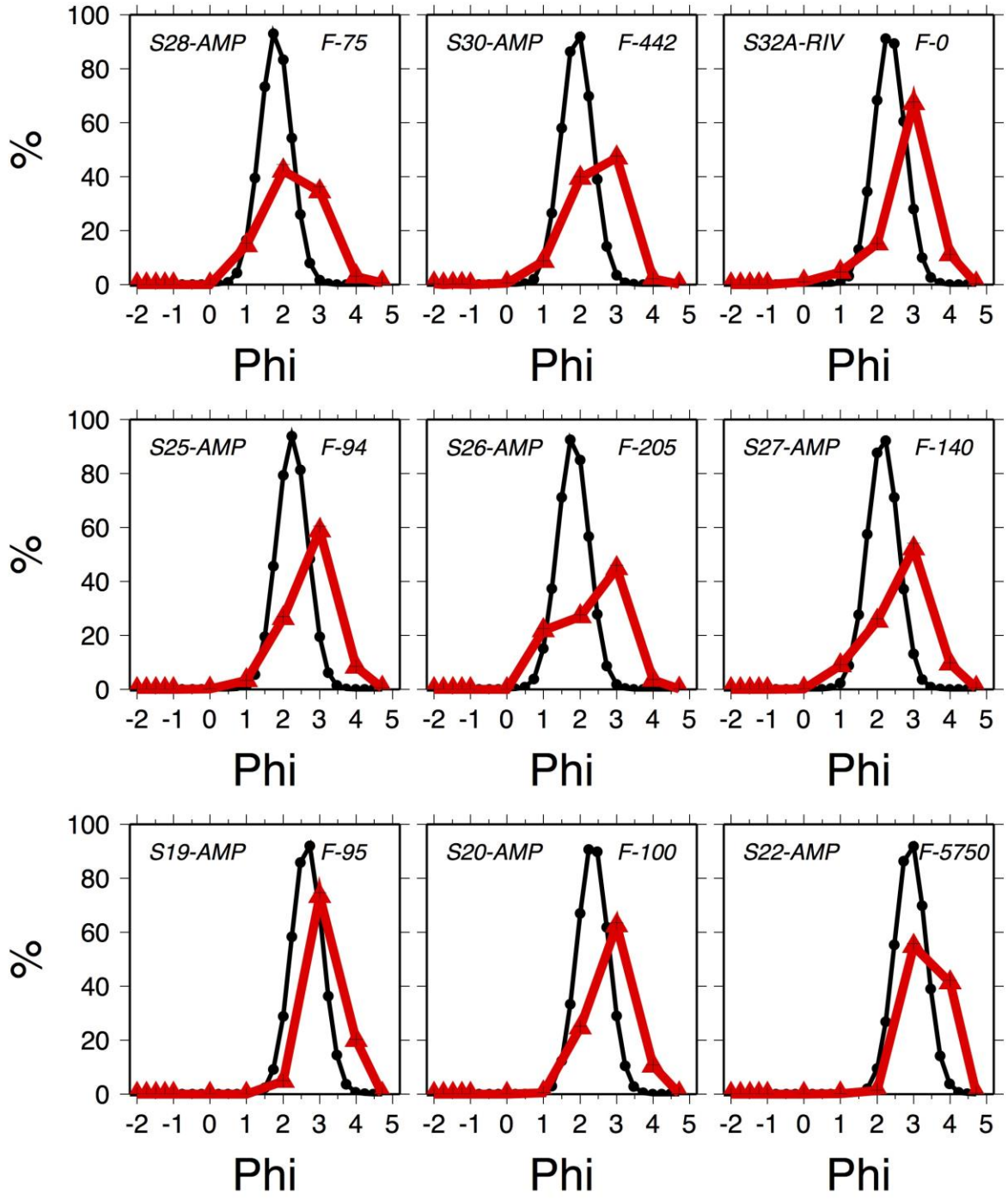
Cross Sections Fenambosy



Ampalaza chevron

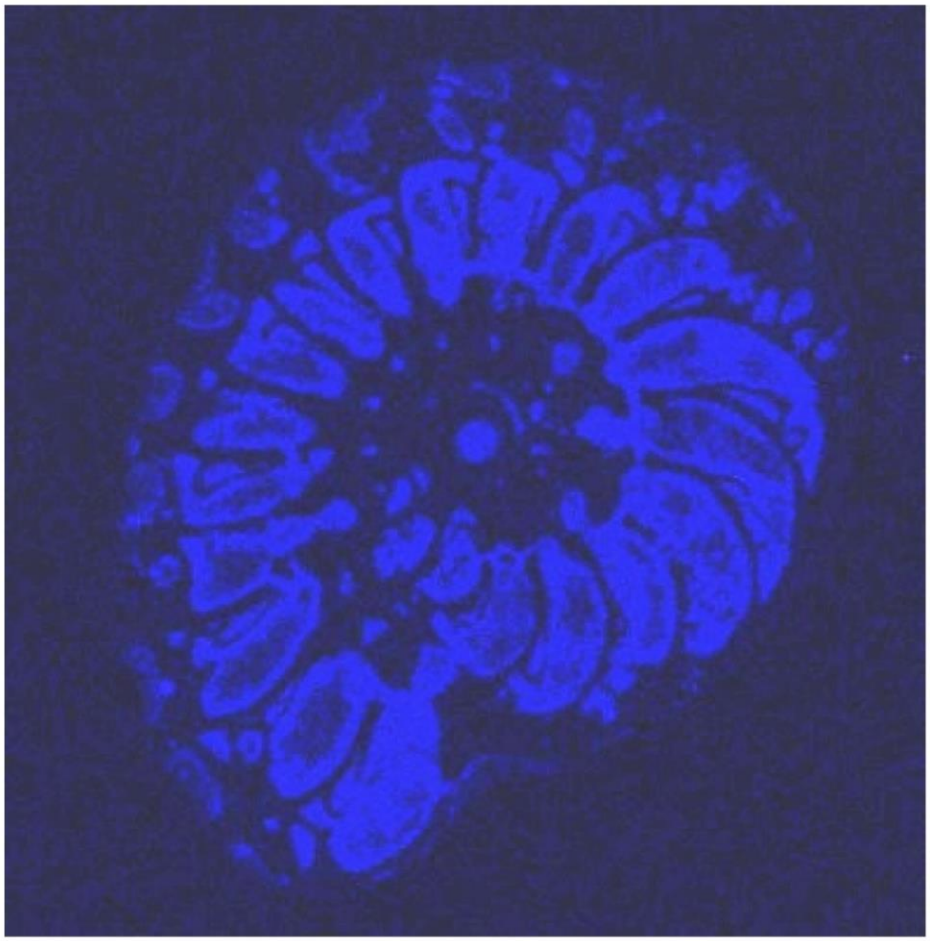
Ampalaza closeup





Ampalaza grain sizes

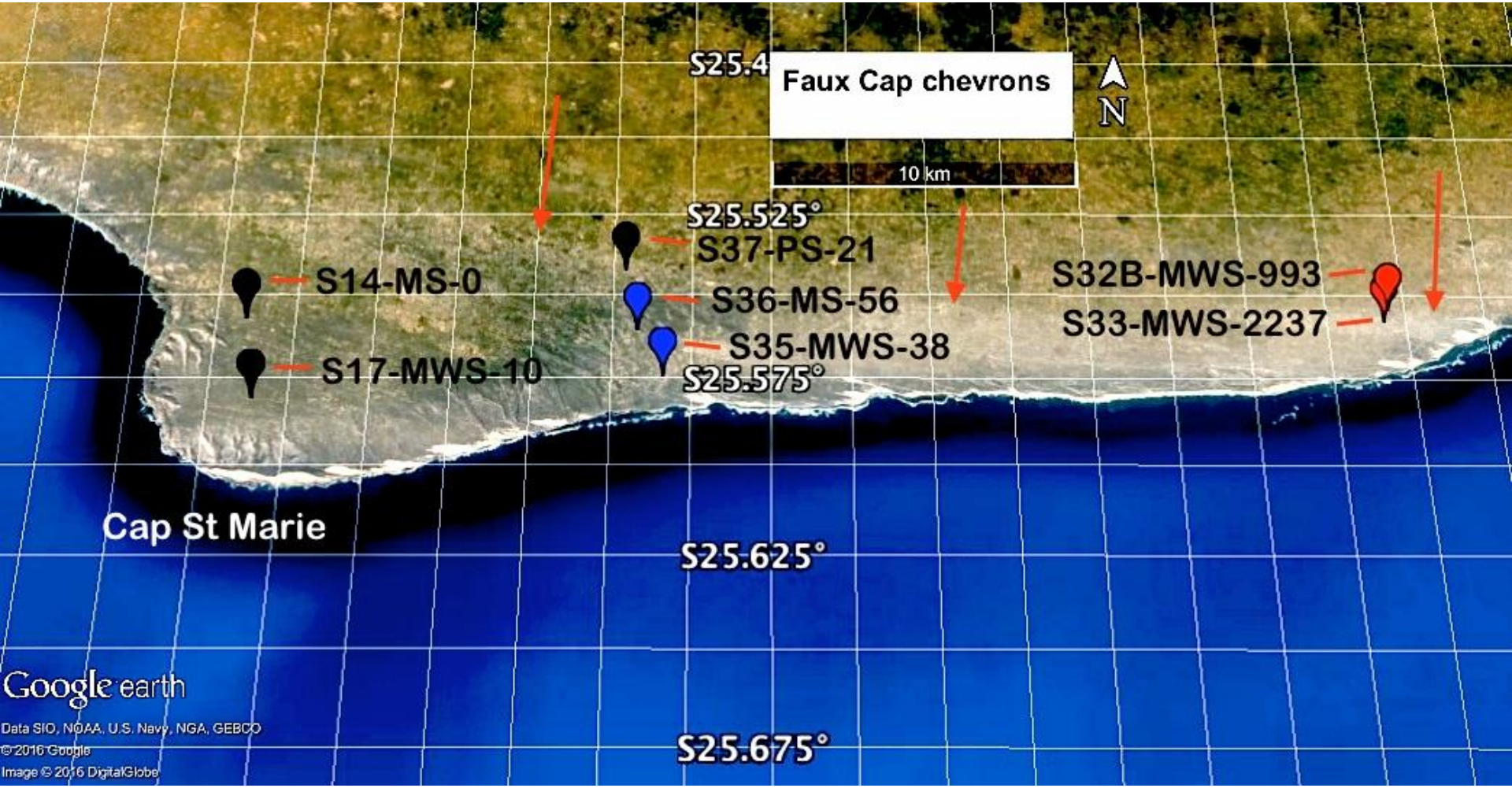
Marine Microfossils-partial dolomite?

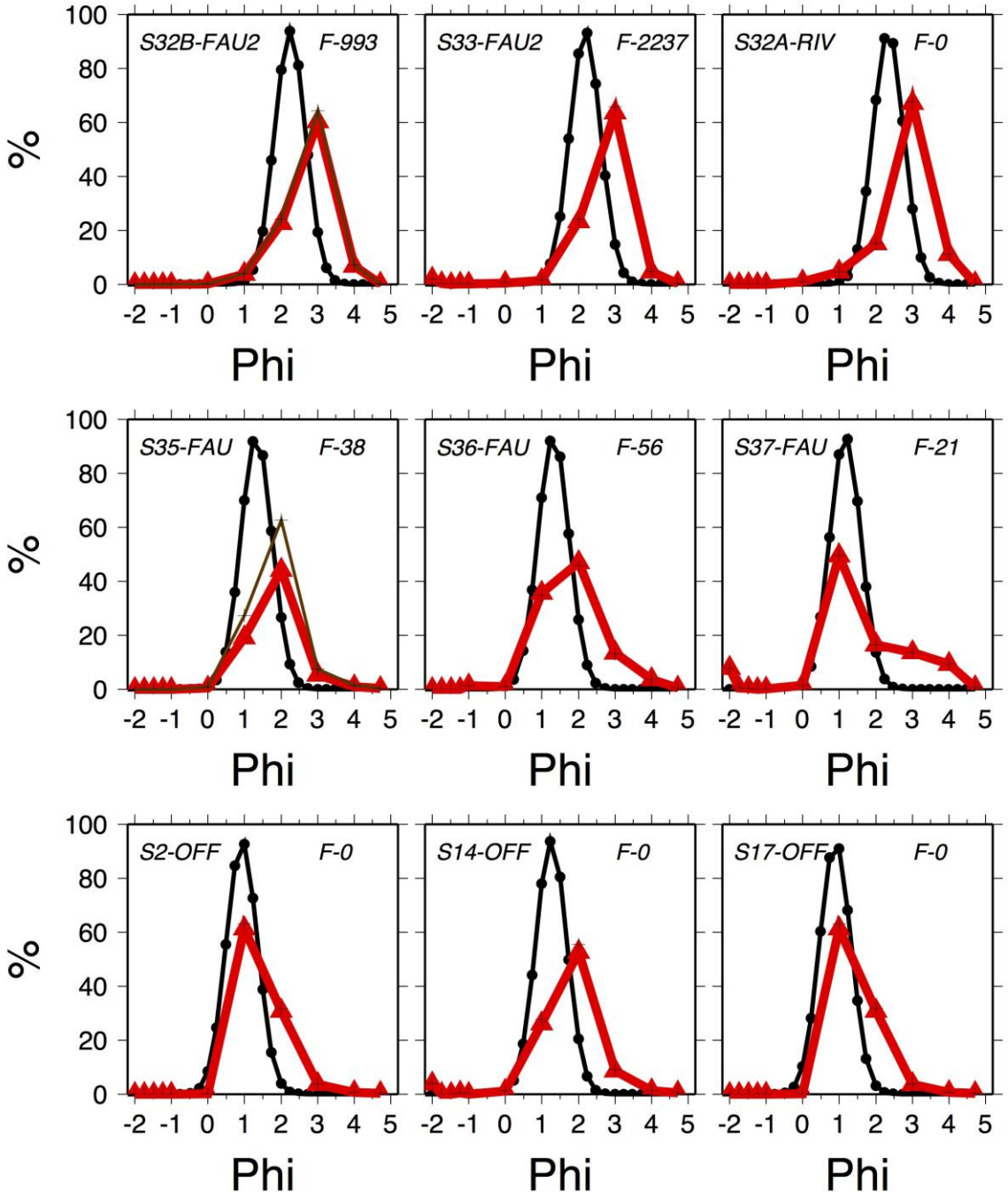


Mg element map

Ca element map

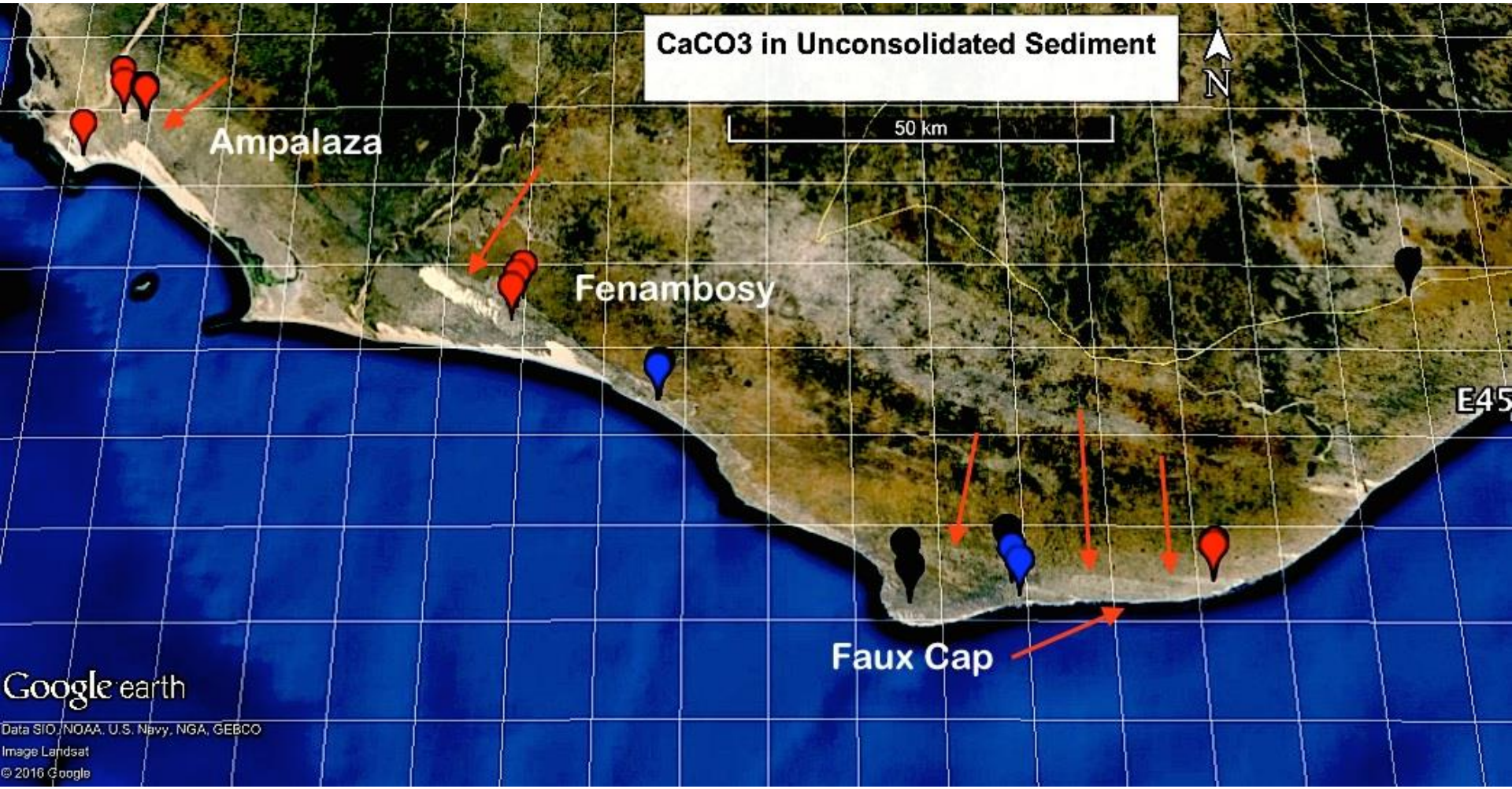
Faux Cap, Cap St Marie



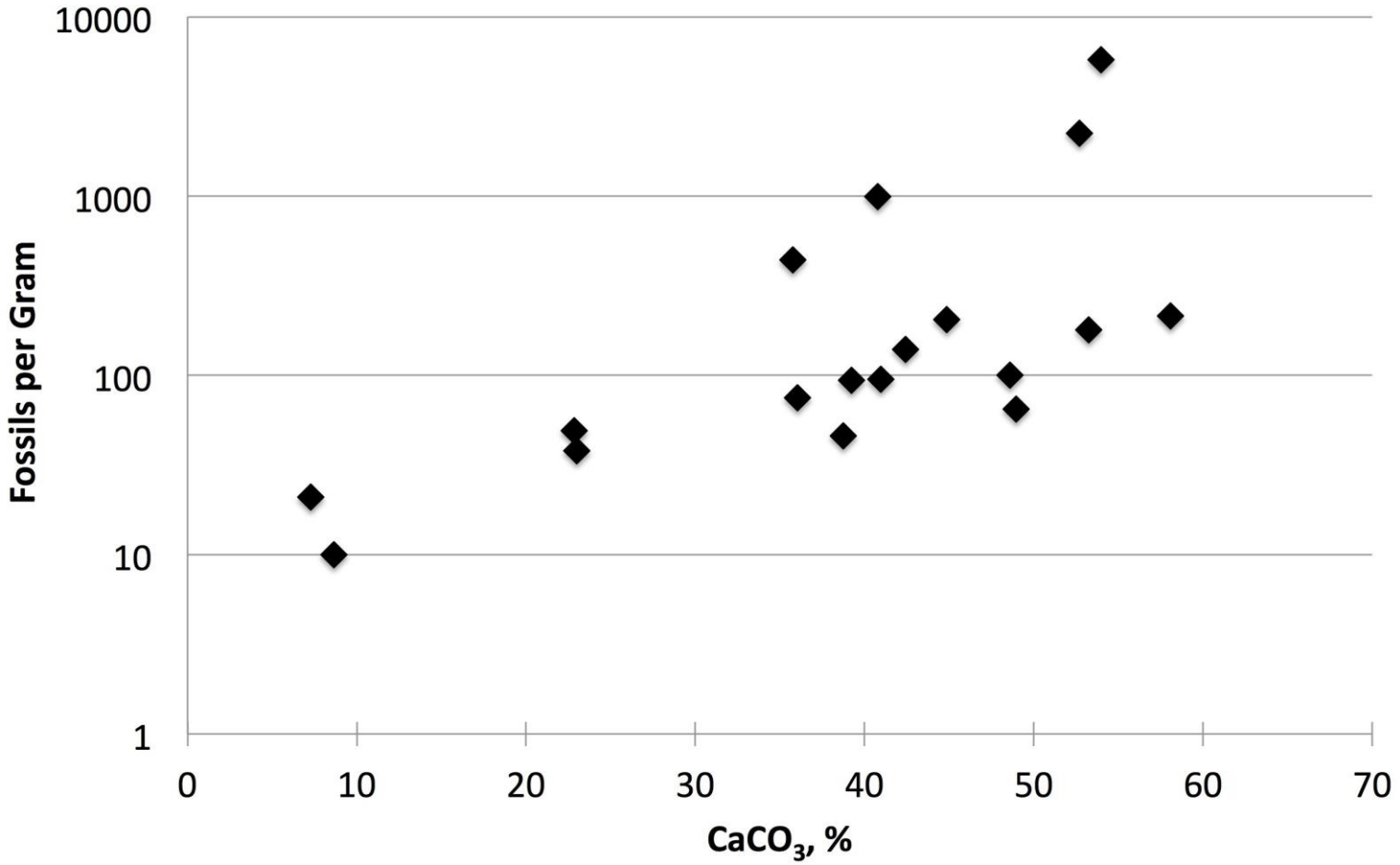


Faux Cap, Cap St. Marie grain sizes

Regional Satellite Image CaCO3



CaCO3 vs Fossils/Gm



Age Dating Results

Boulder-cliff top Fenambosy

Boulders near field

Conclusions-Madagascar

- 1) Carbonate in chevrons is not from modern wildblown beach sand. Event ~ 10,000 yrs ago. (Oddity in 14C timescale)
- 2) Grain size distributions of chevrons do not match windblown sand.
- 3) Dolomite and marine microfossils suggest an offshore source for the carbonate.
- 4) Elevations of the chevrons (up to 185-200 m above sealevel) suggest a megatsunami.
- 5) Source of tsunami-landslide on Reunion volcano OR formation of Burckle crater.

Three Proposed Russian Impact Lakes

Dallas Abbott and Karina Galinskaya-Lamont-Doherty

Dee Breger-Micrographic Arts

Viacheslav Gusiakov and Ivan Amelin-Siberian Branch RAS, Novosibirsk

Alexei Kiselev and Lena Shaleava-

Univ. Mininskogo

Vadim Bronguleev, Sasha Makkaveav, Vadim Karaveav-Inst. of Geography, Moscow

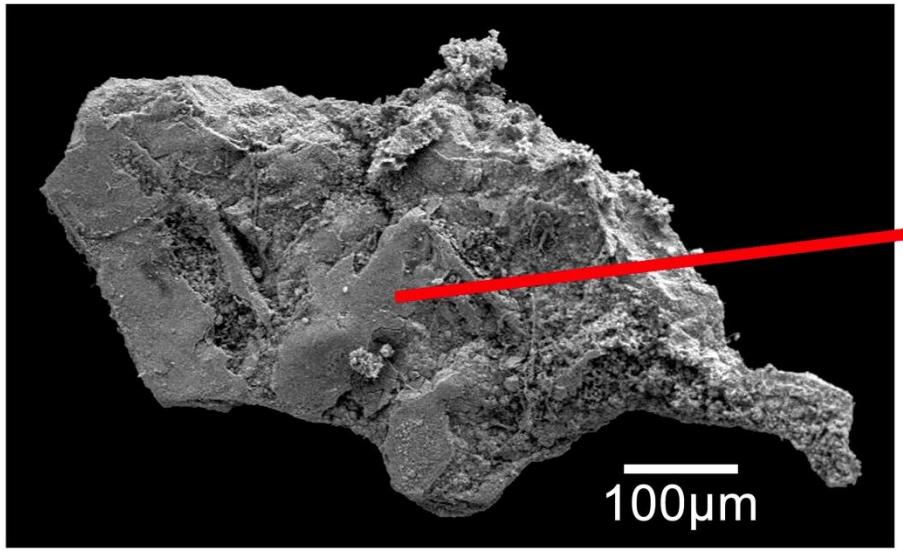
Importance of Ni- Abundant in Material from Outer Space(Example: Iron Meteorite-5-13% Ni)

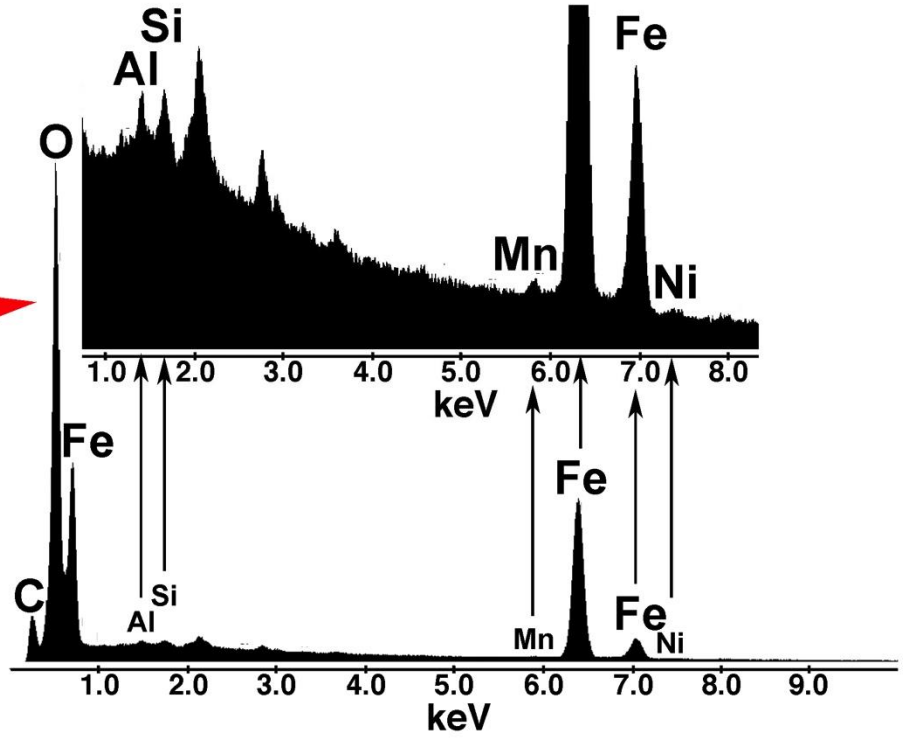
Lake Smerdyachee, Lemeshinskoye,Svetloyar

Smerdyachee-proposed impact lake- ~300 meters diameter

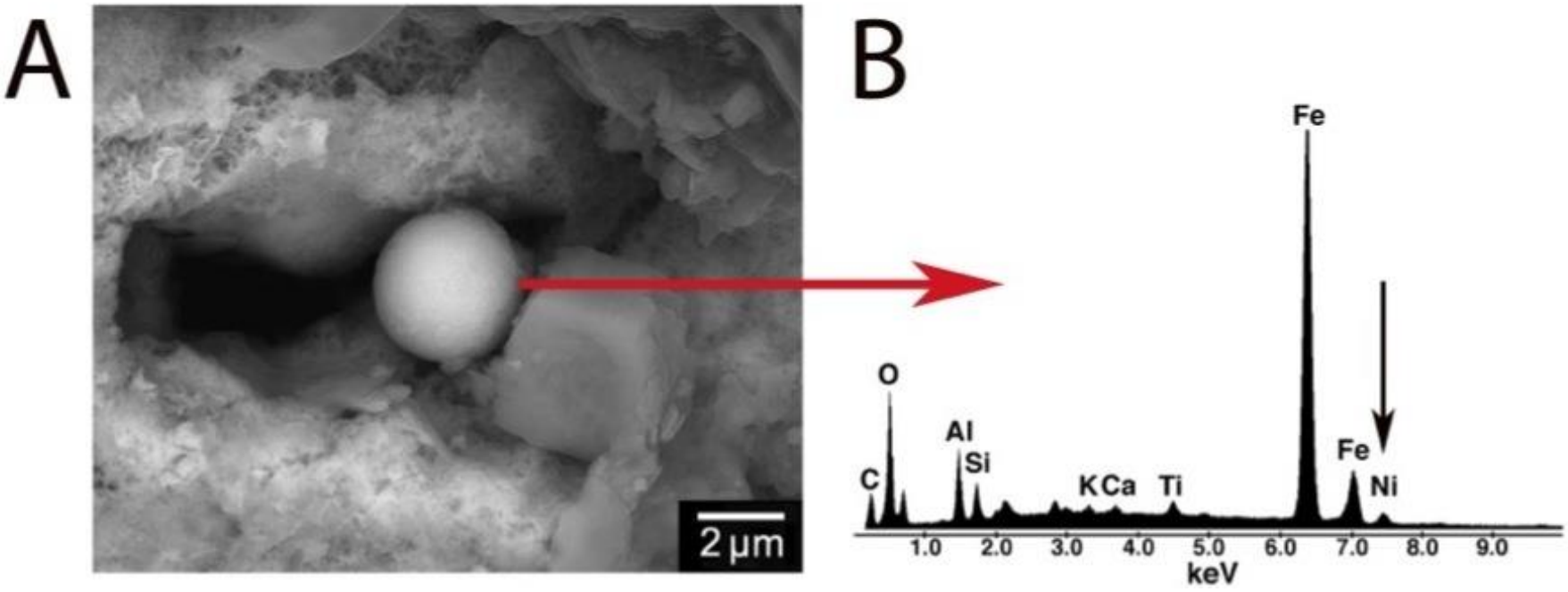
Why Impact? Deep, Round Lake with a Raised Rim

2013 season-first Ni rich material Smerdyachee

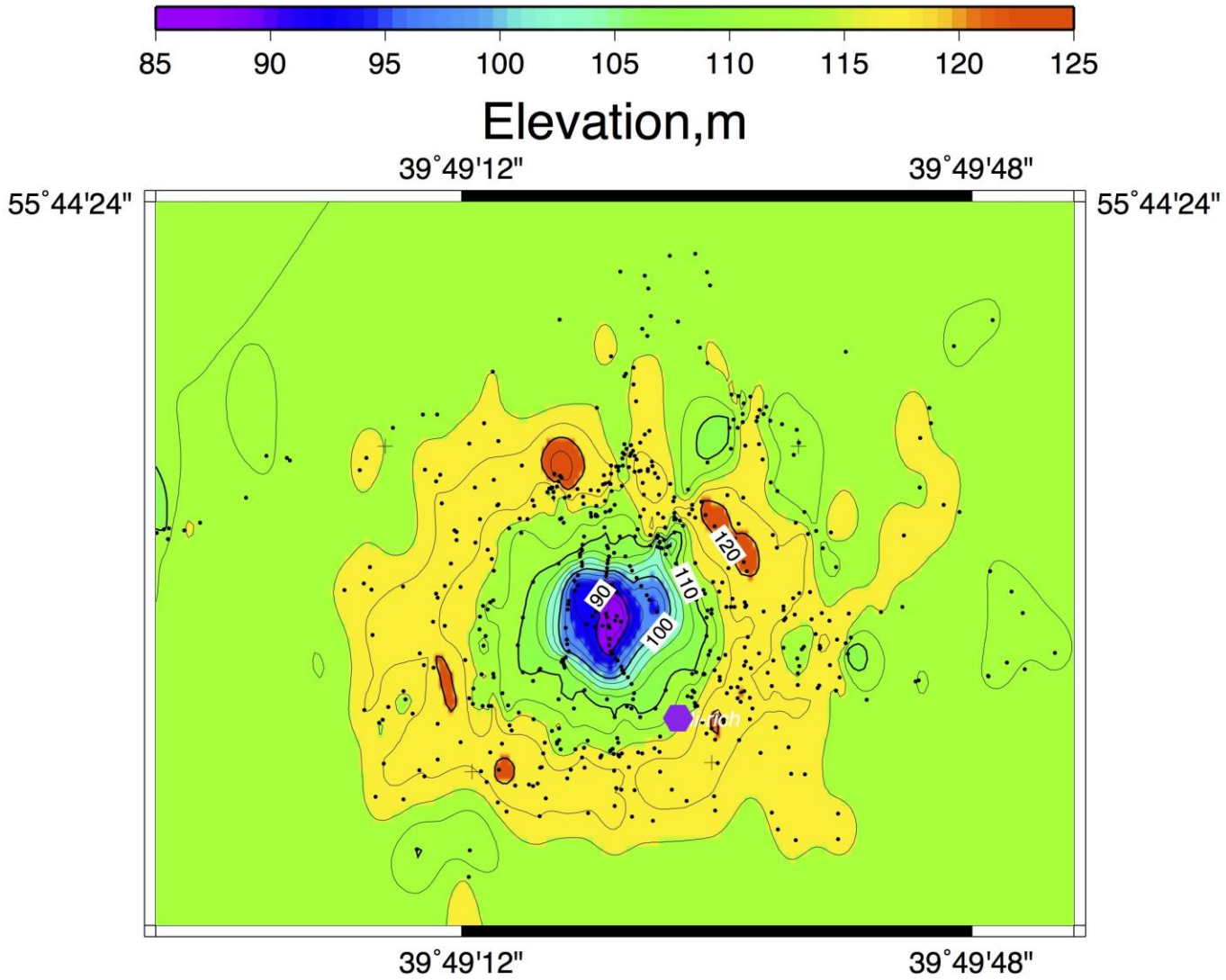




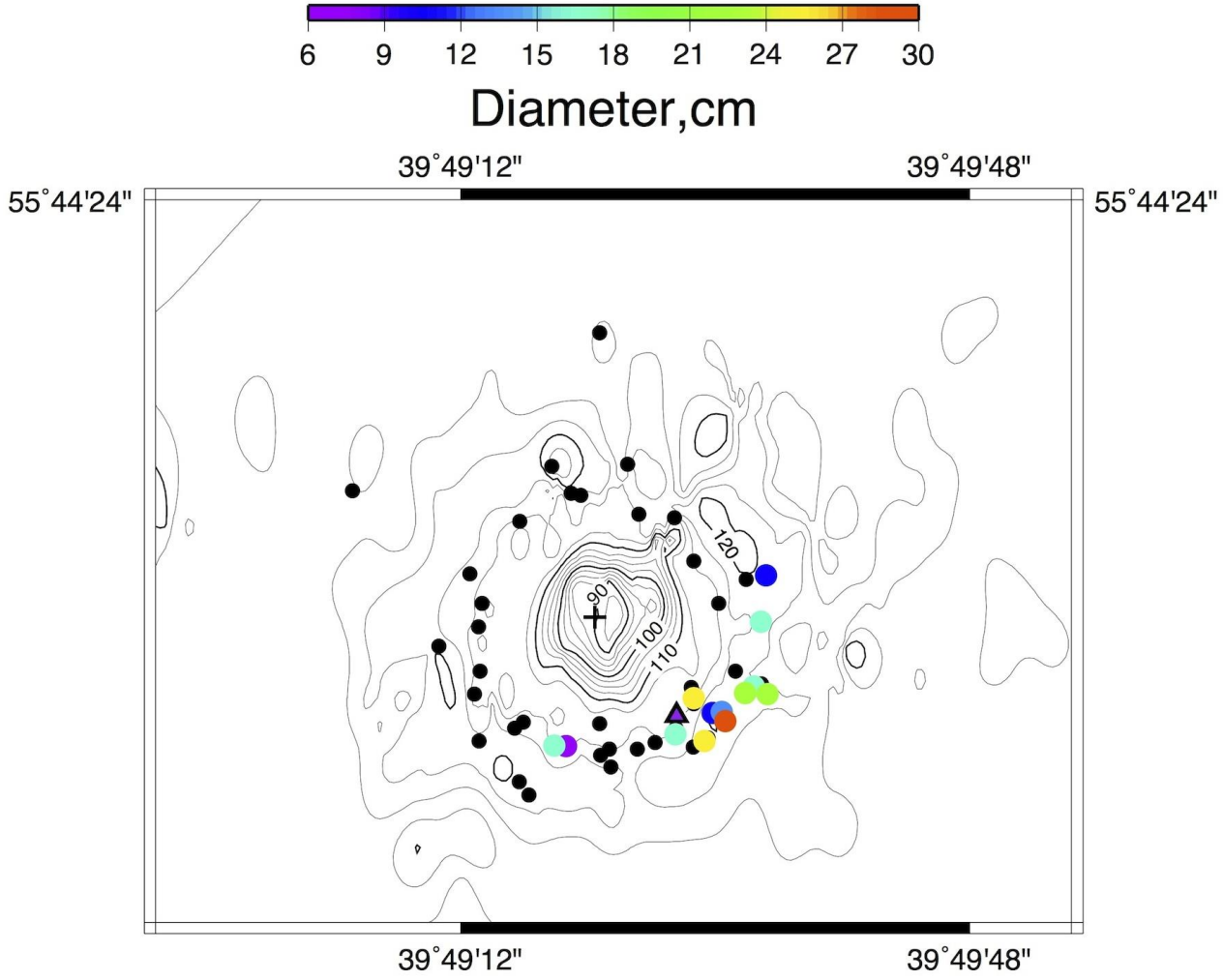
Ni rich material 2013-Smerdyachee



Topography 2014 (water at 114 m)



Large rock fragments containing Paleozoic fossils



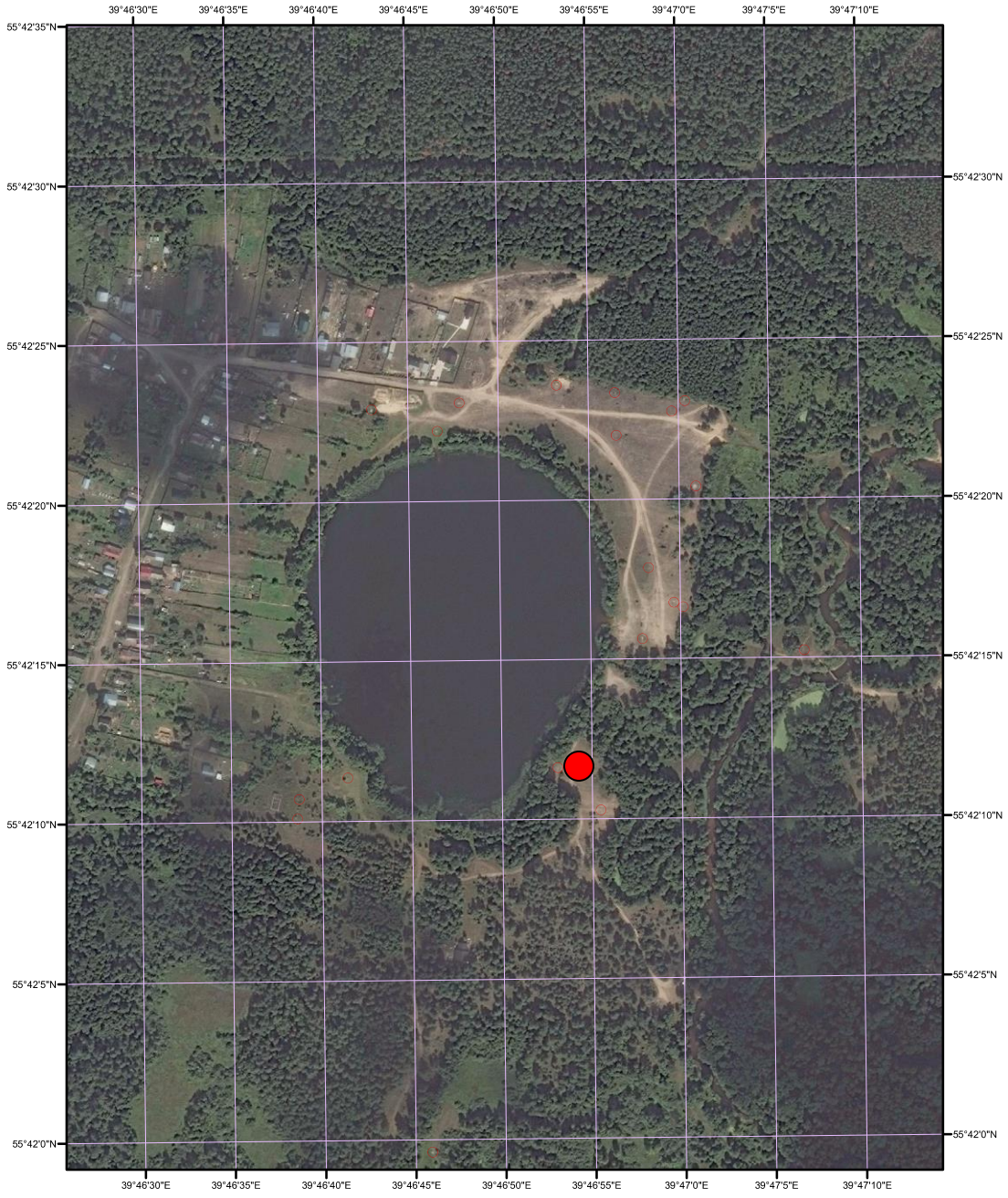
Paleozoic fossils- from rocks at > 40 m depth-above is sand

Crinoid stem

Brachiopod

Moon at Smerdyachee

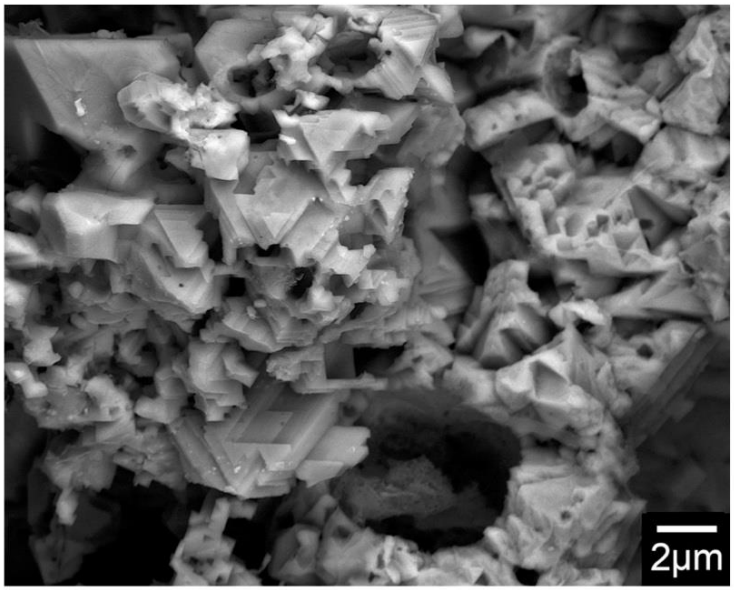
Lemeshinskoye

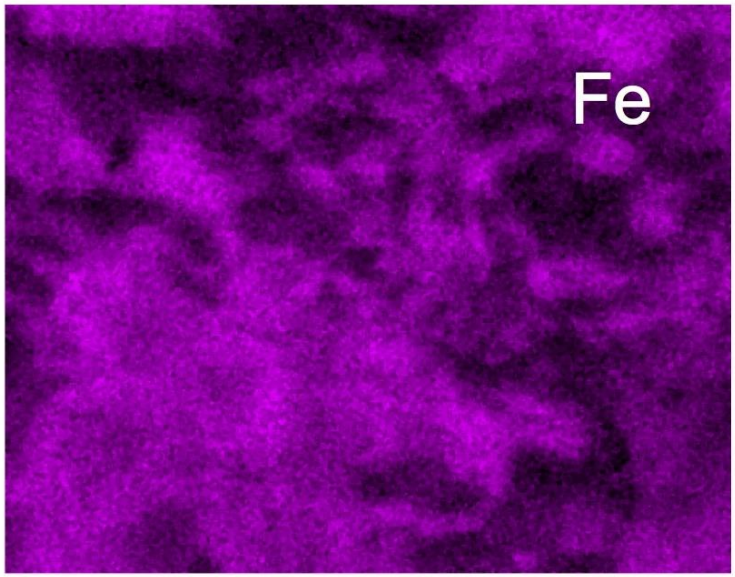


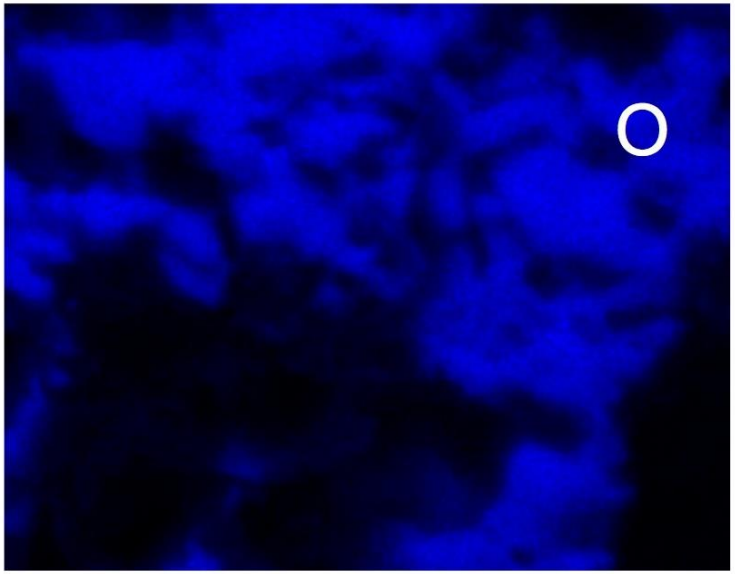
Proposed impact Lake-Elliptical-sampled at red circle

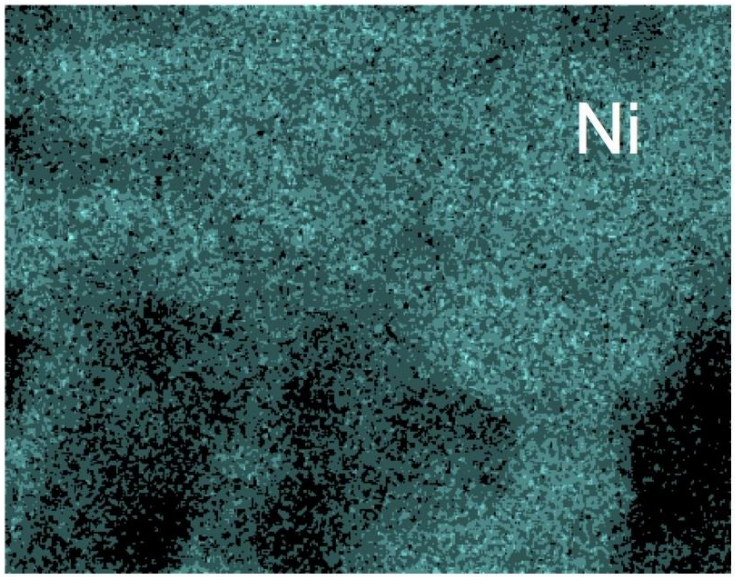
Magnetic Grain-Visible Light

Element Map-area on grain

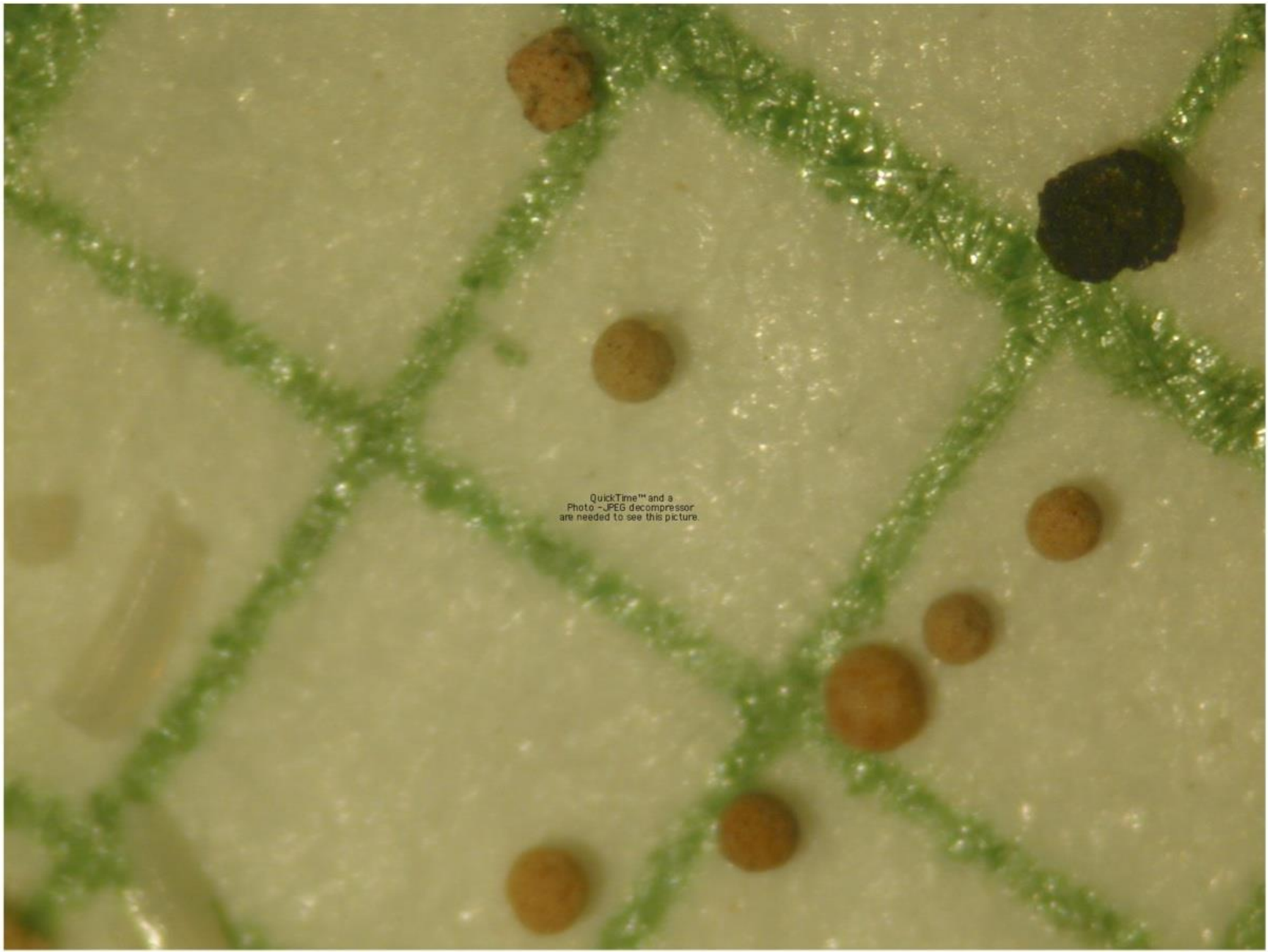




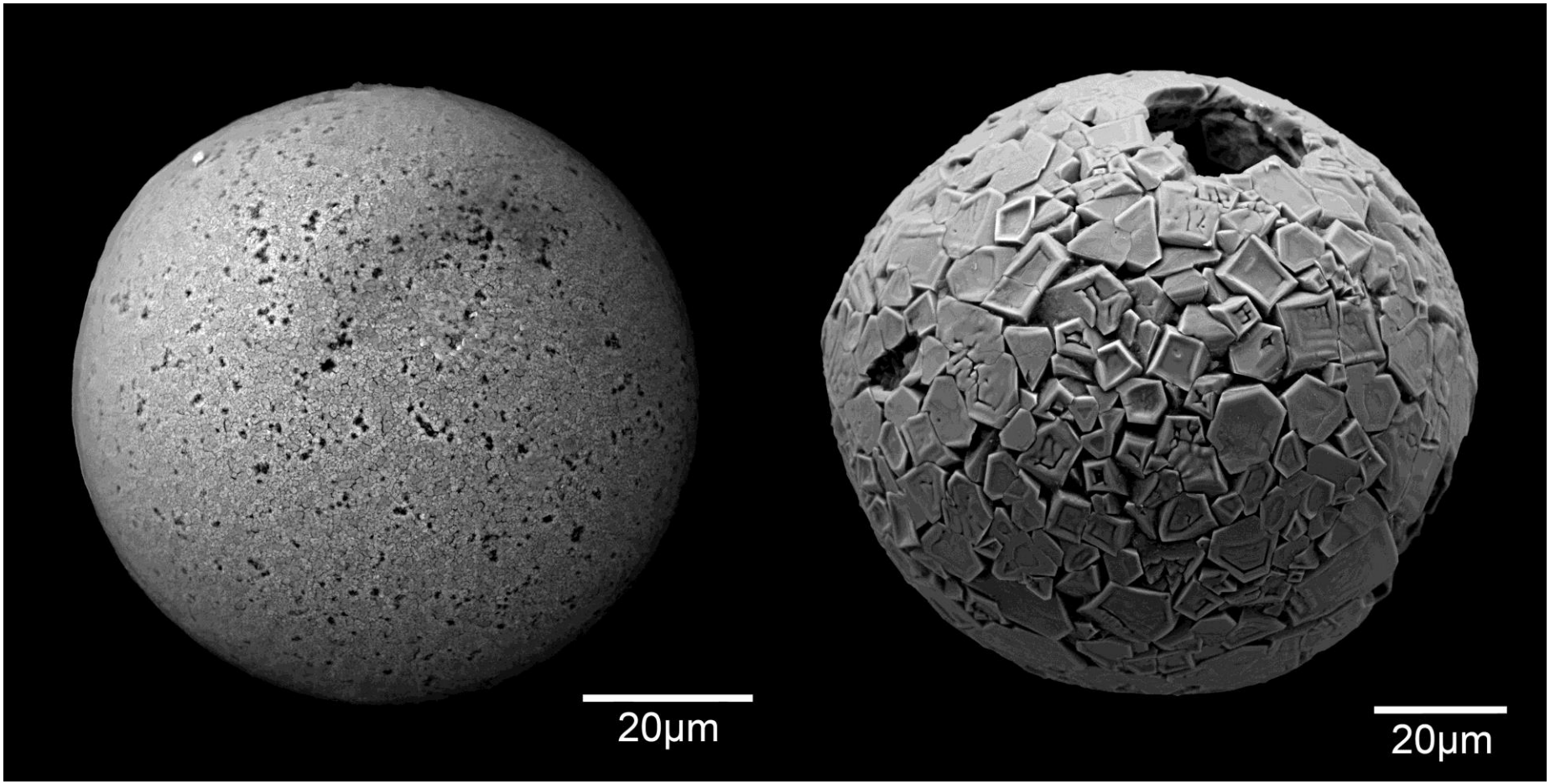




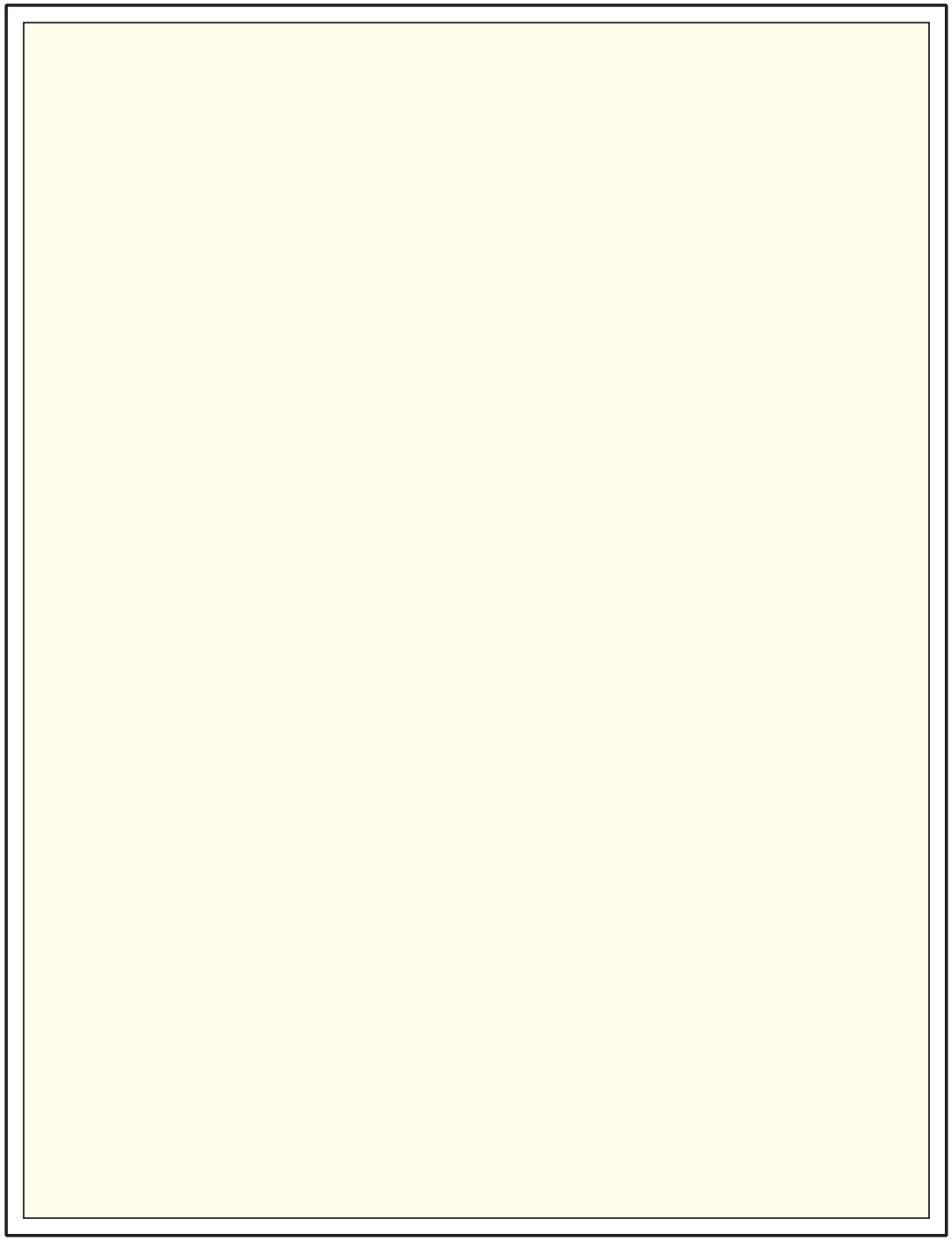
Spherules on 1 mm squares



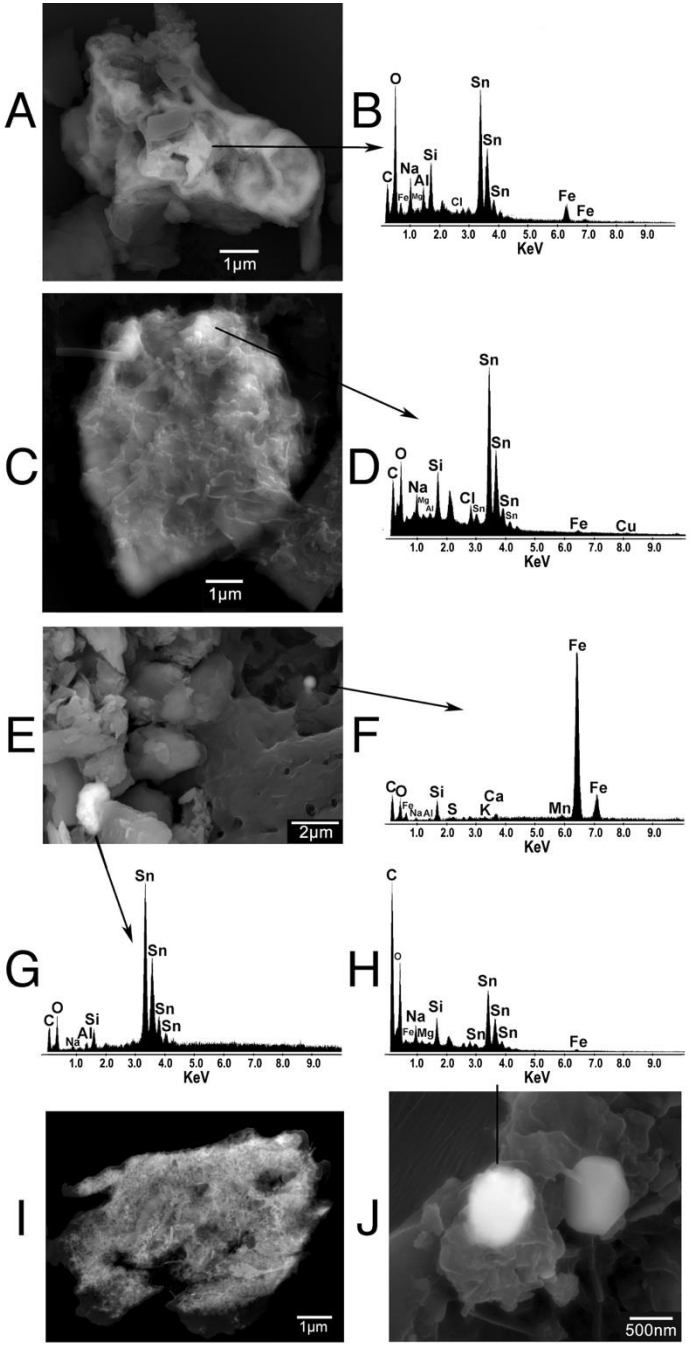
Impact spherules found with Ni bearing grain-Lemeshinskoye



Lake Svetloyar

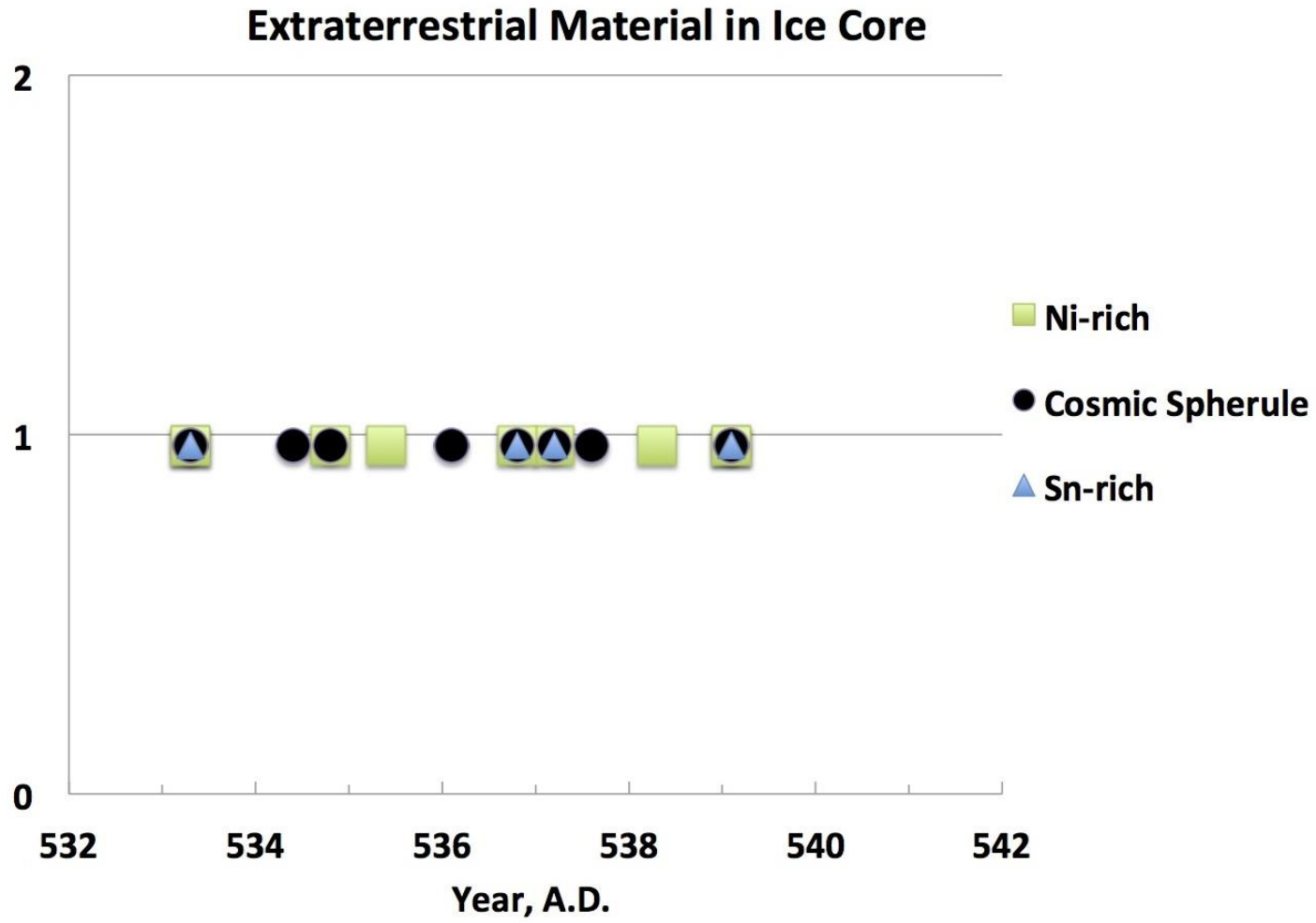


Lake Svetloyar bathymetry

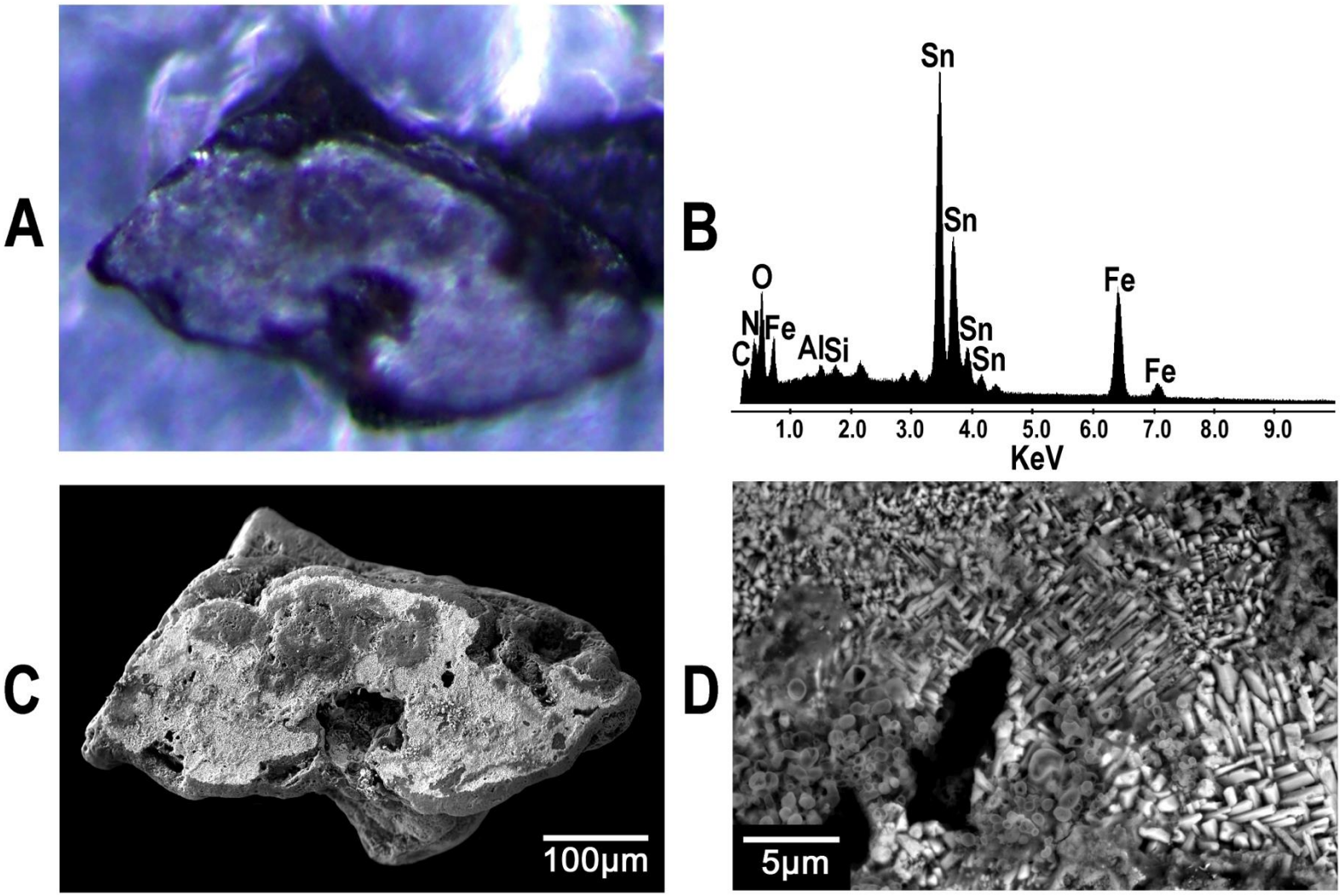


Tiny bits of Sn in ice core- 6th century white

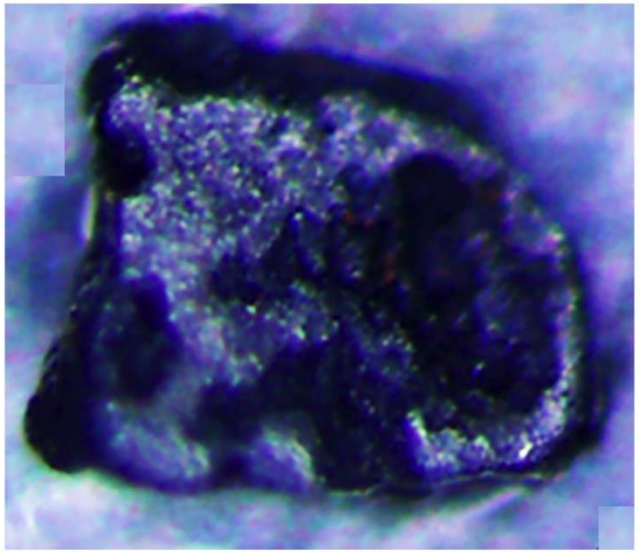
Ni and Sn rich material in ice core-all Sn with Ni

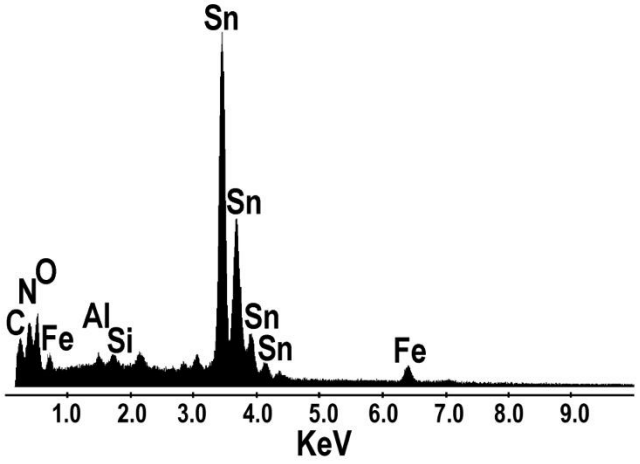


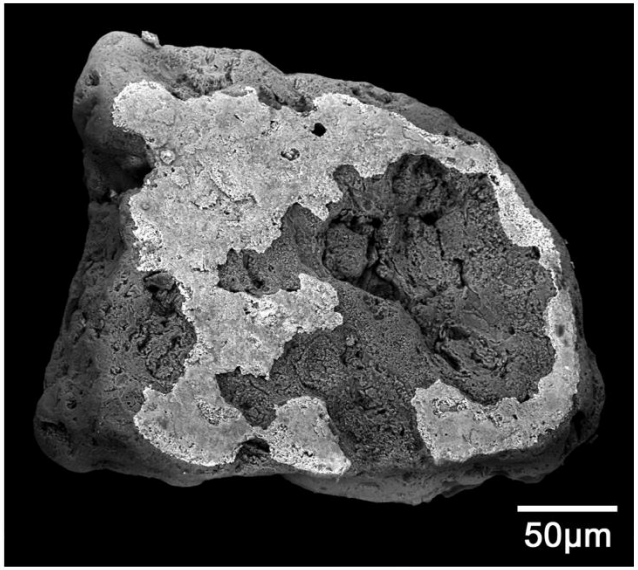
Sn coated grain: Svetloyar

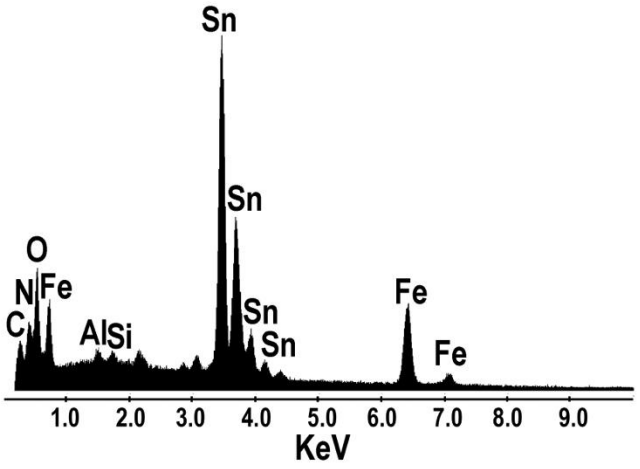


Sn coated Grain 2-Svetloyar









Conclusions-Russian impact lakes

1) Ni bearing material at Smerdyachee, Lemeshinskoye-more Ni than terrestrial rocks

2) Rock from at least 40 m depth-Smerdyachee

3) Sn and Fe rich material present at Svetloyar-possibly from cosmic dust

4) All lakes unproven as yet-can't get the preceeding material published.