

# *How Serious This Is:*

Thermonuclear Components  
Identified in Interstellar  
Samples: A Failed Project Orion  
Type Interstellar Probe ?

*Have we been Discovered?*

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# Meteors – Objects from space that burn up in the atmosphere



**Seen from ground**



**Seen from Space Station**

# In 2014 an Object Burned Up in the Atmosphere

Object came into atmosphere at approximately 50km/ sec , melted and disintegrated at low altitude in atmosphere over Pacific Ocean, observed by Defense Satellites

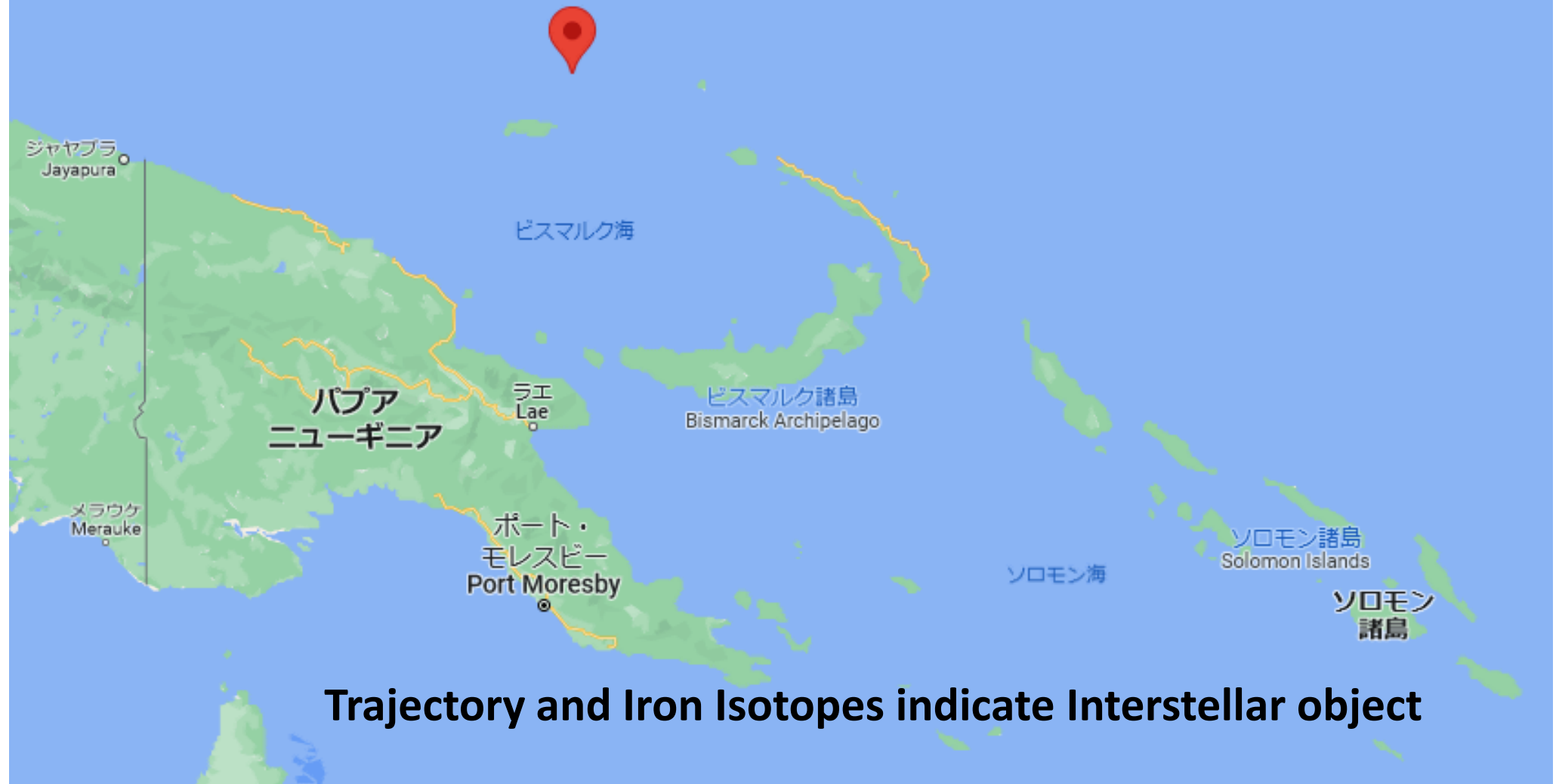
*Fastest object ever seen to Impact*

*Object trajectory was consistent with being Interstellar*

*Object was stronger and more heat resistant than any object ever seen to Impact*

# Impact zone of debris from 2014 Interstellar object

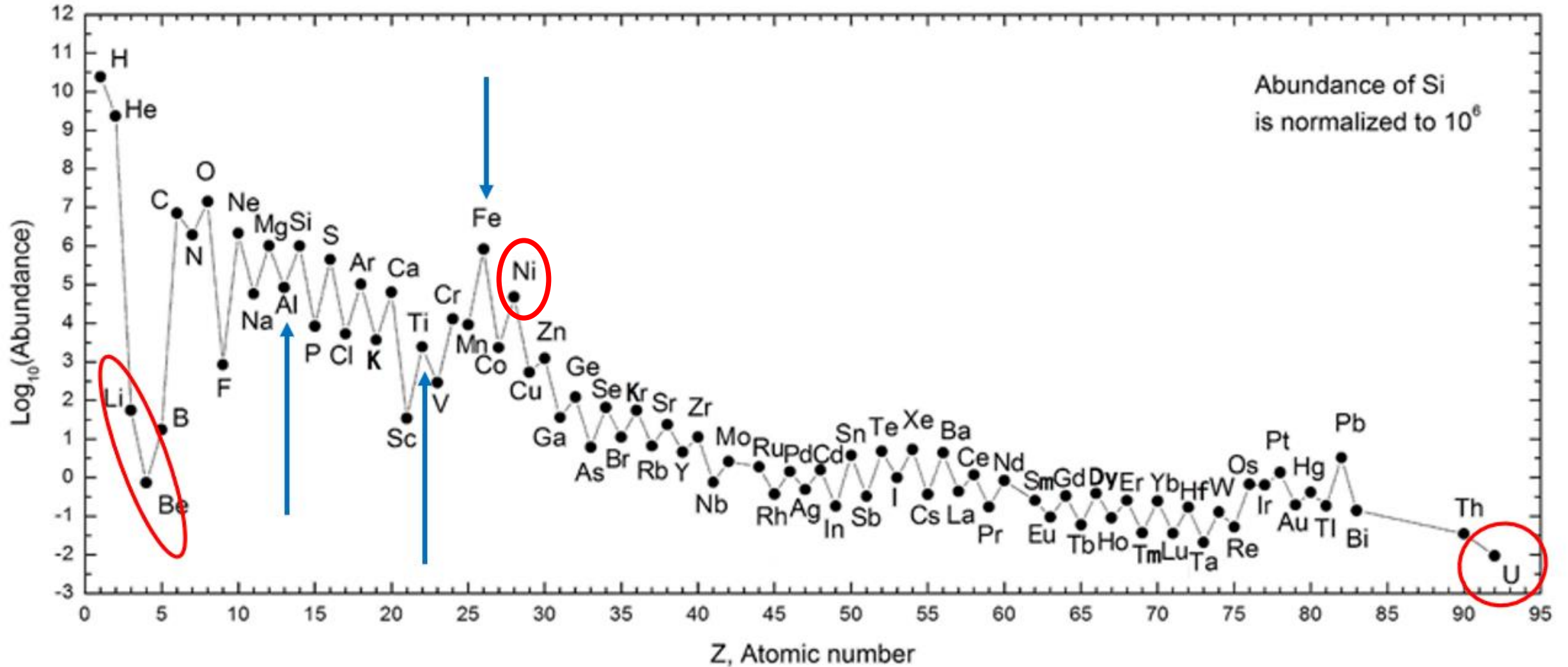
Avi Loeb et al. has recovered and analyzed Debris



Trajectory and Iron Isotopes indicate Interstellar object

# Natural Relative Abundance of Elements in the Cosmos

(as seen in Solar System and confirmed by detailed spectra from other stars)



Note natural abundance of Nickel is nearly the same as Iron (Fe: Ni ~10:1) in Cosmos  
Note also rarity of Beryllium, Lithium, Thorium and Uranium (Be, Li, Th, and U)

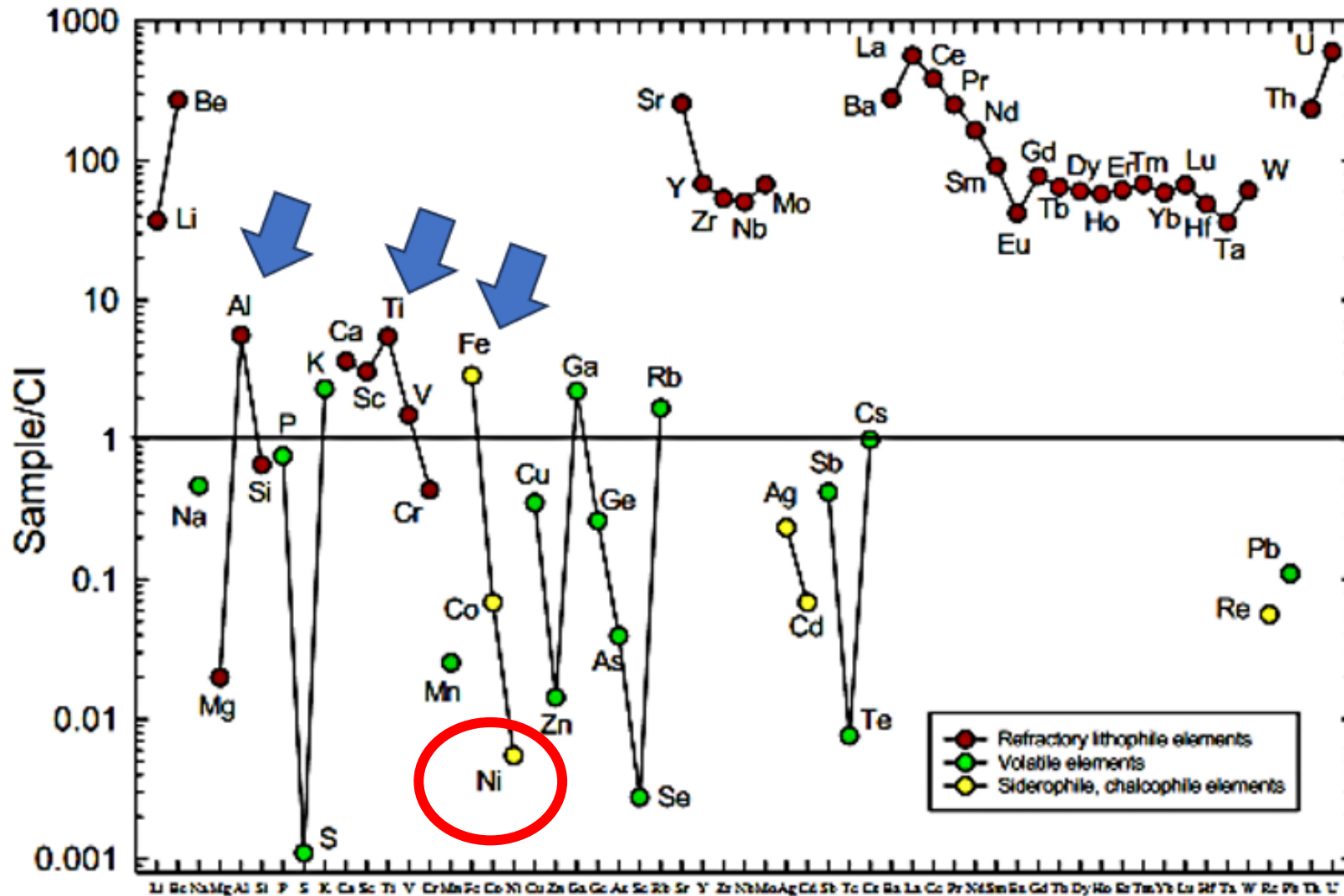
# Nickel Iron Meteorite



The proportion iron : nickel  
is between 90%:10% and 95%:5%

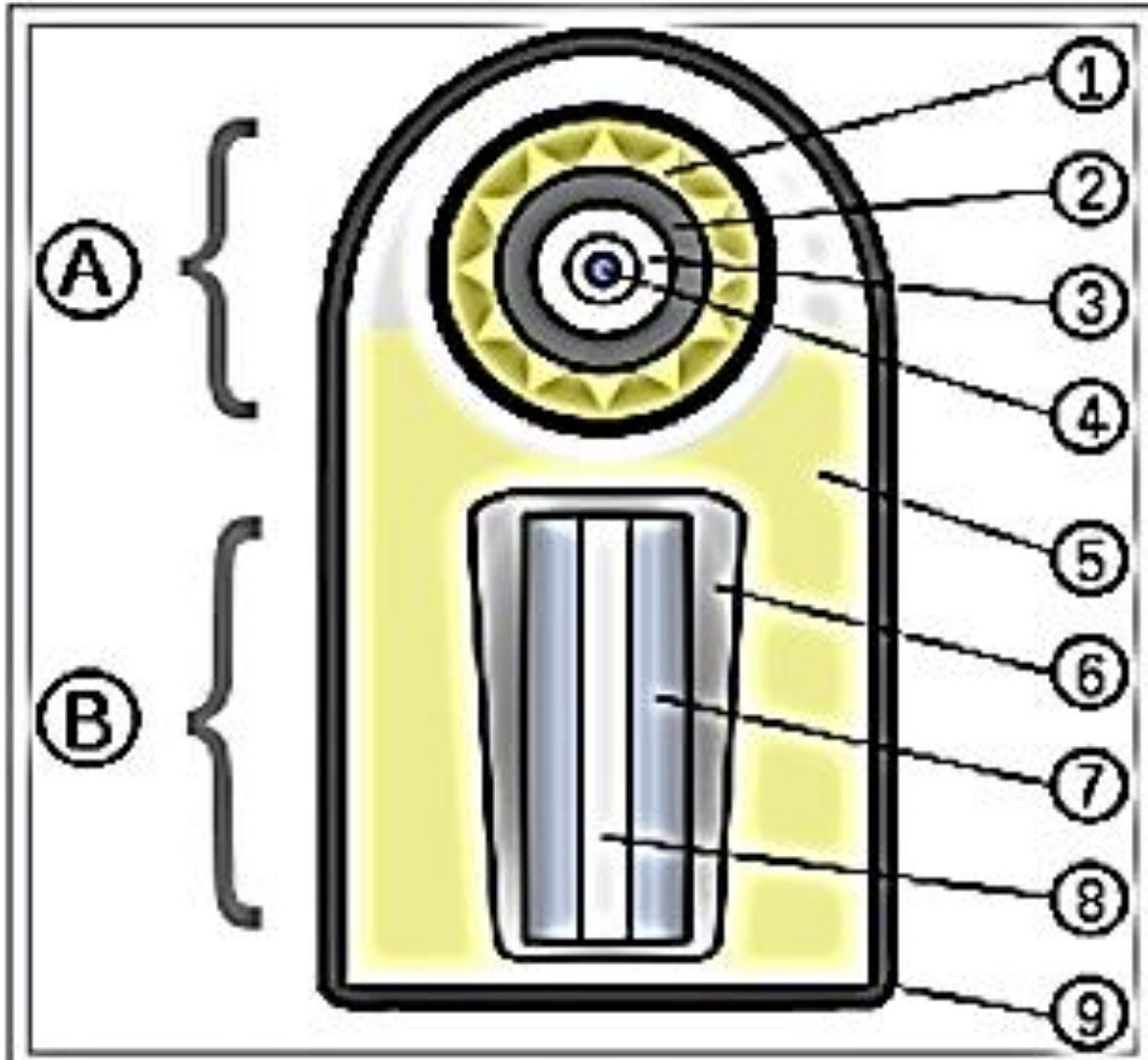
**NICKEL ALWAYS PRESENT WITH IRON  
IN METEORITES > 5%**

# Aerospace Alloy Components



Nickel is approximately 1 part per thousand of Iron in Sample: **NOT NATURAL**  
**Titanium-Aluminum-Steel is a family of high strength aerospace alloys**

# Thermonuclear Device Design and Components



A basic diagram of a thermonuclear weapon.

Note: some designs use spherical secondaries.

A. fission primary stage

B. fusion secondary stage

1. High-explosive lenses


2. Uranium-238 ("tamper") lined with beryllium reflector

3. vacuum ("levitated core")

4. Tritium "boost" gas (blue) within plutonium or uranium hollow core

5. Radiation channel filled with polystyrene foam

6. Uranium ("pusher/tamper")

7. Lithium-6 deuteride (fusion fuel) 

8. Plutonium ("spark plug")

9. Radiation case (confines thermal X-rays by reflection)



# Spartan Missile Nuclear Warhead Contained Thorium (5 Megaton - Tested 1971 on Amchitka in Aleutian Islands)



U.S. Department of Energy  
Office of Classification  
Washington, DC 20585

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## CLASSIFICATION BULLETIN

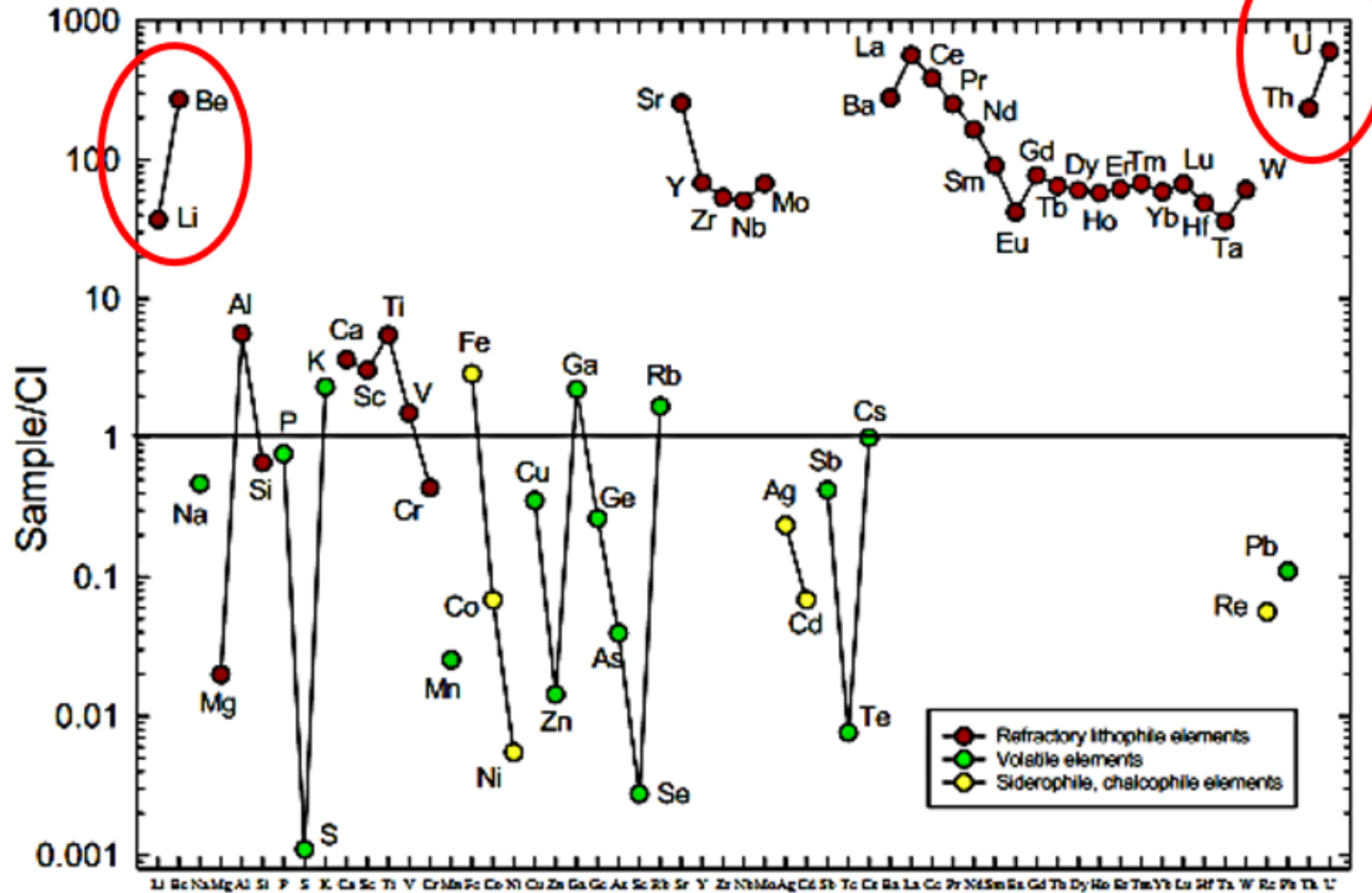
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### Declassification of a Material in a Specified Weapon

On January 14, 2008, the following information was declassified:

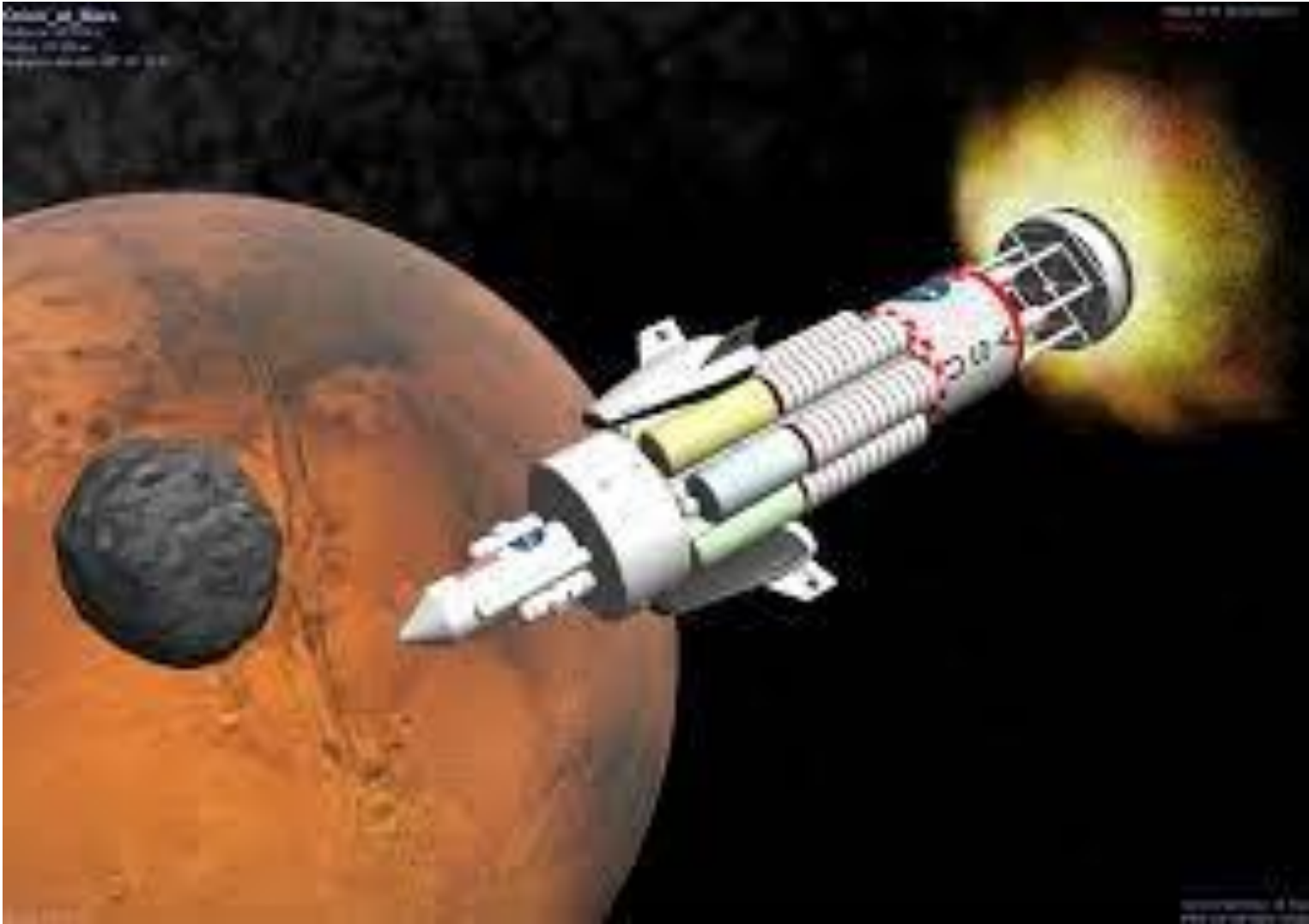
"Fact that thorium metal is used in the radiation case of the W71 warhead."

# Possible Thermo-Nuclear Weapon Components



Sample Spherule contains unnatural abundance of 4 rare elements - **ALL NUCLEAR WEAPON COMPONENTS**

# Project Orion Nuclear charge Propelled Spacecraft



Trajectory and Iron isotopes Suggests ORION TYPE Interstellar probe aimed at Earth – No direct threat

# We owe Avi Loeb et al. A BIG THANKYOU!



*Welcome to the living Cosmos my Friends*