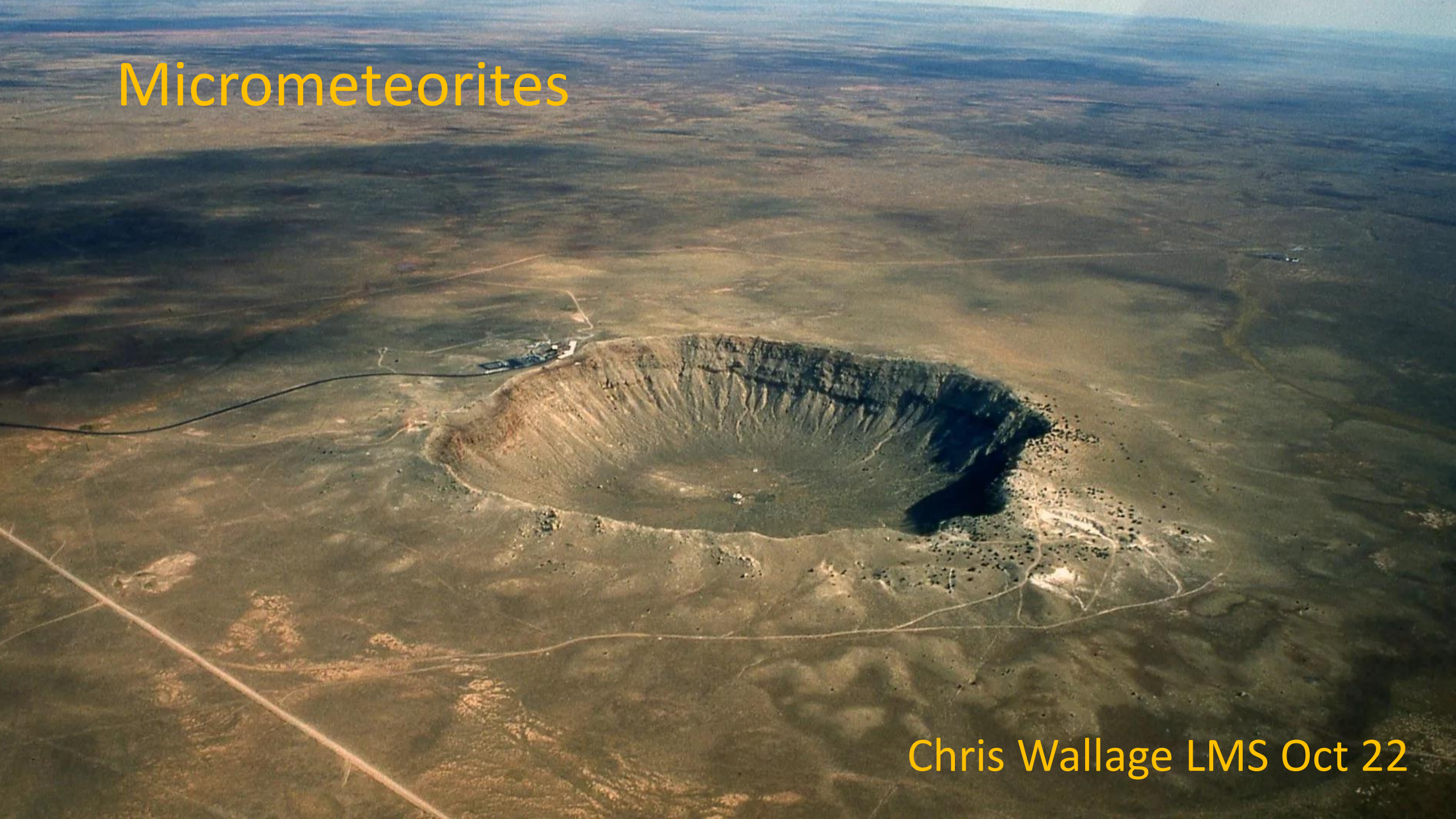
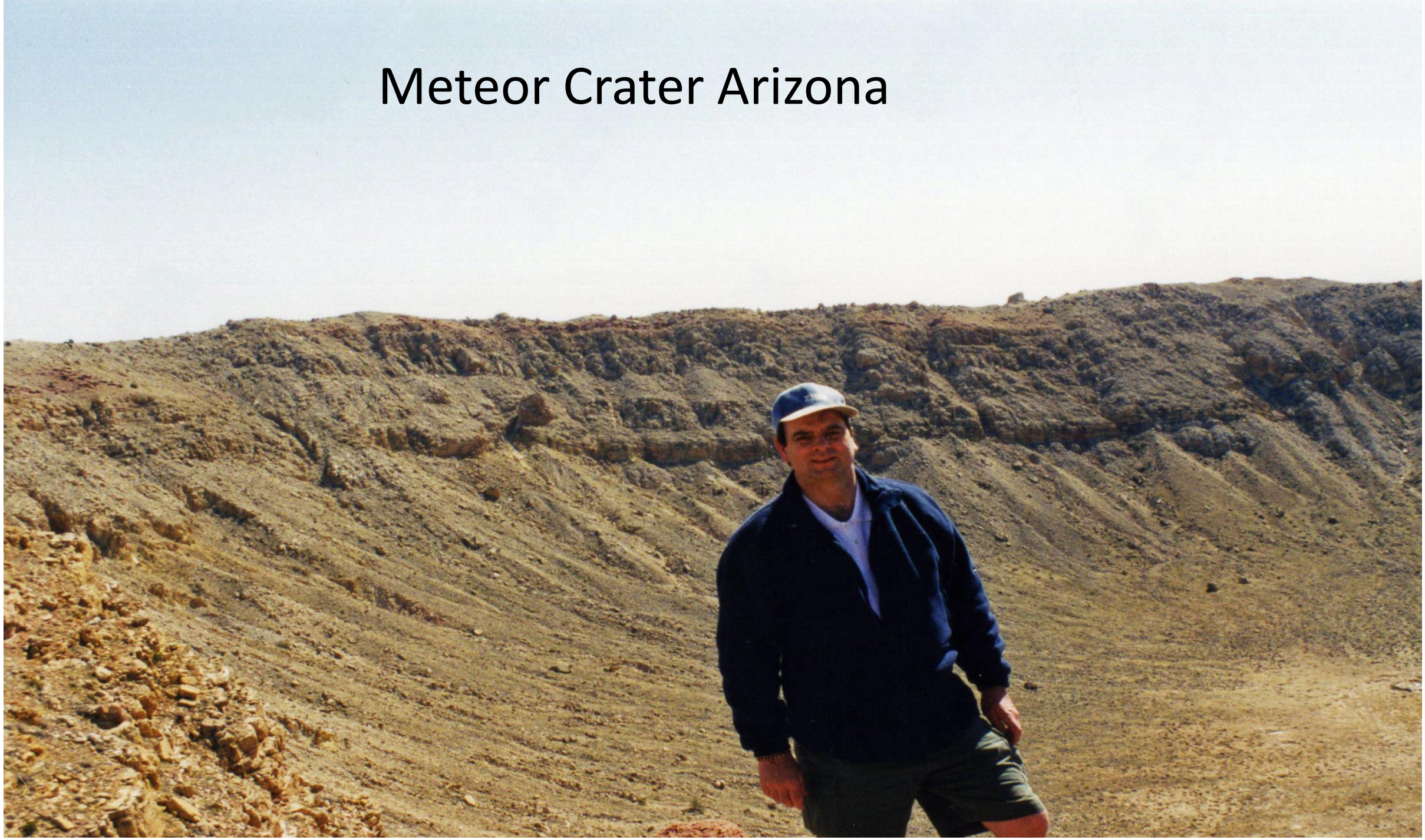

Chris Wallage

Micrometeorites



Chris Wallage LMS Oct 22

Meteor Crater Arizona



Is a Micrometeorite a Meteorite?

- Short answer NO
- Regarded as Cosmic “Star Dust” – the basis of all life on Earth
- Mineral Composition is similar to a Meteorite
  - Stone
  - Metal (Iron & Nickel)
  - Glass (Olivine)
- They are mainly individual Spherules
- Almost all found to date are sub 1mm
- To small to kill anyone or damage anything !

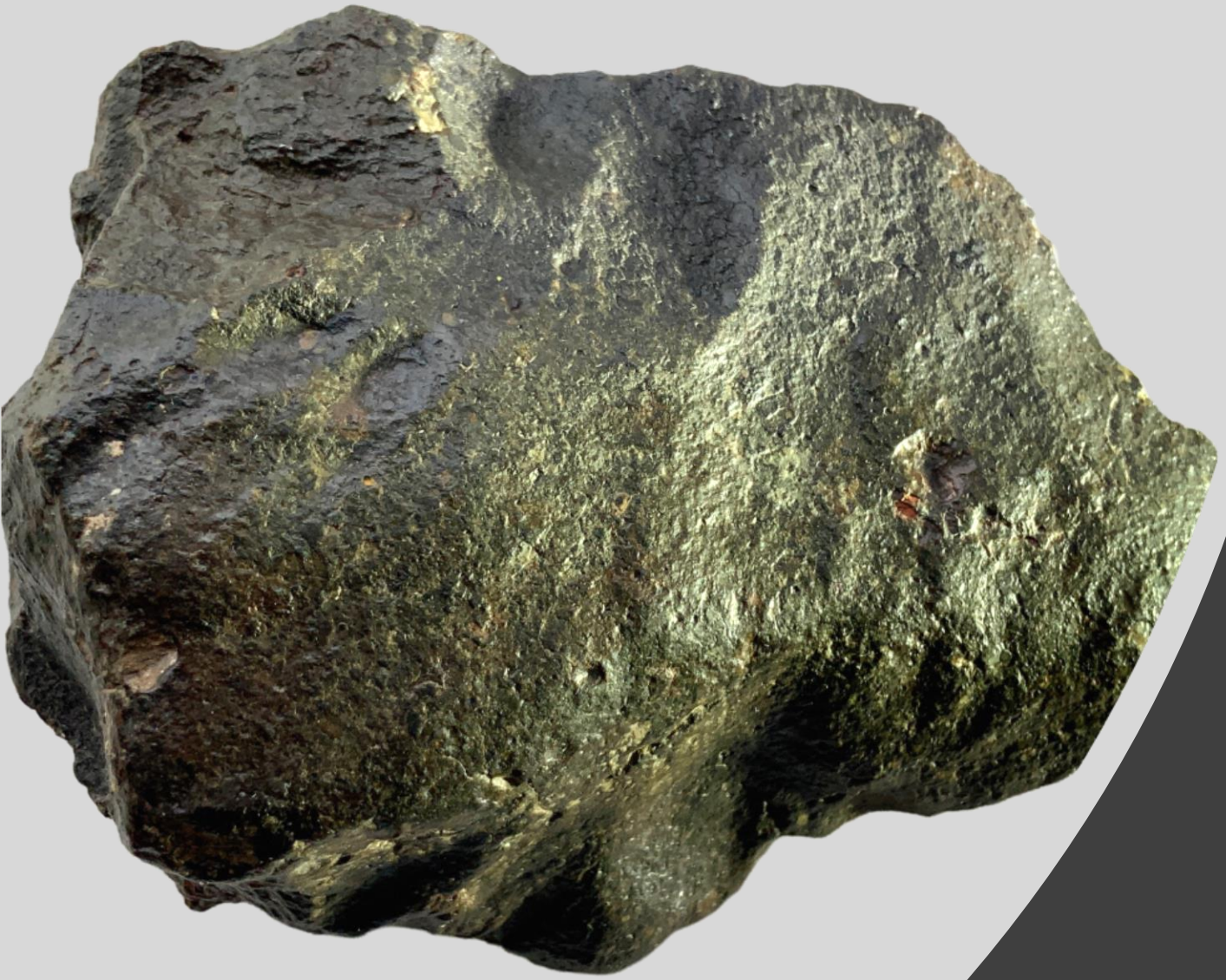
Micrometeorites v Meteorites (Both some 4.6 Billion yrs old)

Micrometeorites

- Origin – Comets
- Sub Millimetre
- Cosmic Dust
- Spherical Melted / Unmelted
- Abundant
- You can find them
- A good subject for Microscopy

Meteorites

- Origin – Asteroids
- 3 Millimetre to 1 meter
- Have shape & form
- Stony / Stony Iron / Iron
- Scarce
- Very difficult to find & collect
- Expensive hobby

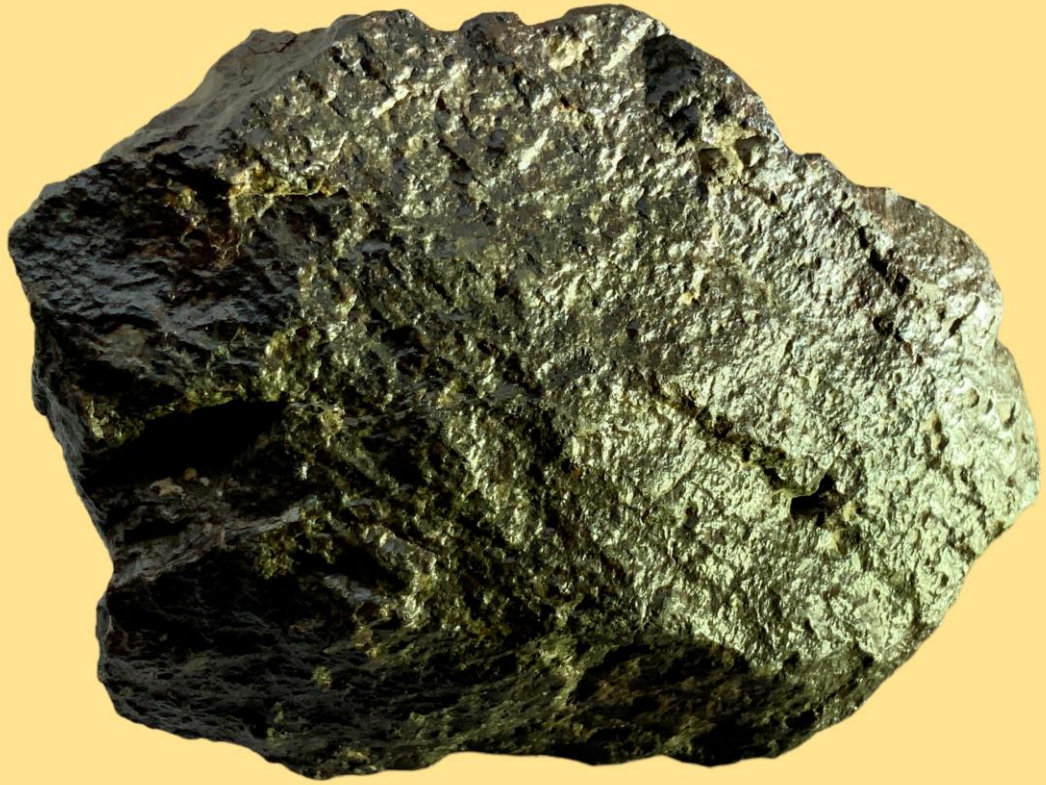


Quick Look at my Meteorites

Stony Chondrite (NWA) 341g

Leading Edge

Ablation Ridges



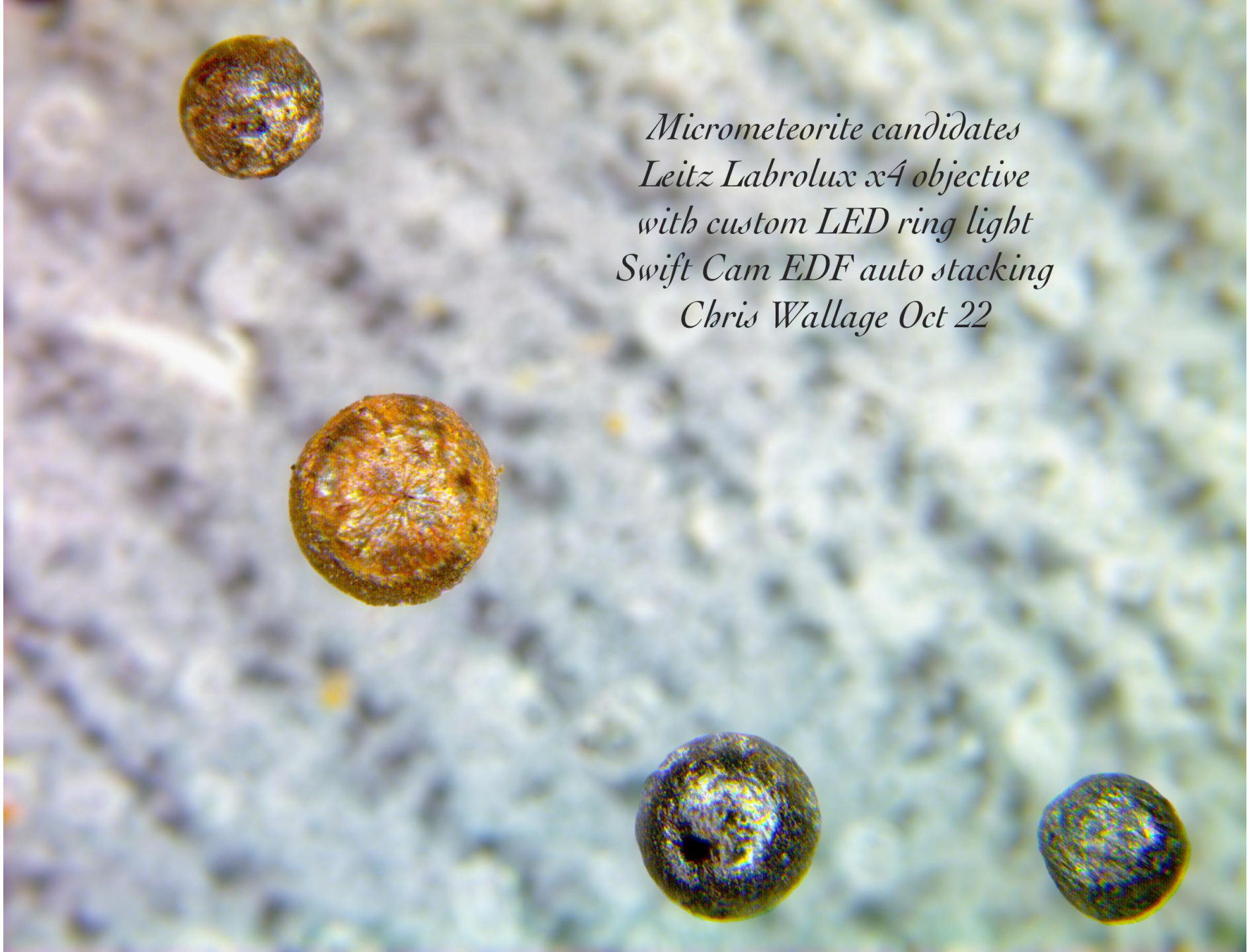
Fusion Crust

High Iron Chrondite (NWA) 420g Cut end

Iron (Imilchil) Meteorites: Agoudal Morocco

- From strewn field
- Atlas Mountains Morocco
- Known as Imilchil
- Hundreds of small irregular shrapnel pieces found
- Nickel-Iron
- Fell 40,000 yrs ago est.
- Found 2000 described 2011

Quick Look at my Micrometeorites From My Roof in Ilkley


Micrometeorite candidates
Leitz Labrolux x4 objective
with custom LED ring light
Swift Cam EDF auto stacking
Chris Wallage Oct 22


Chris Wallage Oct 2022

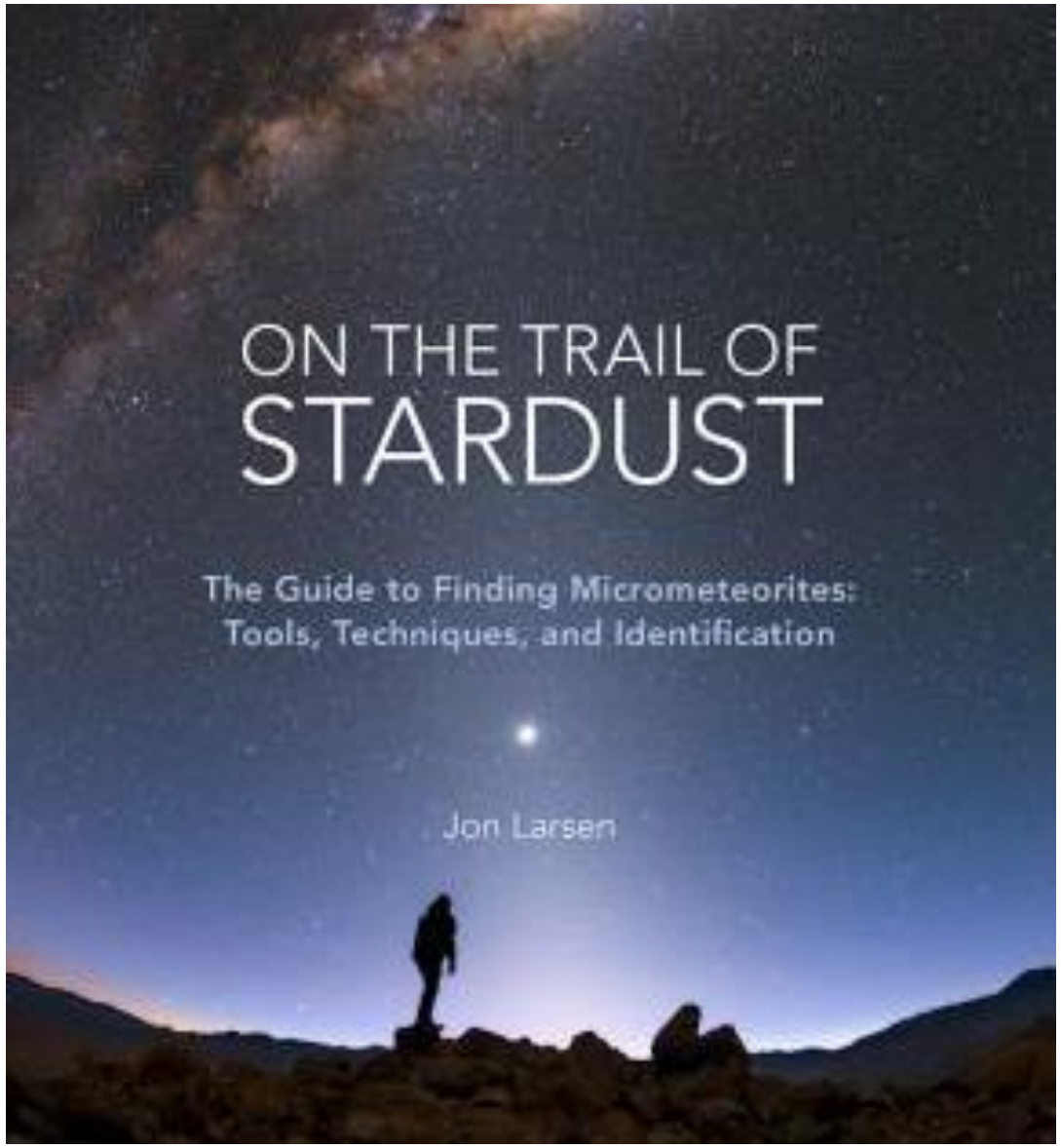
Collecting History

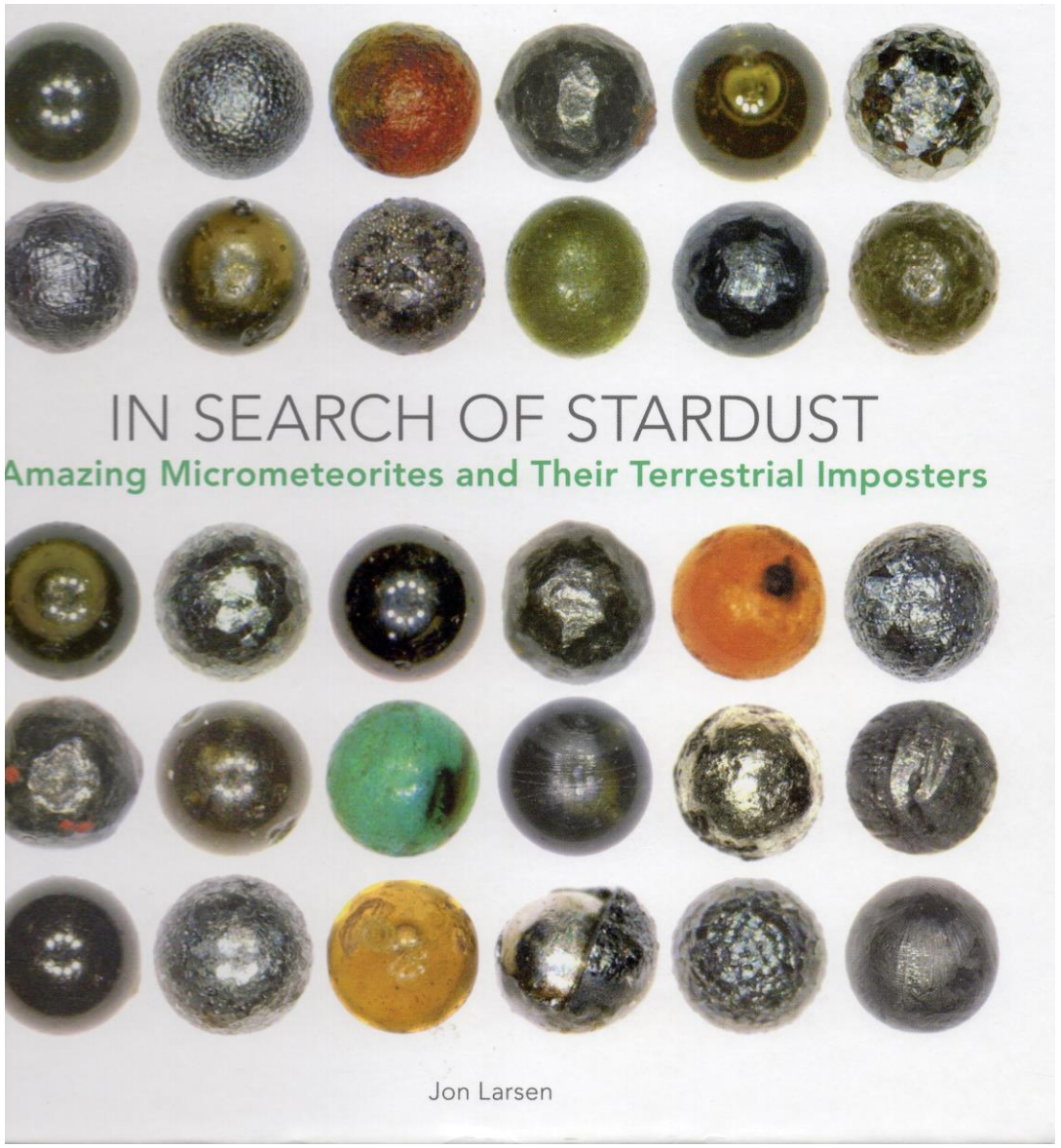
- Known about MM for 150 yrs
- Thought to be only at bottom of Oceans or on top of Polar Ice
- Not possible to find in populated areas
- Unsurmountable amount of terrestrial contaminants
- All changed in 2015 when John Larsen broke the code

    He spent 7 yrs classifying terrestrial dust particles

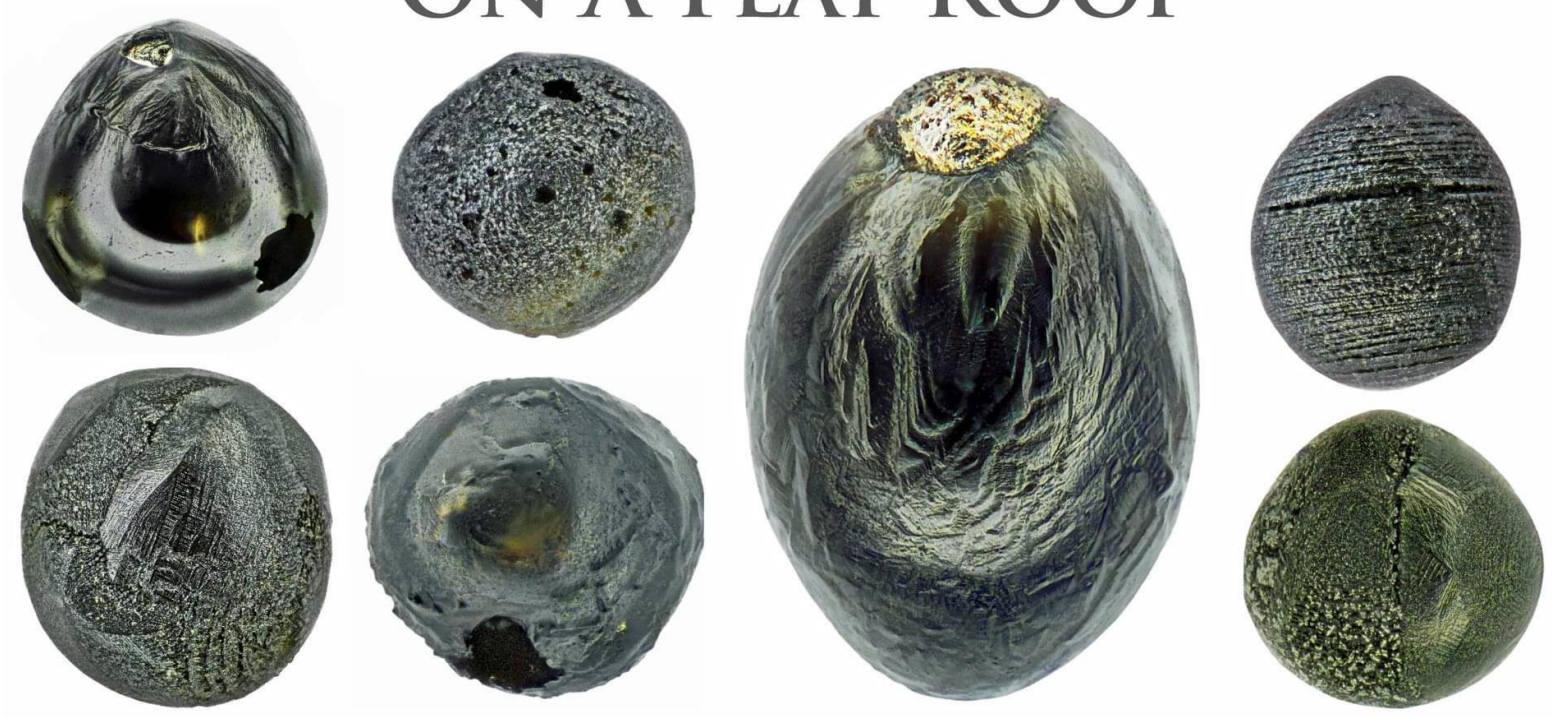
    Identifying types of MM from imposters

Published two Books


ON THE TRAIL OF
STARDUST
The Guide to Finding Micrometeorites:
Tools, Techniques, and Identification
Jon Larsen


IN SEARCH OF STARDUST
Amazing Micrometeorites and Their Terrestrial Imposters
Jon Larsen

How To Find
MICROMETEORITES
On A Flat Roof



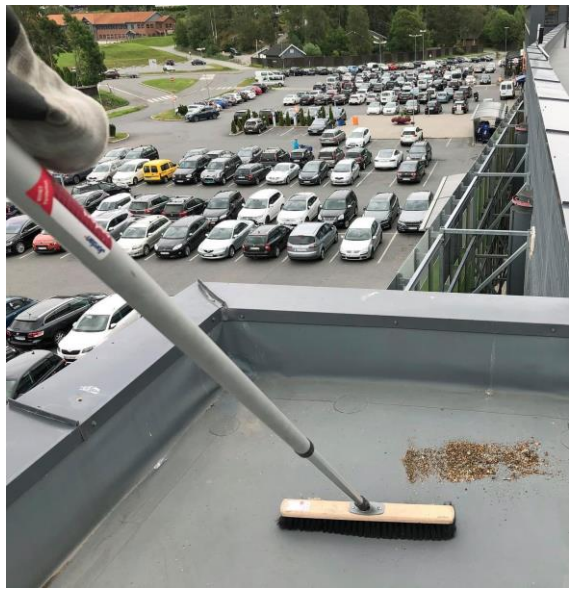
Finding Micrometeorites 4 Steps

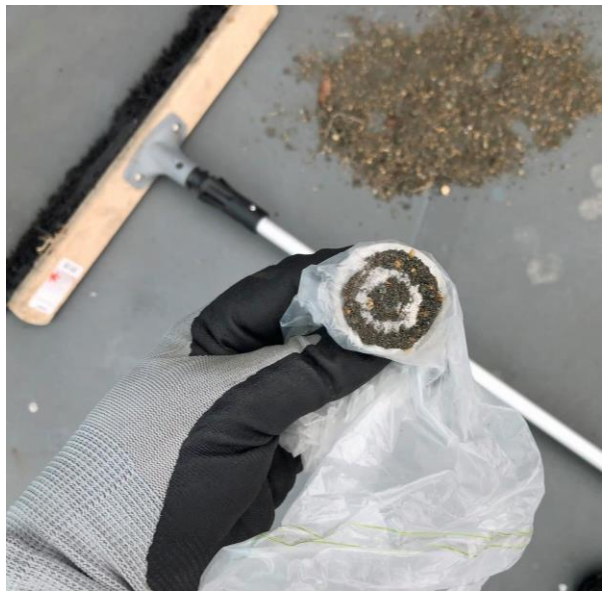
COLLECTING ROOF DEBRIS

MAGNETIC EXTRACTION

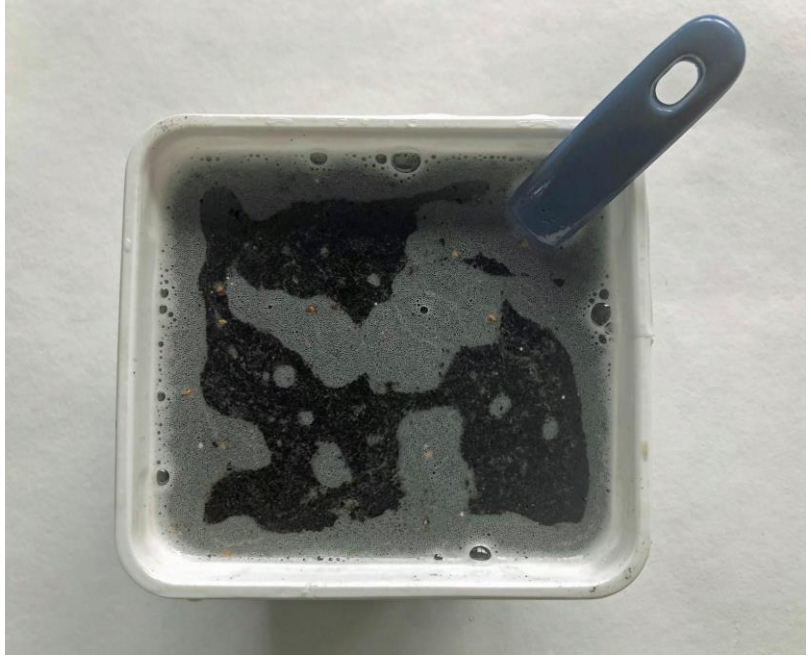
FLOTATION

SCREENING FOR SIZE

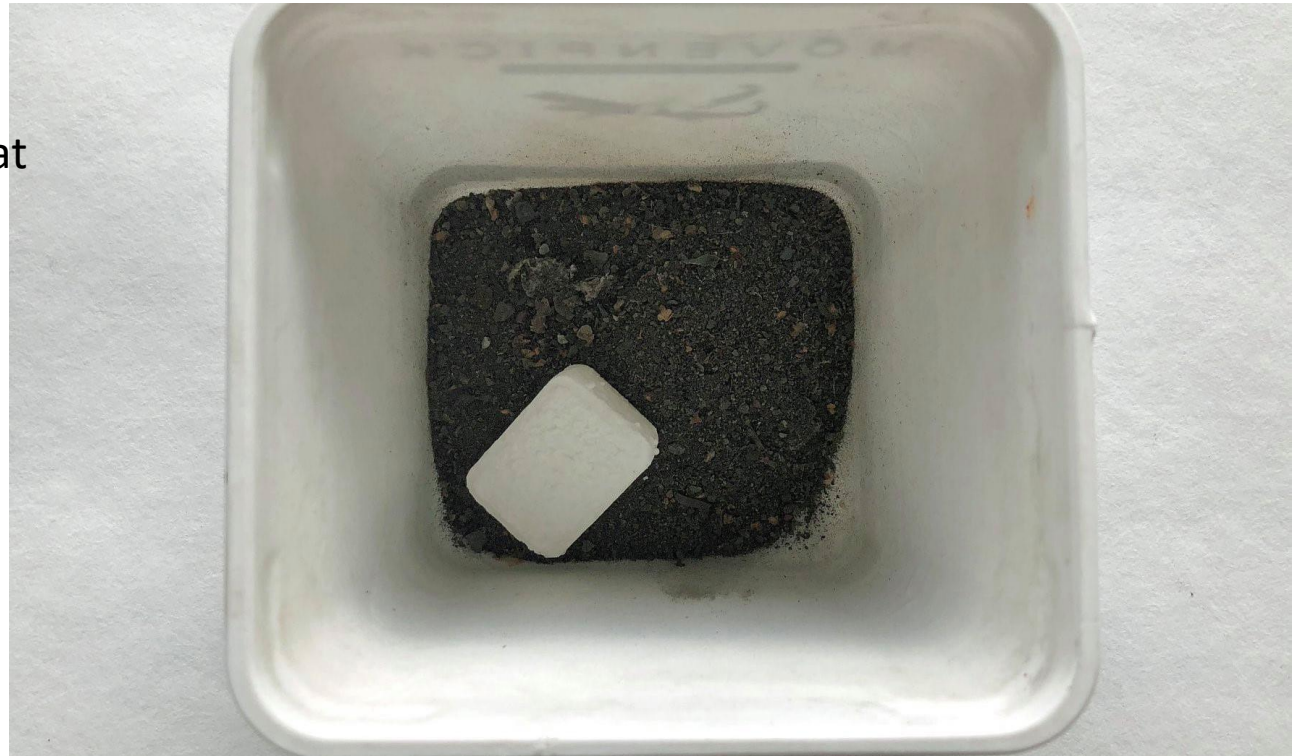




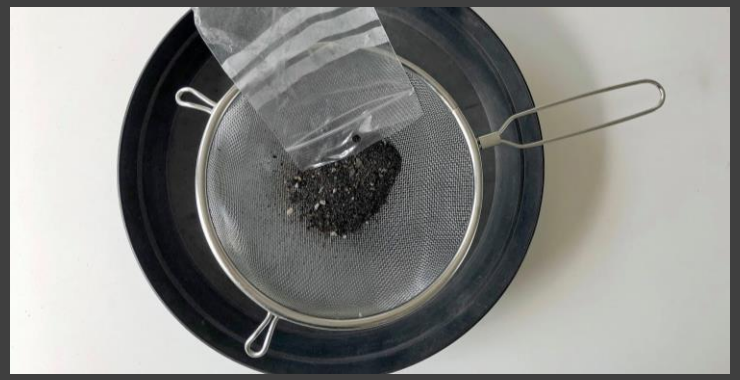
Sweep : Magnetic Screening (80% of cosmic spherules are magnetic) : Bag abt 30g



Washing with detergent: Agitation : Rinse: Repeat

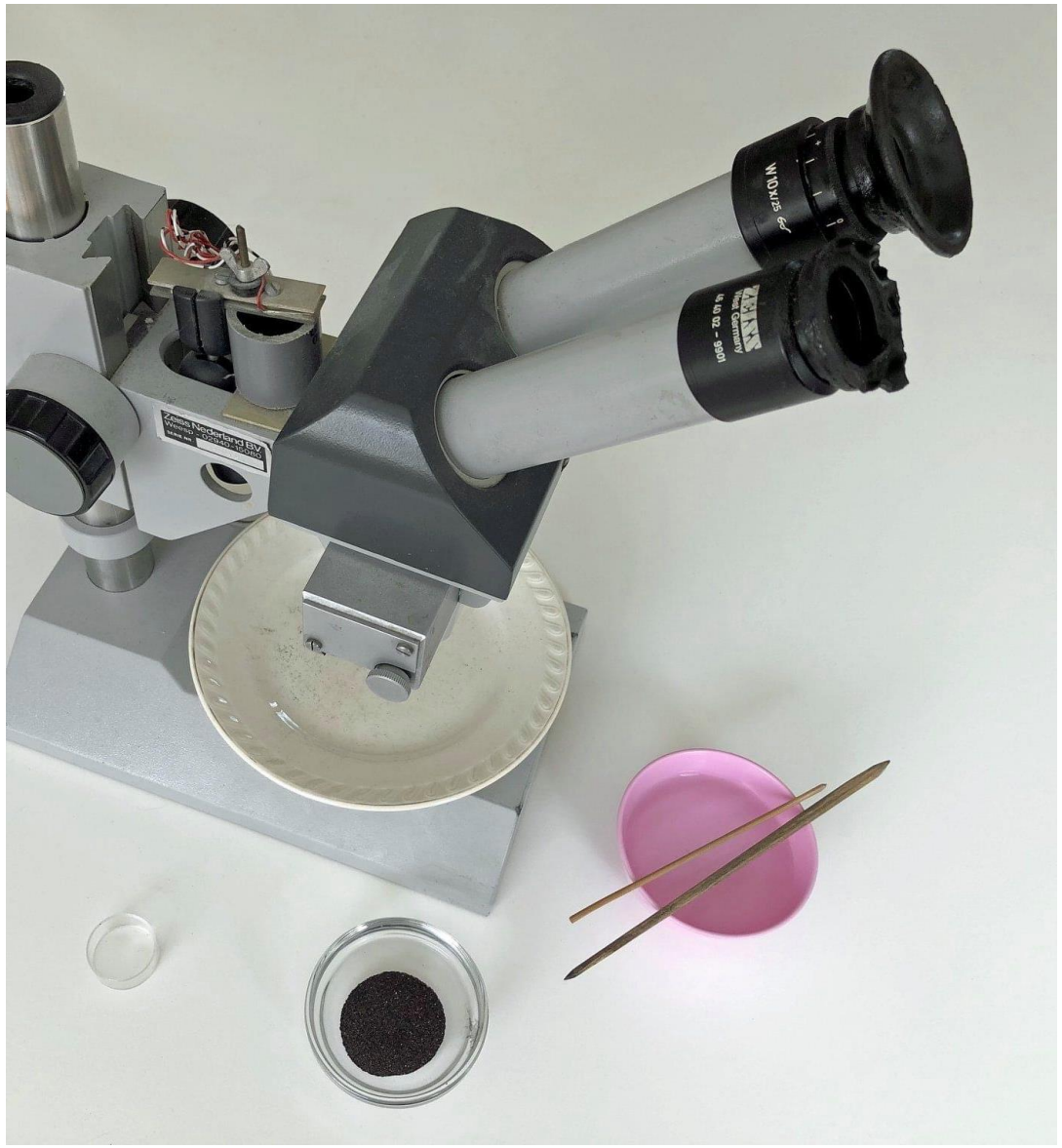


Allow to Dry



Siev: Most cosmic spherules are between 200 and 400 microns

Final Result the sample is down to 7.1g abt 20% of original bag



VINTERBROSENTERET 2019

EIGHT NEW MICROMETEORITES [NMM 2,134] TO [NMM 2,141]

FOUND BY PROJECT STARDUST - JON LARSEN

Find The Micrometeorite





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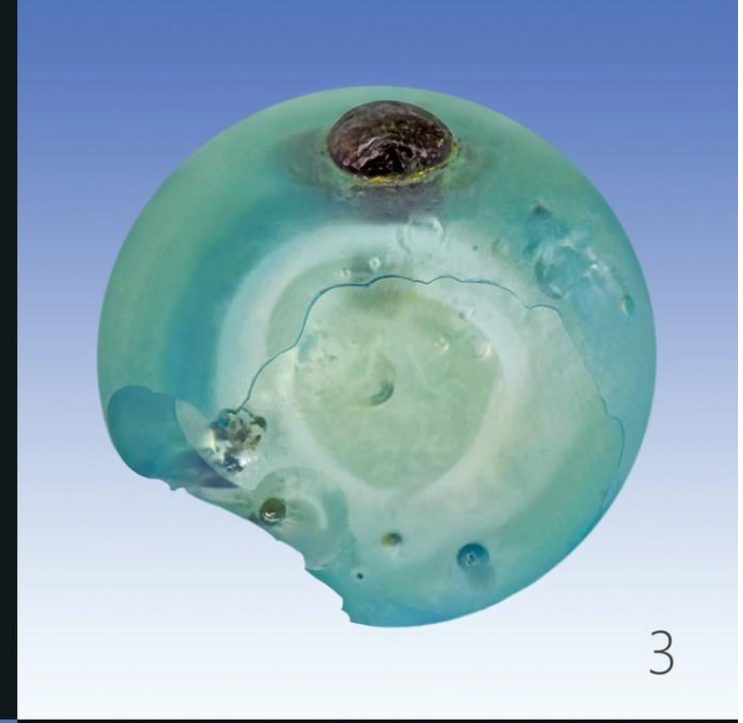
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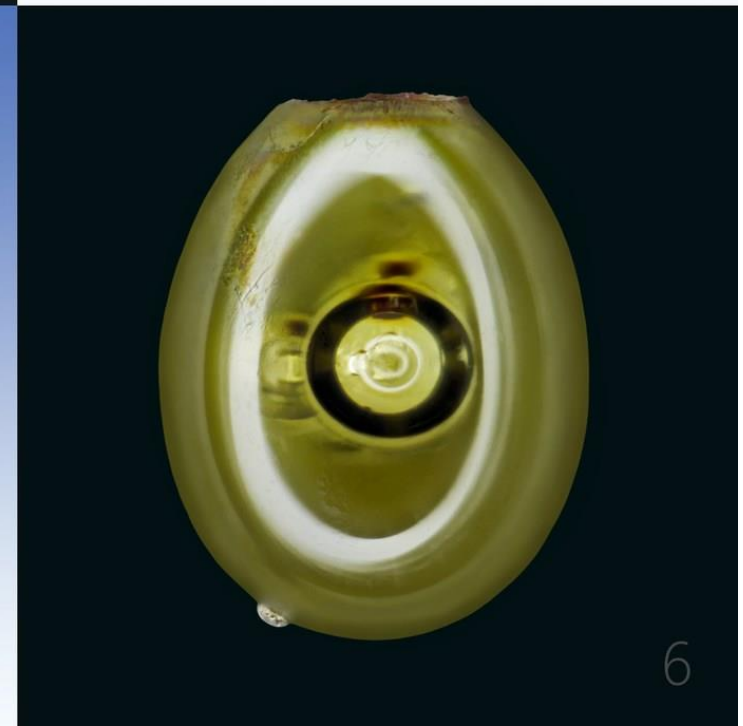
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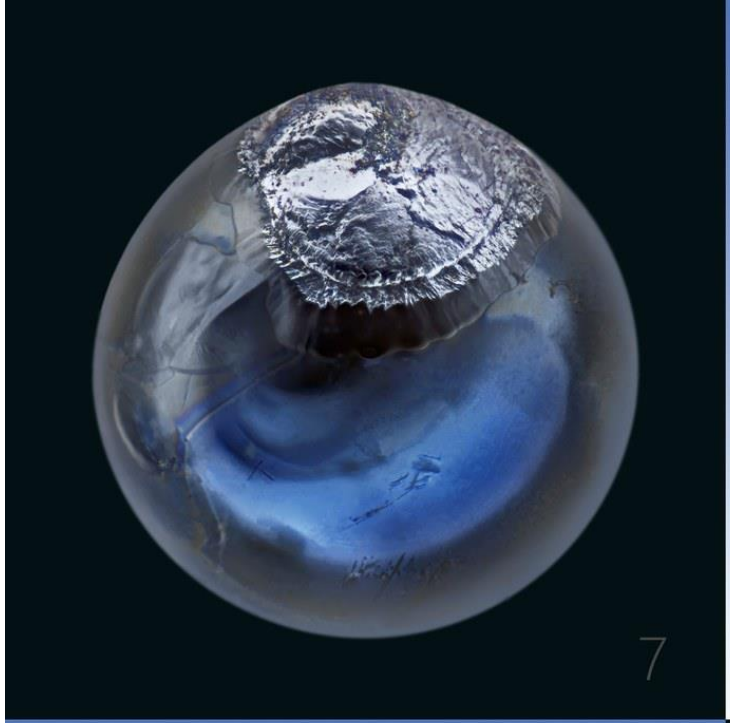
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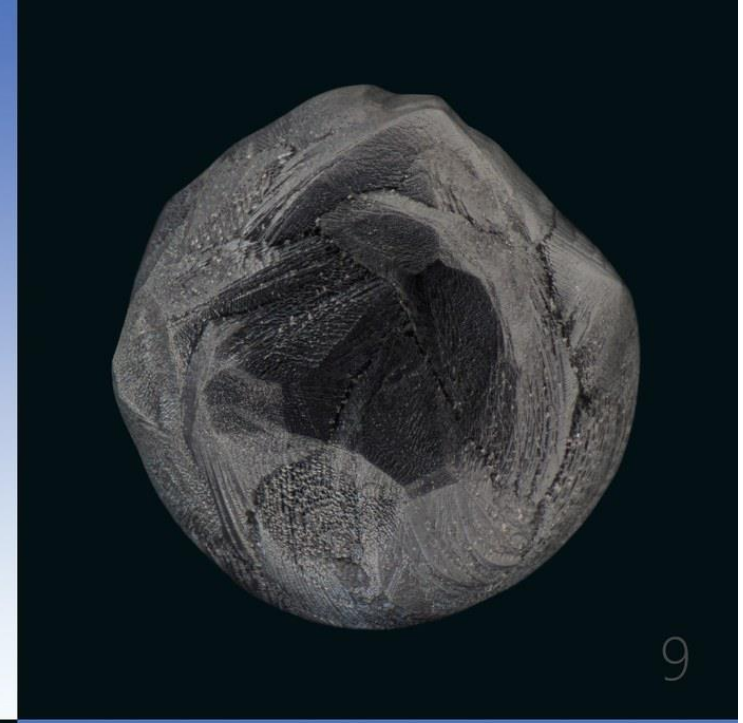
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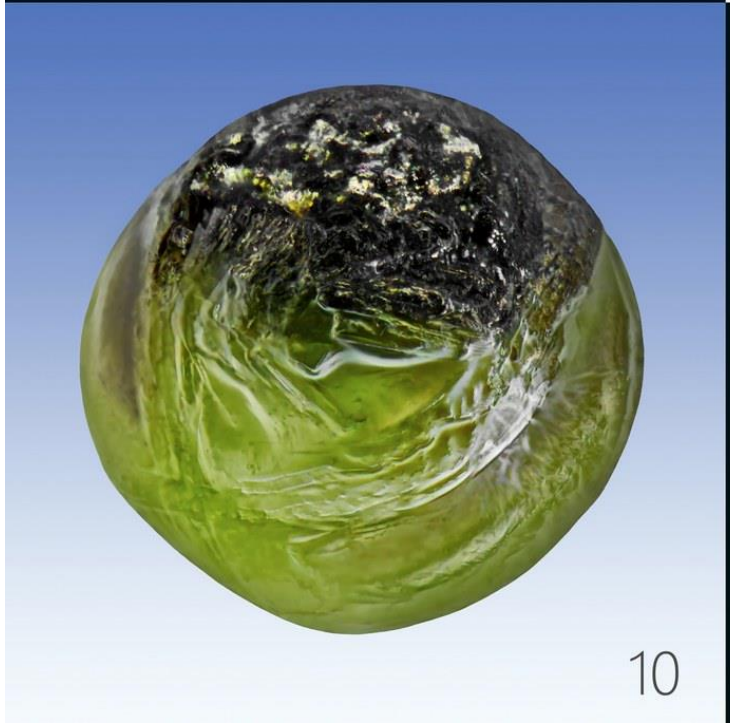
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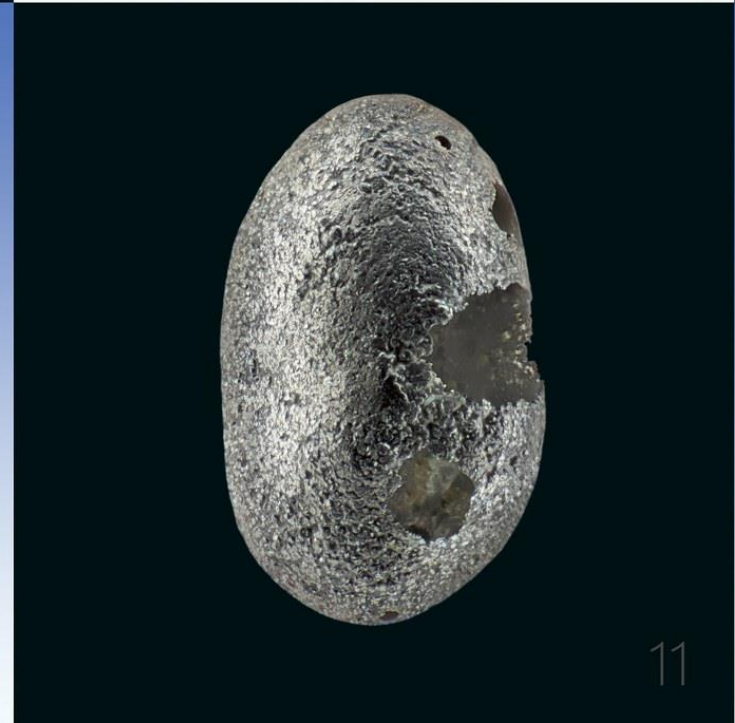
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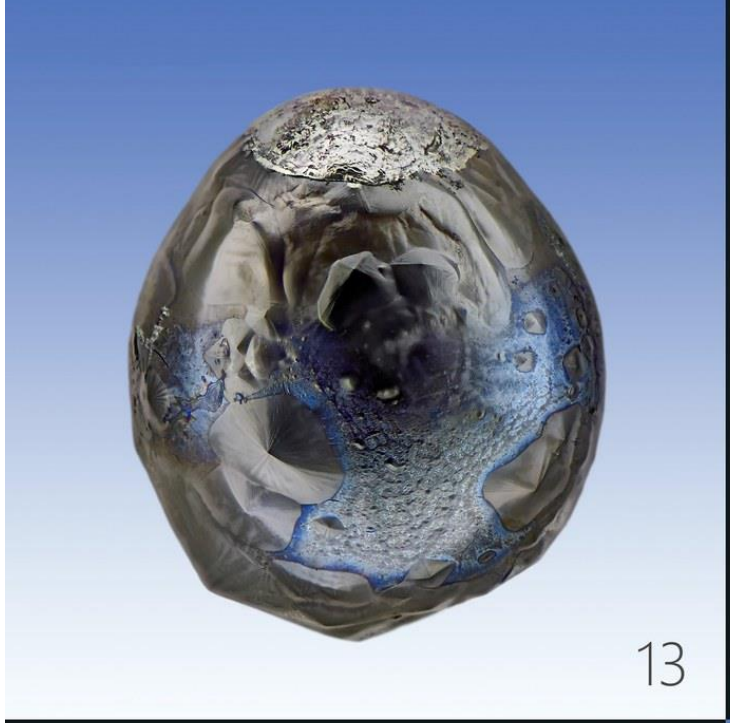
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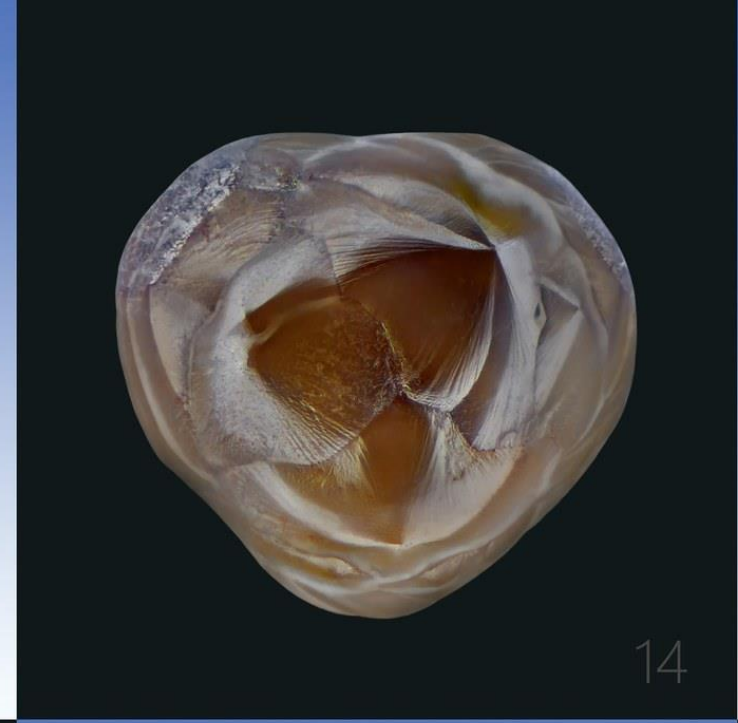
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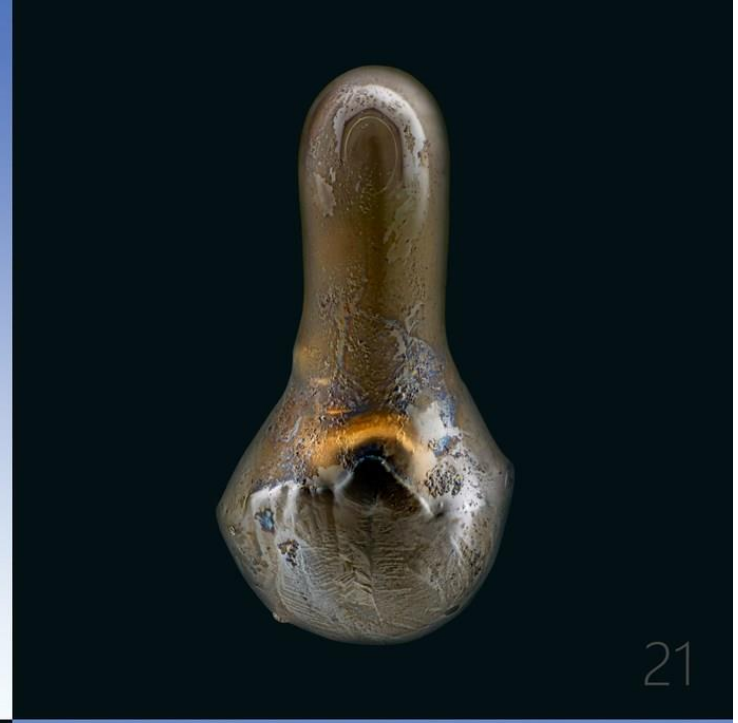
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Find your own Micrometeorite

1

Take a small measured sample from one of the jars

- All have been sieved and cleaned
- Some have been screened for magnetism
- Use supplied screening magnet if you like

2

Place on white sorting plate

- Use cocktail sticks to sort and select
- You are looking for Micron sized Spheroid grains
- RELAX TAKE YOUR TIME

3

View with Stereo Microscope preferably

- Can use a Compound with reflected light source

4

Identify Candidates

- Remove to supplied magnetic capsule
- BEFORE YOU LOSE THEM