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Meteorite or no meteorite?

First steps towards identification

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6 questions to begin with

1. Is the stone colored (blue, green, red,…)?

→ NOT A METEORITE

2. Does the stone contain large white, black or colored crystals?

→ NOT A METEORITE

3. Does the stone contain cavities?

→ NOT A METEORITE

6 questions to begin with

4. Is there a visible layering on the stone?

→ NOT A METEORITE

5. Does the stone have a rust-brown streak?

→ NOT A METEORITE

6. Are there many similar stones in the same place?

→ NOT A METEORITE

In a nuttshell

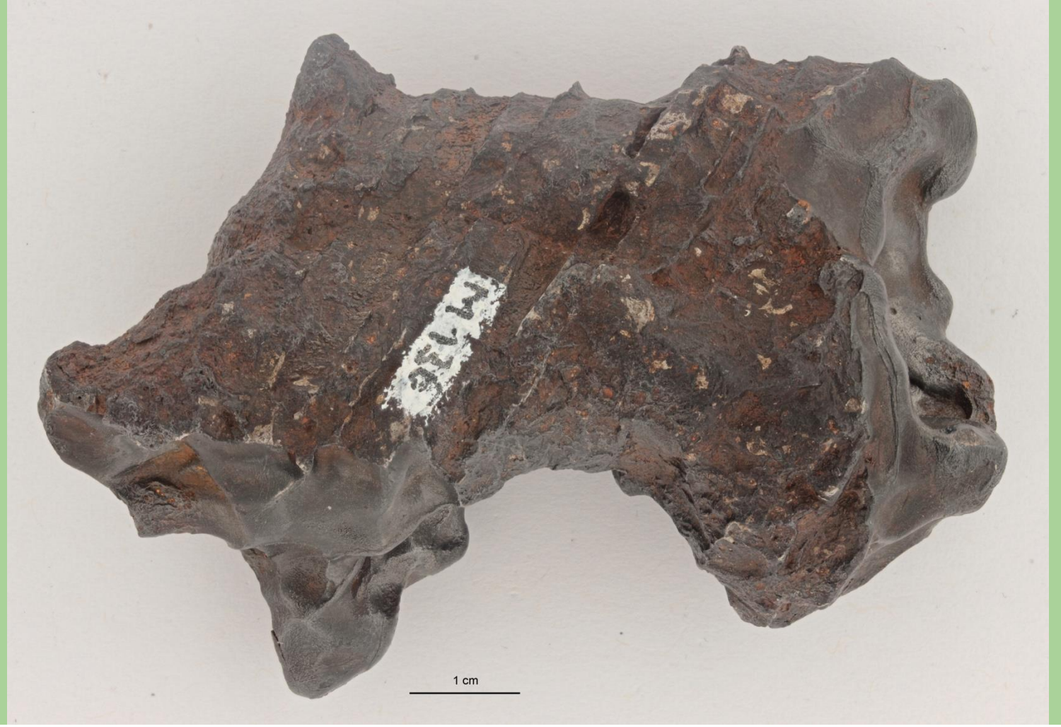
- 1. Is the stone colored (blue, green, red,…)?
- 2. Does the stone contain large white, black or colored crystals ?
- 3. Does the stone have cavities?
- 4. Is there visible layering on the stone?
- 5. Does the stone have a rust-brown streak?
- 6. Are there many similar stones in the same place?

If **ONE** of these features is present, then it's **NOT** a meteorite.

If all 6 questions are negative!

Then you may have...

A: Stone meteorite



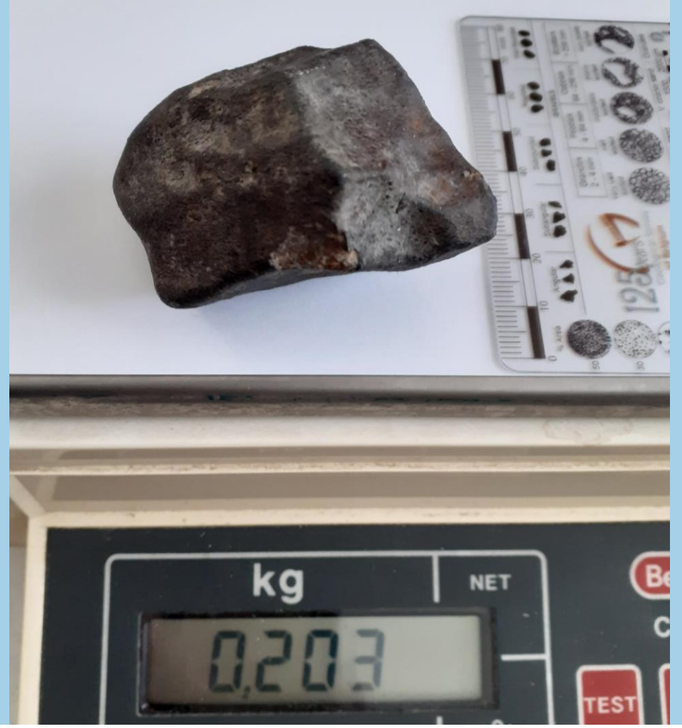
B: Iron meteorite

C: Other meteorite – this chance is so minimal, and the specimens are virtually indistinguishable from terrestrial rocks based on simple features that we do not include this group in this manual.

STONE METEORITE

1. Does the stone have a thin crust that differs greatly from the inside?

And...



2. Does the stone have a fairly high specific gravity (weight 3 – 4 g/cm³)?

And...

STONE METEORITE

3. Does the stone attract a magnet?

And...

4. Can you see small metal spots in the stone and small circles +/- 1mm (chondrules)?

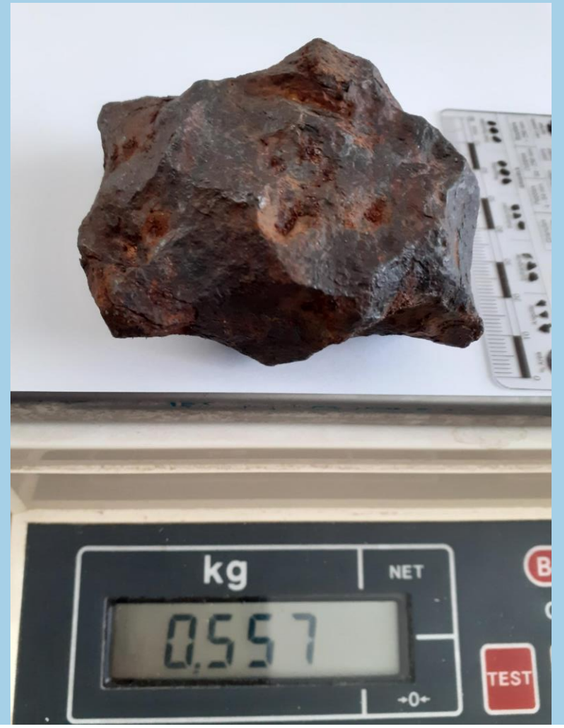
STONE METEORITE

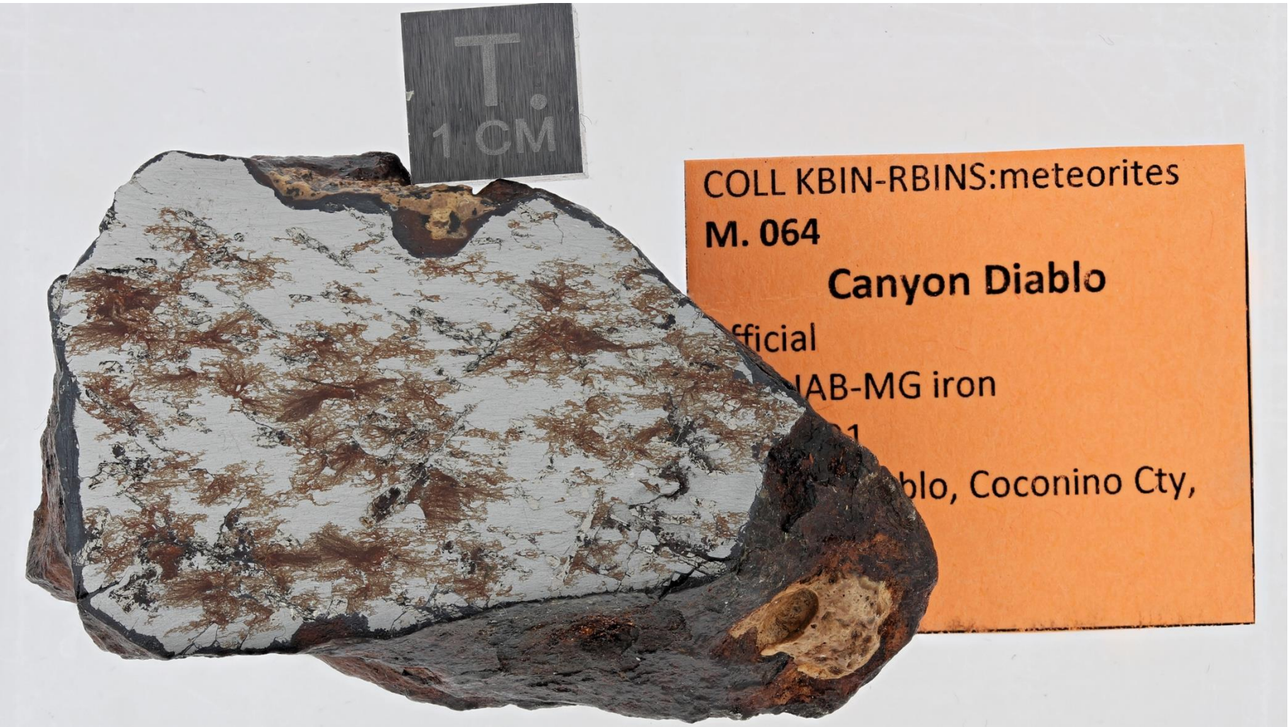
If the stone meets all four conditions and none of the first six characteristics, then there is a **CHANCE** that it's a chondritic stone meteorite.

IRON METEORITE

1. Does the stone have a thin crust?

And...





2. Is the stone heavy (specific gravity 7-8 g/cm³)?

And...

IRON METEORITE

3. Does the stone strongly attract a magnet?

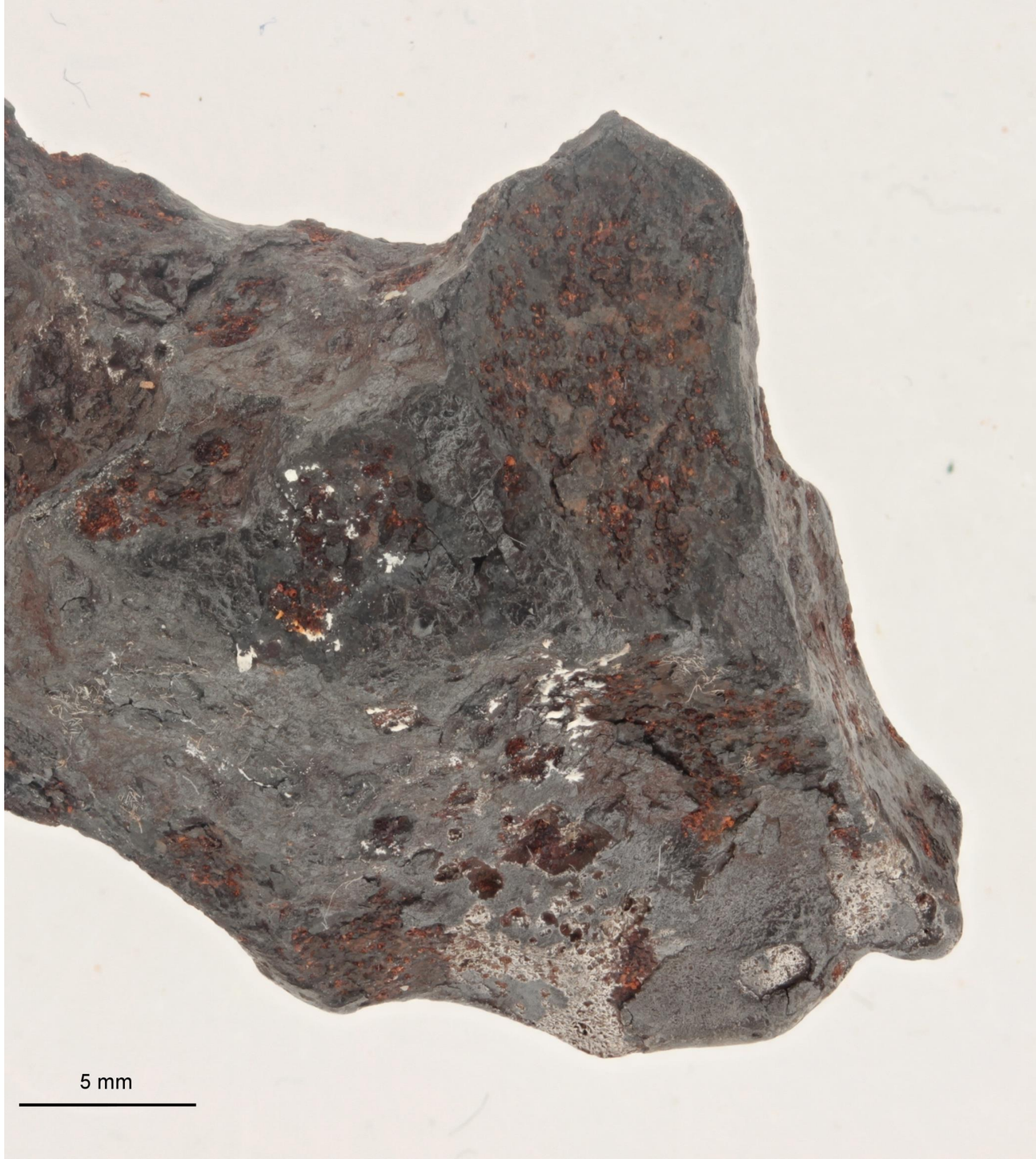
And...

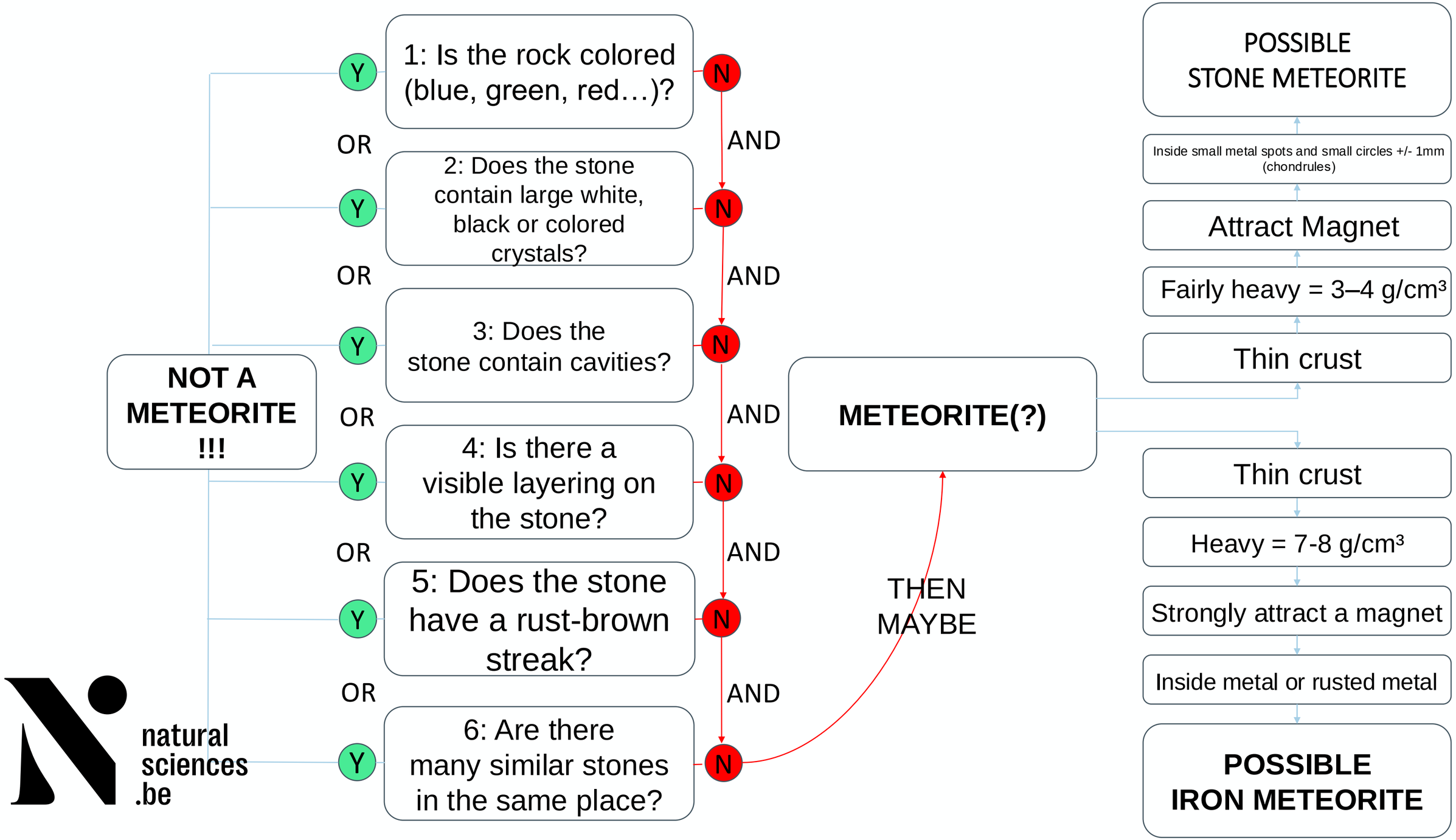
4. Is the stone inside clearly made of metal or rusted metal?

IRON METEORITE

If the stone meets all four conditions and none of the first six characteristics, then you have a **SMALL CHANCE** that it is an iron meteorite.

VERY DIFFICULT TO DISTINGUISH




1: Is the rock colored (blue, green, red…)?
2: Does the stone contain large white, black or colored crystals?
3: Does the stone contain cavities?
4: Is there a visible layering on the stone?
5: Does the stone have a rust-brown streak?
6: Are there many similar stones in the same place?
Y
N
OR
AND
NOT A METEORITE !!!
METEORITE(?)
THEN MAYBE
POSSIBLE STONE METEORITE
Inside small metal spots and small circles +/- 1mm (chondrules)
Attract Magnet
Fairly heavy = 3–4 g/cm³
Thin crust
Thin crust
Heavy = 7-8 g/cm³
Strongly attract a magnet
Inside metal or rusted metal
POSSIBLE IRON METEORITE
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If, after this first evaluation, you still think you have a meteorite, you can take a few photos, preferably in high resolution and with some details, and send them to mdeceukelaire@naturalsciences.be. We'll look at the photos and make an appointment if necessary.

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