



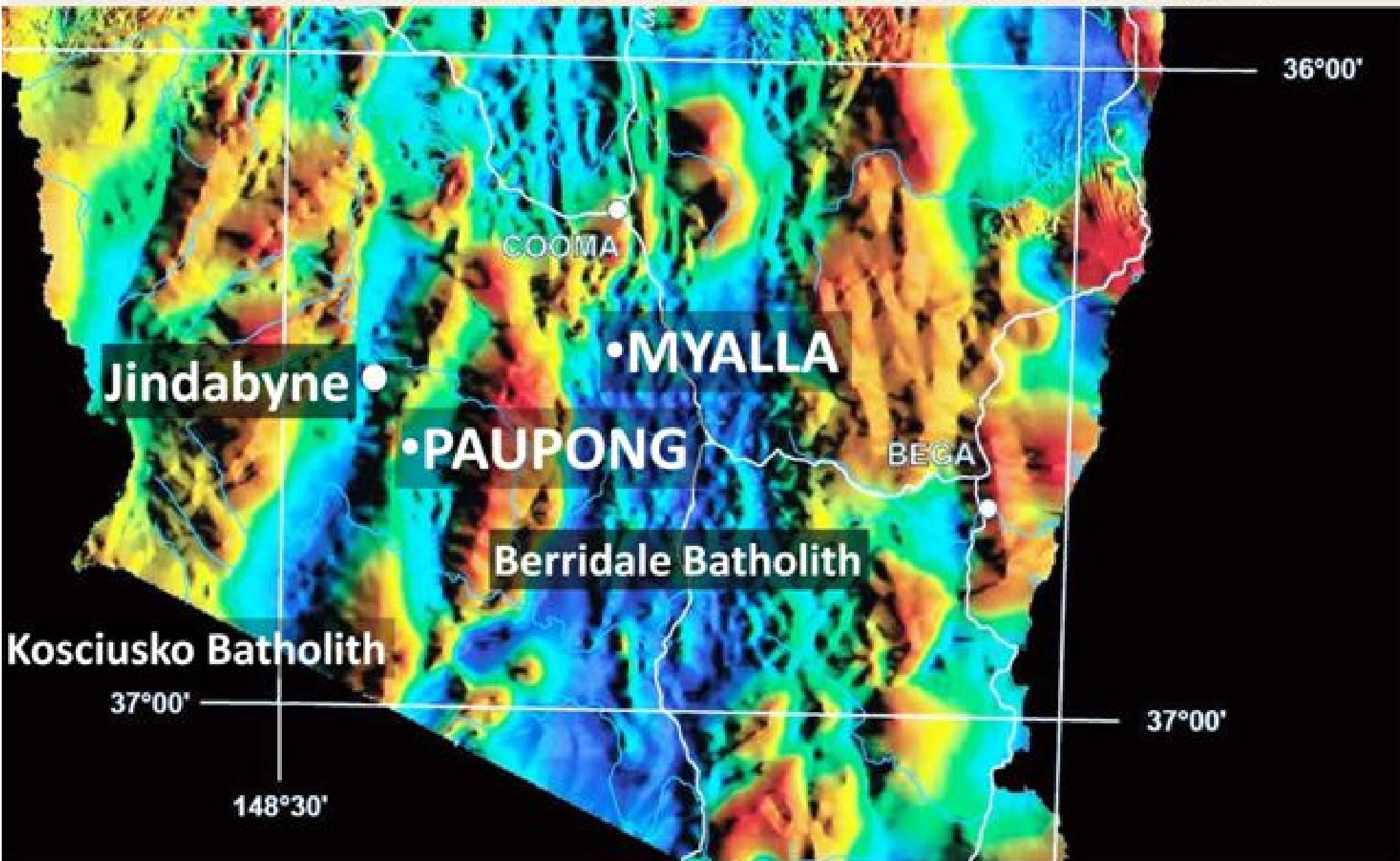
A new, outcropping, greenfields gold discovery at Paupong (near Jindabyne) NSW; serendipity and science.

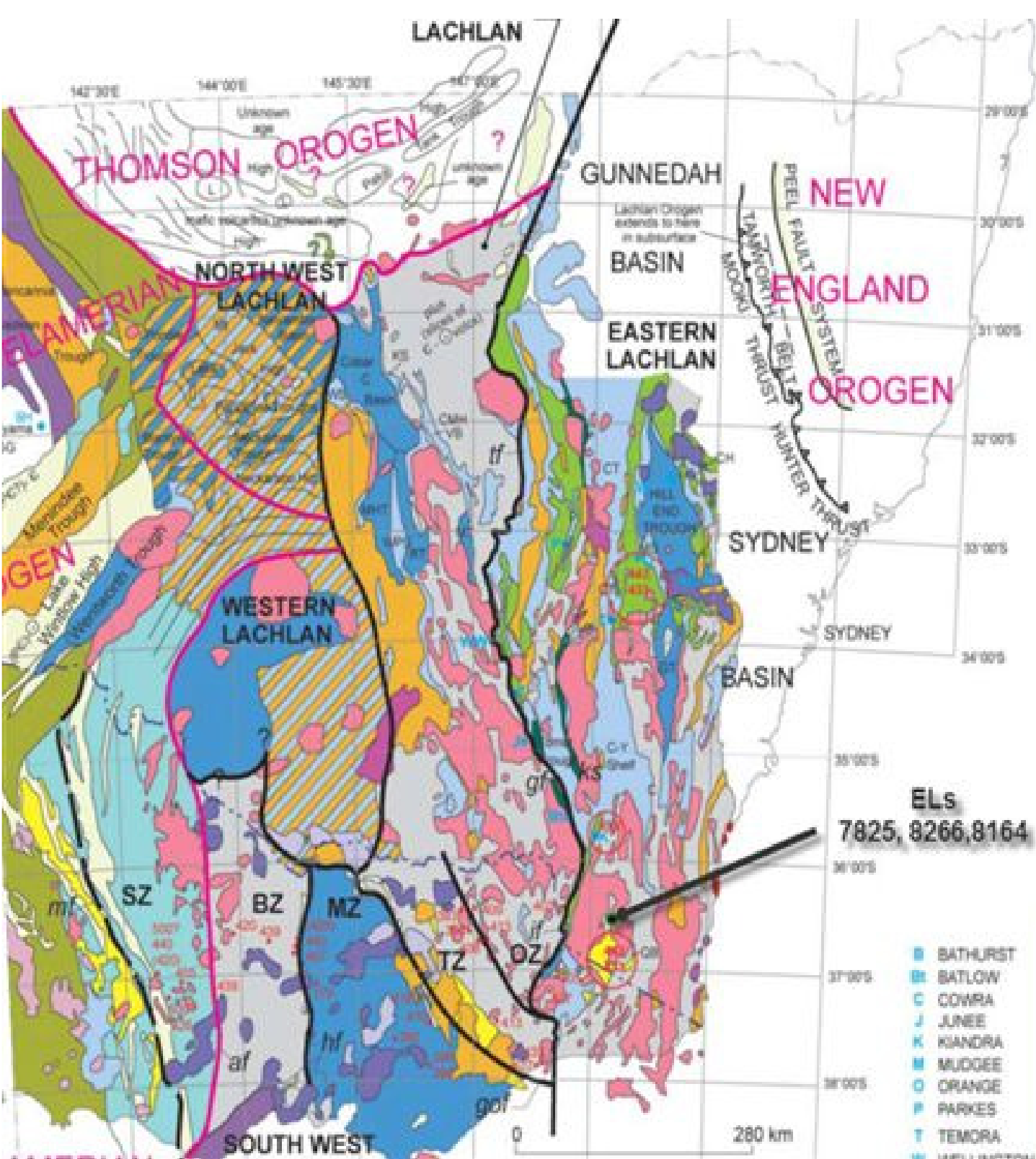
Part 1

Dr B. Jane Barron¹ and Dr Russell J. Fountain²
Alt Resources Limited

1. Consulting Petrologist, Director Alt Resources Limited. Visiting Fellow, School of BEES, UNSW.
2. Consultant. Director Exploration Alt Resources Limited.

ALT RESOURCES GOLD PROJECTS ON SOUTHEASTERN NSW MAGNETIC MAP





Divisions of Lachlan Orogen

(Glen R. A., 2005)

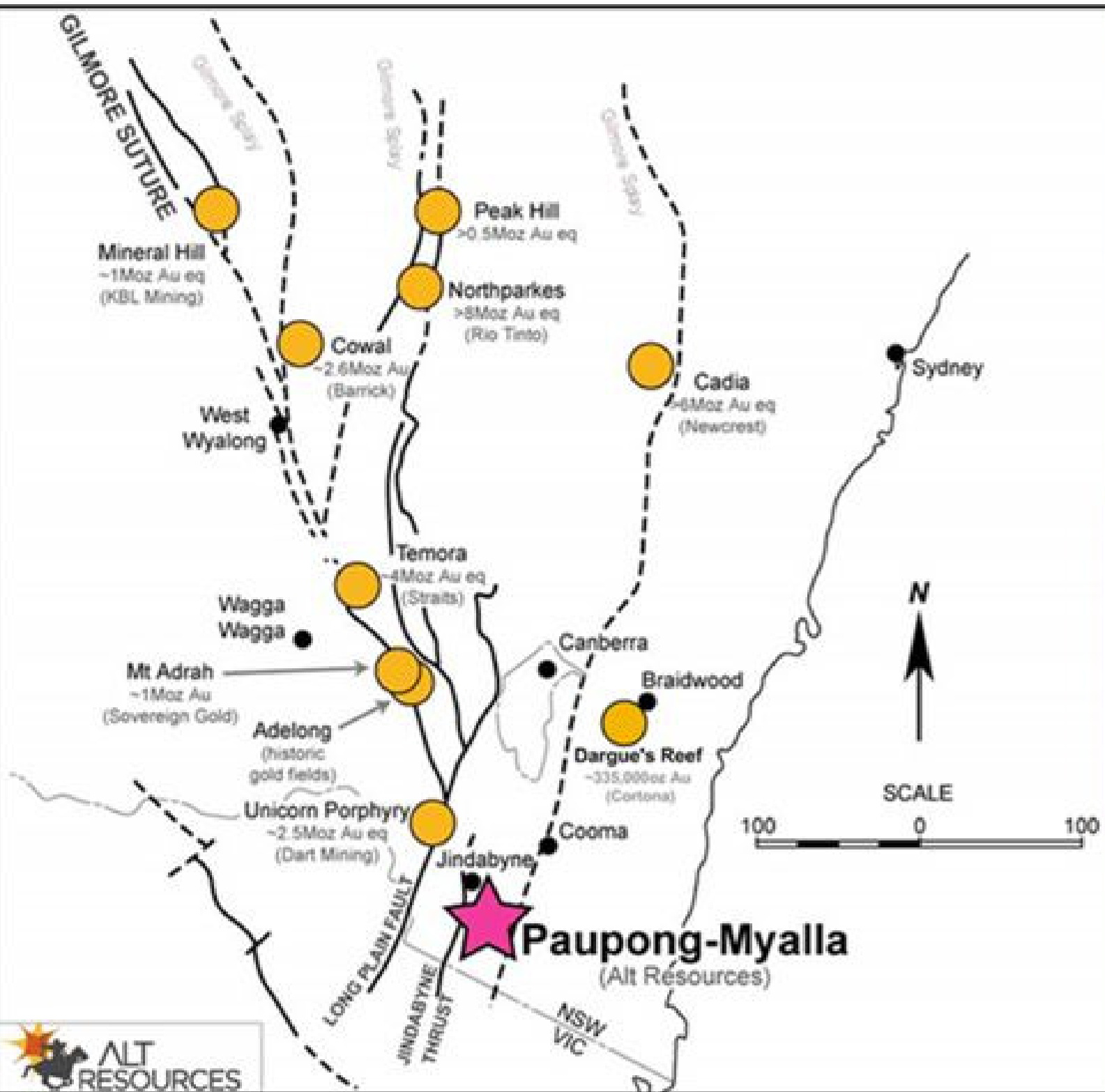
Ordovician
Adaminaby
Supergroup

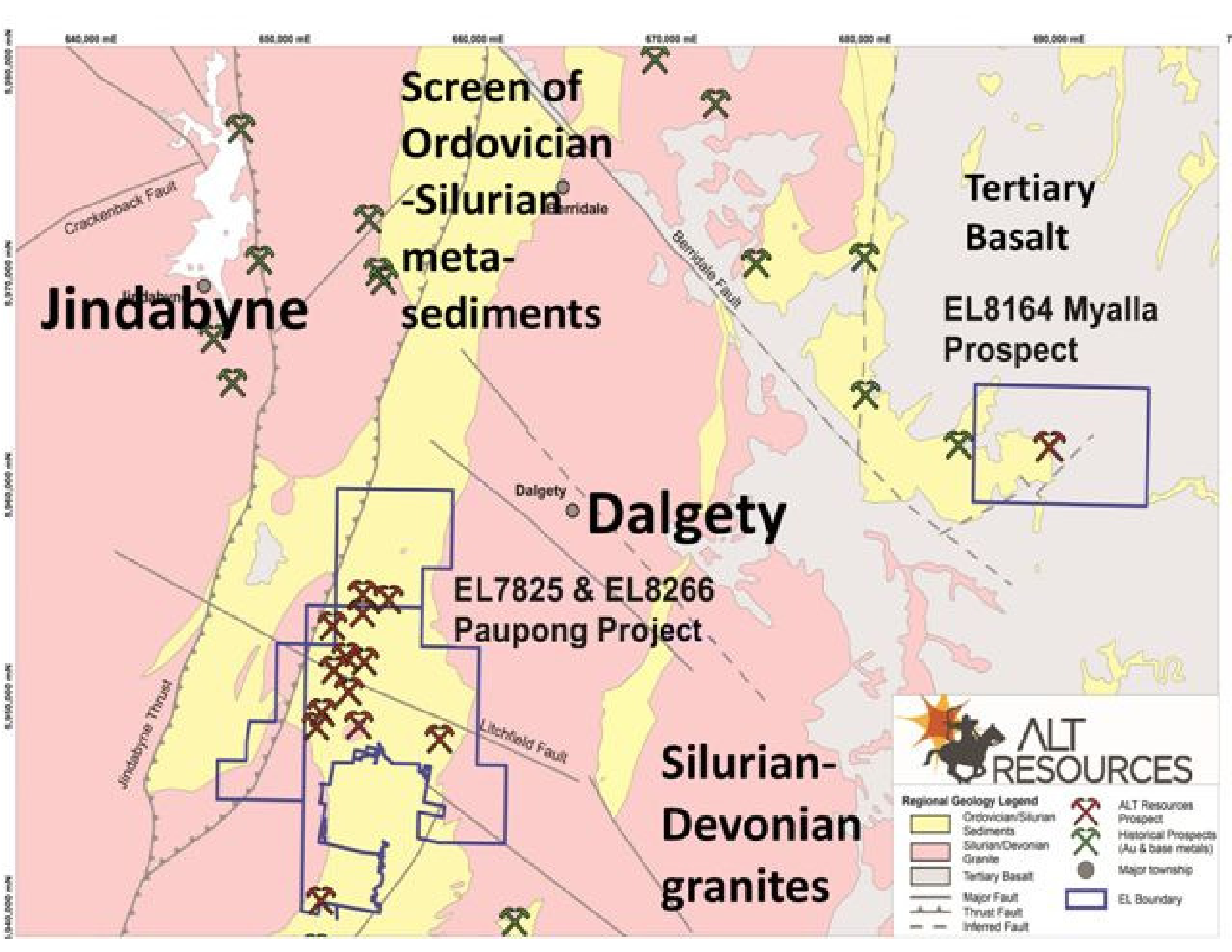
Turbidites –
GREY

Silurian-
Devonian
Granitoids - PINK

Major gold and copper deposits in the Lachlan Orogen

LOCATED ON OR NEAR MAJOR NSW SUTURES AND SPLAYS



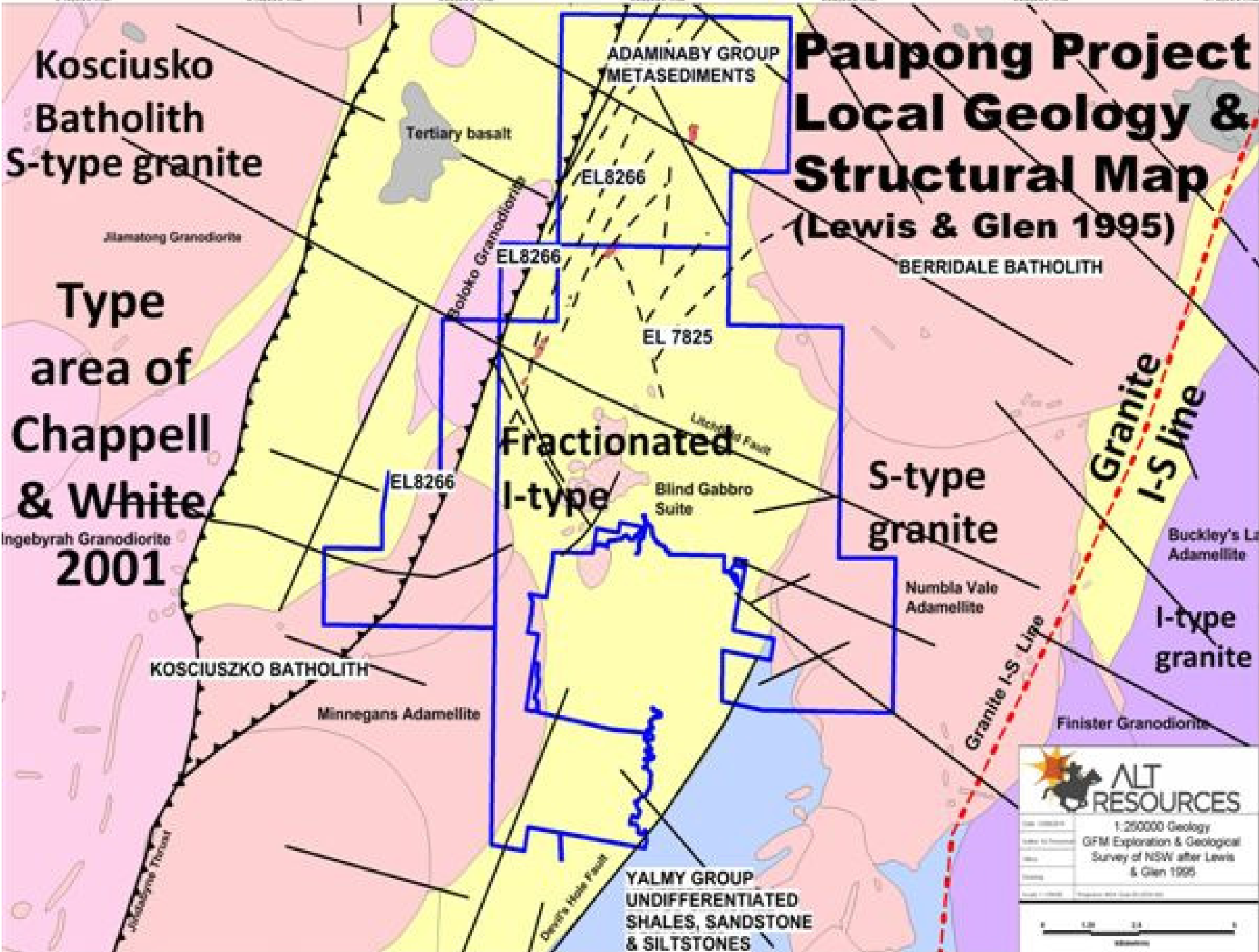


PAUPONG PROJECT

- Real greenfields discovery.
- Started as school project on pioneers/gold in Monaro region.
- 1898 SMH article Litchfield vein.
- Magnetic drill target, took out EL
- Petrology on drill core defined some fractionated members of Blind Gabbro Complex. Map EL.

HOW WAS IT MISSED?

- Gold is too fine grained to pan
- Forgotten distant region of state
- Only old wide-spaced magnetics
- No radiometrics
- Two historic stream sediment surveys did not assay for gold; base metal anomalies not followed up



ALT RESOURCES

1:200000 Geology
GFM Exploration & Geological
Survey of NSW after Lewis
& Glen 1995

Scale: 1:200,000
Date: 2001
Author: Lewis & Glen 1995
Project: Exploration and Geological Survey

0 1.00 2.00 3.00
Kilometres

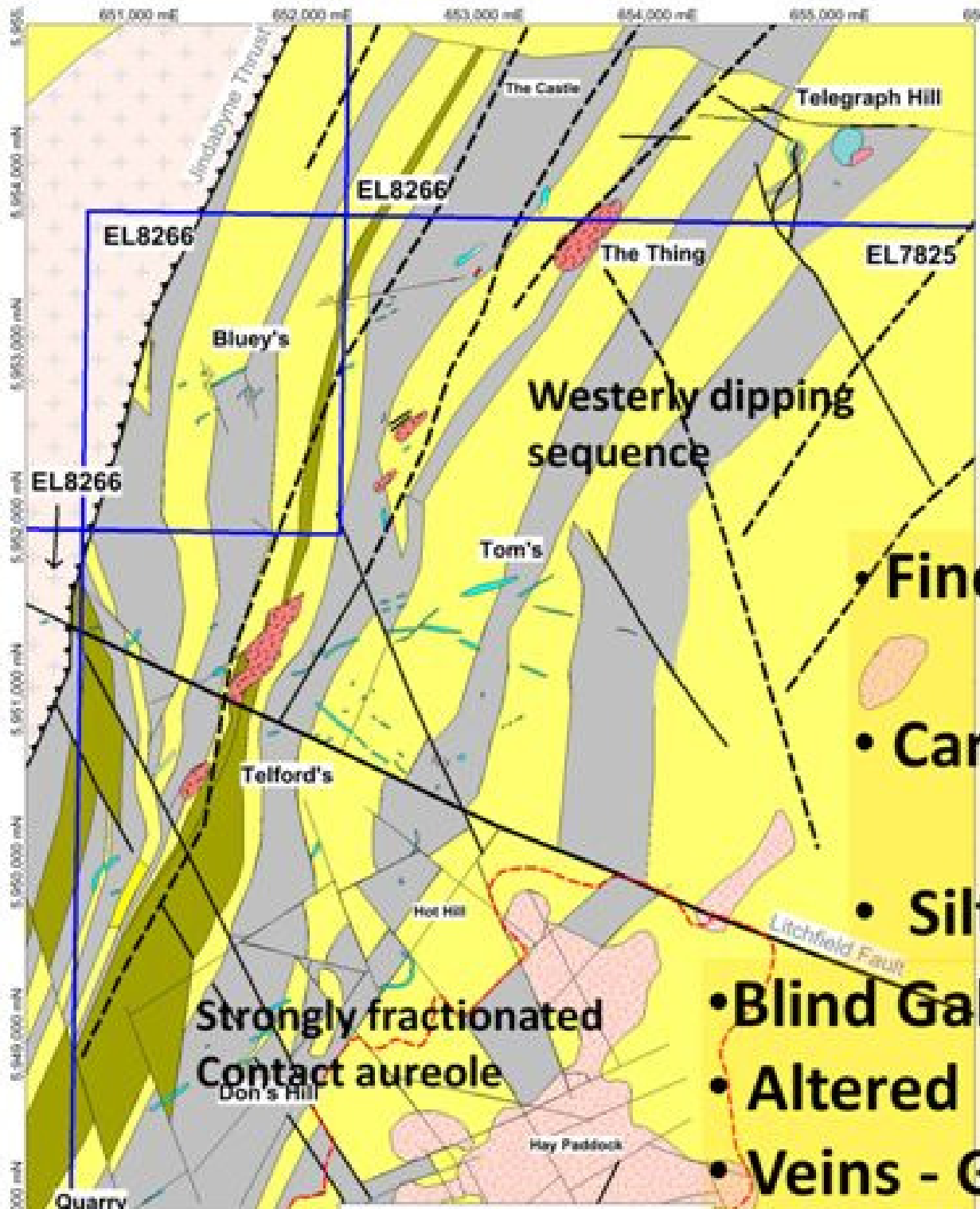
Paupong Project Geology

Ordovician

Adaminaby Group
metasediments

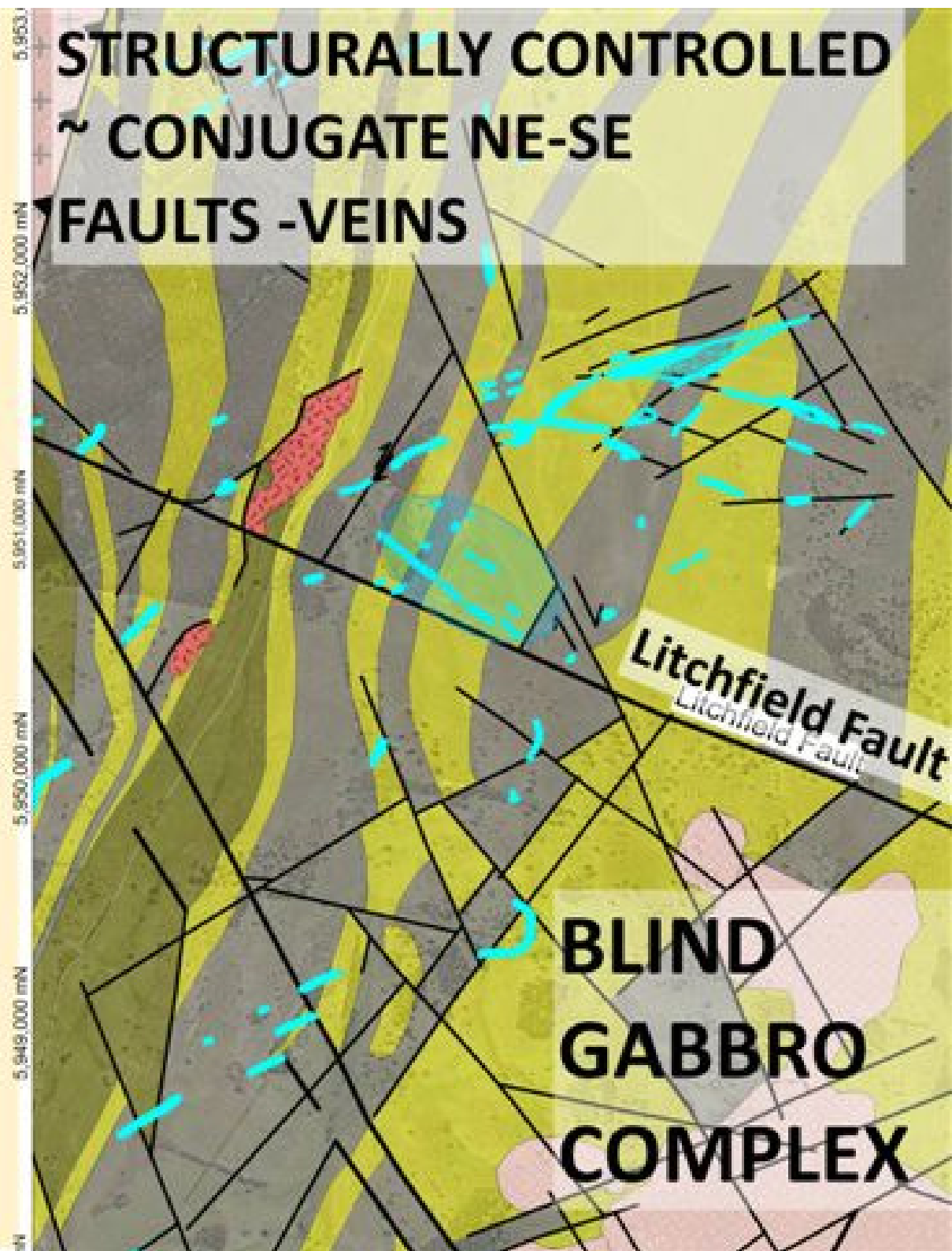
Alternating units of -

- Fine grained sandstone - **YELLOW**
- Carbonaceous shale - **GREY**
- Siltstone - **OLIVE GREEN**
- Blind Gabbro Complex - **PINK**
- Altered porphyry - **RED**
- Veins - **GREEN**



**PART OF QTZ-
SULPHIDE VEIN
SYSTEM.**

**VARIETY OF QTZ
VEINS;
VEIN BRECCIAS;
STOCKWORK
VEIN SYSTEMS -
BLUE-GREEN**



**More than 972 surface samples
give outstanding Au-Ag assays**

Average of 0.40g/t Au

Maximum of 14g/t Au

Average 2.6g/t Ag

Maximum of 190g/t Ag.

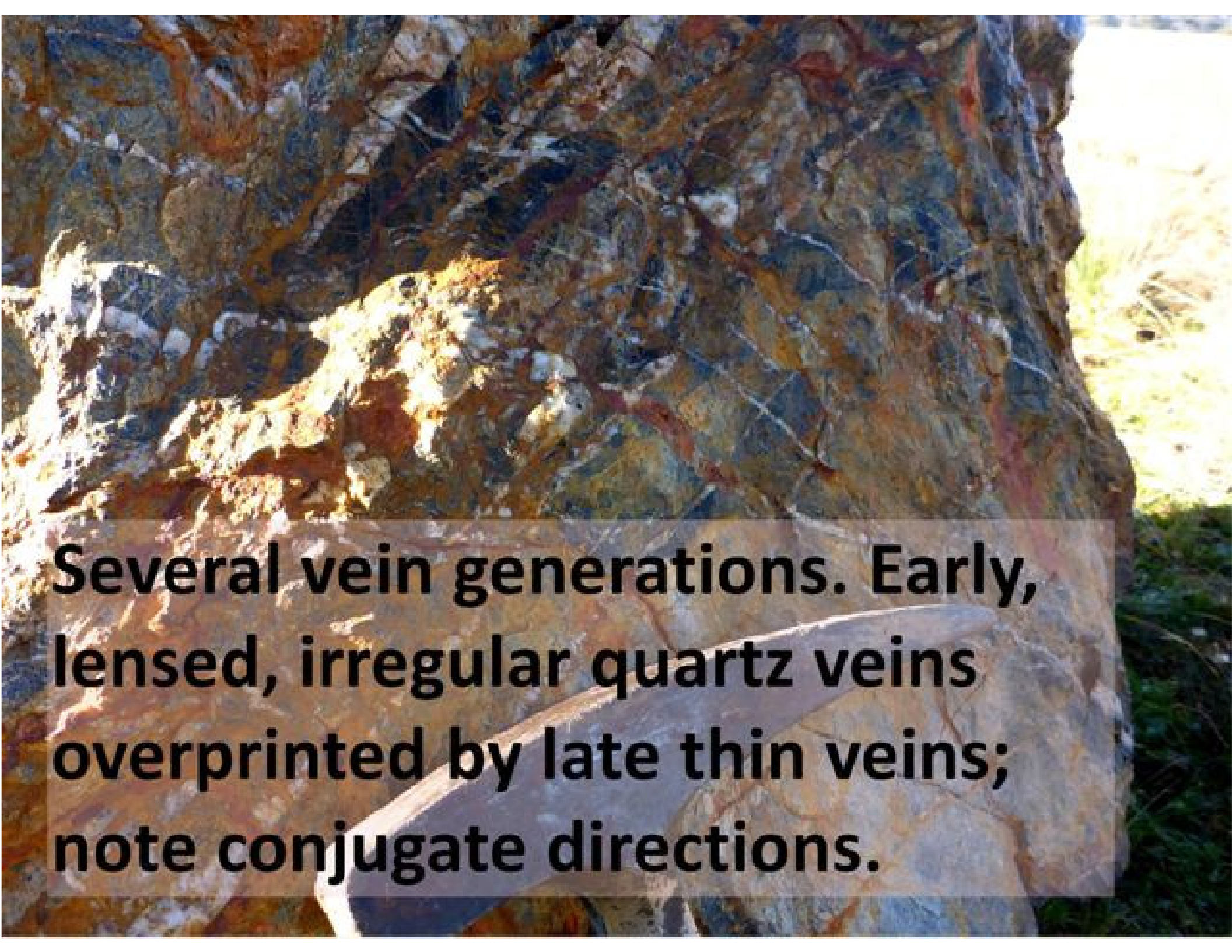
**Cu, As, Pb, Mo and Bi suggest an
intrusive source.**

Geologist and massive outcropping quartz vein



Quartz vein stockwork and gossan



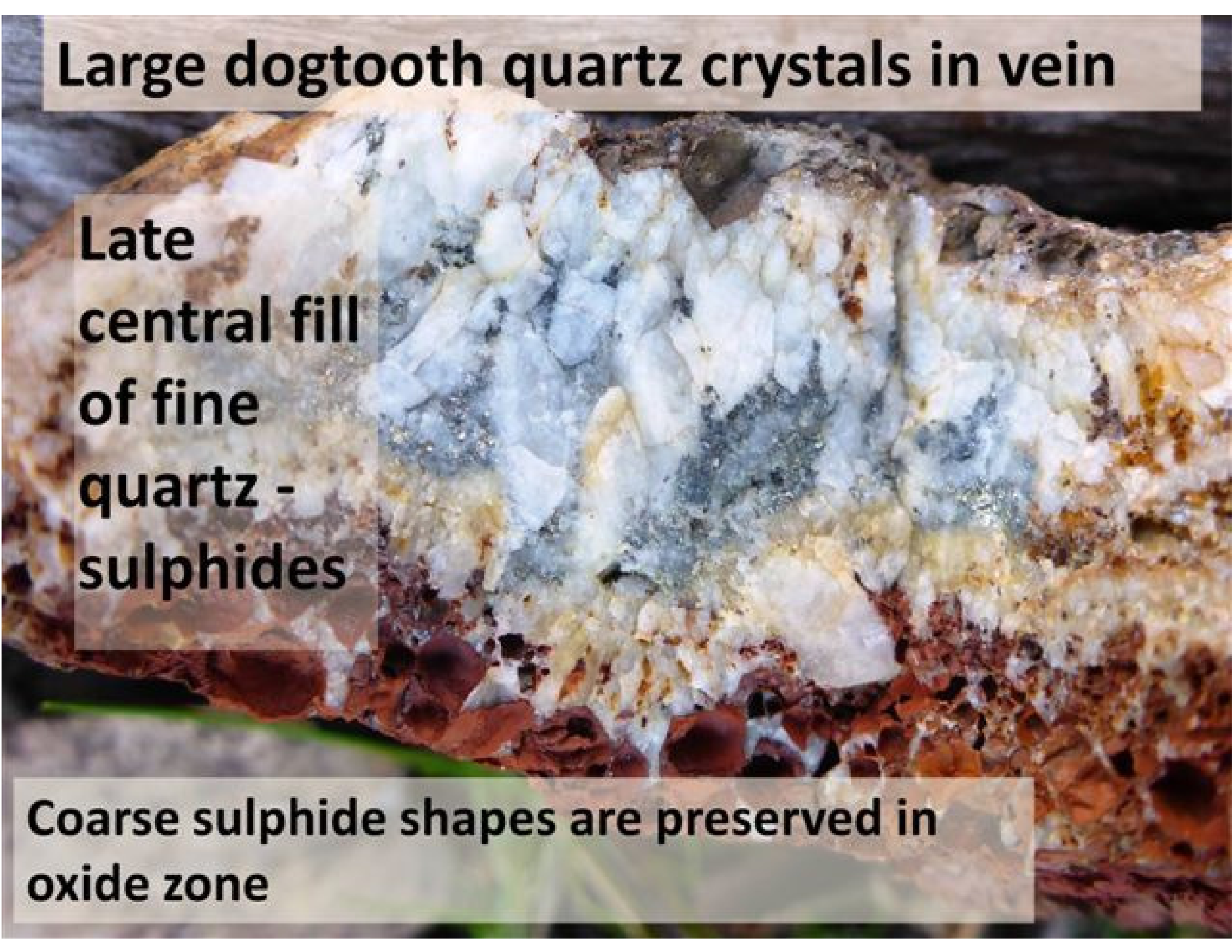


Several vein generations. Early, lensed, irregular quartz veins overprinted by late thin veins; note conjugate directions.

Large dogtooth quartz crystals in vein

**Late
central fill
of fine
quartz -
sulphides**

**Coarse sulphide shapes are preserved in
oxide zone**





**Gossan with oxidised
(weathered) sulphides**

Iron oxides in gossan

microscope view

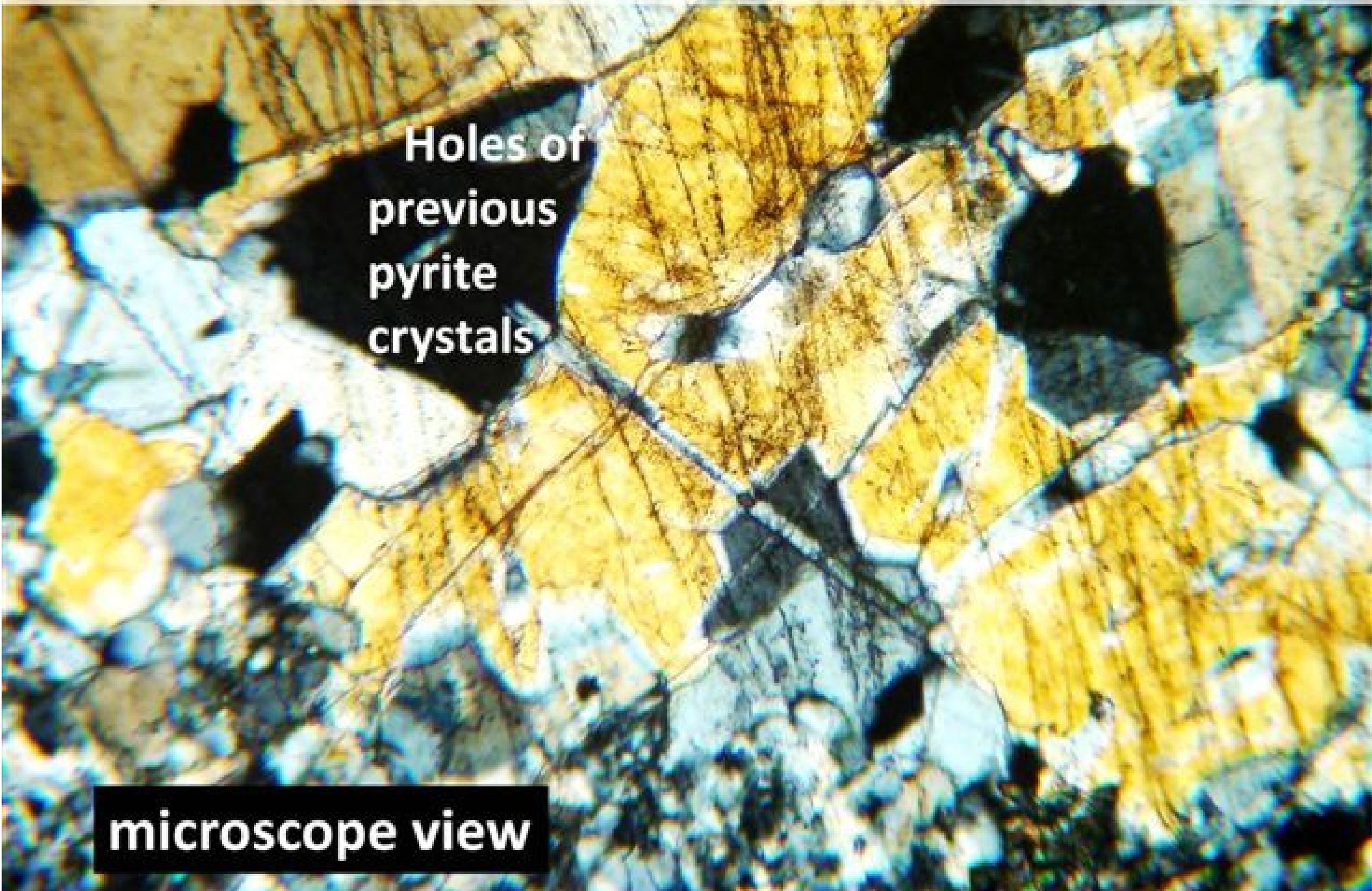
Colloform banded Fe-oxides
replace sulphides

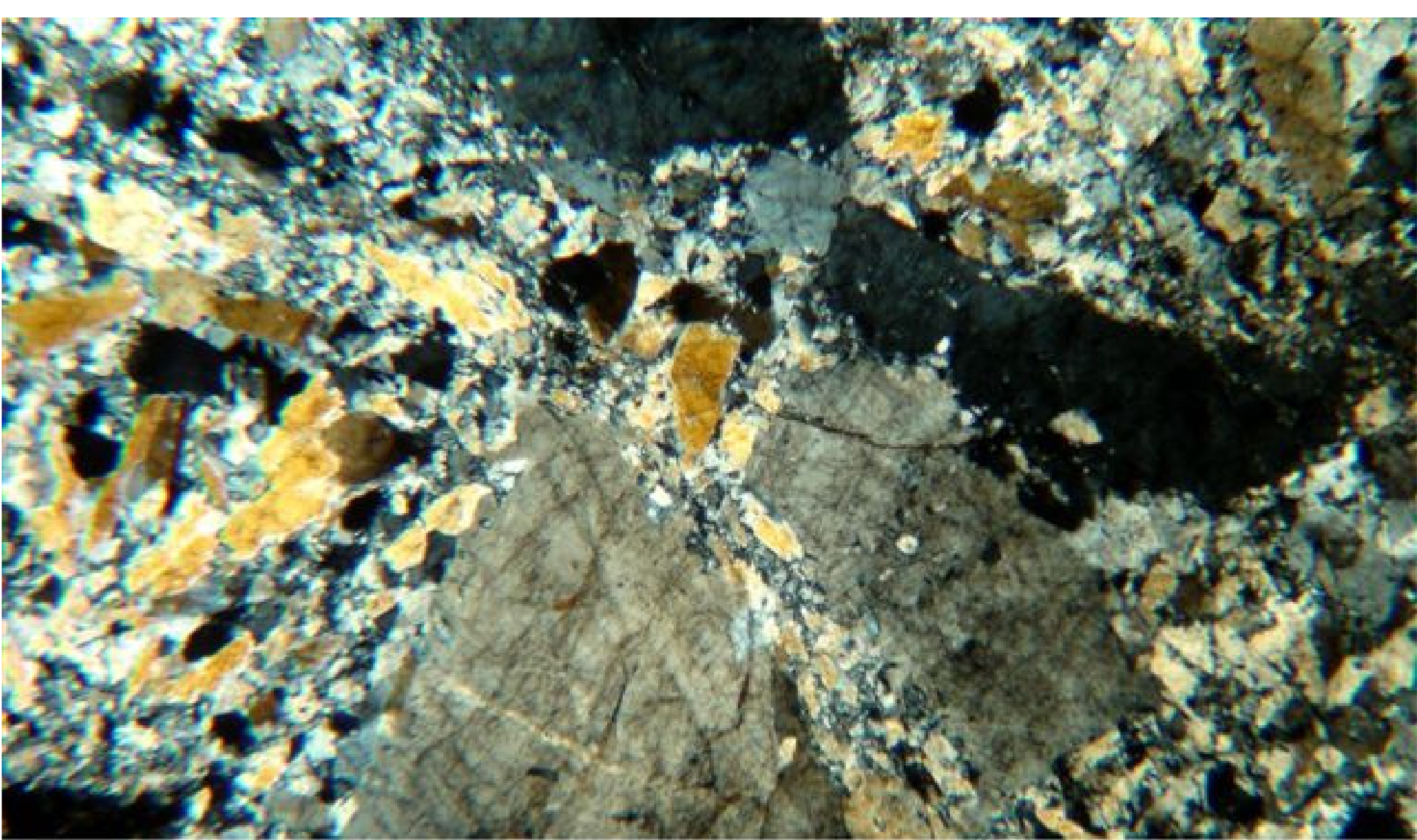
A microscopic view of a gossan, showing a complex network of iron oxides. The image displays a central, irregularly shaped mass of iron oxides, characterized by a banded, colloform texture. This central mass is surrounded by a network of smaller, interconnected iron oxide structures. The overall appearance is that of a highly porous, interconnected network of iron oxides, which has replaced the original sulphide minerals. The background is a dark, granular matrix, likely composed of other minerals or host rock.

Dogtooth quartz crystals in vein

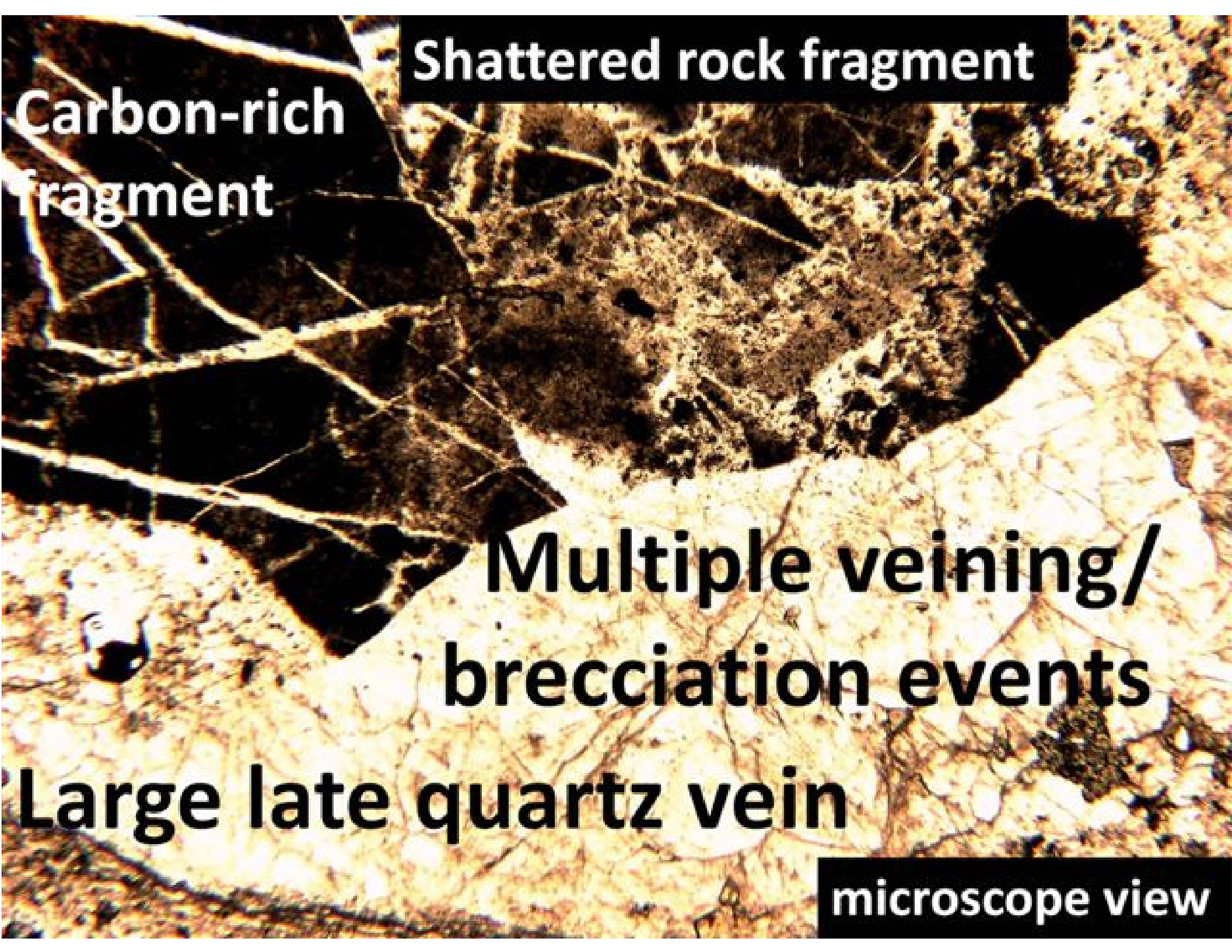
Holes of
previous
pyrite
crystals

microscope view





**Shattered and milled vein quartz
?tectonic/?phreatic. Microscope view**



Shattered rock fragment

**Carbon-rich
fragment**

**Multiple veining/
brecciation events**

Large late quartz vein

microscope view

A microscopic view of rotational breccia. The image shows a light-colored, crystalline matrix containing numerous dark, angular clasts of varying sizes. The clasts are irregularly shaped and appear to be fragments of a different rock type. The matrix is composed of small, interlocking crystals. The overall texture is characteristic of a brecciated rock.

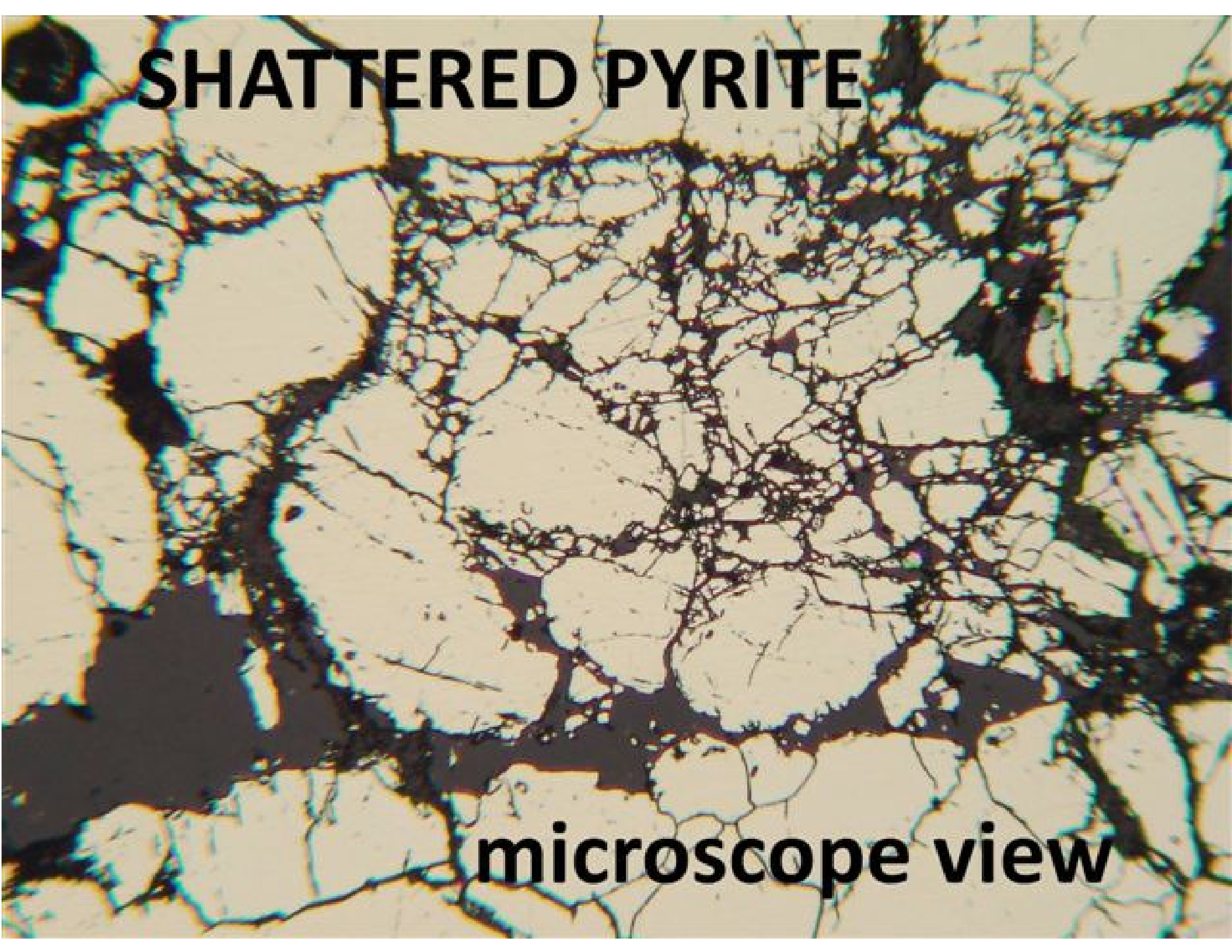
**Rotational
breccia**

Microscope view

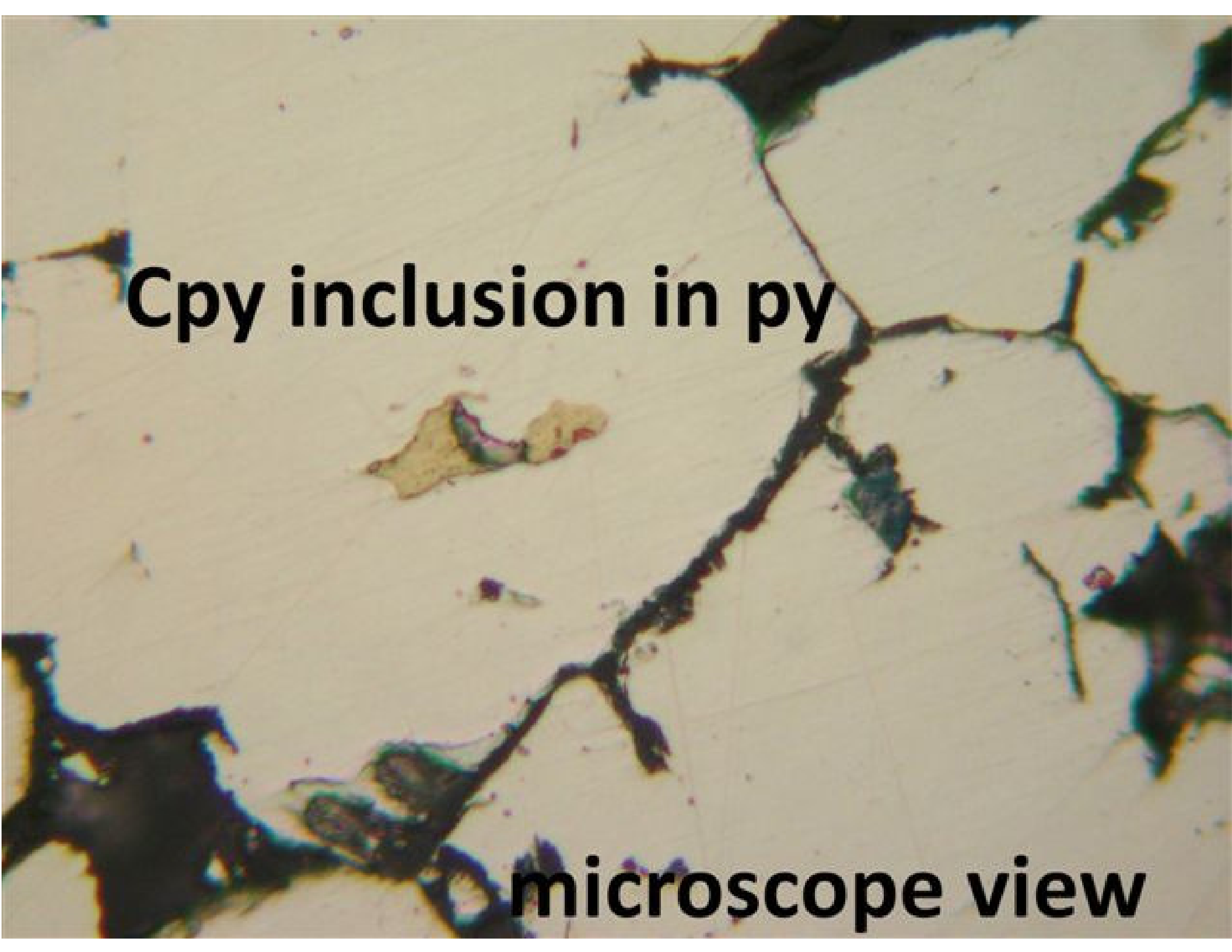
A microscopic image showing a dark, carbonaceous fragment with numerous small, circular, radiolarian fossils embedded within it. The fossils are arranged in a somewhat regular pattern, with some showing distinct radial structures. The surrounding matrix is dark and granular, with some lighter-colored mineral inclusions. The overall appearance is that of a fossiliferous sedimentary rock.

**Radiolaria in
carbonaceous
fragment**

SHATTERED PYRITE

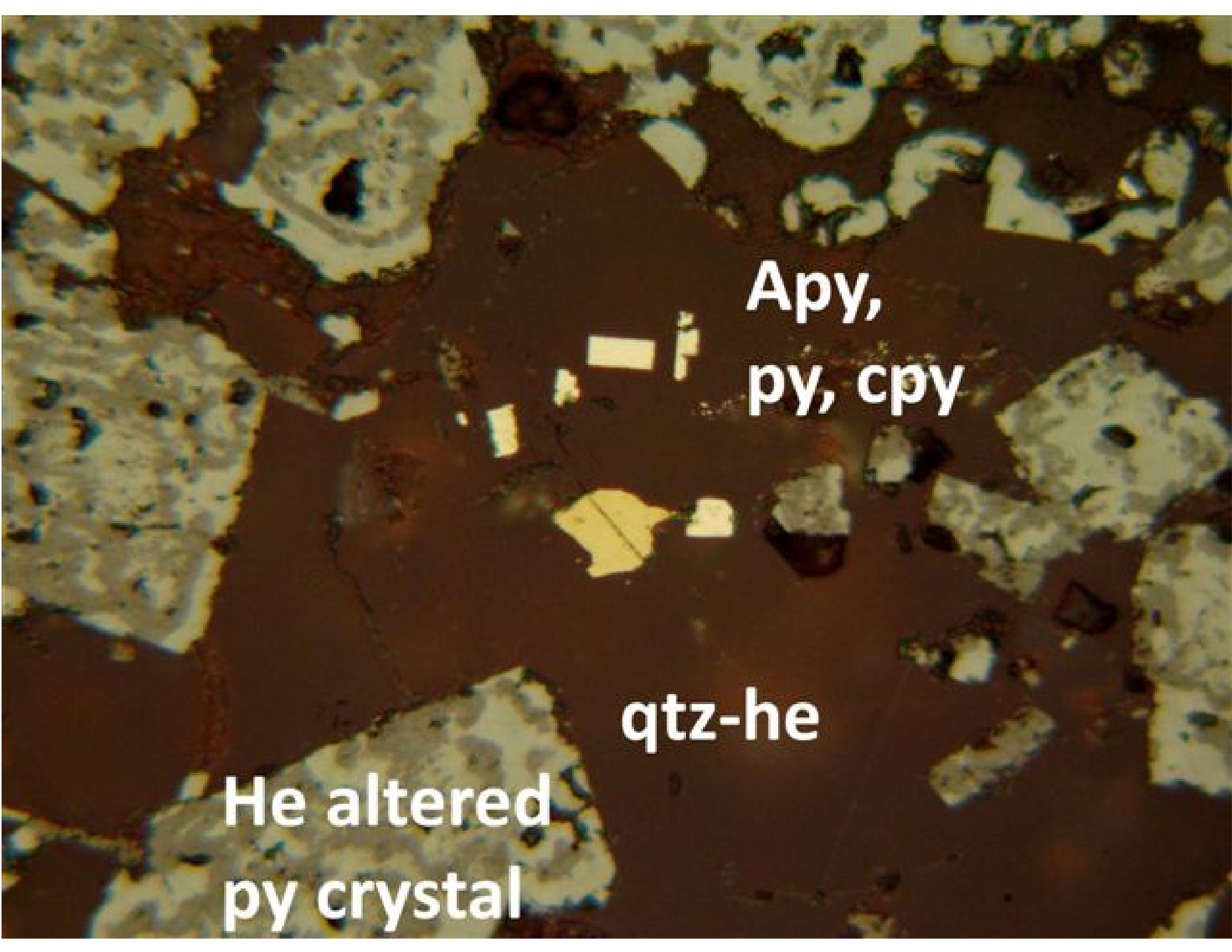


microscope view

A microscopic view of a plant stem section, likely from a monocot. The image shows a central vascular cylinder with a distinct arrangement of vascular bundles. A prominent feature is a large, irregularly shaped inclusion within the pith tissue, which is identified as a Cypripedium inclusion. The inclusion has a yellowish-brown color and a somewhat crystalline or fibrous appearance. The surrounding pith cells are stained, showing their cellular structure. The vascular bundles are arranged in a ring, and the overall structure is typical of a monocot stem.

Cpy inclusion in py

microscope view



**Apy,
py, cpy**

qtz-he

**He altered
py crystal**



Gold specks

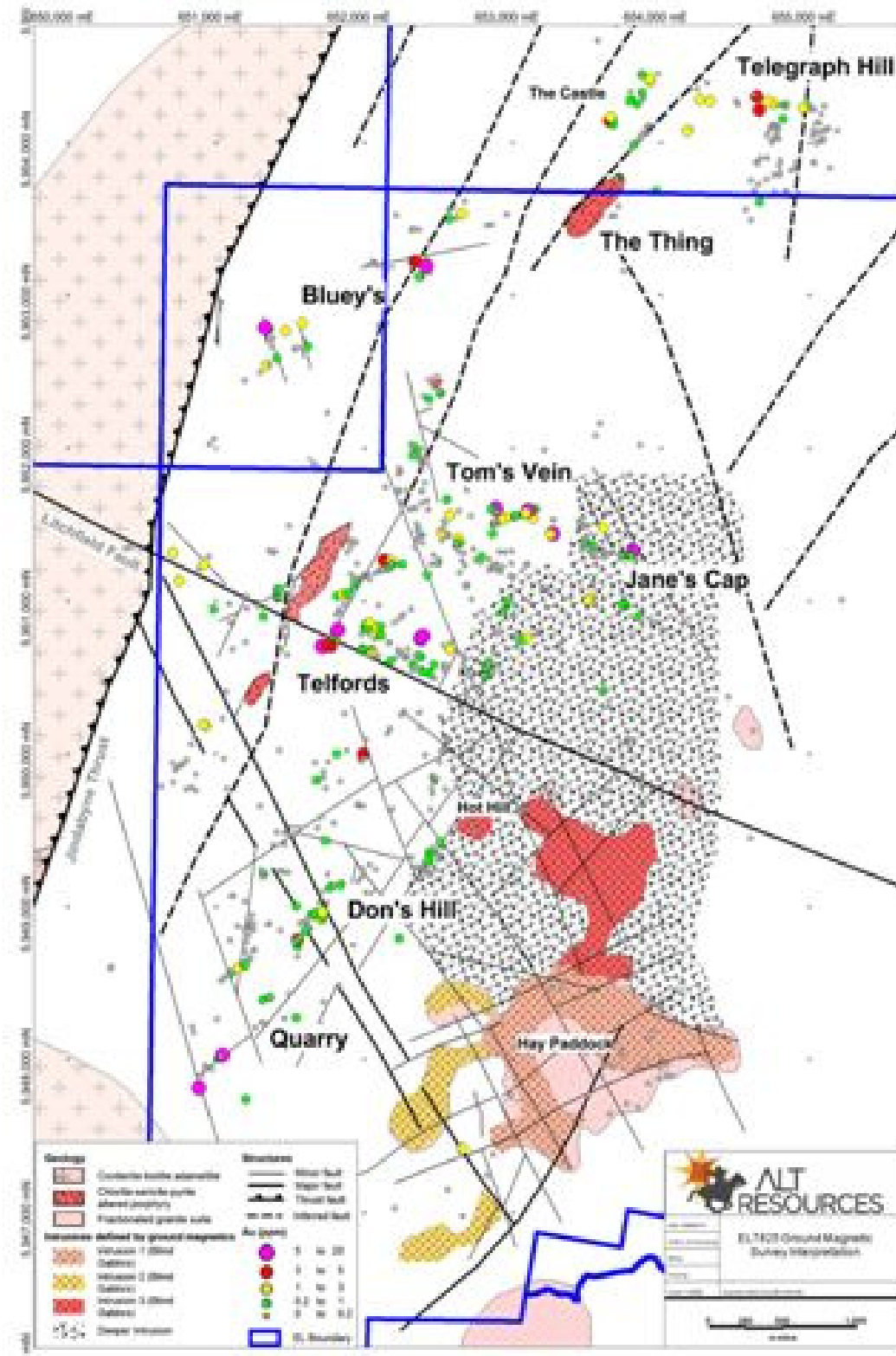
**Weathered out
py crystal sites**

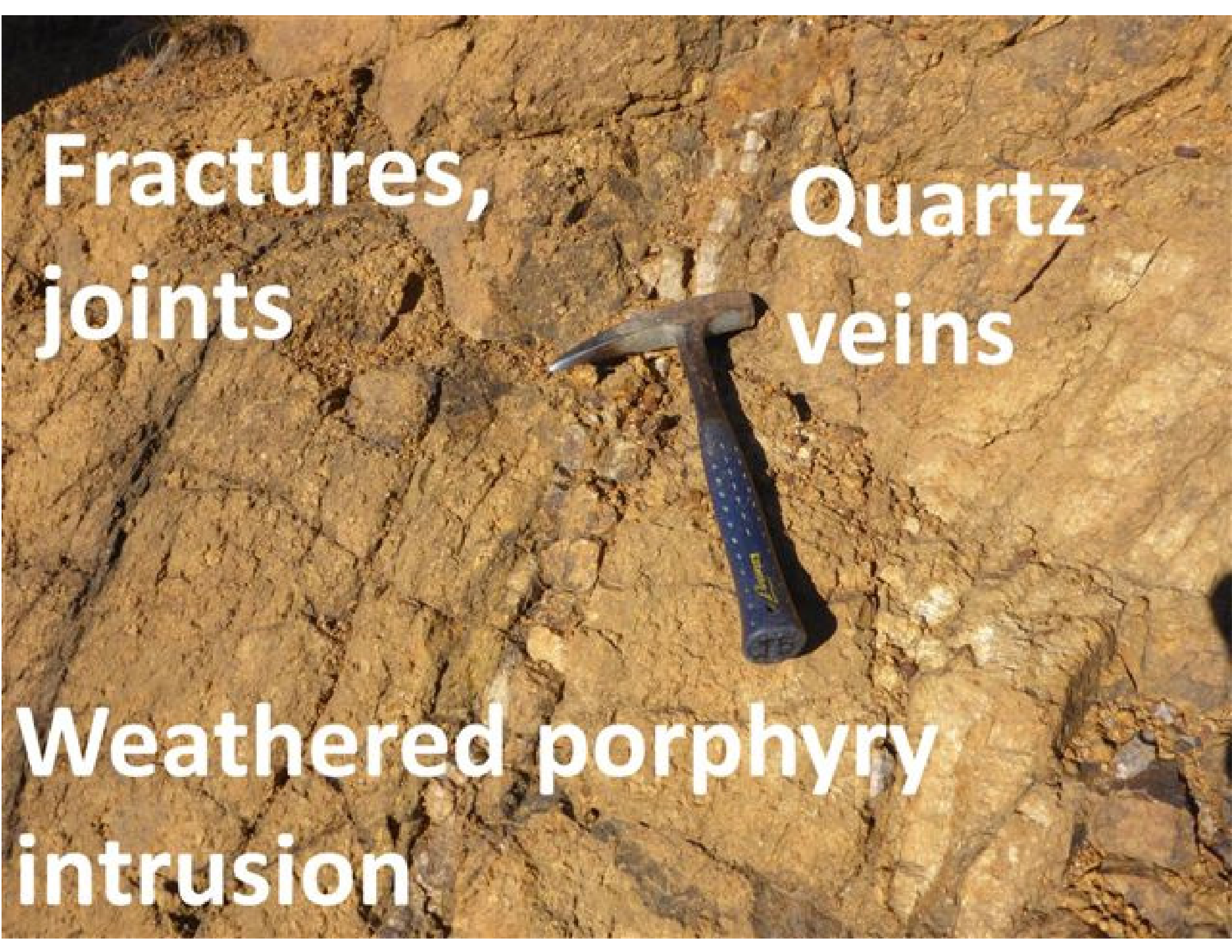
microscope view

Paupong Aeromagnetic Interpretation

Outcropping
intrusive rocks (solid
colour)

Interpreted
intrusives (stipple).





**Fractures,
joints**

**Quartz
veins**

**Weathered porphyry
intrusion**

A photomicrograph showing a cut surface of porphyry. The image displays a complex texture with various mineral grains. A prominent feature is a network of dark, branching veins, likely representing oxidised sulphides. The background is a fine-grained, yellowish-brown matrix. Scattered throughout are larger, lighter-colored grains, some of which are identified as quartz and feldspar. The overall appearance is characteristic of a hydrothermal alteration zone.

Mafic

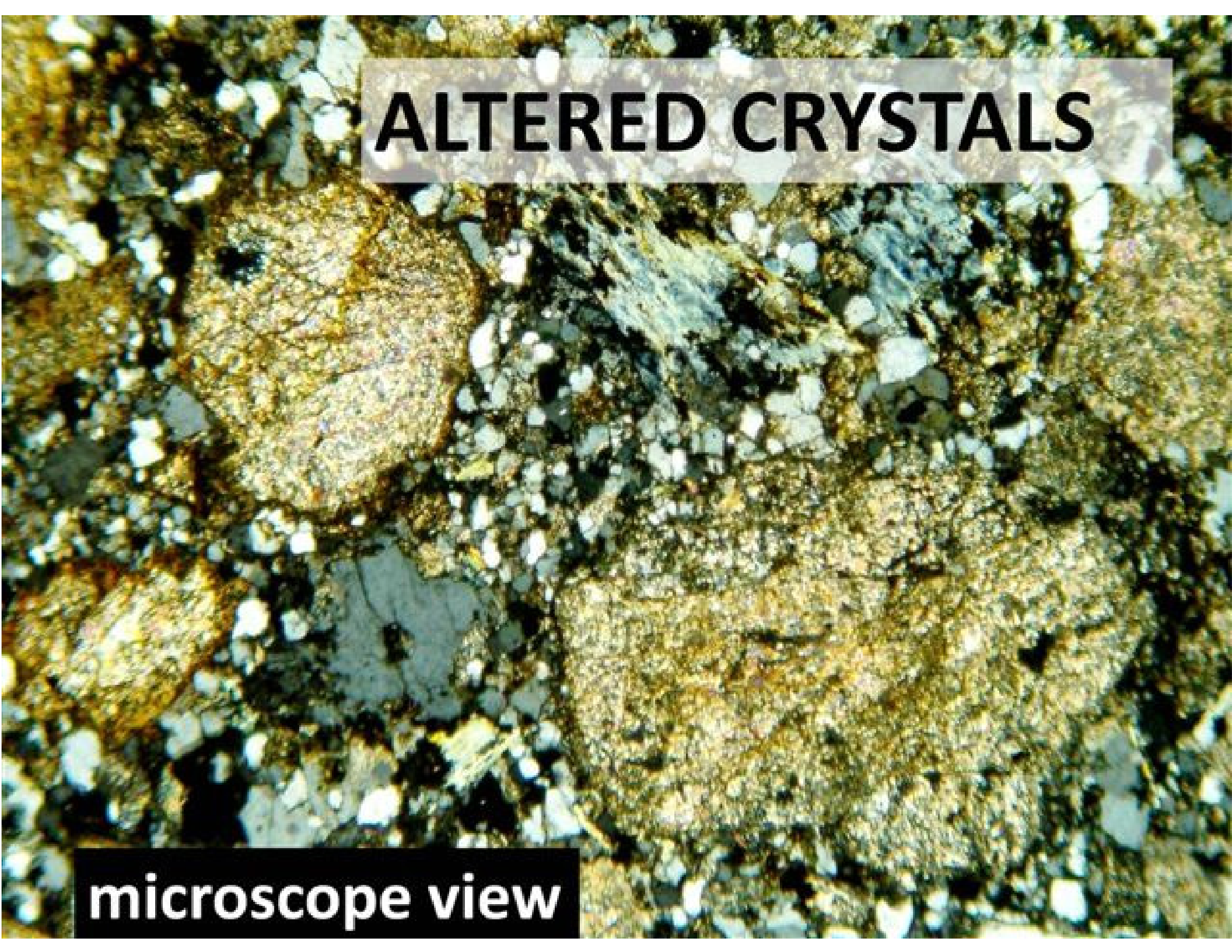
Quartz

Feldspar

Oxidised sulphides

Cut surface of porphyry

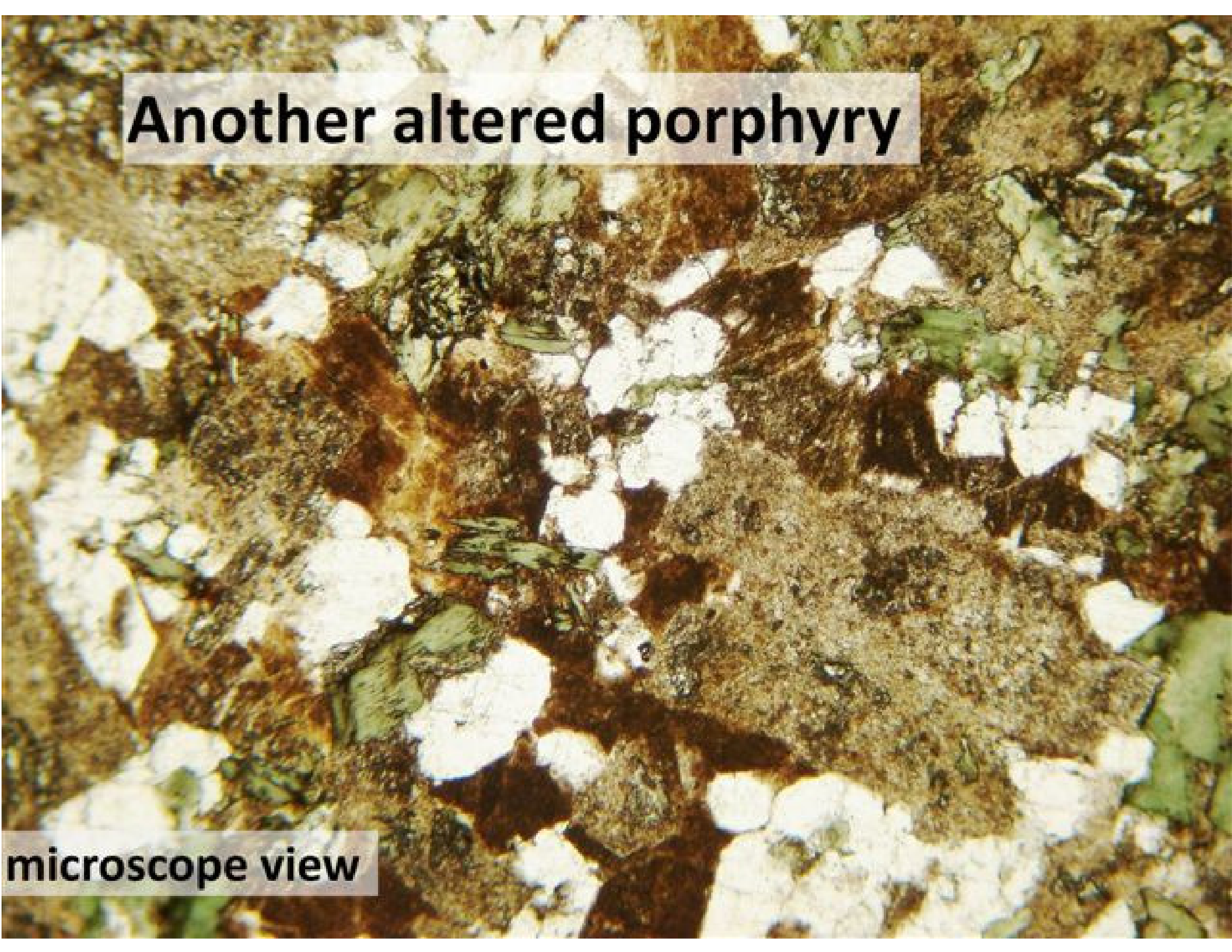
ALTERED CRYSTALS

A microscopic view of a rock sample showing altered crystals. The image features several large, irregularly shaped crystals with a brownish-gold color, set against a darker, more crystalline matrix. The crystals exhibit a complex internal structure, possibly indicating a specific mineralogical composition. The overall texture is granular and heterogeneous.

microscope view

Another altered porphyry

microscope view



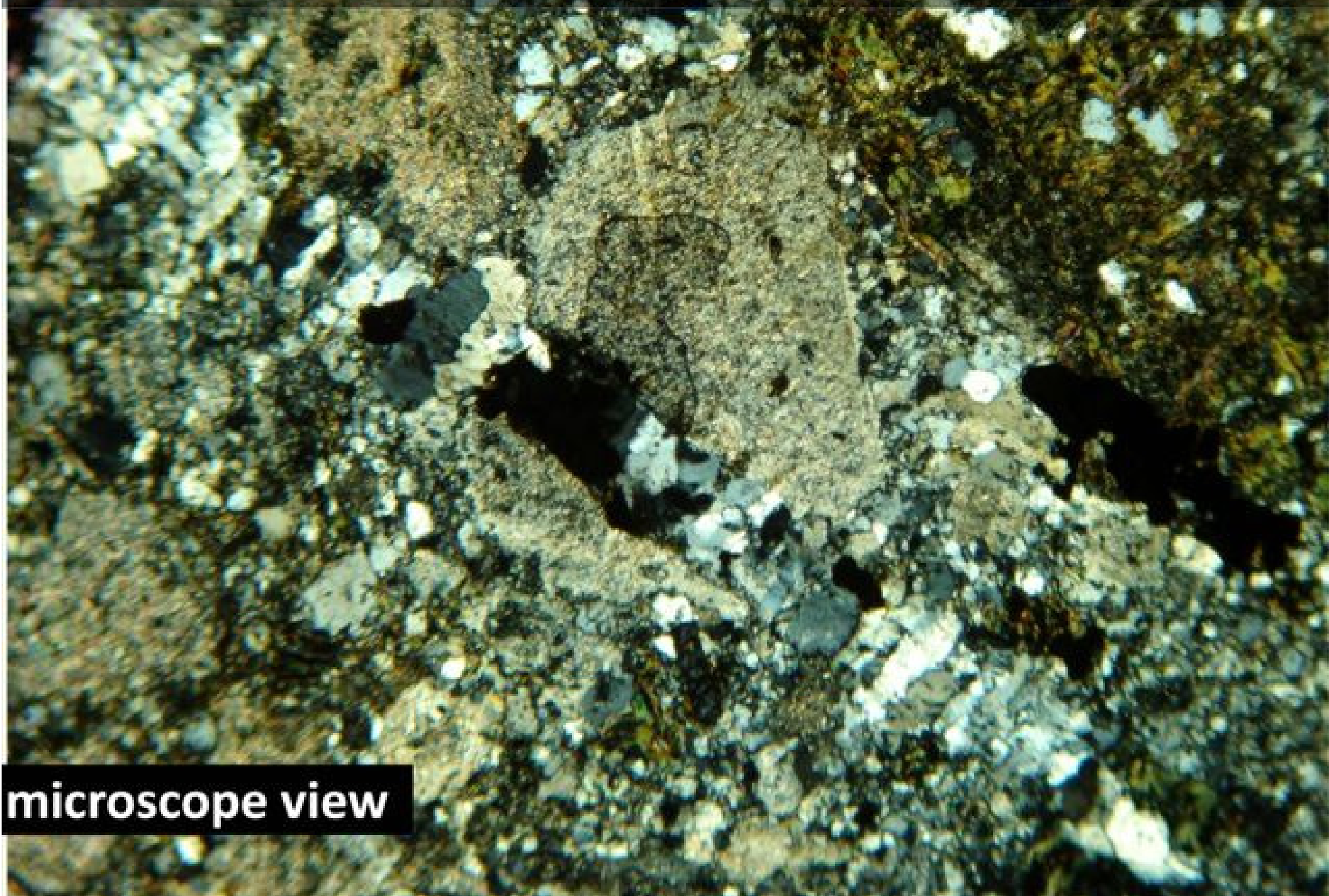
Intensely altered porphyry

A microscopic view of intensely altered porphyry rock. The image shows a complex texture with various mineral grains. Large, irregular, light-colored (yellowish-white) patches are scattered throughout the darker, brownish matrix. These patches are identified as late hydrothermal quartz. Smaller, dark, angular grains are also visible, identified as pyrite. The overall appearance is highly heterogeneous and indicative of intense alteration.

Pyrite , late
patchy
h'thermal
quartz

microscope view

Fracture-located qtz vein with py



microscope view

**Miarolitic gas cavity in altered porphyry
now filled with radial biotite-chlorite**



microscope view

CONCEPTUAL MODEL

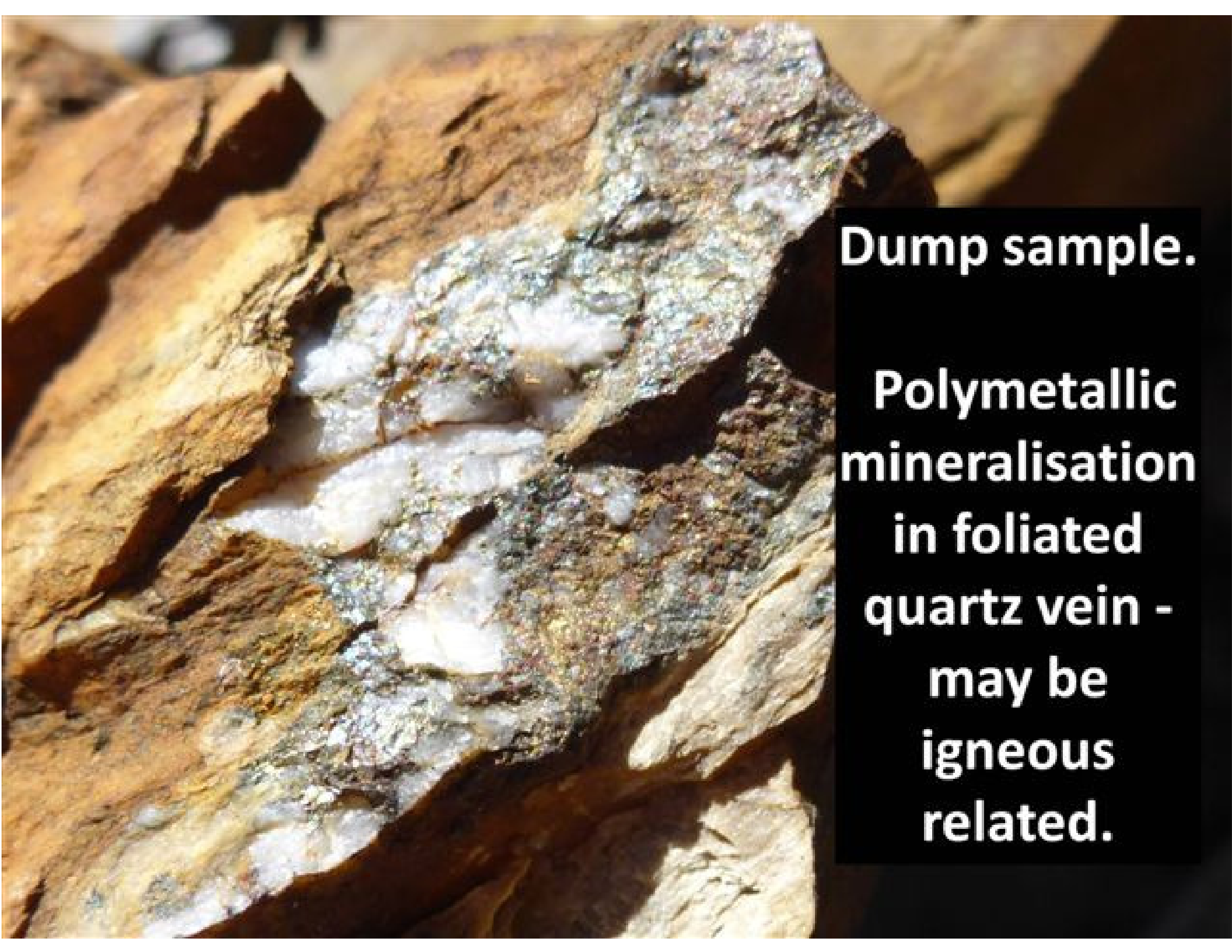
- Ordovician metasediments are faulted, silicified, brittle-fractured.
- Hydrothermal system is defined by multiple veining and brecciation events.
- Significant Au, Ag, apy, py, and base metal sulphides suggests IRS.
- A variety of S-type, and later I-type fractionated intrusive bodies are present.
- High level, altered, veined, mineralised porphyry suggests proximal igneous source.

MYALLA PROSPECT

- Inlier of deformed Ordovician metasediments
- Small historic mine
- 11 historical DDH, significant base metals and gold –
- Au up to 21 g/t
- Alt plans two DDH (500m)



Ordovician metasediments are strongly foliated and multiply deformed



Dump sample.

**Polymetallic
mineralisation
in foliated
quartz vein -
may be
igneous
related.**

