

CHLORITOID

Chemical formula: $(\text{Fe}^{2+}, \text{Mg}, \text{Mn})\text{Al}_2[\text{O}(\text{OH})_2](\text{SiO}_4)$

Crystal system: monoclinic or triclinic

Color in thin section: distinctly pleochroic with:

X = green, gray-green

Y = bluish gray, indigo, blue-green

Z = colorless, yellow, pale green

Form: thin to thick foliated plates, pseudo-hexagonal tabular crystals, often twinned

Cleavage: perfect on {010}, good on {110}

Indices of refraction: $n_\alpha = 1.705 - 1.730$ $n_\beta = 1.708 - 1.734$ $n_\gamma = 1.712 - 1.740$

Birefringence: 0.005 – 0.022 (usually 0.010 – 0.012)

Optic sign: biaxial positive (monoclinic), exceptionally biaxial negative (triclinic)

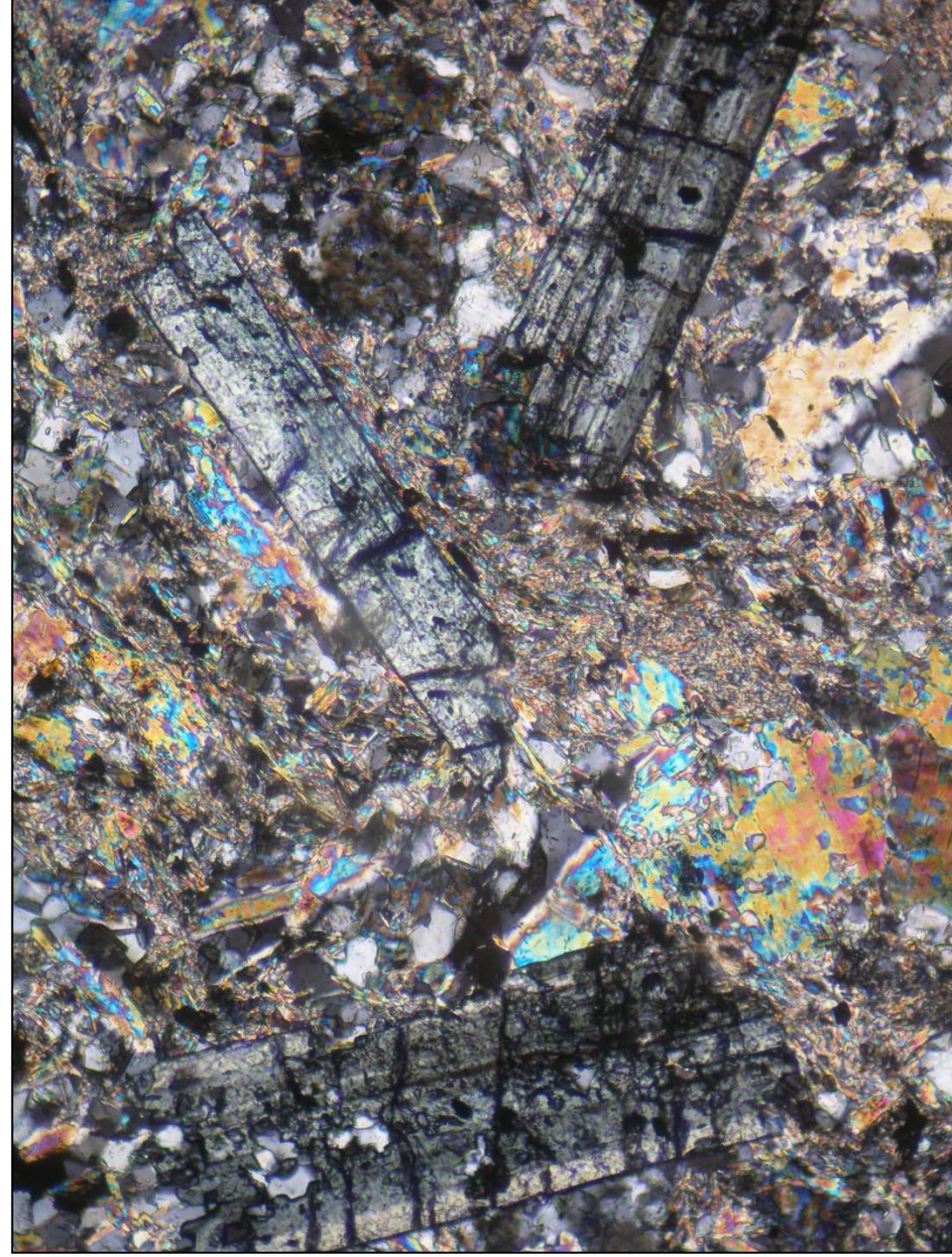
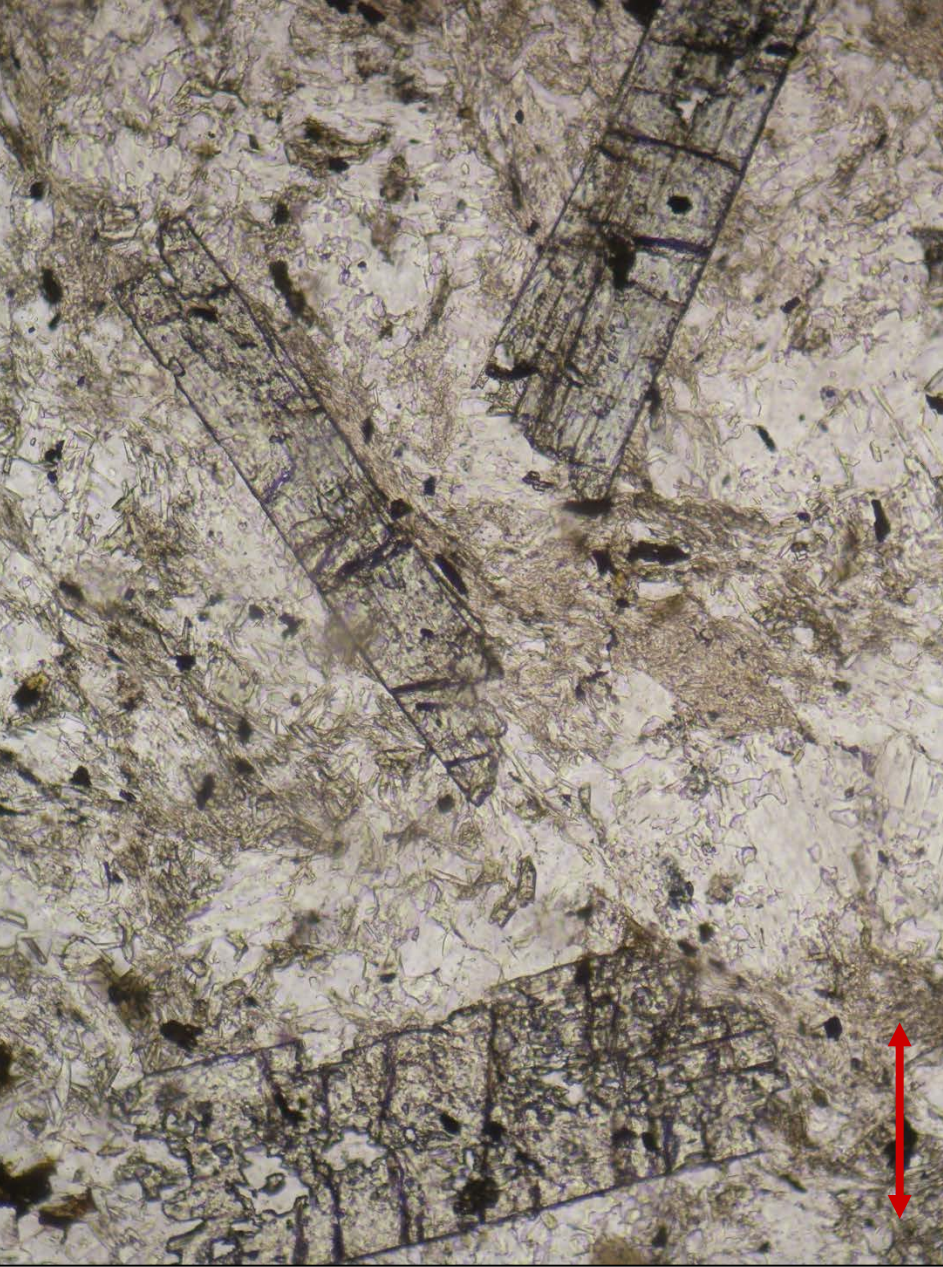
Sign of elongation: negative

Alteration: may be altered to fine-grained muscovite (sericite) or chlorite

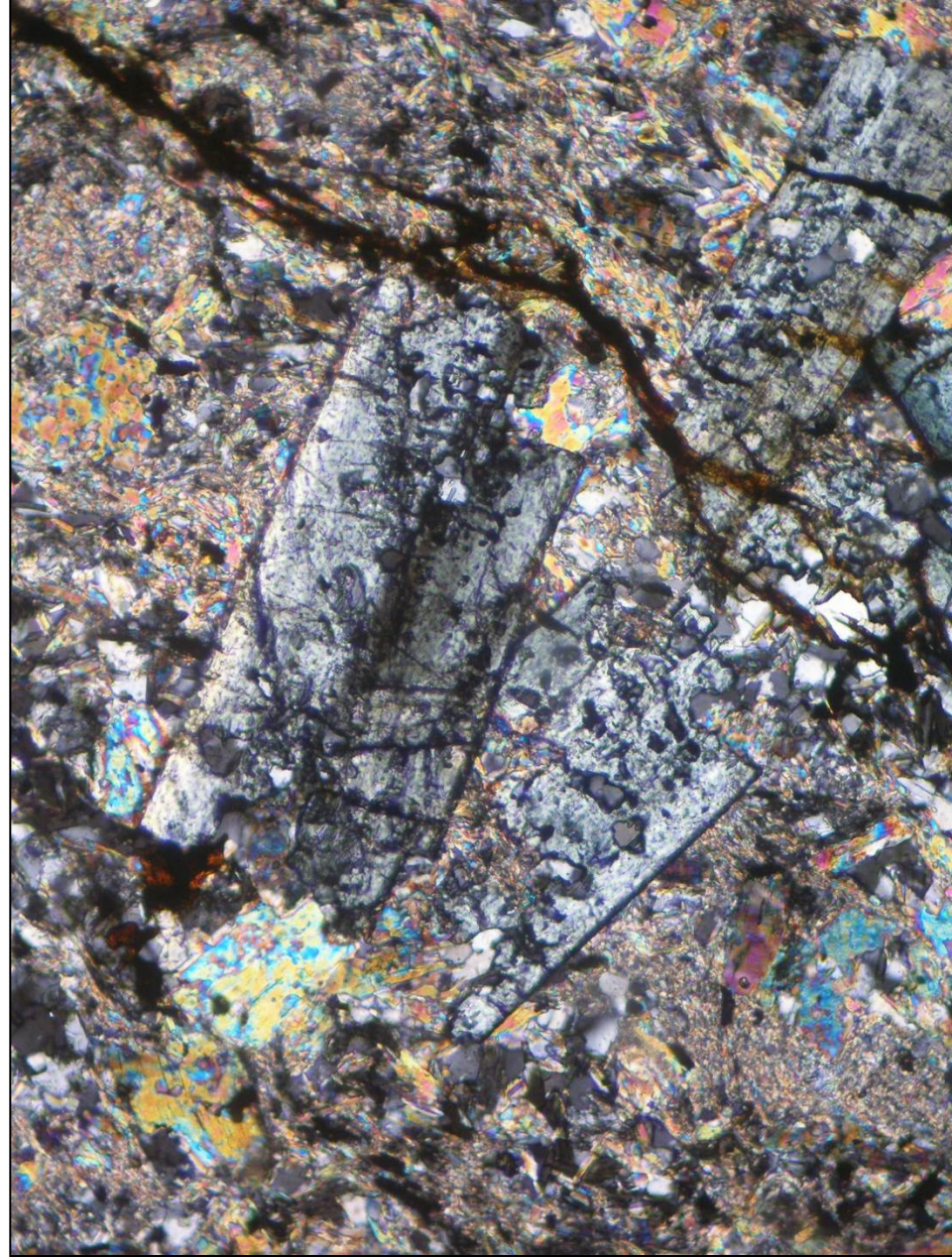
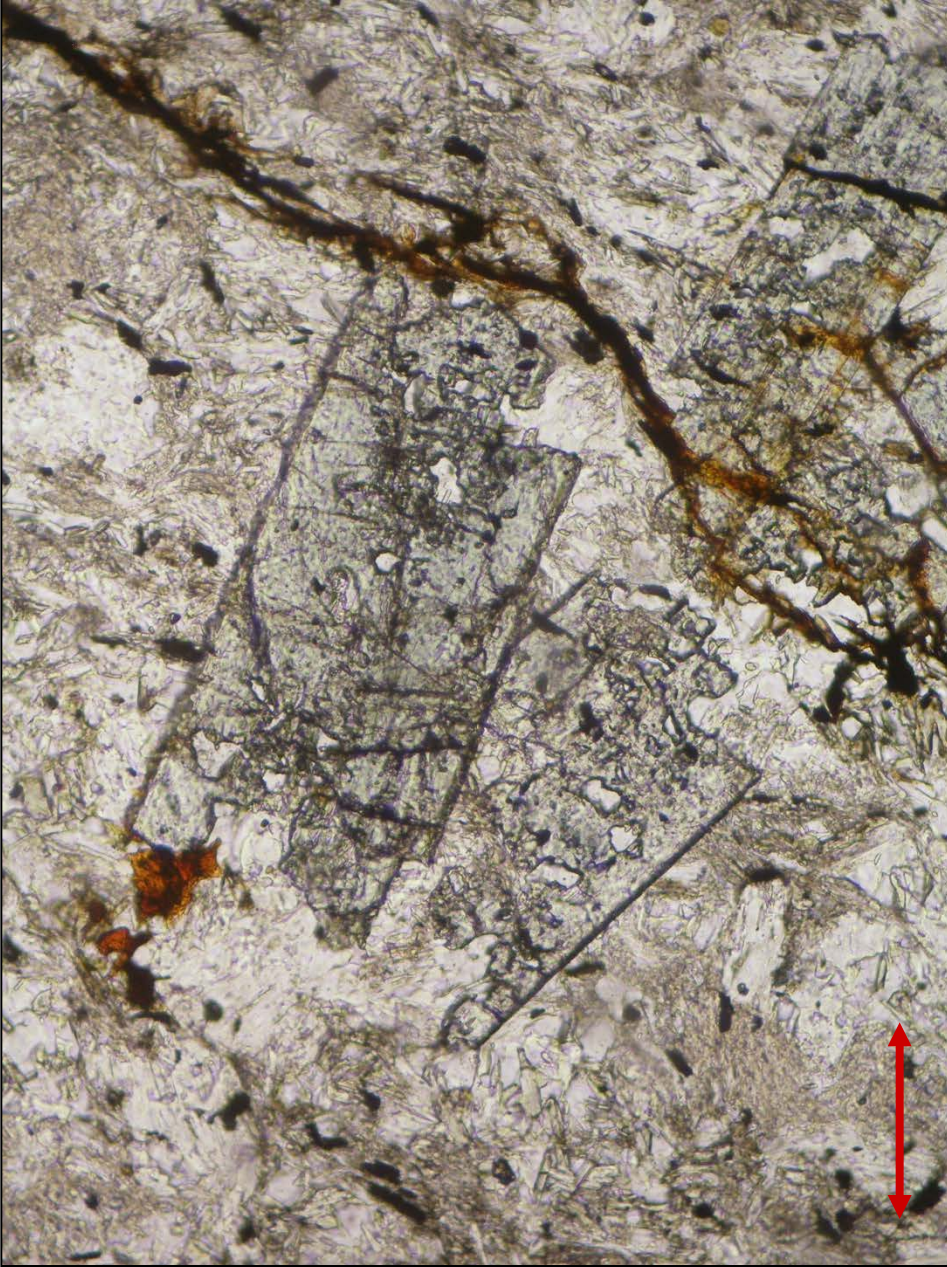
Occurrence: phyllite, mica schist, glaucophane schist, quartzite

Similar minerals in thin sections: chlorite (lower indices of refraction, usually parallel or near-parallel extinction), biotite (higher birefringence), stilpnomelane (higher birefringence)

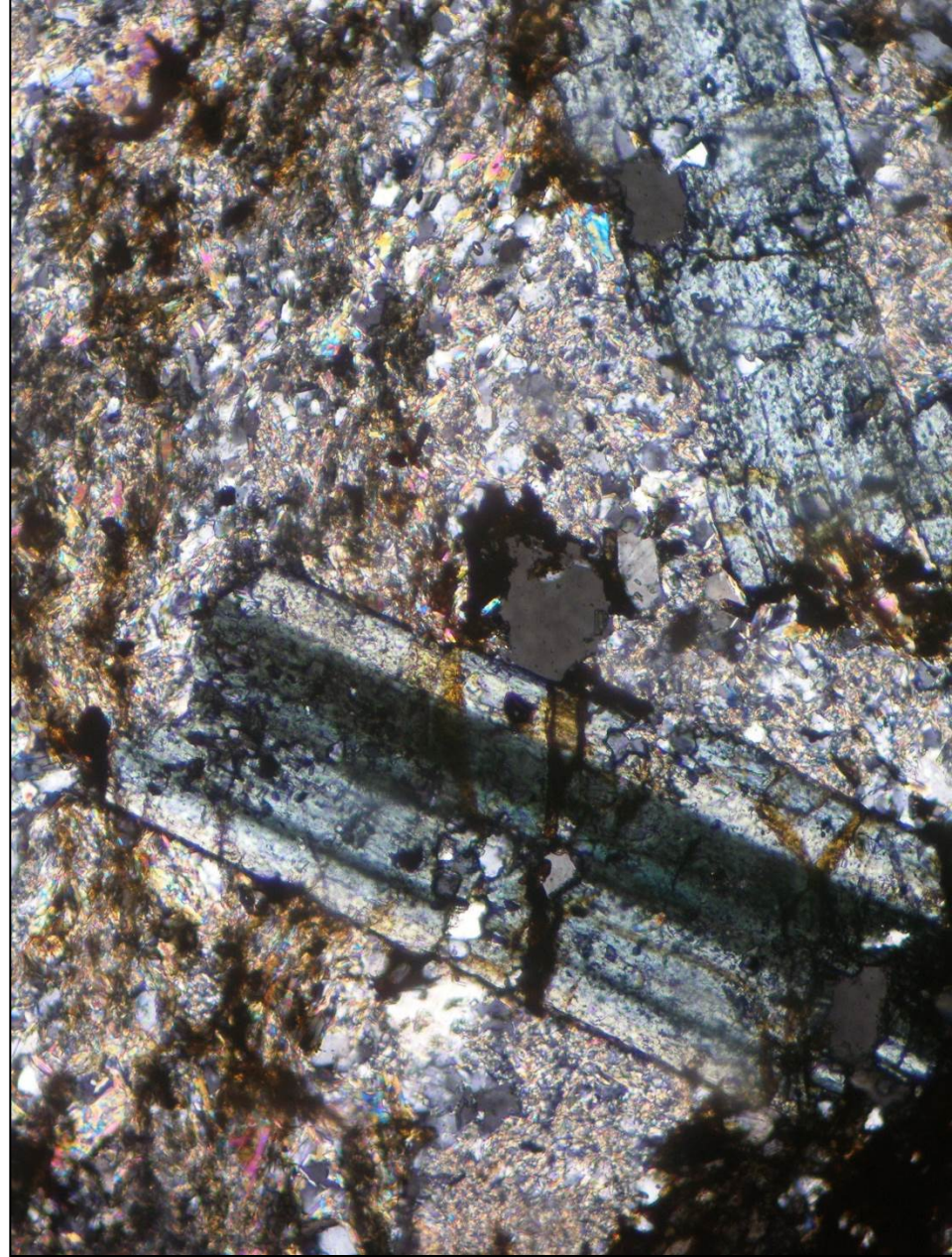
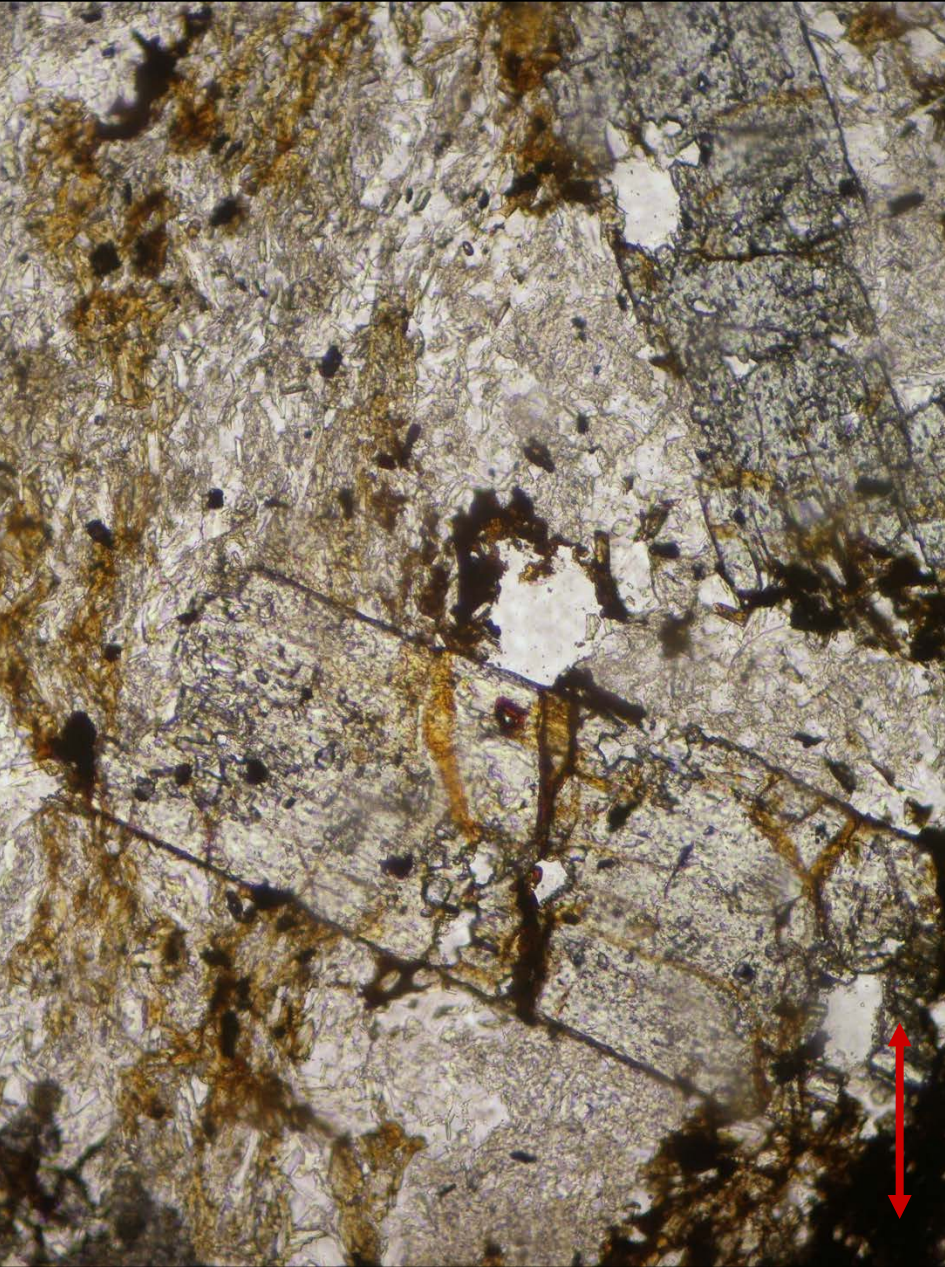
Note: interference colors are commonly anomalous



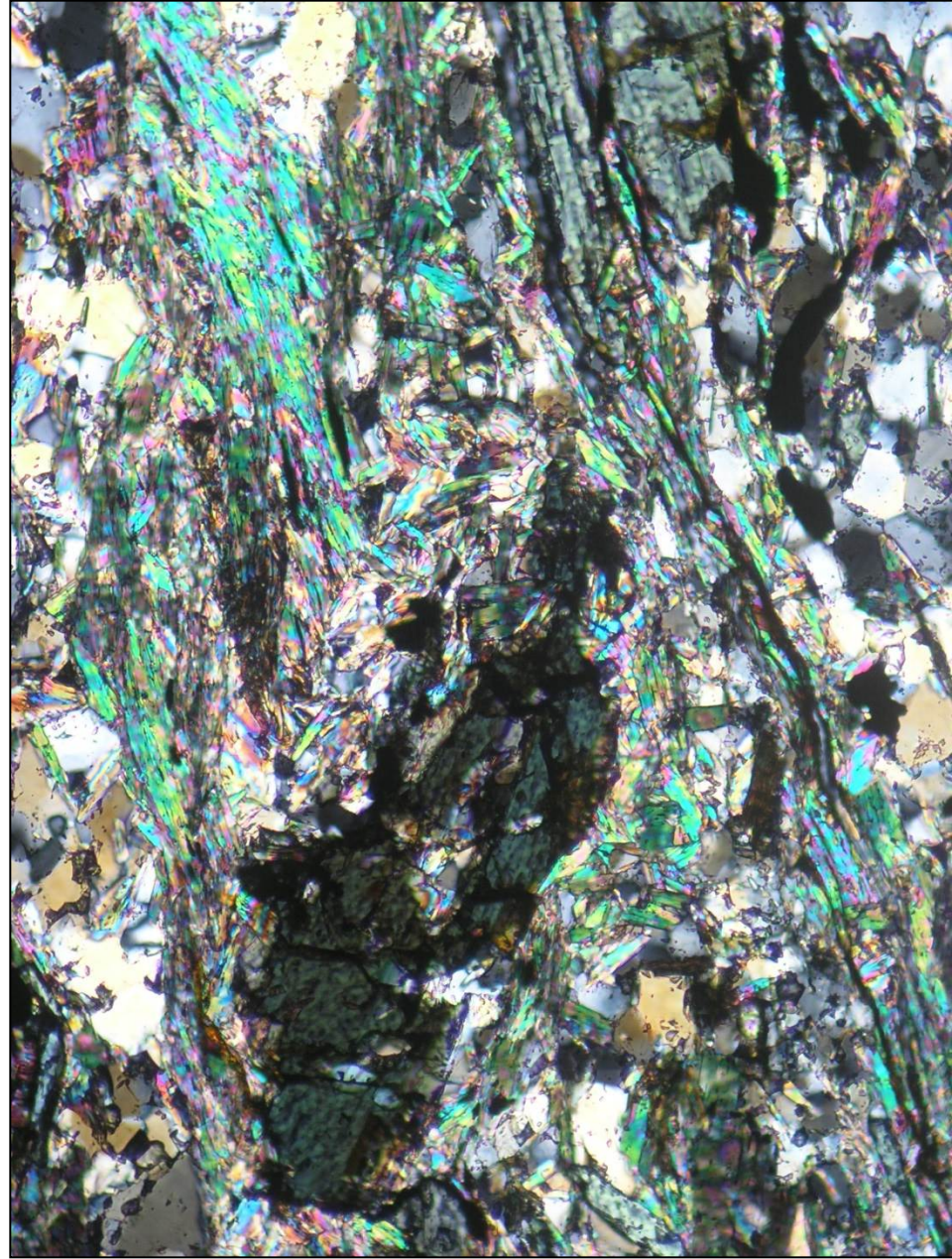
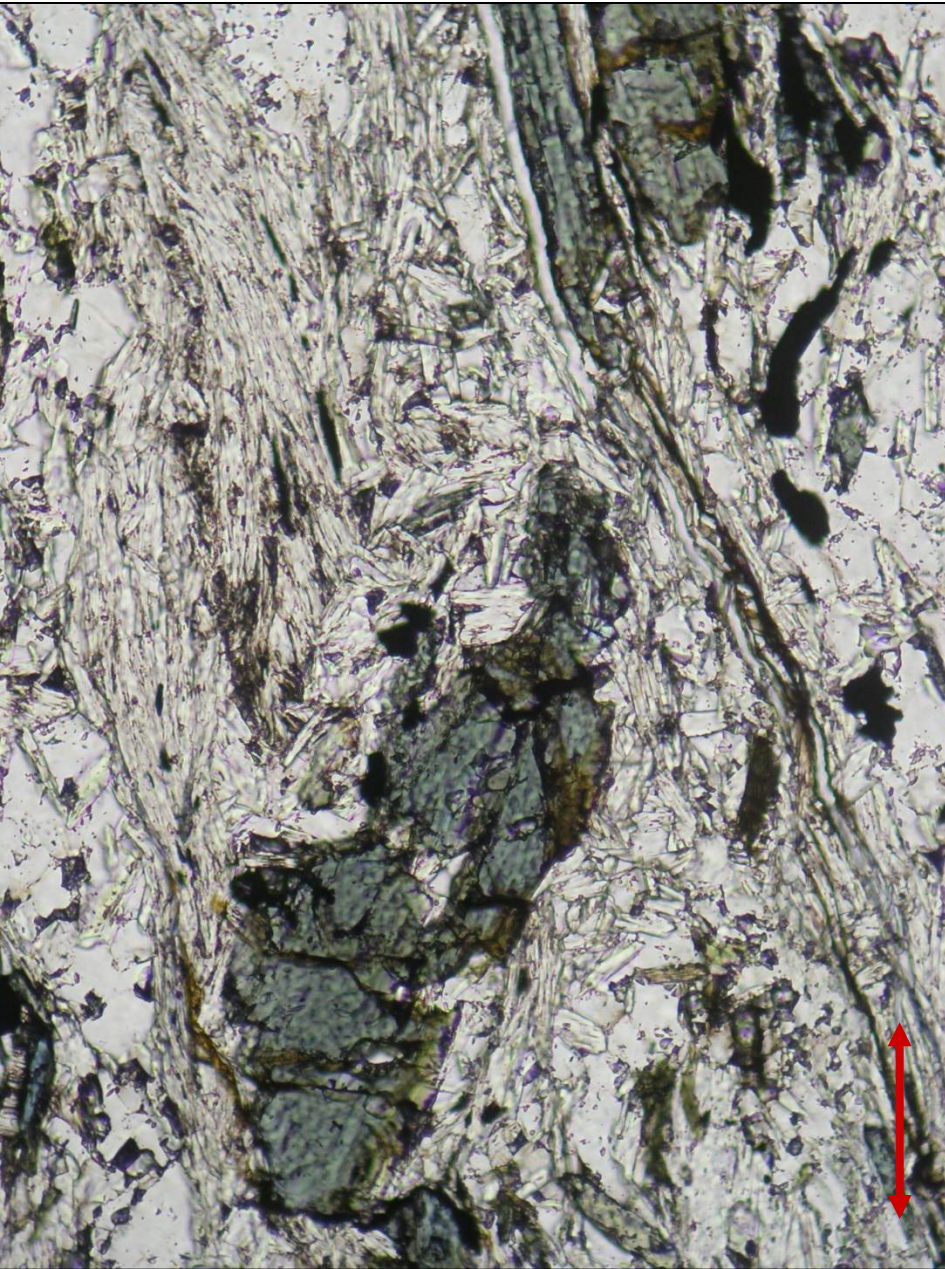
Chloritoid in phyllite from the Železné hory Mts., the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.0 mm. Photo: JiZi.



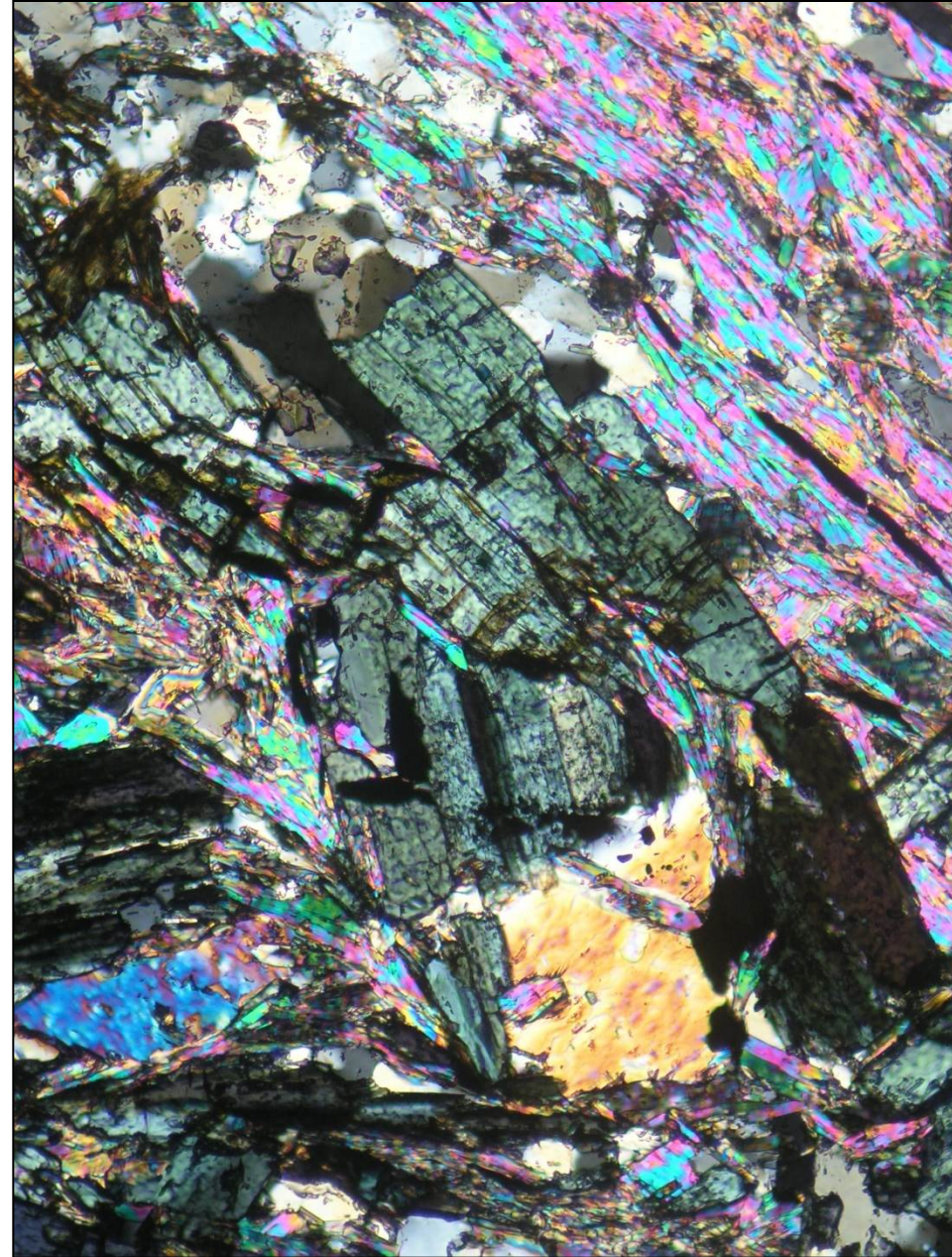
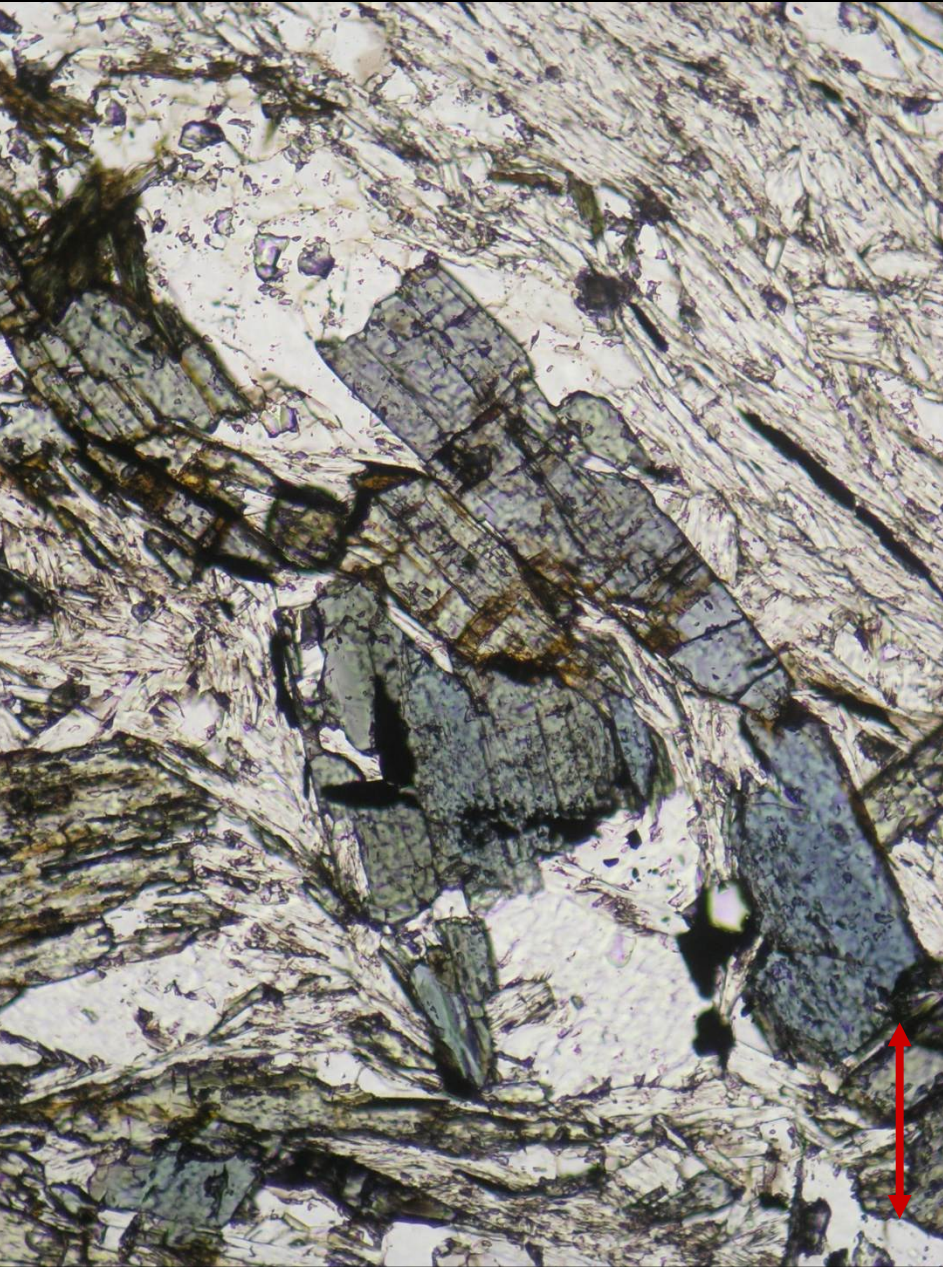
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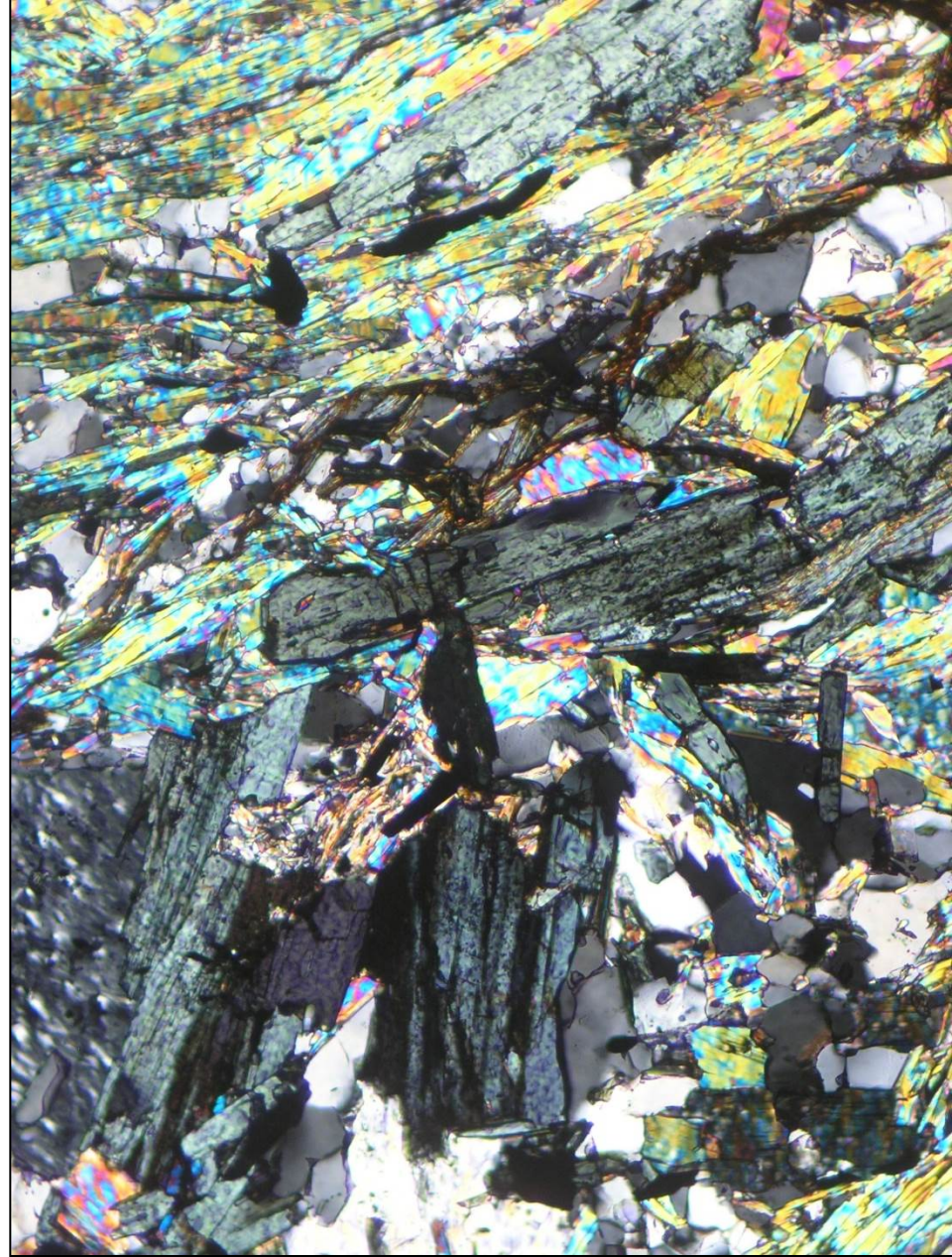
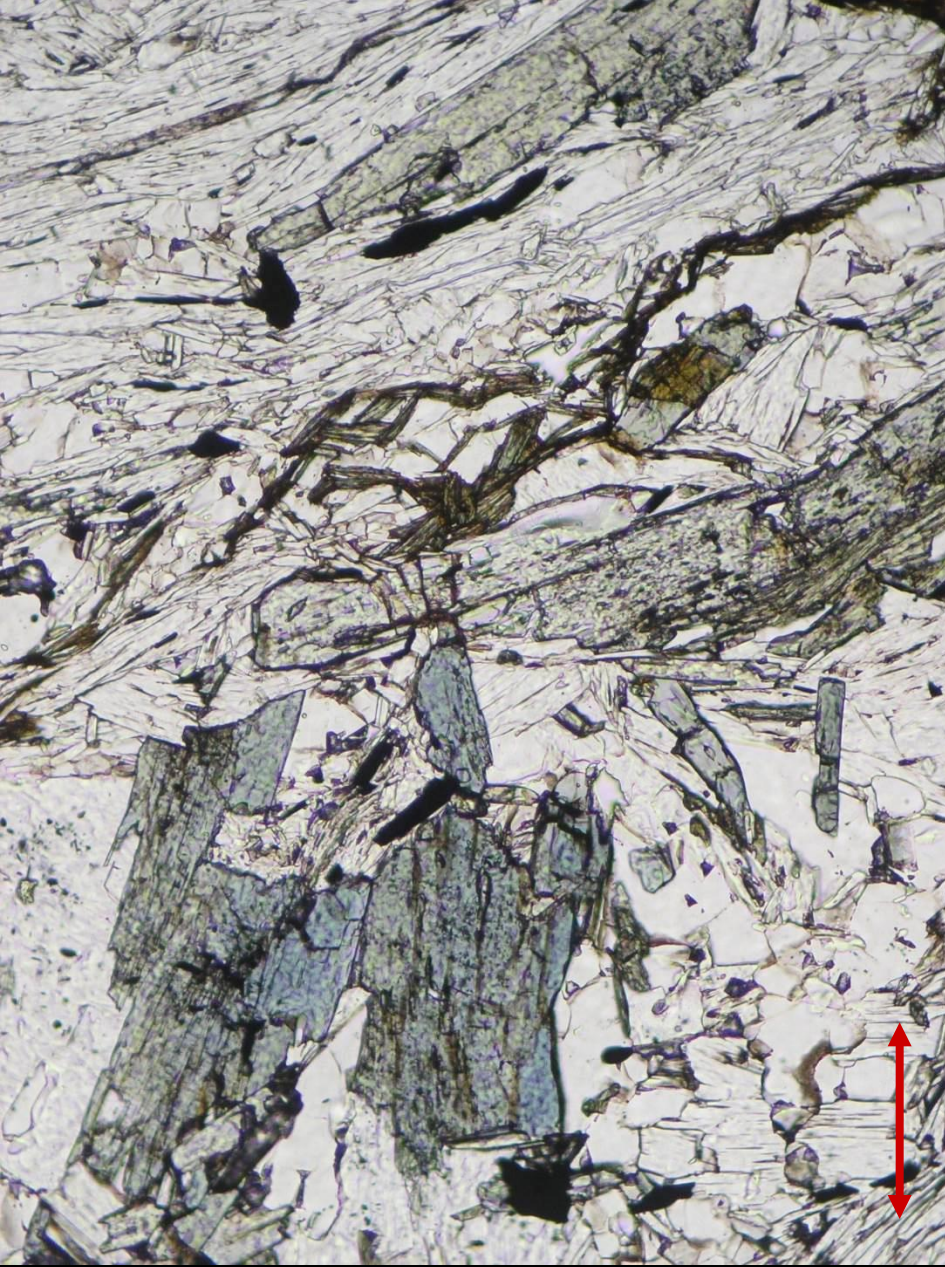
Chloritoid in phyllite from the Železné hory Mts., the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.0 mm. Photo: JiZi.



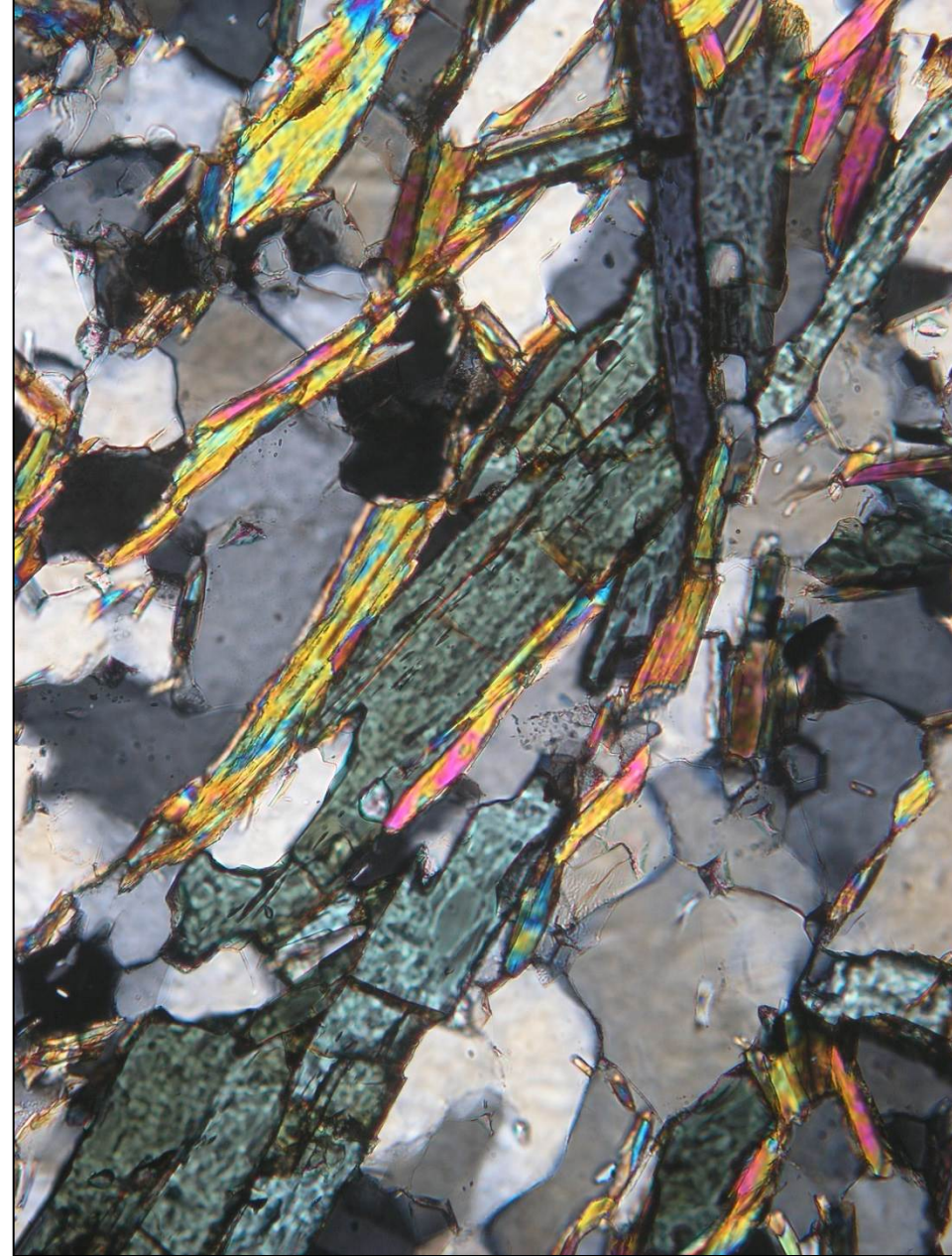
Chloritoid in phyllite Nový Malín, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.0 mm. Photo: JiZi.



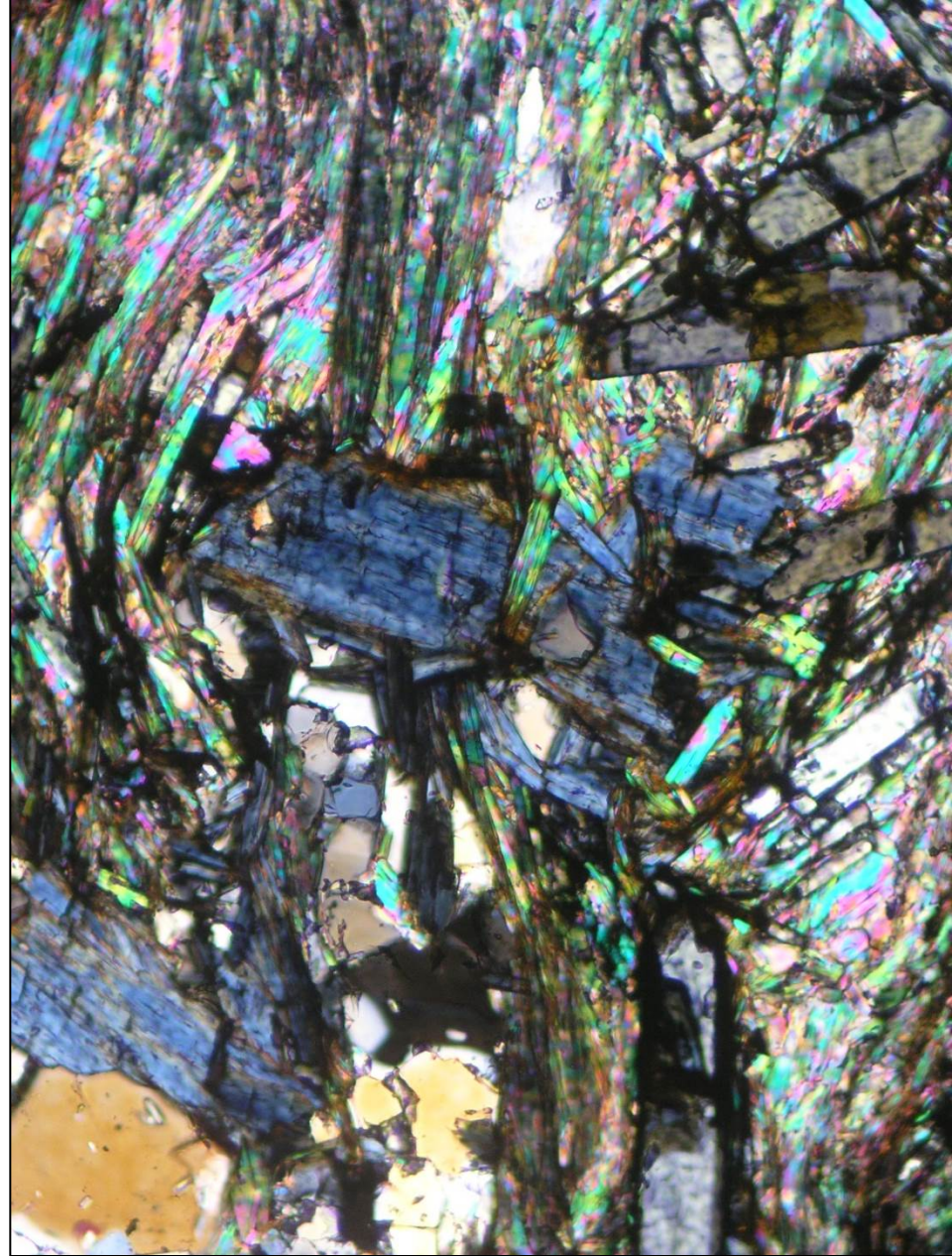
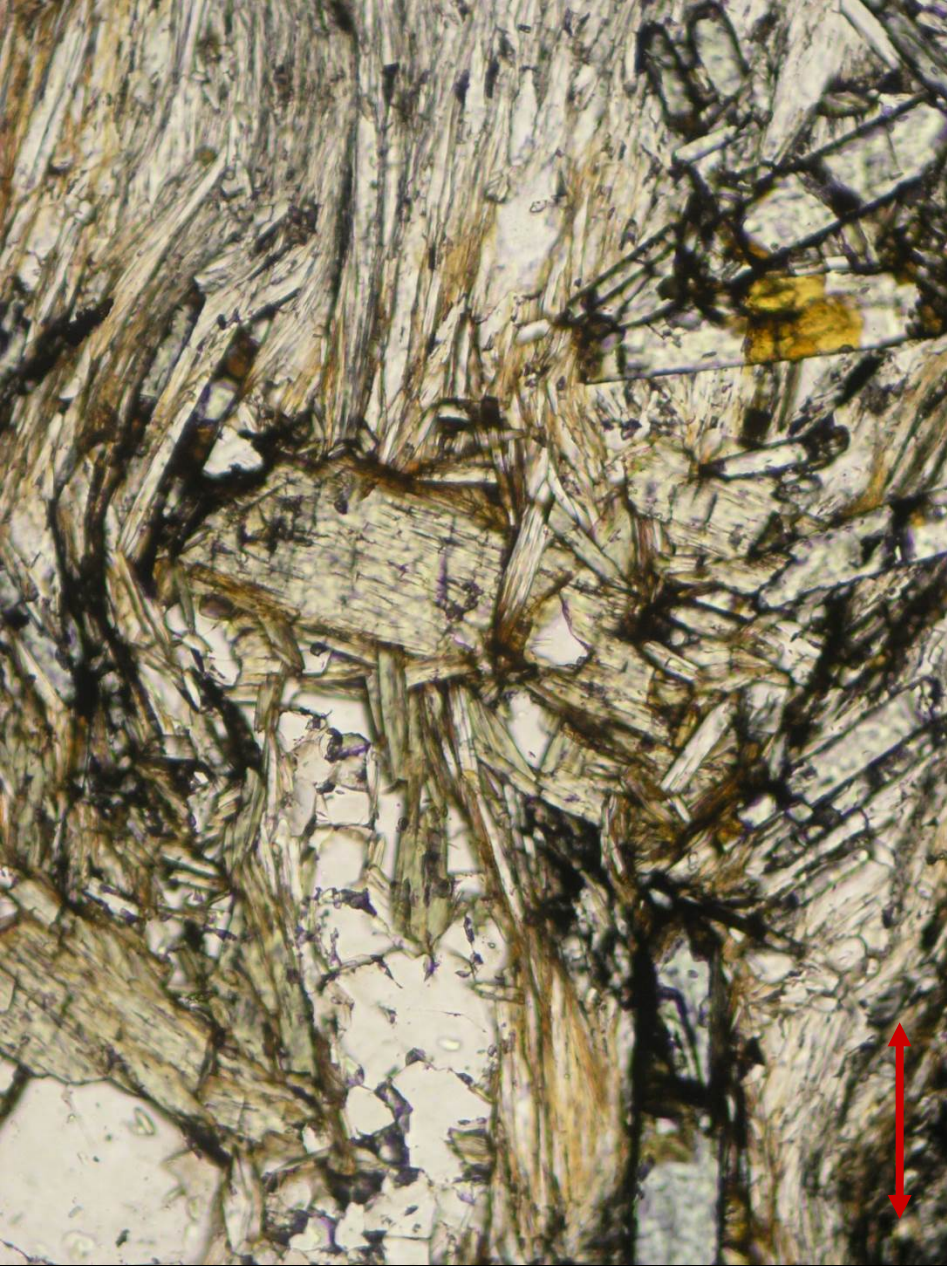
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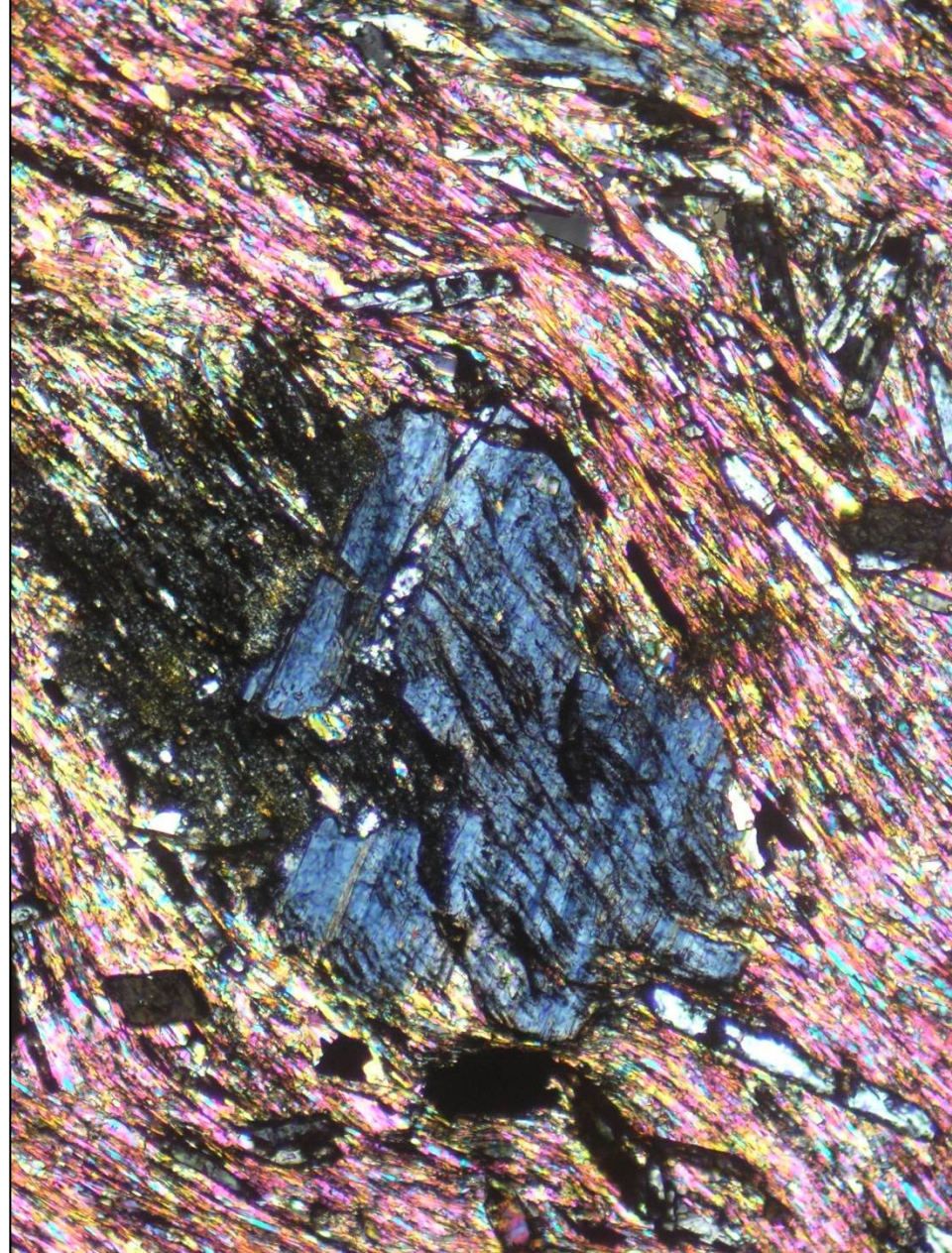
Chloritoid in phyllite Nový Malín, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.0 mm. Photo: JiZi.



Chloritoid in phyllite from Nový Malín, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.4 mm. Photo: JiZi.



Chloritoid in phyllite from Nový Malín, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.0 mm. Photo: JiZi.



Chloritoid in phyllite from Nový Malín, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.0 mm. Photo: JiZi.