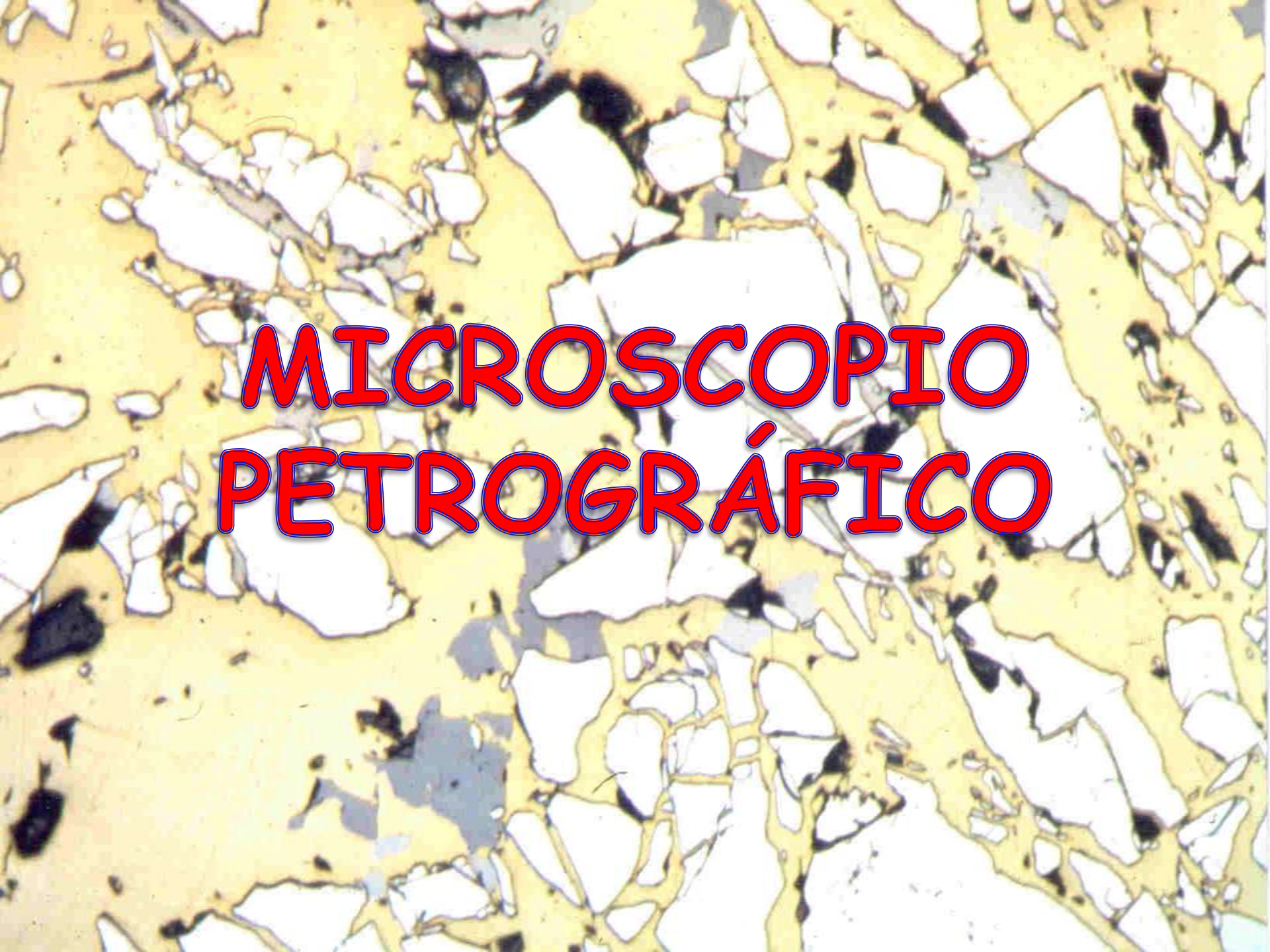
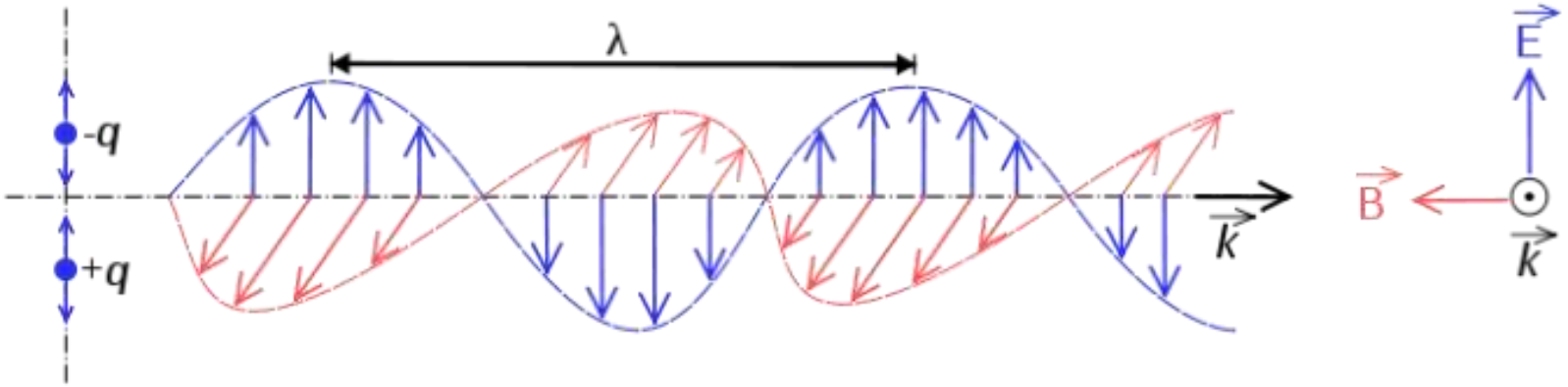
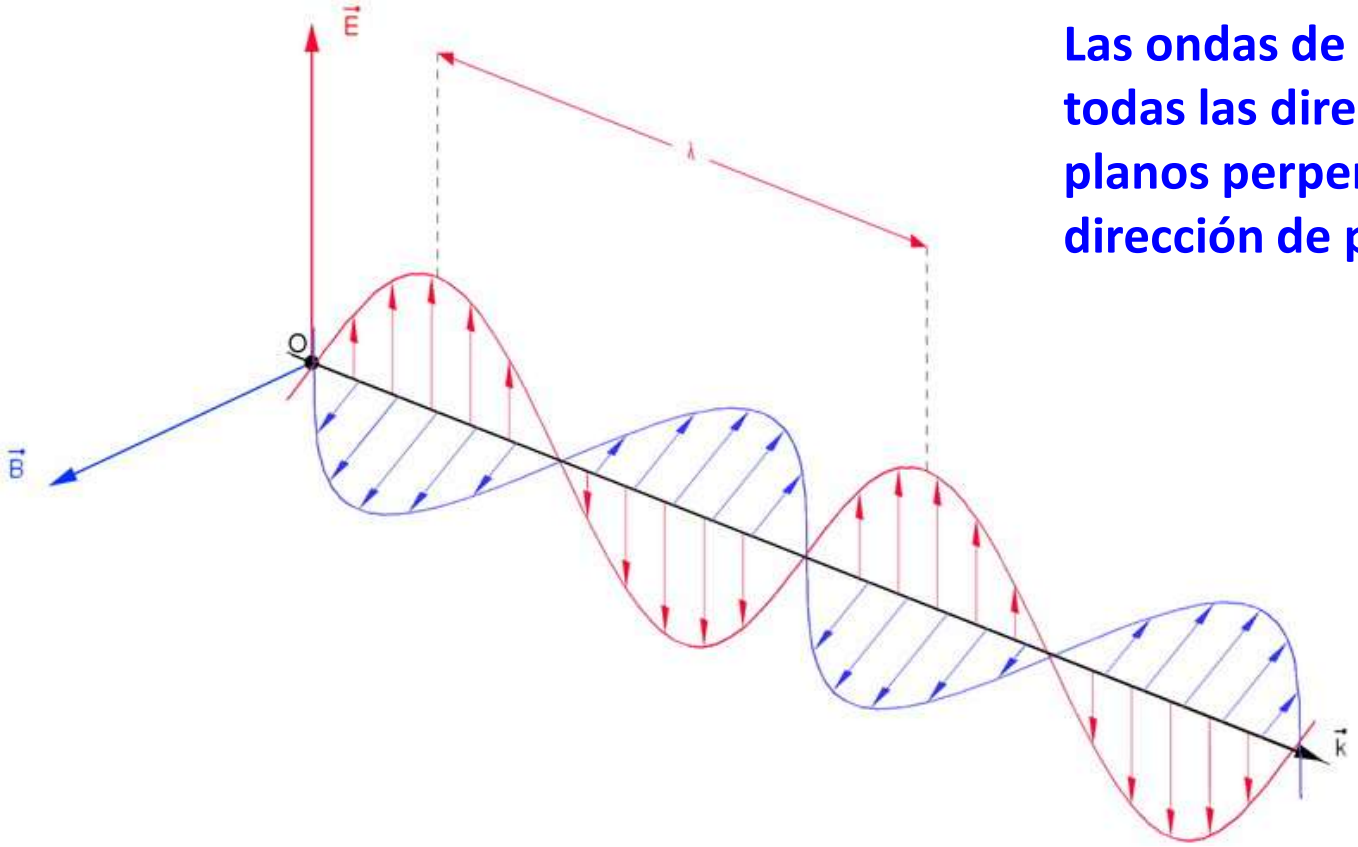

MICROSCOPIO
PETROGRÁFICO

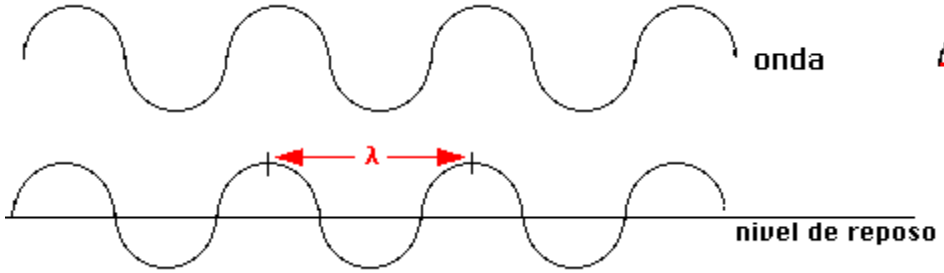
PROPAGACIÓN DE LA LUZ

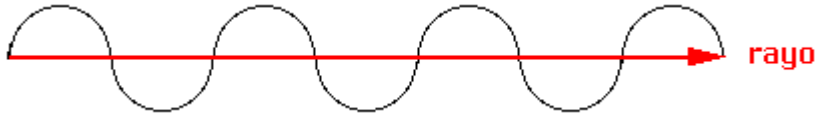


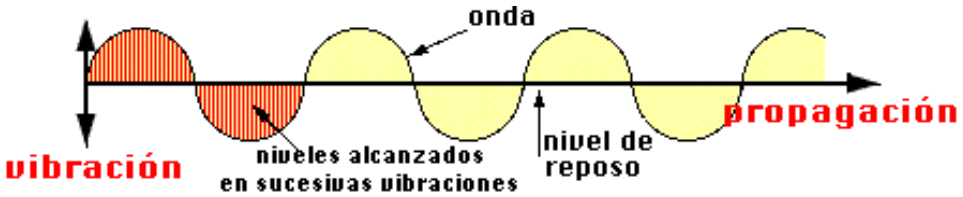


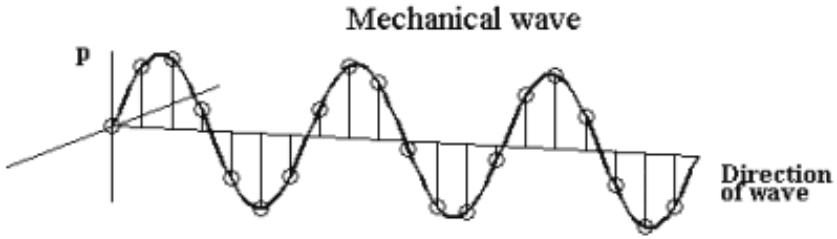
Las ondas de luz vibran en todas las direcciones en planos perpendiculares a la dirección de propagación.

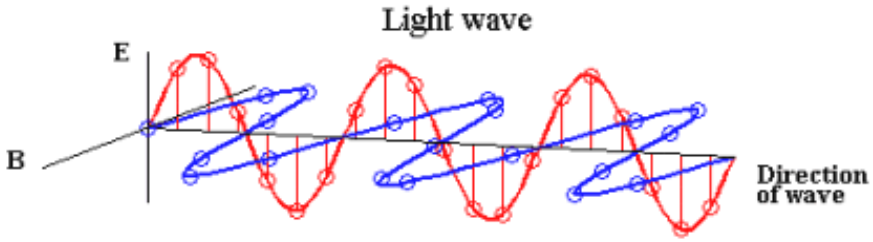
PROPAGACIÓN DE LA LUZ

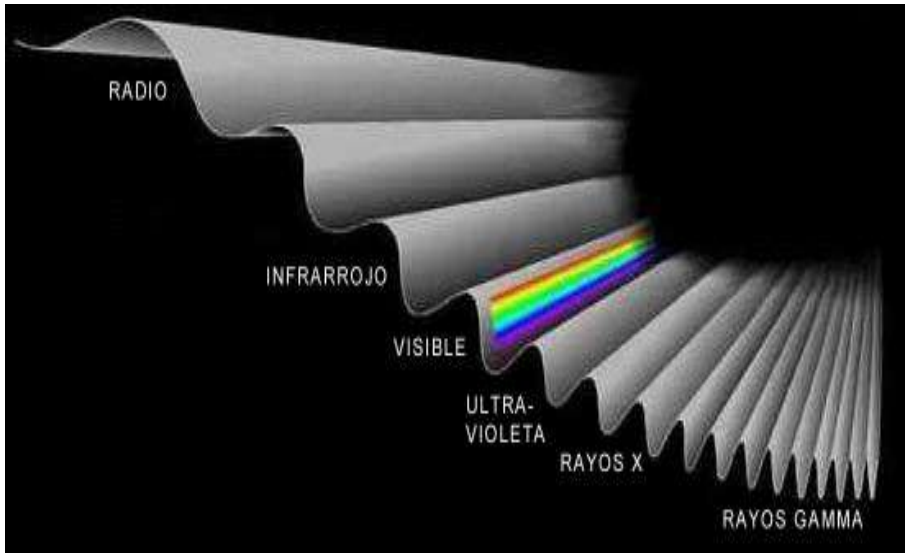




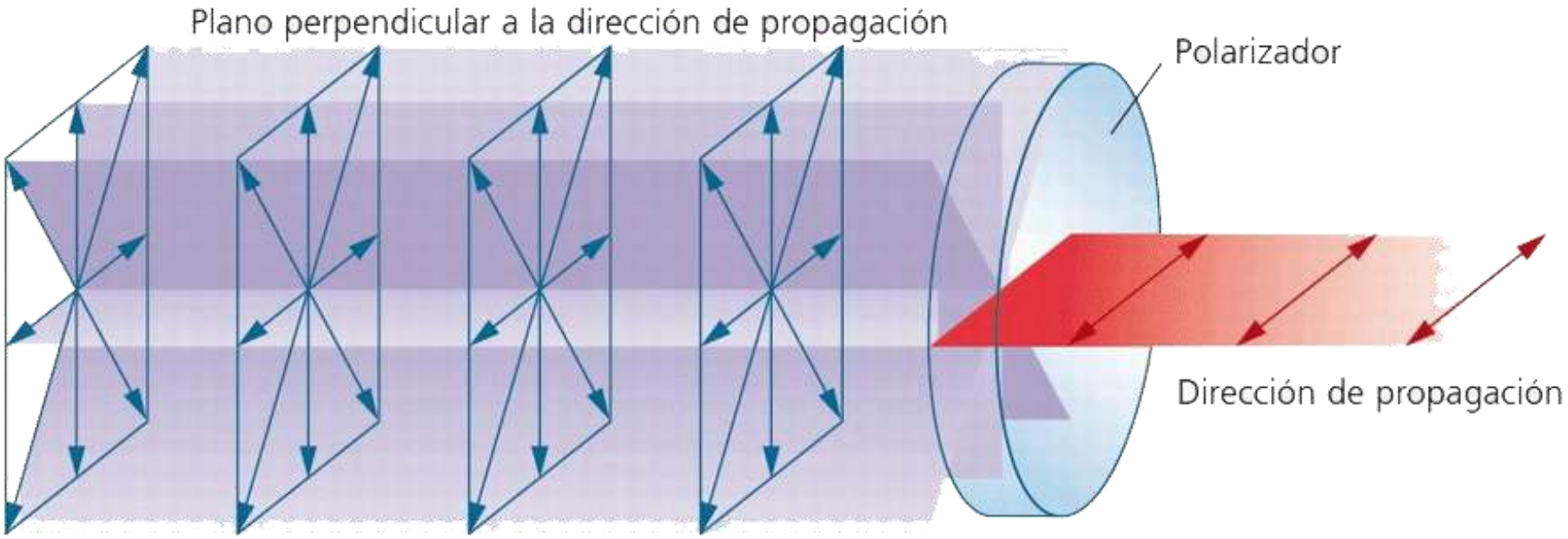


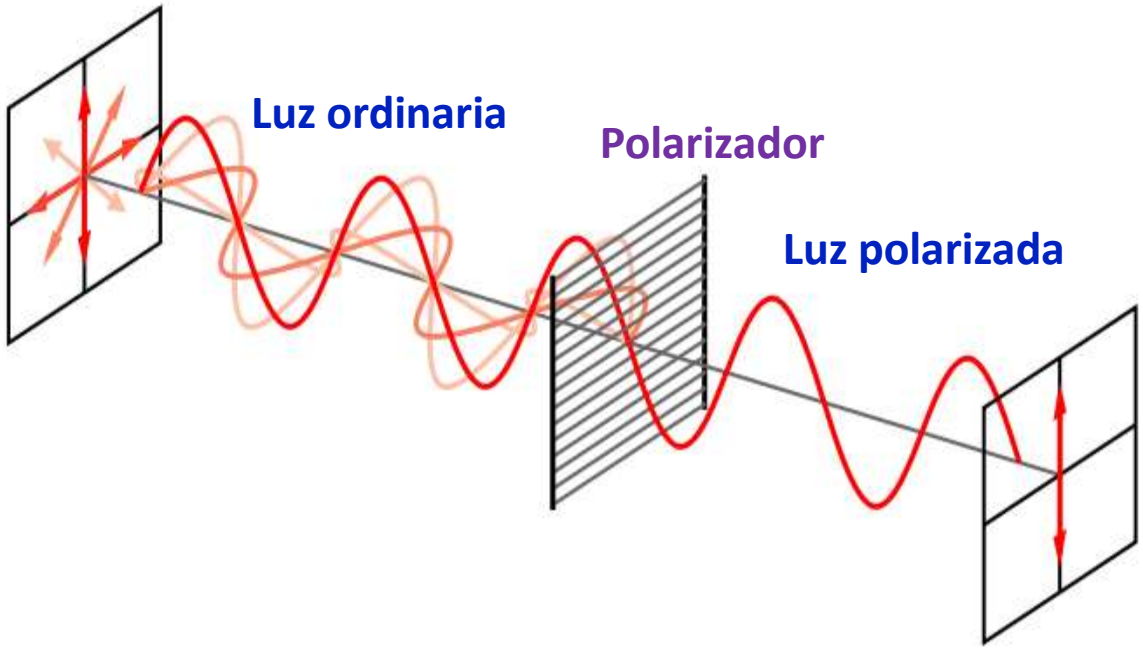


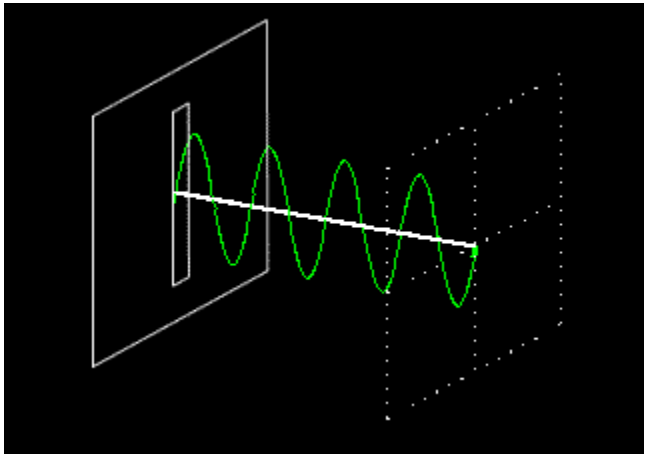




LUZ POLARIZADA







MICROSCOPIO PETROGRÁFICO

Estudiar la textura e identificar los minerales que componen una roca requiere, con frecuencia, el uso del **microscopio petrográfico** que incorpora un **sistema de polarización** de la luz.

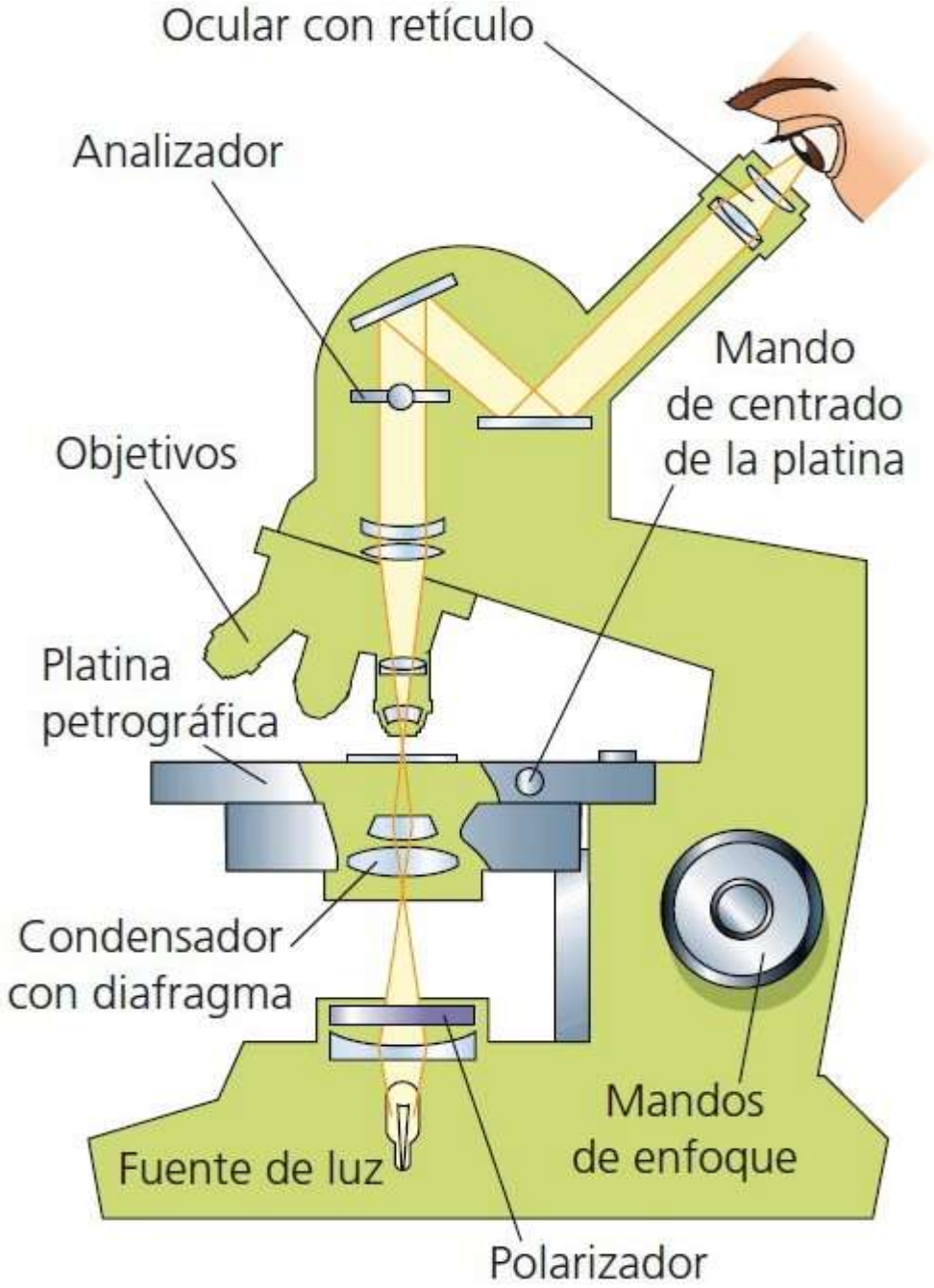
Para poder observar una roca al microscopio hay que realizar una preparación con una sección muy fina de la roca, conocida como **lámina delgada**.

Superficie de cuarcita con textura granoblástica.

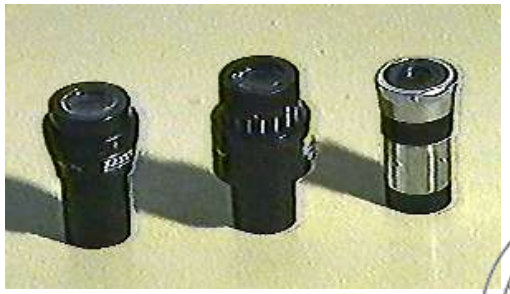
Textura granoblástica al microscopio.

Las rocas estudiadas con luz polarizada presentan unas características que reciben el nombre de propiedades ópticas.

MICROSCOPIO PETROGRÁFICO

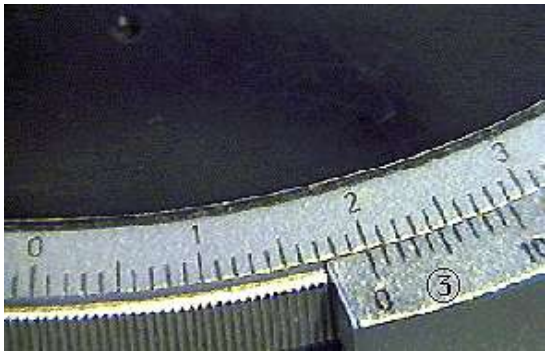


MICROSCOPIO PETROGRÁFICO

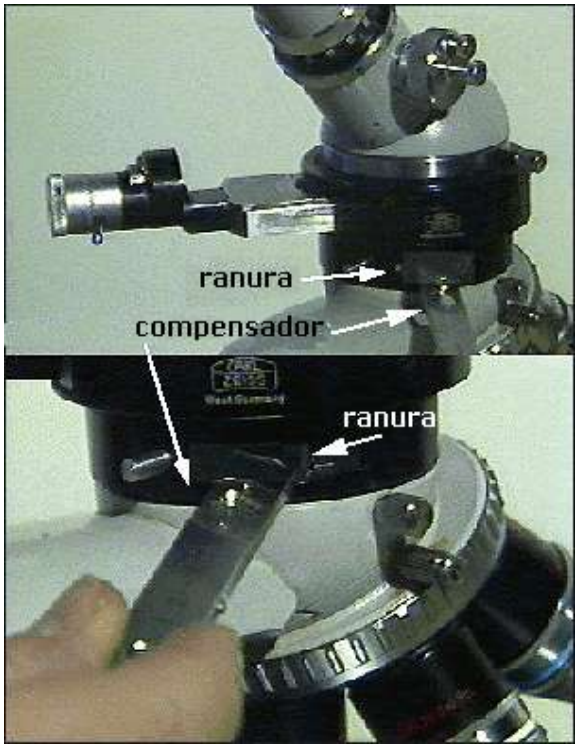


Oculares

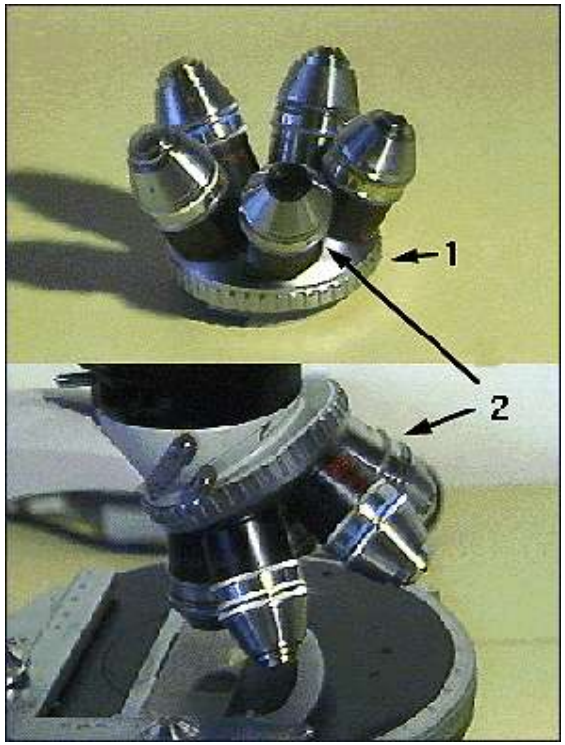
Retículo



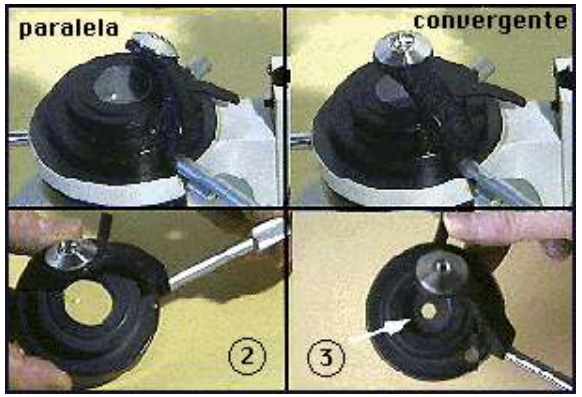
Platina



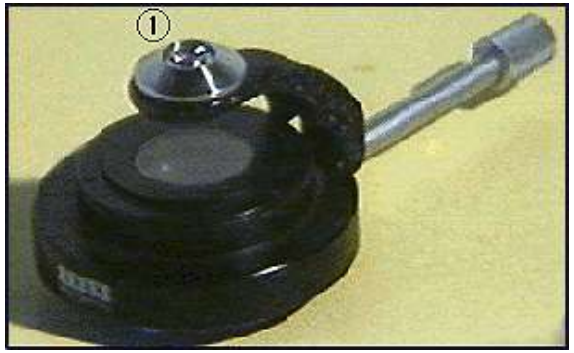
Ranura



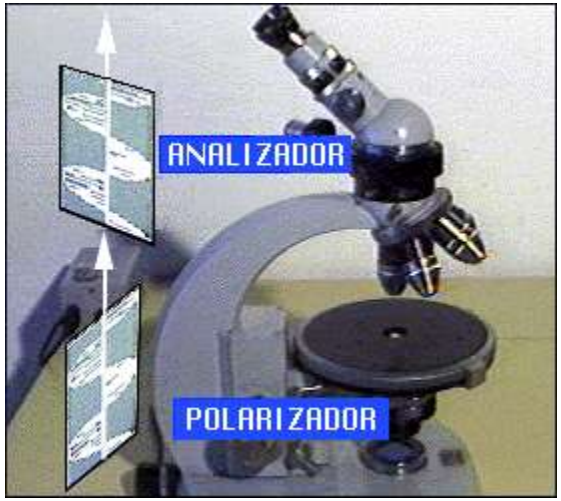
Objetivos



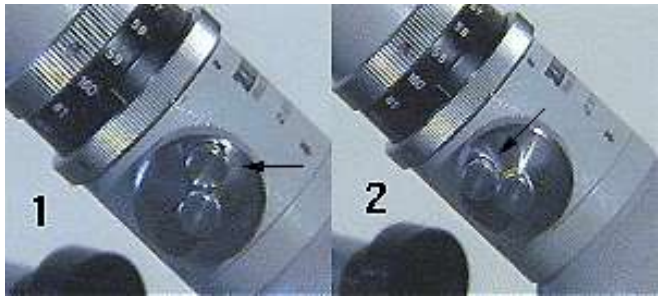
Condensador



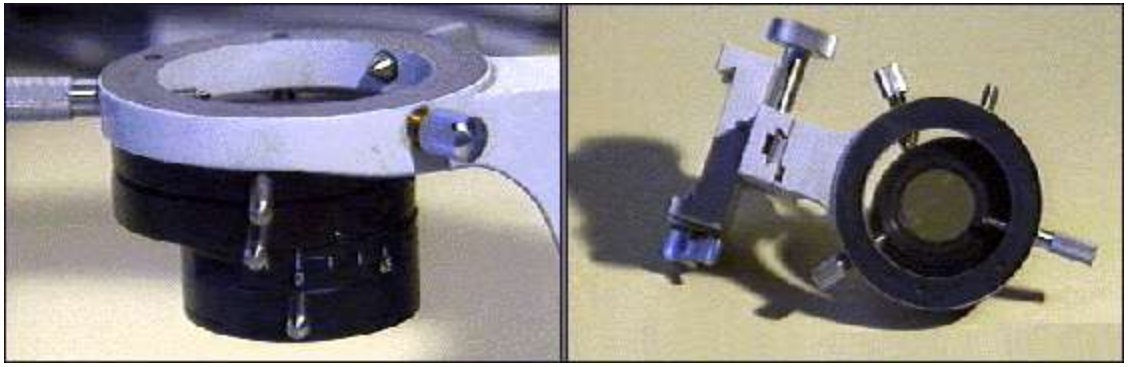
MICROSCOPIO PETROGRÁFICO



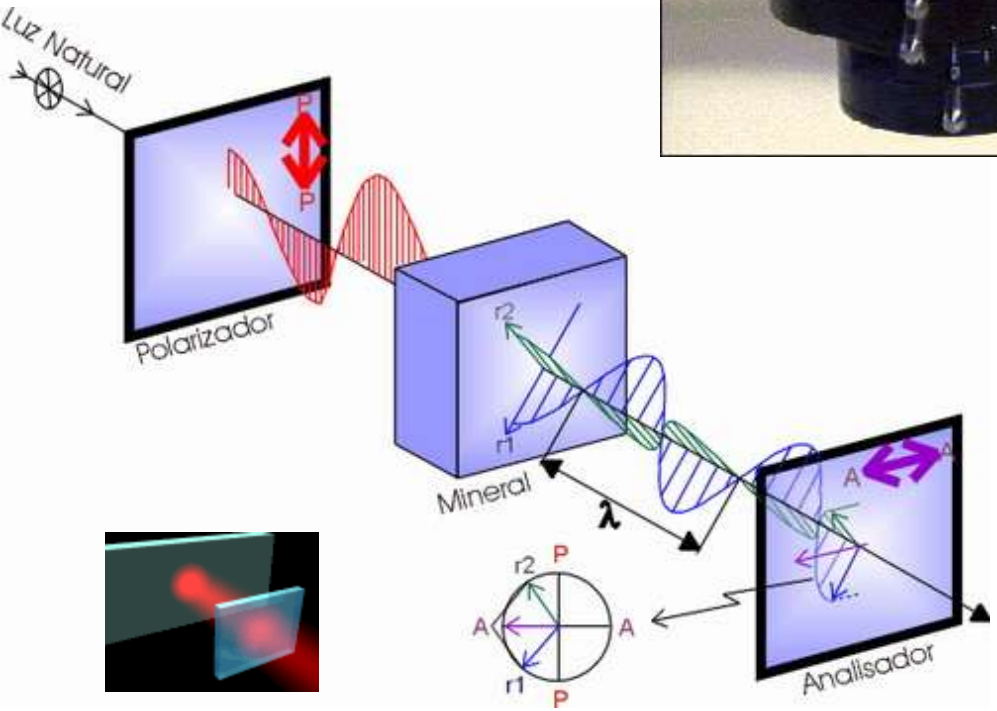
Analizador

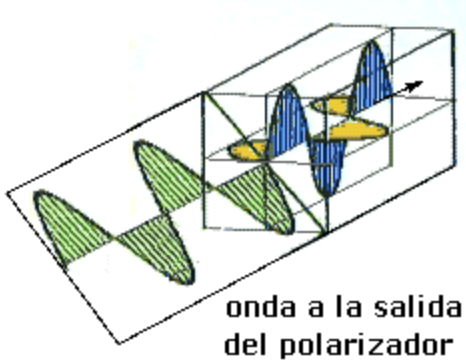


Lente de Bertrand



Polarizador

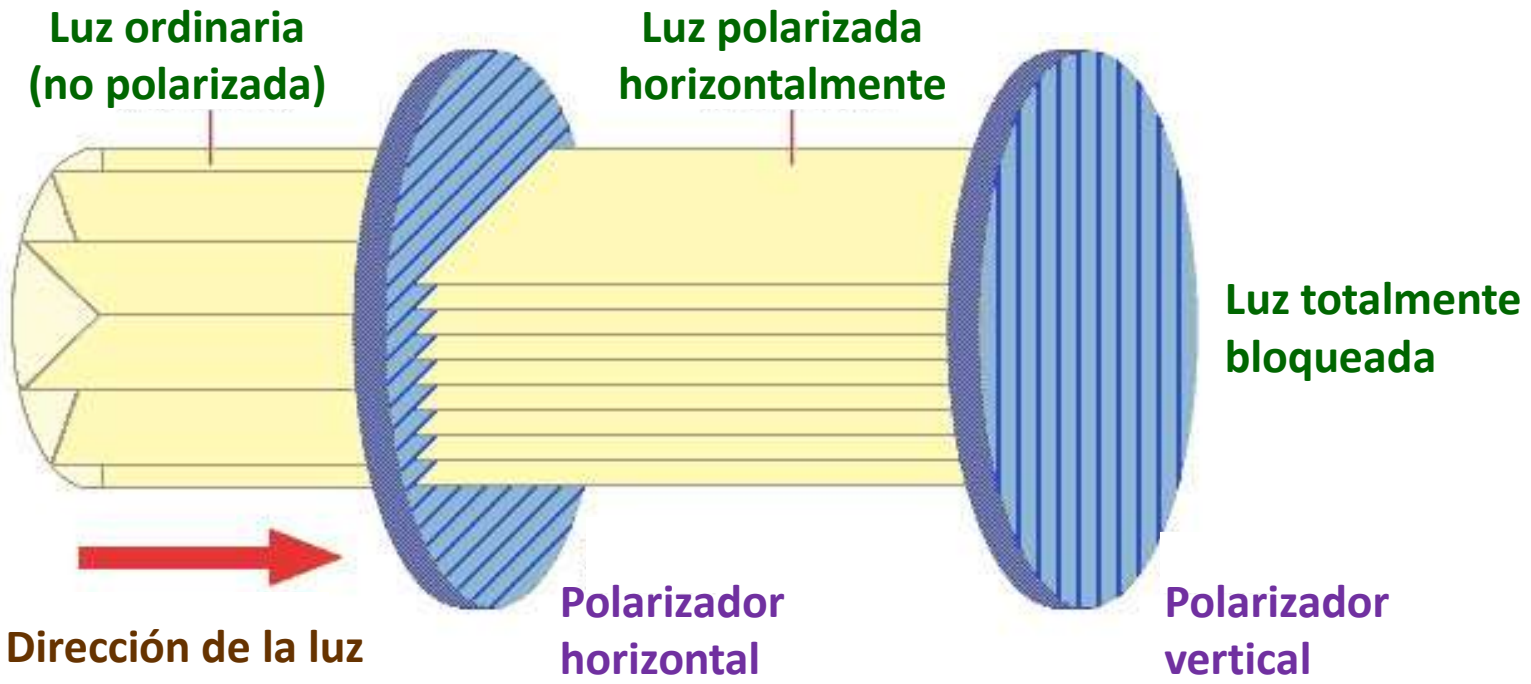


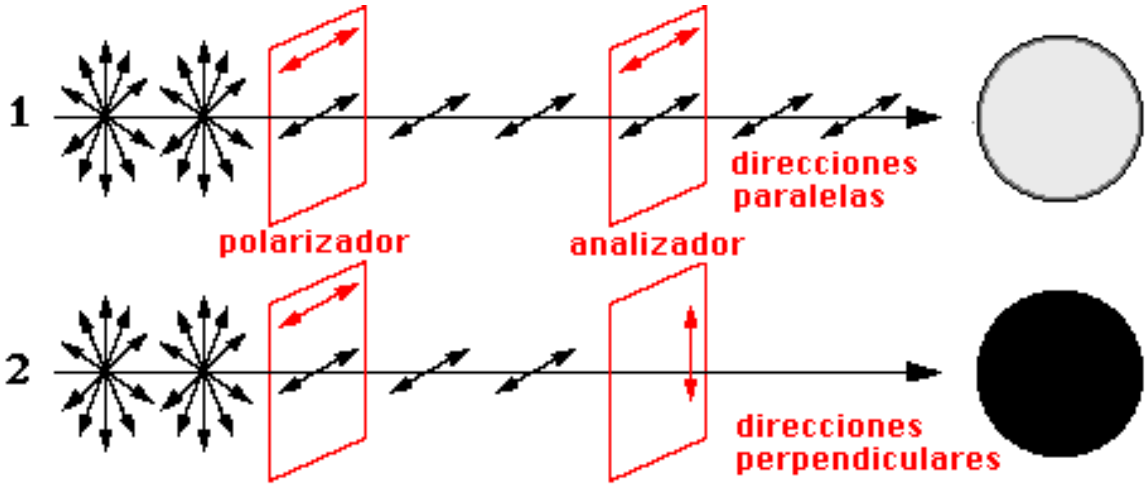


onda a la salida
del polarizador

dos ondas vibrando
en planos perpendiculares
con un mismo camino
de propagación a la salida
del cristal

MICROSCOPIO PETROGRÁFICO. POLARIZADOR Y ANALIZADOR





RECONOCIMIENTO DE MINERALES Y ROCAS

Métodos de reconocimiento de minerales y rocas

WG98/Recon01.cdr

M u e s t r a

Reconocimiento macroscopico

Los minerales más comunes

Estimación de las cantidades

Reconocimiento microscopico

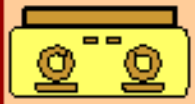
Pulido

Minerales opacos

sección transparente

Minerales transparentes: Cuarzo, Feldespatos, Piroxenos, Biotita y otros

Analisis químicos

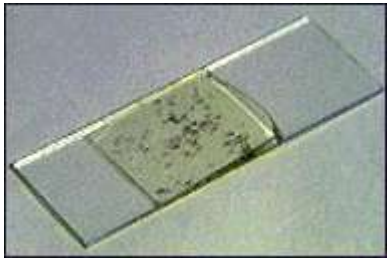


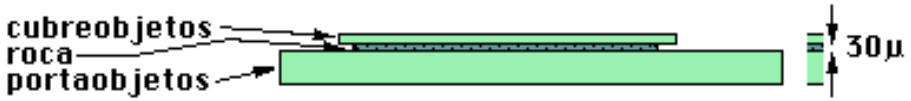
Difractometría

Listado de minerales

Fluoresciencia de rayos X

Listado cuantitativo de los elementos químicos en % o ppm (partes por millón)





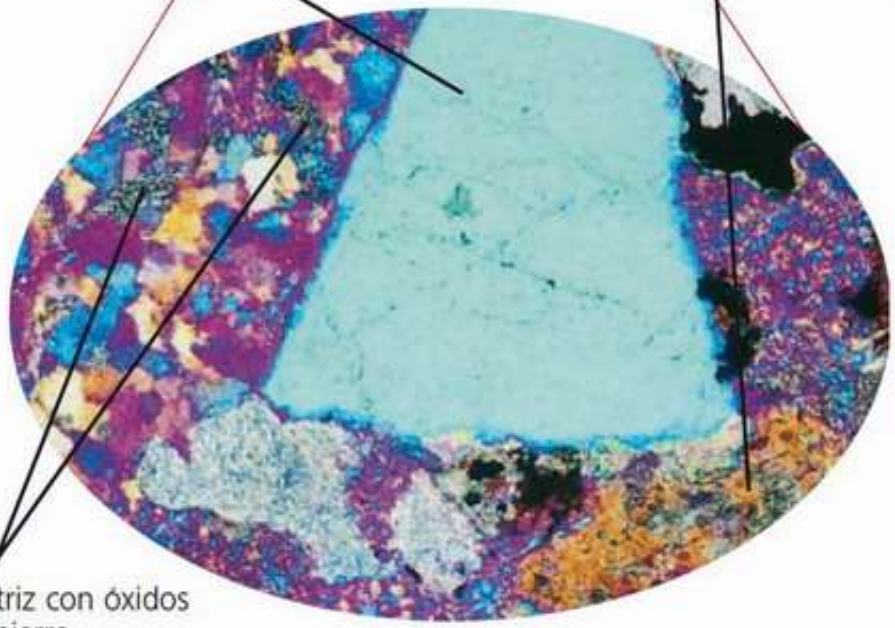
Preparación de una lámina transparente

OBSERVACIÓN DE LÁMINAS DELGADAS DE MINERALES Y ROCAS

Lámina delgada de la arcosa. Presenta clastos unidos por un cemento

Cristales de feldespato de color marrón

Cristales de cuarzo de color gris azulado



Matriz con óxidos de hierro

Lámina delgada del gabro. Todos los minerales están unidos entre sí: textura granuda

Cristales de plagioclasa grises con rayas negras

Cristales de piroxeno amarillentos

Cristales de olivino de color verde

LÁMINA DELGADA DE OLIVINO

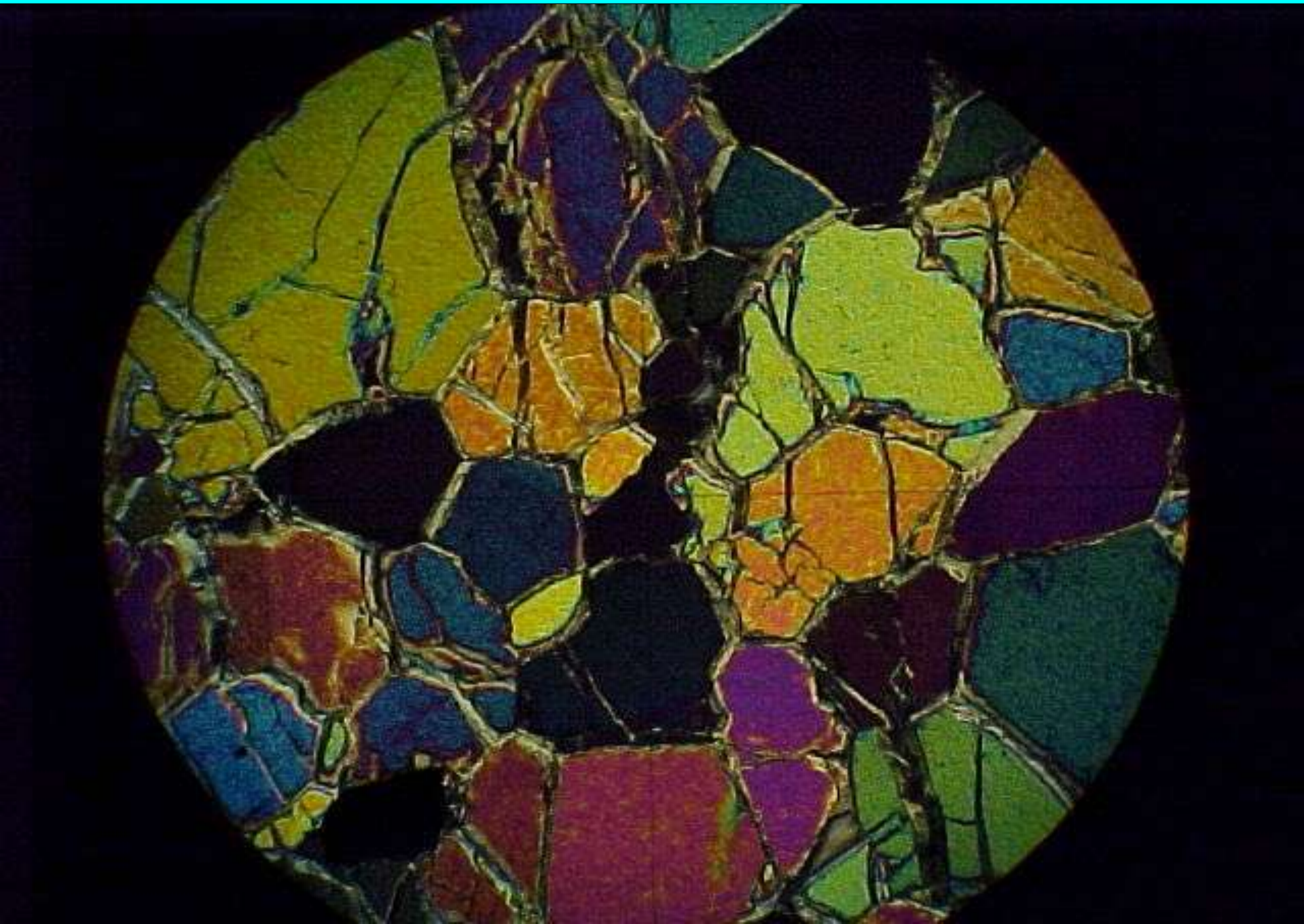


LÁMINA DELGADA DE OLIVINO

sólo polarizador

olivino alterado

polaroides cruzados

LÁMINA DELGADA DE FELDESFATO

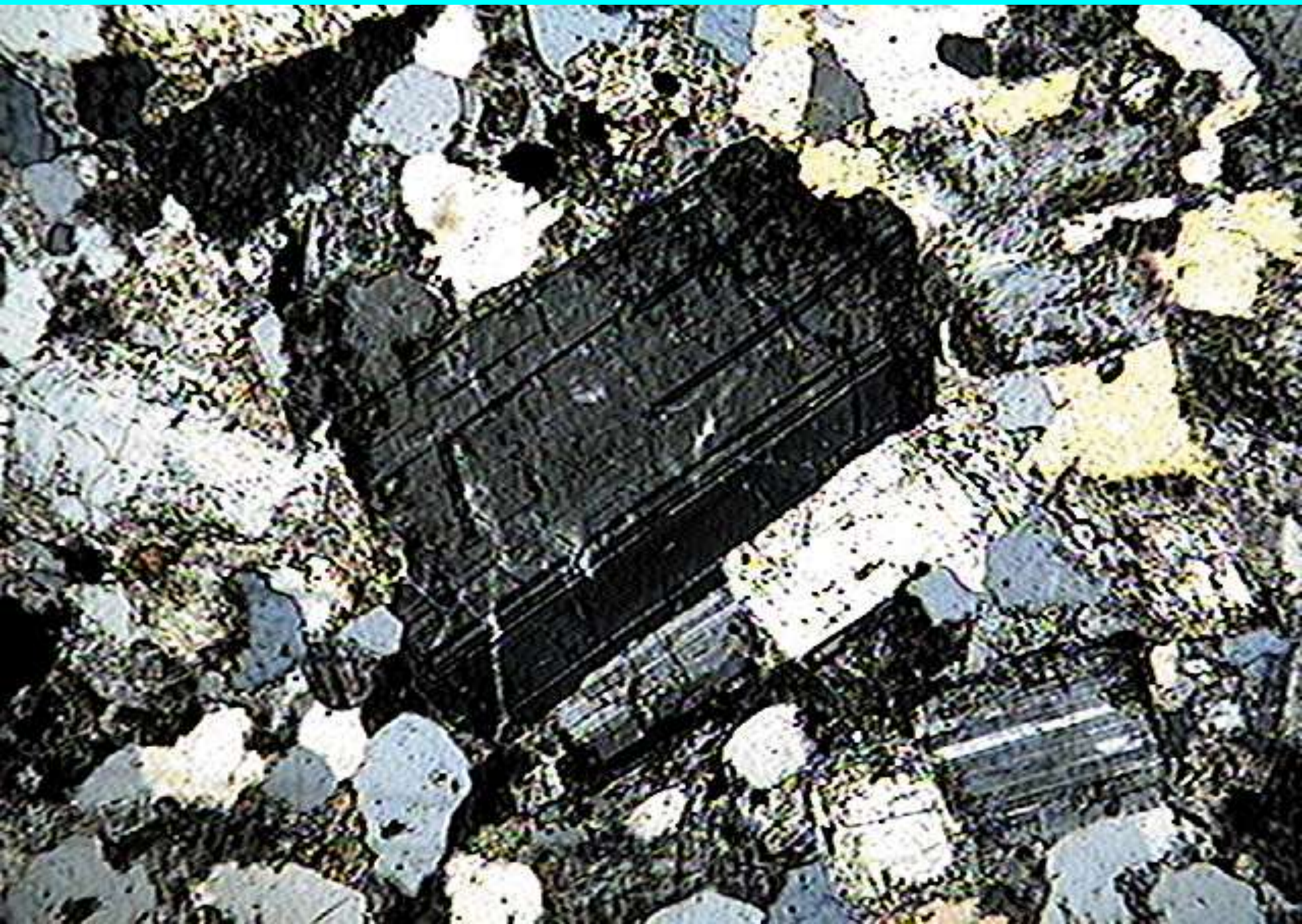
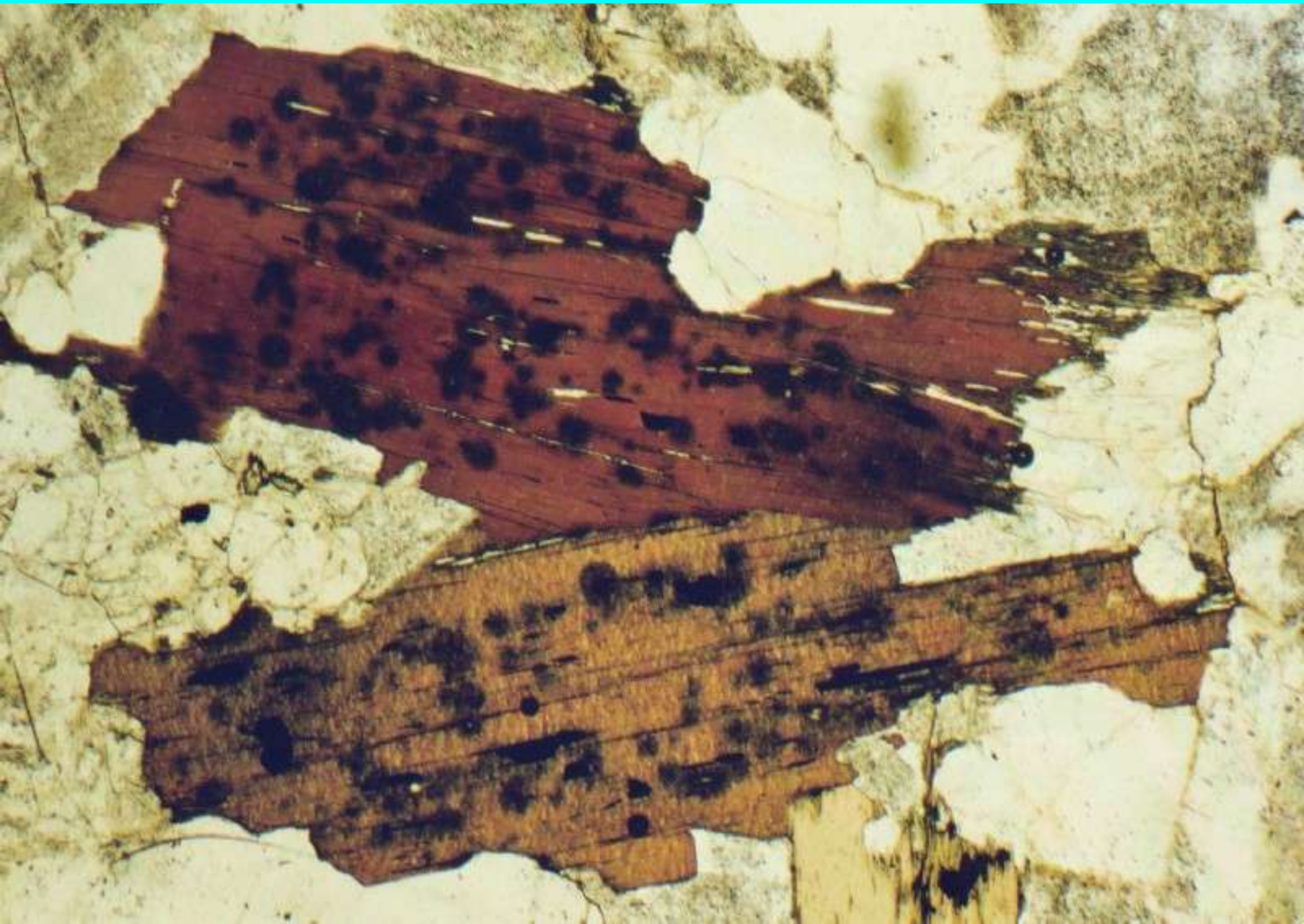
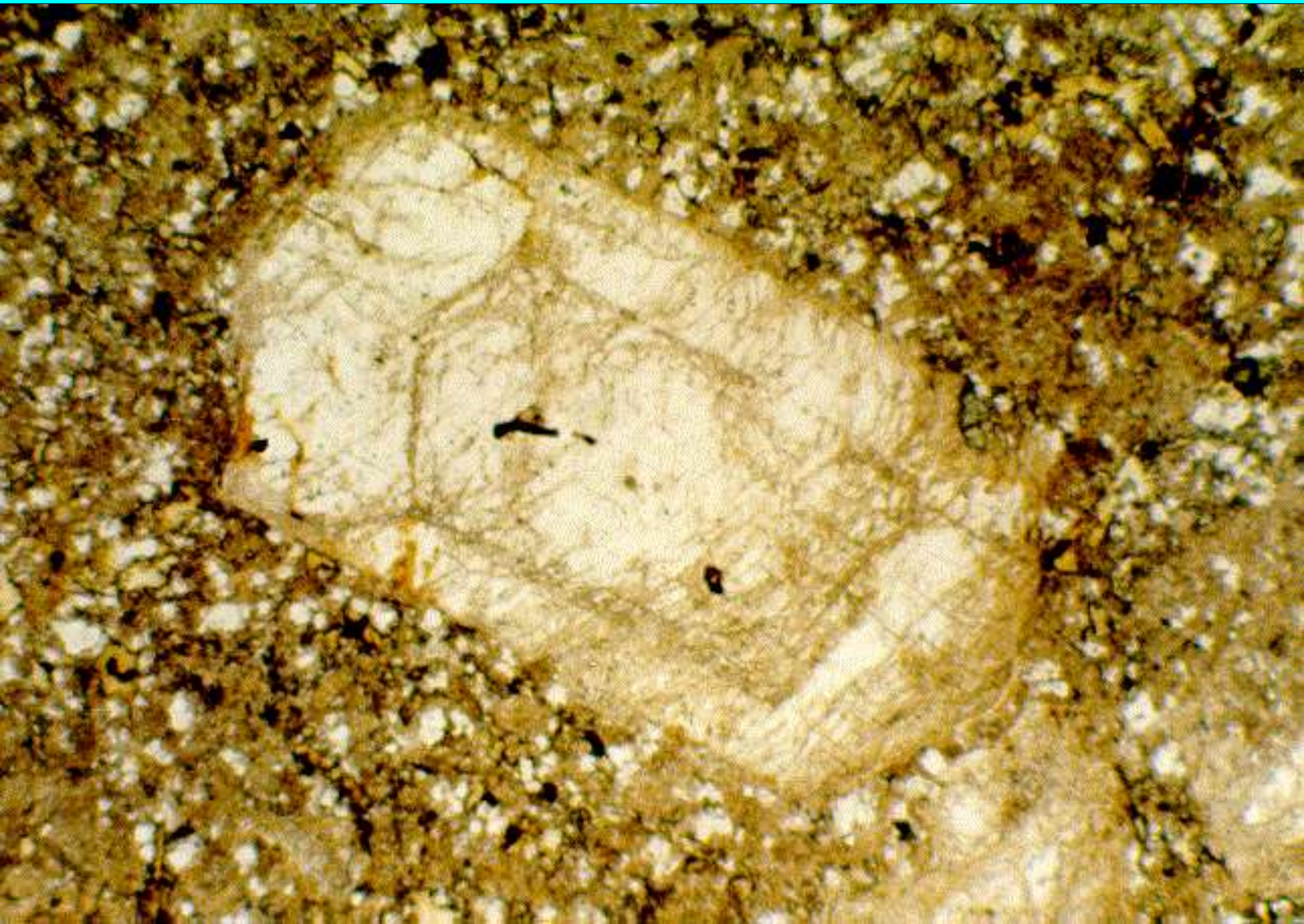


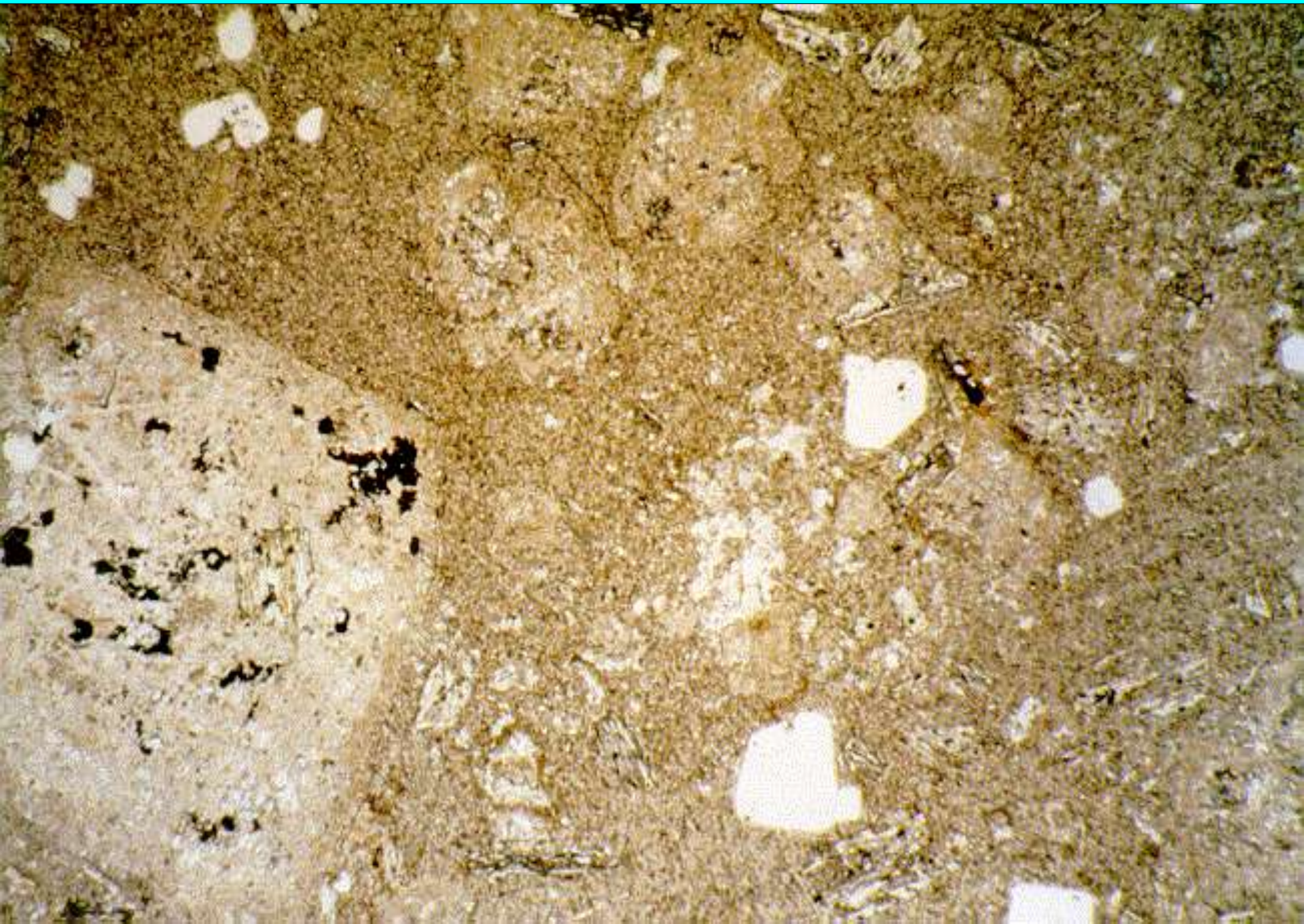
LÁMINA DELGADA DE MICA MOSCOVITA



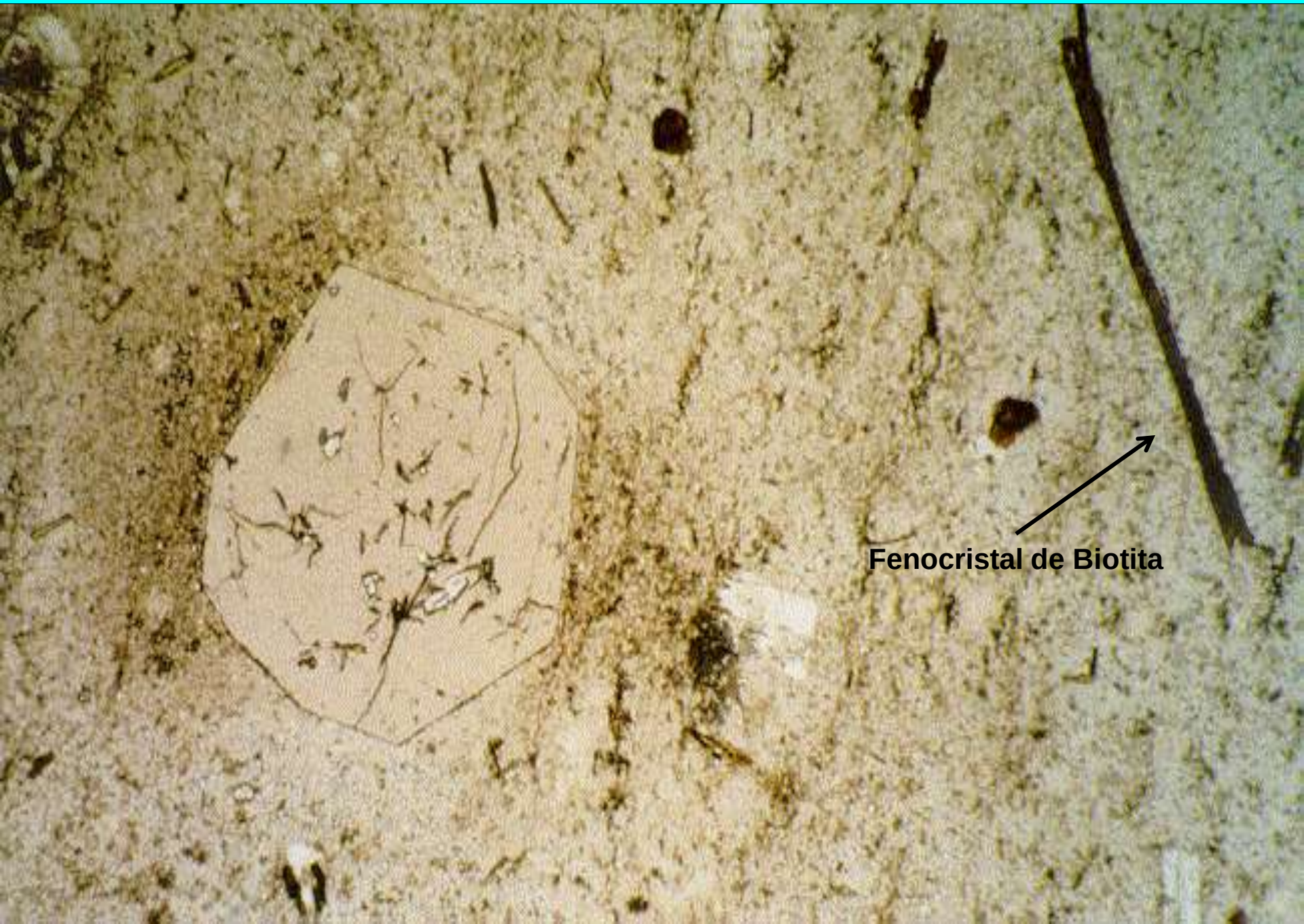
FENOCRISTAL DE PLAGIOCLASA



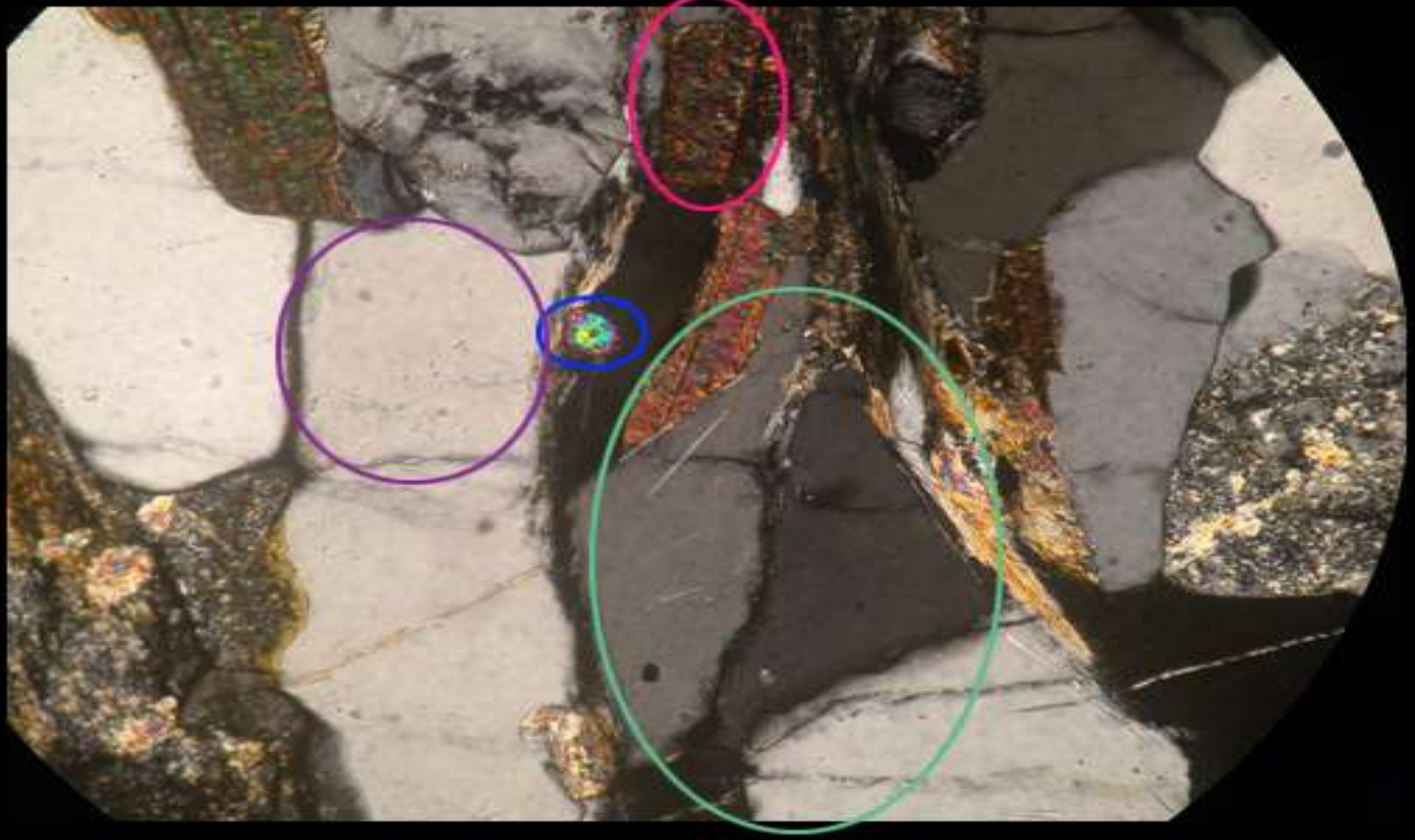
PÓRFIDO CON FENOCRISTALES DE PLAGIOCLASA



FENOCRISTALES DE GRANATE EN PÓRFIDO ANDESÍTICO

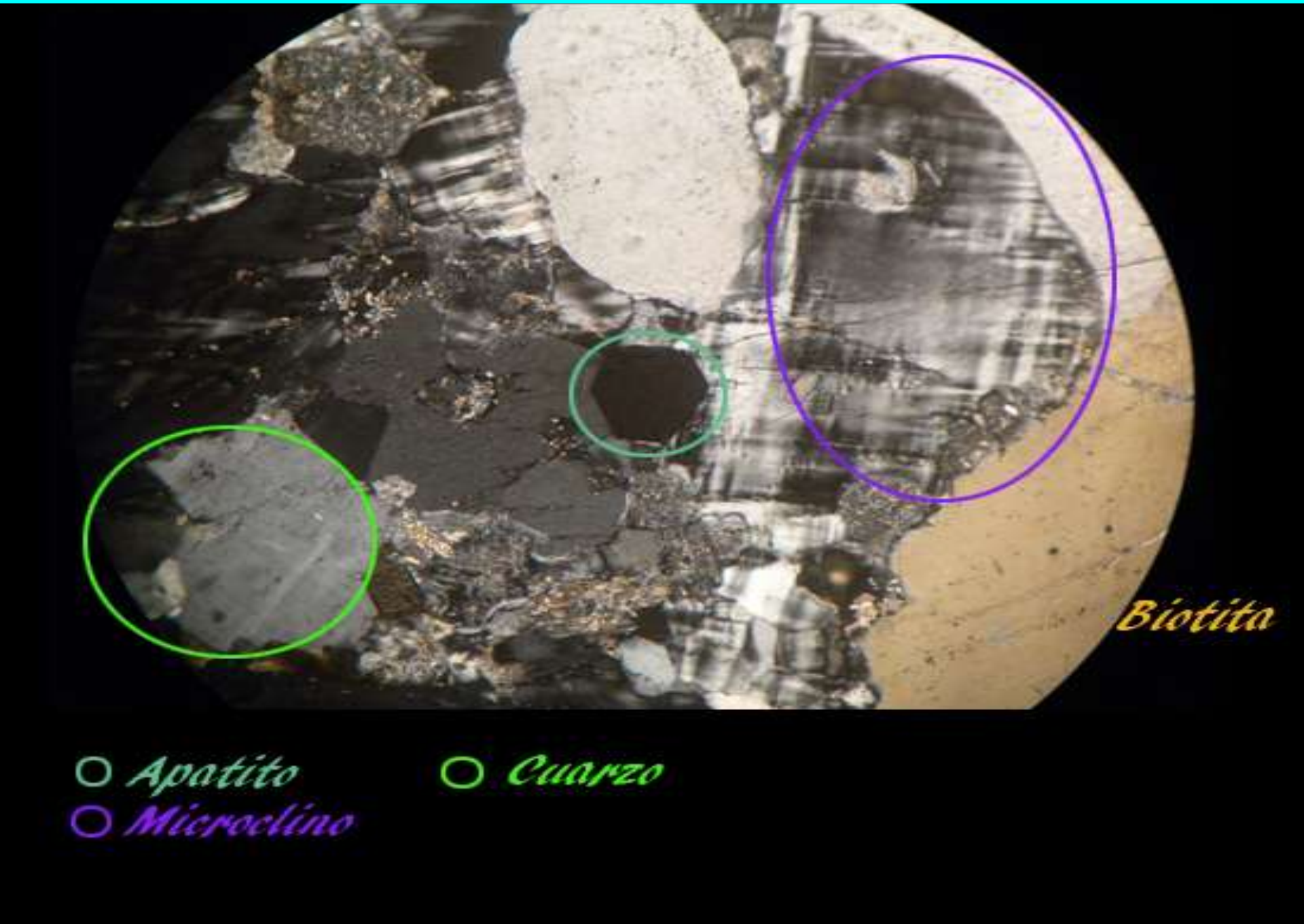


OBSERVACIÓN DE LÁMINAS DELGADAS DE MINERALES Y ROCAS

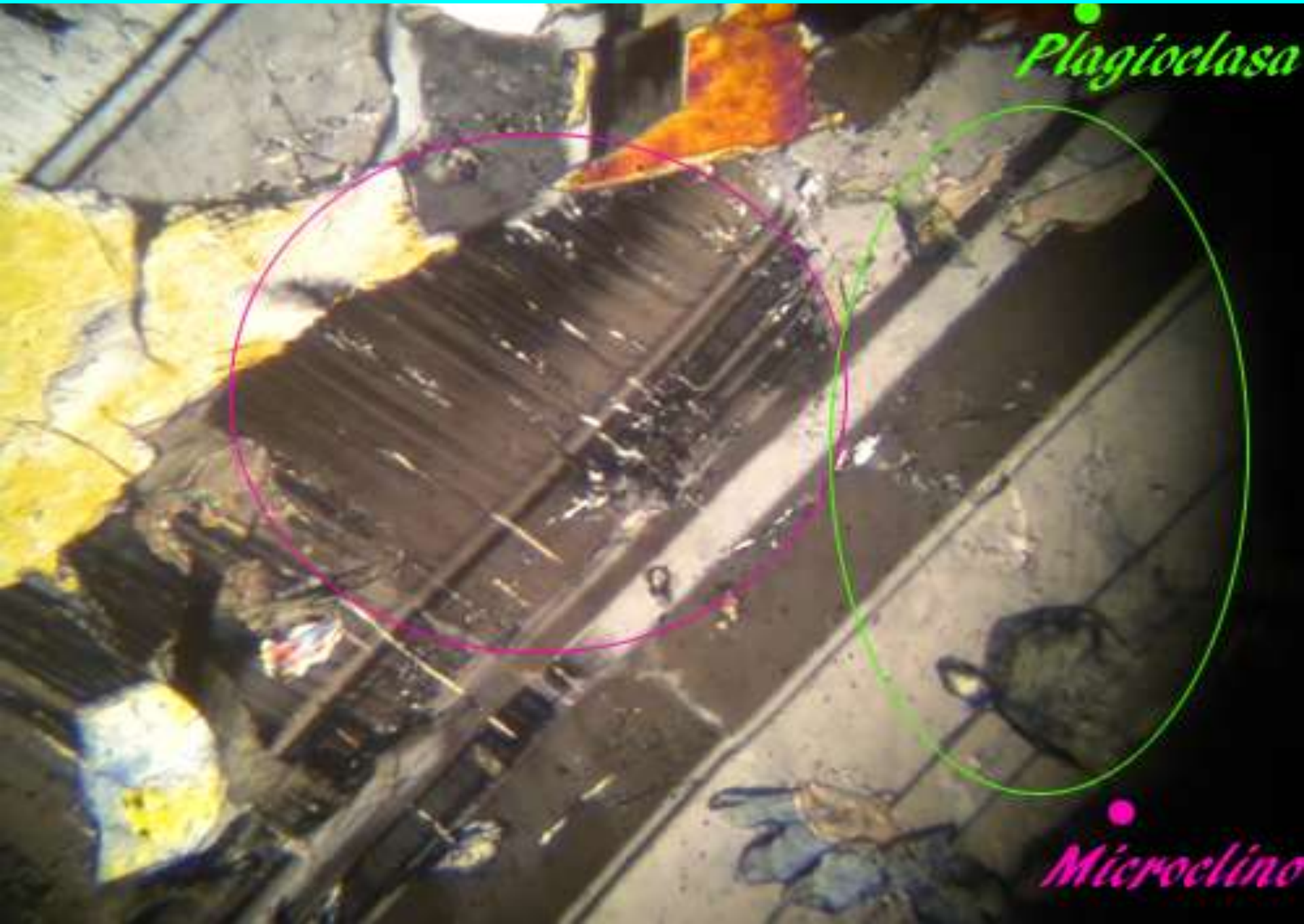


- Circon
- Cuarzo
- Muscovita
- Cuarzo con pequeñas agujas de Sillimanita

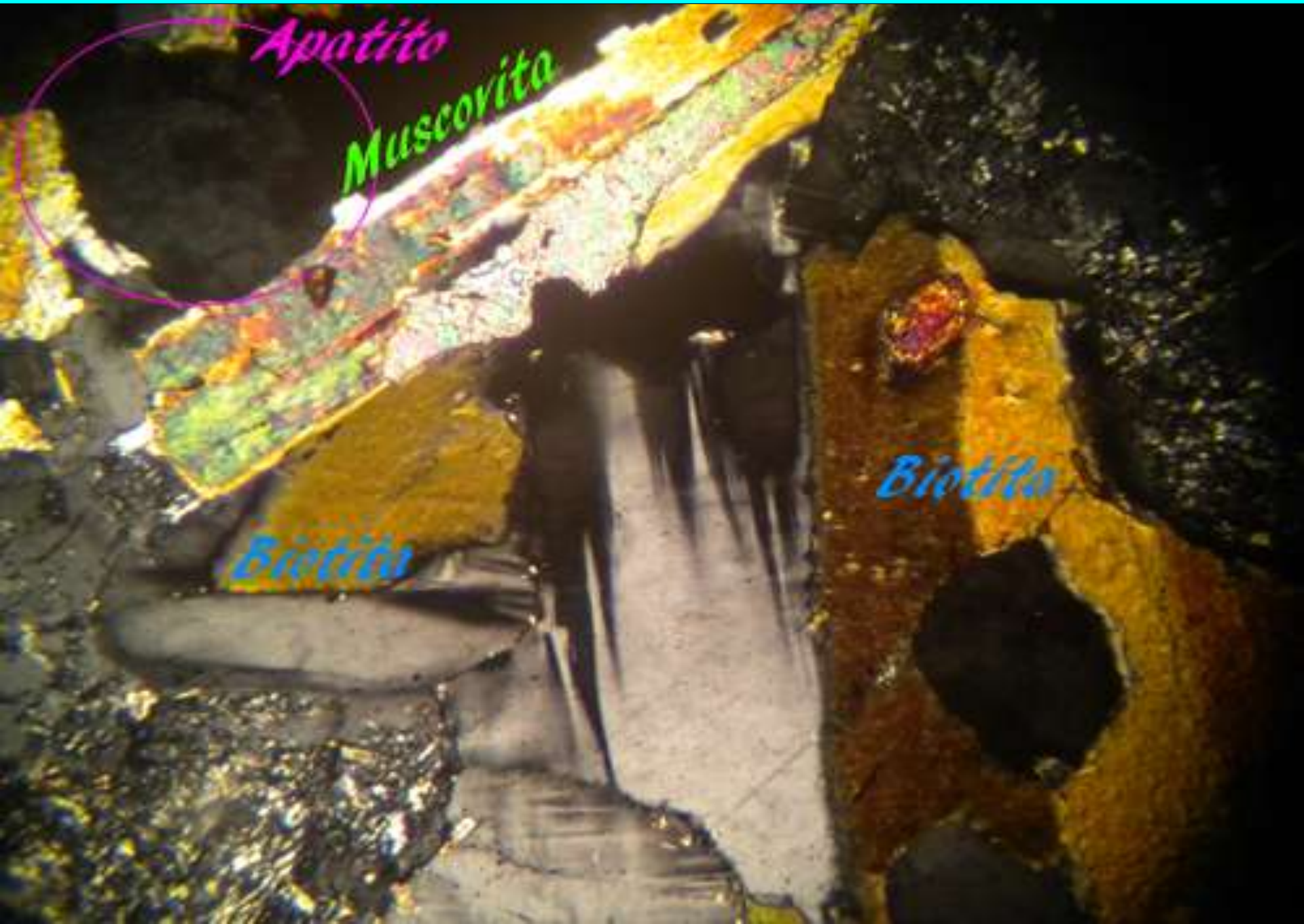
OBSERVACIÓN DE LÁMINAS DELGADAS DE MINERALES Y ROCAS



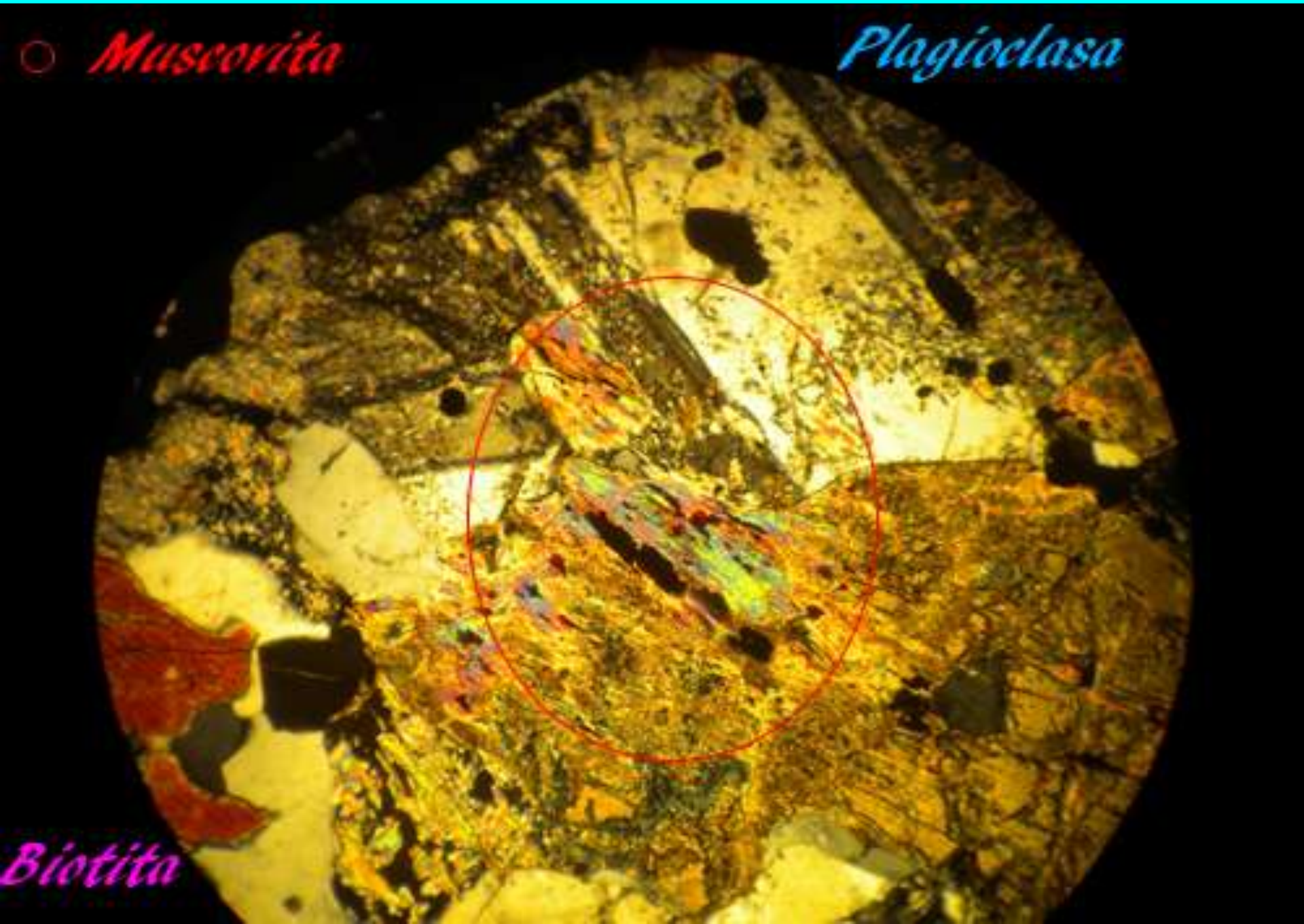
OBSERVACIÓN DE LÁMINAS DELGADAS DE MINERALES Y ROCAS



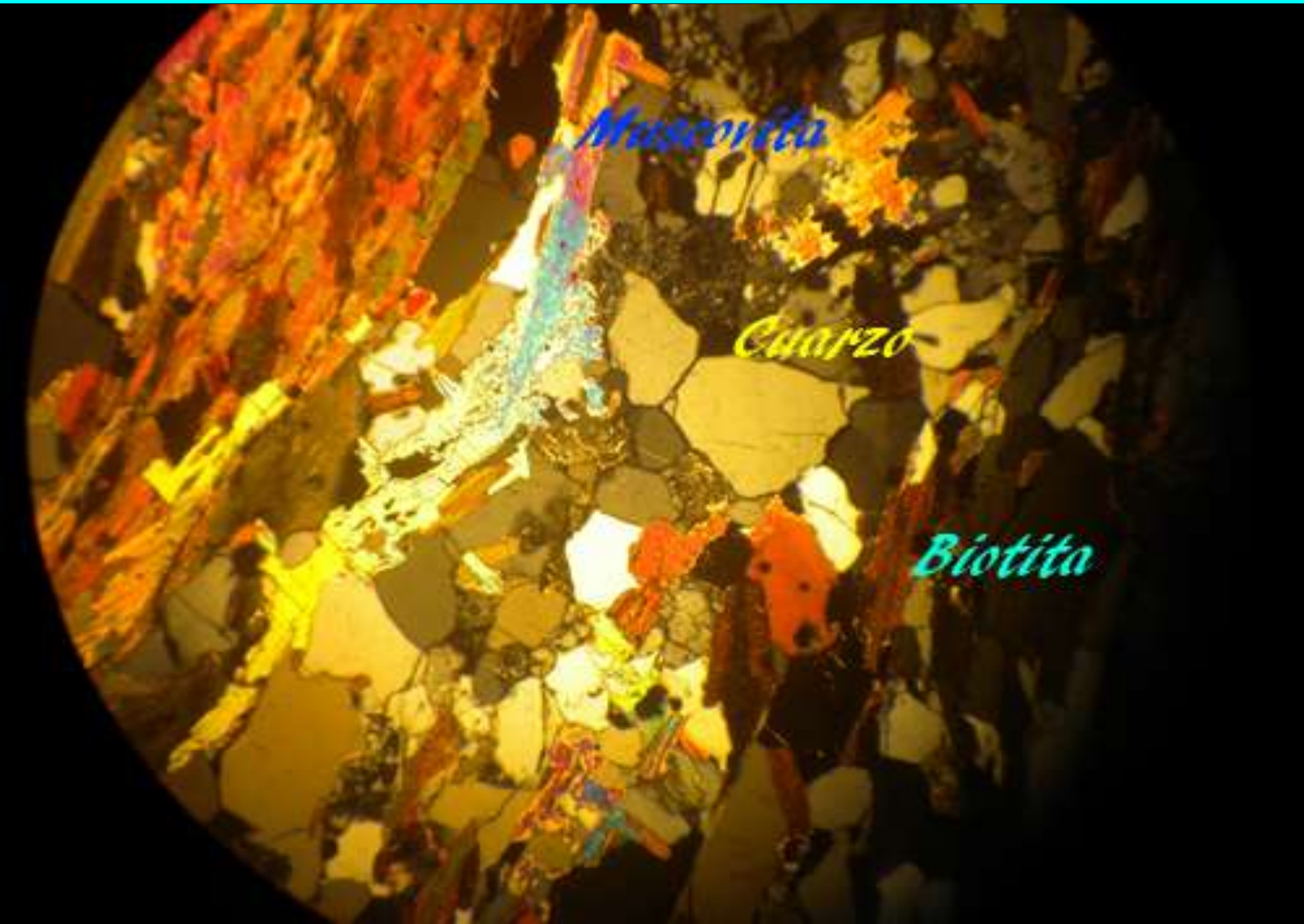
OBSERVACIÓN DE LÁMINAS DELGADAS DE MINERALES Y ROCAS



OBSERVACIÓN DE LÁMINAS DELGADAS DE MINERALES Y ROCAS



OBSERVACIÓN DE LÁMINAS DELGADAS DE MINERALES Y ROCAS



OBSERVACIÓN DE LÁMINAS DELGADAS DE MINERALES Y ROCAS

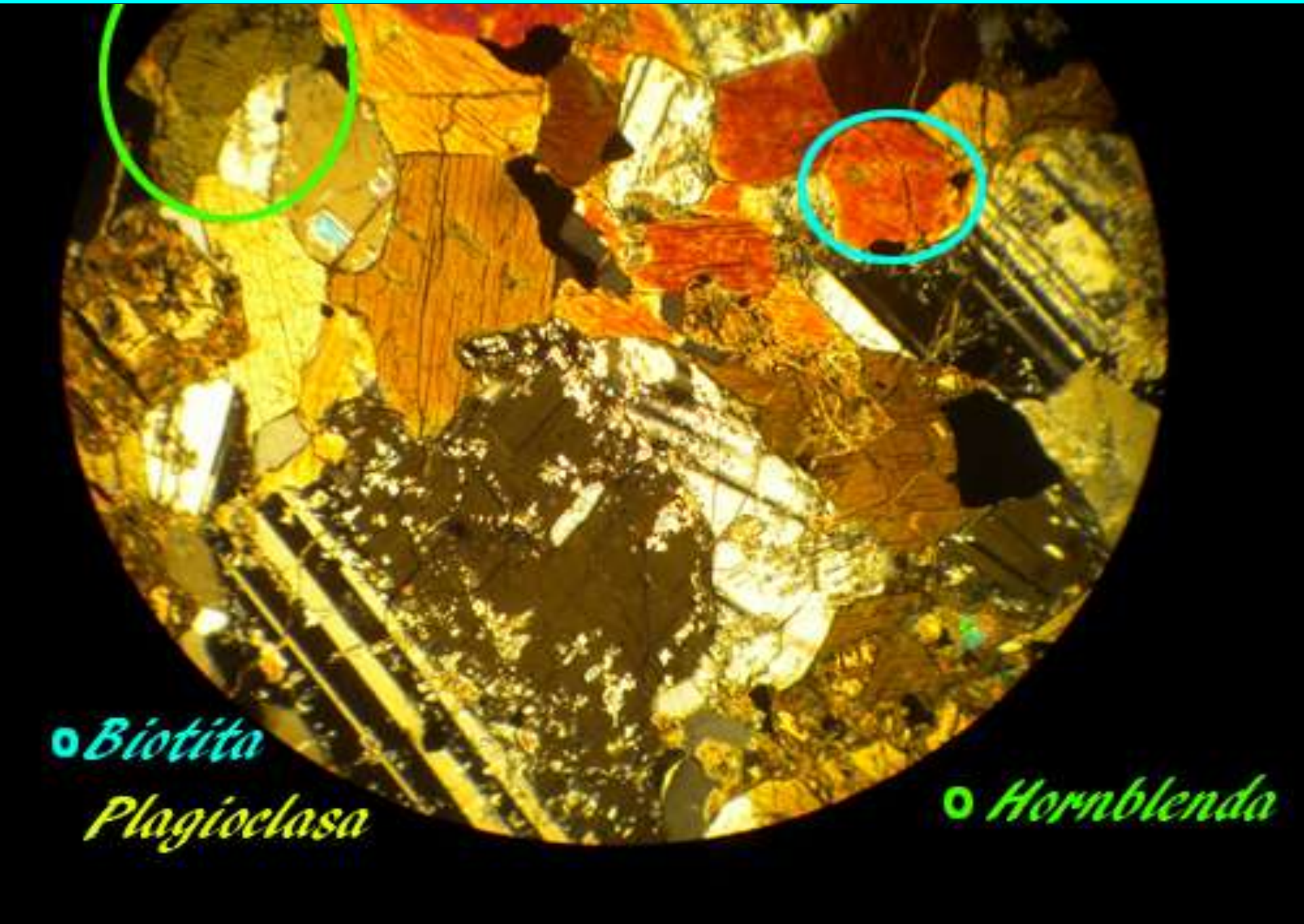


LÁMINA DELGADA DE BASALTO

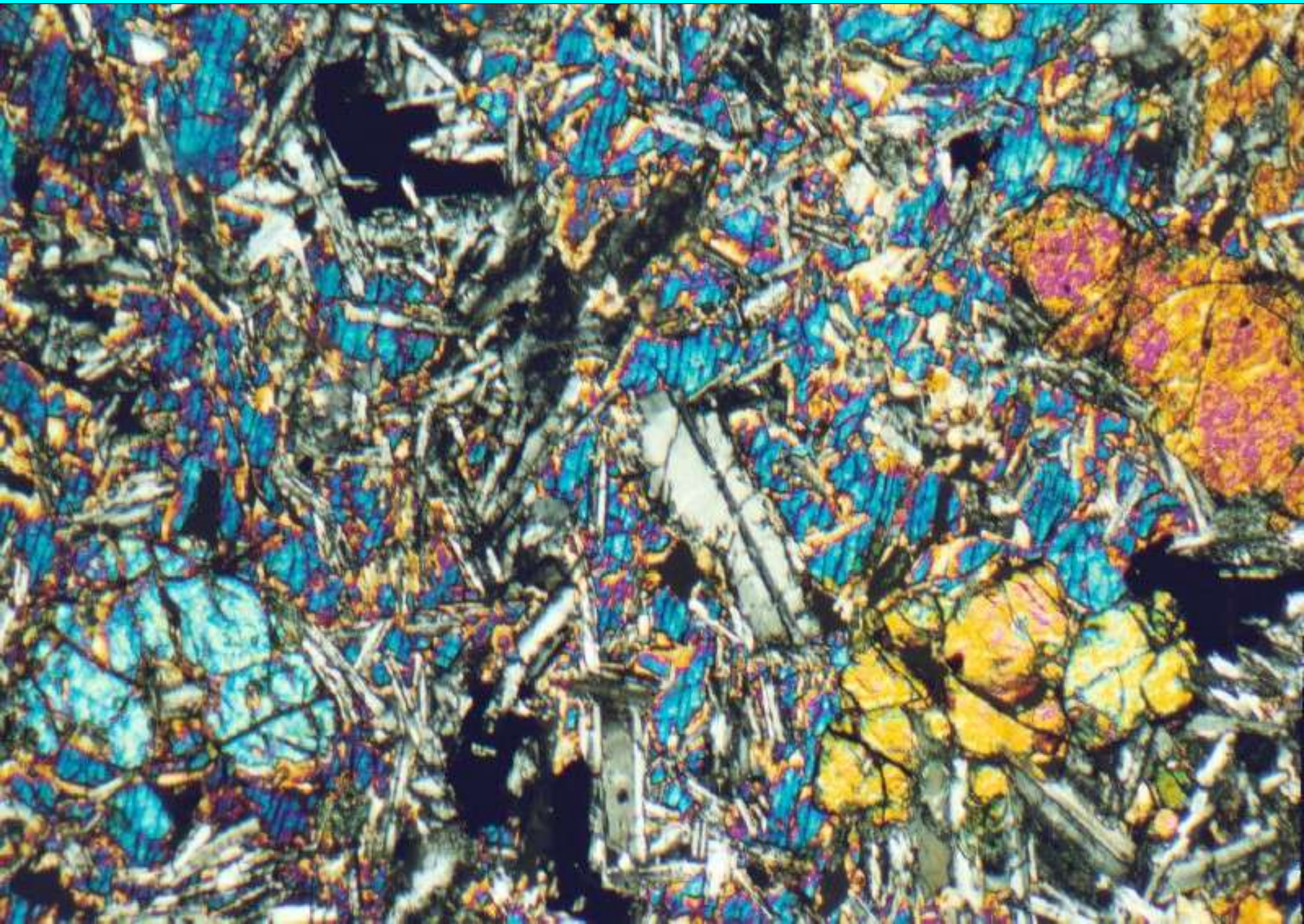
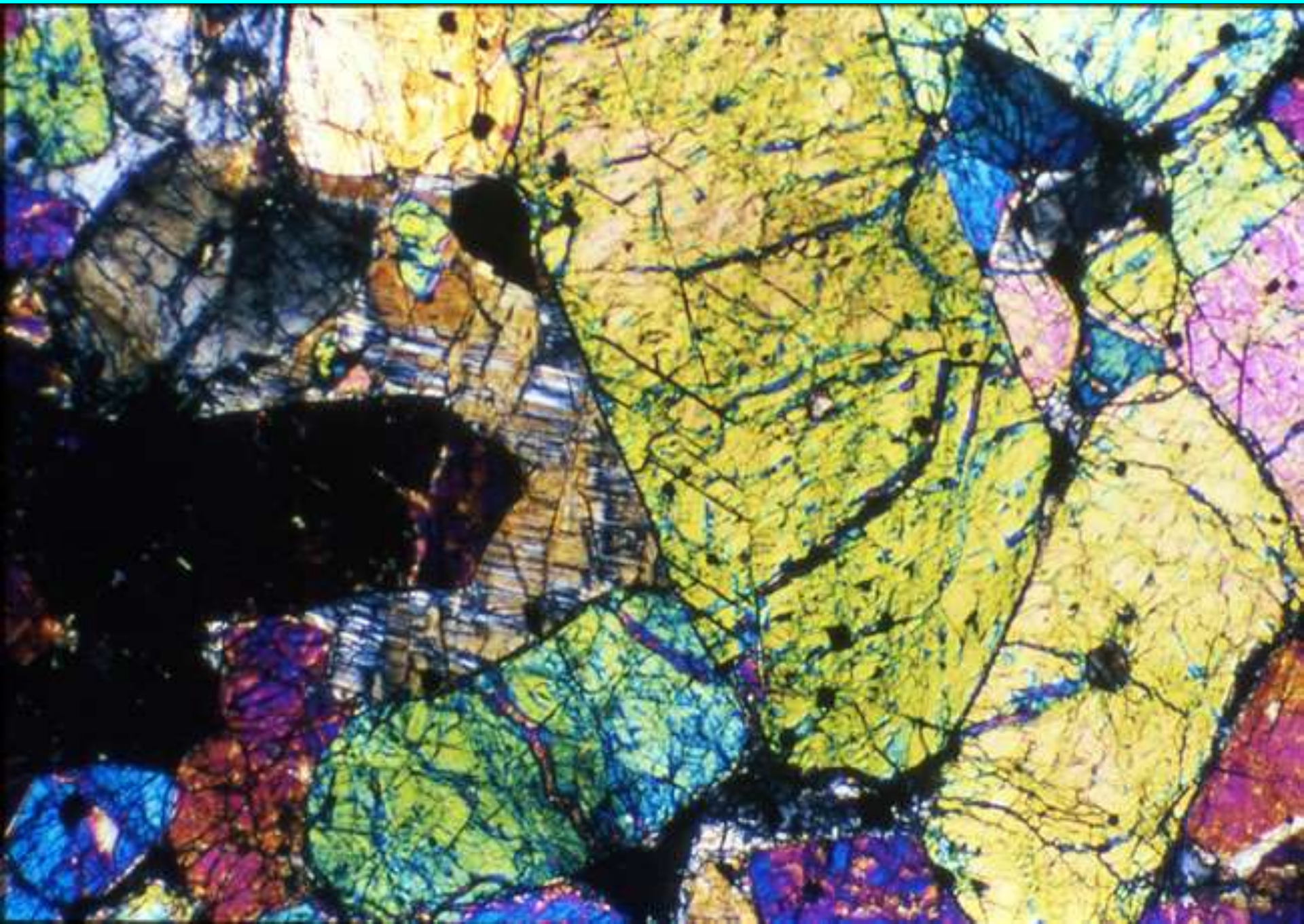
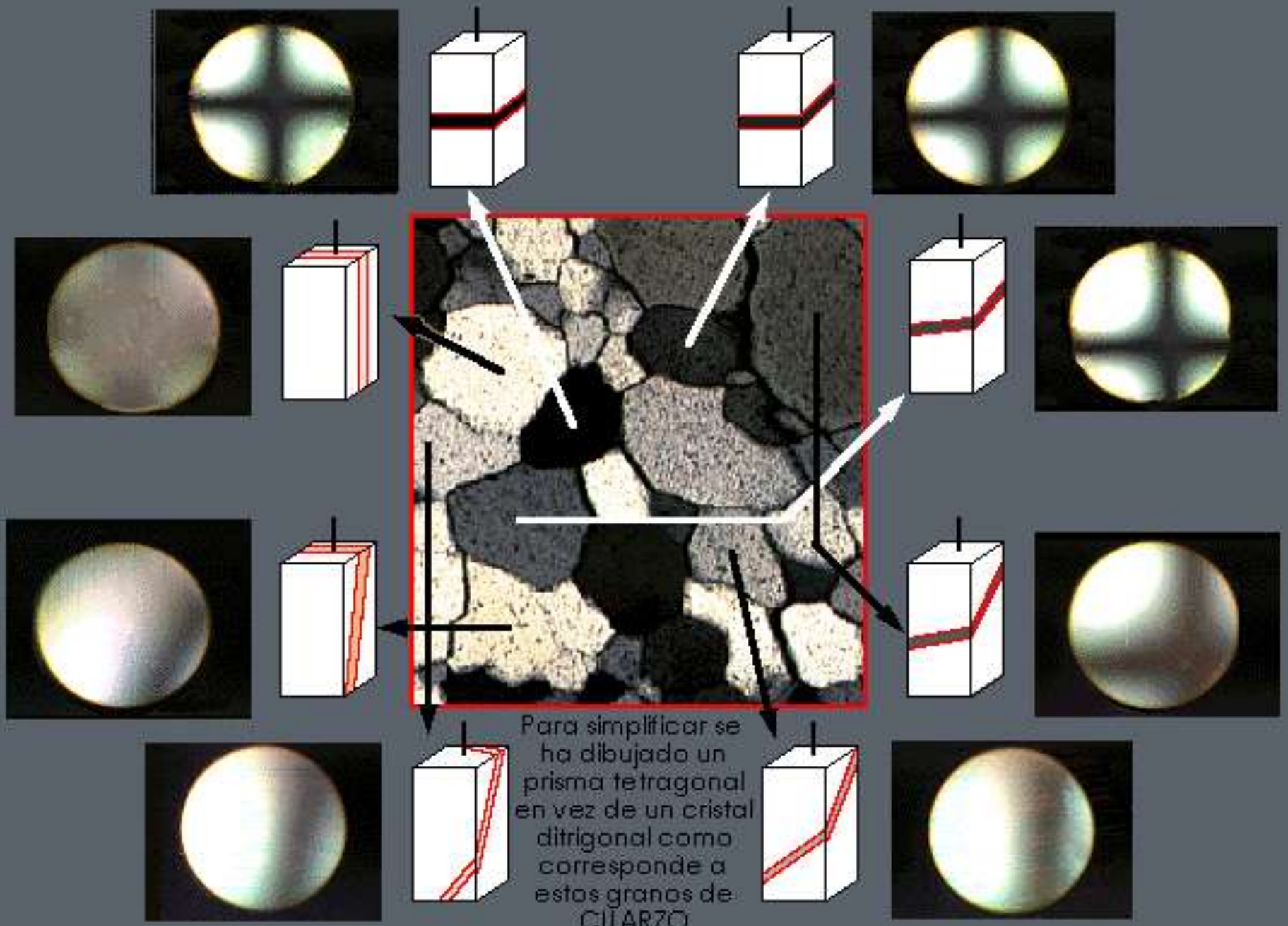


LÁMINA DELGADA DE DIABASA

LÁMINA DELGADA DE UN METEORITO

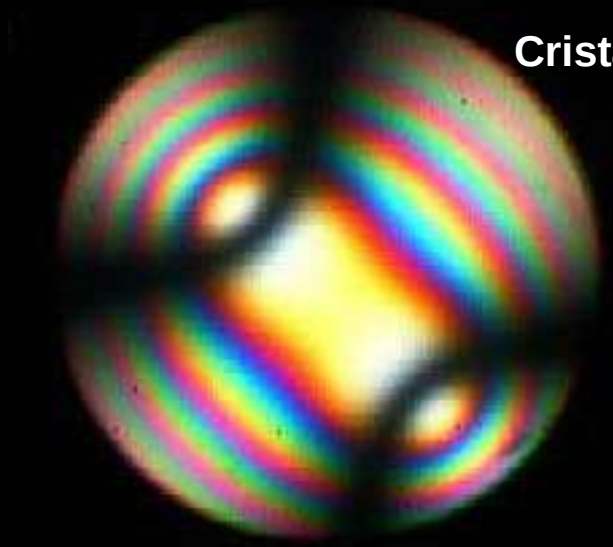


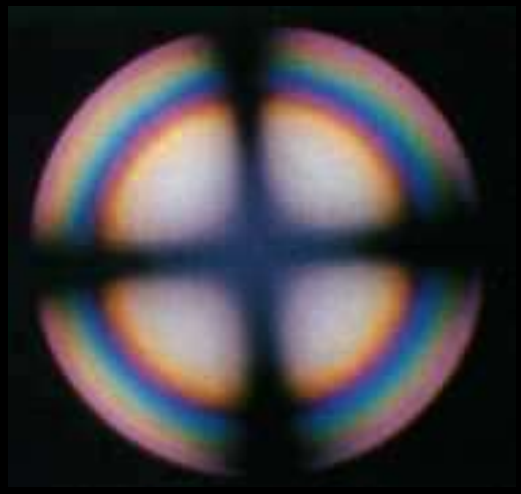
FIGURAS DE INTERFERENCIA



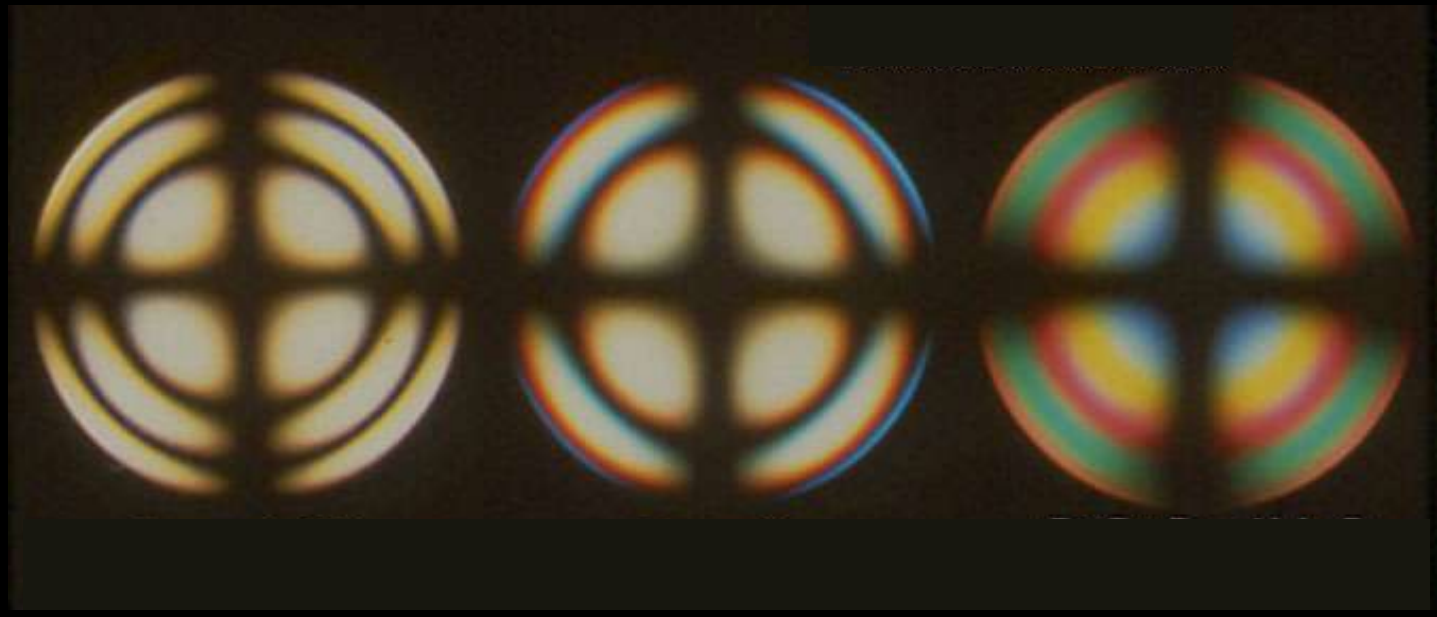
FIGURAS DE INTERFERENCIA

Cristal biáxico





Cristales uniáxicos



FIN