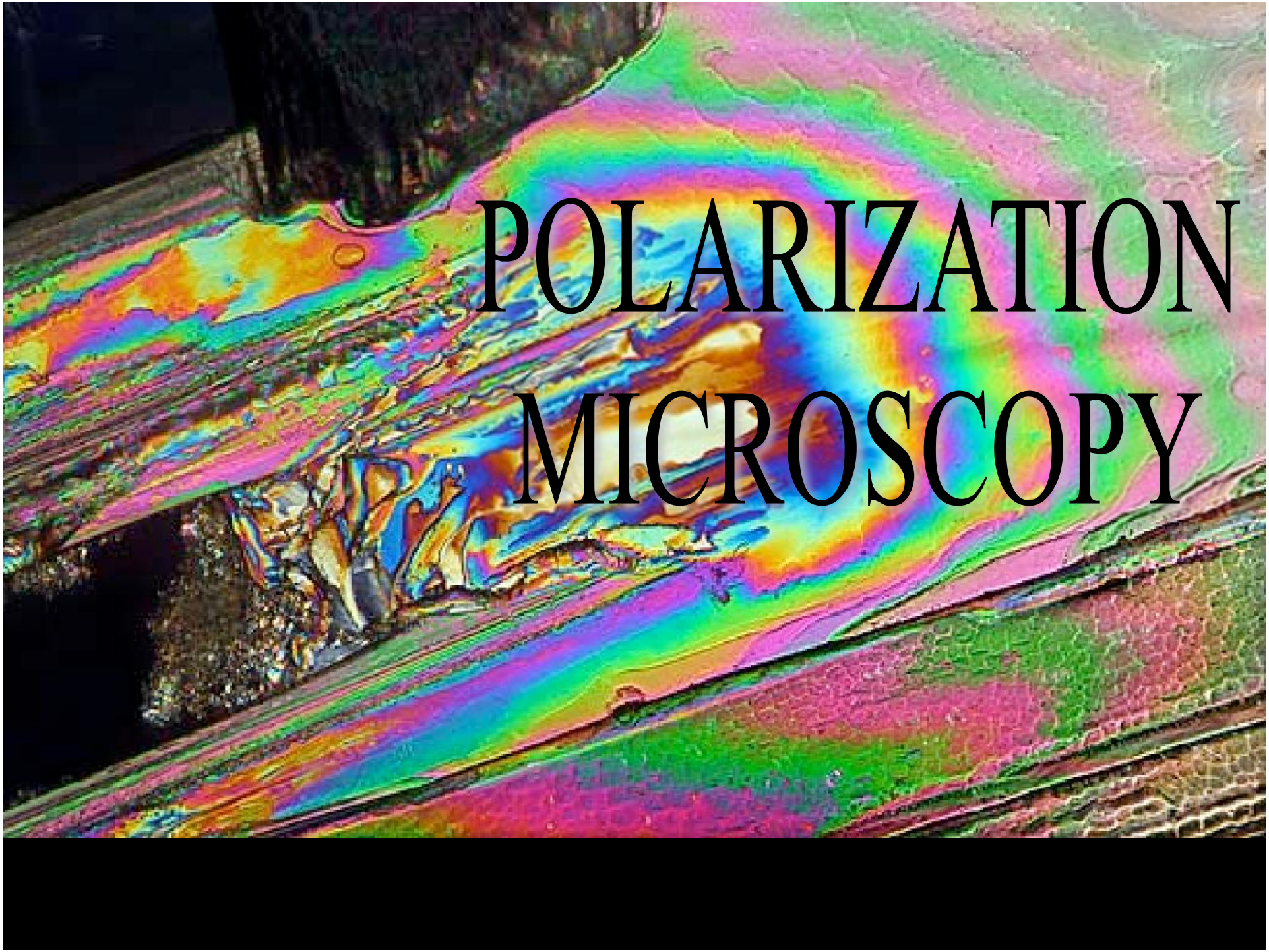
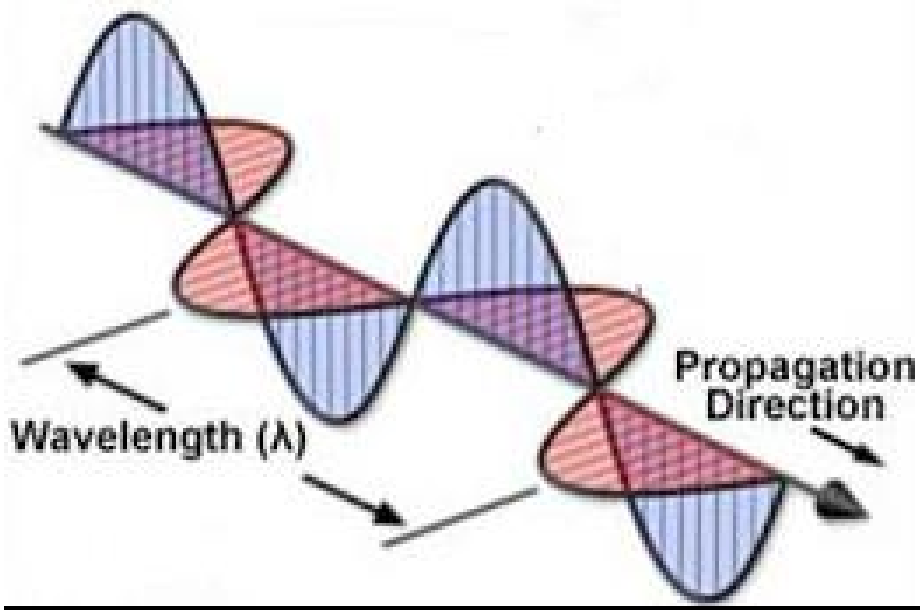
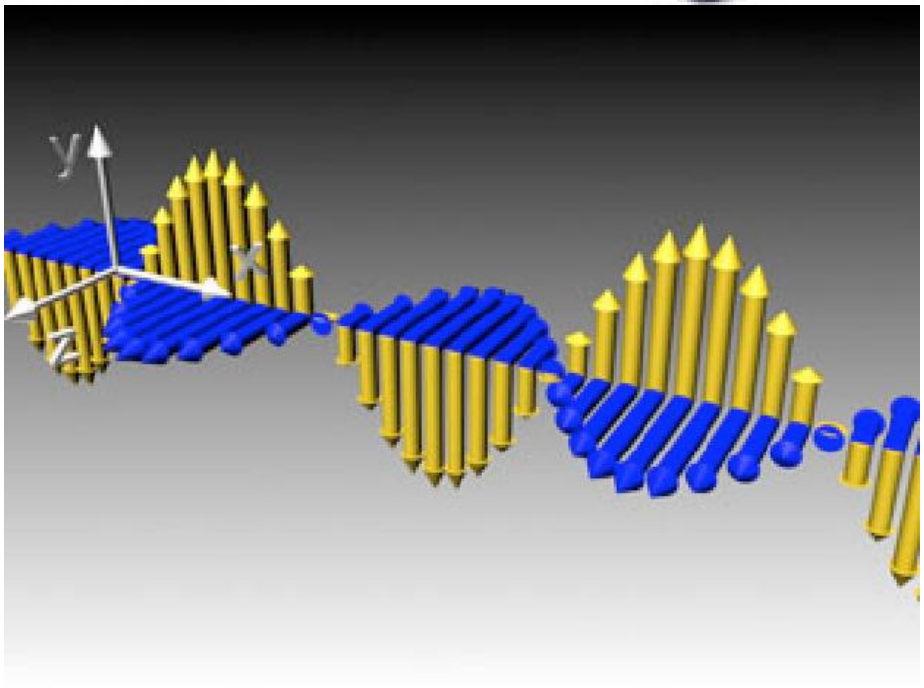
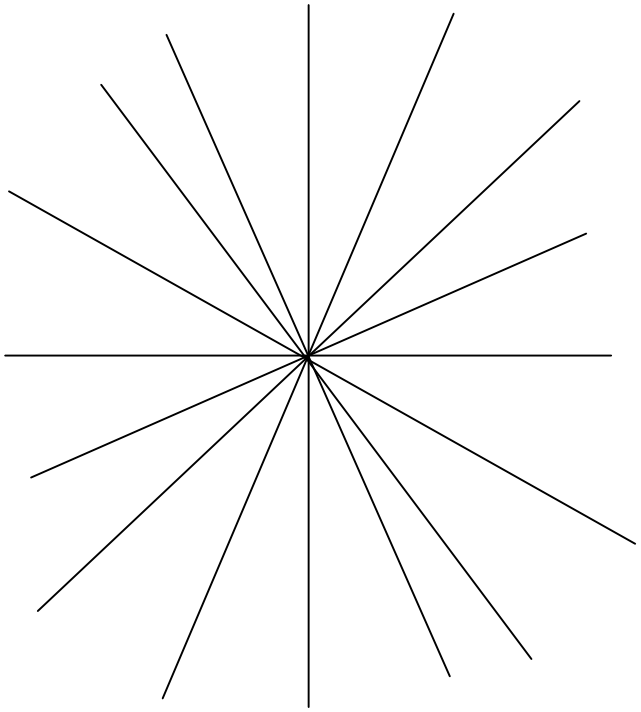
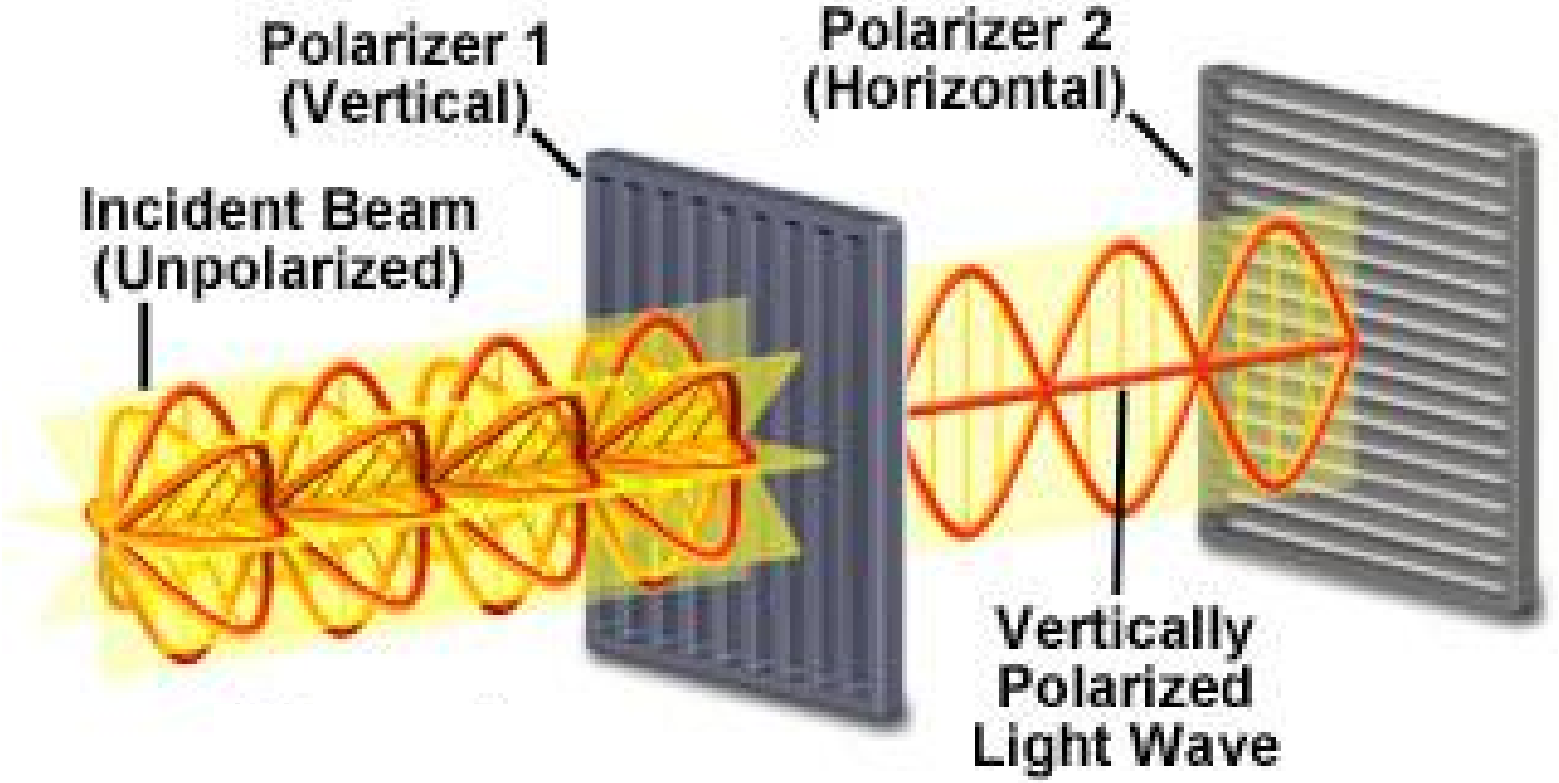

POLARIZATION
MICROSCOPY


Propagation
Direction
Wavelength (λ)

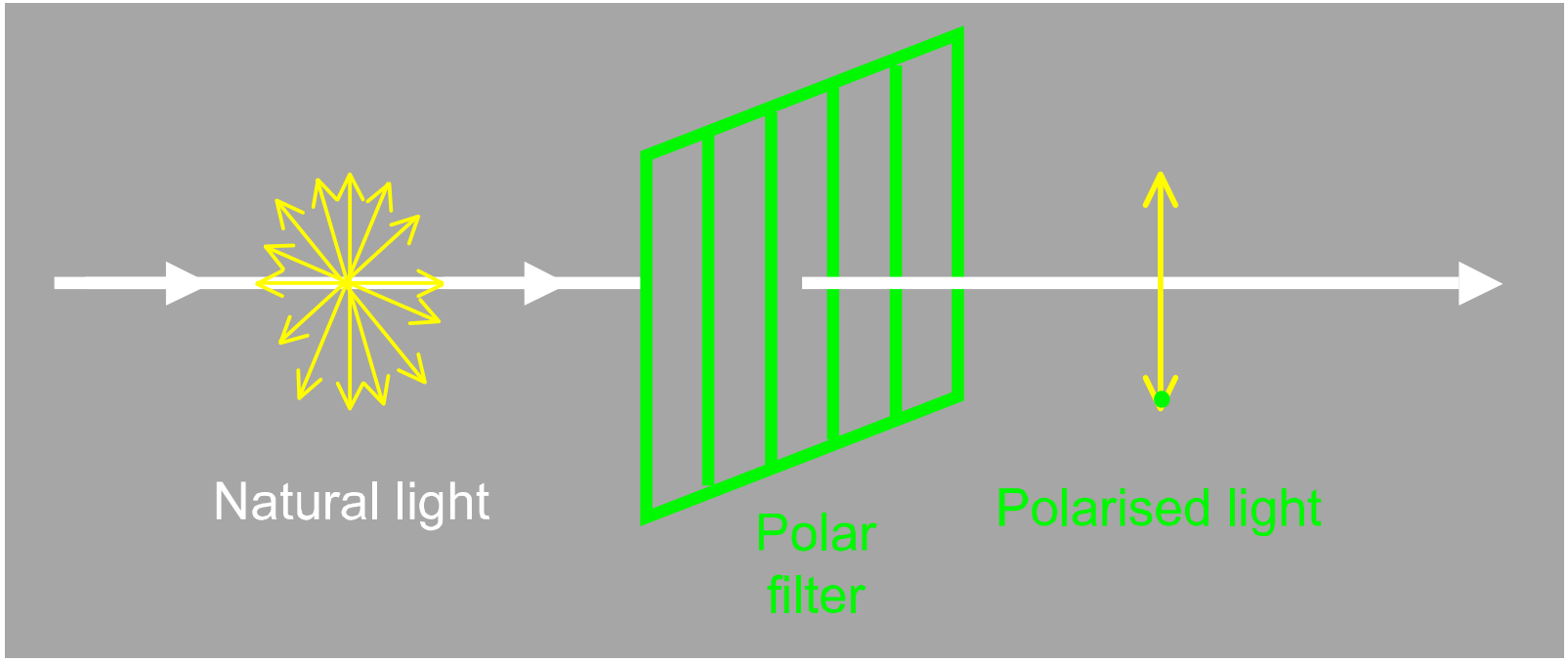

y
x
z



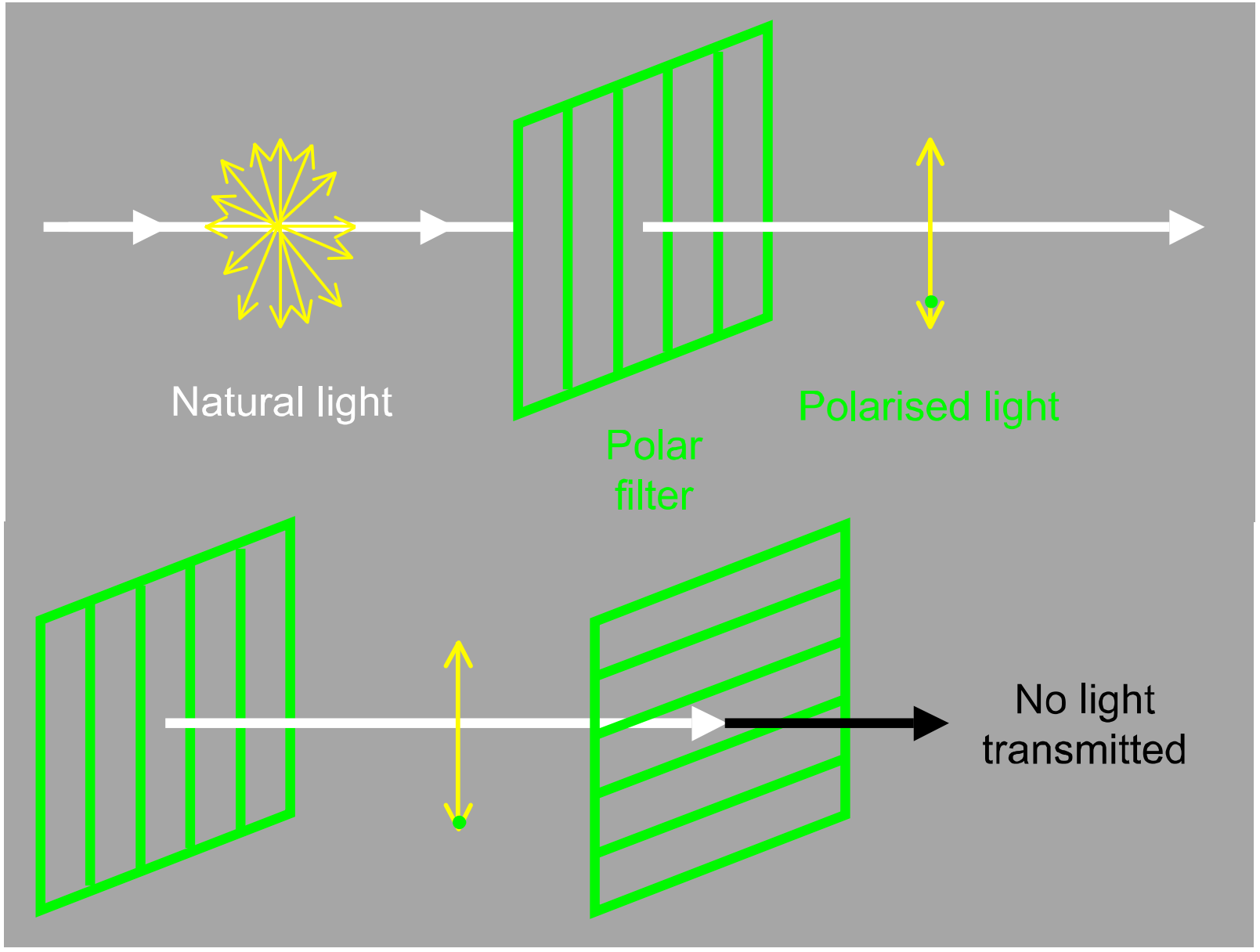
Polarization of Light Waves



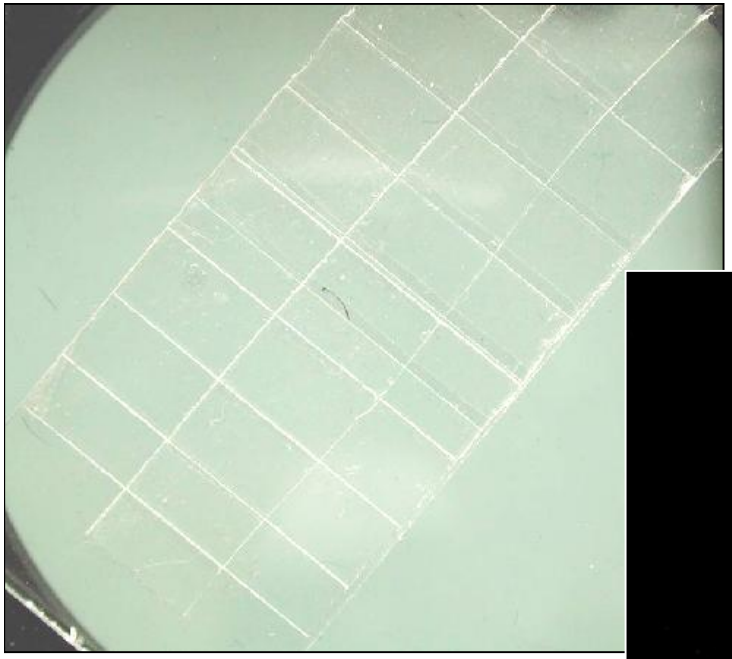
Light waves



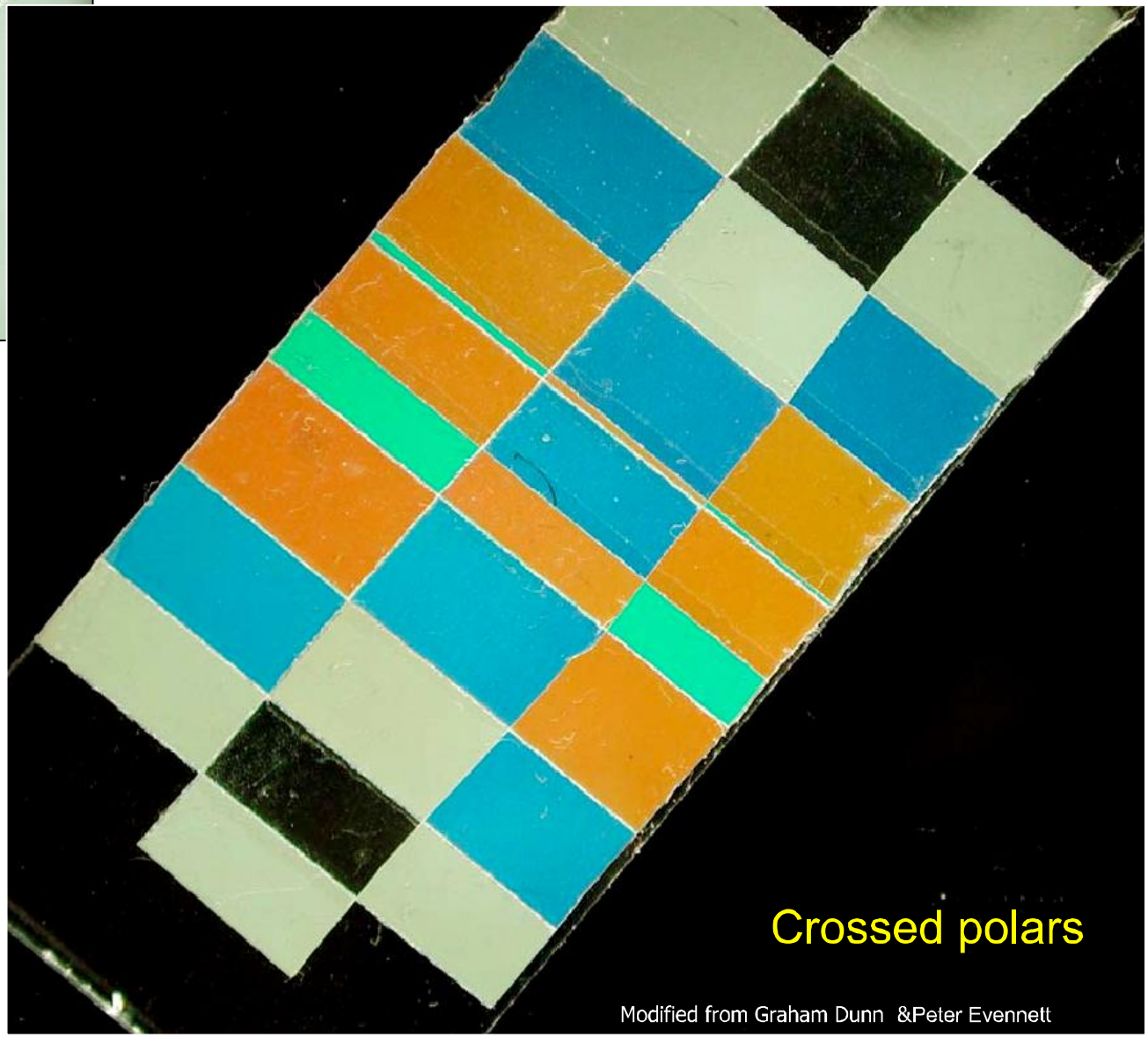
Crossed polars

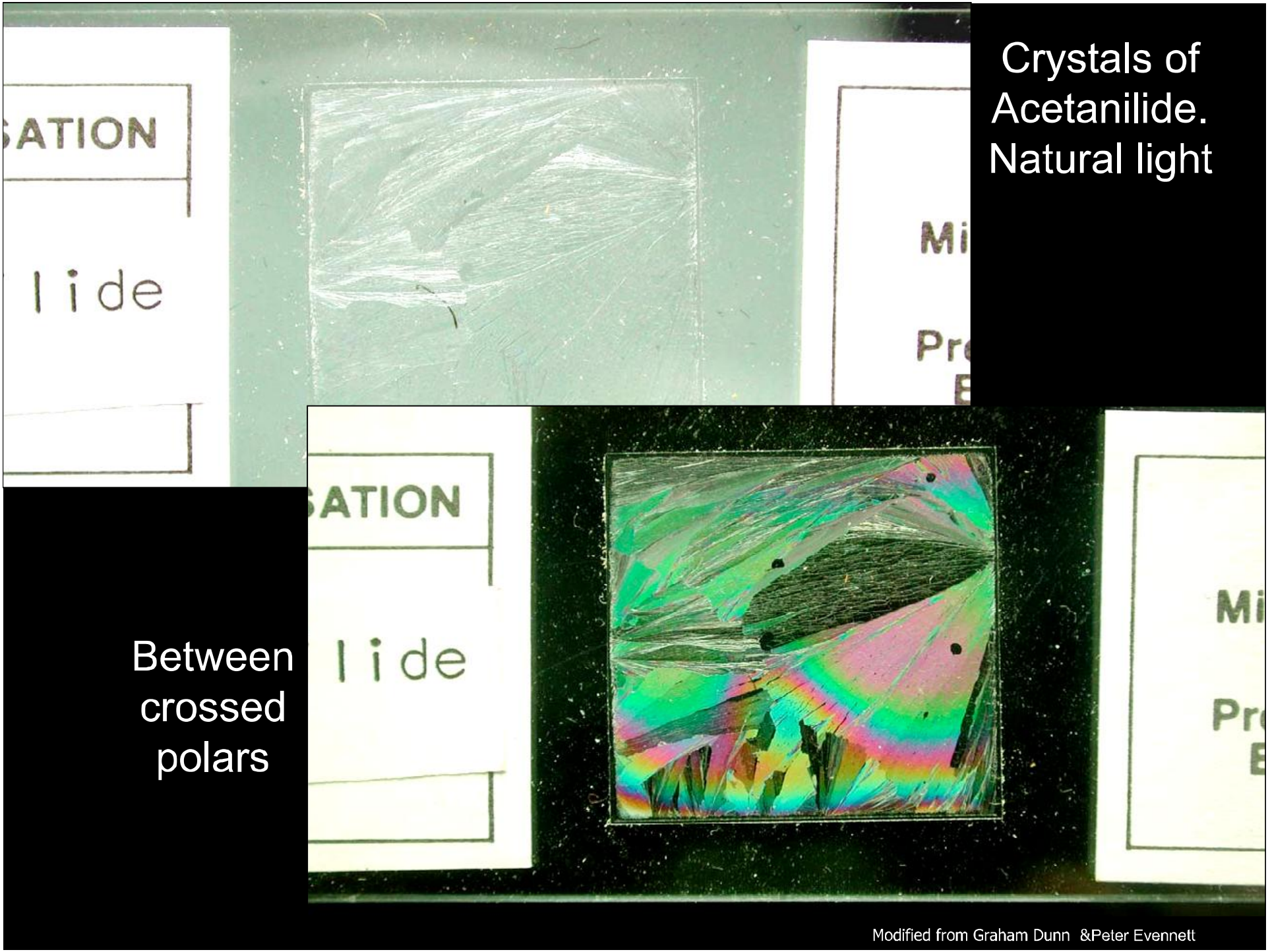


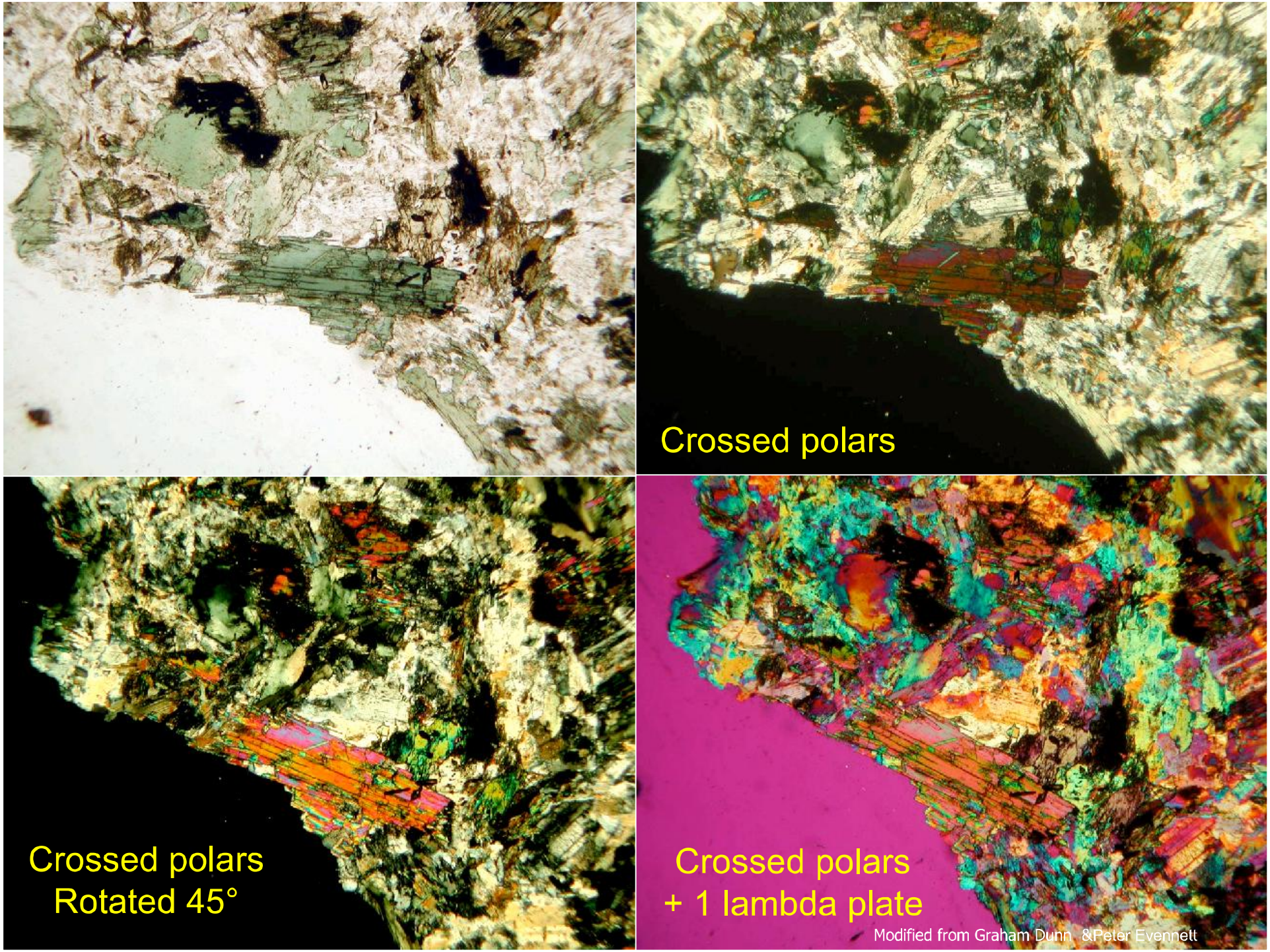
Modified from Graham Dunn &Peter Evennett

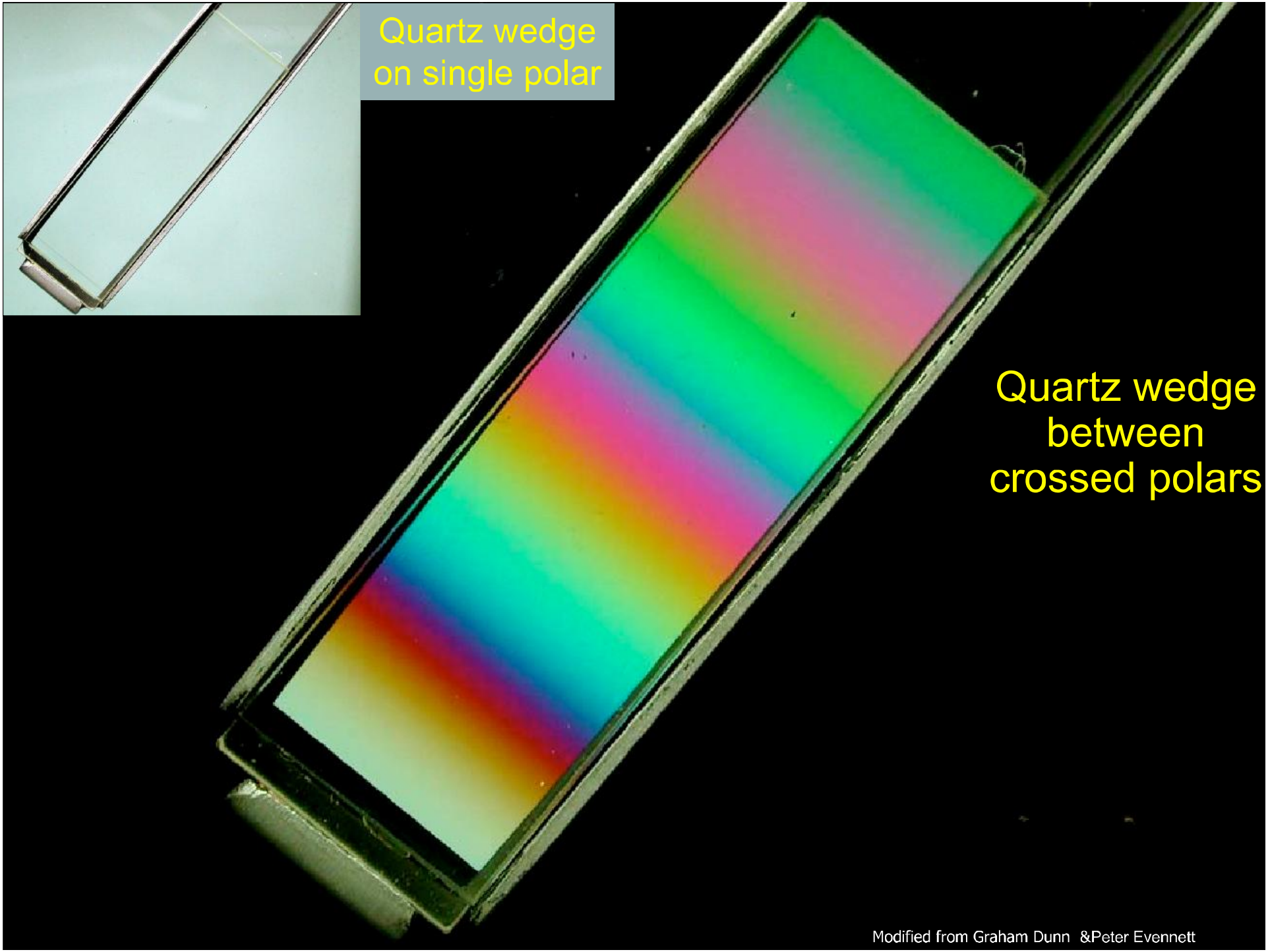


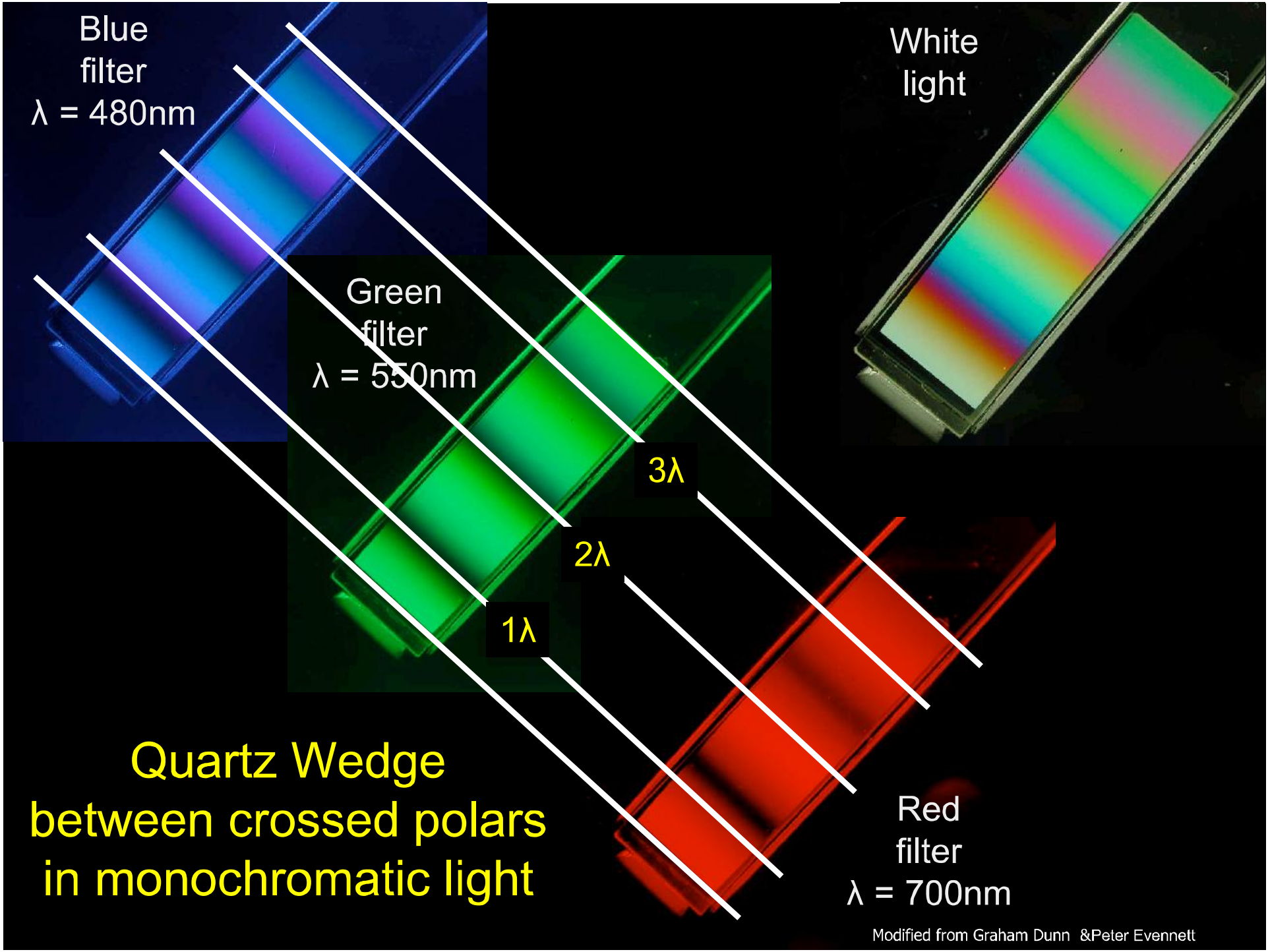
Overlapping pieces of Sellotape

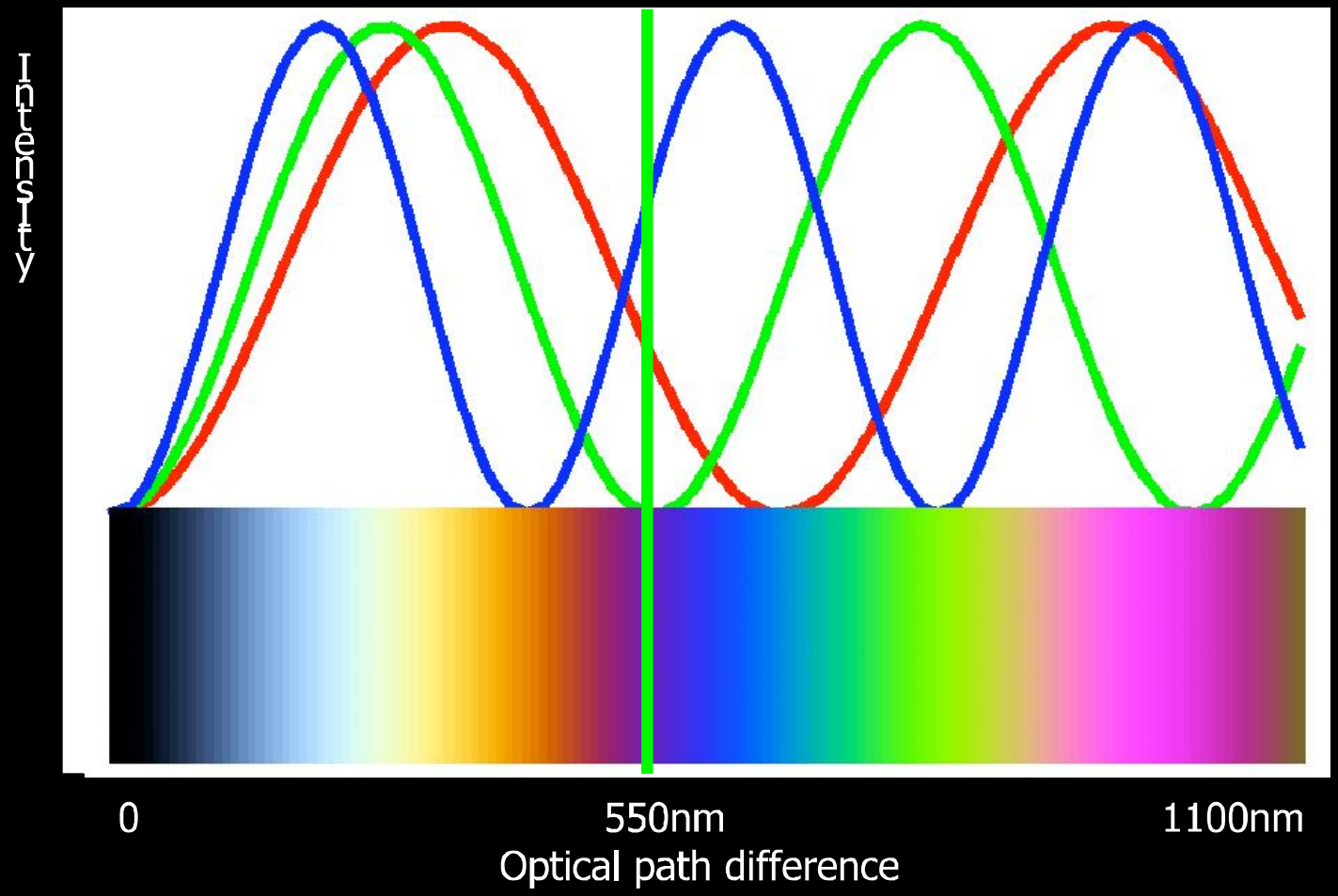



Crystals of Acetanilide. Natural light
Between crossed polars
Modified from Graham Dunn &Peter Evennett


Crossed polars
Crossed polars
Rotated 45°
Crossed polars
+ 1 lambda plate
Modified from Graham Dunn &Peter Evennett

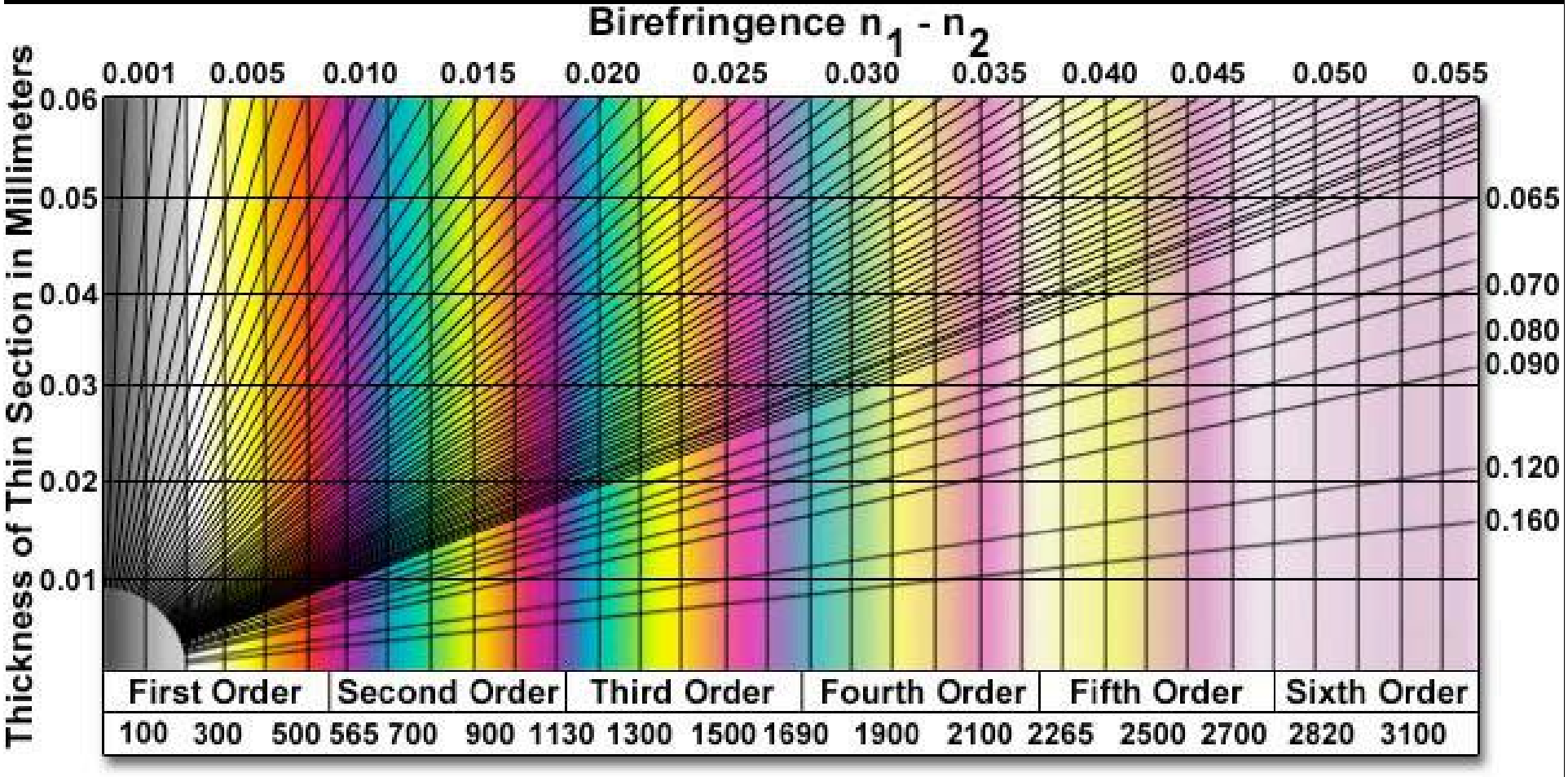

Quartz wedge
on single polar
Quartz wedge
between
crossed polars
Modified from Graham Dunn &Peter Evennett


Blue
filter
λ = 480nm
White
light
Green
filter
λ = 550nm
3λ
2λ
1λ
Quartz Wedge
between crossed polars
in monochromatic light
Red
filter
λ = 700nm
Modified from Graham Dunn &Peter Evennett

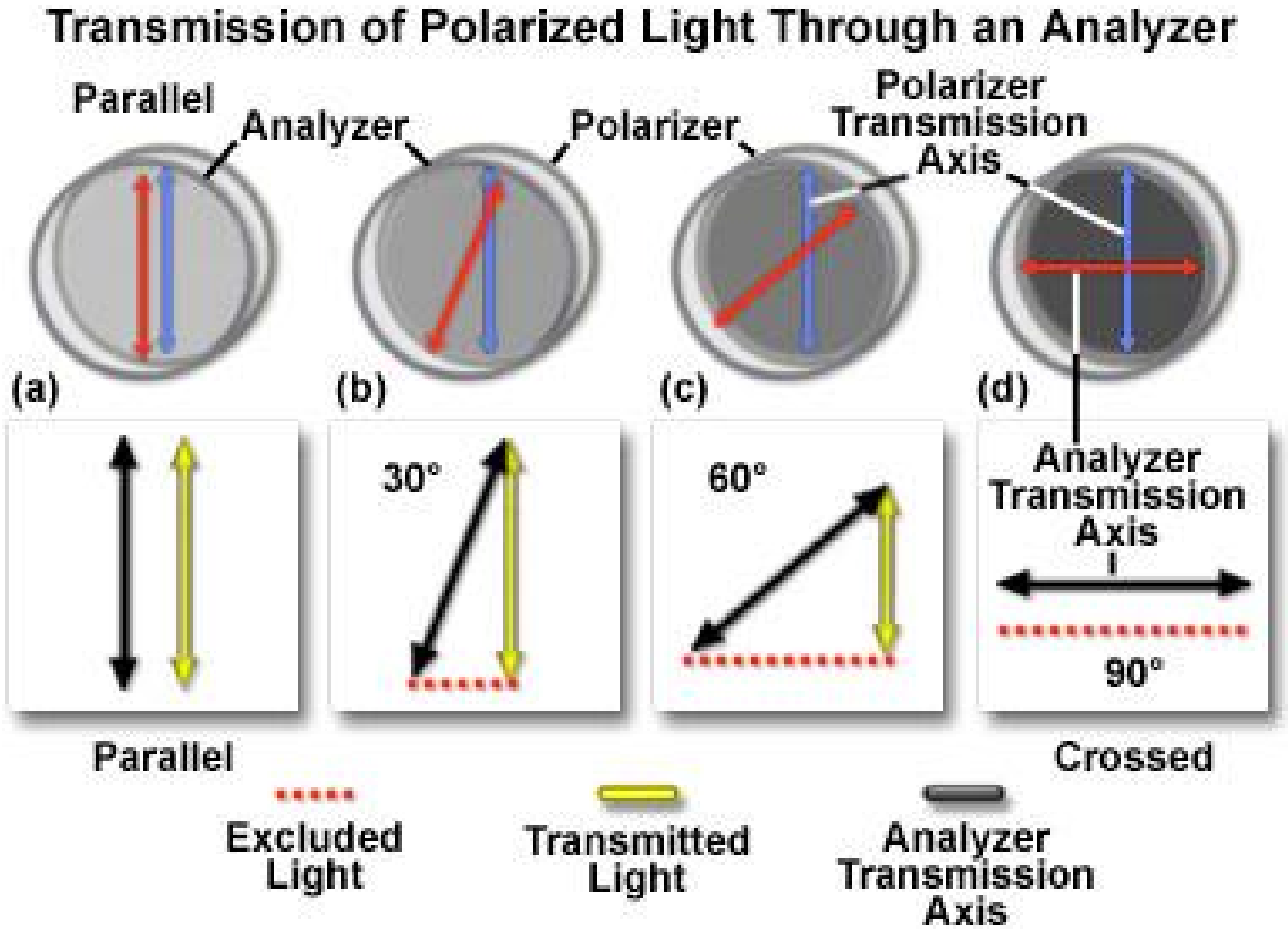


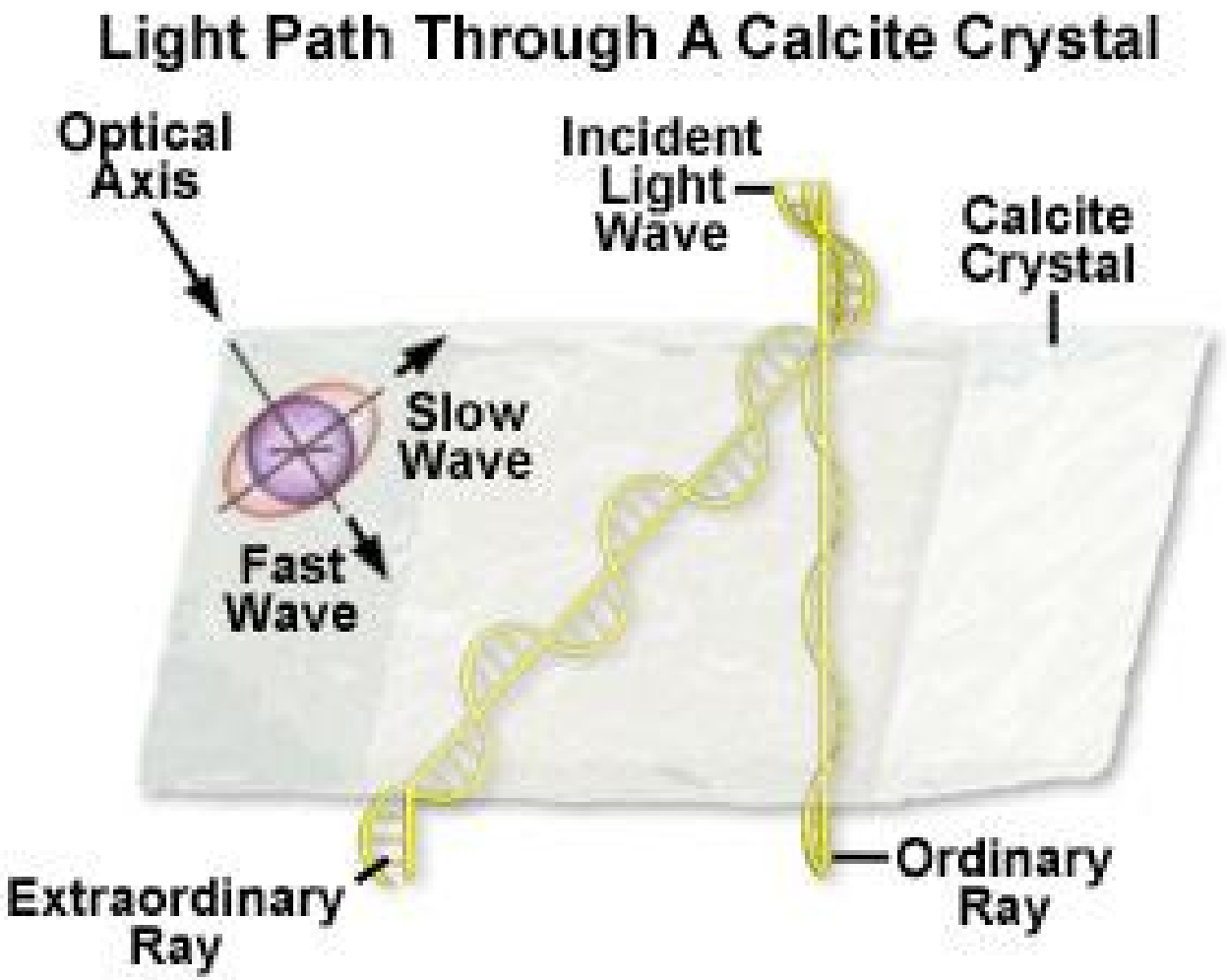
Modified from Graham Dunn &Peter Evennett

The Michel-Lévy Interference Colour Chart

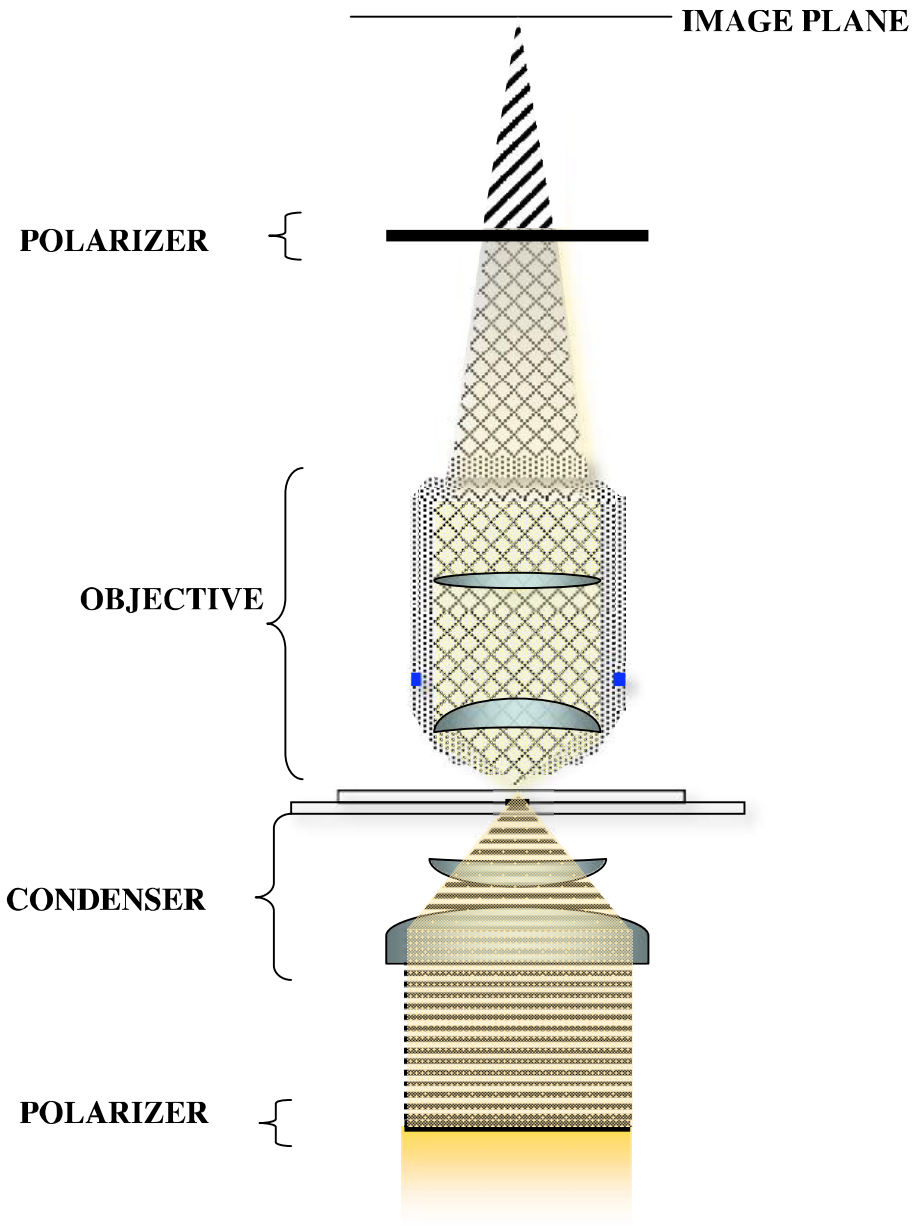


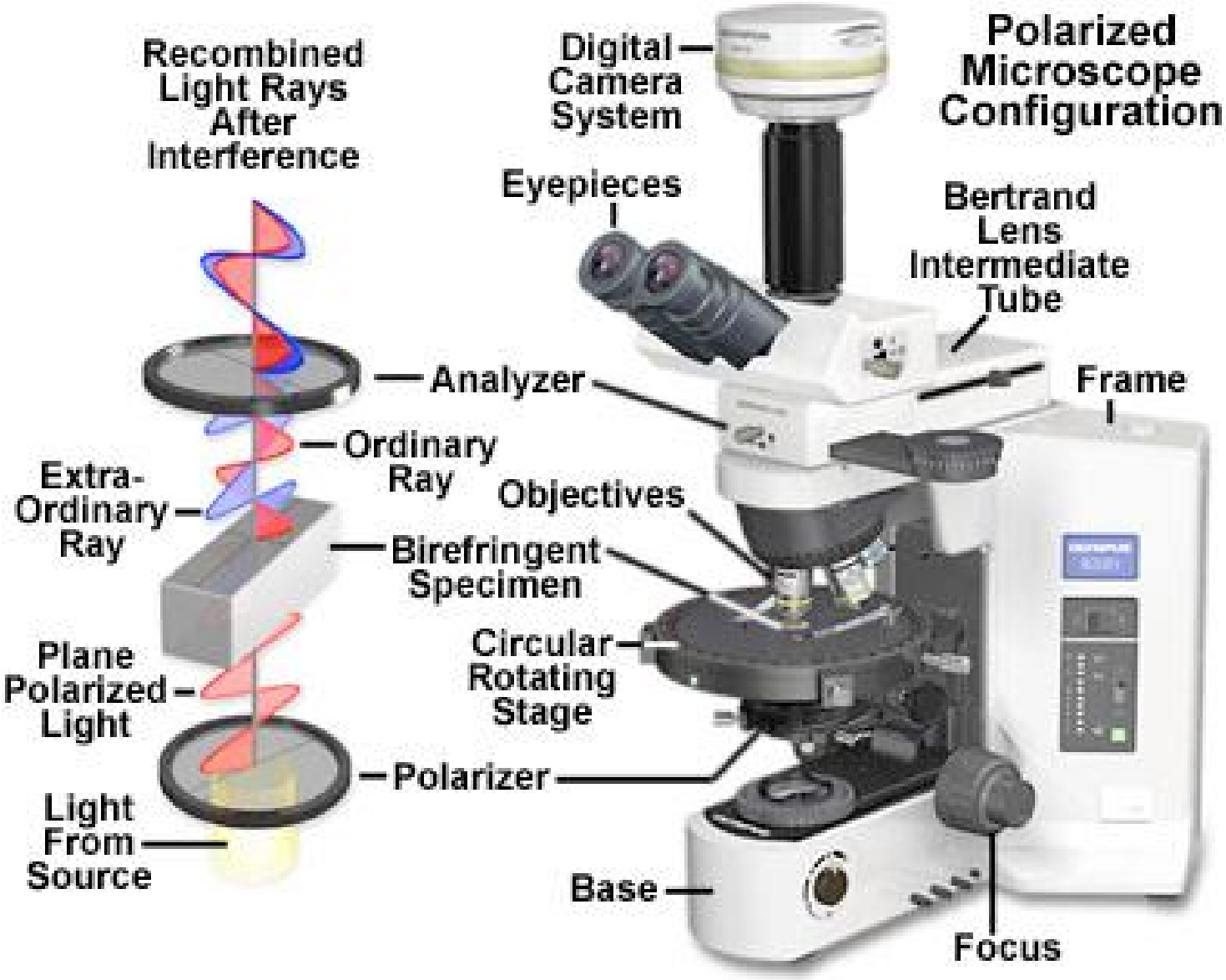
Modified from Graham Dunn &Peter Evennett


Transmission of Polarized Light Through an Analyzer
Parallel
Analyzer
Polarizer
Polarizer Transmission Axis
(a)
(b)
(c)
(d)
30°
60°
Analyzer Transmission Axis
90°
Parallel
Crossed
Excluded Light
Transmitted Light
Analyzer Transmission Axis

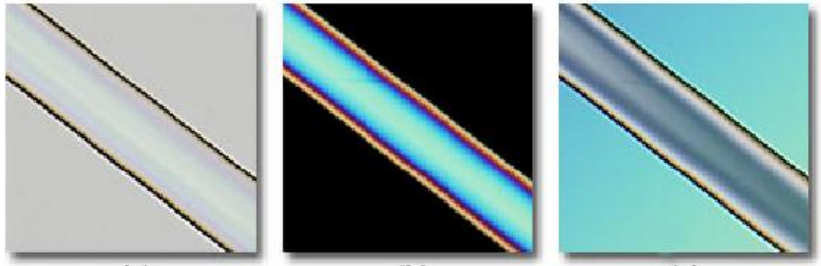

Light Path Through A Calcite Crystal
Optical Axis
Incident Light Wave
Calcite Crystal
Slow Wave
Fast Wave
Extraordinary Ray
Ordinary Ray

POLARIZATION




Recombined Light Rays After Interference
Digital Camera System
Polarized Microscope Configuration
Eyepieces
Bertrand Lens Intermediate Tube
Analyzer
Frame
Ordinary Ray
Extra-Ordinary Ray
Objectives
Birefringent Specimen
Circular Rotating Stage
Plane Polarized Light
Polarizer
Light From Source
Base
Focus

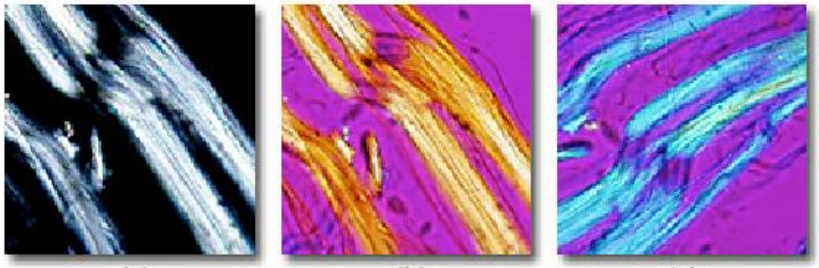
Nylon Fiber in Polarized Light



(a) (b) (c)

Figure 11

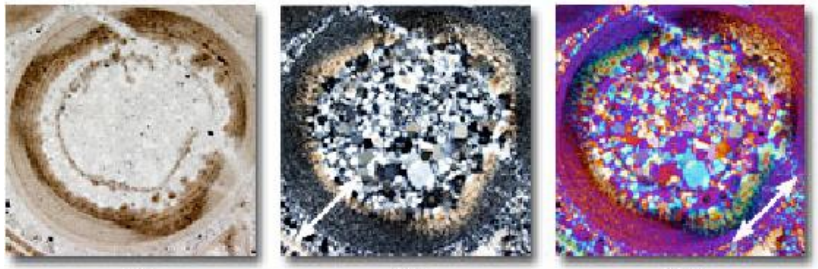
Chrysotile Asbestos Fibers in Polarized Light



(a) (b) (c)

Figure 7

Oolite Thin Section in Polarized Light



(a) (b) (c)

Figure 9