Transmitted-light
Bright field

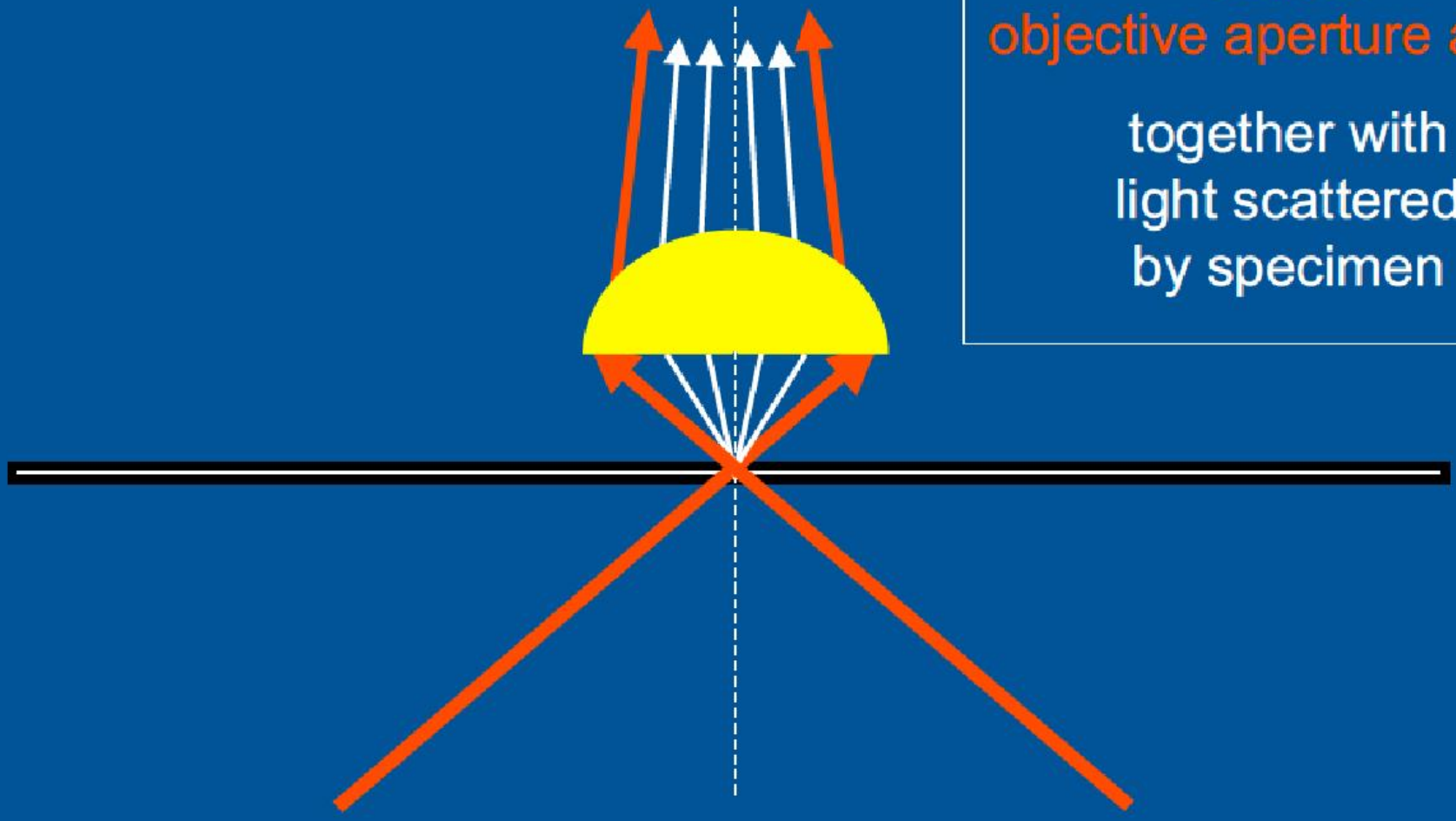
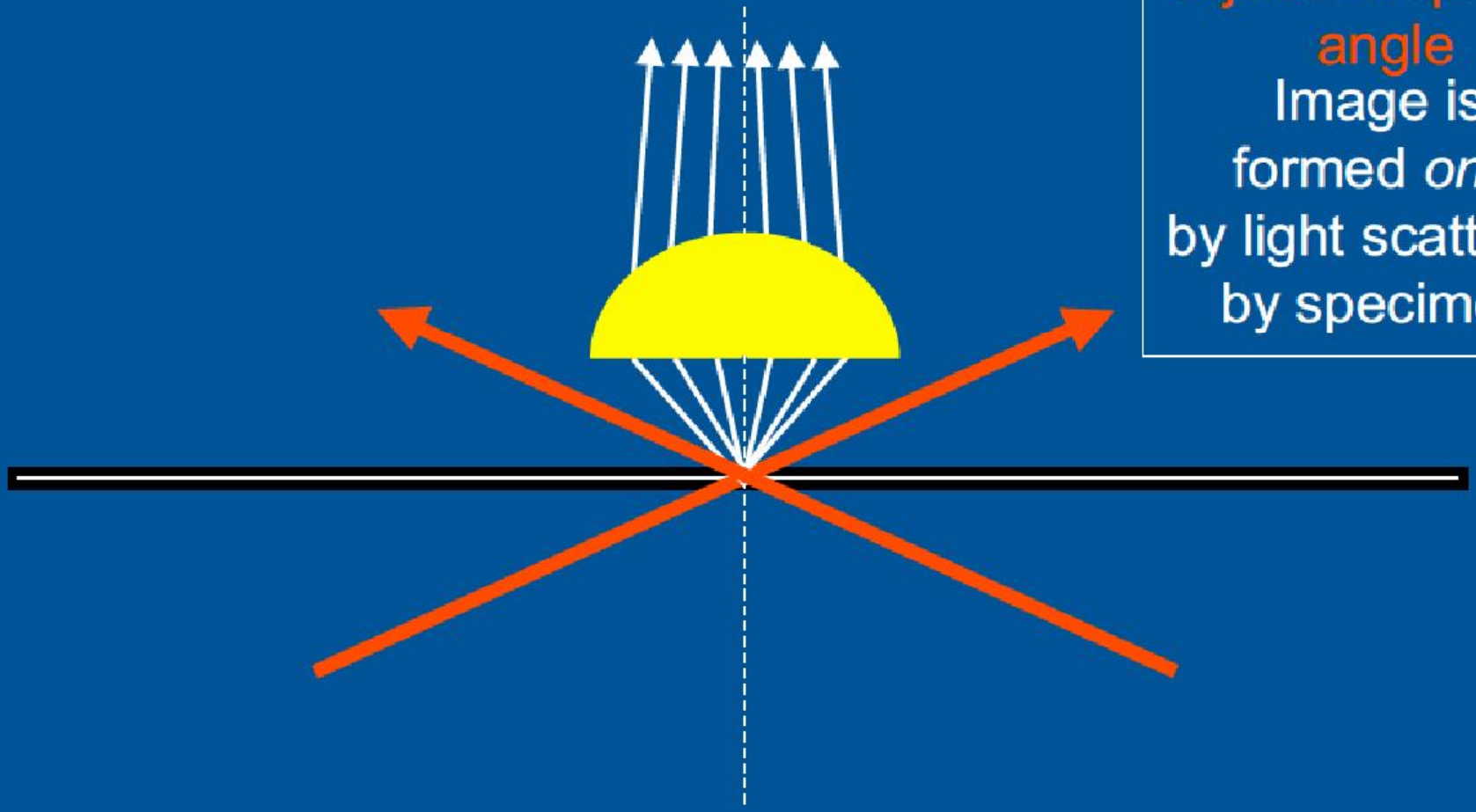


Image formed from illumination which enters ***within*** objective aperture angle

together with light scattered by specimen

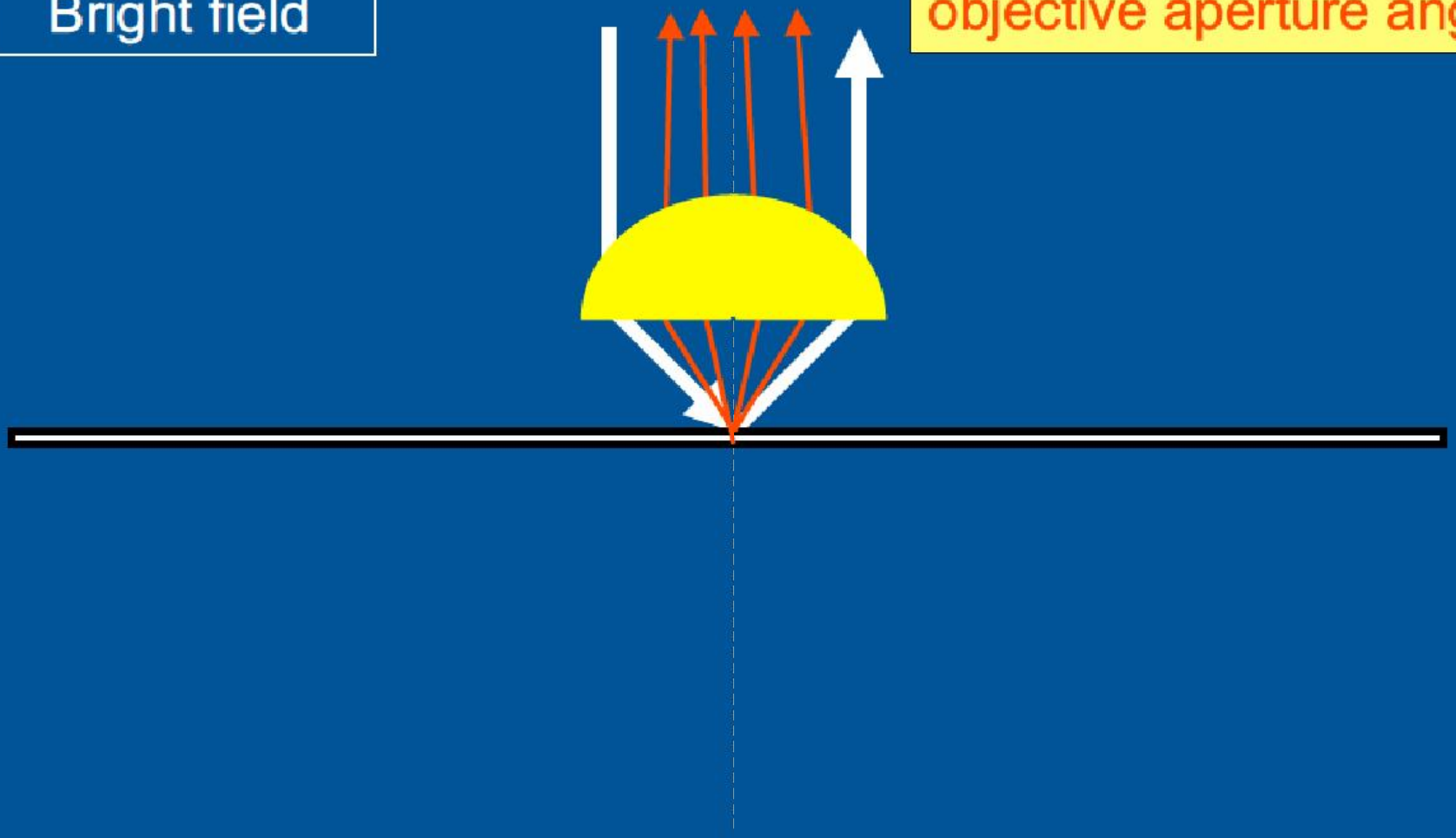
Transmitted-light
Dark field



Illumination falls on specimen ***outside*** objective aperture angle

Image is formed *only* by light scattered by specimen

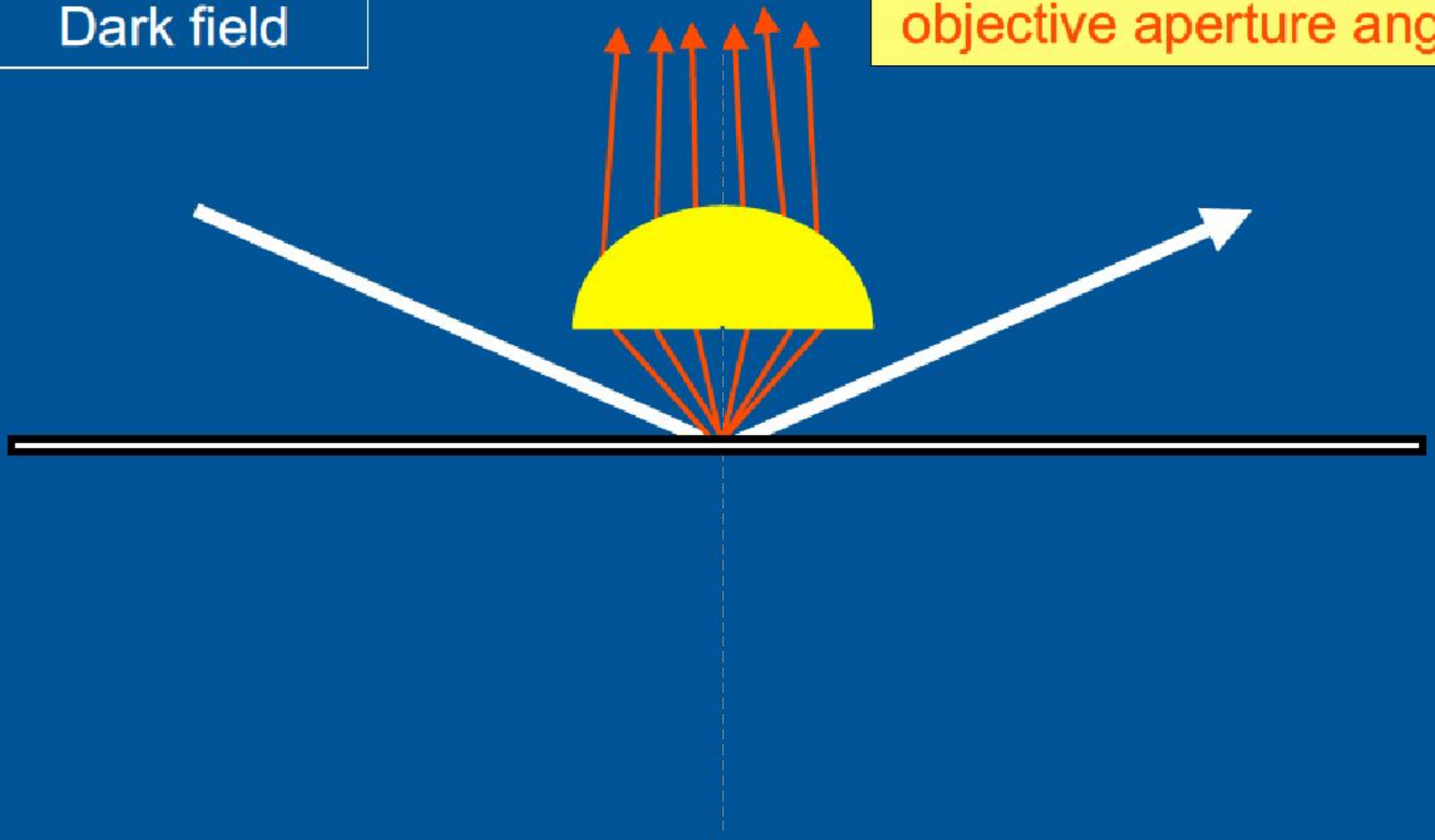
Reflected-light
Bright field

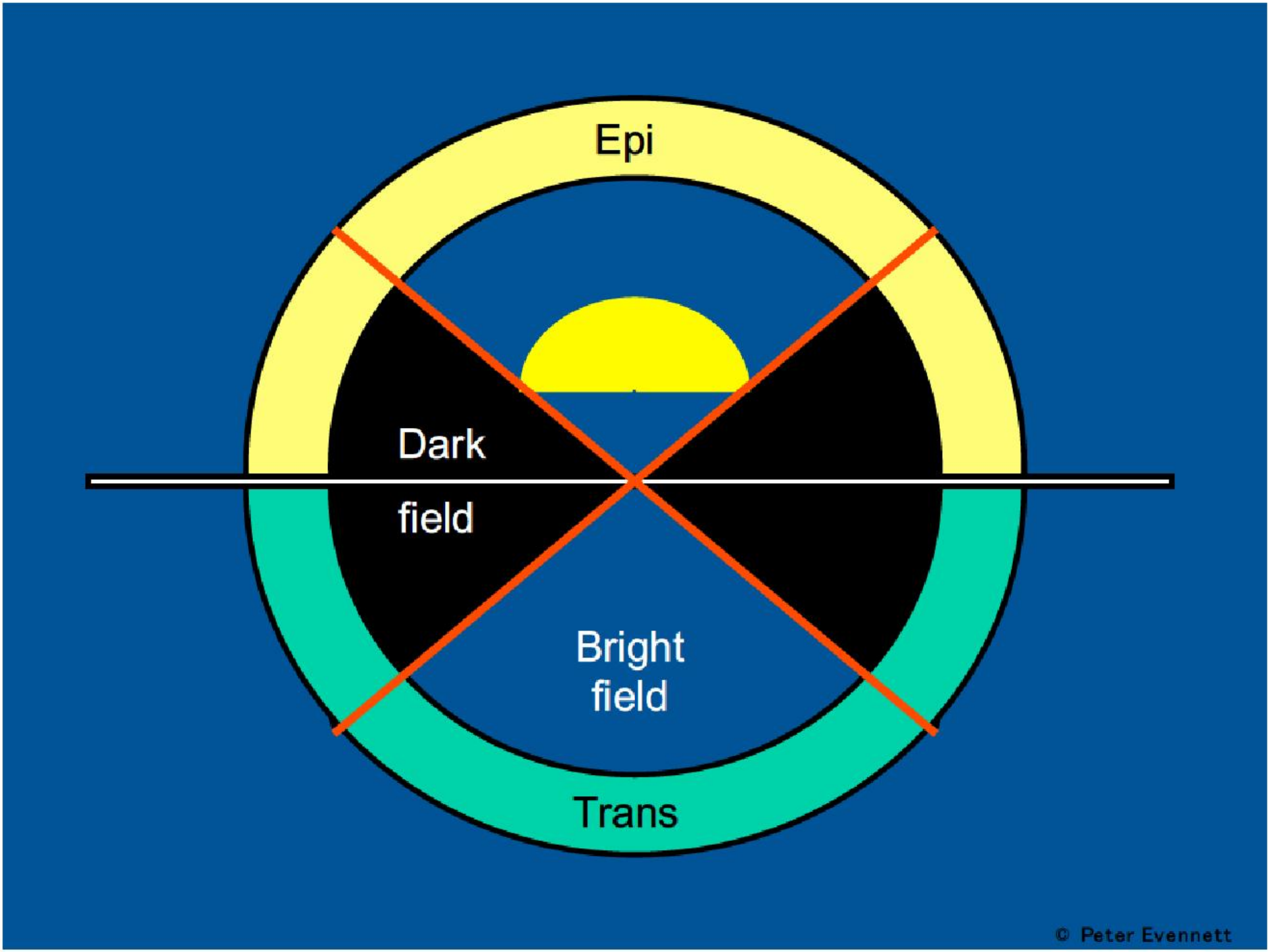


Bright field:
Illumination from ***within***
objective aperture angle

Reflected-light
Dark field

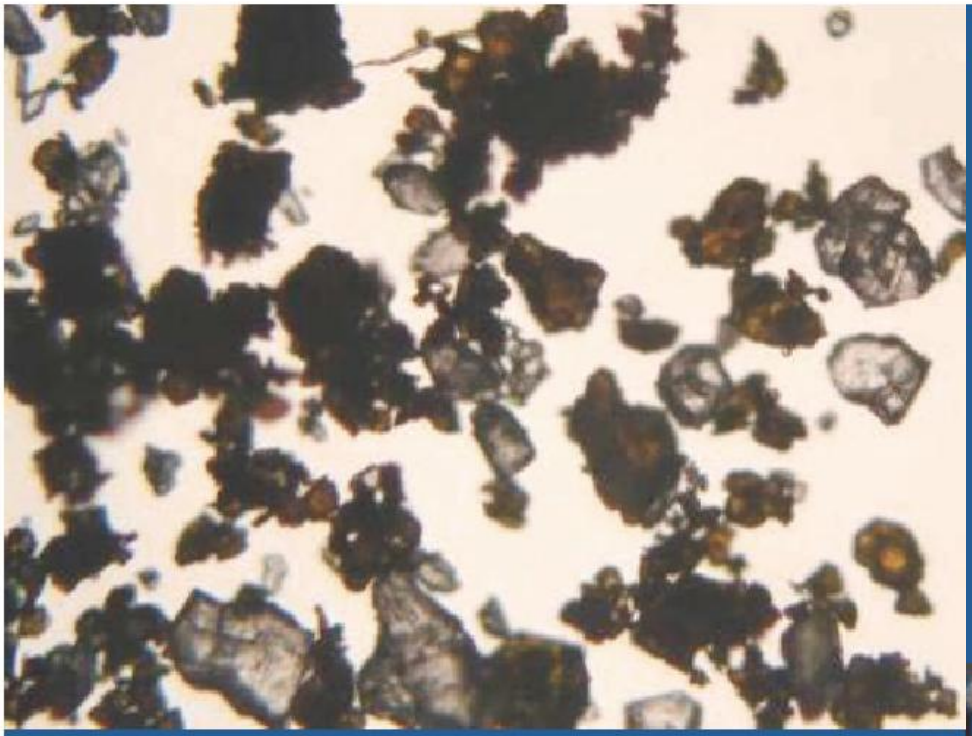
Dark field:
Illumination from ***outside*** objective aperture angle



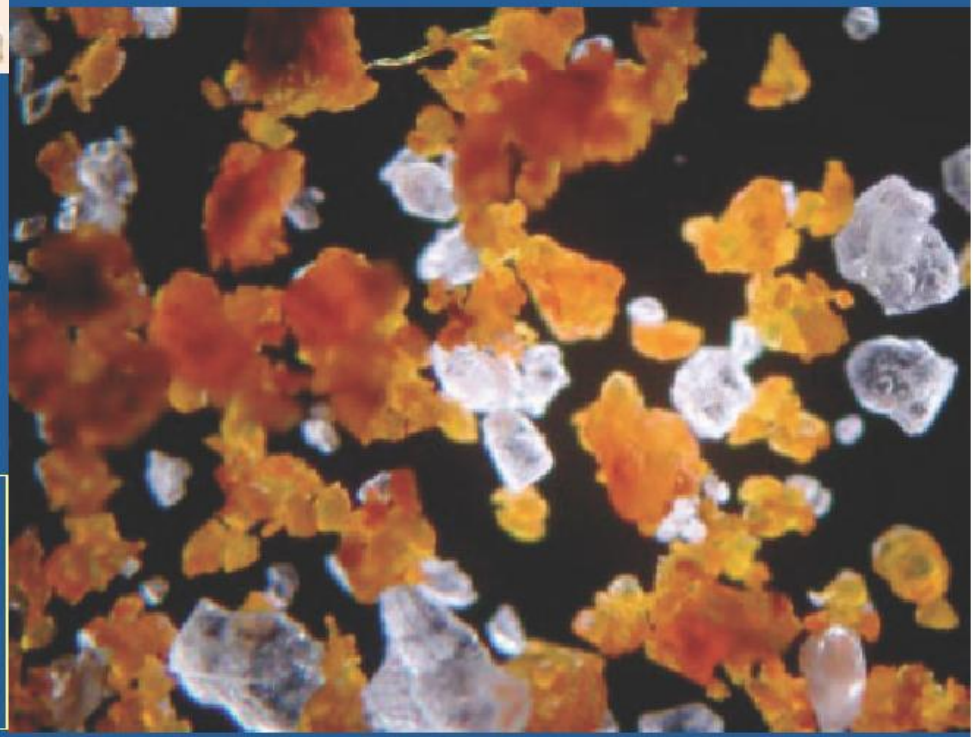

Epi
Dark
field
Bright
field
Trans
© Peter Evennett

Normally-functioning objective lens

Surround with reflecting end delivering light at oblique angle on to surface of specimen



Transmitted-light
Bright field



Reflected-light
Dark field

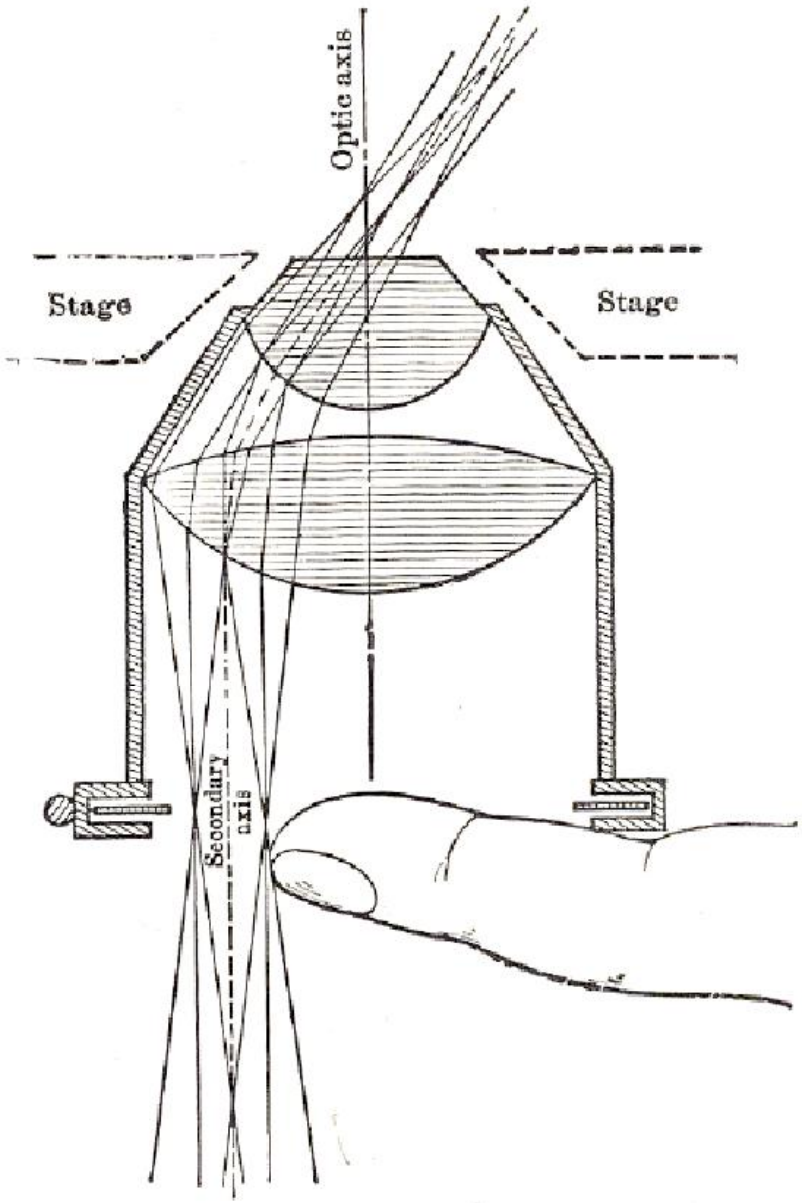
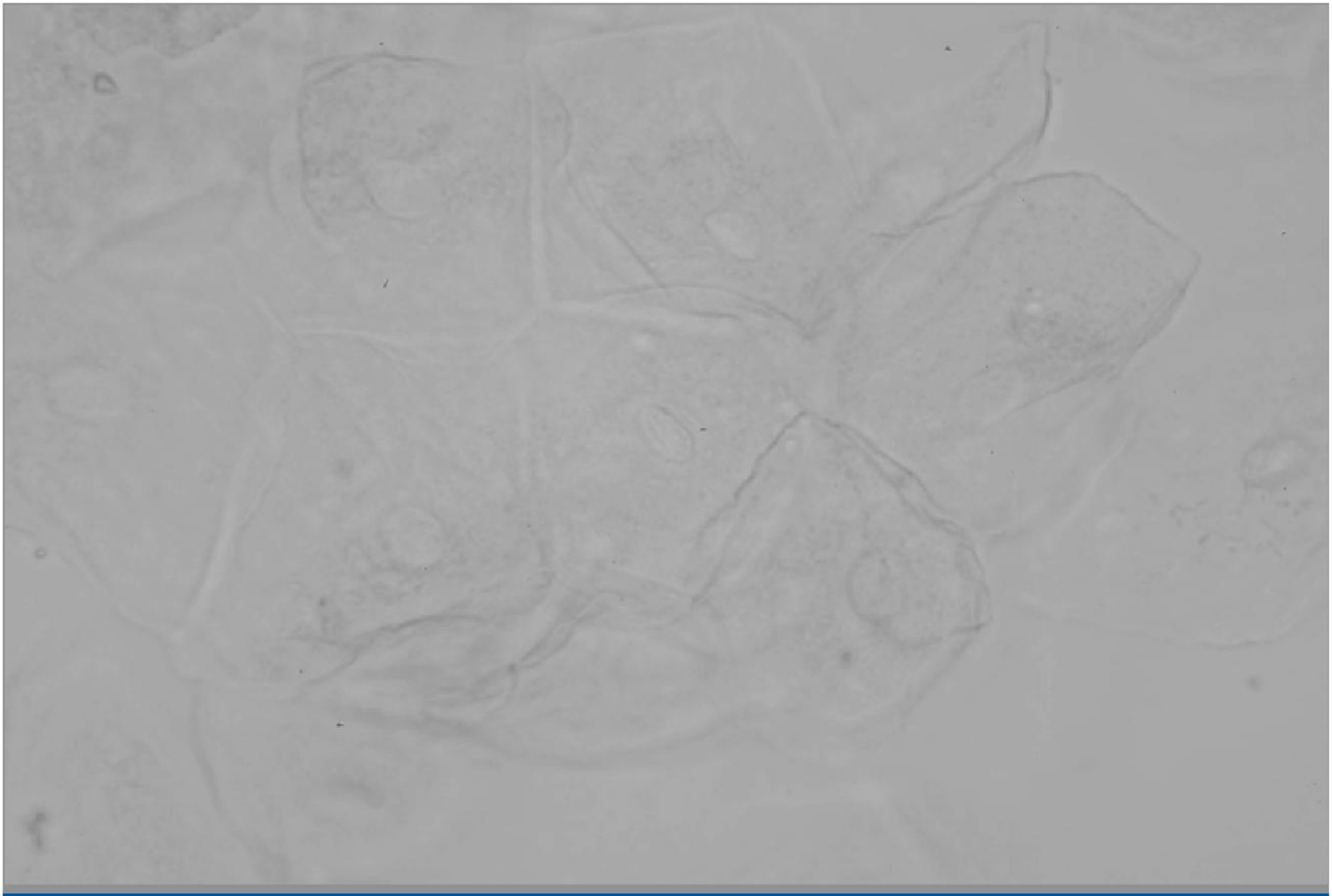


FIG. 62. OBLIQUE LIGHT WITH A CONDENSER.
(From Chamot).

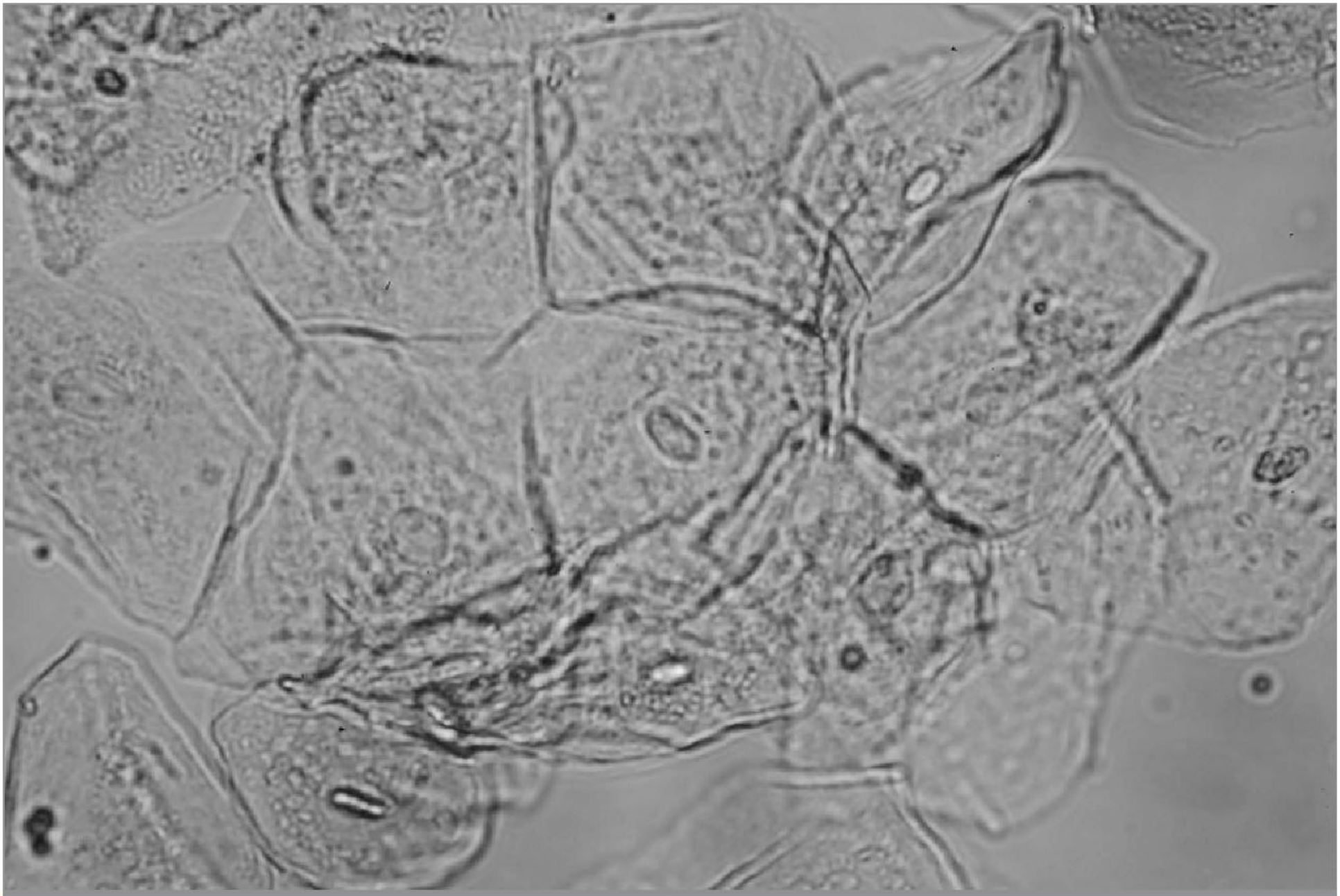
'Digital' oblique illumination

- ie using your finger!

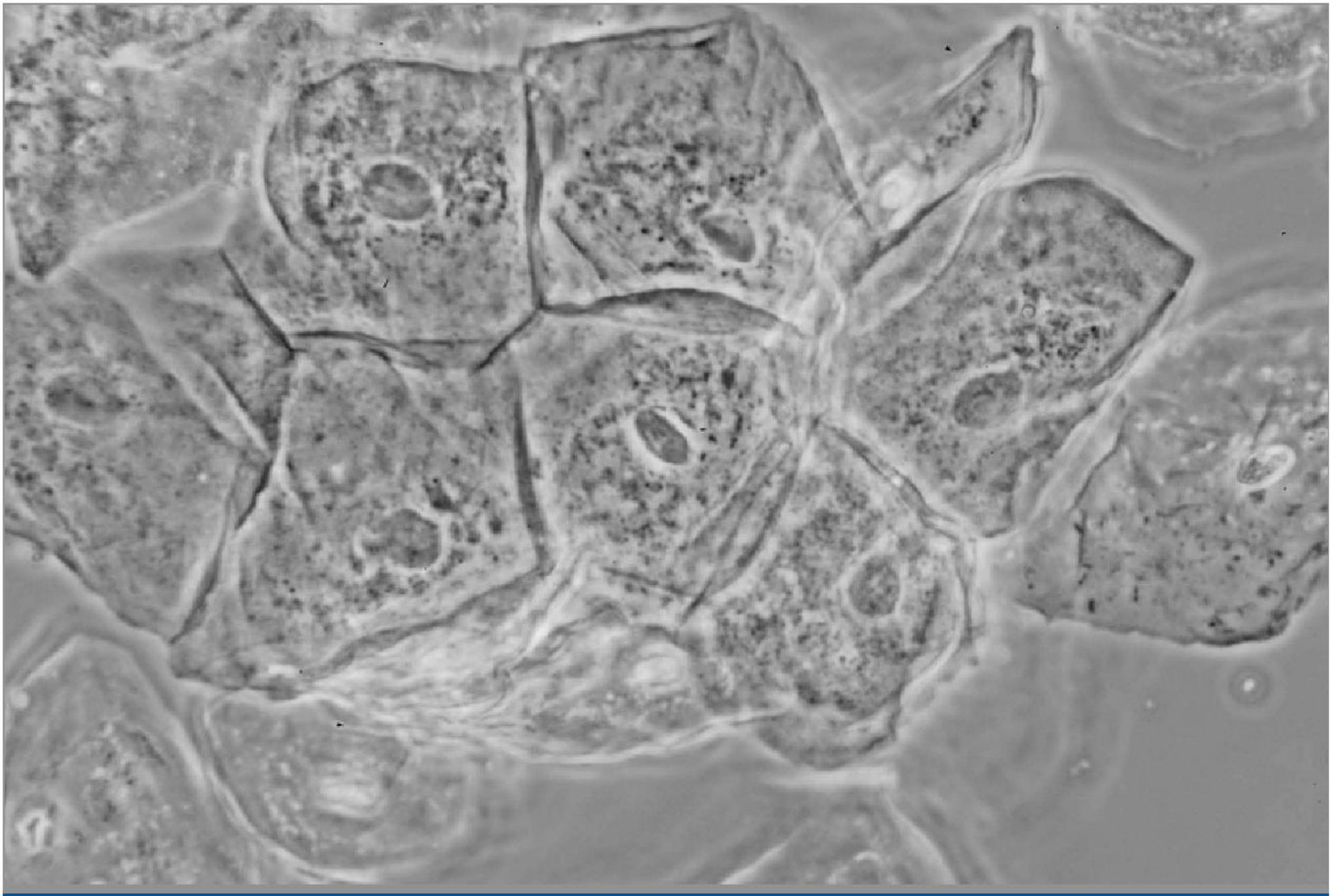
A 'no-cost' option for most microscopes



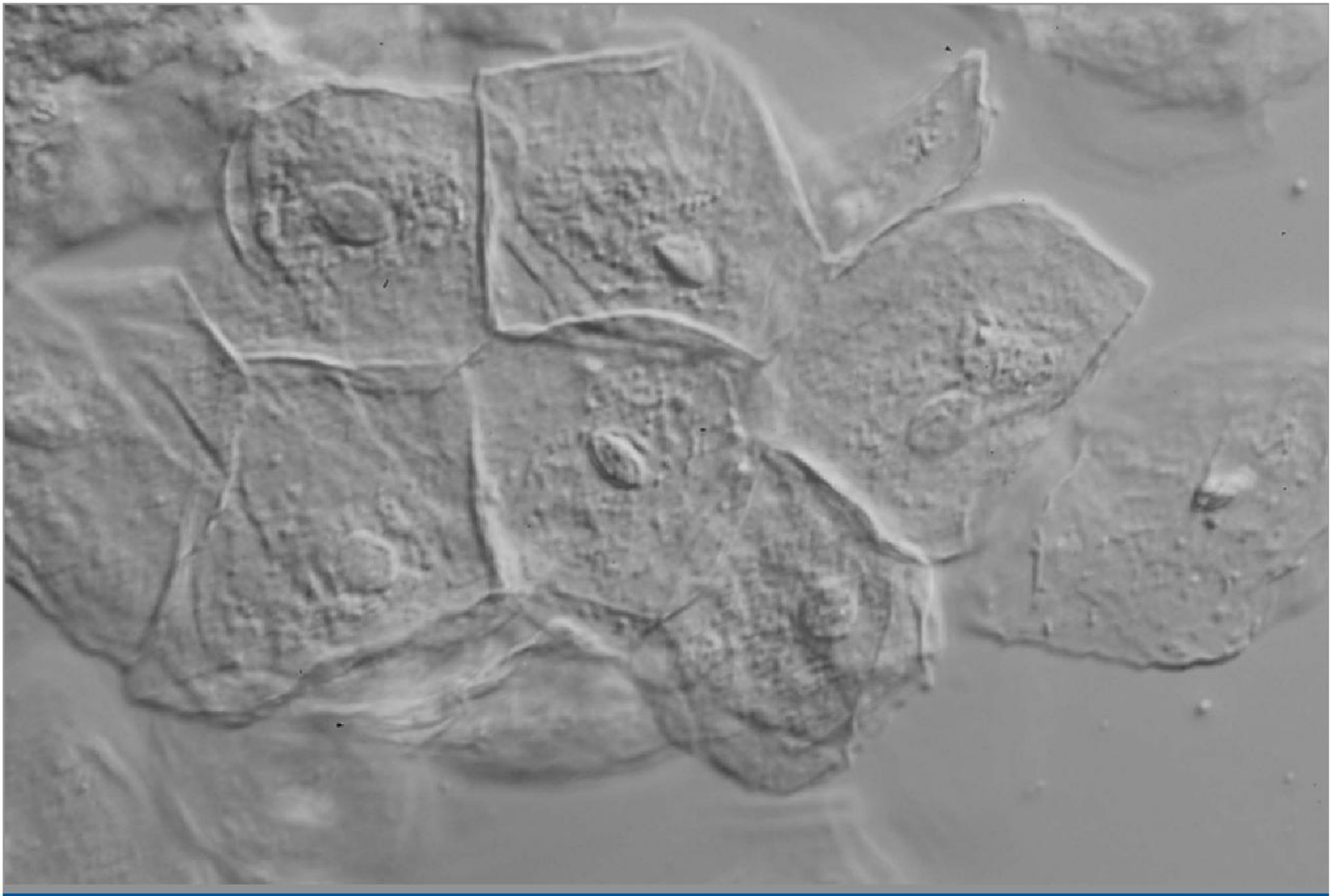
Bright field, full illuminating aperture



Bright field, small illuminating aperture

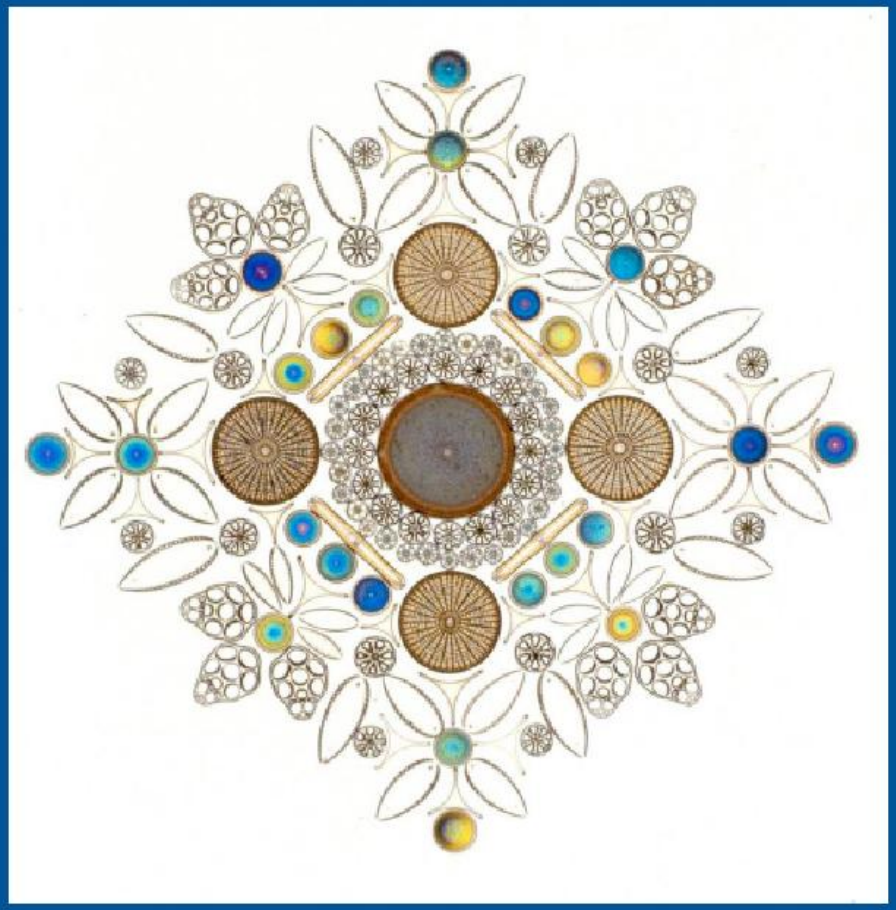


Phase contrast

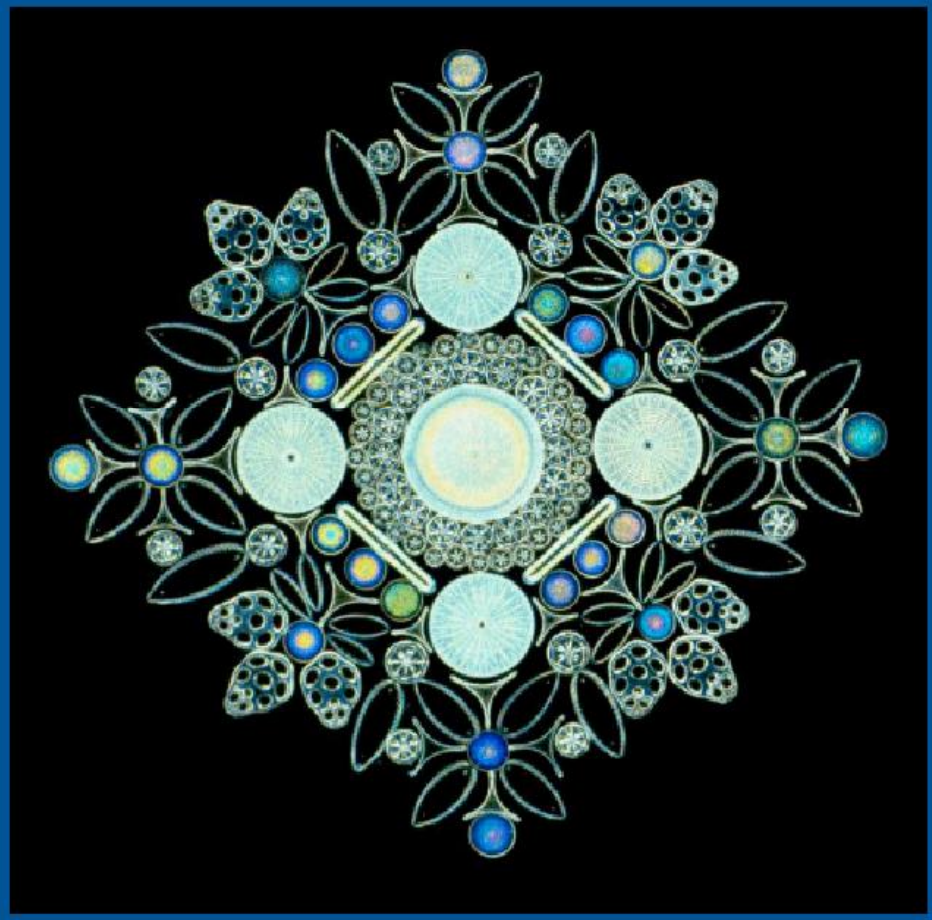


Differential interference contrast

Diatom arrangement: transmitted-light

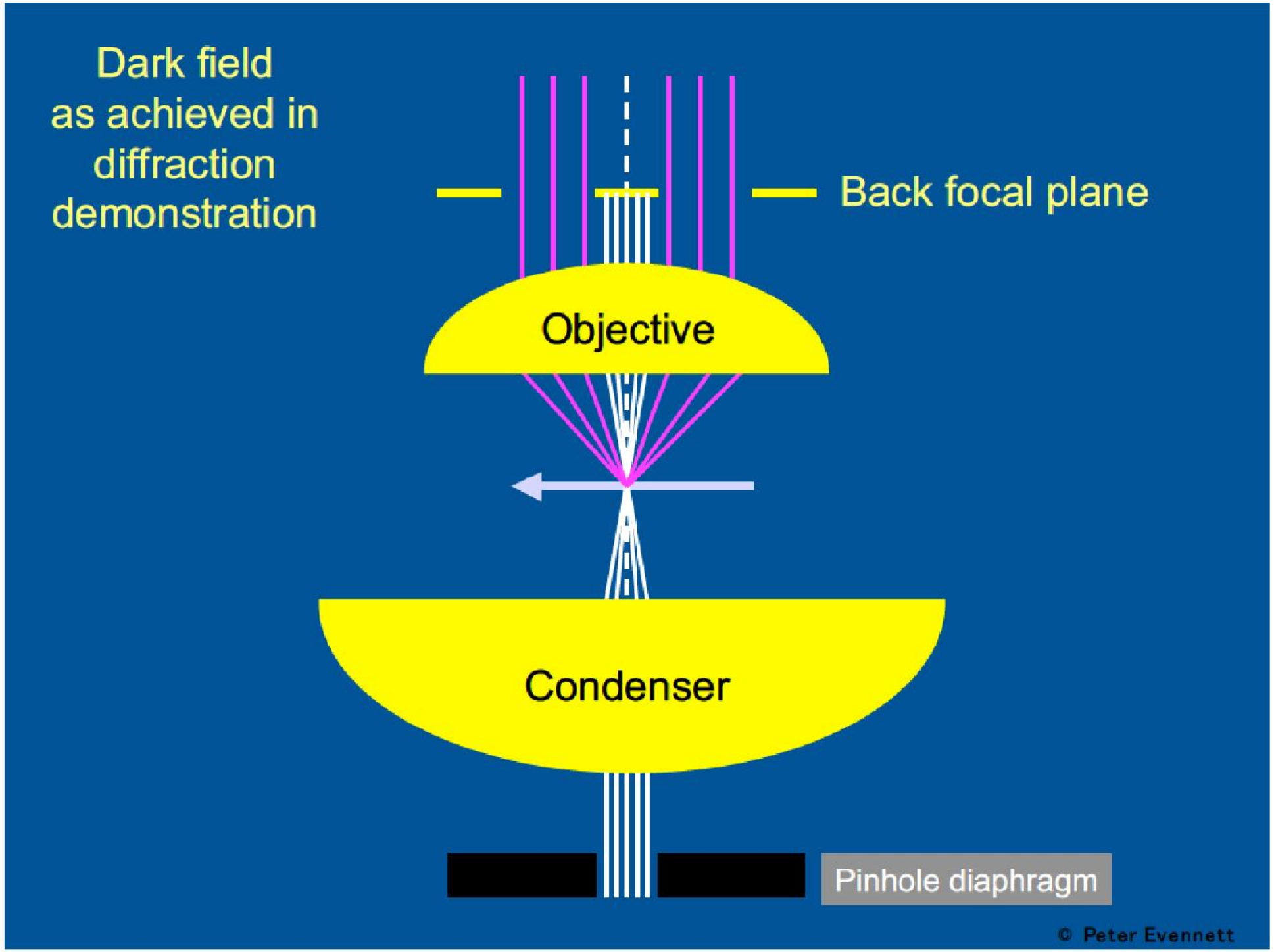


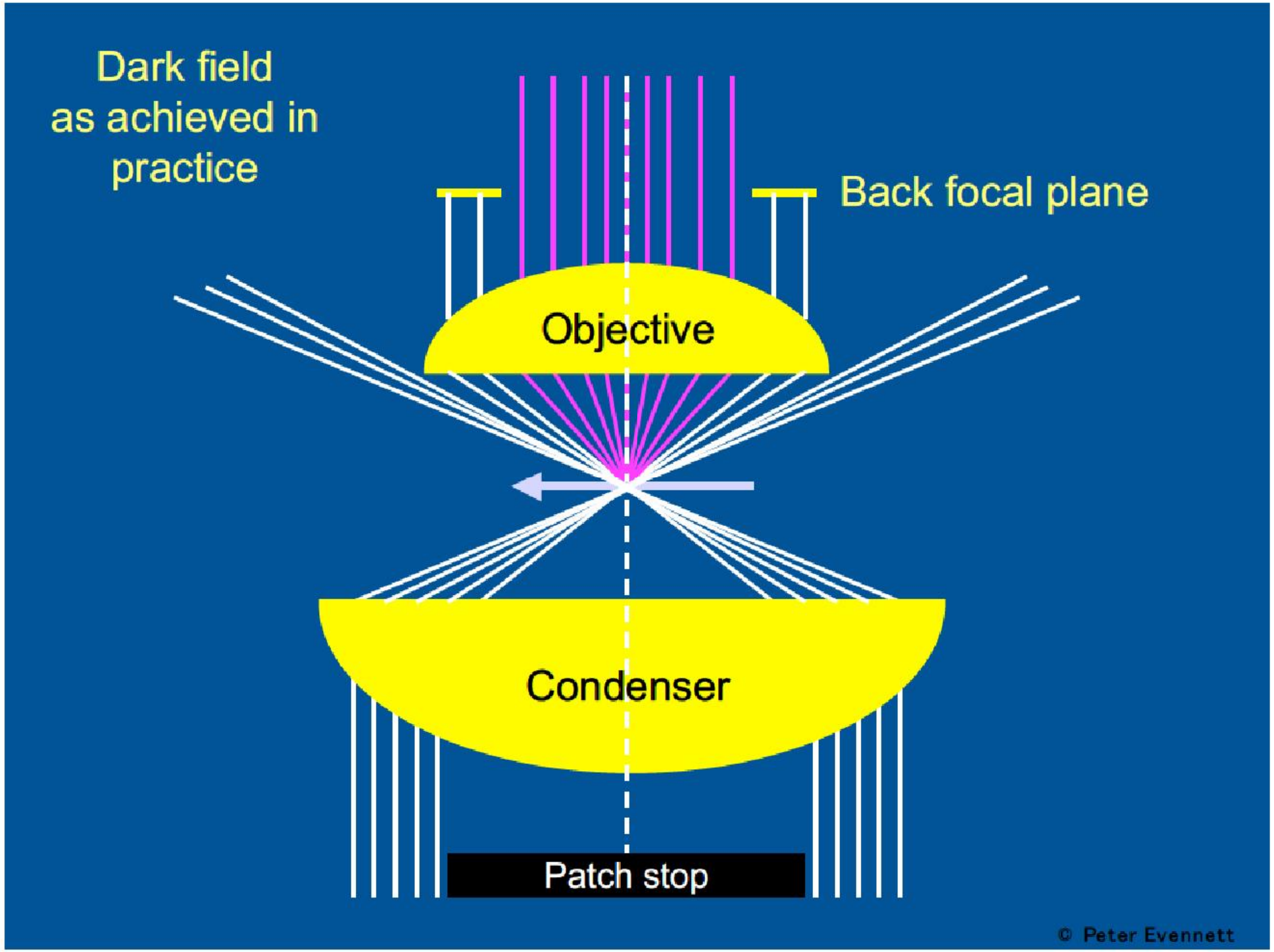
Bright field



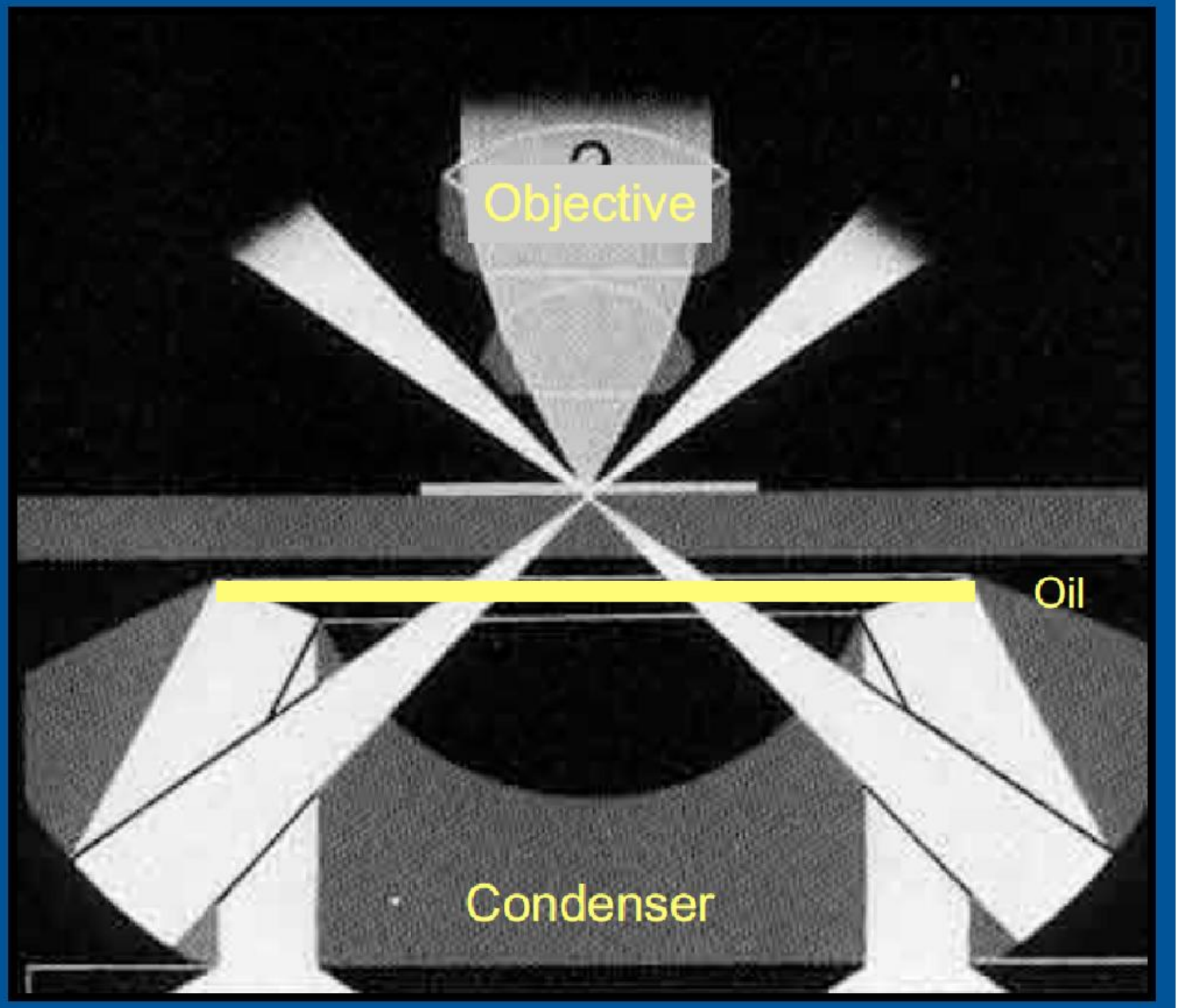
Dark field

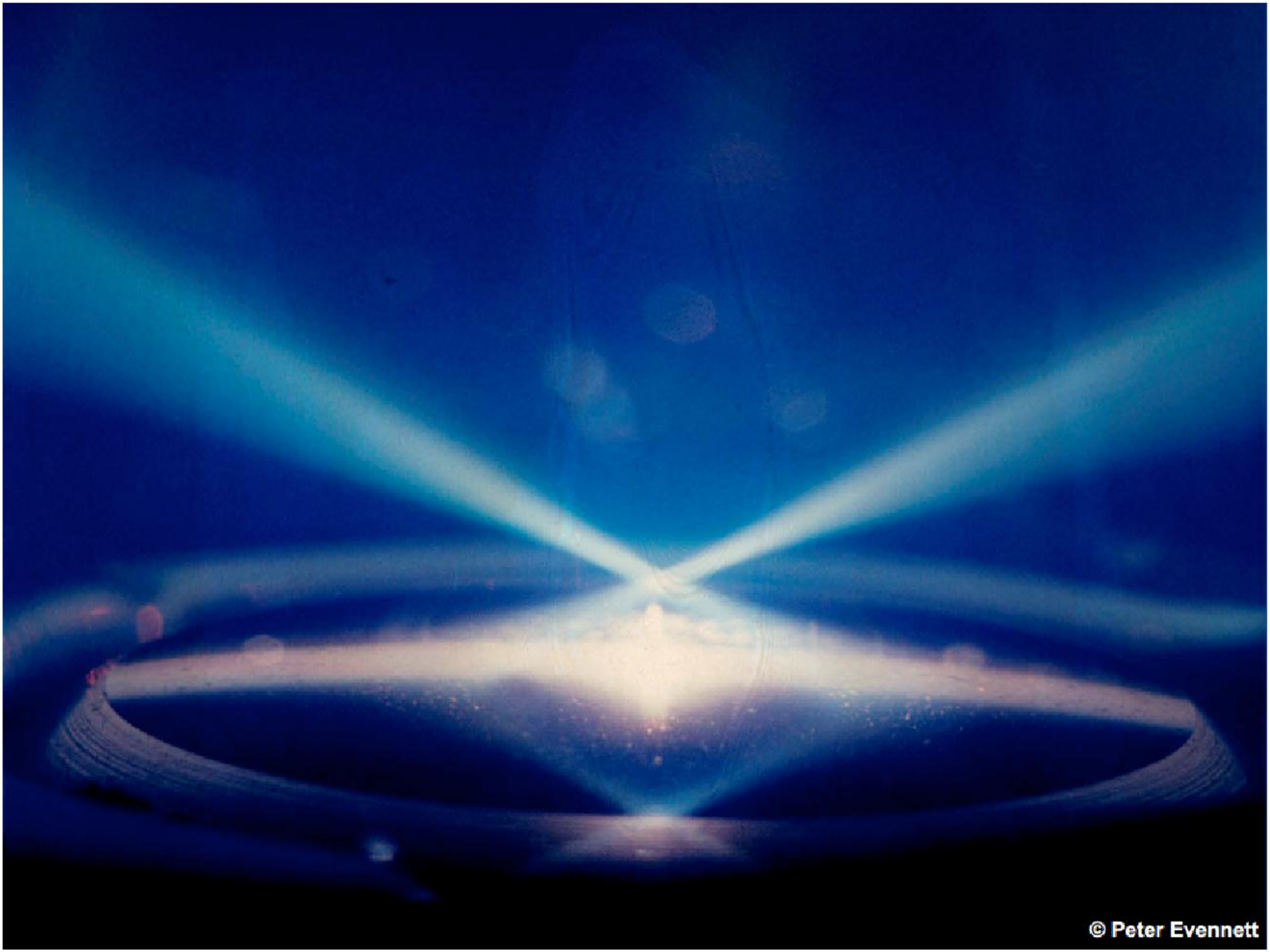

Bryozoa: dark field
© Peter Evennett


Dark field
as achieved in
diffraction
demonstration
Back focal plane
Objective
Condenser
Pinhole diaphragm
© Peter Evennett

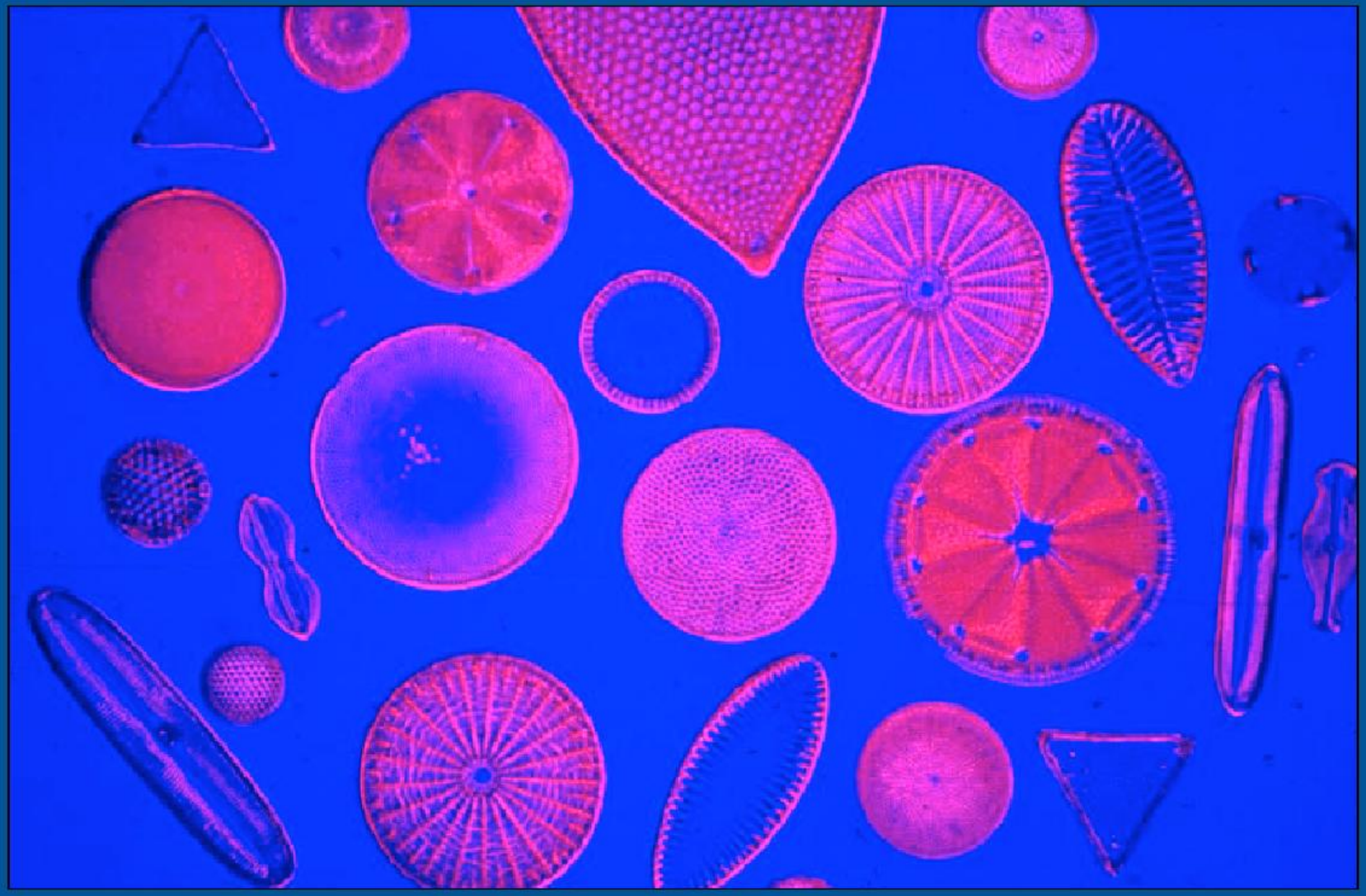

Dark field
as achieved in
practice
Back focal plane
Objective
Condenser
Patch stop
© Peter Evennett

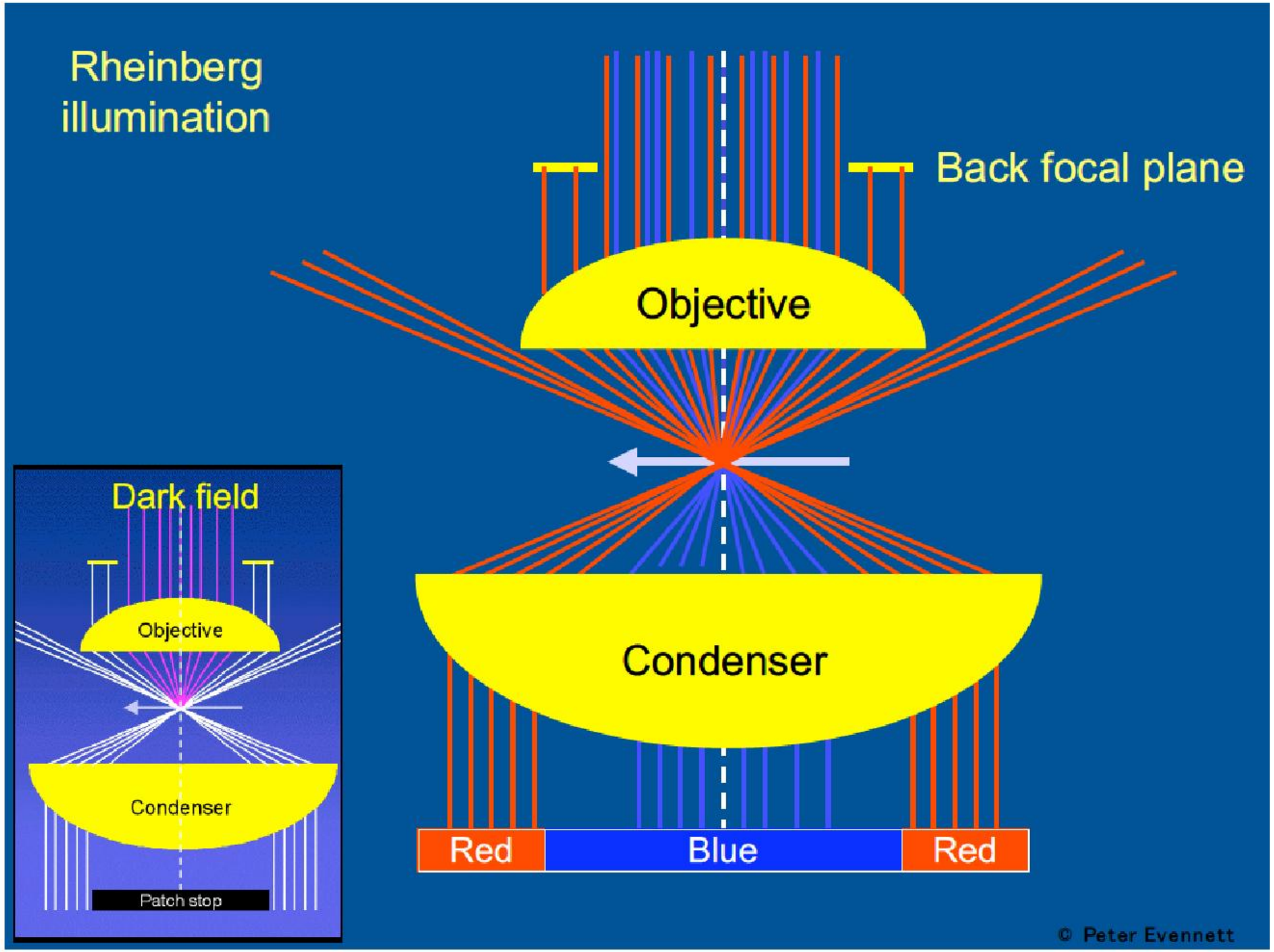
Dark field condenser operating by reflection




© Peter Evennett

Diatoms: Rheinberg illumination




Rheinberg illumination
Back focal plane
Objective
Condenser
Red
Blue
Red
Dark field
Objective
Condenser
Patch stop
© Peter Evennett