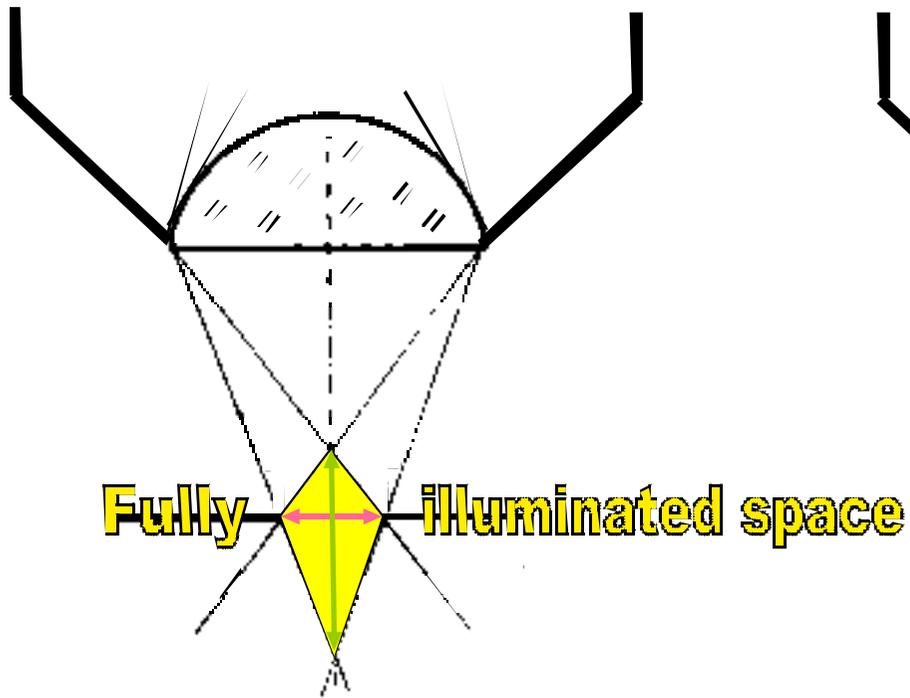


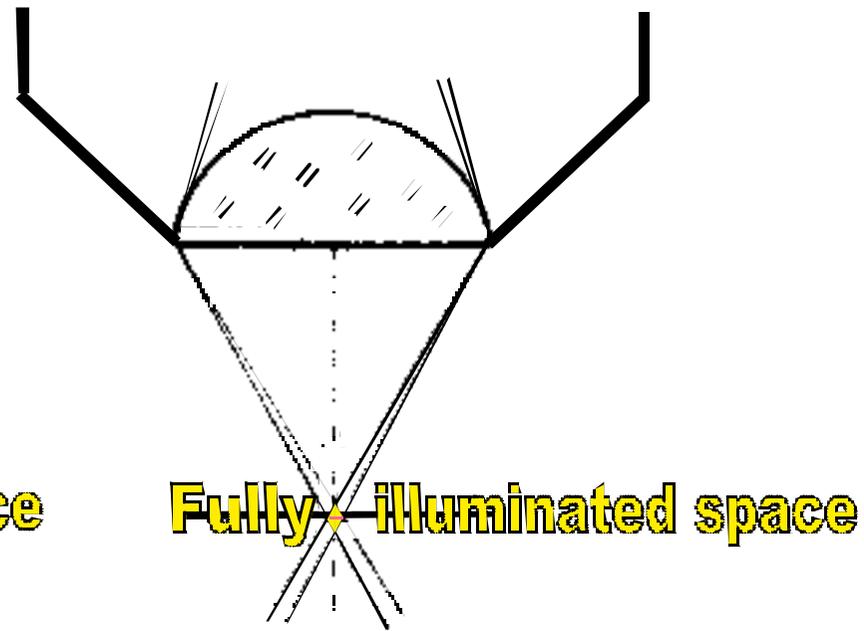
Petráň M., Hadravský M.

How was the Tandem Scanning Microscope Born

Dependence of field depth on field size

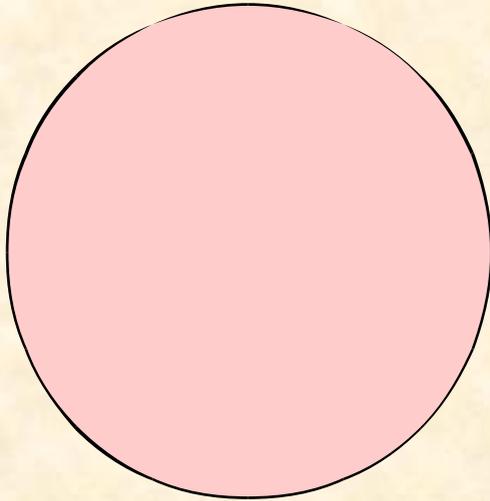


Field **width** and **depth** as allowed by the eyepiece field stop size



Field **width** and **depth** as determined by the very narrowed illuminated field

Interdependence of the size of the field illuminated and the quality of its image



Broad field

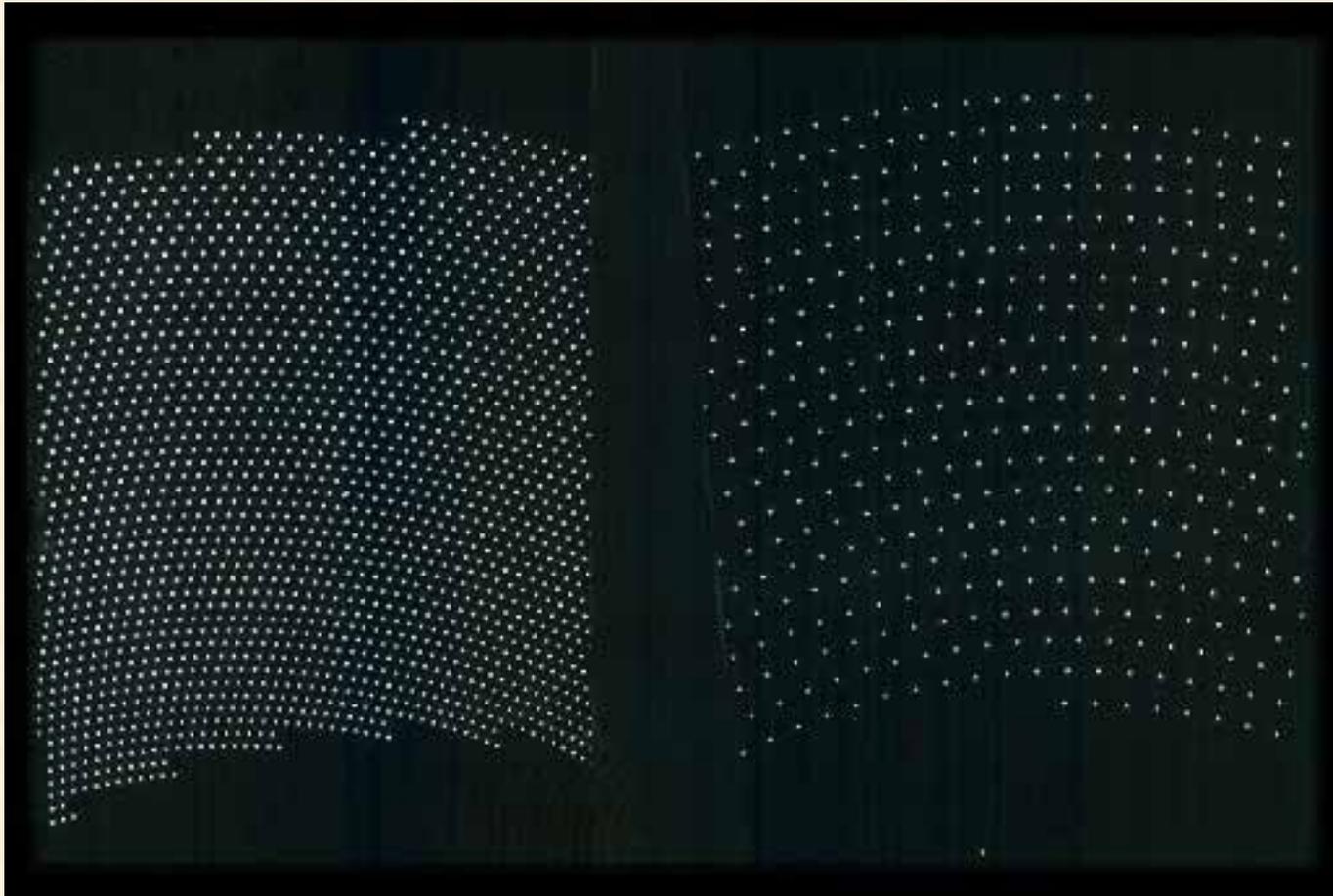


Narrow field

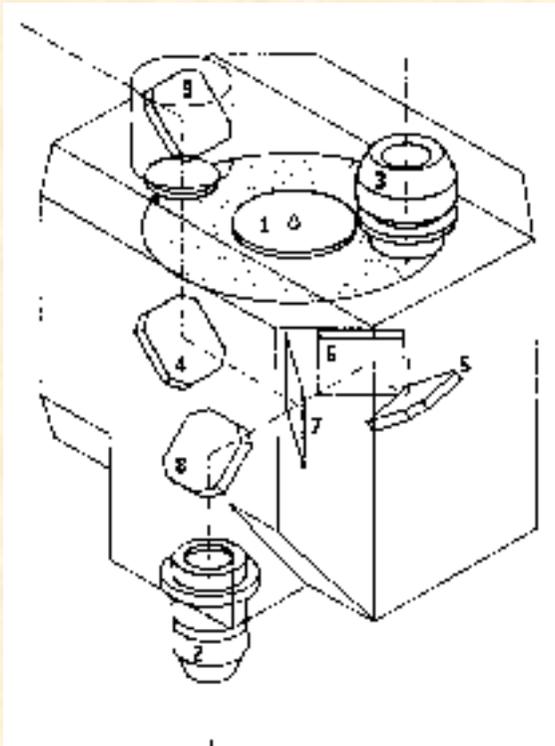
Two of several examples of tested hole patterns

Nipkow disc holes
set by means of
polar coordinates

Nipkow disc holes
set by means of
spiral coordinates



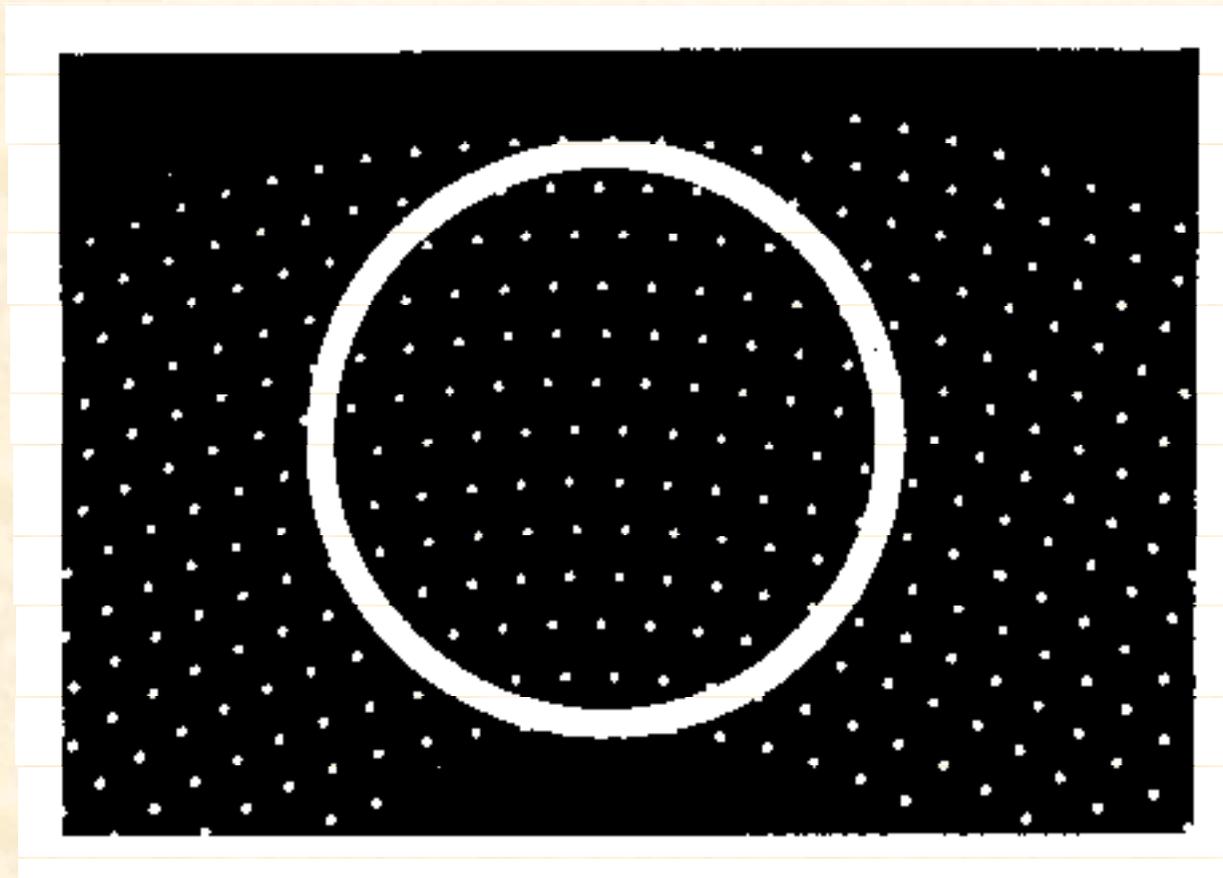
TSM with mirrors



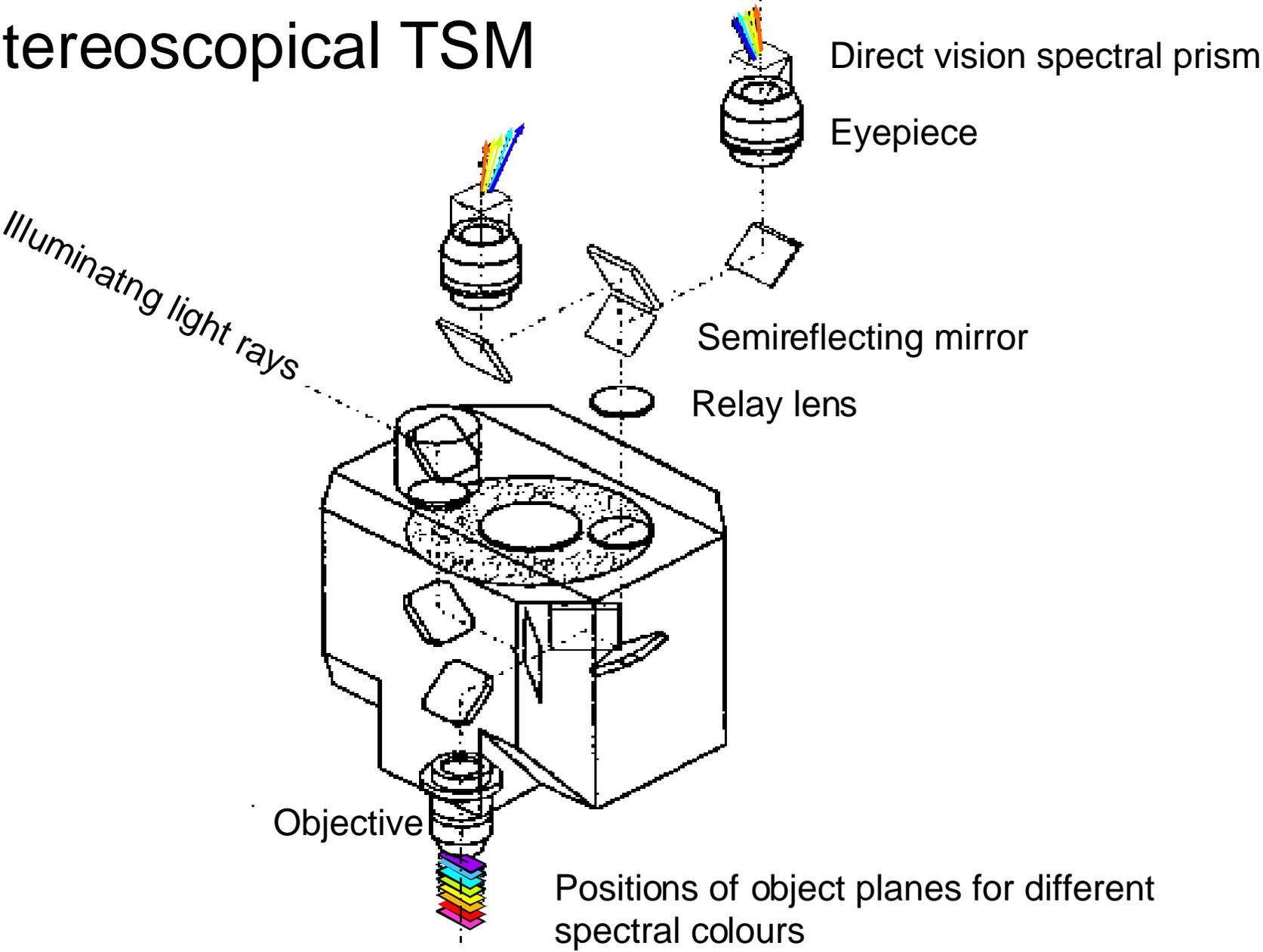
- 1 Nipkow disc
- 2 Microscope objective
- 3 Eyepiece
- 4, 5, 6, 7 Mirrors amalgamating virtually the elemental illumination and image „points“ in the object space
- 7 The „limitlessly“ thin semireflecting-semitransparent mirror (coated mica foil)
- 8, 9 Input and output mirrors (determining position of the light source and of the objective)

Interrupted line – optical axis

One of our Nipkow disc modifications containing greater and rather thinner equidistant holes of equal size.
The ring illustrates size of the image field observed;
here it contains 95 holes on average



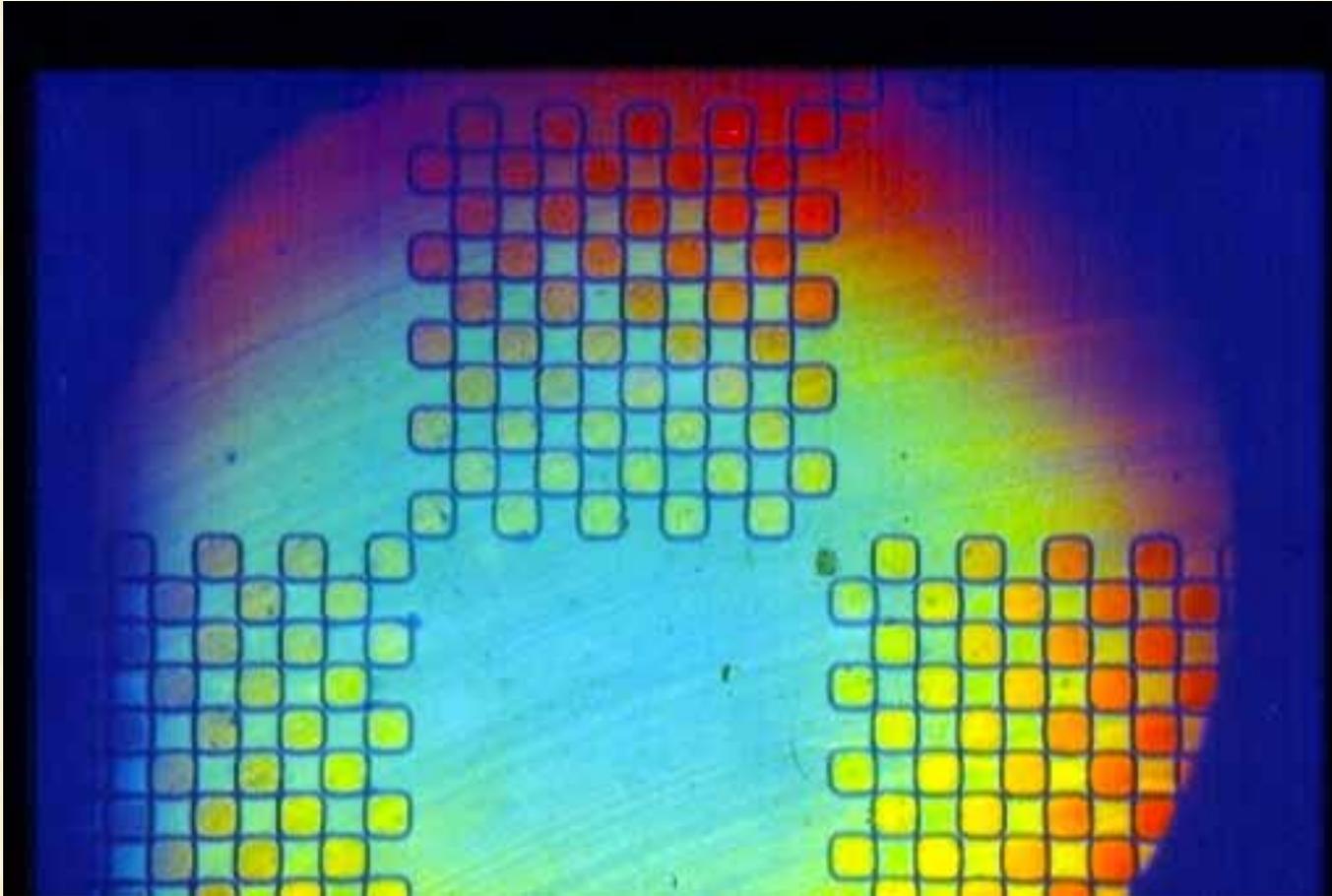
Stereoscopic TSM



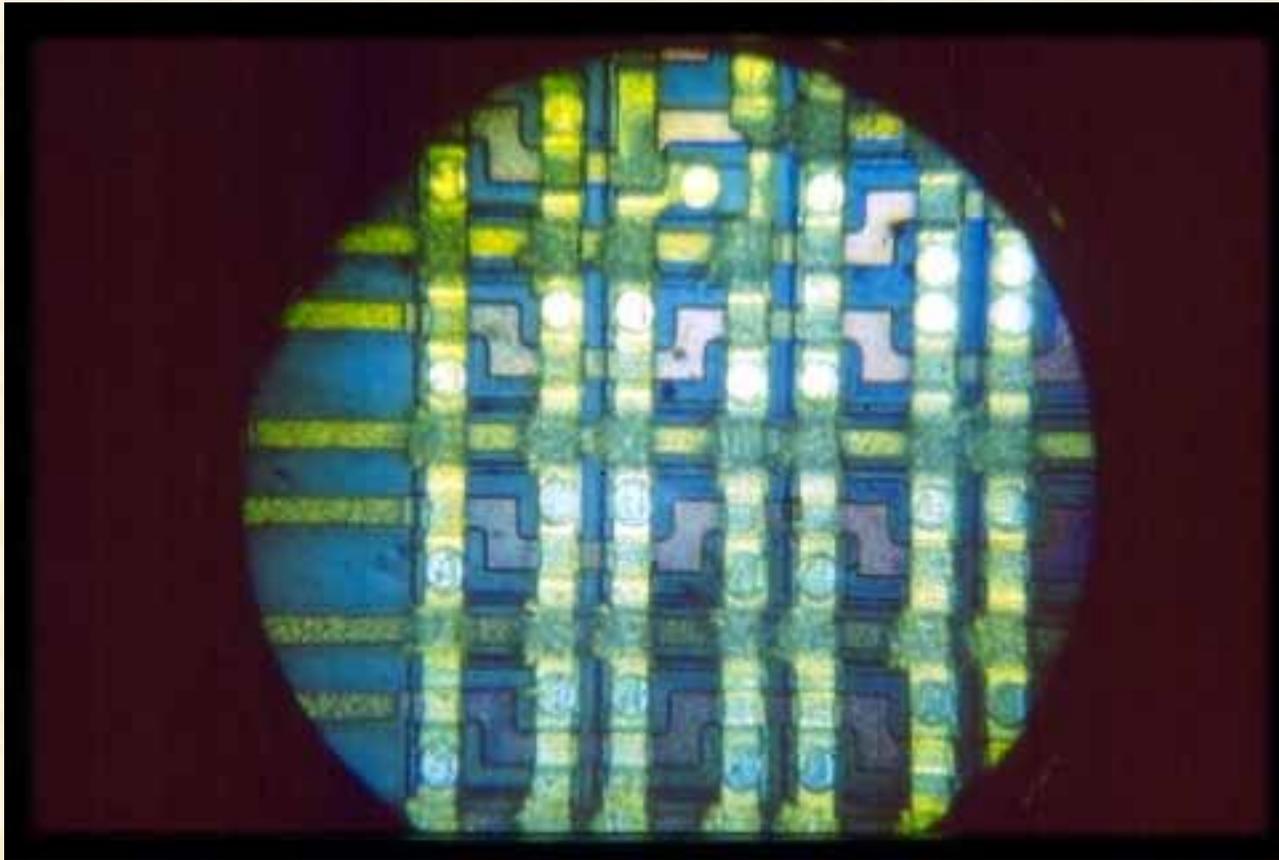
Several species of Diatomae: one slide of the stereoscopical pair



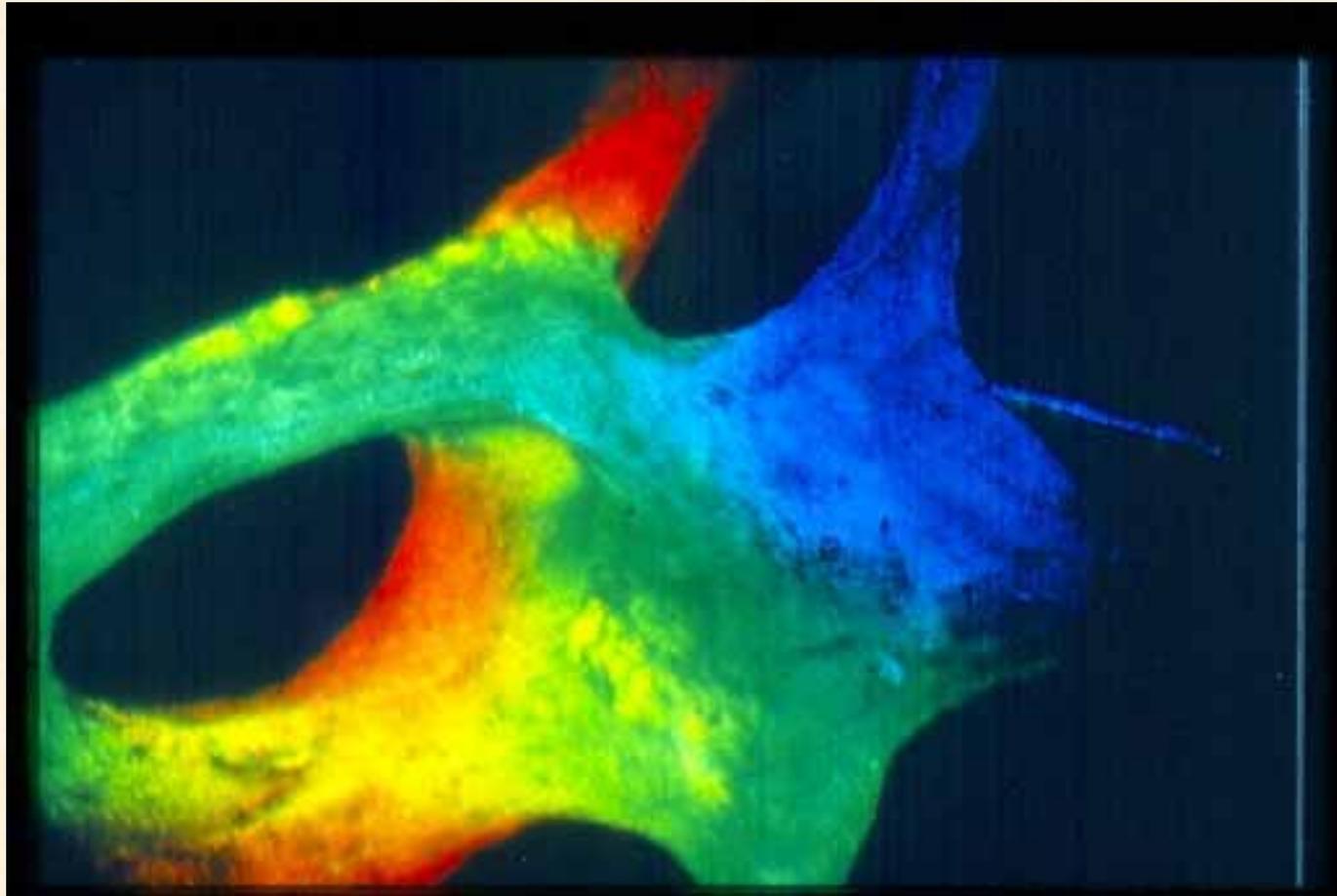
Testing slide: About 1 μm thick „tiles“ on a plane glass surface
color changes are due to the tile thickness and also due to the lens object
plane curvature. Note the different eye sensitivity for wavelength change; it
is maximum on the border between red and orange



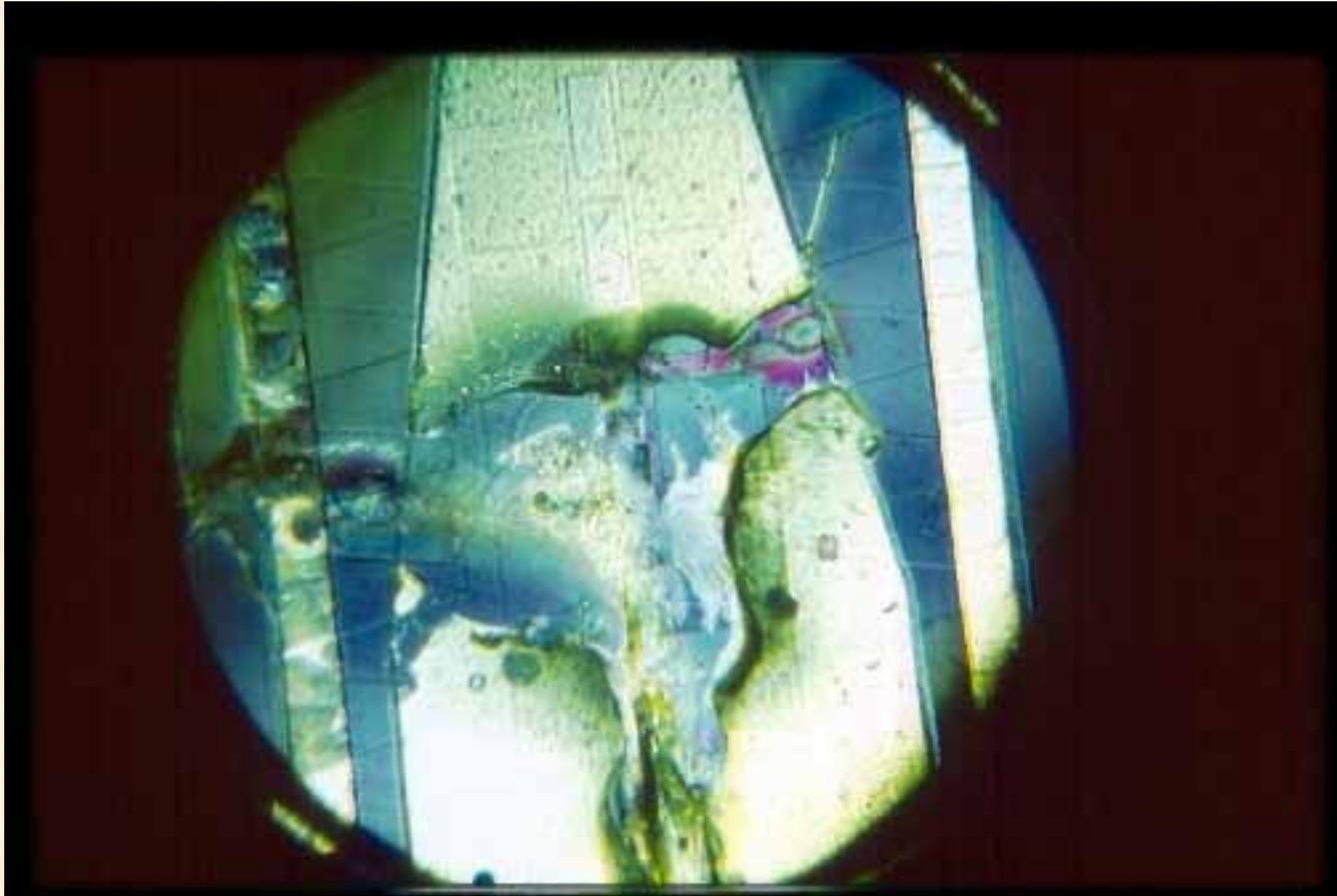
Integrated circuit: different planes are imaged in different colours due to the chromatic aberration of the objective



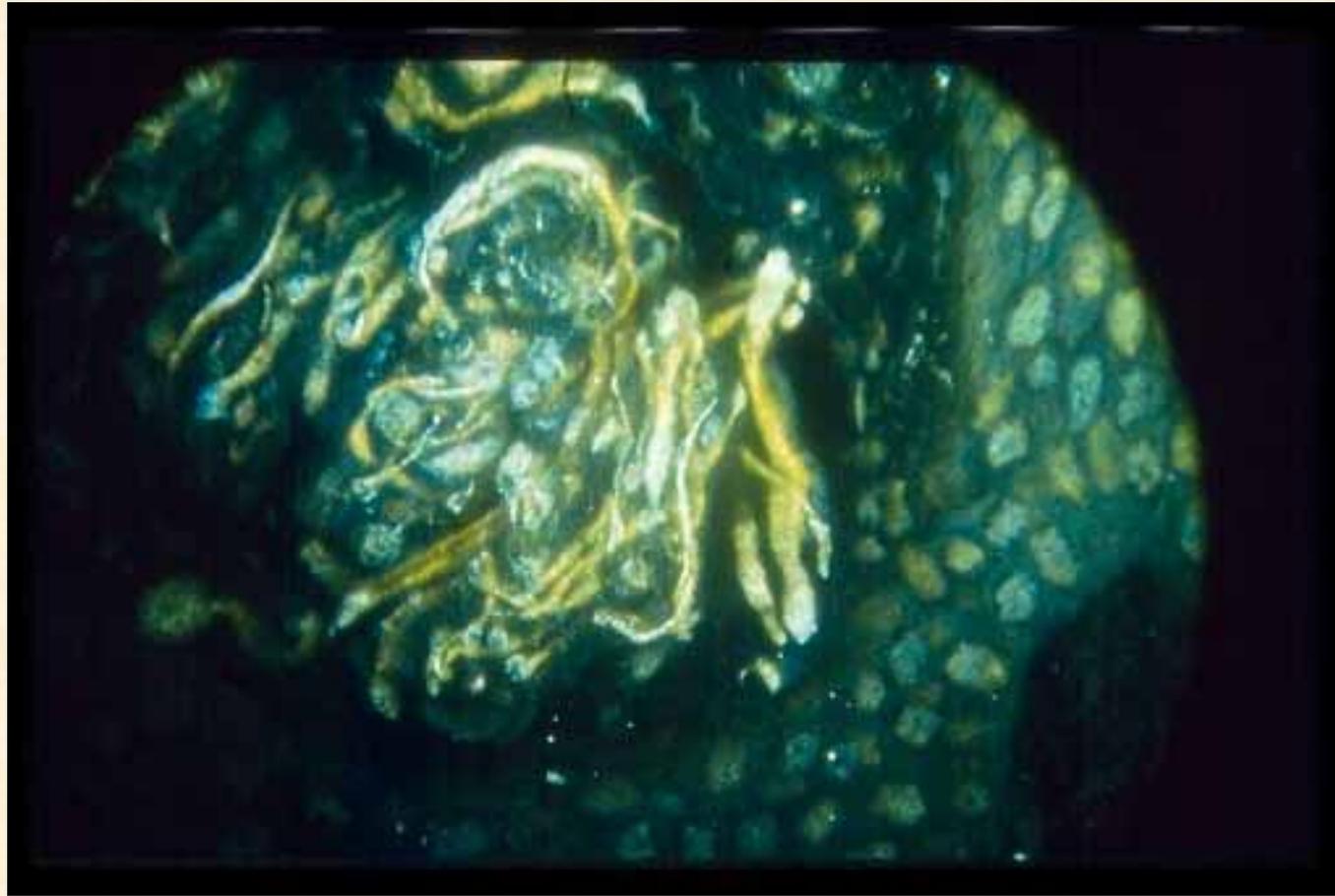
Spongiuous bone (Alan Boyde)



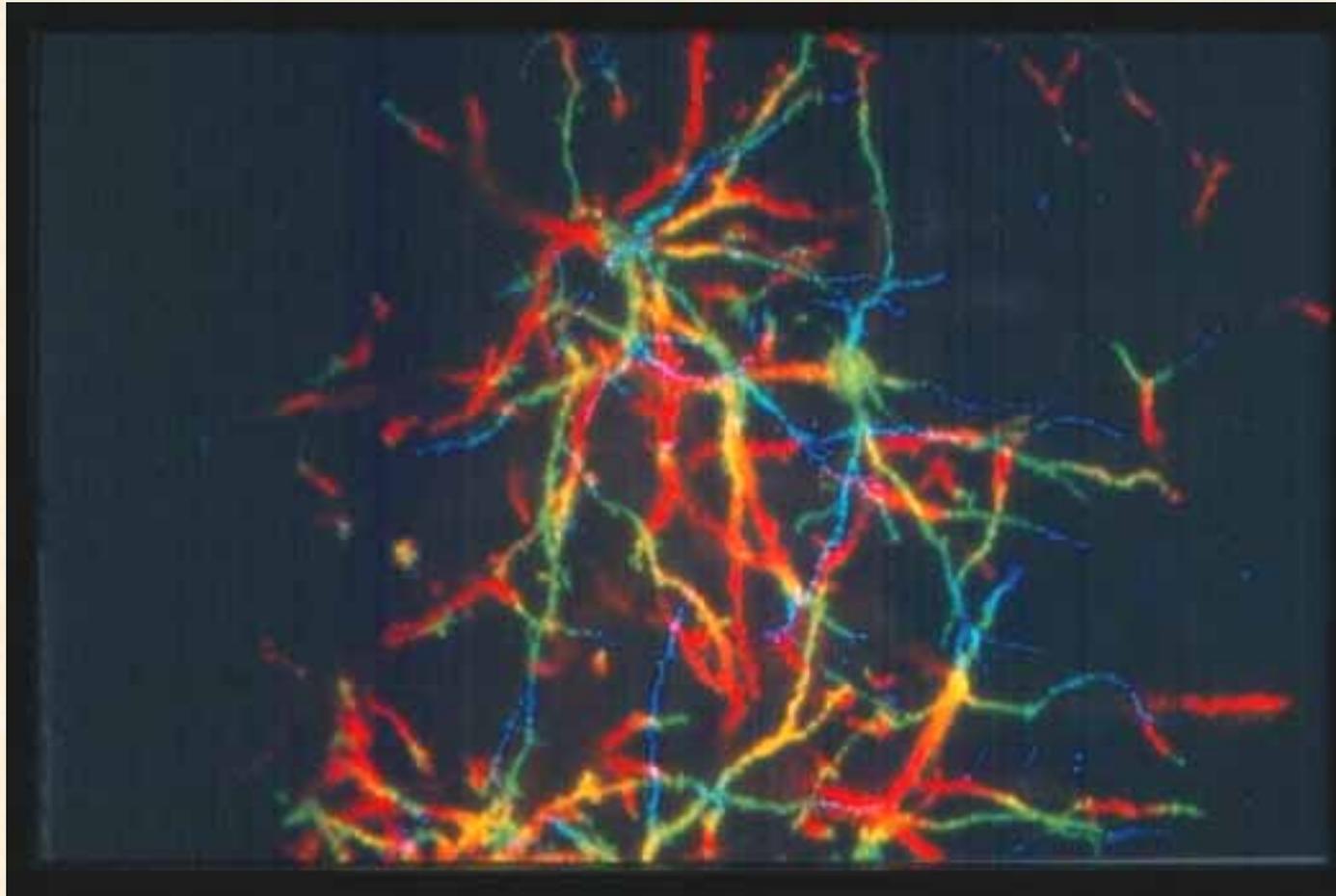
Power transistor (burned out)



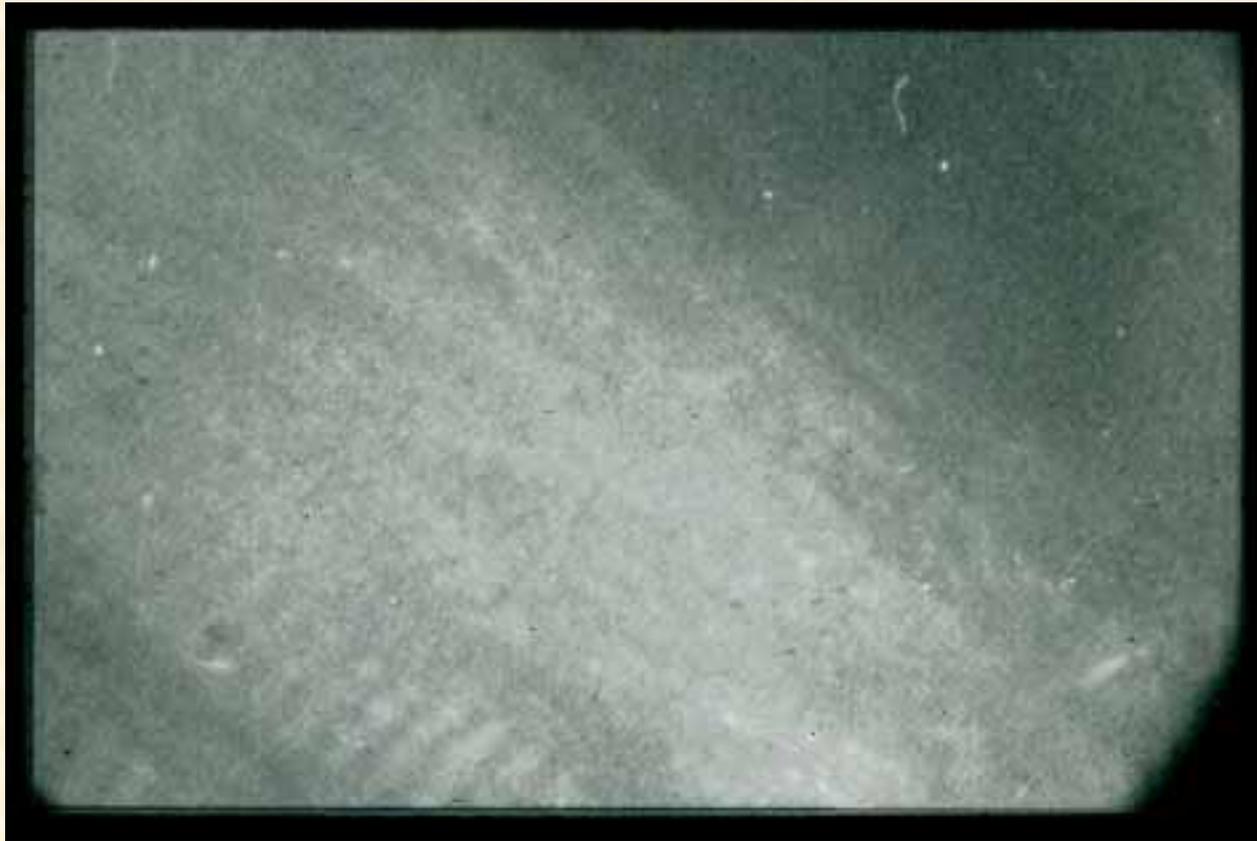
Tactile corpuscle



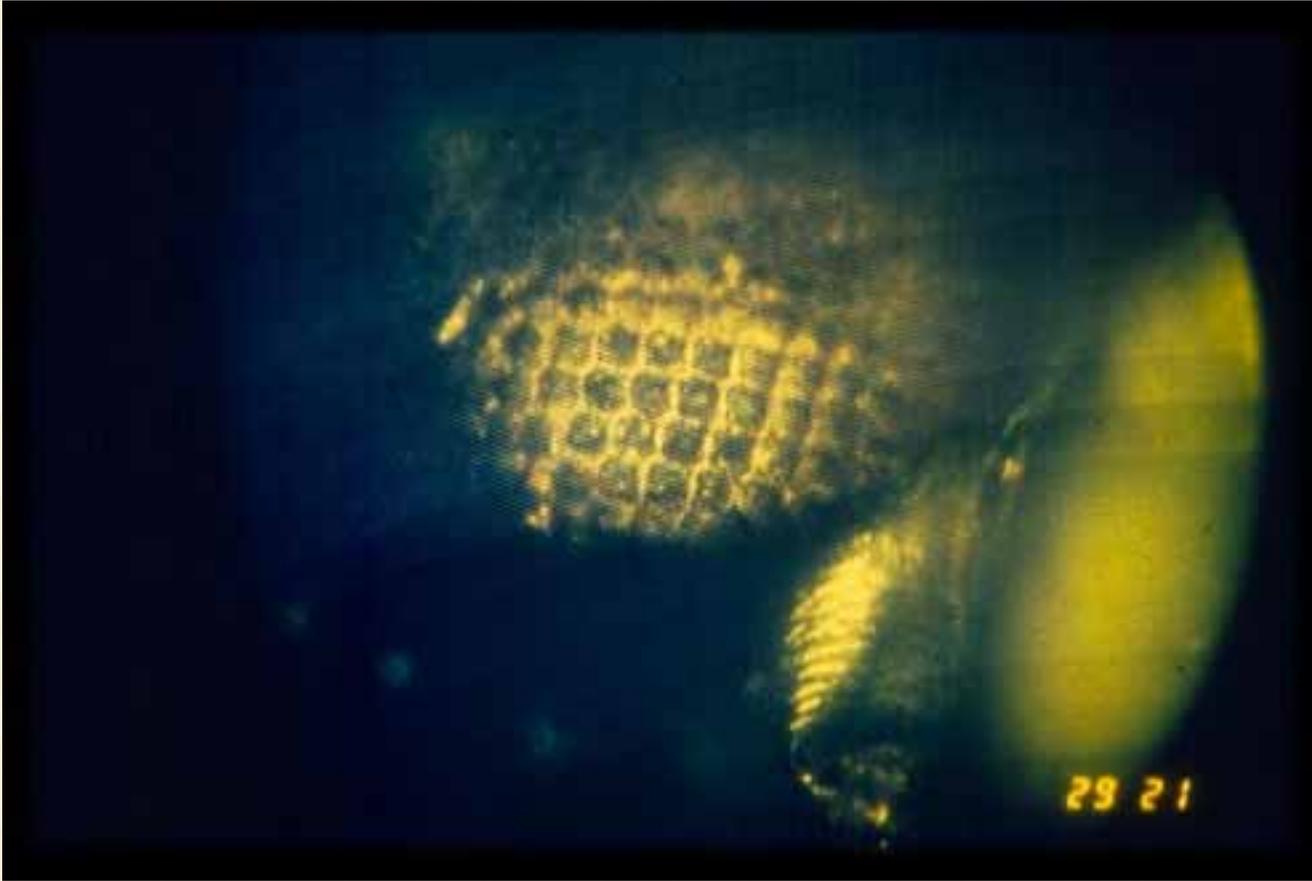
Neuronal network (one slide of the stereoscopic image)



Striated muscle fiber from a fly (1968)



Fly eye



Compact bone excavated by osteoclasts (Alan Boyde)



Sciatic nerve with an intercalated nerve cell (1966)



TSRLM

