Colophon

Built in 1947 at the Bell Labs in the United States, this image shows the first working transistor. The point-contact transistor effect takes place in the germanium surface below the triangle tip. One wire connects to the germanium plate, forming the *base*. Two other wires connect via the triangle to two closely spaced narrow gold foils (<0.1mm at surface at the lower tip) to the germanium surface (forming the *emitter* and *collector*) .

The rapid miniaturisation of the transitor led to observation by Gordon Moore (the co-founder of Fairchild Semiconductor and Intel) in 1965 that the number of transistors in an integrated circuit doubles about every two years. Knows as "Moore's Law" this emperical observation held with remarkable consistency from the 1960s to around 2020. In this time the feature size of transistors drop from milimetres (as shown) to nanometres, with individual 'gates' composed of just a few atoms.