*The Moon*—is a map of the middle latitudes of the Earth's Moon uses a stylized technique called illuminated contours, popularized by Kitiro Tanaka, to present relief features and topography. Alternating dark and light lines have been placed according to an imagined light source placed at the north-west corner of the image giving the impression of three dimensional relief.
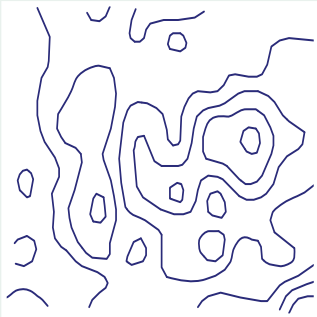
DIGITAL ELEVATION MODEL (DEM)

A Digital Elevation Model of the Moon was used to generate 1 km contours which were generalized to match final scale.
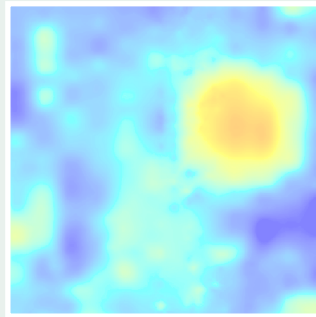
HYPSOMETRIC TINTING OF DEM

The DEM was then colored by elevation (hypsometric tinting) to preserve information on the direction of slope to be used later the process. A diverging color ramp was chosen to facilitate quick understanding of changes in topography and the direction of slope between any two contours
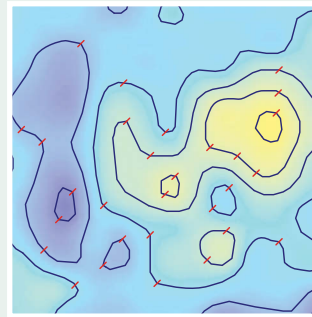
CUTTING AT TRANSITION POINTS

The contour lines were then manually cut at "transition points" where an imaginary light source from the upper left portion of the image would no longer bathe that slope in light but would leave it in shadow.
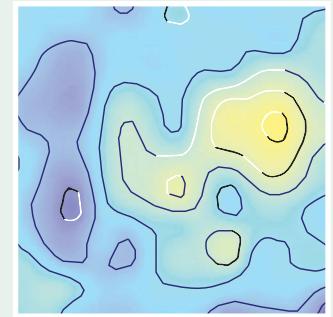
APPLICATION OF COLORED STROKE

The illusion of relief was achieved by manually selecting and applying a colored brush stroke to clipped portions of the contours between "transition points." (Black stroke for shadows and white for sunlight, informed by the slope preserved in the colored DEM).

The Moon

This map of the middle latitudes of the Earth's Moon uses a stylized technique called illuminated contours, popularized by Kitiro Tanaka, to present relief features and topography. Alternating dark and light lines have been placed according to an imagined light source placed at the north-west corner of the image giving the impression of three dimensional relief.
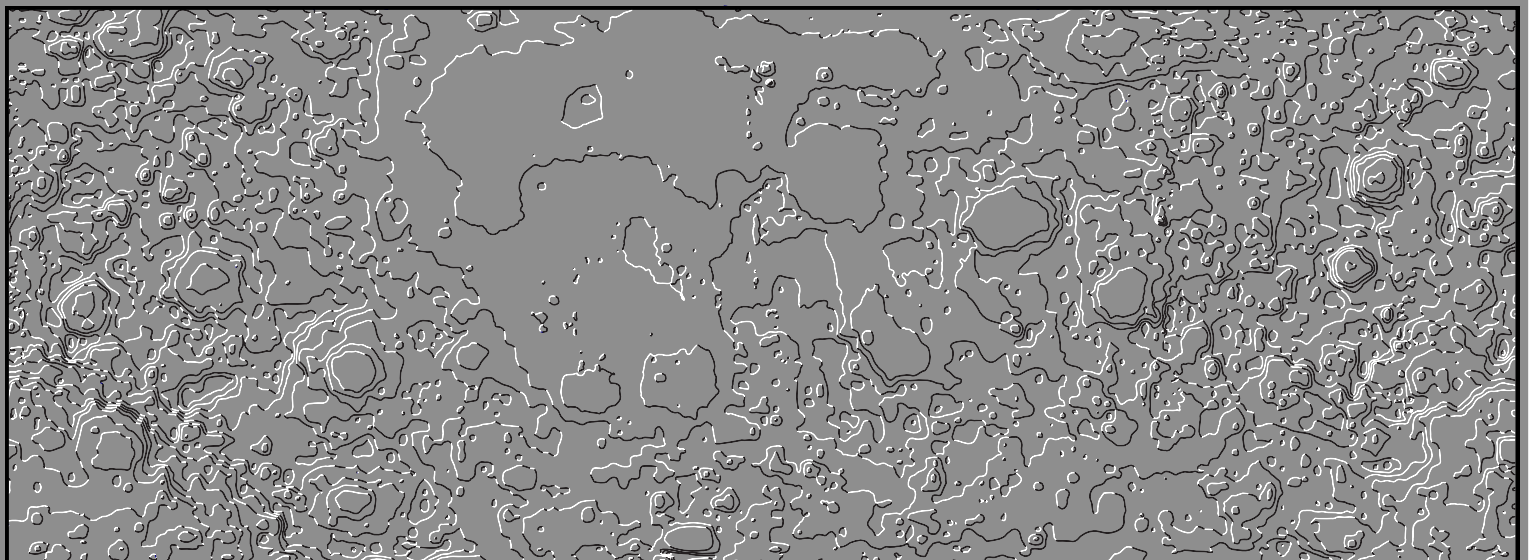
Data: USGS Astrogeology Research Program
Clementine Global Lunar Mosaic

Kevin McGrath 2008

THE EFFECT

The addition of a dark grey background completes the process and helps to strengthen the illusion. Note that the illusion is most powerful from a distance.