CLAIMS:

1. A viewing apparatus for producing a stereoscopic image for an observer, the viewing apparatus comprising:

first and second video projectors for projecting respective ones of first and second video images of an object, the first and second images being different images which are one or both of spatially and angularly shifted in relation to the object so as to convey parallax between the images;

a first mirror which receives light from the first and second video projectors, the first mirror being located in relation to the first and second video projectors such that focussed images of the object are produced at the first mirror such that exit pupils corresponding to each of the focussed images are reflected by the first mirror to a viewing plane so as to be viewable at the respective eyes of the observer as a stereoscopic image; and

at least one further mirror located in relation to the video projectors and the first mirror such that light from the video projectors is reflected onto the first mirror by the further mirrors;

wherein there is an angular component between incident and reflected light paths of the images at the first mirror such that the reflected light path does not intersect the further mirrors.

2. The apparatus of claim 1, wherein the video projectors comprise first and second video displays which are driven by first and second video signals to display respective ones of the first and second video images, and first and second optical arrangements for focussing light from the respective images as displayed by the first and second displays to the first mirror.

3. The apparatus of claim 2, wherein optical axes of the displays are coaxial, with the displays optionally being in opposing relation.

4. The apparatus of claim 2, wherein optical axes of the displays enclose an acute angle.

5. The apparatus of any of claims 2 to 3, wherein the video signals are provided from three-dimensional modelling or animation systems.

6. The apparatus of any of claims 2 to 4, wherein the optical arrangement comprises at least one lens and at least one mirror for directing an optical light path from the display to the first mirror.

7. The apparatus of any of claims 1 to 6, wherein the images are magnified images of the object.

8. The apparatus of any of claims 1 to 7, wherein the first mirror is a concave mirror.

9. The apparatus of any of claims 1 to 8, further comprising:
processing circuitry for manipulating the images as projected by the video projectors to remove or accommodate at least one artefact arising from an optical structure of the apparatus.

10. The apparatus of claim 9, wherein the at least one artefact includes keystone distortion.

11. A stereoscopic microscope incorporating the viewing apparatus of any of claims 1 to 10.

12. A stereoscopic microscope, comprising:
the viewing apparatus of any of claims 1 to 11; and
first and second video cameras for capturing respective ones of first and second magnified images of the object.

13. The microscope of claim 12, further comprising:
an objective lens arrangement for producing first and second magnified images of the object, the first and second video cameras being configured to capture respective ones of first and second magnified images of the object from the image as produced by the objective lens arrangement.

14. The microscope of claim 13, wherein the objective lens arrangement comprises first and second zoom objectives, each for producing a magnified image of the object, the first and second video cameras being configured to capture respective ones of first

and second magnified images of the object from the image as produced by the zoom objectives.

15. The microscope of claim 14, wherein optical axes of the zoom objectives enclose an acute angle which corresponds to a viewing angle between the eyes of the observer to the mirror arrangement.