The Stereoscopic Society

For more than a hundred years The Stereoscopic Society has led the field in promoting the practice, enjoyment and advancement of all forms of stereoscopy - images in three dimensions. The Society welcomes anyone with a genuine interest in three-dimensional imagery, with or without previous experience. As well as stereo photography, any form of stereoscopic imaging (such as drawing, film, TV and computer imaging) is encouraged and supported.

The Society has members in all parts of the UK and in many other countries. Because of this, one of its strengths lies in the many postal groups, each of up to about 20 members, who circulate stereo transparencies or prints in various formats and who comment constructively on each other's work. Other activities and services provided by the Society are listed below:

Journal of 3D Imaging: This is a high quality quarterly magazine which features articles and information relating to the theory and practice of stereoscopy. It also covers information about new products and services, books and the various activities organised by The Society and it always includes a substantial number of stereo images.

Annual Convention: This is usually held over a long weekend in May each year, at different locations, to bring members together from all over the UK and from abroad. There is always a varied programme of events and plenty of projection sessions.

Monthly Meetings: From September to May, monthly meetings on Saturday afternoons are held in London. Similar meetings are held in Coventry on different Saturdays. These allow members to get together to exchange ideas, see practical demonstrations and to enjoy 3D projection sessions.

Annual Exhibition/Competition: Members submit slides, prints or digital images by the end of January each year as entries to the annual competition, hoping to gain a first, second or third place (or an Honourable Mention) in each category. Accepted entries are shown to members at the London and Coventry meetings and at the Annual Convention.

Auctions: An annual auction of stereo equipment is held either at one of the monthly meetings or at the Annual Convention, thus providing an invaluable way of acquiring specialist items.

Library: The Society possesses a comprehensive range of books and periodicals that may be borrowed by members.

Society Supplies: Various publications, cardboard mounts, plastic mounts, and miscellaneous items such as simple viewers and polarising spectacles are stocked by The Society for purchase by members.

Members' Sales: Members, at no cost, can advertise items either "for sale" or "wanted" in the Society's Journal.

International Stereoscopic Union (ISU): The Society collectively is a member of this international organisation, and many Stereoscopic Society members join the ISU on an individual basis. The ISU promotes 3D photography world-wide and holds a convention every two years, in different countries.

How do I join The Stereoscopic Society?

Easy! Simply complete the enclosed application form or contact our Membership Secretary:

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www.StereoscopicSociety.org.uk

The Stereoscopic Society
FOUNDED 1893

3D in the 21st Century

In the early part of the 21st century there has been an exciting surge of interest in stereoscopy (three-dimensional imaging), popularly known as 3D. There was a previous, somewhat short-lived wave of 3D activity in the 1950s but this latest one looks as though it will be here to stay!

Lately, we have enjoyed watching many remarkable 3D films, mostly of the documentary type, of excellent quality, which have been shown in IMAX cinemas in many countries. Now we are beginning to experience an increasing number of feature films, such as the highly successful AVATAR which uses sophisticated animation techniques, and these films are being shown at local cinemas.

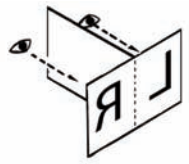
But there is more! 3D TV is now becoming part of our stereo world. Many pubs in the UK are showing 3D TV live programmes of sporting events. It will not be too long before 3D TV will be seen as the “latest hi-tech gadget” in our homes. In Victorian times, the stereoscope was a feature of many homes, enabling families to enjoy viewing stereo photographs. Now we have many more ways to enjoy in-depth images.

How does 3D photography work?

When we look at a scene, the left and right eyes see slightly different images, because they are separated laterally by about 65mm. The brain combines these two images and creates a 3D representation of the original scene in the mind. To produce a stereo image as a photographic print, a screen image in the cinema or on a 3D TV, two such images must be captured in the camera. In whatever way they are displayed, some method has to be used to allow the left eye to see only the left image and the right eye to see only the right image. The brain does the rest and a reconstruction of the original photographed subject will be seen

Here is an example of a stereo image pair, printed side-by-side.

Some people can free-view such images (the same technique used for viewing the popular Magic Eye pictures) but it takes practice. You might find it easier to see the 3D effect by placing a strip of card (12 inches or more in length) vertically between the left and right images and viewing from above with one eye on each side of the card, as illustrated.here.



How to create your own 3D Images from film

Creating your own stereo pictures can add much to your enjoyment of 3D, and it is easy to get started. Any camera can be used to produce a 3D image. First, you take a picture, then move the camera horizontally sideways by about 65mm, the average eye spacing, and take a second picture. Simple enough but It is important that the camera is moved parallel to itself and not rotated in any way. This gives you the two images needed to make a stereo picture.

The disadvantage of this technique is that it is restricted to static subjects, because anything in the scene that moves between the two exposures will cause a discrepancy in part of the final 3D image.

A better method is to use a ”twin rig” consisting of two identical cameras mounted on a bar and linked so that the two shutters fire simultaneously. Alternatively, the stereo images can be taken with a specialist stereo camera that has two lenses roughly eye distance apart and which takes two images simultaneously. This allows 3D action shots to be taken.

There are many traditional stereo 35mm film cameras dating from the 1950s available second-hand, and there are more recent ones constructed from two ordinary cameras, cut up and joined together. One can even find medium format stereo cameras that take larger images.

Since the 1950s most amateur 3D images taken with these cameras have been on slide film but many photographers have produced print images. In all cases the images are displayed or stored in a format that will suit the particular method by which they will be viewed.

A ***Stereo Realist*** camera from the 1950s
(The central "lens" is actually the viewfinder)

A modern ***RBT*** custom-built camera made by cutting and joining two SLRs

Digital 3D

Digital photography has come into its own in the 21st century. Nearly everybody owns a digital camera or advanced mobile phone capable of recording digital images, so photography has really caught on.

Stereo photographers also welcomed the dawning of the digital imaging age but no digital stereo cameras were available so they had first to resort to using pairs of cameras twinned together. Various methods of synchronisation were devised, not always perfect, but they did allow acceptable images to be produced.

Above: ***Digital twin rig*** *Below:* ***Fuji W1***

A major breakthrough occurred when StereoData Maker (SDM) appeared as a free software program on the Internet (*http://stereo.jpn.org/eng/sdm/index.htm*). You can now purchase ready-wired pairs of cameras, or do it yourself, using this ingenious SDM program with a couple of Canon digital cameras and achieve accurate synchronisation.

The latest exciting development is the marketing of the first digital stereo camera, the Fujifilm W1. This has many advanced features that produce high quality images. Particularly impressive is the LCD screen on the camera back that displays the image in 3D without the need for any special viewing device.

How do we best view 3D images?

Free-viewing of relatively small side by side images requires practice and some people find it difficult. However the 3D images are better viewed in a stereoscope or stereo viewer, essentially a “box” or frame fitted with lenses or mirrors incorporating a holder or slot to take the mounted images. Some stereoscopes are designed for slides and others for prints.

Over the years we have had Holmes viewers used in Victorian times for print pairs, the familiar View-Master viewer that takes circular cards with seven pairs of images and a number of well-designed precision viewers with high quality lenses and built-in illumination.

Holmes Viewer

OWL Viewer

ViewMaster

Channel & ***Ekeren*** film viewers

Cyclopital3D *viewer*

Other methods of viewing 3D images include a plastic lorgnette for use with side by side images, and “red and green” spectacles for viewing anaglyphs, prints made by superimposing the left and right images, one green and one red.

Digital images are generally processed on a computer using another free software program from the Internet, StereoPhoto Maker (SPM) (*http://stereo.jpn.org/eng/stphmkr/index.html*). This enables the images to be accurately aligned, modified, enhanced, cropped and resized as required. The final images can be used to produce prints in various formats including anaglyphs, and also retained in a suitable format for digital projection.

Specialised computer monitors are now available that incorporate polarising filters and allow the left and right images to be interlaced on alternate lines on screen. Wearing polarising spectacles gives effective 3D images. Stereo images can be displayed on digital photo frames and viewed with simple twin lens viewers. Fuji market a special direct vision frame viewer for displaying images taken on their stereo camera. The first hand-held viewer, the Cyclopital3D, has appeared as an additional method of viewing digital images.

Projected 3D

Slide images can be projected onto a silver screen (using polarised light) and viewed in 3D through specially designed polarising spectacles that allow each eye to see only its correct image.

Digital projection is the latest form of display. Images can be stored on CDs or memory sticks that are connected to a computer that controls two digital projectors. Use of image processing software programs enables the production of sophisticated sequences of images with commentary, music and many visual effects, in a form that can be played at the click of a mouse button.

Projected 3D is a feature of most of our meetings in London and Coventry as well as at our Annual Convention.

It is probably true to say that the best image quality lies in traditional film slides on film, viewed in a handheld stereoscope. Projected images are quite satisfactory, for both film and digital images. But the future is likely to be digital and there will doubtless be rapid advances in image quality in the future.