

The Royal Photographic Society

HOLOGRAPHY GROUP

Newsletter May 1998

Hologram kindly donated by Chris Levine/iC

Editorial

This Newsletter is a little early, in order for you to receive it in time for the forthcoming conference (30 May at Imperial College, London). As a result it is somewhat shorter on words than I would like it to be. Another reason is that I have received very little copy from members – now I am sure all of you have something interesting you could write about, if only to complain about the Committee.

There is more about the Conference inside. There is still time to register in advance and save yourself £5.87. A tactful hint: if you don't book in advance, bring the fee with you! We were stung last time by several people who promised their colleges, etc., would pay – and they wouldn't. If your case is genuine you can always claim your expenses back from your authority afterwards.

It should be a good day, with coffee, food and wine laid on, the chance to chat to people you may not have seen for a long time, and all for less than half what most conferences charge. There will be a full report in the next Newsletter, and the papers will be published in the Photographic Journal or Imaging Science Journal as appropriate. It goes without saying (or should) that speakers should bring a spare copy of their paper to pass on.

The company GEOLA of Vilnius are offering to supply silver halide film or plates directly to holographers in the UK. A copy of their range of products is included with this Newsletter. Prices (in US\$, what else?) do not include duty or VAT, but they are offering 20% discount for orders received before 1 June. You can telephone, fax or e-mail them: they speak good English. Amanda Ranalli has set up a company to import this material, and will no doubt get better terms by bulk ordering, but matters are not yet in place. She is due to produce a progress report at the Conference.

John Gates sent me a long report on a conference by the Optical Society of America, and I promised in the last Newsletter to produce a précis of it. Unfortunately, as the report was already a précis, much of which wasn't really relevant to holography, I wasn't able to do this, but John is himself delivering a paper at another conference this month, and has promised to let me have a résumé of it.

See you on the 30th!

Graham Saxby

Department of partly-baked ideas

Looking through my back copies of that much-missed magazine *holosphere* I found a small flight of fancy in the Summer 1984 issue which seems relevant to both the DPBI essay in the previous Newsletter on problems of sonic hologram reconstruction and to a previous conference at Imperial College, at which David Pizzanelli gave a scholarly critique on holograms in science fiction and Martin Richardson produced a live hologram of Marilyn Monroe (possibly the only thing the male delegates now remember of the conference). This article of mine pre-dated the conference by several years, and I was surprised David didn't pick up some of the theoretical points I made in it.

Of all the modern and future technologies that SF writers understand incorrectly or incompletely, the worst sufferer is surely holography. A recent TV series actually showed (I wrote) a hologram of a man which was driving a car. Most of the holograms featured in SF are almost as silly [and Red Dwarf was yet to come!], and I wonder why. One shot fairly near the mark was a hologram that appeared in the TV version of *The Hitch-Hiker's Guide to the Galaxy*. In this episode the crew of a (stolen) spaceship orbiting the lost planet Magrathea are suddenly confronted by a holographic image of the planet's Officer of Works, which delivers a recorded message warning them off. The image is greyish, transparent, motionless and more or less full size. The DPBI is interested in the method by which such an image might be projected into the interior of a spaceship 100 km above the holographic plate. A suggested answer comes from Gabor's original idea: if you record your hologram by very short-wave radiation and replay it by very long -wave radiation, the real image will appear at a relative distance from the plate that is the ratio of the two wavelengths. So, record the hologram with a beam of coherent electrons (which have an extremely short wavelength), and replay it using infrared light, which penetrates many plastics and ceramics (the likely construction material for future spaceships).

There is a snag, though. The image will be magnified in the same proportion. Worse, it will also be elongated in proportion to the square of the distance. The image will thus be 100 km wide and 10 000 km high. It will clearly be necessary to design an optical element that will pre-correct this (not easy, even in theory). There is still the difficulty that the infrared image has to be made visible. Hmmm.

The Conference

The programme (at time of writing) is as follows:

9.00 am Opening address by Kevin Brown, Chairman, Holography Group
Session Chairman Dr Hans Bjelkhagen, De Montfort University

10.00 Amanda Ranalli, Holographic Materials Distributors
New Materials: cost, red tape and implications

10.20 Dr Hans Bjelkhagen, De Montfort University
New recording materials for holography

10.40 Coffee break

11.20 Dr Martin Richardson, THIS, London
Recent commissions and work in progress

11.40 Prof. Nick Phillips, De Montfort University
Title not available at present

12.00 Lunch

Session Chairman Prof. Nick Phillips, De Montfort University

2.00 pm Jeff Blyth, HRT GmbH, Steinau and Cambridge University
Beautiful scatter-free plates designed by a holographer for holographers (with demonstration)

3.00 Dr Hans Bjelkhagen, De Montfort University
Progress in colour reflection holography

3.20 Tea break

4.00 David Burder, 3-D Images Ltd
Recent developments in three-dimensional imaging

4.20 Dr Andrew Pepper, Director, Art in Holography 2 Symposium
Holography: a digital community on the Internet?

4.40 Niklas Moeller, Editor, Interferenzen (unconfirmed)
The German Holographic Society

5.00 Kevin Brown: closing remarks

If you haven't received an application form there is one printed on the next page. You can send a photocopy if you don't want to damage your Newsletter. Further updated information is available at our website address, which is:
<http://ourworld.compuserve.com/homepages/rpsholog> (or phone 0171 610 1078)

The Holography Group

presents a one day meeting on

Holography and 3D Imaging

New Materials and Techniques

30th May 1998 9am - 5pm

Imperial College
of Science, Technology and Medicine
Lecture Theatre 208
Civil Engineering Building
Prince's Gardens
London SW7 1LU

Topics to include: Holography
New materials in Holography
3D Imaging
Stereoscopic displays

Chaired by: Dr Hans Bjelkhagen and Professor Nicholas J Phillips
Dept of Modern Optics, De Montford University, Leicester, UK

This conference has been convened in the light of recent changes in the availability of silver halide materials traditionally used for holography. The main aim of the meeting is to discuss new materials and associated techniques in holography as well as recent advances in 3D imaging, stereoscopy and holography.

Holography Group Committee

Chairman

Kevin Brown
12 Chesson Road
London. W14 9QX
0171 6101078

Secretary

Bob Gibson
12 Park Road, Chandlers Ford
Eastleigh
Hants. SO53 2EU
01703 252171

Treasurer

Jonathan Ross
286 Earl's Court Road
London
SW5 9AS
0171 370 2239

Newsletter Editor

Graham Saxby
3 Honor Avenue, Goldthorn Park
Wolverhampton. WV4 5HF
01902 341291

Committee Member

George Jozsa
81 South Knighton Road
Leicester. LE2 3LS
0116 2709277

Committee Member

Molly Gibson
12 Park Road, Chandlers Ford
Eastleigh
Hants. SO53 2EU
01703 252171

Committee Member

Joyce Peck
7 Wilfrids Wood Close
Flackwell Heath
Bucks. HP10 9LJ
01628 523076

Committee Member

David Pizzanelli
27 Kingston Road
Leatherhead
Surrey
KT22 7SL
01372 374254