In search of the age of the Universe

A group of researchers in the Astronomy Centre (CPES) have offered new insight into one of the most fundamental mysteries of modern cosmology — the age of the Universe. Their results, using observations from the orbiting Hubble Space Telescope, have overturned the long-held belief that our galaxy is the largest in the observable Cosmos.

The first estimates of the sizes of other galaxies were made by astronomer Edwin Hubble in the 1930s. Hubble had just discovered that the expansion speed of the Universe increases with distance, an effect which he had encapsulated into a simple law. Measuring the angle that galaxies made on the sky, and using his law to infer their distances from their measured recession speeds, Hubble was able to estimate their sizes. He found that they were all smaller than the Milky Way.

But Hubble had made an error. His distance estimates were wrong, because he had underestimated a crucial number — the age of the Universe, which fixes the precise scaling between expansion speed and distance.

Simon Goodwin and John Grinbin, of the Astronomy Centre, in collaboration with Martin Hendry at the University of Glasgow have now explored a way of estimating galactic distances that is independent of the age of the Universe. Their method uses observations of a special kind of pulsating star, called a Cepheid.

By measuring the period of a Cepheid’s pulsations, astronomers are able to infer the star’s brightness. And, comparing this with the apparent brightness of the star, as seen from Earth, measure the distance to the Cepheid’s host galaxy. Using Cepheid observations made by the Hubble Space Telescope, the Sussex-headed group find that the galaxies in our neighbourhood are much bigger than was previously thought, making the Milky Way quite average in size.

By assuming that our corner of the Universe is typical, the group have assigned their inferred local sizes to a sample of distant galaxies. This has allowed them to work Hubble’s original calculation backwards to obtain a new value for the scaling between expansion speed and distance, linked directly to the age of the Universe which they find to be around 14 billion years.

“Since I started doing cosmology at Sussex in 1967, it has worried me that the accepted value for the age of the Universe (in those days, 8 billion years) implied that we lived in an unusually large galaxy,” says Grinbin. “I’m delighted that there is now clear evidence that we live in a local part of the Universe.”

Public Lectures this week:
Tuesday 6 May at 6.30 pm
Issues in Environmental Science Lecture
Dr J.W. Maunier (Cambridge)
THE HOUSE DUST MITTE AS A PRIMARY CAUSE OF ASTHMA
Thursday 8 May at 6.15 pm
Robin Milner-Gulland
Professor of Russian Studies
AN ICONIC WORLD:
WHAT MAKES RUSSIA ITSELF?
Friday 9 May at 6.00 pm
Wynne Baxter Godfrey Law Lecture
David A. Thomas (Cambridge)
SENTENCING: PARLIAMENT AND THE COURTS
All lectures are in Chichester Lecture Theatre, (formerly MOLS Lecture Theatre)
Face recognition

Before long Big Brother may well be watching you. Recent developments in computerised face-recognition have prompted a joint proposal from Sussex and Queen Mary and Westfield College to fund the development of a portable, self-contained face-recognition system that has the potential to be used as a surveillance interface for domestic security systems. Researchers at the two universities have been working on different aspects of the same problem and are now hoping to integrate their research in a two-year project.

The proposed system would operate using moving images supplied by a small camera, similar to those used in CCTV systems, and would be able to track people's faces and identify who they are, or indicate whether or not it had seen them before. Such a device could be used to store a database of faces in a security system, alerting security to any unauthorised entries. Similarly it could be used in shops to determine shopping trends of customers, or to recognise known shoplifters.

The system would be based on two independent techniques that have already proved to be very successful. The first is the location and tracking of any human faces in the field of view of the camera. The second stage makes use of a small RBF (Radial Basis Function) neural network, a computational device that is based on the architecture of the brain, which checks the images of any faces located to see if it recognises them and if not adds them to the database. This has been particularly effective with small databases of 40 faces, learning new faces and identifying them again later with a high degree of accuracy.

The two techniques combined are highly effective and very fast; they are capable of being retrained with new faces in only a couple of seconds. Unlike many approaches, this system makes use of unconstrained visual images for identification, i.e., images that capture people behaving normally, and is also capable of accurate recognition from limited information. "It is a flexible technique that can learn to recognise people in a natural environment where we are not asking people to do anything strange," says Sussex researcher Jonathan Howell. "For some security systems it may be required for someone to stand in front of them, put their ID card in and then wait while the camera takes a picture of them, but that is very constrained. We are trying to get the system to learn from the information given from a camera when people behave normally."

News from the Science Policy Research Unit

Professor Ben Martin, Director of SPRU and Dr John Irvine (former member of SPRU) have been awarded the prestigious Derek de Solla Price Award for 1996 by the journal Scientometrics. The award is given to individuals who have made outstanding scholarly contributions to the field of scientometrics. The award was founded by the journal to honour Derek Price (1922-1983), a principal architect of the field of science policy research. Candidates are nominated by the journal's international Editorial Advisory Board and voted for by the Board and by former Price Award winners. The award will be handed over during a special ceremony at the Sixth International Conference on Informetrics and Scientometrics to be held in June in Jerusalem.

A two-year award of £125,000 to Professor David Gann by The Housing Corporation will enable SPRU to monitor, evaluate and develop policies for innovation in housing. The research will form part of the programme being conducted under the IMI/RAEng Chair in Innovative Manufacturing: Construction, which is held by David Gann. David will also lead a new DTI Science and Technology Expert Mission to assess the development and use of Open Building Systems in the Netherlands and Finland. This will contribute to the work on international comparisons of innovation in housing at SPRU.
It seems to be the accepted wisdom that students have lost that sense of vision that might attach them to the political process. However, those who teach them seem to reflect an earlier age of passion and commitment. An analysis of higher education teachers’ voting intentions caught my eye recently and especially the report that a massive three per cent of arts lecturers were intending to vote Tory. Who on earth can they be? This led a radical old rodent to recall the time when students were not the apotolic grade chasers that Thatcher and modularisation have turned them into. A time when they called their tortoises Trotsky and one another bruvver (gender issues were in their infancy you understand, and south of the river accents de rigeur, even if you came from Islington, which everyone did.) In those days, the chances of an occupation just before the weather turned fine were high. I suffered a brief bout of nostalgia quite recently, remembering that Sussex used to be known as Balliol by the Sea. This was occasioned by a meal in the posh part of the Refectory when the waiter brought a bottle of University-labelled wine for my approval, bearing the whimsical appellation “soft red.”

With thoughts of flared trousers and revolution gently wafting through my mind, the sudden appearance of rudimentary checkpoints at every entrance to campus quite alarmed me. Were they there to keep us all in, or was this the beginnings of a management lock-out designed to balance the books? Why had the security men been issued with kalaishnikovs? And who was that mysterious new administrator in the black leather overcoat? However, discreet enquiries reveal that this is to do with matters much more serious than Sussex becoming a police state, in other words, car parking. The imminent mass rave in Stunmer Park apparently leads unscrupulous ravers to leave their cars all over campus and the barriers are there to forcefully remind them of their civic responsibilities.

Apparently 70 per cent of lecturers believe that academic standards have fallen. How can this be when we now have such a keen interest in devising quality assurance mechanisms for the maintenance of excellence? For example, one lecturer I know drafted an exam paper which then went to a colleague teaching the course who proposed certain amendments. The paper then went to the sub-dean who suggested some finessing. Thence to an external examiner whose careful scrutiny revealed the possibility of further improvements. Then on to the sub-committee of the examination board whose capacities to discriminate are so powerfully exalted that it could see flaws hitherto undetected by my friend, her colleague, her sub-dean and the external examiner—who between them have something like a century’s experience of the setting of exam papers. I would urge that this model of good practice should be adopted throughout the University. Academic standards will surely shoot up.

I can only admire the fecundity of the management imagination that has come up with the answer to the devaluing of teaching resulting from the research assessment exercise. According to last week’s Bulletin, there are to be three awards, each of £500, for the best teachers, or rather those who can assemble a small mountain of evidence of their superiority. This is to be done according to nine criteria, which begin with words like ‘demonstrates’, ‘accommodates’ and ‘refines’ (this last no doubt referring to the setting of examination papers). While I am all for handing out money to really useful engines, it seems a shame they need to devote a fortnight’s work to making their value apparent.

Cyril Squirel

What the papers say

Research by Graham Davey and Wendy Johnston (COGS) into the effects of bad news reports on people’s mental health itself made news recently. A number of papers picked up on the findings, first reported at length in the Sunday Telegraph, that people shown gloomy news bulletins became worried and depressed, not merely about what they had seen in the bulletin but in their own lives. “The bulletins don’t just get people worrying about the topic in the programme,” says Graham Davey, “viewers are also going to see their own problems as significantly worse.”

Bad news about food scares could become a thing of the past if the recommendations of a report co-authored by Erik Millstone (SPRU) are accepted. Its recommendations, as reported in the Daily Telegraph and the Financial Times are for a national food agency which covers everything from food safety to nutrition and the environment. The new agency should draw on desirable characteristics from different models, and should be independent of the food industry with an open information policy.

The Vice-Chancellor, Gordon Conway, takes issue with the distribution of research money following the research assessment exercise, which has led to a concentration of funding in a small number of universities. He is quoted in the Higher as saying that the universities – and the assessment panels – had been misled into believing that the new 5-star grade was simply an accolade with no funding implications. “My impression is that they would have given more stars in some cases and fewer in others if they had known about the financial implications.”

“The antics of ants could lead to great leaps forward for mankind in the world of robotics and neurosciences,” according to an article in The Times. The article “goes among the creepy crawlies” to look at the work of the Centre for Computational Neuroscience and Robotics. The Centre is studying the behaviour of ants which, says researcher Jon Bird, have navigational capabilities which are incredible for a creature with such a small brain. “We want to take that knowledge of exploration and navigation and build it into robots.”

In Don’s Delight in the Guardian, Margaret Boden (COGS) describes how as a schoolgirl, a copy of Bertrand Russell’s Problems of Philosophy found in a second hand bookshop changed her life. In part because “it reassured me that questions I had been asking for a while – rebuked as “time-wasting” in chemistry and “obstinance” in scripture – were worth asking.”
Levitating to new heights

Sussex has been awarded a contract to build a device that could mark the beginning of a new era in the NASA space programme. The device, a linear motor, is an integral part of a launch system designed by Professor Eric Laithaeit over thirty years ago. It both levitates and propels a spacecraft through a tunnel at high speed and shoots it into orbit. The ten-foot motor will be built by Sussex’s School of Engineering and then be shipped by the contractor, Arrow Dynamics, to the USA for trials - at which stage the US army and NASA are expected to take a keen interest.

According to Eric, one of the reasons NASA is keen to move on from the traditional “rocket” launch is the sheer cost of the fuel used to reach orbit. “With a rocket you burn your fuel and you’ve lost it. Also you have to carry your fuel with you. Two-thirds of the total weight is burned up as fuel, and half of that is simply used in getting the other third up to 600 mph. So by the time you have reached speed all you have done is lifted fuel.” With Eric’s system the power comes from the ground in the form of mains electricity which is safer and very much cheaper, costing around 1000 per launch, compared to the millions of pounds to launch one rocket.

In Eric’s design the vehicle has no launch power itself. Instead the craft rides on a monorail carriage that is levitated and driven by a linear motor. The craft is accelerated through a four mile tunnel, which would gradually be inclined, until finally being shot out at a 45 degree angle. The tunnel’s atmosphere would be kept at a virtual vacuum to reduce any wind resistance within the tunnel. Combined with the reduced friction caused by levitation, this allows the vehicle to be able to reach the crucial speed of 600 mph on leaving the tunnel, whereupon its second-stage on-board thruster would fire, maintaining this speed until reaching orbit.

Eric designed his first linear motor in 1947, making it officially an antique this year. Originally his intention was to use the motors to propel shuttles across weaving looms, and it wasn’t until the 60s that he had the idea to use them to launch space-craft. Until recently his ideas have been largely ignored both by the British government and NASA. However, NASA have now reached a stage where they want a more intensive programme with more launches, which requires a considerable reduction in the launch costs. Representatives of NASA met with Eric last September and are expected to return on completion of the motor within the next six months. Eric is confident that NASA will take-up his design. “It has not committed itself yet, but it is unlikely that it will go elsewhere because this is the cheapest and cleanest way.”

SEPTIC SHOCK — the NO problem

Blood poisoning or sepsis, the general invasion of the blood system by bacteria, is still a major hazard, particularly of abdominal surgery or burns injuries. There are about 37,000 cases of sepsis per year in the UK alone and mortality rates are approximately 40%. The major danger comes from septic shock which is caused by the release of endotoxins associated with bacterial cell walls. These toxins cause an inflammatory response by over-exciting the immune system. The immune response deals well with relatively minor invasions but, with such a massive overload, can cause major shock in which the blood pressure falls dramatically with associated kidney and liver failure. In addition, there is a profound disturbance in the regulation of blood sugar. Stored carbohydrate is mobilised by the liver (causing increased blood sugar) until it runs out; this happens within 24 hours, causing blood sugar levels to fall to catastrophically low levels. Once sepsis has set in, treatments which kill the bacteria make the problem worse by causing the release of more bacterial endotoxins from the dying bacteria.

Mike Titherage and colleagues in BIOLS are working on the mechanisms involved in septic shock and how endotoxins affect the mobilisation of carbohydrate by the liver, as there is evidence that survival is greatly enhanced if the effects on blood glucose can be prevented or reversed. Their aim is to pinpoint targets for new methods of therapy, in particular the possible involvement of nitric oxide (NO) in this process. Nitric oxide is normally produced in minute amounts within the body and plays an important role in the central nervous system, in signalling throughout the body and in the regulation of blood pressure. However in response to bacterial endotoxins there is a large-scale release of nitric oxide within the cells of the body, reaching toxic levels which cause cell and tissue damage and a dramatic fall in blood pressure.

Fortunately the enzyme which produces nitric oxide in response to bacterial endotoxins is different from those involved in its normal function. A search is under way for drugs capable of discriminating between these enzymes, which may be able to reduce some of the effects of endotoxic shock without affecting normal signalling. Whether excess nitric oxide production underlies the changes in the control of carbohydrate mobilisation and blood sugar levels in sepsis, and therefore whether these will be amenable to treatment by these drugs, is an important question which remains to be answered.
Obituaries

Frank Clifford

It is with great sadness that we report the death of Frank Clifford on Tuesday 15 April. Peter Bushell, Dean of the School of Mathematical Sciences writes:

Many of his friends, colleagues and students attended Frank’s funeral service in the Meeting House Chapel last Thursday. He came to Sussex from Cambridge in 1964, after completing his PhD work with Fred Hoyle and Roger Tayler, and joined the newly created School of Physical Sciences. Frank was a man of wide interests and exceptional abilities. He was a gifted and versatile lecturer. Many remember his ten-week series of talks on astronomy, broadcast on Radio Sussex. Generations of students have benefited from the meticulous care and commitment he gave to their needs; he was a patient and sensitive teacher, never too busy to talk or offer help.

Frank was a friendly, gentle and unassuming man and a valued and trusted colleague. He undertook many administrative tasks for his School, always with tact and good humour, sharing his abundant experience with us all. For fifteen years Frank was leader of the University Orchestra and he played in local orchestras and chamber groups throughout his life. The University community owes much to Frank for his many contributions to our life and for his selfless commitment to our good. He will be sadly missed by all who knew him. Our sincere sympathy goes out to Elizabeth and to his family.

Those who would like to express their sympathy by way of a gift, are invited to make a contribution to the National Appeal for Music Therapy, c/o Cooper and Sons, 42 High Street, Lewes BN7 2DD.

Memorial Service

A memorial service for Roger Tayler, Emeritus Professor of Astronomy, who died in January, will be held on Saturday 10 May 1997 at 11am in the Meeting House. The Vice-Chancellor will describe Roger’s many contributions to the University and a fellow-Christian will talk about him in his role as a churchman. The main address will be given by the Astronomer Royal, Sir Martin Rees FRS, on Roger’s contributions to astronomy. All his friends and colleagues are warmly invited to attend.


It was with great sadness that we learned of the death of our colleague, Jane Beattie, on 25 March. Jane died at home, about a year after she was diagnosed as seriously ill with cancer. Jane took her first degree in Experimental Psychology at Sussex in 1981, and then completed an MA and a PhD at the University of Pennsylvania. Although she had a tenure track appointment at the prestigious Graduate Business School in Chicago, Jane decided to return to Sussex in 1991 to a lectureship in SOC, and then to Experimental Psychology (in 1993). During her time at Sussex, Jane consolidated her network of national and international collaborators, in both psychology and economics, and obtained funding for her research on decision making from ESRC, the HSE, the Leverhulme Trust and the EU. Her academic career was very bright: she was a highly respected researcher, and her teaching always met with the greatest praise.

Jane was a wonderfully supportive colleague and friend and she will be sorely missed. Her death was particularly tragic, not only because she died so young, but because she had so much to live for (both personally and professionally). No doubt everyone who knew Jane would wish to extend their deepest sympathy to her husband David Weir (COGS) and to their three young children: Sam, Gavin and Hayley. There will be a memorial service for Jane on her birthday, Friday 16th May, at 4pm, in the Meeting House.

Opportunity knocks

Second year media student Alison Hulme (CCS) received a lucky break when she landed a job as a TV presenter for Pier Pressure, a five-part Meridian arts programme. Like The Pier, the programme was based in Brighton, but aimed at young people. Alison heard about the job when a friend saw an advert in the Argus for open-interviews and persuaded her to give it a try.

During the programme Alison rubbed shoulders with celebrities Status Quo and Right Said Fred, and even took a trip to Paris to interview teen band 3-T. "Right Said Fred were probably my favourites,” said Alison. "They're the kind of blokes I'd like to move in with next year; if someone said find me your ideal flatmates, I'd say I'll have Richard and Fred.”

Alison believes that her degree course has been useful in her job. “It has helped me to see through the industry. I think other presenters on the show are less clued up on what to watch out for, whereas I know that it’s not going to happen overnight. I think that is probably more important than practical skills, because you can pick them up anywhere.”
Celebrating Innovation

Next month, the Sussex Innovation Centre celebrates its first anniversary. And there is good cause for celebration, according to former oil company executive and petroleum engineer, Mike Herd, who has recently taken over as the Centre’s executive director. Although less than a year old, the Centre is already a success story, despite the scepticism with which the idea was greeted initially in some quarters. “There were those who were totally committed to the idea of the Centre, but others who could not believe that such an innovative venture would actually succeed,” says Mike. But the development of the Centre so far has confounded the sceptics. Ninety per cent of its space is now either filled or reserved, companies have to be turned away, and several of the tenants are already beginning to experience very real commercial success. And, quite remarkably in view of the risk involved in setting up a business, there has not been one failure so far.

The Innovation Centre’s tenants are small start-up or recently established high tech companies, working in such fields as biotechnology, multimedia, pharmaceuticals and genetic engineering. In addition to the provision of flexible, affordable space, the Centre offers its tenants the full range of business support: secretarial services, reception, financial advice, marketing expertise – all of which enable them to perform at a level, and within a time-scale, which they simply could not manage on their own. There are also spin-off benefits of working alongside other new enterprises and, of course, the proximity to, and interaction with, the “academic corridor”, the universities of Sussex and Brighton and the Brighton College of Technology.

space, important as it is to get that right. His task is a considerable one. The raison d’etre of the Centre is, after all, no less than the economic regeneration of the Sussex region. This involves supporting existing businesses, attracting new ones, helping them to grow and flourish, and thereby creating employment and enhancing prosperity. It involves identifying and marketing the diverse skills available in the region – including in the university – both nationally and internationally. It is concerned with stimulating ideas, and getting those ideas off the ground, bringing together those who can make ideas work, often in ways that they might not imagine for themselves. “A company with a problem may not realise that it needs a biochemist to solve that problem,” explains Mike. “Conversely a biochemist may not feel able to work within the company’s timescale. It’s part of our role to identify solutions and bring people together in ways that really work for them.”

Among his other tasks, Mike will be exploring ways of extending the site of the existing Centre and establishing further centres in other parts of Sussex. “The Sussex Innovation Centre is clearly working,” he says. “The building itself is the manifestation of a collective vision. My job as Director is to build on that vision and take it as far as it can go.”

Estate Division establishes Hit Team

As we all know, Sussex is in a particularly attractive part of the countryside and is the only university located in an Area of Outstanding Natural Beauty. Quite rightly, we place a great deal of emphasis on environmental protection and, indeed, are committed to enhancing the downland landscape of which we are a part. However, as any walk around the campus will reveal, there are small, but unsightly blots on the landscape which mar the appearance of the campus itself.

To deal with this, the Estates Division has set up a hit squad – two men, a tool kit and a small vehicle – which will undertake monthly inspections of the campus, looking out for, and dealing with, minor problems such as stray litter, defaced or broken signs and display boards disfigured by bits of tape and out-of-date posters. According to Maintenance Manager, Tony Westgate, most of these eyesores will be dealt with on the spot. Those that can’t be will be reported back for further action. For no real cost – the team will be diverted from other duties for around one day a month – this new action will help to ensure that the campus is an environment of which we can all feel justifiably proud.
Dear Editor,

I am pleased to see initiatives to improve the standard of teaching in the University (e.g. the Teaching Awards scheme, Bulletin 25 April). However I feel it needs to be noted that, while the intent may be laudable, the effect of this sort of scheme may be negligible.

At present the quality of teaching in higher education is being adversely affected by the increasing emphasis on the research output of academic staff. The effect of this is two-fold. Firstly academic staff appear to be employed more and more on the basis of their research record with less regard being paid to their teaching abilities. Secondly, though there are many members of staff in the University who are committed to quality teaching, the present research orientated climate is a powerful disincentive to spend time on either teaching or pastoral care. Time spent with students is often time when the key factor in promotion, research, is neglected.

Until more value is given to teaching as something which may genuinely help in

Er ....... Hove actually

Frogs in the Brighton area are becoming rather clique, according to research by Sue Hitchings and Trevor Beebee of BIOLS. At the turn of the century, they may have belonged to one happily interbreeding population but DNA studies show that they are now fragmented into isolated small populations. Relatively few frogs swapping ponds in each season would be enough to ensure a steady interchange of genes, but life has been made too difficult and dangerous for these wanderers by the increase in traffic and the general drying out of the environment.

Isolation robs small populations of the genetic diversity necessary for long term survival. Too much exclusiveness may have a high cost even in the most select neighbourhoods.

Changing face of campus

The following work is being undertaken by the Estates Division. Please take care in the vicinity of the work, and stay outside any safety barriers.

WORK IN PROGRESS
- Library: Stage IV Extension: building works due to be completed in July followed by fitting out, for use from October.
- Bicycle racks: upgrade of existing and installation of new racks continues.
- Anundel Building (used to be AFR): major repair and refurbishment. Levels 2, 3 and 4. Completion due August.
- University entrances: traffic barriers.
- Installation of removable barriers for use at short notice in special circumstances, eg security alert or disaster recovery.

PLANNED FUTURE WORKS IN 1997
- Chichester I (used to be MOLS I): major repair and refurbishment. Programme, dependent on Anundel completion, planned start in September, until March 1998.
- Chichester II (used to be MOLS II): Level 2. Upgrade of new CPES administration area. Planned for August to October.
- Pevensey II (used to be MAPS II): Level 5. Alterations and some upgrading to facilitate School moves. Planned for November to February 1998.
- Falmer House works to improve safety of courtyard moat. Refilled with water, but shallower than original. During the summer vacation.
- East Slope (Phase II): refurbishment. Blocks 10, 13 and 14, July to October.
- Campus Signposting: improvements to map display boards and new fingerpost signs.
- External Decoration: BIOLS (Teaching II, Research I & II and EP Wing), CRPC, Chichester II, Norwich House and Sussex House. During the summer vacation.

PLANNED APPLICATIONS
The following applications for listed building consent (LB) and planning permission (PP) are being submitted, and a copy may be seen at the Estates Building Reception:
- ENGG I: installation of four cooler units.
- (LB and PP)
- Library: refurbishment of existing building. (LB)
### Monday 5 May - Sunday 11 May

#### Lectures, Seminars, Colloquia

- **Tuesday 6 May**
  - 3pm Sussex European Institute Research-in-Progress Seminar: Liberalising transatlantic air transport: issues and implications. Francis McGowan and Alasdair Young, room A71.
  - 4.15pm Biochemistry and Genetics and Development Seminar: X-ray structure of recombinant horse serumid peroxidase and a substrate complex. Andy Smith, Biology Lecture Room.
  - 4.30pm Music Faculty Public Lecture: Who is the composer? Jonathan Harvey, Honorary Professor of Music, room C133.
  - 5pm American Studies Open Seminar: Sex and the Spectacle: eviction and excess in contemporary American fiction. James Arnesley (Middlesex), room D730.
  - 5pm Social Anthropology Graduate/Faculty Seminar: Sustainable co-operation: local social organisations and Orfram funded groups in Tansania. Alison Tierney, room A71.
  - 5pm German Research Colloquium: Viktor Kemper’s diaries. Hans Reiss (Bristol), room A155.
  - 6.30pm Issues in Environmental Science Lecture: The house dust mite as a primary cause of asthma. J.W. Mauder (Medical Entomology Centre, Cambridge), Chichester Lecture Theatre.

- **Wednesday 7 May**
  - 2pm Centre for Statistics and Stochastic Modelling Seminar: Particulars of a similar process. John Bunge (Cornell), Pevensey Building 1A1.
  - 4pm Centre for Mathematical Analysis and its Applications: Sturm-Liouville operators with pathological behaviour of eigenvalues. Katherine Nairnak (Weizmann Institute), Pevensey Building 1A1.

- **Thursday 8 May**
  - 11.30am Economics Faculty/Graduate Seminar: The labour market effects of trade with quality differentiation of products. Alasdair Smith, room D340.
  - 12.30pm Postgraduate History and Gender Seminar: Politics and perspective: power, perception and patriarchy in the later novels of Jane Austen. Virginia Fox, room D730.
  - 4pm Laboratory of Experimental Psychology: Are there genes for grammar? Evidence from specific language impairments. Dorothy Bishop (MRC, APU Cambridge), Biology Lecture Room (EP 3.9).

- **Friday 9 May**
  - 2pm SPRU Seminar Programme: The Chernobyl re-placement project. Prof. John Eddy, ED8 room 121.

#### Miscellaneous

- **Sussex Students’ Forum**
  - 6.30pm Thursday 8 May - Quality or quantity: can a mass higher education system deliver standards of excellence? Speakers include Dr. Ted Tapper, Prof. Peter Scott (Pro-VC, Leeds), Prof. David Watson (Dir. University of Brighton, and Chair of HEQC and UACE) and Claire Fox (Education Editor, LM Magazine), A1 lecture theatre.

- **French Excursion**
  - End of term trip to France. This year’s trip will take place on Saturday 28 June, and we will be heading for Boulogne. Cost including coach from University and ferry crossing will be £20. Booking forms and more information from Nigel Pullen, IDS 219, ext. 4163, or email: N.J.Pullen@sussex.ac.uk

- **Creating Your Own Style**
  - 2.15pm Thursday 8 May - This Computing Service workshop will look at ways of creating a consistent look for your documents by using styles. For further details and to book, contact Computing Service Reception, ext. 8090.

- **Stress? Yoga Can Help**
  - Yoga Society meets Tuesdays 12pm - 12.45pm, and 1pm - 1.45pm. Debating Chamber, Failer House. Beginners/new members welcome.

- **Shell Step Scheme**
  - Second year undergraduates - holiday employment during July and August into Sussex companies to carry out specific project that matches your skills for £110 pw. Are you interested? If so contact Patrici Sutcliffe on campus at the Sussex Innovation Centre, ext 8388, or 704404.

#### CCE Courses

- **Campus Weekly Courses**
  - Introduction to Microsoft Word - Wednesday evenings.
  - Microsoft Applications on the PC: Windows and Word - Saturday 21/28 June.
  - Beginning Multimedia - Thursday evenings
  - Exploring the Internet - Two separate courses: Saturday 10 and 17 May, and Saturday 14 and 21 June.

  For more information contact CCE Room 240, ext. 8527.

#### Gardner

- **Gosher Theatre, Israel**
  - 6-10 May: K’Far - The Village, by Joshua Sobol, UK Premiere. A joyful and evocative story set in the forgotten years (1940-47) of Israel’s history. Performed in Hebrew, with translation into English. Headsets available for a £5 deposit. Tickets £12 (£10 concessions).

- **Film at the Gardner**
  - Sunday 11 May
    - 3pm - In Love and War
    - 6pm & 9pm - Random

  Another special offer exclusive to readers of the Bulletin. For the first 15 people at the Gardner Box Office with your copy of the Bulletin - free seats will be available for the above films.

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### Small Ads

FOR SALE: Pioneer RDS EON car stereo head unit model KEH 2400R. Detachable face for added security, all in graphite colour, with manuals, shop receipt and everything else. Original RRP £200. Perfect condition, bargain £80. Telephone ext. 8213, or 813085.

FOR SALE: Golf clubs, jumbo metal woods, Callaway copies, 1, 3, 5, graphite shafts, right handed, covers, good condition. £75. Call (01689) 853188.

TO LET: Lovely furnished ground floor flat in Clifton Hill / Montpelier area, near buses, station, shops and sea. One double bedroom, suit postgraduate/faculty, single or couple. £380 p.c.m. negotiable. Ring Tony King on (71) 473 2929. Available immediately.

HALF-BOARD accommodation available in shared house for 2 student friends. Lovely bedroom each, own bathroom/TV. Central heating/Central Brighten. On bus/train route to campus. £70 pp/wk. Foreign students welcome. Tel. Angie Okey on (67) 80819 (day), or 699506 (evening/weekend).

BELTING ELECTRIC COOKER. Grill needs attention. Excellent condition. £65. Hitachi Hi-fi stack system. Record/tape player, tuner, speakers. Good working order. £65. Atari 1048ST computer & monitor. Hardly used. £90. Phone ext. 2796 daytime, or 721440 after 6pm.

WANTED, a mountain bike. Make doesn’t matter, so long as in good condition. Can pay around £20! Contact Mo, on 626413, or sspl1@sussex.co.uk.

SPAIN, Costa Blanca. Delightful old house in mountain village, 5 kms from coast, sleeps 5, all mod. cons. Holiday lets from £100 per week. Phone (01323) 899587.

LARGE first-floor bedsit available now in quiet house near club office. Fully furnished, gas cooker and fridge in room, large double-glazed bay window, shared bathroom, use of washing machine and dryer. Rent £43 per week. Contact Joan Griffiths on 739912.

FOR SALE: Squire Stratocaster guitar, solid body, as new. Complete with gig bag and Marshall Valvestate 10 watt practise amp. £150. Phone after 5pm: 779532.


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### Bulletin

The Bulletin appears every Friday of term with copy deadline the preceding Friday lunchtime. We welcome suggestions for news, events, letters and small ads. Please contact the Information Office, Sussex House, on ext. 8209, or email: Bulletin@sussex.ac.uk

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**Bulletin** is now on the web: [http://www.sussex.ac.uk/information_office/bulletin](http://www.sussex.ac.uk/information_office/bulletin)