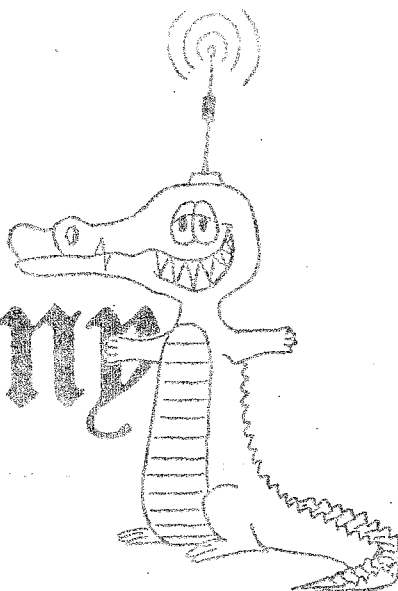


Jeremy



The Journal of the Sydney University Physics Society September 1988

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Editorial

Yes we know, we KNOW! Jeremy has not appeared for a term and some readers have been getting desperate for their fix. There have been rumours of lecturers becoming seriously ill with withdrawal, while others have left the country in search of a substitute. A draft copy of this issue is known to have been stolen from one of the editors' offices (a most heinous crime) and students and staff are in general getting very restless.

For once, the delay was not our fault. *Jeremy* volume three, number two was ready for printing in the second week of Trinity term. It was going to be a big issue - sixteen pages to make up for the absence of a second issue in Lent term. We took it to the resources centre to be printed as usual and discovered much to our collective horror that the Gestetner printing machine was not working and that it would have to be replaced at an indefinite date. Further discrete enquiries revealed that the motor had burned out while it was printing *Lums+*, the magazine of the Sydney University Mathematical Society (we shall resist the temptation to comment on this interesting fact).

Left without a printer we were forced to seek other possibilities. The only other Gestetner on campus is at the Union, and we were told it would pack up under the strain of printing the thirteen thousand sheets of paper that constitute *Jeremy*. The first year Physics outpost in Carslaw offered to help in this time of crisis and print it for the cost of paper alone on their offset machine, but were unfortunately very busy printing first-year notes at the time and thought they'd try to fit it in a page at a time if we couldn't get it done anywhere else. Medsoc offers an offset printing service for students but their asking price was more than Physoc's bank balance (this is not to say it wasn't a good price; it was excellent, but

offset printing is expensive) and off campus prices were worse. So we just had to wait for that replacement Gestetner. We photocopied the issue a few times and distributed it as best we could, but we were otherwise helpless. In the meantime, articles and quotes continued to drift in, and news has grown stale. The new printer has since arrived, so you now have the fattest, if the most infrequent, *Jeremy* ever produced.

Large though it is, this issue has been written almost entirely by the editors themselves. You, dear reader, have not said a word about what you want from the magazine, let alone submitted an article (although to be fair, the responses to the quotes competition so far have been outstanding). Since it is very difficult for us to edit a magazine without feedback (think of how difficult you would find your courses if nobody ever marked your assignments!) we have prepared the first ever *Jeremy* questionnaire. If you wish, you may complete it and place it in the Physics Society mailbox just opposite LT8 in the Physics Building (we still get complaints that people don't know how to contact us). We will, if there is sufficient response, print the results of the survey in the next issue. By no means should this limit you if you have ideas of your own; if you have an article or even an idea for an article and you are prepared to put your name to it, please send it in.

Some people complained that the last issue was very poorly printed. Our resident cartoonist, Kevin Moore, complained that nobody could read the finer points of his artwork. We must admit that this is true. We apologise to Kevin and hope he recovers in time to bring us more cartoons. For the record, the small words on page 5 read "cherubim and seraphim...heavenly radiance...angel trumpets"; on page 7 the noticeboard, titled "appointments vacant", is covered with sheets of paper each headed "DSTO" with two exceptions, one entitled "Anares" and the other, "Forces of darkness and evil" and the caption is "Maxwell's Demon makes yet another futile foray against the second law of noticeboards".

While we're on the subject, Kevin tells us he won't be with us much longer (so you'll be able to stop hiding) and we'll have to find another cartoonist. So we welcome two new cartoonists for this issue, Kim Lester and "DM" (we found the cartoons in the mailbox one day). If you'd like to contribute in this way, feel free. We don't care about the artistic quality of your cartoons so long as they're funny.

Finally, a first year student, identifying him/herself only as "KSJM" wrote in to comment on *Experiments with Physicists* in our last issue:

"An example of rigid-body rotation - An ex-Physics lecturer turning in his grave!"

We hope to hear from you soon.

Pal Fekete	Postgraduate (Plasma)
Kim Lester	Physics III
Louise Scott	Physics III
Eugene Seneta	Physics IV (Astronomy)
Susan Steiner	Physics III

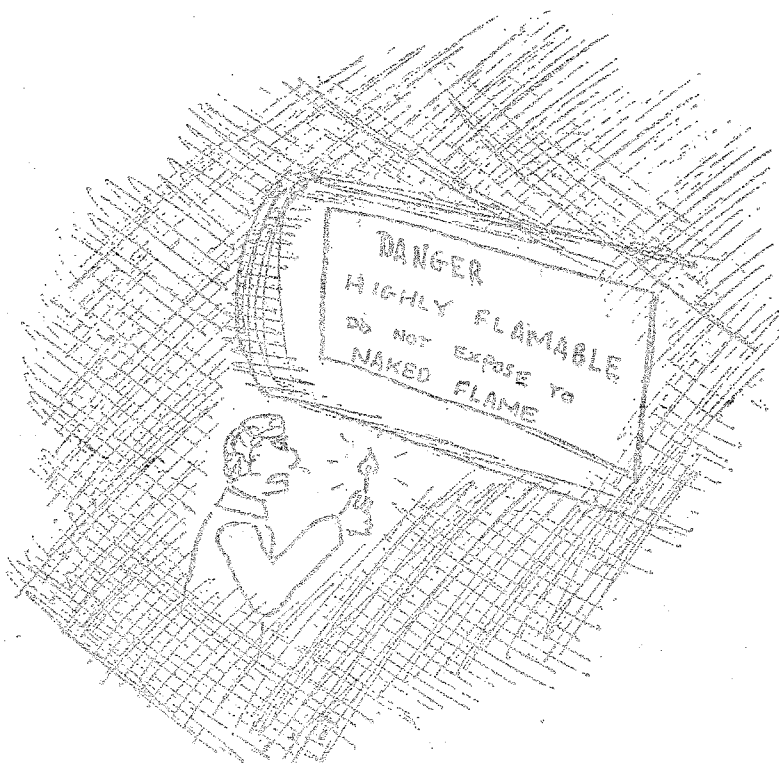
NEWS

MEETING HIGHLIGHTS

There were several general meetings of the Sydney University Physics Society held in Lent and Trinity terms. At the first (the Annual General Meeting, 9th of March) office bearers for 1988 were elected:

President	Michael Usher	
Vice-President	Dom Baudille	
Secretary	Louise Scott	
Treasurer	Richard Rannard	
Sports Secretary	Philip Ryan	
Jeremy Secretary	Eugene Seneta	
Talks Secretary	Shaun Amy	
Committee members	John Sarkissian	Shaun Amy
	Andrew Studer	Andrew Gray
	et. al.	

There was some other business conducted but it's all out of date now due to our late press time; likewise, the several general meetings held since then all contain minutes that are now hopelessly dated.



PARTICULARLY INTERESTING PROBLEMS AND PUZZLES IN PHYSICS

Nobody spends the better part of every day struggling with physics without secretly thinking that all the effort will one day be rewarded with a remarkable insight or ingenious piece of reasoning that accounts for some new and important aspect of the universe. Everyone has a private little list of clever ideas they've had, ideas that they really ought to think through properly one day, things that seemed like a good idea at the time but never were properly formulated... these facts have prompted the editors to introduce a new column which is intended to be an informal forum for such ideas.

We believe there to be a market for such speculations - not only with regard to aspects of physical problems, but also we hope to promote discussion about such things as: Why do developments take the direction they do? What is the proper conduct and direction of current research? Where are the areas that have the greatest need and scope for advance?

Also, it would be interesting to have a column in which particularly intriguing facts and developments can be reviewed, depending on the quantity and quality of conjecture submitted. At the very least, we aim to accumulate some stimulating and motivating material, irrespective of criticisms regarding the uselessness of what will, necessarily, partly be uninformed comment.

Certainly there is no area of physics which is not ridden - or should we say 'endowed' - with experimental anomalies, (to borrow a phrase) ad hoc theoretical cures, uncertainties in crucial data, and the like.

At a time when the demands of economy oblige the greater part of one's effort to be directed towards what might be properly termed 'puzzles' it would be nice to have an excuse to spend some time devising experiments, hypotheses, and techniques that may lead to the answer of a genuine problem.

It is intended that all material be published anonymously, although ambitious first-years have already decreed that Jeremy shall record who submitted what in order to forestall arguments regarding what, at a rather enthusiastic meeting of the Physics Society, was regarded as the inevitable flood of patent applications that would ensue!

Please give anything you think would be of interest to this column to Wilfred Walsh, room 342 or to the Physics Society post-box opposite lecture theatre eight.

[If you couldn't digest all that at once, what we're trying to set up is an anonymous, informal forum where students can discuss their ideas about physics - Ed.]

PARTIES

Two parties have been held since the last *Jeremy* went to press. The first term party was not a resounding success; a run of unfortunate coincidences resulted in everything being organised (?) at the last moment. Those few who stayed on past the first hour, however, were rewarded when the food finally arrived.

The Physics Society put considerably more effort (and money) into its second term party as a form of penance; not since the Great Black

Hole Party of 1987 has a PhysSoc party been such a success. We had returned to the traditional rooftop party venue of the Solar Physics garden, hired a barbeque that could have fried an ox, brought so many sausages and beer cans that there were actually a few left of each afterwards, and enough snacks to keep everyone happy. A good advertising campaign resulted in excellent attendance. The highlight of the evening was a certain *Jeremy* editor, a true experimentalist, putting some dry ice into an "unbreakable" plastic soft-drink bottle and sealing it. It went up in a great cloud, leaving a fine mist of soft-drink to slowly drift over the rooftop *[we don't recommend trying this trick; particularly if you use a glass bottle the explosion may be the last thing you ever see]*.

If you missed the party, watch out for news of our third term party, which ought to be even better!



A shot from the Physics Society first term party. Our apologies to all those who missed out on the BBQ (it did eventually come).

Keep your eyes and ears peeled for news of the third term party (our parties are now "under new management" by people who are not vegetarians).

The Great Jeremy/PhysSoc T-shirt Competition

In our last issue, we announced that Physics Society T-shirts would be awarded as prizes in the quotes competition. Unfortunately, the currently available T-shirts have proven so popular that our entire stock has been depleted (even Robyn Williams has one).

There is a set of hard core members in the Physics Society that believe that the current design is the best there is, but if you think you can do better for the next batch we print, submit your design via the Physics Society mailbox opposite Physics LTS. If we select it for printing, you'll get one of the new T-shirts as a prize. We would prefer two colours only, because production costs are cheaper, but full colour is a possibility if people are prepared to pay a little more when they buy the shirts. As for content, we just want something that a PhysSoc member would be proud to wear.

So if you have some artistic talent and a few ideas, get to work soon, or we'll have nothing to give our winners on the annual award night!

WHAT'S HAPPENING TO THE PHYSICAL REVUE?

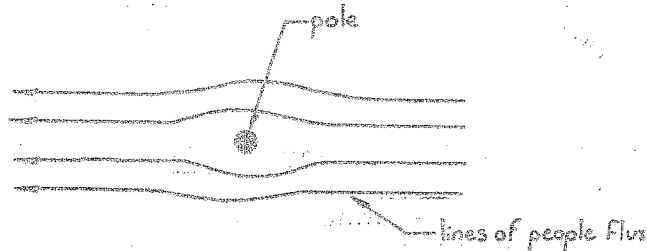
The Revue is indefinitely postponed. One reason is that our printing delays meant we were unable to advertise it effectively. Another is that no students seemed very interested, anyway.

Quantum Theory - A Human Perspective

Much has been written about the quantum theory of particles, sometimes called the Dribble Theory (especially applicable to the aspiring Les Pattersons of the School of Physics, not mentioning any Moore names). A lot less has been written on the human aspect of this theory. Perhaps after reading this article you will wish there had been even less. There are several areas of human life which quantum mechanics encompasses. These areas include the physical, emotional and most definitely psychological spheres of human existence.

It is generally a well accepted fact that people have a tendency to congregate in large groups. This is apparent whether or not the individuals are on inter-communicative terms. This has previously been known as the Sheep Factor (Baa), but those endowed with the intellectual capacity of a physicist (haa) realise that this is in fact a manifestation of quantisation. Moreover this quanta of people exhibits a duality of nature, being able to manifest itself in either wave or particle form.

The wave nature is evident when such groups encounter a foreign object such as a pole. The group apparently flows around the said object without any obvious interference. In fact the group often seems to exist in blissful ignorance of possible obstructions (especially obvious from the glazed expressions on faces after Physics Society parties).



The particle nature of people is clearly seen in the quanta's attempt to pass through a solid wall, especially when their blood contains certain chemical impurities (similar to doping in semiconductors).

This duality of nature results in the production of distraction patterns. These are exemplified beautifully by the SRA. Regular commuters will be able to relate to the term "driven to distraction".

Interference is obvious right here in our illustrious physics building, in the form of the very negative interference that occurs when a theoretical physicist is in the vicinity of any ongoing experiment. The interference is directly proportional to the importance of the practical (rather similar to the law that states that stupidity is directly proportional to the number of maths lectures one attends).

This phenomenon of negative interference is also evident amongst other humans. This interaction of the parties to the mutual discomfort of each is commonly known as fisticuffs.

Positive interference is also abundant in human life. An example of such is LS coupling which occurs between two oppositely charged bodies in the dark resulting in stimulated emission from an excited state (is blackbody radiation more common?).

Humans, like electrons, like to go around in pairs, especially in colder climates (see latest superconductivity theories). Unfortunately friction causes some pairs to split up.

Some pairs are positively (negatively) incompatible, and annihilate each other in one big bang (... "poof!" and they're gone). There have been theories about the increased frequency of these annihilations. News has leaked out from the Lucas Heights reactor (doesn't everything?) - a research spokesperson, Ita Fortress, stated, "These bangs are just a fact of life, and are perfectly safe as long as precautions are taken."

Yet another apparent behavioural pattern that supports the "Quantisation of People" theory is the fact that they are unable to occupy two states at the same time under normal circumstances (not including any third year practicals gone horribly wrong).

People either are, or they're not, they are never both, well not usually, anyway. For example, take Schrodinger's cat. This poor confused creature never quite knew what was happening to it (for all those first/second year greenies who have never heard of Schrodinger, his cat or black boxes, ask someone with enlightenment, intelligence, and a couple of weeks free (such as Ian "watch me glow" Johnston). Anyway, this cat had a duality of nature, that is, it was a schizophrenic zombie.

People also appear to exhibit quark behaviour:

- 1) Strangeness (speaks for itself)
- 2) Truth (seemingly nonexistent amongst certain sociological groups, especially politicians)
- 3) Beauty
- 4) Charm (postgraduate Pal Fekete once said "I'm very good with my hands, take that any way you wish.")
- 5) Up
- 6) Down (we leave these to your imagination)

Like quarks, people are mostly unpredictable; take lecturers' minds when setting exam papers, for example.

Some other elementary particles have been personified around the physics building - namely the winos recently spotted around the tokamak (for all those naive in the finer points of quantum mechanics, a wino is in fact an elementary particle, elementary in both the physical world and in human society).

Despite the fact that people are quantised, not all people are discrete. Take Garry Hart, for example.

Research has also been carried out over the years examining the principles of conservation of energy. It is especially prevalent in many homes, recognised by such phrases as "I'll do it later" or "Not tonight, dear, I have a headache."

People are really just compositions of elementary particles, packaged rather neatly (or so we think). It thus follows from logic thought (see, science training is useful after all, you can rationalise anything by calling it "logical"!) that they will obey the laws of physics. This has indeed been shown. So the next time you ponder which course of action to take, whether it pertains to career decisions, your love life, or merely whether or not to get out of bed in the morning, just pick up any physics textbook - your guide to life!

Kim Lester
Susan Steiner

WORLD EXPO '88 - FOR PHYSICISTS

If you are going to visit the World Expo in Brisbane and expect every pavilion there to extol the virtues of science, then you will probably be a little disappointed. We are not saying that Expo isn't any good - it is truly excellent - but physics is fairly obviously not the exhibition centerpiece in spite of the "Leisure in the age of Technology" Expo theme.

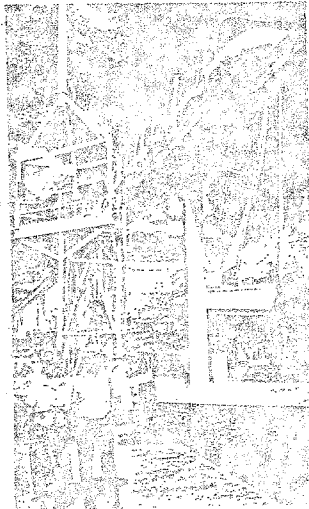
Firstly, some general impressions. Expo is a big place. It is roughly rectangular and it takes a good twenty minutes to walk from one end to the other - longer if you are sedate - and I was doing that trek pretty well all the time, so wear some comfortable shoes. There is a monorail serving two stations (one at either end of the site) but there is usually a long queue of novelty seekers waiting for a ride. Apart from the fact that it's free, very quiet, and extremely frequent, there is little to separate it from Sydney's version.

Expo is also extraordinarily gaudy. From the sunsails to the nightly fireworks display it is full of impractical but delightful artifacts. Every time I discovered a new sculpture or a ridiculous and utterly useless structure I got the uneasy feeling that it was there for a reason, but that I had somehow missed the point. These things did, though, add atmosphere to the place.

There are two things that are present in mind-numbing quantities. The first is the queue. If you want to see something, it is very likely that you will have to wait to do so. Some pavilions have adopted the approach of taking groups of people every twenty minutes or so and subjecting them to whatever films and slide shows are on offer before letting them loose on the exhibits; these tend to have half-hour or worse queues (New Zealand holds the record at over an hour. Save yourself the wait and see the glow-worm caves and the forest by going 'round the back). There appears to be a stable equilibrium queue length; short queues attract prospective patrons and long ones tend to repel them. Thus the queue remains pretty well a constant length all day. Only after about 8pm do the crowds start to thin. Other pavilions take the much more sensible approach of allowing visitors to move through at their own pace and making the film an optional extra - channeling the cattle rather than attempting to pen them, as it were.

The second excess is the video screen (and the slide show). The Pitt Street Mall video wouldn't get more than a glance at Expo. Think instead of passing through rooms with hundreds of screens hanging like candles on a chandelier. Think of a forest (both figuratively and literally) of monitors. Think of video projectors big enough to work with cinema screens. Think of rooms where all four walls - and the ceiling for good measure - are crawling with video images as the exhibitors strive to stuff as many images as they can into visitors' brains. It is utterly impossible to absorb more than a tiny fraction of the audiovisual information presented at Expo.

If you are interested in what Expo does offer in terms of science, then a good start is the UniVations pavilion, Queensland University's contribution. It tends to concentrate mainly on marine biology, but there's a demonstration of a pocket-size microwave link that transmits over several kilometers, some obligatory laser lissajous figures, and displays on the university's new hypersonic wind tunnel with models of aerospace craft that Queensland University



The monorail, peculiar sculptures, tourists and crowds all soon become familiar sights at Expo.

is testing in it.

In the Queensland pavilion, if you persevere with the wall to wall video, you will eventually come to a section on space (the Queenslanders are very excited about the proposed spaceport up there) but there is little actual information content. In similar vein, the British pavilion is plugging "London-Sydney in three hours" with models of its own proposed aerospace vehicle. It also has a space vehicle simulator which I didn't try because - of course - it had a queue.

The Fujitsu pavilion has two sections of interest to physicists. In the first, a robot narrator gives a brief history of computer technology. While it looks fairly lifelike at first glance, it is even worse at holding an audience's attention than a typical physics lecturer; we milled about like sheep waiting for it to finish. There was, however, an astonishing demonstration of two computer choreographed robot arms. They have a tolerance measured in micrometers - even when they are moving at speeds of up to a meter per second. The speed and precision with which they move in time to music is utterly efficient and frighteningly inhuman.

The second exhibit, the one everyone wanted to see, was the three-dimensional computer generated movie. Surprisingly, image separation was achieved by the old fashioned red-green anaglyph technique rather than the more modern crossed polarising filters. There are several very good molecular sequences in it. In one, we see the process of nuclear fusion in a star; in another, water crystallising, and in a third excellent sequence, amino acids combining to form the DNA double helix, which in turn sinuously coils to form a gene and then an entire chromosome. In all cases, the three-dimensional effect allowed a spatial perception impossible to achieve with a textbook.

You can also find three-dimensional images at the USSR pavilion. There are some stunning reflection holograms on display, mainly of fairly innocuous objects such as plates and jugs, but the size and quality of the holograms is very impressive. I even speculated that the Russians were just putting plates behind dirty glass panes and shining lights on them until I came across a projection hologram which would have been impossible to fake this way.

You will come across other holograms scattered around Expo. The

Swiss pavilion has a large one and so does the Primary Industries Pavilion. Honest. You can even buy a hologram first day cover at the Australia Post pavilion for \$3. Unfortunately, as holograms go, this one is not visually very exciting.

Finally, there are the numerous laser light shows around the place. These are technically brilliant; laser beams of all colours and not a few collimations are projected (I suppose with an active mirror) onto a screen to form complex images by a vector scan technique. Ordinary spotlights and diffraction gratings are also used to make the pictures appear more complex.

That is about all the physics you will find at Expo. Technology, on the other hand, is inescapable. There is an IBM system/38 running everything from the sunsail lights to the admission gates. There are truckloads of interactive videodisc systems around the place, both in the IBM pavilion and at the Telecom information kiosks. These latter gadgets provide colour touch screen terminals through which everything anyone could possibly want to know about Expo may be found. You will find that you will have to fine tune your index finger a little, but this method of selection is just as easy as using a mouse. They must get pretty smudged by the end of the day. They are not just gimmicks, either - I found them indispensable. At a touch you can search for pavilions (and call up twenty-second videos on each one; mercifully there is a "skip video" option) or other sites such as restaurants, telephones or restrooms, find out where you are and how to reach your objective (there is an on-line map of Expo); examine the day's events, including any last-minute alterations; view all the bus, train, and ferry timetables, and other wonders. Telephones accept magnetised credit and debit cards. Even the nightly fireworks are computer coordinated.

So if you would like to visit Expo, and there's no reason why you should not, then don't expect to see too much physics while you're there. Instead, consider what there as icing on the cake.

Eugene Seneta

The Kit-Kat Quotes Competition

This competition, now in its third year, has entries flooding in in unprecedented quantities - we didn't think it was possible for so many lecturers to say so many utterly ridiculous things with such frequency. Ian Bassett, who has been relatively quiet in previous years, is using his charming honesty to counter the style of that strong performer, Neil Cramer, with Dick Collins' satire winning him a close third placing. Indeed, some lecturers in their rush for the trophy are forgetting themselves and RE-USING quotes they have said before. Now really, gentlemen! If you have run out of original quotes, you will have to think up some new ones; you won't get away with recycled material! It's not fair on the poor student who dutifully and innocently records what you say, only to discover it's been said long before he or she ever attended university. But most of the material is still wonderfully original and we reproduce here the bumper crop. As we write, more quotes are coming in - we sure hope somebody designs that T-shirt in time for the awards!

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Dick Collins:

"So that gets us down from 10^{24} equations to 10^{23} ."

"It's one of the laws of thermodynamics, 'Nature is a bitch'."
[Sadly, the above quote must be disqualified. It's been said before. Several times. -Ed]

Concerning Dirac: "You'll learn to sleep with this guy later."

"When a lecturer asks a question, the answer will always be zero because that's all you've got in your heads."

"If you think life doesn't get worse, wait 'till your daughter starts going out with guys your age."

"No, it's not wrong - it's algebra."

"Here's a rough analogy. It's like being in the Showbag Pavilion at the Easter Show. When you accelerate, you collide with a fat lady with ten kids and an armful of showbags - she probably won't notice because she has so many kids, but you most certainly will."

Kevin Moore:

"Never let a vegetarian organise a barbeque."

Laurie Peak:

"We have a total of fifty-four tubes. You, being third year honours students, can multiply nine by six."

Alan Chalmers:

"Hmmm...I didn't prepare this; because I thought I knew it."

"We have 1400 pages of Aristotle's writing. I'll summarise that in one lecture."

"We can remove this problem in the theory by not asking that question."

"This probably doesn't mean much to you, since it's in Latin. Doesn't mean much to me either."

Ian Bassett:

"Does anyone want to help me out here by asking a question, or objecting to something, or pointing out a mistake?"

"But you can't tell these particles apart - that's where I think that $n!$ comes in."

"You can get this answer by common sense. You could also get it from statistical mechanics."

"You can define the partition function - for which the standard name is 'the partition function'."

"I warn you, this will be boring and incomprehensible."

"This is a sloppy argument, it's state of the art."

"This is a bit vague, but in practice the vagueness doesn't matter."

"I don't want to rely on this argument, as it's unconvincing. But it's better than nothing."

"Ah, that's a good question...hmmm...I don't know."

"Now we come to something which we won't make any use of."

Neil Cramer:

"So

$$-\frac{\hbar^2}{2m} \nabla^2 u + Vu = Eu$$

simplifies down to

$$\frac{1}{R} \frac{d}{dr} \left[r^2 \frac{dR}{dr} \right] + \frac{2mr^2(E-V(r))}{\hbar^2} = -\frac{1}{Y} \left[\frac{1}{\sin\theta} \frac{\partial}{\partial\theta} \left[\sin\theta \frac{\partial Y}{\partial\theta} \right] + \frac{1}{\sin^2\theta} \frac{\partial^2 Y}{\partial\phi^2} \right]$$

"j stands for generalised quantum number."

"Now this function doesn't look very periodic. It isn't."

"Take the integral over all space and bung in a numerical factor..."

"Now if you read this caption carefully, it says...umm..."

"This is a partial differential equation, which are bloody horrible to solve."

"In quantum mechanics we define operators whenever we can."

"This result looks nice. There's no $\hbar$ so it looks classical."

"It's an effective repulsion, but it's not a true repulsion in effect."

"But the electrons are indistinguishable; we can't tell them apart. So we can put the yellow one down here and the red one up there."

"Associated with that motion is a classical current, so we have an associated magnetic field associated with that current, and so an associated magnetic moment."

Ian Johnston:

"If you fail third year, it's *our* fault."

"This music is just like...well, if you've ever seen a computer simulation of molecules diffusing through a semi-permeable membrane."

"You should all be sitting with your mouths gaping in amazement, but you're probably yawning."

Foreign Quotes - the first for the year:

Phillip Kirkpatrick (Pure Mathematics): "Unfortunately this happens to be a theorem which means that it's true."



I grew up on particle accelerators and nuclear experiments

DM
2

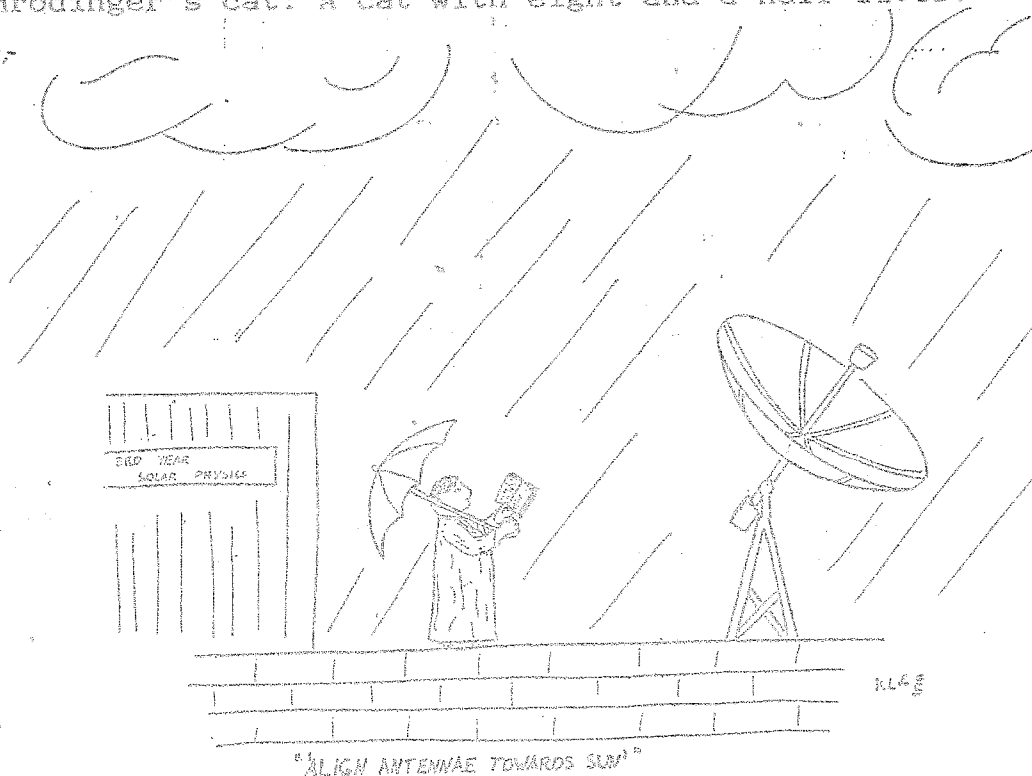
Examination Notice

In keeping with *Jeremy's* tradition of fostering better relationships between staff of the School of Physics and the students, the staff have kindly given us permission to publish this year's exam paper in advance.

- Physics I: Define the universe; give three examples.
Physics II: Propose and validate a theory that explains high temperature superconductivity.
Physics III: Show that God is infinite and hence not square integrable.
Physics IV: In less than 1 page derive the unified field theory. Be prepared to justify any mathematics not given in lectures.
Chemistry: Give a brief history of the atom. Pay special attention to its role in the debate for and against creation science.

Harry's Hard Facts

- * If an experiment can go wrong it will.
- * An experiment will refuse to work until you call the demonstrator whereupon it will work perfectly.
- * The probability of failure is directly proportional to the number of marks it is worth.
- * Any warnings in the note about turning on the equipment in order will be printed over the page - after you've turned everything on and the needles have gone off the dial.
- * The more the lab notes are updated the more out of date they become.
- * Schrodinger's cat: A cat with eight-and-a-half lives.



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Your Lucky Stars (by the people who really know)

GEMINI (May 21 - June 21): Your car rego will run out within twelve months.

CANCER (June 22 - July 23): You might get it.

LEO (July 24 - August 23): There will be darkness in your nights this month, but fear not, for your days will be considerably brighter.

VIRGO (August 24 - September 23): Not for long.

LIBRA (September 24 - October 23): You will be killed at 4.56pm on the 13th of June by a car travelling at 113 kph northbound in the second lane (from the right) on the Bradfield Highway. But don't worry, things will rebalance when you enter the afterlife.

SCORPIO (October 24 - November 22): Both an American spy satellite and a Russian Vostok rocket booster are in your quadrant this month, so avoid conflict at 11.45pm on Saturday. This is a bad month for World War III to happen.

SAGITTARIUS (November 23 - December 22): Don't eat anything that may give you food poisoning, but don't take your dieting too seriously or you will starve. Planck's constant is not expected to change this month.

CAPRICORN (December 23 - January 20): If you drink too much this month you may get drunk. You are particularly vulnerable to high voltages in the third week.

AQUARIUS (January 21 - February 19): You will spend some money this month, therefore it will be to your distinct advantage if you are paid.

KRUNXIUS THE CROCODILE (29th February): This is a bad year for you. You will age.

PISCES (February 20 - March 20): None of your lecturers will improve.

ARIES (March 21 - April 20): Callisto is in conjunction with Venus in Orion. There is an emphasis on Betgeuse. Supernova 1987A is still in the Large Magellanic Cloud. Johnston the rising star will come into prominence and shine throughout the term. All this indicates complete confusion.

TAURUS (April 21 - May 20): There will be an event on your horizon. You will feel blue, and there is no escape. Cygnus X-1 will be the dominant gravitational force in your life this week.

The First Ever Jeremy Survey

Jeremy is your magazine and we want you to enjoy reading it. This survey also presents a unique opportunity for us to find out what you're all like. Please help by completing this survey and dropping it in the Physics Society mailbox (opposite Physics LT3).

1. Which Physics lectures do you attend?

- | | |
|--|---|
| ☐ Life Sciences | ☐ Physics I |
| ☐ Physics II | ☐ Physics III |
| ☐ Physics IV | ☐ Postgraduate |
| ☐ Staff | ☐ I don't do Physics |

2. Overall, how would you rate this issue of Jeremy?

- | | |
|---|-----------------------------------|
| ☐ First class | ☐ Economy |
| ☐ At least it's free | ☐ Terrible |

3. Most of Jeremy is (tick one or more)

- | | |
|---------------------------------------|--|
| ☐ Just right | ☐ Too frivolous |
| ☐ Too serious | ☐ Innocuous |
| ☐ Entertaining | ☐ Offensive |

4. Which features of this issue of Jeremy did you like (put a tick) or dislike (put a cross)?

- | | |
|---|---|
| ☐ Editorial | ☐ News |
| ☐ Light-hearted essays | ☐ Serious essays |
| ☐ Short anecdotes | ☐ Cartoons |
| ☐ Quotes competition | |

Do you have any comments to make on any of these?

4. Do you think that Jeremy should have more serious bits in it?

- | | |
|------------------------------|-----------------------------|
| ☐ Yes | ☐ No |
|------------------------------|-----------------------------|

5. Jeremy is not distributed to Life Sciences students because we can't afford to print the extra thousand copies. Do you think we should still make an effort to distribute it amongst them?

- | | |
|------------------------------|-----------------------------|
| ☐ Yes | ☐ No |
|------------------------------|-----------------------------|

6. Do you think there should be more reader participation in Jeremy?

- | | |
|------------------------------|-----------------------------|
| ☐ Yes | ☐ No |
|------------------------------|-----------------------------|

7. Physics Society events are

- | | |
|---|--|
| ☐ Well advertised | ☐ Not well advertised |
| ☐ I didn't know there were any | |

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8. Would you be prepared to pay a little more (say \$20) for the next Physics Society T-Shirt if it was in full colour?

☐ Yes

☐ No

9. How would you rate Physics Society parties (tick one or more)?

☐ Cheap

☐ Expensive

☐ Excellent

☐ They pass the time

☐ Pathetic

☐ Need more food

☐ I've never been to one

10. Would you be prepared to pay a little more (say, \$4 for members) for more well provisioned parties?

☐ Yes

☐ No

[Staff can ignore the next section]

11. Where do you sit in a lecture?

☐ In direct view of the board

☐ At the back

☐ Near the window

☐ At Manning Bar

☐ In the lap of a good friend

12. In the lecture do you prefer conversation

☐ From the lecturer

☐ From your neighbour

☐ From the person three rows in front (who is cute)

13. If there is graffiti on the desk do you--

☐ Read it with appreciation

☐ Add to it

☐ Disapprove and write to Honi Soit about the evils of graffiti and how it will ruin our desks

☐ Go to the second-year lab, get a hacksaw, saw out the piece you like, take it home and mount it

14. If you could organise your own timetable would you

☐ Have your lectures/practicals in the morning

☐ Organise to have Mondays and Fridays off

☐ Space it out

☐ Not have one

15. If you happened to get a questionnaire in *Jeremy* would you

☐ Turn it into a paper plane

☐ Fill it out

☐ Use it to test out spontaneous combustion in your chemistry lab

☐ Wrap your fish and chips in it

[If you have any other comments to make, please write them below or attach them. Thanks for your time.]