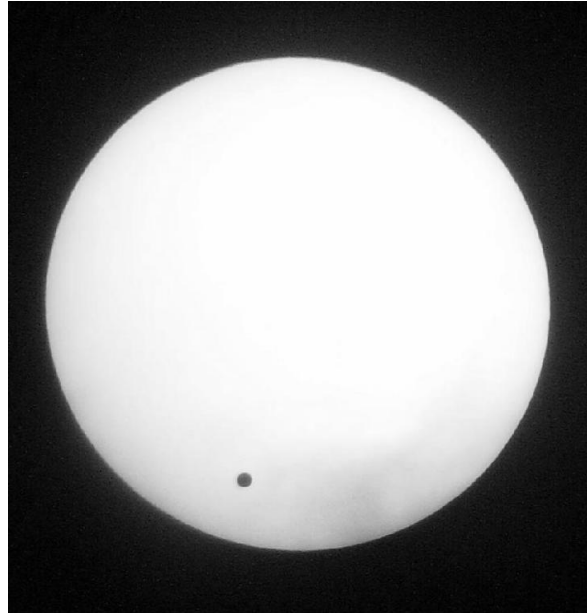


Astronomical Society of Edinburgh Journal

Issue 47

December 2004



Published by The Astronomical Society of Edinburgh
City Observatory, Calton Hill, Edinburgh
for circulation to members
Editor: Dr Dave Gavine
29 Coillesdene Crescent, Edinburgh
Website: <http://www.astronomyedinburgh.org/>

From the President	2
Observing Is Not Believing by Ron Livesey	5
Eclipsing Binary Star - RZ Cassiopeiae by Des Loughney	7
The BAA Honours our former Vice-President	9
The Astronomer's Drinking Song	10

From the President

Welcome to another edition of the Journal and another message from your President.

I must start by thanking all those who have helped with the running of the Society during the last year or so; not only the Council members but also to Dave Gavine for editing this Journal, Alan Pickup for his monthly "night sky" previews and all of the Society members who have given presentations, helped out at Society meetings and other events. Without the support and assistance of these people, we simply wouldn't have a Society.

Thinking about astronomy for a moment (something that I find it harder and harder to find the time for), if 2003 was the "Year of Mars" then for me 2004 must be the "Year of Venus". Certainly the transit in June was the highlight of my observing year so far, although we never know what might happen tomorrow! I would like to thank those who opened the Observatory for the event and I do hope that all of you who got up at such a ridiculously early hour to observe the transit managed to see something, even if the viewing conditions were far from perfect. If you missed it this time, there is another transit in a few years but will not be visible from Scotland.

Part of the role of President is to deal with requests and queries received by the Society and we do get a fair number of what could perhaps be called "unusual requests". We were recently asked if we could suggest an observatory that is open to the public anywhere in the North of Scotland, but unfortunately we couldn't identify one. We were also recently contacted by an individual in North America who has a book that she thinks has been signed by Charles Piazzi Smyth but is asking for our help in confirming this. Perhaps the most difficult requests to deal with are those from other Astronomy Societies in other countries who are desperate for books, equipment or funding. As you may know, the terms of our Society's Constitution prevents us as a Society from providing any assistance to other Societies and organisations but I do always feel some embarrassment in declining such requests. Although the Society as a whole can not offer support, there is nothing to stop individual members or groups of members from providing assistance. If you have any equipment, books etc that you no longer need and wish to help other Societies overseas, then just let the Council know and we can provide you with further details.

We have had a wide range of presentations at the meetings this year. Although we all have slightly different astronomical interests, hopefully there was something that was of interest to everyone somewhere in the schedule. It is always difficult to pick out particular presentations without feeling guilty that you have missed out others. I will, however, just mention a couple that, for me at least, particularly stood out.

Firstly, in May, Professor Jim Dunlop gave us a presentation on Black Holes and Galaxy Formation. This was particularly memorable as being the presentation that introduced the most complicated equation we have seen all year: $RS = 2GM/C^2$. (Don't ask me what it means, but it looks impressive!) Secondly, I would also like to mention the presentation by David Edwards of the Open University. This was memorable for a couple of reasons - firstly, despite our computer projector breaking, David still managed to deliver a first class presentation and secondly it opened my eyes to the range of astronomy courses available from the OU. I must admit that I have not signed up for any yet, but maybe next year. Finally, when reviewing the recent presentations, I must say a big "thank you" to all who spoke at the Member's Night in August. I always enjoy Members' Night as Astronomy is often a solo activity and we rarely get to hear what other members are observing or what their particular interests are. Members' Night is an ideal opportunity to find out what others are doing - and for you to tell us what you have been up to.

One of the most difficult aspects of running the Society is dealing with the financial issues. There are ongoing expenses in running the Society and we must ensure that we maintain a healthy financial position. In the last few years we have made a couple of major purchases - the computer projector and the solar telescope - and, although our finances are still satisfactory, we have been spending more than we have been receiving and clearly this can not continue indefinitely. The Council discussed this with Society members at the April meeting, which led to the increase in subscriptions for the 2004 / 05 session. The Council will, of course, continue to monitor the financial position.

Having, so far, looked back at what has happened in the last few months, I would now like to look forward to consider what the future may hold for the Society. Personally, I think the Society is reasonably healthy in that we have a reasonably large membership, meetings are well-attended and our financial position (whilst not perfect) would be the envy of many other Societies. Despite this, I think that we could do a lot more to make the Society even more active

and dynamic, which I am sure would benefit all members. We have some superb resources available, from the Cook telescope and the solar telescope to our site at Earliburn, however these are often under-used. I know that it is almost impossible to plan observing sessions in advance due to the vagaries of our weather, however I would be keen to hear any suggestions that you may have as to how we could make more use of the equipment we have.

As well as making better use of the Society's resources, I would be keen to see more active involvement of the membership in the Society in general. Unfortunately, attendance at the Messier and Astro-Imaging Groups last winter was rather low and it would be nice to see more members at these meetings this winter. Of course, if Astro-Imaging or observing Messier objects is not your area of interest, then why not suggest another Group be set up to consider whatever particular aspect of astronomy does appeal to you. After all, it is your Society and we would welcome any suggestions from members for new groups or projects. I would also be particularly interested to hear any proposals for how the Society could continue to achieve one of its primary aims, which is to promote the interest in and study of astronomy in the Edinburgh area.

If you are not a practicing astronomical observer and simply have a theoretical interest, then there are still many ways in which you can help in the running of the Society. We have several vacancies on the Council, so if you have been a member of the Society for at least a year, why not apply to join the Council? Even if you are unable to devote the time to sit on the Council, there are many ways you could help - from helping out making tea and coffee at the meetings, to representing the Society at events such as Vogrie Country Park, or even helping open the Observatory to the public on Friday evenings.

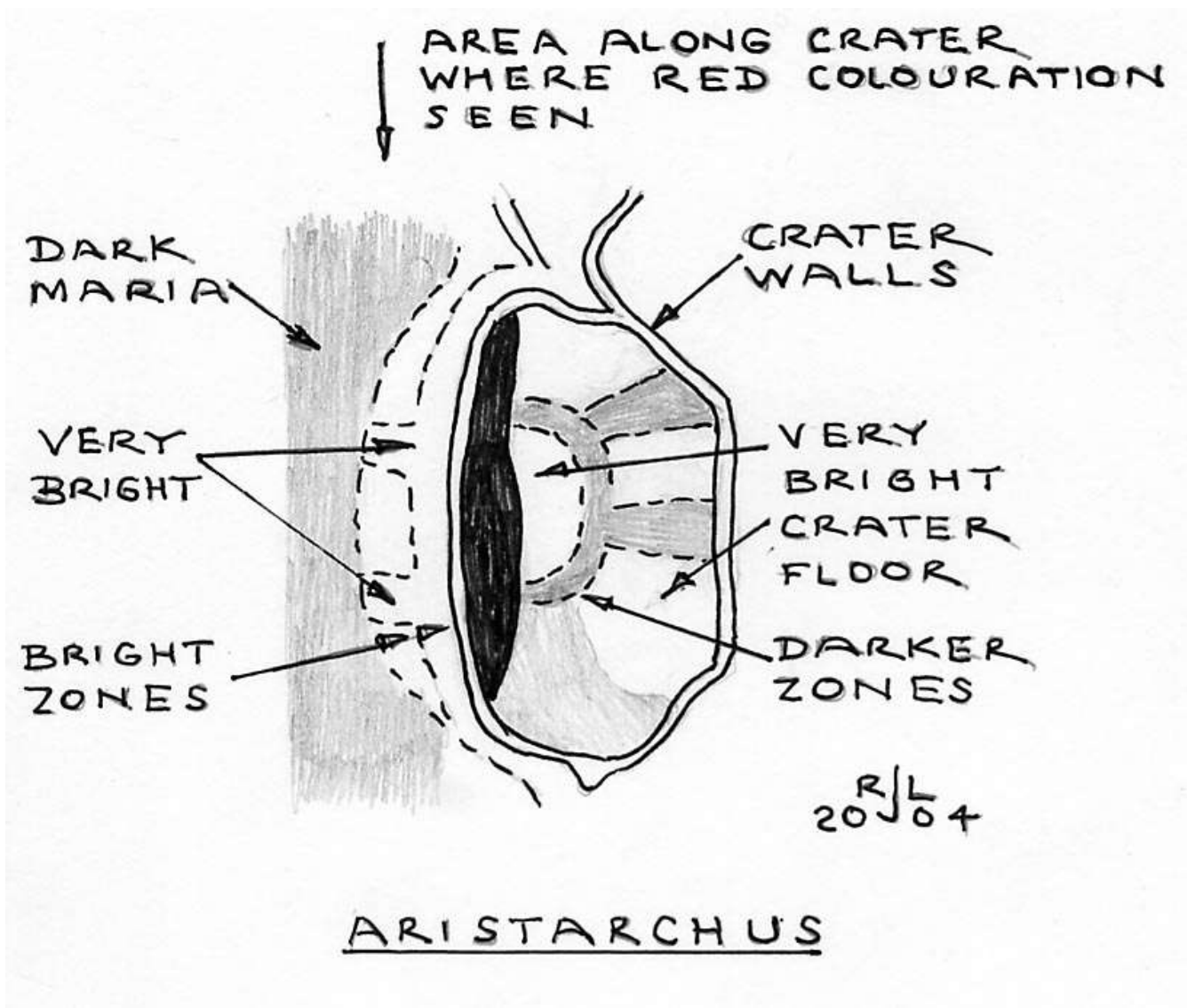
Finally, as the end of my second year as President draws towards a close, I do hope that I will pass the Society on in at least as good a condition as I inherited it. We are a good Society but the future very much relies on you. As I have said, it is your Society and its continued growth and development is in your hands so do please get involved, and let the Council know what it is you want from your Society.

Having got the perennial plea for your support and assistance out of the way, I will close by saying that I look forward to seeing you all at the December meeting and best wishes for the festive season and New Year.

Observing Is Not Believing

by Ron Livesey

Transient Lunar Phenomena (TLP) comprising glows and hazes on the Moon's surface have been reported by observers for a long time. There is an association with certain craters and maria but the causes of TLP is still a matter for debate. A gas emission was detected on November 3 1958 by Dr N. A. Kozyrev observing the central peak of the crater Alphonsus with the great refractor at Pulkova. NASA has reported the detection of tenuous emissions of gas by space vehicles, particularly radon, near the crater Aristarchus and around the peripheries of the circular maria.



For a number of years I have observed the Moon on many occasions with my 152 and 216 mm reflectors at Newton Mearns, and my 63 mm reflector and refractor at Edinburgh. Even when TLP alerts were received I have never detected one at any time. There have been several occasions, however, when I have seen a reddish colour adjacent to Aristarchus. As will be noted on the accompanying drawing there is dark maria material to the left (inverted image) of Aristarchus and bright material on the slopes adjacent to the crater wall. On occasion the slopes have appeared with a reddish tinge but I am convinced that this is an optical effect. It could be generated by the contrast between the dark and bright surface combined with atmospheric movement.

As an illustration as to how the eye may be deceived I noticed a very interesting thing at a recent meeting of the Society. I was sitting in the dark near the entrance door to the lecture theatre, the President was speaking beside the overhead projector and at the time was wearing an anorak with black and white panels. On changing overlays the speaker moved in and out of the bright zone of light escaping from the projector. During these movements I experienced a distinct flash of red light apparently on the white portions of the anorak. This would appear to be another case where light contrasts and movement have combined to produce an apparition of spurious colour.

(Ron and I discussed this and concluded that the phenomenon was not a result of a residual spectrum thrown out by the Fresnel lens of the overhead projector. It seems to occur in the momentary flash from black to white. Spurious red images have been reported in similar cases, see M. Minnaert, "The Nature of Light and Colour in the Open Air", Dover 1954 ch. VIII – Editor.)

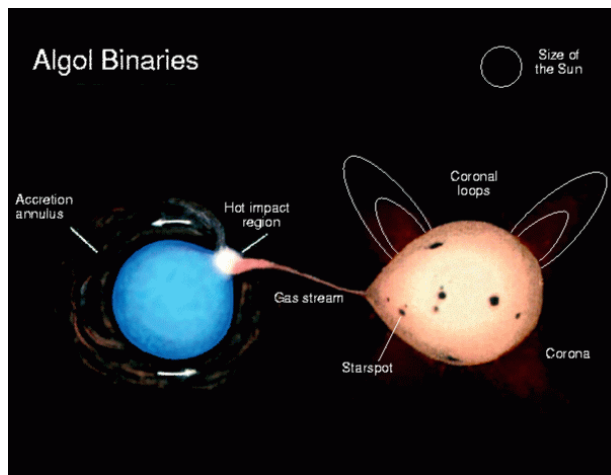
Eclipsing Binary Star - RZ Cassiopeiae

RZ Cas (see note by Tony Markham on the BAA website at <http://www.britastro.org/vss/00886a.html>) is an Algol type eclipsing binary. It has an official period of 1.195274 days or 28.685928 hours. Each eclipse lasts about 4 hours. The star varies from 6.4 to 7.8 in magnitude. Because of the length of the eclipse opportunities to observe a full eclipse are fairly rare.

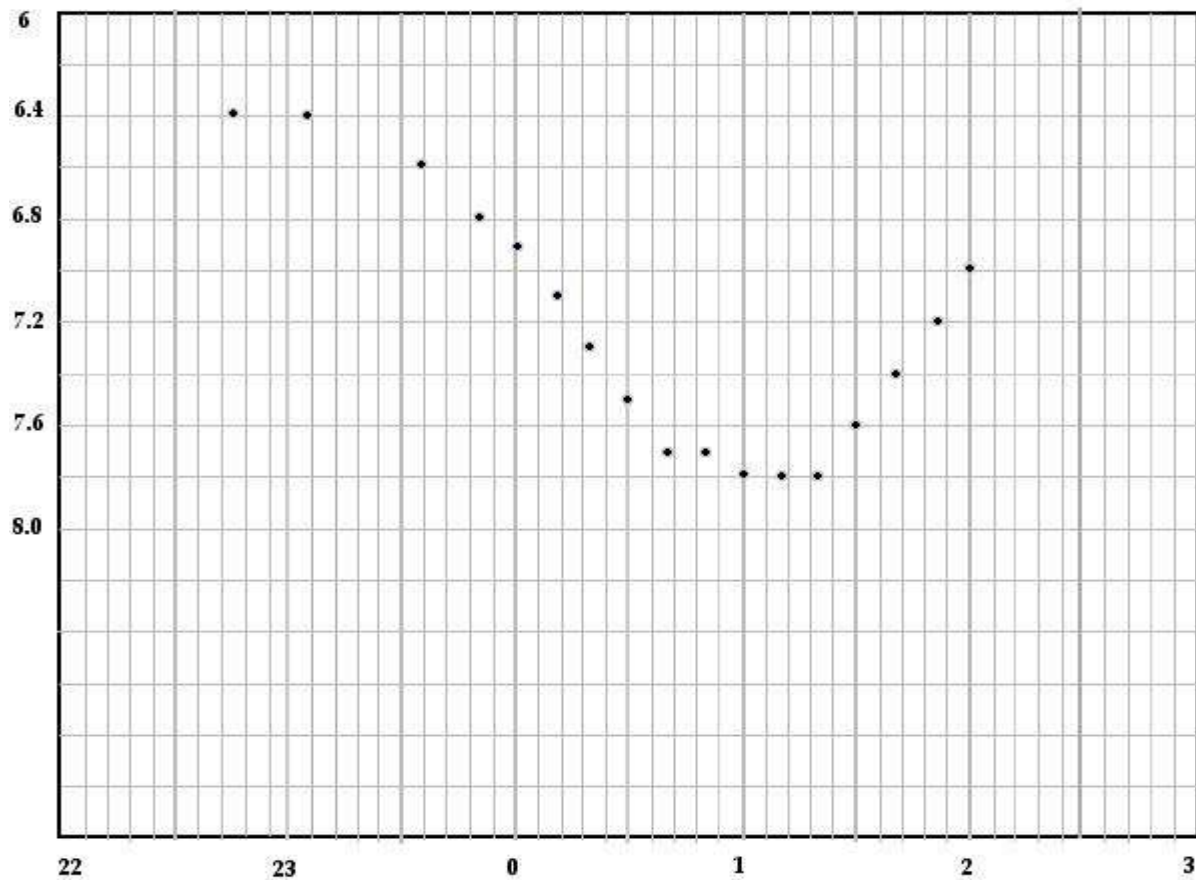
One such opportunity arose on the 16th/17th April 2004. An evening eclipse coincided with clear skies and good conditions. Observations were made with 10x50 binoculars from a deck chair in a back garden of suburban Edinburgh. Warm clothing is essential if it is intended to follow the whole four hour sequence of events. Observations are much easier if your eyes are continually dark adapted. The star is interesting to observe. It changes in magnitude quite fast as it approaches and leaves minimum.

The observations were recorded as shown on the diagram. The vertical axis is magnitude and the horizontal axis is hours. You will note that observations are made about every ten minutes in the two hours around mid eclipse. A good light curve can be constructed. Mid eclipse was around 1.03 am.

There is a 'bump' at minimum (on the left). This may be real as it is thought that one of the stars in this system is a variable. Other observers, at other times, have seen 'bumps' in the light curve which have been attributed to 'starspots' or 'hotspot' where the gas stream in an Algol type binary hits the primary star. See the image of the system. I have looked at several eclipse since 2002 and not one is the same as another.



MAG



The observations in April were of some value. They were sent to Tony Markham who is the Eclipsing Binary Secretary of the BAA Variable Star section. He replied:

"A quick look at a light curve drawn up from your observations suggests that mid eclipse is occurring near phase 0.035 (based on the GCVS elements). This shows that the discrepancy that has been seen for some time between the observed eclipse times and the GCVS predicted eclipse times is continuing to increase and is now in the region of an hour."

If you wish to observe this star you should note that a finder chart and comparisons can be downloaded from the BAA Variable Star section website. I can also supply you with a copy. Contact me at desloughney@blueyonder.co.uk or 0131 477 0718. The times of mid eclipse are printed in magazines such as Astronomy Now for each month.

Des Loughney
2nd December 2004

The BAA Honours our former Vice-President

At the BAA Exhibition Meeting at the Cavendish Laboratories in Cambridge on 26 June 2004 the President, Tom Boles, presented Neil Bone with the highly prized Merlin Medal, in recognition of his many contributions to amateur astronomy and observing.

Neil joined our Society in the late 70s while he was a student at Edinburgh University, and he was also a leading member of the University Astronomical Society. He had, however, already been contributing observations of aurora, noctilucent clouds and meteors from his home near Campbeltown while still at school. He worked as a research technician at the University after he took his BSc and became Vice-President of our Society.

He was in line to become our President but unfortunately was made redundant and was forced to move south, first to Cambridge then to the University of Sussex where he is now a research fellow in molecular biology. It was a good move for his astronomical career, he carries out a lot of observing from the clearer skies of Sussex south of Chichester, even of the aurora and NLC, and he married a fellow astronomer and member of the South Downs Society, Gina Turner. The photo shows Neil and Gina with their children Miranda and George. Neil is now Director of the BAA Meteor Section, he has written several papers and articles on aurora, NLC, meteors and monthly sky diaries for the BAA and for Astronomy Now for which he is on the editorial panel as Contributing Consultant. He has just completed his 6th book for the amateur observer, the others being :



- The Aurora - Sun-Earth Interactions, Wiley, 2nd Edn. 1996
- Philip's Observer's Handbook - Meteors, 1993
- Observing Meteors, Comets, Supernovae and other Transient Phenomena, Springer-Verlag 1999
- Guide to the Constellations, Astronomy Now 2002
- Philip's Mars Observer's Guide, 2003.

Neil is also much in demand as a lecturer by astronomical and other societies, travelling all over the country.

Other Scots who have been awarded the Merlin Medal are : Robert McNaught, Dr Alastair Simmons and Russell Eberst.

The Astronomer's Drinking Song

Who'er would search the starry sky,
Its secrets to divine, sir,
Should take his glass-I mean, should try
A glass or two of wine, sir!
True virtue lies in golden mean,
And man must wet his clay, sir;
Join these two maxims, and 'tis seen
He should drink his bottle a day, sir!

Old Archimedes, reverend sage!
By trump of fame renowned, sir,
Deep problems solved in every page,
And the sphere's curved surface found, sir:
Himself he would have far outshone,
And borne a wider sway, sir,
Had he our modern secret known,
And drank a bottle a day, sir!

When Ptolemy, now long ago,
Believed the Earth stood still, sir,
He never would have blundered so,
Had he but drunk his fill, sir:
He'd then have felt it circulate,
And would have learnt to say, sir,
The true way to investigate
Is to drink your bottle a day, sir!

Copernicus, that learned wight,
The glory of his nation,
With draughts of wine refreshed his sight,
And saw the Earth's rotation
Each planet then its orb described,
The Moon got under way, sir;
These truths from nature he imbibed
For he drank his bottle a day, sir!

The noble Tycho placed the stars,
Each in its due location;
He lost his nose by spite of Mars,
But that was no privation:
Had he but lost his mouth, I grant
He would have felt dismay, sir,
Bless you! he knew what he should want
To drink his bottle a day, sir!

Cold water makes no lucky hits;
On mysteries the head runs:
Small drink let Kepler time his wits
On the regular polyhedrons:
He took to wine, and it changed the chime,
His genius swept away, sir,
Through area varying as the time
At the rate of a bottle a day, sir!

Poor Galileo, forced to rat
Before the Inquisition,
E pur si muove was the pat
He gave them in addition:
He meant, whate'er you think you prove,
The Earth must go its way, sirs;
Spite of your teeth I'll make it move,
For I'll drink my bottle a day, sirs!

Great Newton, who was never beat
Whatever fools may think, sir;
Though sometimes he forgot to eat,

He never forgot to drink, sir:
Descartes took nought but lemonade,
To conquer him was play, sir;
The first advance that Newton made
Was to drink his bottle a day, sir!

D'Alembert, Euler, and Clairaut,
Though they increased our store, sir,
Much further had been seen to go
Had they tiddled a little more, sir!
Lagrange gets mellow with Laplace,
And both are wont to say, sir,
The philosophe who's not an ass
Will drink his bottle a day, sir!

Astronomers! what can avail
Those who calumniate us;
Experiment can never fail
With such an apparatus;
Let him who'd have his merits known
Remember what I say, sir;
Fair science shines on him alone
Who drinks his bottle a day, sir!

How light we reckon of those who mock
By this we'll make to appear, sir,
We'll dine by the sidereal clock
For one more bottle a year, sir:
But choose which pendulum you will,
You'll never make your way, sir,
Unless you drink--and drink your fill,
At least a bottle a day, sir!

Thanks to Austin Gordon for bringing this to our notice. The poem appeared in 1866 in 'Budget of Paradoxes' by Augustus de Morgan FRAS (1806-1871). It is believed that the poem was written about 1800 and appears to have been originally sung at a meeting of the Mathematical Society of London.

For this and many other interesting snippets see:

<http://www.firstscience.com/>