



GNOMON

Newsletter of the Association for Astronomy Education

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EDITORIAL COMMENT

At the risk of boring our readers to tears, may I just once more comment on the proposed change from Greenwich Mean Time to Double Summer Time. It is reported that the UK government has come down in favour of making the change. Several correspondents in the astronomical journals support the change.

The gist of the argument *against* the change is not that there is anything wrong with assigning any arbitrary time for the UK (it could even be quadruple summer time if desired!), but that to adopt a *uniform* time zone for the whole of western Europe (EC region), or possibly the whole of Europe, from Ireland to the Urals, is patently absurd. It is the east-west divide which is important, not the north-south. (This is not to say that problems would not arise between the northern and southern parts of the UK if double summer time were adopted – as it was for a short time during the last war).

Most of our members have by now renewed their subscriptions, but there is a minority who are now in arrears. The policy of the Association is to stop sending newsletters to members in arrears, so it might appear ridiculous to use this column to remind these former members that their subscriptions are overdue. However, we know that *GNOMON* finds its way into all sorts of places, so may I appeal to any such members to renew their subscription *now*.

Articles or letters from members are always welcome, for publication in *GNOMON*. Such articles should be typed, preferably with 1½ line spacing. Please send these to the Editor (address given in this issue).

AAE AT THE ANNUAL MEETING OF THE ASSOCIATION FOR SCIENCE EDUCATION

Council had agreed that the AAE should have a formidable presence at the ASE annual meeting and so five went to Lancaster in January. The ASE annual meeting is the major event in the science teaching calendar. About 4500 teachers attended this event. Throughout the week there was a manned AAE stand answering enquiries and pushing subversive literature in the form of back issues of *GNOMON*. We shared the stand with Armagh, Liverpool and London planetaria, three of our major resource centres. Undine Concannon, Martin Suggett and Martin Ratcliffe joined Dave Mannion, Anne Cohen and myself on the stand. Andrew Cleare helped out with the evening sky-watch.

The Earth and Space sciences were well represented at the meeting. 'Astronomy Today' was a lecture presented by Lancaster Polytechnic and Martin Ratcliffe displayed 'Resources for Teaching Astronomy' to a packed and appreciative audience. Central to the AAE presence was a teachers workshop which offered an opportunity for in-service training to 30 teachers who paid £10 each to attend. We divided the workshop into four small-group activity areas. Anne Cohen tackled the Sun and Seasons, Martin Suggett explored the Moon, Dave Mannion presented the heavens through astrophotography and I tried my hand at gravity and misconceptions. The informal feedback was most positive and the ASE has already invited us back to offer two workshops next year.

I should like to thank all AAE members who gave up their time to help out at Lancaster. The next ASE meeting is at Birmingham University in January 1991. It would be nice to see more of our members helping out. See you there.

ADDRESSES FOR CORRESPONDENCE

Secretary: Bob Kibble, 34 Acland Crescent, Denmark Hill, London SE5 8EQ. For all general enquiries (Tel: 01-274 0530).

Treasurer: Nicholas Steggall, 38 Victoria Crescent, Birkdale Road, Dewsbury WF13 4HJ for all financial and subscription enquiries (Tel: 0924 454718).

Editor: Eric Zucker, 35 Gundreda Road, Lewes, East Sussex BN7 1PT for all enquiries concerning the Newsletter (Tel: 0273 474347).

AAE ANNUAL MEETING – MANCHESTER 1990

The annual meeting this year will be held at Manchester Grammar School on Saturday 19th May. The guest speaker will be Professor Ian Robson who will present 'Astronomy Today', an illustrated excursion through modern developments in Space. There will be an AGM in the morning and in the afternoon, after the guest speaker, an opportunity to look at displays of materials from primary schools who are tackling 'the Earth in Space' as part of the National Curriculum.

A buffet lunch will be provided by the staff of Manchester Grammar School. This will cost £4 per head. Lunch tickets must be purchased in advance through me by returning the enclosed slip with remittance, payable to AAE. In any event, please register using the slip so that I can send you details concerning travel and have some idea of numbers of chairs required, etc.

I should remind members that any proposed amendments to the constitution must be placed with the Secretary in writing by 26th March and nominations for the posts of officers by 30th April.

Bob Kibble,
Secretary

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EXTENDING SCIENCE 17

new!

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Patrick Moore

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A SIMPLE SOLAR ALTITUDE METER FOR USE IN SCHOOLS

G. S. Kelly, Penglais Comprehensive School, Aberystwyth

Attainment Target 16 of the National Science Curriculum contains several references to the sun's apparent motion:

Students should:

Level 1c: be able to describe in relation to their home or school, the apparent daily motion of the Sun across the sky.

Level 3a: know that the inclination of the Sun in the sky changes during the year.

Level 5a: be able to relate a simple model of the Solar System to day/night and year length, changes of day length, seasonal changes and changes in the inclination of the sun.

For these targets to be realised in a scientific context it is expected that the pupils will carry out investigations rather than merely obtaining information from secondary sources. To this end we have developed in Penglais a cheap easily assembled device for measuring the solar altitude (see below for details). Virtually all the first form pupils made a meter (most of them from shoe boxes) and used it to measure the height of the sun. Using the "Penglais Solar Altitude meter" we have carried out the following observations:

1. In mid September the pupils measured the variation in altitude of the sun over one day. (This was homework and carried out on a sunny Saturday). This gave us a set of data and in addition to the primary functions of scientific measurement acquisition and knowledge of the movement of the Sun it enabled us to discuss methods of display of data and errors in data. My results for that day and resulting curve are shown (Table 1 and Fig. 1 respectively). In the teaching situation we pooled data and the resulting scatter of points was very useful in discussions of what curve to draw, accuracy, etc.

From the curves we

- (a) estimated times of sunrise and sunset and compared these with diary predictions.
- (b) estimated the time of noon (the hour for BST came out clearly but the 16 minutes expected because of Aberystwyth's longitude - 4° West - did not from the pupils data),
- (c) found the maximum solar elevation and used it to estimate Aberystwyth's latitude. The observations were very near the equinox and I hadn't discussed seasons then. Answers ranged from 50 to 55° north which I found quite acceptable.

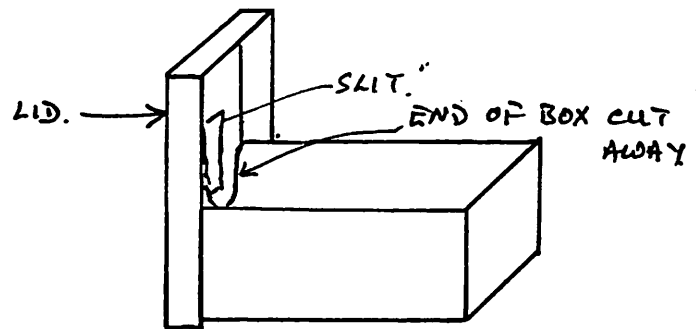
2. Since the end of September we have monitored the maximum daily solar elevation. We have tried to obtain one reading per week, but this has naturally not always been possible. The readings are taken in school as near to noon as possible. The aim is to chart the annual variation and I aim to use the results

- (a) to give the pupils a qualitative understanding and relate the curve to the seasons,
- (b) to estimate the tilt of the Earth's axis, and
- (c) to measure the length of the Year.

The results so far are shown in Figure 2. To achieve consistency, the same device was used for all of them, and apart from one reading from early December they are more consistent than we had any right to expect.

It should be noted that our classes are mixed ability with only a very small number (10 out of 160) withdrawn to a remedial class - which incidentally carried out the observations as well. The consensus feeling in the Penglais

science department is that teaching to the National Science Curriculum effectively across the ability range will require classes of more homogeneous ability. Solar elevation is included at levels 3 and 5 but not at level 4 so that it is inappropriate for pupils who are making the transition from level 3 to 4 to be following the same teaching scheme as those who are capable of absorbing concepts at level 5. The debate on this is likely to run and run!



The construction material was usually cardboard from a shoe box arranged as shown here.

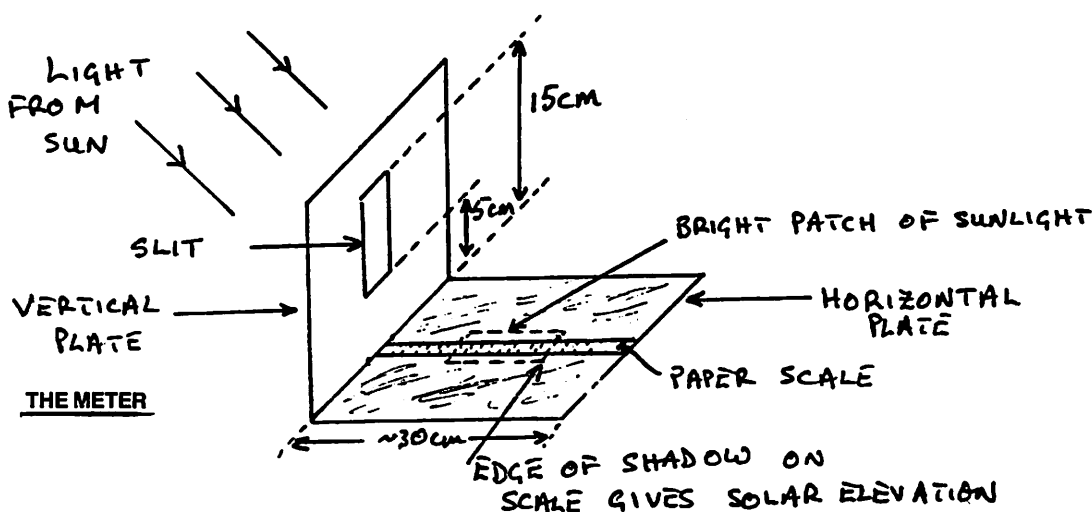
It was important to keep the construction as rigid as possible, so the basic box was cut very little retaining all the strengthening corners.

The only points which had to be accurate were the 5cm and 15cm edges. These were chosen to give a convenient base length in view of the expected results. Naturally the scale had to be accurately positioned. The scales were photocopied from a master which I had drawn.

To use the meter simply place on a smooth horizontal surface (a spirit level or marble will help here), direct the slit at the sun so that the patch of sunlight illuminates the scale and read off the height of the sun from the position of the edge of the shadow. The pupils will experience initial difficulty because of the two scales in one - the upper scale should be used in conjunction with the shadow of the upper edge of the slit - but this is quickly overcome.

The design is certainly capable of improvement, e.g. mounting on a rigid piece of material (plywood), making out of a sheet of tin plate bent to shape, incorporating levelling screws and a spirit level. My first model was made out of plywood and employed a vertical stick with cross pieces at the correct heights instead of a vertical slit. A colleague has used a modification of this wood design to make the weekly readings with his class.

I shall be pleased to hear from anyone who uses my design or improves upon it. Copies of the scales (4 on an A4 sheet) are available. Send SAE to Penglais Comprehensive school, Waun Fawr, Aberystwyth, Dyfed SY23 3AW. A small donation of (say) 20p enclosed would be much appreciated as the department is seriously under-resourced.



POST SCRIPT

The effect of this course on the rest of the school has been not inconsiderable. Quite apart from amused questions occasioned by the sight of massed 11-year-olds bearing modified shoe boxes apparently sun worshipping, the senior forms have demanded to know why "we didn't do anything interesting like this?" It was with a sixth-form class that I came across an interesting variant on the "it's winter because we are further away from the sun" fallacy. "It's winter because the axis of the Earth is tilted so that the Northern hemisphere is further away from the sun than the Southern hemisphere." Dealing with that one did give me an idea for a problem which should not be beyond the good A-level mathematician:

- Derive equations giving for any given latitude and day of the year.
- (a) the noon altitude of the Sun, and
 - (b) the variation in solar altitude throughout the day

After ploughing through the derivations myself I am a little disappointed that none of my Physics class has yet come up with a solution.

SUN HEIGHTS – September 30th 1989
(G. S. Kelly in Aberystwyth)

TABLE 1

Time/BST	Angle ^o
0918	17
0939	19.5
1000	22
1020	24.5
1040	26.8
1100	29.5
1121	31.5
1140	32
1202	33.5
1221	34.5
1241	35
1300	35
1320	35
1344	35
1400	34.5
1420	33.5
1440	32
1502	30.5
1513	29.5
1613	22.5
1630	20
1650	17.5
1708	15
1726	12.5
1740	11

REVIEW: EARTH IN SPACE INSTRUMENT PACK (AT 16)

Published by Molehill Press, £15.

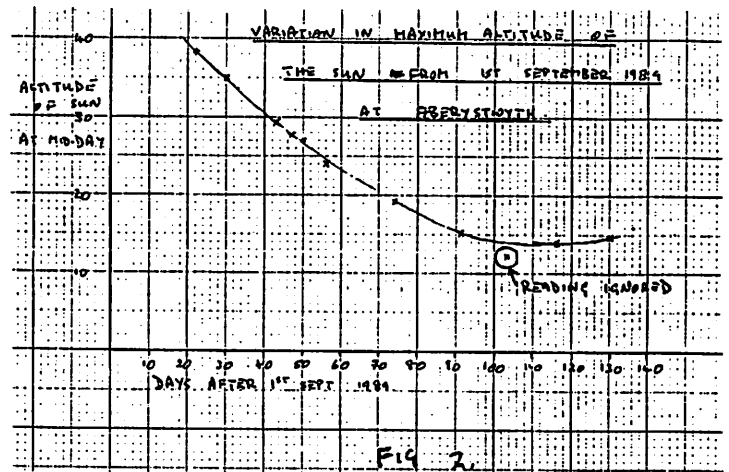
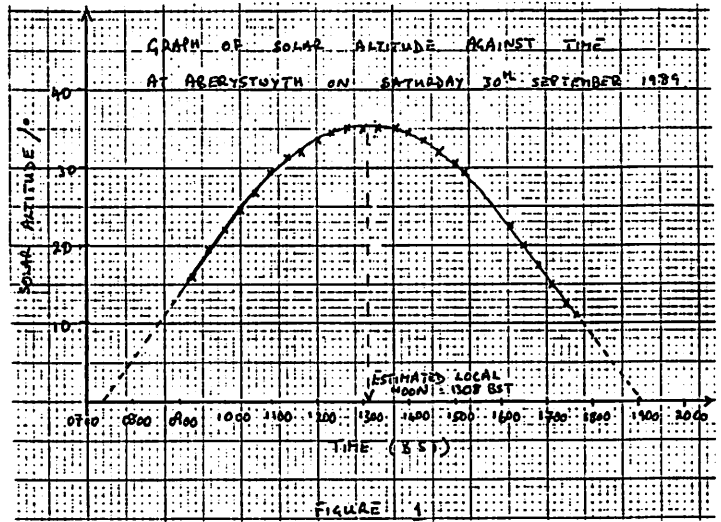
I came across this delightful pack of goodies at the Lancaster conference. So taken was I by the simplicity of the materials that I thought members should be advised and urged to support the venture. Molehill Press is a husband and wife team who currently produce three teaching packs. The Earth in Space instrument pack consists of a horizontal sundial, an equatorial sundial, an analematic sundial, a nocturnal dial, a double quadrant and a lunar observation chart each clearly printed onto A4 card. A book of teachers notes comes with the pack. The instrument sheets are designed to be photocopied for class use and require little more than a pair of scissors, some glue and thread to make up. They are best mounted on stiff card before assembly.

Further details can be obtained through: Molehill Press, Grange Farmhouse Geddington, Kettering, Northants. NN14 1AL.

Bob Kibble

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THE GRUBB PARSONS LECTURE

Instituted by Northern Engineering Industries PLC and the University of Durham under the auspices of the Royal Astronomical Society

EXPLODING STARS AND THE SIZE OF THE UNIVERSE

A public lecture by

PROFESSOR ROBERT KIRSHNER

Center for Astrophysics, Cambridge, USA

will be given in the Scarbrough Lecture Theatre, Science Laboratories (Stockton Road Entrance)

UNIVERSITY OF DURHAM

5.15 pm

WEDNESDAY MAY 9th, 1990

Admission Free

ROBERT KIRSHNER is Professor of Astronomy at Harvard University, Cambridge, Massachusetts and an international leader in the studies of supernovae, large scale structure and observational cosmology. He was a pioneer in observations of the recent supernova 1987A – the first exploding star to be optically detected in our Galactic System since 1604.

The Grubb Parsons Lecture Series

The Newcastle optical and engineering company Grubb Parsons, part of NEI Parsons Ltd, was founded in 1925 and dominated the production of astronomical telescopes for many years. The company was largely responsible for the post-war renaissance in British optical astronomy and built a series of large telescopes culminating in the 4.2 metre William Herschel telescope commissioned on La Palma, Canary Islands in 1987. This lecture series honours the unique contribution Grubb Parsons made to world astronomy.

BOOKS

VISIONS OF SPACE: Artists' Journey Through the Cosmos. Written, compiled and designed by David A. Hardy; foreword by Arthur C. Clarke. Dragon's World 1989. Hardback 320 x 260mm; pp176; £16.95. ISBN 1 85028 098 3.

I was fortunate to see David Hardy's talk on Space Art at the FAS Herstonceux '86 Convention. How does one see a talk? When the talk is so colourful a subject as Space Art and so profusely illustrated with several cassettes of slides, the eye becomes overwhelmed and satiated with colour and images – indeed too much to take in all at once.

Now, one can 'see' this talk in this book, and take the journey at a more leisurely pace and make prolonged stops to absorb the wealth of detail and observe the perfect marriage of technical fact with imagination.

This is a vividly colourful book. On the 176 pages are 17 black and white illustrations and 184 colour reproductions, 29 of which are double page spreads and 31 full page spreads – and are representative of 72 artists.

Everything is here, from Nasmyth's photographs of plaster models in 1874, Abbe Th. Moreux, Lucien Rudaux, H. Seppings Wright from the turn of the century into the 20s and 30s, and right up to the present day.

The eight chapters take the reader – and viewer – step by step from 'The Artists Who Led the Way'; through 'Space Craft? the nuts and bolts of space'; 'Space Stations: stepping stones into space'; 'Back to the Moon: the next small step for man'; 'The Solar System: from past to future'; 'To the Stars: from red dwarfs to black holes'; 'Space Fantasies: the new renaissance'; to, 'Alien Landscapes: finding other worlds on Earth'.

There is something here for everyone; above all is the imagination that licenses the artist to visualise views based on astronomical and technological fact but cannot otherwise be photographed, what David Hardy calls "photographs of the unphotographical" – to the sheer fantasy of Jon Lomberg's 'Milky Way Woman', double page 148/9, showing the woman of the starfields announcing her presence by showing the structure of DNA.

Again, many paintings show a complete mastery of painting technique combined with superb draughtsmanship of graphical and technical detail, e.g. The Space Shuttle depicted by Paul Hudson and Kim P. Poor on pages 22 and 23, which will appeal to a great many, though my preference is for 'Space Shuttle Launch' by Keith Page also on page 22, which has a 'fine art' rather than illustrative approach.

My particular favourites – the book now opens automatically at page 163 – are the 'Martian Sunset' and 'Galactic Halo' by Lilika Papanicolaou which respectively explore the gamut of red and blue in a more intimate and emotional way.

The frontispiece and title page, the first double page spread, is by David Hardy. 'The Way It Should Have Been: A Tribute to Chesley Bonestell' reveals David Hardy's reverence for Chesley Bonestell's work which was the recurrent theme of his 'talk' that I 'saw' at Herstonceux, and is the inspirational fount for David's love affair with Space Art. The warmth of this love affair permeates the book from cover to cover. The wide canvas of Space Art from its beginnings to present day, the wealth of detail on the selected works, the media used, the artists' individual backgrounds and inspiration, the number of artists represented and the modest reticence in showing only six of his own works out of a total of 201 illustrations, are all indicative of his sincerity and his love for his subject.

In *The Daily Telegraph* (18 December 1989), Adrian Berry lists his "Ten Of The Year's Best Books" in the popular science category; "Visions Of Space" is listed at number three. Adrian Berry says, quote, "spectacular artists' visions of the planets".

It is spectacular, but not just for its visual impact. It is that precious intermarriage of technology with intellectual imagination and with the visual arts, which attracts and appeals to me.

Peter Fisher,
Brighton Astronomical and Scientific Society

LETTER

Dear Sir,

During our observatory open night for the total lunar eclipse on February 9th a parent thanked me gushingly for arranging the eclipse as it had engendered so much enthusiasm in his usually apathetic son. It seemed a pity to disillusion him but I had to admit that that particular special effect was not wired up to my planetarium control panel.

Misconceptions come in many guises. I received a real gem last week in the form of a letter from a local education authority, which shall remain nameless, asking me for a list of "planet areas" in the UK. The AAE still has a lot of work to do!

Yours faithfully,
E. M. Hans.

ASTROLOGY AGAIN!

We have received the following cutting from an Australian paper thanks to Karenza Burk of Creswick, Victoria.

'Nostradamus' spoils Voyager's weekend

from D. Widdowson

It saddened me that on a weekend when the Voyager space probe was making dramatic discoveries and returning beautiful images of the planet Neptune, we should have to put up with a pseudo-science "documentary" on Nostradamus for two hours of prime time on Sunday night (Channel 7, 8.30pm).

Actually, I thought belief in these fake prophecies had died in the 70s, along with John Water's wide lapels. But no, here we are learning of all the things that Nostradamus has predicted in the last 10 years (which weren't, however, mentioned in the first show).

The producers even had the nerve to admit that the predictions can only be read with hindsight. What an oracle! And it does rather spoil their presentation of future events when their own interpretations have such a bad track record.

I just wish that Nostradamus had said something about spacecraft encountering planets; then at least we might have seen some pictures from Voyager. But I don't suppose he even predicted Neptune's existence.

I only hope that in 200 years our descendants don't have to put up with this: "We've just heard that the Explorer probe has made the first encounter with a world beyond our Solar System. And we have photos of the strange new life forms that have been discovered there. But we aren't going to bring them to you; instead we present two hours on the philosophy of that great Twentieth Century mystic, Shirley MacLaine."

David Widdowson,
Strathmore
(7.9.89)

GNOBLEM 8 (SOLUTION)

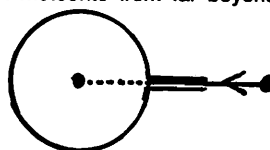
Several readers have sent in solutions to or comments on this problem. They all point out that there is no gravitational force on bodies situated inside a closed hollow sphere (this is the gravitational counterpart to one of Faraday's "ice-pail experiments" in electrostatics). Consequently a person situated inside the hollow sphere would be *weightless*; he could not "have his feet firmly planted on the inside of the sphere." He would not be able to walk on this inner surface without some kind of aid to cause his feet to adhere to that surface.

It is also of interest to question whether plants and trees would grow inwards, as there would be no gravity to control growth. Perhaps a biologist reader would comment on this.

GNOBLEM 9

Another contribution from Robert Mills' copious bag of problems!

"A meteorite from far beyond the Solar System falls vertically down a vertical chimney stack. What was the time at which this event occurred?"



Believe it or not, all the required information is contained in this question. Solution in the next issue.

TEACHERS' PACKS

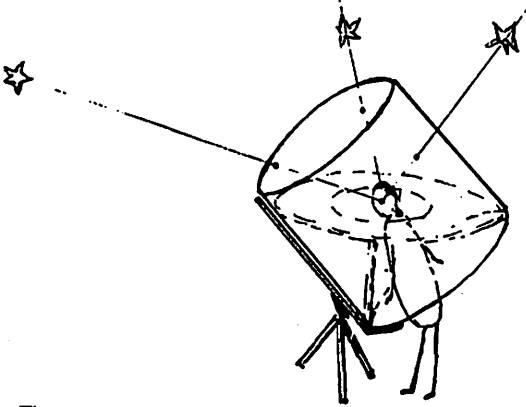
Gremlins, in the form of technical hitches and personal injuries, have delayed the publication dates of these packs, for which the Association apologises. In the meantime, some useful (interim) information for teachers may be had on application to the Secretary (address as in this issue). An advertisement from Molehill Press on Science Packs for Schools, which has the backing of the AAE, also appears in this issue.

COMPUTER DISC FOR "EARTH IN SPACE"

Mr. Phil Edwards of Cwmaber Junior School, Brynhafoed Road, Abertridwr, Caerphilly, Mid-Glamorgan, has informed us that he is preparing a computer disc of English activities for this topic. The disc will include ideas for creative writing, comprehension, etc., based mainly on the books "War of the Worlds" and "Hitch-Hikers' Guide to the Galaxy". Mr. Edwards requests that anyone wishing to obtain a copy of the disc should write to him at the above address, enclosing a stamped addressed envelope and a blank disc. He is using a BBC Master computer, View word processor, and 5¼ inch 40 track discs. (Alternatively, instead of a blank disc, one containing a lesson on a relevant topic, e.g. the Romans, or Transport, would be useful.)

MEMBERS' ADVERTISEMENTS are free, as long as they are of reasonable length.

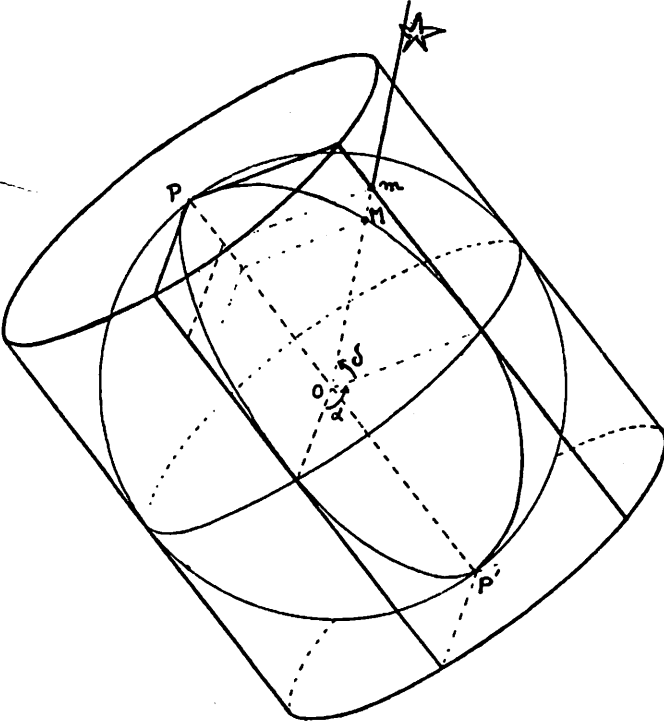
STELLOPOSCOPE



The autumn 1989 number of *Les cahiers clairaut*, the bulletin for teachers of astronomy in France (with which the AAE has an arrangement for the exchange of publications) has an article on an instrument which is called a *stellotoscope*. The accompanying diagram shows its construction. It is a device in which the real sky may be superimposed on a map of the heavens, at any instant of the day and on any date. Its chief features are: (1) a transparent map of the sky in cylindrical form which may be orientated in any azimuth, (2) an equatorial mount which compensates for the Earth's rotation, (3) a device for showing that section of the sky which is above the horizon at the instant of observation and which fixes the position of the eye at the centre of the cylinder. When correctly positioned, the eye sees the real star (or other celestial object) superimposed on its representation on the map.

The difference between the stellotoscope and a planisphere is that whereas the latter gives a 2-dimensional representation of the sky, the former is 3-dimensional. It is cylindrical rather than spherical because a large sphere is more difficult to produce and awkward to transport, as well as making it difficult to place the eye at the centre. (The cylinder may be constructed of plexiglass).

A diagram showing the projection (sphere on to cylinder) is shown.



To use the stellotoscope, it is set up in a similar manner to that for an equatorially mounted telescope, with its polar axis parallel to that of the Earth, pointing towards the Pole Star. To set the cylinder at the correct orientation, one merely lines up the stars of the Great Bear (Ursa Major) with those represented on the cylinder. The map of the sky, with the names of all the constellations, systems of co-ordinates (equatorial, ecliptic, etc.) are seen properly superimposed.

The instrument may also be used as an individual planetarium, showing all the diurnal and annual movements of the sun, the moon and the planets. It may also be used as an armillary sphere.

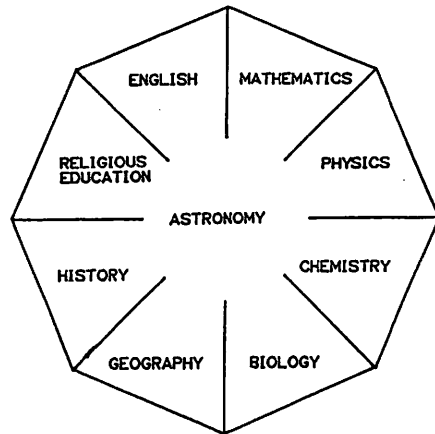
Any member of the AAE who would like more details of this apparatus is asked to write to the Editor (at the address given in this issue) requesting information on the stellotoscope, and enclosing a remittance of £1.00, which will cover photocopying and postage. The information is in French. It is regretted that this service can be offered only to members.

THE IRISH ASTRONOMICAL JOURNAL

This publication appears half yearly, under the patronage of the Armagh and Dunsink Observatories. It covers a very wide range of astronomical topics, but non-mathematical readers should not be put off by this – it is *not* mathematical. As an example of some of the topics dealt with, here is a selection from the March 1989 issue:

The challenge of the cosmos (proceedings of a meeting); high resolution imaging on La Palma; starlink (electronic corridor for astronomers); a new prospect for ultraviolet astronomy; the infrared space observatory; astronomy as a medium of science education; the universe as a teaching aid; video applications in the planetarium; the discovery of Neptune; reviews of many books.

The universe as a teaching aid, an article by Dr. Ian Elliott of Dunsink Observatory, is particularly interesting for AAE members, as it deals with the relationship of astronomy to many other subjects. The accompanying diagram, with the caption "an astrocentric view of education" speaks louder than words!



SKY DIARY: SPRING 1990

By Chronos

Equinox: March 20^d 21^h 19^m Solstice: June 21^d 15^h 33^m

MOON

New Moon	First Quarter	Full Moon	Last Quarter
Mar 26 ^d 19 ^h 48 ^m	Apr 02 ^d 10 ^h 24 ^m	Apr 10 ^d 03 ^h 18 ^m	Apr 18 ^d 07 ^h 02 ^m
Apr 25 04 27	May 01 20 18	May 09 19 31	May 17 19 45
May 24 11 47	May 31 08 11	June 08 11 01	June 16 04 48

PLANETS

Mercury: evening object from March 28 to April 25.
morning object from May 13 to June 25.

Venus: morning object.

Mars: morning object.

Jupiter: evening object.

Saturn: morning object.

COMET AUSTIN

A long period comet, discovered on 1989 December 6th by New Zealander Rodney Austin, is predicted to become a bright object in the northern hemisphere in April and May. It should reach perihelion on April 9th when it will be 52 million km from the Sun. Predictions indicate that Comet Austin will be a naked eye object from mid-March to early June. However the brightness of a comet is a difficult thing to forecast exactly – remember Comet Kahoutek!

For a map showing the predicted track of Comet Austin please send an s.a.e. to: The Planetarium, South Tyneside College, St. Georges Avenue, South Shields, Tyne and Wear, NE34 6ET. Tel: 091 456 0403 (ext. 477). Mark your envelope "AAE Sky Diary".

TOTAL ECLIPSE OF THE SUN

1990 JULY 22, visible in Finland

Nearly 100 groups from Europe, America and Japan have booked to see the eclipse. Readers in the UK should contact the Explorers' Club if they wish to join the visitors, but it is unlikely there is any room left. Weather forecasts are bleak (15% probability of a clear sky, 35% for a half-clear sky). But Finnair are putting on several DC-9 planes to fly above the clouds and see the eclipse. The Ursa Astronomical Association (which is affiliated to AAE) is organising an international meeting of amateur astronomers from 20-25 July.

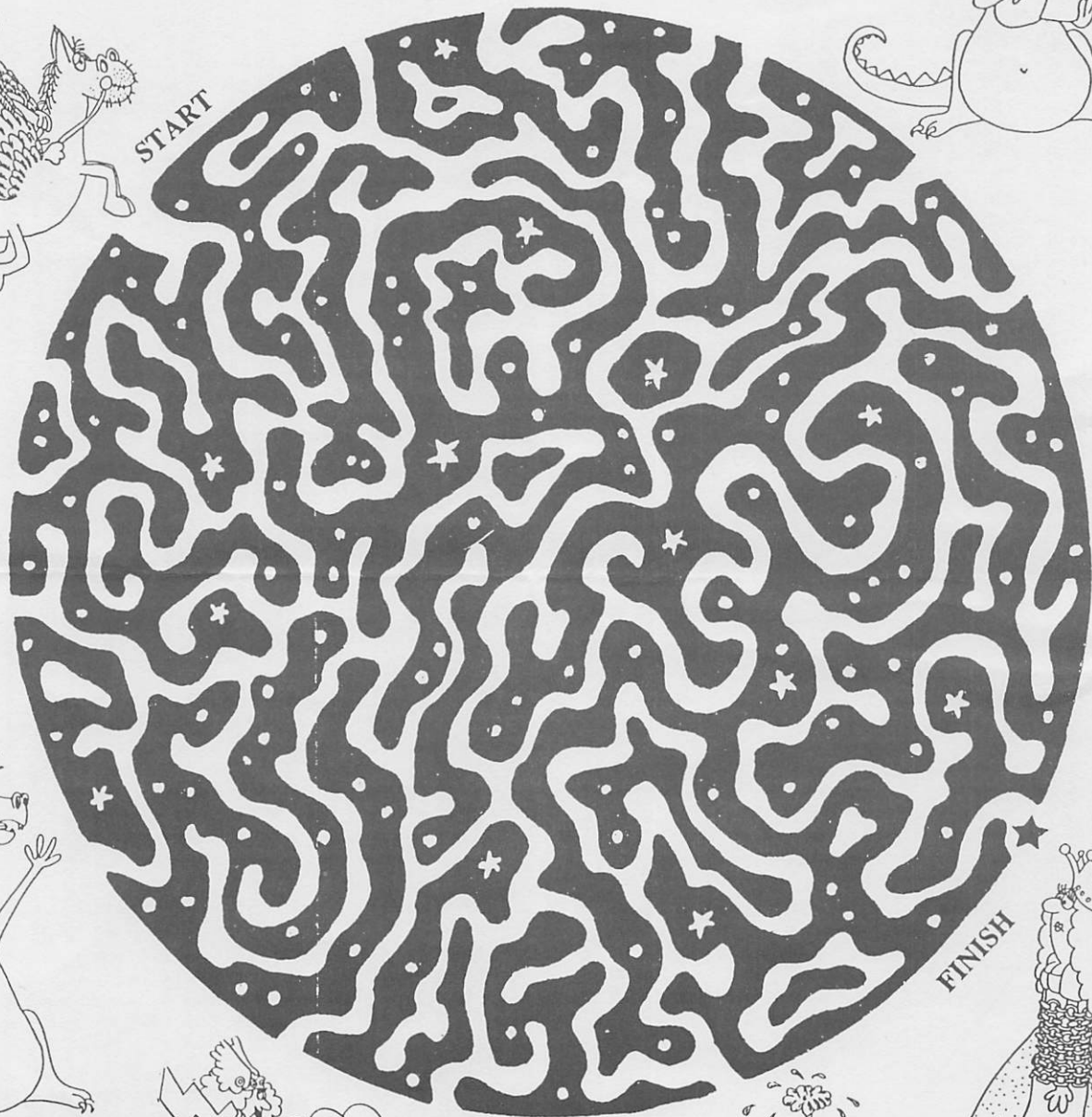
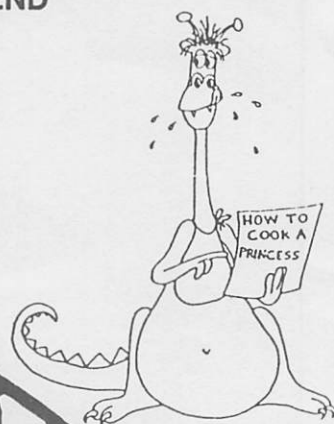
Those interested should contact: Mr. Markus Hotakainen, Ursa Astronomical Association, Laivanvarustajankatu 3, SF-00140 Helsinki, Finland, telephone 358-0-174048, telefax 358-0-657728, OR Dr. Heikki Oja, Observatory, University of Helsinki, SF-00130 Helsinki, Finland, telephone 358-0-1912942, telefax 358-0-1912952.

★ kids' corner

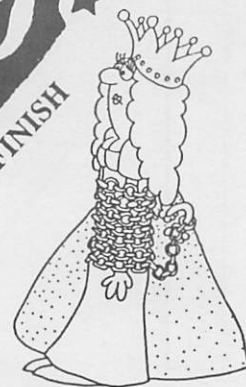
HELP PERSEUS FIND HIS WAY TO RESCUE ANDROMEDA.
BUT BE CAREFUL! DON'T LET HIM END
UP IN THE CLUTCHES OF
A SEA-MONSTER
OR A HUNGRY WHALE
OR...!!



START



FINISH



FROM "THE STARRY MESSENGER"

This maze appeared in the Autumn equinox (1989) issue of the newsletter of the British Columbia Space Sciences Society. As a prize for successfully navigating through the maze, the winners would be shown the real constellations of Perseus and Andromeda! (Reproduced with permission).

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Typeset by Brighton Typesetting