AAE news

PUBLISHED BY THE ASSOCIATION FOR ASTRONOMY EDUCATION

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CONGRATULATIONS !

We are pleased to report that our Patron, Professor F. Graham Smith, has been appointed

ASTRONOMER ROYAL

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ANNUAL GENERAL MEETING

1983 April 9

It is hoped that the next issue of AAEnews will be available for circulation by the end of March and that it will contain details of the Annual General Meeting which is being held in Glasgow this year.

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Spacecharts

A widely acclaimed series of space wall charts

"Attractive ... well printed ... very inexpensive .. highly recommended." BAA Journal

These new charts present up-to-date information on astronomy and astronautics in an attractive format. The meticulously researched text is by Robin Kerrod, FRAS, FBIS, author of many books on science for children and the general reader. SPACECHARTS are illustrated by superb artwork and brilliant colour photographs. Measuring some 900 x 600mm - about 3 ft x 2 ft - they are printed on artpaper for the best possible reproduction.

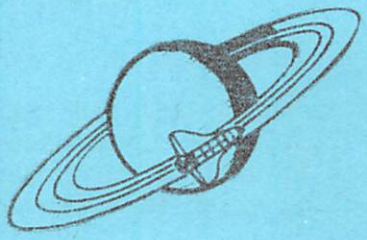
SPACE SHUTTLE features a colour cutaway of orbiter Columbia, together with pictures of its historic maiden flight.

MARS, JUPITER and SATURN include basic astronomical information about the planets and their moons and also the latest data and spectacular photographs returned by the Pioneer, Voyager and Viking probes.

SPACECHARTS are available direct from the publishers and cost only £1.95 each. To ensure that they reach you in perfect condition, they are posted rolled in a strong cardboard tube. Postage and packing costs 60p for 1 chart; 75p for 2-4 charts; and £1.20 for larger orders.

Send your orders, or write for further information to:

SPACECHARTS
Newton Tony
Salisbury
Wilts SP4 OHF



BOOKS RECEIVED

1. DAYTIME STAR: THE STORY OF OUR SUN (Faber & Faber), Simon Mitton, £10. An up-to-date and highly readable account of our nearest star.

2. THE PLANET JUPITER: THE OBSERVER'S HANDBOOK (Faber & Faber), Bertrand M. Peek (second edition, revised by Patrick Moore), £10. An indispensable guide for all serious observers of Jupiter.

3. THE NEW SOLAR SYSTEM (Cambridge University Press), edited by J Kelly Beatty, Brian O'Leary and Andrew Chaikin, £9.95. *

4. PRACTICAL ASTRONOMY WITH YOUR CALCULATOR (Cambridge University Press, Second Edition), Peter Duffett-Smith, Hardback £15, Paperback £4.95. The second edition of a most useful book. The mathematics employed should be within the range of more advanced sixth-formers.

5. SKY ATLAS 2000.0 (Cambridge University Press), Wil Tirion, £15. *

6. SKY CATALOGUE 2000.0: Volume 1, STARS TO MAGNITUDE 8.0 (Cambridge University Press, edited by Alan Hirschfield and Roger W Sinnot). *

7. THE COSMIC SERPENT (Faber & Faber), Victor Clube and Bill Napier, £12.50. Presents a catastrophic view of Earth history.

* Full reviews are in preparation.

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APOLOGIES are due to Nigel Henbest - his name not being mentioned in the previous issue of AAEnews in respect of the talk which he presented at the end of the AGM in Greenwich last year. Apologies are perhaps also in order from the various people who caused disturbance during his lecture by random early departures.

ASSOCIATION NEWS - From the Secretary

CHANGES IN OFFICER POSTS

We announce with regret the resignation of Mr Julian Ravest, of the Liverpool County Museum, as Secretary of the AAE, owing to extreme pressure of work. He saw the Association through its first crucial year of life, and we are all very grateful. Dr Percy Seymour, of the William Day Planetarium, Plymouth, has taken over the post of Secretary.

We are also very sorry to know that Dr David Clarke, Editor of this Newsletter, feels he must resign with effect from April 1983, again owing to pressure of work in Glasgow. We shall miss his editing skills on the Newsletter, which has already proved its worth; on several occasions enquiries from teachers about a specific problem or point of information could be answered from articles in the Newsletter. This is just as it should be, and shows that the AAE is already beginning to function effectively.

There will be further information about Council changes and a revised list of Council members in the next issue.

RESOURCE CENTRES COMMITTEE, AND AREA COMMITTEES OF THE AAE

As you know, the AAE is constitutionally organised so that local activities in astronomy education throughout the UK can be co-ordinated and linked with Council activities by a Resource Centres Committee and various Area Committees.

Capt. Peter Richards-Jones is now setting up a Resource Centres Committee consisting of AAE members working in planetaria and observatories, etc; these centres will become the basis of a network of astronomy teaching resource centres throughout the country. More about this later.

In response to Dr Seymour's letter to all members, we have received some enthusiastic response and

requests to join or help form Area Committees. The AAE membership is bring grouped according to areas and those interested will receive a list of names of members in their area. At the moment seven committees are envisaged, although there is scope for more or less according to need. Each committee should consist of five members (with meetings open to all members), one of whom should be Chairman. At the time of writing a handout is being prepared to give interested people fuller information, so if you would like to help, please contact: Percy Seymour, Director, William Day Planetarium, Plymouth Polytechnic, Plymouth, Devon PL4 8AA.

ANNUAL GENERAL MEETING, GLASGOW, 9 April 1983 - CALL FOR PAPERS

The formal business of the AGM will take place on the afternoon of this day, and will be followed by some short contributions from members on aspects of astronomy education. Please write to Dr Percy Seymour, Director, William Day Planetarium, Plymouth Polytechnic, Plymouth PL4 8AA, if you would like to contribute a short paper (about 10-15 minutes in length) at this time. Applications should be received not later than 7 February, so that Council can choose and co-ordinate items. Please realise there is no guarantee your paper will be accepted, but every effort will be made to include as many as possible.

Percy Seymour.

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A CASE OF RELATIVITY ?

From the replies (only 21 so far!) to the questionnaire on possible attendance at the AGM, two comments have been abstracted: (i) "I hope that the meeting will be in the South in 1984", and (ii) "I will be pleased to pick up passengers on my way South to Glasgow".

COMPUTER SOFTWARE FOR ASTRONOMY EDUCATION

The Association hopes to be able to act as a Clearing House for computer software relevant to astronomy education.

The initial proposal is to ask those who have written, or have available, software to send details of it, using the form provided in the centre of the Newsletter. In this way, the Association may evaluate the level of interest in this area and determine the degree of coverage of various topics. It is then proposed to publish a catalogue based on the replies so that individuals may contact one another to obtain copies of software useful to them.

It is envisaged that the software will be copied free of charge by the author/distributor but that the "customer" will supply the transfer medium (e.g. cassette) and the return postage. Also it is assumed that the author will be acknowledged when appropriate.

Anyone wishing to make conditions different from this "free availability" should notify the fact on the return(s).

It is thought that most of the software will be for use on microcomputers but notification of useful material for mainframes will also be welcomed.

..... so please let the Association know what is happening out there !

Paul Marchant
The Computer Unit
Leeds Polytechnic
Calverley Street
LEEDS LS1 3HE

Form here → → → →

COMPUTER SOFTWARE FOR ASTRONOMY EDUCATION

Please complete in black ink

TITLE OF SOFTWARE:

DESCRIPTION:

MACHINE(S) IT RUNS ON:

Operating System?

Minimum Memory Size?

Disc or cassette based?

Any special requirements?

LANGUAGE:

USE: *Please ring appropriate classification*

Primary School	Junior School	Middle School	Secondary School	Sixth Form	Further Education

Higher Education	Astronomy Society	Other *(Please specify)*

DISTRIBUTOR: Name

Address

Tel. No.

AUTHOR(S) if different from above:

TRANSFER MEDIUM, e.g. disc, cassette, paper tape:

FREE AVAILABILITY: Yes/No *(Delete as appropriate)*

If "No", please specify the conditions of availability:

If you wish to notify more than one item of software, please copy this form the appropriate number of times, or send details in the above format on the same size (A4) sheet.

Please return to: Dr Paul Marchant
The Computer Unit
Leeds Polytechnic
Calverley Street
LEEDS LS1 3HE

SMALL SPECTROSCOPES FOR CLASSROOM USE

The first spectrum to have been discussed in a scientific way was that observed by Sir Isaac Newton. His famous experiment used a prism with sunlight let through a pinhole in an otherwise blacked out room. The prism split the sunlight into its component colours. The spectroscope as a distinct instrument was first made by Joseph Fraunhofer for testing the optical properties of his lens glass.

The components of a spectroscope are shown in Fig. 1. They consist of *SLIT, COLLIMATING LENS* and a *DISPERSING ELEMENT*. This last is now usually a *DIFFRACTION GRATING* rather than a prism. Cheap replica transmission gratings take the form of a sheet of glass coated with gelatine. The gelatine is ruled with perhaps 700 lines per mm. Gratings are supplied covered by a protective sheet of glass; they look like 2" x 2" slides for a projector. They can be purchased from Griffin and George, or other suppliers of schools laboratory equipment.

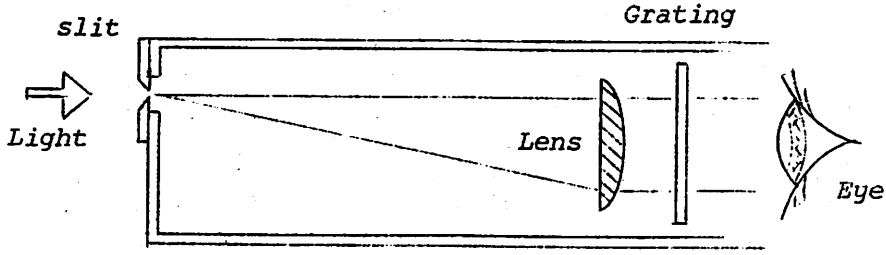

Fig. 1

A light tight box should be made of cardboard or balsa wood and left open at one end (Fig. 1). At the closed end is placed the slit (after a small hole has been pierced). This consists of two pieces of razor blade (careful of fingers!) glued to the box with the edges separated by a few thousandths of an inch - the distance is not critical. The collimating lens may be any positive lens double convex or plano convex 100 to 150 mm focal length and 25 mm diameter; achromatic

lenses give the best results. In assembly the slit is arranged to be at the focus of the lens, the grating goes between the lens and the observer's eye. Make sure the lines of the grating are parallel to the slit (Fig. 2). The slit is offset from the centre of the tube in the model described, to make viewing easier by correcting for the *ANGLE OF DEVIATION* (about 11^{o}) which is present as the light is dispersed into a spectrum.

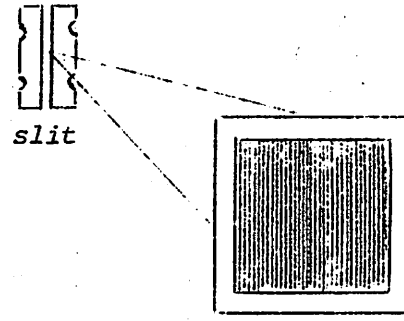

Fig. 2

Many variations on the basic design are possible giving endless fun for the constructor. The more ambitious builders might care to try adjustable slits which widen and narrow by means of a screw, or to add a *VIEW TELESCOPE* (Fig. 3) which is simply a small telescope focussed at infinity taking the position of the eye in the previous setup. This has the advantage of apparently making the spectrum broader allowing more detail to be seen (spectral lines). In the simplest form of all the collimating lens may be dispensed with; only the box, slit and grating are present, so the spectrum seen is very small.

Sources of light for study are all around us, street lights of many kinds. A school textbook of physics should give indications of what to look for, as examples the double yellow line of Sodium in Sodium lamps and the many lines in Neon and Mercury vapour lamps.

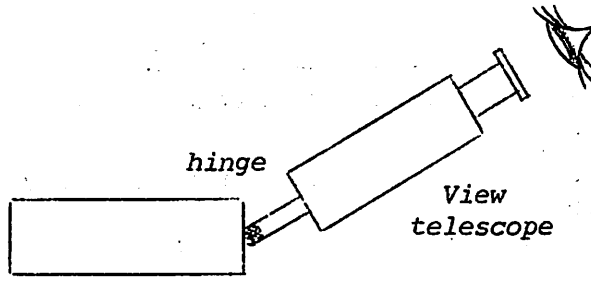

Fig. 3

When studying the Sun do NOT point the spectroscope up to the Sun direct but arrange to have the instrument look at sunlight reflected from a white card.

H Ford
121 Ronald Park Avenue
Westcliff on Sea, Essex.

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A POUND FOR YOUR THOUGHTS

Objects readily available can be used as starting points for astronomical education and discussion. One such is produced by the Bank of England and issued by the million ..... the £1 note.

This 13.5 cm x 6.5 cm sheet of paper, of course, has a portrait of Sir Isaac Newton on its reverse side. We are given the historical setting (1642-1727), some mathematics (ellipses and triangles), optic(k)s (the reflecting telescope) and spectroscopy (the Toblerone, or glass prism as some would have it).

A starting point for classes? After all, Isaac Newton was Master of the Mint.

Geraint Day
Science and Engineering Research Council
Swindon.

AAE COMPENDIUM ON ASTROPHOTOGRAPHY

This collection of material comprises the following articles:

1.	Brief Notes on Simple Astrophotography	J Ravest
2.	Astronomy with a Camera	G Y Haig
3.	Some Hints on Astrophotography with a Telescope	C R Jack
4.	Films for Astrophotography	J R Nichol
5.	Keep it Safe	M Maunder
6.	Booklist	

It is available from: Dr D Clarke
University Observatory
Acre Road/Maryhill Road
Glasgow G20 0TL

Price £1 (cheques payable to AAE).

AAE Council

Patron:	F Graham Smith, MA, PhD, FRS Astronomer Royal and Professor of Radio Astronomy, Director of NRAL, Jodrell Bank
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Mr J Ravest	(Liverpool Planetarium)
Dr E I Robson	(Preston Polytechnic)

Contents

Articles, ideas, views and Letters to the Editor for publication should be sent to:

Dr D Clarke
University Observatory
Acre Road/Maryhill Road
Glasgow G20 0TL
Tel: 041-946 5213

NEXT ISSUE - APRIL 1983

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