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issue number 5



## TELESCOPE MIRROR SUPPORT SYSTEMS by Peter Montgomery (Worthing AS)

Methods of mirror support used in telescopes vary from the very simple (and sometimes inadequate) to the extremely complicated (and frequently over-engineered). Whether they are commercially produced or home-made some of them fail to do their job satisfactorily and sometimes include undesirable features such as metal parts which bear directly on the mirror glass or lack of access to the mirror cover. In some cases 9 or 18 point suspensions are machined to close engineering tolerances and then fitted with leather (or similar) washers which completely nullify all the careful work. However it is not difficult to make your own support system inexpensively and to incorporate many useful extra features.

The prime purpose of a mirror support is to locate the mirror so that it remains in collimation, but it should also allow easy collimation in the first place. Additionally it should protect the mirror, allow rapid temperature stabilisation and enable easy removal and replacement of the mirror cover. By using materials such as plywood, felt and adhesive it is simple to make your own system but it is important to use best quality materials throughout and where metal parts are required these should be rust-proof; brass or stainless steel being preferred.

The support system can conveniently be considered as made up of two sections, the first being the mirror cell and the second being the support plate for the cell, this plate being fitted to the telescope tube. Taking the cell first, my method is to cut two plywood discs 1/8" larger in diameter than the mirror, one being of 1/2" plywood and the other of 1/8". In the 1/2" disc drill three 1/2" diameter holes spaced 120 degrees apart at a distance from the centre of about 1/2 the radius of the disc, then drill a 1" diameter hole in the centre of both discs. Into each of the 1/2" holes place a bolt 1/2" (or 6mm) diameter and 2" long, countersinking the holes so that the bolt heads flush down with the surface of the plywood. (Counter-sunk headed bolts are useful for this but any shape of head can be used.) The thread of the bolts may be metric, BSF or Whitworth but when buying them also purchase about a dozen plain washers and three nuts, or wingnuts, to fit. These bolts are the collimation bolts and while wingnuts make for easier adjustment they are a great temptation to small boys.

The holes for these bolts are best left a firm fit as the bolts are now glued into them and the second (1/8") disc is glued on to the 1/2" disc to trap the bolts in place. BOSTIK No 1 (clear) is a suitable adhesive and before it dries ensure that the projecting shanks of the bolts are parallel with one another and at right angles to the face of the disc. Weight down the two discs and allow 24 hours to dry. Make sure the edges of both discs register with one another but if they do not, sandpaper down the 1/8" disc where it overhangs. Now cut a strip of 1/16" plywood about 1" wider than the thickness of the mirror and long enough to go right round the circumference of the discs with about 1/2" overlap for joining. This should be a scarf joint and if you have to make this strip of plywood in more than one piece use scarf joints throughout. It

is most important that the visible grain of this 1/16" plywood is parallel with the shanks of the bolts otherwise it will not easily bend round the discs. Glue and screw this rim in place using 3/8" screws every 3" or so, ensuring that one edge of the rim is flush with the surface of the 1/2" plywood from which the 1/2" bolts project.

Once the glue is dry go over the whole structure with fine sandpaper to remove all splinters and roughness, then line the rim with one or two layers of felt until the mirror is held snugly in place and does not move when the cell is gently shaken sideways. (This felt is sold for covering card tables or lining drawers and is about 1/16" thick.) Glue the felt in place with Bostik. Next cut a ring from foam-backed carpet ("one million point suspension") and having removed the mirror from the cell secure the ring in place with three blobs of Bostik (120 degrees apart) to the surface of the 1/8" plywood disc. The ring should have a width of about 1/2 that of the mirror and an outer diameter of about 1" less than the mirror. Paint all unlined surfaces matt black.

To hold the mirror into the cell make up three clips from brass strip about 3/8" x 1/8". They should be long enough to cover the width of the rim and have a right angle bend at the top long enough to project over the rim and across the mirror surface for about 1/8". Line these projections with felt and if necessary cut away the rim below the clips to allow the projections to make contact with the mirror surface. At the opposite end of the clips drill a 1/8" hole and enlarge it into a slot along the clip so positioned that a 2" screw can pass through it and the rim into the edge of the 1/2" plywood disc. The slot will enable you to position to clips to hold the mirror snugly as you tighten the 2" screws.

A mirror cover can now be made in a similar fashion to the cell. Cut a 1/2" plywood disc about 5/8" larger in diameter than the mirror and fit to it a 1/16" plywood rim about 2" wide. Line the rim with 1/2" thick foam rubber (use Bostik) and fit a handle to the disc on the side away from the rim. The foam will allow the cover to slip over the clips but will hold it firmly in place.

Turning now to the support plate, its shape will depend on the shape of your telescope tube. If this is square it will be necessary only to cut a square of 1/2" plywood to fit, drill three 1/2" holes to correspond to the collimation bolts in the cell (these holes should be a loose fit) and hinge the plate to one side of the tube with a piano hinge the full width of the tube. On the opposite side of the tube ensure there is a positive seating for the plate and fit a toggle catch to lock it in place. Cut away the remaining two sides of the tube about 1/2" across the width to allow air to circulate. This hinged plate (or "tail-gate") is an excellent arrangement and allows easy removal of the mirror cover, but if there is not enough clearance inside the tube to let the mirror hinge out you will have to provide a "door" in the side of the tube to get at the mirror cover. Paint the inside of the plate matt black and the outside to your taste. If your tube is circular you can still use a "tail-gate" by making it D-shaped and fixing to the tube a piece of 1/2" plywood curved to suit the tube on one side and flat (to take the piano hinges) on

the other. (It will look in shape rather like the cross-section of a plano-concave lens.) Alternatively you can cut your support plate to fit inside your tube but cut it away to allow air circulation leaving three wide "spokes". These spokes can be fixed to the tube walls by three screws about 1 1/2" long passing through the walls into the ends of the spokes. In this case however you will also need a "door" to get at the mirror cover.

To fit the mirror cell to the support plate, pass the collimation bolts through the plate but before doing so slip on to each bolt two plain washers with a spring between them, then finally fit outside the plate a further plain washer and nut or wingnut. The springs will enable you to collimate the mirror and they should be of stout construction. They should be of about 3/8" bore and 1" long comprised of three or four turns of 1/16" wire with 1/16" spaces between turns. If necessary they can be seen from a longer length of spring. When collimating tighten each nut far enough to ensure all three springs are partially compressed then adjust each until the mirror is correctly placed. It is helpful to drill the holes in the plate so that two of them are parallel to the piano hinge, particularly if the latter is also parallel to the draw tube of the focuser, as this makes collimation easier. A sprung mounting of this kind helps to absorb shocks should the telescope tube be dropped or knocked at any time.

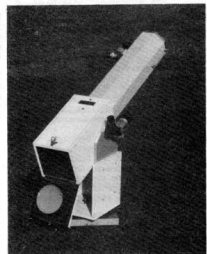


Photo (above): Peter Montgomery's Dobsonian telescope showing the mirror support plate open.

### FREE SMALL-ADS

Any private individual belonging to a member society of the FAS can place a classified advertisement free of charge. Please keep the wording reasonably short and send the copy to me. I will do my best to include the ads in the next following issue but I cannot guarantee anything.

EDITOR

SMALL AD

WANTED Monocentric or Tolles eye pieces. Please write with full details and price to R Moseley, 70 Stanley Road, Earlsdon, Coventry.

# FEDERATION NEWS

PRESIDENT'S REPORT 1984/5



Beacon Hill Telescopes

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The year has been one of mixed fortunes for the FAS. There have been the perennial problems of communication: Council members are widely scattered and lead busy lives, and it is often difficult to get a proper discussion going so that the Federation can develop. At the same time we need to know what you, the members, think we should be doing. Throw brickbats if you must, but wrap them in constructive suggestions!

The insurance scheme instituted in 1983 has died a quiet death even though the offer was later extended to include individual members of FAS societies, simply because there were few enquiries and no takers. But if this was a failure, let's redress the balance with a few successes: Herston-cieux '84, the Astrocalendar produced in association with Cardiff AS, and the Newsletter, which has been very well received. And we still count the majority of local societies in the UK among our members, although there are many societies, large and small, outside our ranks.

There is much to look forward to in the coming year if we can all make the most of the Halley's comet ballyhoo. Ken Marcus and I have represented the FAS on the National Astronomy Week committee, and events are moving fast. I hope societies are making their plans for November and will take advantage of the financial help offered by the Committee towards National Astronomy Week expenses.

Please continue to support your Federation; your Council are all involved in local societies themselves and know your problems. For our part, we will try to give you the best service we can.

Alan Drummond

## SECRETARY'S REPORT 1984/85

My own business commitments at "Earth and Sky", Hebben Bridge, require that I am in the shop on Saturdays to meet customers who have travelled specially for astronomical supplies. So I cannot attend Saturday meetings other than with difficulty. I am therefore asking the Council to find another secretary.

There have been two Council meetings, held in London, which have been poorly attended. Some members of Council are finding it difficult to pay travel expenses, with the result that those who do attend are still not able to have a proper discussion with all their colleagues on FAS policy, new projects, etc.

The regular work of the FAS has continued. The secretary has handled a large volume of mail from outside bodies and individuals in particular.

The Handbook continues to be widely distributed, and is perhaps our most useful achievement. The Astrocalendar, though out late this time, is growing in popularity. One society bought a copy for each of their members, issuing them free against subscriptions, to save printing monthly sky notes in the journal.

An information pack has been prepared by the publications editor to assist new societies who need advice on setting up a society. Geoff Pearce continues to produce members' slides for sale by the FAS.

Members and friends have enjoyed two meetings during the year: the convention at Coventry, May 1984, and the convention at Herston-cieux, October 1984. Both are being repeated in 1985.

Our member societies continue to be active, with varying degrees of success, as reported by the News Round-Up Editor in the new style FAS news-sheet which has been so well received by members.

The FAS Council is always open to requests from member societies to participate in joint ventures, and perhaps it is in this direction that the future of the FAS lies. Unity is our strength.

Please attend the AGM and convention on May 11 with your ideas for the future of the Federation, and how it should best promote the activities of local astronomical societies in the season of Halley's Comet. And anything else which may seem relevant. See you at the AGM!

Rosemary Naylor  
8th March 1985

## EDITOR'S REPORT 1984/5

I knew Chris Green was going to be a difficult act to follow. His pungent and amusingly insulting style defied the laws of optics by casting shadows in all directions at the same time. His writings deserved a massive reaction, but, as it happened, Chris's most notorious editorial resulted in only two letters, one of which I still cannot quite understand. As a communicating medium, the old style FAS Journal was obviously off target, and it was against this background that I took over as Editor.

My first act was to implement an idea previously suggested by Rob Moseley of Coventry. The result is the newsletter you are now reading.

From the letters and comments I have received it seems that the newsletter is well thought of by its readers and I look forward to the expansion of its circulation, contents and frequency of issue.

The format of the newsletter is well suited to the needs of the FAS but, as with any publication, its future depends upon your support. Please keep letters and articles flowing in to the editor.

G Bolland

## IMPORTANT NOTICE

In the last FAS newsletter (No 4) the wrong date was given for the Coventry Convention and AGM. The correct date is SATURDAY 11th MAY 1985.

## TOTAL LUNAR ECLIPSE by Alex Vincent (Worthing AS)

A total eclipse of the moon will take place on May 4 1985 and the moon enter the umbra at 18.17 and rises at 19.20. Totality commences at 19.22 and ends at 20.30. Mid-eclipse will be at 19.57. The moon leaves the umbra at 21.36. All times are UT.

The moon does not disappear completely during totality because it is dimly illuminated due to sunlight being refracted on to the moon's surface by the Earth's atmosphere with interesting variations of colour ranging from a dull blood red to a bright orange-yellow. It has been known that the moon has disappeared completely during totality and the ones of 1884 and 1888 were very dark. This was due to the eruption of Krakatoa in August 1883 where

volcanic ash and dust expelled into the atmosphere and was detectable for a few years afterwards. On May 18 1761 Per War-gentin noticed that the eclipsed moon vanished and it was not even visible in a telescope. This was due to Jorullo which erupted violently in 1759.

I am compiling a book on eclipses and would like a photograph of a total solar eclipse, annular eclipse, total lunar eclipse, also the partial lunar eclipse which occurred on August 17 1970. If any readers have any such photographs I would be pleased to hear from them - Alex Vincent, 21 New Road, Worthing, Sussex, BN13 3JG.

## I.R.Poyser (Engineering)

43 Redoubt Road, Rochester, Kent ME1 1UE.

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2 1/2" airspaced achro, 20" f.l. New. £201.  
3" cemented achro, 20" f.l. £30. (2 only)  
2" cemented achro, 7" f.l. £6. Ideal for a starfinder. I'll sell you a 1" f.l. ocular (3 element) to go with it for £4. Just think - a 7 X 50 starfinder for £10!

I can offer all sorts of short f.l. achros, mostly brand new, with prices unlikely to be more than £5 each.

Ex. Govt. aluminum tripods. Legs 3ft extending to 5ft. Need painting. £15. Altaximut heads available. £15 each.

Adaptors, 'scopes, components made to your special needs. 'Phone evenings after 6pm cheap rate.

STOP PRESS Ask me for Ex.Govt. oculars I've got 1" and 1 1/2" @ £4. Super value.

## STUART LONSDALE

Items for the next "Round-Up" should be sent to: 16 Joan Lane, Hooton Levitt, Nr Rotherham, South Yorkshire, S66 8PH.

**AYLESBURY AS:** The January meeting was almost called off due to the bad weather but those who braved the elements were treated to a talk by Peter Bissell on the history of astronomy.

Gerard Rawlings has given the society a number of RAS Quarterly Journals and "Observatory" booklets for the library.

David Hinds has donated two metal cupboards.

A local industrialist has offered to have his apprentices make a new shutter for the observatory dome as soon as the working drawings are completed. Member Bill George has taken all the measurements and is busy producing the drawings.

**BRIGHTON AS:** The average attendance for 1984 fell from that of 1983. The numbers being 20 and 31 respectively.

In order to attract new members to swell the falling numbers, monthly public meetings would be held. The first one attracted six non-members, four of whom had not been seen before. Hopes were high that they would join.

Tuesday meetings are now informal with members' slides and basic astronomy.

**CHELMSLEY AS:** Writes Frank Hill, "Although staunch supporters of the FAS over the years, correspondence from my society to the 'Round-Up' has been a little defunct. Chelmsley Wood was originally built as an overspill town for Birmingham and is located to the east side of the city, about ten minutes' drive from the airport and the NEC. The society was founded in 1972.

We have regular weekly meetings at the observatory complex in the Colleshill area. They are held every Thursday from 8pm onwards.

The observatory complex consists of a meeting room and an observatory. The observatory, 12-feet in diameter, will house a 16-inch open frame, fork mounted Newtonian reflector. At present the telescope is about 60% constructed. We also have a 6-inch reflector mounted Dobsonian style and an 8-inch currently being refurbished."

The monthly meetings for guest speakers are held at the Chelmsley Wood Library/Theatre, Stevenson Drive, Chelmsley Wood, on the last Thursday from September to May, 7.30 to 10pm.

**HAMPSHIRE ASTRONOMICAL GROUP:** "This group have two observing sites and fifty members", says Secretary Jane Hutson. (By the way Jane, please note my correct name and address at the beginning of the Round-Up - Stuart.) A 12½-inch reflector has been replaced with an 8-inch Dobsonian with drive and setting circles (you don't say what has become of the 12½-inch) and members are currently working on a 20-inch reflector improving the drive and setting circles. A rotating head is to be fitted to remove the annoyance of swinging from a ladder to observe overhead objects!

Opening on Good Friday, April 5th, will be a NAW pre-launch event in Queen Elizabeth Country Park, near Petersfield, Hampshire. The "Haley Comet Trail" will be opened by Heather Couper at 15.00 hours. Further details - contact Mrs Jane Nelson-Townson on 0705 370097. Anyone interested in the Hampshire Group should contact Jane Hutson, Secretary, 33 Mapletree Avenue, Horndean, Hampshire, PO8 9BN.

**HUDDERSFIELD AS:** Sponsored walks last year raised some £186 for funds. It was put towards a TV for the Spectrum computer.

An open weekend was held in September at the observatory on Crosland Moor. Some good publicity was given in local press and radio.

Some members made a visit to Northwich in Cheshire to see Andy Hollis and his photometer that he uses in the Minor Planets section of the BAA.

The observatory on Crosland Moor is certainly worth a visit. It houses a 16-inch fork mounted reflector and has many other goodies including solar power. Interested? Contact Philip Heppenstall on Huddersfield (0484) 661497.

**NEUCHAPEL OBSERVATORIES AND PLANETARIUM:** An open weekend to coincide with the Stoke-on-Trent City Anniversary Celebrations and the North Staffs Wildlife and Conservation Week, is to be held on Saturday April 27th and Sunday April 28th.

An exhibition of astronomy and spaceflight will open in mid-November in the local Newcastle Library.

The Observatory is now part of the International Halley Watch.

A major exhibition will open on March 1st 1986, entitled "The New Universe", it will run for three months in the City Museum.

**NORTH EAST LONDON AS:** The addition of two new members during December was a welcome sight to the society.

During December, Mike Maund gave a talk on Astrophotography, Bernard Beeston said it was a welcome return for Mike after a gap of 15 years!

**SHEFFIELD AS:** The February Informal meeting saw a video of the 50th Anniversary celebrations last April. Member Wilf Naylor is to video some of the meetings for society records.

Derek Fellows brought along a computer program to the same meeting which showed views of the night sky, planets and the position of Comet Halley.

Exhibitions have been arranged for NAW with the Nottingham Building society at two of their branches.

Members commented on the excellent lectures we have had over the last few months. Nora Betts, the Hon Secretary, is already preparing for the 1986 session!

Our oldest member, Walter Wolstenholme, who saw Comet Halley when he was a child, says he is looking forward to seeing it a second time. Are there any members of other societies who have seen Halley before? I would be interested to know. Get in touch with me - Stuart Lonsdale.

**ORWELL AS:** More visits to the observatory, this time by the Clifft Quay Camera Club.

Orwell's observatory houses a 10-inch refractor and is at Nacton near Ipswich. (Editor's note: an article on the Orwell observatory will appear in the next issue of the Newsletter.)

A plea was issued to members for articles to include in the Journal.

Anyone in the Ipswich area interested in joining Orwell should contact the Membership Secretary, David Barnard, 41 Melbourne Road, Ipswich, IP4 5PP, tel: Ipswich 7553.

**SOUTH WEST HERTS AS:** The removal of a number of trees by a local farmer has meant better viewing at the High Top Observatory. The trees were obscuring the eastern and south-eastern horizon. The telescope can now be used on the Moon and planets soon after they rise.

Member Ken Phillips talked about a small school astronomical society. The chemistry master had set about the construction of an 8-inch reflector, built around a Wildy mirror.

**WELLINGBOURGH AND DISTRICT AS:** February 17th was the first anniversary of this group. The first meeting in 1984 was attended by six people.

December 1984 saw a talk by John Hosty who spoke about his Nova discovery in 1977.

A trip was made to the 2nd East Anglian Astronomical Societies Convention in Essex.

It was hoped that the March meeting would include an observing session on Mercury.

**WEST OF LONDON AS:** A few years ago a visit was made to the Norman Lockyer Observatory at Sidmouth. On May 17th this year a return visit is to be made.

During March, a visit is to be made to the University College London to see their STARLINK terminal, the professional astronomical computer network.

The AGM in April will continue the computer theme with a look at some of the astronomical programs now available for home computers.

Subscriptions are to remain at the 1984 level.

**WEST YORKSHIRE AS:** Chairman Derek Hufton asks if any member is willing to take over as the Editor of "PHOBOS", their magazine. He has done the job for 11 years! (Since the society was founded.)

A visit was made to the AAC Xmas party and some are to return for the Spring Star Party.

The new President is to be Les Wooliscroft of the University of Sheffield. The previous President, Warwick Gibbons, had to retire due to a move down to Nuneaton.

The Highways Department has fitted some hood to street lighting near the observatory. No that really is something! Well done the Department.

With all the planets on view (except Pluto) on March 16th during one night's viewing, a "Planet Marathon" is to be arranged at the observatory.

Dampness and condensation on the inside of the dome is causing some concern as it is affecting the woodwork and black mould is growing. It will need to be cleaned up and treated.

The Xmas raffle raised an astonishing £280 net.



## Letter

Dear George,

28th February 1985

I wish to announce that Boston Astronomers intend to present the first Boston Conference on Astronomy on July 27th 1985. Titled "Eyes on the Universe", the speakers will be: Heather Couper, Nigel Henbest, Peter Drew and David Baker. The doors will open at 9am, but lectures do not begin until 10.30, allowing people time to view the exhibition and visit trade stands. The day ends around 5.30pm.

For further information please send an SAE to me at "Southview", Fen Road, Stickford, Boston, PE22 8HD.

Yours sincerely  
Bryne Tongue  
(Secretary, Boston Astronomers)

# HALLEY'S COMET 1986 —:

\*HEATHER COUPER\*

\*NIGEL HENBEST \* IAIN NICOLSON \*

Invite You On Behalf Of:



← and →

↓  
Andrew Gatward



A.B.T.A. Registered.

JOIN US FOR A "ONCE IN A LIFE TIME TRIP, TO OBSERVE HALLEY'S COMET, FROM PROBABLY THE BEST VANTAGE POINT IN THE WORLD".  
This trip not only offers you the chance to spend time with Heather, Nigel and Iain, but the opportunity to see the  
most beautiful attractions South Africa has.

will be joining up with a South African group of astronomers, which will have its obvious advantages, when it comes to  
observing equipment. Not only this, we will of course have the chance to meet those, with a good knowledge of the  
Southern Hemisphere.

are off for two weeks to this Country, our departure date, from Heathrow Airport, being the 6th April 1986. We have  
chosen this date for 2 obvious reasons. 1, this is when the comet will be at its brightest, and almost overhead at  
night, and 2, because we will not run into the problem of that large white globe called "the Moon", obscuring our view.

For those who live in, or journey to, the Southern Hemisphere" writes American Comet expert John E Bortle, "Halley will  
be in all its glory - a sight not to be forgotten".

Of course Halley's Comet is the obvious attraction, but included in this extremely cheap price, are many other things we  
have to offer. During our stay, we will have the chance to see both South Africa's astronomical attractions, and non  
astronomical attractions.....our itinerary includes a visit to the Union Observatory, and the South African Astronomical  
Observatory, the Deep Space Tracking Station at Hartbeesthoek, and the University of Witwatersrand Planetarium.  
Other astronomical excursions include..... a trip to the Valley of the Thousand Hills, the Nagle Dam, the Cape Peninsula,  
Table Mountain, and the Crown Reef Gold Mine. We will also have the chance to see traditions both old and new.....  
Traditional Tribal Dancing in Johannesburg.....to modern winemaking and tasting!!!, in the Cape Wine lands.

For the fifteen days, we will be staying in Johannesburg, Durban and Capetown.

Accommodation will be in luxurious Holiday Inn Hotels. The price we are asking includes, travel, transfers,  
excursions, and all your meals., everything we have mentioned is included in the price. South African  
airways have gone over board in their efforts to help make this an economical, but full and interesting trip. When  
discussions first took place the price was set at £1,300, but this did not include food. After further discussion  
S.A.A. found they could still offer us a full itinerary, with food etc included, for the low low price of £1,150.

For £1,150 you get what is on offer here, all you need on top of this is your spending money, and South Africa is  
famous for its cheap prices. A chance to spend two weeks with three such well known astronomers, obtain the best views  
of Halley's Comet you will get in this once in a life time pass, the opportunity to observe with those who know the  
Southern Hemisphere like we know the Northern, and all these unforgettable trips to astronomical and non astronomical  
attractions that this wonderful country has, with first class service all the way, from the time we get on the plane  
to the hotels, until we get off again 15 days later. SURELY THIS IS AN OFFER YOU ARE NOT GOING TO TURN DOWN.

will probably never get another offer like this again. S.A.A. have helped arrange this trip for astronomers, so  
if you on all you observers, come and join us: The offer is of course open to the general public too, so tell your  
friends, and if they would like to come, they are very welcome to come along too.

and now for your - full itinerary (please send a SAE to);

ANDREW GATWARD,  
BRAINTREE HALSTEAD & DISTRICT A.S.  
19 BELLE VUE TERRACE,  
HALSTEAD,  
ESSEX CO9 2DD. ( TEL: HALSTEAD 476844).

Don't wait too long though, a deposit of 10% should be sent before the end of May, to secure your place, and the unbeatable  
price. We will of course accept bookings after this time, but can't guarantee that prices may not have risen. Book and  
pay before May, and we can guarantee a price of £1,150.

Am looking forward to hearing from you soon, Andrew Gatward.

Contacts at: SOUTH AFRICAN AIRWAYS,  
MR JOHN DANIELS or MR ARTHUR EAST,  
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SOUTH AFRICAN AIRWAYS,  
251-259 REGENT STREET,  
LONDON W1R 7AD  
(tel: 01 437 9621)

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HALSTEAD,  
ESSEX.  
(tel: (0787) 473452)



## Book Review



## Letters

January 16 1985

by Rob Moseley (Coventry & Warwickshire AS)

### "THE GREENING OF MARS"

by Michael Allaby and James Lovelock  
(Andre Deutsch 1984) £7.95 (hardback)

Ever since I read "The Domes of Mars", by Patrick Moore, as a kid, the colonisation of the red planet has, for me, been a vision of World War II in space.

History instills a deep pessimism about the future of our species - so it was a surprise and a pleasure to pick up a profoundly optimistic book on the subject.

This beguiling little treatise (once started hard to put down!) might appear to be at first a projection of currently fashionable "green" politics into space colonisation. It is more than that. It is closely reasoned, literate ... and strangely realistic.

Despite its misleading cover this is no science fiction. It is a marvellous example of what might be termed "science speculation". Produced by an SF writer (Allaby) and a scientist (Lovelock), it never loses its footing in unguarded imagination or literary style.

It takes the form of a sober narrative (set in the year 2245 AD) given by a third generation "Martian", recounting the history of his planet to a group of immigrant "Terrans". The format works well - and the skillfully wrought prose gives an air of established fact to all that we learn.

The "greening of Mars" is the central theme of the book. Mars, it turns out, will not be approached in the way that the Moon was. This is not merely an essay in the possibilities of science and technology. It covers ecological, political, economic, social and even racial considerations too - all in 164 pages! No governments. No military establishments. This is the voyage of the Mayflower. The triumph of the common man.

The sterile stability of Mars (the sterility is assumed as a fact) will be broken by the injection of redundant stocks of "freons" or chloro-fluoro-carbon compounds, withdrawn from terrestrial use due to fears about their harmful effects on the ozone layer (remember the aerosol scares?). These will modify the Martian atmosphere to a sufficient extent to induce a warming effect. Along with quantities of hardy algae spores these injections will (so the authors argue) produce higher temperatures, liberate reservoirs of water locked up as permafrost, reduce the planet's albedo, and start a process of soil formation. These factors would commence a chain of positive feedback, rapidly altering the Martian climate.

How are the injections to be delivered? By utilising the thousands of obsolete solid fuel rockets built to deliver nuclear warheads here on earth - after massive arms limitation agreements in the mid-1980s between the USA and USSR. (How I hope to God that at least this much could pass into reality!)

The real work of taming Mars begins with the arrival of the first pioneers. The planet is not yet an Eden - far from it! But it is warmer. Plants can be grown ... not to feed the settlers, but to continue the process of altering the ecosystem.

The rest is there to read. A brief review like this will probably make the ideas seem facile or naive. Perhaps they are. But the science is good and accessible, and it's a persuasive and heartening view of

Dear Mr Bolland

Thank you very much for your letter of November 28th, and complimentary copy of the Federation of Astronomical Societies newsletter No 3.

We greatly appreciate your kind offer to add us to your mailing list and will look forward to future copies.

Many thanks again,

Sincerely yours,

Leif J Robinson  
Editor - Sky and Telescope

December 3 1984

Dear Mr Bolland

It was interesting to see someone else review essentially the same secondary literature that I did concerning the origins of the zodiac. Since we both used the best sources, the conclusions are pretty similar. It might have been appropriate for Mr Brierley to have cited my article.

Sincerely yours

Owen Gingerich  
Professor of Astronomy and the History of Science - Harvard

In reply, Harry Brierley writes:

32 Portland Place  
Northampton  
NN1 4DH

1985 Jan 15

Sir

In reply to the comments of Prof Gingerich, may I assure him I intended no discourtesy in failing to list his article. Space being limited, I included only those works which I had deliberately sought out and used.

However, I should have mentioned it as a recent and colourful exposition which I very much enjoyed. May I remedy that omission now? "The Origin of the Zodiac" appeared in Sky and Telescope, March 1984, and contains a host of literary references and some fine illustrations. And it is a good read.

When I wrote - after a sixty-year love-affair with the Zodiac - I had a different aim. In spite of my "sugar-coat" title, I was trying to give to my fellow-amateurs and organizers of local societies a painless way of teaching their members about some of the effects of precession. Whether I hit the Bull (I) or not, readers of both articles will judge. Do read both.

Yours faithfully

Dear Mr Bolland

The Wellingtonborough and District AS was formed in February 1984 and we are now looking for new members to join the society. The annual subscription is £3.00. Astronomers who are interested in joining should contact me on (0933) 77972.

Yours sincerely  
S M Williams



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SATURDAY

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Herstmonceux '85

1985

# CONVENTION

PROGRAMME

to be held on 11th May  
at the  
**Herbert Lecture  
Theatre  
COVENTRY**

10.30	Coffee	4.00	Coffee
11.30	AGM	4.30	Michael Pace
12.30	Lunch	5.30	Society Announcements
2.00	Dr John Davies	6.00	Close
3.00	Dr Anne Cohen		

DR ANNE COHEN was a professional astronomer at Jodrell Bank before raising a family. She now is involved in the exhibition side of the visitor centre at Jodrell Bank on a part-time basis. Her lecture will be entitled:-

"AN EXHIBITION OF RADIO ASTRONOMY AT JODRELL BANK"

(or "How do you explain radio astronomy to the general public?")

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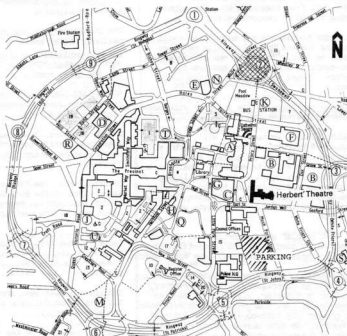
DR JOHN DAVIES is an astronomer and aerospace engineer. After working for British Aerospace he joined the Department of Astronomy at Leicester University and using IRAS data discovered six new comets including comet IRAS-Araki-Alcock. He also discovered a dust tail on comet Temple-2 and several new asteroids, before becoming involved in the UK preparations for Halley's comet. John is now at Birmingham University involved in the development of a UV telescope to be launched in 1987. His lecture will be entitled:-

"WHY IS HALLEY'S COMET IMPORTANT FOR SCIENCE?"

MIKE PACE hardly needs any introduction. A long-standing FAS Council member, Mike has spent the past 21 years helping build the impressive complex at Newchapel. His lecture will be entitled:-

"NEWCHAPEL OBSERVATORY COMES OF AGE"

and will describe the work done over the years and the prospects for the future as a "Natural Sciences Visitor Centre".



DON'T FORGET - SPACE ART AND ASTRO PHOTO COMPETITIONS

Could society delegates please remember to bring their copy of the AGM agenda and minutes of the last AGM, as extra copies will not be available at the convention.

REFRESHMENTS: these will be available from 10.30am to 11.30am and from 4.00pm to 4.30pm. The council member in charge is George Bolland (Diploma in British Rail Coffee Making - failed) so don't say you haven't been warned!

NOTE: SOCIETIES WITH 6 OR MORE DELEGATES GET 1985/86 FAS SUBSCRIPTION FREE.

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(Or the year before!)

