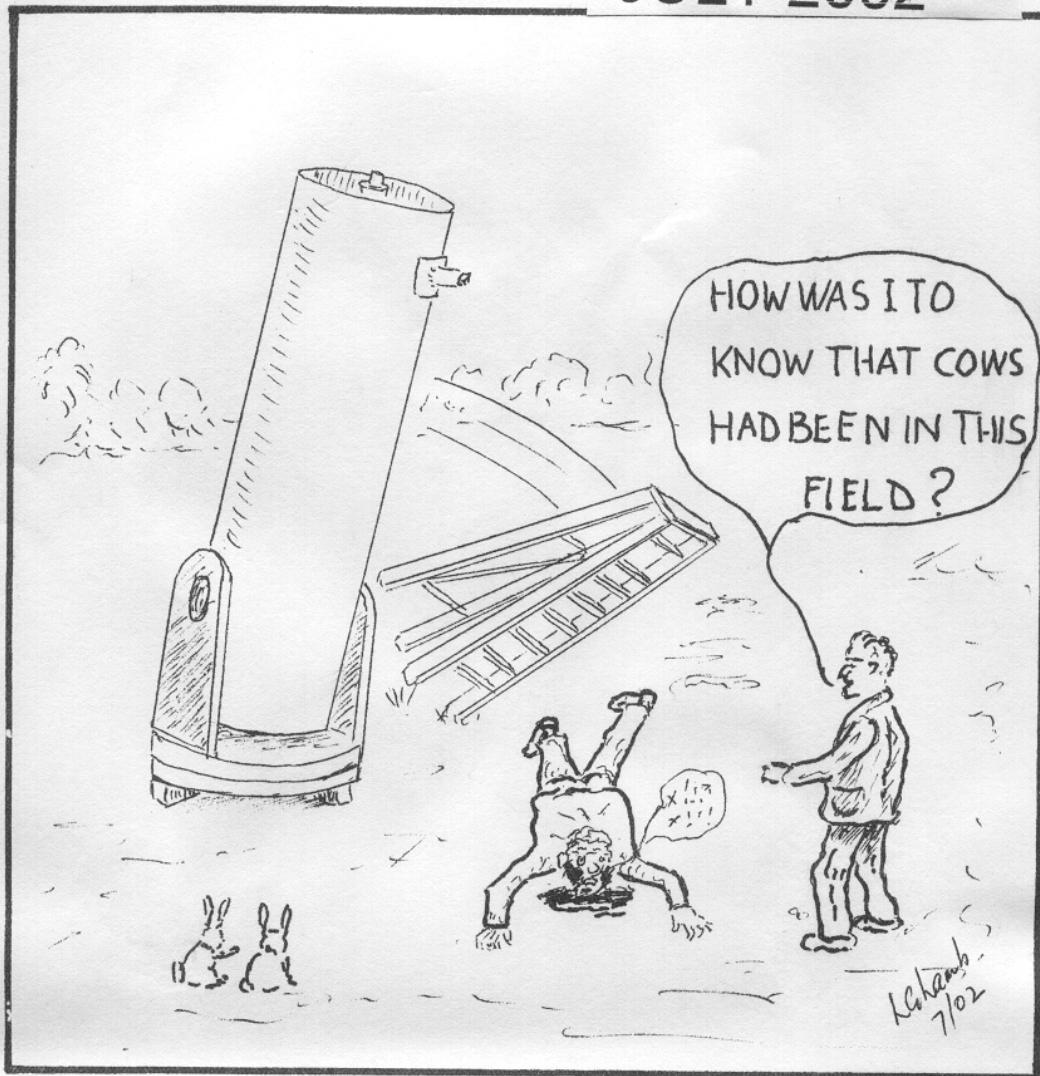


ORWELL ASTRONOMICAL

SOCIETY IPSWICH

Charity No 271313

JULY 2002



Society News

1 Next Committee Meeting

The next committee meeting will be held on Saturday 7th September at 19:30 in the clubroom. This is an open meeting and any one who is interested is invited to attend.

2 Events for 2002

Event	Details	Date
Summer Barbecue	Ken Goward's garden Tuddenham	Saturday 13 th July
Equinox Star Party	Thetford Organiser Loughton A.S	6 th to 13 th September
Summer Excursion	Provisional destination is Oxford	Provisional date Saturday 14 th September
BAA Exhibition Meeting	Cavendish Laboratory Cambridge	Saturday 21st September
FAS Convention	Lecture Theatre 1 in the Ken Edwards Building, University of Leicester	Saturday 19 th October
Open Weekend	Members help will be needed again this year, to prepare the displays.	Saturday 9 th and Sunday 10 th November
Christmas Meal	Provisional date	11 th December

Events for 2003

First Presidential Lecture	Dr. Allan Chapman The Victorian Amateur Tradition At Orwell Park School	Friday 7th March 2003
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This events list, is updated monthly, so watch this space.

3 Telescope Review Articles (Old and New)

Society members own a verity of telescopes, both old and new. I would like to request a series of review articles, from members on their telescopes.

The eventual aim would be to product a booklet on member's equipment that can be given to prospective new members, who ask for advice on telescopes.

The first of these articles was recently written by Neil Morley. Neil reviewed his short focal length 80mm refractor.

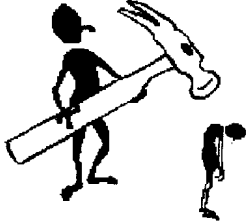
4 Request for Photographs

The first Public Open day the OASI staged as held in 1972. I am provisionally planning a "30 years of Public Open Days" Exhibition for the Open Weekend in November. If any one has any photographs of old Open Days in the 1970's 1980's and 1990's I (Roy Gooding) would like to borrow them, in order make copies.

The Observatory will not be closed during the summer.

But

Its that time of year again when the observatory refurbishment commences. Work will restart on completing the new society Library. When you attend Wednesday evenings any helping hand would be appreciated. Help is requested to man (or woman) the power tools, hammers, and paint brushes.



Once the walls have been finished the new library cabinets will assembled

I will be resuming the observatory painting in July, Probably starting with the walls of the room at the base of the stair well.

Members who attend will be encouraged to lend a hand. If you intend to come along to the observatory during July and August please come in old clothes.

OCCULTATIONS DURING JULY

Only one stellar occultation occurs during the month under favourable circumstances. The table provides details for Orwell Park Observatory; these will be similar at nearby locations.

D	Date & Time	Lunar	Sun	Star	Min	Star	Mag
R	(UT)	Phase	Alt	Alt	Dist	Star	
			(°)	(°)	rad		
D	31 Jul 23:25	0.54-	-19	6	0.20N	ksi 1 Cet	4.4
R	01 Aug 00:24		-20	15			

James Appleton

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OASI ANNUAL FAMILY BARBEQUE

This year's event will be held on Saturday 13th July at Ken Goward's garden in Tuddenham St Martin from 2PM.

Bread rolls, Sauces and Salad will be provided – members should bring along their own foodstuffs for barbecuing and their own drinks.

Don't worry about the weather – if it looks dodgy Ken has a number of Gazebos to provide plenty of shelter!

Weather permitting; Bill Barton will be demonstrating his Solar Observing equipment –
YOUR CHANCE TO SEE THE SUN IN HA

A prize raffle will be held.

Bring the family along and enjoy what will surely be a very pleasant afternoon!

[Redacted], Tuddenham St Martin
2 miles north of Ipswich.

From Ipswich - north via the Tuddenham Road – as you pass the village boundary, [Redacted]

[Redacted] – signs will be posted.

From Grundisburgh/Woodbridge – go past the Fountain Pub and up the hill through the village – [Redacted]

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Millennium Telescope Meeting - 29th May 2002

Night Sky

All times GMT

Sun

The sun will be rising approximately between 03:50 and 04:15
The sun will be setting approximately between 20:20 and 20:00

Moon

3 rd Quarter	New Moon	1 st Quarter	Full Moon
2 nd	10 th	17 th	24 th

Mercury Mercury will be at superior conjunction on the 21st. It will be too close to the sun this month to be seen.

Venus Venus remains a prominent evening sky object this month. Shining at magnitude -4.1 in the NW sky. Venus will be setting at about 22:00 in mid month.

Mars Mars will very difficult to see this month. It will be setting a short time after the sun .

Jupiter Jupiter is in conjunction with the sun on the 20th. It will not be observable this month.

Saturn Saturn has now moved back in to the morning sky. It will be rising at about 02:00 in mid month. Magnitude 0.0.

Uranus Uranus is in Aquarius, and will be rising shortly after sunset by the end of the month. Magnitude 5.7

Neptune Neptune is in Capricornus, rising around sunset this month. Magnitude 7.8

Meteor Showers

Shower	Limits	Maximum	ZHR
Ophiuchids	May 19 th to July	June 9 th June 19 th	5
α Cygnids	July to August	July 21 st to Aug. 21 st	5
Capricornids	July to August	July 8 th July 15 th July 26 th	5
δ Aquardis	July 15 th to August 20 th	July 29 th Aug 6 th	20 10

Meteor source is the BAA Handbook

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The first meeting in the School Science Room, attended by 15 people lasted well over two hours. This quickly turned into a healthy debate regarding the practicalities of using a 19" instrument. It was especially gratifying to have a wide range of viewpoints present ranging from the enthusiastic, curious to somewhat sceptical. Here is a summary of the debate. Responses enclosed in square brackets, where [?] means no answer yet as it largely depends on the design adopted.

1. Due to its size, would the scope be regularly used? A dedicated team of "experts" is required to set it up and take it down. Are there sufficient members committed to completing the scope yet able to sustain interest and use it providing impetus for others? [Of those who attended, 7 said they would be prepared to use the telescope either on-site or at remote locations]
2. Was the project more interesting to the society solely as a constructional challenge rather than a serious observing instrument? [Not necessarily]
3. Would the scope be permanently housed at the observatory or school grounds? It would be useful to be able to transport the scope to relatively dark sites in addition to the observatory [?].
4. Could the mirror be stopped down making this into a smaller more transportable scope? [No - let's use the full mirror aperture!]
5. A key risk introduced by an open tube assembly and especially an ultra-portable design is the possibility of damaging the primary mirror with falling objects when setting up in the dark. With this in mind, should the scope be loaned to and used by more experienced members with specialist observing interests rather than having it housed at the observatory with risk of damage? [?]
6. Start off with simple low-risk design before more complex one [?]
7. Comment - definite attraction at open day!

It was agreed questions regarding usage could only be answered properly following a detailed assessment of several designs against a series of common assessment criteria. This would have to be largely a subjective exercise without having access to a physical scope and definitely needs input from the designers and users of these

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telescopes across the Globe. Large aperture Dobsonians seem to be popular in the USA, and their photos are widely publicised on the internet. Closer to home, users of large Dobsonians at other astronomical societies and the Thetford Star Party from 1-7 September 2002 may help provide further input to the evaluation. There is certainly no hurry to complete the project. Here is a summary of four designs presented during the meeting.

Kriege and Berry Obsession 20" F/5

<http://www.globaldialog.com/~obsessiontscp/OBHP.html>

This design is described in detail in the Kriege and Berry "Practical Manual On Building Large Aperture Telescopes" which the OASI library have recently acquired, and, commercially produced by the authors as the Obsession.

The mirror is supported by its own weight in an 27-point flotation and sling assembly in an open steel frame facilitating cooling. Each flotation point is positioned to support an equal mass of the mirror, and the mirror support triangles, flex under the mirror like an airbed. The sling takes the weight of the bottom edge of the mirror preventing it falling downwards out of the mirror cell. Additional supports prevent the mirror from inadvertently falling forwards or sideways out of the cell assembly. This level of engineering minimises deformation of the mirror and consequent degradation in images as the telescope is pointed around the sky.

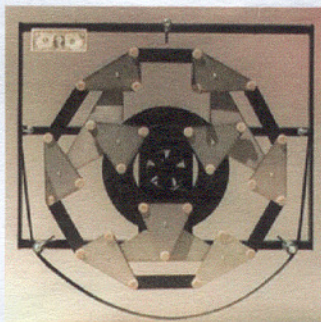


Figure 1 – Mirror Cell Assembly (supported on furniture gliders!)

When compared with other more lightweight designs, the mirror is housed and covered in a significant mirror box assembly adding to the overall bulk and weight. Construction is largely wooden using "aircraft-grade ApplePly". Truss tubes are 1.25" aluminium 0.05" thickness attaching to solid maple split clamps on the mirror

box. The secondary, two rings separated by aluminium tubes and baffled with Kydex acrylic material attaches to each of the trusses via cam-levered aluminium clamps. Side bearings are machined aluminium castings supplied by Obsession.



Figure 2 - Inserting Primary Mirror During Assembly



Figure 3 - Assembled 20" F/5 Obsession

**Dan Gray 16" F/3.75 String Telescope (intended was F/4 mirror!)
<http://www.tms-usa.com/grayarea/janes16/jane16.htm>**

The heart of this design is instead of using truss tubes, two spring-loaded fibreglass rods tension six kevlar strings connected between the mirror box and secondary ring in a truss-tube-like arrangement (hence the name). Alternative designs use threaded tubes to the same effect. Kevlar or fibreglass strings are used as they are resistant to stretching. Set-up is very fast simply requiring the fibreglass rods to be inserted between mirror box and secondary as the strings are permanently connected. Collimation of the secondary is achieved by adjusting string tension. The secondary mirror is glued to the spider. The primary can be collimated from the front of the scope using brackets/fittings protruding from the sides of the mirror cell assembly.



Figure 4 - 16" F/3.75 String Scope

Compared to the Obsession, even allowing for a smaller mirror, the design appears less bulky and more portable. Side bearings have become merged with the mirror housing reducing the overall height of the disassembled telescope. The secondary is reduced to a single ring. The base is a square steel frame. Movement is provided by 3 x roller and 1 x Teflon bearing (altitude) and roller blade wheels (azimuth) attached to each corner of the base.

**Greg Babcock 24" F/4 Ultralight
<http://synrgistic.com/astro/24inch.htm>**

Arguably the most aesthetically pleasing design seen to-date. An interesting feature is six rather than the eight truss tubes made of 3/4" carbon fibre rods. The base is

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reduced to two concentric rings. Roller bearings provide motion in altitude and azimuth. The pyramid shaped spider assembly positions the secondary mirror in-line with the focuser attached to the secondary ring.

This is a more complex design involving more specialised machining and construction. So far, there are no published plans.



Figure 5 - Babcock 24" F/4 Ultralight

**Sayre 22" F/4 Ultralight (CAD only)
<http://www.foothill.net/~sayre/22-in.%20reflector.htm>**

Finally, an even more complex design obviously influenced by the Babcock design shown above. Both seem to reflect the "state-of-the-art" in minimalist ultra-light large aperture Dobsonian designs. Interestingly, most of the parts of this design are common with a 22" binocular telescope that Sayre is also constructing (WOW!)

The open structure promotes more rapid cooling of the primary mirror although it is relatively exposed when composed to the Obsession. Truss tubes are 5/8" O.D .058" thick aluminium. Interestingly, the telescope is being designed with altitude and azimuth electric stepper motor drives to facilitate tracking of objects.

Computer Aided Design (CAD) drawings are available but no apparent published dimensions.

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Figure 6 – Sayre 22" F/4 Ultralight design (CAD drawings)

What happens next?

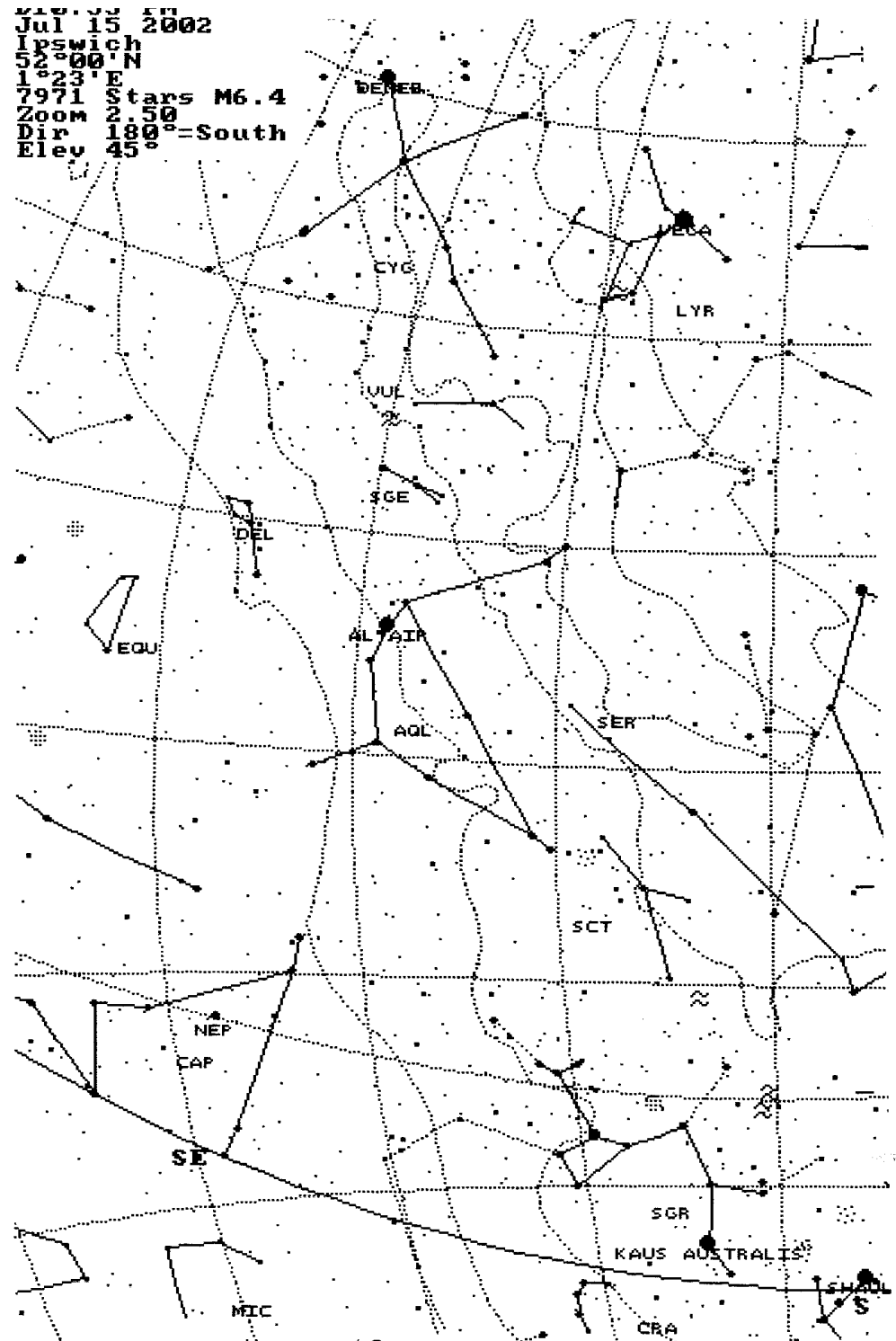
The next open meeting will take place in the School Science Room on Wednesday 10th July commencing at 8:15pm. The purpose is to start to review a set of criteria for evaluating different designs. Following that meeting it is hoped a working group can be formed to present a design proposal to the OASI committee.

Links to ultra-light Dobsonian designs can be found at Mel Bartels Web site at <http://www.efn.org/~mbartels/tm/tm.html> by clicking on the "Ultra Light Dobsonians" link. I'm arranging for a Millennium Telescope section to be set up within the OASI Web site at <http://www.ast.cam.uk/~ipswich>. If you don't have access, articles etc will be available in a folder in the OASI club-room.

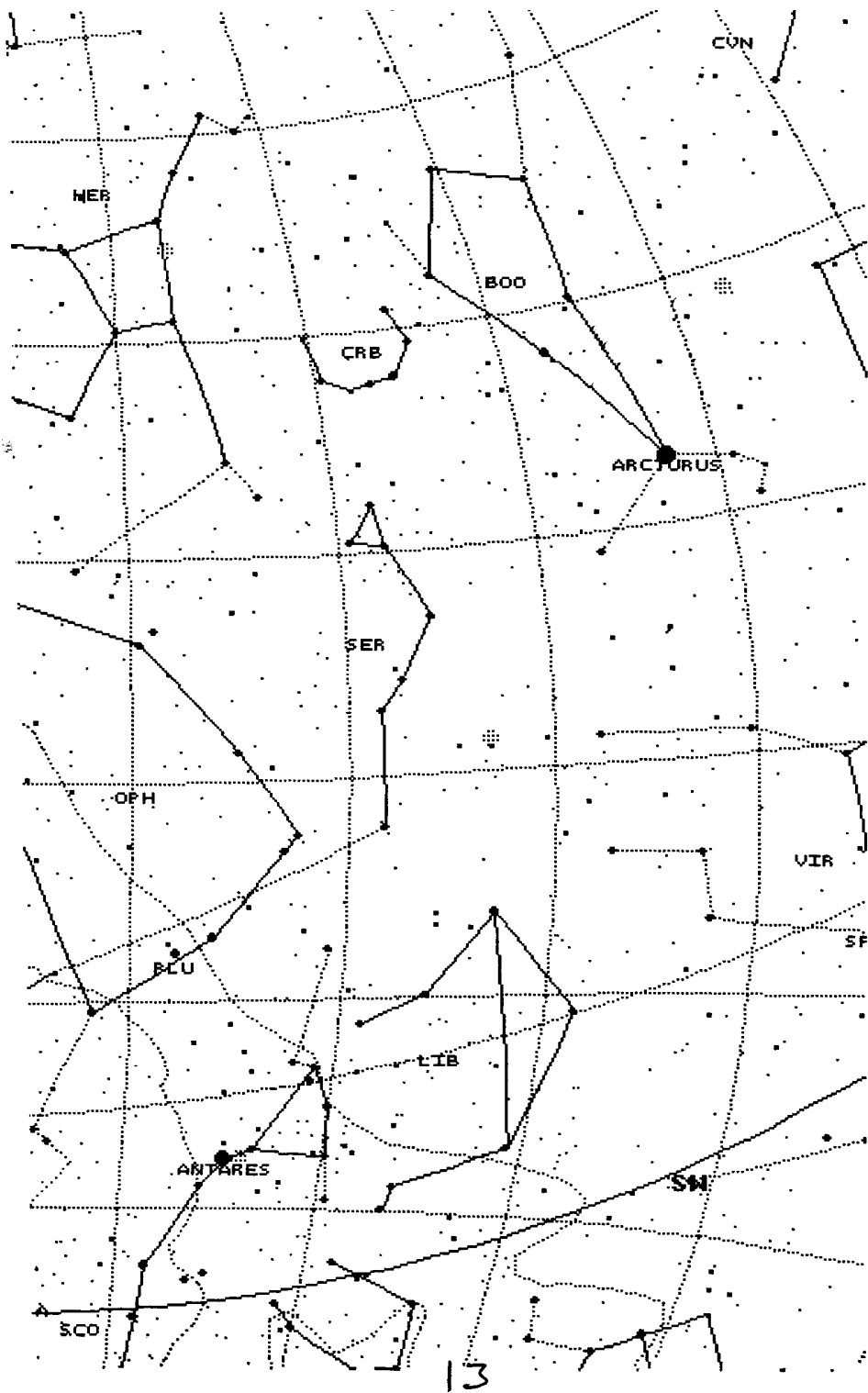
Neil Morley - 3rd June 2002.

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Jul 15 2002
 Ipswich
 52°00'N
 1°23'E Stars M6.4
 Zoom 22.500 = South
 Dir 180°
 Elev 45°



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Group Visits to the Observatory

In September the next series of group visits to the Observatory is due to start.

It is generally acknowledged that demonstrating the building and telescope and showing people the stars and planets is an important part of our club's activities.

However, to be able to do this, volunteers are needed to host these visits, and to avoid the same few members being overburdened, more volunteers are required.

Each visit requires at least two hosts, preferably three. The lead host must be qualified to operate the Tomline telescope. The second host should have some experience of opening and closing the dome, and the third, perhaps a newcomer (or apprentice host) who would like to find out what goes on these evenings, and eventually become a host in their own right.

Below is the list of visits already booked for the next session, so sign up early as a host!

Your society needs YOU!!

You sign up by putting your name against dates on lists in the Belvedere or by calling Garry Coleman on [REDACTED]. I'm waiting for your calls!!

Group	Date
24 th Ipswich Cubs	12 th Sept
24 th Ipswich Scouts	19 th Sept
Woodbridge Cubs	10 th Oct
Overstoke History Group	17 th Oct
St Mary's School	7 th Nov
Triangle Motorcycle Club	14 th Nov
1 st Orwell Cubs	21 st Nov
Bury St Edmonds Young Farmers	16 th Jan
AJS & Matchless Owners Club	13 th Feb

**Millennium Telescope Project (19 inch) Meeting
Wed July 10th 8:15-9:15 pm**

Further to the article elsewhere in this newsletter, an open meeting to review evaluation criteria for assessing existing designs will be held in the school science classroom (the room used for the workshops). All members are welcome to attend.
Neil Morley.

Observing Programme For July

Dates	Observing Director	Activities
Monday		Nothing Booked
Tuesday		Nothing Booked
Wednesdays 3rd 10th 17th 24th 31st from 8.00	M Cook D Payne	Nebular & Faint Objects
Thursday		Group Visit
Friday		Nothing Booked

All members are welcome on any night, but on nights other than Wednesday please check with the appropriate director that the observatory will be open.

Special Events

1. SUMMER BARBECUE 13th JULY

The summer barbecue is taking place in Ken Goward's garden in Tuddenham on Saturday July 13th.

2. COMMITTEE MEETING 7th SEPTEMBER

The next Committee Meeting is to be held on Saturday the 7th of September at 7.30pm in the club room at the observatory. All members are welcome to attend.

2002 COMMITTEE

		Home Phone	Work Phone
CHAIRMAN	D Payne		
SECRETARY & WORK PARTY ORGANISER	R Gooding		
TREASURER & PUBLICITY	K Goward		
MECHANICS	M Cook		
NEWSLETTER CO-ORDINATOR	E Sims		
BEGINNERS MEETING CO-ORD & VISIT CO-ORD	T Sampson		
EQUIPMENT CURATOR	G Coleman		
LIBRARIAN	J Walsh		
	M Whybray		
CO-OPTED MEMBER			
LECTURE CO-ORDINATOR & DARK SKIES	P Richards		
JOURNAL ARTICLES TO CORRESPONDENCE ADDRESS	E Sims	Ipswich Suffolk IP1 4HA	
	R Gooding	OASI Secretary Ipswich Suffolk IP1 6AE	
MEMBERSHIP	M. Cook	Ipswich IP4 5PZ	

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Secretary	R Gooding		
Contact details for the full committee are inside the back page.			
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WWW address:	http://www.ast.cam.ac.uk/~ipswich/		