

ORWELL ASTRONOMICAL

SOCIETY IPSWICH

Charity No 271313

JUNE 1997



NEWTONS REFLECTING TELESCOPE.
PRESENTED TO THE ROYAL SOCIETY
IN 1672. 12 INCHES LONG,
WHILE REFLECTING TELESCOPES
WITH A SIMILAR MAGNIFICATION
(40 TIMES) WERE AT LEAST ONE
METER LONG.

L.G.H.M.B.

SOCIETY NEWS

1 Committee Meeting

The next committee meeting will be held on Saturday 28th June at the observatory, from 19:30. This will be an open meeting and any member is welcome to attend.

2 Events for 1996

This list of events was first presented at the AGM.

Summer excursion	No date fixed as yet
BAA Exhibition Meeting	8th June
Astro Camp	3rd to 17th Aug.
FAS Cambridge Convention	4th Oct.
Second Open Weekend ?	No date fixed as yet
Christmas Meal	10th Dec.

3 Summer Excursion

A possible society excursion trip could be to the science Park at Herstmonceux. If enough members were interested, together with their families and friends it may be possible to hire a bus. Please let me have your opinions about this.

4 New Evening Directories Required.

At present the observatory has only one regular meeting evening, on Wednesdays. If you would like to be trained to operate the observatory and would like to run an additional evening, please contact any committee member.

5 Old Photographs

If any one has any old photographs showing any of the following, could they please contact Roy Gooding.

- Field trips
- Open days
- Maintenance
- Excursions

I am looking for a good selection of pictures to illustrate a booklet I have started for the society's 30th anniversary. The photographs will be digitised. This will do no harm to the pictures. They will only be scanned into a computer

NIGHT SKY

All times GMT

SUN Rises approximately between 03:40 to 03:44
 Sets approximately between 20:12 to 20:22

Moon
 New Moon 5th
 First Quarter 13th
 Full Moon 20th
 Third Quarter 27th

MERCURY Mercury will be at superior conjunction on the 25th

VENUS Venus will be well placed in the western sky after sunset. Mag. -3.9

MARS Mars will be visible after sunset towards the SW. In mid month it will be setting at about 00:30. Mag. +0.3

JUPITER Jupiter will be rising just before midnight at the beginning of the month. Mag. -2.5

SATURN Saturn will be rising at about 01:00 in mid month. Mag. 0.8

URANUS Uranus will be rising at about 22:40, at mid month. Mag. 5.6.

Neptune Neptune will be rising at about 22:00, in mid month. Mag. 8.0

R. Gooding

OCCULTATIONS DURING JUNE 1997

Only one stellar occultation disappearance event occurs during the month under favourable circumstances. Details are given below for the location of Orwell Park Observatory, but will be similar at nearby locations.

Date & Time (UT)	Lunar Phase	Sun Alt (°)	Star Alt (°)	Min Dist rad	Star	Mag
10 Jun 22:09	.29+	-12	10	.84N	SAO98747	7.3

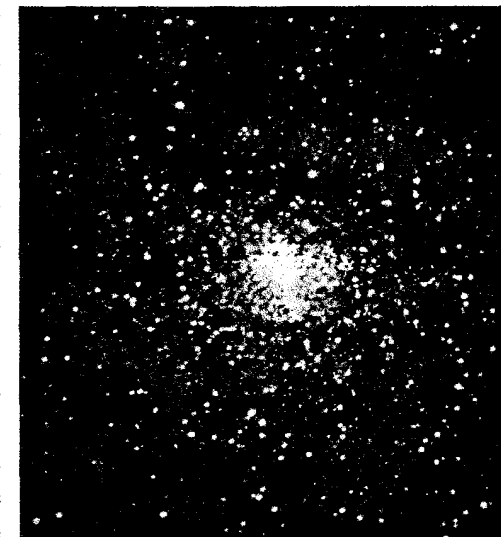
James Appleton

A Globular Challenge for a Late June Evening

David Payne

Time for some challenging deep sky observations again! A challenge for the bright evenings of June are a group of fairly southerly globular clusters - M4, M9, M19, M62, and M80 lying in the constellations of Ophiuchus and Scorpius. These are best observed around mid-night (BST) when they approach maximum altitude and the twilight sky of the June evenings is at its darkest.

M4 is a fine globular cluster in Scorpius easy to locate 1.3 degrees west of Antares (position R.A. 16h 23.6m Dec. -26° 32m). It is easily visible in binoculars and the brightest stars can just be resolved in a 4 inch under good conditions, although generally a larger instrument will be required from Suffolk latitudes. M4 is visually one of the largest of the globular clusters about 23' in apparent diameter although the brighter region is only around 10' to 12'. It would rank with M13 if it was farther north. It has a visual magnitude of about 6 and at lower latitudes and under very good sky conditions it can be detected without optical aid. It is a fairly loose globular with the edges of the cluster begin resolved by a 6 inch telescope. In a 10 inch under clear skies it is a grand sight showing many faint stars forming loops and streams.

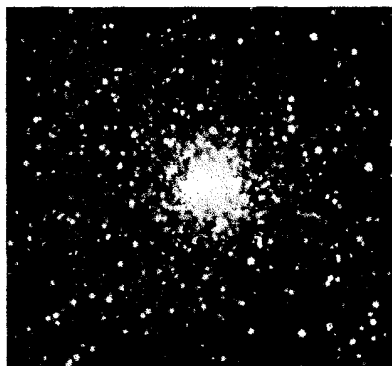


M4 Scorpius

The cluster is one of the nearest globular clusters but the distance estimates are uncertain due to obscuring dark material in the region. Estimates for the distance range from 5700 light years out to about

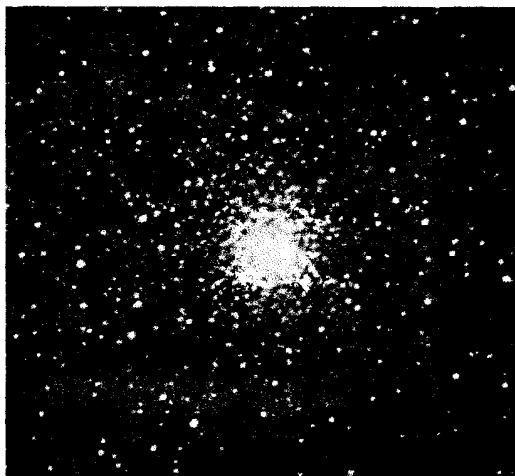
10,000 light years. If the nearer distance was correct then M4 is probably the closest Globular cluster to the Solar System. It is a rather small globular cluster with a diameter around 50 light years, less than 1/3 the diameter of M13 in Hercules which is around 160 light years across.

The most northerly object of the group described this month is M9 at position R.A. 17h 19.2m and Dec. $-18^{\circ} 31'$ in Ophiuchus. Visually it is a relatively small but bright cluster with a diameter quoted as low as 3' of arc up to 8' of arc depending how the outlier stars are interpreted. The integrated magnitude is about 8. In small telescopes it appears as a slightly oval misty patch without any resolution into stars. Even with a 10 inch it is not really resolvable



M9 Ophiuchus

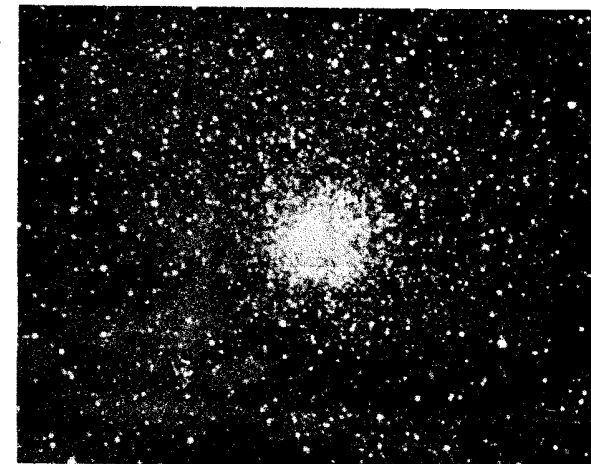
although under good conditions there can be hint of resolution when using moderate magnifications. M9 is one of the closest globular clusters to the centre of the Milky Way lying at about 7500 light years. The distance from the solar system is around 22,000 to 26,000 light years. Using the larger figure for the distance and a visual diameter of 6' would give a true diameter for the cluster of about 45 light years similar in size to M4.



M19 Ophiuchus

Further south and slightly west from M9 is the globular M19 at position R.A. 17h 02.6m Dec. $-26^{\circ} 16'$. This cluster is slightly brighter at about magnitude 7. At least a six inch telescope under good conditions is required to

begin to resolve it. It is however one of the more flattened of the globulars and the elongated shape can be seen even in small telescopes with the longer axis lying almost north-south. M19 lies even closer to the Galactic Centre at about 3000 light years, indeed at this distance it appears embedded within the Galactic Hub. The distance from the solar system has estimates ranging from 20,000 light years up to 30,000 light years. The visual diameter is 5' to 6' which implies a true diameter of between 30 and 50 light years.

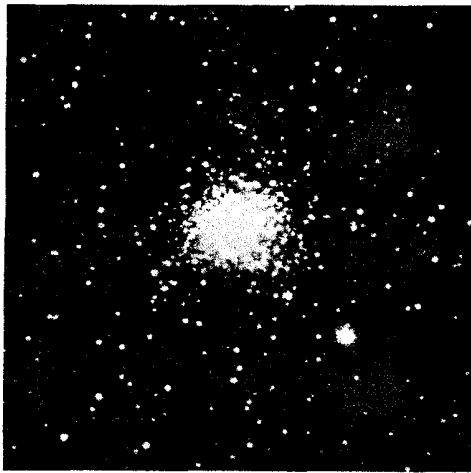


M62 Scorpius (Ophiuchus)

The next object M62 lies exactly on the Ophiuchus/Scorpius border and has been listed in both constellations in different sources. It lies at position R.A. 17h 01.2m Dec. $-30^{\circ} 07'$ and is the most southerly of the objects described this month. From Suffolk it never gets more than 8° above the horizon making this a rather difficult object! It has an integrated magnitude of about 6.6 and a visual diameter of 6'. It is possible to get some resolution of this cluster with a 10 inch but due to its low position in the sky exceptionally good seeing conditions will be required.

It is one of the most irregular shaped of the globulars which may have something to do with it being close to the Galactic Centre and like M19 embedded within the Galactic Hub. The distance from the solar system is estimated to be between 22,000 and 26,000 light years which gives a corresponding actual diameter of between 38 and 45 light years.

The last of the five objects described is M80 which lies in Scorpius at position R.A. 16h 17m Dec. $-22^{\circ} 59'$. This is a small but fairly bright



M 80 Scorpius

Globular cluster with an apparent diameter of about 5' and a magnitude of about 8. At lower latitudes the cluster can begin to be resolved with a six inch telescope but from Suffolk latitudes it will probably require at least a ten inch combined with good seeing conditions. This nebula is quite round with a bright central region which in a small telescope gives an apparent diameter closer to 3'.

The clustre is estimated to be 36,000 light years away with a corresponding true diameter of about 50 light years. It is worth noting that at this distance the Sun would shine at magnitue 20!

If you are lucky enough to have a clear and **dark** southerly aspect at your observing site then June and July are good months to try to get these southerly Messier objects, good hunting!

HALE-BOPP photo evening

The Hale-Bopp show is virtually over for 2500 years with the comet fading rapidly and moving out of sight altogether from our latitudes the time is right to get together to 'swap' images and stories. Wednesday 18th of June has been chosen as an informal evening for people to bring their pictures up to the observatory (between 8pm and 10pm). It will be very informal and if you have other astrophotos, please bring them as well. By the way, if anyone has any astrophotographs or CCD images they'd be willing to put on permanent display, please let the committee know. The society may be able to pay for copies to be made in some cases.

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Radio Astronomy

A meeting will take place at the Observatory at 8 pm on 11th June to discuss starting up some radio astronomy activities at the Observatory. This will include linking with other societies and suitable projects. Everyone is welcome to attend.

Society Sweatshirts and T-Shirts

If anyone wants an item of club clothing we need someone to co-ordinate an order. Some years ago we had sweatshirts made up with embroidered logos. Unfortunately, the original supplier has subsequently ceased trading and the company that took over its business (Banana Moon) no longer have our pattern. The co-ordinator should contact Eric Sims to get a copy of the club logo, to arrange for advertising in the journal (later on after prices have been obtained) and to check that they haven't been beaten to it by another volunteer. If don't want to organise the order, please wait until an add has been placed in the journal.

[The address for Banana Moon is: Banana Moon Workshop, 48 Old Lane Birkenshaw, Bradford West Yorkshire BD11 2JX, Tel: 01274 688103.]

ENVIRONMENTAL PROTECTION

As amateur astronomers we have a responsibility to guard our night time environment against pollution. it is vital now that we write to councils, MPs and other organisations to express our concern.

The key things that can be done include: using flat glass and ultra-low profile light fittings for exterior light fittings, switching off lights if there are times during hours of darkness that they are not needed and in particularly sensitive (ie. rural areas) ensuring lighting is used only when there is no better alternative. Making light pollution at statutory nuisance and making lighting at planning issue would be beneficial. A good way to start is to say that you would like to see the recipient of your letter taking positive action to reduce the levels of light pollution that currently exists.

Some specific initiatives which would be beneficial:

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- Flat glass or ultra-low profile lights to be used as the standard technique for all street lighting. In cases where decorative lighting is wanted for town and city centre situations these should be of the best design for light pollution control and energy efficiency. (Primarily a local government issue).
- Light pollution should be recognised as a statutory nuisance (Dept of Environment issue).
- External lighting should be subject to planning control. (Dept of Environment and local government issue).
- Industry should be encouraged to minimise the amount of light pollution they create. (Dept of Environment, national and local government issue).

Key detrimental effects of light pollution are: damage to the global environment though energy waste, loss on an area of outstanding natural beauty - the night sky, urbanisation of rural areas at night. In addition, negative effects have been noted on wildlife and, in some cases, on human health and safety. For more information you should contact the Campaign for Dark Skies at the address at the end of the article.

The key people to write to are: Your MP. The Department of the Environment or the Secretary of State for the Environment, Your Council(s) and The Millennium Commission on their floodlighting schemes. For more information contact the Campaign for Dark Skies co-ordinators (addresses at the end of the following pages) or any OASI committee member.

Some addresses (most important ones shown in bold):

Ms Jennifer Page (Chief Executive) or Angela Salt (Press Officer), The Millennium Commission, 2 Little Smith Street, London SW1P 3DH, Tel: 0171 340 2007, Fax: 0171 340 2019.

County Councils

Suffolk County Council, County Hall, St. Helens Court. St Helens St, IPSWICH, IP4 2JS. Or,

Essex County Council, County Hall, Chelmsford, Essex, CM1 1LX.

District Councils

Ipswich Borough Council, Civic Centre, Civic Drive, Ipswich, Suffolk IP1 2EE.

Suffolk Coastal District Council, Melton Hill, Woodbridge Suffolk IP12 1AU

National Government

Secretary of State for the Environment, Transport and the Regions, John Prescott. Or,

The Department of Environment, 2 Marsham St, London SW1P 3PY, Tel: 0171 276 0900.

Your MP, Rt. Hon ... MP, House of Commons, London, SW1A 0AA.

You could also raise the issue with companies and organisations you are associated with.

**To Our Children... the Stars
Information and advice for countering light pollution
of the night sky from the Campaign for Dark Skies**

Let There be Dark

"Not to spend time under the stars is as cruel a dispossession as not to spend days in the open countryside. (Daily Telegraph, 18 February 1992)

As we move into the 21st century, a valuable and beautiful part of our heritage is being taken away from us. For the first time in history, vast numbers of the human population are being denied a view of the night sky by poorly designed and badly aimed lighting of various kinds. Urban sky glow now pollutes nearly all of Britain's night skies. Is there any hope of regaining nature's grandest free show? How can astronomers educate and campaign for a return to the dark skies of the past?

What is light Pollution?

Light Pollution is the popular name for sky glow - a brightening of the night sky caused by the scattering of artificial light by aerosol particles (e.g. water droplets) and dust in the air.

What Causes it?

Artificial light gets up into the sky in two ways. By far the greater proportion of this upward light arises because the design or installation of many light fittings allows a significant fraction of the light produced to be emitted above the horizontal, so it goes up into the sky. This is the direct upward light. A much smaller proportion is light that is reflected upwards from roads, pavements and buildings. This is the indirect upward light.

Saving the Stars

Find out about different kinds of lights. How do they cause light pollution? Look for good and bad designs. Praise and publicise individuals, councils and organisations using well-designed, well-aimed light fittings, shielded or louvered floodlights, and sensor-switched security lights.

Complain politely about poor quality lighting, making sure you have the facts to back up your arguments, condemning badly designed, poorly installed and intrusive fixtures. More importantly, go to the root of the problem and try to influence county and city lighting engineers, conservation officers, manufacturers, planners, architects and builders - those who make, choose and install lighting.

Our Best arguments are:

- The massive waste of energy and fossil fuels caused by poorly designed street and external amenity lighting which, in many cases, sends 30 per cent of the light above the horizontal - more than 50 per cent in the case of some globe lights. Light reflected from the ground and buildings contributes little to sky glow compared with that coming directly from the light fittings themselves. Re-directing all the wasted energy will save money and help the environment.
- Glare and overlighting: It is noticeably more comfortable to drive at night with the sun visor down, as many light fittings create so much sideways glare. A good light

should be well-directed and almost invisible from a distance. Flat glass, full cut-off fittings, if correctly installed, emit no light above the horizontal.

- The wastefulness of all-night shop, advertising and display lighting, building illumination, upward floodlighting and permanent domestic and industrial security lights, both in terms of the energy they consume and the vast amounts of greenhouse gases produced. There is little point in leaving most shop advertising and display lights and floodlights on after 11 o'clock at night.
- The right of the individual to pursue legitimate interests and to be able to appreciate the natural environment.
- For more information and advice about ways of reducing light pollution and the **British Astronomical Association Campaign for Dark Skies**, write to...
- The Coordinator, CfDS. Bob Mizon. [redacted], Colehill, Wimborne, Dorset BH21 2PX.
- Bob Cheek, [redacted], Lowestoft NR32 3AB.
- Our see the WWW page at <http://www.u-net.com/ph/cfds/>

PROGRAMME FOR JUNE

Mondays from 7.30pm No Directors available for this night	GENERAL OBSERVATION SECTION
Tuesdays from 7.30pm Mr P Richards [redacted]	OBSERVATORY VISITS FROM OUTSIDE GROUPS
Wednesdays from 7.45pm Mr M Cook [redacted]	NEBULA & FAINT OBJECTS SECTION Mr D Payne [redacted]
Thursdays from 7.30pm Mr P Richards [redacted]	OBSERVATORY VISITS FROM OUTSIDE GROUPS
Fridays from 7.30pm 6th - 20th Mr J Hood [redacted]	DOUBLE STARS

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

Lectures and other events:

Committee Meeting -----On Saturday 21st June at 7.30pm in the club room at the observatory. All members are welcome to attend.

e-mail enquires to oasienq@btbcs.bt.co.uk
WWW url <http://www.ast.cam.ac.uk:80/~ipswich/>

1997 COMMITTEE

	Home Phone	Work Phone
CHAIRMAN	D Payne	[redacted]
SECRETARY	R Gooding	[redacted]
TREASURER	M Nicholls	[redacted]
MAINTENANCE CO-ORD	M Cook	[redacted]
JOURNAL CO-ORDINATOR	E Sims	[redacted]
PUBLICITY & VISIT CO-ORD	P Richards	[redacted]
EQUIPMENT CURATOR	M Harlow	[redacted]
SPECIAL EVENTS CO-ORD		
LIBRARIAN & COMP SOFTWARE	J Appleton	[redacted]
JOURNAL ARTICLES TO	E Sims	[redacted] Ipswich Suffolk IP1 4HA
CORRESPONDENCE ADDRESS	R Gooding	OASI Secretary [redacted] Ipswich Suffolk IP1 6AE
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