

# ORWELL ASTRONOMICAL SOCIETY IPSWICH

Charity No 271313

## JUNE 1999



## Society News

### 1 Next Committee Meeting

The next committee meeting will be held on Saturday 19th June from 19:30 in the clubroom. As usual this is an open meeting and any one who is interested is invited to attend.

### Events for 1999

Event	Details	Date
Summer Barbecue	Venue to be arranged	31 <sup>st</sup> July?
BAA Exhibition Meeting	London Guildhall University Calcutta House	26 <sup>th</sup> June
Eclipse	Members to make own arrangements	11 <sup>th</sup> August
Astro Camp	Mid August	
Lecture meeting	Eclipse results	3 <sup>rd</sup> September
Summer Excursion	Will probable be to Greenwich	11 <sup>th</sup> September
Leighton Sky Camp	Phone Mike Cook [redacted] Venue is near Thetford	10 <sup>th</sup> to 19 <sup>th</sup> September
FAS meeting Cambridge		2 <sup>nd</sup> October
Open Weekend	To be arranged	15 <sup>th</sup> , 16 <sup>th</sup> 17 <sup>th</sup> October
Christmas Meal	To be arranged	8 <sup>th</sup> December

Other events will be added to this list throughout the year

### Notes from the Committee Meeting Held on 24<sup>th</sup> April

- 1 The 19" mirror blank has been purchased and grinding has begun.
- 2 Dave Payne has tested out a TV camera. It reached down to 9<sup>th</sup> magnitude. This will be added to society assets.
- 3 The society has purchased a 6" reflector. The mirror needs re-aluminising and the mount needs cleaning.
- 4 Thanks were given to Ken Goward for his efforts in reorganising the storage and display facilities in the clubroom.

### Night Sky

All times GMT

#### Sun

The sun will be rising approximately 03:40  
The sun will be setting approximately 20:20

#### Moon

3 <sup>rd</sup> Quarter	New Moon	1 <sup>st</sup> Quarter	Full Moon
7 <sup>th</sup>	13 <sup>th</sup>	20 <sup>th</sup>	28 <sup>th</sup>

- Mercury** In mid month Mercury will be setting about 2 hours after the sun. It may be visible low down in the northwest Greatest eastern elongation ( 26° ), on the 28<sup>th</sup>
- Venus** Venus remains very prominent in the evening sky. It will be at greatest eastern elongation on the 11<sup>th</sup>, when it will be at 45°. Magnitude -4.3
- Mars** Mars will be setting at 00:00 by the end of the month. It is in Virgo this month. Magnitude -0.8
- Jupiter** Jupiter will be rising by 00:00 at the end of the month. Magnitude -2.2.
- Saturn** Saturn will be rising at 01:00 at the end of the month. Magnitude 0.6
- Uranus** Uranus will be rising at 23:00 by the end of the month. Magnitude 5.8
- Neptune** Neptune will be rising about 30 minutes before Uranus in mid month. Magnitude 7.8

### Meteor Showers

Shower	Limits	Maximum	ZHR
Ophiuchids	May 19 <sup>th</sup> to July	June 9 <sup>th</sup> June 19 <sup>th</sup>	5

Meteor source is the BAA Handbook

Roy Gooding

### OCCULTATIONS DURING JUNE 1999

The table lists stellar occultation disappearance events which occur during the month under favourable circumstances. The data relates to Orwell Park Observatory, but will be similar at nearby locations.

D or R	Date & Time (UT)	Lunar Phase	Sun Alt (d)	Star Alt (d)	Min Dist (rad)	Star	Mag
D	17 Jun 21:33	.21+	-8	13	.92N	7 Leo	6.3
D	19 Jun 22:32	.42+	-12	13	.88N	ZC 1645	6.7
D	20 Jun 23:10	.52+	-14	10	.90S	10 Vir	5.9
D	23 Jun 23:21	.79+	-14	16	.62N	ZC 2072	6.6
D	25 Jun 21:51	.92+	-10	21	.38S	49 Lib	5.5

James Appleton

### The Annual Convention of the Federation of Astronomical Societies

Saturday the 8th of May saw 112 delegates gathered in Sidmouth, Devon to attend the FAS Convention. We were treated to three excellent lectures each one illustrated with slides.

Konrad Malin Smith started the proceedings by showing a selection of the slides he has taken of Total Solar Eclipses over the last 15 or so years. Some of the slides we saw have graced the pages of Astronomy Now, and he also showed some that illustrated things that can go awry in the excitement of those all too short minutes of totality. A very informative and entertaining lecture. For someone who never really got beyond the iron filings and a magnet stage, contemplating "The Magnetism of the Universe", Dr Percy Seymour's subject was quite daunting. However Dr Seymour presented a logical and informative lecture. Drawing upon evidence from a number of sources, current scientific thinking is led to believe that a magnetic field pervades the entire Universe. Finally Dr Allan Chapman delighted us with a potted biography of the life and work of one of the foremost astronomers of the late 19th, early 20th century, Sir Norman Lockyer. The AGM was held, all reports were accepted, the main item being an increase in society subscriptions, and Pam Spence was elected President.

Devon is a long way from East Anglia, but the effort of getting there was well rewarded for the five delegates from the OASI. A very enjoyable day.

Garry Coleman

### Visit to the Norman Lockyer Observatory

Delegates to the FAS Convention in Sidmouth, Devon were invited to visit the local astronomical society based at the Norman Lockyer Observatory.

The Observatory was founded in 1912 by Sir Joseph Norman Lockyer KCB, FRS, for astronomical and meteorological research. Norman Lockyer was founder and for more than fifty years editor of the scientific journal Nature. He was Professor of Astronomical Physics and Director of the Solar Physics Observatory at the Royal College of Science, London. He discovered Helium in the Sun's atmosphere and contributed much to

our knowledge of the Sun and to its effects on the world's weather. He studied the spectra of stars and developed theories of their formation and evolution. He is regarded as the father of astro-archaeology, and investigated Celtic circles, Stonehenge, and ancient sites in Egypt, and was one of the first to understand their astronomical relevance.

The Observatory houses a number of instruments of historical interest, all well preserved and regularly used by society members. Lockyer's own 6" refractor and a Browning 9" reflector both circa 1870, the Kensington telescope circa 1888, an equatorially mounted twin tube refractor by Cooke of York, comprising a 10" viewing tube and a 9" photographic tube, and the McLean telescope, circa 1894, by Grubb of Dublin, again a twin tube refractor with a 10" viewing tube and a 12" photographic tube.

The Observatory also boasts a planetarium and is home to an amateur radio station and an amateur weather satellite and meteorology station. Five members of OASI were amongst those who enjoyed a guided tour of the Observatory which included viewing Mars and Venus through the above telescopes, a guided tour of the heavens in the planetarium, and a lecture on modern weather satellite systems illustrated with slides.

Garry Coleman

### Astronomy Workshops

The first series of astronomy workshops concluded in style on Wednesday May 12<sup>th</sup>, with an excellent and very practical presentation by Nigel Evans on the subject of eclipse photography. He used transparencies from his own eclipse experiences to demonstrate how to, and how not to get good results.

Another series of workshops is being planned. It is not too late to return questionnaires, which are most important if we are going to plan in accord with members' wishes. So please get them out from the sideboard drawer, or even the waste paper basket, and send them in.

We would be interested in hearing from members who we don't usually see. Maybe there could be an aspect of astronomy which could be brought out in the workshops which would be of interest. We have found that the use of the downstairs science classroom for the sessions a great advantage. We are hoping that, in addition to material with the beginner and improver in mind, we can also make the sessions of interest to all our members. The planning group are meeting shortly, but there is still time to hear from you; and thanks to those who have already returned them. Ted Sampson.

## Observatory Maintenance Log since 1981 (part 3) By Roy Gooding

1987

1987 was a major year for repairing and painting. The year started off in a small way with the fitting of a new lock in the dome door. From this it rapidly escalated into a full time job.

The transit room was completely refurbished. Rotten timbers from the shutter were removed and replaced. The old floor was taken up and replaced with a new one. Research on the construction of the observatory had recently revealed that transit room floor had been lower than the one taken up. The floor was reinstated at the original height. It was immediately obvious that the transit telescope was now more accessible, especially at high altitudes, when using the observing couch. The tops on the telescope support pillars were also recast. The transit room was completed after the walls had been painted and the new floor as stained and varnished.

Parts of the mechanics of the dome were repaired. A new shaft was constructed for the dome rotation wheel and two of the wheel boxes were repaired. One was raised by 3/16"

A professional plasterer was brought to the observatory one Saturday. He was able to re-plaster in a morning, what would have taken us many weeks. The walls and woodwork in the dome were painted, the floor was sanded, stained and varnished.

Once the transit room and the dome had been completed, we started on part of the observatory that had never been decorated since its construction, the spiral stairwell leading up to the observatory. This had always been difficult to keep dust free and painting all the surfaces would help to alleviate this problem. It was decided to sandtex the walls and use concrete paint on the stairs. Once finished the dust level was greatly reduced, though it would not be until the following year.

### This was taken from the observatory log book

Date	Description
08-Apr-87	Started to fit lock in dome door
12-Jul-87	Started sanding down balcony door
19-Jul-87	More decorating work
26-Jul-87	More decorating work
21-Aug-87	Removed wheel box stone cover
23-Aug-87	Wheel box removed ( west side ) & replaced

	Adjacent one raised by 3/16"
26-Aug-87	Wheel box work completed
06-Sep-87	Working on dome walls
09-Sep-87	work continuation
13-Sep-87	Painted dome walls
16-Sep-87	1st undercoat on dome walls
19-Sep-87	Finished removing paint from transit telescope column
20-Sep-87	Gloss painted the dome walls
	Under coated transit room walls
07-Oct-87	Removed transit room floor
17-Oct-87	Making template of transit room floor
22-Oct-87	Brought plywood for transit floor to art room
24-Oct-87	Fitted new transit room floor
28-Oct-87	Measured transit room side shutters
	Delivered skirting board for transit room
	Brought 12 breeze blocks up for transit room floor
05-Nov-87	Painting transit room walls
07-Nov-87	Work in transit room
11-Nov-87	More decorating work
12-Nov-87	Painting in transit room
13-Nov-87	Finished painting transit room
15-Nov-87	Sanded dome floor
16-Nov-87	Stained dome floor. Varnished transit room floor
18-Nov-87	1st varnish coat on dome floor
	2nd varnish coat on transit room floor
	2nd varnish coat on stairs
02-Dec-87	Light sanding of dome floor
05-Dec-87	3rd coat of varnish on dome floor
08-Dec-87	Stair well windows painted
09-Dec-87	Started sandtexing stair well walls
19-Dec-87	Painted stair well walls
23-Nov-87	Painting stair well walls

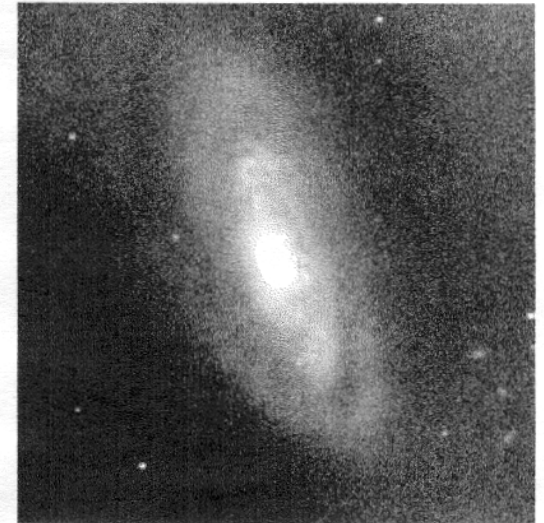
As with all the other articles in this series the information has been obtained from the observatory logbook, newsletter articles, Committee meeting reports and personal reminisces

## Virgo in June

David Payne

A challenge for the light skies of June is to explore the Virgo cluster of galaxies and search out the eleven Messier objects that reside within the boundaries of this constellation. These eleven galaxies are all accessible in moderate telescopes and are necessary to find if you want to complete the Messier set. To find these objects takes a little skill and a good star map. There is a good finder chart of the main Virgo Cluster in Burnam's *Celestial Handbook*, Vol. 3.

Starting with the most northerly object, M90 a fine bright spiral galaxy actually discovered by Messier in 1781. This galaxy has a bright almost stellar nucleus and shines with an integrated magnitude of about 10. It is estimated to be 42 million light years away with an apparent angular size of 7'x3' which gives a true diameter of about 80,000 light years.



M90

The next object to find is the elliptical galaxy M89. This is only about 1 degree away from M90 and lies to the SSW. With a wide field eyepiece and low power it is possible to see both M90 and M89 in the same field. M89 is only 3' in diameter and has an apparent magnitude of 11. It lies at about the same distance as M90 about 42 million light years. It is estimated to have a mass of 250 billion



M89

suns, much greater than M90 which is about 80 billion suns.

The next galaxy to go for is M87 lying about  $1\frac{1}{4}$  degrees to the west of M89 and slightly to the south. This is a bright object of magnitude 9.2 and about 3' diameter. Assuming the galaxy is at the typical virgo cluster distance of about 42 million light years the true diameter is around 40,000 light years. M87 is a giant elliptical galaxy one of the largest known with an estimated mass of 790 billion suns. This is over twice the mass



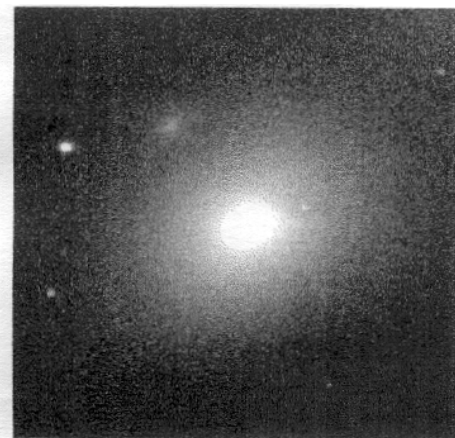
M87

of M31 the Andromeda galaxy, which is estimated to have a mass of 320 billion suns, and nearly 4 times the mass of our Milky Way which has a mass of about 200 billion suns.

M87 is unique in several other ways. It has a very large number of globular cluster surrounding it, probably well in excess of 1000 about ten times the number surrounding our own galaxy. It is also one of the most powerful radio sources in the sky the source of which seems to be associated with a bright jet of material about 4100 light years in length, that is being shot out of one side in a WNW direction. It is also a very powerful Xray source emitting over ten times the energy as xrays than it does in the combined output at optical and radio wavelengths.

From M87 move about  $1\frac{1}{4}$  degrees to WNW to find M86 and close by and slightly further to the west M84. These two elliptical galaxies are only about 20' apart and can be seen in the same field of view. They appear visually very similar about 2' diameter shining at about 9.3 magnitude ( There appears to be some discrepancy between various sources - Burnham gives a magnitude of 10.5 while Jones and Mallas & Kreimer give around

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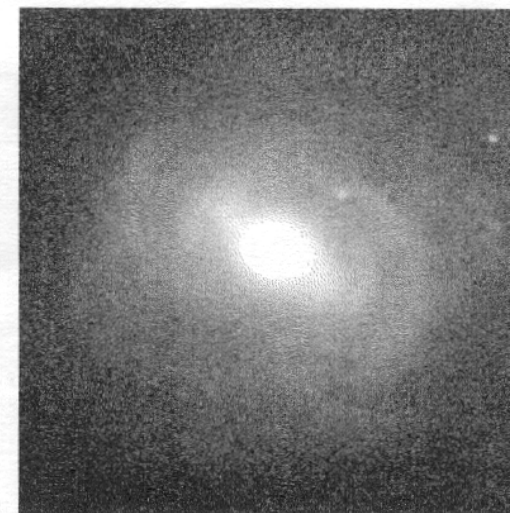
M86



M84

9.3). M86 has very little red shift compared to the average for the Virgo cluster, one explanation for this adopted by E. Holmberg is that M86 is a foreground galaxy not a true cluster member. Holmberg's estimate for the distance of M86 is about 20 million light years about half way between ourselves and the Virgo cluster.

The next object to find is M58. The easiest way to find this is to backtrack to M87 from M84 then continue this line to the ESE a further  $1\frac{1}{4}$  degrees. M58 is a bright fairly compact barred spiral galaxy with a diameter of about 4' and a magnitude of 8.2. making this the brightest of the Virgo galaxies. It is easily visible and the barred structure can just be discerned in an eight inch telescope under good conditions.

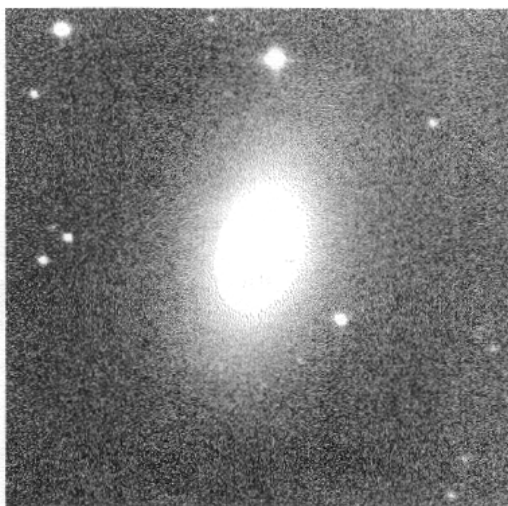


M58

M59 is next about 1 degree east and slightly south of M58 this is another elliptical galaxy about 2' diameter and around magnitude 9.5 visually it is

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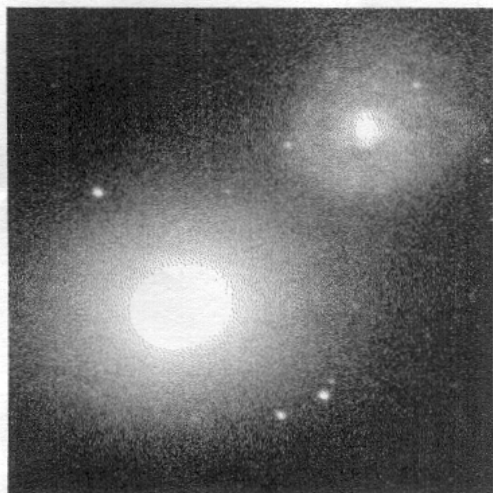
only about 24,000 light years across but has a mass of 250 billion suns.



M59

Continuing east a further ½ degree is another elliptical galaxy M60. This is a fairly bright galaxy at magnitude 9½ in a diameter of about 2'. M60 is amongst the largest elliptical galaxies known with a mass around 1000 billion suns. In a low power field it is possible to observe M59 and M60 together.

There is another galaxy close (2.5') to M60 and to the NW, it is a very faint spiral galaxy NGC 4647, of magnitude 11.5.

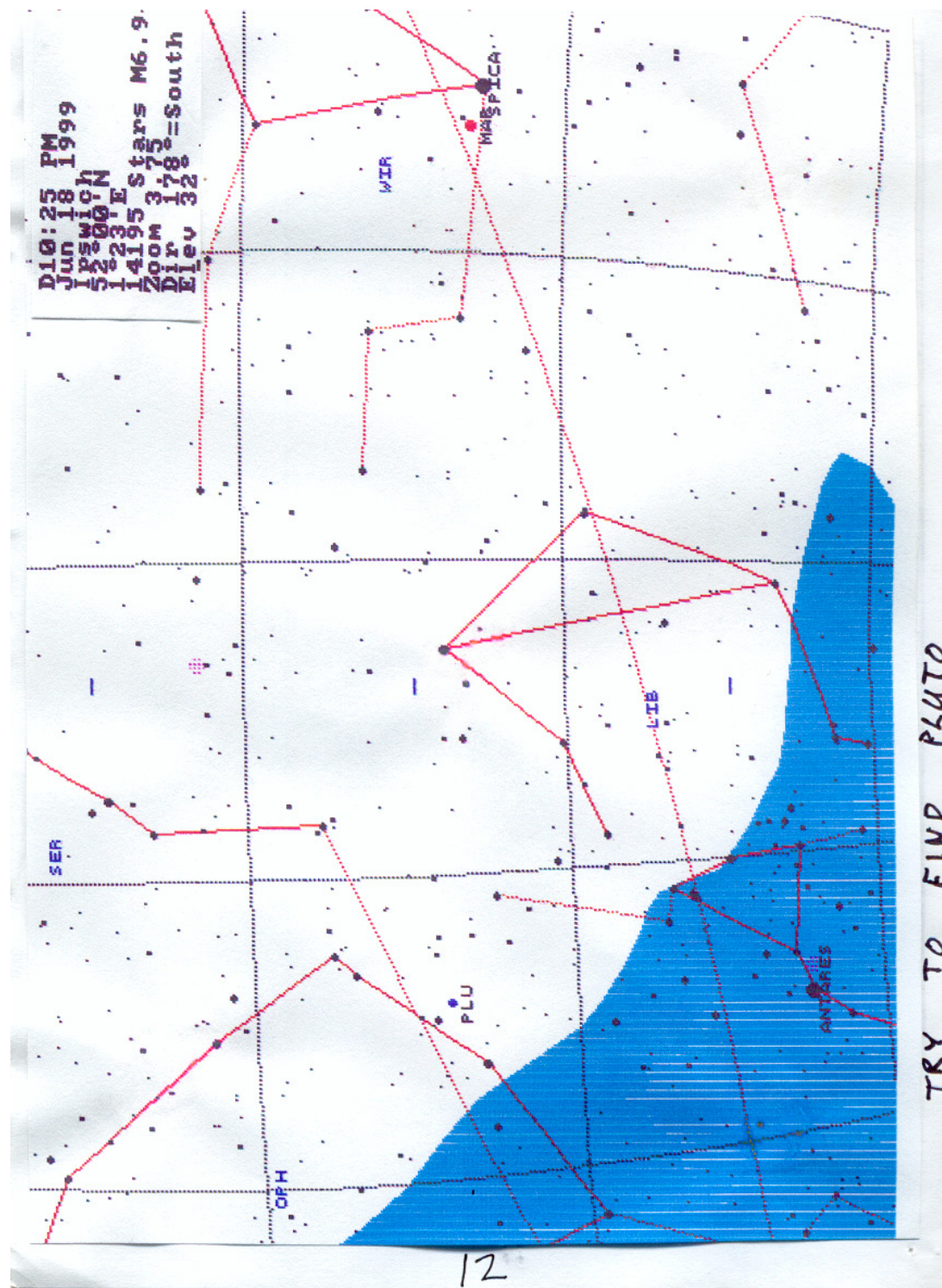


M60 & NGC 4647

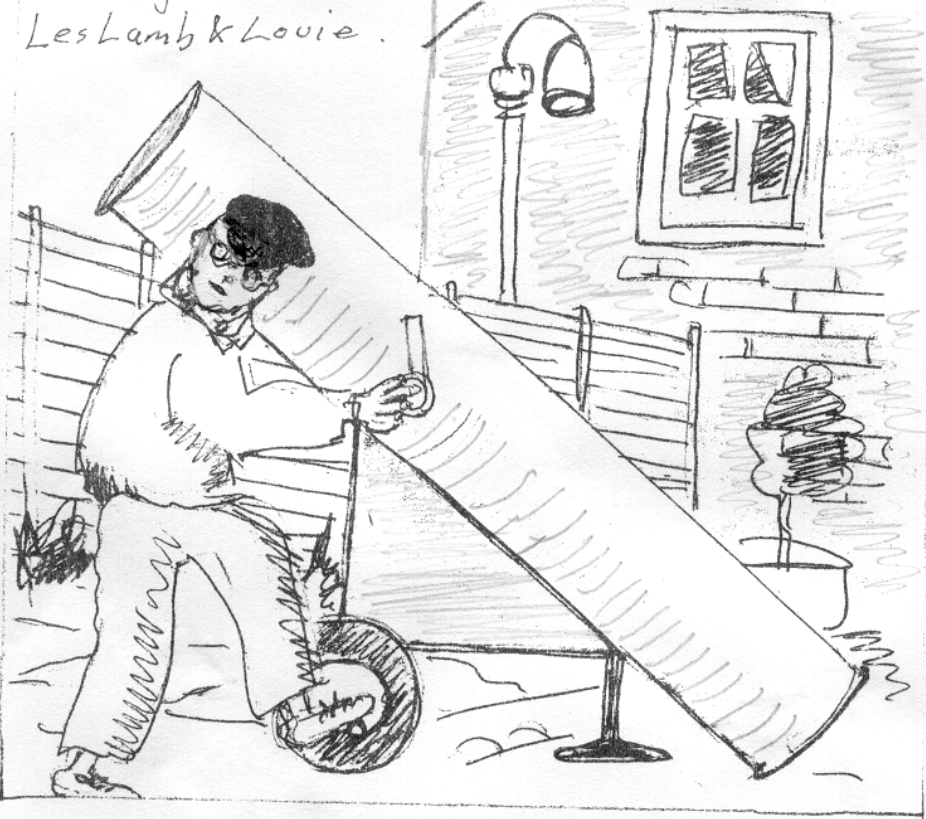
There are three other Messier objects in Virgo M49, M61 and M104. These all lie well away from the main cluster but are still worth searching out. M49 is another giant elliptical galaxy similar in size to M60. M61 is a spiral galaxy of magnitude 9.6 it has a mass of about 50 billion suns, about ¼ the mass of our galaxy.

M104 is the “Sombrero” galaxy a bright easily seen edge on condensed spiral galaxy of magnitude 8.7. It gets its name from a dark dust lane that lies through the centre of the object and can be discerned with a ten inch telescope.

The Virgo cluster is well worth exploring during a clear June evening when the skies have darkened, which means some late night observing! There are many fine NGC objects also visible in addition to the brighter Messier objects mentioned above. Good hunting!



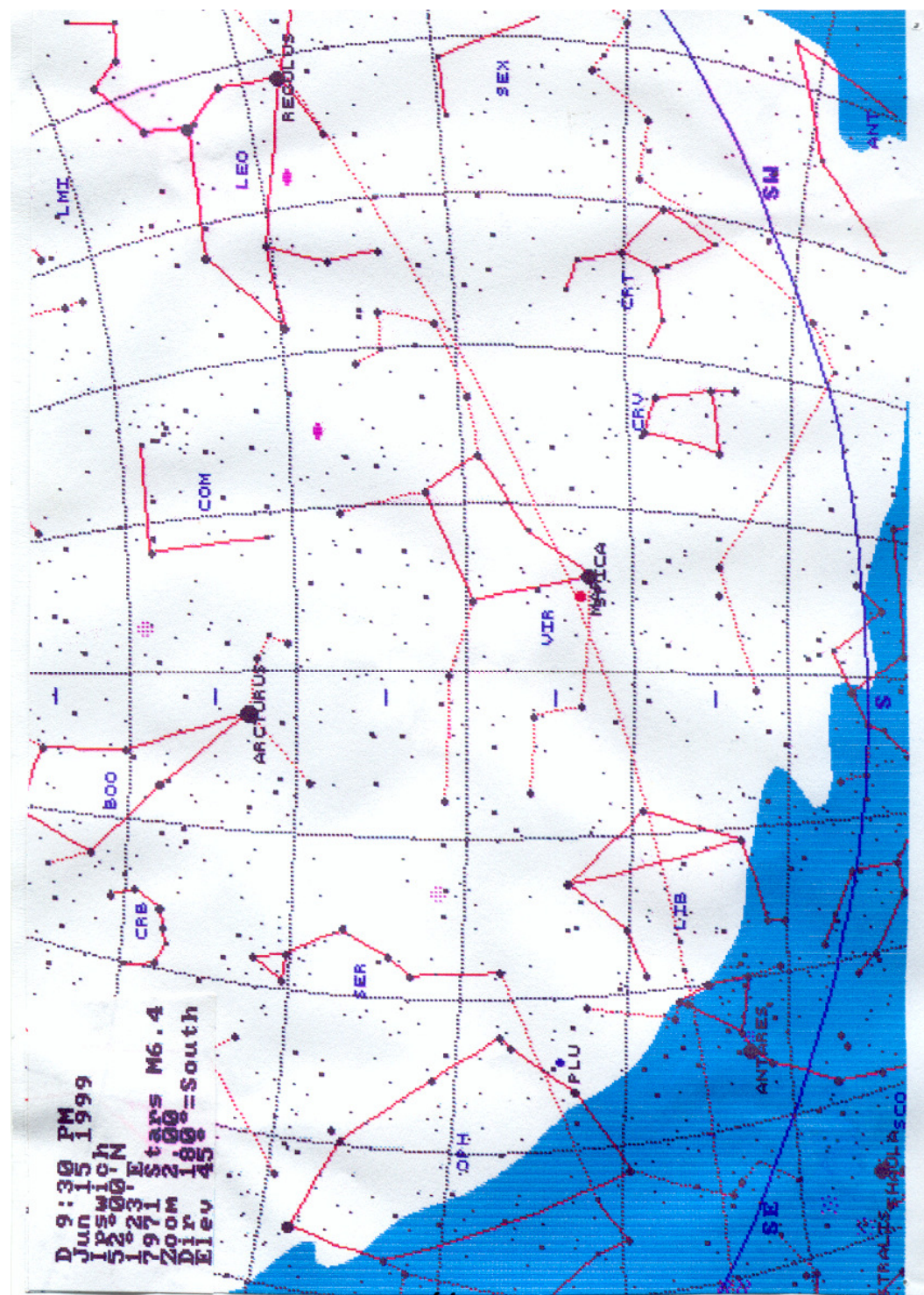
In astronomy we only see the past:  
 Congratulations for 60 years married -  
 Les Lamb & Louie.



**Other Telescopes Night**

The observatory will be open for the use of our other telescopes on Monday June 21<sup>st</sup>. As before, if cloudy, we can consider other matters of astronomical interest.

Ted Sampson.



D 9:30 PM  
 Jun 21 1999  
 52° 09' N  
 179° 23' E  
 7971 ft  
 2000  
 Elev 45  
 tans M6.4  
 600  
 100° = South

## COME ON - DIG DEEP...PLEASE

A big THANK-YOU to all those members who have kindly loaned photographs etc for the revamped displays in the clubroom - *ALL FOUR OF YOU!* Without wishing to be too critical, that's a disappointing response to my plea for your support in the February edition of this organ..

**HAS ANYONE GOT ANY PICTURES OF THE OBSERVATORY UNDERGOING RESTORATION - BEFORE, DURING OR AFTER - THAT I COULD BORROW TO HAVE COPIED?**

They will be used in a framed permanent display, which should capture for posterity the hard work put in by our members over a number of years. A reasonable amount of Astro photographs have been offered, but some drawings etc would be most welcome. Also details/pictures of your home instruments/observatories.

Recent attendees will have noticed that bits and bobs are gradually being updated or improved around the clubroom and we have now got an excellent pile of used/pre owned(?) Astro mags for resale on a table by the balconies. The next improvement, apart from that undertaken by Roy Gooding's organised (pressganged?) repainting volunteers, is the repair of the notice boards around the central pillar.

**IT WOULD BE NICE TO HAVE SOMETHING NEW TO DISPLAY ON THEM!**

Thanks in anticipation...

Ken Goward ☎

## 1999 COMMITTEE

**CHAIRMAN**  
**SECRETARY &  
 WORK PARTY ORGANISER**  
**TREASURER**  
**MECHANICS**  
**NEWSLETTER CO-ORDINATOR**  
**BEGINNERS MEETING CO-ORD**  
**DARK SKIES & VISIT CO-ORD**  
**EQUIPMENT CURATOR**  
**LIBRARIAN**

D Payne  
 R Gooding  
 M Harlow  
 M Cook  
 E Sims  
 T Sampson  
 G Coleman  
 J Walsh  
 J Appleton

Home Phone Work Phone

**CO-OPTED MEMBER**  
**LECTURE CO-ORDINATOR**

P Richards

**JOURNAL ARTICLES TO**

E Sims Ipswich Suffolk IP1 4HA

**CORRESPONDENCE ADDRESS**

R Gooding OASI Secretary  
 Ipswich Suffolk IP1 6AE

**MEMBERSHIP**

M. Cook Ipswich IP4 5PZ

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## Observing Programme For June

Dates	Observing Director	Activities
Mondays from 7.30pm	T Sampson	General Observation
Tuesdays from 7.30pm	G Coleman	Group Visits
Wednesdays from 8.00pm	M Cook D Payne	Nebular & Faint Objects
Thursdays from 7.30pm	G Coleman	Group Visits
Fridays from 7.30pm		Double Stars

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. Committee Meeting

The next committee meeting is going to be held on Saturday 19th June in the club room at the observatory at 7.30pm. All members are welcome to attend.

### 2.

## Society Contact Details

	Home Phone	Work Phone
Chairman	D Payne	
Secretary	R Gooding	

Contact details for the full committee are on the inside back page.

e-mail queries: oasieng@btbcs.bt.co.uk  
 WWW address: http://www.ast.cam.ac.uk:80/~ipswich/

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