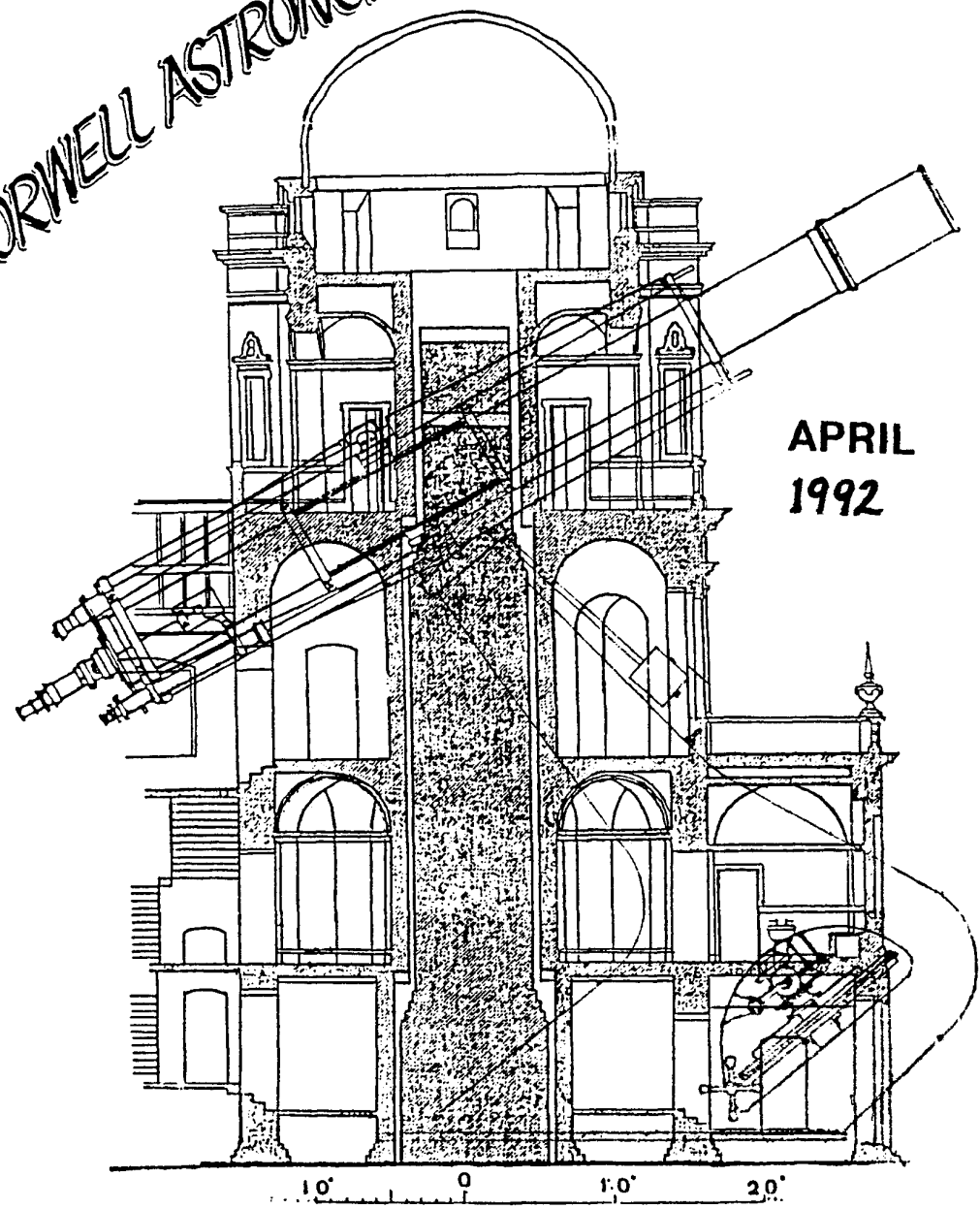


ORWELL ASTRONOMICAL SOCIETY IPSWICH



**APRIL
1992**

SOCIETY NEWS

1 Events

Society Lecture Meetings

Friday June 12th Lecture by Dr. Dewhurst

All meetings will be held at the Friends Meeting House, Fonnereau Road, starting at 8.00 pm.

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*                               OPEN WEEKEND                               *
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* The observatory will be opened to the public on 10,11,12th *
* April, from 8.00 to 10.00 pm. As many members as possible *
* will be required to help run these evenings. Even if you are *
* only able to help for a short time, please come along and *
* offer a hand.
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2 1992 Subscriptions

Subscriptions are due on 1st January of each year.
Rates for 1992:-

JUNIOR & OAP	£7.50	(under 18 or in full time education)
ADULT	£10.50	
FAMILY	£12.00	

There has been an increase of 50p to take into account the increase in the postage rates for the society newsletter.

Cheques & P.O.'s made payable to the ORWELL ASTRONOMICAL SOCIETY (IPSWICH) together with this form to Membership Secretary:-

Mr. D. Barnard
See back for address

3 Committee Meeting

The next meeting will be held at the observatory on May 9th. The meeting starts at 7.30pm and is open to any members who wish to attend.

NIGHT SKY

All times GMT

SUN

Rises approximately at 05.50 to 04.30
Sets approximately at 18.30 to 17.30

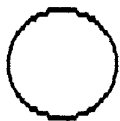
MOON



3th



10th



17th



24th

MERCURY Mercury will be a morning sky object through put April. It will be a difficult object to see as it, being very low down in the pre dawn sky. greatest western elongation occurs on the 23rd (27°). Magnitude 0

VENUS Venus remains very low down in the pre dawn sky all month. Mag. -3.9

MARS Mars will be visible low down in the pre dawn sky. Mag. 1.3

JUPITER Jupiter will be visible for most of the night, setting at 03.00 by the end of the month. Magnitude -2.3

SATURN Saturn rises at about 02.00 by the end of the month. two hours before the sun at the end of the month. Magnitude 0.8

URANUS Uranus will be rising about a little after midnight by the end of the month. Magnitude 5.6
3 hours before the sun at the end of the month.

NEPTUNE Neptune will rising at a similar time as Uranus. Magnitude 7.9

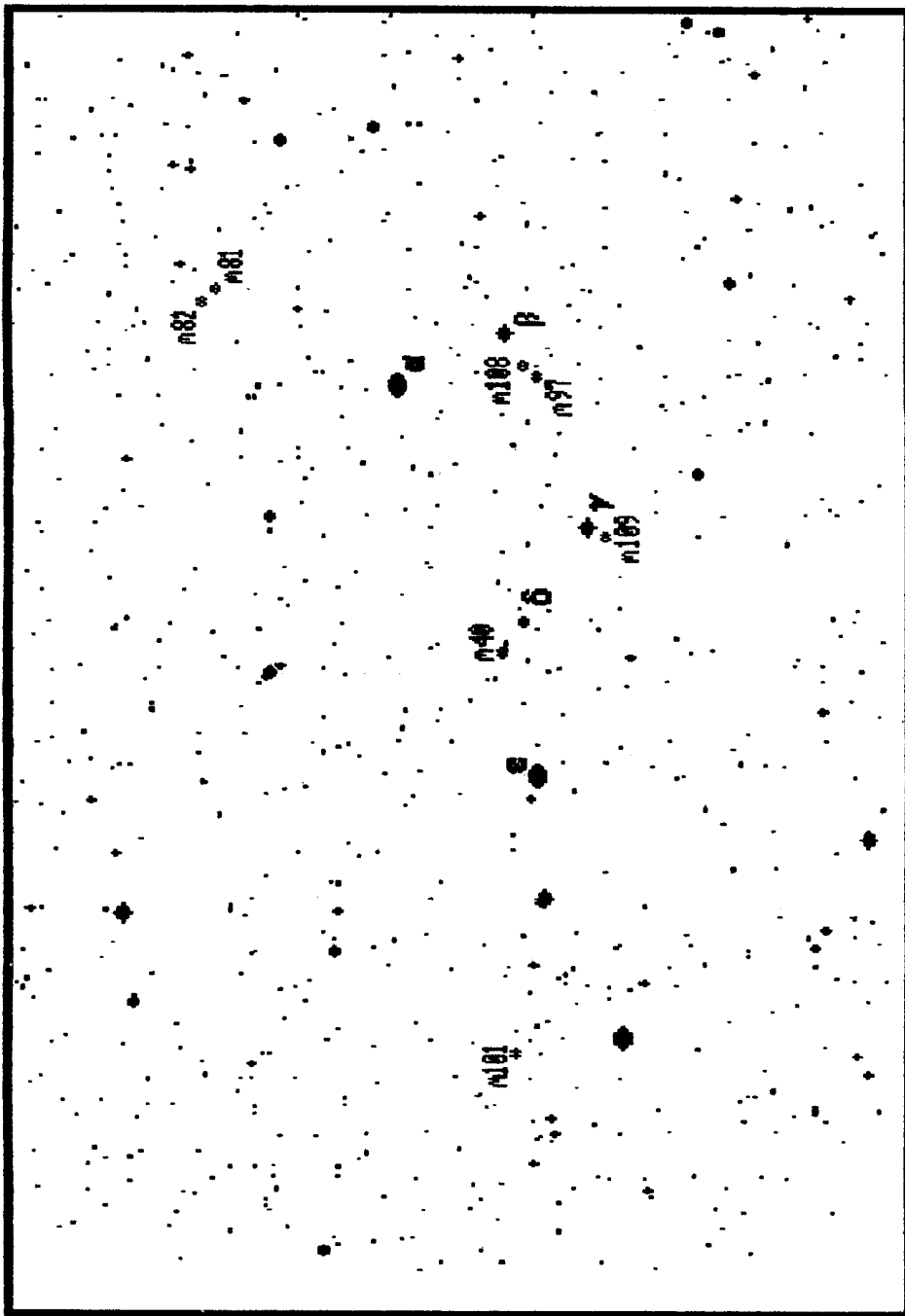
R. Gooding

Messier Objects in Ursa Major

David Payne

Almost overhead during the spring is the constellation of Ursa Major the "Great Bear" It contains seven objects listed in the expanded version of Messier's catalogue namely M40, M81, M82, M97, M101, M108 and M109. The object classified as M40 is not a nebula but a faint double star with 9th magnitude components. Although Messier himself described the object as a pair of faint stars he decided to include the object in his list.

M81 and M82 are a fine pair of galaxies lying on a line drawn through alpha and gamma Ursae Majoris, about ten degrees north west of alpha. They are only 38' apart and can be easily found in binoculars. With low power wide field eyepieces they form a striking pair in small telescopes. The distance of the pair is estimated to be between 6.5 million and 9 million light years with a compromise distance of 7 light years usually accepted. M81 is a classical spiral galaxy with well defined spiral arms surrounding a bright central mass of stars which in turn has a small bright nucleus. The overall diameter is about 36,000 light years. The apparent shape seen from earth is an oval about 18' x 10'. M81 shines with a luminosity of about 20 billion suns and has an integrated visual magnitude of 8.



M82 is the more northerly of the pair and is fainter than M81 shining at about magnitude 9.2. It appears much more elongated and is smaller (8' x 3') than its companion. M82 is a peculiar irregular object and even in small telescopes it appears uneven in brightness. In photographs taken with large telescope the irregular nature is clearly apparent. It is an elongated mass of glowing nebulous material containing dark mottled dust lanes with hazy filaments towards the edge. It shows no resolution into stars indicating vast quantities of interstellar dust. Photographs indicate violent activity such as an exploding core or interaction with another galaxy possibly the much larger M81 some time in the past. Other theories suggest a collision with a vast intergalactic dust cloud and indeed there does appear to be an immense shock wave in front of the galaxy.

M82 is much smaller than M81. It has a total mass of about 50 billion suns (M81 has a mass of about 250 billion suns) and a diameter of about 16,000 light years. It lies at the same distance as M81, about 7 million light years.

M97 is a large planetary nebula also known as the "Owl Nebula" from its appearance on a drawing made by Lord Rosse in 1848 where the dark areas about the centre of the disk can give the illusion of an owl's face. It is easily found 2.4 degrees south east of Beta Ursae Majoris the star at the bottom right of the 'Big Dipper'.

It is one of the largest planetary nebulae with an apparent diameter of almost 3' of arc. Unfortunately the large diameter means a low surface brightness and the nebula appears as a featureless faint grey disk in small telescopes. It is just visible in binoculars shining at magnitude 11 but requires at least a ten inch and very dark clear conditions to make out the dark owl eyes. As with all planetary nebula the size and distance are somewhat uncertain with distance estimates ranging from 1430 light years out to 10,000 light years. If a compromise figure of 3000 light years is chosen the diameter of the nebula will be about 3 light years.

Close to M97 is M108 lying about 48' north west of M97. It is a 10th magnitude elongated object about 8'x1'. It is easily visible in small telescopes with a hint of mottling across its surface. This nebula is a nearly edge on spiral galaxy lying at a distance of some 25 million light years and has a diameter of about 60,000 light years.

Moving east south east about 6.5 degrees M109 can be found lying about 36' ESE of Gamma Ursae Majoris. This is a barred spiral galaxy although only the central region is visible in amateur telescopes. It has a visual magnitude of about 9.5 and is easily seen in small telescopes as an elongated fuzzy region about 7'x4' arc minutes. In larger telescopes the nucleus region has a mottled appearance.

On the extreme eastern edge of Ursa Major about 5.5 degrees east of Mizar lies M101. This is a magnificent face on spiral galaxy but as with all galaxies only shows it's true splendour in

long time exposure photographs. Visually the object is about 10' in diameter extending to about 20' in photographs. In small telescopes only the brighter central region is seen with a faint haze surrounding it. In a ten inch on good dark nights a hint of the spiral structure can be discerned.

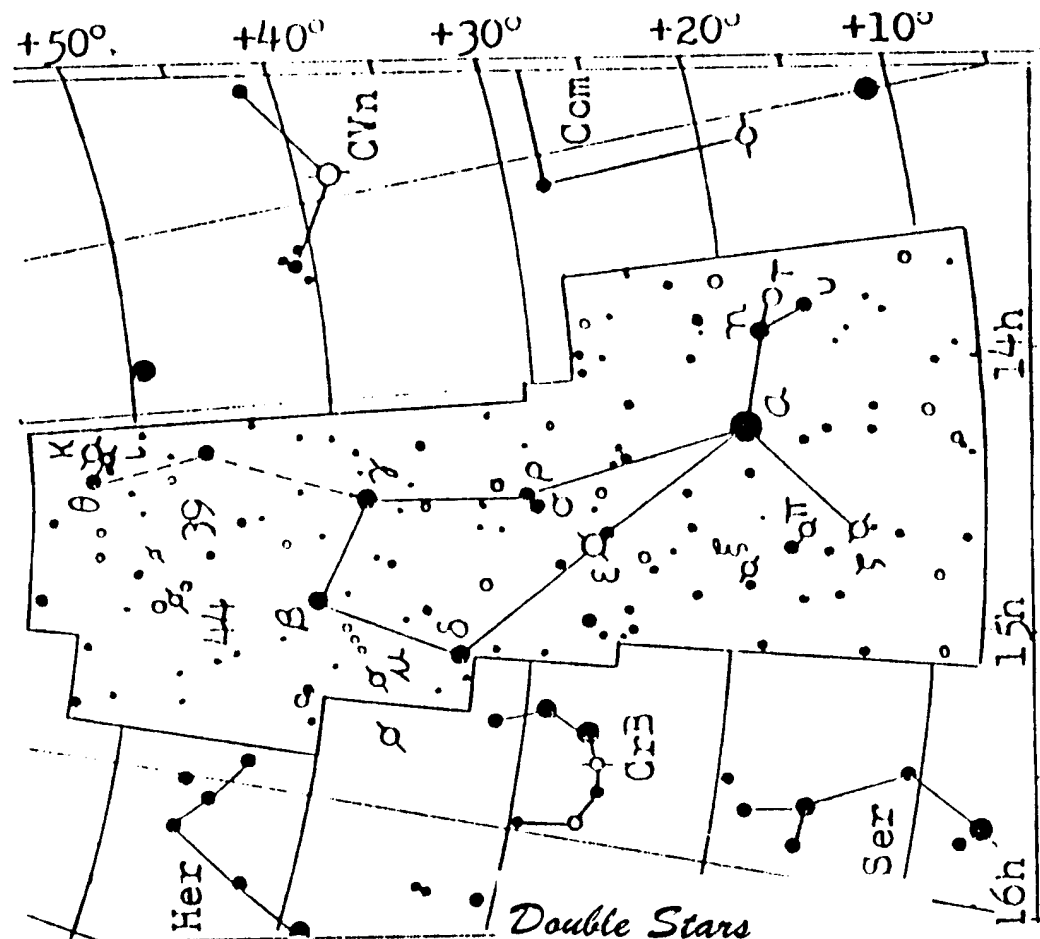
The galaxy is estimated to be about 15 million light years with a full diameter of about 90,000 light years. Although it has a large diameter the computed mass is only about 16 billion suns, less than one tenth the mass of our Milky Way galaxy, making it amongst the lowest mass density galaxies known.

Ursa major is the best known of all constellations and all these objects are fairly easy to find, why not spend a pleasant spring evening hunting them down?

BOOTES

If you extend the handle of the Plough downwards, you come to the most conspicuous star of Bootes. It is called Arcturus and is a bright reddish star of the first magnitude which makes it the fourth brightest star in the sky.

The Quadrantids the years most abundant meteor shower. They radiate from the northern part of Bootes, reaching about 100 meteors an hour on the 3rd & 4th of January each year. The shower takes its name from the now abandoned constellation, Quadrans Muralis. Although they are plentiful the Quadrantids are not as bright as other great showers such as the Perseids.



Pos.	l	m	2	D	d"	P	A	No.
141152	6.6	-4.6	b	13.2	236	K		
1451	4.7	-8.3	c	38.4	33	L		
3816	4.9	-5.8	b	5.6	108	π		
3813	4.6	-4.6	b	1.2	313	ε		
4227	2.7	-5.1	b	2.9	338	E		
4848	6.1	-6.6	b	3.1	45	39		
4919	4.8	-6.9	b	6.7	350	ε		
150247	var	-5.9	b	1.0	267	44		
2237	4.4	-6.6	c	108.	171	μ _{1,2}		
	7.2	-7.8	b	2.0	25	μ ₂		

- K White, blue.
- l Yellow, white.
- π Both white.
- ϵ IZAR: Yellow, blue-green.
- ξ Yellow, reddish-purple.
- μ Bluish-white with two reddish companions.

CANCER

The constellation of Cancer represents the crab that attacked Hercules during his fight with Hydra the water snake.

M44 Praesepe, also named the Beehive cluster is a large group of 75 or more stars 6th mag and less. To the naked eye it appears as a misty patch, the best observations are made through binoculars because of its great size covering 1.5° of sky which is three times the apparent width of the Moon.

A fainter cluster M67 is visible with binoculars near the star α .

Double Stars

Pos.	1	m 2	D	d"	P A	No.
080917	5.7-6.0	b	1.1	15	ζ^1	
	5.1-6.0	b	5.9	89	$\zeta^{1,2}$	
2324	7.1-7.6	b	5.8	47	24	
2327	6.3-6.3	b	5.0	216	δ^2	
3306	6.0-7.1	c	10.4	23	E1245	
4328	6.6-4.2	b	30.7	307	l^1	
5130	6.3-6.5	b	1.5	319	l^2	
	5.6-9.2	b	55.8	198		
5832	6.0-8.1	f	4.6	136	66	
090423	7.2-6.7	b	7.7	199	E1311	

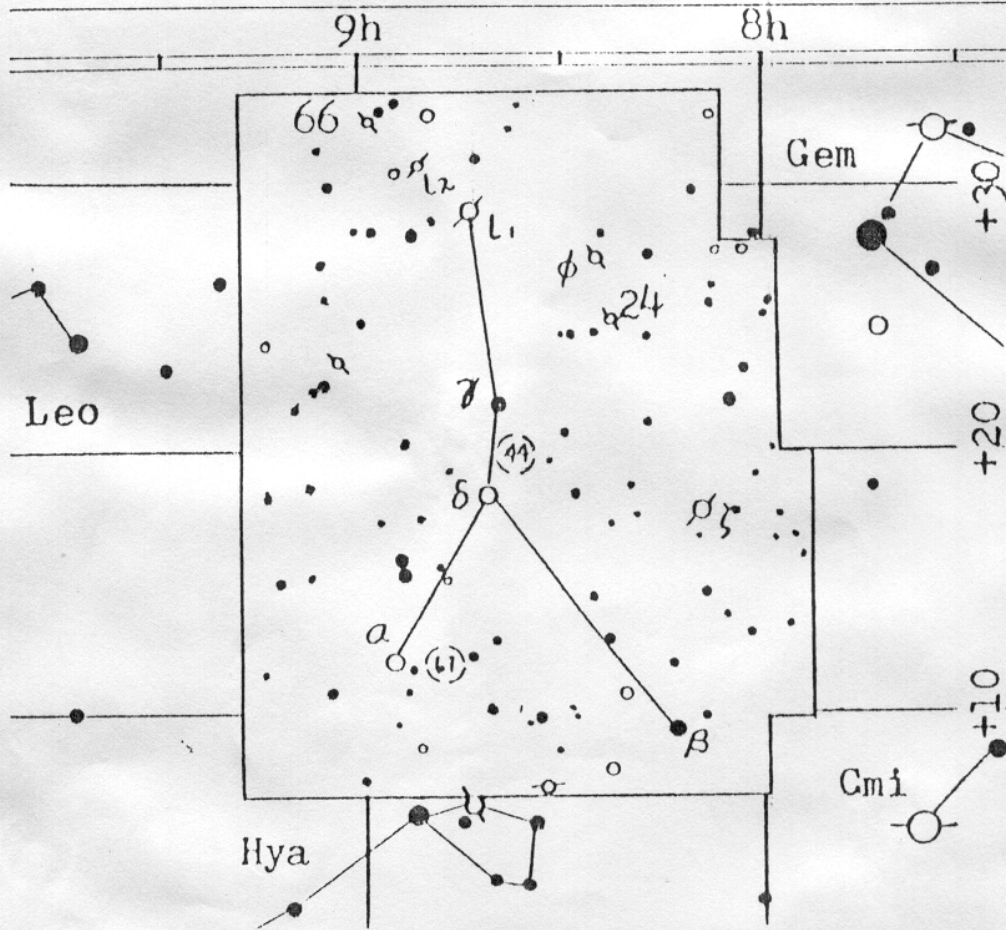
$\zeta_{1,2}$ All three stars are yellow.

ζ^1 closing to 0.3 in 1990.

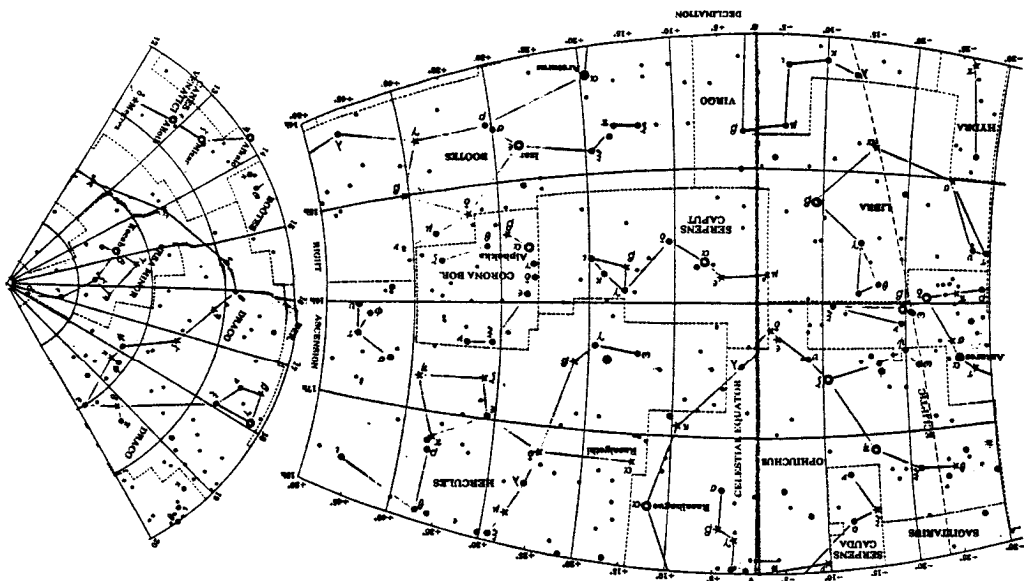
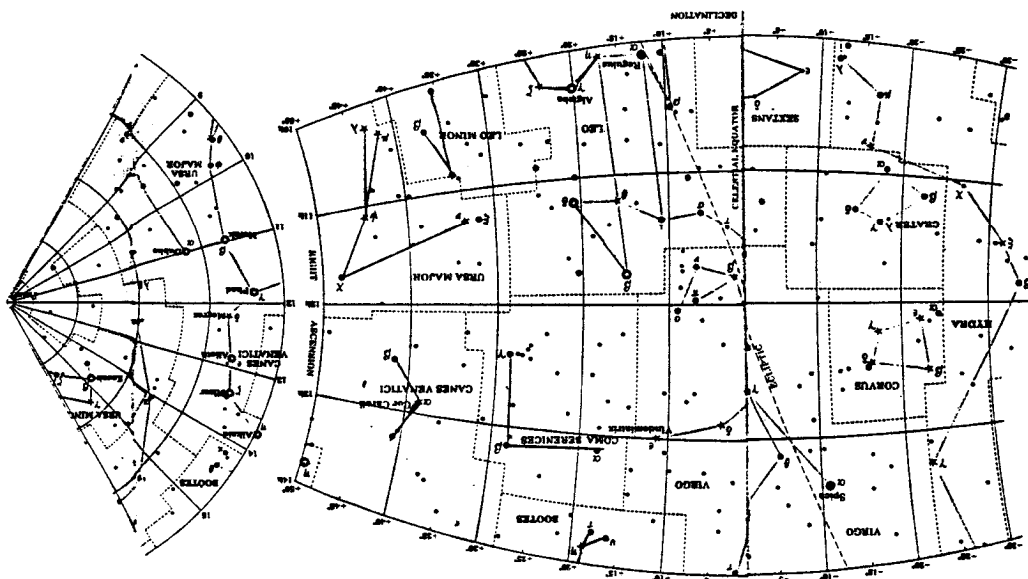
l^1 Beautiful contrast of orange and blue, much like Albireo.

l^2 Close pair of yellow stars.

CANCER



This is how we hope the sky will appear on 10th 11th
& 12th of April for the open evenings not a cloud in sight.



PROGRAMME FOR

APRIL-1992

DAYS & DATES	DIRECTORS	SECTION & ADDRESSES	PHONE INC. STD CODE
Mondays 6,13,20,27	Mr J King	GENERAL OBSERVATION SECTION Felixstowe, IP11 9LQ	
Tuesdays 7,14,21,28	Mr R Newman Mr J King	GENERAL OBSERVATION SECTION (Address above.) (Address above.)	(Number above) (Number above)
Wednesdays 1,8,15,22,29	Mr M Cook Mr D Payne	NEBULA & FAINT OBJECTS SECTION Ipswich, IP4 5PZ Wickham Market, IP13 0SD	
Thursdays 2,9,16,23,30	Mr P Richards Mr G Marriott	OBSERVATORY VISITS FROM OUTSIDE GROUPS Nacton, Ipswich, IP10 0HS Ipswich, IP4 4JB	
Fridays 3,10,17,24	Mr P Richards Mr R A Lobbett Mr G Marriott	PLANETARY & LUNAR SECTION (Address above.) Felixstowe, IP11 8UJ (Address above.)	(Number above) (Number above)
Saturdays 4,11,18,25	Mr P Richards Mr G Marriott	PLANETARY & LUNAR SECTION (Address above.) (Address above.)	(Number above) (Number above)

All nights are open from 7:30pm on and all members are welcome. But, on nights other than Wednesdays please ring one of the directors for that night to check. Directors will also be able to tell you if a group visit is taking place. All of the sections observe anything of interest but the title of each section suggests the most popular subject.

Lectures and other events:

1992 COMMITTEE

CHAIRMAN	D Payne (Address above.)	Home Phone:	Work Phone:
VICE CHAIRMAN & MEMBERSHIP SECRETARY	D Barnard Ipswich, IP38RN.		
SECRETARY	R Gooding Ipswich, IP16AE.		
TREASURER	M Nicholls Capel St Mary, Ipswich, IP92EX.		
MAINTENANCE COORDINATOR	M Cook (Address above.)		
JOURNAL COORDINATOR	E Sims Ipswich, IP14AH		
PUBLICITY & VISIT COORDINATOR	P Richards (Address above.)		
EQUIPMENT CURATOR	J King (Address above.)		

ORWELL ASTRONOMICAL SOCIETY

Orwell Park Observatory
Nacton Nr. Ipswich

OPEN WEEKEND

10th to 12th April

Orwell Park Observatory will be open for public observations of the night sky on the following evenings :-

Friday	10th	April	8.00 to 10.00 pm
Saturday	11th	April	8.00 to 10.00 pm
Sunday	12th	April	8.00 to 10.00 pm

Depending on the weather conditions the Moon and Jupiter will be observed.

Binoculars may be useful.

Slides will be shown if cloudy

Entrance Donation

Child 25p
AD 35p

Secretary: Mr. R. Gooding
168 Ascroft Road