

ORWELL ASTRONOMICAL SOCIETY

MAY
1991



SOCIETY NEWS

1 COMMITTEE MEETING

The next committee meeting will be on Saturday 18th May, with a start at 7.30pm in the club room. As usual this is an open meeting and any member who wishes to attend will be welcome.

NIGHT SKY

All times GMT

SUN Rises approximately between 04.00 to 03.30
Sets approximately between 19.30 to 20.30

MOON



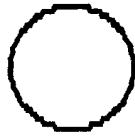
7th



14th



20th



28th

MERCURY Mercury will be at greatest western elongation on the 12th. It is not well placed for observing at this time in the northern hemisphere.

VENUS Venus will be visible in the evening sky, moving into Taurus. By mid month it will be setting at about 23.40. Mag.-4.0

MARS Mars remains an evening object. Mag. 1.5, and remains in Gemini this month.

JUPITER Jupiter is still well placed for observing all evening, until it sets at around midnight in mid month. Mag.-2.0

SATURN Saturn will be rising at about 00.00 hours in mid month. It is near the border of Capricornus and Sagittarius. Mag. 0.6

URANUS Uranus is in Sagittarius, and rises at about mid night. Mag. 5.7

NEPTUNE Neptune is also in Sagittarius, and will be rising at about the same time as Uranus. Mag. 7.9

R.Gooding

Some Deep Sky Objects in Coma Berenices

David Payne

Coma Berenices is a faint constellation lying between Bootes to the east, Leo to the west, Virgo to the south and Canes Venatici to the north. With 68 NGC objects contained within its boundaries the constellation contains many objects for the deep sky observer. Cutting through the Virgo cluster of galaxies only three of the listed NGC objects within the constellation are not galaxies two of these are globular cluster and one (NGC5053) is a rather peculiar cluster somewhere between a true globular cluster and a very condensed galactic cluster. Of the 68 NGC objects seven are listed in the Messier catalogue, 6 are galaxies (M64, M85, M88, M98, M99 & M100) and one is a globular cluster (M53).

Alpha Comae the brightest star at magnitude 4.23, is a binary star system with two almost identical stars. The plane of the orbit of the stars is almost edge on to the Earth such that the separation of the stars varies from effectively zero to a maximum of 0.9". The period of the orbit is 25.85 years and the last maximum separation occurred in 1987. The stars are still fairly well separated and should be split under good conditions with an 8 inch (200mm) telescope.

The Coma Berenices star cluster is probably the best known naked eye cluster after the Pleiades and the Hyades. It has a diameter of about 5 degrees and is therefore best seen with good binoculars. The cluster contains five stars greater than fifth magnitude with a further 32 fainter stars identified as true cluster members. The cluster lies at 250 light years distance and is one of the closest galactic clusters with only the Hyades and the Ursa Major group lying closer.

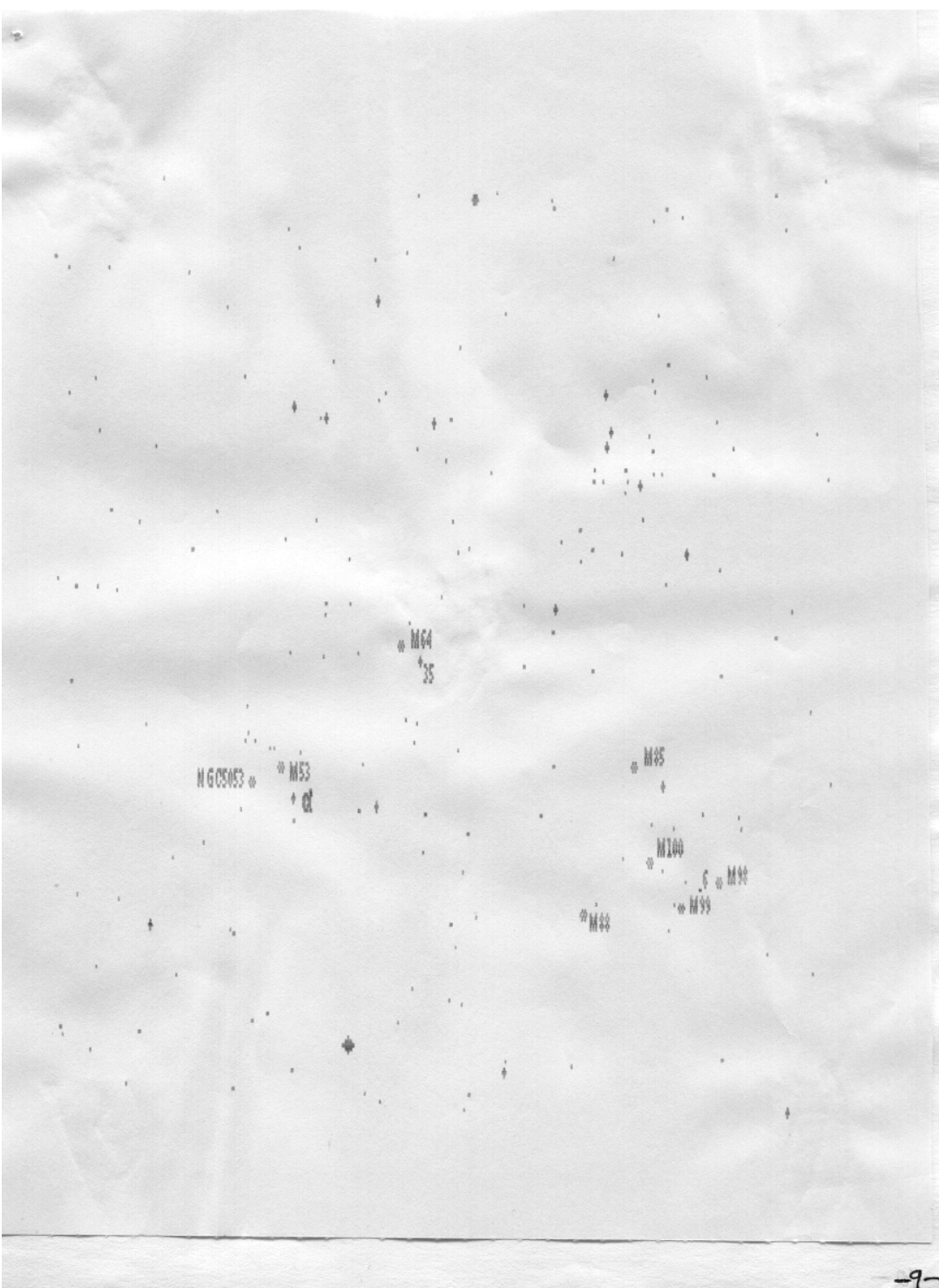
The globular cluster M53 is easily found one degree north east of Alpha Comae. Visually it appears as an 8th magnitude circular patch of light about 10 minutes of arc in diameter fading at the edges. Some

resolution of individual stars begins with telescopes of four inches aperture or greater. The cluster lies some 60,000 to 65,000 light years away with a diameter of about 60 light years and a luminosity of about 200,000 suns. Lying one degree south east is the peculiar cluster NGC5053. This has an integrated magnitude of 10.5 spread over a disk 8 minutes in diameter. The low surface brightness means that at least an 8 inch is needed to detect it visually.

M64 the 'Black Eye Galaxy' is found one degree east north east of the star 35 Comae. It is a spiral galaxy with very smooth and uniform spiral arms but the most remarkable feature is a huge dust cloud bordering the north east side of the nucleus. This dark cloud should be visible in 6 to 8 inch telescopes under good conditions and is clearly visible in a ten inch telescope. The galaxy is an 8th magnitude object about 7.5'x3.5'. The distance is estimated to be between 20 & 25 million light years and is thought not to be a member of the Virgo cluster of galaxies. The distance is uncertain and other estimates have put the distance as far out as 44 million light years and as close as 12 million light years.

The galaxy M85 is one of the brighter members of the Virgo cluster with an integrated magnitude of 10.5 in an area about 3'x2'. Visually the galaxy is an elliptical galaxy and is usually classified as such, however some photographs made at Palomar show partial spiral arms and suggest that the classification should be modified towards spiral types. The galaxy is around 40 to 44 million light years with a diameter of about 40,000 light years. Lying close to m85 at a distance of only 8' to the east is a faint galaxy NGC4394. A magnitude 12 object 3' in diameter should be detectable with a 8 to 10 inch telescope on good dark nights.

M88 is a fairly bright multi-armed spiral galaxy resembling a small version of the Andromeda nebula. It is a 10th magnitude object 5.5'x2.5' and lies at a estimated distance around 41 to 44 million light years. However the measured shift corresponds to a recessional velocity of 1280 miles/second and would place the distance at almost three times the accepted value however other observations suggest the



closer distance is correct and that M88 is a true member of the Virgo cluster.

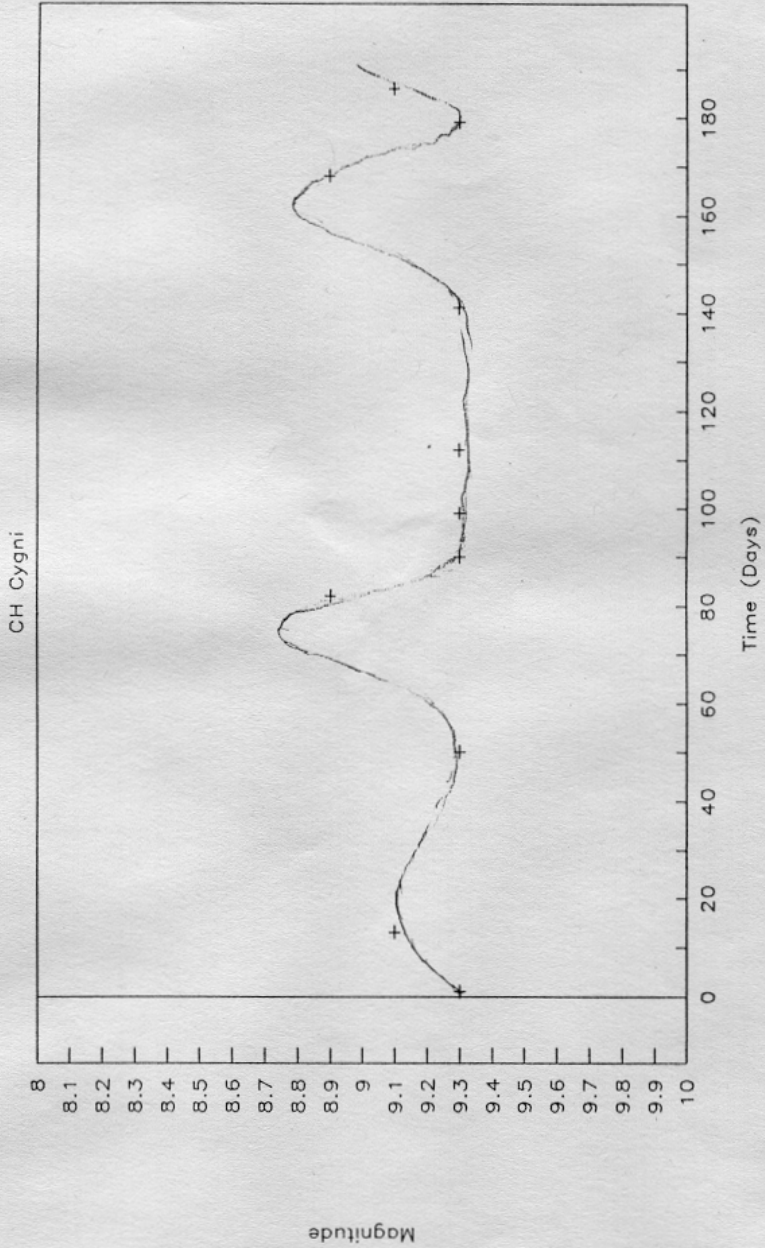
M98 is found 0.5 degrees west of the star 6 Comae. This is an 11th magnitude object $8.2' \times 2.0'$ and is a near edge on spiral galaxy. This is another galaxy with an unusual red shift compared to that corresponding to the estimated distance of 35 million light years. In this case the galaxy is actually blue shifted with an approach velocity of 125 miles/second. If the estimated distance is correct the diameter of the galaxy is 90,000 light years.

Only 1.3 degrees east south east of M98 lies the almost face on spiral galaxy M99. This is a 10th magnitude object $4'$ in diameter. The distance is estimated to be 45 to 50 million light years, again however the red shift would indicate a much larger distance of around 150 million light years. Using the estimate value of 45 to 50 million light years gives a diameter of 50,000 light years.

M100 is the largest spiral galaxy of the Virgo cluster. It is almost face on has an apparent magnitude of 10.5 in a diameter of $5'$. Again the red shift appears to give too great a distance (around 100 million light years) compared to the accepted distance of 40 million light years. Using this value the diameter of M100 would be about 110,000 light years about the same size as the Andromeda Galaxy.

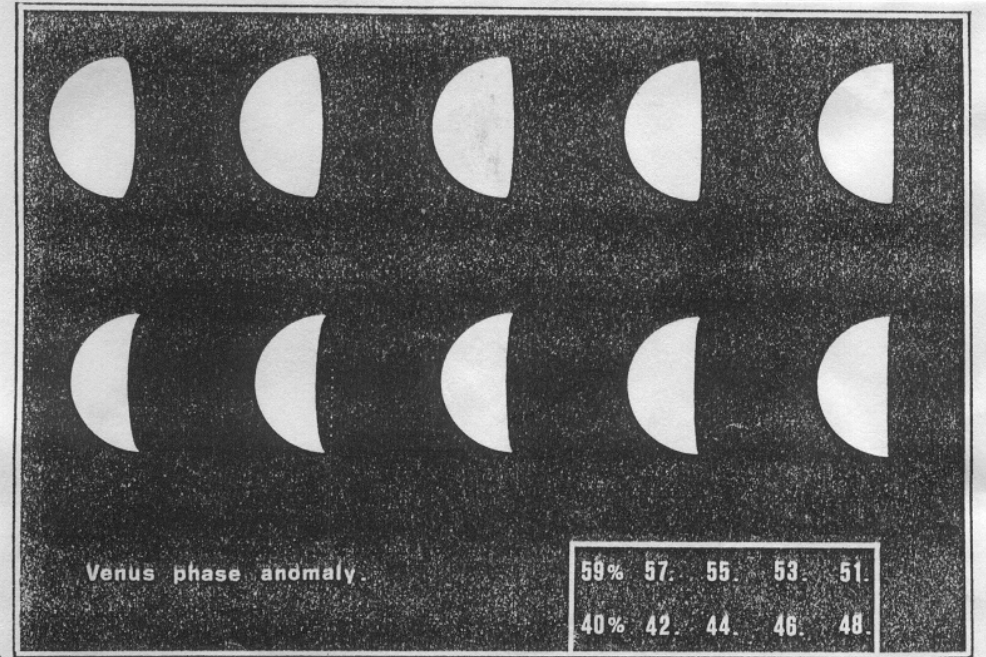
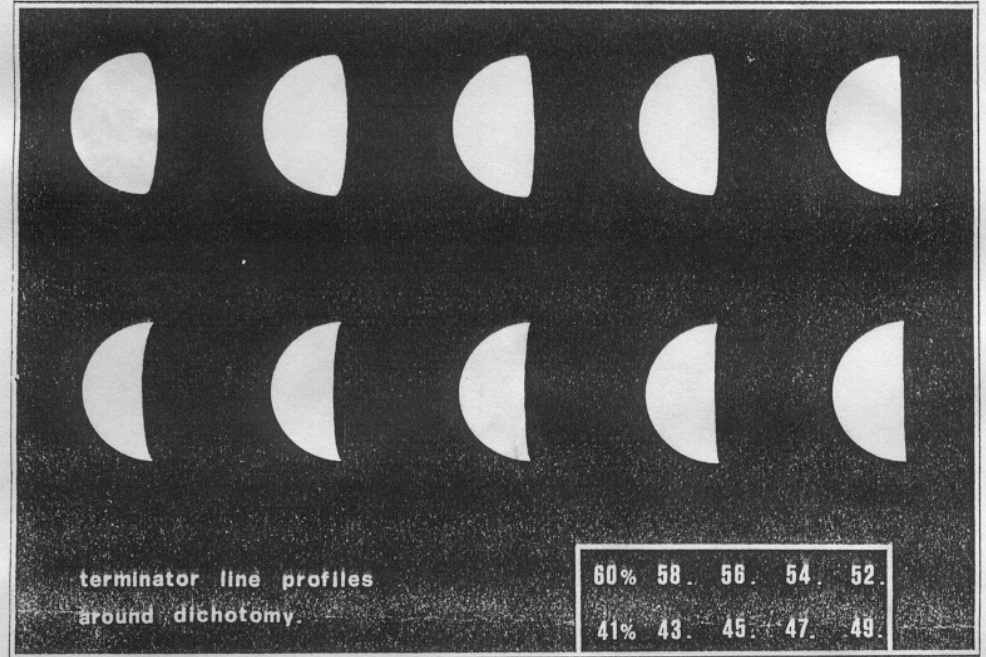
There are many other galaxies in this region of sky and many pleasant hours can be spent wandering amongst them. However only long time exposure photographs show any real detail, visually they appear as pale usually featureless patches of light but this should not detract from searching out these distant objects with moderate telescopes when the skies are dark.

Variable Star Observations

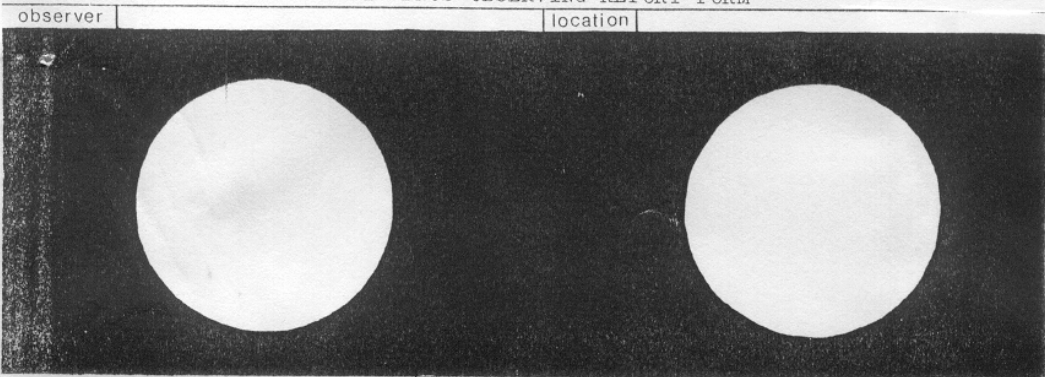


AS PROMISED TWO MONTHS AGO FINAL PART OF
Diagram 1 VENUS REPORT
LOOSE SHEET

Phase blanks for use around dichotomy



INTERNATIONAL VENUS OBSERVING REPORT FORM



observer	location
date & time (U.T)	
e/p. & mag.	
telescope aperture	
filter	
obs. phase †	
seeing & transp.	

computer analysis	Please tick the appropriate box in each case.					
	Definitely present	Possibly present	Definitely absent	Definitely present	Possibly present	Definitely absent
N.cusp cap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N.cusp cap	<input type="checkbox"/>	<input type="checkbox"/>
" " collar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	" " collar	<input type="checkbox"/>	<input type="checkbox"/>
S.cusp cap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S.cusp cap	<input type="checkbox"/>	<input type="checkbox"/>
" " collar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	" " collar	<input type="checkbox"/>	<input type="checkbox"/>
Term. shading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Term. shading	<input type="checkbox"/>	<input type="checkbox"/>
" irregularity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	" irregularity	<input type="checkbox"/>	<input type="checkbox"/>
Limb brightening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Limb brightening	<input type="checkbox"/>	<input type="checkbox"/>
Cusp extensions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cusp extensions	<input type="checkbox"/>	<input type="checkbox"/>
" shortenings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	" shortenings	<input type="checkbox"/>	<input type="checkbox"/>
Ashen Light	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ashen Light	<input type="checkbox"/>	<input type="checkbox"/>
Night-side darker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Night-side darker	<input type="checkbox"/>	<input type="checkbox"/>

accompanying notes Intensity estimates (0 brightest to 5 darkest, see guide) could be included here.

Please use a separate form for each day of observation.

GOOD OBSERVING.

PROGRAMME FOR MAY

DAY	DIRECTORS	SECTION	PHONE No.s
Mondays from 8.00pm			
6-13	Mr R Newman	GENERAL OBSERVATION SECTION	
20-27	Mr R Newman	[Redacted], Felixstowe, IP11 9DY.	Tel. Fel. [Redacted]
	Mr J King	[Redacted], Felixstowe, IP11 9LQ.	Tel. Fel. [Redacted]
Tuesdays from 8.00pm			
7-14	Mr R Newman	GENERAL OBSERVATION SECTION	
21-28	Mr J King	[Address above.]	Tel. Fel. [Redacted]
	Mr J King	[Address above.]	Tel. Fel. [Redacted]
Wednesdays from 8.00pm			
1-8	Mr M Cook	NEBULA AND FAINT OBJECTS SECTION	
15-22	Mr D Payne	[Redacted], Ipswich, IP4 5PZ.	Tel. Ips. [Redacted]
29	Mr D Payne	[Redacted], Wickham Market, IP13 0SD.	Tel. W.M. [Redacted]
Fridays from 8.00pm			
3-10	Mr P Richards	PLANETARY AND LUNAR SECTION	
17-24	Mr R A Lobbett	[Redacted], Ipswich, IP4 1QB.	Tel. Ips. [Redacted]
31	Mr G Marriott	[Redacted] Felixstowe, IP11 8UJ.	Tel. Fel. [Redacted]
	Mr G Marriott	[Redacted] Ipswich, IP4 4JB.	Tel. Ips. [Redacted]
		[Assistant Director]	

All nights are open to all members, but, on nights other than Wednesdays, ring directors to confirm. Directors will also be able to tell you if a group visit is taking place. All sections observe anything of interest, but the title indicates the main specialism.

Lectures and other events : COMMITTEE MEETING
 The next committee meeting will be on Saturday 18th May at the observatory starting at 19.30. As usual this will be an open meeting and any member may attend if they wish.

1991 COMMITTEE

CHAIRMAN	D Payne	[Address above.]	Home: [Redacted] Work: [Redacted]
VICE CHAIRMAN /VISITS CO-ORD	D Barnard	[Redacted], Ipswich, IP4 5PP.	Home: [Redacted] Work: [Redacted]
SECRETARY	R Gooding	[Redacted], Ipswich, IP1 6AE.	Home: [Redacted] Work: [Redacted]
TREASURER	M Nicholls	[Redacted], Capel St Mary, Ipswich, IP9 2EX.	Home: [Redacted] Work: [Redacted]
MAINTENANCE CO-ORD	M Cook	[Address above.]	Home: [Redacted] Work: [Redacted]
JOURNAL CO-ORD	E Sims	[Redacted], Ipswich, IP1 4HA.	Home: [Redacted]
LIBRARIAN	P Richards	[Address above.]	Home: [Redacted] Work: [Redacted]
EQUIPMENT CURATOR	J King	[Address above.]	Home: [Redacted]
SPECIAL EVENTS CO-ORD	A Smith	[Redacted], Ipswich, IP4 5RZ.	Home: [Redacted] Work: [Redacted]