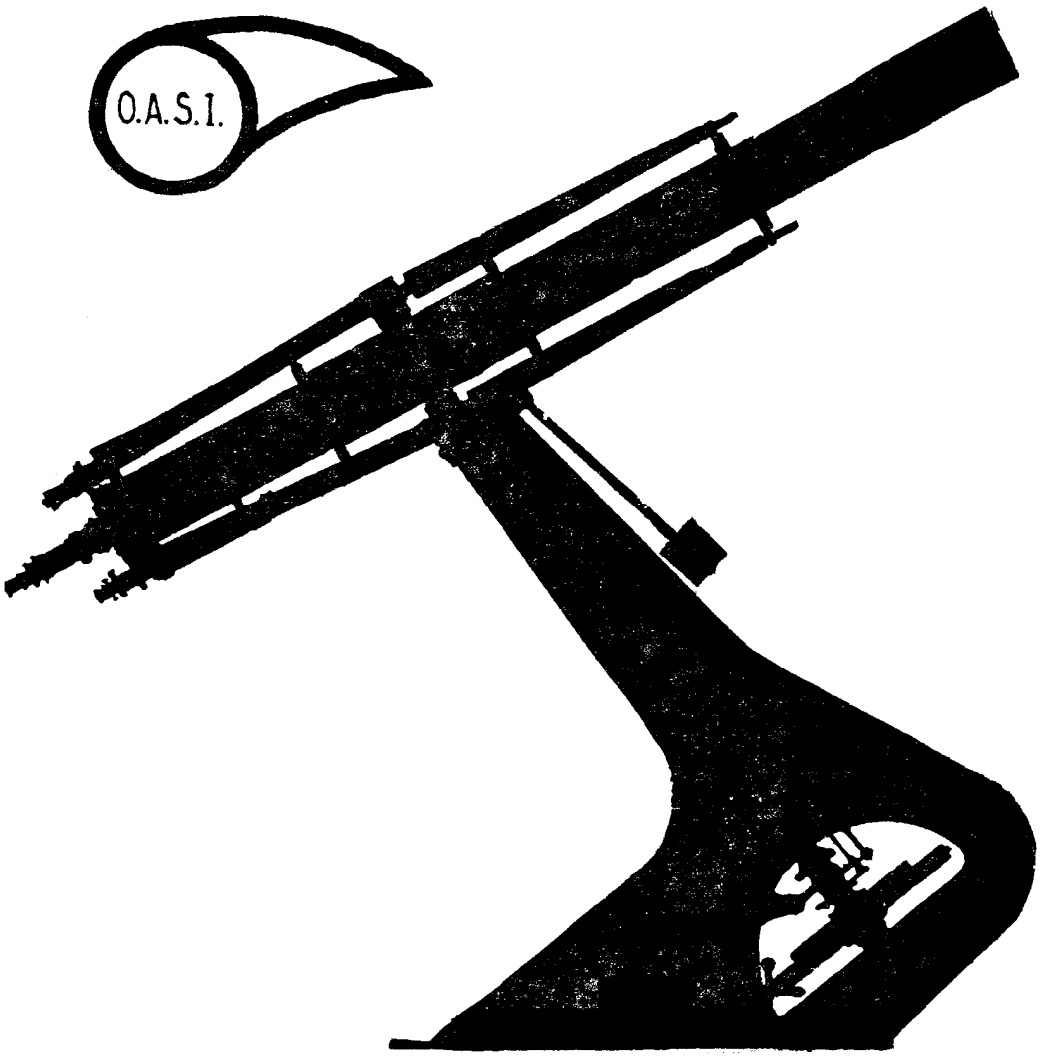
ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

APRIL 1985



The Orwell Park Observatory 10 inch Astronomical Telescope at Nacton near Ipswich

NEWS

1 Visit to Norwich Astronomical Society
A visit has been arranged for Friday 12th April. Members interest -ed please contact R.Gooding.

2 Halley's Comet "Hotline"
This service will be available 24 hours a day for the next 17 months with weekly updates, 01 790 3400

Visits In April

Wednesday April 10th;	Central Electricity Generating Board Social Club, Camera Section Cliff Quay, 8pm
Friday April 12th;	Visit TO Norwich Astronomical Society. Contact Roy Gooding for further details.
Saturday April 20th;	Visit by Rayleigh Astronomical Society, 7pm.
Wednesday April 24th;	Visit by Anglia Holiday Games Club, 7.45pm.
Wednesday May 1st;	Visit by Suffolk Sidecar Club at 8pm.

Other Events

Saturday April 27th. BAA Comet Section Meeting at Ifield near Crawley. Admission £2 by ticket only. 10am start. Tickets available from Peter Stanley, [redacted], IFIELD RH11 0BH.

Committee Meeting

All members are invited to this meeting at the observatory club room on Saturday May 4th at 8pm.

(DAVID BARNARD)

NIGHT SKY

CONSTELLATIONS (all times G.M.T.)

The spring constellations of Leo, Virgo, & Bootes are well placed for observation during the early evening.

SUN

Rises approx. between 05.50 - 04.30
Sets approx. between 18.30 - 19.30

MOON

○ 5th ◑ 12th ● 20th ◐ 28th

OCCULTATIONS

1st	ZC1435	mag.6.6	D	20hr2.9m
1st	ZC1436	" 6.9	D	20hr 45.4m
24th	ZC852	" 5.0	D	20hr 49.6m
29th	ZC1514	" 6.1	D	21hr 48.7m

MERCURY Inferior conjunction on the 3rd.
VENUS Inferior conjunction on the 3rd.
MARS Sets at approx. 21.30 in mid month. Mag.1.7
JUPITER Rises at approx. 03.30 in mid month. Mag.-1.7
SATURN Rises at approx. 21.30 in mid month. Mag.0.5
URANUS Rises at approx. 00.00 in mid month. Mag.5.8
NEPTUNE Rises at approx. 01.00 in mid month. Mag.7.7

R. Gooding

A Couple of Challenging Observations for April

D B Payne

On Monday 22nd April there is a lunar occultation of Mars at 12h3m UT (13h3m BST). The moon is only 2 days from new for this occultation and occuring at midday in full sun light will make this a fairly difficult observation. The moon will be about 30 degrees east of the sun and could be quite difficult to see with the unaided eye. Binoculars will probably be the best instrument for locating it. Once found it should be fairly easy to locate with a telescope. I would suggest starting searching at least half an hour before the event is scheduled to occur to make sure you find both the moon and Mars in plenty of time. Thirty minutes before disappearance Mars will be about 1/4 of a degree away from the dark limb.

During observation you should track Mars with a moderate power (about 150x magnification) which will help to increase contrast and should render the disk of Mars visible in telescopes of 3 inches or more. There are four timings that should be recorded if possible:

1. First contact of the disk of Mars with the dark limb. This is a very difficult event to judge unless the dark limb can be discerned, which is unlikely in small telescopes.

2. Time of total disappearance of Mars.

3. Time of first reappearance of the disk of Mars on the bright limb. Again another very difficult event to judge!

4. Time of last contact of Mars with the moon.

The time between events 1 and 2 (first contact and dissappearance) will only be about 7 seconds, similarly for the time between events 3 and 4. The time of reappearance will be about 13:14 UT (14:14 BST). For timing the events the easiest way is to use a portable tape recorder. About five minutes before each event get a recording of the speaking clock and leave the recorder runing until the event has finished. In this case this will need to be done twice, once for the disappearance event and once for the reappearance. It is also a good idea to make additional recordings of the speaking clock after each event and before turning off the recorder. This alows any stretching of the tape to be taken into account when measuring the timings afterwards.

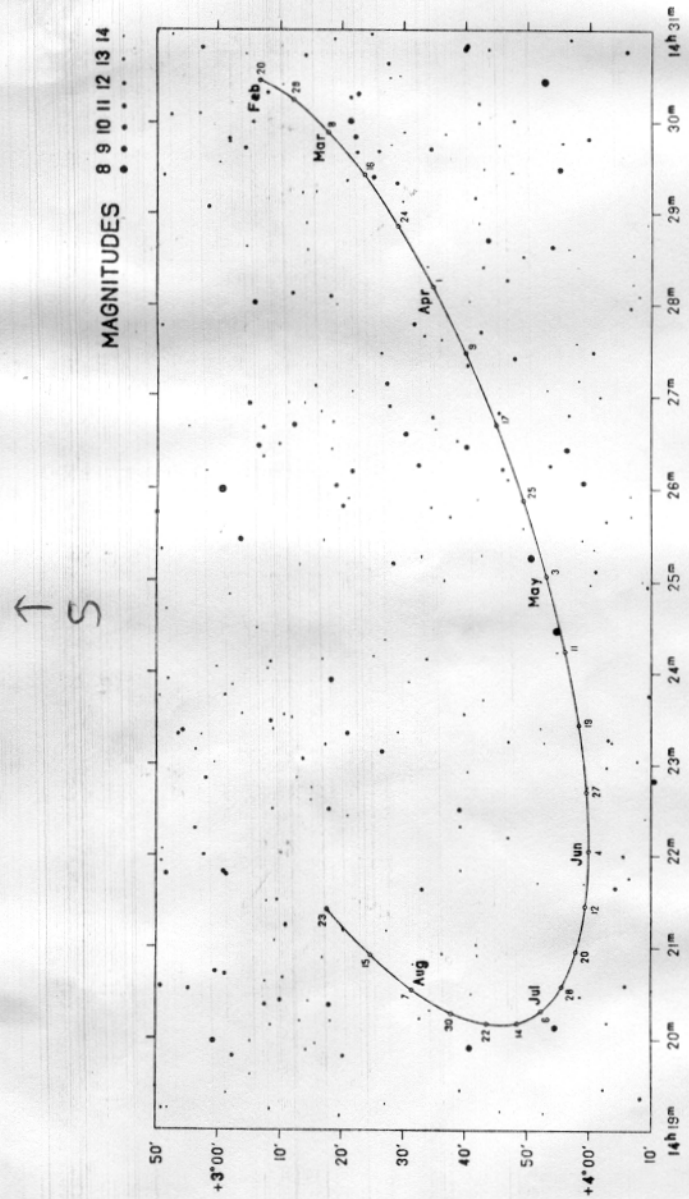
I would be very interested in hearing of the results from anyone who manages to observe this event, please send them along.

The other challenging observation for the month is to observe Pluto! Pluto is at opposition on 23rd April and will be at magnitude 14. Last year I managed to observe this planet fairly readily, first with the Orwell 10 inch refractor and then on three successive occasions with my 10 inch reflector. Once found it was not a particularly difficult object and may have been visible in an eight inch telescope. The chart shown below is taken from the BAA handbook and shows the pridicted position of Pluto through out the year. If you own a telescope of 8 inches or more have a go and try to find the ninth planet. If you do not own a telescope of this size remember that you have access to the Orwell refractor on any night so long as there are two directors present. So come up to the Observatory and have a go!

The area of sky shown in the chart is found 16 degrees south of Arcturus. There are no stars above magnitude 8 on the chart but the 8th and 9th mag stars should be readily descernable in 10x50 binoculars. When the brighter stars have been identified with binoculars find them with the telescope and then work in towards the predicted position of Pluto using the progressively fainter stars. Once you have found what you think is Pluto draw the star field and then repeat the observations on the next clear night. If the star was Pluto then it will have moved!

PLUTO

Pluto is in Virgo, opposition occurring on April 23, when the magnitude of the planet is 14.



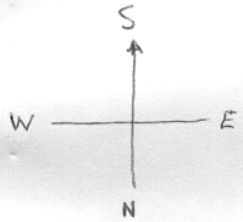
On Sunday the 17th March there were two events that warranted observation of the planets Mercury and Mars. Firstly it was the greatest eastern elongation of Mercury and secondly there was an occultation by Mars of the 6th magnitude star ZC299 (HD12140, SAO92739). These two events and the proximity of the brilliant Venus made this a good opportunity for some early evening observations of the three planets.

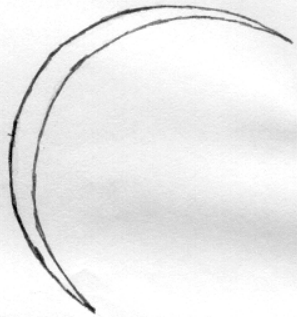
The occultation of Mars was to occur at 18h32m UT. During the day there had been scudding cloud and some rain. However as the sun set the western sky became beautifully clear and Venus was shining brilliantly. I had opened up the observatory at about 18:20 and tried to find Mars. Unfortunately the brightness of the sky was sufficient to render Mars invisible to the unaided eye and even with binoculars it took me about 15 minutes to find it. By this time I had missed the occultation (I will have to get the setting circles completed on my telescope!) and had noticed Mercury low down in the west. I decided to give up Mars for the time being and take a quick look at Mercury. Using an Erfle eyepiece, giving about 80x magnification on my 10 inch reflector, I could make out a small shimmering half illuminated disk. Turbulance made it difficult to determine the phase accurately but it appeared to be exactly 50% illuminated, increasing magnification to 160x did not help. The bright side appeared uniformly illuminated and had a faint pinkish tinge which could have been due to atmospheric absorption.

The time was now 19:10 and I moved the telescope on to Venus. The appearnce was of a brilliant thin cresent, again there was considerable turbulance affecting the image. There was a fairly bright star (I guessed magnitude 5 to 6) about 40 seconds of arc to the north west of the disk of Venus. I then went on to Mars but later (about 19:50) came back to Venus and estimated that this distance had closed to about 30-35 seconds of arc. I wondered if there might be an occultation and and continued to observe Venus until it disappeared, about ten minutes later, below the fence that is behind my observatory. I later plotted the position of Venus on a star map and determined that the star must have been ZC168 (HD6966, SAO92288) a 6.3 magnitude star in Pisces.

I first looked at Mars with the 10" telescope at approximately 19:30, about one hour after the occultation was to have occured. The red disk of the planet was very small but clearly discernible with 160x magnification. I was expecting to see a fairly faint star very close to the planet but could only find a star at least one minute of arc away to the south west. This must have been the correct star but at this stage I found it difficult to believe there could have been an occultation only one hour previously. When I checked later I found that Mars was actually moving across the stellar background at about 110 arc seconds per hour so that the observed position at 19:30 was perfectly consistent with an occultation at 18:32!

The sketches below show the views of the three planets as observed on 17th March, the drawings are approximately to scale.





ZC168

VENUS 17TH MARCH 19:30 UT

MERCURY 17TH MARCH

ZC299

MARS 17TH MARCH 19:40 UT

THE 2nd EAST ANGLIAN ASTRONOMICAL SOCIETIES CONVENTION

On Saturday 23th February the Braintree,Halstead & District A.S. were the hosts to the 2nd convention.Alan Smith's house was employed as the meeting venue for members living in of near Ipswich.Two cars left Alans at 0900 for the Village Hall at Silver End, avillage near Braintree. Before arriving the address gave one visions of rusting corrugated Nissen hut in a corner of a field surrounded by a redundent church and half a dozen decaying cottages. However on arriving , a large and well built village community centre was found.Car parking at the hall was very limited, with early arrivals attempting to park on the field behind the hall. The field was quickly transformed from green to a quagmire of mud in minutes,with vehicles slither-ing all over the place.

The display of our Society activities for 1984 was taken into the hall and mounted on a table provided.With in twenty minutes the rest of our party had arrived,R.&C.Cheesman, M. Nicholls, and D. & D. Payne.Two lectures were scheduled for the morning :- Nigel Henbest on Telescopes and Heather Couper on A Journey to the Centre of the Galaxy.A break was then had for lunch.

Several trade stands were perused along with numerous displays from other societies before the afternoon lectures started. The lectures were given by Iain Nicolson on The Universe and by Dr. David Dewhurst on The Sun.

Other members who were in the party included M. Cook,E.Sims, V. Chapman with D. Thorpe.

VARIABLE STAR OBSERVATIONS

R. Gooding

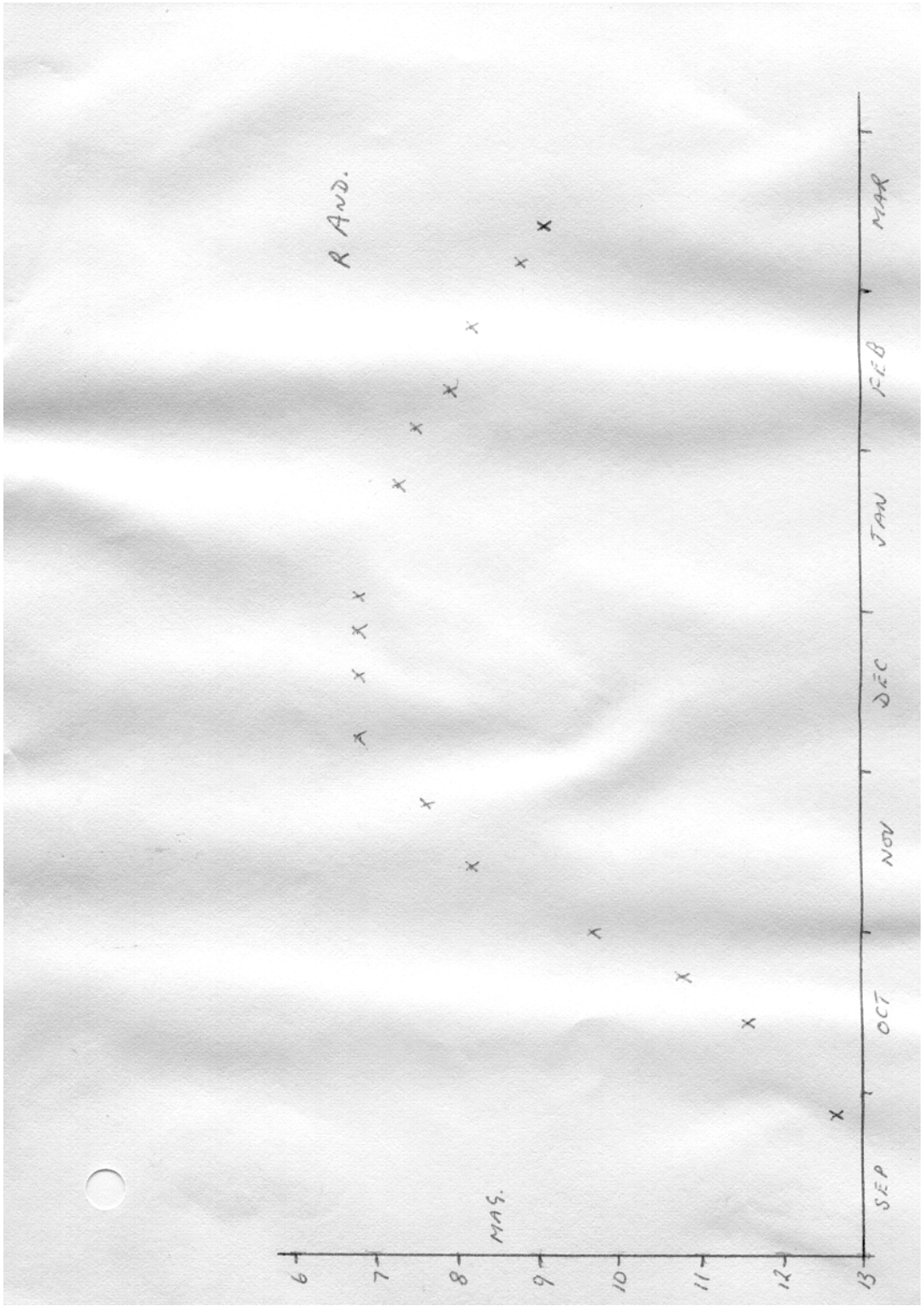
by Mike Nicholls

This months light curve shows R Andromedae from September 1984 to March 1985. It is quite a good example of a maximum of a typical long period or Mira type variable star. The actual magnitude at minimum was probably about 14, indicating a light range of about 7 magnitudes.

The rising portion of the curve is steeper than the falling part, which is another typical characteristic.

The period of the oscillation is 409 days, on average, so that the next maximum will occur in January or February next year.

Observations were made both with an 8" reflector and 10x50 binoculars.



Europe's Digital View of the Stars

Europe's first all-electronic planetarium opens this month in the Hague in Holland. There are only two others operating in the world, and these are in the US.

The computer in the planetarium at The Hague contains information about 6700 stars in a sphere with a radius of 650 light years. These are the stars visible from the Earth. This information is fed to a graphics processor which transforms the data into images on a cathode ray tube, and these images are projected on to the planetarium dome by a wide-angle lens. The illusion of motion is created by projecting images 25 times a second.

A special programme will be put together at the planetarium next year when the Giotto mission to Halley's comet is complete. The European Space Agency which is coordinating the mission will send the first Giotto pictures to the planetarium- probably the day after they are received. Then, in a programme lasting $7\frac{1}{2}$ minutes, the computer will project the stars that Halley's comet passes through on its journey past the Sun. (David Barnard)

Pluto's Moon Observed

A young astronmer from the University of Texas at Austin claims to have become the first person to observe the eclipse of the planet Pluto by its moon, Charon. The observation was made shortly after 2 am on Sunday February 17th. The eclipse lasted $2\frac{1}{2}$ hours. This discovery will help astronmers determine the exact size of Pluto. The eclipses are in a series lasting five years. The astronomers expect to make accurate measurements of the size of both Pluto and its moon as the shape of the eclipses change over the next three to five years. At the moment the eclipse is shallow, barely skimming the edge of the planet, but eventually Charon will move across Pluto. We will also learn more about Pluto's surface, and in a few years should have a map of the planet. (David Barnard)

PROGRAMME FOR APRIL

MONDAYS from 8pm — DOUBLE STAR & PLANETS SECTION
1, 8, 15, 22, 29th

Mr N Taylor [redacted], Farmlands, Trimley — Tel:Fel. [redacted]
Mr T Gillan [redacted], Felixstowe — Tel:Fel. [redacted]

TUESDAYS from 7pm — GENERAL OBSERVATION SECTION
By Arrangement With Directors

Mr N Gage, [redacted], Trimley — Tel: Fel. [redacted]
Mr R Newman [redacted], Felixstowe — Tel: Fel [redacted]

WEDNESDAYS from 8pm — NEBULEA & FAINT OBJECTS SECTION
3, 10, 17, 24

Mr M Cook, [redacted], Ipswich — Tel: Ips. [redacted]
Mr D Payne, [redacted], Wickham Market. — Tel:W.Mkt. [redacted]

FRIDAYS from 8pm — VARIABLE STAR SECTION
By Arrangement With Directors

Mr R Gooding, [redacted], Ipswich — Tel: Ips. [redacted]
Mr M Nicholls, [redacted], Capel St. Mary. — Tel: Ips. [redacted]

1985 COMMITTEE

CHAIRMAN	D Payne	[redacted], Wickham Market, IP13 OSD	Work: [redacted] Home:
VICE CHAIRMAN	R Cheesman	[redacted], Corringham, Essex SS17 9BU	Work: Extn
SECRETARY	R Gooding	[redacted], Ipswich IP1 6AE	Work: Home:
TREASURER	M Nicholls	[redacted], Capel St. Mary, Ipswich, IP9 2EX	Work: Home:
MEMBERSHIP SEC.	D Barnard	[redacted], Ipswich, IP4 5PP	Home: Work:
P.R.O.	D Barnard	[redacted], Ipswich, IP4 5PP	Home: Work:
MAINTENANCE	M Cook	[redacted], Ipswich, IP4 5QA	Home: Work:
FUNCTIONS	E Sims	[redacted], Ipswich, IP1 4HA	Home:
LIBRARIAN	E Sims		