

# ORWELL ASTRONOMICAL SOCIETY, IPSWICH.

# SOCIETY NEWS

## 1. Annual Open Weekend

Please make a note in your diaries of the dates of our annual open weekend. September 25th - 28th.

## 2. Draw

A draw will be held on Monday 28th September. Books for selling will be distributed to members as soon as they are available.


## 3. Boston Astronomical Convention

The Boston Astronomical Convention is to be held on Saturday 1st August. Tickets cost £3.00. Any members interested in attending please contact R. Gooding.

## NIGHT SKY

(all times G.M.T.)

Sun Rises at about 03.40  
Sets at about 20.20

Moon  4th 11th 18th 26th

Mercury Greatest elongation on the 7th ( $24^\circ$ ). Sets about 2 hours after the sun at the beginning of the month. Mag. 1.2 in mid month.

Venus Bright object in morning twilight. Rises about 1 hour before sun in mid month. Mag. -3.9.

Mars Sets at about 22.00 in mid month. Mag. 1.8.

Jupiter Rises at about 01.00 in mid month. Mag. -2.2.

Saturn Opposition on the 9th. Rises before sunset. Mag. 0.0.

Uranus Rises before sunset Mag. 5.8. Opposition on 16th.

Neptune Rises before sunset Mag. 7.7. Opposition on 28th.

### A MESSAGE TO ALL OUR READERS

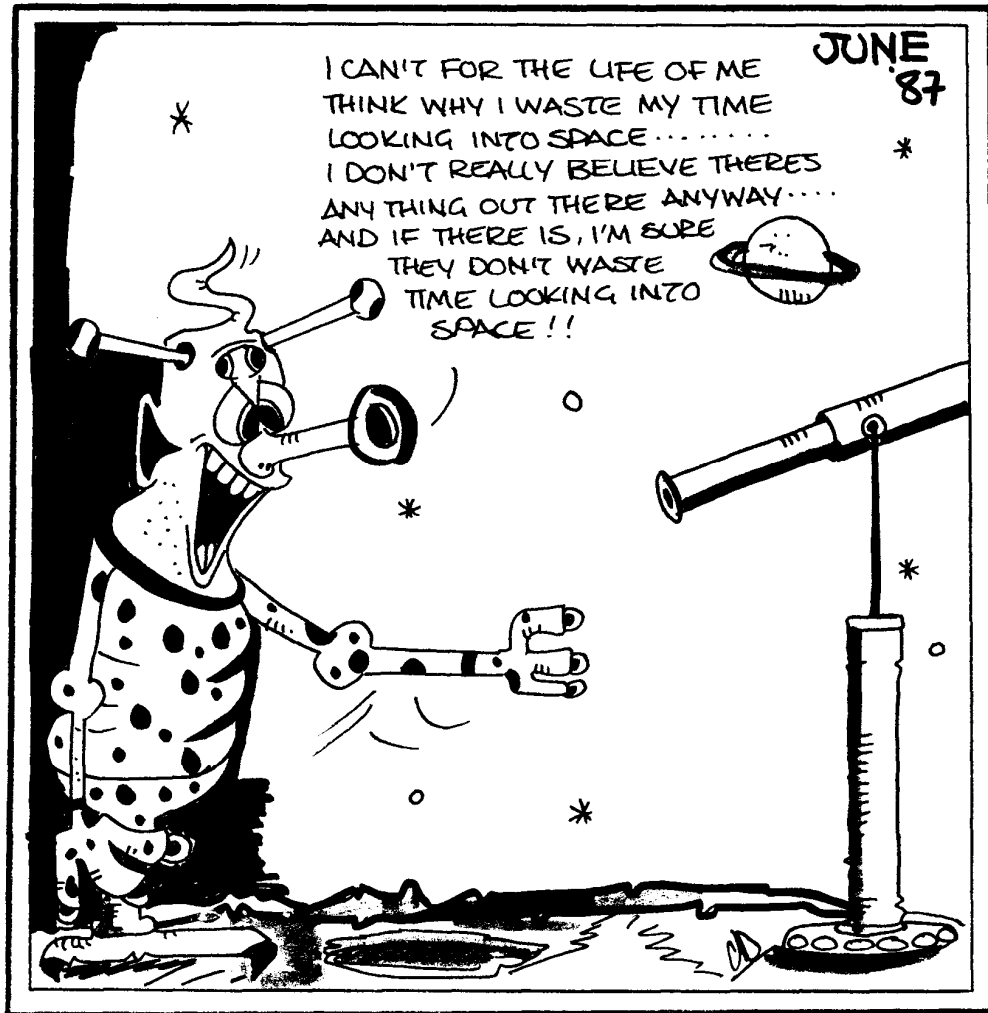
This includes members of the Orwell Astronomical Society and any members of other Astronomical Societies that read this journal.

All types of articles are needed, short or long for your journal. Any subject you think might be of interest to other readers. Typed in A5 format if possible but not essential.

Please send all material to my address which is on the back page or hand to any committee member.

JOURNAL CO-ORDINATOR E. SIMS

Q.A.S.I.



## NEW LIGHT ON THE OBSERVATORY

For a long time I have believed that it may be possible to track down additional information on the history of the Orwell Park Observatory. Evidence is now very strong that the observatory was completed in 1873 and not 1872 as was previously thought.

Since the early 1970's every one believed that the Astronomer Royal, Sir George Airy helped Tomline with the design of the observatory especially as he owned a house in Playford. I have recently been in contact with the Archives Office at the Royal Greenwich Observatory at Herstmonceux to see whether any written records exist between Tomline and Airy. None have been found.

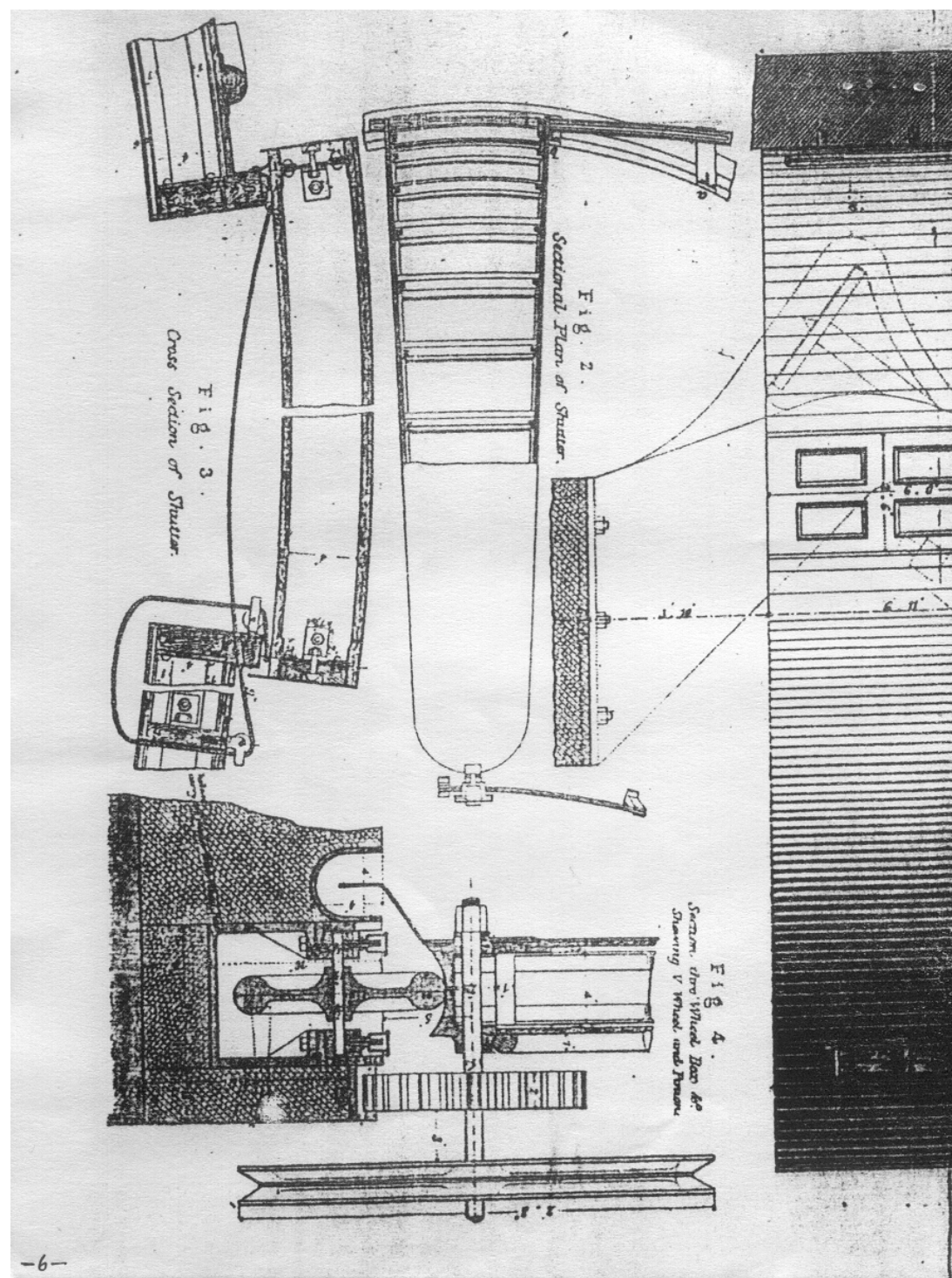
On May 6th I received a letter from the R.G.O. - Mr. A. Perkins. He had found a diagram of the Orwell Park Observatory that had been published on October 2nd 1874, in the magazine 'Engineering'. Surprisingly the diagram had been found in Christie's papers and not Airy's. Mr. Perkins came up with the interesting suggestion that we may have the wrong Astronomer Royal. When the Orwell Park Observatory was built Christie was Airy's chief assistant and did not become Astronomer Royal until after Airy's retirement in 1881.

All that remains to do now is to obtain the text that goes with the diagram. The R.G.O. mentions that they will obtain a copy. In the meantime I have taken steps to obtain a copy from the town library. My first attempt at obtaining a copy was thwarted by red tape. A request chit could not be filled in without the author's name. The library staff discovered that a copy exists at Birmingham Library, and that the author's name was W. Airy.

The name W. Airy fits in perfectly with a piece of information I found at the Suffolk Record Office. In 1874 members of the Ipswich Scientific Gossip Society visited Orwell Park. John Plummer showed them round the observatory, mentioning that the building superintendent was the son of the then Astronomer Royal, Sir George Airy.

For many years it has been believed that Ransomes may have made the iron castings for the telescope mounting. The Ransome archives are now held at Reading University. Ransomes finished astronomical work in 1849 and therefore could not have played any part in the building of our telescope. A further line of research will be to try to find out if any Troughton & Simms' records still exist anywhere. Personally I am rather doubtful.

R. Gooding.



## BARNARD'S STAR

David Payne

It has been some time since I have written an article about observing deep sky objects and I thought it was time for another. However the bright evenings of June (when they are clear) are not the best for observing faint nebulous objects, so this month why not try to find a star. Not just any star but the famous runaway "Barnard's Star. This star is in the constellation Ophiuchus and is near the central meridian after midnight when the sky is darkest. Barnard's Star has several calls to fame, not only does it have the largest proper motion for any known star but is the second closest star to the sun and for us northern hemisphere observers it is the closest star that we can see.

The star was discovered by E Barnard in 1916 who compared photographic plates made in that year with plates taken in 1894. After the discovery images were found by E Pickering on even earlier plates made in 1888. The annual motion of the star is  $10.29''$  travelling almost due north (PA  $356^\circ$ ). The star is a magnitude 9.53 red dwarf, about  $1/2500$  the luminosity of the Sun with about 16% of the mass. The estimated diameter is 140,000 miles (compared to 865,000 miles for the Sun) and it lies at a distance of 6 light years.

In 1962 studies of apparent wobbles in the path of Barnard's Star by Peter van de Kamp led him to suggest that the star had planetary companions. His latest calculations made in 1982 show that there are at least two planets the largest of which would have a mass 70% that of Jupiter and an orbital period of 12 years. It should be stressed however that not all astronomers are convinced by either the data or the conclusions drawn by van de Kamp but the evidence is sufficiently intriguing for astronomers to keep close watch on this wanderer.

Barnard's Star is easily visible in a small telescope. The position of the star is shown on the maps below, the enlarged chart shows the position against the background stars (the circle is  $1^\circ$  in diameter). Why not spend some time finding this star, the closest for us northern hemisphere observers, and recall that you are probably at the same time observing another planetary system.

Oct. 2, 1874.]

ENGINEERING.

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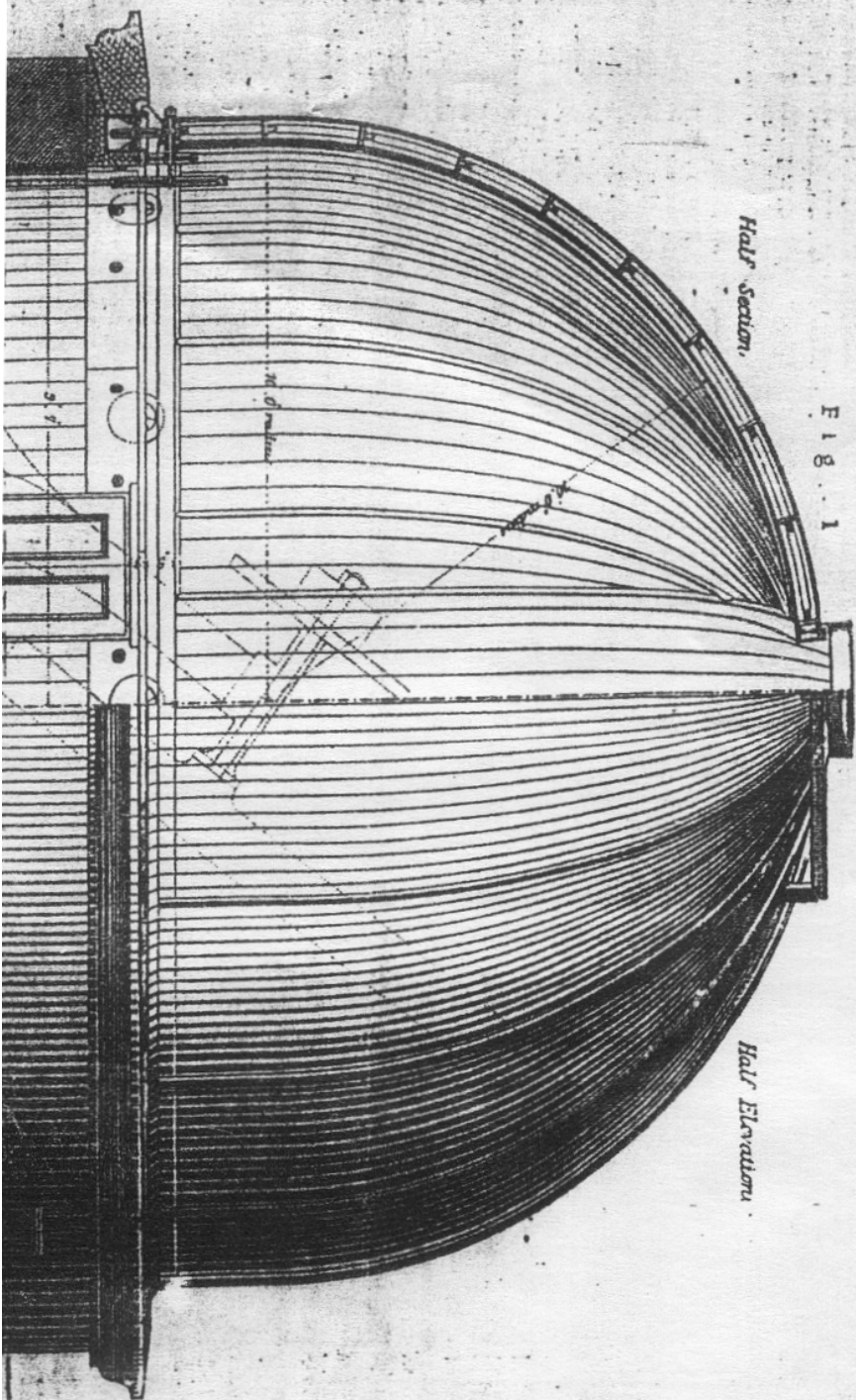
DOME OF THE OBSERVATORY AT ORWELL PARK.

(For Description, see Page 257.)

FIG. 1

Half Section.

Half Elevation.

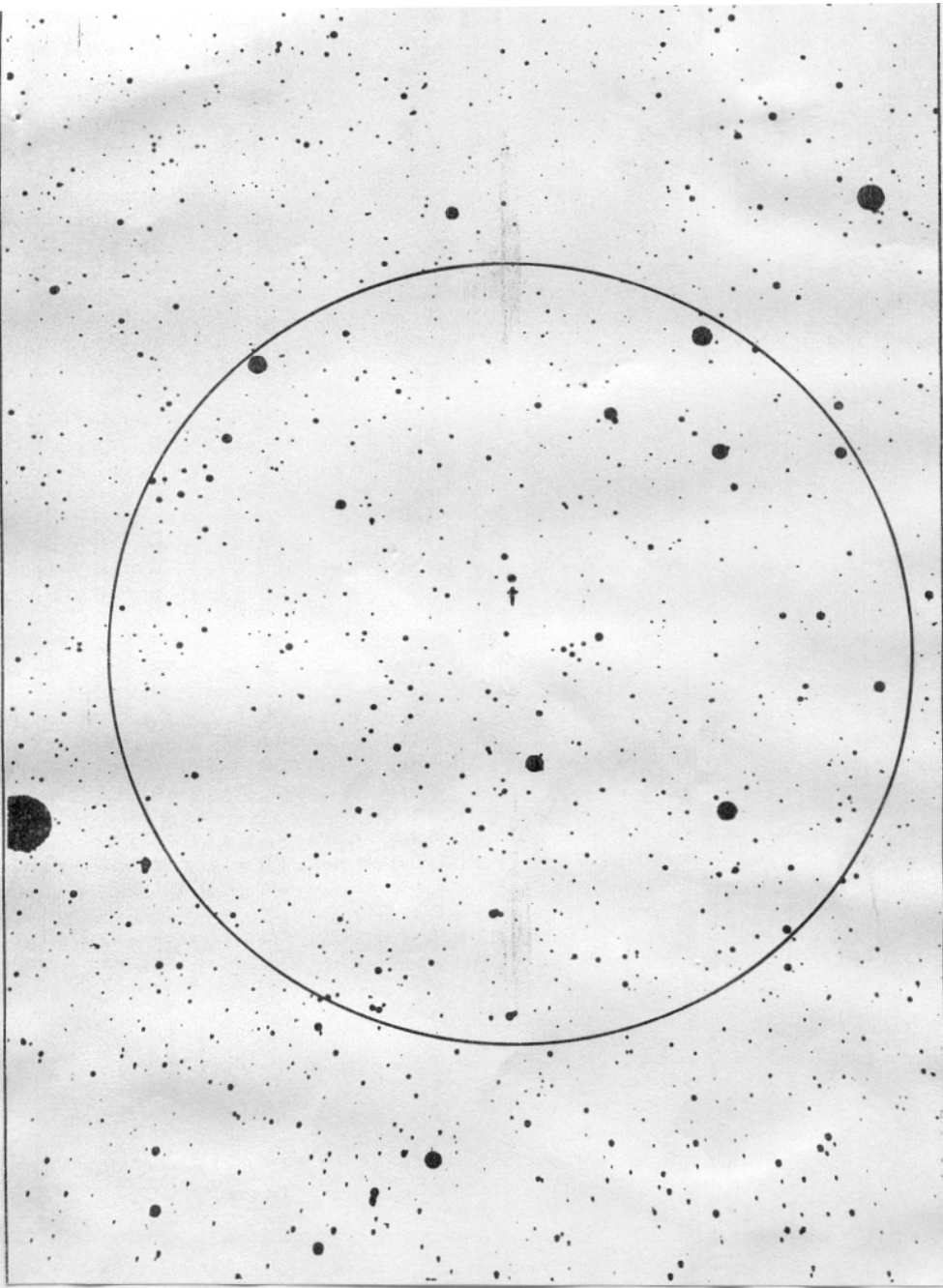


This is a copy of the diagram published on 2nd October 1874 in 'Engineering' showing a plan of part of the Orwell Park Observatory.

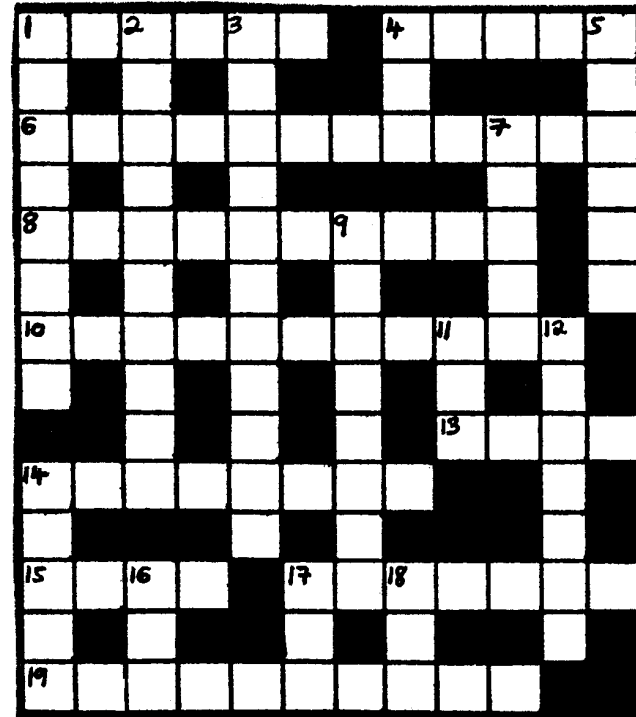
Points of interest are:-

1. The original method of opening and closing the shutter is shown in sufficient detail to enable a reconstruction. It differs from the present system by having both the opening and closing ropes in the centre of the shutter.
2. The wheel for the dome rack and pinion mechanism should have a rope running in the groove of the wheel. The red wheel is original; its authenticity had occasionally been doubted in the past.
3. The drawing of the dome must be a standard Troughton & Simms design. The numbers of wheels in each wheel box is shown as only one, whereas the finished dome has two. Tomline probably had a non-standard dome constructed with a greater weight. The usage of mahogany as the inner lining may account for this increase.

R. Gooding.



The position of Barnard's Star is shown in Sky Atlas 2000. The above chart shows the stellar background around Barnard's star. The circle is I degree in diameter. The bright star on the left is 66 Ophiuchi.



X  
W  
O  
R  
D  
No 8



ACROSS

- I Quasi-stellar radio source (6)
- 4 Eridanus - constellation (5)
- 6 93 million miles is this type of unit (I2)
- 8 Bending of light in an optical media (I0)
- I0 Clouds of dust particles which hover at approximately 50 miles & can be observed long after sunset (II)
- I3 Astronomer Royal (I835-8I) (4)
- I4 Triple star system (8)
- I5 A division of a spherical surface bounded by two parallel circles (4)
- I7 English astronomer (I692-I762) who discovered the aberration of light (7)
- I9 Any motion contrary to the usual (I0)

DOWN

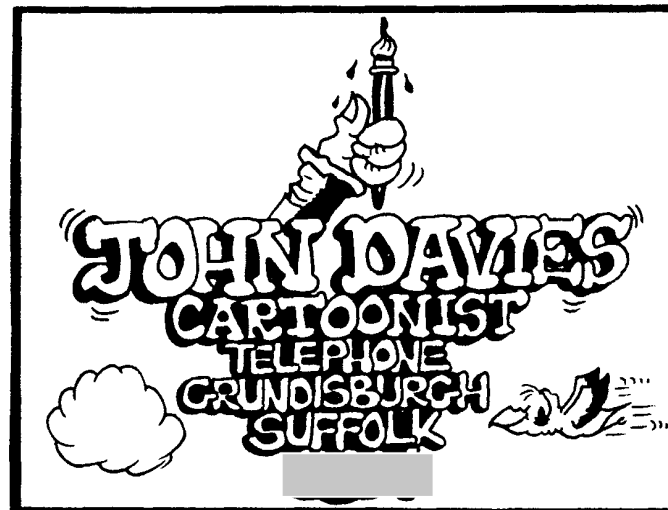
- I Ancient instrument for measuring the altitude of a star (8)
- 2 Man-made satellite (I0)
- 3 Irregular year which is 0.0I74 days longer than the tropical year (II)
- 4 Aries - constellation (3)
- 5 Clefts on the moon (6)
- 7 Von Oppolzer (I84I-86) produced this "..... of eclipses" which covered the years I200BC to AD2I60. (5)
- 9 This Swiss-American astronomer proved the existence of interstellar absorption in I930 (3)
- II A system for measuring years (3)
- I2 Star adjacent to altair within Aquila (7)
- I4 First star discovered to be a visual binary as well as the first star to be identified as a spectropic binary (5)
- I6 Constellation of Reticulum (3)
- I7 Rather large bang (3)
- I8 The altar - constellation (3)

Solution to crossword number 7

ACROSS - I Sidereal, 5 Apex, 8 Neap, 9 Iapetus, I0 Dione, I2 Serpens, I3 Chisel, I4 West, I6 Cassiopeia, I8 Eye, I9 Perigee, 20 Adams

DOWN - I Synodic, 2 Draconids, 3 Enif, 4 Lupus, 5 Antares, 6 Easter, 7 Solstice, II Evening, I4 Wien, I5 Vega, I6 Cup, I7 Ara

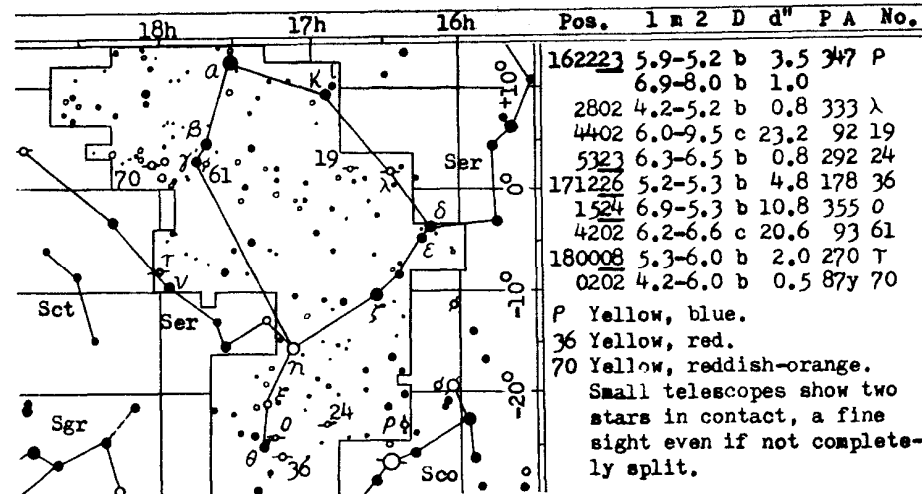
R.A.LOBBETT



"FRONT COVER DESIGNS FOR THIS MAGAZINE"  
 PLUS PERSONAL CARDS, OLD ENGLISH SCRIPT,  
 POSTERS, CARTOON WALL PAINTINGS (FOR CHILDREN'S  
 BEDROOMS) ETC. HUMOROUS VERSE AND HUMEROUS SONGS!

OPIUCHUS

Atlas of Double Stars



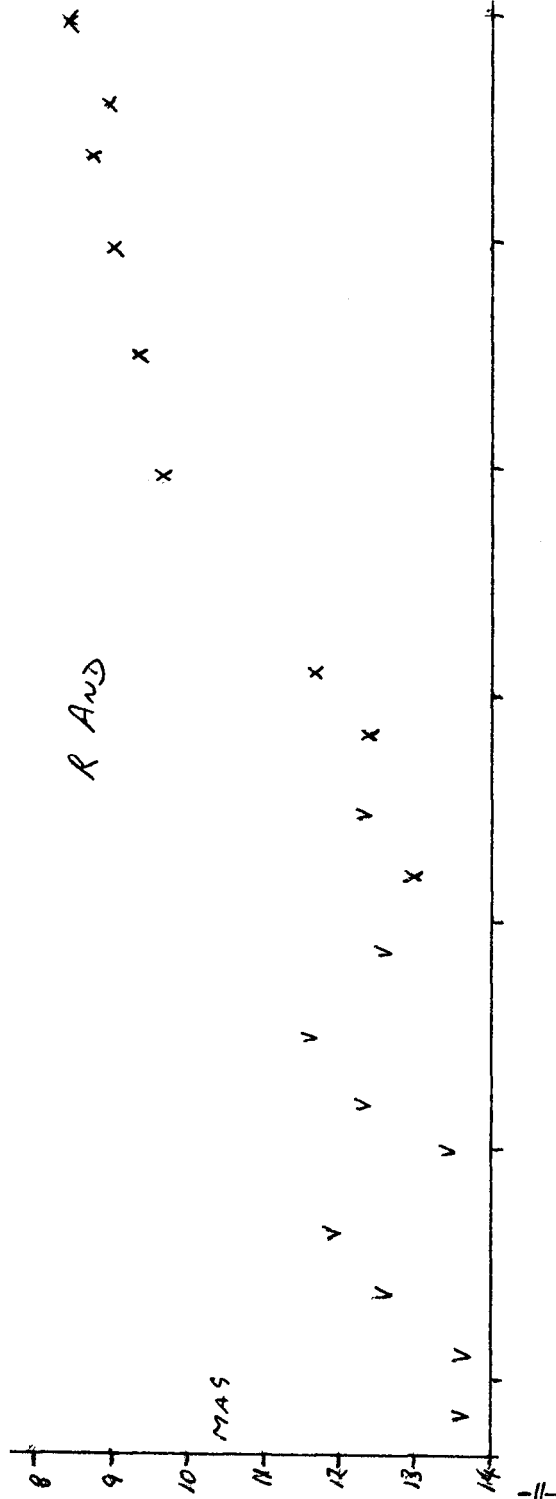
VARIABLE STAR OBSERVATIONS

by Mike Nicholls

This light curve is that of R Andromedae from September 1986 to March 1987. It shows a rise from minimum, where the star is too faint to be seen, towards a maximum. The Vs on the curve mean that the variable is too faint to be seen, and indicate the magnitude of the faintest star seen. These are known as negative observations and are often as much value as a positive sighting. Thus they are always recorded.

R And is a Mira type variable with a period of about 409 days. The light range is generally between magnitudes 6.9 and 14.3. The maximum on this cycle looks as though it will be less than 6.9.

These observations were made using an 8" reflector.



PROGRAMME FOR JUNE

MONDAYS from 8pm 1, 8, 15, 22, 29	DOUBLE STAR & PLANETS SECTION Mr N Taylor [redacted], Faralands, Trimley. Mr T Gillan [redacted], Bardwell, Bury St. Edmunds. Miss M Edwards [redacted], Felixstowe.	Tel: Fel. [redacted] Tel: 0359 Tel: Fel. [redacted]
TUESDAYS from 8pm 2, 9, 16, 23, 30	GENERAL OBSERVATIONS SECTION Mr N Gage [redacted], Trimley. Mr R Newman [redacted], Felixstowe. Mr J King [redacted], Felixstowe.	Tel: Fel. [redacted] Tel: Fel. [redacted] Tel: Fel. [redacted]
WEDNESDAYS from 8pm 3, 10, 17, 24	NEBULEA & FAINT OBJECTS SECTION Mr M Cook [redacted], Ipswich. Mr D Payne [redacted], Wickham Market.	Tel: Ips. [redacted] Tel: W.Mkt [redacted]
FRIDAYS from 8pm 12, 26	GENERAL OBSERVATIONS SECTION Mr R Lobbett [redacted], Felixstowe. Mr J Hood [redacted], Ipswich. Mr M Harlow [redacted], Felixstowe.	Tel: Fel. [redacted] Tel: Ips. [redacted] Tel: Fel. [redacted]

On nights other than Wednesdays please contact directors to confirm dates

1987 COMMITTEE

CHAIRMAN	D Payne [redacted], Wickham Market, IP13 OSD	Work: [redacted] Home: [redacted]
VICE CHAIRMAN/ P.R.O.	D Barnard [redacted], Ipswich. IP4 5PP	Work: [redacted] Home: [redacted]
SECRETARY	R Gooding [redacted], Ipswich. IP1 6AE	Home: [redacted]
TREASURER	M Nicholls [redacted], Capel St. Mary, Ipswich, IP9 2EX	Work: [redacted] Home: [redacted]
MAINTENANCE	M Cook [redacted], Ipswich. IP4 5PZ	Work: [redacted] Home: [redacted]
JOURNAL CO-ORD.	E Sims [redacted], Ipswich. IP1 4HA	Home: [redacted]
LIBRARIAN	R Lobbett [redacted], Felixstowe.	Work: [redacted] Home: [redacted]
EQUIP. CURATOR	M Harlow [redacted], Felixstowe.	Home: [redacted]
SOCIETY EVENTS	P Richards c/o [redacted], Rushmere.	Home: [redacted]