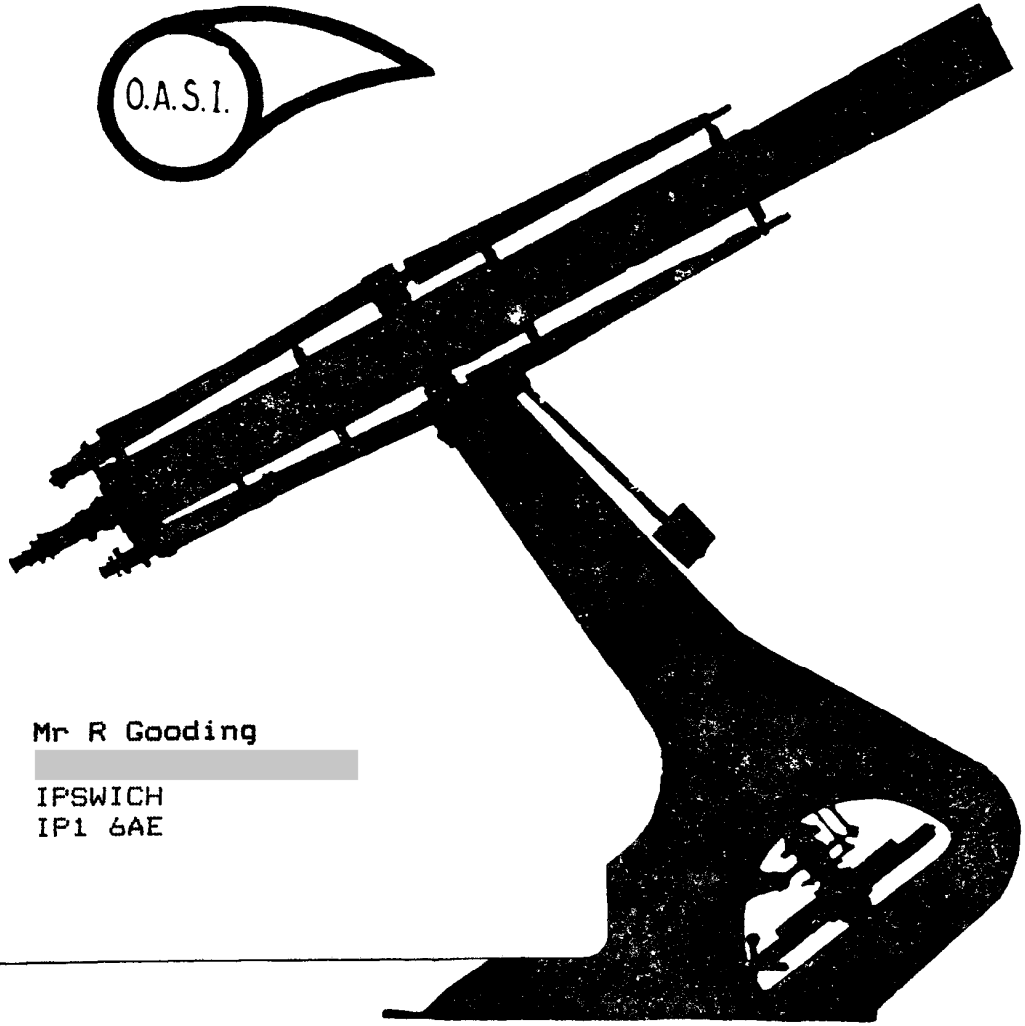
ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

JULY 1983



Mr R Gooding
[redacted]
IPSWICH
IP1 6AE

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

SOCIETY NEWS

The fireball observations reported in last months Journal were sent to the British Meteor Society. They like ourselves have found the objects very peculiar and confirm that they are unlike typical fireball trails. The photographs, taken with the Society's fireball camera operated by Alan Smith, have been sent by the B.M.S. to the Data Anomoly Reseach Centre in Maryland USA.

Sunday 3rd July is Parents Day at Orwell Park School. The observatory is to be opened for this event from 2 to 4pm. Your help would be appreciated for this event.

The Mid Kent Astronomical Society may be visiting the observatory on Saturday 23rd July. Again help will be required contact D Barnard nearer the date for details.

There is a Committee Meeting on Saturday 9th July, 7:30pm at the observatory. All members are welcome.

NIGHT SKY

CONSTELLATIONS The zenith is dominated by Vega in Lyra this month with Hercules to the west of the meridian and Cygnus high in the east. In the south is Ophiucus and Serpens with Aquila in the south east.

SUN Rises approx. 04:00 and sets 21:00 (BST).

MOON 3rd 10th 17th 24th

OCCULTATIONS

16th	ZC 1921	mag 5.9	D	22 hrs	19.5 mins
17th	ZC 2033	mag 4.3	D	22 hrs	20.8 mins
28th	ZC 3343d	mag 5.8	R	02 hrs	37.4 mins
28th	ZC 3349	mag 4.2	D	03 hrs	07.6 mins
28th	ZC 3349	mag 4.2	R	04 hrs	28.0 mins

(all times BST)

MERCURY Superior Conjunction July 9th.
VENUS Sets two hrs after sunset at begining of month, 40 mins after sunset at end of month. Mag. -4.2 mid month.
MARS Morning star rising one hour befor sunrise at end of month. Mag +1.9
JUPITER Sets about 4.5 hrs after sunset Mag -2.0 to -1.9
SATURN sets about 3.5 hrs after sunset Mag +0.8 to +0.9
URANUS Sets about 4.5 hrs after sunset approx mag 6
NEPTUNE Sets about 6 hrs after sunset approx mag 8

Journal Articles

We still need more articles for the Journal from members. Any articles of general astronomical interest are welcome particularly members' own observations. It would be appreciated if articles could be typed onto an A5 format for direct photocopying into the journal. However do not let lack of typing facilities stop you from writing as typing can always be arranged. Submissions for the August Journal are required to be no later than July 16th and should be sent to Dave Payne, Roy Cheesman or left at the Observatory. (Addresses on back page).

Observatory Maintenance This Summer

Jobs to be done include repairing the transit room roof, sealing the guttering under the observatory dome and painting the underside of the dome floor with a pesticide/preserver.

A Recent Item of Interest D Barnard

A supernova has been discovered in the galaxy NGC 4258 by its radio emission. This is the first time a supernova has been discovered at wavelengths other than light. This discovery must mean that many others have been missed - hence this will effect many branches of astrophisics as shocks from explosions of stars are thought to be responsible for the birth of some stars in a galaxy. The shocks also accelerate cosmic ray particles which produce the normal radio emission from spiral galaxies. Also pulsar (collapsed cores of Type II supernovae) numbers in our own galaxy can now be somewhat better explained, as the number of pulsars in our galaxy indicates a new pulsar is born every 10 years but the rate at which supernova explode in spiral galaxies has seemed to be about every 50 years using purely visible light observations.

Source: New Scientist 1983; 98 (1362), 778

NATIONAL ASTRONOMY WEEK

The second National Astronomy Week is planned for the week 9th - 16th November, 1985, to observe Halley's Comet.

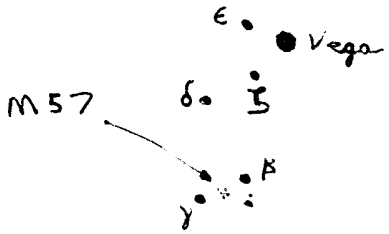
M57 The Ring Nebula in Lyra D P Payne

The small constellation Lyra is near the zenith late evening during July. Dominated by the brilliant star Vega, the fifth brightest star in the sky, it is an easy constellation to identify and contains the most famous of the planetary nebulae M57 otherwise known as the 'Ring Nebula'.

The nebula is easily found in a small telescope approximately midway between the stars Beta and Gamma Lyra (see map below). It is just discernable with 10 x 50 binoculars as a 9th magnitude object but is indistinguishable from a very faint star. The appearance in a 3 inch telescope is of a ghostly glowing disk slightly elliptical in shape about 80" x 60" in size. The ring structure is not clearly visible in telescopes smaller than 6 inches aperture although I have seen definite signs of a darker interior with a 70mm Maksutov telescope using a magnification of 90x. With a 6 inch telescope the ring structure can be clearly seen shining like a pale 'Polo' mint. With a 10 inch telescop fairly high powers can be used and some detail in the ring can be discerned.

It is often suggested that the ring shape is due to observing a spherical shell of glowing gas and that the ring shape is due to looking through the edge of the shell. However theoretical work suggests that this would not explain the differance in brightness between the central region and the ring and therefore the ring shape observed may indeed be the true shape of the nebula, that is a doughnut ring of gas surrounding the central star. This could also explain the odd shape of some of the other planetary nebulae such as the 'Cork Nebula' M76.

The central star in the 'Ring Nebula' is a 14th magnitude object requiring a large telescope for observation. The star is a blue dwarf star with a surface temperature of around 100,000 degrees Centigrade and is one of the hottest stars known. This high surface temperature produces intense ultraviolet radiation which ionises the surrounding gas causing it to glow by flourescence. The 'Ring Nebula' is estimated to be about 1500 light years away. This gives a diameter for the ring of about half a light year. The gases in the ring are shown by spectroscopic analysis, to be expanding at a rate of 12 miles per second. This should mean that the nebula would expand by 1.7" in sixty years but measurements made from photographic plates taken this length of time apart show that the change in apparent size is no greater than 0.3". An explanation for this anomoly could be that the visible, glowing region of gas observed, is not the true diameter of the nebula but only that region surrounding the hot star that has a sufficiently high intensity of ultraviolet radiation combined with adequate density of the gas cloud to cause flourescence of the gas. Outside this region the gas exists but is not glowing sufficiently brightly to be visible.



Meteor Notes July 1893 D Barnard

There are six active showers this month: (All Times U.T.)

Shower	Max.	Normal Limits	ZHR(max)	Radiant RA	Radiant DEC	Age of Moon	Notes
Alpha Lyrids	July 16	July 10-20	-	18 40	+38	5	Telescopic Shower
Capricornids	July 8 16 26	July to Aug.	6 6	20 44 21 00	-15 -15	27 5 15	Three maxima. Multiple Radiant Bright Meteors
Delta Aquarids	July 29 Aug. 7	July 15 -Aug.20	20 10	22 36 23 04	-17 -02	18 27	Double Radiant Rich in faint meteors. Telescopic observations needed.
Alpha Capricornids	Aug. 2	July 15 -Aug.25	8	20 36	-10	22	Rich in yellow fireballs.
Iota Aquarids	Aug. 7	July -Aug.	8	22 12 22 04	-15 -6	27	Rich in faint meteors. Double Radiant. Telescopic Observations needed.
Perseids	Aug.13	July 23 -Aug.20	100+	03 04	+58	4	Recent high rates. Meteors are bright with trails.

OBSERVATIONS OF PLANET JUPITER

60mm Refractor C.J. Cornish

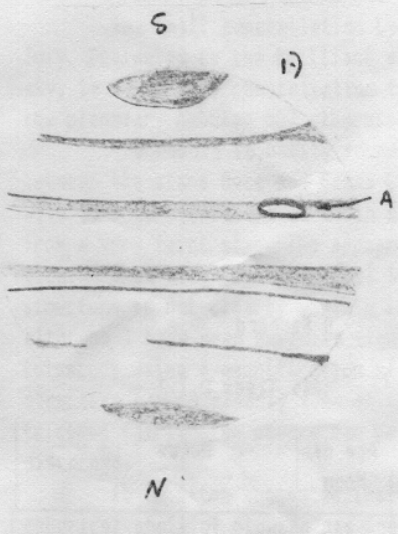


Fig .1.

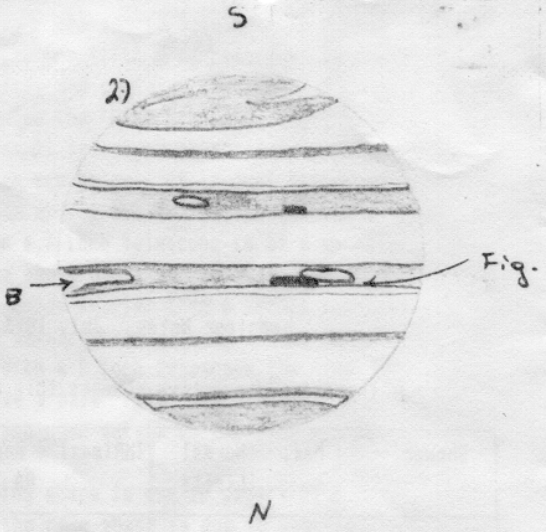


Fig .2.

Positions of Jupiter's Moons

1. This observation of Jupiter was made under bad conditions with only fleeting clear glimpses of detail.
   4/6/83 Time 10.14 - 10.26 p.m.
   The red spot was observed in the Southern Equatorial belt(A). Two moons were also observed, Fig.1.

2. This observation of Jupiter was made under very good conditions in twilight sky. 11/6/83 Time 9.36 - 10.06 p.m. There was large amounts of activity in the Equatorial belts. The white spot was observed in the Northern Equatorial belt. (B) Fig.3. was a bright white spot with a darker area near it. Four moons observed - Fig.2.

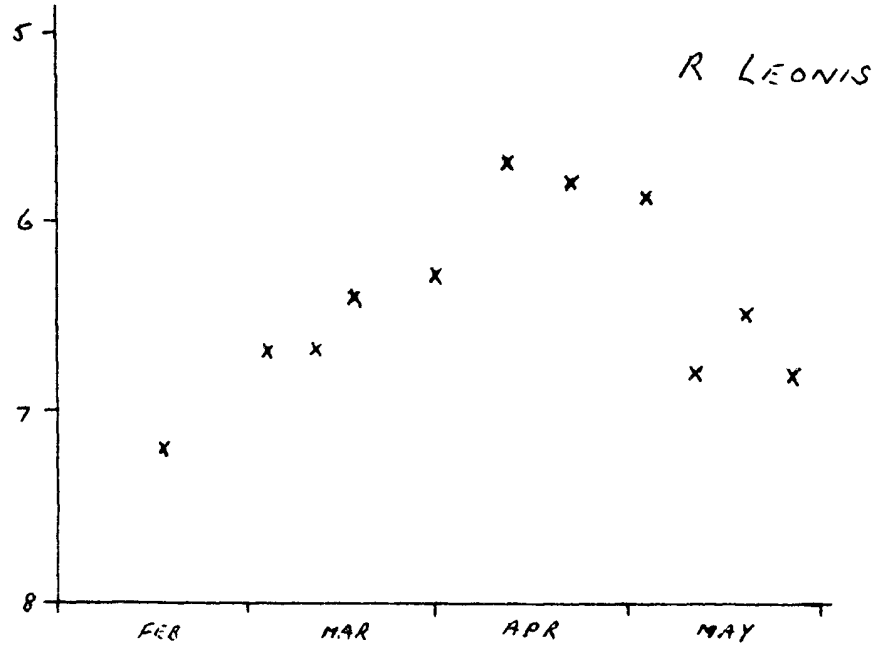
VARIABLE STAR OBSERVATIONS

by Mike Nicholls

This light curve shows R Leonis from February to May this year. This star is a member of the long period class of variables. It is a favourite amongst beginners to variable star observing, because it is easy to locate and can be followed with binoculars for much of its cycle.

The curve shows a maximum of about magnitude 5.7 during mid April. At minimum it drops to around magnitude 10.5 with a period of about 313 days. Thus the maxima occur slightly earlier each year. This can be seen by referring to the August'81 and July'82 journals. A similar 'step' in the curve at magnitude 7 is evident , as in the previous two years.

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



PROGRAMME FOR JUNE

MONDAYS from 8pm 4, 11, 18, 25	DOUBLE STAR & PLANETS SECTION Mr N Taylor [redacted], Walton Felixstowe Mr T Gillon [redacted], Felixstowe		Tel:Fel. [redacted] Tel:Fel. [redacted]
TUESDAYS from 8pm 5, 12, 19, 26	GENERAL OBSERVATION SECTION Mr N Gage, [redacted], Trimley Mr R Hebbs, [redacted]		Tel: Fel. [redacted] Tel: Fel. [redacted]
WEDNESDAYS from 8pm 6, 13, 20, 27	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 8, 22	VARIABLE STAR SECTION Mr R Gooding, [redacted], Ipswich Mr M Nichols, [redacted], Capel St. Mary.		Tel: Ips. [redacted] Tel: Ips. [redacted]
SUNDAYS from 8pm 10, 24	GENERAL OBSERVATION SECTION Mr R Adams, [redacted], Ipswich Mr M Barriskill, [redacted], Ipswich		Tel: Ips. [redacted]

1983 COMMITTEE

CHAIRMAN	D Payne	[redacted], Wickham Market, IP13 0SD	Work: [redacted] Home:
VICE CHAIRMAN	R Cheesman	[redacted], Corringham, Lane, Essex SS17 9BU	Work: Extn
SECRETARY	R Gooding	[redacted], Ipswich	Work: Home:
TREASURER	M Nicholls	[redacted], Capel St. Mary, Ipswich, IP9 2EX	Work: Home:
MEMBERSHIP SEC.	M Barriskill	[redacted], Ipswich	
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	N Gage	[redacted], Trimley, St Mary, IP11 9QY	Home: Work: