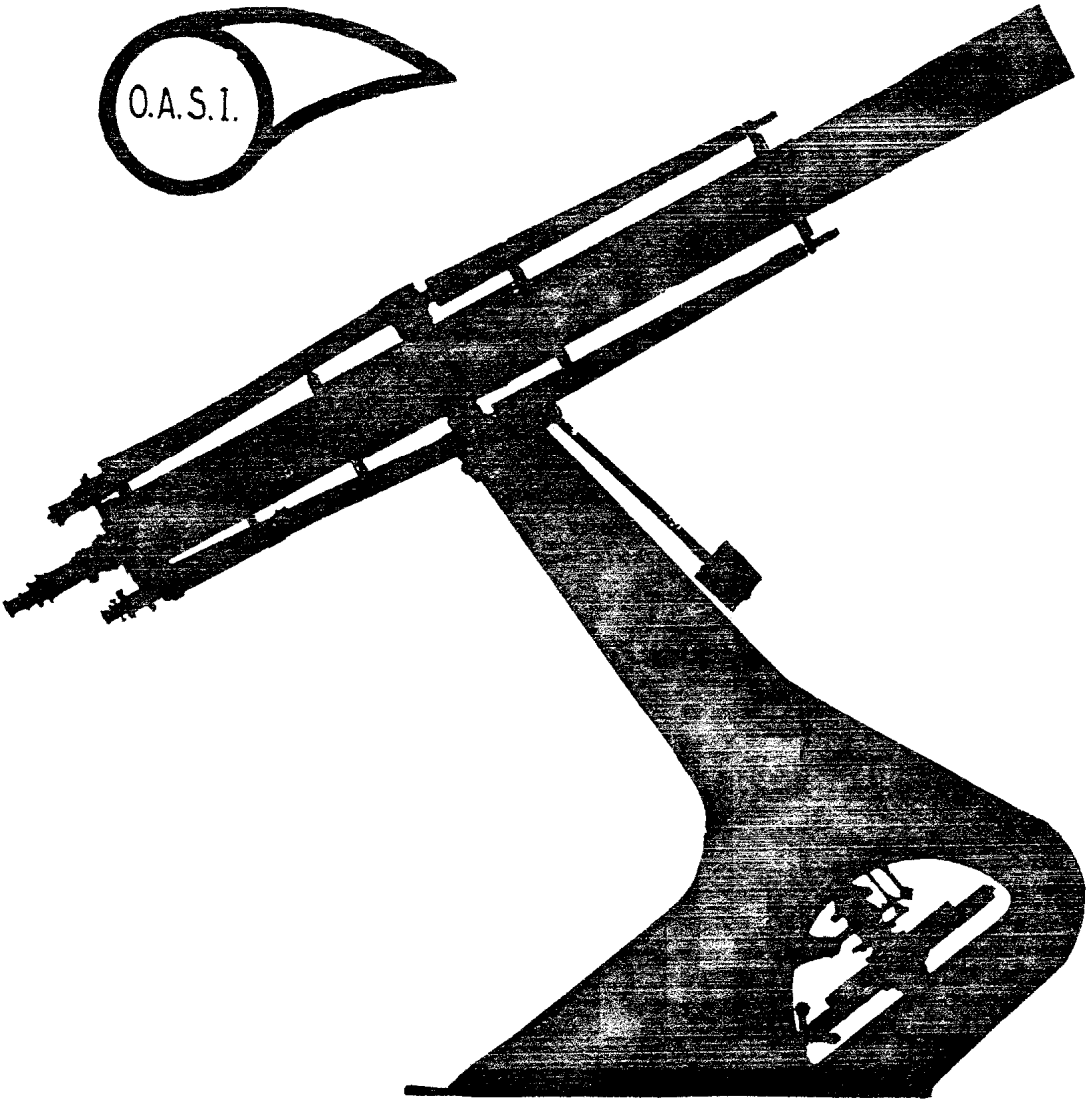


JANUARY 1985



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

1.

1985 SUBSCRIPTIONS

Subscriptions are due on January 1st.

Rates are: Junior £3.50  
 Adult £5.50  
 Family £6.50

Members wishing to have the monthly newsletter posted to them please include an extra £1.60.

Renewals should be sent to D. Barnard. Address on back cover.

2.

1985 ANNUAL GENERAL MEETING

All members are invited to attend the annual general meeting to be held on Saturday, 12th January, in the School's library, commencing at 20.00

3. Lecture Programme

The Winter lecture programme has been suspended due to lack of support.

Constellations (all times G.M.T.)

The Winter constellations are now at their best position for observation. The Spring constellations Cancer and Leo will be rising before 21.00 in mid month.

Sun Rises approx. between 08.06 - 07.44

Sets approx. between 16.02 - 16.44

Moon ○ 7th ● 13th ● 21st ○ 29th

Occultations

4th	ZC 767	mag. 5.5	D	21hr. 35.9m
9th	ZC 1484	" 3.6	R	24hr. 5.3m
27th	ZC 219	" 5.1	D	19hr. 1.2m

Mercury Greatest western elongation 3rd (23°)

Conjunction with Jupiter on January 31st in morning sky.

Venus Greatest eastern elongation 22nd (47°). Sets about 4½ hours after sunset in mid month. Mag. -4.0.

Mars Sets about 4½ hours after the sun in mid month. Mag. +1.2.

Jupiter Conjunction on the 13th.

Saturn Rises at 03.50 in mid month. Mag. +0.8.

Uranus Rises at 05.00 in mid month. Mag. 5.8.

Neptune Rises at 06.00 in mid month. Mag. 7.7.

It is 75 years since it's last visit, Halley's Comet will again become visible from Earth in late 1985 and early 1986. The orbit of the comet will take it closest to the sun on 9th February 1986 after which it will move away on it's next 75 year journey round the solar system.

To observe the comet from Earth a number of factors have to be considered, mainly the distance of the comet from the earth, the apparent location of the comet in relation to the sun and moon and the place on Earth from which you are observing. All these considerations establish that the best location to observe the comet is from the southern hemisphere and that the best time will be in the first half of April 1986.

There are many expeditions organised to observe the comet of which the main three that I know of are :

1. January 1986 - Observation of the comet at prior perihelion position - cost approx £190 by Explorers Travel Club.
2. Halley's Comet from South Africa. Approx. 12 day trip with organised visits to local observatories - cost approx £1100. Guest speakers on trip: Heather Cooper and Nigel Henbest. The trip is organised by Braintree & Halstead A.S.. As at 1st December 55 people had booked for this trip.
3. Halley's Comet from Australia. 12 day programme around Sydney and local observatories including the Anglo - Australian Telescopes at Siding Springs. Guest speaker on this trip is Patrick Moore. Basic price for the trip is £860 and tour extensions can be arranged either on the way out or on the way back from Sydney. Extensions include Bali, Singapore, Hong Kong, Bankok etc.

Two of our members have already booked on this trip with the added tours of 'The Outback' - 12 days of travelling by road from Sydney to Darwin calling at Alice Springs and Ayers Rock, covering about 3000 miles through the bush and observing the comet from the 'middle of no where' hundreds of miles from civilisation. After arriving at Darwin for a two day stay the two members are flying on to Bali for a 3 day recuperation period before flying home (approx 22 days "holiday" starting 3rd April 1986). The trip is arranged through Explorers Travel Club, Maiden Head.

Another of our members is thinking of observing the comet from Kenya.

If you are interested in any of these trips and would like further information please contact:

R M Cheesman

Corringham,  
Essex

Tele

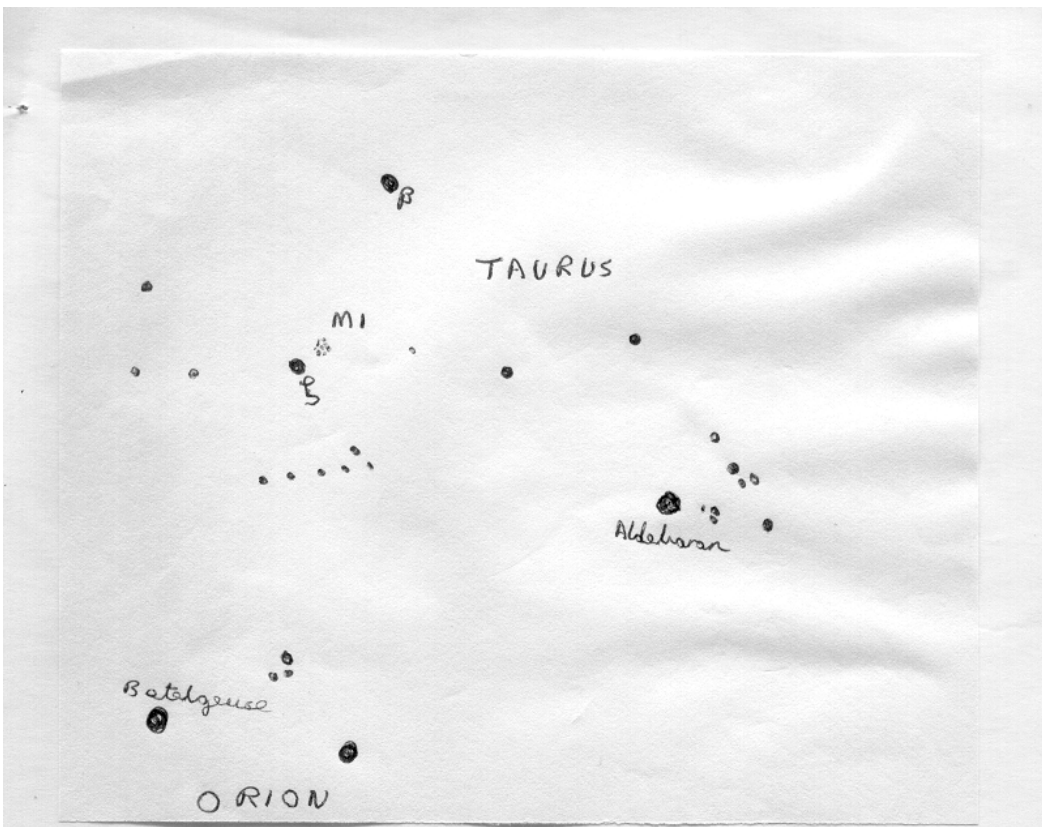
Lying in the constellation of Taurus due north of Orion is one of the most interesting and intensively observed objects in the heavens. The object is the famous Crab Nebula the most conspicuous supernova remnant known. The Crab Nebula is the first object in the Messier catalogue and was indeed the object that caused him to compile his famous list of nebula and clusters. The discovery of the nebula is credited to the English amateur astronomer John Bevis in 1731 but it was rediscovered by Messier in 1758. The nebula can be detected in a 3 inch telescope on dark clear nights but it is faint and at least a 6 inch is required to show the oval shape. In a 10 inch some faint detail can be discerned.

The nebula is expanding in size at the rate of about 600 miles per second. Using this figure calculations suggest that the nebula started to expand about 900 years ago and is now associated with a supernova that was recorded by the Chinese in 1054. The supernova was sufficiently bright to have been visible in daylight for 23 days!

The nebula contains considerable filamentary structure, which is the main source of light from the nebula. This filamentary structure is embeded in a much more diffuse cloud of nebulosity. It has been found that the light from the nebula is polarised indicating the presence of strong magnetic fields. The Crab Nebula is also a strong source of radio energy which is also strongly polarised. In 1963 it was discovered that it is also a powerful X-ray source emitting about 100 times as much energy in the form of x-rays as it does in visible light. These discoveries have indicated that the radiation emitted is produced by high energy electrons being accelerated in the strong magnetic fields and producing a type of radiation know as synchrotron radiation.

At the centre of the Crab Nebula is a very strange object, a super dense star so compressed that the electrons and protons have been forced to combine and form neutrons such that the whole star is a tiny object only a few miles in diameter consisting almost entirely of neutrons. The neutron star at the center of the Crab Nebula is spinning at about 30 times a second. There is an incredibly strong magnetic field associated with the star also rotating at this rate. The presence of this intense rotating magnetic field cuses a beam of radiation to be emitted which, as it passes the Earth, appears as a pulse. Hence the name 'pulsar' for this class of objects. Here again the Crab Nebula pulsar was the first pulsar to be discovered.

So much has been learnt about the Crab Nebula that a complete book has been devoted to it, published by D. Reidel Publishing Company in 1971 and entitled 'The Crab Nebula'. Such a famous object deserves at least a quick look. During January it is high in the sky and easily found about 1 degree north west of Zeta Tauri.



A Missing Astral Link

Astronomers at the University of Arizona claim to have detected "the first planet in orbit around another star"; but this object may be instead a missing link between stars and planets. They have investigated the infrared emission from a very dim star, called VB8, and found that it is accompanied by another object that emits infrared frequencies.

VB8 is one of the most intrinsically dimmest and coolest stars known, emitting only one hundred thousandth as much light as the Sun. Although it is only 21 light years away, the star is 10,000 times too faint to be seen with the naked eye. It is part of a star trio, orbiting another pair of stars that are each a thousand times brighter. VB8 is red dwarf star with a surface temperature of only 2400K.

It is estimated that the newly discovered infrared companion has a mass that is so low that the object cannot heat up enough for nuclear reactions to make it shine as a star. Its infrared emissions come from heat generated as it shrinks. This object has been called "a planet 30-80 times heavier than Jupiter".

As it has such a high mass it is different from other planets in our Solar System. Other astronomers have searched for other isolated infrared "stars" with masses this low and believe that an object called LHS2924 may be only as heavy as 50 Jupiters, and have dubbed it as a "brown dwarf".

Celestial Flashes Match Gamma Ray Bursts

Astronomers working in Chile claim to have seen flashes of light from a mysterious source previously known to emit bursts of gamma rays. Gamma-ray detectors in spacecraft have found 16 bursts of gamma rays from this object which lies in the remains of an exploded star in our nearest neighbouring galaxy, the Large Magellanic Cloud. No other observations have so far seen the gamma-ray source itself, which theory tells us is almost certainly a neutron star. Now a team of 13 European Astronomers have used an optical telescope in Chile to monitor the position of the gamma-ray source, for a total of 910 hours. They have found 3 flashes of light, the longest only 0.4 seconds in duration. The team is fairly confident that it was able to eliminate other possible flashes in the sky. If the flashes are indeed brighter at optical wavelengths than in gamma-rays, then simple ground-based studies may crack the mystery of the gamma-ray bursters.

(David Barnard)

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The O.A.S.I. Annual General Meeting  
 Will Be Held:  
 7:30pm SATURDAY JANUARY 12th  
 At  
 Orwell Park School  
 In  
 The Library

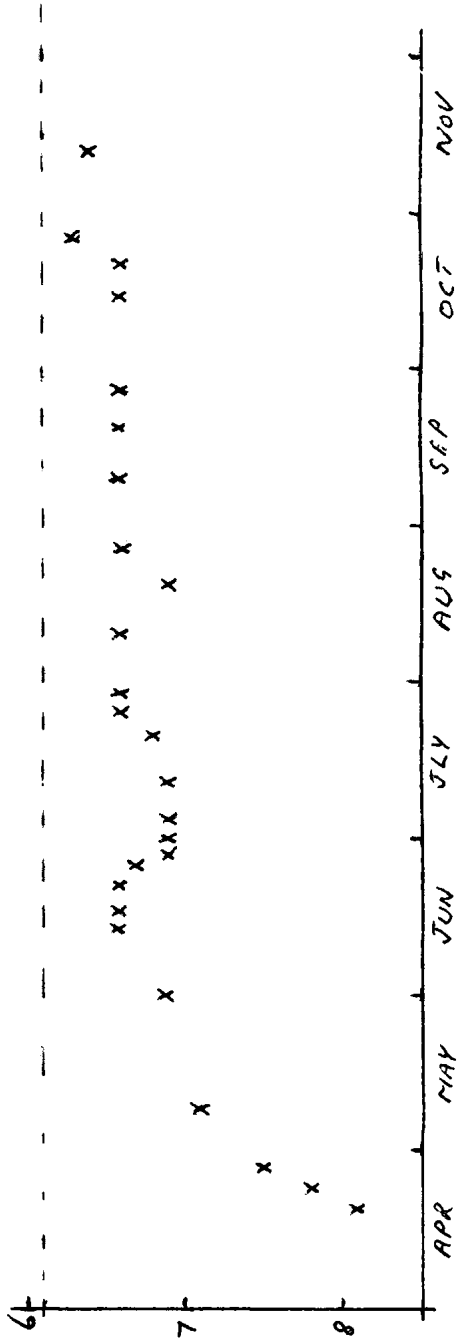
\*\* PLEASE COME ALONG \*\*

VARIABLE STAR OBSERVATIONS

by Mike Nicholls

This light curve shows R Coronae Borealis from April to November 1984. This star is the best known example of a class of the same name. Normally it stays at a magnitude of about 6.1, which is indicated by the dashed line. However, occasionally and quite irregularly, it fades quickly to around the 15th magnitude. This it did in the autumn of 1983, as is shown in the Nov 1983 journal. It remains at a minimum for an unpredictable period, which can be years, before rising to maximum again. This it usually does more slowly and erratically than the fade. This light curve shows a portion of this rise towards the maximum, and it can be seen that the star has not yet reached its maximum yet. It is possible that it may fade again before reaching the maximum

Observations were made using both binoculars and an 8" reflector.



PROGRAMME FOR JANUARY

MONDAYS from 8pm 7, 14, 21, 28	DOUBLE STAR & PLANETS SECTION Mr N Taylor [redacted], Farlands Trimley Mr T Gillan [redacted], Felixstowe	Tel: Fel. [redacted] Tel: Fel. [redacted]
TUESDAYS from 7pm By Arrangement With Directors	GENERAL OBSERVATION SECTION Mr N Gage, [redacted], Trimley Mr R Newman [redacted], Felixstowe	Tel. Fel. [redacted] Tel: Fel. [redacted]
WEDNESDAYS from 8pm 2, 9, 16, 23, 30	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 By Arrangement With Directors	VARIABLE STAR SECTION Mr R Gooding, [redacted], Ipswich Mr M Nicholls, [redacted], Capel St. Mary.	Tel: Ips. [redacted] Tel: Ips. [redacted]

1984 COMMITTEE

CHAIRMAN	D Payne	[redacted], Wickham Market, IP13 OSD	Work: [redacted] Home: [redacted]
VICE CHAIRMAN	R Cheesman	[redacted], Corringham, Essex SS17 9BU	Work: [redacted] Extn: [redacted]
SECRETARY	R Gooding	[redacted], Ipswich IP1 6AE	Work: [redacted] Home: [redacted]
TREASURER	M Nicholls	[redacted], Capel St. Mary, Ipswich, IP9 2EX	Work: [redacted] Home: [redacted]
MEMBERSHIP SEC.	M Barriskill	[redacted], Ipswich IP1 2EZ	Home: [redacted]
P.R.O.	D Barnard	[redacted], Ipswich, IP4 5PP	Home: [redacted] Work: [redacted]
MAINTENANCE	M Cook	[redacted], Ipswich, IP4 5QA	Home: [redacted] Work: [redacted]
FUNCTIONS	E Sims	[redacted], Ipswich, IP1 4HA	Home: [redacted]
LIBRARIAN	N Gage	[redacted], Trimley St Mary, IP10 0XZ	Home: [redacted] Work: [redacted]