

NOVEMBER 1983



1. 12 Tickets for the South East Essex Astronomical Society 'April Day' will be ordered.
2. Neil Taylor will be giving a lecture at the Friends Meeting House on Friday, 9th December, at 8.00 p.m.
3. Subscription rates due on January 1st will be £3, £5 & £6 respectively for under 18's, adults and family membership.
4. As was mentioned in September Newsletter the S.E.E.A.S. lecture programme includes:-
 - Thursday, 3rd November, Dr. Simon Mitton
Supernovae and Galaxies (ticket only)
 - Thursday, 1st December, Nigel Henbest
The New Astronomy (ticket only)
 - 1984, Thursday, 5th January, Film night.
 If sufficient interest is shown trips will be organized.
5. The observatory at Nacton is now open weekly on Mondays, Tuesdays, Wednesdays and fortnightly on Fridays and Sundays. No prior permission is required to attend these meetings. If you have not been at the dome for some time, perhaps you could make a date during November to come along.

THE NIGHT SKY

Constellations (all times G.M.T.)

The winter constellations of Taurus, Auriga and Gemini are all visible in the early evening by the middle of the month.

Sun Rises approx. 07.00 to 07.55 Sets approx. 16.30 to 15.55

Moon ☉ 4th ☾ 12th ☽ 20th ● 27th

Occultations

12th	ZC 3178	mag. 6.2	D	19hr	30.7m	
15th	" 5	" 4.7	D	22hr	50.7m	
16th	" 106	" 6.8	D	22hr	58.8m	
18th	" 354	" 5.5	D	23hr	55.9m	
23rd	" 1070	" 5.2	D	20hr	12.0m	
25th	" 1239	" 6.4	D	0hr	07.7m	
27th	" 1514	" 6.1	D	5hr	39.4m	17th

Mercury Visible in evening sky. Elongation of 10° at mag.-0.5 on

Venus Visible in morning sky. Greatest Western Elongation, 47° at mag.-4.1 on 4th.

Mars Rises about 5 hrs. before sunrise.

Jupiter Sets about 1hr 30m after sunset mag.-1.3

Saturn Rises about 30 mins before sunrise mag. 0.8

Uranus Sets about 1 hr. after sunset.

Neptune Sets about 2 hr.30mins. after sunset.

R. Gooding.

Neptune's moon Triton seems to have an atmosphere, according to research reported at the Natural Satellites Conference at Cornell University in New York State. Apparently Triton has an atmosphere capable of varying its volume one thousand-fold, while its surface is covered in an ocean of liquid nitrogen, maybe with solid methane 'icebergs.

Triton is roughly the same size as our moon, about 2100 miles in diameter. The orbit of Triton around Neptune is unstable and this has a considerable effect upon the atmosphere. The plane of the orbit undergoes rapid precession about Neptune leading to a large variation in both the amount and direction of sunlight reaching different parts of Triton. Hence extreme variations of temperature are created on this cold world. All the volatile substances are at the poles and it is the temperature of the poles that govern the properties of the atmosphere (like the solid carbon dioxide polar caps of Mars).

Underneath this atmosphere lies a liquid nitrogen ocean, according to scientists using NASA's 3m IR telescope in Hawaii. Triton's surface temperature is -218 degrees centigrade which would allow solid methane ice to float in the liquid nitrogen ocean. Triton is now the second moon in the solar system on which nitrogen has been detected - the other being Saturn's satellite Titan.

Source: New Scientist Vol, 100 No. 1380 p. 177.

The Andromeda Nebula M31 D Payne

November is a good time for observing the nearest of the spiral galaxies, M31 the 'Andromeda Nebula. It is the most distant object that can readily be seen without optical aid (I am neglecting those claims for naked eye observation of M33 in Triangulum. I'm sure they are true but I have yet to see this galaxy without binocular assistance).

Binoculars are an excellent instrument with which to observe M31. On very clear dark moonless nights the faint outline of the galaxy can be traced out to three or four degrees, between 6 and 8 full moons side by side! With a telescope low powers are needed otherwise the faint glow of the nebula becomes an indistinguishable background for the foreground stars of our own galaxy and only the bright nucleus is clearly visible. In a 10 inch telescope on good clear nights some of the dust lanes are discernable.

M31 has four smaller satellite galaxies two of which (M32 and NGC 205) are fairly close to M31 and are visible in a 3 inch telescope. M32 is the brighter and smaller of the pair, NGC 205 being dimmer and larger and can be fairly difficult for a 3 inch, although I have seen it on several occasions with a 70mm (2.75 inch) Maksutov telescope. The other two satellite galaxies are not in the constellation

of Andromeda but lie approximately 7 degrees to the north of M31 the constellation Cassiopeia. They are NGC 185 and NGC 147 both are much fainter and require a 6 inch telescope to observe them.

M31 lies at a distance of about 2.2 million light years with a diameter extending to 180,000 light years and is certainly amongst the largest galaxies known.

VARIABLE STAR OBSERVATIONS

by Mike Nicholls

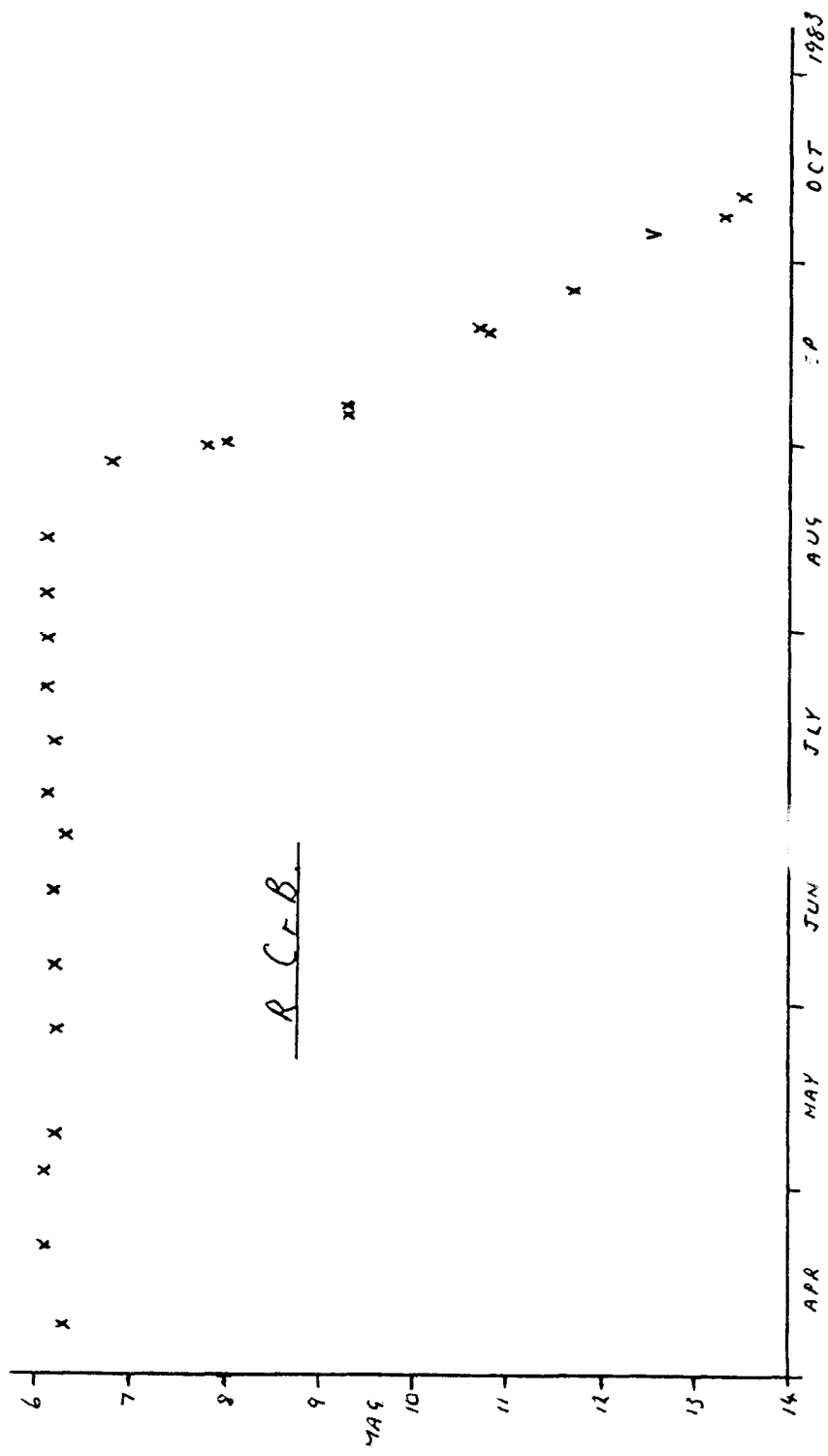
This month's light curve shows R Coronae Borealis from April to October this year. This star gives its name to a class of variables which remain at maximum for most of the time. R CrB has been at maximum for the past 3 years at least, apart from one or two short shallow dips of a magnitude or so.

Occasionally, however, they drop quite suddenly and unpredictably by several magnitudes, which R CrB has done in August this year as the light curve shows. Its movements from now on are equally unpredictable. It could return to normal quite soon, or it could remain at a minimum for a year or more. Alternatively, it could become unstable, rising and falling erratically for several years.

Compared to other types of variable, these stars are quite rare. They are thought to be very old and have consumed most of their hydrogen. Spectra show that they are rich in carbon. The current favourite model of the mechanism causing the variations is based on the abundance of this carbon. It is thought that occasionally carbon vapour rises above the atmosphere, cools and condenses to form a veil of soot around the star. This prevents light energy from escaping. Eventually the soot disperses, either into space or back into the star.

Observations were made using 10x50 binoculars and an 8" reflector. The 10" at Orwell Park would now be ideal for R CrB in its present state.

SOCIETY TRIP TO HERSTMONCEUX



On Saturday, 1st October, the F.A.S. held its third annual meeting at Herstmonceux which is situated about 12 miles West of Hastings and has been the home of the Royal Greenwich Observatory since 1948, having moved from Greenwich, London. A total of 14 members made the trip to Herstmonceux, 12 by minibus and 2 by car.

Alan Smith, having volunteered to drive the minibus, collected members from various locations around town. By 07.15 every one was accounted for, and Alan set a course for the A12 via Nacton Road (resisting the thought that after weeks of planning, we may all end up at Nacton observatory) he turned right at the round about heading out of town over the Orwell Bridge. The journey to the Dartford Tunnel was uneventful unlike last year (see November's issue for 1982) and by 10.15 our destination was reached.

After parking every one reported to the F.A.S. reception desk obtaining programmes and tickets for visits to the R.G.O. facilities in the afternoon. By popular demand, a visit to the cafe for coffee came next.

Having finished our liquid refreshment our party split up into groups. I joined Eric Sims and Martin Cook for a lecture on colour. We were lucky enough to get to the lecture room just before the doors were locked. Several of our party left it a little too late and missed the talk. The lecture had nothing to do with astronomy but proved to be just as interesting. Using a bank of about 6 projectors the lecturer showed how an arbitrary colour can be produced by mixing the three primary colours, by varying their brightness. Some colours could only be matched if a colour was subtracted instead of added.

The lecturer concluded with a question and answer period after which we made our way back to the minibus for lunch, where we found the others lunching. Before we had finished, a car drew up beside us, marking the arrival of Roy Cheesman and Michael Barriskill.

After lunch, we were left to our own devices. The activities included browsing round the trade stands where Ron Hebbs was to be found, the R.G.O. exhibition hall, attending lectures as well as guided tours of 3 R.G.O. facilities, namely the Starlink Computer, the laser ranging telescope and the 30" refractor. If none of these appealed, a ramble through the grounds could be taken.

The two previous F.A.S. meetings were both wet and windy. The weather at this year's meeting behaved true to form, with rain showers mixed with periods of prolonged drizzle. Fortunately the wet conditions did stop some of the time.

After returning to the cafe for coffee it was decided to commence the journey home leaving Herstmonceux at about six o'clock. After travelling about 10 miles Roy signalled that he wished to stop for petrol. During this break it was suggested that a further stop at a pub was called for.

Resuming our journey a second stop was made, having travelled at least 100 yards from the garage! This stop was at a pub called The Cross Keys. Having quenched our thirst a third attempt was made to place some miles between us and Herstmonceux. It was not long before a third stop was proposed for fish and chips, so Tonbridge was chosen. For some miles before reaching Tonbridge, we had been behind a car which appeared to be shy of travelling above thirty miles an hour, resulting in a considerable tail back of traffic. Just before the Tonbridge turn-off, the car was overtaken. What followed proved to be probably the fastest passage through Tonbridge any one had, or ever would experience. Needless to say no fish and chip shops were sighted. Emerging out of town and back on the main road, low and behold we found ourselves behind the same car, still travelling at the same speed! This was quickly overtaken. The next town Sevenoaks, was investigated and proved successful.

The journey from Sevenoaks to the Dartford Tunnel proved uneventful until the toll gates were reached. Approaching a gate with no vehicles waiting, Alan suddenly put the minibus into reverse with apparently no concern for any vehicles behind. With equal suddenness the van changed direction and leached forward again into another toll gate lane. Automatic toll gate was all Alan mentioned afterwards!

The final problem before we reached Ipswich could have proved very inconvenient had it occurred earlier in the evening. By the time we reached Capel St. Mary Alan mentioned that the electrics on the minibus were playing up. The headlights were barely on. These were turned off, leaving the side lights only, on. Had the engine stalled, there may not have been sufficient charge in the battery to restart it. So limping into Ipswich, every one was dropped off. The minibus was finally abandoned outside Alan Smith's for collection by Willhire.

The full list of members on the Herstmonceux trip were: Alan Smith, Martin Cook, Dave Barnard, Eric Sims, Carl Cornish, Tom Gillan, David, Martin, Angela & Darren Payne, Colin Button, Roy Cheesman, Michael Barriskill and myself.

R. Gooding.

PROGRAMME FOR NOVEMBER

MONDAYS from 8pm 7, 14, 21, 28	DOUBLE STAR & PLANETS SECTION Mr N Taylor [redacted], Walton Felixstowe. IP11 9BE Mr T Gillon [redacted], Felixstowe	Tel: Fel. [redacted] Tel: Fel. [redacted]
TUESDAYS from 7pm 1, 8, 15, 22, 29	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 4, 18, 25	VARIABLE STAR SECTION Mr R Gooding, [redacted], Ipswich Mr M Nicholls, [redacted], Capel St. Mary.	Tel: Ips. [redacted] Tel: Ips. [redacted]
SUNDAYS from 8pm 13, 27	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	Works: [redacted] Home: [redacted]
VICE CHAIRMAN	R Cheesman [redacted], Corringham, Essex SS17 9BU	Works: [redacted] Extn: [redacted]
SECRETARY	R Gooding [redacted], Ipswich	Works: [redacted] Home: [redacted]
TREASURER	M Nicholls [redacted], Capel St. Mary, Ipswich, IP9 2EX	Works: [redacted] Home: [redacted]
MEMBERSHIP SEC.	M Barriskill [redacted], Ipswich	
P.R.O.	D Barnard [redacted], Ipswich, IP4 5PP	Home: [redacted] Works: [redacted]
MAINTENANCE	M Cook [redacted], Ipswich, IP4 5QA	Home: [redacted] Works: [redacted]
FUNCTIONS	E Sims [redacted], Ipswich, IP1 4HA	Home: [redacted]
LIBRARIAN	N Gage [redacted], Trimley, St Mary, IP11 9QY	Home: [redacted] Works: [redacted]