ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

NOVEMBER 1984

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

SOCIETY NEWS

1. The 2nd East Anglian Astronomical Society's convention is to be held on 2nd February 1985. Interested members please contact R. Gooding.
2. A return visit to Norwich A.S. is proposed for December or January if sufficient people are interested.

NIGHT SKY

Constellations (all times G.M.T.)

The autumn constellations are still well placed for observation though by the end of the month the principal winter constellations will have risen in the east by mid evening.

Sun Rises approx. between 7.10 - 8.00
Sets approx. between 16.30 - 15.50.

Moon ○ 8th ◑ 16th ● 22nd ◐ 30th
Penumbral eclipse of Moon on the 8th begins before moonrise at 16h. 20m, ends at 20h 12m.

Occultations

3rd	ZC 3458	Mag.	6.5	D	22h.46.3m
4th	25	"	7.5	D	24h. 8.6m
10th	709	"	4.3	R	18h.41.5m

Mercury Greatest eastern elongation on the 25th when it sets about 1 hour after sunset.

Venus Sets about 2 hours after sunset in mid month.

Mars Sets about 4½ hours after sunset in mid month.

Jupiter Sets at 19.00 in mid month.

Saturn In conjunction with sun on the 11th. Unobservable till end of the month.

Uranus & Neptune Both approaching conjunction with sun.

OPEN WEEKEND

The Open Weekend held during the four nights from September 28th to October 1st, contributed about £170 to Society funds.

The Saturday evening provided the best weather conditions with the sky being completely clear all the time the Observatory was open. As well as the 10", two smaller telescopes, a 70mm Maksutov and 4½" reflector were in use on the balconies. Shorter periods of clear sky occurred during the other three evenings. Cloud prevailed so much on Friday and Sunday that the back up slide programme was brought into use.

On Monday evening the Draw was held at 21.00

R. Gooding

VARIABLE STAR OBSERVATIONS

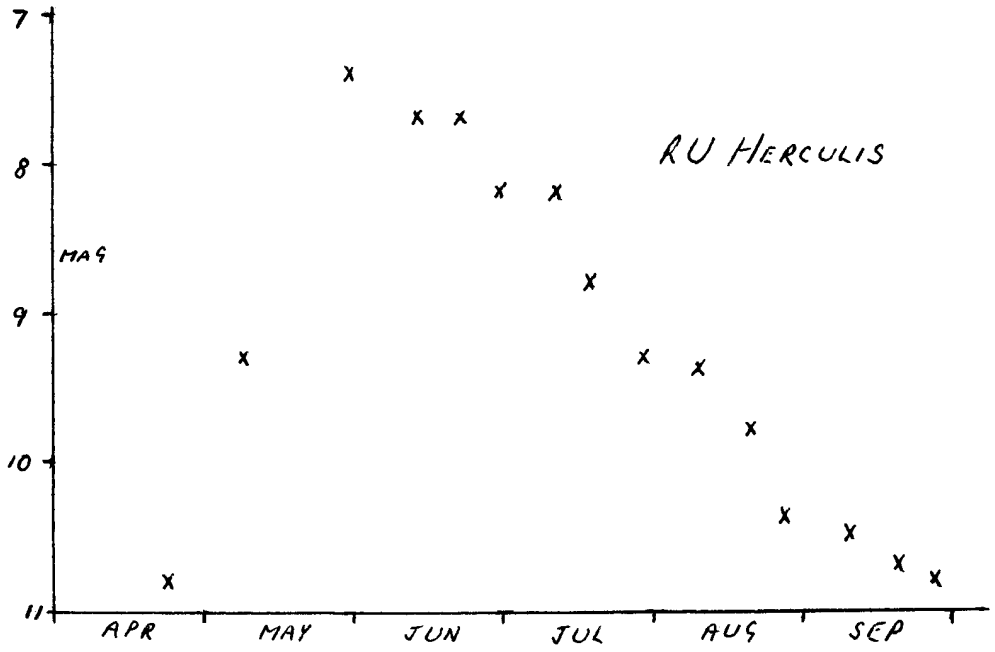
by Mike Nicholls

The light curve shown below is that of RU Herculis from April to September this year. It shows a typical maximum for this star, which is a long period variable. The minima for this star average at magnitude 13.7 and so there is much more of the cycle fainter than the portion shown here. This is also borne out by the fact that the whole period is about 485 days, or about 16 months.

The actual date of the maximum appears to be the first of June; however, I do not have any figures for the predicted date.

Notice that the rise is much faster than the fall. This is quite normal for this class of variable.

All observations were made using an 8" reflector.



F.A.S. MEETING AT HERSTMONCEUX

R. Gooding.

On Saturday, 6th October, the F.A.S. held their fourth annual meeting at Herstmonceux. For any member who does not know, Herstmonceux is the home of the Royal Greenwich Observatory, situated in Sussex about 11 miles from Eastbourne. The group from Ipswich consisted of only three members, Martin Cook, Eric Sims and Roy Gooding who left at 07.50. At the Dartford tunnel Roy Cheesman with a member from Chelmsford A.S. were met.

Travelling in convoy towards Herstmonceux, the weather at complete variance to the Herstmonceux tradition had turned to brilliant cloudless blue sky on our arrival at 10.20. Heavy rain had greeted us on the three previous visits. As soon as the cars had been parked outside Herstmonceux Castle, numerous cameras rapidly appeared out of pockets and bags to be hurriedly pointed at the Castle and surrounding grounds to record the unprecidented weather condition. Just in case the rains should re-appear without warning.

After reporting to the reception desk, our party went into the flower garden at the back of the Castle where particular attention was given to the sun dial. The remaining time before lunch was spent looking round the R.G.O. permanent exhibition and various trade stands. Afterwards a packed lunch was enjoyed in the warm October sunshine.

It was decided to attend the lecture on Photometry for Amateurs, scheduled to start at 14.00. The interim time after lunch was spent strolling round part of the R.G.O. grounds. The venue for the talk was changed at the last minute to an alternative room. This was after the audience was seated and waiting for the start. Needless to say the start was delayed. The lecture was sat through with patience and fortitude with interruptions only to catch people from falling off their chairs. We left the lecture with the feeling that we should have remained in the original room where an Astro 'Call My Bluff' panel game was being held and from which loud appreciative applause was heard at its conclusion.

The next area we visited was the second room containing the R.G.O. permanent exhibition that only opened in the afternoon. Here we were able to admire a 6" refractor made by T. Cook and Son. Looking through the eyepiece we had the good fortune of the telescope being pointed at Messier 42, the view of which was enjoyed in full colour. Now there's an idea! On the next cloudy night we should try the same with the 10".

Refreshment at the R.G.O. cafe was sought before commencing a second stroll round the grounds, which brought us to the laser ranging telescope. The equipment is used to determine the distance to the Geos satellite. This is one of several similar stations round the world that are used to study plate tectonics. As the skies were clear the telescope and laser had actually just completed a measurement prior to our arrival at the dome. Whilst we were having the equipment explained to us the laser was calibrated by using a reflector on the side of the former I.N.T. Dome situated about ¼ mile away.

After a final look round the trade stands we all retired back to the cars for tea. Before leaving for home we attended a lecture on the Interiors of the Planets and their satellites, which ended at 19.00. The journey home was interrupted by three stops. The first being a return visit to the Cross Keys Pub. at Hurst Green (first visited last year). The second and third stops being at a fish and chip shop in Orpington and at the Dartford Tunnel where we bid farewell to Roy Cheesman and friend.

We arrived home after an enjoyable but tiring day at 23.00.

Result of Grand draw held on 1/10/84.

1st Prize(b/w TV) won by ticket no.493, Steve Allen, Shell Haven.
Chocolates-no.907, A Rayner, [redacted], Felixstowe.
Sherry-no.639, C Nice, [redacted], Felixstowe.
£2 Book token-no.919, R Clark, [redacted], Eastwood, Leigh on Se
£2 Book token-no.279, B Coe, [redacted], Colchester.
White wine-no.894, Jessica Copsey.
Red wine-no.345, Mrs P Dedman.
Quality Street-no.741, June(Routemaster).
" " -no.839, Mr G J Smith, [redacted].
Roses-no.579, Thersa Ward, [redacted], Woodbridge.
" -no.168, F N Gooding, [redacted], Ipswich.

STOP PRESS
FOR SALE: 84mm Reflector with 2 eyepieces, mount + tripod. Used on many successful OASI expeditions £25 O.N.O. A.Smith Ips. [redacted].

New Evidence of Distant Planets

A photograph of a flattened disc of material surrounding a star 50 light years distant is being regarded as the most concrete evidence yet that planets exist outside our Solar System. The way in which this disc was discovered suggests that planetary systems could be common.

The disc was seen around the star Beta Pictoris by Richard Terrile of Pasadena. It was photographed from the University of Arizona. The disc may be material left over after planets were formed. Terrile says he has not seen any planets directly.

Until last year, the best evidence for other planetary bodies was a small 'wobble' seen in the motions of a few stars close to our Solar System, which could be blamed to gravitational forces from planets. Last year, IRAS (the Infrared satellite) returned data showing that four stars , among them Beta Pictoris, had gas clouds around them. This indicated the chance that planets were being formed.

Beta Pictoris was observed through the 100" telescope at the Las Campinas Obser vatory in Chile.A disc was spotted, a shape which should be produced during planetary formation. The composition of the disc is not yet clear but Terrile believes it may be similar to that of the planets in our Solar System.

The disc is roughly 10 times bigger than our Solar System. Even at 50 light years away, that is large enough to see with a telescope; the disc makes an angle of 50 arcseconds, larger than the planet Jupiter as seen from Earth. But the disc is so faint that it is overwhelmed by light from the central star. To make the disc visible, Terrile used a mask to block out the light from the central star, and then processed the data through a computer to remove the effects of starlight scattered by the atmosphere. The density of the disc seems to increase nearer the star, but Terrile thinks the disc may be hollow, because the interior material has already formed planets.

Eventually, he says, the motion of the large planets in the system will disperse the debris that make up the disc. The five billion years since the formation of our Solar System have been enough for such debris to be removed from the region of the sun.

(David Barnard)

Some Messier Objects for November D Payne

Messier objects lying in the Right Ascension range 0 hours to 3 hours present a southerly aspect during November. In this range there are 8 objects spread over the constellations: Cassiopeia (M103), Andromeda (M31 & M32), Perseus (M34 & M76) Triangulum (M33), Pisces (M74) and Cetus (M77). All the objects, apart from M77 in Cetus, are north of the celestial equator and M77 is only a few minutes of arc south, so they are all high in the sky and in good positions for observation.

M103 in Cassiopeia is a galactic cluster easily found in binoculars about 1 degree north east of Delta Cass. It is a fairly condensed cluster of about 40 stars the brigter members of which are easily resolved in a 3 inch telescope.

M34 in Perseus is an excellent object in binoculars. It is a fairly large open cluster of about 80 stars. When observing with telescopes, low powers are preferable as higher powers simply spread the brighter stars generally across the field of view. The other Messier object in Perseus M76 is often said to be the faintest object in the Messier catalogue with an integrated magnitude of 12.2. M76 is a planetary nebula with a peculiar elongated shape. Because of the low surface brightness it can be a difficult object for small telescopes but I have managed to observe it on several occasions with only a 75mm Maksutov telescope and have even been able to discern something of its elongated shape.

The Messier object M33 in triangulum is a face on spiral galaxy some times known as the 'Pin Wheel Galaxy'. It is the second closest spiral galaxy to us after the Andromeda Nebula M31. M33 is not an easy object for small telescopes because of its large size and low surface brightness. It is reportedly visible with the unaided eye wich would make it the most distant object visible without optical aid. However such observations require excellent seeing conditions and very dark skies not usually found from UK observing sights. It is however easily found with binoculars and using these instruments is probably the best way of locating the object. When observing with telescopes low powers are essential, for example only about 20x is all that should be used with a 3 inch and no more than 50x with a 10 inch.

M74 in Pisces is another large and faint face on spiral galaxy and again requires low powers and good dark skies. It is considerably further away than M33, about 30 million light years compared with 2.4 million. It has a much more condensed nucleus than M33 and it is this nucleus that is visible in small telescopes.

The most southerly of the objects described this month is M77 in Cetus but being almost on the celestial equator still means that it is high in the sky throughout the month. M77 is a 'Seyfert' galaxy so named after the American astronomer Carl Seyfert. These galaxies have very bright almost stellar like nuclei and are thought to relate in some way to Quasars. M77 is easily seen in small telescope as a fuzzy star while larger instruments show the bright central nucleus and a surrounding fainter 'halo'.

PROGRAMME FOR NOVEMBER

MONDAYS from 8pm 5, 12, 19, 26	DOUBLE STAR & PLANETS SECTION Mr N Taylor [redacted], Farmlands 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]
WEDNESDAYS from 8pm 7, 14, 21, 28	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 0SD	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.	M Barriskill	[redacted], Ipswich IP1 2EZ	Home:
P.R.O.	D Barnard	[redacted], Ipswich, IP4 5PP	Home: Work:
MAINTENANCE	M Cook	[redacted], Ipswich, IP4 5QA	Home: Work:
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