



The Newsletter

of the



Orwell Astronomical Society (Ipswich)

Registered charity no. 271313

2010 October

www.oasi.org.uk

No 456



The Total Solar Eclipse 2010 July 11 (Paul Whiting)

Society News (Roy Gooding)

1 Committee Meeting Saturday 23rd October

All members are invited to attend the next Committee meeting, on Saturday 23rd October. Start time 20:00. Venue Methodist Church Hall

2 Access into the School Grounds and Observatory Tower

Please use the third gate into the school grounds, this is the gate behind the Gym. If the Black door entrance at the base of the observatory tower is locked, you will have to phone someone in the observatory to let you in. My mobile number is [REDACTED]. (Roy Gooding) alternatively the Observatory mobile is [REDACTED] during meeting hours. The gate code is on the back of your membership card

3 Welcome to New Members

4 Events Programme for 2010

This is a provisional event list, which will be updated through out the year

Meeting	Venue	Date
RAS Library visit Organiser: Contact Tina Hammond for more details	Burlington House Piccadilly London	Saturday 2 nd October
FAS Convention	Institute of Astronomy, Cambridge	Saturday 9 th October
Open Weekend		16 th / 17 th October 19:30 to 22:00
Lecture by Tom Boles: Discovering Supernovae - Motivation & Rewards	Methodist Church Halls, in Blackhorse Lane	Friday 22 October 20:00
Geminid Meteor watch	The "Dip" Felixstowe	Saturday 11 th December
Christmas Meal	Arlingtons Museum street	Wednesday 15 th December 20:00

5 Events Programme for 2011

This provisional event list will be updated through out the year

Meeting	Venue	Date
AGM	Methodist Church Halls, in Blackhorse Lane	Saturday 8 th January 20:00

OPEN WEEKEND

This event has now been confirmed with the School and will be held on Saturday 16th and Sunday 17th October
Doors open for the public at 19:30

As usual as much help as possible is required to make this an other successful Open Weekend.

If you are only available to help for a short time your presence will still be appreciated.

Please make use of the poster. If you require any more, please contact either Eric Sims or Roy Gooding

Christmas Meal!

Wednesday 15th December 20:00

Arlingtons require the meal deposit by the end of September. Please make your choice and confirm your attendance ASAP, by providing a deposit. Any cheques should be made out to Roy Gooding and not the society. As usual it will be on a first come basis. I have booked 30 places.

Arlingtons require the deposit by the end of September If you wish to attend please contact me. I will soon be closing any more bookings.

Starters:

Chestnut, parsnip & apple soup

Chicken, ham terrine

Prawn Cocktail

Beetroot, walnut salad with goats cheese toast

Smoked salmon, new potatoes with dill creme fraiche

Roquefort & red onion with hazelnut dressing

Main course:

Turkey with all the trimmings

Cod, with pea puree, smoked bacon & shallot sauce

Beef with Madeira fondant potatoes and mixed vegetables

Vegetable stew with fresh mango & coconut relish

Honey-roast pork, with mustard potatoes, apple compote & mixed vegetables

Roast lamb, onion mash, & mixed vegetables

Dessert:

Christmas pudding with brandy sauce

Ice coffee & honeycomb parfait

French Christmas roll

Chocolate Marquise pot

Winter berries Pavlova & toffee sauce

Cheeses & biscuits

Tea or Coffee with minced pie

Cost: £25 per head

Deposit: non returnable £10 by September

I will be instigating the usual booking method soon: Roy Gooding

OCCULTATIONS DURING OCTOBER

The table lists lunar occultations which occur during the month under favourable circumstances. The data relates to Orwell Park Observatory, but will be similar at nearby locations.

Date	Time (UT)	D R	Lunar Phase	Sun Alt (d)	Star Alt (d)	Mag	Star
02 Oct	00:20:55	D	0.40-	-41	13	5.9	61 Gem
	01:16:30	R		-38	21		
14 Oct	19:41:16	D	0.49+	-25	13	7.0	Hip 95577
16 Oct	21:32:14	D	0.68+	-40	18	7.1	ZC 3083
17 Oct	21:40:10	D	0.77+	-41	25	7.2	Hip 107974
18 Oct	23:00:18	D	0.85+	-47	27	5.0	kappa Aqr
28 Oct	05:13:44	D	0.75-	-14	57	2.9	mu Gem
	06:00:23	R		-7	52		

Night Sky (October)

All times GMT

Moon

3 rd Quarter	New Moon	1 st Quarter	Full Moon	3 rd Quarter
1 st	7 th	14 th	23 rd	30 th

Object	Date	Times		Mag	Notes
		Rise	Set		
Sun	1	05:56	17:33		
	31	06:48	16:29		
Mercury	1	04:42	17:24		Mercury is too close to the sun to see this month
	31	07:45	16:42		
Venus	1	09:45	17:46		Venus is too close to the sun to see this month
	31	06:52	15:41		
Mars	1	09:09	18:30		Mars is too close to the sun to see this month
	31	09:12	17:22		
Jupiter	1	17:16	04:58	-2.9	Jupiter is well placed to observe this month.
	31	15:12	02:43		
Saturn	1	05:50	17:44	0.9	Saturn is visible in the morning sky this month
	31	04:12	15:52		
Uranus	1	17:12	05:07	5.7	Uranus is above and to the left of Jupiter
	31	15:13	03:03		
Neptune	1	16:15	02:05	7.8	Neptune is in capricornus
	31	14:17	00:05		

Meteor Showers

Shower	Maximum	Limits	ZHR
Piscids	Sept. 8 th	Sept. to Oct.	10
	Sept. 21 st		5
	Oct. 13 th		?
Orionids	Oct. 22 nd	Oct. 16 th to 27 th	25

Meteor source is the BAA Handbook

A Visit to the Astronomy Festival at Herstmonceux

Paul Whiting

It must be about 32 years since I last visited the Royal Greenwich Observatory at Herstmonceux, East Sussex. Then it was still home to the RGO and the Isaac Newton Telescope. Now it is home to the Observatory Science Centre, owned and operated by a learning charity that makes all the science educational gizmos on display at many museums and activity centres. The Science Centre, with the help of volunteer experts, have renovated and restored the domes and remaining telescopes and throw them open to the public to use (at a charge) whenever possible. For six years now they have been holding an Astronomy Festival (an excuse to make more money) and this year I thought I would visit.

The festival starts on Friday night for observing and then day and night sessions on Saturday and Sunday. Each session costs £7.40. The day sessions each offer five talks – at £2 per talk. So £57 for the whole weekend – plus raffle tickets. I taught them well !!

I went along for the Saturday sessions. The talks were quite interesting and took place in Dome B underneath the 36 inch Yapp reflector. First Dr Chris Arridge from UCL gave a talk on the gas giant planets, detailing some of the latest discoveries from Cassini-Huygens. Then Dr Anthony Wilson of the London Science Museum gave a short history of the Isaac Newton Telescope, from its long committee stages trying to agree what to build, to the build process – utilising one of the first pyrex 98 inch mirror blanks made in the US a number of years previously for another project before their money ran out. Having decided on the type of telescope the press started criticising the location – let's face it East Sussex is as bad as the rest of the UK in terms of cloudy nights. That is why the Isaac Newton Telescope was moved to La Palma. When I say "moved", they took the opportunity to upgrade it - new mirror, new mounting, new controls I think a bit of the casing did survive.

Next came Dr Lewis Dartnell on astrobiology – I actually skipped this lecture to visit the amateur radio exhibit via the Coronado PSTs (a nice little prominence on display). The radio shack, based in the old weather station office, was tracking and monitoring satellites as they passed over, including some overhead passes of the ISS. We heard one of the astronauts talking, but we were unable to talk back to him.

In the afternoon, Will Gater, of the Sky at Night magazine, spoke on his book, "The Cosmic Keyhole", a list of the most important (to him) discoveries over the last 10 years. Incidentally Will and the preceding speakers (who were also touting their new books) were available at book signings. I managed to resist.

Finally Nik Szymanek gave his usual great talk showing his latest wonderful photographs. Everyone came out feeling very inadequate.

The evening session saw Domes A, D & E open for observing. Unfortunately the clouds rolled in but there were a few clear patches.

First to Dome A and the 30 inch Thompson reflector. Not brilliant optics but OK for planetary work. Unfortunately Jupiter was obscured by cloud. The crowd was getting ugly so the man in charge was persuaded to rotate the dome and aim the telescope at Arcturus. Trouble is a star through a giant telescope looks like, well a star! I moved on to Dome D.

Dome D, home to the 10 and 13 inch astrographic refractors. They use the 10 inch as a spotting scope for the 13 inch. It took the expert about 15 minutes to find Jupiter. I helpfully suggested they buy a smaller scope to use as a spotter spotter!

We eventually found Jupiter - the moons were well placed but the seeing was too bad to see very many stripes. The Red Spot was on the far side at the time.

Finally on to Dome E and the 147 year old Thompson 26 inch refracting telescope, with a 115 year old 13 inch spotter (will they never learn?). The best part of this dome is the rising floor – great fun. Despite the cloudy sky we did get to glimpse the M13 globular cluster.

So a good day out, it is good to see someone preserving the old domes and telescopes of the RGO from its two previous homes (Greenwich and Herstmonceux). The Science Centre personnel and volunteers appeared capable and showed a genuine interest in the preservation of the hardware.

My one gripe was the lack lustre displays put on by the trade stands and even the local societies (OK some made more of an effort than others). The beer tent was good though, not to mention the wonderful bacon toastie in the cafeteria.

If anyone is interested for future years, camping is encouraged (£10) and a weekend pass to enter the festival (not the talks) costs £30.

I found a very pleasant pub to stay in, the Horseshoe Inn, about a mile from the observatory on Windmill Hill – recommended, especially the inclusive breakfast.

The Polynesian Eclipse – 11th July 2010

Paul Whiting

As I had built up a wealth of hotel loyalty points through my very many nights away from home this year on business, I decided to extend this eclipse trip by a day or so by travelling to Heathrow the day before departure. This turned out to be a good idea as I was upgraded to a suite, which had the additional benefit of free access to the club lounge. Thus began a 3 day champagne binge! Let me explain. The flight to Tahiti takes around twenty hours flight time, plus the night stop-over in Los Angeles. This demanded an upgrade to Business Class, which meant access to the airline lounges in Heathrow and Los Angeles, which in turn meant the continuation of the champagne binge - for those interested this started off with Laurent-Perrier in the Crowne Plaza, Heathrow; Moët with Virgin Atlantic and finally Jacquard with Air Tahiti Nui. Still it was my birthday!

So the party of 120 Explorers travellers arrived at Tahiti. The first hotel, the Radisson Plaza, was very pleasant – we hadn't quite taken it over, in fact there were at least two other eclipse parties there, although they kept themselves to themselves. True to form for Explorers, the original hotel booked, the Hilton, actually closed down. So we had been hastily re-booked in to the Radisson Plaza, however we had to move to another hotel for one night as the Radisson was over booked. This effectively took out a whole day of leisure just to move – as check out was 10am an re-check in was 2pm.

As always with Explorers the phrase "a leisurely day" is far from the truth, especially when one has booked sightseeing. The half day tour of Tahiti was generally quite good - visiting Point Venus where Capt Cook studied the 1769 Transit of Venus, and a natural sea cliff blow hole - but the Paul Gauguin museum was a little um, let us say not my cup of tea.

The next day saw John Mason give his usual pre-eclipse briefing, definitely up to standard (DVD available later). However before he got started, much

to my embarrassment he presented me with a birthday card from the Explorers team.

The following day we moved to the newer hotel for one night, much nicer rooms but alas location and catering was way down on the Radisson, although it was much nearer the Town Centre and its facilities..

Saturday 10th was our private charter flight to the Hao. The Island around which the coral atoll has formed has long since eroded under the sea – hence there is just a flattened circular atoll around a classic south pacific lagoon.



Picture credit: NASA

Hao is an interesting place – it boasts the largest runway in the South Pacific (3.5 km), it is in fact an alternate landing site for the space shuttle, although as John Mason put it, how the 200 local inhabitants would react to such a landing is unknown! We were met at Hao airport by the local

Mayor and given the tradition greeting dance by young ladies in grass skirts.

A group of Americans had beaten us to the only spare beds on the island (the school dormitories), so we had to camp. The campsite was quite amazing. Nothing had existed on the site two months before but scrub. The whole site had been cleared and set up especially for us. The site was levelled with crushed concrete (from the previous French atomic testing base buildings) and sand. It was quite nice - paved and planted with coconut plants. Three blocks – toilet, dining and bar – were especially built out of logs and banana leaves. The toilet cum shower block was amazing. The toilets were of the long drop variety – don't forget to “flush” with a bucket of sand after use. I still have no idea where the shower water came from. The only lights for miles were the faint ones on the toilet block – great for observing but not good for dressing/undressing. The Sun rose at 8am and set at 6pm, so bed at 9pm, awake at 1am (the “beds” (5mm of foam) were that comfortable!). So to summarise: uncomfortable nights, bug feeding frenzies, horrible food and deep drop toilets (we were assured they wouldn't collapse). Some people even slept on the park benches.

The food was as good as it could be given that everything had to be imported, but the island attitude of the concept of *mañana* being altogether too urgent, did little to help the food preparation and delivery. However the beer & water was cheaper than in Tahiti, despite fears of captive audience.

The local school buses (converted lorries) were our taxis for the duration as we were 3 miles from town and 2 miles from the airport. We were invited to the local Heiva (a month long festival celebrated across the whole of French Polynesia). Here we saw Mr & Miss Heiva being auditioned and crowned – plus of course the usual eclipse tee-shirt rip-offs.

And so the day of the eclipse dawned. The site was really excellent, in fact Bill Gates, Richard Branson and possibly Fred Espenak were rumoured to be on or close by the island on boats.

The eclipse itself (Saros 146) was a shorter overall duration than most, around 3 hours from first to last contact. We had a great view over the Pacific Ocean, although this did mean we had some fleeting cloud, although this was statistically the best place on the track for lack of cloud cover. There were wonderful point source lighting effects - sharp shadows - as the Moon slowly inched over the solar disk.

There was a Tahiti TV film crew on site, who made themselves a nuisance by bothering observers during the eclipse.

Totality: there was a tight compact corona as would be expected at the lower end of the solar activity cycle. There were 3 streamers (strong magnetic lines of force carrying solar material away from the surface). A number of prominences were seen around the edge and a sunspot group (seen just prior to 2nd contact). Mercury could be seen easily but little else.

Later that day we wandered on to the long runway, where John gave us his usual southern live planetarium show. This was particularly good given the really clear skies. I had my best view ever of the Milky Way, including the dark dust lanes and the coal sack nebula. Later saw a more serious observation session, observing the Triffid, and Lagoon nebulae, Eta Carina, all the goodies in Sagittarius plus the more obscure southern constellations.

Then back to Tahiti for more early starts, but we didn't care – they had proper toilets, loo paper, a bed and proper food. It was an experience – I wouldn't have missed it but I wouldn't rush back to a camping site!

The next day saw a catamaran trip across to Moorea island (used for the back drop of Mutiny on the Bounty, and some scenes in South Pacific). Our jolly bus driver commented our way around the island, driving the coach up incredible slopes, clutch slipping away. Then he informed us about the hot bed of mosquitoes and dengue fever, and told us he would be shutting the bus door behind us ! After an hour or so of this full day tour he dropped us off at a pearl shop for an hour followed by a 3 hour stop for lunch 200 yards up the road. So 4 hours of this full day tour was "at leisure". As it happened we took zero time at the pearl shop (beer seller

next door) but it did take over 2 hours to serve lunch to half a dozen people. This was a general trait of French Polynesia.

Then a 4x4 tour of Tahiti's mountainous heart – more mossies with dengue fever, where's the insect repellent?

On to Easter Island or Rapa Nui (Big Rapa – Little Rapa, Rapa Ini is in the Tahitian Group). Very green and wet and not as set up for tourism as Tahiti. Our hotel (reputed to be one of the best on the island) was claimed to be 3 star. I would say 3 (B&B) rosettes, some 6 or 7 classifications below the hotel we were in in Tahiti. The rooms were varied. Some people had vast arenas with no furniture in apart from a bed, others (including me) had minute spaces crammed with, well, a bed. The hotel was friendly enough but overwhelmed by so many people. For example dinner: vegetables were served at 7.30pm, more vegetables were served at 8pm, and the meat followed at 8.35pm, with some salad. As someone said it will be a very nice hotel when it's finished!

However the sights on the island are incredible. The Maui (the big heads) have a lot more history behind them than one may at first think, and we were told about every second of that history by the very keen historian and island archaeologist Sergio Rapu, who also happened to be the former Governor of Easter Island and owner of the hotel and local tour company. We'll never forget Professor William Molloy!

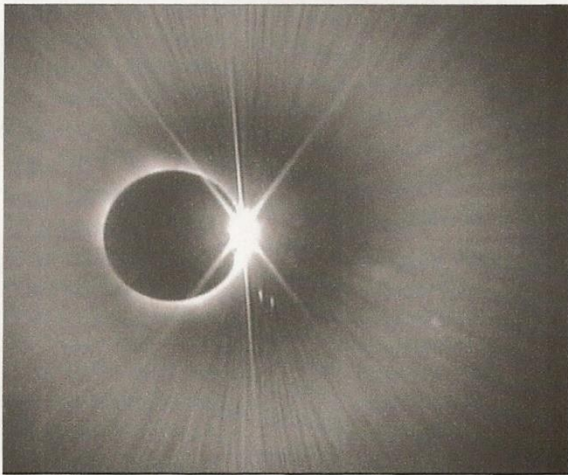
Entertainment was sparse in the evenings on Easter Island – we had the standard local barbecue and folklore evening on the last night, but I thought I would liven things up by re-running the music quiz first seen at the OASI barbecue in 2009. It went down quite well, with Explorers providing a bottle of wine for the winning team.

The weather on Easter Island was very variable, calm blue skies one minute and stormy tempests the next. Rainbows were very commonplace – an average of 3 or 4 a day on display. On a couple of occasions the night produced superbly clear skies providing yet another opportunity to view the southern constellations, the incredible Milky Way and the Magellanic clouds. Finally the epic saga of the homeward journey – four days with only one night in a bed, best forgotten I think.



Men with hats on Easter Island ▲

The Diamond Ring ▼



OASI SUMMER BARBECUE 2010

by Tina Hammond

All who attended the OASI 2010 barbecue at Newbourne had a great time, due to the excellent viewing conditions and weather - not too hot, not too cold - plus the chance to relax in the company of members who are not necessarily able to attend evening events.

Although lighting-up time was not until 2 pm, members started arriving more than an hour earlier. Many brought along prizes for the raffle, an important fund raiser this year, as there was no charge for entry.

Chairman Neil Morley and his wife Lyn had to depart shortly after their arrival, as they were doing a gig in Bury St Edmunds that evening. Their departure also heralded the end of the game of football and the commencement of some serious solar observing.

Throughout the afternoon our Hydrogen Alpha telescope was the focal point of attention, being used by all there to admire the half dozen solar prominences on a very active Sun.

The food was almost of secondary importance, as we were rushed through our cooking and eating by Paul Whiting, who had to dash off to London Heathrow to connect with his flight to Melbourne, Australia, at 6 pm!

Four teams assembled in the Hall for two hours of fun trivia, the prize eventually being won by the appropriately named Star Gazers team. This was followed by the raffle and the sudden exodus of our Treasurer...!

I stayed until 7 pm, leaving behind a tight core of a dozen members: alas, their plans of night viewing were foiled by cloud cover, although a spectacular sunset was enjoyed by all remaining.

With temperatures in the low 20 degrees, a September barbecue may well become a regular event on the OASI calendar. However, plans of holding it at this time of year rather than in midsummer (to avoid clashing with people's holidays) were foiled as Jimmy's Farm were celebrating their harvest with a music festival, and so a few members went there instead.... To paraphrase Abraham Lincoln, you cannot please all the people all of the time.

Many thanks so those who helped organise the event or supplied equipment, food, raffle prizes, etc.

Our next social events are to the Royal Astronomical Society Library and Royal Greenwich Observatory on Saturday 2 October, followed by the Ipswich Beer Festival at the Ipswich Corn Exchange on Thursday 7 October.

See you there!!?

Ipswich Beer Festival 2010

by Nigel Smith

Watch out, the Cornish Pirates are coming! Once feared from the English Channel trade routes to the Spanish Main and far off Caribbean islands; today they promise to add some lively banter and humour to our ever colourful festival!

Once again at the Ipswich Corn Exchange, the local Campaign for Real Ale (CAMRA) branch will be hosting the biggest real ale festival organised in Suffolk.

The 28th Festival will be held from Wednesday 6th October to Saturday 9th October 2010 at the Ipswich Corn Exchange in King Street, Ipswich IP1 1EG [located behind the Town Hall]. As usual, we will again be featuring a wide range of English draught real ales, together with some specially selected and imported draught German beers. We will also be offering a wide selection of traditionally produced West Country cider and Perry.

This year many of the real ales have been selected with a "West Country" theme. A wide range of beers are being specially supplied from Cornwall, Devon and Somerset micro brewers, which are rarely seen in East Anglia. A wide selection of local beers will also be available from our new "locale bar". You can also meet some of our local brewers during the event. To help get this massive event off to a lively start, free admission will also be given to people turning out in pirate fancy dress costume on the Wednesday evening!

To help complement the festival theme and beer selection, we

have also booked the original Wurzels - who were only recently playing at Glastonbury - on Saturday evening. This is their only gig outside the West Country this year, and a great opportunity to hear their massive repertoire of hit songs! Local band, Waxies Dargel, is playing on Friday evening. However, we open on Wednesday evening with an "open mic" session, organised in conjunction with the Ipswich Beer House.

PUBLIC OPENING TIMES:

WED - 5pm till 11pm;

THUR, FRI & SAT - 11am till 11pm (open all day).

ADMISSION CHARGES:

Wed 24th 5-11pm £3 (concessions £1.50);

Thur & Fri 11-6pm £1.50 (concessions Free);

Thur & Fri 6-11pm £3 (concessions £1.30);

Sat 11-6pm £1.50 (concessions Free);

Sat 7-11pm £9 (no concessions; CAMRA members £6).

Tickets for Saturday evening on sale in advance from the box office 01473 433100.

Food will be available every session, with both a Mexi-mix and a selection of traditional pies. A family area is again provided together with a quieter drinking zone.

See <http://www.ipswichcamra.com> for latest details. We are also on Facebook where you can also set your own account language option to "English (Pirate)"!

Small Telescope Observing Nights (STONs) at the Observatory

These are held (Often on the first and third monday of the month, but not always) starting around 8pm on the Belvedere level at the observatory using the society's smaller telescopes. These consist of a 10" Dobsonian reflector a 6" Fullerscope reflector, and a Meade ETX 125EC computer controlled Maksutov-Cassegrain. We also have two pairs of large binoculars.

The idea is that anybody from beginner level upward, can learn to use telescopes, compare and appreciate the strengths of the various types and obtain confidence in finding some of the dimmer night sky objects. This is an ideal point to start before buying your own telescope, as it may change your views as to what you think you want! If anybody has specific subjects they want covered please feed that back, but also note the workshops that Mike Whybray organises.













People attending will get more out of these evenings if the objects are at least cursorily studied before attending, the internet is very good for info as are many cheap books from places like the works. Waterstones has more expensive books and Planispheres.

We have a STON email list to remind people, so if you want to be on it let Paddy and Gerry know the details.

Gerry Pilling, Paddy O'Sullivan and Dave Robinson run the evenings and they regard themselves as non-experts, although they have a reasonable amount of experience of using the telescopes. Don't be afraid to come just because you don't know very much, everybody has to start at sometime and if you know nothing, you can only get better!

Gerry Pilling

OASI Committee Contacts & Responsibilities

Neil Morley	Chairman			Chair committee meetings. Represent OASI to external bodies.
Roy Gooding	Secretary			Respond to enquiries. Press & publicity. Observatory decoration. Open days.
Paul Whiting FRAS	Treasurer			Finance. Visits by outside groups.
James Appleton	Committee			Minutes of committee meetings. Web site.
Bill Barton FRAS	Committee			Safety & security.
Martin Cook	Committee			Membership. Tomline Refractor maintenance.
Tina Hammond	Committee			Librarian.
Peter Richards	Committee			Lecture meetings. Email distribution lists.
Eric Sims	Committee			Newsletter.
John Wainwright	Committee			Equipment curator.
Mike Whybray	Committee			Workshops.

Trustees

Mr Roy Adams
Mr David Brown
Mr David Payne

Honorary President

Dr Allan Chapman D.Phil MA FRAS

DIARY for October

<p>Monday 4th & 25th STONs From 8.00pm</p>	<p>SMALL TELESCOPES OBSERVING NIGHTS AT THE OBSERVATORY Main observing targets: Lyra, Cygnus, Aquila Plus Pisces With Jupiter and Uranus close by. ☎ Paddy O'Sullivan [redacted] ☎ Gerry Pilling [redacted]</p>
<p>Wednesdays From 8.00pm</p>	<p>OBSERVATORY CLUB NIGHTS Observing with the Tomline Refractor and other telescopes if skies are clear. ☎ Martin Cook [redacted], mobile [redacted] ☎ Roy Gooding [redacted], mobile [redacted]</p>
<p>Wednesday 13th Doors open 7.30pm, workshop starts 7.45pm</p>	<p>OASI WORKSHOP Nacton village Hall. Millenium Telescope observing session. ☎ Mike Whybray [redacted]</p>
<p>Thursday 7th 6:15pm 14th 8:00 pm 21st 7:00pm 28th 7:00pm</p>	<p>OBSERVATORY VISITS BY LOCAL COMMUNITY GROUP 11th Ipswich Beavers. 11th Ipswich Scouts. 3rd Woodbridge brownies. 3rd Woodbridge brownies. ☎ Paul Whiting FRAS [redacted]</p>
<p>Saturday 23rd October @ 8.00pm</p>	<p>COMMITTEE MEETING Methodist Church Hall, Blackhorse Lane, Ipswich</p>

PUBLIC OPEN WEEKEND

Saturday 16th October 7:30pm to 10:00

Sunday 17th October 7:30pm to 10:00

Society Contact Details

Observatory tel. no. (meeting nights only): [redacted]

Secretary: Roy Gooding ☐ [redacted] (day) [redacted] (evening)

E-mail queries: ipswich@ast.cam.ac.uk

Chairman: Neil Morley ☐ [redacted]