



# The Newsletter

of the

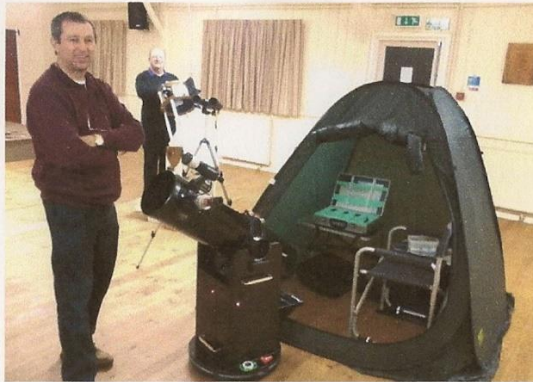


## Orwell Astronomical Society (Ipswich)

**2013**  
MARCH

Registered charity no. 271313  
[www.oasi.org.uk](http://www.oasi.org.uk)

**No 483**



### Newbourne Observing Group

Photos from February 11<sup>th</sup> meeting at Newbourne Village Hall.



# Society News (Roy Gooding)

## 1 Committee Meeting 27<sup>th</sup> April 2013

All members are invited to attend the next Committee meeting. Start time 20:00  
Venue: Methodist Church Hall.

## 2 Access into the School Grounds and Observatory Tower

The code for the car park gate, is on the back of your membership card. 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.

## 3 2013 Subscriptions

Subscription are due for this year now. March is the cut off point. If you have not paid for this year please return the Pink form with your cheque, payable to OASI, to Martin Cook. The March Newsletter will be the last you will receive, if have not yet paid.

## 4 New Members

Mrs Jill Boote Mr John Parry Mr Phill Murray

## 5 Events Programme for 2013

This provisional event list will be updated through out the year

Meeting	Venue	Date
Spring Star Party	Kelling Heath Kelling Norfolk	April?
Society BBQ	Newbourne Village Hall?	TBC
Autumn Equinox Sky Camp	Kelling Heath Kelling Norfolk	September
FAS convention	Cambridge Institute of Astronomy	October?
Open Weekend		TBC
Christmas Meal		December

## 6 Out Reach Meetings 2013 in Christchurch Park

### Winter Star Party

Meeting	Venue	Date
Winter Star Party 2 <sup>nd</sup> Option	Christchurch Park Westerfield Road entrance	Saturday 23 <sup>rd</sup> March 19:00 to 21:00

### Directions

What entrance should we use	Meet at the Westerfield Road entrance at about 18:30. The park ranges will be at the entrance
Set up time.	If you plan to bring a telescope, and arrive at about 18:30. This will give you about 30 minutes to set up.  If you would like to come along just to help, please do so. It may useful to have your member ship card to show the Park Rangers. The park gates will be closed at 19:30 and will not be re-opened until the end
Observing Location	On the hill
Start time	19:00
End time	21:00 May be earlier if visitors have all left

If you are able to help either with or without a telescope please meet at the Westerfield Road entrance at 18:30.

**To confirm if the event is on, please give me a call on IP [REDACTED] on the Saturday afternoon**

### Astronomy in the Park

Meeting	Venue	Date
Astronomy in the Park 1 <sup>st</sup> option	Christchurch Park Bolton Lane entrance	Saturday 18 <sup>th</sup> and Sunday 19 <sup>th</sup> May 11:00 to 16:00
Astronomy in the Park 2 <sup>nd</sup> option if 1 <sup>st</sup> is cloudy	Christchurch Park Bolton Lane entrance	Saturday 25 <sup>th</sup> and Sunday 26 <sup>th</sup> May 11:00 to 16:00

**These dates for Christchurch Park have been confirmed with Sam Pollard**

## 7 Out Reach Meetings 2013 Chantry Park

### Spring Star Party

#### Directions:

- Enter Chantry Park from the Hadleigh road entrance. It is the drive way to the Sue Rider home.
- This drive dose not have any gates so access is always open
- At the top of the drive take the left hand road. There are about 3 speed humps along here.

At the end of this road, which is about 200 yards long, there is a parking area.

Meeting	Venue	Date
Spring Star Party 1 <sup>st</sup> Option	Chantry Park	Saturday 13 <sup>th</sup> April 20:00 to 22:00
Spring Star Party 2 <sup>nd</sup> option if 1 <sup>st</sup> is cloudy	Chantry Park	Saturday 20 <sup>th</sup> April 20:00 to 22:00

**These dates have now been confirmed.**

## 8 Out Reach Meetings 2013 Holywells Park

### Autumn Star Party

Richard Sharp ( from the town park ranger group) has recently moved from Chantry Park to Holywells Park. He has asked if we can stage an event in the park. I may wait till the Autumn for this one

## 9 Out Reach Meetings 2013 Minsmere RSPB Reserve

This is a new one. The RSPB have asked use to run an astronomy event for them. This is still in the planning stage. They originally asked for a talk, which Paul Whiting is willing to do. I added that we may be also be able to run a Star Party for them in the evening. Minsmere has very dark skies, as it is miles from anywhere. The biggest problem may be the distance and members not prepared travel this far. We have never run a public event this far from base.

The date set for this Friday 4<sup>th</sup> October

## **10 2013 Comets**

### **Two bright comets are predicted for 2013**

The 1st comet (PANSTARRS) will be visible in the evening sky in March and April This one should be visible during the Chantry Park Star Party

The 2<sup>nd</sup> comet (ISON) and brightest (-16! this may be over optimistic) is visible before and after Christmas, may require more Out Reach meeting / meetings. I have spoken to Sam Pollard about running Star Parties before and after Christmas, in Christchurch Park.. The latter one should coincide with the BBC's Stargazing Live 2014

### **Notes on Out Reach Meetings**

#### **BBC Stargazing 18th January**

The venue again, this year was at the Reg Direr centre in Christchurch Park. About 80 visitors attended this meeting. The weather as not with us this year, the sky remained cloudy for the whole evening. The visitors were entertained by Paul Whiting with a series of lectures

The small entrance foray to the centre, rapidly fill up a wide assortment of telescopes. More than a dozen members attended, and as I did not make a mental note who was there I will express my usual thanks to all who were able to make it

#### **1st Star Party Option in Christchurch Park 16th February**

The weather for this event was very difficult to predict, with the web sites all showing patchy skies for the evening. I called in at the Reg Driver centre, on the way home from town, in the morning. The receptionist mentioned that she leaves off at 16:00 and it was decided that a decision on a go no go should be made between 15:00 and 15:30, that would give her time to call the visitors. As the sky was still completely cloudy at 15:00 I decided to cancel the event.

However by around tea time the skies started to clear, but still left a thin covering of high cloud. The moon and Jupiter were visible, with the moon looking very milky through the haze. We would have been able to show the visitors the moon and Jupiter but not much else. Deep sky objects would have been almost impossible to find and observe.

Lets hope the weather for the 2<sup>nd</sup> option on the 23<sup>rd</sup> March, is better.

# Night Sky (March)

## Moon

<b>3<sup>rd</sup> Quarter</b>	<b>New Moon</b>	<b>1<sup>st</sup> Quarter</b>	<b>Full Moon</b>
<b>4<sup>th</sup></b>	<b>11<sup>th</sup></b>	<b>19<sup>th</sup></b>	<b>27<sup>th</sup></b>

Object	Date			Mag.	Notes
		Rise	Set		
Sun	1	06:41	17:35		
	31	05:32	18:28		
Mercury	1	06:31	18:17		Mercury is lost in the morning twilight sky
	31	04:58	15:42		
Venus	1	06:40	16:50		Venus is too close to the sun this month to be seen
	31	05:43	18:26		
Mars	1	07:06	18:31		Mars is too close to the sun this month to be seen
	31	05:44	18:46		
Jupiter	1	09:39	01:47	-2.1	Jupiter remains a prominent object until the small hours of the morning
	31	07:53	00:10		
Saturn	1	22:59	08:53	0.6	Saturn is now rising by mid evening
	31	20:54	06:53		
Uranus	1	07:30	19:58		Uranus is too close to the sun this month to be seen
	31	05:35	18:09		
Neptune	1	06:33	16:45		Neptune is too close to the sun this month to be seen
	31	04:37	14:53		

## Whatever Happened to Beagle 2?

With all the excitement surrounding the NASA Mars Curiosity Rover, it is all too easy to forget it was exactly 10 years ago when a British spacecraft failed in an attempted landing on Mars. Beagle 2 was part of the European Space Agency's (ESA) Mars Express mission. It was conceived by a group of British academics headed by Professor Colin Pillinger of the Open University, in collaboration with the University of Leicester. The mission purpose was to search for signs of life on Mars, past or present, and its name reflected this goal as Professor Pillinger explained "HMS Beagle was the ship that took Darwin on his voyage around the world in the 1830s and led to our knowledge about life on Earth making a real quantum leap. We hope Beagle 2 will do the same thing for life on Mars".

Beagle 2 had a robotic arm known as the Payload Adjustable Workbench (PAW), designed to be extended after landing. The PAW contained a pair of stereo cameras, a microscope with 6 micrometre resolution, a Mössbauer gamma ray spectrometer, an X-ray spectrometer, a drill for collecting rock samples and a spotlight. Rock samples were to be passed by the PAW into a mass spectrometer and gas chromatograph in the body of the lander - the GAP (Gas Analysis Package), to measure the relative proportions of different isotopes of carbon. Since carbon is thought to be the basis of all life, these readings could have revealed whether the samples contained the remnants of living organisms.

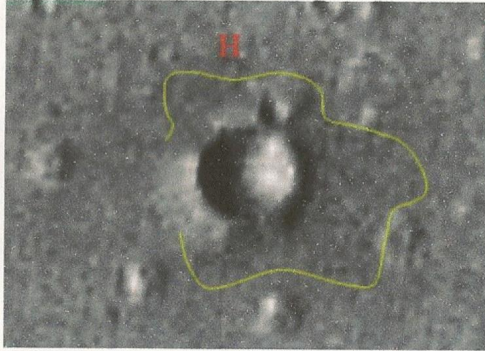
In addition, Beagle 2 was equipped with a small "mole" (Planetary Undersurface Tool, or PLUTO), to be deployed by the arm. PLUTO had a compressed spring mechanism designed to enable it to move across the surface at a rate of 20 mm per second and to burrow into the ground and collect a subsurface sample in a cavity in its tip. The mole was attached to the lander by a power cable which could be used as a winch to bring the sample back to the lander.

The lander had the shape of a shallow bowl with a diameter of 1m and a depth of 0.25 m. The cover of the lander was hinged and folded open to reveal the interior of the craft which held a UHF antenna, the 0.75 m long robot arm, and the scientific equipment. The main body also contained the battery, telecommunications, electronics, and central processor, heaters, and additional payload items (radiation and oxidation sensors). The lid itself further unfolded to expose four disk-shaped solar arrays. The lander package had a mass of 69 kg at launch but the actual lander would have been only 33.2 kg at touchdown.

The ground segment itself was derived from the European Space Agency software

kernel known as SCOS2000. In keeping with the low cost theme of the mission, the control software was the first of its kind to be deployed on a laptop.

Shortly after the scheduled landing on Christmas Day , Professor Colin Pillinger, lead scientist reported “The first clear view of the specific area where the British Beagle 2 lander should have touched down has revealed a one kilometre crater dead centre in the target landing zone”.

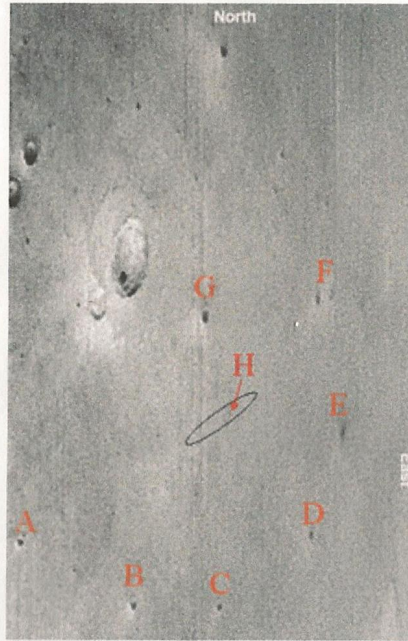


*Mars Global Surveyor discovered this one-km crater and surrounding ejecta field near the centre of the Beagle 2 landing zone. Source: Malin Space Science Systems*

NASA's Mars Global Surveyor orbiter took this image 20 minutes after Beagle's scheduled 02:54 UTC arrival on December 25<sup>th</sup> 2003. Beagle scientists had previously examined numerous photographs of the broad Isidis Planitia region near the Martian equator whilst selecting an area to land.

"When we were choosing this site, we avoided the obvious craters that we could see at relatively low-resolution. You cannot avoid every crater on Mars, otherwise you'd never go there," Pillinger said. "We'd chosen the area that we were landing because we believed it was the right sort of area to risk a landing. There were no slopes, it was low altitude, rock abundance was less than 15 percent. It was said to be 'enough' rocks to keep the geologists happy but not so many that it frightened the engineers to death!"





*Global Surveyor shot this image of Mars about 20 minutes after the Beagle 2 landing. The target landing zone is highlighted with the ellipse.*

*Source: Malin Space Science Systems*

When the mission was planned, the estimate of the landing ellipse was 480 by 300 (kilometres), a relatively large area. Following Beagle's deployment from the Mars Express orbiter on December 19th, ESA officials had narrowed the landing zone to an area 70 kilometres long by 10 kilometres wide.

"There is absolutely no way you could target to avoid a 1 km crater. The target got smaller the better we knew the trajectory of Mars Express. The best, the absolute best that could be done, was we were targeting 70 by 10 kilometres. There are an awful lot of 1 km craters that you can put into an ellipse that size," Pillinger said. Despite this, the chances of Beagle reaching the crater in the Mars Global Surveyor image were very slim. "We would have to be incredibly accurate and also incredibly unlucky that we went down this crater, which would not be good news -- one would not want to go into a crater, one would not want bounce on the edge and bounce into it," Pillinger added.



*Professor Colin Pillinger and Beagle 2 model.*

The highly ambitious Beagle lander used parachutes to slow its descent and then three balloon-like airbags around the craft to cushion multiple bounces on the surface before coming to rest. Designers said the landing system needed to avoid bouncing on slopes and rocky terrain. Also, landing in a crater could cause shadows on the craft's power-generating solar panels that would create more trouble.

"There are two ways of looking at craters -- you don't want to land right by them but you want to land near enough to them so you can take advantage. The impact excavates rocks and gives you a nice, diverse suite of rocks that you can analyse," Pillinger said.

Despite many valiant attempts, no signals were received from Beagle 2. Was it ahead of its time?

Neil Morley

## OCCULTATIONS DURING MARCH

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
04 Mar	02:33:52	D	0.59-	-35	9	3.9	9 Sco
	03:14:25	R		-30	13		
06 Mar	05:47:01	D	0.35-	-7	15	5.3	15 Sgr
16 Mar	21:15:37	D	0.24+	-28	19	6.8	ZC 510
17 Mar	20:16:13	D	0.32+	-21	36	7.5	V986 Tau
17 Mar	22:51:07	D	0.33+	-37	13	6.0	ZC 654
18 Mar	18:55:00	D	0.41+	-8	53	6.5	107 Tau
19 Mar	19:51:54	D	0.51+	-17	52	7.4	V1385 Ori
20 Mar	22:50:23	D	0.61+	-36	33	6.8	ZC 1057
20 Mar	23:30:39	D	0.61+	-37	28	7.2	QY Gem
22 Mar	20:43:51	D	0.78+	-23	51	7.3	Hip 41865

A grazing occultation of the star 13 Sgr crosses East Anglia early in the morning of 06 March 2013. Circumstances are as follows:

Date	Time (UT)	Lunar Phase	Limb	Sun Alt (°)	Star Alt (°)	Star
06 Mar	05:35	35%-	S	-9	14	13 Sgr, magnitude 3.8

The graze line passes just south of Bungay and out to sea mid-way between Lowestoft and Southwold. Weather permitting, an observing trip will be observed to the graze line where, if theoretical calculations are correct, observers with telescopes of circa 10 cm or greater aperture will be able to watch the mountains and valleys on the limb of the Moon pass in front of the star, alternately hiding and revealing it. Please contact me if you are interested in participating in an observing trip.

James Appleton

## Newbourne Observing Group

We meet at The Newbourne Village Hall, Milln Lane, Newbourne, IP12 4NP Start

### February Meeting

**Another non observing night but still a successful evening.**

In spite of the cold, mud and sleeting rain 15 members attended the February meeting and there were 10 telescopes set up in the hall - a mini astrofest!

Newbourne Observing Group	11 <sup>th</sup> February 2013
<i>Telescope</i>	<i>Owner</i>
Vixen 4" (100 mm) refractor	Bill Barton
ETX 90 PE	Andrew Gibbs
Skywatcher 200mm DOB (200P)	Martin R-Hardy
8" DOB (+Observing Tent)	David Murton
5" Newtonian circa 1986 (for Comet Halley)	Neil Morley
Meade ETX 125	Mike Norris
Celestron C90	Mike Norris
Skywatcher 120 mm refractor	Mike O' Mahony
Celestron 130 SLT	Gerry Pilling
10" Newtonian DOB	John Wainwright

It was a great opportunity to compare scopes and mounts and to see how other members used their equipment.

If you are new to astronomy or a new member of OASI then the N.O.G. evenings are for you.

Our next Meeting is on Monday 11th March starting at 7pm.

If the weather is cloudy we will be looking at Star Charts and comparing how you locate objects with Alt-Azimuth Mounts and Go-to Mounts. See you in March!

## Picture from the Past

Last year, whilst doing a quiz, the stargazers were confronted by this photograph: where in East Anglia was it?



To their eternal shame they failed to identify it as Orwell station. Nacton, which was of course Colonel Tomlins's personal station.

Obvious when you know the answer isn't it.

**Tina Hammond**

# Astronomy Workshops

**Doors open at 7:30pm.**

**Workshops START at 7:45pm**

**Venue: NACTON VILLAGE HALL IP10 0EU**

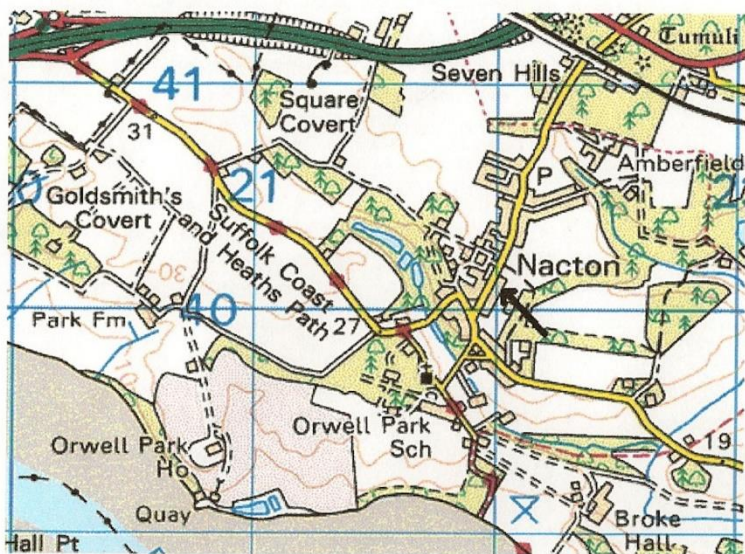
If you are a new OASI member, or haven't been to one of these workshops before – they are a mixture of events of different characters including beginners talks, interactive workshops, films etc., suitable for all. They are also a chance to chat with other members over a cup of tea and a biscuit, in a venue rather warmer than the observatory dome on a winter's night!

Date	Event	Run by...
6 <sup>th</sup> March	<b>The Sun</b> The Sun appears to be that big, yellow ball of gas that provides us with heat and light and the occasional aurora display. But what actually is the Sun? and how does it work? Paul will spend a few minutes giving a conducted tour of the interior of the Sun together with some of the processes that make the Sun "shine". Bill will conclude the evening with an outline of amateur study of the Sun, covering the following subject areas: white light observing, narrow band observing and reduction of results.	<b>Paul Whiting and Bill Barton</b>
3 <sup>rd</sup> April	<b>Stars and their colours</b> The wavelength (colour) spectrum of a star can be used to understand many of its properties e.g. its type (old, new, hot or cool), chemical composition, and velocity; indeed most of our knowledge of stars has been obtained through spectroscopy. This talk is an introduction as to how the amateur can obtain, record and process star spectra in a (relatively) inexpensive manner using grating, camera and free software.	<b>Mike O'Mahony</b>

Mike Whybray Workshops organiser

██████████ (Mobile) ██████████ (Home)

Workshops venue: NACTON VILLAGE HALL IP10 0EU (next to the small village school, just below and left of the N in Nacton on the map). Please park on the same side of the road as the hall, but avoid parking on the white lines which mark clear spaces for various driveways and passing places. The police do occasionally check up on this!



## Tomline Operating Manual

A new version of the Tomline Operating Manual has been issued to correct an error in figure two at the top of page six.

The new version is version five which can be proved by looking at the 'document history' table on the last page and by the image on the first page showing an interior view of the observatory in place of the exterior view of version four.

All previous issues of the Operating Manual should be destroyed.

Bill Barton

## DIARY for MARCH

<p><b>STONS</b></p> <p><b>Tuesday 12th - 19th</b>  <b>From 8:00pm</b></p>	<p><b>SMALL TELESCOPES OBSERVING NIGHTS AT THE OBSERVATORY</b></p> <p><b>Main observing targets:</b> Gemini, Cancer, Leo, M44, M57, M95, M96, M105, M65, M66.</p> <p>☎ Paddy O'Sullivan [REDACTED]  ☎ Gerry Pilling [REDACTED]  ☎ Dave Robinson [REDACTED]</p>
<p><b>Wednesdays</b>  <b>From 8.00pm</b></p>	<p><b>OBSERVATORY CLUB NIGHTS</b></p> <p>Observing with the Tomline Refractor and other telescopes if skies are clear.</p> <p>☎ Martin Cook [REDACTED], mobile [REDACTED]  ☎ Roy Gooding [REDACTED], mobile [REDACTED]</p>
<p><b>Wednesday 6<sup>th</sup> March</b>  <b>Doors open 7:30pm</b>  <b>Start 7:45pm</b></p>	<p><b>OASI WORKSHOP</b></p> <p><b>At Nacton Village Hall</b></p> <p><b>The Sun By Paul Whiting &amp; Bill Barton</b></p> <p>☎ Mike Whybray [REDACTED]</p>
<p><b>Tuesday 5<sup>th</sup> March 8:0pm</b>  <b>Thursday 7<sup>th</sup> March 7:0pm</b>  <b>Thursday 14<sup>th</sup> Mar 7:0pm</b>  <b>Thursday 21<sup>st</sup> Mar 8:0pm</b>  <b>Thursday 28<sup>th</sup> Mar 7:0pm</b></p>	<p><b>OBSERVATORY VISITS BY LOCAL COMMUNITY GROUPS</b></p> <p><b>Taster Evening</b></p> <p><b>1<sup>st</sup> Stanway Cubs (I)</b>  <b>1<sup>st</sup> Stanway Cubs (II)</b>  <b>2<sup>nd</sup> Ipswich Scouts</b>  <b>Rendlesham School Club</b></p> <p>☎ Paul Whiting FRAS [REDACTED]</p>
<p><b>Saturday 27<sup>th</sup> April</b>  <b>8:00pm start</b></p>	<p><b>COMMITTEE MEETING</b></p> <p><b>Venue: The Methodist Church Hall</b>  <b>Blackhorse Lane Ipswich</b></p>

**Winter Star Party Christchurch Park Westerfield road entrance**  
**2<sup>nd</sup> Option March 23rd**

### OASI Members Group Observing Evenings.

**Monday 11<sup>th</sup> March** The venue is Newbourne Village Hall. Available to us from 7pm until 11pm. Subject if cloudy Star Charts  
**Address Mill Road, Newbourne. Location map [www.newbourne.org.uk](http://www.newbourne.org.uk)**

### **Society Contact Details**

Observatory tel. no. (meeting nights only): [REDACTED]  
 Secretary: Roy Gooding [REDACTED] (day) [REDACTED] (evening)

Web-site. James Appleton: e-mail [REDACTED]

E-mail queries: [info@oasi.org.uk](mailto:info@oasi.org.uk)

Facebook.com/orwell astronomical

Chairman: Neil Morley [REDACTED] / e-mail [REDACTED]

Please send material for the OASI web site (e.g. observations, notices of events, general interest articles) to [info@oasi.org.uk](mailto:info@oasi.org.uk)