



# The Newsletter

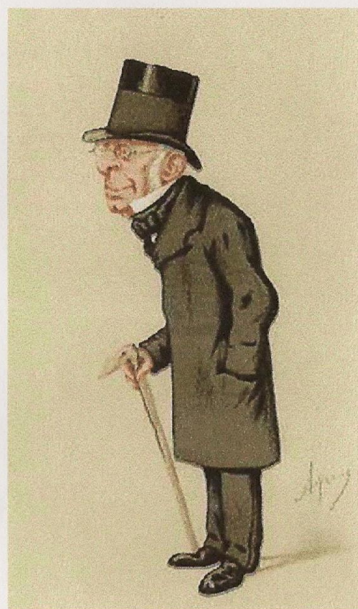
of the  
**Orwell Astronomical Society (Ipswich)**



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No 413



Above

OASI members who regularly visit the Orwell Park Observatory will recognise the left-hand image as that of Sir George Biddell Airy (7<sup>th</sup> Astronomer Royal) by T H Maguire dated 1852. The image was part of a set commissioned to raise funds for the Ipswich Museum and a facsimile of this portrait hangs in the Belvedere room. The right-hand image is a later caricature of Airy by Ape – part of the well-known series of 'Spy' prints, which appeared in Vanity Fair in the late nineteenth and early 20<sup>th</sup> century, depicting the 'movers and shakers' of the day in sport, industry and science. Airy had strong links to Ipswich and reasons to be grateful to its engineers.

See article 'By Way of Thanks' inside...

# Society News (Roy Gooding)

## 1 Committee Meeting Saturday 11<sup>th</sup> November

The next Committee meeting will be held on Saturday 11<sup>th</sup> November at the Methodist Church Hall, from 20:00. This is an open meeting and any one who is interested is invited to attend

## 2 Events for 2006

Meeting	Venue	Date
Astronomy Workshop Observatories of the South Western United States.	Nacton Village Hall Paul Whiting	Wednesday 1 <sup>st</sup> November 7:45pm
Lecture meeting Space Rocks By David Byrant	Methodist Church Hall Blackhorse Lane	Friday 24 <sup>th</sup> November 20:00
Astronomy Workshop Quiz night	Nacton Village Hall Mike Whybray, & Paul Whiting	Wednesday 6 <sup>th</sup> December 7:45pm
Geminids Meteor Watch	Sea wall promenade at the "Dip" end of Felixstowe	Saturday 9 <sup>th</sup> December
Christmas Meal	Levington Ship	Wednesday 13 <sup>th</sup> December 20:00

This event list will be updated through out the year

## Events for 2007

Meeting	Venue	Date
Lecture Meeting Nik Symanek	Methodist Church Hall Blackhorse Lane	Friday 2 <sup>nd</sup> March

## 3 Access into the School Grounds and Observatory Tower

The gate code is [REDACTED]. 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)

## 4 Society's 40<sup>th</sup> Anniversary Year 2007

*Some random thoughts open for discussion.*

2007 will be the 40<sup>th</sup> anniversary year for the Orwell Astronomical Society. A number of events will be held throughout the year to celebrate this. At present, any plans are at a very preliminary stage

- A joint meeting with the BAA in January is in the preliminary planning stage.

This meeting will be on Saturday 20<sup>th</sup> January 2007. We are the host Society for this meeting but the BAA is running it. The BAA will be charging for this. Attendance is by pre-booking with the BAA only. More information when available

- All events could be prefixed with “40<sup>th</sup> Anniversary”
- A society meal could be held during the year.
- A formal Astronomical Convention could be held.
- A more informal exhibition meeting could be held that is aimed more for the general public.

If you have any ideas that can be considered please contact me.

## 5 Equipment Wish List

At the March committee meeting, a wish list for additional society equipment was discussed.

Item under consideration	Comments
Laptop PC	Purchased
Eyepiece Cupboard	Purchased
Eyepieces for the small telescopes	
Webcam and equipment for CCD imaging.	Purchased
Coronado solar telescope	
Barlow Lens	
2” Right Angle Mirror Diagonal	
Laser Collimator	
AC587 1.25” Universal Eyepiece Protection Kit	
AC598 Jumbo Eyepiece Protection Kit	
Orion (USA) Soft Rubber Eyeguards	

## 6 Society Email Distribution list

Society information is often distributed at an earlier date than can be achieved by the monthly Newsletter. If you would like to be received society emails, please forward your name and email address to [REDACTED]

## 7 Welcome to New Members

Alistar Young David Canning

## **8 Lecture Meeting Venue**

Our town lecture venue is now at the Methodist Church, in Blackhorse Lane. The church has a car park, bigger enough to take about 30 cars, in Black Horse Lane Alternatively there is a Park & Display car park at the top of Black Horse Lane, next too the Town Council Offices. This is about 100 yards form the church.

Black Horse Lane has only one entrance, which is from Elm Street. This is just past the Police Station, if you are arriving from Civic Drive. The church car park is on the right, just past the Black Horse pub.

Meeting starts at 20:00, doors open at 19:30

## **9 Observing Projects for 2006 Geminids Meteor Watch**

The next meteor watch will be the Geminids in December. The maximum will be on Thursday 14th December.

**The meeting will on Saturday 9<sup>th</sup> December from 20:00**

**The venue will on the sea wall promenade at the “Dip” end of Felixstowe.**

Directions for those who do not know this part of Old Felixstowe

- From the Hamilton Road roundabout, take the turning into High Road East
- Once you are parallel with on top of the cliff, there are two car parks available.
- The first one is behind the trees, on the right, just past the open area of grass, where Brackenbury Fort was once located. The steps down to the promenade are behind the Refreshment hut.
- The second car park is also on the right, up the hill on the other side of the “Dip”, (hence the name). There are several ways down from this car park to the sea wall promenade.
- The promenade from the first car park gives the darker sky. The streetlights along High Road East can not be seen from here neither were Felixstowe dock lights visible, though the evening on which I checked this out was a little hazy.
- The meeting time 20:00
- The Moon will not be any trouble as it is at third quarter on the 12<sup>th</sup>

If you are interested please contact Roy Gooding, James Appleton or Martin Cook

## **10 Observatory Tower Restoration**

The School is planning to undertake some restoration work on the observatory tower in the new year. More information when known.

# Night Sky (November)

All times GMT

## Sun

The sun will be rising approximately between 07:00 and 07:34

The sun will be setting approximately between 16:30 and 16:00

## Moon

Full Moon	3 <sup>rd</sup> Quarter	New Moon	1 <sup>st</sup> Quarter
5 <sup>th</sup>	12 <sup>th</sup>	20 <sup>th</sup>	28 <sup>th</sup>

**Mercury** Mercury will be at inferior conjunction on the 8<sup>th</sup>, before it moves back into the morning sky, reaching greatest western elongation on the 20<sup>th</sup>. At the end of the month, Mercury will be rising about 2 hours before sunrise.

**Venus** Venus is too near the sun this month for observation

**Mars** Mars remains in early morning twilight this month, and will not be observable.

**Jupiter** Jupiter will be in conjunction with the sun on the 21<sup>st</sup>, and will not be observable this month.

**Saturn** Saturn will be rising at about 22:00 by the end of the month. Magnitude 0.5

**Uranus** Uranus is on Aquarius, and will be setting at about 23:00, by the end of the month. Magnitude 5.7

**Neptune** Neptune is in Capricornus, and will be setting at about 21:00 at the end of the month. Magnitude 7.8

## Meteor Showers

Shower	Maximum	Limits	ZHR
Taurids	November 3 <sup>rd</sup>	October 20 <sup>th</sup> to November 20 <sup>th</sup>	10
Leonids	November 17 <sup>th</sup> 16:00	November 15 <sup>th</sup> to 20 <sup>th</sup>	20?

Meteor source is the BAA Handbook

## OCCULTATIONS DURING NOVEMBER

The table lists stellar 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
01 Nov	19:24:29	D	0.81+	-28	30	7.5	Hip 114795
03 Nov	19:41:36	D	0.96+	-31	37	4.3	71 Psc, epsilon Psc
26 Nov	17:20:38	D	0.33+	-13	17	8.0	Hip 104665
26 Nov	18:30:16	D	0.33+	-24	15	8.0	ZC 3101
26 Nov	19:07:07	D	0.33+	-29	12	7.7	Hip 104902
27 Nov	17:49:02	D	0.44+	-18	23	7.1	ZC 3236
27 Nov	18:43:49	D	0.44+	-26	22	6.7	ZC 3240
27 Nov	20:25:45	D	0.45+	-41	15	8.0	KP Aqr
28 Nov	18:40:13	D	0.55+	-25	30	8.4	ZC 3372
28 Nov	22:39:50	D	0.57+	-57	11	8.5	5248-1149-1
29 Nov	22:20:30	D	0.68+	-56	25	8.4	Hip 117902
30 Nov	23:02:06	D	0.79+	-59	32	6.0	60 Psc

James Appleton





## **ADVANCE NOTICE OF OUR FIRST EVENT FOR 2007 \*\*\* OUR 40<sup>TH</sup> ANNIVERSARY YEAR \*\*\***

On **Saturday 20<sup>th</sup> January 2007** the British Astronomical Association and OASI will co-host one of the highly successful series of **BAA Back to Basics Workshops** at the Methodist Halls, Blackhorse Lane, Ipswich.

The aim of these workshops is help beginners and 'improvers' learn the basic techniques in astronomy and to develop their interest to their full potential. The day consists of a full programme of talks and practical sessions where the BAA's experts will be on hand to help answer your questions. The event will be supported by trade stands and displays and OASI will support it by presenting our own display and providing volunteers on the day to help with all aspects, including the provision of light refreshments.

To that end, **OASI members may attend without having to pay for a ticket if they are prepared to volunteer their services for the day. Please note that it is essential that you let our Chairman (see contact details on inside back page) know in good time if you wish to volunteer as the BAA insist upon advance notification of the volunteer list. If you simply turn up on the day and you have not otherwise paid for a ticket you will – regretfully – be turned away if the full ticket allocation has been sold.**

At the time of writing we await receipt of the BAA booking form, which will be included with the December edition of this newsletter.

In the mean time – see the programme below to whet your appetite...

- 10.00 - 10.20 Registration Tea/Coffee**
- 10.20 - 10.30 Official welcome by the BAA President – Richard Miles**
- 10.30 - 11.15 Solar Observing – Peter Meadows**
- 11.15 - 12.00 Variable Stars – Guy Hurst**
- 12.00 - 12.45 Radio Astronomy – Laurence Newell**
- 12.45 - 14.00 Lunch (make your own arrangements) – If weather fine there will be a solar observing session in the car park**
- 14.00 - 14.45 Equipment demonstration and advice – Bob Marriott**
- 14.45 - 15.30 Imaging – Martin Taylor**
- 15.30 - 16.00 Tea/Coffee**
- 16.00 - 16.45 Simple Deep Sky Observing – Stewart Moore**
- 16.45 - 17.30 Closing address – BAA President**

**If there is sufficient demand, we will host a visit to the Orwell Park Observatory afterwards and open the dome if the weather is kind to us...**

# BY WAY OF THANKS

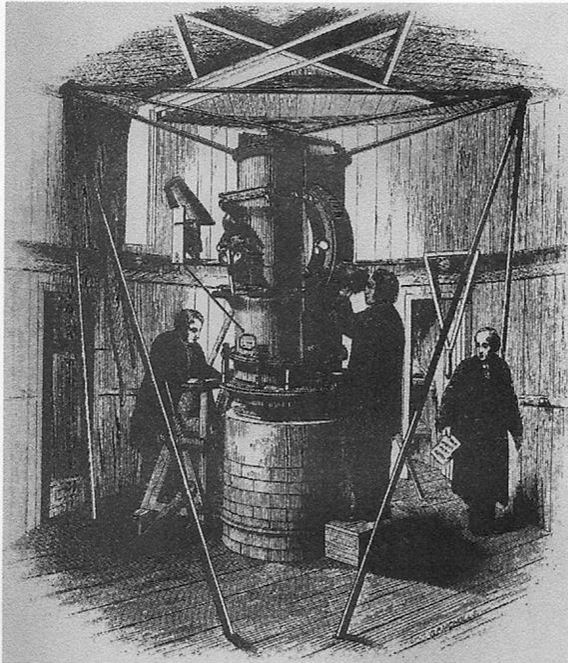
Sir George Biddell Airy and his appreciation for  
The craftsmen and engineers of Ipswich

By Kenneth J. Goward FRAS

Well documented within these pages is the association the 7<sup>th</sup> Astronomer Royal, Sir George Biddell Airy (1810-1892) has with Ipswich and its surrounding area—but what of his appreciation for this corner of Suffolk? That he was so much a part of the area is self-evident by his purchase of a cottage at Playford where his frequent visits to his uncle, Arthur Biddell, at Hall Farm had exposed the young Airy to the likes of slave trade abolitionist, Thomas Clarkson, the engineer William Cubitt and the founder of Ransomes of Ipswich, Robert Ransome. Their influence and encouragement spurred Airy on to Trinity College Cambridge, where his mathematical genius was soon recognised and eventually on to Greenwich via the Cambridge Observatory.

Shortly after appointment in 1835 Airy reported that he was satisfied with the existing Greenwich observational equipment and in his own methodical way commenced a total revamp of the observatory routines, of its procedures and a cleanout of under-performing staff, all of which had undermined the efficient running of the establishment whilst in the care of Airy's predecessor, John Pond. However, by 1843 it became apparent to Airy that positional observation of the moon on the meridian was falling far short of what was needed to produce accurate tables of its orbit and he proposed a new instrument that would allow off meridian positional measurements to be taken and which would lead to a doubling of useable data. Airy's innovative design called for a transit instrument mounted on an absolutely rigid mechanism that would allow its use in azimuth and for readings to be taken on a greater number of occasions during a lunation. His knowledge of the heavy engineering skills of the craftsmen of Ransomes of Ipswich led him to commission the building of this new instrument to his own design. Charles May (the firm was then known as Ransomes & May) assisted Airy in design and the heavy components of the telescope were cast at Ransomes' Orwell Works. Messrs Troughton & Sims undertook the manufacture of the optics and graduation scales. The transit telescope was supported on a cast spoked wheel arrangement inside two massive cast iron side plates and sat upon a mount with the azimuth scale at the base. The instrument was supported on the top bearing by an innovative framework that Airy had designed in triangles for maximum rigidity using minimal thickness cast iron struts (minimising obstruction to the telescope) and the whole instrument was contained inside a drum dome mounted on a tower in similar style to the arrangements we have at Orwell Park, whereby the central pillar is entirely detached from the outer building. The instrument was highly successful and was used at Greenwich from 1847 to 1910. It is now in store in the collection of the Science Museum in London.





Airy's Altazimuth Instrument as depicted in Edwin Dunkin's 'The Midnight Sky'  
 A somewhat exaggerated view, given that there were never more than two persons in the dome at one time and there certainly was not the working space this view supposes!

In the same year that Airy's Altazimuth Instrument, as it came to be known, saw first light the new Ipswich Museum opened its doors in what we now know as Museum Street. Its remit was to '*educate the working classes in natural history*' and was at first financed by voluntary local donation until financial failure in 1853 and subsequent rescue (bailing out) by the Ipswich Corporation. The museum had as its first patron no lesser a personage than HRH Prince Albert, who had inspected the facilities when the museum hosted a meeting of the British Association for the Advancement of Science (BAAS) in 1851 – a year of national pride, insofar as the Great Exhibition was that year trumpeting Britain's industrial and scientific dominance. The Museum's second President from 1850 to 1861 was the Revd John Stevens Henslow, who had been a mentor of Charles Darwin at Cambridge.

The BAAS meeting, however, was by no means the first brush with the great and good of Victorian science, for in 1848 following a wish expressed by the museum patrons, Airy offered his services in support of their aims and delivered a series of popular lectures on astronomy over the course of five evenings with the option of a sixth if he overran. However, the museum building was deemed unsuitable to hold the anticipated numbers of craftsmen, engineers and mechanics it was aimed at and the nearby Temperance Hall was chosen as the lecture venue. And it

hardly seems necessary to say that in the interminable lingo of the day, Airy's lectures did spill over into a sixth evening between Monday 13<sup>th</sup> and Saturday 18<sup>th</sup> March. We must bear in mind that people of Airy's standing were more or less Victorian superstars and events such as this would have been the red hot must have tickets of the time! So much so, that the stated maximum capacity of the Temperance Hall was 500 persons and Airy recalls in his autobiography that there around 700 souls present each evening. Just think of the apoplexy modern day health & safety wallahs would have had at this prospect!!

Before looking at the subject matter covered in those lectures, you'll have to forgive my mentioning some delightfully Victorian attitudes displayed by Airy and though I cannot agree with his reasoning, the first example does make for an amusing and VERY non PC quote...

He said on his first lecture introduction, "*The Lectures will be of what I may call a mathematical kind. But in speaking of this, I beg that the ladies present will not be startled. I do not mean to use algebra or any other science, such as must be commonly of an unintelligible character to a mixed meeting*". There's one he'd never get away with in our more enlightened times!

Airy went on to explain his connections with Ipswich and his reasons for giving the lectures, "*I have been personally long connected, not with the town of Ipswich precisely, but with the neighbourhood. I remember, with gratitude, that the first time I was shown an astronomical object of any great interest, it was exhibited to me by the founder of the mechanical and manufacturing Institution which has now risen to such great importance in the Town of Ipswich. (A clear reference to Messrs Ransome & May) It was by the elder Mr Ransome that I was first shown the planet Saturn, with a telescope manufactured by his own hands. And I may add, that the first Nautical Almanac I possessed (the 19<sup>th</sup> century 'Starry Night' – though still in production) was received as a present from a gentleman then residing in Ipswich, who has now risen to great eminence in the Metropolis as an engineer. (William Cubitt) From these and other circumstances, I was desirous when the opportunity should occur, of offering to the members of the Museum, or any other similar body in the town of Ipswich, a course of Lectures on Astronomy*".

Referring to his desire for the lectures to be available to the mechanics/artisans of Ipswich he said, "*The alliance between astronomers and mechanics is much closer than it may seem to be at the first view of the matter. Astronomers have to rely very closely upon mechanics for every part of the apparatus connected with their operations. Possibly mechanics have derived something from their connection with astronomers: but at all events, I am certain the debt is on the other side; I may adduce as a practical instance, that the last instrument erected at the Royal Observatory, Greenwich, and to which I attach great importance, was constructed by the mechanics of Ipswich (the afore mentioned Airy*

Altazimuth) whilst I am at the present time in negotiation with one of the mechanical establishments of the town for another instrument of considerable importance in astronomical observations". A clear reference to Airy's design for a substantial new Transit Telescope – brought into use through a further Ransomes/Troughton & Simms engineering partnership in 1851 - the instrument by which to this day the zero meridian of the world is still measured.



This is the only known image of the former Ipswich Temperance Hall in Crown Street, junction with High Street taken in March 1963 – just a few weeks before the building was demolished to make way for modern office buildings. The hall was built to remedy a growing problem of late-night drunkenness and disorder around the town centre – so – no change there then... Towards the end of the 19<sup>th</sup> century the hall was sold to George Abbott Ltd and became known as the Crown Iron Works. The company produced a range of domestic cooking stoves at its foundry there well into the 1950s – the original facade of the Temperance Hall can be seen behind the rather gaudy front extension erected by Abbots.

*By kind permission of Mr David Kindred.*

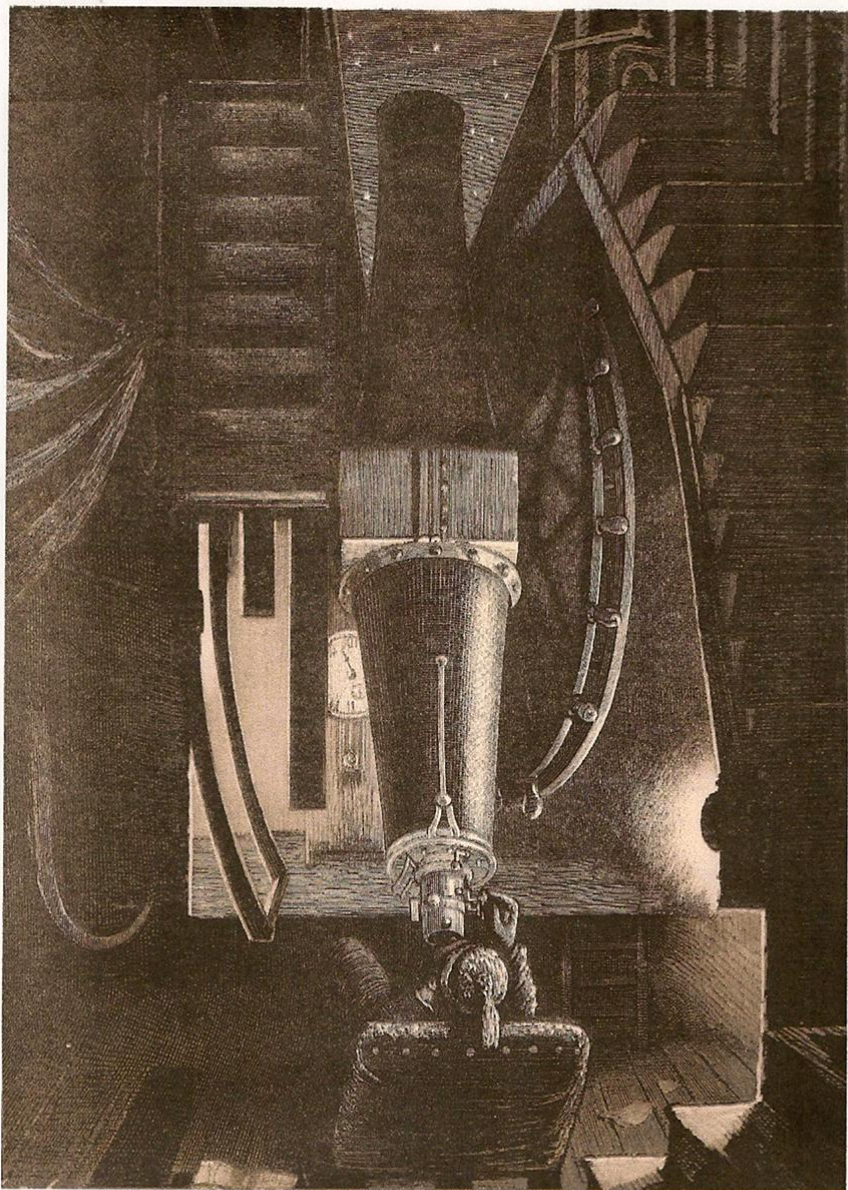
The lectures began at 8pm and must have gone on quite late, given that the final lecture on Saturday evening - according to the Ipswich Journal – finished around 11pm. As may be deduced from the table of lectures, in the vogue of the day they were of a highly mathematical nature, but Airy arranged for diagrams and working model demonstrations to assist the audiences in comprehending them. The following extract are Airy's words in a letter from his Playford cottage to his wife Richarda back at Greenwich on the day after the 1<sup>st</sup> lecture (Tuesday 14<sup>th</sup> March); *'At the proper time I went to the hall : found a chairman installed (Mr Weston) : was presented to him, and by him presented to the audience : made my bow and commenced. The room was quite full: I have rarely seen such a sea of faces; about 700 I believe. Everything went off extremely well, except that the rollers of the moving piece of sky would squeak : but people did not mind it ; and*

when first a star passed the meridian, then Jupiter, then some stars, and then Saturn, he was much applauded. Before beginning I gave notice that I should wait to answer questions ; and as soon as the lecture was finished the Chairman repeated this and begged people to ask. So several people did ask very pertinent questions (from the benches) shewing that they had attended well. Others came up and asked questions.'

ARY'S SIX LECTURES ON ASTRONOMY - March 1848, Temperance Hall, Norwich

Date	Monday 13 <sup>th</sup>	Tuesday 14 <sup>th</sup>	Wednesday 15 <sup>th</sup>	Thursday 16 <sup>th</sup>	Friday 17 <sup>th</sup>	Saturday 18 <sup>th</sup>
Lecture In Chair	Lecture 1 From Noon Thomas Church Western Esq	Lecture 2 From Noon Thomas Church Western Esq	Lecture 3 From Noon William Kitchell Esq	Lecture 4 From Noon William Long Esq of Starn Hall, Saxmundham	Lecture 5 From Noon Rev Edwin Sibbey AM	Lecture 6 From Noon Rev John Perriock
Subjects covered	Evidence for the apparent rotation of the heavens round the earth. Reflections. Descriptions of some instruments proper for Astronomical Observations.	Investigation of the form and dimensions of the earth. Proof that the earth really revolves. Apparent motion of the Sun among the stars or real motion of the earth round the Sun. Permanency of an axis of rotation.	Apparent motion of the Planets. Clerk theory of Planetary motions. Epicycles. Deferents etc. Copernican theory. Kepler's elliptic theory. Theory of central forces. Laws of motion. Composition and Resolution of Forces. Motion of a Planet in its orbit deduced from these laws. Measure of distance by Parallax.	General notions of Parallax. Method of finding the Moon's Parallax and distance. Methods of finding the Sun's Parallax by Transit of Venus across the Sun's disc. Cause of failure of other methods.	Precession of the Equinoxes. Lunar Nutation. Aberration of light. Measure of the diameters of Stars.	Velocity of light deduced by Roemer from observations of the Eclipse of Jupiter's Satellite. Proper motion of Stars. Motion of Solar System in space. Theory of Gravitation. Methods of comparing attraction. Perturbations of the Moon. Mutual perturbations of the Planets. Long inequality of Jupiter and Saturn. Calculation of figure of the Earth from Pendulum Experiments. Experiments on the density of the Earth. Schaller's Experiments. Cavendish Experiment. Weight and density of the Sun. Weight of some Planets and of the Moon. Conclusions.





An observation being made at the Airy Transit Circle  
As depicted in the Illustrated London News 11<sup>th</sup> December 1880.  
This is the second instrument Airy alluded to in the introduction to his first Ipswich Lecture  
*Image from the collection of Ken Goward*

Over the course of the week Airy's words were recorded in shorthand and the transcript was printed in book form under the title Lectures on Astronomy by the Astronomer Royal. Although the size of the print run is not clear, four editions had been printed before 1865 by Messrs S H Cowell of Butter Market Ipswich, published by Simpkin and Marshal of London. By a pure fluke I was lucky enough to obtain a 4<sup>th</sup> edition from eBay just recently and for a song – the going book trade rate is normally in three figures. By 1866 a revised pocket sized version of the book entitled Popular Astronomy was published by Macmillan and edited by a Mr Stirling with Airy's permission. A further revision appeared in the 7th edition by a Mr H H Turner in the year before Airy's death – 1891. In all some 14 editions appeared, although the numbering of those editions was somewhat jumbled and some so-called editions were merely further printings – for sure there were seven 'actual' reprints. I have still to get to the bottom of where any royalties may have gone, but suspect they went to the museum as Airy also agreed to sit for a portrait by T H Maguire in 1852 (see front cover) – one of a series of famous scientists of the day commissioned by the museum to raise much-needed funds and now in the possession of the Suffolk Records Office. There is a copy of Popular Astronomy available to OASI members in our library, although it may not be taken out on loan.

Airy remained faithful in his appreciation of the skills of Ipswich's manufacturing industry and designed a new Transit Circle to come on stream in 1850 and the heavy mounting for the Gt Equatorial Telescope installed by 1859. All of the heavy engineering components were entrusted to Ransomes - a visible and long lasting thank you. The Ipswich Museum, by the way, moved to its present location in High Street in the 1870s.

#### **Acknowledgements:**

I am grateful to the following for their help in preparing this article: Dr Allan Chapman, Gilbert Satterthwaite, Garry Coleman, David Kindred Bill Barton and members of the Ipswich Society.

#### **Sources:**

Lectures on Astronomy by the Astronomer Royal, published by Simpkin & Marshall 1865.

Popular Astronomy, published by Macmillan 1895.

Autobiography of Sir George Biddell Airy, compiled by Wilfrid Airy and published by Cambridge University Press 1896.

Greenwich Observatory, Volume 3, the Buildings and Instruments, Derek Howse, 1975.

The Ipswich Journal March 1848 – various reports.

The Suffolk Chronicle March 1848 – various reports.

*KJG*



## Open Weekend

The Open Weekend this year was held on Saturday 30<sup>th</sup> September and Sunday 1<sup>st</sup> October. This year's event was waited for with great expectation, in the hope that the weather would be better than that experienced during Open Weekends of recent years. The weather was on our side this year. Saturday evening presented us with partial cloud, with sufficient clear periods to have a full programme of observations. Sunday evening was even better, with complete clear skies

Three observing areas were in operation. The principle site was with the Tomline Refractor, where the moon was the under full view. On the Saturday evening the visitors had to be patient while waiting for the next clear patch of sky. The second observing area, was with the small telescopes on the balconies and the third area was on the school playing field, which I was the hosting.

Inclement weather had caused the cancellation of my night sky tours for several years, however, this year I was back in business. Since I last gave Open Weekend visitors a guided tour of the night sky a new item of technology is now available, a green laser pointer. These laser pointers, are now an essential tool, when giving practical talks about the night sky. In the past I had to make do with a torch which had a beam that could be focused with a narrow shaft of light. On Saturday I was helped by Martin Cook who also had a pointer, so we had two laser pointers in use. Some times we were pointing at different objects while other times we were pointing at the same object. Our publicity posters recommended that visitors should bring along a pair of binoculars. Many visitors took our advice and did have binoculars with them. Martin and I proceeded to target some prominent deep sky objects, by triangulating them with our lasers. Every one with binoculars easily found these by following the green beams. Objects observed were the double cluster in Perseus, M13, M31, M45 and  $\epsilon$  Lyra. In previous years using only a white beam torch, it was difficult to point out any deep sky objects as the light tended to obscure anything targeted. Two groups of visitors were showed the night sky on Saturday and all seemed to leave the field appreciative of the tour. An additional high light on Saturday was a bright meteor, which was seen below Altair. This as would be expected was the catalyst for a discussion on meteors.

Sunday evening activities were a repeat of Saturdays. As is normal on Sundays there were fewer visitors, this gave a more relaxed evening with no where to busy, thus giving the visitors more personal attention. There was demand for only one night sky tour on Sunday evening.

Finally I would like to thank all members who were able to come along and give a helping hand. This was the best Open Weekend, weather wise, we have held for several years.

Roy Gooding

## A Visit to Seething

Back in June, Ipswich were the visitors on Norwich's home turf. I'm talking about the beautiful science here - astronomy – by the way, and the visit of the Orwell Astronomical Society (Ipswich) to the observatory of the Norwich Astronomical Society (NAS).

Norwich Astronomical Society has had its observatory at Seething for just over 10 years. Before that, its observatory had been on land owned by the University of East Anglia at Colney Lane, just south of Norwich. When plans were announced to build not one, but two new hospitals right next door to the observatory, NAS became understandably concerned about the sky quality at Colney Lane. Members wondered whether the site would be viable in the long term. At the Public Inquiry into the development NAS was promised compensation to allow a new site to be bought, to pay for a professionally built facility to replace those at Colney Lane, and to help the move to the new location. They have built on this initial kick-(re)start and now have an excellent and well equipped observatory.

It was a pleasant sunny evening when we arrived, so we started with a look at the Sun in H-Alpha through a Coronado PST<sup>1</sup>, followed by a tour of the site in daylight. As well as being an attractive location in unspoilt countryside, away from light pollution, the observatory is well equipped for meeting all its members' observing requirements: with a run-off shed - which can accommodate members' telescopes with shelter from the wind and power for equipment - two domes - each with a good size telescope - and two areas of hard-standing for member's to set up their own telescopes with six observing pitches in each. In one of the hard-standing areas each pitch has electrical hook-up to power drive motors, laptop computers and imaging equipment. In their 4 acre site they've also found room for picnic tables, which are ideal for *starbecues*.

The main building has a well-equipped lecture room, toilet, kitchen (including a dishwasher<sup>2</sup>) and a recreation room with a pool table. We were told all good observatories – amateur and professional – should have a pool table. This left us wondering where we could fit a pool table: on top of the stairwell roof with lifelines to catch players falling off!?

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<sup>1</sup> The Coronado Personal Solar Telescope is a 40mm instrument designed specifically to observe the Sun at the wavelength of 'Hydrogen Alpha' a wavelength which looks pinkish to the eye. This allows spectacular views of solar prominences.

<sup>2</sup> As one of OASI's dishwashers at lectures and workshops I can see the value of that particular piece of equipment.

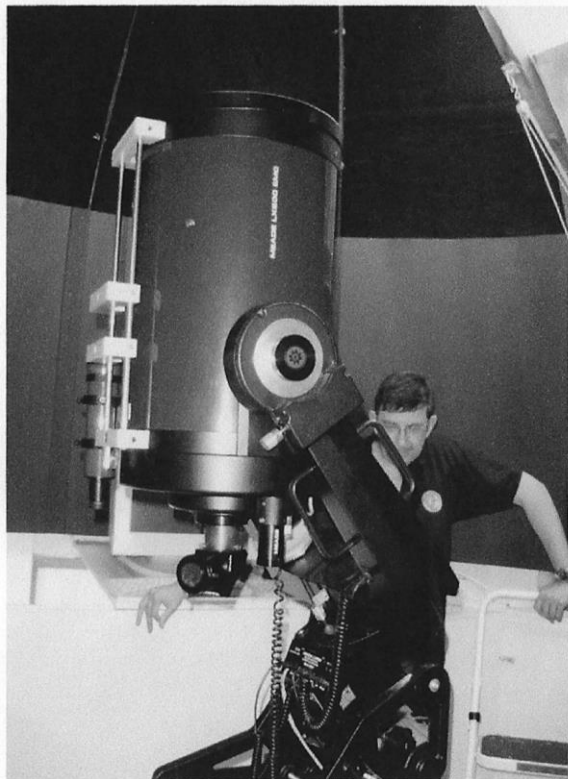
After the tour, our hosts gave two talks: one on the history of their society and one on mars in 3-D, using images from the Mars Exploration Rover missions. We were so impressed with the latter that OASI has purchased 3D viewing glasses and obtained the images so we can run the same sort of presentations ourselves. After the talks we had a chance to chat to our hosts over tea, coffee and biscuits and then it was sufficiently dark for observing and another look at some of the instruments.



When OASI visited NAS at Colney Lane a 30 inch reflecting telescope was a highlight of the visit. We knew that the instrument was difficult to use and maintain and has been replaced by the Genesis Dome. I was wondering what happened to that instrument. I've subsequently discovered that it has been adopted by another club (Norfolk Astronomers) based at Reepham to the North West of Norwich. They have already established an observatory at Reepham with one instrument which has been in operation for a couple of years and the 30 inch telescope dome which should be just about complete.

The new, big instrument at Seething is a 30cm (12") Meade LX200 Schmidt-Cassegrain housed in "The Genesis Dome", which is motorised and 4 metres across. A CCD camera can be attached to the telescope and a network cable runs underground to the clubhouse. NAS find this particularly useful for visitors who cannot climb the steps into the Dome. The Genesis Dome and telescope were installed as part of a £15,000 project to which many organisations contributed.

We also saw "the Herschel Dome" which some OASI members may remember from a visit to Colney lane in the 1980s at which time it housed a 25cm (10") reflector with a mechanical clock drive. Now the dome has been refurbished and holds a Skywatcher 15cm (6") refractor. A large achromatic refractor like this will show some chromatic aberration, so they have fitted a correcting lens in front of the eyepiece which for an extra £500 makes the instrument perform virtually as well as a telescope several times the price of the whole assembly. As NAS say on their website, this is a "telescope that now provides the members and visitors with stunning high-resolution planetary and lunar views". We certainly put it through its paces looking at Mars, Jupiter, Saturn and the Moon.



NAS is looking at developing its radio astronomy facilities. We saw the "Washing Line" (technically a dual dipole antenna) which is designed to detect the radio emissions generated by the motion of the moon Io passing through the magnetic field of Jupiter. During the day time the antenna array can be used to monitor solar activity. They have also started to renovate two 10ft radio dishes that are mounted on rotating bases. These two dishes are around 100 metres apart on an east-west axis and they hope to set them up as an interferometer.

It was fascinating to see such a great range of instruments and a great visit in every way. With OASI approaching its fortieth year it's encouraging to see another, even more venerable, East Anglian astronomical society going from strength to strength.

Pete Richards

# OASI Committee Contacts & Responsibilities

Kenneth J. Goward FRAS	<b>Chairman</b>	☎	Press & Publicity with Secretary.
Roy Gooding	<b>Secretary</b>	☎	<b>MAIN POINT OF SOCIETY CONTACT</b> Press Publicity with Chairman. Observatory Decoration. Visits by potential new members.
Garry Coleman	<b>Treasurer</b>	☎	Finance. Supervision of Grant Applications.
James Appleton	Committee	☎	Committee Meeting Minutes. Web Site.
Martin Cook	Committee	☎	Membership. Tomline Refractor Maintenance.
Neil Morley	Committee	☎	Equipment Curator.
Ted Sampson	Committee	☎	Tomline Refractor Tutoring. Social Activities.
Eric Sims	Committee	☎	Newsletter.
Mike Whybray	Committee	☎	Librarian & Workshops.
Paul Whiting FRAS	Committee	☎	Visits by outside groups.
Bill Barton FRAS	Committee	☎	Safety & Security.
Peter Richards	Co-opted	☎	Lecture Meetings. School Lighting liaison. Email Distribution Lists.

# Diary for November

<p><b>Monday</b>  <b>13<sup>th</sup> &amp; 20<sup>th</sup></b>  <b>From 8pm</b>          NB STONS for 2006/7 will be          Scheduled on two Mondays per          month around no moon periods</p>	<p><b><u>SMALL TELESCOPES OBSERVING NIGHTS</u></b> (STONS)          Observing targets in and around Pegasus          And Pisces          ☎ Paddy O'Sullivan [redacted]</p>
<p><b>Wednesday 1<sup>st</sup></b>  <b>7.45pm</b>  <b>NACTON VILLAGE HALL</b></p>	<p><b><u>ASTRONOMY WORKSHOP</u></b>  <i>'Observatories of the South Western United States'</i>          Presented by Paul Whiting FRAS          ☎ Mike Whybray [redacted]</p>
<p><b>Wednesday</b>  <b>1<sup>st</sup> 8<sup>th</sup> 15<sup>th</sup> 22<sup>nd</sup> 29<sup>th</sup></b>  <b>from 8pm</b></p>	<p><b><u>OBSERVATORY CLUB NIGHTS</u></b>          ☎ Martin Cook [redacted] (mobile) [redacted]          ☎ Roy Gooding [redacted] (mobile) [redacted]</p>
<p><b>Thursday 30<sup>th</sup></b>  <b>8pm</b></p>	<p><b><u>VISIT BY OUTSIDE GROUP</u></b>          Gipping Valley Young Farmers          (junior section)          ☎ Paul Whiting FRAS [redacted]</p>
<p><b>Friday</b>  <b>24<sup>th</sup> at 8pm</b>  <b>METHODIST HALL</b>  <b>BLACKHORSE LANE</b>  <b>IPSWICH</b></p>	<p><b><u>LECTURE MEETING</u></b>  <i>'Space Rocks'</i>          Presented by David Bryant          Every year thousands of tons of rock and metal crash          down onto the Earth! How can you find a meteorite with          just a magnet and a hand-lens? And how would you          recognise one? Hold - or even buy - a real meteorite!  <b>David (who runs <i>Spacerocks UK</i>) will have some          Space rocks for sale after the talk.</b>          ☎ Peter Richards [redacted]</p>

## Society Primary Contacts

Chairman: Kenneth J. Goward FRAS ☎ [redacted] (daytime & evenings)  
 Secretary: Roy Gooding ☎ [redacted] (daytime) [redacted] (evenings)  
 E-Mail queries [Ipswich@ast.cam.ac.uk](mailto:Ipswich@ast.cam.ac.uk)

## Society Trustees

Mr Roy Adams Mr David Brown Mr David Payne

## Society Honorary President

Professor Allan Chapman D.Phil MA FRAS

## Observatory Telephone Number

Meeting nights only

[redacted]