The Newsletter of the Orwell Astronomical Society (Ipswich)

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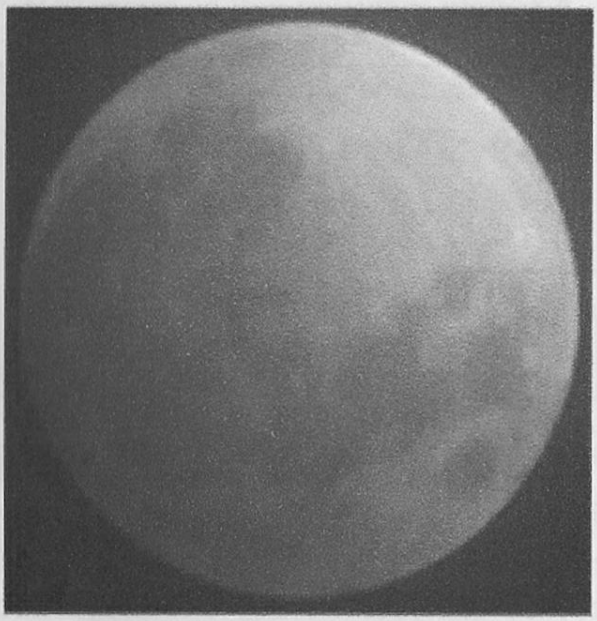
2008 April No 429



Total Lunar Eclipse 2008 February 21st at 03:16UT.

A TRIUMPH OF TENACITY

Mike Harlow spent a frustrating night attempting to image February's Lunar Eclipse, but his tenacity paid off – in his own words…

"What rubbish weather! Hazy to totally invisible through the partial phases and then almost completely invisible during totality. However, due to the wonders of modern technology I did manage to get a half decent image. By taking a 10 second exposure through the Schmidt (at F/2.5) and stretching the almost completely blank image like mad afterwards the totally eclipsed moon did appear from the gloom. (Pity its in black and white!!!)".

NB There is a very nice image of Mike's 220mm aperture 400mm focal length Schmidt Camera in the March edition of 'Astronomy Now' – Martin Mobberley's 'Tech Talk', page 83.

Society News (Roy Gooding)

1 Committing Meeting Saturday 10th May

The next committee meeting will be held on Saturday 10th May from 20:00 at the Methodist Church Hall. This is meeting is open to any member who would like to attend.

2 Events for 2008

This event list will be updated through out the year

Meeting	Venue	Date
Open Weekend		**12th and 13th April**
Excursion	A society excursion will be arranged if there is sufficient interest	No date set yet
Summer Barbecue If you would like to host this years event please contact any committee member	No venue fixed yet	No date set yet
Perseid Meteor watch	The "Dip" Felixstowe	Saturday 16th August
Geminid Meteor watch	The "Dip" Felixstowe	Saturday 13th December
Christmas Meal		Wednesday 11th December?

3 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.

4 Welcome to New Members

5 Lecture Meeting Venue

Our town lecture venue is now at the Methodist Church Halls, in Blackhorse Lane. The Church has a car park, can 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 former 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.

Meetings start at 20:00, doors open at 19:30

7 Proposed Society Excursion for 2008

At the last committee meeting it was proposed to have a society excursion if there is sufficient interest from members.

- The first option is to have a return visit to Greenwich
- The second option is to go to Herstmonceux for the 2008 Astronomy Festival on Saturday 6th September

Please contact Roy Gooding if you are interested. An excursion will only be arranged if there are enough members interested to make it financially viable.

Open Weekend

Saturday 12th and Sunday 13th April.
Doors open for the public at 19:30

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

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

THE ORWELL PARK OBSERVATORY WILL BE OPEN TO THE PUBLIC ON

SATURDAY 12th April From 7:30pm to 10:00pm
SUNDAY 13th April From 7:30pm to 10:00pm

The weekends programme includes:

OBSERVATIONS OF THE MOON, SATURN, MARS and the NIGHT SKY

Night Sky (May)

All times BST

Moon

New Moon	1st Quarter	Full Moon	3rd Quarter
6th	12th	20th	28th

Object	Date	Times		Mag.	Notes
		Rise	Set		
Sun	1	06:39	19:39		
	30	05:36	20:29		
Mercury	1	06:31	18:09	0.0	Mercury is at superior conjunction on the 16th
	30	06:00	22:06		
Venus		06:20	19:21	-3.8	Venus remains low down in the pre-drawn sky this month
	30	05:26	19:21		
Mars	1	10:38	03:47	0.5	Mars remains in Gemini As it recedes for the earth it will more difficult to see any markings
	30	10:03	02:36		
Jupiter	1	03:52	11:52	-2.1	Jupiter is in Sagittarius. It is near to its lowest point in the sky, making it difficult to observe, if you do not have a clear southern horizon
	30	02:05	10:08		
Saturn	1	15:35	05:54	0.3	Saturn remains well placed to observer this month
	30	13:36	03:59		
Uranus	1	06:09	17:27	5.8	Uranus is low down in the pre-dawn twilight sky
	30	04:18	13:36		
Neptune	1	05:19	14:56	7.8	Neptune is also in the bright dawn sky and will be difficult to see this month
	30	03:26	13:06		

Meteor Showers (BAA Handbook)

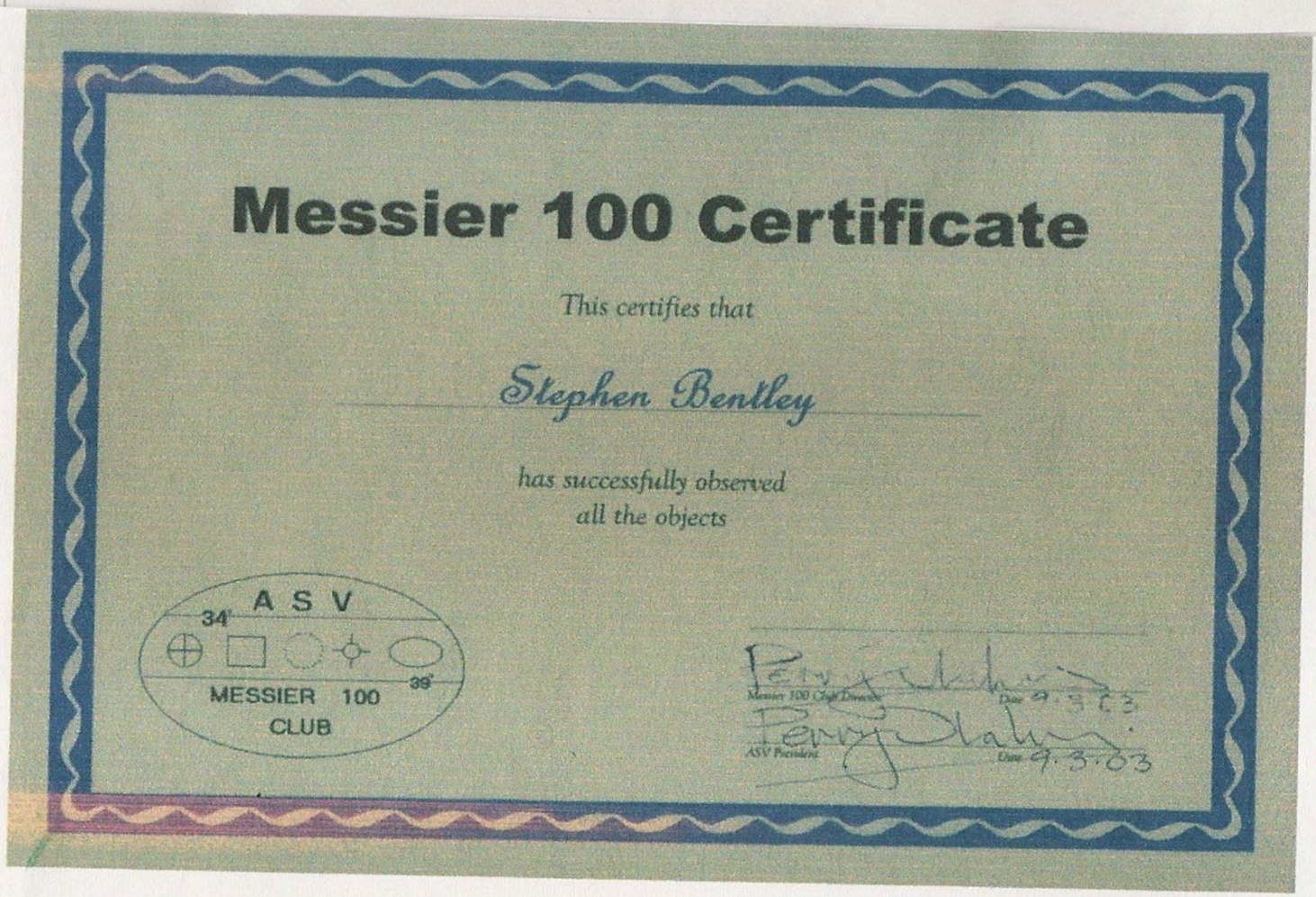
Shower	Maximum	Limits	ZHR
Lyrids	April 24th	April 19th to 25th	10

OCCULTATIONS DURING APRIL

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
08 Apr	20:43:45	D	0.10+	-18	15	7.4	ZC 513
11 Apr	22:51:24	D	0.40+	-28	25	7.0	ZC 1046
11 Apr	23:15:21	D	0.41+	-29	21	6.8	ZC 1049
12 Apr	19:45:08	D	0.50+	-9	56	7.4	Hip 37747
12 Apr	21:41:51	D	0.51+	-23	42	6.2	82 Gem
13 Apr	19:26:11	D	0.61+	-6	57	6.8	ZC 1297
13 Apr	19:30:25	D	0.61+	-7	57	6.8	EP Cnc
13 Apr	19:31:34	D	0.61+	-7	57	6.8	42 Cnc
13 Apr	22:19:52	D	0.62+	-25	41	6.8	ZC 1312
14 Apr	01:15:06	D	0.63+	-26	14	6.7	ZC 1321
14 Apr	23:54:53	D	0.73+	-28	30	7.0	ZC 1425
15 Apr	00:49:27	D	0.73+	-27	21	7.0	ZC 1427
15 Apr	19:54:00	D	0.81+	-9	46	6.6	ZC 1516

James Appleton



A Message from the Chair

As many of you will know, my health has been something of an issue in recent times and as a result I have not been unable to serve the society as well as it ought to be served. For the good of OASI, my own well being, and acting upon advice, I have stepped aside from an active role in the OASI Chairman's post and those duties will be undertaken by members of the Committee with me 'in absentia' until the 2009 Annual General Meeting, when a new Chair will be elected.

Members will be pleased to know that the protracted negotiations, hiccups and apparent gloomy outlook regarding the new Operating Licence for Orwell Park Observatory are largely resolved and behind us now and some remaining fine points of detail will be sorted out imminently. David Payne has kindly volunteered to see those negotiations through to conclusion and we expect to have good news and a far better outlook for OASI within a very short time. To that end I welcome the Co-opting of John Wainwright onto Committee, pending election confirmation at the next AGM. John is an active and keen member, who will bring a breath of fresh air to the Committee as he assumes responsibility for strategic forward planning – the way to go for OASI.

For my own part, I shall continue to support the society and produce the newsletter covers etc until our editor or the membership grows tired of my style, along with the occasional (OK - boring) article!

It only remains for me to wish the OASI Committee well in their endeavours and to say that each of them has always acted in the best interests of the society and we owe our gratitude to them. This is no farewell, just a step into the wings to retrench and get back to a more active personal membership level.

Best wishes
Ken

Kenneth J. Goward FRAS
Chairman, OASI.

It's Time To Go Home.....

by Tina Hammond

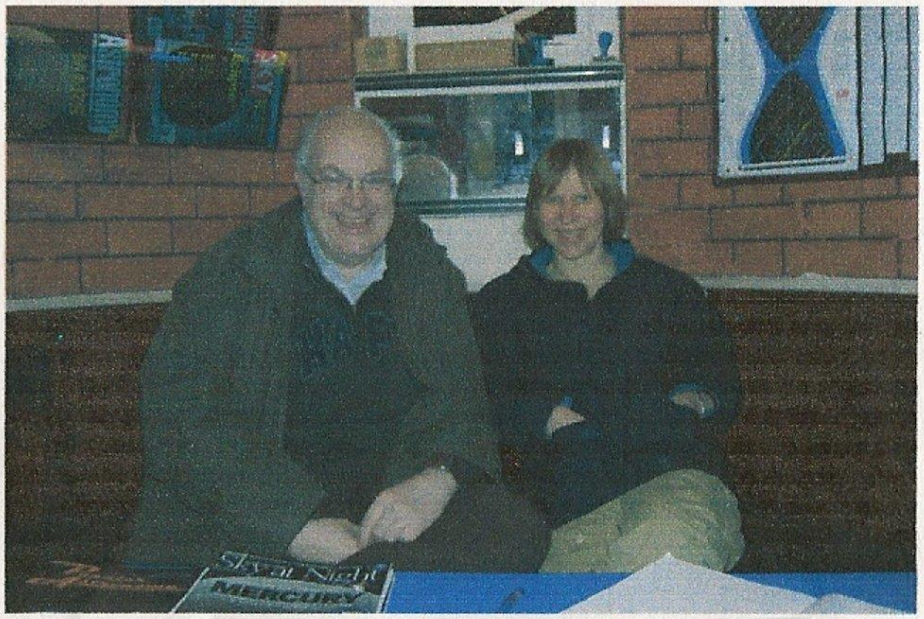
The OASI Workshop planned for the evening of Wednesday 5 March 2008 was always in doubt. Would the skies be clear enough for us to use the Millennium Telescope? Or would we have to fall back on our alternative 'tea break' entertainment for that night, a talk by Steve Bentley from Victoria in Australia, on observing 100 Messier objects 'down under'?

Steve would be staying with me in Ipswich for four nights, as part of an eight-week multi-segmented European-ski-touring holiday. His Air Berlin flight from Paris via Dusseldorf was due to arrive at Stansted at 1050 that morning. Not a problem, he had the Messier data on a memory stick, backed up on a disc, and I had yet another back-up disc.

Alarm bells started to ring at 9 am when a text was received from Paris. His flight had not left due to a baggage handlers strike in Germany. Updates continued throughout the day, the irony being his flight left Paris for Dusseldorf at 1050, the very time he was supposed to land in England!

Unfortunately, Air Berlin flights from Dusseldorf to Stansted are rare, and the next available - indeed the only - one was at 1900, arriving 1930.
Howard was despatched to meet him at Stansted, while Lindsay and I turned up at the Village Hall armed with my back-up disc, relieved that it worked in OASI's laptop.

Naturally, the skies chose to be overcast all night, so with no Millennium Telescope, nor tea break speaker, it was down to OASI's more enterprising members who had had the forethought to bring along alternative entertainment to keep the show going.



Paul & Tina in Belvedere

First up was Paul Whiting with an extremely interesting talk on his experience on a Norwegian Coastal Lines Hurtigruten vessel. A four night cruise, starting and finishing at Tromso, north of the Arctic Circle in Norway, and cruising as far as the North Cape (Nord Kapp) in order to view the Aurora Borealis, was very inspiring.

Neil Morley did a slide show on the potential pitfalls when you extract three screws from a telescope and a piece of glass falls out! Not one to be tried at home. He also had some shots of the annual Teslathon, featuring home-built Tesla coils, at Cambridge in October.

The tea break came and went, but still no sign of Steve. Pete Richards started a potentially massive talk on his and Nicky's holiday to Chicago last May, during which time they visited the Yerkes Observatory on Lake Geneva (Illinois). And we thought Orwell Park was opulent! Charles Yerkes was an American tycoon, with wealth to equal that of Tomline. We were getting into the nuances of the architecture and discussing whose nose was featured on a gargoyle when, at just gone 9 pm, the door opened and in staggered a dishevelled and tired looking Australian, closely followed by Steve Bentley.

This brought Pete's pictures to a somewhat abrupt and unceremonious end, and Steve gave a 40 minute talk on Charles Messier (26/6/1730 – 12/4/1817). I had not realised that, like so many of his contemporaries, he was primarily a comet hunter, but got so annoyed at having to waste time re-eliminating these little white fuzzy things that looked like comets, that he compiled a list of them to avoid future time-wasting. Thus the list of objects so revered by current astronomers, was to him a 'catalogue of inconvenience'. Messier himself listed 103 objects, aided by his assistant Pierre Mechain, Barabus Oriani, and Nicholas de La Caille (who viewed from South Africa), but was supplemented by others using his notes, from 1921 –1966, to the 110 we know toady.

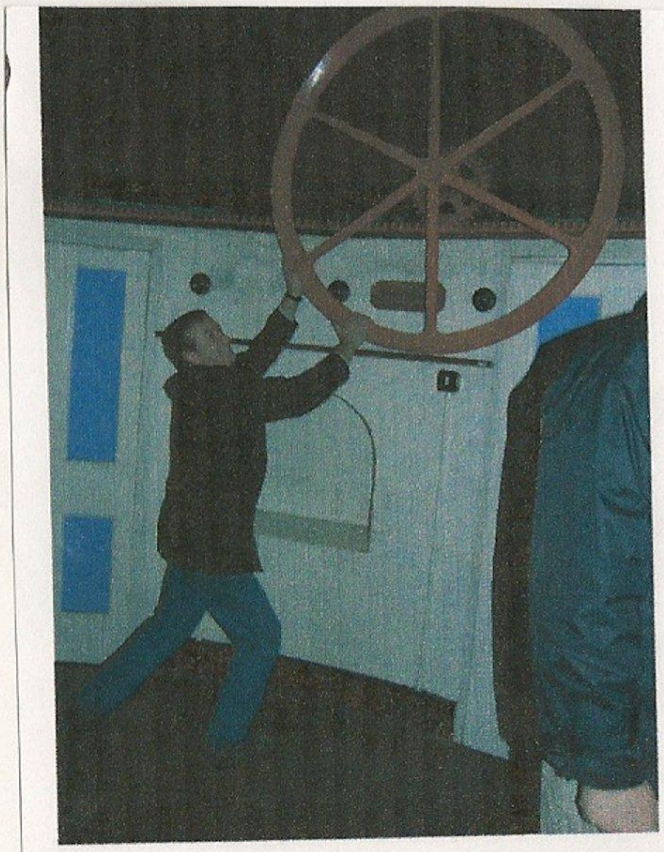
Exactly 100 items can be seen from the state of Victoria (34'-39' south), and the Astronomical Society of Victoria (ASV) award a certificate to anybody observing all 100: Steve completed his certificate in under two years, from January 2000 until November 2001, the final sighting taking place at the end of the Melbourne Cup Bank Holiday long weekend. For each viewing, he noted the time, date, conditions, place, persons with him, described the object, and sketched each one. Very amusing were the 'upside down' constellations he had drawn!

When asked where most of the observing was done from, he replied that the ASV have their own fields: one for popular observing and the other reserved only for those who wish to take long exposure photography – and thus not subject to red light torches (white light not permitted at all) - at Heathcote, close to where he lives. Pressed on the point, he revealed it was a 2 hour car journey from his home. Gasps! 'Oh, you think that's a long way? Huh.'. Such is the difference between our two great countries! The last object to be sighted (M76) was viewed from Mildura, a town on the Victoria/New South Wales border, which took all day to drive to! Luckily he saw it on his third – and final - night there. Wow!

The two fields owned by the ASV sound extremely accommodating for the members. Not only can you park easily and safely, but the site also has brick buildings, where you can variously eat, drink, sleep (!), and store equipment. Called the Leon Mow Deep Sky Site (LMDSS), they were bequeathed to the ASV by, er, Leon Mow.

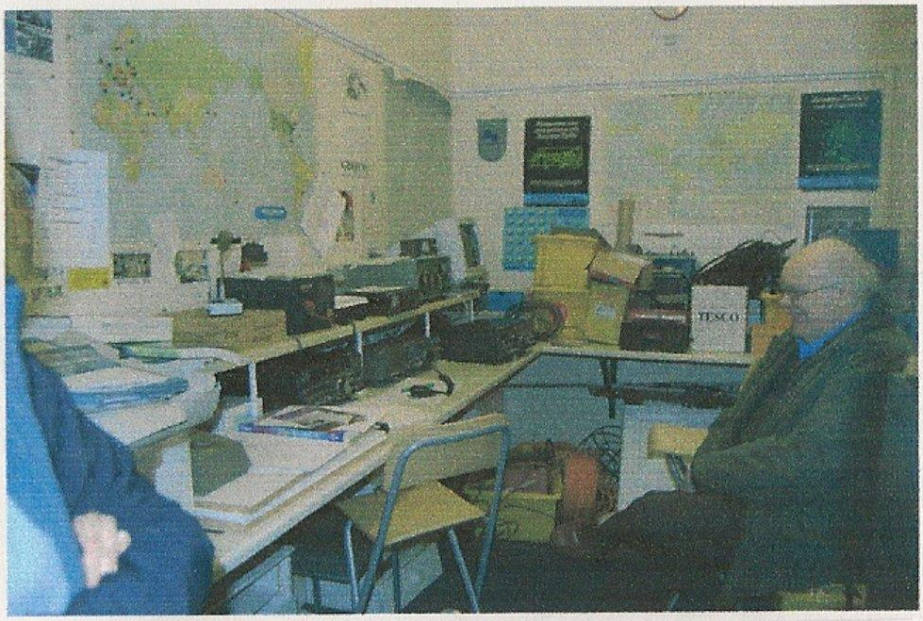
Paul, Gerry, Neil, Steve and I undertook an impromptu visit to Orwell Park at the conclusion of the Workshop, ahead of Thursday's visit by Amberfield, at which we would again be in attendance. Due to the overcast conditions, the only thing Steve was able to observe was the Bull *(sic)* and Oyster public house....

Gerry Pilling



Steve Bentley in Orwell Park Observatory

Thursday dawned bright and sunny, However, by the evening, the skies had again completely clouded over, and neither Amberfield nor Steve got to view anything except the RHS. The evening was not all wasted, however. Steve shares Paul's love of amateur radio, and we adjourned to the Amateur Radio Club room at Orwell Park after the girls had departed. It was noted that no messages had yet been received from Victoria, and so a card was handed over in the expectation that this state of affairs will soon be remedied.



Paul in Orwell Park Amateur Radio Suite

A quick beer in the Ship resulted in an invitation to look round BT's Martlesham HQ the next morning (Steve is a telecommunications design engineer).

Friday was a disgusting day. Still overcast and cloudy, it was also raining heavily early on, and so we abandoned our plans to photograph Airy's grave first and went directly to Adastral House. Checking in as representatives from that well known global company, OAS, we enjoyed a walk around the site, delighting in the cosmic names given to the various buildings, some more tongue in cheek than others...

Fortified by a latte, the clouds cleared, Steve bade farewell to Paul and we made our way to Playford Churchyard to photograph the Airy family graves, and thence to Orwell Park School to obtain a picture of it, and the Observatory, in daylight. The day's sightseeing continued with a visit to Tomline's own railway station, Derby Road, and a look at the rather unprepossessing Tomline Road, finishing with a trip to the town centre.

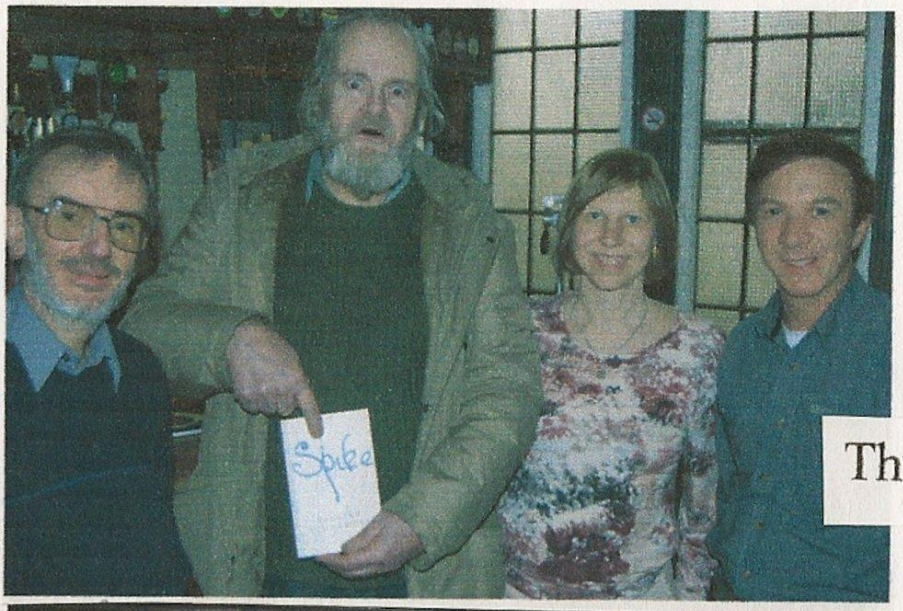
Before leaving Australia, Steve had not realised there would be so much to do here, and had thought that we would 'hang out' at my place for the few days he was here. As things transpired, we spent very little time at home, and managed to survive on vast oceans of adrenaline, making his forthcoming coach tour look like a lazy day at the beach. So busy were we, that I did not read Gerry's text invite to view on the only clear night – Friday – until Sunday evening!

What else did we do to fill in our copious spare time? Well, on Thursday we did the Hammond Sightseeing Tour 1, visiting places of interest along the Heritage Coast (Blythburgh Church - Black Shuck; Southwold – water clock on pier, fish and chips with Adnams in the Nelson; Dunwich – sunken city; Theberton – thatched church, zeppelin remains; Sizewell; Thorpeness – House In The Clouds; Aldeburgh - Maggi Hambling Scallop, Benjamin Britten, Moot Hall; Snape - Maltings). On Saturday we ventured into London and visited an exhibition of Salvador Dali and Pablo Picasso's work, then lunch and all afternoon in a pub in the company of film producer Joe 'Casino Royale, Rising Damp, Not Only But Also' McGrath, Thunderclap 'Something In The Air' Newman and two of Spike Milligan's children, ending up with a curry in Brick Lane, while Sunday saw us chilling out at Chez Tina before Steve caught the afternoon train to London to join his month long coach tour of western Europe the following day.

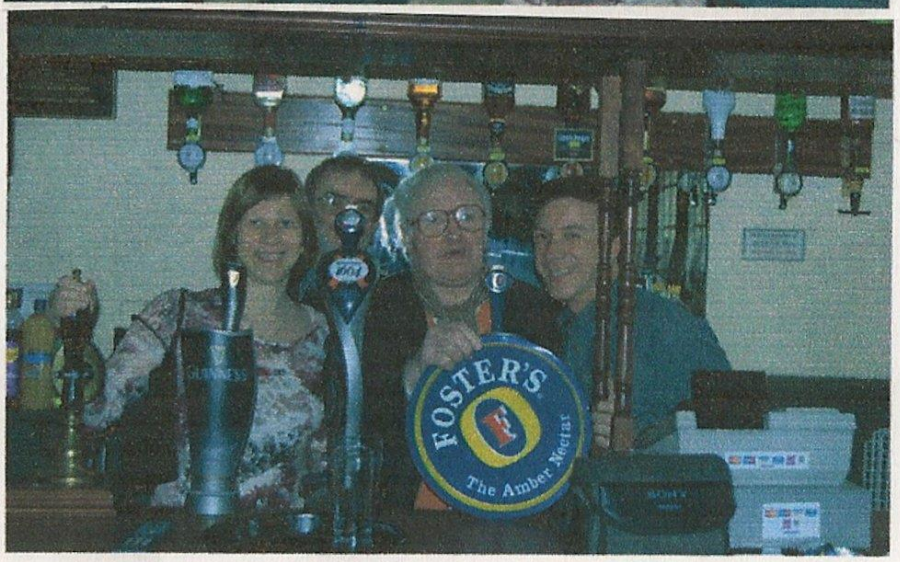
Jane & Sile Milligan

Paul in Orwell Park Observatory

Telescope on Southwold Pier



Thunderclap Newman



Joe McGrath

Alas, as he was to find to his discomfort, entering and leaving the UK is not a pain-free business. Having endured an eight hour delay with the Paris/Stansted connection, Steve was again to be foiled at the borders, this time at Dover, where unusually high winds forced his ferry to be cancelled. Perhaps surprisingly, the decision to use the Chunnel was not taken until 5.30 p.m, by which time he had already spent (yet another!) eight hours in a departure lounge! However, I am sure this excess time was well utilised by writing up somewhat more complete entries of The Ipswich Experience in his holiday journal, which was very patchy compared with the first four weeks.

As astronomers know, every cloud.....etc!

All photographs courtesy of Stephen J Bentley

OASI Committee Contacts & Responsibities

Kenneth J. Goward FRAS	**Chairman**	☎	
Roy Gooding	**Secretary**	☎	**MAIN POINT OF SOCIETY CONTACT** Press Publicity with Chairman. Observatory Decoration. Visits by potential new members.
Paul Whiting FRAS	**Treasurer**	☎	**Finance.** Supervision of Grant Applications. Visits by outside groups. **IYA 2009 Coordinator**
James Appleton	Committee	☎	Committee Meeting Minutes. Web Site.
Martin Cook	Committee	☎	Membership. Tomline Refractor Maintenance.
Neil Morley	Committee	☎	Equipment Curator.
Peter Richards	Committee	☎	Lecture Meetings. School Lighting liaison. Email Distribution Lists.
Eric Sims	Committee	☎	Newsletter.
Mike Whybray	Committee	☎	Librarian & Workshops.
Bill Barton FRAS	Committee	☎	Safety & Security.
John Wainwright	Co-opted	☎	Forward planning & Strategy

IYA 2009 – ADVANCE DATES NOTICE

- Monday March 30th - Sunday April 5th - **Saturn Week**
- Monday July 20th - Sunday July 26th - **Moon Week**
- Monday October 26th - Sunday November 1st - **Jupiter Week**

Diary for April

Monday 7th & 21st **FROM 8PM** *See also box below...*	**SMALL TELESCOPE OBSERVING SESSIONS** (STONS) **Observing Target: Coma Berenices** ☎ Paddy O'Sullivan ☎ Gerry Pilling
Wednesdays **FROM 8PM**	**MAIN OBSERVATORY CLUB NIGHTS** **Primary Observational targets: Nebulae and faint objects.** ☎ Martin Cook (mobile) ☎ Roy Gooding (mobile)
Wednesday 2nd **FROM 7.30PM** **Nacton village Hall**	**MONTHLY WORKSHOP** ***'Telescope Collimation for Dummies'*** Presented by Paddy O'Sullivan ☎ Mike Whybray
Thursday 3rd	**COMMUNITY GROUP VISITS** 26th Ipswich Beaver Colony. ☎ Paul Whiting FRAS
Saturday 12th **Sunday 13th** **FROM 7.30PM to 10PM**	**OBSERVATORY PUBLIC OPEN WEEKEND** **Volunteers needed – see inside.** ☎ Roy Gooding (mobile)

Society Primary Contacts

Chairman: Kenneth J. Goward FRAS ☎ (daytime & evenings)
Secretary: Roy Gooding ☎ (daytime) (evenings)
E-Mail queries: 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

Would STON attendees let either Paddy O'Sullivan or Gerry Pilling know if they wish to have a May meeting? Otherwise the sessions will resume in the autumn. The STON organisers are still available for ad hoc meetings if members have any special interests.

ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

http://www.oasi.org.uk/
Charity No. 271313

PUBLIC OPEN WEEKEND

Visit One of the Few Remaining Operational Victorian Observatories Located at Orwell Park School Nacton off the A1156 between Ipswich and Felixstowe

THE ORWELL PARK OBSERVATORY WILL BE OPEN TO THE PUBLIC ON

SATURDAY 12th April From 7:30pm to 10:00pm
SUNDAY 13th April From 7:30pm to 10:00pm

The weekends programme includes:

OBSERVATIONS OF THE MOON, SATURN, MARS and the NIGHT SKY

Observations will be undertaken: -
(Subject to favourable weather conditions)

- **In the Observatory Tower, using the 10" Tomline Refractor and other small telescopes**
- **Outside on the field, using naked eye binoculars and small telescopes**
- **If you have a pair of binoculars we recommend that you bring them with you.**
- **Warm clothing may be required**

Entrance by Donation

Child & Senior Citizen	£1.50
Adult	£3.00

Honorary Secretary
Roy Gooding
168 Ashcroft Road
Ipswich
IP1 6AE

John Isaac Plummer, Colonel Tomline's Astronomer Part 1

As one of OASI's activities during 2007 to mark the fortieth anniversary of the Society, I set out to compile a history of John Isaac Plummer and his work as an astronomer. As is often the nature of such things, my original estimate of the time and effort required turned out to be hopelessly optimistic, and it has taken until well into 2008 to complete the work!

The work is now complete, and Eric will be publishing the history in the form of an appendix to the Newsletter, starting with this edition and continuing over the next ten. There is a copy of the complete history in the OASI library for anyone who cannot wait to receive all the instalments in the Newsletter!

James Appleton, 10 March 2008

John Isaac Plummer. The photograph is believed to have been taken around the year 1900 while he was at Hong Kong.

CONTENTS

APPENDICES

1 Introduction

John Isaac Plummer was born in 1845. He began his astronomical career as an assistant observer at Glasgow Observatory, publishing his first paper [1867b] in 1867. By 1868 he had left Glasgow and moved to Durham Observatory, publishing his first paper [1868a] there in 1868.

In 1873 or 1874 Colonel George Tomline completed construction of his private astronomical observatory at Orwell Park, in the village of Nacton near Ipswich, Suffolk. The observatory was sited atop a 20 metre high brick tower on the east wing of his mansion on the north bank of the River Orwell. It was equipped with a 258mm (10.2"), f15.1 equatorially mounted refracting telescope and a 75mm (3") transit instrument. The mount of the equatorial instrument was of an innovative design which allowed easy operation and unobstructed views of the entire hemisphere of the sky. Tomline's observatory was one of the finest private observatories in the country.

In June 1874, Tomline engaged the services of Plummer as his professional astronomer. Plummer worked for Tomline at Orwell Park for 16 years, undertaking a variety of astronomical investigations, concentrating particularly on positional estimates of comets. Tomline died in 1889, following which his heirs terminated Plummer's employment. After this, Plummer moved briefly to Ipswich and then to Hong Kong Observatory, where he worked until his retirement in 1911. He died in 1925 in Oxshott, Surrey.

We know only the basic facts of Plummer's life. However, during his time as an astronomer at Glasgow, Durham and Orwell Park Observatories, his astronomical publications amounted to 68 papers and short communications and one textbook. He published three further papers (two on astronomical subjects) while at Ipswich after leaving Orwell Park. At Hong Kong, he contributed to four astronomical publications and published a pamphlet on typhoons. (At the time, the director of Hong Kong Observatory was changing the emphasis of the work of the institution from astronomy to meteorology.) Plummer's publications provide a fascinating insight into the state of Victorian astronomical science and the situation of a privately-employed professional astronomer of the era.

This booklet provides a compilation of the known facts about Plummer's life and a summary and appraisal of his publications. The remainder of section 1 details the background to the production of the booklet. Section 2 provides a summary of Plummer's life and work and a commentary on his abilities as an astronomer. There are many aspects of Plummer's life about which we know nothing and section 3 provides a list of suggested areas for further research. Section 4 lists references. Appendices 1 – 15 examine Plummer's astronomical publications in detail. Appendix 16 provides a brief summary of his two non-astronomical publications. Appendix 17 contains the text of press reports of Plummer's lectures in Ipswich. Appendix 18 provides a brief overview of the types of micrometer used by Plummer. Appendix 19 outlines the approach taken to calculating the circumstances of some astronomical phenomena observed by Plummer. Appendix 20 provides brief biographical details of two of Plummer's relatives who enjoyed

distinguished careers in astronomy and finally Appendix 21 details the visit by Plummer's great-grandson, Richard Bellamy-Brown, to Orwell Park Observatory in 2004.

1.1 Genesis Of This Document

At the date of writing this document (March 2008) the Orwell Astronomical Society Ipswich (OASI) is custodian of Orwell Park Observatory. OASI formed in 1967 and production of this document was one of several activities undertaken to mark the 40th anniversary of the Society.

From 1979 onwards, members of OASI have investigated the history of Orwell Park Observatory and the astronomers who used it. This document provides a compilation of research by the following members of OASI and adds to it a detailed appraisal of Plummer's publications:

- Mike Barriskill and Charles Radley in 1979 researched the archives of the RAS and discovered that Plummer was the first astronomer to use Orwell Park Observatory.
- Roy Gooding in the mid-1980s compiled an account of the known facts about Plummer's life and key aspects of his work as an astronomer.
- Ken Goward in the late 1990s, through contacts in Hong Kong, uncovered the key aspects of Plummer's professional career at Hong Kong Observatory.
- Paul Whiting in the early 2000s compiled a detailed appraisal of Plummer's work at Orwell Park and uncovered the publications to which he contributed while at Hong Kong.

1.2 Acknowledgements

This booklet builds upon the work of the members of OASI mentioned above. Special thanks are due as follows for assistance in the preparation of this booklet:

1. Mark Hurn, Departmental Librarian at the Institute of Astronomy, University of Cambridge for supplying many of Plummer's papers.
2. Greig Tulloch for translating papers by Döllen from German into English.
3. Richard Bellamy-Brown, great grandson of J I Plummer, for providing photographs of J I Plummer, J I Plummer and his family, and the photograph thought to be of W E Plummer, and for granting permission to publish the photographs.
4. Professor P Kevin MacKeown, University of Hong Kong, for information on the relationship between Plummer and Doberck.
5. Mike Whybray and Paul Whiting for reviewing the text.

This research has made use of NASA's Astrophysics Data System.

2 Plummer's Life And Work

John Isaac Plummer was born in 1845 in Deptford in London. His family lived in Kent Street. We know nothing else of his early life. As an adult, he pursued a career as an astronomer, but we do not know how or why he came to do so.

Plummer began his astronomical career at Glasgow Observatory, and he published his first known paper [1867b] in the *Monthly Notices of the Royal Astronomical Society* (MNRAS) on observations made at Glasgow Observatory of the Leonid meteor shower of 13-14 November 1866. Plummer enjoyed only a brief stay at Glasgow Observatory, and he published no other papers on work undertaken there.

By the end of 1867 Plummer had moved to Durham Observatory, where he was a protégé of the colourful Victorian astronomer, the Revd Dr Temple Chevallier. At Durham, Plummer pursued a wide variety of astronomical interests. During 1868, in his first year at Durham, he published reports on observations of the transit of Mercury [1868a], minor planets and a comet [1869a] and lunar occultations [1869c]. In fact, Plummer was to spend much time observing minor planets and comets while at Durham Observatory and in total published reports on 34 minor planets and four comets observed during his stay there. In 1869, he undertook innovative spectroscopic observations by comparing the spectrum of two bright aurorae with that of Betelguese and the Sun [1869e]. At the time, spectroscopy was a new science, and Plummer's work attracted the attention of Huggins, one of the pioneers of spectroscopy in the UK. Plummer had a very productive final year at Durham Observatory (1873), during which he published the following:

- A textbook on astronomy for use in schools [1873a].
- A new theory to explain the supposed phenomenon of *projection upon the limb* during lunar occultations [1873c, 1873e]. (Astronomers of the era sometimes reported that a star about to be occulted by the Moon would appear to hang upon the limb for several seconds before finally disappearing. Occasionally, astronomers reported the analogous effect during an occultation reappearance.)
- A discussion of how best to measure the diameter of Venus during the transit of the planet in 1874 [1873g] and a report on attempts to measure the diameter of Venus in practice [1873h] (but not during the transit).

Colonel George Tomline (1813 – 1889) purchased Orwell Park Mansion in 1848. In the late 1860s, he resolved to expand the accommodation for his many guests at the mansion by the addition of self-contained apartments and a fashionable Turkish bath suite. He also aimed to add a muniment room for his papers and other valuables and a private astronomical observatory. Tomline employed John MacVicar Anderson (1835 - 1915) as architect for the building work and Wilfrid Airy (1836 – 1925) as design engineer for the astronomical observatory and associated equipment. Wilfrid was the son of Sir George Biddell Airy, the seventh Astronomer Royal – thus providing an obvious link between Airy and Tomline. Geography provided another potential link between the two: in 1848

Airy completed renovation and extension of a cottage in Church Lane, Playford, near Ipswich, which he treated as a country retreat - it is entirely plausible that Tomline knew Airy socially.

Construction of Tomline's Observatory at Orwell Park was completed towards the end of 1873 or beginning of 1874. Tomline then began making inquires about the appointment of a professional astronomer to operate his Observatory. We do not know with certainty the details of how he came to employ Plummer; however, it is plausible that Airy provided the link between the two. In 1872 Plummer applied to Airy for a vacant observer's post at the Royal Observatory, Greenwich (ROG) [1872a]. Plummer's application was unsuccessful; however it does indicate that at this time he was looking for a change in employment. It is plausible therefore that Tomline's links with Airy resulted in the latter suggesting Plummer as a candidate for the vacancy at Orwell Park. Whatever the details of the appointment, Plummer left Durham Observatory and commenced work at Orwell Park Observatory in June 1874. Upon leaving Durham the University awarded him an honorary M.A.

Figure 1 shows the rear of Orwell Park Mansion with the Observatory Tower dominating the East Wing, the Observatory Tower itself in close-up and the main astronomical instruments housed in the Observatory Tower in Plummer's era: the 258mm (10.2") equatorial refracting telescope and the 75mm (3") transit telescope.

In his first annual report to the RAS from Orwell Park, Plummer [1875e] commented on the quality of the equatorial refractor of the Observatory: *The principal instrument is an equatorially mounted refractor of large aperture, furnished with all the appliances necessary to render it in every respect a really useful instrument. The object-glass by Messrs Merz, of Munich, is of 10 inches aperture. Its definition is excellent, the beauty and regularity of the diffraction rings around the stars' images being the best possible proof of the excellence of its figure. The form of mounting renders this instrument one of the most easily worked of its size yet erected.* Plummer went on to define his anticipated main field of astronomical observation at Orwell Park: *it has been determined to employ this fine instrument chiefly for the observation of comets, both periodical and occasional,…*

Tomline had a house built for Plummer within sight of Orwell Park Observatory, across the valley from the Observatory on Levington Road, Nacton. The house still stands; it was originally named *Astronomer's House* but at the time of writing is named *Orwell Dene*.

The minute book of the Ipswich Science & Gossip Society records the first known local reference to Plummer at Orwell Park. (In 1875 the Society changed its name to the Ipswich Science Society.) Members of the Society visited Orwell Park on 11 July 1874. They were guided round the mansion and the grounds and were introduced to Plummer, then newly installed, who showed them round the Observatory. Plummer must have given a good account of himself as this meeting proved to be the start of a long association with the Society which, in 1880, made him an honorary member.

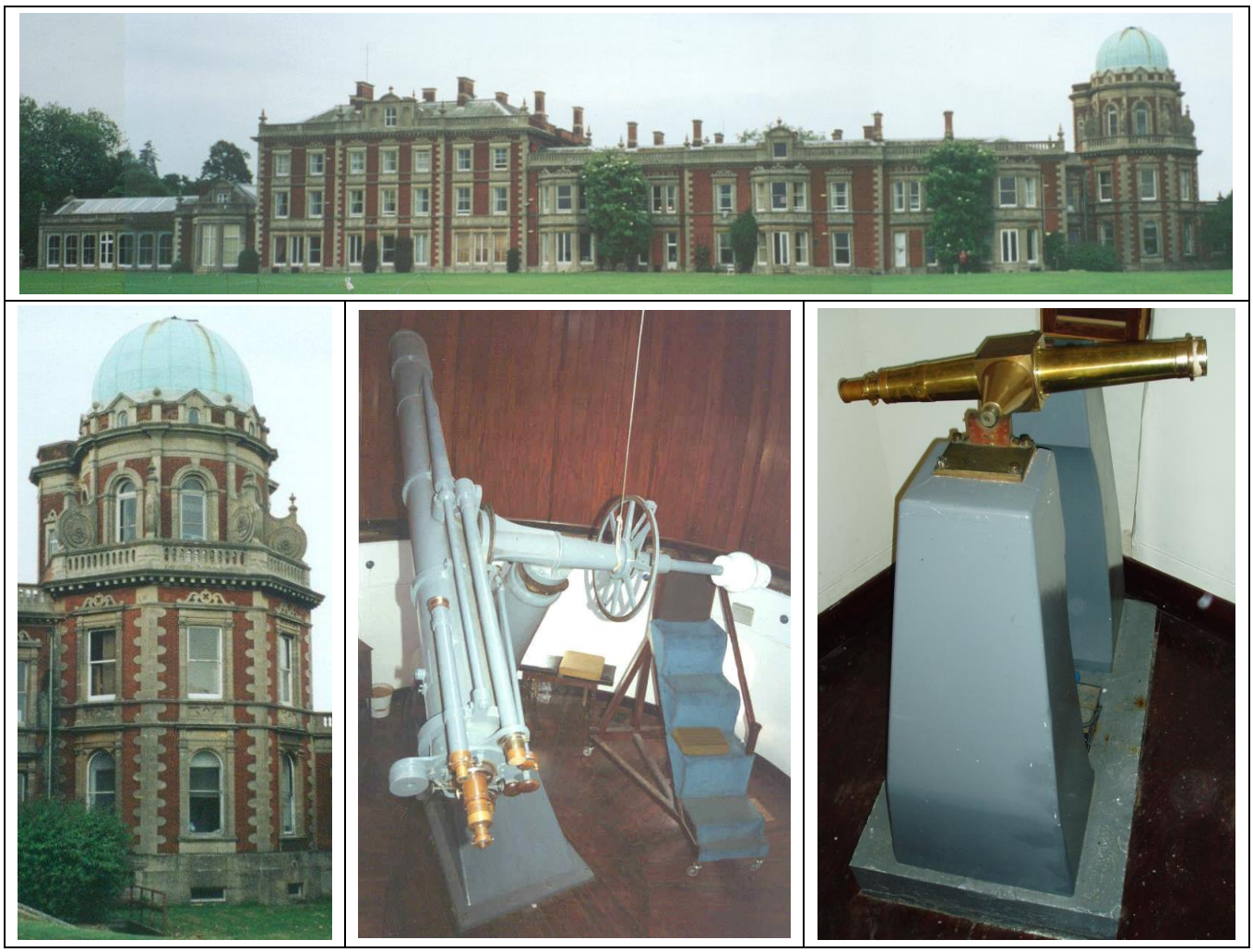


Figure 1. Top to bottom, left to right: the rear of Orwell Park Mansion with the Observatory Tower on the East Wing, the Observatory Tower in close up, the 258mm (10.2") equatorial refractor and the 75mm (3") transit telescope. (Photographs by James Appleton.)

While at Orwell Park Plummer gave several public lectures on astronomy in Ipswich. The reports in local newspapers (*Suffolk Chronicle* and the *East Anglian Daily Times*) of Plummer's lectures make interesting reading. Table 1 lists Plummer's lectures in Ipswich and Appendix A17 contains the text of the press reports.

Plummer's main work at Orwell Park Observatory was indeed the observation of comets, and during his time there he published reports of observations or attempted observations of 49 comets. His observing reports of comets concentrate almost exclusively on positional estimates. During his initial years at Orwell Park, he also pursued a wide range of other astronomical activities, reflecting no doubt the diverse interests which he developed at Glasgow and Durham Observatories. Up to the end of 1881, Plummer published papers on the following range of subjects: aurorae, the zodiacal light, comets, efforts to determine the longitude of Orwell Park Observatory, stars with supposedly irregular proper motions, meteors, Venus, the transit of Mercury in 1878, photometry of the lunar eclipse of 1877, observations of the solar eclipse of 1880 and lunar occultations.

Lecture	Date	Report Published
The Cometary System	02 December 1874	*Suffolk Chronicle*, 05 December 1874
The Aurora Borealis	05 June 1878	*East Anglian Daily Times*, 06 June 1878 *Suffolk Chronicle*, 08 June 1878
Meteors	03 March 1880	*East Anglian Daily Times*, 04 March 1880
Stars	03 December 1890	*East Anglian Daily Times*, 04 December 1890

Table 1. Plummer's lectures in Ipswich.

Tomline gave permission for Plummer to participate in the ROG expedition to Bermuda [1882b] to observe the transit of Venus on 06 December 1882; the expedition took Plummer away from Orwell Park for some four months. Unfortunately, there appears to be no surviving record of observations by Plummer in Bermuda (or indeed of observations by astronomers on the other ROG expeditions to observe the transit). On Plummer's return home in 1883 he gave a lecture at Harwich on the transit of Venus.

Plummer's trip to Bermuda appears to have been cathartic in terms of his astronomical interests, as from 1883 until he left Orwell Park he concentrated almost exclusively on the observation of comets. (In fact, he intended to participate in an international project to observe occultations during lunar eclipses in 1884 and 1888, but cloud prevented him from doing so.)

The gradual narrowing of Plummer's field of interest during his time at Orwell Park perhaps reflects his increasing isolation from the mainstream of astronomical activity. When he left Durham Observatory to take up his post as Tomline's professional astronomer, he was undoubtedly familiar with the latest astronomical thinking of the day. At this time, he had published, or was in the process of preparing, scientific papers on a wide range of observational and theoretical aspects of astronomy, a textbook on astronomy, and had undertaken some innovative work in spectroscopic observations of aurorae. He had engaged in dialogue via the pages of MNRAS with some of the leading astronomers of the day. Initially at Orwell Park, Plummer looked forward to the use of a superb astronomical telescope and associated equipment. He anticipated that spectroscopic instruments would be made available for his use [1874d], enabling him to continue some of the innovative work that he had undertaken at Durham Observatory. He had access to the mainstream of developments in astronomy via the Cambridge University Library, which, in 1875, Professor J C Adams[1], placed at his disposal [1875a].

However, it seems that some of the initial promise of Orwell Park did not fully materialise. The anticipated spectroscopic instruments appear not to have been provided, as Plummer

[1] Credited jointly with le Verrier of predicting the position of Neptune at the time of its discovery.

made no mention of spectroscopic observations in his publications from Orwell Park. In 1875, the most recent copy of the *Greenwich Observations* which Plummer could readily access was dated 1864 – not indicative of an up-to-date observatory! His access to Cambridge Observatory library appears to have ceased within two years of it being provided [1878c, 1880e]. Plummer also experienced considerable operational difficulty with the transit telescope at Orwell Park Observatory. Initially he found a peculiar periodicity in the errors of the transit instrument [1878c] and four years later he wrote [1882b] that the instrument was not suitable for the observation of comparison stars (for estimating the positions of comets). As much of Plummer's work at Orwell Park was associated with positional astronomy, it is likely that he found the difficulties with the transit instrument especially frustrating. Additionally, it is likely that Plummer found life in East Anglia isolated from the mainstream of astronomical activity in the UK. These factors perhaps contributed towards a sense of disenchantment betrayed by some of his later papers at Orwell Park.

We do not know the extent of Tomline's interest in astronomy. Clearly, in the early 1870s, in order to commission and equip one of the finest private observatories in the land and to recruit a professional astronomer to operate it, Tomline's interest in the science must have been exceedingly great. However, there is no evidence that he participated actively in the work of his Observatory once it became operational. It may be that Tomline's interest in astronomy waned and that his lack of interest manifested itself in a lack of funding and support for Plummer's work: this would explain Plummer's inability to access the latest astronomical literature and the apparent non-arrival of the spectroscopic instruments. It is likely that Tomline regarded Plummer merely as a servant, albeit one who was highly educated, and Tomline would have had no qualms directing his personal energy and funding towards projects other than his observatory if his personal interests changed.

Obituaries of Tomline provide some clues. The *Lincolnshire Chronicle* [1889f] mentioned Tomline's interest in astronomy only in passing, noting that *"he kept an astronomer" because he conscientiously believed it to be his duty to employ his money in every direction which human activity demanded recognition and the cooperation of men of wealth*. His obituary in the *Ipswich Journal* [1889g] did not mention an interest in astronomy at all. His obituary in the *East Anglian Daily Times* [1889h] stated that *his love and knowledge of astronomy were very great; and his observatory at Nacton (well and widely known in astronomical circles) was anything but a folly*. In the same edition of the paper, personal reminiscences by "one who knew him well" mentioned that *with astronomers, I have heard him apparently holding his own*. In summary, Tomline's obituaries indicate a keen interest in and love of the science of astronomy, but do not indicate that he had any active involvement at all in the work of his observatory.

Census records from 1881 detail the members of Plummer's household at Nacton as follows:

- John Isaac Plummer, born 1845 at St Pauls, Deptford.
- Marion M Plummer (wife), born 1847 in Scotland.
- Marion M Plummer (daughter), born 1871.

- Euphemia B Plummer (daughter), born 1877 in Nacton.
- John A Plummer (son), born 1878 in Nacton.
- Elizabeth M Silbyrn (servant), born 1856 in Henley, Suffolk.

However, Nacton parish records, consulted by Roy Gooding, are not entirely consistent with this, and list Plummer's children as:

- Beatrice Mary, born 09 August 1876.
- John Archibold, born 19 January 1878.

A photograph of some of Plummer's family, provided by Richard Bellamy-Brown, thought to have been taken after Plummer left Orwell Park and moved to Hong Kong, appears to show three daughters, whom we presume to be Marion M, Euphemia B and Beatrice Mary. Our assumption therefore is that Plummer sired three daughters and a son.

Plummer was elected to the RAS on 11 February 1876. In 1894 the RAS removed his name from their list of Fellows, probably for not paying his subscription.

Tomline died in 1889 and his heirs had no interest in retaining the services of a professional astronomer. Plummer left Orwell Park in late 1890 and for a time lived at 8 Constitution Hill, Ipswich, where he wrote two brief contributions to *Nature*, one non-astronomical [1890c] and one astronomical [1890d]. His last known engagement in Ipswich was on 03 December 1890 when he gave a talk entitled *Stars* to the Ipswich Scientific Society: more than 10 years had elapsed since his previous lecture, and it is possible that his last one was arranged in view of his imminent departure from the area.

Plummer then moved to Hong Kong. Much of our knowledge of his time at Hong Kong comes from references [1983a, 2005a] and from a search of files in the Hong Kong Public Records Office[2]. On 01 May 1891, Plummer took up the post of Chief Assistant at the Hong Kong Observatory, reporting to the Director of the Observatory, Dr William Doberck (1852-1907). Plummer was appointed by the Governor of Hong Kong, and his appointment was in a position senior to that of the candidate preferred by Doberck, another British ex-patriot, Frederick Figg, who held the position of First Assistant. At the time, Doberck was transforming the primary role of the Observatory from astronomy to meteorology[3], necessitated by the threat of typhoons to the ever-increasing maritime trade centred on Hong Kong. Figg was experienced in meteorological observations whereas Plummer was not.

Doberck was the first Director of Hong Kong Observatory. He was irascible and difficult to deal with, but good at his job and highly regarded. However, the inevitable result of his personality was a high rate of turnover in locally-recruited staff. Doberck campaigned for several years to the Governor of Hong Kong for an increase in staffing levels, including the appointment of UK ex-patriots. In 1890 the Governor appointed a commission to

[2] Leung Ming Wo of the Hong Kong Observatory undertook the search at the request of Ken Goward.

[3] Hong Kong Observatory today is the main meteorological centre for the Hong Kong Special Administrative Region, with minimal links to astronomy.

examine the working of the Observatory and Doberck's claims, which the commission concluded were justified. Plummer's recruitment was in line with the conclusion of the commission.

Although Doberck lauded Plummer on several occasions for his observational skill, the relationship between the two was far from as smooth. Plummer, at 46 years old when he joined the Observatory, was eight years older than Doberck. To quote a later Colonial Office minute, *it was evident that Dr Doberck did not hit it off with Mr Plummer*. Within six months of Plummer's appointment, in October 1891 the Colonial Secretary wrote to Doberck, *...and I am to inform you that His Excellency trusts that you, as Head of the Department in which you are both working, will find the means of placing your relations with Mr Plummer on…* No doubt this was not unrelated to a letter that Plummer sent to Doberck on 06 October 1891 including the following:

> *…in connection with cleaning the time ball apparatus… is a disgustingly dirty job even for a Chinese Coolie and in consequence I must decline to undertake the cleaning myself. Indeed I am surprised that you should have asked me to do such work … you ask me to undertake the testing of currents which is work I am unfamiliar with, as you are perfectly aware…*

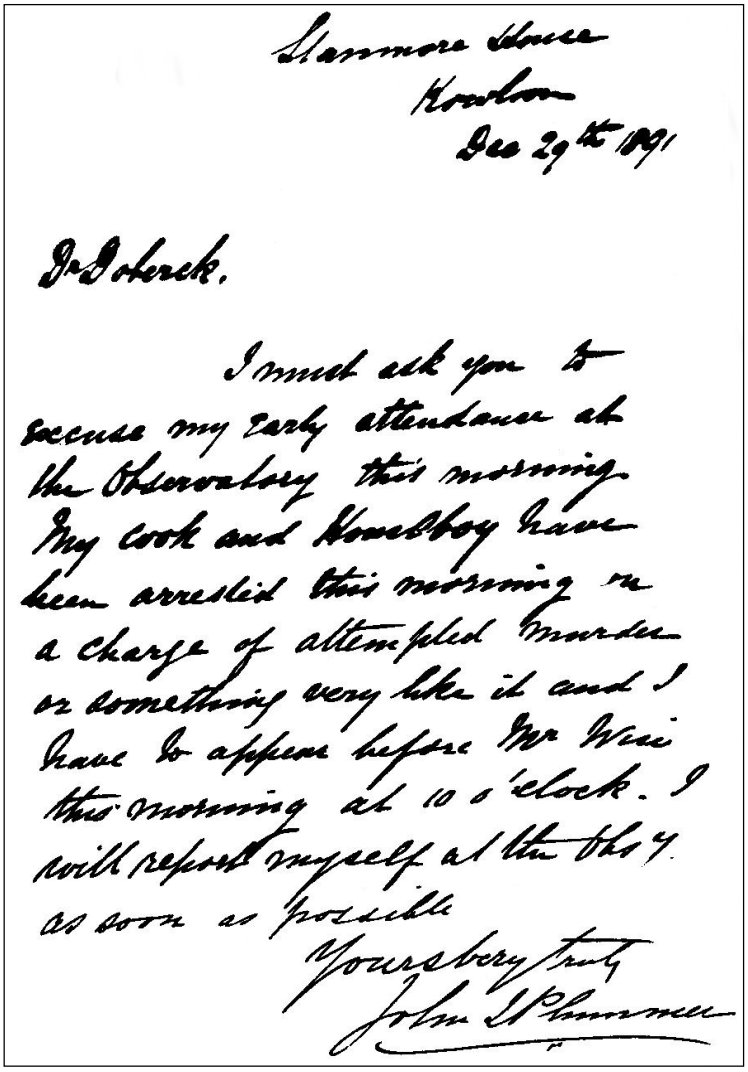
A memo from Plummer to Doberck dated 29 December 1891 (see figure 2) conveys some of the insecurity that Plummer must have felt regarding his new position together with a sense for the strange events that could befall an ex-pat resident of Hong Kong. The text of the memo is as follows:

Stanmore House
Kowloon
Dec 29th 1891

Dr Doberck,

I must ask you to excuse my early attendance at the observatory this morning. My cook and houseboy have been arrested this morning on a charge of attempted murder or something very like it and I have to appear before Mr Wise this morning at 10 o'clock. I will present myself at the obsy as soon as possible.

Yours very truly
John I Plummer



Stanmore House
Hendon
Dec 29th 1891

Dr Doberck.

I must ask you to excuse my early attendance at the Observatory this morning. My cook and Houseboy have been arrested this morning on a charge of attempted murder or something very like it and I have to appear before Mr Nicol this morning at 10 o'clock. I will report myself at the Obs'y as soon as possible

Yours very truly
John A Plummer

Figure 2. Plummer's memo to Doberck of 29 December 1891.

Doberck had applied for a long leave of absence from the Observatory just before Plummer's arrival in 1891 but withdrew his application when his incompatibility with the new appointee became apparent! In 1893 Doberck once more prepared to go on a long leave of access, and drew up, in great detail, a roster of duties for the staff in his absence (it contained some very restrictive clauses) which Plummer and Figg signed. Doberck sent the roster for endorsement by the Governor, who declined to accept it:

> *...the Officer Administering the Government declines to sign the document forwarded... or any document of a like nature. In the event of your being granted leave of absence at any future time the officer who may be appointed to act as your* locum tenens *will be responsible for the proper conduct of the department during your absence.*

Doberck also informed the Governor that he wished Figg, Plummer's junior, to act in his place during his leave of absence. However, the Governor, advised by the Colonial Office to use his discretion, appointed Plummer. Doberck, however, refused Plummer access to

the Observatory's correspondence file - not surprising as it contained, in a letter from Doberck to the Governor, the comments: *Mr Plummer makes excellent astronomical observations and reduction, but he has no knowledge of electricity…* and in a letter from Doberck to the Secretary of State for the Colonies the comments: *…the Governor thinks that Mr Plummer ... is the proper person to act for me, although I declare him to be unfitted for such duty*.

Doberck went on leave at the end of May 1894, intending to be away for about a year. On leave in England, where he got married, in September 1894 he found a reprimand in the mail from the Colonial Office; Plummer had complained to the Governor about the non-availability of the correspondence file, the Governor passed the complaint to London, and, seeing it as a serious matter, they wanted an explanation. In what is for Doberck an unusually obsequious letter, he offered some reasons for his procedures, which apparently satisfied the Colonial Office, though less so the Hong Kong Government, and he promised not to repeat the misdemeanour. After this Doberck curtailed his leave and returned to Hong Kong. Arriving back in Hong Kong on 27 December 1894, Doberck went straight to the Observatory, but the next day he was docked to half pay as though he were still on leave and asked to explain his behaviour, especially:

> *What right had you to extract promises from an officer appointed by His Excellency to act during your absence? Were you not informed … that His Excellency had disapproved of the arrangement proposed by you, and that the officer appointed to act would be responsible for the proper conduct of the department?*

In reply Doberck pointed out, with some exaggeration, the disastrous condition in which he found his beloved Observatory on his return, all, he claimed, due to the incompetence of Plummer, who had been appointed Acting Director against his advice. He was still reduced to half pay, but the Governor convened a two man committee to investigate Doberck's complaints against Plummer.

The two men of the committee, the Captain Superintendent of Police and the Treasurer, spent a day at the Observatory interviewing Doberck, Plummer and Figg and wrote a report, which was not published. They looked into the several accusations that Doberck had made against Plummer, who, to take one example, responded to the accusation that the *[telescope] wires had been allowed to get into such a state as to render fine observations impossible*, with the reasonable remark that *during the cool season it is impossible to find [spider's threads]… He has been looking for good spider's threads for some months to replace them with*. The Committee members gave as their opinion that the principle cause of friction which led to the enquiry was *the discontinuance of the astronomical observations which Dr Doberck considers so important and of such value to the shipping*. They largely agreed with his accusations against Plummer, observed that *it appears… somewhat fortunate that Dr Doberck should have curtailed his leave* and forwarded his request that his salary be restored, being *unaware of the reason which has led to his being thus punished*. The report largely vindicated Doberck’s opinion of Plummer as being unfit

to manage the Observatory, and on all future occasions when Doberck was absent, notwithstanding Plummer's protestations, Figg was appointed Acting Director.

Plummer's main duties at the Observatory were to make astronomical observations (in particular of transits) and magnetic observations, to regulate clocks, to attend to chronometers, the chronograph and the time ball and to copy ship's logs. Between 1898 and 1907 he contributed to the creation of the *Hong Kong Star Catalogue* (epoch 1900.0) [1905a], making transit observations and performing the necessary data reduction.

Figg concentrated on meteorological work, which was becoming ever more important as several typhoons had hit the rapidly-expanding colony with attendant great loss of life. Reflecting this, when Doberck died in 1907, Figg was promoted to replace him as Director of the Observatory, over Plummer.

A search[4] in the RAS library for references to Plummer during his time at Hong Kong Observatory discovered four publications associated with the preparation of the Hong Kong Star Catalogue [1900a, 1902a, 1905a, 1907a]. Two of the publications contain references by Doberck to Plummer as follows:

[1900a] *My thanks are due to Mr J I Plummer, and to Mr F G Figg for the willingness with which they have assisted me in carrying out this investigation. The former gentleman has devoted much time to calculations in connection with this work. This work on identifying and cataloguing this list of stars took place between 1898 and 1900.*

[1902a] *Mr J I Plummer took about 7000 transits. I took about 9000. Mr Plummer attended to the chronograph, and the reductions from apparent to mean places, and reduction to 1900.0. During the first six months I reduced the observations. Next year they were reduced under my supervision. During the remainder of the time Mr Plummer reduced them. The calculations were not done in duplicate, but Mr Plummer's skill is well known and the smallness of the probable errors prove that the work was accurately done. I attended to the construction of the catalogue and the determination of proper motions.*

Plummer retired from Hong Kong Observatory in January 1911. He died at Oxshott, Surrey, on 06 February 1925, aged 80.

Figure 3 shows Plummer; it is thought to have been taken while he was employed at Hong Kong Observatory.

[4] In 2003, OASI member Paul Whiting undertook a name reference search for Plummer during the latter's time at Hong Kong Observatory.

Figure 3. John Isaac Plummer. The photograph is believed to have been taken around the year 1900 while he was at Hong Kong.

Plummer's younger brother William Edward and his nephew Henry Crozier Keating Plummer also enjoyed distinguished astronomical careers. John and William in many ways had similar careers - working in private and university observatories, obtaining honorary MAs from the latter. Both ended their careers in establishments taking on more work in meteorology than astronomy, albeit on opposite sides of the Earth! However, it was Henry who had the most distinguished astronomical career. Appendix 20 contains brief biographical details of William and Henry Plummer.

--- To be continued ---