

# Orwell Astronomical Society (Ipswich)

## *Information For Members*



Orwell Park Observatory

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# 1 The Society

Orwell Astronomical Society (Ipswich) is an astronomy society based at Orwell Park Observatory, in the village of Nacton, near Ipswich. This booklet provides information for members of OASI. It is intended to provide basic information about the Society, its purpose, and the facilities which it provides. Any member of the committee can provide more information about the matters in this booklet.

The front cover of this booklet shows the observatory tower at Orwell Park. We take the name of the Society from the observatory; “Ipswich” is included parenthetically to indicate the locality.

OASI is particularly fortunate to be based at Orwell Park Observatory. The facility is equipped with several astronomical telescopes, of which the most notable is the 26 cm Tomline Refractor dating from 1874 (figure 1)<sup>1</sup>.



Figure 1. The Tomline Refractor.

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<sup>1</sup> Note that the guide telescope, shown mounted underneath the Tomline Refractor, has been removed subsequent to the photograph being taken.

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The Society encourages use of the Tomline Refractor and other instruments and provides training and guidance in their use. The observatory also houses a club meeting room and a library of astronomical books, periodicals and DVDs.

Membership of OASI is open to all who have an interest in astronomy. In recent years, our members have numbered around 100, most living in the areas of Ipswich, south-east Suffolk and north-east Essex. Members span a wide range of interests and abilities, from the interested layman to the advanced amateur. Many have a general interest in the subject, and many are “armchair astronomers”. Several experienced amateurs are also members, with interests in visual and photographic observing, encouraging public interest in astronomy, telescope making and astronomical computing. We encourage and support a wide range of astronomical activities and aim to host events and activities for all our members, whatever their level of astronomical knowledge and expertise.

## **1.1 Aims And Activities**

The constitution of OASI defines our objective as:

*To promote and advance public education and interest in the science of Astronomy and to provide facilities for the encouragement and pursuit of observational Astronomy.*

Our main activities in fulfilment of this objective are:

- operating and maintaining Orwell Park Observatory,
- astronomical observing,
- encouraging public interest in astronomy,
- workshops on astronomical topics,
- lectures on astronomy,
- hosting visits to Orwell Park Observatory by local groups,
- publishing a monthly newsletter,
- visits to places of astronomical interest,
- social events.

## **1.2 Membership Details**

We have two classes of membership:

- Member (18 years old and over),
- Honorary Member – invited by the committee to enjoy free membership for services rendered.

A member is entitled to bring immediate family relatives (partner, children, parents) to events. Note that for child protection purposes, all under-18s must be accompanied at events by a parent/guardian.

Membership subscriptions become due on 1<sup>st</sup> January each year. A subscription not paid by February is interpreted as resignation. Subscriptions are used towards general running costs of OASI.

All members are encouraged to complete a voluntary endorsement on their annual membership renewal to enable the Society to claim tax rebates from HMRC (Her Majesty's Revenue & Customs) via Gift Aid.

## **1.3 Management Committee**

A general management committee manages the Society. The committee is elected annually at the AGM, held in January. The committee comprises three elected officers (chairman, secretary and treasurer) plus eight elected members. The committee generally holds meetings five or six times a year. All members of the Society are welcome to attend all committee meetings and the AGM. Notice of each committee meeting and the AGM is published in the newsletter.

Participation in committee work does not require special skills, but rather enthusiasm and a willingness to commit a small amount of effort to the Society on an ongoing basis. A regular turnover of committee members is essential to ensure representative management of the Society; therefore all members are encouraged to stand for election to committee posts.

## **1.4 Library**

There is a small library at Orwell Park Observatory, under the supervision of the Society's librarian. It holds a collection of books, magazines, periodicals, star atlases and DVDs.

The library receives the following periodicals:

- the journal, newsletters and circulars of the British Astronomical Association (BAA),
- the journal of the Society for Popular Astronomy (SPA),
- newsletters of the Federation of Astronomical Societies (FAS),
- newsletters from neighbouring astronomical societies,
- *Sky & Telescope* magazine,
- *Astronomy* magazine,
- *Sky at Night* magazine,
- *Astronomy Now* magazine.

Most items held in the library, with the exception of recent issues of magazines and some reference books, are available for loan. Each item borrowed must be signed out in the library logbook, and signed back in again when returned. The maximum period of loan is two months.

A small selection of books is also held at Newbourne Village Hall. The same system is in operation for loans, but with a maximum period of one month.

Members with requests for acquisitions should contact the librarian.

## **1.5 Newsletter**

We produce a monthly newsletter that is distributed electronically to all members. (We also email a copy to neighbouring astronomy societies in East Anglia and another to Suffolk Records Office.) The newsletter contains an outlook for the night sky for the month ahead, articles by members, and a list of forthcoming Society activities (including observatory opening times, lecture meetings, excursions,

field trips, visits, etc). Articles by members are always welcome, and should be given to the newsletter co-ordinator. Back issues of the newsletter may be downloaded from OASI website.

## **1.6 Affiliations**

We are affiliated to the BAA, FAS and SPA.

## **1.7 Charitable Status**

The Society is a UK registered charity, number 271313.

## **1.8 Personal Data**

The Society is not registered with the Information Commissioner's Office under the General Data Protection Regulation (2018), being covered by the exemption for organisations which process personal data solely for recreational purposes.

The membership secretary holds a list of members' names and addresses on computer file. The committee uses this list solely for administrative purposes. The committee provides to HMRC names and addresses of members who have signed an endorsement on their annual membership renewal to enable the Society to claim tax rebates via Gift Aid. The committee does not release members' details to any other body.

## **1.9 Accessing The Observatory**

OASI operates Orwell Park Observatory under licence from its owners, Orwell Park Educational Trust. The observatory is sited within the grounds of Orwell Park School and child protection legislation requires that members of the Society be isolated from unaccompanied pupils. To achieve this, the following licence conditions must be strictly observed:

- Cars may be parked in the car-park at the rear of the gym.
- The observatory tower may be accessed from the black external door at its base. **All other areas of the school are out of bounds.**

- Sign-in to the observatory logbook. (Also sign in any visitors.)
- Use only the designated toilets and the authorised route between the toilets and the observatory.

Opening times of the observatory are published in the newsletter and on the website. Generally, evening observing sessions begin at 8.15pm; other times are by prior arrangement. Access to the grounds and observatory is via gates and doors fitted with programmable electronic locks which are activated by key-fobs and combination codes. Any member of OASI can request a key-fob to gain access during permitted entrance times. A member with a key-fob may provide access for visitors and for members without key-fobs.

Members of OASI must keep the observatory secure. When leaving the observatory ensure that all exterior doors are locked. Report any suspicious incidents to a member of the committee immediately.

We issue every member with a membership card every year. Members visiting the observatory must carry the card: staff at the school may request to see it as proof of entitlement to be there. The phone number of the observatory is printed on the rear of the card for the benefit of anyone experiencing problems negotiating the security system.

## **1.10 Contact Details**

Orwell Park Observatory phone: 07967 519249

Website: [www.oasi.org.uk](http://www.oasi.org.uk)

Secretary's e-mail address: [secretary@oasi.org.uk](mailto:secretary@oasi.org.uk)

Email distribution list: [oasi@groups.io](mailto:oasi@groups.io)

Before posting to the email distribution list, it is necessary to subscribe to the OASI email group by emailing [OASI+subscribe@groups.io](mailto:OASI+subscribe@groups.io).

## **2 Activities**

Astronomy is a multi-faceted hobby and we attempt to encourage and support all aspects of the hobby. This section describes our main activities at the time of writing; suggestions for new activities are always welcome!

All members are welcome to participate in all OASI activities.

### **2.1 Observing**

We are particularly fortunate to be based at a well-equipped observatory and are therefore keen to encourage observing projects. We run a club meeting at the observatory every Wednesday evening providing an opportunity for members to meet, exchange news and undertake observations using the Society's telescopes.

We also hold twice-monthly meetings at Newbourne village hall for observing and as social gatherings. These meetings provide an ideal opportunity for prospective new members of the Society to attend to meet some of our enthusiastic observers.

Members with particular interests in observing are encouraged to run additional observing evenings (see section 3).

Some of the observing projects that members of OASI have undertaken in recent years are as follows.

#### **Lunar Observations**

The Tomline Refractor provides wonderful views of the Moon, revealing a jumbled landscape of craters, mountains, maria, scarps and other features. As the Moon travels in its orbit, the angle of solar illumination of surface features changes. It is interesting to observe the changes in appearance of a particular surface feature (e.g. a crater or mountain) under different conditions of illumination.

It is fascinating to identify features on the lunar surface using a high magnification eyepiece and a lunar atlas. Under ideal conditions the Tomline Refractor can reveal features as small as 1 km in diameter.

## **Lunar Occultations**

A lunar occultation occurs when the Moon, in its motion through the heavens, passes in front of a star or planet, temporarily hiding the latter from view. Our members have observed and timed occultations and used the results to estimate characteristics of the rotation of the Earth.

A grazing lunar occultation occurs when the north or south limb of the Moon passes in front of the star or planet, and mountains and valleys on the limb alternately obscure and reveal the latter. Such events are visible only from a narrow path on the Earth's surface. We organise field trips to observe grazing lunar occultations.

## **Planetary Observations**

We frequently observe the planets and their brighter satellites. In the early years of the 21<sup>st</sup> century, we enjoyed excellent views of the transits of Mercury (2003, 2016, 2019) and Venus (2004) via large-scale images projected by the Tomline Refractor. (Unfortunately, the transit of Venus in 2012 was clouded out.)

Dwarf planet Pluto is at the limiting magnitude of the Tomline Refractor (largely because of the effects of light pollution). It is a challenge to identify the object using a detailed finder chart and to confirm the identification via a subsequent observation some days later showing its movement against the background stars.

In 2012-2014, in conjunction with the organisers of National Astronomy Week 2014, we ran a project to estimate the speed of light by the method of Ole Rømer (1644-1710); this attracted observations by many members of the Society and led to publication of a paper in the BAA Journal (*JBAA*, **126**, 3, 2016, pp.139-148).

## **Comets**

The Tomline Refractor was originally installed for the purpose of observing comets. Although impressive naked-eye comets are rare, in the last few years of the 20<sup>th</sup> century and first few years of the 21<sup>st</sup>, our members enjoyed spectacular views of Comets Hyakutake, Hale-Bopp, Holmes and others. Members also observe fainter comets,

visible only with the aid of binoculars or telescopes, which are more frequent visitors to our skies.

### **Meteor Watches**

A meteor is a particle of space debris that enters Earth's atmosphere. Friction between the particle and air molecules causes the particle to become intensely hot and incandescent; if the particle is sufficiently large, it can create a visible trail. The best occasions for observing meteors are when the Earth in its orbit passes through a trail of debris associated with a comet; when this happens, a meteor shower may result, with hundreds of meteor trails visible during a night.

Some members run all-sky cameras to capture meteor trails, and we occasionally organise observing trips to dark sky sites for observation of the most prominent meteor showers.

### **Deep Sky Observing**

Although the skies around Ipswich have become increasingly light polluted, many deep sky objects (nebula, star clusters and galaxies) are still visible. Many observers enjoy the technique of "star hopping" to locate deep sky objects. Once such an object is located, the challenge becomes one of identifying its detailed features.

### **Solar Observing**

The Tomline Refractor can project a large, high-quality image of the Sun enabling easy study of sunspots and other features on the solar disc. We also possess smaller, specialist solar instruments (details later) for viewing the Sun in monochromatic light. **NB: Never look directly at the Sun via a telescope or binoculars unless the instrument is specifically designed for solar observing.**

## **2.2 Lectures**

We organise lecture meetings during each winter season. Lecturers have included past presidents of the BAA, Dr Allan Chapman (leading historian of astronomy and Honorary President of OASI),

professional astronomers and authors, members of neighbouring astronomical societies and members of OASI.



Figure 2. Dr Allan Chapman and the audience at the end of the 6<sup>th</sup> Presidential Lecture, June 2013.

## **2.3 Public Outreach**

We are keen to encourage public interest in astronomy and stage a variety of activities to further this important aim. Our events in Christchurch Park, Holywells Park, Orwell Country Park and Priory Park have included night-time observing and solar observing. Some events are hosted in conjunction with national initiatives, such as the BBC *Stargazing Live* series or National Astronomy Week: when this happens, a large crowd can be expected.

Other outreach activities include hosting visits to the observatory (see below), solar and night-time observing at schools, libraries and other venues, presentations and lectures to external groups, and appearances on local radio stations.

Many members of OASI take enjoy supporting public outreach events and enthusing over their interest in the hobby and what it offers. OASI attracts many new members in this way.

## **2.4 Astronomy Workshops**

During each winter season, we run a series of six or so astronomy workshops. A member of OASI leads each workshop, introduces the topic and guides the discussion. The workshops are intended to be interactive, so contributions are welcome from all attendees.

Suggestions for workshops and volunteers to lead the discussion are always welcome.

## **2.5 Visiting The Observatory**

All members are entitled to bring immediate members of their families to the observatory without making prior arrangements. They may also invite others to visit on an occasional basis. Visitors to the observatory are the responsibility of the member hosting them.

There is always great demand by local individuals and groups to visit the observatory. Our visits co-ordinator endeavours to cater for this demand as follows:

- Observatory tours are aimed at individuals: they provide an opportunity to visit the observatory in a small group, to meet members of OASI and to join the Society. The number of visitors on each observatory tour is kept low and the events therefore provide an opportunity for visitors to find out in some detail about the activities of the Society.
- Group visits provide an opportunity for groups or societies (e.g. Scouts, school groups, hobby clubs) to visit the observatory. There is always a great demand for group visits, and they are often organised months in advance. Any member wishing to invite a group to visit the observatory must agree the date with the Society's visits co-ordinator.

Members not assisting directly with a visit may use the observatory while the visit is taking place; however, they should be mindful that visitors may be using the telescopes if the sky is clear.

All visitors to the observatory must be bound by the rules of the Society. A member hosting a visit must ensure that the visitors sign in to the observatory logbook.

Regular visitors are obliged to become members of the Society.

## **2.6 Telescope Making**

Several members of OASI are telescope makers, interested in the construction of optical systems and mountings. Our most ambitious telescope making project to date has been construction of the Millennium Telescope, a 48 cm Dobsonian built to mark the year 2000 (it finally saw *first light* in April 2005). Many of our members contributed time and effort to the project.



Figure 3. The Millennium Telescope at an astronomy workshop, October 2010.

Several members have constructed smaller telescopes, including a Schmidt camera, a 25 cm Dobsonian reflector, a 22 cm Newtonian and an 11 cm Newtonian.

## **2.7 Campaign For Dark Skies**

In recent years, the night sky around the observatory has become increasingly light polluted. This unnecessary trend, unfortunately suffered by much of the UK, has done much to reduce public

awareness of astronomy. In addition to the threat posed to astronomers, light pollution has many other detrimental effects on the local and global environment including harm to nocturnal wildlife. Burning fossil fuels to generate unnecessary illumination also contributes to global warming and air pollution.

The early impetus behind the campaign against light pollution came from astronomers working with rural conservationists. In order to help in the ongoing fight against light pollution, the Society contributes to the Campaign For Dark Skies (CfDS) and endeavours to organise representation on various local planning committees dealing with lighting issues. Further assistance with this work is always welcome. We possess a light meter to measure sky illumination levels.

## **2.8 Social Events**

Our main social events are a Christmas Meal and summer BBQ. Both are held in locations in or near Ipswich and all members and their guests are welcome.



Figure 4. Summer BBQ, July 2015.

## **2.9 Conventions And Meetings**

In a typical year there are several astronomical conventions, residential weekends and meetings, of which the most notable are hosted by the BAA, SHA (Society for the History of Astronomy) and

FAS. Several members of OASI usually attend such events, frequently travelling together to minimise transport costs.

## **2.10 Other Events**

The Society organises other activities on an occasional basis, for example:

- Excursions to places of astronomical interest.
- Visits to neighbouring astronomical societies.

### 3 The Observatory

Figure 5 shows the rear of Orwell Park School: the observatory dome towers above the roof of the main building, on the east wing.



Figure 5. Rear view of Orwell Park School.

The observatory houses several astronomical instruments. Original to the facility are the 26 cm Tomline Refractor and the 7.5 cm transit telescope, both constructed by Troughton & Simms. Figure 1 shows the Tomline refractor; figure 6 the transit instrument. Modern instruments include a 25 cm Dobsonian reflector, a 12.5 cm computerised Maksutov-Cassegrain, a 20 cm Celestron NexStar 8 SE Schmidt-Cassegrain, a 33 cm Celestron Schmidt-Cassegrain, a Coronado Personal Solar Telescope (PST), a Lunt LS60THa/B1200 solar telescope, a pair of 25x80 binoculars, a pair of 11x80 binoculars and several pairs of smaller binoculars.



Figure 6. The 7.5 cm transit telescope.

All the instruments are available for use by all members of the Society.

Occasionally, with the permission of the committee, portable telescopes may be taken on field trips or borrowed by members for use at home. If a telescope (or other equipment) is borrowed for use

outside the observatory, it must be signed out in the equipment loan book and signed in again when returned.

There is a PC in the observatory, available to run planetarium programmes and other astronomical software.

### **3.1 Observing**

We hold informal “club evenings” at the observatory every Wednesday, during which the facility is guaranteed to be open and observations will be undertaken if weather conditions permit. Other evenings at the observatory are generally by arrangement.

We also hold observing evenings twice a month at Newbourne village hall, our “dark sky” site. Members are encouraged to bring their own telescopes to Newbourne.

We encourage experienced observers to organise additional observing evenings and to supervise and encourage use of telescopes at the observatory and at Newbourne.

### **3.2 Tomline Refractor Telescope Training**

We encourage use of the Tomline Refractor. However, safe and effective operation of the instrument requires a degree of skill, knowledge and experience and the committee therefore restricts its use to members of the Society who are authorised operators and those acting under the direct supervision of an authorised operator. The committee maintains a list, displayed on the noticeboard in the belvedere room, of authorised operators.

A member of OASI interested in using the Tomline Refractor should approach the committee. Training in use of the instrument will then be provided, generally in the form of informal coaching by an experienced user over a period of some weeks. Once the member has completed training and demonstrated proficiency in use of the instrument, he/she may then use the Tomline Refractor unsupervised, in line with published guidance.

Because of safety considerations, we strictly enforce the rule that a qualified operator of the Tomline Refractor plus one other member of

OASI must be present in the observatory dome before the shutter is opened for use.

Besides the Tomline Refractor, the other telescopes and instruments in the observatory do not require special precautions in their use and may be operated by any member of the Society. However, new members should seek the advice of more established members before operating equipment with which they are unfamiliar.

### ***3.3 Orwell Park Observatory Fire Instructions***

The entire Orwell Park School site is a no-smoking zone. Smoke detectors are fitted throughout the school including the observatory.

All members of OASI must acquaint themselves with the following fire instructions for the observatory.

#### **Fire Drill**

1. The fire alarm is a continuously ringing bell.
2. Upon hearing the fire alarm, make your way by the safest possible route to the lawn on the river side of the school and assemble by the cricket pavilion. Do not spend time collecting personal possessions or closing the dome shutter, etc.
3. The person leading the night's activities will check the observatory to ensure that it is empty if it is safe to do so, collect the attendance book if it is immediately to hand, and then make his/her way to the cricket pavilion.
4. On exiting the observatory, doors should be closed BUT NOT LOCKED.
5. Nobody is to re-enter the observatory until the person leading the night's activities, in conjunction with the teacher in charge and Suffolk Fire Brigade, gives the all clear.

### **Action On Discovering A Fire**

1. Warn people in the immediate area.
2. Use a fire alarm button to activate the fire alarm.
3. Leave the building by the safest possible route and make your way to the cricket pavilion on the lawn at the river side of the school.
4. Do not re-enter the observatory to collect personal effects.
5. Ensure that the fire brigade has been called: 999 or 112.
6. The location of the observatory is:  
Orwell Park School, Nacton, Ipswich, IP10 0ER
7. Tackle the fire using available equipment **ONLY** if you can do so safely and effectively.

### **3.4 First Aid Instructions**

A first aid box for the treatment of minor injuries is kept in the club meeting room.

In the event of someone being taken seriously ill or suffering an accident, proceed as follows:

1. Make the casualty as comfortable as possible but do not move him/her unnecessarily.
2. Phone emergency services.
3. Send a member of OASI to the entrance of the school to escort emergency services to the casualty by the shortest possible route.
4. Make an entry of the incident in the observatory log book.

## 4 History Of The Observatory And Society

Research by OASI members Charles Radley, Roy Gooding, Ken Goward, James Appleton and others has uncovered the fascinating history of the observatory. The Society provides a booklet describing the history in some detail; the following summary contains the main highlights.

The first person to build a mansion at Orwell Park was Admiral Edward Vernon (1684-1757) who lived there from 1725 to 1757 (figure 7). He is nowadays best remembered as “Old Grog”, responsible for watering down the sailor’s rum ration (or “grog”) in order to reduce drunkenness on board ship. Orwell Park remained in the possession of Vernon’s relatives until, in 1848, George Tomline (1813-89) purchased it (figure 8).



Figure 7. Vernon by Gainsborough.

Tomline was an individual of enormous wealth and great intellect. He owned considerable land in

Suffolk and elsewhere and a large house off The Mall in London. He had many interests in business and commerce, and built the Ipswich to Felixstowe railway line and Felixstowe Docks. For many years he was an MP, first for Sudbury, then Shrewsbury and finally Great Grimsby. He had many interests in science and the arts and was reputed to have had one of the best private libraries in the country, with an extensive collection of paintings, porcelain and china. He entertained many aristocratic and scientific visitors at Orwell Park.

During the twenty-five years following his purchase of Orwell Park, Tomline extended the mansion to its present size. During the last phase of extensions, he built the observatory on the east wing, sparing no expense in so doing! He appointed as architect John Macvicar Anderson, later to become president of the Royal

Institution of British Architects, and as engineer responsible for specification of the astronomical equipment, Wilfrid Airy, civil engineer and second son of the Astronomer Royal, Sir George Biddell Airy. Anderson designed the observatory tower as a four story edifice, integral to the mansion, providing many desirable facilities for Tomline in addition to housing astronomical instrumentation. The ground floor comprised a Turkish bath suite; the first floor contained a muniments room for storing valuable documents; and the second floor comprised a belvedere giving access to balconies from which to admire the surrounding lands. The third floor comprised the equatorial room which housed the main astronomical instrument, the 26 cm refractor and, off it, a small chamber housing the 7.5 cm transit refractor. Both telescopes were constructed by Troughton and Simms of London, at the time one of the world's leading telescope manufacturers. In its day, Tomline's observatory was one of the finest in private ownership in the land.



Figure 8. The only known portrait of Tomline.

Construction work on the observatory began in 1872 and was completed in late 1873 or early 1874<sup>2</sup>. The telescope tube and mounting cost £1,345 12s 8d and the objective lens, manufactured by the German firm, Merz, cost a further £333 6s 8d (respectively £1,345.63 and £333.34 in modern currency). Unfortunately, although the cost of construction of the observatory tower was clearly immense, no record of it has survived.

On the recommendation of the Astronomer Royal, Tomline recruited John Isaac Plummer (1845-1925) as professional astronomer to operate his observatory (figure 9). Plummer had begun his career in

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<sup>2</sup> After the tower was constructed, Tomline added a water-powered hydraulic lift.

1860 at Cambridge Observatory as an astronomical computer (a person who performed numerical calculations in support of astronomical observers). In 1864 he moved to Greenwich Observatory as an astronomical computer; in late 1866 he took up the post of Assistant Astronomer at Glasgow Observatory; then in November 1867 he was appointed to the post of *Observer* to the University of Durham. At Durham, Plummer worked under the Professor of Mathematics and Astronomy, the Rev Dr Temple Chevallier; however, by the time he joined, Chevallier had little direct involvement in the work of his department, and Plummer was largely unsupervised. He was an observer of some ability and was reported to have *a good eye for detecting faint objects*. Shortly before leaving Durham, he published a school textbook on astronomy.



Figure 9. Plummer, circa 1900, in Hong Kong.

Plummer started work for Tomline in June 1874. Tomline provided him with a house, on Levington Road, offering a magnificent view of the mansion and observatory. (The house, *Orwell Dene*, still stands.)

Tomline was knowledgeable about astronomy (as indeed he was about all matters of science and engineering). Paradoxically, however, despite spending literally a fortune building and equipping his observatory, there is no evidence that he ever personally used the facility; rather, he preferred to leave its operation entirely to Plummer. Tomline believed that it was incumbent upon men of great wealth to deploy their resources for the betterment of humanity, and he may have seen the running of an observatory as one of his smaller contributions in this regard. There is also some evidence from the historical record that he enjoyed the ability to flaunt a “tame astronomer” as a statement of his scientific prowess to the many important visitors to his mansion.

While at Orwell Park, Plummer pursued a wide range of astronomical investigations, including observations of Venus, comets, the aurora, the zodiacal light and meteors, stellar astronomy and photometry (using a home-made photometer employing a whale oil candle as reference light source). He published his results in the journals *Monthly Notices of the Royal Astronomical Society* (*MNRAS*), *Nature*, *Popular Science Review*, *The Observatory*, and *Astronomische Nachrichten*. The majority of his work at Orwell Park concerned positional measurements of comets: he observed all the bright comets between 1874 and 1890, amounting to 45 in total. He interrupted his work at Orwell Park in 1882 to lead a government expedition to the West Indies to observe the transit of Venus of 06 December 1882.

Tomline died in 1889, and Orwell Park then passed to Captain Ernest Pretzman. Unfortunately, Pretzman had no interest in astronomy and did not retain Plummer's services. Plummer's last report on his work at Orwell Park appeared in *Nature* in December 1890 and he left Nacton shortly thereafter. On 01 May 1891, he took up the post of Chief Assistant at Hong Kong Observatory, where he worked until his retirement in 1911.

Orwell Park Observatory was then little used for many years. A Mr Hancock of Nacton, who knew how to operate the refracting telescope, occasionally used it to demonstrate the wonders of the night sky to Pretzman's guests. However, Hancock's efforts obviously did not inspire Pretzman to develop an interest in astronomy, as he tried to sell the telescope and even offered it free to Eton College! Fortunately, he was unable to dispose of it.

In 1930, Pretzman gave permission for Mr E H Collinson, Director of the Mars Section of the BAA, to use the observatory. Collinson used the observatory for six years, observing two oppositions of Mars and making extensive observations of the Moon and Jupiter. (His observations are stored in the archives of the BAA and may be viewed on the OASI website.) He noted in his observing logs that at this time the observatory was still in a good state of repair.

In 1936, Aldeburgh Lodge School purchased Orwell Park, locating there the following year, and changing its name to Orwell Park

School. The headmaster at the time was Mr N H Wilkinson. He found Hancock, learned from him how to operate the telescope, and used it until 1939 to instruct the boys of the school in astronomy. With the boys, he observed the moon, planets, star clusters, nebulae and double stars.

In 1939, on the outbreak of the Second World War, the school moved out of Orwell Park and the 7<sup>th</sup> Armoured Division, the *Desert Rats*, moved in. The army used the observatory tower as a lookout post for spotting enemy aircraft.

In 1946, on the return of the school to Orwell Park, Wilkinson found that the observatory had suffered badly under the stewardship of the army. The sidereal clock had been damaged and most of the eyepieces stolen. Wilkinson purchased new eyepieces and had the object lens taken out and cleaned by a firm in London, after which he resumed using the telescope to instruct the boys.

On 09 October 1948, approximately 25 members of Ipswich and District Natural History Society (IDNHS) spent an evening at Orwell Park Observatory. Wilkinson, Mr R L T Clarkson, FRAS, and Mr D J Fulcher guided the party in observations of Jupiter, the moon, star clusters and a double star. The visit was a great success and crystallised the idea of forming an Astronomical Section of IDNHS. On 20 November 1948, at a public meeting hosted by IDNHS at Ipswich Museum, 30 people signed a request that IDNHS form an Astronomical Section, which was duly constituted in early 1949.

At an IDNHS annual meeting on 14 January 1950, members present agreed to wind up the Astronomical Section of IDNHS and form instead an independent astronomical society to be called Ipswich and District Astronomical Society (IDAS). Clarkson<sup>3</sup> became first president of IDAS and Fulcher its first honorary secretary.

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<sup>3</sup> In fact, Clarkson was a dedicated and prolific lunar observer who contributed significantly to the work of the BAA in mapping the Moon in the pre-Apollo era. In 1954, he was honoured when a lunar crater was named after him. In subsequent rationalisation of lunar nomenclature, the International Astronomical Union returned crater Clarkson to its former designation, Gassendi A.

The objectives of IDAS were: *the association for mutual help of persons interested in Astronomy, the encouragement of a popular interest in the science, and the encouragement of active observing and the construction of astronomical equipment.*

Initially IDAS thrived. It hosted public meetings on astronomy and film shows with an astronomical theme. Members attended Cambridge University extra-mural courses on astronomy, organised excursions to local places of interest and to Cambridge University Observatories, collected information on the history of astronomy in the area and ran a small library holding astronomical books and magazines. They constructed telescopes, undertook observations and held star-parties at one another's homes. They occasionally used the Orwell Park refractor. IDAS lacked a permanent base and, in early 1954, there was considerable interest in raising funds to build a public observatory which would be open to the people of Ipswich and could act as a home for IDAS. (Unfortunately, nothing came of this splendid idea!) Membership of IDAS peaked at 80 in 1951. Throughout the early 1950s, subscriptions were 5/- for adults and 2/6 for juniors.

In 1955 the honorary secretary of IDAS, Mr C R Munford, left the district and the Society was unable to attract anyone to fill the post. Without an honorary secretary, IDAS was unable to run a full programme of events, membership gradually declined and, in mid-1957, the Society ceased to function. Several members of IDAS later joined OASI.

After 1957, again the observatory suffered from neglect with only occasional use by the school.

In 1967, a group of friends asked permission from Orwell Park School to use the refracting telescope and to restore the observatory; they went on to found the Orwell Astronomical Society (Ipswich). John Easty was first chairman, Mr M J Allen first honorary secretary and Vernon Wilkes first treasurer. Unfortunately, the earliest existing records of OASI date from 1972, so the precise date when the Society was constituted is not known.

In 1967 the observatory was essentially derelict. Initially OASI had little money to spare so could undertake very little renovation work. OASI held its first fund-raising event in 1972 to mark the supposed centenary of the opening of the observatory. (As noted above, subsequent research has established that the observatory in fact came into use in June 1874.) OASI had good relations with the local press in the early 1970s and both the *East Anglian Daily Times* (*EADT*) and the *Evening Star* published several features on the observatory and OASI's work to restore it, all of which helped attract the public to fund-raising events.

Throughout the 1970's many members of OASI spent considerable time and effort restoring and decorating the observatory. Roy Cheesman, who took over from Easty as chairman in 1973, sustained much of the enthusiasm for the work. Colin Button, a member of the Society, provided a particularly highlight of this period: his exploits re-pointing the outside wall of the observatory tower, some 20 metres above ground, featured on the front page of the *EADT*!

In 1973 the Society arranged for Horace Dall of Luton, a leading optical expert, to clean and refigure the object glass of the refractor. Dall's refiguring corrected some original manufacturing defects.

In 1981 Roy Cheesman moved away from Ipswich and David Payne was elected chairman of OASI. David's primary astronomical interest was observing, however during the 1980s the Society undertook further renovation work in the observatory and in particular restored many features to their original condition following the discovery of the original plans of the building. Under David's chairmanship, the Society modernised and upgraded the drive system of the refractor.

One area of the observatory that had become irreparably derelict during the century or so since its construction was the hydraulic apparatus of the lift. During the 1990s OASI extended flooring into the former lift shaft to create extra storage space, a computer room off the equatorial dome and a library room off the belvedere.

During the late 1990s and early 2000s interest in astronomy in the UK rose to new levels and the average membership of OASI

increased from *circa* 70 to *circa* 110. Following several successful moneymaking open weekends in the late 1990s, the Society funded construction and acquisition of several astronomical instruments including a 25 cm Dobsonian, 10 cm rich field reflector, 12.5 cm computerised Maksutov-Cassegrain and a pair of 11x80 astronomical binoculars. The Society also purchased a computer for running astronomical ephemeris programs and imaging software. In 1999 the Society began a major project to construct a 48 cm f4.5 Dobsonian reflector, named the *Millennium Telescope*. The project took much longer than originally planned but, at long last, on 18 April 2005, the instrument saw first light. The *Millennium Telescope* is nowadays used at star parties and other observing events.

Particularly memorable observations made by members of OASI under David's chairmanship included: all eight major planets plus dwarf planet Pluto observed during the evening of 04 May 1989; the magnificent auroral displays of 13 March 1989, 08 November 1991 and 06 April 2000; and the total solar eclipse of 11 August 1999 observed from the UK and other countries.

In 2001 Dr Allan Chapman MA, D.Phil, FRAS of Wadham College, Oxford, graciously accepted an invitation from OASI to become the Society's first honorary president. On 18 May of that year, in the delightful setting of The Orangery at Orwell Park School, Allan delivered a lecture entitled *Sir G B Airy, 7<sup>th</sup> Astronomer Royal*, and then presided at a ceremony to dedicate the refractor as the *Tomline Refractor*. Allan delivers presidential lectures to OASI approximately every 18 months. Topics to date, following the first in 2001, have been: *The Victorian Amateur Tradition*; *The Great Ladies of Astronomy*; *That Clubbable Passion: The Amateur Astronomical Society*; *Thomas Harriot, Galileo and the First Telescopic Astronomers*; and *Patrick Moore, A Lifetime In Astronomy*. Allan is an accomplished and renowned speaker and presidential lectures are always well attended!

In January 2003, David Payne stepped down as chairman and Ken Goward, FRAS, was elected to the post. (David subsequently accepted an invitation from the committee to become a trustee of OASI.) Under Ken's chairmanship OASI thrived, with membership

attaining a peak of 118 in late 2003. Ken's main interest in astronomy was matters historical, and he undertook much research into the history of astronomy in Suffolk, encouraging others to do the same. With encouragement and assistance from Ken, James Appleton undertook a major piece of research into the life and work of Plummer, published as a booklet available from the OASI website. During Ken's time in the chair, members of OASI enjoyed a successful observation of the long awaited transit of Venus on 08 June 2004. The Society upgraded its computer facilities and purchased much new equipment, including a Coronado Personal Solar Telescope (PST). In 2009, Ken resigned due to ill health and, sadly, passed away not long afterwards.

Neil Morley was elected chairman after Ken, bringing another new perspective to the role. The UN nominated 2009 *International Year of Astronomy (IYA)*, and Neil's first year as chairman was therefore particularly busy as OASI hosted many public events celebrating astronomy under the auspices of IYA. Neil also invested much time and effort developing links with bodies and individuals in the business of restoring historical buildings, laying the groundwork for future restoration work at Orwell Park.

Under his chairmanship, members of OASI continued with several programmes of observations, including the use of new technology to capture spectra of planets and some of the brighter stars. One notable failed observation (due to thick cloud) was that of the second and final transit of Venus of the 21<sup>st</sup> century, on 06 June 2012.

In 2014, Neil stepped down as chairman and David Murton was elected to the role. David, an enthusiastic and prolific observer, did much to encourage OASI observing projects and was instrumental in promoting the use of Newbourne Village Hall as a venue for meetings and observing. Observing highlights under David's stewardship included the transit of Mercury on 09 May 2016 and several successful efforts to photograph the International Space Station (ISS) as it passed overhead.

David resigned from OASI in 2018 and Paul Whiting, FRAS was elected chairman, in a caretaker capacity, for one year. Paul encouraged a range of observing projects and reinstated OASI's

annual Open Weekends, which had been allowed to lapse in previous years. He rebranded OASI events so that activities at Newbourne clearly came under the aegis of OASI.

In 2019, Andy Gibbs was elected chairman, bringing to the post experience and an enthusiasm for astronomical imaging.

This brings us up to date at the time of writing. It is to be hoped that the future of the observatory and Society will be as interesting as the almost one and a half centuries of its history to date!

# 5 Constitution

## 1. Name

The name of the Society shall be *Orwell Astronomical Society (Ipswich)*.

The Society is a registered charity No. 271313.

## 2. Objectives

To promote and advance public education and interest in the science of astronomy and to provide facilities for the encouragement and pursuit of observational astronomy.

## 3. Membership

Membership of the Society is at the discretion of the committee.

There are two classes of membership as follows:

- a) Member,
- b) Honorary Member - invited by the committee to enjoy free membership for services rendered.

The immediate family of a member (partner, children, parents) are entitled to attend OASI meetings and events, however only the member may vote at meetings. For child protection purposes, all children (under 18s) must be accompanied at meetings and events by a parent/guardian.

The committee is empowered to disqualify a member whose actions bring the Society into disrepute or damage relationships with the School. The committee must meet in order to progress a disqualification; the member in question is entitled to attend the meeting and may ask one of the Trustees of the Society to speak on his/her behalf.

## 4. Subscriptions

Subscriptions are payable on the first day of January. Subscriptions are not refundable except in special circumstances at the discretion of the committee. Membership fees will be agreed at the AGM.

Subscriptions not paid by the end of February will be assumed to mean resignation.

## **5. Officers**

The Honorary President of the Society will be Dr Allan Chapman, FRAS, Wadham College, Oxford.

The Society shall have three Trustees: Mr R Adams, Mr D M J Brown and Mr D B Payne. They shall have full access to all matters concerning the Society.

The Society shall also have three elected officers: Chairman, Secretary and Treasurer. These officers will be elected annually at the Annual General Meeting (AGM) of the Society.

## **6. Management Of The Society**

The Society will be managed by a management committee consisting of the three elected officers and eight other members. The committee shall be elected annually at the AGM of the Society. All nominations for committee membership shall be in writing and be in the hands of the Secretary before the start of the AGM.

The management committee shall meet as required. Six committee members must be present to form a quorum, which must include at least one of the elected officers. The committee shall be empowered to fill any vacancy in its membership arising during the year, until the next AGM, from members of the Society.

The committee shall be empowered to appoint sub-committees for any purpose. The management committee and any sub-committees may co-opt additional members from the Society, and they will have voting rights on the committee they join.

Each member of the Society shall have one vote in the ballot for each post at the AGM. A simple majority shall decide those elected. If there is a tie for any post the outcome shall be decided by further votes. Postal votes or proxy votes are not eligible. The committee shall take office from the date of the AGM to the date of the following AGM.

## **7. Disqualification Of A Committee Member**

If a committee member fails to attend three consecutive committee meetings the member may be called upon by the committee to resign. Authority to fill the vacancy will rest with the committee until the next AGM.

## **8. Committee Records**

The Secretary shall retain minutes of all meetings of the committee and sub-committees.

## **9. Annual General Meeting**

The AGM of the Society will be held annually, in the month of January, at a time and place agreed by the committee. Members of OASI shall be given at least 14 days' notice of the AGM, such notice being posted in the Society's newsletter.

An AGM or EGM are the only meetings that can endorse changes to the constitution or rules of the Society. Members of OASI shall be given at least 14 days notice of a meeting to endorse such changes, together with details of the changes themselves, such notice being posted in the Society's newsletter.

## **10. Extraordinary General Meeting**

The committee may call an Extraordinary General Meeting (EGM) to discuss any matter and shall be bound to do so on receiving a request signed by not less than 25% of the membership. Such a request must be sent to the Secretary stating the reason for the meeting. The meeting shall take place within 28 days of receipt of the request and not less than seven days clear notice of the meeting shall be given.

## **11. Finance**

All monies shall be banked in the name of the Society. Withdrawals shall be by cheque bearing the signatures of the Treasurer and either the Secretary or Chairman. All recommendations and requests for expenditure shall be approved by the committee before being incurred.

At the AGM the Treasurer shall present a balance sheet of the income and expenditure of the Society, to be subsequently audited by an honorary auditor appointed by the committee. The auditor must not be an elected member of the committee.

## 12. Bye Laws

The committee shall be empowered to make such rules as it considers necessary. Such rules shall be submitted to an AGM or EGM for ratification.

## 13. Winding Up The Society

Should the Society be wound up, its assets shall be placed in the hands of the Trustees to be donated wholly, at their sole and absolute discretion, to charitable bodies with aims similar to those of the Society.



David Murton, Chairman



Roy Gooding, Secretary

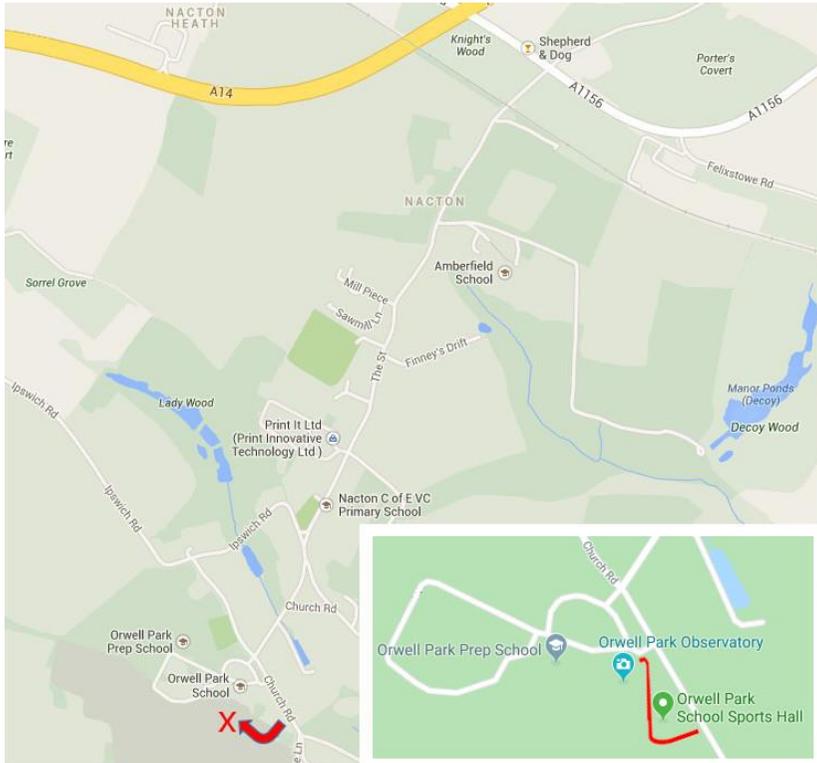


Paul Whiting FRAS,  
Treasurer

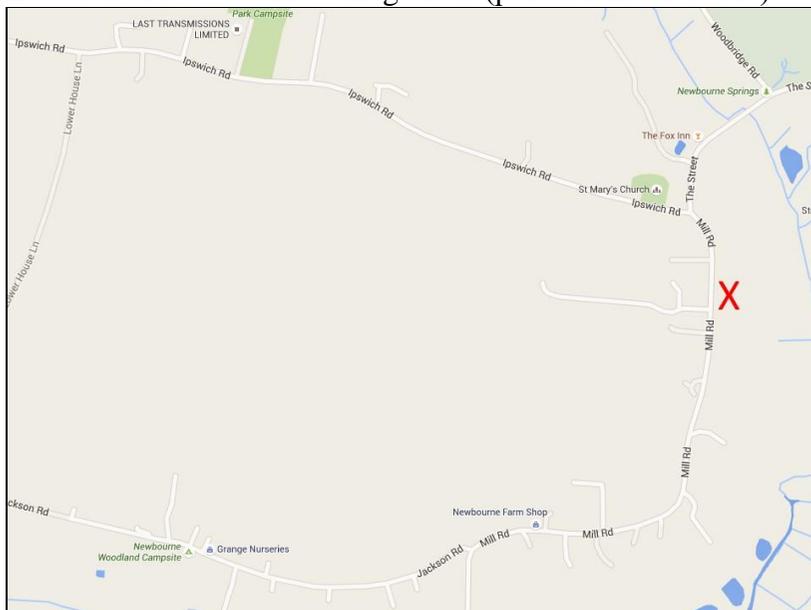
[Ratified at EGM 19 May 2014.]

## 6 Maps

Location of the Observatory. (Shows the position marked “X” and the route there from Church Road, Nacton.)



## Location of Newbourne Village Hall (position marked “X”)



## 7 Document History

Version	Date	Author
Issue 1	23 January 1997	J M Appleton & R E Gooding
Issue 2	14 December 2001	J M Appleton
Issue 3	23 October 2002	J M Appleton
Issue 4	13 January 2003	J M Appleton
Issue 5	02 October 2003	J M Appleton
Issue 6	12 October 2008	J M Appleton
Issue 7	23 May 2010	J M Appleton
Issue 8	16 July 2016	J M Appleton
Issue 9	30 November 2019	J M Appleton

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## IMAGES BY MEMBERS OF OASI



M33, the Triangulum Galaxy, David Murton, 29 October 2013.



A Perseid meteor streaks in front of the Milky Way, Kev Fulcher, 12 August 2015.



Mare Imbrium, Kev Fulcher, 04 September 2014.



Observing the transit of Mercury with the Tomline Refractor, 09 May 2016.