



Mercury

The Newsletter of the Cotswold Astronomical Society

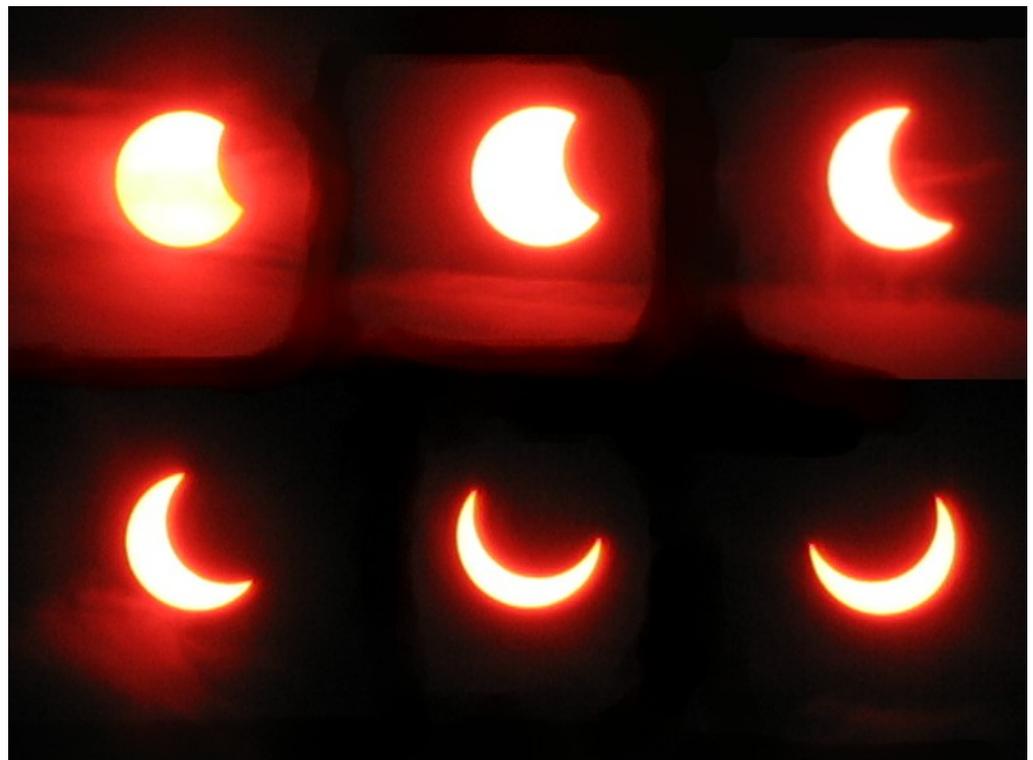
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New Year's (*High*) Resolutions



Sensational photos of the eclipse on January 4th, sent in by Valerii Koratev in Zhukovsky just outside Moscow.



Please see important information about the Society Dinner—page 6



“ Well there are sparkly white things to look at in the sky, and if you look very closely they do look like stars...”

“we are now entering 2011, which will hopefully be an exciting year for astronomy”

Editor's Desk

Well I have to say that Santa has been very good to me this Christmas. I have a shiny new DSLR camera and lenses, and a 'new to me' telescope for lunar and planetary observations (thanks Tony).

As expected, the penance for acquiring new astro-kit is a couple of weeks of cloud cover, but at least in my case that only builds the enthusiasm to get out there and have a look as soon as the skies clear.

With the BBC doing their bit to bring astronomy to the masses with their Stargazing LIVE programs, hopefully we have good year ahead to look forward to.

I do hope you enjoy this first 2011 issue.

Happy New Year,

Rik

Co-ordinator's Report

by Peter Cadogan

The last two meetings of the CAS have been rather different from our normal ones, because we did not have a visiting speaker at either of them. In November, Simon Bennett from the Widescreen Centre was unable to come to us, but in his place Mark Gibbons was able to show a very moving DVD about the first moon landing. We had been keeping this in reserve for just such an eventuality. What vivid memories this video brought back to me as I stayed up all night in 1969 waiting for the first grainy TV pictures to come back from the lunar surface. Little did I know then that in just one year's time I would discover that Buzz Aldrin had been doing the field work for my own PhD research! My only gripe was that he showed Apollo 17 landscapes instead of the rather more boring Apollo 11 ones.

Following suggestions (from Tony, Rik and John Fletcher) to try and encourage members to take more images of the night sky, I put forward my proposals at the November meeting for some image challenge projects that would provide some well defined, and achievable objectives. Elsewhere in this issue I will give an update on this and try to explain how everyone can find their own way to participate in this project.

During early December I was informed about the BBC's plan for encouraging people to look up at the night sky with their local astronomical societies through their 3 Stargazing Live programmes, which will already have been shown by the time this issue of Mercury appears. But still to come will be our Lodge Park event on 15th January, for which we would welcome as many members as can make it. We would like to use events such as these to promote society events and, thanks to Rik, we now have an updated leaflet that tells prospective new members about exactly what we do as a society. So if you find yourself in a position where you might be able to promote the society in some way, please make sure that you have some of these fliers to hand out.

In order to support our outreach activities, it might also be a good idea for us to put together an extensive set of Powerpoint Slides, covering a very wide set of astronomical topics. From such a resource a presentation could quickly be constructed with a little bit of judicious cutting and pasting. Rik has offered to come up with a design template for these slides, to match Mercury and the flier, so that there would be a common style for the CAS. But the subject matter for astronomy is enormous and it would make sense for the job (ie finding suitable images on the internet or elsewhere) to be divided up among a number of members, each of whom might have

an interest or knowledge of a particular field (eg the Moon in my case). Paul Wheat has volunteered to coordinate this activity, so if you would like to get involved, please let us know. The key to all this is to find some really good sources of images that we would be able to use for public displays (eg NASA, ESA, ESO etc).

The Christmas meeting was a jolly occasion, although surprisingly few members turned up on the night. There was a lot of good food to go around and some short talks to give us something to talk about as we munched. I tried to present a "work in progress" report on my LRO crater detection software project, which I am still enthusiastic about. Even if I cannot find any alien spacecraft on the lunar surface, I can still hope to learn a lot more about the processes of crater formation and erosion. I am sure that there is still a lot to discover still from the LRO images. One of the most recent discoveries is that the crater Giordano Bruno, just beyond the Western limb, must be at least 1 million years old, so its excavation cannot possibly have been witnessed by those Canterbury monks in the 1200's.

It is really wonderful how easily we can gain access to professionally acquired astronomy data, such as the SDSS, these days. I heard recently about a project to map galaxy bubbles in the infra red images returned by the Spitzer telescope. It is part of the Zooniverse umbrella, which includes GalaxyZoo and MoonZoo and can be found at www.milkywayproject.org. I've not tried it out yet, but it looks fascinating. And I gather that the European Southern Observatory is also making large amounts of its data available, although you would probably need to be a bit of a "Techie" to do much with it see www.eso.org/public/outreach/hiddentreasures/science_archive.html.

Eddie Carpenter showed us some truly fascinating images of Mars from 100 years ago as, using his venerable magic lantern projector, as he pretended to be giving a talk

about Martian Canals in the year 1910. Nowadays, it is hard to believe that people believed that such things as canals really existed, but as recently as the 1960s it was also still thought that lunar rilles were carved out by water and that most of the moon's craters were volcanic in origin. And what goes around comes around - long ago, large amounts of water probably did indeed flow on the surface of Mars, albeit not in the straight lines depicted by Lowell, but rather in channels carved out by the rushing torrents.

So we are now entering 2011, which will hopefully be an exciting year for astronomy, as most years seem to be these days. We will start to get results from Planck probe and will doubtless hear about more discoveries from the Herschel Space Observatory. Messenger will go into orbit around Mercury, perhaps the LHC will find a Higgs boson or two and the Mars Science Laboratory will be successfully launched. Will Spirit and Opportunity survive, will Kepler find a truly earth-like planet, and will there be a meteor shower at a time of clear skies this year?

*"will there be
a meteor
shower at a
time of clear
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year?"*



M31 'the Andromeda galaxy' by Peter Burgess

Dates For Your Diary: January 9th–March 12th

by Tony Ireland

This is a time for Goodbyes and an upcoming Hullo. Goodbye to Jupiter and Hullo (of sorts) to Saturn. There's also the beginnings of a fleeting glimpse of Mercury in the evening sky. Mars is too close to the Sun, whilst Venus shines bright in the morning sky as it dashes back towards the Sun.

There are some challenging occultations, whilst I have assumed that as far as Jupiter is concerned you won't want to observe the dancing Moons after about the third week of January as by then it will be rather low in the SouthWest.

I have not bothered with meteor showers as there aren't any of note to stay up for within the span of these notes.

Sunday Jan 9th

This morning, 20 hours after its big brother Venus, Mercury reaches its furthest elongation 23.3 degrees West (as against 47 for Venus) but because of the lie of the ecliptic both will be low on the South Eastern horizon. Notice the difference in their brightness, Venus is at Mag - 4.5 whilst Mercury, 24 degrees to the lower left, is at Mag 0.3. In your scope Venus is 25" across like a Half Moon, Mercury just 6.7" across, two thirds lit.

Monday Jan 10th B P

The Moon will be a charming sight close to Jupiter after sunset.

Tuesday Jan 11th T

Jupiter will have just three Moons visible tonight with Io in eclipse to the East. Europa, Ganymede and Callisto are to the West, BUT South of Jupiter will be another point of light Star HIP 11781 Mag 7.5, a super giant 1106 Light Years away. So don't think one of the Moons has slipped !!

Wednesday Jan 12th

This evening the Moon will be a brilliant Half Phase. If its clear I shall be rolling back the roof of the shed and enjoying all my favourite craters through the 180 and maybe trying out the new CCD camera but you can also enjoy looking at the Moon through bins, you know !

Thursday Jan 13th T

It's Jupiter again tonight. Through your scope you'll see three Moons if you observe before 7 pm - Io to the East

and Ganymede and Callisto to the West. Suddenly at 19.00 Europa appears to the West whilst its shadow remains on the left side of the disc.

Friday Jan 14th T

Your first occultation ! At 23.08 the Moon occults Star ZC 47 (Zeta Arietis) at PA 95. Mag 4.9.

And if you are interested today is the first day of the Roman year 2764 AUC ('from the city founded'). Now that's something to tell them down the pub tonight..

Saturday Jan 15th B

The Moon will be close to the Pleiades tonight.

Sunday Jan 16th T

At 20.29 the Moon passes in front of NGC 1746 - a Star Cluster.

Monday Jan 17th T

Quite a lot tonight. First Jupiter, then two Occultations.

At 19.52 Ganymede starts to cross Jupiter's disc from the East. Io will also be out to the East whilst Europa and Callisto will be to the West. For how long can you track Ganymede ?

Over to the East the bright near Full Moon will be rising.....

At 20.29.32 it will occult Star ZC 916 Mag 4.3 at PA 62 (the dark limb of the Moon) and

At 23.31.18 it will occult Star ZC 929 Mag 5.8 at PA 59

Tuesday Jan 18th T

Jupiter again. At 18.58 Io disappears behind Jupiter with Europa and Ganymede to the West (right) and Callisto out to the East.

Wednesday Jan 19th T

If it was cloudy last night you can have a go at Jupiter again. Callisto is still to the East joined by Europa. Ganymede is on the other side (West) and is joined by Io at 18.33 leaving its shadow on Jupiter.

The Moon is Full at 21.22. Have a look at it about that time. Can you see any craters at either side in bins or with a telescope ?

Thursday Jan 20th T

More Jupiter. At 19.52 Europa encroaches the disc of Jupiter from the East leaving Callisto and Io behind. Ganymede is out to the West.

Saturday Jan 22nd T

This evening if you observe Jupiter all four Moons will be to the East, in this order - Europa, Io, Ganymede and Callisto BUT not until AFTER 20.00 when Europa emerges from eclipse, well away from Jupiter's disc.

Then at 22.35.13 at PA 251 (dark leading side) the Moon occults Star ZC 1587 Mag 5.9 - a challenge in view of the phase of the Moon, and the fact that it will be just 15 degrees above the Eastern horizon !

Sunday Jan 23rd T

The Moon occults Star ZC 1713 Mag 5.6 PA 278

at 23.25.01. Again, the Moon will be just 10 degrees above the Eastern horizon, so a tough one this one.

FEBRUARY

During this month daylight increases by two hours so at last you'll begin to feel that Spring is approaching even if we are still buried under two feet of snow !!

Jupiter is very low but maybe still worth a viewing early evening for the first part of the month but I have not listed any events to view.

So unless you are prepared to stay up beyond midnight there are no planets to view..Venus will be too low in the morning sky..

But I fear there is not a lot to get excited about....

Friday Feb 4th

At 5 o'clock this evening as the Sun sets Mars passes behind the Sun. It's taken a long time to do this since we were viewing it last year ! But remember it has been moving East (left) all the time in its orbit whilst we were travelling in the same direction on the opposite side so we cancelled each other out ! Now we are going to catch up Mars until it gets back in our evening sky though this wont be until next year !

Saturday Feb 5th

This evening Jupiter passes into the Northern part of our sky where it will stay for the next six years giving us some really good views of the giant planet in that time when it comes to opposition high in the South.

Sunday Feb 6th

This evening the Moon will be near Jupiter in the South West sky.

Friday Feb 11th B

This evening the Moon is SSE of the Pleiades. It became First Quarter this morning.

Saturday Feb 12th T

At 18.46.49 the Moon will occult Star ZC 693 Mag 6 at PA 98.

Saturday Feb 19th T

A late one tonight ! The Moon occults Star ZC 1670 Mag 4.8 at 23.52.22 PA 288. The Moon will be nearly Full so not easy even though it is at the dark edge.

MARCH

There are some challenging conjunctions in the early part of this month as Mercury starts to rise in the South West for an interesting sequence of alignments with Jupiter, Uranus and the Moon. More of this next month.

Meanwhile it's still a wait to see Saturn at a sensible (!) time, but by the time of the next notes you will be polishing your lenses to observe the ringed planet.

For the record though we have the following :-

Monday Mar 7th

When you look at the Sun through - the snow clouds ! - you can tell your nearest and dearest that the North Pole of that bright object is pointing away from us at its greatest degree. If that doesn't deserve a drink to celebrate I don't know what does... (but are there any sunspots near the equator. ?...)

Friday March 11th T

Another late night for Occultation fans.

At 23.07.14 the Moon occults Star ZC 660 Mag 4.3 at PA 85 The Moon will be 19 degrees above the horizon.

39 minutes later, with the Moon now just 14 degrees above the Western horizon it will occult Star ZC 664 Mag 5.5 Pa 32.

And that's it for this edition.... but there's more to look forward to in the next edition...

TONY IRELAND

CAS Dinner 2011 – STILL TIME TO BOOK!

Remember - this year's CAS dinner is being held at the Renaissance Restaurant, Cheltenham on Thursday 27th January and there is still time to book your place.

Full details and the booking form can be downloaded from the Society's website or can be obtained from Rod Salisbury - contact details at back of Mercury.

BOOKINGS CLOSE ON 17TH JANUARY. DON'T MISS YOUR CHANCE TO JOIN US FOR THE EVENING - BOOK NOW!

Rosette Nebula – by Peter Burgess



The picture is the sum of 10 x 6 minutes exposures visible light plus 6 x 6 Hydrogen Alpha light taken through Williams Optics Megrev 72 telescope.

The Rosette Nebula is located near one end of a giant molecular cloud in the Monoceros region of the Milky Way. The solar wind from the young stars in the centre of the nebula have cleared the area of gas. The ultra violet light from these stars also cause the remaining hydrogen gas in the nebula to glow, giving the nebula a red colour.

Observing Director's Notes

by Ian Davies

It's great to see 2011 kicking off with astronomy getting a prime-time airing on the BBC, courtesy of their Stargazing LIVE event. I read a recent interview with Prof Brian Cox, who will be hosting the three programmes, who said he had been very pleasantly surprised at the reaction (and viewing figures!) that his recent Wonders of the Solar System show attracted from the Great British public. He put this down to there being a general interest in astronomy in the UK, which his programme tapped in to. Let's hope he's right, and that Stargazing LIVE gets a sizable number of people out under the night skies this year (weather permitting, of course - what are the chances of there being clear skies to coincide with a live astronomy show?!)

Talking of getting out under the night skies, I've been pleased with the reaction to the new CAS Observations Database that I established a couple of months ago. There has been a steady stream of observations and photographs submitted via the website, and already I can see the benefits in having a record of our observational work that we can refer to in the future. Some of the photographs have been truly stunning, and all of them have been very gratefully received. Unfortunately I don't think the weather was conducive to any great numbers of us making observations of the Geminids in December - I only happened to see one meteor, from the window of a bus early on the morning of the 14th! Perhaps we'll have had more luck with the Quadrantids, and the partial solar eclipse, by the time this goes to print!

January is traditionally a time to set yourself some New Year's Resolutions, so how about some of these to get your teeth into?

- Try your hand at astrophotography - it's possible to get some really great results with fairly modest equipment, and with slightly more outlay (and a great deal of patience!) you can take photos from your back yard that were the only within reach of the professionals just a few years ago. There are plenty of excellent photographers in the Society who I'm sure would be more than happy to share some of their know-how with anyone keen on giving it a go.

- Keep an observations logbook. This is something I started doing a few years ago, and it's made a huge difference to my enjoyment of observational astronomy. Although it can seem a bit of a drag at first (especially if you're chomping at the bit to dial in the next interesting object into your GoTo computer!), it really does add a great deal to the whole experience of observing objects with a telescope (or binoculars, for that matter). Noting the time, place, conditions, and

details of what you're seeing naturally makes you study things much more carefully (the quality of your notes is proportional to the time spent really seeing what you're looking at!), and it's great for developing your ocular abilities at the eyepiece. Best of all, once you've been doing it for a while, you end up with a fascinating record of nights spent under the skies which you can read in the warm when it's raining outside! And of course, taking a few extra moments to submit your notes to the CAS database will contribute to the richness of the records of the Society too!

- Write something for Mercury. We're always on the lookout for articles written by Society members, so don't be shy - put pen to paper and share your astronomical experiences with the rest of us! And if you're feeling really ambitious, why not prepare a talk to give at one of the monthly meetings?

For my part, I'm hoping to get out with the telescope a little more often now that my 7 month old son is starting to sleep a bit better at night...talk about tempting fate!

Hope to see you all at the CAS dinner!

Clear skies,

Ian



24 October 2010 2115UT
Canon 1000D SLR 58mm f/8 250mm zoom
Mark Gibbons

"I know it isn't very good, but this is the first astronomical photo I have taken! I understand it is better to shoot when it isn't nearly full moon.

It was a slightly hazy night and the moon was so bright there were very few stars visible, like being in the suburbs."

FROM THE ARCHIVES...

by Tony Ireland

It is hard to believe but at the end of this year the Cotswold Astronomical Society will celebrate its 30th Anniversary ! As a Founding Member I thought it might be an idea over the next six editions to look back across the years and recall some of the great times we had , the observations we made, the people we met and so on.

Fortunately I have every copy of MERCURY except two. I know that Nick Day, one of our early, still extant (!), members has those two copies somewhere in his loft but he says it is 'life threatening' to even think of going 'up there' to look for them ! Recently Callum borrowed all my early copies to have them scanned and stored for Gloucestershire Records. Quite a task. A Domesday Book of the CAS !!

So, with apologies to those of you who know this story, how did it all begin ? Well it all began as a result of Spring Cleaning in 1981. I had a huge collection of SKY & TELESCOPE magazines - when Sky & Telescope WAS a magazine and not the pale imposter that Americans send over now - dating back to 1954, when I first began to get really interested in astronomy. I had no idea how to get rid of them. I mentioned this to my boss in the Cheltenham Tax Office who had asked me what I had been up to over that weekend. 'I know someone who will take them off your hands' he said, ' my Son in law, Richard.' And not long afterwards Dick Warden phoned and arranged to call round. His eyes lit up when he saw the collection. 'You can have them for nothing', I said. No wonder his eyes lit up even more ! I discovered much later that I could have asked up to £200 for them. Well done Dick !!

Some weeks later Dick phoned me and asked if I would be interested in starting an Astronomy Society. He had tried once before and failed for lack of support. I told him that I was attending an Astronomy Class at GLO-SCAT at the end of our road. I would see if anyone there would be interested. Some were, so Dick called a meeting at The Lansdown pub at Westal Green in December 1981 and the rest is history. We met in each others houses with 8 members to begin with. Dick arranged for a magazine to be typed up under the name (eventually) of MERCURY which was the first planet we observed the following Spring through his 8" Celestron.

Sadly I think the red notebook in which I , as Treasurer and Membership Secretary, recorded details of who was a member then and what we all paid - very little - has

been lost. But we were a motley lot, believe me ! All ages, all men. Dick called himself Co-ordinator rather than Chairman, we didn't have a Committee as such, and never really have had. since. No Secretary. Dick did just about everything. Arranging meetings, deciding what we would do, where we would visit, typing up MERCURY, printing it out.... a man of many parts. It was his enthusiasm which kept us going.

So lets look at some of the memorable events of the first years..1981 - 1985

Rod is always anxious to expand our membership if only to keep our ship afloat financially, but 30 years ago we had just about a dozen members: we knew each other and we were pals together, For the record, at the first AGM in April 1983, the accounts were as follows :-

Expenditure		Income	
Production of Newsletter	46.63	Subs	64.50
Membership Fee of FAS	4.00	Sale of Calendars	2.00
FAS Calendars	5.00		
Treasurer's expenses	2.00		
Bank Charges	0.43		
Balance at Bank	8.44		
	66.50		66.50

Subs were £5.00 pa. Those still at school paid £2.50 !

The first meeting of the CAS took place on January 9 1982 at Churchdown in order to see the first of seven eclipses in that year - the maximum possible in any year - a Total Eclipse of the Moon occurring at a respectable hour of 19.17 . Amazingly it was clear, photos were taken and shown at the March meeting held at Fred Watkins house on the 6th. Later that month Dick issued the first 'official' Newsletter. It ran to 7 typed pages. It included a report on the meeting at Fred's house, details of what to see in the next month, a discussion on image size in telescopes and a preview of viewing nights planned for later that month.

In April another viewing session was planned at Cleeve Hill. It was attended by Fred Watkins - and no-one else ! Fred spent two hours observing and then went home disillusioned !!

But Fred was active throughout the year organising a visit to Jodrell Bank, while Dick and Dan Turton (of Trophy fame) spent an interesting weekend at the Annual BAA binge at Winchester. More about those meetings later...

In July I started a series in the magazine on what to see in Constellations. This was the forerunner of DFYD which appeared for the first time in

The Partial eclipse of the Sun was clouded out on July 20th (of course), but later that year Comet Austin caused a stir leading to our first Radio Interview when Dick and I appeared on Severn Sound. Great fun!

We planned making a model Moon, astro photography, counting sunspots, a Call out Network and Dick issued the magazine EVERY month.

In November Dick started Issue 9 with the words 'I normally make some comment about the weather, but as it has been so bad I am not going to bother!' - nothing changes then...

Also in November a certain Bernard Abrams joined us. Bernard was to contribute greatly to the work of the Society over the next 20 or more years.

One of our more keen members at that time was young Daryl Dobbs a charismatic character who was not afraid to contribute to the magazine in his own inimitable style especially if it involved his hero Patrick Moore. He had all Patrick's books and was always keen to seize an opportunity to hear the Great Man speak. One such occasion occurred in London late in 1982. Daryl asked me to accompany him to a city he had never visited before (!) especially as he wanted to get to see the infamous Dudley Fuller of Fullerscopes. His tale of that day out is one of the highlights of 1982! How about this....

Close Encounters of the Deadly Dotty Dudley Kind..

When we arrived at Fullerscopes a sign greeted us 'DOWN BELOW TESTING. RING THE BELL OR JUMP ON TOP OF THE SKYLIGHT!'

The door was opened by a small bespectacled grey haired man who looked like.. Ronnie Corbett or a Muppet. Dudley Fuller. The shop looked like a bomb had hit, with.. telescopes and other bits and pieces everywhere. Steptoe and Son would have been proud....

Daryl related what happened when I revealed my occu-

pation! Dudley did not approve of the Inland Revenue regaling us with a long story of how he had challenged the Revenue over his expenses and won by sending in a photograph (which he showed us) of a HUGE telescope strapped to the roof of a mini car!!

Then it was on to a JAS meeting to hear Patrick Moore's talk about Venus. Pipeman of the Year Patrick did not let us down... with some hilarious stories of lectures that had gone wrong and about being mistaken by many for Billy Graham.... Afterwards he spent a long time signing books and magazines, delighting Daryl by giving him his visiting card and inviting Daryl to call in if he was ever in the Sussex area, and any others of the CAS providing we telephoned first to see if he was in.... and, years later, some of us did. More of that later...

Early in 1983 two other practices began, one of which lasted several years, the other continues (of sorts) today. Daryl Dobbs and later Bernard Abrams compiled a monthly Crossword and I stuck a pin in a list of overseas Astronomical Societies and it landed upon the Chicago Astronomical Society. I wrote to their Secretary, a dizzy lady by the name of Teinya Prusinski who replied immediately saying her Society would be delighted to form a bond with us. Little did I know at the time that the Chicago AS was the world's oldest amateur Society (1862) with a membership of over 150 many of whom had huge scopes, observatories etc far beyond anything we could muster. This link has continued, though now not directly with the Chicago AS but with a former member Alan Birkner, who now belongs to a different amateur Society. The Chicago AS suffered greatly several years ago both financially and through poor management. Nevertheless this link has given us a glimpse of another world to our joint advantages.

Volume 1 Issue 12 of March/April 1983 contained an article with an historic headline...

DATES FOR YOUR DIARY.....it wasn't bad either, though where I got the information from I have no idea!!

Early in 1983 a certain Peter Cadogan joined us after visiting Cheltenham Tax Office! He wanted to know the tax implications of writing a book about The Moon. I wonder what would have happened if yours truly had NOT taken the interview? Maybe we wouldn't have a Co-ordinator or a Librarian now?

In June 1983 Eclipse Chaser Extraordinaire Dan Turton flew off to Indonesia to successfully see the Total Eclipse of the Sun. I recall getting up early that morn-

ing, on holiday, gazing over the Borromean Islands from our hotel balcony in Baveno in Italy and thinking of Dan enjoying that eclipse thousands of miles to the East, as dawn broke. His photos were wonderful (but they always were..) of the five minute eclipse. But Dan wasn't the only member of the CAS at that eclipse. So too was the wonderfully eccentric Richard Glynn and his wife who out shone Dan with his photos using a 1000mm telephoto lens. Lucky people ! Amazingly at that time I and Dick speculated on how we could save money between 1983 and 1991 in order to see the Total eclipse of the Sun from Hawaii..... it was but a dream, but one that came true..for me at least.

Early in 1984 Ian Gray and Nick Day joined us, members still. Little did Nick know that his joining would change his life for ever ! By our second AGM our turnover had increased to £130 with a healthy £53 in the Bank. Lots of activities in the Messier league and members going to astro meetings in Bath, Bristol and the BAA Annual binge in Winchester, to enjoy the usual roast Dinosaur and a hilarious talk by Mr. Mrs Rob Mills including a quiz ending with a recital of The Owl and the Pussy Cat so disorganised that it reduced your truly to uncontrollable laughter that I had to be escorted out of the lecture room with a handkerchief stuffed in my mouth !! Daryl trekked across country to Southend to hear Patrick Moore at the SE Essex AS 10th anniversary meeting. He reported that Patrick discussed his home made Pea Wine which sounded like 'liquid Pickfords: it will move anything and is not to be taken after curry' !

There was continued interest in the AAC in Yorkshire of which more later.

That Spring a certain John Fletcher contacted Dick Warden seeking information on the CAS . We are still recovering.... John observed and drew for the magazine the Partial Eclipse of the Sun on 30 May 1984. This was an Annular Eclipse as seen from Chicago, successfully, as per the report received later *'the horns of the solar crescent began to grow in H Alpha light, break up and stretch around the limb of the Moon right before my eyes. Within seconds the end of the horns had met signalling the beginning of annularity. I saw no Bailey's Beads but instead a broken ring with large elongated slices of solar edge. Mid eclipse occurred after only 4 seconds... the ring was glaringly bright against a dark blue skyas the ring separated near the third contact point I saw a solar prominence... a rare event.. well worth seeing.'*

Also worth commenting on are the efforts some were

making to photograph the sky in the pre digital era. Reading the reports makes you realise how lucky we are now to be blessed with modern techniques. On one occasion a member spent several days taking a roll of B&W film which he passed on to Dick who promptly ruined most of it in the development stage..... Nevertheless the Society photographic entries won First Prize at the 1984 annual meeting of the FAS in Coventry and Bernard returned triumphant with a cheque for £5 for Society funds. A new innovation were quizzes between the Sofa Lofas and the Hardbacks. Competition rivalled that for the Ashes...

That summer Hilary and I were able to have a tour of Pisa and Florence which included visits to churches associated with Copernicus and Galileo. The latter came to realise the theory of oscillation whilst his attention wandered during a long sermon in the Cathedral and instead watched the swinging lantern of the latest work of art hanging from the ceiling. The long swings and the short swings took exactly the same time. Later using cannonballs of different weight dropped from the nearby Leaning Tower which hit the ground at the same time he discovered the law of falling bodies. In the church of Santa Croce in Florence we found his memorial on the wall complete with his bust holding a telescope, whilst below an insert of a globe with four smaller globes, which our Italian guide described as the Sun and planets. I put him right by pointing out that it represented Jupiter and his four Moons discovered on January 7th 1610 ! We also thought that astronomy seemed to be popular in Italy as we saw several telescope shops including one selling an 8" Newtonian with a 3" refractor as a guide scope: cost 3 MILLION lire - about £1300 !!

The first meeting at John Fletchers house took place in July that year and in October he hosted the first meeting of our Gloucester Branch. Later that month he and I ended up in a decaying Manor House in Cowley to address nearly 30 ladies of the Girls' Brigade some with babies (!) on the wonders of the Universe.

Another unusual day out was when Dick drove me up to Wellington in Shropshire for an auction at which we had been told was a 4.5 " refractor and a 77 mm refractor. Dick was interested in a pair of decent binoculars. On arrival we found that the larger scope had been neglected and had a scratch on the lens. The other telescope however seemed worth following up. It was midday when they came under the hammer after a series of items which would have made Bargain Hunt cringe ! The 77mm Swift telescope went for

£250 five times what Bernard back in Cheltenham would have paid, whilst the larger refractor went for £350, £150 more than I was willing to pay. Dick pulled out of bidding for the 11x80 binoculars when it reached £53 - they sold for £57. Later we discovered they were probably worth £400! We then visited a local Tax Office to see their latest wonder - a computer! I shall always remember Dick's scornful comment 'My God, is that what you've got. That went out SEVEN years ago!!!!'. no change there then from what the Revenue use today with such disastrous consequences..

As 1985 came in the CAS met to discuss plans for National Astronomy Week later that year. 21 ideas were proposed to involve the public! A special 14 page edition was issued with details of Halley's Comet events and data. A sub committee was set up to co-ordinate our activities.

Nick Day produced a LoGo used to this day whilst members pursued a project to photograph all the constellations.

Reading the Newsletters you realise just how active we had all been, giving talks, visiting conventions and meetings all over the country and attracting decent

visiting speakers even though our membership remained around 20. The Messier League had notched up nearly 700 observations. At the AGM of 15 March John Fletcher was made a Life member of the Gloucester Branch.

On April 20th John F hosted our first Star Party with members from Bristol AS and SW Cotswold AS. A terrific success, More were planned. But on 4th May the CAS had its lowest attendance - just five turned up to NOT view the Total eclipse of the Moon!!

Later that summer 'a young amateur astronomer' joined us - Jonathan Obee. I received a letter from a young Iranian astronomer asking for details of our Society, Andrew Packer and Bernard Abrams managed amazing results photographing the night sky and the Moon and all the while Dick Warden encouraged us to achieve even greater things.

We will continue the story of the CAS in the next MERCURY which will include the exciting events surrounding Halley's comet, which put us on the nationwide map, well and truly !!

TONY IRELAND

17 October 2010
Skywatcher 200P f/5.9
Fujifilm Finepix F480
Leon Crawley

" I mounted my Fuji-film Finepix F480 8.2 mp camera on a bracket pointing into the eye piece, then tracked the moon on the digital screen taking pictures wherever the moon filled the screen! There are no settings for film speed or length of shot etc, it is pretty much a classic point and pray type camera. This photo represents the best of the 30 or so photo's I took, but it did prove to me that even with a 'low' tech camera as entry level this that I am able to get some sort of image ..."



The CAS Imaging Challenge Projects

by Peter Cadogan

The snow prevented me from going away for the week before Christmas so I have spent some more time on this and have started to incorporate members' images on the web site. So please continue submitting your pictures through Ian Davies's image portal. You can also copy them directly to me if you like. I have put the latest version onto the web at the following address:

www.cadogans.myzen.co.uk/CASICP

There is a link to these pages from the main web site, under 'Observing'.

You should be able to see how it works, so please have a look at it and give me your thoughts about it. If this approach goes well, we could easily add some more projects in the future.

As far as submitting images is concerned, it might be sensible for us to comply with the file naming convention adopted by the BAA, which is described below. The actual image files (and thumbnail versions) will probably be renamed on the actual web site to make it easier to show the information. Please note that "object" should be one of the predefined mnemonics that are shown below. Images should ideally be no more than 900 pixels wide and 600 pixels deep and should not be more than about 1mb in size. Only some of the additional information will be shown (eg location)

Filenames

Please use the standard naming convention for image file names:

object_yyyymmdd_observer.img

or

object_yyyymmdd_hhmm_observer.img

object should be the designation, for example m31 for Messier 31.

observer should be your surname, for example potter, you may also add an initial if you wish.

yyymmdd is year month day and hhmm is hour and minute

img is the image format, gif, jpg etc. Putting this together, example image file names might be

moon_20080604_tough.jpg m1_20080811_holt.jpg

Image Sizes

Submitted images will be automatically resized to a maximum of 1024 pixels in the largest dimension, should the image be bigger than this. To ensure the integrity of your image you may wish to resize your image prior to upload.

Image Descriptions

Full details about the image must be supplied in the description to include:

Date/time of observation:

Location:

Equipment used:

Exposure details:

Processing details:

Narrative description is also welcomed.

Solar System

SUN	Sun
MOO	Moon
JUP	Jupiter
SAT	Saturn
MAR	Mars
VEN	Venus
MER	Mercury
URA	Uranus
NEP	Neptune
PLU	Pluto
AST	Asteroids
CMT	Comets
MET	Meteors
ZOD	Zodiacal Light
LUN	Lunar Eclipse
SOL	Solar Eclipse
OCC	Occultations
NLI	Aurora
ATM	Atmosphere
SPA	Spacecraft
EAR	Earth

Lunar Phases

1L	Day 1
2L	Day 2
3L	Day 3
4L	Day 4
5L	Day 5
6L	Day 6
7L	First Quarter
8L	Day 8
9L	Day 9
10L	Day 10
11L	Day 11
12L	Day 12
13L	Day 13
14L	Full Moon
15L	Day 15
16L	Day 16
17L	Day 17
18L	Day 18
19L	Day 19
20L	Day 20
21L	Day 21
22L	Last Quarter
23L	Day 23
24L	Day 24
25L	Day 25
26L	Day 26
27L	Day 27
28L	Day 28

Messier Objects

1M	Crab Nebula
2M	Messier 2
3M	Messier 3
.....	
110M	Messier 110

Constellations

AND	Andromeda	SER	Serpens
AQR	Aquarius	SEX	Sextans
AQL	Aquila	TAU	Taurus
ARI	Aries	TRI	Triangulum
AUR	Auriga	UMA	Ursa Major
BOO	Boötes	UMI	Ursa Minor
CAM	Camelopardalis	VIR	Virgo
CNC	Cancer	VUL	Vulpecula
CVN	Canes Venatici	ANT	Antlia
CMA	Canis Major	APS	Apus
CMI	Canis Minor	ARA	Ara
CAP	Capricornus	CAE	Caelum
CAS	Cassiopeia	CAR	Carina
CEP	Cepheus	CEN	Centaurus
CET	Cetus	CHA	Chamaeleon
COM	Coma Berenices	CIR	Circinus
CRB	Corona Borealis	COL	Columba
CRV	Corvus	CRA	Corona Austrina
CRT	Crater	CRU	Crux
CYG	Cygnus	DOR	Dorado
DEL	Delphinus	FOR	Fornax
DRA	Draco	GRU	Grus
EQU	Equuleus	HOR	Horologium
ERI	Eridanus	HYD	Hydrus
GEM	Gemini	IND	Indus
HER	Hercules	MEN	Mensa
HYA	Hydra	MIC	Microscopium
LAC	Lacerta	MUS	Musca
LEO	Leo	NOR	Norma
LMI	Leo Minor	OCT	Octans
LEP	Lepus	PAV	Pavo
LIB	Libra	PHE	Phoenix
LUP	Lupus	PIC	Pictor
LYN	Lynx	PSC	Pisces
LYR	Lyra	PSA	Piscis Austrinus
MON	Monoceros	PUP	Puppis
OPH	Ophiuchus	PYX	Pyxis
ORI	Orion	RET	Reticulum
PEG	Pegasus	SCL	Sculptor
PER	Perseus	TEL	Telescopium
SGE	Sagitta	TRA	Triangulum Australe
SGR	Sagittarius	TUC	Tucana
SCO	Scorpius	VEL	Vela
SCT	Scutum	VOL	Volans

Theta Orionis and the Great Nebula in Orion – by Rik McRae



At an estimated distance of 1600 ly, this is best emission nebula in the northern sky, fantastic viewing under all conditions with bright wings sweeping to the east and south. Highlighted by the Trapezium cluster which contains six stars, the bright portion surrounding Theta probably has the highest surface brightness of any HII region in the sky with an "electric" appearance. Dark streaks and a dark wedge = "fish's mouth" intrudes on the NE side.

This was taken on 24/11/2010 at 23:50 hrs from my back garden in Quedgeley using a SW Explorer 150P f/5 and an unmodified Cannon 300D at prime focus. Imaging was 7x 30s @ ISO1600, 3x Darks + Bias, No Flats (hence the horrible gradient!). Stacking and alignment was done using Deep Sky Stacker with post processing in Photoshop elements 7. (*M42_20101124_2350_mcræe.jpg*)

"In for a penny!" - Or a beginners guide to getting your feet wet with Astronomy

by Leon Crawley

"You might as well have it" my sister exclaimed, we can't use it where we are, we are in too much of a valley.

My brother in law put the tangle of aluminium and tubes on the carpet in front of me and without delay, with the expertise of a master builder, magically produced a telescope bearing the name Jupiter by Meade.

"You know about stars and stuff so you should be able to use it." my sister helpfully advised, thinking the few books about astronomy on my book shelves were all the knowledge I would need. Forgetting the fact that the use of a sextant for navigation at sea is slightly different to serious observing, and I had not done that for real.

A few packets of biscuits and cups of coffee and tea later, and the donors departed leaving me the proud owner of an actual telescope!

"Well that should help keep you busy," Jill, my wife gleefully retorted, knowing full well my propensity for diving in to excess on first exposure to a new subject. I must say at this point I am retired because of PPMS, Primary Progressive Multiple Sclerosis. It is in fact the breakdown of the myelin sheath around connections within the brain shorting out signals to various parts of the body. I am sure you wanted to know that, but I thought the reasons for any strange behaviour I perform should be accounted for early on.

Back to the telescope. I memorised the manual that evening, it was only 33 pages after all. The telescope it transpires was a 70mm Refractor, with a GOTO system which was supposed to magically move the telescope around the sky to point at different bits of that mass of lights we know as the stars. After marvelling at the coding required to do that, together with the way the database must be stored (I was a computer programmer for over 30 years), I put the batteries in the beast. A sound similar to that of electric hair clippers emitted from the black box holding the telescope as it slewed, see I am learning, waving around like a cats tail as it watches an approaching target. Flashing red scrolling text appeared on an LED control.

First thing was to slow its scrolling speed, it had taken several minutes to work out what was being said.

"Do you agree not to look at the sun?" it flashed, "Do you agree not to look at the sun?", "Do you agree not to look at the sun?", "Do you agree not to look at the

sun?"

Erm, sure I read about that in the manual, I thought. It's amazing how quickly you can forget what you have just read, well it is for me.

"It might be easier to read at night." Jill advised, she is very rarely wrong. "It will be dark after we have eaten, you can take it outside and try it again then."

How can you refuse a meal? Spookily after we had eaten it was dark.

I moved the telescope and tripod outside onto the 'patio'. Remember, I am still learning, I knew nothing about letting the telescope 'cool' down to the outside temperature, although I had established it was difficult to view anything directly through the windows, especially with the indoor lights on. There was nothing for it but to brave the wild outside, at night, the wild mainly being the neighbours wondering why I was using a telescope to look in their windows. They got bored quickly and decided just to keep their curtains firmly shut, which had the benefit of cutting down the light upsetting my 'night vision', learning again! However, I still had the lights on in our house, after all, how was I to see what was happening with no lights? So I had the buzz words but not the application of the rules.

The telescope was again brought to life, the hair clippers waved the cats tail, the red LED flashed.

"Do you agree not to look at the sun?", "Do you agree not to look at the sun?"

Does it not know it's dark? Apparently not. I agreed not to look at the sun, and then had to tell it where I was! So back into the house.

"Where's Lola?" I cried out to Jill.

"In my car." The reply came back.

We name all our electrical devices that show any sign of intelligence. Lola was a GPS, I don't remember how she came to get that name, but I am sure the Kink's song of the 60's came into it. Sad or what.

Lola provided our Latitude and Longitude. Believe it or not this is the first time I have had need to find out what these values were, and since then it is surprising how useful it has been mainly for use in things like Google Earth etc.

"Date? Time?"

These were entered. Jup started slewing again. It stopped expectantly. The red led asking if the polar star was visible.

At this point I must explain my understanding of the way telescopes work. Telescopes use eyepieces! It is not because they have some disability, or because of some historic association with Piracy on the high seas. An eyepiece is in fact a small tube, in this tube are a collection of lens. The tube containing the eyepiece lens is intended to fit in a hole in the side of the telescope. It is almost as though the telescope itself is long monacle, and to change the magnification of what you see through the telescope you put different eyeballs in! The eyeballs, sorry eyepieces, come in different strengths, but the telescope is always the same strength!

This I find strange, and it appears a common problem with beginners, the telescope only has a fixed magnification. So when they say on the television that the Hubble telescope that is in space is one of the most powerful in the world, do they mean it has better eye-pieces? I have yet to find the answer to that!

Eyepieces themselves have some anomalies to throw at you. Unlike car engines where the bigger the c.c. of an engine the more powerful it is, with eyepieces, less is more, so that a 25mm eyepiece is actually less powerful than a 9mm! There are some deep technical reasons for this! (Sorry if this sounds like the parents excuse for avoiding biological discussions with their 6 year olds, while they hope junior might forget the question in the intervening years!)

Back to being outside.

I had established earlier during the day, by pointing Jup out of the window, that by using the supplied 9mm eyepiece, I had trouble focusing the telescope on the neighbours washing line pegs, with the 25mm I could at least focus, a bit. Focusing is carried out, by the way, by twiddling with a dial near the hole the eyepiece goes in.

The 25mm eye piece in place, Jup had happily slewed to point directly at the house, two metres from the house was obviously too close. A wall of the house would have filled the view if I could have focused on it.

A curse or two and I powered off, using the Jup as a giant walking stick I made my way up the 3 steps to our lawn, an area mainly enjoyed by our dogs whose enthusiastic jaunts have cut trenches in strange irregular patterns. The upshot of this is that flat areas are in short supply. However, after adjusting the legs of the tripod, and using a 3ft builders spirit level I got some semblance of level. The 'scope' has an intriguing dial

on the side to give its 'Alt' position, yet more learning. I think Alt actually is an astronomic term for up and down. The corollary of Alt, is AZ or Azimuth, this means sideways in non-astronomic terms, but strangely it is also referred to as 'Right Azimuth', why 'Right' and why not 'Left' I have yet to discover. As a left handed person it does rather smell of the usual anti lefty discrimination we often get, but that is another subject.

Back to the adjustment, I had to first align the telescope to the Polar star, more learning, and this was the one pointed to by the right hand side of the pan making the big dipper. I actually knew where the big dipper was from my childhood. Jill, a Norfolk lass, calls the big dipper 'Jack's Wagon', I am sure it also has many other names. Having 'visually sighted the Polar star I undid the big dials holding the telescope in place and moved the little aiming scope on top of Jup so that it pointed at it. The aiming scope is the little telescope like the scope on a rifle, and likewise, it is used for aiming the main telescope!

After tightening the adjusting dials, inserting the 25mm eyepiece, I used the left and right buttons to slew the blurred image I could see into the middle of the view.

A sound similar to one of those modern symphonies seemed to fill the neighbourhood. Was Jup talking to me in some alien form of speech, or was it similar to the moan's one gets when your car has decided the tea cup of oil remaining in the engine is no longer sufficient? It was the later. I had forgotten the warning in the manual not to tighten the dials too much, with the result that the little engines valiantly trying to wind on the equally small plastic gears, were now artistically rearranging the gears into something Picasso would have been proud of. Although in fairness to myself, and anyone who had previously encountered a telescope such as Jup, the Meade DS-2000 series does have a long track record of delicate mechanics.

I was out here, in the midst of summer, dressed in all my winter glory with a tube on a tripod. So what could I see if I aimed it myself? Lots of points of light! What they were called, I had no idea. In the distant, rarely used and cobweb strewn areas of my mind, I seemed to remember there were some shapes of 'Gods', 'Beasties', and other Ancient Greek anomalies in the sky. So, a happy hour or two was spent trying to establish what groups of lights could possibly be what. Not a single pattern other than that of the Dipper showed itself!

So back indoors, and the following morning, a surf on the web started a long campaign to see if there was help out there ...



Astronomers Stumble onto Huge Space Molecules

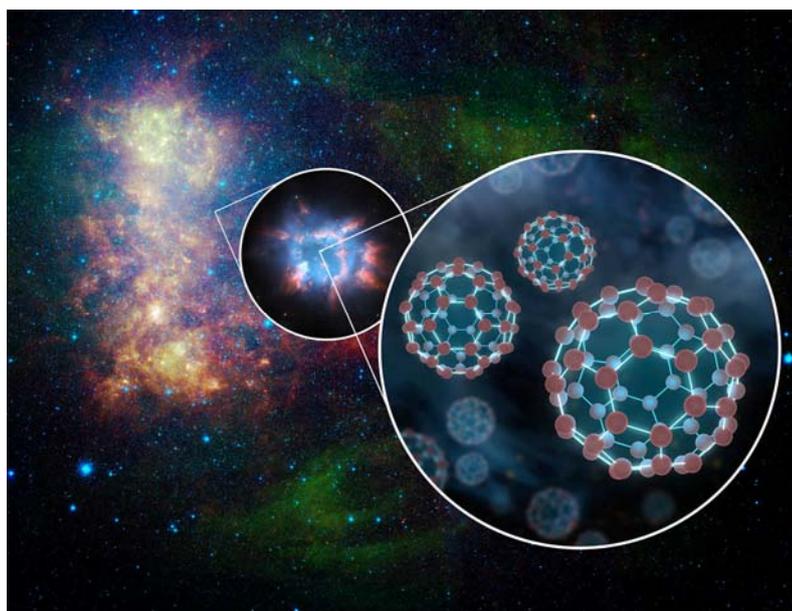
by Trudy E. Bell and Tony Phillips

Deep in interstellar space, in the swirling gaseous envelope of a planetary nebula, hosts of carbon atoms have joined together to form large three-dimensional molecules of a special type previously seen only on Earth. Astronomers discovered them almost accidentally using NASA's Spitzer Space Telescope.

"They are the largest molecules known in space," declared Jan Cami of the University of Western Ontario, lead author of a paper with three colleagues published in *Science* online on July 22, 2010, and in print on September 3.

Not only are the molecules big: they are of a special class of carbon molecules known as "fullerenes" because their structure resembles the geodesic domes popularized by architect Buckminster Fuller. Spitzer found evidence of two types of fullerenes. The smaller type, nicknamed the "buckyball," is chemical formula C₆₀, made of 60 carbon atoms joined in a series of hexagons and pentagons to form a spherical closed cage exactly like a black-and-white soccer ball. Spitzer also found a larger fullerene, chemical formula C₇₀, consisting of 70 carbon atoms in an elongated closed cage more resembling an oval rugby ball.

" 70 carbon atoms in an elongated closed cage more resembling an oval rugby ball"



Superimposed on a Spitzer infrared photo of the Small Magellanic Cloud is an artist's illustration depicting a magnified view of a planetary nebula and an even further magnified view of buckyballs, which consist of 60 carbon atoms arranged like soccer balls.

Neither type of fullerene is rigid; instead, their carbon atoms vibrate in and out, rather like the surface of a large soap bubble changes shape as it floats through the air. "Those vibrations correspond to wavelengths of infrared light emitted or absorbed—and that infrared emission is what Spitzer recorded," Cami explained.

Although fullerenes have been sought in space for the last 25 years, ever since they were first identified in the laboratory, the astronomers practically stumbled into the discovery. Co-author Jeronimo Bernard-Salas of Cornell University, an expert in gas and dust in planetary nebulae, was doing routine research with Spitzer's infrared observations of planetary nebulae with its spectroscopy instrument. When he studied the spectrum (infrared signature) of a dim planetary nebula called Tc 1 in the southern-hemisphere constellation of Ara, he noticed several clear peaks he had not seen before in the spectra of other planetary nebulae.

"When he came to me," recounted Cami, an astrophysicist who specializes in molecular chemistry, "I immediately and intuitively knew it I was looking at buckyballs in space. I've never been that excited!" The authors confirmed his hunch by carefully comparing the Tc 1 spectrum to laboratory experiments described in the literature.

"This discovery shows that it is possible—even easy—for complex carbonaceous molecules to form spontaneously in space," Cami said. "Now that we know fullerenes are out there, we can figure out their roles in the physics and chemistry of deep space. Who knows what other complex chemical compounds exist—maybe even some relevant to the formation of life in the universe!"

Stay tuned!

Learn more about this discovery at <http://www.spitzer.caltech.edu>. For kids, there are lots of beautiful Spitzer images to match up in the Spitzer Concentration game at <http://spaceplace.nasa.gov/en/kids/spitzer/concentration>.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Society Loan Equipment

The following equipment is available on loan to society members. To save the current holders of these items from having to bring them along to every meeting, they will now only be made available by pre-booking:



Meade MySky (A)

This is a gadget that helps the beginner navigate around the night sky.



Meade ETX 90 (A)

This is a small telescope that comes with its own tripod and was kindly donated to the society by Tony Ireland.



10x50 binoculars (A)

A fine pair of binoculars and a sturdy tripod with adaptor. Both of these items were bequeathed to the society by the late Mary Hilsden.

For items marked A - please contact Andy Szewczuk via email (andrewandkarensz@tiscali.co.uk)



Manual equatorial mount on a sturdy tripod (B)

Kindly donated by Angela Cresswell, this heavy duty mount could be very useful if you currently have a telescope (eg an 8") without such a mount.

For items marked B - please contact Peter Burgess via email (p-w-burgess@tiscali.co.uk)



Celestron C8+ (C)

This fine telescope was very kindly given to the society by Andy Stephens and will always be available for viewing at monthly meetings, clear skies permitting. However it can be borrowed between meetings if required.

For items marked C - please contact Peter Cadogan via email (peter.cadogan@zen.co.uk)



Phenix 127 (D)

This 5" f/9.4 achromatic refractor offers excellent views of the moon and planets. It was kindly donated by Alan Parker. As for the C8+ above, this scope should always be available for viewing at monthly meetings but can be borrowed between meetings.

For items marked D - please contact Rik McRae via email (rikmcrae@yahoo.co.uk)

Monthly Meetings and Events

8th January 2011

6pm–10pm, Shurdington

Planetary viewing evening open to the public followed by illustrated talks on the planets

Mark Gibbons & Callum Potter

12th March 2011

Radioastronomy

Norman Pomfret, member of BAA's Radio Astronomy Group

9th April 2011

AGM

15th January 2011

6.30pm–8.30pm, Lodge Park, Aldsworth

Public viewing evening and illustrated talk

12th February 2011

Active Galaxy Jets

Professor Daina Worrall, Bristol University

Directions to Shurdington Century and Millennium Halls

From Cheltenham

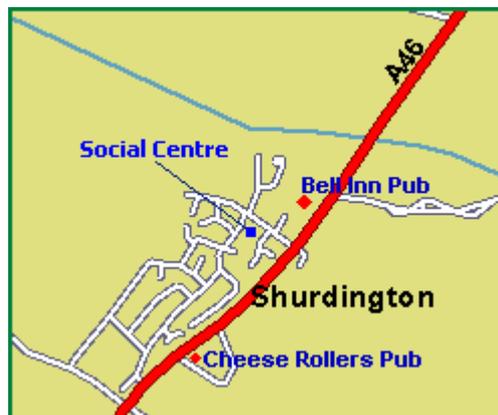
Follow the A46 towards Bath/Stroud which passes through Shurdington. Turn right into Church Lane which is close to a Pelican Crossing, then 2nd left into Bishops Road. Century and Millennium Halls are immediately on the left.

From Gloucester

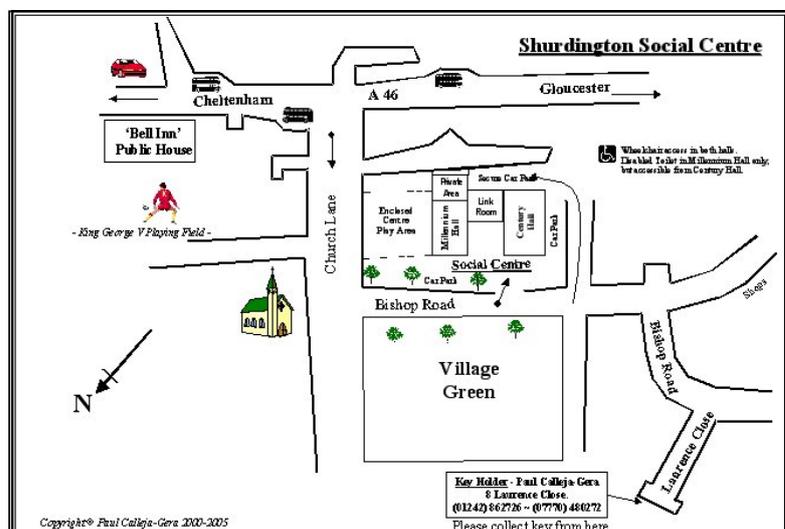
Follow the A417 towards Cirencester. At the roundabout with the A46 turn left towards Cheltenham. This road passes through Shurdington. Turn left into Church Lane near a Pelican Crossing, then 2nd left into Bishops Road. Century and Millennium Halls are immediately on the left.

From Cirencester

Follow the A417 towards Gloucester. At the roundabout with the A46 turn right towards Cheltenham. This road passes through Shurdington. Turn left into Church Lane near a Pelican Crossing, then 2nd left into Bishops Road. Century and Millennium Halls are immediately on the left.



“Meetings of the society are held monthly on the second Saturday of the Month, starting at 7.45 p.m.”



The Cotswold Astronomical Society serves amateur astronomers in the Cotswold area centered on Cheltenham and Gloucester. Local membership reaches to Swindon, Evesham and Worcester too.

We welcome anyone interested in astronomy. Our members come from all walks of life and range from beginners just starting out to experienced amateurs with a wealth of knowledge. Members have varied interests from cosmology to telescope making, from lunar and planetary observing, to supernova hunting.

Not all members are active observers, and the society caters equally well for the armchair or internet astronomer.

We're on the web!

www.cotswoldas.org.uk
info@cotswoldas.org.uk

The Cotswold Astronomical Society was established in 1982 and is a member of the Federation of Astronomical Societies.



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Links

Weather Check

<http://>

www.jfmto.pwp.blueyonder.co.uk/CURRENT_Vantage_Pro.htm

Astronomy Picture of the Day

<http://antwarp.gsfc.nasa.gov/apod/astropix.html>

You may choose to receive your Mercury in PDF form, this will help to keep down costs.

The next edition will be in March. Please ensure material for publication reaches me by the end of February.

Thank you, Rik