



Letchworth &  
District  
Astronomical  
Society

# ANDROMEDA

## The LDAS Newsletter

### October 2009



## Galaxy cluster smashes distance record

**A group of galaxies has been seen at a record distance from Earth thanks to the assistance of Bristol scientists.**

Joining forces with ground-based telescopes, NASA's Chandra and Spitzer space telescopes have uncovered the most distant galaxy cluster yet at 10.2 billion light years, beating the previous record holder by one billion light years. The cluster is named JKCS041

"It's like finding a *T. Rex* fossil that's much older than any other known," said Dr Ben Maughan, from the University of Bristol.

He added: "One fossil might just fit in with our understanding of dinosaurs, but if you found many more you would have to start rethinking how dinosaurs evolved. The same is true for galaxy clusters and our understanding of cosmology."

Galaxy clusters are the Universe's largest objects bound by gravity, and experts hope that the findings will help them understand better how the cosmos has changed over time.

JKCS041 is at the farthest point at which scientists think galaxy clusters can exist in the early Universe.

Stefano Andreon, of the National Institute for Astrophysics in Milan, Italy, said: "This object is close to the distance limit expected for a galaxy cluster. We don't think gravity can work fast enough to make galaxy clusters much earlier."

Scientists have detected what they believe to be the light from individual galaxies out to about 13 billion light-years. A group of telescopes this year also caught what was thought to be the flash from the cataclysmic explosion of a giant star at a similar distance.

The paper describing the JKCS041 results will appear in a forthcoming issue of the journal *Astronomy and Astrophysics*.

JKCS041 was first identified in 2006 by the United Kingdom Infrared Telescope (UKIRT), revealing component galaxies dominated by old red stars. It's record-breaking distance was determined from optical and infrared measurements by the UKIRT, the Canada-France-Hawaii Telescope in Hawaii, and NASA's Spitzer Space Telescope. Chandra added the final piece of evidence – hot gas detected between the galaxies – proving that JKCS041 is indeed a true cluster, and not one that is still forming.



JKCS041 was first detected in 2006 with infrared observations. In this Chandra X-ray image, X-ray emission is shown in blue.

Image: NASA/CXC/INAF/S.Andreon et al.

The observations also ruled out the possibility of the galaxies distributed along the same line of sight, and the extent and shape of the X-ray emission, combined with the lack of a central radio source, argue against the possibility that the X-ray emission is caused by scattering of cosmic microwave background light by particles emitting radio waves.

The hunt is now on for similar distant clusters. Previous record holder XMMXCS J2215.9-1738 was discovered by ESA's XMM-Newton space telescope in 2006 at 9.2 billion light years, but astronomers need more case studies to thoroughly test cosmological models, such as the nature and prevalence of dark matter and the destiny of our Universe.

From the BBC Science Website and Emily Baldwin, Astronomy Now

# Letchworth & District Astronomical Society Newsletter – October 2009



Articles submitted for inclusion in this Newsletter are welcomed, and should be sent, in **electronic format**, to the editor, who will then consider them for publication.

The editor is Jerry Stone. E-mail: [editor@ldas.org.uk](mailto:editor@ldas.org.uk)

**Articles for the next issue must be submitted by Saturday 14<sup>th</sup> November 2009.**

Opinions expressed by the contributors are not necessarily those of the Editor or the Committee.

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## Introduction

Hi everyone,

Those of you who were at the September meeting will have heard that the society has been given a grant of £2,500 by local councillor Terry Hone from his Locality Budget. This is a fund available to assist local organisations who offer activities to the community, and we are delighted to have been allocated this amount, which is actually 25% of the total on offer! Many thanks to Robert Townsend for finding out about this fund and for submitting the application on behalf of the society.

We have also submitted an application to the Letchworth Garden City Heritage Foundation. You can read more about this - and what we plan to do with the funds - on page 3.

Following the announcement in the last issue about Ian Dunbar stepping down as Dark Skies Officer, I am very pleased to announce that at the end of Bob Mizon’s talk at the September meeting, John Flook has volunteered to take over the post, for which we are very grateful. One of John’s first tasks will be to write a letter of appreciation with regard to the new street lights that are being installed, which have full cut-off hoods, greatly reducing the light scatter up into the sky.

We still need someone to take over from Richard Benson as Membership Secretary, so we would like to hear from anyone willing to take on this role. We would also like someone to take over as Newsletter Editor. If you are interested, then please let me know and I can give you further details.

Full information about all of our events is available on our website – [www.ldas.org.uk](http://www.ldas.org.uk) – so look through all of our activities and make sure that you book your places at [events@ldas.org.uk](mailto:events@ldas.org.uk)

I look forward to seeing you at our October meeting on the 28<sup>th</sup>, which will see the return of Nial Tanvir from the University of Leicester. Please note that this meeting is at the Spirella Building - See page 4.

Clear skies,

Jerry

**Jerry Stone FBIS FRAS**  
Chairman, Letchworth & District Astronomical Society

LDAS is affiliated to :

- The British Astronomical Association
- The Federation of Astronomical Societies
- The Society for Popular Astronomy

IYA programme supported by the Royal Astronomical Society



## SOCIETY MATTERS

### ★ Adults' Astronomy Workshop : Friday November 13, 19:30

The final Adults' Astronomy Workshop of the year will be on Friday November 13. These sessions are intended as a mixture of theory and practical observing. We meet at 7:30 pm in the "Exhibition Barn" at the Standalone Farm Centre (opposite the main barns that we use for the Public Star Parties). A theory session will be followed by some observing – subject to clear skies.

At this final session for 2009, Rosemary Anthony will give an introduction to astronomical sketching. I am sure that many of you have been awed by Dale's superb drawings. Now here is an opportunity for you to start to learn how you can do this yourselves. Of course we don't guarantee that you'll be producing work of Dale's standard, but we'll get you started - what you do next is up to you!

If you would like to come along, the session is free to members, but places are limited and must be booked in advance. **Simply drop a line to [events@ldas.org.uk](mailto:events@ldas.org.uk)** Non-members can attend at just £5.

### ★ Young Persons' Astronomy Workshop : Saturday November 14, 19:30

We have also been running workshops for young observers, and welcome anyone up to the age of 16 to join us at these sessions. Again, the sessions are free to members and £5 for non-members. An accompanying adult can attend at no charge. **Write to [events@ldas.org.uk](mailto:events@ldas.org.uk)**

The final session of the year will be on Saturday November 14, when we will be looking at observing the Moon, and previewing the constellations that can be seen through the winter.

For both the Adults and Young Persons sessions, if there is a specific topic that you would like to have covered, then please let me know.

### ★ Meteor Watch : Monday & Tuesday November 16 & 17, from 20:00

Unfortunately the sky was cloudy for the Orionid meteors, but we're hoping for better things for the Leonids - one of the best-known meteor showers of the year. This time the peak practically coincides with a New Moon, so there will be no lunar glare to detract from the display and we will have a dark sky for our observations. The main peak is on the night of the 17th, but due to the uncertainty of the weather, we will be going for Monday 16th as well as the Tuesday.

Bring along a chair or recliner, and perhaps a blanket, plus nibbles and a hot drink to keep you going. Don't forget to wear warm clothing! This event is free. See page 8 for more details.

**If you can help in any way with any of these events, then please write to [events@ldas.org.uk](mailto:events@ldas.org.uk)**

Full details, with a list of dates of all events, can be found on our website at [www.ldas.org/IYA.html](http://www.ldas.org/IYA.html)

### ★ Observatory Upgrade - A Special LDAS Project

We have been considering ways of improving facilities in the observatory for some time, and there are two areas in particular that we have been looking at in detail. The first is a replacement for the existing 10" reflector. Our ideal new scope would be a 14" modern instrument, preferably computerised. We would also like to be able to fit a video camera to it, with the image being output to a monitor. This would allow several people to view the image at the same time, rather than queue up for a short time at the eyepiece. This would be especially helpful at our public star parties, and when we have groups visiting the observatory.

This would require an improved power supply, and we have come up with a specification that would also enable us to run laptops and low-level lighting. By coincidence, we have recently learned of a Meade LX200 14" scope being offered second-hand which would meet our requirements, and of a supplier of a power system which matches our needs. The total cost is expected to be around £7,200

As already announced, we have been granted £2,500 by local Councillor Terry Hone from his Locality Budget, and we have also applied for a grant from the Letchworth Garden City Heritage Foundation, who can fund up to 50% of a local group's project. The society would have to fund the remainder of the cost.

This is obviously a very exciting time for the society, and we will keep you updated with news on this project.

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## LDAS Meetings and Events

Here is a listing of events for the next few months. Our full listing is on our website.

★ A star indicates that places at the event must be booked in advance. There is a fee for some events.

Key:  LDAS IYA special event     Observing event     Observing in towns     Monthly meeting  
 LDAS members' event     Publicity event     IYA & other science events

Event	Day	Date	Time	Notes
IYA major event	Sat - Sun	Oct 24 - Nov 1		Autumn Moonwatch Week ☉ - ☊
October Meeting	Wed	Oct 28	19:30	Nial Tanvir Note: This meeting is at the Spirella Building and not at Plinston Hall.
Astronomy Workshop	Fri	Nov 13	19:30	+ Members' Observing. At Standalone Farm ● ★
Young Persons' Workshop	Sat	Nov 14	19:30	At Standalone Farm ● ★
Meteor Watch	Mon & Tue	Nov 16 & 17	From 20:00	Leonids ●
IYA major event	Thu - Sun	Nov 19 - 29		Schools' Moonwatch Week ● - ☊
November Meeting	Wed	Nov 25	19:30	Paul Hewett
Observing session	Fri	Nov 27	19:30	At Standalone Farm ☊
December Meeting	Wed	Dec 9	19:30	AGM and annual Astro-Quiz
Observing session	Fri	Dec 18	19:30	At Standalone Farm ●
Meteor Watch	Tue	Dec 22	From 20:00	Ursids ●

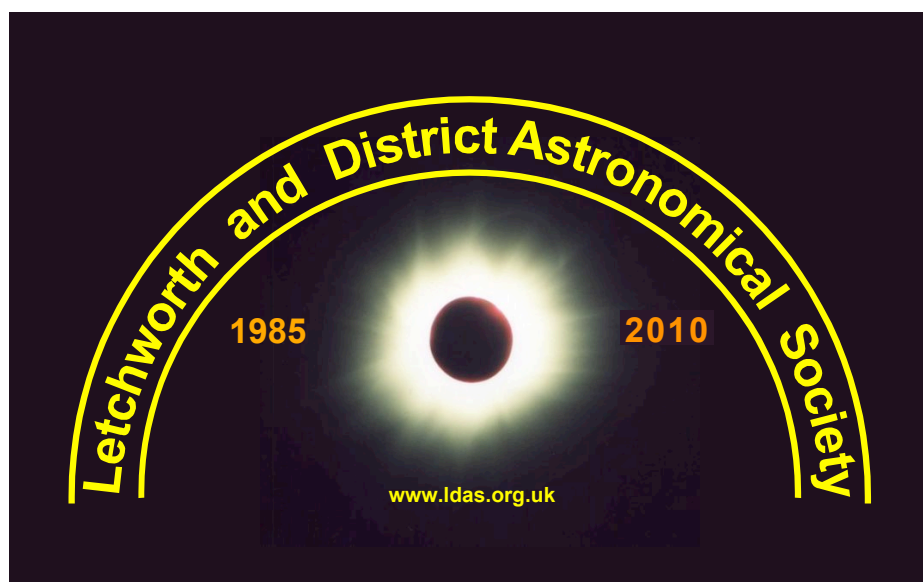
- Members are welcome to come along for observing sessions when workshops are taking place, but if they wish to take part in the workshop as well, then **they must book places in advance** (even though they are free), as places are limited. Write to [events@ldas.org.uk](mailto:events@ldas.org.uk)

**Please note that this month's meeting is being held in the Ballroom at the Spirella building.**

The entrance to the Spiralla car park is in Icknield Way. In relation to Plinston Hall, head along Broadway past Morrisons towards the railway station. At the end of Broadway, turn left into Station Place then right at the mini-roundabout into Bridge Road and go over the bridge. Take the first left into Icknield Road and then the entrance to the car park will be the next left.

**We are already looking forward into 2010, which will be the society's 25th anniversary.**

What would you like to see us doing next year? Do you have any ideas for speakers, trips, observing activities or anything else? Please write to me, or give me a call on 01438 712000.



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## Events for October / November 2009

★ = Places must be booked    ☉ = Help required    ▼ = Limited places

October		
Sun 25		
Mon 26		Moon First Quarter
Tue 27		Jupiter and Neptune 3° south of the Moon
Wed 28	19:30	<b>October Meeting.</b> At Plinston Hall : <b>Nial Tanvir</b>
Thu 29		
Fri 30		Uranus 6° south of the Moon
Sat 31	18:00	<b>“Ghosts and Galaxies” Halloween Event.</b> At Standalone Farm Centre ★ ▼ ☉
October		
Sun 1		
Mon 2		Full Moon
Tue 3		
Wed 4		
Thu 5		Mercury superior conjunction
Fri 6		
Sat 7		
Sun 8		
Mon 9		Mars 3° north of the Moon. Moon Last Quarter
Tue 10		
Wed 11		
Thu 12		
Fri 13	19:30	Saturn 8° north of the Moon <b>Observing Session, plus Adults’ Astronomy Workshop.</b> At Standalone Farm Centre ★ ▼
Sat 14	19:30	<b>Young Persons’ Astronomy Workshop.</b> At Standalone Farm Centre ★ ▼
Sun 15		
Mon 16	From 20:00	<b>Meteor Watch</b> Leonids meteors. At Standalone Farm Centre. New Moon
Tue 17	From 20:00	<b>Meteor Watch</b> Leonids meteors. At Standalone Farm Centre
Wed 18		
Thu 19		
Fri 20		
Sat 21		
Sun 22		
Mon 23		
Tue 24		Moon Last Quarter. Mercury 3° south of the Moon
Wed 25	19:30	<b>November Meeting.</b> At Plinston Hall : <b>Paul Hewett</b> of the IoA
Thu 26		Uranus 6° south of the Moon
Fri 27		
Sat 28		
Sun 29		
Mon 30		

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### The LDAS Annual Star-B-Que

Over 20 members gathered at Standalone on September 26 for our annual combination Star Party and Bar-B-Que - otherwise known as the Star-B-Que! Since coining this name for the first one back in 2005 I have seen it used by other societies in reports on the internet. Maybe I should have registered the name ...

As we always hold this event close to the Autumn equinox, John Flook suggested that we refer to it as the EquiNosh!

We set up half a dozen disposable barbeques and by around 5:30 the food was cooking away nicely. I had brought along some salad items and a supply of drinks and we all had a great time.

Then people started to get their scopes set up for the evening's viewing. We were treated to a bonus sighting as the International Space Station made a pass fairly low in the south-west. The Moon was nicely placed and so was Jupiter.

Later on, people were searching for some deep-sky objects. Robert Townsend had brought his large Dobsonian and found an object that was particularly appropriate for the evening - NGC 7026, otherwise known as the Cheesburger Nebula!

All in all it was a great evening.

Our next social event is our famous annual astronomy quiz, which follows our AGM in December. New members please note that the December meeting is on the 2nd Wednesday, December 9th, and not on the 30th.

### The October Public Star Party

On Saturday we held our last Public Star Party of the year, and it turned out to be a great finale.

The weather on the previous few days had been pretty bad and the forecast for Saturday had been for rain during the day and patchy cloud. However on Friday the forecast was updated to show clear skies after 7pm. Both parts turned out to be fairly accurate. Unfortunately the rain meant that we could not have our usual Public Astronomy Session during the day to publicise the evening's event. This was a blow, as we know from previous experience that quite a number of people who come along to the star parties do so as a result of seeing our display. The other problem was that those who did know about the event may have been unsure about going along because of the weather.

As it turned out the sky started to clear by late afternoon, and when I arrived at Standalone at 5:30 it was completely clear. John Flook was the only other member present at that time, and the two of us set to work getting the place ready. About 6:15, other members arrived and by 7:15, when the first visitors turned up, we had things pretty well set.

By this time the clouds had returned and this was the pattern through the evening. Fortunately they were generally individual clouds rather than an overall haze, which meant that we had clear areas which allowed our observing to go ahead.

The numbers at the observatory grew quickly, and Tom and I took out the 10" Schmidt-Newtonian onto the hardstanding, and Tom manned the scope through the evening. Nick was manning the 5" refractor by the gate at the end of the path. From this position, visitors could see the Moon across the field without any obstruction. Meanwhile Robert was in the observatory with the main 10" scope.

Whilst people were waiting for their turn at one of the scopes, I gave a tour of the sky, using a green laser pointer to pick out some of the stars and constellations. We let the visitors have plenty of time to look at the Moon and Jupiter before starting the talk in the barn at 8:45. This went down very well, and afterwards they went into the next-door barn for refreshments and to buy some of the astronomical items that were available.

We gained three new members during the evening which takes our total to 110, which I believe is the highest whilst I have been with the society.

Thank you to everyone who helped out on the evening - we could not have done this without you.

Our next Public Star Party is provisionally set for March 13, 2010, which will be during National Science & Engineering Week. Put it in your diaries ...

### September Meeting Review

#### “The Campaign for Dark Skies - Encouraging Star Quality Lighting”

By Bob Mizon

Bob Mizon is one of eleven regional co-ordinators for the Campaign for Dark Skies (CfDS). He lives in Dorset, near to Swanage, which enjoys some of the darkest skies in England, even though it is close to Bournemouth, a town of half a million people. He can see stars down to magnitude 5.5, as well as the Milky Way and dark nebulae. He emphasised that the CfDS wants to praise good lighting practices rather than complain about bad lights.

Mr. Mizon divided his talk into two parts, ten Frequently Asked Questions (FAQs) and an update on the campaign.

The first FAQ is, ‘What is light pollution?’. It is light that is wasted by going upwards into the sky rather than downwards, where it is wanted. Light that is directed above the horizontal, particularly at low angles, is scattered from aerosol particles and water droplets in the atmosphere, and as a result is reflected downwards towards the observer as skyglow. Over-bright and poorly aimed lights cause glare, which is the most dangerous aspect of light pollution. Stray light that enters adjoining premises (for example, from security lights) is light nuisance, and light trespass is caused by people maliciously shining lights into other people’s premises.

The second question is ‘Why the fuss?’, with the implication that only a minority (i.e. astronomers) are affected by light pollution. However, everybody has the right to see the night sky without hindrance, and most people enjoy the experience of seeing it. Moreover, most of the people who are troubled by light nuisance and glare are not astronomers.

The third question is ‘Surely we can’t turn all the lights off. In fact, the CfDS does not want to turn off a single necessary light. What is needed is the right amount of light, directed where it is needed. Shielding and good design of lights, and sensitivity to their effects on other people, will lead to a solution of the problems of light pollution and light nuisance.

The fourth question is, ‘Don’t we need lights to prevent crime?’ There is little reliable evidence that the presence of lights deters criminals. Most break-ins occur during the daytime, and many vandals and burglars target brightly lit premises; criminals are deterred by the presence of a dog, by signs that a house is occupied and by external alarms and CCTV cameras rather than by outside lights. It is much easier to see malefactors if lighting is subtle; glare blinds potential witnesses and creates deep shadows where criminals can hide. One school of thought states that darkened premises are actually safer, and that a torch flashing in the dark is more suspicious than a person moving in a brightly lit space. The booklet *Blinded By The Light* points out (page 34) that astronomers observing under dark skies can themselves be a deterrent to crime, since they can report suspicious behaviour whereas security lights cannot. Moreover, the person who benefits most from a back-garden light at 3 a.m. is likely to be the burglar sorting out his tools under the light rather than the house-owner asleep indoors or a police officer several miles away.

As specific examples, in Wimborne (Dorset), most trouble occurs in the brightly lit town centre, and in Theydon Bois (Essex), where there are no street lights, there is little crime and no public desire for increased lighting.

The fifth question is, ‘How much energy is wasted?’. In 1990, the British Astronomical Association calculated that road lights in the UK waste >£50 million annually, and in Europe 1.5 billion Euros is wasted every year on lighting up the sky.

The sixth question is, ‘Is light nuisance against the law?’. The Clean Neighbourhoods Act 2005 makes intrusive light a statutory nuisance alongside noise. There is still no law specifically to protect the night sky, but some individuals have successfully gone to law to make councils reduce light pollution. Since Slovenia, Liechtenstein and the Czech Republic have laws protecting the night sky, the UK should be able to provide the same legal protection.

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A seventh question is, 'Do downward directed lights need to be closer together, thus requiring more lights and more electricity?'. The answer is no; where full cut-off lamps have been introduced, they have often used the existing columns, and sometimes the columns for the new lamps have been wider apart, so that fewer lights have been required.

The eighth question is, 'Aren't lamps designed by experts?'. The answer was, 'So was the *Titanic*'.

The ninth question is, 'What can I do personally to reduce light pollution?'. Use sensible lights out of doors, and approach neighbours and organisations with glare and poorly directed lights to inform them about the problem. One can become a local officer for the CfDS, subscribe to the CfDS Newsletter (£3 for two years), or donate to the fighting fund. One can also give talks on astronomy, mentioning light pollution as a concluding point, and stressing the amount of energy and money wasted by over-bright and poorly aimed lights. At this point there was an outbreak of applause for a picture taken by Dale Holt illustrating light pollution.

The tenth question is, 'Where can I find out more about light pollution?'. Besides the website of the Campaign for Dark Skies itself (<http://www.britastro.org/dark-skies/>), there are two other websites, [www.dark-skies.org](http://www.dark-skies.org) and [www.need-less.org.uk](http://www.need-less.org.uk). The Campaign has also published a 40-page handbook, *Blinded by the Light*.

The Campaign for Dark Skies has been active since 1989, and has made some progress in the past 20 years in making the public aware of the existence of light pollution. Martin Morgan-Taylor, of the Law Department of de Montfort University, is a committee member of CfDS, and has published several articles about the legal aspects of light pollution. All local authorities must now act against light nuisance, and the Highways Agency has recognised the importance of not having upward shining lights. Twenty-five local authorities now switch lights off after midnight. This change has led to reductions in crime; although accident rates have remained unchanged, they have at least not increased. Finally, the CfDs offers Good Lighting Awards to organisations and individuals that have introduced lighting that reduces light pollution, for example the Zeta Sunflowers used in Oxford Science Park.

Review by **Richard Stratford**

The Society has several copies of the CfDS leaflet for anyone who is interested, and we also purchased a copy of "Blinded by the Light", which members can borrow from the society's library.

In addition, the society Committee agreed to make a donation of £50 to the Campaign, for which Bob was very grateful.

The society has been running 3 of the animated adverts on the home page of our website.

We are very pleased that at the end of Bob's talk we were able to announce that John Flook had volunteered to take over the role of our Dark Skies Officer.

- If you have any questions,
  - if you have any ideas about people we could contact,
  - or if you can produce any examples of good or bad lighting,
- then please contact John. He will be happy to hear from you.

## ASTRONOMICAL MATTERS

### Leonid Meteor Watch

The famous Leonid meteors are back again! The other main meteor shower of the year is the Perseids, but as they occur during August, the sky isn't as dark as it will be in November. Unlike last year's shower, this year's peak coincides with a New Moon, so we should have the perfect conditions - clouds permitting! For this reason we are going for two nights - Monday 16<sup>th</sup> and Tuesday 17<sup>th</sup>.

The forecast for this year is very good. Some reports suggest that we may be approaching meteor storm levels, though personally I will confess to some doubt about that, especially from our not-so-dark location ...

★ Anyway, here's a run-down on the event:

#### What are the Leonid Meteors?

Although known as "shooting stars", this only refers to the visual aspect, as meteors are mostly grains of dust - whereas a star is a giant ball of fire! The dust is a stream of material trailing from a comet - in this case, comet Tempel-Tuttle - and as the Earth passes through the dust, the particles rush through our atmosphere. This causes friction, which makes the particles glow. Most of them burn up completely; if a piece is large enough to survive and reach the ground, the remnant is called a meteorite.

#### When and where is the meteor watch?

From 8pm on each night (Nov 16 & 17) at the Standalone Farm Centre. Park on the hard-standing and join us in the field through the gate.

#### What should I bring?

A chair - preferably a recliner - so that you can sit back and look up at the sky. You're going to be sitting / lying there for a while, so make sure that you wear warm clothing. A hat will help prevent heat loss, and an extra pair of socks might help your toes freezing! For inside warmth, a flask with a hot drink would be a good idea (though take note that the toilets at Standalone will be closed).

#### What about a scope or binoculars?

If you want to spend some time looking at other things in the sky as well, then bring your equipment, but it won't be much use for watching meteors, as they flash across the sky very fast, they only last a few seconds and you cannot guarantee just where the next one will be.

If you want to take pictures of the meteors, you need a camera that allows you to take long exposures - say about 30 seconds. Beyond that you may find that the skyglow becomes too pronounced. What I do is to put the camera on a tripod facing upwards, with a medium focal length setting, and I just keep taking 30-second exposures. The nice thing about digital cameras is that you can delete the ones that don't show any meteors when you get home.

★ Here are the notes on the Leonids from the Society for Popular Astronomy:

Possibly strong, maybe even storm-level, Leonid activity has been predicted for this year, with best rates probably happening at some stage between roughly 21h-22h UT on November 17.

ZHRs (Zenith Hourly Rates) are uncertain, possibly around the 120-140 mark, but maybe as high as ~1000-1500, and probably set against a background of ZHRs ~20-40+ from about 06:30 UT on November 17 till roughly 00:30 UT on the 18th.

Other submaxima may occur too, near 07:30 (ZHRs ~200+?) and 09h UT (~25-30?) on the 17th, 00h (~15?) and 19h UT (~10-15, but faint meteors) on the 18th. This does not exclude other unexpected peaks!

New Moon on November 16 creates perfect viewing conditions, but the probably strongest peak will be too early for the UK if it keeps to time, as the radiant rises here at about 23h UT, and can be usefully-observed only after midnight. The proximity of the shower's parent comet 55P/Tempel-Tuttle helped produce the strong to storm returns in 1998-2002. It was at perihelion last in 1998 (period 33 years). Very swift meteors.

★ 120 meteors per hour means an average of one every 30 seconds, which I would be very happy with. A rate of 1,200 - one every 3 seconds, or 20 per minute, would be pretty amazing. As I said, I have some doubt that we will see that, but I would be extremely pleased to be proved wrong!

On **December 22**, we'll be finishing off the year with a meteor watch for the **Ursids**. More details on this next month.

## ADVERTS

### For Sale – Items to celebrate Astronomy and Space Exploration

#### Two versions of the GalileoScope

It is 400 years since Galileo first looked at the skies through his telescope. Here is a chance for you to repeat his observations by making your own version of this simple refracting telescope.

There are two versions: A cut-out model which will take about an hour to make, offering 10x magnification, and a press-out version, which will take about 30 minutes and offers 6x magnification.



The scopes come complete with instructions and lenses, which are not bad at all. I have used both of these scopes to observe Jupiter!

The special price for LDAS members is just £5 for the large model or £4 for the smaller one.

You can buy them at our next meeting, or by post (contact me for details).

#### A Working Orrery

This lovely model includes the Sun, Mercury, Venus and the Earth and Moon. The Sun lights up using an LED.

Wind the handle and watch the planets and the Moon moving through space.

The axial tilt of the Earth is shown, and as the Moon travels on its orbit whilst the Earth goes around the Sun, it is possible to demonstrate seasons and eclipses.

The special price for LDAS members is £40. This item has to be specially ordered.



#### One Small Step

There's another anniversary in 2009, as it is 40 years since the first men set foot on the Moon, when Apollo 11 landed in the Sea of Tranquility on July 20.

"One Small Step" is presented as the scrapbook of a young space enthusiast whose grandfather worked in Mission Control. In fact it is written by Jerry Stone, who has his own celebration this year, as it's the 40<sup>th</sup> anniversary of his first presentation on spaceflight.

The book is full of flaps to lift and things to pull out, not to mention some stunning pictures, beautifully printed.

12" x 10" Price: £14.99

"Adults are going to enjoy this just as much as children" – Booksellers' Choice

"Marvellous! Marvellous!" – Sir Patrick Moore.



All these items are available from Jerry through LDAS. [info@spaceflight-uk.com](mailto:info@spaceflight-uk.com)

See him at one of our events, or write to:

# Letchworth & District Astronomical Society Newsletter – October 2009

## CONTACT INFORMATION AND OFFICIAL MEETING DATES

If you have any comments or suggestions regarding any aspect of Society activities, do please contact us using any of the details below.

### General LDAS Contacts

Position	E-mail
Committee	committee@ldas.org.uk
Chairman	chair@ldas.org.uk
Secretary	sec@ldas.org.uk
Newsletter editor	editor@ldas.org.uk
Webmaster	web@ldas.org.uk
IYA Project Team	IYA@ldas.org.uk

### LDAS Committee Contacts

Position	Name	Obs key	Telephone	E-mail
Honorary President	Bob Forrest		01992 535810	r.w.forrest@herts.ac.uk
Chairman	Jerry Stone	Y	01438 712000	spaceflight_uk@yahoo.co.uk
Treasurer	Brian Hendy		01462 812123	hendybn@aol.com
Secretary	Nick Ellis		01707 321013	ellis.nick@virgin.net
Membership Secretary	Richard Benson		01727 762863	richardcbenson@googlemail.com
Meetings Organiser	Stan Waterman		01462 433912	stanwaterman@aol.com
Observatory Manager	Mike Atkins	Y	01992 460044	mike-atkins@hotmail.co.uk
Observing Co-ordinator	Robert Townsend	Y	01438 238338	meteorwatcher@hotmail.com
Catering Co-ordinator	June Matthams		01462 433330	juno12@btinternet.com
Newsletter Editor	Jerry Stone		01438 712000	spaceflight_uk@yahoo.co.uk
Librarian	John Flook		07796 884848	jsflook@yahoo.com
Dark Skies Officer	John Flook		07796 884848	jsflook@yahoo.com
Webmaster	Jerry Stone		01438 712000	spaceflight_uk@yahoo.co.uk

### The LDAS IYA Project Team

Ian Dunbar	John Flook	Sam Hawkins
Alan Pounder	Jerry Stone	Robert Townsend

#### Committee meeting dates

February 18  
 May 20  
 August 5  
 November 3

#### IYA Project Team meeting dates

January 10	June 28
January 25	August 23
February 22	September 27
March 29	October 25
April 19	November 29
May 31	January 3 2010