

Thanet Astronomy Group

Astronomy for Everyone in Plain English

NEWSLETTER

December 2015



Comet C/2013 US10 Catalina

This space is reserved for promoting members' businesses.
You can place an advert here for a donation to the group.

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Executive Committee Messages

Christmas and New Year

The Committee members would like to wish all the members an
Extremely Merry Christmas
and an
Exceedingly Prosperous New Year.

Meetings December and New Year

- December 2nd** Don't forget this members meeting is the Groups Christmas Dinner and Entertainment Evening and it's going to be a good one !!!
- December 26th** Will be the last Saturday meeting at the cafe of 2015. So do come and say hello. If you miss this meeting you will have to wait till next year for another chance to meet up with our amazing group.
- January 2nd** Will start the Saturday meetings for 2016 closely followed by....
- January 6th** Wednesday's members meeting at the cafe.

Telescope Making Group

In the new year 2016 we will start working on the first of 3 telescopes we hope to make this year. If you have not already signed up for this amazing workshop and would like to, just let Danny, George W. or Gill know.

Note : There is no knowledge or experience needed to join this workshop.

The Junior group have already started on and almost got working a 3” refractor they have built from scratch and already have made a tube and working focuser assembly for their 3” Newtonian Reflector Telescope.

Newsletter

If any members would like to offer to help with any pages for the Newsletter we would be very grateful.

Danny, George, Gill.

About the Cover Picture

Comet C/2013 US10 Catalina



Credit : Catalina Sky Survey University of Arizona

Discovery

Comet Catalina is a relatively newly discovered comet. It was discovered on 31st of October 2013 by the Catalina Sky Survey based in the Catalina Mountains north of Tucson USA, with their 26.77 inch (68cm) Telescope.

The Catalina Sky Survey is a project set up primarily to search for potentially hazardous asteroids that threaten to impact the Earth. In general it searches for and discovers comets and objects including the dangerous Near Earth Objects (NEO's).

The NEO observation program is part of a US congressional directive to NASA to identify 0.62 mile (1Km) or larger objects that threaten the Earth. The Catalina Sky Survey is part of this program. Web site <http://www.lpl.arizona.edu/css/>



One of the CSS Telescopes

Spotting Catalina

Until November Catalina has been a southern hemisphere object but it is now visible to us in the northern hemisphere. When I say 'visible' I mean unobstructed, during November the comet is not at a good angle which makes seeing it harder but the main problem is its magnitude (brightness).

During December comet Catalina will climb out of the twilight and haze close the the horizon and by New Years Eve Catalina will pass very close to the bright star Arcturus in the constellation Bootes. It is expected to be about magnitude 5 at this time, this brings it into the naked eye range but only just and you will need a very dark site to see it by eye. However this magnitude is well within the grasp of binoculars and small telescopes.

Comet Catalina is thought to have an orbital period of several million years so if you want to see it

NOW IS THE TIME !!

Where to Look

Option 1.)

See the "What's in the sky this month" article (page 13) for an opportunity to see the comet On Thursday 3rd December at 6:00am.

Danny

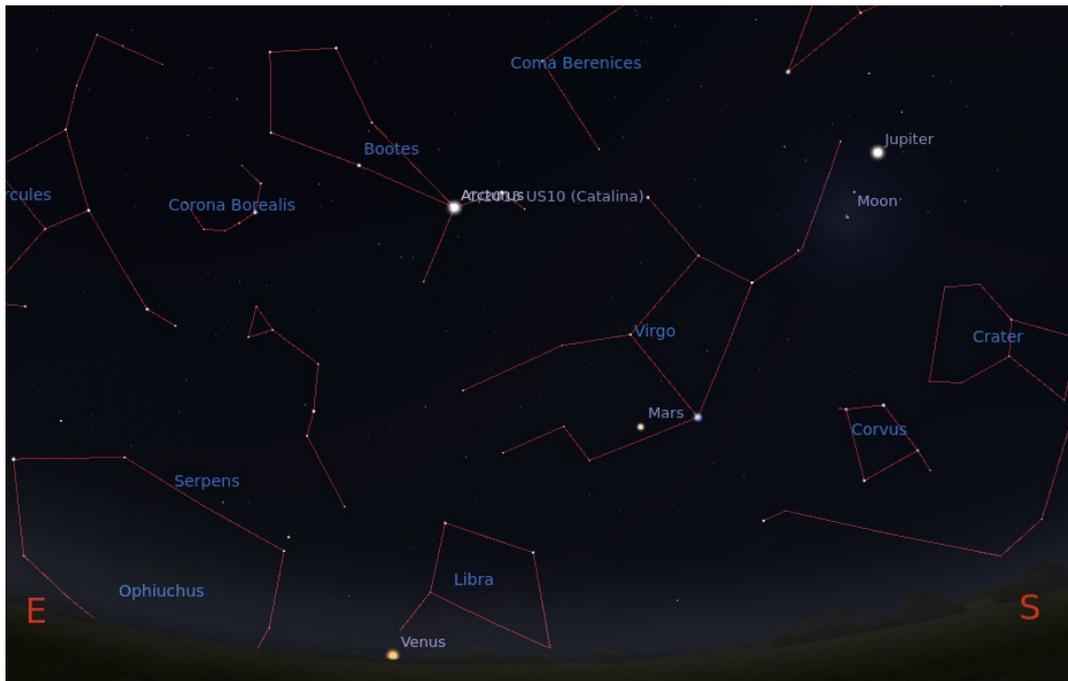
About the Cover Picture

Comet C/2013 US10 Catalina

Option 2.)

On the morning of **New Years Day at 5:00am** (so this is ideal because you will still be up after the New Years Eve celebrations) **Looking South East at 124° and 46° above the horizon**, just to the right of Arcturus the brightest star in Bootes you will be able to see the comet Catalina. You will need a very dark location to see it by eye.

If you have binoculars or a small telescope it will be easy to find, as it will be less than 1° from Arcturus.



Arcturus in the constellation Bootes and Comet Catalina



Close up of Arcturus showing Catalina position



Extreme close up showing detail of Catalina and tail direction

We hope the sky is clear on at least one of these days and you get to see this amazing sight. See the CSS link on page 4 for details of the comets position on other days.

Danny.

Thanet Astronomy Group Contact Details

Executive Committee

Chairman	Daniel Day	01843 228 904
Treasurer	George Ward	01843 292 640
Secretary	Gill Palmer	07543 942 245

Committee

Volunteers	George Cozens	07970 181 395
Members	Sheila Bull	07791 892 057
Newsletter	Janet McBride	01227 364 092
Newsletter	Tracy Howes	07917 710 638
Library	Janet McBride	01227 364 092
Web Site	Danny Day	01843 228 904
JAC & Gill	Gill Palmer	01843 848 064

Member's Meeting Dates and Times

Thanet Astronomy Group Member's Meetings Dates and Times

6th January 2016 at 7:30pm

3rd February 2016 at 7:30pm

2nd March 2016 at 7:30pm

6th April 2016 at 7:30pm

4th May 2016 at 7:30pm

1st June 2016 at 8pm

6th July 2016 at 8pm

3rd August 2016 at 8pm

***** 7th September 2016 at 8pm *****

***** Anniversary Three Years at West Bay Cafe Party *****

5th October 2016 at 7:30pm

2nd November 2016 at 7:30pm

***** 7th December 2016 at 7:30 for 8:00pm *****

***** Christmas Evening Meal and Entertainment *****

All Member's meetings will be held at the :-

West Bay Cafe,
Sea Road,
Westgate-on-Sea,
Kent.
CT8 8QA

Advertisement

WEST BAY CAFE

Sea Road - Westgate-on-Sea
CT8 8QA

Location :-

This Family Friendly Cafe is situated on the promenade just beside the sandy beach. Opposite the junction of Sea Road and Rowena Road. Westgate-on-Sea. CT8 8QA.

Access :-

via a flight of steps behind the cafe.

Disabled Access :-

via the main entrance to the bay and a slope at the cafe door.

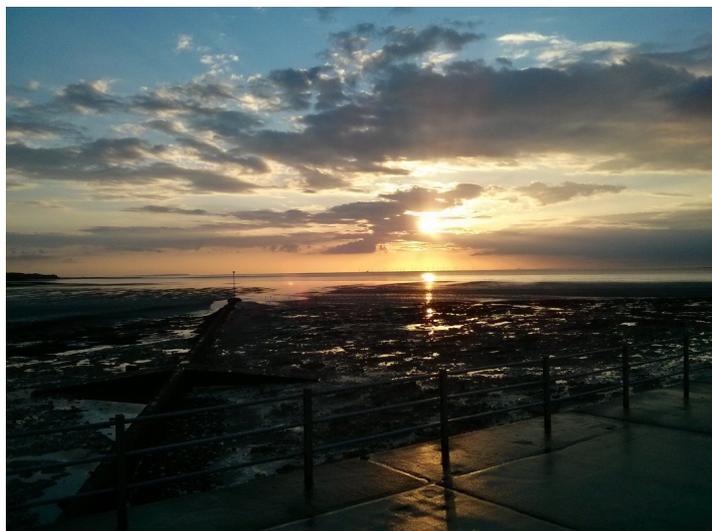
West Bay Cafe run by Alan and Kate and has a very friendly atmosphere.



Alan outside the new style West Bay Cafe

There is a wide variety of good food and drinks at very reasonable prices and there are always special offers.

There is seating both inside and outside for those extra hot days.



A Typical Sunset at the West Bay Cafe

The Sunsets at the West Bay Cafe are Spectacular.

**With a meal, some friends,
and a pint or two.**

What more could you ask for!

West Bay Cafe have hosted Thanet Astronomy Group since September 2013.

We would like to say a
HUGE THANK YOU to Alan and Kate
for all the help and support they have shown us over the last year.

Please use this Brilliant Seaside Cafe and Tell Your Friends.

What we did in November

November 2015

Wednesday 4th November Members Meeting

We opened this meeting up with the usual messages by Gill and then got down to business with a short section on Stellarium by Danny. Then for the second half of the meeting we broke into two workshops one on the Comet Catalina by George Ward and the other on dismantling and reassembling a telescope by Danny.

Saturday 7th November Public Outreach Meeting

Today was spent in the cafe due to bad weather despite the wind and rain we still had many people. There was a lot of discussion on general astronomy topics. Gill and the juniors George and Charlotte were working on developing a basic refracting telescope from 2 lenses and a collection of cardboard tubes. It was discovered that using two identical lenses would not produce a magnified image.

Tuesday 10th November 1st Birchington Cubs

This evening Danny and Gill were at the 1st Birchington Cubs teaching them their astronomy badge. Week one was spent working through the presentation to cover all the required knowledge. It was noted that the cubs were one of the quietest and well behaved packs we have visited.

Saturday 14th November Public Outreach Meeting

The weather today was really bad with gale force winds (hurricane Kate) and rain so everyone was in the warm cafe taking advantage of the tea, coffee, chips and cake etc.

After a discussion at the previous weeks meeting about telescope making, George (Jr.) turned up with a completed Newtonian telescope tube assembly including a working focuser !

Tuesday 17th November 1st Birchington Cubs

The second visit was planned to involve the cubs in a more interactive way and test what they had learnt. We started with a look through their requirements and loads of questions were asked by Danny, Gill and the cubs.

In the second half of the evening the cubs broke into two groups, Group one with Gill made models of all the planets of the solar system. Group two explored the universe with George W and Stellarium. Then after a while the groups swapped over. At the end of the evening it was concluded that all the cubs had done really well and all deserved their badges.

Saturday 21th November Public Outreach Meeting

Today was another bad weather day, with wind and rain, so the meeting was in the cafe, even though the weather was bad many people turned up to the meeting. George (Jr.) brought his telescope tube along today to show that its inside had now been painted black.

It now only needs the focuser draw tubes inside diameter to be made a little smaller so it fits eye pieces a little better. We have found a mirror set for the telescope and the next stage is for George to construct the primary mirror cell.

Saturday 28th November Public Outreach Meeting

Today was a bit better weather wise, dry but still windy. We did get the telescopes out for a while but then retired to the warmth of the cafe for hot drinks and lots of talk and planning of things **Astronomical !!** We even took a telescope mirror sell apart to show the juniors how to make one.

Danny

Junior Members Page

November 2015

Junior Members' News

Thanet Astronomy Group have been out and about in the Community again... this time helping the 1st Birchington Cubs to achieve their Space Badge!

Twenty eager members of the Cubs participated in a range of astronomical activities over two weeks to focus on their 6 requirements.

Cubs, Astronomer Activity Badge Requirements

To gain this badge, Cub Scouts must complete the following:

- 1. Make a model or draw a simple diagram of the solar system.*
- 2. Explain the difference between a planet and a star.*
- 3. Identify three constellations.*
- 4. Find out about and present some information on the two of the following: planets, comets, the northern lights, the sun, eclipses, meteorites, black holes, the moon, light years, space exploration or any other space-related subject.*
- 5. Observe the moon, if possible using binoculars or a telescope. Describe some of its features.*
- 6. Know how to locate and identify the pole star. Know how explorers used it to navigate and plot courses.*



Throughout Danny's presentation during the first week's session, their answers and questions came thick and fast.

At the second week's session, their knowledge and recall of the main facts earned them their sought after Space Badge. 8.00 cm

As a culmination of the events, the 1st Birchington Cubs were treated to an indoor trip to the stars and planets by George W. on Stellarium and Gill helped them to make their own planets using balloons and rice.

It was encouraging to see they had listened to and understood the criteria that defines a planet, as they all moulded their squidgy shaped balls into perfect spheres then used them to act out the positions in the Solar System around their leader who posed as the Sun!

Reach for the stars, Junior Astronomers!

Gill P.

Renaissance Glass

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NEEDS FOR GLASS
GLASS FOR ALL USES**

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Book review

Science But Not As We Know It

By Ben Gilliland

Published by Dorling Kindersley

Although the book is not strictly an astronomy book, a large percentage of it is dedicated to space and astronomy.

The Book consists of four sections 1.) Mysterious Universe, 2.) To Boldly Go, 3.) The Appliance Of Science, and 4.) Teeny, Tiny, Super-Small Stuff.

Each section is broken up into about a dozen separate articles each one dealing with one subject. The information in each section is well laid out with plenty of useful illustrations. Due to the way the book is laid out, you can read any of the articles on any of the subjects in isolation. It is an easy and very informative read.

Section 1 starts with “How big is the universe” includes “Welcome to the multiverse”, “We are all doomed”, “How to catch a comet” amongst many others and ends with “The space rock that killed Pluto”.

Section 2 starts with “The first human in space” includes “Voyager: our distant emissary”, colonizing Mars”, “Detecting killer asteroids” amongst many others and ends with “Space the final Frontier”.

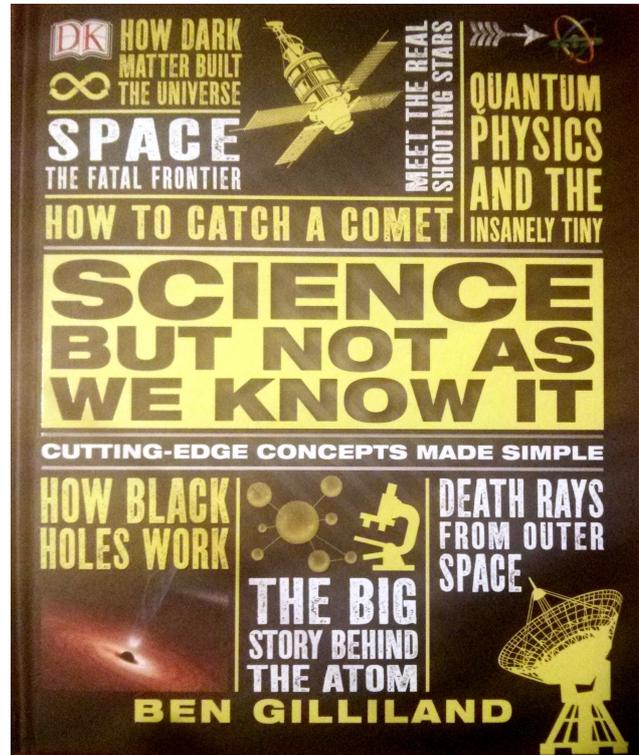
Section 3 starts with “Its only a theory” includes “What is dark matter”, “We are all made of stars”, “Death rays from outer space” amongst many others and ends with “Curiosity: science's heart”.

Section 4 starts with “The story of the atom” includes “The world of the insanely tiny”, “Higgs boson: a bluffer's guide”, “Particle accelerators” amongst many others and ends with “Attack of the micro black holes”.

In my opinion this book is a must read, it will give you a grounding on the universe we live in and is written in a way that is entertaining, informative and easy to read.

Currently on sale at The Works Margate High Street for only £5.00 RRP £9.99

Danny.



What's in the sky this month

What to see in December :-

Thursday 3rd December at 6:00am
Comet (Catalina)

Saturday 5th December at 8:00pm
Open Cluster (Pleiades)

From 4/17 December Peek night 13/14th December
Meteor Shower (Geminids)

This month we have three fantastic objects for you to look out for. The Comet Catalina, an Open Star Cluster Pleiades and the Geminids Meteor Shower.

Comet C/2013 US10 Catalina

This comet became visible from the northern hemisphere in November.

On Thursday 3rd December at 6:00am look South East at 127° and 14° above the horizon and if Catalina has become bright enough you will see the Comet just above the horizon if it is a clear night.



Comet Catalina, Venus, Mars, Jupiter, Moon

It will be easy to find because it leads a line of three planets and the Moon towards the horizon. From Catalina bottom left, Planet Venus (the brightest object apart from the Moon), Planet Mars (not so bright), Planet Jupiter (another very bright object) and last but not least the Moon at the top right of the line.

George Ward / Danny Day.

What's in the sky this month

Pleiades

One of the delights of our winter skies is the open star cluster **Pleiades our group logo**, also known as The Seven Sisters, Subaru or (M45). This is a beautiful open star cluster in the constellation of Taurus. It is visible by eye as a small group of stars.

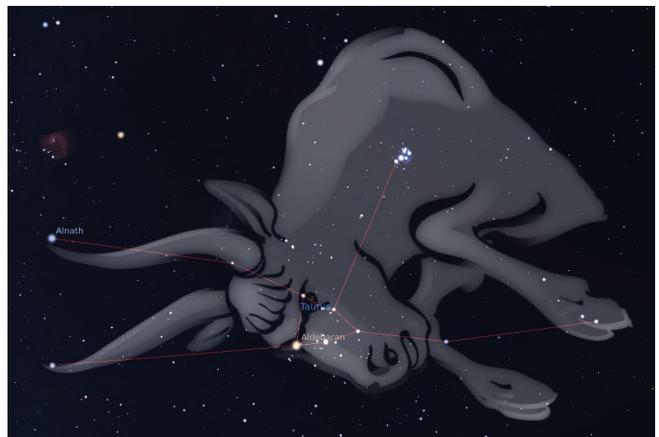
On Saturday 5th December at 8pm look East at 114° and 48° above the horizon, you will see Pleiades, it marks the shoulder of Taurus The Bull.

You can see Pleiades by eye and if you look a little to one side (known as averted vision,) you will see it more clearly. You don't need a telescope, because Pleiades is so big. This open star cluster is 15 light years from side to side.

With the aid of a pair of binoculars and a very steady hand the detail that can be seen is much better and if you have a small telescope then Pleiades is definitely a target to look at.



The Constellation Taurus in the South Eastern Sky



Close up of Taurus showing Pleiades on the bull's shoulder



Extreme close up of Pleiades

George Ward / Danny Day.

What's in the sky this month

Geminids

Although the peak night is the 13/14 the Geminids can be seen from 4/17 December.

On the evening of 13/14 December at 8:00pm look East at 68° and 24° above the horizon you will see the star Caster (the head of one of the Gemini twins) just above this is the radiant of the Geminid Meteor Shower.

This meteor shower is called the Geminids because all the meteors 'appear' to originate from the constellation of Gemini. However this is not the fact.

Most meteor showers are caused by debris left behind by passing Comets. When the Earth passes through the orbit of these comets the remaining debris enters the Earth's atmosphere and is burnt up by the friction caused as it passes through the Earth's atmosphere at very high speed.

The Geminids however are different. This meteor shower is one of only a few that are caused by an asteroid. In this case the asteroid 3200 Phaethon. It is expected to produce meteors (shooting stars) at the rate of about 120 per hour.

The Shooting Stars can be seen anywhere in the sky but if you trace a line back in the direction they came from all the lines will converge at the radiant point in the constellation of Gemini.

To see any meteor shower the trick is to look in the general direction of the radiant and at as much of the sky as you can. If you think you just saw one then you most likely did. They are very short lived, just keep looking and if you look long enough at some point one will appear where you happen to be looking.

If you are really lucky then you will see a fire ball. This is where a larger piece of debris has entered the Earth's atmosphere and as it burns up it breaks up into smaller pieces and these in turn burn up. This lasts much longer than the normal shooting stars and is quite a spectacle.



Paola-Castillo used her cell phone to capture this fireball : Credit: Paola-Castillo



A Fireball Meteor by Shannon age 11

George Ward / Danny Day.

Member's Page

Astronomy and Social Media

There are a myriad of websites that are all about astronomy and it can be time consuming to click on every one and save the websites under favourites etc. One of the best ways to get all the latest information is to use social media sites such as Facebook and Instagram. By 'liking' and 'following' the websites, their latest news, discoveries and blogs are highlighted on your page.

I use Facebook to keep constantly updated and some of the websites that use Facebook are:--

ESO Astronomy - Astronomy Now Magazine - Arizona science & Astronomy Expo / EarthSky.org

Astronomers Without Borders – Uwingu - Celestron Telescopes

International Dark-Sky Association - Astronomy Magazine - and many others.

Uwingu posted this on 12 November 2015



The Coma Galaxy Cluster, in the northern constellation of the hair of Queen Berenice, is one of the closest very rich collections of galaxies in the nearby Universe. The cluster, also known as Abell 1656, is about 320 million light-years from Earth and contains more than 1,000 members.

The galaxies in rich clusters undergo many interactions and mergers that tend to gradually turn gas-rich spirals into elliptical systems without much active star formation. As a result there are far more ellipticals and fewer spirals in the coma cluster than are found in quieter corners of the universe.

Instagram is very similar but you have the added advantage of following different people who have a great interest in astronomy and share their photos.

One such person is Jimmy Walker a PGA Golfer. He is very keen on astronomy and has some amazing photos see below:-

This was his post to go with the photo: [jimmywalkerpga](#) Blood Moon from New Mexico with the [#Celestron](#) RASA. Nice half sec shot. Enjoy! Thanks for all the well wishes too!



This is another one of his pictures: [jimmywalkerpga](#) NGC6995 The Veil In Cygnus. This is part of star that went supernova about 7000 years ago. This is a small segment of larger picture. I hope all enjoy the close up look from the RCOS 16". This has well over 30hours of exposures.

And this is his scope!!!! RCOS 16" Telescope from SRO.



Sheila Bull.

Member's Page

Astronomy and Social Media

I also came across this poem on the Astronomers Without Borders website with the accompanying picture below:

Once upon a ghostly star,
knee-deep in a darkling place
I meandered off too far
into outer, outer space.

As I wandered in this land
of the void beyond the night,
suddenly I saw a hand
reaching for a cosmic light.

Though lost in darkness dreary
and adrift in bleak despair,
disheartened, weak, and weary,
I could not but stop and stare.

Such a wondrous illusion
floated in those blackened skies!
Was this only delusion
that I saw before my eyes?

Did collapsed star long ago,
pulsar spinning crazily,
cause that nebulaic glow
emanating hazily?

Was this sight to be believed?
Astrophysical ideal?
Pareidolia perceived?
Yet the phantasm seemed real!

Fingers colored brilliant blue
clutching at a fiery band
formed a most amazing view
of this archetypal hand.

And my musing mind was full
of this inner mystic spell
serving as the heavens' pull
out of my own private hell.

That ethereal display
brought me eerily around,
showing me the light of day
and a destiny profound.

Ever onward I would plod,
thus to seek the truth inside,
on a path that few had trod
where deep wisdom would abide.

With this purpose as my guide,
though the way might twist and bend,
I would live until I died
with enlightenment my end.

Yea, it was as if a dream
of a helping hand within
shone a bright eternal beam
where obscurity had been.

~ Harley White

You can also access these sites and get instant updates through Twitter.

I am aware that some people believe that social media is full of rubbish but used properly can be an informative and funky way of keeping up to date and getting the latest information on your phone, pc, laptop or tablet.

Sheila Bull.



Did You Know ?

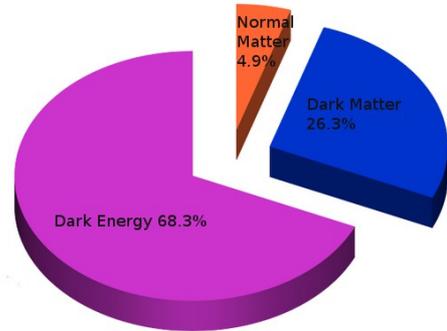
Did you know 95.1% of the universe is missing ???

All of everything that we can see in the universe Galaxies, Stars, Planets, Asteroids, Comets, Dust and Gas is only 4.9% of what exists !

The other 95.1% consists of Dark Matter and Dark Energy.

Dark Matter being about 26.8%.

Dark Energy being about 68.3%.



NGC 4555 embedded in 18,000,000°F gas cloud.

Credit: NASA/CXC/E. O'Sullivan et al

Dark Matter is a hypothetical type of matter that can not be seen, it does not absorb or emit light, or any other type of electromagnetic radiation. The only way we can detect it is there is by the gravitational effect it has on normal matter.

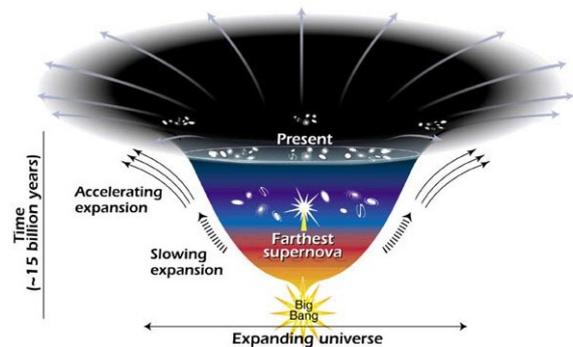
Chandra's X-ray image of the Galaxy NGC 4555 shows it embedded in an 18,000,000°F gas cloud. The gas has a diameter of about 400,000 light years.

It is believed that it is the Gravity from the dark matter that is stopping the gas cloud from drifting away into inter galactic space.

Dark Energy is a hypothetical type of energy that is believed to permeate all of space and be responsible for the accelerating expansion of the universe.

The missing 95.1% of our universe is made up of 26.8% Dark Matter and 68.3% Dark Energy

Since the birth of our universe (13.8 Billion years ago) the rate at which it has been expanding, has been changing. The shallower the curve the faster the expansion.



The changing rate of expansion of the universe

Image credit of NASA/STScI/Ann Feild.

The curve and therefore the rate of expansion changed about 7.5 billion years ago, this is when objects in the universe such as Galaxies began to fly apart at a faster rate.

Astronomers think that the faster expansion is due to a dark force (dark energy) that is pulling galaxies apart.

Danny.

Junior Astronomers Club (JAC & Gill)

November 2015

JAC and Gill's News

Despite Hurricane Kate's and Barney's attempts to dampen the enthusiasm of our intrepid Junior Astronomers, our younger members still braved the weather to come to the indoor comforts of the cafe for the Saturday meetings (and chips!)



In fact, Charlotte and George's enthusiasm to experiment with making their own simple telescope using various sized cardboard tubes, magnifying glasses and sticky tape (in true Blue Peter fashion) has inspired the more mature members to set up their own working party to make a their own telescope!

George Jr. has even taken the cardboard theme one step further by working with his Granddad to adapt a larger white plastic tube by adding a side extension for an eyepiece and blacking out the inside (under the expert instruction of Danny!)



Watch this space for further developments over the New Year... and a full report and instructions from the Juniors on how to build your own telescope!



Reach for the stars, Junior Astronomers!

Gill Palmer.

Adult Word Search

This month we have done Christmas flavour word searches for both the adults and junior members.

BAUBLES
MISTLETOE
SANTACL AUS
TINSEL

CHRISTMASCAKE
PRESENTS
SLEIGH
TURKEY

LIGHTS
REINDEER
SPROUTS
WREATH

H I V S O F D K I J G W G J R
G P F T K F C W T F W M J C E
I F N H L S I O N B Q D H X I
E J N G H S T N E S E R P A N
L Z R I Z Z Y C J R I C N L D
S U A L C A T N A S F E Q M E
P I B L E S N I T P O D U N E
R W R E A T H M Q T P O F F R
O S E L B U A B E D Y S D R V
U Y Q Q P S C L H K W Z N X S
T J X R C V T U R K E Y P M D
S X E A Z S M H P S Q I K V U
K U K Z I H A X D P H M L S V
O E T M P Y P I G Z Q M I I F
C J W Y G U P K V F B P T O X

Tracy Howes.

Junior Word Search

CAKE
SANTA

CHOCOLATE
SNOW

CRACKERS
TREE

PRESENTS
TURKEY

C C K A D A E R I
R H Y K T K T P T
A E O R A N J R A
C E E C E T A E A
K E O R O F C S J
E X H H I L Q E V
R H R G G J A N S
S X Y E K R U T U
H Q T H W O N S E

We hope that you find the Adult and Junior word searches interesting and that they inspire you to look up any of the words you don't know *Absolutely Everything About* :-)

If you like these please let us know and we will continue to produce them.

We are thinking of adding a crossword as well in future newsletters. If you like this idea please let us know.

Comments Please : you all know the email address !

Tracy Howes.

Member's For Sale and Wanted

This page is for members to place items for Sale and Wanted adverts.

Please let us know if you have anything you would like on this page.

Email us at : - thanetastronomygroup@gmail.com

Or call Danny 01843 228904 or George 01843 292640

For Sale

10 Hardback and five paperback Kathy Reichs books

10 Hardback and two paperback Karin Slaughter books

22 Hardback and one paperback Clive Cussler books

£1 Per Hardback

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